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Why firm access to the bond market differs over the business cycle: A theory and some evidence

João A.C. Santos

Federal Reserve Bank of New York, 33 Liberty Street, New York, NY 10045, United States

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Abstract

This paper presents a theory of firm access to the bond market in which information gathering agencies are valuable but alter the relative cost of bond financing across firms and over the business cycle. The theory builds on the assumption that information frictions prevent these agencies from rating firms correctly all of the time. As a result, the cost of bond financing becomes dependent on the state of the economy and the "quality" of the signal provided by these agencies' ratings. In addition, when the mix of bond issuers becomes riskier, as happens in recessions, bond financing becomes more expensive for mid-quality firms. Bond financing may even become more expensive to all firms, in which case mid-quality firms will be affected the most. The analysis of the bonds issued in the last two decades by American firms shows that split ratings, our proxy for the "quality" of the rating agencies' signal, do not affect the relative cost of bond financing across firms in expansions, but they do increase the relative cost of this funding source for mid-credit quality issuers in recessions.
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E-mail address: joao.santos@ny.frb.org

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1. Introduction

Evidence from the US bond market shows that recessions increase bond credit spreads in the primary market, affecting the relative cost of bond financing across issuers of different creditworthiness. In this paper, we argue, and present supporting evidence, that the effect of recessions on the relative cost of bond financing is partly due to the information agencies that firms use to raise bond financing. Our theory builds on the assumption that information frictions prevent these agencies from rating firms correctly all of the time. As a result, the cost of bond financing becomes dependent on the state of the economy and the "quality" of the signal provided by these agencies' ratings.

There are many theories that explain firms' use of bond financing, but surprisingly none of these theories take into account the role of rating agencies.[1] Yet, virtually all firms use these agencies to access the bond market. The widespread use of credit ratings, of course, could be due to institutional factors like regulations, but it could also be attributable to a valuable role performed by rating agencies.[2] Ramakrishnan and Thakor (1984), Millon and Thakor (1984), and Boot et al. (forthcoming), for example, provide theories that explain intermediaries whose main function is to produce information to be used by investors. Liu and Thakor (1984), Ederington et al. (1987), and Hand et al. (1992), in turn, provide evidence that rating agencies produce valuable information.

This paper adds to the literature on bond financing by presenting a theory of firms' access to the bond market in which rating agencies provide a valuable service. We create a role for these agencies by assuming that there is adverse selection. This makes it worthwhile for firms to contract with an information agency in exchange for a signal on their creditworthiness. Importantly, the same asymmetry of information that makes these agencies valuable also leads them to produce occasionally incorrect assessments about the firm's creditworthiness. Following the idea that it is relatively easier for information agencies to identify the worst and best firms in the economy, we assume that the "quality" of the signal produced by these agencies is lower for mid-credit quality firms.

Under these conditions, we show that the cost of accessing the bond market depends on the "quality" of the signal of information agencies' ratings. We further show that if distribution of firms is riskier in recessions (in a first order stochastic dominance sense), then recessions will increase the cost of information agencies' incorrect assessments. As a result, and for this reason *alone*, recessions increase the cost of bond financing to mid-quality firms. Recessions may also increase the cost of bond financing to *all* firms, in which case mid-quality firms are affected the most.

To test our theory we first try to find supporting evidence for the model's assumption on the "quality" of the signal produced by information agencies. We proxy the "quality" of this signal by the frequency of bond rating splits at issue date between Moody's and S&P under the assumption that there is an inverse relationship between the "quality" of the signal of these agencies' ratings and the frequency with which they disagree on the ratings they assign bonds. Our finding that rating agencies are more likely to announce split

[1] See Diamond (1991), Rajan (1992), Besanko and Kanatas (1993), Chemmanur and Fulghieri (1994), Yosha (1995), Bhattacharya and Chiesa (1995), Boot and Thakor (1997), Holmstrom and Tirole (1997), Repullo and Suarez (1998, 1999), Bolton and Freixas (2000), and Carey and Rosen (2001).

[2] See Cantor and Packer (1996) for regulations that give bond issuers an incentive to seek a credit rating.

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