Does it matter who owns Moody's?

Simi Kedia
Shivaram Rajgopal
Xing Zhou[1]

March 23, 2015
Comments welcome

Abstract:

Following its IPO in 2000, Moody's had two shareholders, Berkshire Hathaway and Davis Selected Advisors, who collectively own about 23.5% of Moody's from 2001 to 2010, the entire sample period. Moody's ratings on corporate bonds issued by important investee firms of these two stable large shareholders were more favorable relative to S&P's ratings. Moody's relatively favorable ratings are increasing in the size and duration for which large shareholders hold the investee firms. The results cannot be explained by issuer characteristics or by greater informativeness of Moody's ratings. These findings are consistent with regulatory concerns about the public ownership of credit rating agencies.

JEL classification: G32; L32

Key words: Moody's; credit rating agencies; ownership structure; conflict of interest; difference-in-difference; corporate bond; CMBS

[1] Simi Kedia is at Rutgers Business School and can be reached at skedia@rbsmail.rutgers.edu. Shivaram Rajgopal is at Emory University and can be reached at shivaram.rajgopal@emory.edu. Xing Zhou is at Rutgers Business School and can be reached at xing.zhou@rbsmail.rutgers.edu. We acknowledge financial assistance from our respective schools. We acknowledge helpful comments from Philip Strahan, Todd Gromley (AFA discussant), Pepa Kraft (AAA discussant), David Reeb, participants at the 2015 AFA Meetings, the 2014 AAA meetings, 2014 Summer Conference at ISB, and workshop participants at Baruch College, National University of Singapore, University of Texas at Dallas, UCLA, Florida State University, UC Irvine, UC Riverside, Fordham University, Bristol University, Exeter University, and the Federal Reserve Board of Governors. All errors are ours alone.

Does it matter who owns Moody's?

1. Introduction

Moody's was founded in 1900 to publish manuals of performance statistics related to stocks and bonds. The company was acquired by Dun & Bradstreet in 1962, and remained one of its divisions till October 4, 2000, when it was spun off and listed on the NYSE. The public listing of Moody's opens up the possibility that its large shareholders influence the rating process. Indeed, a similar concern was raised in 1984, when Security Pacific Bank had proposed acquiring Duff and Phelps, the fourth largest credit rating agency at that time. The Federal Reserve Board discouraged the acquisition, ruling that if the merger were to take place, Duff and Phelps would be prohibited from issuing public ratings because Security Pacific Bank would be effectively rating its own borrowers (Edrington and Yawitz, 1987). Since then, regulators and policy makers have under-emphasized this problem, possibly under the assumption that if a rating agency were publicly held by diffuse owners, or by a non-financial entity, the potential for such conflicts is small.

However, concerns about the public ownership of credit ratings have resurfaced again. In 2011, Securities and Exchange Commission (SEC) investigations found that "two of the larger NRSROs (Nationally Recognized Statistical Rating Organizations) did not have specific policies and procedures for managing the potential conflict of issuers that may be significant shareholders of the NRSRO."[2] Recent media reports have alleged that Moody's

[2] http://www.sec.gov/news/studies/2011/2011_nrsro_section15e_examinations_summary_report.pdf. The SEC refers to the accredited rating agencies such as Moody's, S&P and Fitch as Nationally Recognized Statistical Rating Organizations.

has been slow to downgrade Wells Fargo, a portfolio company of Berkshire Hathaway, the largest shareholder of Moody's.[3]

In this paper, we study whether credit rating agencies are influenced by the economic interests of their large shareholders. Credit ratings have a significant impact on the financial market. Ratings affect a firm's capital structure (Kisgen 2006), its cost of capital (Kisgen and Strahan 2010), and the capital requirements of banks and insurance companies. The regulatory reliance on ratings implies that any material bias in rating agencies' decisions has the potential to impact the financial system and erode market confidence.

We begin with an examination of the ownership structure of Moody's after its IPO in 2000. There are ten shareholders with at least a 5% stake in Moody's in any quarter from Q4 of 2000 to 2010. Among these ten shareholders, Berkshire Hathaway and Davis Selected Advisors are unique. First, they are the two largest shareholders, with Berkshire Hathaway owning on average 16.4% and Davis Selected Advisors owning 6.9% of Moody's. Second, their stake is stable as both of them own 5% or more of Moody's for the entire 40 quarters of the sample period. Although both these stable large shareholders of Moody's are investment management firms, their investing styles differ. Berkshire Hathaway holds an average of only 32 firms in its portfolio every quarter whereas Davis Selected Advisors holds 181.

Any preferential treatment by Moody's towards its shareholders is more likely to be observed when the shareholding is large and the shareholder has a long term interest in Moody's. We identify such stable large shareholders as those that hold at least 5% of Moody's for the past 12 quarters. As most of the shareholders are asset management firms

[3] http://www.forbes.com/sites/halahtouryalai/2012/02/16/missing-from-moodys-downgrade-list-warren-buffetts-favorite-bank/.

with no bond issues, we examine preferential treatment by Moody's via higher ratings on bond issues of their investee or portfolio firms. Favorable ratings by Moody's are more likely to be seen for large investee firms of its shareholders. We identify such large investee firms as those that account for at least 0.25% of the investment management firm's portfolio for each of the past four quarters.[4] Bonds issued by large investee firms of Moody's stable large shareholders are labeled as Moody's Related. We investigate whether Moody's assigns favorable ratings to Moody's Related bonds.

Several factors are likely to influence Moody's ratings, ranging from macro-economic issues such as recessions or booms to competitive pressures in the industry, besides firm and bond specific characteristics. To control for a host of these characteristics, we use a difference-in-difference approach by benchmarking Moody's ratings to those of S&P on the same bonds. Moody's and S&P are the two largest NRSROs, and S&P is Moody's closest competitor.[5] Unobservable and omitted factors that affect credit ratings are likely to impact both Moody's and S&P's ratings, and are hence unlikely to influence the difference between their ratings on the same bond. To capture such relative ratings, we create a variable, S&P – Moody's Rating, which is equal to S&P's numerical rating minus Moody's numerical rating on the same bond. Because we assign lower numerical values to higher ratings, a positive value for S&P – Moody's Rating implies that Moody's assigns a favorable rating to the bond relative to S&P.

We first study initial ratings on 9,550 new bonds issued from 2001 to 2010. After controlling for firm and issue characteristics, industry and time fixed effects, Moody's

[4] We perform robustness around these criteria that are discussed later in the paper. Different cut-offs lead to qualitatively similar results.

[5] For the year 2010, Moody's and S&P have approximately 1 million and 1.2 million ratings reported outstanding, respectively. These magnitudes far exceed those of the third largest rating agency, Fitch, with approximately 500,000 ratings reported outstanding (see SEC 2011).

ratings are 0.467 notches higher than S&P for Moody's Related bonds. This relatively higher rating is robust (i) to various criteria for identifying Moody's Related bonds; (ii) when Fitch instead of S&P is used as a benchmark; and (iii) to Fama-Macbeth estimations instead of pooled regressions.

If Moody's relatively favorable ratings are on account of the economic interests of its stable large shareholders, they should be increasing in the size of the large shareholder's stake and time for which the large shareholder holds the investee firms. In line with this intuition, we find that the relatively favorable ratings by Moody's are increasing in both the magnitude and duration of the ownership stake for which the large investee is held. We also find evidence that Moody's relative ratings are more favorable for Berkshire Hathaway's large investees relative to Davis Selected Advisors. This is consistent with Moody's according greater consideration to large shareholders that hold a higher fraction of Moody's shares. Lastly, we find evidence that Moody's is more likely to assign favorable ratings to Moody's Related bonds when the better ratings are more valuable, as captured by bonds that are on the speculative/ investment grade boundary.

The evidence of relatively better ratings by Moody's is also economically significant. Using bonds that receive a split rating from Moody's and S&P, we estimate that a one notch higher rating by Moody's is associated with a 26 basis point reduction in the offering yield of the bond. This translates to approximately a $400,000 saving in interest cost per year for an average bond.

We then examine whether Moody's favorable treatment towards its stable large shareholders is also observed for its ratings on outstanding bonds. Focusing on instances where both Moody's and S&P assign the same rating change on the same bond, we find that Moody's is slower than S&P by 71 days in downgrading Moody's Related bonds. There is

no significant difference between the two agencies in the timing of the upgrades. Moreover, we compute the average value of the daily difference between S&P's and Moody's Ratings over the quarter for outstanding bonds, and find that Moody's relative rating is more favorable for outstanding bonds of Moody's Related issuers.

However, it is possible that the favorable ratings for Moody's Related bonds are not due to ownership, but are instead attributable to omitted firm characteristics that drive both Moody's rating decisions and its large shareholders' investment decisions. For example, improved firm performance that leads Berkshire Hathaway to increase its investment in a portfolio firm may also drive Moody's higher credit rating on this firm. To address this concern, we examine Moody's ratings on bonds issued by large investee firms of Berkshire Hathaway and Davis Selected Advisors, both before and after Moody's IPO. We find no evidence that Moody's assigns favorable ratings to large investee firms of Berkshire Hathaway and Davis Selected Advisors in the period before the establishment of the relationship with Moody's. However, after the establishment of the relationship with Moody's in the post IPO period, the same issuers get relatively favorable ratings from Moody's. This suggests that ownership in Moody's, as opposed to potentially omitted common firm characteristics, is more likely to account for its relatively favorable ratings.

Another alternate interpretation of the results is that the relatively favorable ratings are due to Moody's superior information about the large investee firms, potentially through the channel of common shareholders. In this case, the relatively favorable ratings by Moody's on related bonds would reflect better information rather than bias. We conduct two tests to examine this conjecture. First, following Duffie, Saita, and Wang (2007), we calculate a firm's expected default frequency and find no evidence that relatively favorable ratings for Moody's Related bonds are associated with a lower expected default frequency.

Second, we use changes in the spreads of credit default swap contracts (CDS) around ratings changes to measure the informativeness of such changes, and find no evidence that Moody's rating changes on related bonds are associated with greater changes in CDS spreads. In summary, there is little evidence to suggest that Moody's ratings on Moody's Related bonds are more informative about expected credit outcomes.

A potential concern relates to how the influence or expectations of large shareholders are communicated to Moody's. Large holdings of Berkshire and Davis are public knowledge through their 13F filings. Further, a large investee firm, in its interaction with Moody's around a new bond issuance, has an incentive to reveal to Moody's that they are both large holdings in the Berkshire and Davis portfolios. We would also expect Moody's investor relations personnel to be in contact with Berkshire and Davis, given their stature as large and stable shareholders. It is plausible that Berkshire and Davis reveal to Moody's some of their important portfolio firms that are in the process of considering a new bond issue or face prospective rating changes of existing bonds.

One can ask why a Moody's analyst would cater to such explicit or implicit influence of large shareholders. Employee testimonials to the Financial Crisis Inquiry Commission (FCIC) reveal that Moody's culture changed when it went public. The change involved going "from [a culture] resembling a university academic department to one which values revenues at all costs."[6] The cultural change was brought about by compensation criteria that rewarded compliant analysts with promotions, bonuses and stock options (Mark Froeba's testimony (June 2, 2010 before the FCIC). The *Wall Street Journal* (April 11, 2008) discusses an anecdote where Brian Clarkson, a managing director, quadrupled Moody's

[6] Quote by Eric Kolchinsky, a former managing director of Moody's (The Financial Crisis Inquiry Report 2011, page 207).

market share in the residential mortgage backed securities group by simply firing (or transferring) nearly all the analysts in the group, and replacing them with analysts willing to apply a new, potentially laxer, rating methodology. Such pressure on analysts to provide ratings that favored important clients potentially could have spilled over to a policy of favoring the economic interests of its important shareholders.

Though S&P is not public, it is a subsidiary of McGraw-Hill, a publicly traded firm. Large shareholders potentially exert greater influence when they are direct owners, as in the case of Moody's, as opposed to when they are indirect owners, as in the case of S&P through their ownership in S&P's parent company, McGraw-Hill. We examine the role of indirect ownership by studying whether S&P assigns favorable ratings to large investee firms of McGraw-Hills's stable large shareholders. We find one shareholder, Goldman Sachs, who is classified as a stable large shareholder of McGraw Hill for three quarters over the sample period. S&P assigns relatively favorable ratings to the bonds issued by large investees of Goldman Sachs, McGraw Hill's stable large shareholder. This suggests that indirect ownership is also associated with favorable credit ratings.

Our paper is perhaps the first to identify a conflict of interest related to the economic interests of a rating agency's owners. It is worth noting that we document these biases in the relatively transparent world of bond ratings, where rating models have been established for years and the potential for information asymmetry between the rating agency and bond investors is relatively smaller. Although data limitations prevent a full analysis, the problem is likely to be greater for inherently opaque structured products. Moreover, a large majority of these products carry a rating from only one rating agency, which leads to incentives for opinion shopping and greater conflicts of interest.

The evidence in this study is consistent with recent regulatory concerns related to the potential bias of rating agencies toward their significant shareholders. The evidence informs recent discussions in the European Union that is considering regulation that (i) requires rating agencies to abstain from rating securities issued by shareholders who own 10% or more of the rating agency; and (ii) imposes an outright ban on investors buying more that 5% of the rating agency.[7]

The remainder of the paper is organized as follows. Section 2 discusses the literature and section 3 describes the data. Section 4 and section 5 report findings from our empirical analyses of ratings on new and outstanding bonds. Section 6 discusses alternative explanations, section 7 examines the effect of indirect ownership and section 8 concludes.

2. Literature Review

The paper is related to two streams of literature, the first on credit ratings and the second on large shareholders. There is a vast literature on the conflicts of interest faced by credit rating agencies. Researchers (e.g., Mathis, McAndrews, and Rochet 2009, Xia 2010, Kraft 2011, Bonsall 2012, Jiang, Stanford and Xie 2012, He, Qian, and Strahan 2012, Cornaggia and Cornaggia 2013) have focused on compromised ratings on account of the "issuer-pay model," whereby the rating agencies are paid by the issuers seeking ratings. Others (e.g., Benmelech and Dlugosz 2009, and Bongaerts, Cremers and Goetzmann 2012) have highlighted the impact of "ratings shopping," that enables issuers to go with the agency with the most favorable ratings.

The rating agencies usually counter allegations of conflict of interest by invoking the high cost of damaging their reputation. The reputation capital view argues that as the

[7] http://www.ft.com/intl/cms/s/0/87b90b60-38dc-11e2-bd13-00144feabdc0.html#axzz2frhAk8IG

eventual success and survival of the credit rating agency depends on their credibility, these agencies would not wantonly compromise the quality of their ratings for short run gains. Moreover, the importance of economies of scale, experience, and reputation for bond ratings might explain why the ratings business is highly concentrated with strong barriers to entry and a high franchise value that the rating firms would want to protect (Smith and Walter 2001, White 2009).

However, several papers question the reputation capital argument. Becker and Milbourn (2011) find that increased competition from Fitch, the third largest rating agency, is associated with poorer quality ratings from both the incumbent agencies, Moody's and S&P. Kedia, Rajgopal and Zhou (2014) document that increased market pressures after Moody's went public in 2000 resulted in Moody's giving out relatively favorable ratings to their clients. Partnoy (1999) counters the reputation capital view by proposing an alternate regulatory license view. He argues that Moody's and S&P have survived and prospered for so long not because ratings are necessarily informative, accurate or credible, but because ratings enable issuers to reduce the costs of complying with costly regulation.

Partnoy (1999) lists three prominent examples of such licenses. First, in 1991, the SEC adopted a rule requiring money market funds to invest no more than five percent of its holdings in "second tier" commercial paper, where the tier structure depends on the ratings assigned to such paper by one or more of the NRSROs. Second, insurance companies that want to avoid paying a capital charge to the National Association of Insurance Commissioners (NAIC) are required to hold securities that are highly rated by one or more of the NRSROs. A similar regulation applies to risk-based capital held by banks. Finally, the vast markets in asset-based securities and structured investment vehicles would not have

arisen, had the regulators not sanctioned holding investments in these securities as long as they were highly rated by an NRSRO.

Moreover, as regulations also impose costs on the entry of new rating agencies, the market power of the two big raters, S&P and Moody's, increases over time. Moody's, S&P and Fitch were the first set of NRSROs to be approved. Langohr and Langohr (2008, page 384) argue that the three rating agencies dominate the market because the process of gaining regulatory approval from the SEC to be designated as an NRSRO is onerous. Partnoy (1999) cites the example of IBCA Ltd., a British firm recognized for ratings of bank debt but not for ratings of corporate debt, which is reported to have battled with the SEC for full recognition from 1988 until 1997 when it merged with Fitch. As White (2009) points out, without the NRSRO designation, any would-be bond rater would likely be ignored by most financial institutions; and, since the financial institutions would ignore the would-be bond rater, so would bond issuers.

Our paper is also related to the vast literature on the role of large shareholders. Large shareholders can play an important role in firm governance as their large stakes gives them incentives to bear the cost of monitoring managers (Shleifer and Vishny (1986)). Admati and Pfleiderer (2009) and Edmans (2009) show that large shareholders can also exert governance through the threat of exit. A large literature empirically examines the effect of large shareholder activism and recently hedge fund activism (for surveys see Gillan and Starks (1998) and Brav, Jiang and Kim (2010) respectively).

However, large shareholders can also extract private benefits of control and influence the firm in following objectives other than value maximization. Barclay and Holderness (1989) document that large blocks trade at a premium of 20% reflecting the private benefits associated with them. Subsequent work by Mikkelson and Regassa (1991) and Chang and

Mayers (2012) confirms the existence of such premiums. In the context of closed-end mutual funds, Barclay, Holderness, and Pontiff (1993) document via an analysis of press reports that block holders receive a variety of private benefits leading to significantly larger discounts on the fund. Several papers document the importance of block holders in tunneling resources in overseas corporations (e.g., Dyck and Zingales 2002, Nenova 2003, and Atansov 2005).

As demonstrated by the above literature, whether large shareholders are associated with enhanced monitoring or private benefits in an empirical matter. In the context of Moody's, this issue impacts not just its shareholders but also potentially the financial system. As discussed above, the capital requirements of insurance and banks are based on credit ratings and bias in the ratings can potentially undermine the stability and confidence of the financial system.

3. Data description

3.1. Moody's shareholders and their investee firms

To identify large shareholders of Moody's, we obtain quarterly institutional common stock holdings data from the Thomson-Reuters Institutional Holdings (13F) Database for the period following Moody's IPO in October 2000 till the end of 2010. An institutional shareholder of Moody's is classified as a large shareholder of Moody's in a given quarter if it owned at least 5% of Moody's in the prior quarter. As we require one quarter of data to identify large shareholders, our period of study starts from the first quarter of 2001 and extends for 40 quarters to the end of 2010.

Panel A of Table 1 displays summary data on Moody's ownership structure. Moody's has an average of 363 institutional shareholders, and an average of 3 large

shareholders every quarter. Panel B presents the list of ten shareholders, which are classified as large shareholders for at least one quarter over our sample period. The two largest shareholders are Berkshire Hathaway and Davis Selected Advisors. Berkshire Hathaway holds on average 16.4% of Moody's, with a minimum of 12.1% to a maximum of 20.4% while Davis Selected Advisors, holds on average 6.9%, with its share varying from 5.5% to 8.1% (See Panel C).

We next look at the portfolio or investee firms of these large shareholders. As there are a lot of investee firms, we use various cutoffs to identify which of the investee firms are important. For most of the paper, we classify an investee firm as being large if it accounts for at least 0.25% of the portfolio in each of the past four quarters.[8] Based on this criterion, 18 of the 32 portfolio firms of Berkshire Hathaway and 44 of the 181 portfolio firms of Davis Selected Advisors are classified as large investees (See Panel B).

3.2. Credit ratings on corporate bonds

The data on the history of credit rating changes by Moody's and S&P and other bond characteristics are obtained from the Mergent's Fixed Income Securities Database (FISD). We retain all bonds that are rated by both Moody's and S&P and issued by firms covered in both CRSP and Compustat. We exclude government agency bonds issued by Freddie Mac and Fannie Mae, leaving us with a final sample of 9,550 new bonds issued by 972 firms from 2001 to 2010.

Table 2 presents the credit rating categories used by Moody's, the equivalent ratings by S&P, and the distribution of our sample new issues across these categories. As shown in Panel A, most of the new issues are rated investment-grade. The average issue size is $325

[8] We use 0.25% as the cutoff as it is the 75% percentile holding in the 13F universe for the sample period. The results are qualitatively similar with other different cutoffs and have been reported later in the paper.

million with 10 years to maturity (Table 3). On average, the issuing firm has market capitalization of $189 billion and a leverage ratio (long term debt to total assets) of 30%.

4. New Bond Issues

4.1. Moody's relative ratings

We examine whether Moody's tends to assign higher ratings to bonds issued by large investee firms of Moody's large shareholders. As discussed above, we benchmark Moody's ratings to those by S&P on the same bonds. S&P – Moody's Rating, which is S&P's numerical rating minus Moody's numerical rating, is positive when Moody's assigns a higher rating for the new issue relative to S&P.

Of the total 9,550 new bonds in our sample, 2,302 are issued by large investees of Moody's large shareholders. The dummy variable, Large Investee of Large Shareholder, takes the value of one for these bonds. The median S&P – Moody's Rating for these large investee bonds is one and that for other bonds is zero (See Table 4). Results are similar when we consider means instead of medians. Further, these results are observed across the various ratings categories, i.e., for high-yield as well as for investment-grade bonds.[9]

Next, we control for firm and bond characteristics identified by the prior literature in multivariate estimation (see Pinches and Mingo 1973, Kaplan and Urwitz 1979, Blume, Lim and Mckinlay 1998, Campbell and Taskler 2003, and Jiang, Stanford and Xie 2012). In particular, we control for issuer size which is the natural log of market value, leverage which is the ratio of long-term debt to total assets, operating margin which is operating income before depreciation divided by sales, and stock volatility, which is the standard deviation of daily stock returns in the year prior to the issuance. In addition, we control for issue

[9] There are only 17 Large Investee bonds in the high yield category. Due to this small sample size, the results are weaker with significant differences observed only in means but not in medians.

characteristics by including issue size, defined as the logarithm of the par value of the bond issue, years to maturity at issuance, and a Seniority dummy variable which is equal to one if the bond is a senior bond. All accounting variables are of annual frequency and are drawn from the fiscal year prior to the issuance of the new bond. Lastly, we include the variable of interest, the Large Investee of Large Shareholder dummy. In summary, we estimate the following model:

$$S\&P - Moody'sRating_i = \gamma_0 + \gamma_1 Large\ Investeeof Large Shareholder_i + \sum_{j=2}^{8} \gamma_j ControlVar_i^j + \varepsilon_i, \qquad (1)$$

where control variables are as defined above. In addition, we include quarter dummies to control for time trends,[10] and industry dummies based on a bond's two-digit industry code from FISD to control for potential differences in industry expertise of the two rating agencies. We double cluster standard errors at the issuer and industry-year level to control for correlations among multiple bond issues by the same firm and in a given industry year. We also adjust these standard errors for heteroscedasticity. The results from the estimation are displayed in Column 1 of Table 5. The coefficient on Large Investee of Large Shareholder is significant at the 1% level, implying that Moody's assigned relatively favorable ratings to bond issues by large investees of its large shareholders.

Institutional investors tend to trade frequently. If Moody's expects the large shareholding to be temporary, it is unlikely to cater to the interests of these shareholders. To understand this incentive better, we separate large shareholders that are perceived to be transient from those that are perceived to be stable. Specifically, an institution is classified as a stable large shareholder of Moody's if it holds at least 5% of Moody's in each of the

[10] For the existence of time effects, see Liu, Jorion and Shi 2006, Becker and Milbourn 2011, Alp 2012, Bolton, Freixas, Shapiro 2012, and Cornaggia, Cornaggia and Xia 2012.

prior 12 quarters. Shareholders with 5% or a greater stake in Moody's in at least one quarter but less than 12 quarters over the past three years are classified as transient large shareholders.[11] The dummy variable, Moody's Related (Large Investee of Transient Large Shareholder), takes the value of one for bonds that are issued by large investee firms of Moody's stable (transient) large shareholders. As we require three years of data to identify large shareholders, all large shareholders are classified as being transient prior to the fourth quarter of 2003. A total of 927 bonds are classified as Moody's Related bonds in our sample.

We find that there are only two institutions – Berkshire Hathaway and Davis Selected Advisors – that are classified as stable large shareholders in the fourth quarter of 2003, and they continue to be classified as such for the entire sample period. None of the other eight shareholders hold their minimum 5% stake long enough to be ever classified as a stable large shareholder. To examine whether favorable ratings are seen for large investees of both stable and transient large shareholders, we include them both in our next specification. As seen in Column 2 of Table 5, the coefficient on Moody's Related is positive and highly significant while that of Large Investee of Transient Large Shareholder is not significant. The evidence of relatively favorable rating from Moody's is confined to large investee firms of its stable large shareholders. Consequently, in the remaining analysis, we just focus on these bonds, i.e., Moody's Related bonds (Column 3).

The analysis using the difference between S&P and Moody's ratings (S&P – Moody's Rating) provides evidence of Moody's favorable ratings on Moody's Related bonds relative to S&P. To ensure that this difference in relative ratings is attributable to favorable ratings from Moody's, rather than tougher ratings from S&P, we examine absolute

[11] The three year cutoff is dictated by the data. If Moody's management observes a large stake over several years, it is likely to conclude that this represents long term interests in the firm. In untabulated results we have tried one and two year cutoffs with qualitatively similar results.

ratings as well. In particular, we re-estimate the results using Moody's rating (Column 4) and S&P's rating (Column 5) as the dependent variable. We find significant evidence of laxer ratings from Moody's on Moody's Related bonds, as its coefficient in Column 4 is negative and significant at the 1% level. We find no evidence that S&P ratings for these bonds are tougher (See Column 5). In summary, the relatively favorable ratings on Moody's Related bonds are due to Moody's actions, rather than S&P's.

4.2. Robustness tests

4.2.1. Fama-McBeth estimation

The above results are based on estimating a pooled regression of Model (1) for new bond issues over the sample period. As the sample includes multiple bond issues by some firms, we have clustered the errors at the issuer and industry-year level. To address any residual concerns about correlated errors, we also estimate Model (1) using Fama-MacBeth regressions. In particular, we estimate the model in the cross-section every quarter, and then calculate the mean and standard deviation of the parameter estimates across our sample period.[12] To ensure that the estimate of standard deviation is robust, we allow the time-series of the parameter estimates to follow an AR(1) process. As can be seen in Column 1 of Table 6, this does not impact our results. The coefficient of Moody's Related remains positive and highly significant.

4.2.2 Different ownership cutoffs for investee firm

Next, we present results that rely on both a tighter and a looser cutoff to define a large investee firm. For the tighter cutoff, we consider an investee firm as large if it accounts

[12] As the stable large shareholders and consequently Moody's Related are only identified from Q4 of 2003 to the end of 2010, the Fama-MacBeth regressions span 27 quarters.

for at least 1%, instead of the prior 0.25%, of a shareholder's portfolio in each of the past four quarters. Note that 1% is the 90th percentile of a firm's weight within an institution's portfolio from the 13F universe over our sample period. Hence, this cutoff allows us to examine Moody's ratings for the group of most important investee firms. Imposing the tighter cutoff drops the number of Moody's Related new bond issues to 275. The empirical results are qualitatively similar to those reported earlier (Column 2 of Table 6). The looser cutoff relates to when an investee firm is classified as large if it is held by a Moody's shareholder in each of the prior four quarters. As this looser cutoff does not require any minimum investment, 2,168 bonds get classified as Moody's Related. As shown in Column 3 of Table 6, this change does not materially impact the results.

4.2.3 Different time criteria for investee firms

Along with different criteria for the level of holdings, we also conduct robustness tests with different criteria for the length of time for which investee firms are held by the large shareholders of Moody's. We begin with a longer holding period – an investee firm is considered as being a large investee if it accounts for at least 0.25% of the shareholders' portfolio for each of the prior eight quarters instead of prior four quarters. The results with this longer time window are reported in Column 4 and are not materially different. We also try a shorter holding period that requires large investee firms to account for 0.25% of the shareholders' portfolio for each of the prior two quarters. Once again, this does not materially impact the results. As seen in Column 5 – the coefficient on Moody's Related continues to be positive and highly significant.

4.2.4 Fitch as a benchmark

We also examine the robustness of our results by using ratings from Fitch, the third largest rating agency, as the benchmark.[13] As Fitch is smaller than S&P, the number of new bond issues that are rated by both Fitch and Moody's is lower at 8,546. The dependent variable is redefined as Fitch's numerical rating minus Moody's numerical rating. This change in benchmark does not impact the results. The coefficient on Moody's Related is positive and highly significant (Column 6 of Table 6). Even relative to Fitch, Moody's gives higher ratings to related new bonds.

4.2.5 Shareholder level analysis

For robustness, we also conduct the analysis at the shareholder rather than at the bond level. Specifically, in each quarter for every shareholder of Moody's (in that quarter), we average the S&P – Moody's Ratings for all new issues of its portfolio firms in that quarter. This is the average favorable ratings given to new issues of all portfolio firms in the quarter. We also average all the bond level, and issuer level characteristics. Hence, the unit of observation for this analysis is a shareholder-quarter. The Moody's Related dummy takes the value of one for shareholders that have been classified as stable large shareholders in that quarter, i.e., for Berkshire and Davis after Q4 2003. As seen in Column 7 of Table 6, the coefficient on Moody's Related dummy is positive and significant. The evidence suggests that, on average, Moody's rating for portfolio firms of the two stable large shareholders are significantly more favorable.

[13] Fitch was founded by John Knowles Fitch in 1913. In 1997, it merged with IBCA Limited of London, a subsidiary of Fimalac, S.A., a French holding company. In 2006, Hearst Corporation purchased a 20% stake and in 2009 it purchased another 20%. In 2012, Hearst increased its stake in Fitch to 50%.

4.3. Relationship to Moody's – Size and Duration

4.3.1. Size of the stake

Thus far we have used a dummy variable to characterize the relationship with Moody's. However, the relatively favorable ratings by Moody's should be higher when the issuer is a more important investee firm of Moody's stable large shareholders. To examine this, we create a variable, Size of Stake, defined as the average ownership of Moody's stable large shareholders in the large investee firm over the past four quarters. As seen in Column 1 of Table 7, the coefficient on Size of Stake is positive and significant, implying that the favorable rating by Moody's is increasing in the importance of the large investee firms. To address the magnitude of the rating advantage conferred on the most important investee firms, as captured by Size of Stake, we create a High (Low) Stake dummy that takes the value of one if Size of Stake is above (below) its 90^{th} percentile. The top ten percent of large investees receive, on average, a 0.73 notch higher rating from Moody's (See Column 2 of Table 7).

4.3.2 Duration of the stake

Along with the size of the stake, the duration of the stake can also capture the importance of the investee firm. The variable, Duration of Stake, is the number of quarters for which Moody's stable large shareholders hold the large investee firm. The coefficient of Duration of Stake is positive and significant (Column 3 of Table 7), implying that the relatively better rating from Moody's is increasing in the time for which the large investee firm is held. Investee firms that are in the top ten percentile of Duration of Stake receive, on average, a 0.74 notch higher rating from Moody's (Column 4, Table 7) while the remaining receive a 0.44 notch higher rating.

4.3.3 Berkshire Hathaway and Davis Selected Advisors

As Berkshire Hathaway's stake in Moody's is larger than that of Davis Selected Advisors, Moody's is likely to assign more favorable ratings to investees of Berkshire Hathaway. To test this we create a Berkshire (Davis) Investee dummy that takes the value of one if the bond is issued by a large investee of Berkshire Hathaway (Davis Selected Advisors). The coefficient on both dummies are significant, though the coefficient of Berkshire Investee dummy at 0.588 is significantly higher than the coefficient of 0.45 for the Davis Investee dummy at the 5% level (See Table 7 of Column 5). In summary, Moody's assigns relatively favorable ratings to important investee firms of both Berkshire Hathaway and Davis Selected Advisors, though the ratings for Berkshire investees are significantly better than that for Davis investees.

4.3.4 Investment grade/ High yield boundary

Getting a better rating from Moody's is advantageous, though the benefit is likely more pronounced for firms that are rated at the speculative and investment grade boundary. Issuers with a speculative grade rating from S&P are likely to benefit most by obtaining a higher investment grade rating from Moody's. In this section, we examine if Moody's Related issuers at the high yield/investment grade boundary are more likely to receive a better rating from Moody's.

To this end, we identify all bonds where Moody's and S&P disagree on ratings around the high yield/investment grade boundary. The Split Dummy takes the value of one for the 173 bonds where one rating is speculative grade while the other is investment grade.[14] The interaction of the Moody's Related and the Split Dummy variables identifies borderline

[14] Of the 173 bonds at the speculative and investment grade boundary, only four bonds are Moody's Related. All these four bonds have a higher rating by Moody's relative to S&P.

bonds that are related to Moody's. As can be seen in Column 6 of Table 7, the coefficient of the interaction term is positive and significant, implying that the Moody's Related bonds at the boundary of speculative and investment grade are significantly more likely to get a better rating from Moody's.

4.3.5 Bond yields

In this section, we attempt to shed light on the economic impact of getting a better rating from Moody's. Specifically, we estimate the difference in the offering yield of new bonds with a higher rating from Moody's from the expected offering yield if the bond had the same rating from both agencies. The expected offering yield is the average offering yield of all bonds issued in the past one year where both Moody's and S&P have the same rating as S&P's rating on the new bond in question. For example, if a new bond issue is rated BBB- by Moody's and BB+ by S&P, the expected offering yield is the offering yield of all new bonds in the past one year where both Moody's and S&P assigned a rating of BB+. We require at least five bonds to compute this expected offering yield. Consequently, we are not able to estimate the expected offering yield for many new bond issues, thereby reducing the sample size to 1,618 new bonds.

As the dependent variable is a difference in yield, we include control variables shown to be significant in explaining corporate yield spreads (e.g., Campbell and Taksler (2003), and Chen, Lesmond, and Wei (2007)). Specifically, we include bond-specific characteristics such as issue size and years to maturity, firm-specific characteristics like issuer size, leverage, operating margin, pre-tax interest coverage, mean daily stock returns and its standard deviation. We also include macroeconomic variables, specifically the one-year

Treasury rate, the difference between 10-year and 2-year Treasury rates, the Eurodollar rate, the CRSP return, market volatility index as captured by VIX, and the credit spread.[15]

Lastly, we include our variable of interest, S&P – Moody's Rating. Its estimated coefficient is -26 (Column 1 of Table 8), implying that bonds with a one notch higher Moody's rating enjoy a reduction in offering yield of 26 basis points. As Moody's assigns an average of 0.467 notches higher rating to Moody's Related bonds, this translates into interest saving of about $400,000 per year for the average size bond issue.[16]

In Column 2, we include Moody's Related Dummy and its interaction with S&P – Moody's Rating to study if the market sees through the higher rating given to Moody's Related bonds. Both the coefficient of Moody's Related and its interaction with S&P – Moody's Rating are not significant. This suggests that Moody's Related bonds appear to enjoy the same yield reduction as other bonds with a higher Moody's rating but unrelated to Moody's stable large shareholders. We also estimate the expected offering yield by considering bonds with the same ratings as the S&P rating that were issued in the prior two years, instead of one year. This results in a small increase in sample size with no qualitative change in the results (see Columns 3 and 4).

5. Outstanding Bonds

In this section, we investigate whether Moody's favorable ratings toward the interests of its owners are also observed in its ratings on outstanding bonds. A straightforward way

[15] The firm stock return and its standard deviation is calculated from daily returns in the quarter. The CRSP return is measured using CRSP value weighted index returns within each quarter. The Eurodollar is the difference between the 30 day Eurodollar and Treasury Rates. The market volatility index, i.e., VIX is from the Chicago Board Options Exchange. The Credit Spread is the Moody's corporate credit spreads between Baa and Aaa bonds. Standard errors are corrected in line with Thomson (2011).

[16] There is a 26 basis point lower offering yield for every notch that Moody's rating is higher than S&P rating. As the average Moody's Related bond gets 0.467 notch better ratings, it gets a reduction of 12 basis points in offering yield. For an average bond issue of $325 million (Table 3) this translates into $0.4 million in interest savings every year.

to address this issue is to examine whether Moody's is relatively faster to upgrade and slower to downgrade Moody's Related bonds. However, investigating which agency is faster requires the identification of the same rating change by both agencies, which is challenging given that rating changes by different agencies often occur at different levels and are of different magnitudes.[17] We attempt to identify the same rating change as one where a firm is downgraded/upgraded from the same old rating to the same new rating by both agencies within a one-year period. We identify a total of 566 such identical rating changes by Moody's and S&P, of which 398 are downgrades and the rest are upgrades.

To examine the timeliness of the same rating changes by the two agencies, we create a variable labeled Lead Days, which is the number of days by which Moody's leads S&P in initiating the rating change. A negative value of Lead Days implies that Moody's lags S&P in the ratings change. We then regress Lead Days on Moody's Related and all the control variables used in Model (1). For the sample of downgrades, the coefficient on Moody's Related is -71 and highly significant, suggesting that Moody's is about 71 days slower, relative to S&P, in downgrading related bonds (Column 1 of Table 9). The coefficient on Moody's Related for the upgrade sample is positive, though is not statistically significant.[18]

Because we can find only a small number of identical rating changes by both agencies, we adopt an alternate approach to examine outstanding bonds. We calculate the average value of the daily S&P – Moody's Rating over the quarter. A positive value of this average S&P – Moody's Rating suggests that Moody's rating on this outstanding bond tends

[17] For example, consider the following typical case with three rating events: (i) S&P downgrades a bond by one notch from AA- to A+ in May 1999; (ii) Moody's downgrades the same bond by two notches, from AA to A, in July 1999; and (iii) finally, S&P downgrades the bond by one notch again from A+ to A- in September 1999. This example highlights the difficulty in identifying a rating change from the same level and of the same magnitude by both rating agencies.

[18] This is not surprising as out of the 168 identical upgrades, only five belong to Moody's Related firms.

to be higher than S&P's. Using this as the dependent variable, we re-estimate Model (1) using the sample of all outstanding bonds rated by both Moody's and S&P. As seen in Column 3 of Table 9, the coefficient on Moody's Related is positive and significant at the 1% level. Outstanding bonds issued by Moody's Related firms receive better ratings from Moody's relative to S&P. In summary, the results for outstanding bonds mirror those for new bonds and collectively point to Moody's relative laxity towards related bonds.

6. Alternate Explanations

6.1 Common criteria

A potential alternate explanation for our findings is that firm characteristics which lead Berkshire Hathaway and Davis Selected Advisors, the two stable large shareholders of Moody's, to increase their investment in portfolio firms – making them large investees – also affect Moody's risk assessment and its higher rating. In other words, the large shareholders and Moody's could both be good at identifying better performing firms. If common criteria were to explain our results, the findings should hold, irrespective of whether Berkshire Hathaway and Davis Selected Advisors hold a stable large stake in Moody's.

We test this conjecture by examining the bond issues of firms that are large investee firms of Berkshire Hathaway and Davis Selected Advisors both before and after Moody's IPO. By pooling bond issues prior to 2000 with those post 2000 for these issuers, we can ascertain the impact of the initiation of the Moody's relation within issuer. If economic interests of large shareholders explain Moody's favorable ratings, then the favorable ratings should emerge for these issuers only after the relationship with Moody's is established.

In this sample of new bond issues over the period 1991 to 2010 by large investees of Berkshire Hathaway and Davis Selected advisors, we estimate the model for S&P – Moody's

Ratings.[19] We include the previously defined variable Moody's Related to capture bonds issued while the relationship with Moody's is active. We create a new variable, Large Investee Prior to Relationship, to capture bond issues by large investees of Berkshire or Davis prior to their relationship with Moody's.

As seen in Column 1 of Table 10, the coefficient of Moody's Related is positive and highly significant, while that of Large Investee Prior to Relationship is not significant. The difference between the two coefficients is significant at less than 1% level. This implies that Moody's rating on new bond issues by large investees of Berkshire or Davis was not favorable before they were related to Moody's, but became significantly better after the relationship was established. The results for outstanding issues, displayed in Column 2, are similar. Whereas the coefficient of Moody's Related is positive and significant, that of Large Investee Prior to Relationship is negative and significant. This analysis keeps the issuer constant and shows that the establishment of the relationship with Moody's is the source of the relatively favorable rating from Moody's.

6.2 The informativeness explanation

Another potential explanation for our findings could be that Moody's higher ratings reflect better information rather than favorable treatment. Common ownership by Berkshire Hathaway or Davis Selected Advisors could generate private information that makes Moody's ratings relatively more informative and accurate for Moody's Related bonds. It is worth noting, however, that an informed Moody's does not automatically imply favorable ratings. When Moody's information about related bonds is negative, its ratings should be

[19] The sample consists of bonds issued by firms that are classified as Moody's Related in at least one quarter after Q3 2003 and as large investees in at least one quarter prior to Q4 2000.

tougher than S&P's. However, we examine the informativeness hypothesis via (i) the correlation of ratings with the issuer's expected default frequencies; and (ii) changes in CDS spreads around rating changes.[20]

6.2.1 Expected Default Frequency

We follow Duffie, Saita, and Wang (2007) and estimate a distance-to-default measure for each firm-quarter based on the Black–Scholes–Merton specification. The distance to default measure estimates the number of standard deviations of asset growth by which a firm's market value of assets exceeds the firm's liabilities. We go on to estimate the Expected Default Frequency as the cumulative standard normal distribution function valued at the negative distance to default.

We then include Expected Default Frequency and its interaction with Moody's Related in Model (1). If Moody's relatively higher ratings on bonds by related firms are more informative, they should be associated with a lower Expected Default Frequency, and the coefficient of the interaction of Expected Default Frequency and Moody's Related should be negative and significant. As can be seen in Table 11, the coefficient of the interaction term is insignificant for new issues (Column 1) as well as for outstanding issues (Column 2). Overall, there is little evidence that Moody's relatively higher ratings for Moody's Related bonds represents superior information about the credit risks of the underlying bonds.

[20] We also investigated actual bond defaults. Because none of the Moody's Related new bond issues defaulted within two years of issuance, we cannot ascertain whether higher Moody's ratings of these bonds was associated with lower defaults.

6.2.2 Change in CDS spreads

Another way to shed light on the informativeness of credit ratings is to study bond price movements around rating changes. An informative downgrade (upgrade) should be accompanied by a significant drop (increase) in bond prices. However, due to limited trading in bonds, it is difficult to examine changes in bond prices within a short time window around ratings changes. Consequently, we study changes in CDS spreads around rating changes.[21] This research design allows us to capture any information that is new to the credit market.

We obtain daily CDS composite spreads from Markit Group Ltd.[22] Over the sample period, we have data to calculate changes in CDS spreads over a three-day window for 1,703 rating actions, including 1,071 downgrades and 632 upgrades. Around 50% of both upgrades and downgrades are by Moody's and about 4% of those are Moody's Related. We calculate the change in CDS spreads of a five year CDS contract, from day -1 to day 1 where day 0 which is the day of the rating change. We use the five-year CDS contract as it is the most actively traded contract for a given entity (Hull, Predescu, and White (2004)). We then estimate a model for the change in CDS spreads where the variables of interest are a dummy for rating changes by S&P, a dummy for rating changes by Moody's and its interaction with Moody's Related dummy. These capture how ratings change by the two agencies impact CDS spreads. The above model for CDS changes is estimated separately for upgrades and downgrades.

In line with Hull, Predescu, and White (2004), we incorporate several control variables. To control for the CDS market's anticipation of rating changes, we include lagged

[21] CDSs contain useful information regarding a firm's credit risks (Longstaff, Mithal, and Neis (2005). Blanco, Brennan, and Marsh (2005) find that corporate bond and CDS markets price credit risk equally well. Further, CDSs have been shown to lead bonds in incorporating credit risk information.

[22] Markit averages daily closing prices obtained from contributing global banks and their most recent trade prices to produce its daily CDS composite spreads. See Markit (2009).

change in CDS spread, which is the change in the CDS spread from day -10 to -2. We also include the magnitude of rating change, a dummy variable equal to one if the rating change crosses the investment and speculative-grade boundary, and the natural log of the number of days since the previous rating change in the same direction. These control variables have also been used in Jorion, Liu, and Shi (2006) to examine the informativeness of rating changes.

If Moody's rating changes for Moody's Related bonds tend to be more informative, we would expect a positive (negative) coefficient of the interaction of Moody's Rating Change Dummy and Moody's Related dummy for the downgrades (upgrades). Column 1 of Table 12 shows that for downgrades, the coefficient on both S&P Rating Change Dummy and Moody's Rating Change Dummy is positive and significant, suggesting that downgrades by both agencies are significant negative events associated with an increase in CDS spreads. However, the interaction of Moody's Rating Change Dummy and Moody's Related dummy is not significant. For the upgrade sample, none of the variables are significant (Column 2). Similar absence of significant results for the upgrade sample is also reported by Hull, Predescu, and White (2004). Overall, there is little evidence to suggest that relatively favorable ratings by Moody's for Moody's Related bonds represents more informative ratings.

7. Large shareholders of the parent company

Thus far, we have examined the impact of large shareholders on Moody's ratings. This inquiry has been motivated by the fact that Moody's is directly listed on a stock exchange whereas S&P, although a division of a public firm, is not itself publicly listed. Throughout the ten year period following Moody's IPO, S&P remains a subsidiary of

McGraw-Hill. In this section, we evaluate whether indirect ownership, through a large holding in the parent firm of S&P, McGraw-Hill also impacts ratings.

Much like Moody's, McGraw Hill through S&P, its ratings division, is also likely to cater to the interests of its stable large shareholders by assigning favorable ratings to its large investee firms. However, a direct listing engenders sharper incentives for Moody's executives. The value of their equity linked compensation is impacted only by the performance of the rating business rather than by the performance of other divisions, unlike the case of S&P. This clearer focus gives Moody's executives greater incentives to assign favorable ratings to cater to the interests of its large shareholders. For the large shareholders as well, the performance of the ratings division is likely to have a stronger impact on their decision to hold the stake for the long term, as in the case of Moody's and in contrast to McGraw Hill. Consequently, we expect direct ownership, as in the case of Moody's, to have a stronger effect on rating than indirect ownership through the parent, as in S&P's case.

A study of McGraw-Hill's ownership structure reveals that it has, on average, 496 shareholders each quarter (Panel A of Table 13). A total of six investment management firms are classified as large shareholders in at least one quarter over the sample period. Only one firm, Goldman Sachs, is classified as a stable large shareholder based on our criteria and that too only for three quarters during our sample period.

As before, we identify large investee firms of McGraw-Hill's stable large shareholders. There are, on average, 59 large investees of Goldman Sachs in the three quarters that it is deemed to be a stable large shareholder of McGraw Hill. These large investee firms issued 179 new bonds in the three quarters. To study the effect of this relationship with McGraw Hill on S&P ratings, we create a dummy variable, McGraw Hill Related, which is equal to one if a bond is issued by a large investee of the stable large

shareholder of McGraw Hill and zero otherwise. The coefficient of McGraw Hill Related should be negative if S&P gives favorable ratings to these bonds.[23]

As seen in Column 1 of Table 14, the coefficient on McGraw Hill Related is negative and significant for new issues. This suggests that S&P is favorable towards the interests of its parent's stable large shareholder as well. However, it is possible that some of the large investee firms of McGraw Hill's large shareholder are also held by Moody's large shareholders. To understand this overlap better, we identify bonds that are only McGraw Hill Related, bonds that are only Moody's Related, and those that are related to both rating agencies. There are 25 bonds issued by firms that are related to both McGraw Hill and Moody's. As seen in Model 2, this does not materially impact the results. There is significant evidence that S&P assigns relatively better ratings to the McGraw Hill Related bonds, and Moody's gives favorable ratings to Moody's Related Bonds. For bonds that are related to both Moody's and McGraw Hill, the biases counter each other and there is no significant observed relative bias. The results are qualitatively similar for outstanding bonds (See Columns 3 and 4). In summary, there is significant evidence that indirect ownership in the parent firm of the rating agency is also associated with favorable treatment.

8. Conclusions

The SEC and the European Union have recently expressed concerns about potential conflicts of interest faced by ratings agencies with regard to the interests of their large owners. We provide evidence to suggest that these concerns are not misplaced. We find that Moody's ratings for corporate bonds issued by large investees of its stable large shareholders are more favorable relative to S&P's ratings on the same issue. We do not find

[23] Note that the dependent variable for Model (1) is still S&P – Moody's Rating. Positive (negative) values of this implies a relatively higher rating by Moody's (S&P).

evidence of favorable treatment by Moody's towards the large investees prior to the establishment of the relationship with Moody's. This result suggests that omitted firm characteristics regarded as important by both Moody's and its stable large shareholders cannot account for the results. There is no evidence that the favorable ratings by Moody's are more informative. Therefore, better information flows arising from a common large shareholder also cannot account for the results.

Moody's favorable ratings towards the interests of its stable large shareholders are increasing in the size of their holding in Moody's. Further, the favorable ratings are also increasing in the size and duration of the stable large shareholders position in the large investee. We conjecture that the potential for such bias is larger for ratings of structured products that are more opaque than bonds and typically tend to carry a rating only from one agency. We hope our evidence contributes to the regulatory debate about the organization and ownership of the credit rating industry.

REFERENCES

Admati, AR and P. Pfleiderer, 2009, The "Wall Street Walk" and shareholder activism: Exit as a form of voice, Review of Financial Studies.

Atanasov, V. 2005. How much value can blockholders tunnel? Evidence from the Bulgarian mass privatization auctions. Journal of Financial Economics 76(1): 191-234.

Barclay, M.J., and C. G. Holderness. 1989. Private benefits from control of public corporations. Journal of Financial Economics 25: 371-395.

Barclay, M. J., C. G. Holderness, and J.Pontiff. 1993. Private benefits from block ownership and discounts on closed-end funds. Journal of Financial Economics 33: 263-291.

Becker, B., and T. Milbourn. 2011. How did competition affect credit ratings? Journal of Financial Economics 101, 493–514.

Benmelech, E., Dlugosz, J., 2009. The credit rating crisis. Unpublished working paper: NBER.

Bertrand, M., E. Duflo, and S. Mullainathan. 2004. How much should we trust differences-in-differences estimates. *Quarterly Journal of Economics* 19(1) 249-275.

Blanco, R., Brennan, S., Marsh, I., 2005. An empirical analysis of the dynamic relation between investment-grade bonds and credit default swaps. Journal of finance LX, 2255–2281.

Bolton, P., Xavier, F., Shapiro, J, 2012. The credit ratings game. Journal of Finance 67, 85–111.

Bongaerts, D., Cremers, M., Goetzmann, W., 2012. Tiebreaker: Certification and multiple credit ratings. Journal of Finance 67, 113–152.

Bonsall, S., 2012. The informational effects of firm funded certification: Evidence from the bond rating agencies. Unpublished working paper: Ohio State University.

Brav, A, W. Jiang and H. Kim, 2010, Hedge fund activism: A review, Working Paper, Columbia University.

Campbell, J., G. Taksler (2003). Equity Volatility and Corporate Bond Yields, *Journal of Finance* 58, 2321–49.

Chen, L., D. Lesmond, J. Wei (2007). Corporate Yield Spreads and Bond Liquidity, *Journal of Finance* 62, 119–49.

Cornaggia, J., Cornaggia, K., Xia, H., 2012. Conflicted credit analysts, Unpublished Working Paper: Indiana University.

Chang, S., and D. Mayers. 2012. Who benefits in a negotiated block trade? Financial Management 41:3: pages 703–731.

Doidge, C., G. A. Karolyi, K. Lins, D. Miller and R. Stulz. 2009. Private benefits of control, ownership, and the cross-listing decision. Journal of Finance 64(1): 425-466.

Dyck, A. and L. Zingales. 2002. Private benefits of control: An international comparison. Journal of Finance.

Edrington, L. and J. Yawitz. 1987. "The Bond Rating Process" in Edward Altman Ed, Handbook of Financial Markets. John Wiley and Sons, New York.

Edmans, A., 2009, Blockholder trading, market efficiency and managerial myopia, Journal of Finance.

Financial Crisis Inquiry Commission. 2011. Final report of the National Commission on the causes of the financial and economic crisis in the United States.

Froeba, M., 2010. Testimony before the Financial Crisis Inquiry Commission, June 2, 2010.

Fisher, Jeffery, and Clark Maxam, 2001. Pricing commercial mortgage-backed securities. Journal of Property Investment and Finance 19, 498–518.

Gillan, S and L. Starks, 1998, A survey of shareholder activism: Motivation and empirical evidence, Working Paper, University of Texas, Austin.

He, J., Qian, J., Strahan, P., 2012. Are all ratings created equal? The impact of issuer size on the pricing of mortgage backed securities. Journal of Finance 67, 2097–2137.

Hull, J., Predescu, M., White, A., 2004. The relationship between credit default swap spreads, bond yields, and credit rating announcements. Journal of Banking and Finance 28, 2789–2811.

Jiang, J., Stanford, M., Xie, Y., 2012. Does it matter who pays for bond ratings? Historical evidence. Journal of Financial Economics 105, 607–621.

Kedia, S., S. Rajgopal and X. Zhou. 2014. Did going public impair Moody's credit ratings? Journal of Financial Economics (forthcoming).

Kisgen, D., 2006. Credit ratings and capital structure. Journal of Finance 61, 1035–1072.

Kisgen, D., Strahan, P., 2010. Do regulations based on credit ratings affect a firm's cost of capital? Review of Financial Studies 23, 4324–4347.

Kraft, P., 2011. The impact of the contractual use of ratings on the rating process—Evidence from rating agency adjustments. Unpublished Working Paper: University of Chicago.

Langohr, H. and P. Langohr. 2008. The Rating Agencies and Their Credit Ratings: What They Are, How They Work, and Why They Are Relevant. Chichester: Wiley.

Longstaff, F., Mithal, S., Neis, E., 2005. Corporate yield spreads: Default risk or liquidity? New Evidence from the credit default swap market. Journal of Finance LX, 2213–2253.

Mathis, J., McAndrews, J., Rochet, J., 2009. Rating the raters: Are reputation concerns powerful enough to discipline rating agencies? Journal of Monetary Economics 56, 657–674.

Markit, 2009. The CDS big bang: understanding the changes to the global CDS contract and North American conventions. Markit Group Ltd., London, UK.

McLean, B., Nocera, J., 2010. All the Devils are Here: The Hidden History of the Financial Crisis. Penguin Group.

Mikkelson, Wayne, and Hailu Regassa. 1991. Premiums paid in block transactions. Managerial and Decision Economics 12: 511-517.

Nenova, T. 2003. The value of corporate voting rights and control: A cross-country analysis. Journal of Financial Economics.

Partnoy, F. 1999. The Siskel and Ebert of financial markets?: Two thumbs down for the credit rating agencies. Washington University Law Review, 77:619

Permanent Subcommittee on Investigations. 2011. Wall street and the financial crisis. Anatomy of a financial collapse. Majority and Minority Staff Report.

Shleifer, A. and R. Vishny, 1986, Large Shareholders and Corporate Control, Journal of Political Economy.

Smith, R. and I. Walter. 2001. Rating agencies: Is there an agency issue? NYU Working Paper No. FIN-01-003. Available at SSRN: http://ssrn.com/abstract=1294460

Thompson, S. (2011). Simple Formulas for Standard Errors that Cluster by Both Firm and Time, *Journal of Financial Economics* 99, 1–10.

White, L. 2009. The credit rating agencies: How did we get here? Where should we go? Available at http://www.ftc.gov/be/seminardocs/091112crediratingagencies.pdf.

Xia, H., 2010. The issuer-pay rating model and rating inflation: Evidence from corporate credit ratings. Unpublished Working Paper: University of North Carolina.

Table 1: Summary Information on Moody's Ownership Structure

An institutional shareholder of Moody's is classified as a large shareholder of Moody's in a given quarter if it owned at least 5% of Moody's in the prior quarter. An investee firm of a shareholder is classified as being large if it accounts for at least 0.25% of the shareholder's portfolio in each of the past four quarters. Panel A provides summary information on Moody's shareholders and their investee firms.

Panel A: Summary information on Moody's shareholders and their investee firms

	Mean	Median	Min	Max	STD	N
Number of Shareholders	363	356	261	474	61	40
Number of Large Shareholders	3	3	2	5	1	40
Number of Investees of Large Shareholders	1,846	1,708	169	4,724	1,688	40
Number of Large Investees of Large Shareholders	90	88	50	176	36	40

Panel B: Summary information on Moody's large shareholders

Firm Name	Number of Quarters Classified as Large Owner	Mean Number of Investees per Quarter	Mean Number of Large Investees per Quarter
BERKSHIRE HATHAWAY	40	32	18
DAVIS SELECTED ADVISERS	40	181	44
GOLDMAN SACHS	9	3,571	55
CAPITAL RESEARCH GBL INVESTORS	5	488	55
CAPITAL WORLD INVESTORS	5	504	58
BARCLAYS	5	4,374	48
SANDS CAPITAL MANAGEMENT	4	47	18
FIDELITY MGMT & RESEARCH	4	2,887	56
HARRIS ASSOCIATES	2	226	66
MSDW & COMPANY	2	3,680	49

Panel C: Summary statistics of Moody's large shareholders' quarterly stake in Moody's

Firm Name	Mean	Median	Min	Max	STD	N
BERKSHIRE HATHAWAY	16.4%	16.2%	12.1%	20.4%	2.0%	40
DAVIS SELECTED ADVISERS	6.9%	6.8%	5.5%	8.1%	0.7%	40
GOLDMAN SACHS	2.9%	2.4%	0.0%	7.2%	2.5%	40
CAPITAL RESEARCH GBL INVESTORS	8.8%	10.3%	4.2%	11.3%	2.8%	6
CAPITAL WORLD INVESTORS	6.1%	5.9%	1.2%	12.1%	4.5%	11
BARCLAYS	3.8%	3.3%	2.9%	6.3%	1.0%	34
SANDS CAPITAL MANAGEMENT	3.0%	3.0%	0.4%	5.6%	1.6%	28
FIDELITY MGMT & RESEARCH	2.6%	2.6%	0.0%	9.1%	2.2%	40
HARRIS ASSOCIATES	2.4%	2.2%	0.0%	5.0%	1.1%	21
MSDW & COMPANY	2.3%	1.8%	0.2%	8.1%	1.8%	38

Table 2: Distribution of new bond issues across numeric rating categories

This table provides summary information on Moody's and S&P's credit rating on new bonds issued between the first quarter of 2001 and the last quarter of 2010. Panel A presents the frequency distributions of the sample bonds across different rating categories by Moody's and S&P, and the numerical coding of each rating category. Panel B presents the mean and median of the numerical ratings of our sample bonds assigned by Moody's and S&P.

Panel A: Frequency distribution

	Numeric Rating	Moody's		S&P	
		Rating Letter	Frequency (%)	Rating Letter	Frequency (%)
		Investment-grade			
Highest Quality	1	Aaa	1.65	AAA	1.77
Very High Quality	2	Aa1	0.98	AA+	0.03
	3	Aa2	3.2	AA	1.38
	4	Aa3	25.49	AA-	8.75
High Quality	5	A1	12.74	A+	21.17
	6	A2	14.86	A	30.43
	7	A3	8.04	A-	4.04
Minimum Investment Grade	8	Baa1	4.14	BBB+	4.1
	9	Baa2	5.53	BBB	5.75
	10	Baa3	5.26	BBB-	5.1
		High-yield			
Low Grade	11	Ba1	2.04	BB+	2.03
	12	Ba2	1.74	BB	3.36
	13	Ba3	4.23	BB-	2.41
Very Speculative	14	B1	2.57	B+	3.11
	15	B3	3.16	B	3.1
	16	B3	2.79	B-	2.28
Substantial Risk	17	Caa1	0.97	CCC+	0.58
	18	Caa2	0.41	CCC	0.49
	19	Caa3	0.16	CCC-	0.07
Very Poor Quality	20	Ca	0.04	CC	0.03
	21	C	0.00	C	0

Panel B: Summary statistics on numerical ratings

	Moody's		S&P	
	Mean	Median	Mean	Median
Full Sample	7.14	6.00	7.36	6.00
Investment-grade	5.61	5.00	5.98	6.00
High-yield	14.03	14.00	13.81	14.00

Table 3: Descriptive statistics of new bonds and their issuers
The table presents summary information on the characteristics of our sample of new bonds and their issuers. Issuer Size is the market value of equity plus the book value of debt. Leverage is long term debt divided by total assets. Operating Margin is operating income before depreciation divided by sales. Stock Return Standard Deviation is the standard deviation of daily stock returns in the year prior. Issue Size is the par value of the bond issue. Time to Maturity is a bond's number of years to maturity at issuance. Moody's and S&P's Ratings are the numerical values of the ratings assigned by Moody's and S&P, coded as per Table 2. All firm characteristics are measured in the year prior to the issuance.

	Mean	Median	STD
Issuer Size ($ billion)	189.46	82.82	233.86
Leverage	0.30	0.24	0.18
Operating Margin	0.32	0.38	4.61
Stock Return Standard Deviation	0.03	0.02	0.06
Issue Size ($ million)	324.98	66.35	1,983.29
Time to Maturity at Issuance (Years)	9.76	7.07	8.45
Moody's Ratings	7.35	6.00	3.48
S&P Ratings	7.14	6.00	3.82

Table 4: Univariate analysis of relative ratings

The sample consists of new bond issues from 2001 to 2010. The numbers displayed are mean or median values of numerical ratings given by Moody's and S&P. S&P – Moody's Rating, is the S&P numerical rating minus Moody's numerical rating. Large Investee of Large Shareholder includes bond issues by firms that are large investee firms of Moody's large shareholders. Other Firms include bonds issued by all the other issuers in our sample. Panel A presents the result from using the full sample. Panel B displays the results for bond issues rated as investment-grade by both agencies. For Panel C, the sample includes bonds rated as high-yield by at least one agency. The last column displays *p*-values from a test on the difference in means and medians of S&P – Moody's Rating for the two groups of bonds, i.e., Moody's related and other firms. ***, **, * represent significance at 1%, 5%, and 10% level, respectively.

	Large Investee of Large Shareholder			Other Firms			
	Moody's Rating	S&P Rating	S&P – Moody's Rating	Moody's Rating	S&P Rating	S&P – Moody's Rating	Difference Test
Panel A: Full sample							
Mean	4.622	5.241	0.619	7.936	8.014	0.078	(0.000)***
Median	4.000	5.000	1.000	7.000	6.000	0.000	(0.000)***
Nobs	2,302	2,302	2,302	7,248	7,248	7,248	
Panel B: Investment-grade							
Mean	4.564	5.186	0.622	6.008	6.223	0.214	(0.000)***
Median	4.000	5.000	1.000	6.000	6.000	0.000	(0.000)***
Nobs	2,285	2,285	2,285	5,480	5,480	5,480	
Panel C: High-yield							
Mean	12.471	12.588	0.118	13.911	13.564	-0.347	(0.085)*
Median	13.000	12.000	1.000	14.000	14.000	0.000	(0.188)
Nobs	17	17	17	1,768	1,768	1,768	

Table 5: Moody's ratings on new bond issues

The dependent variable for Column 1 to 3 is S&P – Moody's Rating. The dependent variable in Column 4(5) is Moody's (S&P) numerical rating. The sample includes new bond issues from 2001 to 2010. Large Investee of Large Shareholder takes the value of one if the bond is issued by a large investee firm of Moody's large shareholders. Moody's Related (Large Investee of Transient Large Shareholder) takes the value of one if the bond is issued by a large investee firm of Moody's stable (transient) large shareholder. Issuer Size is the natural log of market value. Leverage is ratio of long-term debt to total assets. Operating Margin is operating income before depreciation divided by sales. Std. Deviation of stock return is the standard deviation of daily stock returns in the year prior to the issuance. Issue Size is the logarithm of the par value of the bond issue. Year to Maturity is a bond's number of years to maturity at issuance. Seniority is a dummy variable for whether the issue is senior debt. All control variables are measured in the year prior to the new issue. Errors are clustered at the firm and industry year level. Heteroscedasticity adjusted robust *p*-values are provided below each estimates. ***, **, * represent significance at 1%, 5%, and 10% level, respectively.

	1	2	3	4	5
	S&P-Moody's Rating			Moody's Rating	S&P Rating
Intercept	-1.850	-1.864	-1.863	8.075	6.212
	(0.000)***	(0.000)***	(0.000)***	(0.000)***	(0.000)***
Large Investee of Large Shareholder	0.213				
	(0.008)***				
Moody's Related		0.465	0.467	-0.401	0.066
		(0.000)***	(0.000)***	(0.008)***	(0.768)
Large Investee of Transient Large Shareholder		0.069			
		(0.393)			
Issuer Size	0.062	0.060	0.071	-1.098	-1.027
	(0.021)**	(0.021)**	(0.009)***	(0.000)***	(0.000)***
Leverage	-0.567	-0.539	-0.541	5.585	5.045
	(0.015)**	(0.013)**	(0.013)**	(0.000)***	(0.000)***
Operating Margin	0.001	0.001	0.001	-0.013	-0.013
	(0.444)	(0.391)	(0.448)	(0.000)***	(0.000)***
Std. Deviation of Stock Return	-0.144	-0.136	-0.143	0.691	0.548
	(0.391)	(0.396)	(0.354)	(0.625)	(0.675)
Issue Size	0.039	0.038	0.039	0.066	0.104
	(0.008)***	(0.008)***	(0.008)***	(0.124)	(0.004)***
Years to Maturity	-0.017	-0.010	-0.012	-0.334	-0.345
	(0.460)	(0.634)	(0.594)	(0.000)***	(0.000)***
Seniority	-0.258	-0.247	-0.252	-1.626	-1.878
	(0.001)***	(0.001)***	(0.000)***	(0.000)***	(0.000)***
Adj. R-square	0.449	0.445	0.445	0.797	0.758
N	9,550	9,550	9,550	9,550	9,550
Industry Fixed Effects	Yes	Yes	Yes	Yes	Yes
Time Fixed Effects	Yes	Yes	Yes	Yes	Yes

Table 6: Robustness tests

The dependent variable, for columns 1 to 6, is S&P – Moody's Rating. Moody's Related takes the value of one if the bond is issued by a large investee firm of Moody's stable large shareholders. Column 1 presents results from estimating Model (1) using Fama-MacBeth regressions. Column 2 (Column 3) present results from using a tighter (looser) criterion to define large investee firms. Column 4 (Column 5) present results from using a longer (shorter) holding period criterion to define large investee firms. Column 6 uses Fitch ratings, instead of S&P ratings, as the benchmark. Column 7 reports estimation at the shareholder quarter level. Issuer Size is the natural log of market value, Leverage is ratio of long-term debt to total assets, Operating Margin is operating income before depreciation divided by sales, Std. Deviation of Stock Return is the standard deviation of daily stock returns in the year prior to the issuance, Issue Size is the logarithm of the par value of the bond issue, Years to Maturity is a bond's number of years to maturity at issuance and Seniority is a dummy variable for whether the issue is senior debt. All control variables are measured in the year prior to the new issue. Errors, except in columns 1 and 7, are clustered at the firm and industry year level. In column 7, the dependent variable is the average S&P – Moody's rating for all new bond issues by portfolio firms of Moody's shareholder in that quarter. The control variable are averaged across the new bond issues. Moody's Related takes the value of one for shareholders classified as stable large shareholders in that quarter. Heteroscedasticity adjusted robust *p*-values are provided below each estimates. ***, **, * represent significance at 1%, 5%, and 10% level, respectively.

	(1) Fama MacBeth	(2) Tigher Criteria	(3) Looser Criteria	(4) Longer Holding	(5) Shorter Holding	(6) Fitch as Benchmark	(7) Shareholder Level
Intercept	0.211	-1.832	-1.854	-1.862	-1.862	-1.251	-0.728
	(0.189)	(0.000)***	(0.000)***	(0.000)***	(0.000)***	(0.000)***	(0.000)***
Moody's Related	0.378	0.44	0.271	0.504	0.462	0.251	0.315
	(0.000)***	(0.001)***	(0.012)**	(0.000)***	(0.000)***	(0.001)***	(0.000)***
Issuer Size	0.065	0.080	0.059	0.074	0.070	0.116	0.205
	(0.000)***	(0.004)***	(0.026)**	(0.006)***	(0.011)**	(0.000)***	(0.000)***
Leverage	-0.461	-0.592	-0.569	-0.538	-0.542	-0.587	0.581
	(0.007)***	(0.008)***	(0.012)**	(0.013)**	(0.012)**	(0.011)**	(0.000)***
Operating Margin	-0.511	0.001	0.001	0.001	0.001	-0.098	-0.194
	(0.077)*	(0.442)	(0.352)	(0.452)	(0.444)	(0.107)	(0.000)***
Std. Deviation of	5.013	-0.130	-0.166	-0.146	-0.144	-0.071	-8.602
Stock Return	(0.211)	(0.366)	(0.342)	(0.342)	(0.353)	(0.629)	(0.000)***
Issue Size	-0.002	0.038	0.035	0.039	0.039	0.049	-0.052
	(0.898)	(0.010)***	(0.020)**	(0.008)***	(0.009)***	(0.002)***	(0.000)***
Years To Maturity	-0.041	-0.021	-0.012	-0.008	-0.014	0.003	-0.157
	(0.153)	(0.354)	(0.580)	(0.723)	(0.521)	(0.891)	(0.000)***
Seniority	-0.202	-0.278	-0.256	-0.264	-0.250	-0.194	-0.603
	(0.164)	(0.000)***	(0.002)***	(0.000)***	(0.001)***	(0.086)*	(0.000)***
Adjusted R-square	0.514	0.434	0.436	0.445	0.445	0.343	0.400
Number of Obs.	6,041	9,550	9,550	9,550	9,550	8,546	19,374
Number of Quarters	29	40	40	40	40	40	40
Industry Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	No
Time Fixed Effects	N/A	Yes	Yes	Yes	Yes	Yes	Yes

Table 7: Impact of size and duration of owner's holdings

The dependent variable is S&P – Moody's Rating. Size of Stake is the average holding of Berkshire or Davis in the investee firm in the prior four quarters. High (Low) Stake Dummy takes the value of one if the size of stake is above (below) the 90th percentile. Duration Holding is the average number of quarters that Berkshire or Davis holds the investee firm. High (low) duration dummy takes the value of one if the duration is above (below) the 90th percentile. The dummy variable Berkshire Investee (Davis investee) take the value of one if the bond is issued by a Berkshire Hathaway (Davis Selected Advisors) investee in the years when Berkshire (Davis) is classified as a stable large shareholder of Moody's. IG/HY dummy takes the value of one for bonds with one rating as investment grade and the other rating as high yield. Moody's Related takes the value of one for bonds issued by large investees of Moody's stable large shareholders. Other variables included in the estimation but not displayed are Issuer Size, Leverage, Operating Margin, Standard Deviation of Stock Return, Issue Size, Years to Maturity and Seniority. Errors are clustered at the firm and industry year level. Heteroscedasticity adjusted robust *p*-values are provided below each estimates. ***, **, * represent significance at 1%, 5%, and 10% level, respectively.

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Intercept	-1.849	-1.867	-1.871	-1.865	-1.866	-1.868
	(0.000) ***	(0.000) ***	(0.000) ***	(0.000) ***	(0.000) ***	(0.000) ***
Size of Stake	5.691					
	(0.000) ***					
High Stake Dummy		0.726				
		(0.000) ***				
Low Stake Dummy		0.424				
		(0.000) ***				
Duration of Stake			0.014			
			(0.000) ***			
High duration Dummy				0.738		
				(0.002) ***		
Low Duration Dummy				0.438		
				(0.000) ***		
Berkshire Investees					0.588	
					(0.000) ***	
Davis Investees					0.450	
					(0.000) ***	
Moody's Related						0.458
						(0.000) ***
IG/HY Dummy						-0.299
						(0.083) *
Moody's Related * IG/HY Dummy						1.443
						(0.000) ***
Adj R-square	0.436	0.446	0.443	0.445	0.445	0.447
Nobs	9,550	9,550	9,550	9,550	9,550	9,550
Control Variables	Yes	Yes	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Time Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes

Table 8: Impact on yield spreads

The dependent variable is yield difference for new bond issues, which is the offering yield of new bonds minus the expected yield. Expected yield is the average offering yield of all bonds issued in the prior one year (two years) for Column 1 and 2 (3 and 4), where both Moody's and S&P gave the same rating as the new bond's S&P rating. Errors are clustered at the bond year level. Heteroscedasticity adjusted robust *p*-values are provided below each estimates. ***, **, * represent significance at 1%, 5%, and 10% level, respectively.

	1	**2**	**3**	**4**
Intercept	-21.009	-27.077	-162.812	-165.605
	(0.743)	(0.673)	(0.010)***	(0.009)***
S&P – Moody's Rating	-26.103	-26.782	-23.952	-23.799
	(0.000)***	(0.000)***	(0.000)***	(0.000)***
Moody's Related		22.443		11.406
		(0.197)		(0.444)
(S&P – Moody's) *Moody's Related		8.104		-10.589
		(0.613)		(0.328)
S&P Rating	-7.539	-7.396	-9.545	-9.444
	(0.000)***	(0.000)***	(0.000)***	(0.000)***
Years to maturity	2.385	2.698	-0.711	-0.773
	(0.573)	(0.526)	(0.866)	(0.854)
Issue Size	7.639	7.606	1.794	1.884
	(0.233)	(0.234)	(0.771)	(0.759)
Issuer Size	-22.946	-23.349	-22.566	-22.596
	(0.000)***	(0.000)***	(0.000)***	(0.000)***
Leverage	79.179	79.828	108.235	107.720
	(0.008)***	(0.008)***	(0.001)***	(0.001)***
Operating Margin	-15.653	-12.706	-18.033	-19.339
	(0.054)*	(0.186)	(0.013)**	(0.018)**
Interest Coverage	-0.017	-0.012	-0.028	-0.025
	(0.685)	(0.771)	(0.539)	(0.581)
Stock Return	-943.646	-951.575	-1888.590	-1914.910
	(0.741)	(0.739)	(0.511)	(0.505)
Standard Deviation of Stock	14.686	15.361	238.317	239.845
Returns	(0.945)	(0.943)	(0.312)	(0.308)
Vix	6.517	6.567	6.977	6.989
	(0.000)***	(0.000)***	(0.000)***	(0.000)***
1 Year Treasury Rate	-10.785	-10.061	17.669	18.058
	(0.236)	(0.270)	(0.049)**	(0.045)**
10-2 years Treasury Rate	-54.602	-54.197	-27.224	-26.743
	(0.001)***	(0.001)***	(0.096)*	(0.103)
EuroDollar	-9.009	-11.805	28.039	27.171
	(0.489)	(0.385)	(0.030)**	(0.042)**
CRSP Return	963.949	1067.105	3018.580	3029.762
	(0.753)	(0.727)	(0.319)	(0.318)
Credit Spread	-9.513	-9.229	11.133	11.237
	(0.522)	(0.537)	(0.454)	(0.450)
Adj R-square	0.196	0.196	0.275	0.275
Nobs	1,618	1,618	1,692	1,692

Table 9: Outstanding bond issues

The sample for Column 1 (Column 2) consists of all same downgrades (upgrades) by both Moody's and S&P over the period from 2001 to 2010. The sample for Column 3 consists of all outstanding bond issues over the same sample period. The dependent variable for Column 1 and Column 2 is Lead Days, which is the number of days by which Moody's leads S&P in making the same rating change. The dependent variable for Column 3 is the average daily S&P-Moody's Ratings for the quarter. Moody's Related takes the value of one if the bond is issued by a large investee firm of Moody's stable large shareholders. Issuer Size is the natural log of market value, Leverage is ratio of long-term debt to total assets, Operating Margin is operating income before depreciation divided by sales, Std. Deviation of Stock Return is the standard deviation of daily stock returns in the year prior to the issuance, Issue Size is the logarithm of the par value of all bonds by the same firm, Years to Maturity is average number of years to maturity of the issuer's bonds, and Seniority is the percent of a firm's bonds that are senior debt. All control variables are measured in the year prior. Errors are clustered at the firm and industry year level. Heteroscedasticity adjusted robust *p*-values are provided below each estimates. ***, **, * represent significance at 1%, 5%, and 10% level, respectively.

	1. Downgrade	2. Upgrade	3. All Issues
Intercept	1.973	-3.203	-0.149
	(0.762)	(0.896)	(0.379)
Moody's Related	-71.054	21.309	0.095
	(0.072)*	(0.597)	(0.021)**
Issuer Size	7.018	-0.604	-0.014
	(0.037)**	(0.947)	(0.051)*
Leverage	46.994	138.615	-0.418
	(0.265)	(0.075)*	(0.000)***
Operating Margin	-6.146	-43.197	0.000
	(0.151)	(0.528)	(0.049)**
Std. Deviation of	11.728	-1.114	0.005
Stock Return	(0.441)	(0.499)	(0.735)
Issue Size	2.452	-10.173	0.046
	(0.613)	(0.368)	(0.000)***
Years to Maturity	-6.000	-19.439	0.004
	(0.595)	(0.324)	(0.000)***
Seniority	7.829	-12.982	0.020
	(0.635)	(0.643)	(0.318)
Adj R-square	0.020	0.029	0.290
Number if observations	398	168	32,924
Industry Fixed Effects	Yes	Yes	Yes
Time Fixed Effects	Yes	Yes	Yes

Table 10: Moody's rating bias prior to going public

The sample consists of new bond issues (Column 1) and outstanding bond issues (Column 2) over the period 1991 to 2010. Only bond issues of firms classified as Moody's Related for at least one quarter over the period 2000 to 2010, and classified as large investee of Berkshire or Davis for at least one quarter over the period 1991 to 2000 are included. The dependent variable is S&P - Moody's Rating for Column 1, and its average value within a quarter for column 2. Moody's Related, as defined before, is a dummy variable that takes the value of one for bond issues by large investees of Moody's stable large shareholders. Large Investee prior to Moody's Relationship takes the value of one for bond issues by large investees of Berkshire or Davis prior to them being classified as stable large shareholders of Moody's. Control variables included are defined as before. Heteroscedasticity adjusted robust *p*-values are provided below each estimates. The errors are clustered at the firm and industry year level. ***, **, * represent significance at 1%, 5%, and 10% level, respectively.

	New Issues	**All Issues**
Intercept	-1.219	-0.425
	(0.004)***	(0.059)*
Moody's Related	0.485	0.283
	(0.021)**	(0.000)***
Large Investee prior to Moody's Relationship	0.085	-0.132
	(0.434)	(0.072)*
Issuer Size	-0.047	0.206
	(0.439)	(0.000)***
Leverage	0.817	-0.322
	(0.221)	(0.164)
Operating Margin	-0.271	-0.035
	(0.004)***	(0.124)
Std. Deviation of Stock Return	-11.079	-0.138
	(0.059)*	(0.062)*
Issue Size	-0.007	-0.033
	(0.646)	(0.122)
Years to Maturity	-0.031	0.015
	(0.316)	(0.464)
Seniority	-0.264	-0.233
	(0.007)***	(0.160)
Adj R-square	0.665	0.272
Number of observations	2,403	8,447
Industry Fixed Effects	Yes	Yes
Time Fixed Effects	Yes	Yes

Table 11: The Informativeness of Moody's Ratings – Expected Default Frequency
The sample consists of new bonds issues (Column 1) and outstanding bond issues (Column (2)) over the period 2001 to 2010. The dependent variable for Column 1 and Column 2 is S&P - Moody's Rating and its average value within a quarter respectively. Moody's Related dummy takes the value of one for bond issues by large investee firms of Moody's stable large shareholders. Expected default frequency is estimated following Duffie, Saita, and Wang (2007). Control variables are as defined as before. The errors are clustered at the firm and industry year level. Heteroscedasticity adjusted robust *p*-values are reported below. ***, **, * represent significance at 1%, 5%, and 10% level, respectively.

	1.New Issues	2.All Issues
Intercept	-1.874	-0.075
	(0.000)***	(0.510)
Moody's Related	0.483	0.089
	(0.000)***	(0.011)**
Expected Default Frequency	-0.523	-0.254
	(0.002)***	(0.000)***
Moody's Related * Expected Default Frequency	-0.435	-0.328
	(0.496)	(0.222)
Issuer Size	0.067	0.022
	(0.013)***	(0.007)***
Leverage	-0.497	0.115
	(0.022)***	(0.021)**
Operating Margin	0.000	-0.099
	(0.951)	(0.000)***
Std. deviation of stock returns	-0.073	0.088
	(0.502)	(0.005)***
Issue Size	0.044	-0.001
	(0.003)***	(0.876)
Years to Maturity	-0.016	0.002
	(0.469)	(0.000)***
Seniority	-0.264	0.029
	(0.000)***	(0.228)
Adjusted R-square	0.451	0.089
Number of observations	9,550	32,924
Industry Fixed Effects	Yes	Yes
Time Fixed Effects	Yes	Yes

Table 12: The Informativeness of Moody's Ratings – CDS Spreads

The sample includes all downgrades (upgrades) by either Moody's or S&P with available CDS spreads over the period 2001 to 2010. The dependent variable for both columns is change in the five years CDS contract from day -1 to day +1, where day 0 is the day of the rating change. Moody's Related takes the value of one for bonds issued by large investee of Moody's stable large shareholders. S&P Rating Change Dummy (Moody's Rating Change Dummy) takes the value one if the rating change is by S&P (Moody's). Lagged Change in CDS spreads is the change in CDS spread from day -10 to day -2. Magnitude of Rating Change is the absolute magnitude of the rating change. Heteroscedasticity adjusted robust *p*-values are provided below each estimates. ***, **, * represent significance at 1%, 5%, and 10% level, respectively.

	1. Downgrade	2. Upgrade
S&P Rating Change Dummy	0.158	0.001
	(0.094)*	(0.982)
Moody's Rating Change Dummy	0.235	0.000
	(0.040)**	(0.999)
Moody's Related * Moody's Rating Change Dummy	0.291	0.009
	(0.463)	(0.538)
Lagged Change in CDS Spreads	0.254	0.034
	(0.035)**	(0.745)
Magnitude of Rating change	-0.004	0.007
	(0.937)	(0.695)
Rating change across IG/HY boundary Dummy	-0.147	0.034
	(0.555)	(0.440)
Log of Days from last rating change	-0.019	-0.004
	(0.207)	(0.326)
Adjusted R-square	0.074	0.010
Number of observations	1,071	632

Table 13: Summary information on McGraw-Hill's ownership structure

McGraw-Hill's ownership data are obtained from Thomson-Reuters Institutional Holdings (13F) for the period 2001 to 2010, spanning 40 quarters. A large shareholder is one who owned at least 5% of a firm in the prior quarter. A stable large shareholder is one who owned at least 5% of a firm in each of the past 12 quarters. An investee firm of a shareholder is considered large if it accounts for at least 0.25% of the shareholder's portfolio in each of the past four quarters. Panel A provides summary information on McGraw-Hill's shareholders and their investee firms. Panel B lists McGraw-Hill's shareholders that are classified as large shareholders for at least one quarter during the sample period. Panel C provides summary statistics on the quarterly holdings of these large shareholders of McGraw-Hill.

Panel A: Summary information on McGraw-Hill's shareholders and their investee firms

	Mean	Median	Min	Max	STD	N
Number of Shareholders	496	479	392	640	74	40
Number of Large Shareholders	1	1	1	2	0	30
Number of Investee of Large Shareholders	3,161	3,267	460	4,886	1,175	30
Number of Large Investees of Large Shareholders	70	65	48	130	22	30
Number of Stable Large Shareholders	1	1	1	1	0	3
Number of Large Investees of Stable Large Shareholders	59	61	52	65	7	3

Panel B: Summary information on McGraw-Hill's large shareholders

Firm Name	Number of Quarters Classified as Large Owner	Number of Investees per Quarter	Number of Large Investees per Quarter
GOLDMAN SACHS & COMPANY	14	3,571	55
T. ROWE PRICE ASSOCIATES	10	1,946	71
BARCLAYS	8	4,374	48
CAPITAL WORLD INVESTORS	4	504	58
FIDELITY MGMT & RESEARCH	3	2,887	56
MSDW & COMPANY	1	3,680	49

Panel C: Summary statistics of McGraw-Hill's large shareholders' quarterly stake in McGraw Hill

Firm Name	Mean	Median	Min	Max	STD	N
GOLDMAN SACHS & COMPANY	3.1%	3.3%	0.0%	7.5%	2.8%	40
T. ROWE PRICE ASSOCIATES	2.9%	0.7%	0.2%	10.5%	3.6%	40
BARCLAYS	4.9%	4.2%	3.0%	10.2%	2.3%	34
CAPITAL WORLD INVESTORS	9.1%	10.4%	1.8%	12.2%	4.0%	6
FIDELITY MGMT & RESEARCH	2.6%	2.5%	0.3%	5.3%	1.4%	40
MSDW & COMPANY	1.1%	0.6%	0.1%	5.6%	1.3%	38

Table 14: S&P's bias toward McGraw-Hill's large shareholders

The sample consists of new bonds issues (Panel A) and outstanding bond issues (Panel B) over the period 2001 to 2010. The dependent variable is S&P – Moody's Ratings and its average value within a quarter for Panel A and Panel B respectively. McGraw Hill Related takes the value one if the bond is issued by a large investee of a McGraw Hill stable large shareholder. Moody's Related Only (McGraw Hill Related Only) takes the value one if the bond is (not) classified as Moody's Related but not (is) McGraw Hill Related. Related to both is a dummy that takes the value of one if the bond is classified as being related to both Moody's and McGraw Hill. Control variables are as defined as before. Errors are clustered at the firm and industry year level. Heteroscedasticity adjusted robust *p*-values are provided below each estimates. ***, **, * represent significance at 1%, 5%, and 10% level, respectively.

	Panel A: New Issues		**Panel B: All Issues**	
Intercept	-1.810	-1.858	-0.150	-0.151
	(0.000)***	(0.000)***	(0.376)	(0.373)
McGraw Hill Related	-0.328		-0.146	
	(0.098)*		(0.006)***	
Moody's Related Only		0.441		0.090
		(0.000)***		(0.035)**
McGraw Hill Related Only		-0.272		-0.168
		(0.070)*		(0.001)***
Related to Both		0.599		0.107
		(0.157)		(0.355)
Issuer Size	0.093	0.074	-0.012	-0.013
	(0.000)***	(0.000)***	(0.099)*	(0.073)*
Leverage	-0.583	-0.542	-0.417	-0.416
	(0.000)***	(0.000)***	(0.000)***	(0.000)***
Operating Margin	0.000	0.001	0.000	0.000
	(0.561)	(0.339)	(0.059)*	(0.056)*
Std. Deviation of Stock Returns	-0.159	-0.144	0.005	0.005
	(0.250)	(0.320)	(0.740)	(0.733)
Issue Size	0.043	0.040	0.047	0.046
	(0.000)***	(0.000)***	(0.000)***	(0.000)***
Years to Maturity	-0.023	-0.014	0.004	0.004
	(0.136)	(0.386)	(0.000)***	(0.000)***
Seniority	-0.269	-0.255	0.020	0.019
	(0.000)***	(0.000)***	(0.309)	(0.321)
Adjusted R-square	0.431	0.446	0.290	0.291
Number of Observations	9,550	9,550	32,924	32,924
Industry Fixed Effects	Yes	Yes	Yes	Yes
Time Fixed Effects	Yes	Yes	Yes	Yes