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The Performance of Corporate Credit Ratings

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Following the performance of structured finance securities in general and residential mortgage-backed securities ("RMBS") related securities in particular, the reputations of the major credit rating agencies—Moody's, S&P and Fitch—have suffered considerably. The core competency of rating agencies is now sometimes questioned even outside of structured finance. But are investors too quick to dismiss the utility of corporate credit ratings? In this short note I will explore the accuracy of the corporate default forecasts Moody's has published throughout the recent financial crisis.

Moody's has been rating corporate debt obligations for almost 100 years. Almost all corporate debt traded in North America carries a credit rating from not one but two of the major agencies, and their use in Europe and the rest of the world is expanding. Are the agencies only extracting a regulatory rent that virtually compels debt issuers to carry a rating, or do these ratings provide valuable information on the relative creditworthiness of corporate bonds and loans?

Most rating agencies publish research on their performance not only for the benefit of regulators, but for the benefit of market participants. Moody's Credit Policy Research Group, which I manage, routinely publishes default and rating performance studies of different corporate and financial sectors and different geographies. We evaluate performance on a number of dimensions but put most emphasis on the ordinal accuracy and stability of ratings.[2]

Ratings are *relative* measures of credit risk, not absolute, and "ordinal accuracy" refers to the relative discriminatory power of ratings. Credits rated "Aa" should be less risky than credits rated "A;" that is the objective of the rating agency and it is the objective we evaluate on a regular basis. This objective is distinctly different from targeting an absolute *level* of risk to associate with a rating category, which, admittedly, is how some wish to use ratings.

In what follows I will depart from the question of ordinal power and instead assess the absolute (or cardinal) accuracy of corporate default rate forecasts based on Moody's credit ratings. When Moody's forecasts a twelve-month default rate of 3 percent, how reliable has that been? I should stress that this is not how Moody's would evaluate its own performance, since such cardinal measures are not part of its objectives. Still, it is a natural and intuitive enough question, and it is how many of the sharpest critics of rating agencies wish to frame the debate. So, can a rating agency forecast corporate defaults, or not?

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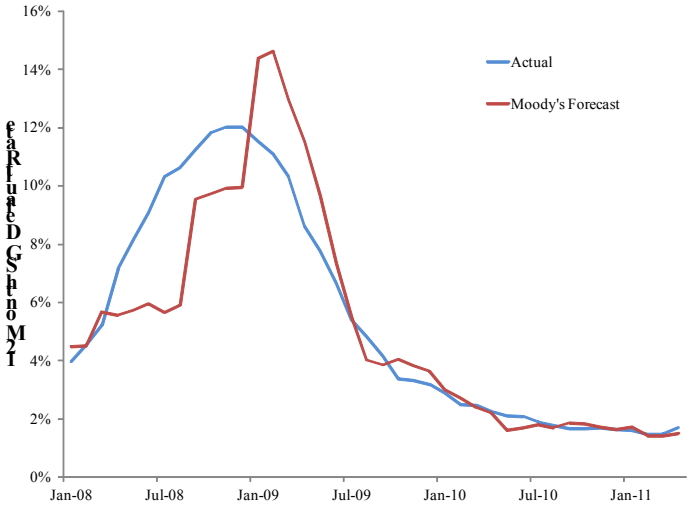
[2] That ratings should be accurate is self-evident. What many critics do not consider is that to be useful for capital scoring and investment management, ratings must be *stable*. Ratings which are always in flux and subject to frequent reversals are unhelpful. Ratings which simply move with market prices will be accurate but essentially useless (and even counterproductive) as guidelines for portfolio management.

Moody's publishes its corporate default forecasts every month. Those forecasts are based on its patented Credit Transition Model ("CTM") which, in the interest of full disclosure, I developed. The details of this statistical model are not important here, but it is worth noting that the model works at the level of the individual debt issuer; default rates for portfolios of issuers—say, the "North American High Yield Portfolio"—are aggregations of the individual issuer forecasts. It is a "bottom-up" as opposed to "top-down" econometric model and can generate a default forecast for literally any portfolio of rated issuers. But typically such flexibility comes at the cost of absolute accuracy.[3]

Forecasting is always a risky business. Forecasts are most often right when the environment is stable and wrong when it is not, but that is precisely opposite to when people most need forecasts to be accurate. The recent financial crisis represents a difficult test of any default forecasting model, since it saw the sharpest increase, the highest level, and the sharpest decrease in corporate default rates in the last 30 years.

Figure 1 compares the 12-month forecast of the global high yield default rate against its realization. If the forecasts were perfect, one line would sit right on top of the other. Of course no forecast model is ever perfect; in this case we see that the model under-predicted defaults in the few months before Lehman imploded in September of 2008, and then over-predicted defaults for the first couple of months of 2009. But by and large the model's forecasts have been fairly accurate. We should recall that this is comparing a forecast made a full year in advance against the realization of defaults during that year.

Figure 1: Comparing Actual and Forecast 12-Month Default Rates for the Global High Yield Universe



Consider the first point on this chart, corresponding to January 2008. Eight months before Lehman collapsed, the credit spread for high yield issuers in North America stood at 668

[3] It's fairly easy to see why. Suppose you are interested in a forecast of "total fruit sold." One could try to forecast that by first forecasting the sale of apples, separately bananas, separately pears, and so on and adding them all up. Or one could just try and forecast the aggregate total directly. In most cases, the behavior of the aggregate is more stable (and hence easier to forecast) than are the behaviors of the constituents.

basis points ("bps") and the unemployment rate in the United States was 5.0 percent. In that environment, Moody's forecasted a default rate of 4.5 percent, meaning that of the 2,179 high yield issuers outstanding on January 1, 2008, Moody's expected about 98 of them to default by January 1, 2009. How many did default? Eighty-six, representing a rate of 3.9 percent.

Move forward one month to February 2008. The unemployment rate had dropped slightly to 4.9 percent while credit spreads had widened to about 745 bps. Moody's then expected 103 of the 2,290 high yield issuers to default by February 2009. How many did? As it happens, 104.

Since the beginning of the financial crisis, the most significant under-prediction of defaults occurred in August 2008, six weeks before Lehman collapsed. The unemployment rate was 6.1 percent, but credit spreads were just 794 bps: pricing in the market, often a reliable indicator, was not yet reflecting the collapse that was about to come. On August 1, 2008, Moody's expected 132 defaults over the coming twelve months; it is difficult to remember today, but at the time this was an aggressive forecast. The reality would turn out to be 238.

But just one month later, on September 1, 2008, still before Lehman's collapse, credit spreads had widened to 1,020 bps, and Moody's forecast jumped considerably to anticipate 214 defaults over the subsequent twelve months. The reality would turn out to be 252 defaults.

As important as calling a sharp increase in defaults is identifying the decline. From May to July of 2009, Moody's default forecast dropped sharply from 9.7 percent to 5.5 percent. At the time, when spreads still stood at 1,067 bps, this forecast was an outlier against the prevailing street forecasts of high single to low (sometimes mid) double-digit default rates. As it would turn out, the default rate from July 2009 to July 2010 was 5.4 percent.

Table 1 reproduces the forecast and actual default counts beginning with the January 2010 forecast. For the last sixteen months, through general economic turmoil and the European sovereign credit crisis, Moody's corporate default predictions have typically been correct to within 3 defaults.

Table 1: Comparing Actual and Forecast 12-Month Default Counts for the Global High Yield Universe

	12 Month Default Count	
	Forecast	Actual
January, 2010	59.6	57
February, 2010	54.2	49
March, 2010	45.7	47
April, 2010	42.5	43
May, 2010	31.6	41
June, 2010	33.8	41
July, 2010	36.2	38
August, 2010	34.1	36
September, 2010	37.3	34
October, 2010	37.0	34
November, 2010	34.9	34
December, 2010	34.8	34
January, 2011	36.6	34
February, 2011	30.5	32
March, 2011	31.0	32
April, 2011	33.1	37

Talking about forecast accuracy sounds a little like "famous last words," and who knows, perhaps this article will appear very embarrassing a year from now! Past performance, as they say, is no guarantee of future performance. But it is worth pausing to remember that credit ratings have been useful measures of risk in the corporate debt markets for almost a century, and, perhaps, the results presented above may help remind us why.