Credit rating agency and equity analysts' adjustments to GAAP earnings

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Abstract

The adjusted earnings definitions of Moody's are lower than those of sell-side equity analysts. The difference in the adjusted earnings definitions of the two financial intermediaries is greater when companies have more volatile stock returns or higher financial leverage. Furthermore, the difference in the adjusted earnings definitions is greater when Moody's issues optimistic ratings for bonds that are subject to higher rating fee incentives. Moody's earnings definitions more accurately predict future company earnings than those of sell-side equity analysts, though only for more poorly-rated firms. These findings indicate stronger conservatism incentives of credit rating agencies relative to equity analysts, especially under conditions of uncertainty and ratings optimism. Moreover, rating agencies' relative conservatism does not appear to worsen the quality of their research output.

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1. Introduction

Credit rating agency analysts adjust earnings of client companies and use these adjustments as inputs in their rating models (Moody's, 2007). Recent research shows that adjusted earnings definitions of credit rating agencies generate stock price reactions (De Franco et al., 2011), and explain bond yields better than GAAP earnings (Kraft, 2010; Batta et al., 2010). Similarly, adjusted earnings definitions of sell-side equity analysts predict future earnings better, and have higher valuation multiples, than GAAP earnings (Gu and Chen, 2004; Bhattacharya et al., 2003; Bradshaw and Sloan, 2002).[1] Overall, the earnings adjustments of both credit rating agency analysts and equity analysts are shown to be informative. However, each group of analysts serves a different clientele and therefore faces a different set of incentives, which may translate into differences in their earnings definitions. In this paper, we study these differences.

Both equity and credit rating agency analysts have incentives to issue optimistic research. Equity analysts issue optimistic stock recommendations in order to generate business and to curry favour with management (Lin and McNichols, 1998; Ertimur et al., 2010). Likewise, credit rating agencies issue optimistic ratings on corporate debt (Becker and Milbourn, 2011; Kraft, 2011) in order to generate research fees and to avoid temporary downgrades (Altman and Rijken, 2006). Equity analysts have countervailing incentives to be conservative, especially when they serve institutional clients (Hugon and Muslu, 2010). Likewise, credit rating agencies have incentives to be conservative, because their research is used in regulatory oversight, portfolio governance, and private credit arrangements (Beaver et al., 2006).

[1] The adjusted earnings definitions of equity analysts are known as "pro forma" or "street" earnings. We choose the more general "adjusted earnings" term to label the definitions of both credit rating agency and equity analysts.

We argue that credit rating agency analysts have stronger conservatism incentives (net of optimism incentives) than equity analysts for two major reasons. First, credit rating agencies operate in a considerably more concentrated market than that of equity analysts, mitigating the need to compete through optimistic research output. Second, unlike equity analysts, the credit rating agencies are in the business of certifying the downside risk of issuers, and therefore regulators and investors evaluate the credit rating agencies' ability to certify the downside risk of issuers. In other words, credit rating agencies stand to lose relatively more credibility and business than equity analysts if their optimism proves to be inaccurate. For instance, the Securities and Exchange Commission (SEC) registers select agencies as "Nationally Recognized Statistical Rating Organizations (NRSRO)" based on past integrity and market position. Such status is vital in the ratings industry, because users overwhelmingly demand that bond ratings come from an NRSRO (Beaver et al., 2006).

We predict that the credit rating agency analysts' stronger conservatism incentives will be reflected in their adjusted earnings definitions. Specifically, adjusted earnings definitions of credit rating agency analysts will be lower than those of equity analysts, especially under settings of high uncertainty. We test this prediction by comparing earnings adjustments at the company and fiscal quarter level reported by i) Moody's Inc., one of the two largest credit rating agencies globally, and ii) the I/B/E/S database, which tracks adjustments used by the majority of equity analysts. The sample covers all non-financial U.S. companies with outstanding Moody's ratings as of May 2008.

We show that the adjusted earnings of Moody's are on average 0.1% of market capitalization lower than those of equity analysts. The difference largely results from Moody's analysts' tendency, and equity analysts' reluctance, to deduct the fair value of employee stock-

based compensation and to reverse capitalized interest costs associated with self-constructed assets. Additionally, the difference results from Moody's analysts' reluctance, and equity analysts' tendency, to exclude from their earnings definitions negative items such as in-process R&D expense, write-downs, M&A-related costs, and restructuring costs. We also document a larger gap between the adjusted earnings of Moody's and equity analysts under high corporate uncertainty, i.e., when company stock returns are volatile and when company debt levels are high. In other words, Moody's is incrementally more conservative when the downside risk for the company, and thus the reputation risk for the agency, is stronger.

An alternative argument predicts that rating agencies would simply issue conservative ratings rather than conservative earnings adjustments. Countering this argument, our evidence suggests that the earnings adjustments of credit rating agencies serve as observable and quantitative indicators of conservatism. The agencies can point to these inputs as evidence of their caution in the event of an increase in the credit risk of a highly rated company. Indeed, Moody's cites "improving the transparency of the ratings process" as its primary motivation in releasing information about the accounting adjustments used in our study.[2] In contrast, ratings are more qualitative than the adjustments, because ratings are the product of additional assessments by Moody's about management quality, accounting quality, industry structure, governance risk, and event risk (Moody's, 2007), in addition to the adjusted financial statements. It is therefore harder for Moody's to evidence its conservatism by pointing to the rating itself. This interpretation complements Kraft (2010), who documents that Moody's makes additional "soft" adjustments at the final stage of the ratings process. She finds that these

[2] The web page for the Moody's Financial Metrics service (http://moodysfm.moodys.com/), from which we obtain our sample data, notes that the service "enables clients to access the models, standard reports, and rating methodologies used by Moody's analysts in the rating process. Moody's Financial Metrics™ provides investors an unprecedented level of transparency in addition to high quality Moody's content."

adjustments produce ratings that are more optimistic than what would be predicted by the adjusted financial statements and other qualitative and quantitative inputs into their ratings.

We additionally document that the adjusted earnings gap between Moody's and equity analysts increases significantly with the size of bond offerings and total assets of the issuers (which proxy for realized and potential rating fee income), especially when Moody's ratings are the most optimistic (i.e., Aaa, Aa, and A). Although we posit that reputational risk concerns of credit rating agencies drive conservatism in their earnings adjustments, this finding points to the role of fee income incentives: Moody's may be optimistic in ratings levels under the extant "issuer-pays" model of rating agency compensation, but uses earnings adjustments to reveal its conservative views to sophisticated investors. This argument is analogous to findings that equity analysts strategically bias their recommendations upwards, but keep their earnings forecasts less biased for the use of more sophisticated clientele (Malmendier and Shantikumar, 2009; Ertimur et al., 2010).

We address several competing explanations for our findings. The first is based on credit rating agencies' privileged access to information. Regulation Fair Disclosure, which was enacted in 2000, banned managers from releasing private information to equity analysts, but carved out an exception for credit rating agencies. The conservative earnings adjustments of credit rating agencies may reflect some of this privileged information. This explanation is unlikely, because it is not clear why managers would selectively release pessimistic information about the greater persistence of loss items to credit rating agencies. Nonetheless, we find that the predictive ability of credit rating agencies' earnings definitions is indeed slightly higher than that of equity analysts, though this effect is exclusive to firms rated high risk (i.e., Ba and B). We therefore cannot rule out that privileged information is producing earnings conservatism among

these firms with high credit risk, for which information asymmetry between managers and investors is likely higher. However, reputational concerns and client fee incentives remain the most likely explanations for conservatism for the rest of our sample firms, and as contributing factors for firms with high credit risk.

Second, we address whether differences in research tasks drive our results. Shareholders (creditors) are interested in research for accurate equity valuations (accurate default risk assessments). Since the credit rating agencies allocate more effort on default risk assessments and evaluating downside risk, they may, for example, more sceptically evaluate valuation allowances for under-reserving, or identify income-reducing interest expense, research tasks that equity analysts categorically ignore. This may drive the difference in adjusted earnings. As a robustness check, we re-perform all of our analyses using a standard adjustment topic for Moody's and equity analysts alike, the unusual and non-recurring items on the income statement. We find that all results hold. Third, we show that the gap in earnings adjustments cannot be explained by differences in the timing of adjustment information releases of the two groups of analysts. Finally, we argue that Moody's uses significant discretion in many of its adjustments, and the results are not a by-product of Moody's invariantly applying a pre-determined set of adjustments.

Our findings offer several insights on the economics of financial intermediation. Researchers have examined the effect of rating changes and watch lists on prices of stocks, bonds, and credit derivatives (Hand et al., 1992; Dichev and Piotroski, 2001; Hull et al., 2004), yet have devoted little attention to credit rating agencies' adjustments to GAAP earnings. We contribute to the emerging literature on the properties of credit rating agencies' earnings adjustments (De Franco et al., 2011; Kraft, 2011). The earnings adjustments are the only directly

comparable research output of credit rating agencies and equity analysts, enabling a clear investigation of their differential conservatism incentives and how these incentives affect the quality of their research output. We find that credit rating agencies have stronger conservatism incentives relative to equity analysts, yet these incentives do not materially distort the quality of their research output. This finding extends Beaver et al. (2006), who show that the ratings of NRSRO's are more conservative than non-NRSRO's, because NRSRO research is used for contracting/certification purposes. Nevertheless, we also present evidence suggesting that credit rating agencies yield to client fee incentives under certain settings: They optimistically rate companies that offer large realized and potential fee income, while revealing their more conservative views through their earnings adjustments. This evidence of double-speaking contributes to the growing evidence on the consequences of the "issuer-pays" compensation model of the rating industry (Corneggia et al., 2011; Becker and Milbourn, 2011).

We organize our paper as follows. The next section describes the related literature and develops our hypotheses. Section 3 describes our sample selection, and Section 4 provides empirical tests. Section 5 concludes.

2. Hypotheses development

2.1. Conservatism in earnings adjustments

The market for U.S. corporate debt securities is large and important: The total debt market capitalization amounts to $6.9 trillion whereas the total equity market capitalization is $11.7 trillion in 2009.[3] By rating the credit risk of virtually all debt securities, credit rating agencies serve two critical functions. First, they help debt investors to make informed

[3] Source: Securities Industry and Financial Markets Association and Wilshire Associates.

investment decisions (investment advisory role). Second, they facilitate regulatory oversight, portfolio governance, and private credit arrangements (certification role).

Many observers suggest that, similar to equity analysts who issue optimistic stock recommendations, rating agencies positively bias ratings in their investment advisory role (Lynch, 2009). The recent financial crisis has turned the spotlight on rating agencies' incentives to curry favour with issuers. Becker and Milbourn (2011) find that increased competition among rating agencies created a race to the bottom, where rating levels are more optimistic and less informative. Kraft (2011) documents that rating agencies generally cater to issuers with optimistic ratings if issuers' interest payments are tied to the ratings. The rating agencies are also alleged for overly optimistic ratings on structured products like asset-backed securities and insurance products, especially if the rating agencies stand to receive higher research fees (Riddiough and Zhu, 2010; Corneggia et al., 2011).

The rating agencies may also positively bias their ratings in their certification role, because they have a stated goal of stability, i.e., lowering a rating only after permanent declines in credit quality. This is because institutional investors can hold limited amounts of speculative grade debt and have to engage in costly portfolio rebalancing in the event of a rating downgrade. Furthermore, regulators and banks also demand stable ratings to avoid procyclical capital requirements, which have the potential to worsen the effects of market downturns (Loffler, 2004). This stability policy of rating agencies, which is known as "through the cycle ratings policy," produces sticky ratings that are slow to incorporate negative news about credit quality (Altman and Rijken, 2006).

Countering the incentives to produce optimistic ratings are rating agencies' incentives to produce conservative research. As gatekeepers of capital markets, regulators and auditors

demand conservative financial reporting (Watts, 2003). Regulators are conservative due to political considerations, because they are held responsible for failing to prevent large investor losses. Auditors facing litigation risk scrutinize managers' income-increasing and material assertions more critically (Nelson et al., 2002) and report qualified opinions more frequently (Krishnan and Krishnan, 1996). Thus, we expect that rating agencies have incentives to be conservative because of their certification role—similar to those of regulators and auditors (Watts, 2003; Holthausen and Leftwich, 1986). The credibility of a rating agency is hampered when a positively rated issuer or financial product defaults. Regulatory oversight makes this threat explicit. The SEC gives select rating agencies NRSRO status based on factors including market position and past integrity.[4] Moreover, the users of ratings data such as the institutional investors and financial regulators increasingly demand that ratings come from a NRSRO (Beaver et al., 2006).

The equity analysts also have incentives to be conservative, because they advise institutional investors, who make more prudent investments than retail investors do (Del Guercio, 1996; Gompers and Metrick, 2001; Hugon and Muslu, 2010). However, we predict that, in their certification role, rating agency analysts face stronger conservatism (net of optimism) incentives for the following reasons. First, regulators and investors evaluate rating agencies, but not brokerage houses, on their ability to certify the downside risk of issuers. Second, issuers have less power over rating agencies than over the brokerage houses. Almost all debt offerings are rated by rating agencies, which operate in a concentrated market; therefore,

[4] The Credit Rating Agency Reform Act of 2006 provides clear guidelines for NRSRO qualification. The rating agencies that are currently registered as NRSRO's for corporate debt issues are LACE Financial Corporation, A.M. Best Company, DBRS, Egan-Jones Company, Japan Credit Rating Agency, Rating and Investment Information, Fitch, Moody's Investor Service, and Standard and Poor's. The ratings industry is more concentrated than the brokerage industry in equity markets (Bongaerts et al., 2011). Moody's and Standard and Poor's are the largest and oldest rating agencies, rating virtually all bond issues. Fitch is the third largest, rating about half of the bond issues.

issuers cannot as effectively shop rating agencies (Bongaerts et al., 2011). Third, rating agencies, unlike brokerage houses, do not compete for investment-banking business or trading commissions. They therefore have fewer incentives to appease issuers and investors with positive ratings, though these incentives may be intensified in some circumstances, such as for issuers with large potential ratings fees (see section 2.3 below).

Our expectation of stronger net conservatism incentives for rating agency analysts over equity analysts extend Beaver et al. (2006), who find that NRSRO ratings are more conservative than non-NRSRO ratings because of the more significant certification role of NRSRO's. Yet, we expect the stronger net conservatism incentives of rating agencies to be reflected in their adjustments to GAAP financial statements rather than their ratings. This is because, unlike ratings, the adjusted earnings of rating agencies can be directly benchmarked against GAAP or the adjusted earnings definitions of equity analysts. Conservative adjusted earnings definitions of rating agencies can mitigate loss of reputation in the event of a decline in credit quality of a favourably-rated issuer. Consistent with the above prediction, Moody's cites as one primary reason to adjust reported financial statements "to reflect estimate and assumptions that we believe are more prudent" (Moody's, 2007).[5] Equity analysts do not possess similar incentives. In fact, Baik et al. (2009) find that equity analysts promote glamour stocks by making income-increasing earnings adjustments. This discussion serves as a basis for our first hypothesis.

Hypothesis 1: Adjusted earnings of credit rating agency analysts are lower than those of equity analysts.

We note that Moody's does not make a single net income adjustment but adjusts various earnings items, the net effect of which we examine in this paper. Appendix 1 explains these

[5] Moody's also cites the following three reasons to adjust company reported financials: "To apply accounting principles that we believe more faithfully capture underlying economics", "to identify and segregate effects of unusual or non-recurring items," and "to improve comparability by aligning accounting principles".

individual adjustments. Similarly, we note that Moody's does not directly map the cumulative net income adjustment into its rating process. Rather, Moody's determines corporate ratings based on several inputs, such as Sales, EBITDA/Assets, EBITDA/Interest Expense, Debt/EBITDA (Moody's, 2007), all of which are affected by adjustments that, in turn, produce differences between Moody's and equity analysts' earnings definitions.[6] The ratings and bond yields are affected by these adjustments (Kraft, 2010). Therefore, we expect that these adjustments will also be cumulatively related to ratings.

2.2. Uncertainty and conservatism in adjusted earnings

Facing significant loss of reputation and business for failing to predict default, rating agency analysts choose to err on the side of greater conservatism when there is more uncertainty about credit risk outcomes. We analyse two sources of uncertainty about credit risk. First is uncertainty over firm value, as measured by daily stock return volatility. Second is uncertainty over company prospects as going concern, as measured by leverage ratio. In contrast, equity analysts do not face as great a risk of reputation loss in uncertain environments; their optimism incentives are even greater in these circumstances (Lim, 2001). These incentive differences between rating agencies and equity analysts serve as a basis for our second hypothesis.

Hypothesis 2: The gap between the adjusted earnings of credit rating agency analysts and equity analysts is larger under conditions of greater uncertainty.

2.3. Conflict of interest and conservatism in adjusted earnings

Equity analysts bias their recommendations upwards to please company management and to gain investment banking business, but bias their forecasts less for the use of more

[6] As we note in Appendix 1, three of Moody's adjustments do not affect bottom-line earnings, which serve as the basis for comparison between Moody's and IBES. However, five of Moody's adjustments affect bottom-line net income, as well as "above-the-line" items like EBITDA, which is a typical predictor variable for ratings. Thus, differences between Moody's and IBES we identify in our paper—driven cross-sectionally by Moody's desire for reputation preservation and by potential conflicts of interest—may directly affect major inputs into Moody's ratings.

sophisticated investors (Malmendier and Shantikumar, 2009; Ertimur et al., 2010). Similarly, we expect that rating agencies will bias their ratings upwards to please company management and to keep rating levels stable, while conveying their conservative views of credit quality using earnings adjustments. Given the overarching net conservatism incentives of rating agencies relative to equity analysts, such inconsistency between different research outputs of the rating agencies is likely to be more constrained than that of equity analysts. We nonetheless expect a larger gap between earnings definitions of rating agencies and equity analysts—signalling a more pessimistic outlook of rating agencies on issuers' credit quality—when the ratings are optimistic and when rating fee income from the issuers is large. In a similar vein, Cornaggia et al. (2011) show that Moody's ratings standards deteriorate with revenue generation among the asset classes that Moody's rates. We argue that rating and research fees will be large when the principal values of the bond issues and total assets of issuers are large.[7] This leads to our third hypothesis:

> *Hypothesis 3: Given a rating level, the gap between the adjusted earnings of credit rating agency analysts and equity analysts is larger when issuers make larger debt offerings and when issuers are larger.*

2.4. Predictability of future earnings in adjusted earnings

The credit rating agencies possess an informational advantage over equity analysts, because the Regulation Fair Disclosure (Reg FD), which was enacted in 2000, did not extend its strictures to privileged communication of managerial information to rating agencies. Jorion et al. (2005) document that rating changes generate larger stock returns after Reg FD, suggesting higher informational advantages of rating agencies after Reg FD. Given that rating agencies have access to privileged information, they may be able to better identify nonrecurring items and,

[7] 86% of the revenue of Moody's Investors Service, the credit rating division of Moody's Inc., is derived from fees paid by rated issuers, while most of the remaining 14% is derived from credit research and data sold to institutional investors and issuers (Source: Moody's). Thus, research fee income from institutional investors, who may demand rating agencies' conservative views, should also be associated with larger debt issues and larger firms.

thus, generate adjusted earnings that better predict future performance. Alternatively, the conservative bias and focus on the credit risk may reduce rating agencies' ability to predict future performance, because rating agencies' adjustments will fail to reflect persistent gain items or transitory loss items. The above discussion, with opposite predictions, serves as a basis for our fourth hypothesis, which we state in null form.

Hypothesis 4: The adjusted earnings of credit rating agencies have a similar predictive ability for future company performance as those of equity analysts.

We note that all our hypotheses including Hypothesis 4 deals with *ex post* adjustments to reported GAAP earnings—and not with ratings agencies' estimates about the future earnings. This narrows the range of private information that might be reflected in earnings adjustments and the potential for differences in predictive ability for future performance.

3. Sample selection

We obtain Moody's adjustments to GAAP earnings from Moody's Financial Metrics, which provides rating-related information on all industrial U.S. companies rated by Moody's as of May 2008. The sample period is between the first quarter of 2004 and the first quarter of 2008. Moody's adjusts GAAP earnings for a number of items. Adjustments that affect net income–rather than those that shift amounts within income statement–include i) classifying as income statement items the changes in fair value of pension plan assets and obligations, pension service cost, and imputed interest on pension-related debt; ii) expensing interest capitalized during the period; iii) recognizing stock-based compensation prior to SFAS 123R; iv) reversing unusual and non-recurring income statement items; and v) "non-standard," more *ad hoc* adjustments Moody's tailors to issuers' particular circumstances. Appendix 1 explains these adjustments. We note that Moody's does not force their adjusted income statements to articulate

with their adjusted balance sheets. That is, Moody's earnings adjustments will not simply be the "by-product" of its balance sheet adjustments.

Moody's Financial Metrics reports company-reported earnings as "Reported net profit after-tax before unusual items" (*hereafter, GAAP*), which is identical to "Earnings before extraordinary items and discontinued operations (ibq)" in the Compustat Fundamentals Quarterly file.[8] Moody's Financial Metrics also reports cumulative effect of all adjustments as "Unusual & non-recurring items-adjustment, after-tax adjustment." We add the two items to define Moody's adjusted earnings and label it as *Moody's*. We obtain earnings adjustments of equity analysts using "Actuals" from the Unadjusted Summary file in the I/B/E/S database. This variable shows company-reported earnings adjusted for non-recurring items, discontinued operations, and extraordinary items defined by the majority of equity analysts following the company. To convert these per-share estimates to dollar levels, we multiply "Actuals" by the number of shares used by Compustat to compute EPS and label it as *IBES*.[9]

We then deflate *Moody's*, *IBES*, and *GAAP* by market value of equity, i.e., average number of basic shares outstanding ("cshprq" in Compustat Fundamentals Quarterly) multiplied by share price as of the first day of the fiscal quarter from CRSP. Finally, we delete outlier observations if either of the earnings differences *IBES – Moody's*, *Moody's – GAAP*, or *IBES – GAAP* exceed 5% of the market value of equity. These outliers, which constitute 3% of the sample, generally have low market value of equity (median of $821 million, relative to a median of $3,049 in the remaining sample) and would have had undue influence on our analyses due primarily to small deflator problem. The final sample consists of 3,402 firm-quarters from 784

[8] *GAAP* excludes quarterly discontinued and extraordinary items. Moody's retains financial statements as originally-reported by firms, disregarding any subsequent restatements.

[9] Our discussion with I/B/E/S staff indicates that, for companies with negative (positive) GAAP EPS, I/B/E/S Actuals are converted to a per-share amount based on common (diluted) shares outstanding used to calculate GAAP EPS.

firms, representing more than 50% data attrition from the Financial Metrics sample due to data requirements about equity analysts and GAAP earnings as well as the outlier truncation described above. Table 1, Panel A shows the quarterly breakdown of the final sample. The majority of firm-quarters are from the fourth quarter of 2006 to the fourth quarter of 2007. This is because we obtained our dataset as of May 2008, and Financial Metrics only provides a rolling window of adjustments for the rated firms, rather than the entire history of adjustments.[10]

Table 1 Panel B reports descriptives of financial variables, all winsorized at 1%. Sample firms have average (median) assets of $9.9 ($3.3) billion and average (median) market-to-book ratios of 2.94 (2.40). 14% of the sample quarters are *GAAP* loss firm-quarters. The standard deviation of daily stock returns is 2%. The sample companies have debt levels at 21% of the market capitalization of their assets, and they have on average an outstanding $7.3 billion of large debt offerings (each above $250 million in principal values) at the time of the ratings. The descriptives suggest that sample companies are larger, more profitable, and have higher growth potential than companies in the Compustat universe.

4. Research design and results

4.1. Differences among adjusted earnings and GAAP earnings

Table 1, Table B provides descriptive statistics on *IBES, Moody's*, and *GAAP*. The average *IBES, Moody's*, and *GAAP* are 1.01%, 0.91%, and 0.89% of market capitalization, respectively. The median *IBES, Moody's*, and *GAAP* are 1.37%, 1.29%, and 1.29% of market capitalization, respectively. These statistics show that Moody's earnings definitions are lower than equity analysts' earnings definitions. The GAAP earnings are slightly (significantly) lower than Moody's (equity analysts' adjustments), suggesting that both groups of analysts

[10] When a company is no longer rated due to delisting or M&A activity, it remains in the sample, explaining the small number of observations before the fourth quarter of 2006.

predominantly undo negative charges embedded in GAAP earnings. We test the mean difference between *IBES* and *Moody's* using the following model:

$$IBES_{it} - Moody's_{it} = \alpha_1 + \varepsilon_{it}$$

To test Hypothesis 1, we assess whether $\alpha_1>0$. Additionally, we test whether *IBES - GAAP* and *Moody's - GAAP* are significantly different from zero. Deviations from mean differences may be clustered by company and time; therefore, our regression model adjusts standard errors by both company and calendar quarter.

The average (median) *IBES-Moody's* is 0.10% (0.03%) of market capitalization. The difference is statistically significant at 1% in a regression framework, confirming Hypothesis 1. The adjusted earnings of Moody's analysts are systematically lower than those of equity analysts. The average (median) *IBES-GAAP* is 0.11% (0.01%) of market capitalization and significant at 1%. The average (median) *Moody's-GAAP* is 0.01% (0.00%) of market capitalization and is not statistically significant. Yet, *Moody's-GAAP* has significant variation, with standard deviation of 0.57%, suggesting that Moody's adjusts GAAP earnings for a substantial number of companies.

4.2. Specific adjustments that result in differences in earnings adjustments

Table 2, Panel A presents average levels and non-zero percentages of each of Moody's five adjustments to GAAP that impact net income. Panel A also provides average *IBES-Moody's* when each of these adjustments is non-zero; these averages can be compared to the unconditional sample average of 0.10% market capitalization to explain the incremental impact of the individual Moody's adjustments to GAAP on *IBES-Moody's*. Moody's adjustments to GAAP for capitalized interest and employee stock compensation result in larger *IBES-Moody's* (at 0.17% and 0.28% of market capitalization, respectively) than the sample average. Note, however, that

after SFAS 123R was implemented in 2005, Moody's no longer performed a stock-based compensation adjustment; that is, it conformed to GAAP. Any differences with equity analysts after that point are not therefore included in the 0.28% market capitalization figure. However, we expect that, as per Barth et al. (2011), many equity analysts continued to exclude stock-based compensation expenses even after SFAS 123R. This will then continue to produce differences between Moody's and equity analysts even after 2005.

Moody's adjustments to pension-related income items reduce GAAP income by 2% of market capitalization, yet are not associated with a higher *IBES-Moody's* than the sample average (at 0.10%). In contrast, Moody's exclusions of unusual and non-recurring GAAP "special items" result in smaller *IBES-Moody's* (at 0.05%) than the sample average, which implies that, when Moody's analysts conform to GAAP and include special items in their earnings definitions, *IBES-Moody's* is larger than the sample average. Thus, to the extent *IBES-Moody's* is driven by special item adjustments, it is likely driven by Moody's analysts' retention of transitory loss items (identified in Panel B below) that equity analysts choose to exclude. The rest of the Moody's adjustments, those for non-standard adjustments and those for hybrid securities, are infrequent and are not associated with a significant *IBES-Moody's*.

Table 2, Panel B documents the extent to which the existence of different types of GAAP special items relates with Moody's and equity analysts' adjustments. When companies report various special items, Moody's is more conservative and report earnings lower than what would be predicted by the unconditional gap of 0.10% between *IBES* and *Moody's*. Specifically, *Moody's* is lower than *IBES* when companies report in-process R&D expense (by 0.32% of market value of equity), asset write-downs (0.30%), acquisition and merger-related expense (0.26%), and restructuring costs (0.21%). Different special items may, of course, coexist, and

therefore the effect of reported special items on the earnings differences may be even larger than the univariate effects. For instance, untabulated tests show that goodwill impairment and restructuring charges often occur together.

Overall differences between *IBES* and *Moody's* are driven by a variety of adjustments on which Moody's and equity analysts disagree. Yet, nearly all the above special items, which contribute to the difference, are income decreasing, whereas other special items in Table 2 (i.e., reversal – restructuring/acquisition, gain/loss on ineffective hedges, extinguishment of debt, nonrecurring income taxes, and settlement of litigation / insurance) can be income increasing or decreasing. We interpret this as indirect evidence that rating agencies include income-decreasing special items in their earnings definitions more so than the equity analysts do.

4.3. Adjusted earnings in the presence of uncertainty

The following regression model tests Hypothesis 2, which makes predictions on how uncertainty affects earnings definitions of Moody's and equity analysts:

$$IBES_{it} - Moody's_{it} = \alpha_1 + \alpha_2 Uncertainty_{it} + \varepsilon_{it}$$

We use two proxies of *Uncertainty*. The first proxy is an indicator variable on whether daily stock return volatility during the past year is above the sample median of 0.29%. The second proxy is an indicator variable on whether the long-term debt-to-total capitalization ratio is above the industry median (relative to all Compustat firms within the firm's GICS 6-digit industry) for the calendar quarter. To test Hypothesis 2, we assess whether $\alpha_2 > 0$. The standard errors are clustered by both firm and calendar quarter. To control for the effect of credit risk, we examine the differences across the following four Moody's rating groups, with the ratings obtained from the Mergent-FISD database: Low risk (Aaa, Aa, and A), moderate risk (Baa), high risk (Ba and

B), very high risk (Caa, Ca, and C).[11] The first (last) two rating groups are considered investment (speculative) grade.

Table 3 provides empirical results. The average gap between *IBES* and *Moody's* is 0.10% of market capitalization for the full sample; 0.07% for low-risk issuers, 0.03% for moderate-risk issuers, 0.13% for high-risk issuers, and 0.28% for very-high-risk issuers. The differences suggest that Moody's is, unsurprisingly, more conservative in earnings adjustments relative to equity analysts when it issues pessimistic ratings. That is, earnings adjustments relate with the rating agencies' ultimate output, i.e., ratings. Yet, the relation between rating levels and earnings adjustments is not monotonic, pointing to the Moody's soft adjustments to ratings (Kraft, 2010).

For the full sample, *IBES–Moody's* is 0.09% of market capitalization higher for observations with return volatilities that are above the sample median (0.15%) than those that are below the industry median (0.06%). This difference is statistically significant. There are no reliable patterns across the ratings categories, and the result for the full sample is driven by observations with high-risk ratings. Similarly, *IBES–Moody's* is 0.13% of market capitalization higher for observations with debt ratios that are above the industry median (0.17%) than those that are below the industry median (0.04%). This difference is statistically significant. The result for the full sample is driven by observations with moderate-risk and high-risk ratings. In sum, the differences between *IBES* and *Moody's* are consistent with Hypothesis 2, which predicts enhanced conservatism for Moody's earnings under conditions of higher uncertainty.

[11] In order to compute the issuers' quarterly rating levels, we follow Bongaerts et al. (2011) to identify specific issues. Specifically, we only use Moody's ratings on the firm's senior fixed rate, unsecured debt obligations that do not contain special features, such as callability, putability, or sinking funds. In case of multiple debt obligations that are active during the quarter, we compute average rating level, weighted by the issue size.

4.4. Adjusted earnings in the presence of client fee incentives

To test whether client fee incentives affect rating agency conservatism, we rank firm-quarters into terciles based on issuer characteristics that are potentially associated with client fees. The credit rating agencies potentially collect more revenue from issuers as well as from sales of credit research to institutional clients when issuers have larger offering activity and when issuers are larger in total assets. We use two proxies for the client fee incentives: i) total dollar value of large debt offerings (above $250 million) that are outstanding during the fiscal quarter (to proxy for extant fee incentives), and ii) issuer's total assets (to proxy for extant and potential fee incentives).[12] Hypothesis 3 predicts that, conditional on the rating levels, *IBES-Moody's* will be greater in the tercile with highest client fee incentives. We test for *IBES-Moody's* between the highest and lowest client fee terciles using an OLS regression model, with standard errors clustered by both firm and calendar quarter. To control for firm credit risk, we also group firms into four Moody's rating partitions.

Table 4 provides empirical results for Hypothesis 3. For the firms rated low risk (Aaa, Aa, A), we expect Moody's rating optimism to be the most prevalent. In this category, we find that *IBES-Moody's* is larger by 0.12% of market capitalization for the highest debt offering tercile relative to the lowest. Similarly, *IBES-Moody's* is larger by 0.10% of market capitalization for the highest total assets tercile relative to the lowest. Both differences are significant. For the remaining rating categories, we mostly do not observe statistically significant differences between the client fee terciles, even though *IBES-Moody's* across the highest and lowest client fee terciles generally shrinks as ratings are more pessimistic. The results broadly support our predictions on incentives to cater to sophisticated institutional investors with more

[12] Xiang et al. (2011) measure higher expected rating fees using an indicator variable that takes the value of 1 if the bond size and bond issuer's issue frequency are greater than the sample median.

conservative earnings adjustments, while maintaining relations with issuers via optimistic ratings.

4.5. Predictive ability of adjusted earnings

The following regression model tests Hypothesis 4, which makes predictions on the relative ability of *Moody's* and *IBES* to explain future performance:

$$GAAPSI_{it+4} = \alpha_1 + \beta_1 Adjusted\ Earnings_{it} + \varepsilon_{it}$$

where $GAAPSI_{it+4}$ is GAAP earnings excluding special items during one-year-ahead quarterly earnings, and $Adjusted\ Earnings_{it}$ is *Moody's* or *IBES*. We choose one-year-ahead quarterly earnings to reduce the effects of seasonality and short-term earnings momentum. To assess whether *Moody's* or *IBES* better explain future income, we run the Davidson and MacKinnon (1981) J-test, assessing whether fitted values from the model above load significantly in a model using the alternative adjusted earnings definition. We use GAAPSI as the dependent variable, because we do not expect that analysts predict non-recurring items in the future.[13] This test requires one-year-ahead quarterly earnings, resulting in a dataset of 3,142 firm-quarters from 769 firms. This test is run for both the full sample and subsamples across ratings categories. The standard errors are clustered by both firm and calendar quarter.

Table 5 provides testing results for Hypothesis 4. The positive and significant coefficients on *Moody's* and *IBES* suggest that both earnings definitions predict future earnings. The question of interest in Hypothesis 4 is which earnings definition has better ability to predict future earnings. Davidson and MacKinnon (1981) J-test suggests that *Moody's* has greater predictive ability than *IBES* for the full sample. The t-statistic on predicted *Moody's* included in the *IBES* regression is statistically significant at the 1% level, while the t-statistic on predicted *IBES*

[13] Untabulated tests show similar results when the dependent variable is GAAP earnings including special items or operating cash flows.

included in the *Moody's* regression is statistically insignificant. The J-tests across the rating groups show that the result for the full sample is driven by the firms rated high risk (Ba and B) and marginally by the firms rated very high risk (Caa, Ca, and C). In contrast, *IBES* is a better predictor of future earnings when the issuer has moderate risk rating (Baa).

Overall, test results of Hypothesis 4 show that Moody's conservatism in earnings adjustments does not materially distort its ability to predict future earnings. Since information asymmetry is likely to be elevated among issuers with high risk and very high risk ratings, that Moody's forecasting power is enhanced for these issuers is consistent with Moody's obtaining privileged information as part of their exemption from Reg FD. However, *IBES-Moody's* remains positive even among issuers rated low risk (Table 3); and is greater for low-risk issuers with large bond offerings and large issuers (Table 4). These results suggest that reputational and client fee incentives, rather than privileged information, primarily drive *IBES-Moody's*, and these incentives should also contribute to Moody's conservatism for firms issuers that are rated high risk.

4.6. Alternative Explanations

Differences in Research Tasks of the Two Types of Analysts

Shareholders (creditors) are interested in research for accurate equity valuations (accurate default risk assessments). Since the credit rating agencies allocate more effort on default risk assessment and evaluating downside risk, they may, for example, more sceptically evaluate valuation allowances for under-reserving, or more carefully try to identify income-reducing interest expense from capitalized interest on self-constructed assets. This will produce relatively lower adjusted earnings on average. We assess whether differences in research tasks of rating agencies and equity analysts may produce the above empirical results. We do so in two ways.

First, we assess whether results are robust to the use of an alternative Moody's earnings definition that only includes Moody's adjustments for unusual and nonrecurring items. We expect that equity and rating agency analysts would attach equal importance to this standard adjustment category. Any systematic differences between the two would likely be driven by incentives towards relative conservatism, rather than to different research tasks between equity and credit analysis. Table 6, Panel A shows average *IBES-Moody's* as well as differences across uncertainty partitions. As in our main results, *IBES-Moody's* is positive and significant, 0.06% of market capitalization, and is greater in the presence of heightened uncertainty.

Second, Li (2010) shows that earnings definitions in longer-maturity debt contracts are more likely to exclude transitory items. Since equity is an inherently a longer maturity claim than debt, it is possible that equity analysts more frequently exclude transitory items, which are typically income-decreasing. Such difference in research tasks may explain the difference between *IBES* and *Moody's*. Countering this explanation is that Moody's has a long-horizon ratings perspective. In fact, Moody's typically adopts a five-to-ten year horizon for assessing default risk, which should mitigate the impact of debt maturity on the adjustment differences.[14] To assess the validity of these countering explanations, we compute the issue-amount-weighted time-to-maturity of the firm's senior unsecured debt obligations for each firm quarter using the Mergent FISD database. Then, we regress *IBES-Moody's* on time-to-maturity, and include credit rating indicator variables as controls, because ratings are related to both debt maturity and *IBES-Moody's*. Table 6, Panel B presents the regression results. We find no relationship between time-to-maturity and *IBES-Moody's*. The maturity of debt contracts does not change Moody's adjustments significantly to make a critical impact on *IBES-Moody's*. Overall, our results suggest

[14] http://moodys.com/ratings-process/In-a-World-of-Short-Term-Outlooks-Long-Term-Opinions-are-Vital/002004003.

that differences in research tasks between rating agencies and equity analysts do not drive our results.

Differences in Timing of Adjusted Earnings Releases

Moody's typically releases its reports ten to twelve days after 10-Q and 10-K filing dates, which is well after companies report their earnings and when earnings definitions of equity analysts are collected.[15] Hollie et al. (2005) find that firms may revise information in their preliminary earnings releases when they eventually file with the SEC. Therefore, Moody's analysts use later (and thus superior) information set than equity analysts, which could potentially explain the empirical results. We test for this alternative argument by assessing whether the results are qualitatively different when our tests use differences between preliminary earnings and 10-Q net income, pretax income, or operating income (scaled by market capitalization) as control variables. Though we generally find that *IBES-Moody's* is, indeed, significantly and positively related to the difference between preliminary earnings and 10-Q net income, including this variable in regressions does not materially change our results.

Are Moody's Adjustments Non-discretionary?

The hypotheses in this paper assume that, similar to equity analysts, Moody's analysts observe issuer characteristics and strategically adjust GAAP earnings to reflect their net conservatism incentives. Therefore, it is important to establish that Moody's analysts have discretion in producing their research, i.e., their earnings adjustments are not based on a strictly pre-determined procedure.[16] We emphasize that many of the Moody's adjustments involve discretion on the part of Moody's analysts.

[15] This is based on our discussions with Moody's staff.

[16] Alternatively, it could be argued that Moody's institutionally sets conservative standards based on its incentives and that mechanical adjustments serve the same purpose as adjustments based on individual Moody's analysts.

Moody's has described, and Appendix 1 lists, the following five of Moody's major adjustments to GAAP earnings, which impacts the bottom line (Moody's 2006): pension gains or losses, capitalized interest expensing, stock-based compensation, unusual and non-recurring income statement items, and non-standard adjustments. Although Moody's lists these five adjustments among its "standard" adjustments to firms' financial statements, only two can be deemed wholly mechanical: 1) Stock-based compensation, which require Moody's analysts to expense the fair-value of option-based compensation prior to SFAS 123R, and 2) capitalized interest expensing, which require Moody's analysts to expense any interest that issuers capitalized during a fiscal period. Although we do not predict that these two mechanical items will drive our cross-sectional predictions (Hypotheses 2 and 3) for *IBES-Moody's*, they may still serve as channels to convey Moody's on average, reputation-preserving conservatism (Hypothesis 1), as they reflect a discretionary choice by Moody's, as a firm, to produce consistently lower earnings definitions.

The remaining three adjustments require significant discretion on the part of Moody's analysts. First, unusual and non-recurring income statement adjustments require Moody's analysts to determine which items are transitory; Moody's does not publish a defined list of unusual income statement items, and states that analysts "identify unusual and non-recurring transactions and events from public disclosures, including management's discussion and analysis of operations," which suggests the analysts rely on idiosyncratic reporting choices by management, rather than a pre-defined list of adjustments. Moody's also states analysts "may also discuss those types of transactions with management to help ensure that we have considered major items and accurately quantified their effects." This again suggests significant room for analysts' discretion and consideration of the particular issuer's circumstances. Second, for

pension gain and loss adjustments, Moody's analysts must determine an incremental borrowing rate to impute interest expense on pension-related debt, and they must assess whether the management's discount rate to calculate the present-value of pension obligations is reasonable. Third, non-standard adjustments represent adjustments Moody's analysts deem necessary on a case by case basis. These adjustments usually relate to highly judgmental areas such as asset valuation allowances, impairments of assets, and contingent liabilities (De Franco et al., 2011).

Finally, the following three adjustments do not have any bottom-line impact: operating leases, securitizations, and hybrid debt-equity securities. Therefore, these adjustments will not change *IBES-Moody's*. Even in this category, securitizations require discretion on the part of Moody's analysts, because analysts determine whether assets sold to securitization trusts represent true sales rather than off-balance-sheet financing. Additionally, for hybrid securities, analysts must determine the degree to which a hybrid security represents more of a debt-like or more of an equity-like claim on the firm's cash flows.

5. Conclusion

In this paper, we compare the adjusted earnings definitions of Moody's and equity analysts. That the adjusted earnings definitions of the two groups of analysts and the underlying GAAP earnings are directly comparable *ex post* (versus other forward-looking research outputs of the analysts) enables us to assess the effects of different clientele-based incentives on analysts' research output. We show that adjusted earnings of Moody's are about 0.1% of market capitalization lower than those of equity analysts. Furthermore, although the adjusted earnings of Moody's are not statistically different than GAAP earnings, the differences between the two earnings exhibit strong cross-sectional variation. Moody's analysts appear to use more

conservative earnings choices than equity analysts, especially for adjustments involving employee stock-based compensation and capitalized interest of self-constructed assets. Moody's conservatism additionally derives from its analysts' reluctance, and equity analysts' tendency, to exclude from their earnings definitions negative items such as in-process R&D expense, write-downs, M&A-related costs, and restructuring costs. We also show a larger gap between the earnings definitions of Moody's and equity analysts under settings of high corporate uncertainty, i.e., when stock prices are volatile and when there exist high levels of company debt. Similarly, there is a larger gap between earnings definitions of Moody's and equity analysts for companies that have high credit risk. These findings suggest stronger conservatism incentives of Moody's due to their certification role in the credit markets.

We also find evidence consistent with credit rating agencies issuing optimistic ratings but revealing their reserved views of the firm's credit quality in earnings adjustments—but only for firms with large debt offerings and large total assets. Moody's stands to receive high research and rating fees from this subset of firms under the "issuer-pays" model of the rating industry. Our finding is akin to the phenomenon of "speaking in two tongues" documented for equity analysts (Malmendier and Shantikumar, 2009; Ertimur et al., 2010).

Finally, we show that Moody's earnings predict future earnings more accurately relative to equity analysts' earnings definitions, though this effect is concentrated in firms with high credit risk. This is consistent with Moody's analysts using their privileged access to information to produce earnings that include more persistent (and exclude less persistent) gain or loss items for these firms. Overall, however, it suggests that Moody's analysts' conservatism incentives thus do not materially distort the information content of their adjusted earnings, relative to equity analysts.

We close with a caveat. We test our hypotheses using only Moody's adjusted earnings, because earnings adjustments of other credit rating agencies are not available. While there is reason to expect that large credit rating agencies, i.e., Moody's, S&P, and Fitch, have similar research output (Bongaerts et al., 2011), smaller credit rating agencies may have lower conservatism incentives, reducing the generalizability of our findings to the credit rating industry as a whole.

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Appendix 1: Moody's Income Statement Adjustments

This Appendix describes Moody's income statement adjustments. Moody's (2006) provides details on its methodology. De Franco et al. (2011) provide details about the effect of each adjustment on specific income statement line items.

1) Underfunded defined benefit pensions: Under GAAP, pension expenses are determined by smoothing the recognition of actuarial gains and losses on pension assets and debt as well as service cost. Moody's recognizes as debt the underfunded pension amount, i.e., the projected benefit obligation (PBO) and the fair value of pension assets. This amount cannot be negative. Moody's defines pension expense as service cost plus the imputed interest on the PBO, minus the actual earnings on plan assets. This amount cannot be negative. Moody's reverses GAAP pension costs, i.e., amortization of prior service cost, and actuarial gains and losses.

2) Capitalized interest: Under GAAP, interest costs related with the financing of self-constructed assets are capitalized. Moody's reverses this capitalization and expenses interest capitalized during the period.

3) Employee stock compensation: Prior to SFAS 123R, many firms did not expense the fair value of employee stock options. For these observations, Moody's expenses the fair value of employee stock options.

4) Unusual and non-recurring (special) items: Under GAAP, various unusual and non-recurring items are reported. Moody's reverses these items, net of their tax effect.

5) Non-standard adjustments: Moody's makes non-standard adjustments based on how it believes the definitions and assumptions related to company earnings will reflect economic reality. These adjustments are mostly related to asset valuation allowances, asset impairments, and contingent liabilities. These adjustments are fully subject to Moody's analysts' discretion.

Apart from the above adjustments that change net income definitions, Moody's also makes the following adjustments that shift items within the income statement, but do not change the net income:

6) Hybrid securities: Hybrid securities, such as preferred stock, exhibits attributes of both debt and equity. Moody's divides the value of hybrid securities to debt and equity, the fraction of which depends on Moody's own judgment. Since this item shifts amounts to and from interest expense and preferred dividends, it has no bottom-line effect.

7) Operating leases: GAAP does not recognize operating leases as liabilities. Moody's reverses this practice, and treats all operating leases as capital leases. This adjustment reduces operating expenses (i.e., rent) and increases interest expense.

8) Securitizations: Under GAAP, companies may report as sales the transfer of assets to securitization trusts. Moody's argues that companies retain asset risks after securitizations and therefore reclassifies securitizations as collateralized borrowings. Moody's imputes interest expense on deemed financing from securitizing assets, but it offsets this expense with a reduction in operating expenses.

Moody's also makes the following adjustment that does not affect any item in the income statement:

9) Inventory method: The LIFO method, which is allowed under GAAP, understates the value of inventory. Moody's adjusts the value of inventory by adding firms' LIFO reserve to balance sheet inventory.

Appendix 2: Variable Definitions

Variable	Definition (*Compustat* variables in parentheses)
Assets	As reported book value of assets from *Moody's*.
GAAP	Earnings before discontinued operations and extraordinary items (ibq), or equivalently "Reported net profit after-tax before unusual items" from *Moody's Financial Metrics*. This figure is deflated by market capitalization, i.e., number of shares used to calculate basic EPS (cshprq) multiplied by price per share as of the beginning of fiscal quarter.
GAAPSI	Earnings before discontinued operations and extraordinary items (ibq) before the following *Compustat* items: After-tax settlement from litigation or insurance (setaq), debt extinguishment gains and losses (dteaq), gains and losses (glpq), restructuring charges (rcaq), write-downs (wdaq), in-process research and development (rdip), and other special items (spioaq). This figure is deflated by market capitalization, i.e., number of shares used to calculate basic EPS (cshprq) multiplied by price per share as of the beginning of fiscal quarter.
IBES	I/B/E/S Actual as obtained from Unadjusted Summary file. The figure is first multiplied by the number of diluted shares used to calculate EPS (cshfdq) when income (epsfiq) is positive, and by the number of basic shares (cshprq) when income is negative, which is based on I/B/E/S earnings scaling practices. This figure is then deflated by market capitalization, i.e., number of shares used to calculate basic EPS (cshprq) multiplied by price per share as of the beginning of each fiscal quarter.
Large Debt Offerings	Sum of large debt offerings (those above $250 million in principal value), whose offering date (maturity date) is before (after) the end of fiscal quarter.
Leverage	Ratio of total debt (long-term debt plus debt in current liabilities) divided by total debt plus equity market capitalization as of two months after the end of the fiscal-quarter (three months for fiscal quarter four).
Loss	Percentage of negative GAAP earnings.
Market-to-book	Ratio of equity market capitalization to common shareholders' equity, with prices taken two months after the end of each quarter (three months for the fourth fiscal quarter).
Moody's	Moody's adjusted earnings, incorporating all Moody's adjustments to net income. This number is deflated by the number of shares used to calculate basic EPS (cshprq), multiplied by the price per share as of the beginning of each quarter.
Return	Market-adjusted return from *CRSP*, for the three months ending two months after the end of each fiscal quarter (three months for fiscal quarter four).
Stock volatility	Standard deviation of daily stock returns for the year ending two months after the end of each fiscal quarter (three months for fiscal quarter four).
Time-to-maturity	Issue-amount-weighted time-to-maturity of the firm's outstanding senior and unsecured debt obligations from the Mergent FISD database for each firm quarter.

Table 1: Sample

Panel A: Sample quarters

	Fiscal Quarter 1	Fiscal Quarter 2	Fiscal Quarter 3	Fiscal Quarter 4	Total
2004	13	16	21	29	79
2005	36	43	47	40	166
2006	49	46	75	541	711
2007	620	635	617	566	2,438
2008	8	0	0	0	8
Total	726	740	760	1,176	3,402

Panel B: Descriptive statistics

	Mean		Std dev	p1	p25	p50	p75	p99
Financials								
Assets (bn. $'s)	9.85		19.86	0.26	1.44	3.26	9.61	144.40
Market-to-book	2.94		5.43	-22.80	1.49	2.40	3.80	33.18
Loss (%)	0.14		0.35	0.00	0.00	0.00	0.00	1.00
Stock volatility	0.02		0.01	0.01	0.01	0.02	0.02	0.04
Leverage (%)	0.21		0.14	0.00	0.11	0.18	0.30	0.56
Large debt offerings (bn. $'s)	7.28		13.99	0.00	0.00	1.82	7.48	80.00
Earnings definitions (% of Mcap)								
IBES	1.01		2.25	-13.33	0.83	1.37	1.83	4.85
Moody's	0.91		2.35	-13.38	0.68	1.29	1.82	5.03
GAAP	0.89		2.36	-13.26	0.64	1.29	1.83	5.08
IBES – Moody's	0.10	***	0.76	-2.21	-0.03	0.03	0.20	3.07
Moody's – GAAP	0.01		0.57	-1.61	-0.07	0.00	0.01	2.39
IBES – GAAP	0.11	***	0.78	-2.14	-0.01	0.01	0.15	3.24

***Notes*:** Panel A lists the number of observations per quarter for the 3,402 sample firm-quarters, representing 788 unique firms. Panel B presents descriptive statistics of company financials and earnings definitions, IBES, Moody's, and GAAP. Earnings are deflated by market capitalization at the beginning of the quarter. We exclude observations if any of the three earnings differences (i.e., IBES-Moody's, Moody's-GAAP, or IBES-GAAP) is above 5% of market capitalization. All continuous variables are winsorized at the 1st and 99th percentiles. Tests of mean differences use standard errors adjusted for firm and calendar-quarter clusters. ***, **, and * denote significance at 1%, 5%, and 10%, respectively. Appendix 2 provides variable definitions.

Table 2: Moody's adjustments and earnings definitions

Panel A: Moody's standard adjustments to GAAP

	Mean	% non-zero adjustment to GAAP	IBES – Moody's when adjustment to GAAP is non-zero
Underfunded defined benefit pensions	-0.02	66%	0.10 ***
Capitalized interest	-0.02	24%	0.17 ***
Employee stock compensation	-0.01	5%	0.28 ***
Non-standard adjustments	0.00	5%	0.13
Unusual and non-recurring (special) items	0.05	33%	0.05 *

Panel B: Earnings definitions in presence of GAAP special items

	IBES – Moody's when special item is non-zero		Moody's – GAAP when special item is non-zero		IBES – GAAP when special item is non-zero	
	Mean	% positive	Mean	% positive	Mean	% positive
In process R&D expense	0.35 ***	84.1	0.34 ***	62.2	0.69 ***	92.7
Write-downs	0.30 ***	67.7	0.12 *	37.5	0.42 ***	72.6
Acquisition/Merger	0.26 ***	71.5	0.05	42.7	0.31 ***	71.9
Reversal (Restructuring/Acquis.)	0.25	69.8	0.10	38.5	0.35 **	67.0
Restructuring cost	0.21 ***	69.1	0.07 **	41.6	0.28 ***	72.0
Other special items	0.15 **	63.4	0.07 **	37.9	0.22 ***	62.9
Gain/loss on ineffective hedges	0.11	62.7	0.02	29.9	0.12	56.8
Settlement (Litigation/insurance)	0.08	62.4	0.06	37.3	0.14	61.9
Extinguishment of debt	0.07	61.8	0.13	43.2	0.21 *	63.7
Nonrecurring income taxes	0.03 *	54.4	-0.01	35.3	0.01 ***	53.0
Impairment of goodwill	0.01	53.3	0.22 **	42.7	0.23	62.7

***Notes*:** Panel A presents descriptive statistics on the Moody's standard adjustments on GAAP net income, with all items scaled by market capitalization. Appendix 1 describes Moody's adjustments. Panel B presents differences between the earnings definitions and percentage of positive observations in the presence of after-tax special items in *Compustat* database. We exclude observations if any of the three earnings differences (i.e., IBES-Moody's, Moody's-GAAP, or IBES-GAAP) is above 5% of market capitalization. All continuous variables are winsorized at the 1st and 99th percentiles. Tests of differences use standard errors adjusted for firm and calendar-quarter clusters. ***, **, and * denote significance at 1%, 5%, and 10%, respectively. Appendix 2 provides variable definitions.

Table 3: Earnings differences based on uncertainty partitions

	Full sample	Low risk ratings Aaa, Aaa, A	Moderate risk ratings Baa	High risk ratings Ba, B	Very high risk ratings Caa, Ca, C
	(*n*=3,402)	(*n*=527)	(*n*=924)	(*n*=1,740)	(*n*=211)
IBES – Moody's	0.10 ***	0.07 ***	0.03 ***	0.13 ***	0.28 **
IBES	1.01	1.55	1.43	1.07	-2.63
Moody's	0.91	1.48	1.40	0.95	-3.02
IBES – Moody's					
High stock volatility	0.15 ***	0.04 **	0.03	0.16 ***	0.24
Low stock volatility	0.06 ***	0.10 ***	0.02	0.10 ***	0.32
High – Low	0.09 ***	-0.06	0.01	0.06 *	-0.08
IBES – Moody's					
High leverage	0.17 ***	0.07 **	0.07 **	0.19 ***	0.33
Low leverage	0.04 *	0.07 ***	-0.01	0.06 **	0.23 **
High – Low	0.13 ***	0.00	0.08 **	0.13 ***	0.09

***Notes*:** The table presents average IBES – Moody's for subsamples partitioned across rating groups and the following two uncertainty variables: i) Stock volatility is the standard deviation of daily stock returns for the year ending two months after the fiscal quarter end (three months for fiscal quarter four); and ii) Leverage is the ratio of total debt (long-term debt plus debt in current liabilities from *Compustat*) divided by total debt plus equity market capitalization as of two months after the end of fiscal quarter (three months for fiscal quarter four). The high and low stock volatility (leverage) subsamples are formed with respect to the median volatility of the sample (median leverage of the GICS industry). We exclude observations if any of the three earnings differences (i.e., IBES-Moody's, Moody's-GAAP, or IBES-GAAP) is above 5% of market capitalization. All continuous variables are winsorized at the 1st and 99th percentiles. Tests of differences use standard errors adjusted for firm and calendar-quarter clusters. ***, **, and * denote significance at 1%, 5%, and 10%, respectively. Appendix 2 provides variable definitions.

Table 4: Speaking with two tongues

IBES – Moody's	Full sample	Low risk ratings Aaa, Aaa, A	Moderate risk ratings Baa	High risk ratings Ba, B	Very high risk ratings Caa, Ca, C
	(*n*=3,070)	(*n*=501)	(*n*=891)	(*n*=1,469)	(*n*=209)
Large debt offerings					
Largest tercile	0.10	0.13	0.02	0.19	-0.06
Middle tercile	0.15	0.05	0.05	0.20	0.58
Smallest tercile	0.09	0.01	0.01	0.10	0.41
Largest-Smallest tercile	0.01	0.12 ***	0.02	0.09	-0.47 *
Assets					
Largest tercile	0.14	0.13	0.07	0.27	0.10
Middle tercile	0.05	0.06	0.01	0.08	0.33
Smallest tercile	0.13	0.03	0.00	0.08	0.50
Largest-Smallest tercile	0.01	0.10 *	0.07	0.19 *	-0.40

***Notes*:** The table presents average IBES – Moody's for subsamples partitioned across rating groups and the following two client fee incentive variables: i) Large debt offerings is the total dollar amount of large debt offerings (those above $250 million in principal value) whose offering date (maturity date) is before (after) the fiscal-quarter end; and ii) Assets is total assets at the end of each firm-quarter. We exclude observations if any of the three earnings differences (i.e., IBES-Moody's, Moody's-GAAP, or IBES-GAAP) is above 5% of market capitalization. All continuous variables are winsorized at the 1st and 99th percentiles. Tests of differences across terciles use standard errors adjusted for firm and calendar-quarter clusters. ***, **, and * denote significance at 1%, 5%, and 10%, respectively. Appendix 2 provides variable definitions.

Table 5: Earnings prediction tests

	Full sample		Low risk ratings Aaa, Aaa, A		Moderate risk ratings Baa		High risk ratings Ba, B		Very high risk ratings Caa, Ca, C	
	(*n*=3,142)		(*n*=508)		(*n*=893)		(*n*=1,560)		(*n*=181)	
IBES	1.27	***	0.46		0.75	***	1.08	***	1.28	***
	(7.29)		(0.86)		(8.26)		(4.79)		(4.25)	
Intercept	-1.59	***	0.61		-0.15		-1.78	***	-4.27	***
	(3.53)		(1.00)		(1.52)		(3.40)		(2.49)	
R^2	15.8%		1.1%		7.6%		8.5%		20.7%	
Moody's	1.23	***	0.46		0.66	***	1.06	***	1.28	***
	(7.74)		(1.48)		(5.61)		(5.68)		(4.11)	
Intercept	-1.42	***	0.66	**	0.00		-1.64	***	-3.72	**
	(3.05)		(2.72)		(0.02)		(2.95)		(2.17)	
R^2	16.4%		1.5%		7.1%		9.0%		21.7%	
J-test for relative explanatory power										
T-stat on predicted IBES values included in Moody's regression	1.54		0.05		2.38		0.93		0.58	
T-stat on predicted Moody's values included in IBES regression	3.74		1.20		0.99		3.87		1.61	

***Notes*:** The table presents results for regressing four-quarter ahead quarterly earnings before discontinued operations and extraordinary items, $GAAPSI_{t+4}$, on $IBES_t$ and $Moody's_t$. The results of the Davidson and McKinnon (1981) J-test are reported below each set of results. We exclude observations if any of the three earnings differences (i.e., IBES-Moody's, Moody's-GAAP, or IBES-GAAP) is above 5% of market capitalization. All continuous variables are winsorized at the 1st and 99th percentiles. T-statistics are based on standard errors clustered by both firm and calendar quarter. ***, **, and * denote significance at 1%, 5%, and 10%, respectively. Appendix 2 provides variable definitions.

Table 6: Research task differences between Moody's analysts and equity analysts

Panel A: Earnings difference based on uncertainty partitions, Moody's adjusted only for unusual income statement items

	IBES – Moody's (*n*=3,402)	
	0.06	***
High stock volatility	0.10	***
Low stock volatility	0.03	*
High - Low	0.07	**
High leverage	0.12	***
Low leverage	0.01	
High - Low	0.11	***

Panel B: Regression of IBES – Moody's on time-to-maturity

	Dependent variable: IBES – Moody's (*n*=1,810)	
	All differences	Only unusual income item differences
Time-to-maturity	0.013	0.014
	(0.82)	(1.03)
Intercept	0.004	-0.045
	(0.03)	(0.34)
Credit rating indicators	Yes	Yes
R^2	6.0%	8.0%

***Notes*:** Panel A presents average IBES – Moody's across the sample partitioned by the two uncertainty variables defined in Table 3, where Moody's only incorporates unusual income statement adjustments. Panel B presents results of a regression of IBES – Moody's on the issuer bonds' value-weighted average time-to-maturity (in years) and Moody's credit rating indicators. We exclude observations if any of the three earnings differences (i.e., IBES-Moody's, Moody's-GAAP, or IBES-GAAP) is above 5% of market capitalization. All continuous variables are winsorized at the 1st and 99th percentiles. Tests of differences use standard errors adjusted for firm and calendar-quarter clusters. ***, **, and * denote significance at 1%, 5%, and 10%, respectively. Appendix 2 provides variable definitions.