“Noise” in Ratings: Not Entirely Random

Author:

Dr. Puneet Prakash 1
Assistant Professor
Department of Finance, Insurance, and Real Estate
Virginia Commonwealth University

1 Corresponding Author: Address: VCU School of Business, Rom 3147, 1015 Floyd Avenue, Richmond, VA – 23284. Phone: 804-828-7180 (W). Email: pprakash@vcu.edu
Abstract

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I investigate the informational accuracy as opposed to informational content of credit ratings over time. The study presents an empirical analysis of the classification errors. Results suggest that greater the credit risk in the economy, the higher is the error rate. Of all binary classifications tested, classification error for dichotomous class of investment vs. non-investment grade issuers is best explained by the economy-wide credit risk distribution. I conclude there is more “noise” in the assignment of ratings at exactly the time when there is more uncertainty regarding the credit risk of firms in the economy – i.e., during a credit crisis.

1. Introduction

In this paper I study the informational accuracy of ratings. Rating agencies assign firms of different risk type to separate risk classes (usually a letter grade) which reflects the true underlying probability of default. However, this classification is not perfect and raters make errors in their assignments. So a low risk firm can be assigned a high letter grade and vice-versa. Consequently, conditional upon the true type of the firm, say, high risk (H) or low risk (L), the probability that a H-type is assigned a lower letter grade B ($p_{BH}$) is less than one. Similarly, the probability that an L-type is assigned a high letter grade A ($p_{AL}$) is also less than one. Given that the classification system is not perfect, there are bound to be classification errors. This study examines errors in classification over time as a function the underlying distribution of the credit risk in the economy. I find that the riskiness of the underlying economy-wide credit risk distribution has considerable explanatory power for the classification errors. When I test for errors in the binary classification of investment vs. non-investment grade, the explanatory power of underlying economy – wide credit risk reaches a maximum. This leads me to conclude that when there is higher uncertainty regarding credit risk, the distinction between investment versus non-investment grade is least clear-cut. In light of Boot, Milbourn and
Schmeits (2006) argument that when firm is of medium credit quality then the role of a credit rating agency (CRA) as a monitor is more important in ruling out bad equilibrium outcomes, the empirical findings in this paper suggest that over the period of 1986-2000, correct classification of medium quality firms declined. The study also finds that over the period of study, the econometric model used for ratings is able to distinguish firms at the ends of rating spectrum (AAA and CCC respectively) from the medium quality firms better.

This study examines the classification errors of S&P ratings over time in a conceptual framework of Lizzeri (1999) while borrowing some elements from Boot et al (2006) and the management science literature (Nerkar and Paruchuri (2005); Paruchuri et al (2006)). Lizzeri (1999) focuses on the information provider role of the rating agency while Boot et al. (2006) focus on the monitoring role that rating intermediaries perform after the issuance of a rating. However, while Lizzeri (1999) argues that a CRA manipulates information in a way so as to capture all informational rents and even allows for a possibility that the probability of getting a specific class rating is actually independent of the true type of the firm, I rule out that possibility to begin with. In essence, I assume that $p_{B|B}$ and $p_{A|A}$ do not equal $p_{B}$ and $p_{A}$ respectively. 

The structure of the paper is as follows. In section 2, I discuss the conceptual framework for analysis, both theoretical and empirical. Section 3 discusses the hypothesis, data and methodology. The empirical results obtained from the model are then discussed in section 4 and section 5 concludes.
Bibliography


