Do Bondholders Influence Corporate Disclosures?

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Job Market Paper

Abstract

In compliance with recent legislation from the Dodd-Frank Wall Street Reform and Consumer Protection Act (Dodd-Frank), the Office of the Comptroller of the Currency (OCC) passed a final rule in June 2012 which requires banks and savings associations to actively monitor and assess their debt investments rather than passively relying on credit ratings. The OCC specifically directs these institutions to examine default risk by focusing on "operating and financial performance". I utilize this regulatory change to examine how greater demand for information by major institutions impacts the corporate disclosures of issuers. I focus on forward looking management earnings forecasts (MEFs) and find greater bond market reaction to MEFs after the OCC rule. The increase in informativeness corresponds with greater ex-post accuracy of MEFs and more precise forecasts (Lo, 2014). The improvement in the accuracy and informativeness of MEFs is not driven by earlier events and is greater for issuers where more information is demanded by banks; i.e. riskier issuers, firms which subsequently issue new debt, and firms located in cities where banks are headquartered. These results suggest that greater demand for information by bondholders has a significant impact on the quality of issuer's forward looking corporate disclosures.

Keywords: Dodd-Frank, OCC, MEFs, information quality, credit ratings

Do Bondholders Influence Corporate Disclosures?

1. Introduction

The bond market is dominated by institutions who are arguably sophisticated and likely to influence a firm's public information production[2]. While prior research suggests that bondholders rely on corporate disclosures (Datta and Dhillon, 1993; Jiang, 2008; Easton, Monahan and Vasvari, 2009; Shivakumar et al., 2011), it is unclear whether this reliance influences how firms report these disclosures. Firms may perceive the importance of corporate disclosures to be less significant to bond investors because they already supply private information to credit rating agencies (CRAs). Given the availability of debt ratings which are potentially more informative regarding firm default probabilities, firms may have less reason to believe that public disclosures matter to the bond market.

With debt issuances being the most significant form of financing[3], investigating the influence of bondholders on corporate disclosures is an important topic. Identifying how bond investors influence corporate disclosures is challenging given their endogenous relationship. For instance, it is uncertain whether bondholders influence corporate disclosures or if bondholders prefer firms with differing informational environments. To address this issue, I utilize a recent regulatory change which reduces bondholder's reliance on credit ratings and directs them to commit to greater due diligence on debt investments. Using this exogenous increase in demand

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[2] Approximately 95 percent of bondholders are institutional investors (Jiang, 2008). Prior research uses high institutional ownership to proxy for investor sophistication and richer firm information environments (e.g., Ayers and Freeman 2003; Bartov et al. 2000; Battalio and Mendenhall 2005; Collins et al. 2003; Jiambalvo et al. 2002; Walther 1997).

[3] In 2010, 1.0 billion in U.S. bond issuances compared with 231 billion in equities (Sifma Research).

for information for bondholders, I examine whether firms have greater incentives to improve the quality of their corporate disclosures[4].

As part of the Dodd-Frank Wall Street Reform and Consumer Protection Act (Dodd-Frank) passed in July 2010, section 939a requires that all federal agencies review their current regulations which reference credit ratings and identify alternative standards of creditworthiness[5]. The response from the Office of the Comptroller of the Currency (OCC) has been particularly significant and decisive. The OCC, which sets standards for all banks and savings associations, specified on June 13, 2012 that credit ratings issued by external CRAs can no longer be solely relied upon to determine if a security is investment grade. All banks and savings associations must use their own due diligence to fully assess an issuer's repayment ability.

The OCC decision changes the way banks conduct securities oversight and requires banks to actively monitor and assess their debt investments rather than passively relying on credit ratings. Specifically, the OCC's general guidelines for credit risk assessment of corporate bonds calls for the examination of default risk and capacity to service debt by "assessing operating and financial performance". This paper examines how a shift to more active securities oversight through the evaluation of financial performance impact issuer's corporate disclosures. To assess and update beliefs on default risk, banks are limited in terms of the information available to them for analysis. Investment divisions within banks cannot access issuer's private information and are more likely to turn towards corporate disclosures. Chief among these disclosures are earnings related disclosures such as financial reports and management earnings forecasts (MEFs). I focus on MEFs for several reasons. First, unlike earnings announcements,

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[4] While theory suggests benefits associated with "increased levels of disclosures", this can be broadly interpreted as either an increase in the quantity of disclosures or an increase in the quality of disclosures (Leuz and Verrechia, 2000).

[5] See section 3 for a summary of Dodd-Frank and a detailed description of the each federal agencies response to section 939a.

which are relatively rigid and constrained to quarterly and annual releases, MEFs offer greater flexibility to communicate information in a timely manner (Ball and Shivakumar, 2008). Leuz and Verrechia (2000) also indicate that examining the economic consequences of financial reporting is difficult given that domestic firms are already constrained by U.S. Generally Accepted Accounting Principles (U.S. GAAP). Lastly, Shivakumar et al. (2011) find that MEFs are more price-relevant to credit markets than audited earnings numbers. Banks are therefore more likely to turn to forecasted earnings to update beliefs on future default rates.

Increased demand for MEFs will improve the quality of these disclosures because it changes the cost benefit analysis of firms which provide this information. Higher quality disclosures can lower information asymmetry (Diamond and Verrecchia, 1991) and result in lower bid-ask spreads (Welker, 1995; Leuz and Verrecchia, 2000), and lower cost-of-capital (Botosan, 1997; Sengupta, 1998; Leuz and Verrecchia 2000; Graham, Harvey and Rajgopal, 2005). However, preparing disclosures involves direct costs and can also damage a firm's competitive position (Verrecchia, 1983) and subject firms to litigation risk (Cao and Narayanamoorthy, 2011). Greater demand for MEFs increases the potential benefits of disclosing. As a result of greater incremental benefits, management may invest more in their disclosures which will improve the quality of MEFs[6].

Using a comprehensive sample of MEFs from 2010 to 2013, I first examine the overall market reaction to MEFs. Although the OCC decision applies broadly only to banks and savings associations, this subset of significant institutions likely drives the debt market. According to U.S. Flow of Funds Accounts, as of Q3 2013, banks and savings associations held over $770

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[6] Greater incremental benefits may induce firms to improve the quality of disclosures and also increase it's quantity. However, the prediction on quantity is mixed due to increased litigation costs from not being able to a meet a forecast (see hypothesis section for a more detailed discussion).

billion of outstanding corporate and foreign bonds, more than the bond holdings of both private and public pension funds.

The OCC mandate requiring banks to assess financial performance through means other than reliance on credit ratings increases the overall market reaction to MEFs. I find increased informativeness of MEFs in the post-OCC announcement period when compared to the pre period.

Why does the informativeness of MEFs increase? Under efficient markets, greater market response implies that MEFs are of better quality and that they better reflect fundamental performance. However, if investors rely less on credit ratings and more on alternative sources of information, increased informativeness may merely reflect greater weight placed on these disclosures (Dehaan, 2013). To determine if increased informativeness corresponds with improved quality, I examine the accuracy of MEFs. Being that MEFs can be compared to actual ex-post earnings, I test the accuracy of MEFs and find that compared with subsequent earnings, MEFs are more accurate in the post announcement period. These results suggest that greater informativeness corresponds with more accurate disclosures.

The incentive to provide better information will likely vary with demand for information by banks. I provide additional evidence to better tie the overall results with incentives to provide better quality disclosures by examining these variations in demand for information. OCC guidance states that "high quality investments generally will not require the same level of review as investments further down the credit quality spectrum". The OCC's guidance highlights that due diligence and demand for information should vary given the risk of an issuer. If the risk of default is low, the need for costly credit analysis is negated given that full and timely repayment of principal and interest is expected. Directing banks to focus on riskier issuers makes sense in

terms of balancing the burden of due diligence with the benefits of more informed investment decisions. To examine how demand for information varies with the risk of issuers, I partition the sample based on an issuer's credit rating. High investment grade securities will likely not warrant as much demand for information as securities which are near the speculative grade boundary.

The incentive for issuers to provide better corporate disclosures is also likely to vary if they anticipate future debt issuances. For new issuances, direct interest savings result when cost of capital is reduced through an improvement in the information environment. The incentive to provide better disclosures may also be greater for issuers where banks own relatively more debt. I use proximity to bank headquarters as a proxy for relative debt ownership by banks.

I find that the main results are stronger for the subset of firms with credit ratings near the speculative grade boundary, for firms which issue new debt within a year of an MEF, and for firms located near more bank headquarters. There is both greater market reaction and greater accuracy in the MEFs of these particular firms.

I perform several additional tests. First, it is possible that the results are driven by earlier events. Greater demand for alternatives sources of information in lieu of credit ratings may have begun as a result of the financial crisis which damaged the credibility of CRAs. However, I do not find that there is a trend of greater informativeness or improved accuracy of MEFs starting from the end of the financial crisis. I also examine changes in forecast precision. If managers are investing more into the quality of disclosures, improved accuracy should correspond with greater precision. Following Lo (2014), I find that MEFs become more precise in the post period.

This paper's direct contribution provides evidence that as bondholders turn to forecasted earnings as a source of information, the quality of these corporate disclosures improves.

Demand for this source of information improves the quality of this information set. While existing studies have shown that accounting information is relevant to bondholders (Datta and Dhillon, 1993; Jiang, 2008; Easton, Monahan and Vasvari, 2009), this study suggests that bondholders can influence the quality of accounting information. This unique finding suggests that the quality of disclosures can be influenced by investors other than equity holders[7].

This paper also builds on our understanding of recent Dodd-Frank legislation. Arguably the most significant piece of legislation since the Sarbanes Oxley Act, understanding the impact of Dodd-Frank is relevant to policy makers, practitioners and academics. A recent study has suggested that certain provisions which increase the liability of CRAs may have unintended consequences (Dimitrov, Palia and Tang, 2014). Rather than discipline CRAs, increased litigation risks lead to lower and less informative ratings. This study suggests that efforts to reduce bondholder's reliance on ratings can have spillover effects which impact general corporate disclosures. While Dodd-Frank's intent was merely to encourage better investment decisions by bondholders, the quality of forecasted earnings has improved as a result of greater demand for information. In this sense, the improvement in the quality of corporate disclosures may also be an unintended consequence.

The rest of the paper is organized as follows. Section 2 contains a literature review and hypothesis development. Section 3 provides a brief summary of each federal agencies response to section 939a of Dodd-Frank. Section 4 presents the data and methodology. Section 5 discusses the results and section 6 concludes.

2. Literature Review and Hypothesis Development

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[7] Existing research has largely focused on the influence of institutional equity holders on a firm's information environment (e.g., Healy et al., 1999; Bushee and Noe, 2000; Ajinkya et al., 2005; Boone and White, 2014).

2.1. Literature Review

This paper builds on prior work related to MEFs, the information content of credit ratings and the reliance and regulation of credit ratings. I include a brief literature review on these related topics.

Early work on MEFs have shown that they are influential and affect stock prices (Pownall et al., 1993), analysts' forecasts (Baginski and Hassell 1990) and bid-ask spreads (Coller and Yohn, 1997). Being that MEFs can be compared to actual ex-post earnings, research has examined the accuracy MEFs. Rogers and Stocken (2005) find that the accuracy of MEFs varies depending on forecast difficulty. Recent studies have also indicated a possible desire to issue pessimistic forecasts in an attempt to walk-down market expectations (Bergman and Roychowdhury, 2008; Cotter et al., 2006; Matsumoto, 2002). Investors also appear to anticipate predicated errors, with market response varying with predicted forecast errors for good news forecasts (Rogers and Stocken, 2005). Ng et al. (2013) also find that forecast credibility mitigates the magnitude of investor under-reaction to forecast news.

Credit ratings incorporate public and private information and are represented as a summary letter grade which signals future default probabilities. Research has shown significant market reaction to ratings changes (Holthausen and Leftwich, 1986; Hand, Holthausen, and Letfwich, 1992; Dichev and Piotroski, 2001). Credit ratings are also correlated with bond yields (Kao and Wu, 1990) and predict future operating performance (Ederington and Goh, 1988). Despite the importance of credit ratings to market participants, CRAs have also been shown to issue biased ratings (Jiang, Stanford, and Xie, 2012; Griffin and Tang, 2011; Strobl and Xia, 2012). Dehaan (2013) finds that after the financial crisis, investors rely less on ratings and place more weight on financial reports. Dehaan (2013) does not attribute his findings to regulatory

influences and does not claim that the quality of financial reporting improves. This paper examines the effect of recent regulation requiring major institutions (banks and savings associations) to conduct their own credit analysis instead of passive reliance on credit ratings. I examine the informativeness and accuracy of forecasted earnings and tie these findings to an improvement in the quality of these disclosures due to increased demand for information.

In response to the financial crisis, congress passed Dodd-Frank and included provisions which increase the liability of CRAs for inaccurate ratings. However, a recent study by Dimitrov, Palia and Tang (2014) suggests that instead of disciplining CRAs to provide more accurate ratings, CRAs protect themselves by issuing lower and less informative ratings. This paper extends research examining the effects of recent Dodd-Frank legislation by examining another provision which requires banks to conduct their own credit analysis instead of relying only on credit ratings. This paper ties together research on MEFs, Dodd-Frank legislation, and credit ratings by examining whether the quality of forward looking corporate disclosures improve as major institutions rely more on this source of information.

2.2. Hypothesis Development

To comply with the OCC rule requiring active due diligence of debt securities, banks will seek information to assess financial performance and ascertain default probabilities. However, in attaining information related to default probabilities, banks are limited in terms of the information that they have access to. Unlike CRAs, the investment divisions of banks do not have access to private information or internal forecasts[8]. One alternative would be to turn to financial reports which contain indicators which have traditionally been used in debt contracting.

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[8] Ivashina and Sun (2011) suggest that banks may be utilizing private information acquired in the loan market to trade on securities. However, such practices of trading on the basis of material non-public information are illegal and therefore unlikely to be used as compliance with OCC rules.

However, financial reports are backward looking historical accounts of performance and are constrained to quarterly and annual releases. Voluntary disclosures, such as MEFs, can be updated when new information arrives and are forward-looking forecasts. MEFs have also been cited as a source of information used by CRAs[9] and would therefore be a likely source of information which updates beliefs on future default probabilities. Shivakumar et al. (2011) also find that MEFs are more value relevant to credit markets than earnings announcements.

Increased demand for forecasted earnings will alter the incentives of firms which provide this information. The incentive to issue forecasts and provide information is driven in part by the desire to lower information asymmetry between managers and investors. Lower information asymmetry is desirable because it is associated with higher liquidity (Diamond and Verrecchia, 1991), lower bid-ask spreads (Leuz and Verrecchia, 2000), and lower cost-of-capital (Botosan, 1997; Sengupta, 1998; Leuz and Verrecchia 2000). Greater demand for voluntary disclosures increases the potential benefits of disclosing.

Disclosures also involve direct costs and subject firms to litigation risk (Graham et al., 2005; Cao and Narayanamoorthy, 2011) and proprietary costs (Verrecchia, 1983). I do not expect direct or proprietary costs per unit of disclosure to be greater than the potential benefits of disclosing. However, litigation costs may be potentially higher. Specifically, greater reliance on MEFs by major institutions may subject a firm to increased litigation costs if they cannot meet a forecast. Therefore, the prediction for the quantity of MEFs after the OCC rule is unclear because while the benefits of disclosures have increased, litigation costs may make firms more reluctant to give forecasts. However, while increased litigation costs may decrease the quantity

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[9] Standard & Poor's notes that the decision to change the outlook on Nokia's was partly due to management forecast revisions (Standard & Poor's, 2010).

of MEFs, litigation concerns should not decrease the overall quality of MEF reporting[10]. Given

greater benefits from disclosures, I anticipate that the quality of MEFs will improve as banks rely

more on this information set:

> H1: The quality of management earnings forecasts will increase following the OCC announcement that prohibits banks and savings associations from relying solely on credit ratings.

3. Dodd-Frank Wall Street Reform and Consumer Protection Act

Subtitle C of Dodd-Frank, "Improvements to the Regulation of Credit Rating Agencies",

contains nine separate sections (931-939) related to CRAs. These provisions can be generally

categorized as addressing litigation of CRAs, internal controls and disclosure, regulatory

oversight and reliance on credit ratings[11]. This paper focuses on the effect of section 939a which

addresses regulatory reliance on credit ratings and requires that all federal agencies review their

current regulations which reference credit ratings and identify alternative standards of

creditworthiness.

As of the writing of this paper, several federal agencies have issued final rules in

response to section 939a. See Appendix A for a summary of all rules. In July 2011, the

Commodity Futures Trading Commission (CFTC) which overseas futures commission

merchants, derivatives clearing organizations and commodity pool operators amended CFTC

regulations 1.49 and 4.24. Regulation 1.49 addresses the standards which non-U.S. banks are

required to satisfy before futures commission merchants may deposit customer funds into them.

Previously, non-U.S. banks must have either commercial paper or long-term debt rated in one of

the two highest rating categories by a CRA to satisfy regulation 1.49. Now, these banks no

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[10] Johnson et al. (2001) find that forecast errors were not impacted by litigation costs. Cao and Narayanamoorthy (2011) suggest that precision may improve with increasing litigation risks.
[11] See Dimitrov, Palia and Tang (2014) for a thorough summary of the various sections in Dodd-Frank related to CRAs.

longer need to meet this requirement and only need to have in excess of $1 billion in regulatory capital. Regulation 4.24 modifies the disclosures that commodity pool operators will be required to provide to their customers and no longer requires a reference to a credit rating.

The Securities and Exchange Commission (SEC) has issued several separate announcements which removes reliance on credit ratings related under the Securities Act of 1933, the Securities Exchange Act of 1934 and the Investment Company Act of 1940. On August 2011, the SEC amended rule and form requirements for securities offerings and issuer disclosure rules that rely on credit ratings[12]. Issuers seeking to offer securities in the U.S. must register with the SEC unless they are exempt and quality for shelf registration (expedited basis). The qualifications for shelf registration required an investment grade rating from at least one CRA. This requirement is now amended and allows an issuer the option of shelf registration if it meets at least one of four new tests[13]. On January 2014, the SEC removed references to related to broker-dealers and repurchase agreements[14]. Broker-dealers are required under the net capital rule to maintain sufficient liquid assets to meet all obligations to customers and counterparties. Broker-dealers typically set aside capital based on the credit risk on counterparties which are based on credit ratings. The SEC now no longer requires reliance on credit ratings in the calculations/adjustments for net capital and proposes alternative factors in credit risk such as credit spread, securities-related research, default statistics and yields. The SEC also amended rules which previously required mutual funds to consider credit ratings of repurchase agreement collateral. Repurchase agreements were typically considered fully collateralized if collateral was either cash, a government security, or were of a high category in terms of credit ratings.

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[12] Under the Securities Act of 1933 and the Securities Exchange Act of 1934.
[13] An issuer has either 1) issued at least $1 billion in non-convertible securities in the previous three years registered under the Securities Act, 2) has at least $750 million on non-convertible securities outstanding under the Securities Act, 3) is a wholly owned subsidiary of a well-known seasoned issuer as defined under the Securities Act, 4) is a majority-owned operating partnership of a real estate investment trust that qualifies as a well-known seasoned issuer.
[14] Under the Securities Exchange Act of 1934 and Investment Company Act of 1940, respectively.

References to ratings are now removed and collateral by an issuer can be fully collateralized if the issuer has an "exceptionally strong capacity" to meet financial obligations. The SEC, however, does not clarify "exceptionally strong capacity" or include specific factors and tests for credit analysis.

On November 2013, the Federal Housing Finance Agency (FHFA) removed references to certain safety and soundness regulations which affect federal home loan banks. FHFA now requires that these banks apply internal analysis and criteria to determine the credit worthiness of a security. Similarly, on December 2012, the National Credit Union Administration (NCUA) removed reference to credit ratings in NCUA regulation and requires credit unions to conduct internal analysis to determine credit worthiness. The criteria listed are very similar to the ones the SEC requires for broker-dealers in determining net capital and include credit spread, securities-related research and etc.

On June 2012, the OCC removed references to credit ratings in OCC regulations and adopted alternative standards to assessing credit worthiness. OCC no longer allows banks and savings associations to rely solely on credit ratings as a source of credit worthiness. Banks are now required to fully assess an issuer's repayment ability by considering issuer specific data as wells as market and economic factors. The level of due diligence expected varies by the risk of the security with general obligation municipal debt requiring less intensive review than corporate and asset backed securities. The FDIC's final rule on July, 2012 mirrors the OCC and removes references to the investment grade standard as applied to credit ratings and requires due diligence focusing on an issuer's repayment ability.

3.1. Summary

To date, various federal agencies have responded to section 939a by issuing final rules which remove references to credit ratings and propose alternative means of assessing credit worthiness. The SEC rules requiring internal credit analysis applies to broker-dealer counterparties and repurchase agreements. These are not direct bondholders and there should be limited effects in the bond market. The FHFA and NCUA rules apply to federal home loan banks and credit unions which are a relatively small subset of corporate bondholders. The CFTC rules merely amend requirements related to the acceptance of deposits and disclosures and do not stipulate specific entities to conduct internal analysis of credit worthiness.

In contrast, the final rules from the OCC requiring banks to conduct credit analysis are detailed and provide specific guidance related to the due diligence requirements as they vary for security type. The OCC rules apply to all national banks and federal savings associations. However, this rule applies more broadly because the Federal Reserve Board's Regulation H[15] and the Federal Deposit Insurance Corporation's regulations on activities of insured state banks and insured savings associations[16] prohibit member and nonmember state banks and state savings associations from engaging in activities and investments that are not permissible for national banks and their subsidiaries. Therefore, the OCC's final rule establishes the standard for all banks and savings associations[17].

4. Data and Methodology

4.1. Data

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[15] See 12 CFR 208.21
[16] See 12 CFR 362
[17] *Community Banking Connections*, a nationwide Federal Reserve System resource for community banks provides a discussion of this broad application at http://www.communitybankingconnections.org/articles/2013/Q2/Investing-in-Securities-Without-Relying-on-External-Credit-Ratings.cfm

I obtain MEFs for U.S. firms from First Call's Company Issued Guidance database from December 2010 to December 2013. I focus on annual forecasts of earnings per share (EPS) and exclude any forecasts which are not point or range estimates. The pre-announcement period is defined as between December 2010 and June 12, 2012 while the post-announcement period is between June 13, 2012 and December 2013. I restrict the sample to firms which issue MEFs both before and after the passage of the OCC rule. This constant sample should allow for better comparisons of MEF properties before and after the rule. To compute forecast accuracy, I obtain actual EPS from the Institutional Brokers' Estimate System (IBES) actual file. Stock prices and overall bond market returns are obtained from the Center for Research in Security Prices (CRSP). The average stock price one week prior to the MEF is used as a deflator for forecast accuracy[18]. Financial indicators and S&P credit ratings for the most recent quarter prior to the MEF are obtained from Compustat and IBES. Macro-economic variables are available from the Bureau of Economic Analysis. Lastly, I exclude observations from the financial industry as defined according the Fama-French 12 industry classification. Table 1 shows the descriptive statistics for the sample.

<Table 1>

New debt issuances occurring in the year subsequent to an MEF are obtained from the Securities Data Company database (SDC). Bond returns are calculated as the percentage change in bond prices from trades surrounding MEF announcements. Bond prices are obtained from FINRA's Trade Reporting and Compliance Engine (TRACE) database. Variables with extreme outliers are winsorized at the the 1% and the 99% level. Key variables are described in Appendix B.

4.2. Methodology

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[18] Firms with average stock prices below $1 are omitted.

4.2.1. Choice of event date

The OCC announced final rules prohibiting sole reliance on credit ratings in June of 2012. However, the choice of this event date could be confounded for several reasons. First, if affected parties were certain at an earlier date that such rules would be implemented, the OCC announcement of final rules would be of little surprise to those involved. However, given that institutions voiced significant concerns regarding the burden and costs of analyzing securities, it seems unlikely that there was a consensus of what the final rules would be. For instance, many banks requested that the OCC allow for grandfathering of debt securities held by the institution before this rule to be exempted from due diligence requirements. Some banks also requested an extended period of delayed implementation[19]. The OCC ultimately rejected these requests and maintained that credit ratings should not be the sole criteria for an investment.

The discussions between the OCC and institutions prior to the passage of final rules established a degree of uncertainty as to what the final provisions would be. Due diligence requirements would have been substantially lower if existing securities were grandfathered and institutions did not have to conduct credit monitoring of those securities. The impact of OCC rules would have also been limited if delayed implementation was allowed or if other exceptions were granted. Consequently, the OCC's announcement of final rules resolves significant uncertainty.

Another concern which confounds the choice of June, 2012 as the event date would be if banks already implemented due diligence requirements in anticipation of this rule. However, given the resistance and suggestions for delayed implementation, it also seems unlikely that banks would be willing to shoulder the significant costs of debt security due diligence without regulatory requirements in place. Therefore, the announcement of final rules by the OCC creates

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[19] See the commentary sections of the OCC final rules.

a strong identification to test the exogenous effects of added demand for information by major institutions. The main analysis of this paper uses the announcement of final rules during June, 2012 as the event period of interest.

4.2.2. Informativeness of MEFs

To test how the quality of MEFs changes after the OCC announcement, I focus on informativeness and accuracy. Using annual forecasts of earnings, I measure informativeness through the response of bond investors to announcements of MEFs.

$$
\begin{aligned}
Bond\ Return = \ & \beta_0 + \beta_1 Surprise + \beta_2 afterOCC + \beta_3 afterOCC * Surprise \\
& + \beta_4 ChangeGDP + \beta_5 Debt\ to\ Equity + \beta_6 Market\ to\ Book + \beta_7 Firm\ Size \\
& + \beta_8 Analyst\ Following + \varepsilon
\end{aligned}
$$

$$(1)$$

Bond returns are calculated as the percentage change in bond prices from trades surrounding earnings announcements[20]. The bond price before the MEF announcement is given by the volume-weighted trade price on the day closest and prior to the MEF announcement date. The bond price after the MEF announcement is given by the volume-weighted trade price on the day closest to and following the MEF announcement date. I measure announcement bond returns only for bond issues with at least one trade during the five days before and the five days after the MEF announcement date. Surprise is defined as management forecasts of annual earnings minus the analyst consensus scaled by average stock price one week prior to the announcement date. After OCC is an indicator variable equal to one for the period between June 13, 2012 and December 2013 and zero for the period between December 2010 and June 12, 2012. AfterOCC

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[20] Because of the different maturities, credit quality, and characteristics of the various bond issues in the sample, there is no readily available benchmark for announcement bond returns. Hence, similar to Dimitrov et al. (2014), I examine raw announcement bond returns

* Surprise is the interaction term between afterOCC and Surprise and the main variable of interest. If greater reliance by bond investors increases the informativeness of MEFs after the OCC announcement, the coefficient of the interaction term should be positive, reflecting greater reaction per unit of surprise in the post period relative to the pre period.

I control for firm level variations in size, analyst following, debt to equity ratio and market to book ratio. Changes in macro-economic conditions may also influence the informativeness of MEFs. The passage of the OCC's final rule occurred during a later stage of economic recovery in the United States. This results in a sample period with varying degrees of economic performance. I control for the quarterly change in real GDP measured over the quarter prior to the MEF announcement. Additionally, I include industry fixed effects as defined according the Fama-French 12 industry classification.

4.2.3. Accuracy of MEFs

To test the accuracy of MEFs, I compare MEFs with actual earnings and use the following model:

$$
\begin{aligned}
Accuracy = \ & \beta_0 + \beta_1 afterOCC + \beta_2 Firm\ Size + \beta_3 ForecastHorizon \\
& + \beta_4 InterestCoverage + \beta_5 Debt\ to\ Assets + \beta_6 Market\ to\ Book \\
& + \beta_7 Bundle + \beta_8 PriorAccuracy + \beta_9 PriorStDev\ Forecast\ Errors \\
& + \beta_{10} Concentration + \varepsilon
\end{aligned}
$$

(2)

Following Ng et al. (2013), accuracy is calculated as:

$$
Accuracy = -1 * \text{ABS} \left(\frac{\text{Actual Earnings} - \text{Forecasted Earnings}}{\text{Price}} \right)
$$

Where Price is the average stock price one week prior to the MEF announcement date. Actual earnings are obtained from the IBES actuals file. A MEF is more accurate if it is closer to zero

while inaccurate MEFs have large negative values. I control for the differential accuracy levels of bundled versus unbundled forecasts (Rogers and Van Buskirk, 2013), prior forecast accuracy (Hutton and Stocken, 2009) and other variables which influence accuracy (Zhang, 2012). Additionally, I include industry fixed effects as defined according the Fama-French 12 industry classification.

5. Results

In this section I test how the accuracy and informativeness of MEFs changes following the OCC announcement prohibiting sole reliance on credit ratings as a source of information. Section 5.1 examines the overall informativeness of MEFs. Section 5.2 tests the accuracy of MEFs relative to ex-post earnings. Section 5.3 provides additional analysis.

5.1. Informativeness of MEFS before and after OCC announcement

In this section, I examine how the informativeness of MEFs changes after the OCC announcement prohibiting sole reliance on credit ratings. Rogers and Van Buskirk (2013) observe that bundled forecasts have become more common recently, increasing from approximately 15% of forecasts in the late 1990s to 75% of forecasts in 2007. To exclude the effects of earnings announcements, I examine only unbundled forecasts issued outside of a two day window of earnings announcements. I anticipate that more active monitoring of debt securities will increase the informativeness of MEFs as bondholders turn to this source of information to update beliefs about future default probabilities.

The results in model 1 of table 1 show that the interaction term between afterOCC and Surprise is positive and significant. There is greater incremental bond market reaction to

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earnings surprise in the post period. Furthermore, model 1 also indicates that the variable for forecast surprise is insignificant, showing that the bond market did not react to earnings surprise in the pre-period. These results indicate that bondholders did not consistently rely on MEFs as a source of information prior to the passage of the OCC rule prohibiting sole reliance on credit ratings. Bondholders turned to this information set as a consistent source of information after the rule[21].

Models 2 to 7 examine if the improved informativeness of MEFs varies with demand for information by bondholders. Given a higher likelihood of default, OCC guidance requires that banks commit greater due diligence to riskier issuers. Market reaction to MEFs should vary according to an issuer's likelihood of default. In model 2, the sample of firms is restricted to firms with Standard & Poor's (SP) credit ratings between BBB+ and BB-[22]. I anticipate that banks will demand more information for firms near the speculative grade boundary. Likewise, high investment grade securities will likely not warrant as much demand for information as securities which are near the speculative grade boundary.

Model 2 shows that the increase in informativeness of MEFs in the post period is greater for riskier issuers. The interaction term between afterOCC and Surprise is significant and of greater economic magnitude then the entire sample. Model 5 also shows that for high investment grade issuers, there is no improvement in the informativeness of MEFs in the post period[23].

The incentive for issuers to provide more informativeness disclosures is also likely to vary if there are anticipated future debt issuances. For new issuances, direct interest savings

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[21] I also examine bond market reactions to forecasted earnings surprise before my sample period and find similar results showing varying levels of reliance on MEFs.

[22] This sample does not include issuers rated B+ or below because banks generally hold little speculative debt (see OCC handbook on investment securities).

[23] Tests based on the full sample with an interaction variable may be less precise under certain circumstances when coefficients of control variables may differ between the two groups (Hardy, 1993). To overcome this weakness, it has been suggested that separate regression tests on the two groups be conducted (Gul, Fung, and Jaggi, 2009).

result when cost of capital is reduced through an improvement in the information environment. In model 3, the sample is restricted to firms that subsequently issue bonds within one year of an MEF. Model 6 is restricted to firms which do not issue new bonds within one year of an MEF. The results show that the informativeness of MEFs varies with anticipated debt issuances. Firms which issue new debt provide more informative MEFs (model 3) than firms which do not have future debt issuances (model 6).

The results thus far provide evidence that the informativeness of MEFs varies with demand for information from debt holders. While banks and savings associations drive a significant portion of demand in the debt market, the OCC decision applies only to banks and savings associations and not all bondholders. Given limitations in data availability, it is not possible to specifically identify which bonds are owned by banks. To address this identification issue, I use proximity as a proxy for the relative influence of banks and savings associations. The literature has extensively documented that investors invest more in firms that are closer to them because they have soft information about these firms (Kang and Stulz, 1997; Coval and Moskowitz, 1999; Huberman, 2001; etc.). I anticipate that banks headquartered in the same city as issuers are also likely to invest relatively more in these firms. Consequently, issuers located in cities where banks are also headquartered will have greater incentives to provide more informative MEFs. Model 4 is restricted to firms which are also headquartered in cities where banks and savings associations are located[24]. Model 7 represents firms located in cities where there are no bank and savings association headquarters. The results show that issuers headquartered in the same city as banks provide more informative MEFs (model 4). For firms

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[24] The list of active banks and savings associations is provided on the OCC's website: http://www.occ.gov/topics/licensing/national-bank-lists/index-active-bank-lists.html.

located in cities without bank headquarters, there is not a significant increase in the informativeness of MEFs in the post period (model 7).

The results show an increase in the informativeness of forecasted earnings which varies with demand for information by bondholders. These results provide evidence in support of hypothesis 1.

<Table 2>

5.2. Accuracy of MEFs before and after OCC announcement

The results in table 2 show that MEFs become more informative after the OCC announcement. Greater reliance on earnings related news may be due to a variety of influences. Dehaan (2013) suggest that loss of reputation following the financial crisis led investors to place less weight on credit ratings and more weight on financial reports. Increased informativeness in the post OCC announcement period may be a continued trend of greater reliance on alternative disclosures. However, under efficient markets, greater market response implies that MEFs are of better quality and that they better reflect fundamental performance. To determine if improved value relevance of MEFs is also consistent with improved quality, I examine how the accuracy of MEFs changes in the post period relative to the pre period.

The results in model 1 of table 3 show that afterOCC is positive and significant. Overall, MEFs are more accurate in the post period. Models 2 to 7 examine if the improved accuracy of MEFs is tied to demand for information by bondholders. Given greater demand for information, I anticipate that firms near the speculative grade boundary have greater incentives to provide more accurate forecasts. In model 2, the afterOCC variable is significant and of greater

economic magnitude than the overall sample. Model 5 shows no improvement in the accuracy of MEFs in the post period for high investment grade issuers.

In model 3, the sample is restricted to firms that subsequently issue bonds within one year of an MEF. Model 6 is restricted to firms which do not issue new bonds within one year of an MEF. The results show that the accuracy of MEFs varies with anticipated debt issuances. Firms which issue new debt provide more accurate MEFs (model 3) than firms which do not have future debt issuances (model 6).

Lastly, using proximity as a proxy for the relative influence of banks and savings associations, I anticipate that issuers headquartered in the same city as banks will provide more accurate MEFs. Model 4 is restricted to firms which are also headquartered in cities where banks and savings associations are located. Model 7 represents firms located in cities without any bank and savings association headquarters. The results show that issuers headquartered in the same city as banks provide more accurate MEFs (model 4). For firms located in cities without bank headquarters, there is no association between accuracy of MEFs and the post period (model 7).

<Table 3>

The results show that the accuracy of MEFs improves in the post period. The improvement in accuracy in the post period is greater in magnitude for riskier issuers, issuers which subsequently issue new debt, and issuers located near bank headquarters. These results provide strong evidence in support of hypothesis 1.

5.3. Additional Analysis

In this section, I provide additional robustness tests for my main results. Section 5.3.1 examines the influence of time trend effects on the main results. Section 5.3.2 examines the precision of MEFs in the pre vs post periods. Section 5.3.3 examines the quantity of MEFs in the pre vs post periods and Section 5.3.4 discusses the effects of the loan market.

5.3.1. Time trend

The choice of the announcement of final rules prohibiting sole reliance on credit ratings by the OCC provides a strong identification to study the exogenous effects of added demand for information by major institutions. I find that greater demand for information by banks improves the informativeness and accuracy of MEFs. It is, however, possible that the increase in the informativess and accuracy of MEFs is a result of an earlier time trend. Greater demand for alternative sources of information in lieu of credit ratings may have begun as a result of the financial crisis which damaged the credibility of CRAs (Dehaan, 2013). To test if my main results are a continued trend resulting from the financial crisis, I examine a time trend variable which takes on values ranging from 1-4 to correspond with the years 2009-2012, respectively[25]. If this variable of interest is significant, it could indicate that the improvement in the informativeness and accuracy of MEFs is stemming from an earlier trend and not the passage of the OCC rule in June of 2012. The results in table 4 (panel A) show that the time period variable and it's interaction with forecast earnings surprise is insignificant across most specifications. Overall, the bond market does not appear to react more to MEFs immediately following the financial crisis. Panel B also confirms that the improvement in the accuracy of MEFs did not start from an earlier time period.

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[25] Alternatively, I also define a time trend to include the financial crisis years and find that it is not consistent with the overall results.

<Table 4>

5.3.2. Forecast precision

The main results provide evidence that firms provide better quality forecasts as a result of greater demand for information from bondholders. I attribute the incentive of issuers to provide better quality forecasts as greater incremental benefits of disclosures in the post period. If managers are devoting more resources to forecasting, MEFs should also be more precise. To examine changes in the level of precision for MEFs, I follow Lo (2014) and define precision categorically with point, range, open-ended and general impression forecasts being coded as 3, 2, 1 and 0, respectively. I control for size, market to book ratio, debt to equity, return on assets, forecast horizon and return volatility.

$$Precision = \ \beta_0 + \beta_1 afterOCC + \beta_2 Firm\ Size + \beta_3 Return\ on\ Assets + \beta_4 Market\ to\ Book \\ + \beta_5 Market\ to\ Book + \beta_6 Stock\ Return\ Volatility + \beta_7 Debt\ to\ Equity + \varepsilon$$

(3)

The results in model 1 of table 5 show that MEFs are more precise in the post period. The coefficient of afterOCC is positive and significant showing that forecasts in the post period are more likely to be precise. After the passage of OCC rule, the odds that an MEF is in a more precise category is 1.87 times greater than before the OCC rule, holding all else constant [26]. The results are similar when viewed across the various subsets of data used in the main model (models 2-4) and show that the likelihood of precise forecasts is 2.61, 2.12 and 2.15 times greater

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[26] The proportional odds ratio in ordered logit models is given by $e^{coefficient}$ (in this case, $e^{0.628} = 1.87$). It captures the proportional change in the odds that an MEF is in a more precise category, for a unit change in a predictor variable, given the other variables are held constant in the model.

after the OCC rule for riskier firms, firms which subsequently issue new debt and firms located near bank headquarters, respectively[27].

<Table 5>

5.3.3. The quantity of MEFs

If major institutions are now demanding information such as MEFs, will firms report a greater quantity of MEFs? Greater incremental benefits of reporting MEFs may induce firms to report more information as well as improve the quality of information. However, while incremental benefits of issuing MEFs may increase as a result of greater demand for information, certain costs may also be higher. Cao and Narayanamoorthy (2011) show that ex-ante litigation risks have an effect on MEF reporting. Graham, Harvey and Rajgopal (2005) survey CFOs and find that they may be reluctant to give forecasts as a result of litigation costs from not being able to meet forecasts. Greater reliance on MEFs in the post period by major institutions may increase the litigation risk of inaccurate forecasts. Firms may therefore be more reluctant to issue forecasts in the post period. In that sense, while demand for information will increase the quantity of MEF reporting, litigation risks may decrease the quantity of MEFs. To test which effect is stronger, I examine the quantity of MEFs reported in the pre vs post periods with the following logit model whereby "Forecast" takes on a value of 1 for firms which issue an annual MEF in and zero otherwise[28]:

$$Forecast = \beta_0 + \beta_1 afterOCC + \beta_2 Return\ on\ Assets + \beta_3 Firm\ Quarterly\ Return + \beta_4 Firm\ Size + \beta_5 LogMV + \beta_5 Debt\ to\ Assets + \varepsilon$$

(4)

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[27] I find that the likelihood of more precise forecasts is also significantly greater across all samples (corresponding to models 5-7 in the main tables). However, the economic significance is lower in magnitude across these samples.
[28] The pre and post periods are delineated by fiscal quarter.

The results (untabulated) show that for the entire sample and for firms located near bank headquarters, the tendency to issue an annual MEF increases in the post period. However, for the cross sections that are restricted to riskier firms and firms which subsequently issue new debt, the likelihood of issuing an MEF is not significantly higher in the post period. These cross sectional results may be moderated by higher litigation risks.

5.3.4. The influence of the loan market

If banks already maintain lending relationships with the firms that they also purchase bonds from, will this affect demand for information? Due diligence requirements for credit analysis may be lower if banks already have information regarding firms via their loan department. However, demand for public disclosures is unlikely to be affected by an existing lending relationship because loan activities and investment activities are separate functions within a bank. The reason these functions are separate is because, in relationship banking, banks and firms rely on private information rather than public disclosures to resolve information asymmetries. U.S. federal law prohibits banks from trading on private information attained in the loan market. Therefore, demand for public disclosures such as MEFs is unlikely to be affected by lending relationships because information attained in the loan market cannot be used for investment decisions.

The idea that lending relationships with banks reduces demand for corporate disclosures is also doubtful because private communications with a particular bank or syndicate only reaches a limited audience. Consequently, in order to reach bondholders in general, firms would most likely rely on public disclosures.

6. Conclusion

In compliance with recent legislation from the Dodd-Frank Wall Street Reform and Consumer Protection Act (Dodd-Frank), the Office of the Comptroller of the Currency (OCC) passed a final rule in June 2012 which requires banks and savings associations to actively monitor and assess debt securities rather than passively relying on credit ratings. The OCC specifically directs these institutions to examine default risk by focusing on "operating and financial performance". This regulatory change creates an exogenous shock which increases demand for information related to financial performance. I utilize this regulatory change to examine how a shift to more active securities oversight through the evaluation of financial performance impacts the quality of forward looking corporate disclosures.

I focus on MEFs and hypothesize that greater reliance on these disclosures changes the cost benefit analysis of firms which provide this information. Higher quality disclosures can lower information asymmetry (Diamond and Verrecchia, 1991) and result in lower bid-ask spreads (Welker, 1995; Leuz and Verrecchia, 2000), and lower cost-of-capital (Botosan, 1997; Leuz and Verrecchia 2000). Increased demand for MEFs alters the cost benefit decision making of firms providing this information and creates greater incentives to improve the quality of these disclosures.

I find results that are consistent with improved quality of MEFs. Management earnings forecasts become more informative and their ex-post accuracy improves. Firms also issue forecasts which are more likely to be precise. Furthermore, I rule out earlier time trends as drivers of my results and find that the overall results are stronger for firms where more

information is demanded i.e. riskier issuers, firms which subsequently issue new debt, and firms

located near bank headquarters.

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Appendix A: Status of Section 939A of Subtitle C of Dodd-Frank

Organization	Announcement Date	Effective Date	Description
SEC	1/8/2014	7/7/2014	Removes certain references to credit ratings from broker-dealer financial responsibility and securities transaction rules under the Securities Exchange Act of 1934.
SEC	1/8/2014	2/7/2014	Removes certain references to credit ratings from investment repurchase agreement rules.
FHFA	1/8/2013	5/7/2014	Removes reference to credit ratings in various Federal Home Loan Bank (FHLB) regulations.
NCUA	12/13/2012	6/11/2013	Establishes alternatives to the use of credit ratings to assess credit worthiness for credit unions.
OCC	6/13/2012	1/1/2013	All national banks and savings associations may no longer rely on credit ratings as the sole measure of credit worthiness. Establishes guidance on due diligence requirements in determining the credit worthiness of investment securities.
OCC	6/13/2012	7/21/2013	Removes references to credit ratings in the OCC's non-capital regulations and adopts alternative standards for assessing creditworthiness.
SEC	8/3/2011	9/2/2011	Adopts amendments to replace rule and form requirements under the Securities Act of 1933 and the Securities Exchange Act of 1934 for securities offering or issuer disclosure rules that rely on, or make special accommodations for, credit ratings
CFTC	7/25/2011	9/23/2011	Removes any reference to or reliance on credit ratings in CFTC regulations.
FDIC	7/24/2012	7/21/2012	Replaces the investment grade standard for security investments with due diligence verifying capacity to meet financial commitments. The FDIC allows a transition period until 1/1/2013 to come into compliance with this final rule.

Appendix B: Variable Measurement

Variable name	Variable measurement
Bond returns	Bond returns are calculated based on the volume-weighted trade price for the closest trade date within a five-day period prior to a forecast announcement date, and the volume-weighted trade price for the closest trade date within a five-day period following a forecast announcement date.
After OCC	Indicator variable equal to one for the period between June 13, 2012 and December 2013 and zero for the period between December 2010 and June 12, 2012.
Debt to Equity	Total long-term debt divided by total equity for the fiscal quarter ending prior to the MEF announcement date.
LT Debt Leverage	Total long-term debt divided by total assets for the fiscal quarter ending prior to the MEF announcement date.
Firm Size	The logarithmic of total assets for the fiscal quarter ending prior to the MEF announcement date.
Interest Coverage	Income before extraordinary items divided by interest expense for the fiscal quarter ending prior to the MEF announcement date.
Market-to-Book	Market value of equity divided by book value of equity for the fiscal quarter ending prior to the MEF announcement date.
Stock Return Volatility	Standard deviation of daily stock returns measured over the fiscal quarter ending prior to the MEF announcement date.
Analyst Following	Equity analyst coverage measured over the fiscal quarter ending prior to the MEF announcement date.

Appendix B: Variable Measurement Continues

Variable name	Variable measurement
Bundle	Indicator variable equal to one for MEFs that occur on the same date as earnings announcements and zero otherwise.
Prior Accuracy	Average accuracy of MEFs in the year prior to the current MEF.
Prior Standard Deviation of Forecast Errors	Standard deviation of forecast errors in the year prior to the MEF announcement date.
Concentration	Industry concentration as measured by the Herfindahl Index.
Forecast Horizon	Management forecast period end date minus the announcement date and scaled by 360.
Forecast Precision	The absolute difference between range forecasts scaled by the average stock price one week prior to the MEF announcement date.
Change GDP	Quarterly percentage change in GDP chained to 2009 dollars in the quarter prior to the MEF announcement date.

Table 1: Summary statistics

Variable	Before OCC				After OCC			
	#Obs	Mean	Min	Max	#Obs	Mean	Min	Max
Surprise	9,803	0.000	-0.307	0.517	10,923	-0.001	-0.516	0.318
Ex-post Forecast Accuracy	9,433	-0.010	-5.901	0.000	9,703	-0.006	-0.800	0.000
Interest Coverage	9,137	16.586	-118.233	619.086	10,129	13.975	-118.233	619.086
Debt to Assets	9,700	0.261	0.000	0.831	10,788	0.282	0.000	0.831
Firm size	9,910	8.977	1.903	12.187	10,993	9.076	3.287	12.515
Market to Book	9,906	3.533	-10.708	22.378	10,992	3.907	-10.708	22.378
Debt to Equity	9,635	0.935	0.000	12.812	10,673	1.013	0.000	12.812
Analyst Following	10,504	15.501	1.000	43.000	11,553	16.429	1.000	43.000
Stock Return Volatility	9,886	0.019	0.007	0.079	10,908	0.016	0.007	0.079
Bundle	10,578	0.647	0.000	1.000	11,622	0.663	0.000	1.000
Prior Accuracy	9,426	-0.008	-0.933	0.000	10,366	-0.007	-3.555	0.000
Prior StDev Forecast Error	9,168	0.004	0.000	0.183	9,925	0.004	0.000	2.452
Concentration	9,576	0.350	0.019	1.000	10,645	0.373	0.022	1.000
Change GDP	9,911	2.488	-1.300	4.900	10,993	1.981	-1.000	4.900
Forecast Horizon	10,578	0.674	0.036	2.078	11,622	0.646	0.073	2.078

This table reports descriptive statistics for key variables. The sample consists of annual management earnings forecast announcements for U.S. companies between November 2010 and December 2013. After OCC includes the period between June 12, 2012 and December, 2013, and Before OCC includes the period between November 2010 and June 12, 2012. Variable definitions are provided in the results section of the paper.

Table 2

Regression Results for Informativeness of Management Earnings Forecasts

Variable	Predicted Sign	Model 1 Entire Sample		Model 2 Investment Grade Boundary Sample		Model 3 Subsequent Debt Issuers Sample		Model 4 Proximity to Banks Sample	
		Coefficient	T Stat	Coefficient	T Stat	Coefficient	T Stat	Coefficient	T Stat
Forecast Surprise	/	0.023	0.98	-0.120	-0.79	0.004	0.26	0.015	0.65
After OCC	/	0.000	-0.85	0.000	0.04	0.000	-0.58	-0.001	-0.77
After OCC * Surprise	+	**0.125*****	**4.73**	**0.287***	**1.77**	**0.132*****	**7.04**	**0.156***	**1.76**
Change GDP	+/-	0.000	-0.44	0.000	0.38	0.000	-0.12	0.000	0.58
Debt to Equity	+/-	0.000	1.16	0.001*	1.66	0.000	0.78	0.000	0.02
Market to Book	+/-	0.000	-1.55	0.000*	-1.70	0.000	-1.23	0.000	-0.46
Firm Size	+/-	0.000	1.37	0.001	1.39	0.001**	2.62	0.001	1.18
Analyst Following	+/-	0.000	-1.09	0.000	-0.35	0.000	-0.94	0.000**	-2.03
Constant		-0.002	-0.77	-0.004	-1.08	-0.006*	-1.88	-0.002	-0.56
Industry Fixed Effects		Yes		Yes		Yes		Yes	
N		4,445		2,110		2,966		2,328	
Rsquared		2.02%		2.07%		2.84%		1.50%	

		Model 5			Model 6		Model 7	
		High Investment Grade Sample			Non-Issuers Sample		Non-Proximity to Banks Sample	
Variable	Predicted Sign	Coefficient	T Stat		Coefficient	T Stat	Coefficient	T Stat
Forecast Surprise	/	0.049	1.19		0.190	0.94	0.079	1.08
After OCC	/	-0.001**	-2.01		-0.001	-0.63	0.000	-0.60
After OCC * Surprise	**+/-**	**0.041**	**0.52**		**-0.001**	**-0.01**	**0.060**	**0.83**
Change GDP	+/-	0.000	-1.48		0.000	-0.09	0.000	-1.17
Debt to Equity	+/-	0.000	-0.71		0.001	1.25	0.001	1.61
Market to Book	+/-	0.000	1.08		0.000	-0.86	0.000	-0.91
Firm Size	+/-	0.001*	1.87		0.000	0.39	0.001*	1.68
Analyst Following	+/-	0.000	-0.65		0.000	-0.67	0.000	-0.64
Constant	/	-0.011**	-2.22		-0.001	-0.15	-0.005	-1.50
Industry Fixed Effects		Yes			Yes		Yes	
N		2,188			1,479		2,117	
Rsquared		1.26%			2.29%		4.61%	

This table shows regression results for the bond market response to unbundled forecasted earnings surprises between December 2010 and December 2013. The dependent variable is the bond market return surrounding management forecast announcement dates. After OCC is a dummy variable with a value of one for dates assigned after June 12, 2012, and zero for dates between December 2010 and June 12, 2012. Industries are defined according to the Fama-French 12 industry classification. Firms in the financial industry are excluded. The remaining variables are defined in Appendix B. The dependent variable is the ex-post accuracy of management earnings forecasts. After OCC is a dummy variable with a value of one for dates assigned after June 12, 2012, and zero for dates between December 2010 and June 12, 2012. Model 1 includes observations from the entire sample. Model 2 is restricted to observations with a S&P rating between BBB+ and BB-. Model 3 is restricted to observations for firms that also issue new debt within a one year window following the current financial reporting date. Model 4 is restricted to observations for firms that are also located in cities where bank or savings associations are headquartered. Model 5 is restricted to observations with a S&P rating above BBB+. Model 6 is restricted to observations for issuers that do not issue new debt within a one year window following the current financial reporting date. Model 7 is restricted to observations for issuers headquartered cities without any banks or savings associations. Standard errors are clustered by firm. ***,**,* represent significance beyond the 1st, 5th, and 10th percentile levels, respectively.

Table 3

Regression Results for Accuracy of Management Earnings Forecasts

Variable	Predicted Sign	Model 1 Entire Sample		Model 2 Investment Grade Boundary Sample		Model 3 Subsequent Debt Issuers Sample		Model 4 Proximity to Banks Sample	
		Coefficient	T Stat	Coefficient	T Stat	Coefficient	T Stat	Coefficient	T Stat
After OCC	+	**0.143****	**2.42**	**0.187*****	**2.76**	**0.189****	**2.22**	**0.176****	**2.09**
Firm Size	+	0.000	1.58	0.000	0.42	0.000	0.37	0.000	0.64
Forecast Horizon	-	-0.007***	-8.75	-0.006***	-5.98	-0.005***	-5.12	-0.008***	-6.45
Interest Coverage	+/-	0.000	0.64	0.000*	1.85	0.000	-0.63	0.000***	3.19
Analyst Following	+/-	0.000	0.74	0.000	-0.16	0.000	0.77	0.000	0.05
Debt to Assets	-	-0.012	-1.35	0.002	0.67	-0.026	-1.28	-0.001	-0.20
Market to Book	+	0.000**	2.04	0.000	1.33	0.000	1.34	0.000	1.04
Bundle	+/-	-0.001	-1.36	0.000	0.03	-0.001	-1.25	0.000	-0.18
Prior Accuracy	+	0.064	0.39	0.338	1.41	0.075	0.20	0.086	0.42
Prior StDev Forecast Error	-	-1.044***	-2.79	-0.557*	-1.79	-1.095	-1.39	-1.252***	-2.75
Concentration	+/-	0.001	0.39	0.001	0.76	0.001	0.21	0.002	1.16
Constant	/	-0.001	-0.22	-0.001	-0.30	0.005	0.39	-0.002	-0.45
Industry Fixed Effects		Yes		Yes		Yes		Yes	
N		15,469		6,396		8,129		7,832	
Rsquared		27.09%		18.74%		27.77%		30.44%	

| | | Model 5 | | Model 6 | | Model 7 | |
| | | High Investment Grade Sample | | Non-Issuers Sample | | Non-Proximity to Banks Sample | |
Variable	Predicted Sign	Coefficient	T Stat	Coefficient	T Stat	Coefficient	T Stat
After OCC	**+/-**	**-0.137**	**-1.41**	**0.089**	**0.99**	**0.057**	**0.76**
Firm Size	+	0.000	0.34	0.000	0.85	0.001**	2.15
Forecast Horizon	-	-0.005***	-4.07	-0.010***	-8.01	-0.006***	-5.43
Interest Coverage	+/-	0.000	1.18	0.000**	2.17	0.000	-0.79
Analyst Following	+/-	0.000	-0.57	0.000	0.40	0.000	0.80
Debt to Assets	-	0.000	-0.11	0.000	-0.10	-0.027	-1.45
Market to Book	+	0.000	0.71	0.000	1.37	0.001**	2.06
Bundle	+/-	-0.001**	-2.10	0.000	-0.44	-0.001	-1.39
Prior Accuracy	+	-0.143***	-3.12	0.017	0.11	0.034	0.12
Prior StDev Forecast Error	-	-2.095***	-5.13	-1.016***	-2.66	-0.799	-1.43
Concentration	+/-	0.002	0.88	0.002	0.95	-0.001	-0.31
Constant	/	0.004	1.11	-0.002	-0.53	0.000	-0.03
Industry Fixed Effects		Yes		Yes		Yes	
N		5,665		7,340		7,637	
Rsquared		54.43%		29.47%		27.77%	

This table shows regression results for the accuracy of forecasted earnings between December 2010 and December 2013. The dependent variable is the ex-post accuracy of management earnings forecasts. After OCC is a dummy variable with a value of one for dates assigned after June 12, 2012, and zero for dates between December 2010 and June 12, 2012. The coefficient for After OCC is multiplied by 100 for ease of interpretation. Industries are defined according to the Fama-French 12 industry classification. Firms in the financial industry are excluded. The remaining variables are defined in the appendix section of the paper. Model 1 includes observations from the entire sample. Model 2 is restricted to observations with a S&P rating between BBB+ and BB-. Model 3 is restricted to observations for firms that also issue new debt within a one year window following the current financial reporting date. Model 4 is restricted to observations for firms that are also located in cities where bank or savings associations are headquartered. Model 5 is restricted to observations with a S&P rating above BBB+. Model 6 is restricted to observations for issuers that do not issue new debt within a one year window following the current financial reporting date. Model 7 is restricted to observations for issuers headquartered cities without any banks or savings associations. Standard errors are clustered by firm. ***,**,* represent significance beyond the 1st, 5th, and 10th percentile levels, respectively.

Table 4

Informativeness and Accuracy of Management Earnings Forecasts for an Alternative Time Period

Panel A: Informativeness of Management Earnings Forecasts

Coefficient	Entire Sample	Investment Grade Boundary Sample	Subsequent Debt Issuers Sample	Proximity to Banks Sample
Time Trend * Surprise (Corresponds to Models 1-4 of Table 2)	0.060	0.125**	-0.064	0.029

Panel B: Accuracy of Management Earnings Forecasts

Coefficient	Entire Sample	Investment Grade Boundary Sample	Subsequent Debt Issuers Sample	Proximity to Banks Sample
Time Trend (Corresponds to Models 1-4 of Table 3)	0.023	0.009	-0.003	0.002

This table shows regression results for the informativeness and accuracy of management earnings forecasts between December 2010 and December 2013. Panel A shows the bond market response to unbundled forecasted earnings surprises and panel B shows the accuracy of forecasted earnings. The dependent variable for panel A is the bond market return surrounding management forecast announcement dates. The dependent variable for panel B is the ex-post accuracy of management earnings forecasts. Time Trend represents values of 1 to 4 which corresponds with the years 2009 to 2012, respectively. The time trend variable is multiplied by 100 in panel B for ease of exposition. For brevity, only the variables of interest are tabulated. Standard errors are clustered by firm. ***,**,* represent significance beyond the 1st, 5th, and 10th percentile levels, respectively.

Table 5

Ordered Logistic Regression Results for the Precision of Management Earnings Forecasts

Variable	Predicted Sign	Model 1 Entire Sample		Model 2 Investment Grade Boundary Sample		Model 3 Subsequent Debt Issuers Sample		Model 4 Proximity to Banks Sample	
		Coefficient	Z Stat	Coefficient	Z Stat	Coefficient	Z Stat	Coefficient	Z Stat
After OCC	+	**0.628***	**4.53**	**0.958***	**3.48**	**0.751***	**3.73**	**0.764***	**4.42**
Market to Book	-	-0.121***	-2.71	-0.150**	-2.03	-0.233***	-3.38	-0.075*	-1.75
Firm Size	-	-0.120	-1.08	-0.293**	-2.09	-0.077	-0.50	0.187	1.37
Return on Assets	-	-3.175	-0.90	8.676**	2.47	3.966	0.59	1.488	0.39
Forecast Horizon	+/-	-0.380	-1.12	0.974***	3.48	-0.318	-0.92	0.017	0.04
Stock Return Volatility	+/-	-1.878	-0.22	2.126	0.16	11.357	0.75	2.485	0.22
Debt to Equity	+	0.194**	2.33	0.270**	2.23	0.427***	2.98	0.109	0.86
Industry Fixed Effects		Yes		Yes		Yes		Yes	
N		20,037		7,765		9,409		9,825	
Pseudo Rsquared		7.97%		8.56%		20.02%		6.08%	

This table shows ordered logistic regression results for the precision of forecasted earnings surprises between November 2010 and December 2013. The dependent variable is the precision of management earnings forecasts, defined categorically with point, range, open-ended and general impression forecasts being coded as 3, 2, 1 and 0, respectively. After OCC is a dummy variable with a value of one for dates assigned after June 12, 2012, and zero for dates between November 2010 and June 12, 2012. Industries are defined according to the Fama-French 12 industry classification. Firms in the financial industry are excluded. Model 1 includes observations from the entire sample. Model 2 is restricted to observations with a S&P rating between BBB+ and BB-. Model 3 is restricted to observations for firms that also issue new debt within a one year window following the current financial reporting date. Model 4 is restricted to observations for firms that are also located in cities where bank or savings associations are headquartered. The remaining variables are defined in the appendix section of the paper. Standard errors are clustered by firm. ***,**,* represent significance beyond the 1st, 5th, and 10th percentile levels, respectively.