Journal of Financial Stability 9 (2013) 545–555

Contents lists available at ScienceDirect

Journal of Financial Stability

journal homepage: www.elsevier.com/locate/jfstabil

Do investors care about credit ratings? An analysis through the cycle

Giuliano Iannotta[a], Giacomo Nocera[b], Andrea Resti[c,*]

[a] Università Cattolica del Sacro Cuore, Milan, Italy
[b] Audencia – PRES LUNAM, Centre for Financial and Risk Management, Nantes, France
[c] Università Bocconi – Department of Finance, via Röntgen 1, 20136 Milan, Italy

ARTICLE INFO

Article history:
Received 25 October 2011
Received in revised form 23 May 2012
Accepted 26 November 2012
Available online 7 December 2012

JEL classification:
G12
G15
G24

Keywords:
Bond
Credit spread
Rating
Opaqueness

ABSTRACT

We investigate how the credit cycle affects the link between bond spreads and credit ratings. Using a simple model of the credit assessment process, we show that when the debt market is more opaque, the information content of ratings deteriorates, creating an incentive for investors to increase the amount spent on private information. We test this hypothesis empirically. Results show that when market opaqueness (proxied by the spread between Aaa- and Baa-rated bonds) increases, the explanatory power of ratings and other control variables deteriorates as investors increasingly price in non-public information.

1. Introduction

Bond ratings provide financial market participants with judgements on the likelihood that bondholders will suffer losses due to a delay in interest or principal payment, debt restructuring, or bankruptcy. But how reliable are ratings as indicators of credit standing? Do investors have an incentive to go beyond ratings, conveying additional information into bond spreads? Does such an incentive depend on market conditions?

Extensive evidence supports the idea of a tight relation between bond spreads and several measures of credit risk, including ratings, during the last 25 years (for a review, see Gonzalez et al., 2004). However, spreads also reflect other bond characteristics, such as maturity, size, currency of denomination, liquidity, and so forth.[1] Along with ratings, these issue characteristics represent easy-to-observe information. Nonetheless, a certain amount of hidden information could be relevant in pricing a bond. The incentive to gather and price such additional information may become stronger as the debt market grows more opaque, that is, when the information content of ratings becomes poorer (i.e., when the agency ratings' ability to assess issuer creditworthiness worsens).

In this paper we analyze the effects on bond pricing of changes in market opaqueness and in the information content of ratings. The idea is simple: if the information content of ratings is poorer, bond investors should invest more in additional information; hence ratings and any other easy-to-observe issue characteristics should lose part of their ability to explain bond credit spreads.

Using a simple model of the credit assessment process under uncertainty, we verify that the incentive to invest in additional information becomes stronger when the information content of ratings is poorer. In the model, investors choose the optimal (costly) investment in additional private information to improve their ability to distinguish between good and bad issuers. This investment in additional private information increases when ratings become less effective in forecasting future defaults.

The impact of ratings on bond spreads across the credit cycle is then empirically investigated. Using a heteroscedastic regression model, we look at the factors affecting the spread dispersion unexplained by ratings and other easy-to-observe characteristics. We find that such unexplained dispersion increases for bonds issued during phases of higher market-wide uncertainty, supporting the

* Corresponding author. Tel.: +39 02 5836 5916; fax: +39 02 5836 5920.
E-mail addresses: giuliano.iannotta@unicatt.it (G. Iannotta), gnocera@audencia.com (G. Nocera), andrea.resti@unibocconi.it (A. Resti).

[1] Based on CDS spreads, Collin-Dufresne et al. (2001) find that monthly spread changes are principally driven by local supply/demand shocks that are independent of both credit risk factors and standard proxies for liquidity. Expected recovery rates in case of default also prove relevant in explaining credit spreads (Altman, 1989).

1572-3089/$ – see front matter © 2012 Elsevier B.V. All rights reserved.
http://dx.doi.org/10.1016/j.jfs.2012.11.006

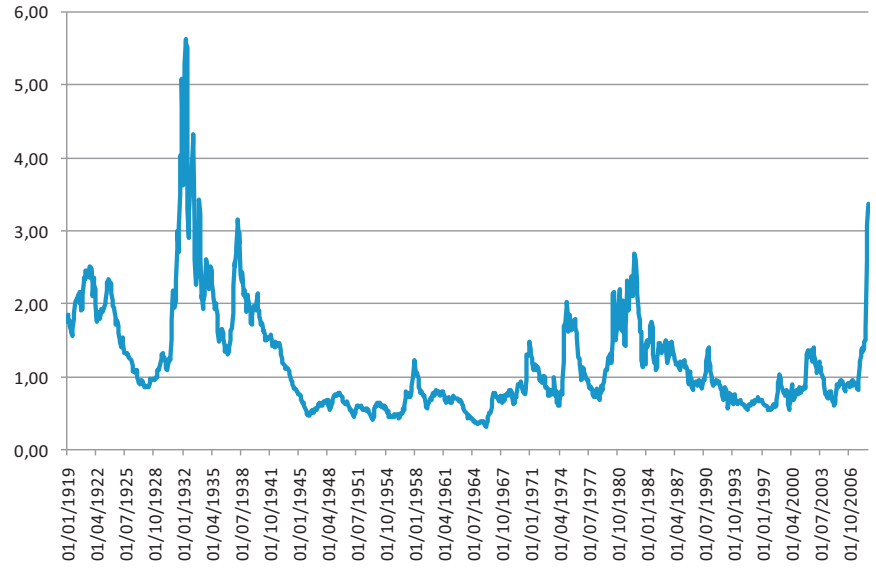

Fig. 1. QS, January 1919 to December 2008. This graph plots the QS from January 1919 to December 2008. The QS is computed as the difference between secondary-market yields on seasoned corporate bonds rated Baa and Aaa by Moody's. We compute the monthly averages of the daily data points, collected from FRED, the database of the Federal Reserve Bank of St. Louis. Moody's tries to include bonds with remaining maturities as close as possible to 30 years and drops bonds if the remaining life falls below 20 years, if the bond is susceptible to redemption, or if the rating changes.

hypothesis that investors collect and impound additional information into spreads when opacity increases. Our chief proxy for the degree of market opaqueness is the quality spread (QS), measured by the difference between secondary-market yields on Baa- and Aaa-rated bonds. However, our results are robust to the use of alternative proxies for market opaqueness, such as the average dispersion of analyst forecasts, the downgrades-to-upgrades ratio (i.e., the number of rating downgrades divided by the number of rating upgrades), and the Standard & Poor's (S&P) 500 volatility index (VIX).

The paper proceeds as follows. Section 2 describes the main variable used to capture the stance of the credit market and provides first evidence of its relationship with the information content of agency ratings. Section 3 develops a model of ratings-based investment in risky bonds under uncertainty. Section 4 describes the methodology and the data sources, summarizes the sample characteristics, and presents the results of the empirical analysis; a number of robustness checks are also provided. Section 5 concludes by focusing on the policy implications.

2. Qs and the information content of ratings

As stated above, in this paper we investigate how the link between bond spreads and credit ratings changes under different market conditions. Among the many variables that can be used to describe the stance of the credit market, we focus on the credit curve's steepness, that is, the QS. We compute the QS as the difference between secondary-market yields on seasoned corporate bonds rated Baa and Aaa by Moody's. We take monthly averages of daily data points, downloaded from FRED, the database of the Federal Reserve Bank of St. Louis. Moody's tries to include bonds with remaining maturities as close as possible to 30 years and drops bonds if the remaining life falls below 20 years, if the bond is susceptible to redemption, or if the rating changes. Fig. 1 plots the QS from January 1919 to December 2008. When this spread is narrow – as it used to be during the 1990s and the first half of the last decade – Baa-rated issuers can tap the bond market without having to pay a substantial premium. A wider QS indicates that investors are 'flying to quality' and request higher compensation to lend to lower-quality companies. Previous studies have shown that the QS tends to rise during business cycle contractions and fall during expansions (Chen, 1991; Fama and French, 1989) and is positively related to volatility in stock market returns (Lindset and Westgaard, 2007), suggesting that it is not only associated with an increase in (investor-perceived) credit risk, but also – and more generally – with a higher uncertainty in asset prices and company values. In addition, as shown by Chen et al. (2009), the QS is positively correlated to dividend yields (i.e., it increases when stock prices decrease more than dividends) and negatively correlated to various measures of leverage (debt over total assets) for Baa-rated companies (meaning that such companies can build up debt when the QS is low but must deleverage as the QS increases).

Summing up, an increase in the QS signals that the real economy is experiencing a downturn, credit is becoming more expensive (and leverage shrinks) for Baa-rated companies, market returns are becoming more volatile, and stock prices are decreasing more than dividends. Furthermore, according to Mishkin (1990, 1991), increases in the QS can be viewed as the result of changes in the 'lemon's' discount on securities prices caused by asymmetric information. Examining the historical evidence on financial crises, Mishkin (1991) claims that when adverse selection increases in financial markets, there should be a large rise in borrowers' interest rates for which reliable information on their characteristics is substantially difficult to obtain, that is, for which there is a serious asymmetric information problem. On the other hand, there would be a much smaller effect on borrowers' interest rates for which there is almost no asymmetric information problem because it is easy to obtain information about their characteristics. Since low-quality borrowers are more likely to be firms for which information about their characteristics is difficult to obtain, while high-quality borrowers are more likely to be those for which the asymmetric information problem is least severe, a rise in the spread between interest rates for low- and high-quality borrowers can provide information on when the adverse selection problem becomes more severe in debt markets. Hence, according to Mishkin (1991), the QS can be interpreted as a measure of informational opaqueness. Consistent with this view, we now show that an increase in QS can be associated with a decrease in the predictive power of ratings.