Journal of Financial Economics 93 (2009) 325–351

Contents lists available at ScienceDirect

Journal of Financial Economics

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

Information asymmetry and firms' credit market access: Evidence from Moody's credit rating format refinement ☆

Tony T. Tang

Barclays Global Investors, San Francisco, CA 94105, USA

ARTICLE INFO

Article history:
Received 11 December 2007
Received in revised form
21 July 2008
Accepted 30 July 2008
Available online 3 May 2009

JEL classification:
G32

Keywords:
Information asymmetry
Capital structure
Financing decisions
Investment policies
Credit ratings

ABSTRACT

I exploit Moody's 1982 credit rating refinement to examine its effects on firms' credit market access, financing decisions, and investment policies. While firms' ex ante yield spread can partially predict the direction of refinement changes, firms with refinement upgrades experience an additional decrease in their ex post borrowing cost compared with firms with downgrades. The former subsequently also issue more debt and rely more on debt financing over equity than the latter. Lastly, upgraded firms have more capital investments, less cash accumulation, and faster asset growth than downgraded firms. These findings show that credit market information asymmetry significantly affects firms' real outcomes.

1. Introduction

Information asymmetry lies at the heart of explanations for why economic outcomes such as investment decisions could be inefficient (Stiglitz and Weiss, 1981; Myers and Majluf, 1984; Diamond, 1991a). Financial intermediaries such as banks, credit rating agencies, and advisory financial service providers exist on the pretext of partially resolving the adverse effect of information asymmetry (Leland and Pyle, 1977; Diamond, 1984, 1991b; Fama, 1985; Carey, Post, and Sharpe, 1998). Existing empirical studies on the impact of information asymmetry have been limited largely due to the difficulty of finding appropriate proxies for changes in the levels of information asymmetry. Most corporate finance studies have focused on using firm characteristics such as size, tangibility, and institutional ownership, as well as the dispersion in firms' analyst forecasts, to measure information asymmetry. These factors are undoubtedly correlated with firms' unobservable investment opportunities and thereby make it difficult to establish the causal effect of information asymmetry on firms' real outcomes.[1] To bridge this gap, I examine Moody's Investors Service's (Moody's) credit rating format refinement in 1982 to study the effects of information asymmetry on firms'

☆ I am especially grateful to the members of my dissertation committee: Douglas Diamond (chair), Steve Kaplan, Atif Mian, and Joshua Rauh for their continuous support and guidance. I am also thankful to Marianne Bertrand, Anil Kashyap, Darren Kisgen, Toby Moskowitz, Per Strömberg, Amir Sufi, Luigi Zingales, seminar participants at Boston College, Columbia University, Harvard Business School, University of Chicago, University of Illinois at Urbana-Champaign as well as conference participants at the 2006 Financial Research Association annual meeting and the 2007 Western Finance Association annual meeting for their valuable comments and suggestions. I am grateful to Moody's Investors Service for providing credit rating data. All errors are my own.

E-mail address: ttang@chicagogsb.edu

0304-405X/$ - see front matter © 2009 Elsevier B.V. All rights reserved.
doi:10.1016/j.jfineco.2008.07.007

[1] For a comprehensive list of proxies used to assess the degree of information asymmetry, see Bharath, Pasquariello, and Wu (2009).

credit market access, financing decisions, and investment policies.

Moody's decision to offer more refined credit ratings provides an unexpected and plausibly exogenous release of information. It helps to identify the causal effect of information asymmetry on firms' real outcomes. Prior to April 1982, Moody's used nine broad rating classes to assign firms' credit worthiness. Starting on April 26, 1982, Moody's began reporting ratings using a more refined rating gradation by attaching numerical modifiers to its broad rating classes. Within the same rating class, Moody's assigned rating modifiers of "1", "2", and "3" to represent subratings of best, average, and worst credit quality, respectively. The rating refinement effectively expands corporate credit rating categories from 9 to 19 (Moody's Investors Service, 1982a). Moody's statement accompanying the rating refinement indicates that the refined rating assignments were based on the same information that Moody's used for its previously coarse rating assignments. Therefore, the new rating assignments are not accompanied by any fundamental change in issuing firms' risk profiles but are merely results of Moody's new reporting system. Moreover, this rating refinement seems unlikely to have been anticipated. It was not preceded by any announcement and was carried out simultaneously for all bonds that were followed by Moody's on the same day. These special features of Moody's 1982 rating refinement assure the exogenous nature of the rating refinement changes, thus allowing me to identify the causal effect of the availability of additional information (via a credit rating format refinement) on firms' subsequent financing and investment policies.

I first show the information content of Moody's rating refinement by examining the predictability of the refinement changes and their impact on firms' subsequent cost of borrowing. Firms' ex ante bond yields can partially predict the direction of the rating refinement changes. However, despite their predictable component, the refinement changes lead to significant changes in firms' subsequent borrowing costs. Following the rating refinement, firms that receive higher refined ratings experience a 20 basis point drop in their corporate bond yields, compared with firms that receive lower refined ratings. The significant difference is robust to various measures of yield spreads. This finding suggests that the refinement helps to reduce credit market information asymmetry by revealing new information on firms' credit quality. It therefore allows creditors to better identify firm types: Firms with good credit quality (higher refined ratings) gain access to a cheaper source of capital whereas firms with poor credit quality (lower refined ratings) are limited to a more costly source of capital.

Changes in firms' access to credit markets are reflected in their capital structure decisions following the rating refinement. A higher refined rating allows firms to issue significantly more long-term debt, approximately 2% of their lagged assets, than a lower refined rating in the one-year period subsequent to the rating refinement. This gap increases to 5% of the lagged assets when long-term debt net of cash is considered. The better credit market access facilitated by the higher refined rating also leads these firms to issue less equity and rely more on debt financing. The increase in reliance on long-term debt financing by the firms with higher refined ratings is consistent with the predictions based on the Diamond (1991a) debt maturity model, in which firms that were previously under-rated switch to long-term debt financing after their true credit quality is revealed.

Different credit market access resulting from Moody's 1982 rating refinement is also significantly related to firms' investment decisions. Firms that receive higher refined ratings subsequently make more capital investments, accumulate less cash, and have faster asset growth. The increase in these firms' investment activities is partially financed by their debt issuance and partially by their cash balance, which leads to a decrease in their cash accumulation. Firms with lower refined ratings make fewer investments and accumulate more cash. This is consistent with the intuition offered by Almeida, Campello, and Weisbach (2004), who find that firms with limited capital market access have a greater propensity to save cash out of cash flows in anticipation of future investments. These findings illustrate that credit market imperfections such as information asymmetry significantly limit firms' credit market access and affect their financing and investment decisions. An improvement in transparency via third-party credit rating refinements allows greater credit market access and more capital investments for firms that were under-rated in the previous coarse rating format.

This paper is closely related to studies of information asymmetry and capital constraints (Diamond, 1984, 1991a, b; Hoshi, Kashyap, and Scharfstein, 1990; Petersen and Rajan, 1994; Berger and Udell, 1995). While these previous studies mainly focus on the importance of firms' lending choices, i.e., relation lending versus at-arm's-length borrowing, this paper studies the effectiveness of third-party rating agencies in mitigating firms' capital constraints resulting from credit market information asymmetry. It also contributes to a limited number of papers on the importance of credit resource supply in determining firms' capital structure decisions. Faulkender and Petersen (2005) report that firms with access to the public bond markets, as measured by having a debt rating, have significantly more leverage. Sufi (2009) finds that firms increase their use of debt after the introduction of bank loan ratings due to an increase in the number of uninformed lenders. Confirming credit market supply frictions are an important determinant of corporate capital structure, Leary (2006) shows that firms' leverage corresponds positively with credit market liquidity; and Lemmon and Roberts (2009) show that below-investment-grade firms experience contemporaneous decline in debt issuance and investment following a contraction in their credit supply after 1989. Complementary to these studies, this paper focuses on the ability of credit rating agencies to improve credit availability to borrowers with preexisting credit ratings. More important, it provides evidence on the price channel through which credit ratings could facilitate a reallocation of capital resources and in turn affect firms' financing and investment decisions. Although the empirical setting of Moody's