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The Effect of Geographic Diversity on Managerial Earnings Forecasts

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ABSTRACT

We examine whether geographic diversity – a salient characteristic of the firm's organizational structure – affects the timing and quality of voluntary disclosure. We find that firms with higher geographic diversity issue earnings forecasts that are more pessimistic, less precise, and less accurate. We also find that firms with higher geographic diversity are more likely to bundle managerial earnings forecasts with the prior quarter's earnings announcement and less likely to issue forecasts during the quarter. These results are consistent with geographic diversity increasing information acquisition costs associated with providing managerial earnings forecasts. Consistent with these findings, we provide evidence consistent with managers substituting managerial earnings forecasts with firm-initiated non-earnings press releases, which require less information acquisition, and that managerial earnings forecasts are less useful to analysts and investors when geographic diversity is higher. Overall, our findings suggest that a firm's organizational complexity is a factor that shapes the information environment of the firm.

Keywords: Organizational Complexity; Geographic Diversity; Management Earnings Forecasts; Press Releases; Information Acquisition Costs

JEL Code: M40, M41

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1. Introduction

We examine how the firm's organizational complexity affects voluntary disclosure practices. We provide evidence that geographic diversity – a salient feature of organizational complexity – decreases the timeliness and quality of managerial earnings forecasts. We also find that more geographically diverse firms are more likely to use press releases of non-earnings information to supplement firm disclosure when the timeliness and quality of managerial earnings forecasts are reduced. These results are consistent with geographic diversity increasing the information acquisition costs associated with voluntary disclosure.

Prior research suggests that the firm's geographic diversity influences the information acquisition and processing costs (Ashbaugh and Pincus, 2001; Bushman et al., 2004; Duru & Reeb, 2002; Reeb et al., 1998). Geographically diverse firms are often required to navigate different customer bases, social norms, employee standards, tolerances for questionable behavior, cultural diversity, and potential language barriers (Mittal et al., 2004), which can complicate the acquisition of information to predict earnings. In addition, geographic diversity likely reduces the amount of soft information that managers gather from visiting different geographic locations (Agarwal & Hauswald, 2010). Thus, geographic diversity likely increases the costs a firm must incur to acquire and process information to produce earnings forecasts.

Due to information acquisition costs, we anticipate that a firm's geographic diversity is negatively associated with the quality and timeliness of the firm's voluntary disclosure. Earnings forecasts require managers to acquire and process information about the expected revenues and expenses across all geographical segments. As information acquisition costs associated with the firm's geographic diversity increase, managers must expend more to acquire and process sufficient information to form a reliable earnings forecast, which likely reduces the timeliness and quality of

managerial earnings forecasts. Prior research suggests that managers may withhold disclosure if they are unable to cost-effectively gather and process information (Dye, 1985; Jung & Kwon, 1988). Thus, we predict that firms produce less timely and lower-quality forecasts as geographic diversity increases.

Using 179,438 firm-quarter observations between 2002 and 2017, we first examine the association between geographic diversity and the timeliness of managerial earnings forecasts. Following Bushman et al. (2004), we define geographic diversity as the dispersion of sales-generating activities across the firm's geographical segments. We find that firms with higher geographic diversity are more likely to bundle their *final* quarterly earnings forecast with the earnings announcement and less likely to revise managerial forecasts *during* the quarter. We argue that it is less costly for managers to collect and process information about the subsequent quarter as they collect information about the firm's current performance to comply with mandatory reporting requirements.

We next examine the relation between geographic diversity and the quality of managerial earnings forecasts. Geographic diversity may lead to lower-quality managerial earnings forecasts (e.g., less accurate forecast) if geographic diversity simply increases the complexity in producing a forecast. Consistent with this explanation, we find that managers of more geographically diverse firms produce less accurate forecasts. In addition, managers face high costs for missing their own forecasts and for failing to update investors when they receive negative information, which may cause them to produce less precise or more pessimistic forecasts.[1] Consistent with this reasoning,

[1] For example, lawyers frequently bring class action lawsuits against firms for failing to update existing disclosure. Cornerstone (2013) provides evidence that approximately 54% of lawsuits between 2009 and 2013 have allegations of "false forward-looking information". Rogers and Van Buskirk (2009) suggest that plaintiff's attorneys frequently argue that the Private Securities Litigation Reform Act of 1995, which purportedly protected forward-looking disclosures, does not protect the defendant's forward-looking disclosures.

we find that managers of more geographically diverse firms produce less precise and more pessimistic forecasts to reduce the likelihood of missing their own forecast if a negative shock affects the firm (Cyert & March, 1963; Merchant, 1985). These findings corroborate the prediction that geographic diversity decreases managerial forecast quality.

If the timeliness and quality of managerial earnings forecasts deteriorate as geographic diversity increases, then we also expect managerial earnings forecasts to be less useful to analysts and investors. We find that analysts' and investors' reaction to managerial forecast news is muted when geographic diversity is higher, which is consistent with more geographically diverse firms producing lower-quality and less timely earnings forecasts.

While managerial earnings forecasts require the acquisition of information across all geographic segments, non-earnings press releases require less information acquisition and processing than managerial earnings forecasts. As a result, when geographic diversity is higher, we expect managers to provide more non-earnings press releases to substitute for lower-quality earnings forecasts to partially satisfy investors' demand for information (Cheynel & Levine, 2020; Pozen, 2005). Consistent with expectations, we find that firms with higher geographic diversity are more likely to substitute earnings forecasts for non-earnings disclosures during the quarter. This finding suggests that the organizational structure of the firm affects the firm's disclosure strategy by altering the type of information (e.g., earnings vs non-earnings forecasts) provided to market participants.

Lastly, we examine how the aforementioned results vary with the firm's cultural tightness in the cross-section. Gelfand et al. (2011) define cultural tightness (looseness) as strong (weak) norms and a low (high) tolerance of deviant behavior. If a company's international operations are concentrated in countries where cultural tightness is high, then we expect managers in these

countries to foster and encourage coordination, conformity, accountability, and connectedness within the firm, which reduces the information acquisition and processing costs associated with geographic diversity. Consistent with expectations, we find some evidence that the negative association between geographic diversity and the issuance of managerial earnings forecasts is attenuated when the firm's cultural tightness increases.

Our findings contribute to the accounting literature in the following ways. First, our evidence extends our understanding of the forces that drive managerial forecasts. Beyer et al. (2010) call for additional research exploring the costs and benefits of voluntary disclosure. In addition, Hirst et al. (2008) note the lack of evidence documenting the association between forecast antecedents and properties. We address both these concerns by demonstrating that the organization structure (i.e., an antecedent) of the firm can increase the costs of providing voluntary disclosure, which is manifested as less-timely and lower-quality managerial forecasts.[2,3]

Second, our findings contribute to the international business strategy literature by providing evidence that international diversification affects the manager's ability to effectively communicate with external market participants. While prior research primarily documents positive

[2] Drawing causal inferences from non-experimental data is challenging (Gow et al., 2016) due to endogeneity concerns. To mitigate the possibility of correlated omitted variables, we include control variables for many firm characteristics and disclosure determinants. We also include industry and time fixed effects to control for unobservable industry-specific characteristics and time-varying shocks. While we believe that reverse causality concerns are less likely (e.g., managerial quarterly earnings forecasts alter the firm's decision to expand or divest its international operations), we cannot eliminate the possibility of reverse causality. Overall, we acknowledge that, due to the nature of non-experimental data, our study cannot provide causal evidence on the relation between geographic diversity and managerial forecasts.

[3] Generally, prior research does not examine whether geographic diversity affects management's communication with external market participants with two exceptions. First, Herrmann et al. (2010) provide evidence that the quality and frequency of earnings guidance is higher for firms with a higher percentage of foreign sales prior to the passage of Reg FD. Second, Feng et al. (2009) find evidence consistent with ineffective internal controls decreasing the accuracy of management forecasts. Unlike these prior studies, we examine what disclosures managers use to substitute for managerial earnings forecasts when geographic diversity increases. We also provide evidence on how geographic diversity affects investor and analyst reactions to news communicated through managerial forecasts.

effects of diversification on firm performance and growth, we highlight potential disclosure costs that are associated with diversification.[4]

Third, our findings add to the literature examining the association between complexity and voluntary disclosure. Guay et al. (2016) find a positive association between financial statement complexity and the frequency of managerial forecasts. They suggest that firms with higher financial statement complexity use managerial forecasts to assist investors in processing more complex information found in the financial statements. Our results suggest that geographic diversity (which is a form of complexity) inhibits voluntary disclosure by increasing information acquisition costs. In Guay et al. (2016), investor uncertainty is driving the increase in voluntary disclosure, whereas, in this study, the cost of acquiring and processing information by managers is driving the decrease in voluntary disclosures.

Lastly, we contribute to the emerging literature on how firms substitute different types of disclosure. Heinle et al. (2018) provide evidence that managers substitute a higher cost disclosure for a lower cost disclosure to reduce investor uncertainty. Noh et al. (2019) document a negative relationship between earnings guidance and 8K filings, indicating that firms use these disclosures as substitutes. Cheynel and Levine (2020) mosaic theory studies how signals produced by different market participants collectively shape the information environment of the firm. Our findings suggest that firms substitute a more costly disclosure (management earnings forecasts) for a less costly disclosure (non-earnings press releases) to offset the negative effects of geographic diversity on the firm's information environment.

[4] The following studies provide evidence that diversification is positively associated with firm performance and growth: Ghoshal (1987); Hitt et al. (1997); Rugman (1976); Kim et al. (1993); Markides and Ittner (1994). For example, international diversification allows firms to increase their reach to other international markets and to tap new opportunities to raise capital (Hitt et al., 2006).

2. Hypothesis Development

A firm's organizational structure becomes more complex as the number of activities and subsystems existing within the firm increase (Daft, 1992; Scott, 1992). Geographic diversity is a salient feature of the firm's organizational structure. Firms with diversified geographic segments have more complex operations relative to single-segment firms. Geographically diverse firms operate in heterogeneous cultures with different norms, languages, customer bases, employee standards, cultural diversity, and tolerances for questionable behavior. We expect that these differences operate as frictions when gathering information within the firm. For example, language differences can act as a barrier to gathering relevant information across segments. Even when a language is spoken well by non-native speakers, employees may not be able to fully communicate necessary and important information that is relevant to forecasting earnings. Additionally, managers may find it more difficult to rely on information from geographical segments that are more tolerant of questionable behavior as inputs to forecasting the firm's earnings (Gelfand et al., 2011). To rely on such information, managers may opt to gather more information and incur additional information acquisition costs to corroborate the information collected from geographical segments that are more likely to tolerate questionable behavior.

Prior research suggests that information acquisition frictions are lessened (exacerbated) when cultures, languages, and employed standards are more (less) similar. For example, Alderfer and Smith (1982) argue that people embedded in a certain cultural context tend to share world views, which impacts the way they communicate, cooperate, and deal with interpersonal conflicts. Mittal et al. (2004) argue that geographically diverse customer bases make coordinating activities within an organization more challenging. Elron (1997) documents that cultural heterogeneity within top management teams is positively associated with issue-based conflict; however, more

culturally diverse teams also performed better.

As the distance between the managers of geographical segments and the managers at corporate headquarters (i.e., managers who are acquiring information to produce earnings forecasts) increases, managers at corporate headquarters may not be able to easily visit each geographical segment to gather relevant, soft information that is less easily obtained through oral communication (Agarwal & Hauswald, 2010). More specifically, while the information advantages of upper management lie in the general corporate strategies such as M&A and plans for the long-term growth (Graham et al., 2005), the managers of geographical segments have greater knowledge and information about regional investment opportunities, environmental uncertainties, local competitions, political risks, currency risks, regulatory interventions, etc. These factors further increase the uncertainty surrounding the geographic segments' earnings performance (Bushman et al., 2004; Duru & Reeb, 2002; Reeb et al., 1998), rendering the acquisition of such heterogeneous information more vulnerable to errors and noise. These errors and noise decrease the accuracy of the expectation of future earnings.

As noted earlier, prior research suggests that information acquisition costs increase as geographic diversity increases, *ceteris paribus*.[5] If information acquisition costs are positively associated with geographic diversity, then we expect management's communication with external market participants to be affected by the firm's geographic diversity, since managers may withhold disclosure if they are unable to cost-effectively gather and process information (Dye, 1985; Jung & Kwon, 1988). In particular, information acquisition costs are relevant when forecasting earnings because managerial earnings forecasts require the acquisition of information about revenues and

[5] It is possible that advances in technology, communication, travel, and information systems reduce or eliminate the information acquisition costs that corporate headquarters face when operating in multiple geographic regions, which in turn would attenuate the negative association between geographic diversity and the quality/timeliness of management's earnings forecasts.

expenses across the firm's geographic segments. As information acquisition and processing costs increase, managers expend more costs to acquire sufficient information to form a reliable earnings forecast, which may manifest itself through a reduction in the timeliness and quality of managerial earnings forecasts. Thus, we predict that firms produce less-timely and lower-quality managerial earnings forecasts as they become more geographically diverse. We state our hypothesis in the alternative form below.

H1 – Geographic diversity is negatively associated with the timeliness and quality of managerial earnings forecasts.

If the timeliness and quality of managerial earnings forecasts deteriorate as geographic diversity increases, then we expect managerial earnings forecasts to be less useful to analysts and investors. Therefore, we anticipate that analysts and investors do not react as strongly to the news in managerial earnings forecasts when geographic diversity is higher. We state our hypothesis in the alternative form below.

H2 – Managerial earnings forecasts are less useful to analysts and investors as geographic diversity increases.

It is possible, however, that managerial earnings forecasts could become more informative if investors are likely to have difficulties understanding the cash flow generation process of more geographically diverse firms. Analysts or investors may use any information provided by managers, even if this information is biased and imprecise, when the uncertainty in future cash flows is sufficiently high prior to the issuance of the earnings forecast (Pastor & Veronesi, 2009).

We expect managers to substitute other disclosures for managerial earnings forecasts as information acquisition costs that are related to geographic diversity increase to partially satisfy market participants' demand for information. Prior research provides evidence of substituting one

disclosure for another when the cost of the first disclosure increases (Heinle et al., 2018; Noh et al., 2019). Thus, if the costs of producing managerial earnings forecasts rise, then we expect managers to substitute other firm-initiated press releases for managerial earnings forecasts. Non-earnings firm-initiated press releases do not often require the information acquisition that is necessary to prepare earnings forecasts. However, non-earnings press releases can provide useful information, which can partially satisfy market participants' demand for information. For example, managers may provide information about a new product release but may not be comfortable providing a less precise earnings forecast, which requires the acquisition of information across all geographic segments.

We expect non-earnings information to be useful to investors and other market participants. Mosaic theory suggests that investors can improve expectations of future earnings by combining individual pieces of information to form a superior expectation (Cheynel & Levine, 2020; Pozen, 2005). Pozen (2005, p.639) states that "the significance of one item of information may frequently depend upon knowledge of many other items of information." Thus, we expect firms to substitute earnings forecasts for non-earnings firm-initiated press releases to partially satisfy market participants' demand for information as geographic diversity increases. We state our hypothesis in the alternative form below.

H3 – Managers issue more non-earnings press releases as geographic diversity increases.

3. Geographic Diversity

Similar to Bushman et al. (2004), we measure geographic diversity by computing the revenue-based Herfindahl-Hirschman indices for each firm using the reported geographical segments found in the Compustat Segment file. Each index is computed as the sum of squared sales in each firm's geographical segment divided by total firm sales. The Herfindahl-Hirschman

index for a single firm operating in *n* different geographical segments is calculated as follows:

$$\sum_{Geo\ Segment=1}^{n} \left(\frac{Sales_{Geo\ segment}}{Total\ Firm\ Sales} \right)^2$$

This index has a range between 0 and 1. Higher values indicate a higher concentration of sales-generating activities, and therefore less diversity in geographic segments. The index increases with the concentration of firm sales in a single geographic segment and decreases with the number of geographic segments, *ceteris paribus*. For instance, consider two firms identical in size and number of segments. Firm A has 90 percent of its revenues generated by one segment, and the remaining 10 percent of its sales split evenly between the two remaining segments. Firm B, on the other hand, has its revenues generated equally among its three segments. Firm A will have a higher Herfindahl-Hirschman index, reflecting the higher concentration of its operations in one geographical segment and signifying less geographic diversity. We then subtract the index from 1 to create a variable for geographic diversity (*Geo Diversity*$_{i,t}$) that takes on values between 0 to 1, with higher values representing observations with greater geographic diversity.[6]

Firms exercise judgment on whether to define geographic segments narrowly or widely, and likely balance proprietary costs and informativeness to investors when deciding how narrowly to define geographic segments. Empirical evidence suggests that segment information is useful to investors despite variation in the application of SFAS 131 (Berger & Hann, 2003; Cho, 2015; Ettredge et al., 2005; Jayaraman & Wu, 2019). The variability in the application of SFAS 131 likely results in measurement error in *Geo Diversity*$_{i,t}$.[7] However, we have no reason to believe

[6] We assign value of zero to missing values of the geographic diversity measure. Our results are qualitatively similar when we delete observations with missing values of the measure.

[7] The number of segments, discontinuation of geographic segments, and the geographic location of subsidiaries are alternative measures for geographic diversity. These alternative measures are subject to the same self-reporting issues and potential measurement error in *Geo Diversity*$_{i,t}$. Contrary to these alternative proxies, our measure weights the firm's geographical segments using the sales generated by each segment, which allows us to measure the importance

that the measurement error is biasing our empirical tests in favor of finding results consistent with our hypotheses.[8,] Nevertheless, we use alternative segment data obtained from S&P Capital IQ to construct geographic diversity measures and examine our hypotheses. We more fully discuss these alternative geographic diversity measures and results in Section 5.3 and in the Online Appendix. Generally, the results are qualitatively similar, indicating that our inferences are robust to the potential measurement errors in our proxy.

Although we focus on the association between geographic diversity and earnings forecasts, our hypotheses may also apply to firms operating across multiple industry segments. Business or industry diversity could increase the costs of acquiring information across business segments. Having segments that operate in different industries requires sufficient knowledge about each industry to make earnings predictions for each industry segment.[9] Furthermore, firms may face challenges in consolidating information from segments operating in different industries, given their varying business cycles. Teece (1980) and Y. M. Zhou (2011) find that coordination costs increase with diversification. Therefore, the business segment diversity of the firm could also increase the costs of acquiring information.

However, it is possible that diversification into non-related businesses results in more stable cash flows than diversification into more related businesses (Amit & Livnat, 1988). Several

of the geographic segment to the firm. Using these alternative measures, we find weaker but qualitatively similar results (untabulated).

[8] If firms choose to make more precise segment disclosures, it may reduce information asymmetry and reduce investor demand for managerial earnings forecasts. However, we do not believe this to be the case for two reasons. First, segment disclosures provide historical information while earnings forecasts provide forward-looking information. Segment disclosures and earnings forecasts are likely to be complements because firms with high quality mandatory disclosure likely provide high quality voluntary disclosure (Ball et al., 2012). Second, in Table 7, we find that firms with higher geographic diversity are *more* likely to issue firm-initiated non-earnings press releases, suggesting that segment disclosures do not necessarily substitute for managerial voluntary disclosure.

[9] The extant research, predominantly in the finance literature, speaks to the challenges that diversified firms face regarding how the market views and values business diversification (Habib et al., 1997; Krishnaswami & Subramaniam, 1999; Nanda & Narayanan, 1999).

studies have even singled out business diversity as a factor that does *not* negatively impact information asymmetry (Clarke et al., 2004; Thomas, 2002). Thus, it is possible that business diversity has a positive impact on management's forecasting behavior (Waymire, 1985). Since it is less clear how business diversity affects management's communication, we make no specific predictions about how business segment diversity affects the timing and quality of managerial earnings forecasts.[10] However, since business segments also represent different facets of corporate diversification, we also measure business segment diversity (defined as the revenue-based Herfindahl-Hirschman index for each firm using the reported business segments) and include business diversity as an additional independent variable in all regression models.

4. Empirical Results

4.1. Sample and Descriptive Statistics

We construct our sample using all firm-quarter observations from I/B/E/S and Compustat with sufficient data to calculate each of the variables in our model specifications. We collect segment data from Compustat's historical segment file. We obtain data on the word count and the Gunning Fog Index of the 10-K or 10-Q from WRDS SEC Analytics Suite. We collect all quantitative quarterly management earnings forecasts from the I/B/E/S guidance database from 2002 through 2017.[11] We obtain press release data from RavenPack, which provides news articles published by the Dow Jones Newswires.[12] We use the RavenPack database to identify earnings-related and non-earnings press releases that are initiated by the firm. RavenPack distinguishes

[10] Nagar et al. (2003) include the number of business segments as a control in their model and also find no relation between the number of business segments and management forecast frequency.
[11] F. S. Zhou (2021) compares the I/B/E/S guidance database with the CIG database. He finds that the "I/B/E/S guidance is superior to CIG in the coverage comprehensiveness."
[12] Following prior studies (Drake et al., 2014), we use business press data from RavenPack, an aggregator of business press articles. The dataset includes the Dow Jones (DJ) news archives—consisting of all DJ Newswires and Wall Street Journal articles. Tetlock (2007) argues that the DJ news archives is a natural choice for a business press data source that impacts the market, due to its large circulation and influence.

articles that contain earnings forecasts from those that do not.

We exclude forecasts made before 2002 due to the different disclosure environment prior to Regulation Fair Disclosure (Reg FD). Prior to Reg FD, management could privately communicate information about the firm's performance to financial intermediaries. Following prior studies (Rogers & Stocken, 2005), we do not include forecasts made after the fiscal quarter end (i.e., pre-earnings announcements). Our full sample includes 179,438 firm-quarter observations. Our sample size decreases as we require different independent and dependent variables in each empirical specification.

Descriptive statistics for the sample can be found in Table 1. Appendix A provides the variable definitions. Table 1 provides descriptive statistics for firm-quarter observations. Our sample consists of 6,546 unique firms. We find that approximately 20.7% of the firms in our sample issue earnings forecasts. We also find that approximately 17.3% of the sample firms issue an earnings forecast during the five-day window surrounding the prior quarter's earnings announcement (*Bundled* $MF_{i,t}$), and 3.4% of the sample firms issue quarterly unbundled earnings forecasts during the quarter (i.e., forecasts issued between two days after the prior quarter's earnings announcement and the fiscal quarter end). Conditional on firms issuing at least one earnings forecast, approximately 2.6% of the firm-quarters revise outstanding earnings forecasts (*MF Revision*$_{i,t}$). Consistent with Rogers and Van Buskirk (2013), conditional on firms issuing at least one earnings forecast, approximately 86.7% of the firm-quarters bundle their *last* earnings forecast for the quarter with the prior quarter's earnings announcement (*Bundled Last* $MF_{i,t}$). In the Online Appendix, we provide the descriptive statistics for the sample of management forecasts used in our analysis (i.e., Firm-MF panel). For example, if managers issue two forecasts during the quarter, then there is a separate observation for both managerial forecasts.

We provide the Spearman correlations for the main variables in Table 2. The Spearman correlations for all variables are found in the Online Appendix. The correlations between the geographic diversity variable (*Geo Diversity*$_{i,t}$) and the financial statement complexity variables (*Length*$_{i,t-1,}$ and *FOG*$_{i,t-1}$) are low (correlation of 0.01 and -0.02, respectively), suggesting that geographic diversity captures aspects of complexity that are different from financial statement complexity. We find univariate evidence that *MF Revision*$_{i,t}$ is negatively associated with *Geo Diversity*$_{i,t}$ (correlation of -0.04). Interestingly, the correlation between geographic segment diversity and business segment diversity is not large (correlation of 0.09), suggesting that geographically diverse firms do not necessarily have diverse business segments.

The correlations between *Geo Diversity*$_{i,t}$ and *Bundled MF*$_{i,t}$ and *Bundled Last MF*$_{i,t}$ are significantly positive (correlation of 0.21 and 0.12, respectively), providing preliminary evidence that geographically diverse firms are more likely to bundle their forecasts with the earnings announcement. Consistent with expectations, the univariate correlations suggest that geographic diversity is associated with less specific and more pessimistic earnings forecasts (correlations of -0.05 and -0.03, respectively). *Geo Diversity*$_{i,t}$ is positively correlated with our measure of non-earnings press releases (*lnNR_Other*$_{i,t}$, correlation of 0.13), suggesting that firms with higher geographic diversity are more likely to provide non-earnings firm-initiated press releases. In the Online Appendix (Panel B of Table OA2), we report the correlations for the sample of management forecasts.

4.2. Managerial Forecast Timing

4.2.1. Bundled vs. unbundled managerial forecasts

We first examine whether firms with higher geographic diversity have less timely managerial earnings forecasts. If geographic diversity increases information acquisition costs

within the firm, then we expect firms with higher geographic diversity to be more likely to bundle forecasts with the previous earnings announcement for two reasons. First, firms are required to acquire information from their geographical segments at the earnings announcement date to comply with mandatory reporting requirements. Firms are not required to acquire information at other times during the quarter. Thus, managers may choose to collect information related to current and future earnings at the same time to limit the number of times the geographical segments need to gather relevant information. Second, acquisition costs limit the information set of managers (i.e., less managerial private information about future earnings) and reduce the likelihood that managers know when forecasts need to be updated throughout the quarter, reducing the likelihood of managers issuing forecasts during the quarter. Therefore, we expect managers of firms with higher geographic diversity to be more likely to bundle forecasts with the prior earnings announcement. We use the following model to test this expectation.

$$\begin{aligned} Dep\ Var_{i,t} = \quad & \beta_1\, Geo\ Diversity_{i,t} + \beta_2\, Length_{i,t-1} + \beta_3\, Fog_{i,t-1} + \beta_4\, lnDays\_EA_{i,t} \\ & + \beta_5\, Business\ Diversity_{i,t} + \beta_6\, lnSizes_{i,t-1} + \beta_7\, Book\text{-}to\text{-}Market_{i,t-1} \\ & + \beta_8\, SalesVol_{i,t-1} + \beta_9\, OCFVol_{i,t-1} + \beta_{10}\, RetVol_{i,t-1} + \beta_{11}\, Litigation\ Risk_{i,t} \\ & + \beta_{12}\, \Delta ROA_{i,t} + \beta_{13}\, SalesGrowth_{i,t} + \beta_{14}\, HHI_{i,t} + \beta_{15}\, lnCoverage_{i,t-1} \\ & + \beta_{16}\, INSTOWN_{i,t-1} + \beta_{17}\, Fourth\ Quarter_{i,t} + \beta_{18}\, Lagged\ Dep\ Var_{i,t-1} \\ & + \Sigma Industry\ FE + \Sigma Year\ FE + \varepsilon_{i,t} \end{aligned} \tag{1}$$

$Dep\ Var_{i,t}$ is equal to $Bundled\ MF_{i,t}$ or $Unbundled\ MF_{i,t}$. $Bundled\ MF_{i,t}$ is an indicator variable equal to one if firm *i* issues an earnings forecast during the five-day [-2, +2] window surrounding the earnings announcement for quarter *t-1* and equal to zero otherwise. *Unbundled* $MF_{i,t}$ is an indicator equal to one if firm *i* issues a quarterly earnings forecast from two days after the prior quarter's earnings announcement date during quarter *t* to the end of fiscal quarter *t* and equal to zero otherwise. To estimate the likelihoods of geographically diverse firms issuing

bundled or unbundled earnings forecasts, we use a linear probability model with fixed effects.[13]

We include several control variables in equation (1) to reduce potential concerns about correlated omitted variables and self-reporting differences across firms. All control variables are defined in Appendix A. Similar to prior research (Gallemore & Labro, 2015; Heitzman & Huang, 2019), we proxy for accounting system sophistication using the natural logarithm of the number of days between the end of the quarter and the earnings announcement date ($lnDays\_EA_{i,t}$). A sophisticated accounting system that is capable of quickly acquiring information from the different geographic segments allows for the books to be closed more quickly than a firm with a less sophisticated accounting system, *ceteris paribus*, and likely results in a shorter lag between the quarter-end and earnings announcement date.[14] Consistent with this view, Dorantes et al. (2013) suggest that firms with lower-quality information systems need more time to prepare their financial statements. In addition, firm, industry, and time-varying control variables (discussed below) help to control for other aspects of the firm's information acquisition system.

Following Guay et al. (2016), we include the length and Gunning Fog Index of the 10-Q as control variables. We also control for the business diversity ($Business\ Diversity_{i,t}$). We control for environmental uncertainty using the coefficient of variation (standard deviation divided by the mean) over the prior 12 quarters preceding quarter *t* in sales ($SalesVol_{i,t-1}$) and in operating cash flows ($OCFVol_{i,t-1}$).[15] We also include the volatility of daily stock returns for firm *i* in quarter *t-1*

[13] We do not use a logit/probit model (i.e., non-linear model) with fixed effects to avoid the incidental parameters problem (Neyman & Scott, 1948). In untabulated tests, we find that our results are robust to using a logit or a probit model with or without fixed effects.

[14] Several control variables are likely associated with the sophistication of the firm's information system. For example, larger firms, more volatile firms, and more mature firms are more likely to have more sophisticated information systems. We also control for industry and institutional ownership, which is likely associated with the demand for information. Lastly, we also control for the lagged dependent variable in many empirical tests, which also controls for the impact of the information system to the degree that voluntary disclosure is associated with the information system.

[15] We use the standard deviation in revenues as opposed to earnings to more directly capture demand uncertainty facing the organization. However, we also use earnings volatility (which is highly correlated with the volatility in revenues) in unreported tests and find similar results.

($RetVol_{i,t-1}$). We expect volatility in fundamentals to be negatively associated with the provision and accuracy of a forecast (Chen et al., 2011; Waymire, 1985).

Several additional firm characteristics affect investors' demand for information (Ajinkya et al., 2005; Boone & White, 2015). We use analyst following and institutional ownership to control for information demand. Following Wang (2007), we control for litigation risk (*Litigation* $Risk_{i,t}$). We also control for other factors prior literature identifies as affecting voluntary disclosure: firm size, growth opportunities, profitability, sales-based Herfindahl-Hirschman Index, and a fourth-quarter indicator variable. Prior research shows that managerial incentives to obfuscate segment reporting increase with proprietary costs (Berger & Hann, 2003; Botosan & Stanford, 2005; Cho, 2015). Thus, including book-to-market ratio ($Book\text{-}to\text{-}Market_{i,t-1}$), Herfindahl-Hirschman Index ($HHI_{i,t}$), firm size ($lnSize_{t-1}$), and profitability ($\Delta ROA_{i,t}$) controls for proprietary costs and agency costs. The fourth fiscal quarter indicator *(Fourth Quarter*$_{i,t}$) for firm *i* during quarter *t* is included since managers are more likely to provide voluntary disclosure at the end of the fiscal year.[16] We include industry (Fama-French 48 industries) and year fixed effects to mitigate concerns that unobservable industry-wide factors and time-varying common shocks confound our results. Industry fixed effects allow us to control for industry norms in reporting geographic segments. We cluster all the standard errors by firm and calendar quarter to correct the standard errors for both serial and cross-sectional correlation (Petersen, 2009).

Table 3 presents the results using equation (1). The dependent variable is equal to *Bundled* $MF_{i,t}$ in columns (1) and (2) and equal to *Unbundled* $MF_{i,t}$ in columns (3) and (4). In column (1),

[16] The provision/properties of managerial forecasts and the disclosure of geographical segments in the financial statements could be influenced by the sensitivity of managers' compensation to stock market fluctuations. In additional robustness tests, we control for the sensitivity of managers' compensation to stock market fluctuations. We note that the results are weaker; however, the inferences are qualitatively similar. We believe that the results are slightly weaker because the sample size is smaller, potentially reducing the statistical power of the empirical tests. Compensation data in ExecuComp is only available for S&P 1,500 firms.

we find a significantly (1% level) positive coefficient on *Geo Diversity*$_{i,t}$ equal to 0.078, suggesting that firms with greater geographic diversity are more likely to bundle their earnings forecasts with the prior quarter's earnings announcement. The coefficient estimate suggests that a one-standard-deviation increase in *Geo Diversity*$_{i,t}$ is associated with a 2.10% increase in the likelihood of the firm issuing a bundled earnings forecast, which is approximately a 12.17% increase relative to its mean (0.1217 = [0.078 × 0.270] / 0.173). In column (2), we include the lagged dependent variable as an additional control and continue to observe a significantly (1% level) positive coefficient on *Geo Diversity*$_{i,t}$. The coefficient estimate suggests that a one-standard-deviation increase in *Geo Diversity*$_{i,t}$ is associated with a 0.59% increase in the likelihood of issuing a bundled forecast, which is approximately a 3.43% increase relative to its mean (0.0343 = [0.022 × 0.270] / 0.173).

In column (3), we find a negative and significant (5% level) coefficient on *Geo Diversity*$_{i,t}$ equal to -0.014, which suggests geographically diverse firms are less likely to provide earnings forecasts during the quarter. The coefficient estimate suggests that a one-standard-deviation increase in *Geo Diversity*$_{i,t}$ is associated with a 0.378% decrease in the likelihood of issuing an earnings forecast during the quarter (i.e., forecasts issued two-days after the prior quarter's earnings announcement in quarter *t*), which is approximately an 11.12% decrease relative to its mean (0.1112 = [-0.014 × 0.270] / 0.034). In column (4), we again include the lagged dependent variable as an additional control and continue to find a significantly (5% level) negative coefficient on *Geo Diversity*$_{i,t}$. The coefficient estimate suggests that a one-standard-deviation increase in *Geo Diversity*$_{i,t}$ is associated with a 0.27% decrease in the likelihood of issuing an earnings forecast during the quarter, which is approximately a 7.94% decrease relative to its mean (0.0794 = [-0.010 × 0.270] / 0.034). Overall, the findings in Table 3 are consistent with our first hypothesis that firms with higher geographic diversity produce less timely managerial earnings forecasts.

4.2.2. Managerial forecast revisions

If managers are less able to cost-effectively acquire information across multiple geographic segments, then we expect that managers are less likely to revise their earnings forecasts during the quarter and more likely to issue their last revision at the earnings announcement date. We use the same specification in equation (1), with one exception. Rather than including all firm-quarter observations, we only include firm-quarter observations with at least one management forecast during the year. This regression specification focuses on whether firms collect new information to update their outstanding forecasts when geographic diversity is higher.

Table 4 presents the results examining the relation between geographic diversity and management forecast revisions. The dependent variable is equal to either *Bundled Last MF*$_{i,t}$ or *MF Revision*$_{i,t}$. *Bundled Last MF*$_{i,t}$ is an indicator variable equal to one if the manager issues the *last* earnings forecast for quarter *t* during the five-day window surrounding the earnings announcement for quarter *t-1* and equal to zero otherwise.[17] In column (1), we find a positive and significant coefficient (1% level) of 0.070 on *Geo Diversity*$_{i,t}$, suggesting that geographic diversity increases the likelihood that management bundles its *final* earnings forecast of the quarter with the prior quarter's earnings announcement. The coefficient estimate suggests that a one-standard-deviation increase in *Geo Diversity*$_{i,t}$ is associated with a 1.97% increase in the likelihood of the bundling the last forecast, which is approximately 2.27% relative to its mean (0.0227 = [0.070 × 0.282] / 0.867).[18] After including the lagged dependent variable in column (2), we find that the coefficient on *Geo Diversity*$_{i,t}$ continues to be significantly positive with a similar economic

[17] *Bundled Last MF*$_{i,t}$ is equal to 1 when the last managerial forecast is issued in the 5-day window surrounding the earnings announcement, and *Bundled MF*$_{i,t}$ is equal to 1 when there is a managerial forecast issued during the 5-day window surrounding the earnings announcement. The regression including *Bundled Last MF*$_{i,t}$ as the dependent variable includes firm-quarter observations for which a managerial forecast is provided by management. The regression including *Bundled MF*$_{i,t}$ as the dependent variable includes all firm-quarter observations.

[18] The standard deviation of *Geo Diversity*$_{i,t}$ for this reduced sample with non-missing values of the dependent variable is equal to 0.282 (untabulated).

magnitude found in column (1).

MF Revision$_{i,t}$ is an indicator equal to one if firm *i* issues an earnings forecast revision between two days after the prior quarter's earnings announcement date and the fiscal quarter-end and equal to zero otherwise. We define an earnings forecast revision as a management earnings forecast that *updates* the outstanding management earnings forecast, conditional on the firm having an outstanding initial earnings forecast. If firm *i* merely confirms the outstanding forecast (i.e., the new forecast is equal to the previous forecast), then the confirming forecast is not considered as a forecast revision. In column (3), we find a negative and significant (5% level) coefficient of -0.016 on *Geo Diversity*$_{i,t}$, suggesting that firms with higher geographic diversity are less likely to revise their forecasts during the quarter. The economic magnitude of this effect is comparable to that found in Table 3: a one-standard-deviation increase in *Geo Diversity*$_{i,t}$ is associated with a 0.45% decrease in the likelihood of forecast revisions, which is approximately 17.35% relative to its mean (0.1735 = [-0.016× 0.282] / 0.026). When we include the lagged dependent variable in the regression, we find similar results in column (4).

Overall, the results in Table 4 are consistent with those in Table 3 and suggest that firms with greater geographic diversity are less likely to revise their forecasts during the quarter and are more likely to bundle their last forecast with the prior quarter's earnings announcement.

4.3. Managerial Forecast Quality

If geographic diversity increases the costs that managers incur to acquire information, we expect managers to issue lower-quality earnings forecasts. We examine whether the precision, bias, and accuracy of the management earnings forecast are associated with geographic diversity using equation (2). We use ordinary least squares to test our predictions.

$$
\begin{aligned}
Dep\ Var_{i,t} = \quad & \beta_1\, Geo\ Diversity_{i,t} + \beta_2\, Length_{i,t-1} + \beta_3\, Fog_{i,t-1} + \beta_4\, lnDays\_EA_{i,t} \\
& + \beta_5\, Business\ Diversity_{i,t} + \beta_6\, lnSizes_{i,t-1} + \beta_7\, Book\text{-}to\text{-}Market_{i,t-1} \\
& + \beta_8\, SalesVol_{i,t-1} + \beta_9\, OCFVol_{i,t-1} + \beta_{10}\, RetVol_{i,t-1} + \beta_{11}\, Litigation\ Risk_{i,t} \\
& + \beta_{12}\, \Delta ROA_{i,t} + \beta_{13}\, SalesGrowth_{i,t} + \beta_{14}\, HHI_{i,t} + \beta_{15}\, lnCoverage_{i,t-1} \\
& + \beta_{16}\, INSTOWN_{i,t-1} + \beta_{17}\, Fourth\ Quarter_{i,t} + \beta_{18}\, Horizon_{i,t} \\
& + \Sigma Industry\ FE + \Sigma Year\ FE + \varepsilon_{i,t}
\end{aligned}
\tag{2}
$$

$Dep\ Var_{i,t}$ is equal to $Specificity_{i,t}$, $Forecast\ Bias_{i,t,}$ or $Forecast\ Error_{i,t}$.[19] Table 5 presents the results of equation (2). In column (1), $Specificity_{i,t}$ is equal to the difference between the top of the forecast range less the bottom of the forecast range multiplied by -1 and scaled by stock price three days before the forecast date for the last forecast issued for firm *i* during quarter *t*. $Specificity_{i,t}$ is equal to zero for point estimates (Vashishtha, 2014). Hence, higher values of $Specificity_{i,t}$ indicate more specific forecasts. In column (1), we find a negative and significant coefficient (5% level) on $Geo\ Diversity_{i,t}$ equal to -0.111, which suggests that geographically diverse firms provide less precise managerial forecasts. The coefficient estimate suggests that a one-standard-deviation increase in $Geo\ Diversity_{i,t}$ is associated with a 0.031 decrease in $Specificity_{i,t}$, which is approximately 10.58% of its mean (0.1058 = [-0.111 × 0.282] / -0.296).[20]

We also expect managers to be more pessimistic in their forecasts to absorb unexpected shocks that might negatively affect future earnings. Managers are less likely to miss pessimistic forecasts, reducing the likelihood of future litigation brought by shareholders for not updating firm

[19] We use the last earnings forecast for firm *i* during quarter *t* to compute the variables. We find that the results are unaffected by using the first earnings forecast issued during the quarter.

[20] In untabulated tests, we run an ordered logit with forecast form as the dependent variable. Forecast form is equal to two when the forecast is a point forecast, one when the forecast is a closed-ended range forecast, and zero when the forecast is an open-ended forecast. We find a negative but insignificant coefficient on $Geo\ Diversity_{i,t}$. However, we do not believe the insignificant relation nullifies or diminishes the results in Table 5. The analysis in Table 5 allows us to identify continuous variation in the range forecasts, which we cannot do with the ordered logit test. The insignificant results using forecast form could be because there is less variation in the dependent variable. In our sample, among all the last management forecasts issued during the quarter, only 2.09% (= 684 / 32,714) of the forecasts are open-ended range forecasts while 85.97% (= 28,125 / 32,714) and 11.94% (= 3,905 / 32,714) are closed-range range and point forecasts, respectively. These descriptive statistics are consistent with prior research that provides evidence that closed-range forecasts are the most prevalent form of management earnings forecasts (Ciconte et al., 2014).

disclosure in a timely manner. Cornerstone (2013) reports that approximately 54% of lawsuits between 2009 and 2013 bring allegations that management provided "false forward-looking information," which could be cited if management does not update the firm's earnings forecasts after negative earnings shocks in a timely manner. Therefore, we examine the association between geographic diversity and managerial forecast biases.

In column (2), we present the regression results with *Forecast Bias*$_{i,t}$ as the dependent variable. *Forecast Bias*$_{i,t}$ is equal to the management earnings forecast for firm *i* during quarter *t* less actual earnings as provided by I/B/E/S and scaled by stock price three days prior to the date of the last management forecast issued during quarter *t*. Lower values of *Forecast Bias*$_{i,t}$ represent more pessimistic forecasts. In column (2), we find a negative and significant (5% level) coefficient on *Geo Diversity*$_{i,t}$ equal to -0.250, suggesting that geographically diverse firms provide more pessimistic forecasts. The economic magnitude of this effect is large: a one-standard-deviation increase in *Geo Diversity*$_{i,t}$ is associated with a 0.071 decrease in *Forecast Bias*$_{i,t}$, which is approximately 35.97% of its mean (0.3597 = [-0.250 × 0.282] / -0.196). Consistent with expectations, we also find that managers of firms with high uncertainty (*SalesVol*$_{i,t-1}$ and *RetVol*$_{i,t-1}$) are more pessimistic in their forecasts.

In column (3), we present the results when *Forecast Error*$_{i,t}$ is the dependent variable. *Forecast Error*$_{i,t}$ is equal to the absolute value of *Forecast Bias*$_{i,t}$, and higher values of *Forecast Error*$_{i,t}$ represent less accurate forecasts. We find a positive and significant coefficient (10% level) on *Geo Diversity*$_{i,t}$ equal to 0.178, indicating that geographic diversity decreases managerial forecast accuracy. Again, a one-standard-deviation increase in *Geo Diversity*$_{i,t}$ is associated with a 0.050 increase in *Forecast Error*$_{i,t}$, which is approximately 9.14% of its mean (0.091 = [0.178 × 0.282] / 0.549). Consistent with expectations, we find that managers of large firms (*lnSize*$_{i,t-1}$) and

firms with high institutional ownership ($INSTOWN_{i,t-1}$) issue more accurate forecasts. We also find that firms with high uncertainty ($SalesVol_{i,t-1}$ and $RetVol_{i,t-1}$) issue less accurate managerial forecasts.

Overall, the results in Table 5 support our first hypothesis that managers of firms with higher geographic diversity provide lower quality management forecasts—specifically, forecasts that are less specific, more pessimistic, and less accurate.

4.4. Investor and Analyst Reactions to Managerial Forecasts

One of the purposes of management earnings forecasts is to reduce information asymmetry between managers and outside market participants (Beyer et al., 2010). If firms with higher geographic diversity provide lower-quality and less-timely management forecasts, we expect analysts and investors to be less likely to rely on them when revising their beliefs, as reflected in analyst revisions and returns. Using all management quarterly earnings forecasts issued during our sample period, we test whether the news in management forecasts is less informative to analysts and investors when issued by firms with higher geographic diversity. Equation (3) is estimated for each managerial forecast issued by firm *i* using ordinary least squares.

$$\begin{aligned} Dep\ Var_{i,t,m} = \quad & \beta_1\, MF\ News_{i,t,m} + \beta_2\, High\ Geo\ Diversity_{i,t} \\ & + \beta_3\, MF\ News_{i,t,m} \times High\ Geo\ Diversity_{i,t} + \beta_4\, Length_{i,t-1} + \beta_5\, Fog_{i,t-1} \\ & + \beta_6\, lnDays\_EA_{i,t} + \beta_7\, Business\ Diversity_{i,t} + \beta_8\, lnSizes_{i,t-1} \\ & + \beta_9\, Book\text{-}to\text{-}Market_{i,t-1} + \beta_{10}\, SalesVol_{i,t-1} + \beta_{11}\, OCFVol_{i,t-1} \\ & + \beta_{12}\, RetVol_{i,t-1} + \beta_{13}\, Litigation\ Risk_{i,t} + \beta_{14}\, \Delta ROA_{i,t} + \beta_{15}\, SalesGrowth_{i,t} \\ & + \beta_{16}\, HHI_{i,t} + \beta_{17}\, lnCoverage_{i,t-1} + \beta_{18}\, INSTOWN_{i,t-1} \\ & + \beta_{19}\, Fourth\ Quarter_{i,t} + \beta_{20}\, Horizon_{i,t,m} + \Sigma Industry\ FE + \Sigma Year\ FE + \varepsilon_{i,t} \end{aligned} \tag{3}$$

$Dep\ Var_{i,t,m}$ is equal to either $AF\ Revision_{i,t,m}$ or $Return[0,2]_{i,t,m}$. The subscript *m* is for each management forecast. $AF\ Revision_{i,t,m}$ is equal to the consensus analyst forecast issued five days after the management forecast less the consensus analyst forecast issued three days prior to the

management forecast scaled by stock price three days days prior to the management forecast date. *Return[0,2]*$_{i,t,m}$ is equal to the three-day buy-and-hold abnormal return between the day of and two days after the management forecast. *MF News*$_{i,t,m}$ is equal to the management forecast less the consensus analyst forecast issued three days prior to the management forecast date scaled by stock price three days prior to the management forecast date. When the management forecast is issued in the five-day window surrounding the earnings announcement date, we follow Rogers and Van Buskirk (2013) and adjust management forecast news to control for potential confounding effects of concurrent earnings announcements. We find that our results are qualitatively similar if we do not make this adjustment. We expect a positive coefficient on *MF News*$_{i,t,m}$ if managerial earnings forecasts are informative to analysts and investors. *High Geo Diversity*$_{i,t}$ is equal to one if *Geo Diversity*$_{i,t}$ is above the sample median and equal to zero otherwise. The coefficient on the interaction between *MF News*$_{i,t,m}$ and *High Geo Diversity*$_{i,t}$ is the coefficient of interest and expected to be negative if the news in management forecasts is less informative to analysts and investors when geographic diversity is higher.

Tables 6 presents the results of using equation (3). In columns (1) and (2), *AF Revision*$_{i,t,m}$ is the dependent variable. *Return [0,2]*$_{i,t,m}$ is the dependent variable in columns (3) and (4). In column (1), we find a significantly positive (1% level) coefficient on *MF News*$_{i,t,m}$ equal to 0.128, suggesting that analysts revise their earnings forecasts in response to the news in managerial earnings forecasts. In column (2), we find a significantly negative (1% level) coefficient on the interaction term (*MF News*$_{i,t,m}$ × *High Geo Diversity*$_{i,t}$) equal to -0.049, suggesting that analysts respond less to the news in managerial forecasts issued by firms with higher geographic diversity. The coefficient estimate suggests that analyst forecast revisions are 31.41% (= -0.049 / 0.156) lower when the news in the managerial forecast is issued by firms with higher geographic diversity.

In columns (3) and (4) we find that investors' response to the news in managerial forecasts is 30.0% lower when the forecast is issued by firms with higher geographic diversity.

The results in Table 6 are consistent with our second hypothesis and suggest that market participants (e.g., analysts and investors) have a dampened reaction to the news in managerial earnings forecasts when issued by firms with higher geographic diversity. This evidence corroborates our findings in Table 5 that geographic diversity is associated with less specific, more pessimistic, and less accurate forecasts. It is possible that market participants would seek and find other sources of information to complement the low-quality managerial earnings forecasts to improve their information set. We explore this possibility in the next section.

4.5. Non-Earnings Press Releases as Earnings Forecast Substitutes

Lastly, we explore whether higher information acquisition costs arising from higher geographic diversity encourage firms to substitute earnings forecasts with firm-initiated press releases that do not contain earnings-related information. Specifically, we investigate whether higher geographic diversity is associated with more non-earnings firm-initiated press releases during the quarter using equation (4).

$$\begin{aligned} lnNR\_Other_{i,t} = \; & \beta_1 Geo\ Diversity_{i,t} + \beta_2 Length_{i,t-1} + \beta_3 Fog_{i,t-1} + \beta_4 lnDays\_EA_{i,t} \\ & + \beta_5 Business\ Diversity_{i,t} + \beta_6 lnSizes_{i,t-1} + \beta_7 Book\text{-}to\text{-}Market_{i,t-1} \\ & + \beta_8 SalesVol_{i,t-1} + \beta_9 OCFVol_{i,t-1} + \beta_{10} RetVol_{i,t-1} + \beta_{11} Litigation\ Risk_{i,t} \\ & + \beta_{12} \Delta ROA_{i,t} + \beta_{13} SalesGrowth_{i,t} + \beta_{14} HHI_{i,t} + \beta_{15} lnCoverage_{i,t-1} \\ & + \beta_{16} INSTOWN_{i,t-1} + \beta_{17} Fourth\ Quarter_{i,t} + \beta_{18} Horizon_{i,t} \\ & + \Sigma Industry\ FE + \Sigma Year\ FE + \varepsilon_{i,t} \end{aligned} \quad (4)$$

$lnNR\_Other_{i,t}$ is equal to the natural log of one plus the number of firm-initiated press releases that do not contain earnings-related news for firm i from two days after the earnings

announcement for quarter *t-1* and the end of quarter *t*.[21] According to RavenPack, non-earnings press-releases include acquisitions, asset write-downs, regulatory items (e.g., auditor appointments or auditor resignations), product services, clinical trials, business contracts, regulatory product applications, regulatory product approvals, product releases, product discontinuations, bankruptcies, equity actions, business combinations, labor issues (e.g., workplace safety), delistings, natural disasters, corporate social responsibility, public offerings, patent filings, patent filing rejections, partnership terminations, debt restructuring, etc. We expect that these press releases provide investors with additional information that can be useful in forming expectations about the firm's expected future cash flows.

Table 7 presents the results from estimating equation (4). In column (1), the coefficient is significantly positive on $Geo\ Diversity_{i,t}$ at the 1% level and is equal to 0.092, implying that a one-standard-deviation increase in $Geo\ Diversity_{i,t}$ is associated with a 2.5% increase in the dependent variable ($lnNR\_Other_{i,t}$). This result suggests managers substitute earnings forecasts with firm-initiated non-earnings press releases as geographic diversity increases. When we include the lagged dependent variable in column (2), we find that similar results.

As a robustness test, we also examine whether firms with higher geographic diversity are *less* likely to issue press releases that contain earnings information. We replace $lnNR\_Other_{i,t}$ with $lnNR\_Earn_{i,t}$ in equation (4). $lnNR\_Earn_{i,t}$ is equal to the natural log of one plus the number of firm-initiated press releases containing earnings-related news for firm *i* between two days after the prior quarter's earnings announcement date and the quarter-end. In columns (3) and (4), we find a significantly negative coefficient on $Geo\ Diversity_{i,t}$ at the 1% level, which is consistent with our

[21] Based on Ravenpack's recommendation, we identify firm-initiated press releases by using a relevance score of higher than 75, an event novelty score of 100, and news type of 'press release.' A press release is defined by Ravenpack as "a corporate announcement originated by an entity and distributed via a news provider."

findings in Table 3 and Table 4 that firms with greater geographic diversity are less likely to provide earnings forecasts during the quarter.

Overall, along with our findings in Table 3 and Table 4, these results suggest that firms with higher geographic diversity are more likely to substitute earnings forecasts with firm-initiated press releases that do not contain earnings news.

5. Additional Analyses

5.1. Cross-Sectional Test – Cultural Tightness

We examine how cultural tightness influences the extent to which geographic diversity affects the quality and timeliness of managerial earnings forecasts. Cultural tightness allows us to more finely examine the variation in the information acquisition costs associated with geographic diversity. Gelfand et al. (2011) define cultural tightness (looseness) as strong (weak) norms and a low (high) tolerance for deviant behavior. Geographic segments that are culturally tighter are less likely to have differences in social norms, tolerances for questionable behavior, employee standards, and cultural diversity. Thus, the costs of acquiring information within more geographically diverse firms are not as great when gathering information from geographic segments that are culturally tighter. Therefore, when cultural tightness within the firm is higher, we expect geographic diversity of the firm to be less impactful on voluntary disclosure.

To examine this prediction, we use the cultural tightness index provided by Gelfand et al. (2011) to create *Cultural Tightness*$_{i,t}$, which is the segment-sales-weighted cultural tightness index.[22] Then we create an indicator variable, *High Cultural Tightness*$_{i,t}$, which is equal to one if *Cultural Tightness*$_{i,t}$ is above the sample median and equal to zero otherwise. We interact this

[22] In case where the geographic segment definition is not specific to an individual country (e.g., Europe, Asia, Latin America, and etc.), we use the region's GDP weighted average of cultural tightness score. We obtain GDP data and the regional information from the World Bank (https://data.worldbank.org/indicator/).

indicator with *Geo Diversity*$_{i,t}$ to examine whether the effects of international diversification on managerial forecasting behavior vary with the firm's cultural tightness.

Table 8 reports the estimation results. We include all control variables from the primary empirical specifications in addition to the lagged dependent variables; however, the control variables are omitted from Table 8 for the sake of brevity. In Panel A, we examine the timing of managerial earnings forecasts provided during the quarter and the issuance of non-earnings press releases. We find that the signs and significance (at least at the 10% level) of the coefficients on *Geo Diversity*$_{i,t}$ are similar to those found in primary tests previously reported. In Panel A, the coefficient on the interaction between *High Cultural Tightness*$_{i,t}$ and *Geo Diversity*$_{i,t}$ has the predicted sign in columns (2), (3), (4), and (6). These results suggest that the timing of managerial forecasts is less affected by geographic diversity when firms are culturally tighter. Interestingly, we do not find the predicted coefficients on *Geo Diversity*$_{i,t}$ and its interaction with *High Cultural Tightness*$_{i,t}$ in Panel B, which is where we present the results examining the quality of disclosure.

5.2. Annual Managerial Forecasts

Our tests focus on quarterly managerial forecasts because the forecast horizon for quarterly managerial forecasts is typically shorter than that of annual forecasts. Our hypotheses are unlikely to apply to longer forecast horizons for two reasons. First, managers are more likely to use actual realizations of segment-specific information combined with general market trends and firm-specific plans for the upcoming year for longer horizon forecasts. In contrast, shorter horizon forecasts are more likely to require real-time segment-specific information to guide investors toward quarterly earnings. Second, managers are less likely to face litigation and reputation concerns if annual forecasts are not met since the longer horizon affords the manager more time to evaluate the performance of the firm and guide analysts toward the realization, making actual

geographic segment information less important for annual forecasts than quarterly forecasts. Thus, we have chosen to focus on quarterly, rather than annual forecasts.

Quarterly forecasts are inherently important to study. Houston et al. (2010) provide evidence that quarterly forecasts are fundamentally different from annual forecasts. Houston et al. (2010) provide evidence that firms are more likely to stop providing *quarterly* guidance due to poor performance and repeatedly missing analyst expectations. Houston et al. (2010) also provide evidence that firms that stop providing *quarterly* forecasts have a decrease in analyst coverage, an increase in analyst earnings forecast errors, and an increase in analyst forecast dispersion. Interestingly, of the 222 firms that stop providing *quarterly* guidance in their sample, only 31 of those firms stop providing *annual* guidance. This evidence suggests that the costs and benefits of quarterly managerial forecasts are not identical to that of annual forecasts.

In addition, investors and analysts tend to fixate on quarterly earnings announcements (Bradshaw & Sloan, 2002).[23] Much of the prior literature on meeting or beating expectations examines quarterly earnings realizations (Doyle et al., 2013; Doyle et al., 2006; Gu & Chen, 2004; Matsumoto, 2002). Thus, the market's fixation on quarterly earnings announcements may affect the timing and quality of quarterly managerial forecasts relative to annual forecasts. Our focus on quarterly forecasts contributes to our understanding of the inherent complexities of an important managerial disclosure practice.

Nevertheless, we test whether our results hold for annual forecasts despite the differences between annual and quarterly forecasts. Not surprisingly, we find that the results do not hold when

[23] Bradshaw and Sloan (2002) suggest that "the quarterly earnings announcement season has become a closely watched ritual."

using annual forecasts. This evidence contributes to the existing literature (Houston et al., 2010) documenting how managers use annual forecasts differently from quarterly forecasts.

5.3. Compustat Segment File vs. S&P Capital IQ

Similar to Bushman et al. (2004), we construct *Geo Diversity*$_{i,t}$ using the Compustat's segment file. The segment data in Compustat are based on companies' regulatory filings and provide historical geographic segment data. However, if managers exercise discretion in defining segments, managerial discretion could bias *Geo Diversity*$_{i,t}$. Also, Compustat's segment data often define geographic segments broadly (e.g., Asia, Europe, Africa, etc.), which could decrease the precision of the variable measurement and thus increase measurement error. To address these issues, we employ an alternative data source, S&P Capital IQ, to construct geographic diversity measures and perform sensitivity checks using theses alternative measures.

S&P Capital IQ provides subsidiary information on public companies.[24] S&P Capital IQ collects subsidiary data from various sources including SEC filings/annual reports (e.g., Forms 10-K, 10KSB, 20F, 40-F, DEF 14A), and other sources such as firm websites, stock exchanges, governmental agencies, insurers, news articles, press releases, firm announcements, etc. Using this database, we create several alternative geographic diversity measures and perform robustness tests. We describe the four additional geographic diversity measures and include the results from the robustness tests in the Online Appendix of the paper. Generally, the inferences based on S&P Capital IQ data are generally similar with one exception.[25] We find limited evidence that high

[24] https://www.capitaliq.com/

[25] We use the following dependent variables to test whether firms with higher geographic diversity have less timely managerial earnings forecasts during the quarter: *Unbundled MF*$_{i,t}$ (Table 3), *Bundled Last MF*$_{i,t}$ (Table 4), *MF Revision*$_{i,t}$ (Table 4), and *lnNR_Earn*$_{i,t}$ (Table 7). The robustness tests using S&P Capital IQ data to construct the geographic diversity measures are consistent with the results reported in the paper when using the following dependent variables: *MF Revision*$_{i,t}$ (Table OB3 in the Online Appendix), *Bundled Last MF*$_{i,t}$ (Table OB3 in the Online Appendix), and *lnNR_Earn*$_{i,t}$ (Table OB6 in the Online Appendix). However, the geographic diversity measures are

geographic diversity dampens investors' and analysts' reaction to managerial forecast news (Table 6 of the main paper and Table OB5 of the Online Appendix). Overall, the additional tests using the alternative geographic diversity measures constructed from S&P Capital IQ suggest that our inferences are not significantly affected by potential reporting biases and measurement error in the geographic diversity measure constructed using the Compustat Segment file.

6. Conclusion

In this paper, we examine whether geographic diversity is associated with the timing and quality of managerial voluntary disclosures. We find that firms with higher geographic diversity are more likely to bundle earnings forecasts with the prior quarter's earnings announcement and less likely to issue forecasts during the quarter. We also find that geographic diversity is associated with less specific, less accurate, and more pessimistic forecasts. Consistent with more geographically diverse firms issuing less-timely and lower-quality forecasts, analysts and investors find the news in managerial forecasts less informative. Finally, geographically diverse firms are more likely to substitute earnings forecasts with firm-initiated non-earnings press releases. Taken together, our results suggest that acquiring information across heterogeneous geographic segments is costly to managers when producing earnings forecasts.

We contribute to the accounting literature by providing evidence that the firm's organizational structure can increase the costs of acquiring information, which can affect financial disclosure practices. Our study is among the few that attempts to link managerial and financial accounting research. Our study also helps us understand why firms issue less-timely and lower-quality managerial forecasts. Although our results largely corroborate our hypotheses, the proxy

not significant when *Unbundled* $MF_{i,t}$, is the dependent variable (Table OB2 in the Online Appendix). Therefore, in summary, the results in the robustness tests support our inference that geographic diversity leads to less timely earnings forecasts during the quarter.

we use to measure geographic diversity is relatively noisy. Future research may find it useful to develop alternative proxies to measure the costs associated with geographic diversity. While our results cannot speak to causation, we believe that our paper provides important descriptive evidence on the association between geographic diversity and a firm's voluntary disclosure behavior.

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Appendix A. Variable Definitions

Variables	Descriptions
Geo Diversity$_{i,t}$	*Geo Diversity*$_{i,t}$ is equal to one minus the geographic segment Herfindahl-Hirschman index for firm *i* in quarter *t*. The Herfindahl-Hirschman index is the sum of squares of the sales in each geographic segment divided by total firm sales.
MF News$_{i,t,m}$	*MF News*$_{i,t,m}$ is equal to the management forecast less the consensus analyst forecast issued three days prior to the management forecast scaled by stock price three days prior to the management forecast date, and equal to zero otherwise.
Bundled MF$_{i,t}$	*Bundled MF* is an indicator variable equal to one if firm *i* issues a quarterly earnings forecast in the five-day [-2,+2] window surrounding the prior quarter's earnings announcement date during quarter *t*, and equal to zero otherwise.
Unbundled MF$_{i,t}$	*Unbundled MF*$_{i,t}$ is an indicator equal to one if firm *i* issues a quarterly earnings forecast from two days after the prior quarter's earnings announcement date during quarter *t* to the end of fiscal quarter *t,* and equal to zero otherwise.
MF Revision$_{i,t}$	*MF Revision*$_{i,t}$ is an indicator equal to one if firm *i* revises an outstanding quarterly earnings forecast from two days after the prior quarter's earnings announcement date and the fiscal quarter end, and equal to zero otherwise.
Bundled Last MF$_{i,t}$	*Bundled Last MF*$_{i,t}$ is an indicator variable equal to one if the last earnings forecast for firm *i* is issued in the [-2,+2] window surrounding the prior quarter's earnings announcement date during quarter *t*, and equal to zero otherwise.
Specificity$_{i,t}$	*Specificity*$_{i,t}$ is equal to -1 multiplied by the difference between the top and bottom of the forecast range divided by stock price three days before the date of the management forecast. If the management forecast is a point forecast, this variable is set equal to zero. This variable is then multiplied by 100.
Forecast Bias$_{i,t}$	*Forecast Bias*$_{i,t}$ is equal to the last management earnings forecast prior to earnings announcement during quarter *t* for firm *i* less the I/B/E/S-reported actual earnings per share scaled by stock price three days prior to the date of management forecast. This variable is then multiplied by 100.
Forecast Error$_{i,t}$	*Forecast Error*$_{i,t}$ is equal to the absolute value of *Forecast Bias*$_{i,t}$.
NR_Earn$_{i,t}$	*NR_Earn*$_{i,t}$ is equal to the number of firm-initiated press releases that contain an earnings forecast issued by firm *i* from two days after the prior quarter's earnings announcement date during quarter *t* to the end of fiscal quarter *t*. In the regressions, we take the natural logarithm of this variable (i.e., *lnNR_Earn*$_{i,t}$).
NR_Other$_{i,t}$	*NR_Other*$_{i,t}$ is equal to the number of firm-initiated press releases that do not contain an earnings forecast issued by firm *i* from two days after the prior quarter's earnings announcement date during quarter *t* to the end of fiscal quarter *t*. In the regressions, we take the natural logarithm of this variable (i.e., *lnNR_Other*$_{i,t}$).
AF Revision$_{i,t,m}$	*AF Revision*$_{i,t,m}$ is equal to the consensus analyst forecast five days after the management forecast date less the consensus analyst forecast three days prior to the management forecast date scaled by stock price three days prior to the management forecast date.
Return[0,2]$_{i,t,m}$	*Return[0,2]*$_{i,t,m}$ is equal to the three-day buy and hold abnormal return in the [0,+2] window surrounding the management forecast date.
Length$_{i,t-1}$	*Length*$_{i,t-1}$ is equal to the word count of the 10-K/Q for firm *i* in quarter *t-1*.
Fog$_{i,t-1}$	*Fog*$_{i,t-1}$ is equal to the Gunning Fog index of the 10-K/Q for firm *i* in quarter *t-1*.

$Days\_EA_{i,t}$	$Days\_EA_{i,t}$ is equal to the number of days between the end of the quarter and the earnings announcement date for firm *i* in quarter *t*. In the regressions, we take the natural logarithm of this variable (i.e., $lnDays\_EA_{i,t}$).
Business Diversity$_{i,t}$	*Business Diversity*$_{i,t}$ is equal to one minus the business segment Herfindahl-Hirschman index for firm *i* in quarter *t*. The Herfindahl-Hirschman index is the sum of squares of the sales in each business segment divided by total firm sales.
$lnSIZE_{i,t-1}$	$lnSize_{i,t-1}$ is equal to the natural logarithm of firm *i*'s market value of equity at the beginning of quarter *t*.
Book-to-Market$_{i,t-1}$	*Book-to-Market*$_{i,t-1}$ is equal to firm *i*'s book value of equity divided by market value of equity at the beginning of quarter *t*.
$SalesVol_{i,t-1}$	$SalesVol_{i,t-1}$ is equal to the standard deviation of sales scaled by the mean value of sales for the 12 quarters preceding quarter *t* for firm *i*).
$OCFVol_{i,t-1}$	$OCFVol_{i,t-1}$ is equal to the standard deviation of operating cash flows scaled by the mean value of operating cash flows for the 12 quarters preceding quarter *t* for firm *i* (a minimum of 8 observations is required).
$RetVol_{i,t-1}$	$RetVol_{i,t-1}$ is equal to the standard deviation of daily stock returns during quarter *t-1* for firm *i*.
Litigation Risk$_{i,t}$	*Litigation Risk*$_{i,t}$ is equal to one if firm *i* experiences an earnings decrease of more than 20 percent in quarter *t* compared to quarter *t-4* and is in a high risk industry (SIC codes 2833-2836, 3600-3674, 5200-5961, 7370-7374, 8731-8734).
$\Delta ROA_{i,t}$	$\Delta ROA_{i,t}$ is return on assets for firm *i* in quarter *t* less return on assets for firm *i* in quarter *t-4*. Return on assets in quarter *t* is measured as I/B/E/S-reported actual EPS divided by average total assets per share for firm *i* in quarter *t*.
SalesGrowth$_{i,t}$	*SalesGrowth*$_{i,t}$ is equal to firm *i*'s net sales in quarter *t* divided by net sales in quarter *t-4*.
$HHI_{i,t}$	$HHI_{j,t}$ is the Herfindahl-Hirschman Index measured as the sum of squared market shares of all firms in the same two-digit SIC industry during quarter *t*.
$Coverage_{i,t-1}$	$Coverage_{i,t-1}$ is equal to the number of analysts following firm *i* at the beginning of quarter *t*. In the regressions, we take the natural logarithm of this variable (i.e., $lnCoverage_{i,t-1}$).
$INSTOWN_{i,t-1}$	$INSTOWN_{i,t-1}$ is equal to the percentage of firm *i*'s stock held by institutional investors at the beginning of quarter *t*.
Fourth Quarter$_{i,t}$	*Fourth Quarter*$_{i,t}$ is an indicator variable equal to one if the fiscal quarter is firm *i*'s fourth quarter, and equal to zero otherwise.
Horizon$_{i,t}$	*Horizon*$_{i,t}$ is equal to the number of days between the management forecast and the earnings announcement date for quarter *t* divided by 365.
Cultural Tightness$_{i,t}$	*Cultural Tightness*$_{i,t}$ is the segment-sales-weighted cultural tightness score index. The cultural tightness index is provided by Gelfand et al. (2011). If the geographic segment definition is not specific to an individual country, we use the region's GDP weighted average of cultural tightness score.

Table 1. Descriptive Statistics

This table reports descriptive statistics for the sample of Firm-Quarter observations with available information. The sample period ranges from 2002 to 2017. All continuous variables are winsorized at the 1 and 99th percentiles. All variables are defined in Appendix A.

Variables	N	Mean	Std	Q1	Median	Q3
Main independent variables						
Geo Diversity$_{i,t}$	179,438	0.217	0.270	0.000	0.000	0.467
Dependent variables						
Bundled MF$_{i,t}$	179,438	0.173	0.378	0.000	0.000	0.000
Unbundled MF$_{i,t}$	179,438	0.034	0.181	0.000	0.000	0.000
MF Revision$_{i,t}$	32,714	0.026	0.158	0.000	0.000	0.000
Bundled Last MF$_{i,t}$	32,714	0.867	0.339	1.000	1.000	1.000
Specificity$_{i,t}$	32,030	-0.296	0.697	-0.252	-0.115	-0.046
Forecast Bias$_{i,t}$	32,714	-0.196	1.384	-0.325	-0.095	0.000
Forecast Error$_{i,t}$	32,714	0.549	1.285	0.054	0.156	0.460
NR_Earn$_{i,t}$	142,896	0.060	0.259	0.000	0.000	0.000
NR_Other$_{i,t}$	142,896	1.718	2.522	0.000	1.000	2.000
Control variables						
Length$_{i,t-1}$	179,438	9.850	0.725	9.340	9.806	10.354
Fog$_{i,t-1}$	179,438	20.029	2.011	19.149	19.886	20.665
Days_EA$_{i,t}$	179,438	33.392	12.941	25.000	31.000	38.000
Business Diversity$_{i,t}$	179,438	0.064	0.154	0.000	0.000	0.000
lnSize$_{i,t-1}$	179,438	6.855	1.783	5.581	6.778	8.025
Book-to-Market$_{i,t-1}$	179,438	0.574	0.479	0.273	0.479	0.761
SalesVol$_{i,t-1}$	179,438	0.252	0.208	0.116	0.189	0.313
OCFVol$_{i,t-1}$	179,438	0.963	3.943	0.388	0.733	1.440
RetVol$_{i,t-1}$	179,438	0.027	0.017	0.016	0.023	0.034
Litigation Risk$_{i,t}$	179,438	0.114	0.318	0.000	0.000	0.000
$\Delta ROA_{i,t}$	179,438	-0.001	0.025	-0.005	0.000	0.004
SalesGrowth$_{i,t}$	179,438	1.123	0.382	0.967	1.066	1.194
HHI$_{i,t}$	179,438	0.062	0.067	0.029	0.040	0.067
Coverage$_{i,t-1}$	179,438	7.654	6.800	2.000	6.000	11.000
INSTOWN$_{i,t-1}$	179,438	0.649	0.289	0.453	0.722	0.887
Fourth Quarter$_{i,t}$	179,438	0.257	0.437	0.000	0.000	1.000
Horizon$_{i,t}$	32,714	0.237	0.053	0.230	0.249	0.263
Variables in cross-sectional tests						
Cultural Tightness$_{i,t}$	177,467	5.401	0.685	5.100	5.100	5.343

Table 2. Correlations

This table reports Spearman correlations of main variables. Sample period ranges from 2002 to 2017. All continuous variables are winsorized at 1st and 99th percentiles. Significance level at 1% is bolded. All variables are defined in Appendix A.

	Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
(1)	*Geo Diversity*$_{i,t}$													
(2)	*Bundled MF*$_{i,t}$	**0.21**												
(3)	*Unbundled MF*$_{i,t}$	**0.03**	**0.24**											
(4)	*MF Revision*$_{i,t}$	**-0.04**	**-0.06**	**0.34**										
(5)	*Bundled Last MF*$_{i,t}$	**0.12**	**0.66**	**-0.83**	**-0.25**									
(6)	*Specificity*$_{i,t}$	**-0.05**	-0.03	**0.07**	**0.06**	**-0.05**								
(7)	*Forecast Bias*$_{i,t}$	**-0.03**	-0.02	**0.01**	-0.01	-0.01	**0.02**							
(8)	*Forecast Error*$_{i,t}$	**-0.02**	**0.01**	-0.03	-0.01	**0.02**	**-0.27**	**-0.55**						
(9)	*lnNR_Earn*$_{i,t}$	0.00	**0.02**	**0.15**	**0.06**	**-0.29**	**0.04**	0.00	-0.03					
(10)	*lnNR_Other*$_{i,t}$	**0.13**	**0.10**	**0.07**	**0.07**	**-0.04**	**0.11**	0.04	**-0.09**	**0.12**				
(11)	*Length*$_{i,t-1}$	**0.01**	**-0.03**	**-0.06**	**-0.05**	**0.12**	**-0.02**	0.00	-0.02	**0.03**	**0.05**			
(12)	*Fog*$_{i,t-1}$	**-0.02**	0.00	**-0.04**	**-0.02**	**0.10**	-0.01	**-0.01**	-0.01	**-0.02**	**0.03**	**0.39**		
(13)	*lnDays_EA*$_{i,t}$	**-0.09**	**-0.13**	**-0.10**	**-0.06**	**0.12**	**-0.12**	**0.02**	**0.08**	**-0.12**	**-0.18**	**-0.03**	**0.09**	
(14)	*Business Diversity*$_{i,t}$	**0.09**	**0.02**	**0.04**	**0.02**	**-0.06**	**0.08**	-0.01	-0.02	**0.02**	**0.03**	**-0.01**	**-0.03**	0.00

Table 3. Geographic Diversity and Management Forecast Timing

This table presents the results from the regression of either *Bundled* $MF_{i,t}$ in columns (1) and (2) or *Unbundled* $MF_{i,t}$ in columns (3) and (4) on the geographic diversity measure and control variables. The sample period ranges from 2002 to 2017. *Bundled* $MF_{i,t}$ is an indicator variable equal to one if firm *i* issues a quarterly earnings forecast in the [-2,+2] window surrounding the prior quarter's earnings announcement date during quarter *t*, and equal to zero otherwise. *Unbundled* $MF_{i,t}$ is an indicator equal to one if firm *i* issues a quarterly earnings forecast from two days after the prior quarter's earnings announcement date during quarter *t* to the end of fiscal quarter *t*. All other variables are defined in Appendix A. Standard errors are clustered by firm and calendar quarter. Robust *t*-statistics are in parentheses. *, **, and *** represent significance level at the 10%, 5%, and 1%, respectively.

	Bundled $MF_{i,t}$		*Unbundled* $MF_{i,t}$	
Independent Variables	(1)	(2)	(3)	(4)
***Geo Diversity*$_{i,t}$**	**0.078*** **	**0.022*** **	**-0.014** **	**-0.010** **
	(3.936)	**(4.059)**	**(-2.504)**	**(-2.428)**
Length$_{i,t-1}$	0.001	0.002	-0.003**	-0.003***
	(0.437)	(1.594)	(-2.238)	(-2.906)
Fog$_{i,t-1}$	0.001	-0.000	0.000	0.000
	(0.598)	(-0.388)	(0.628)	(0.813)
lnDays_EA$_{i,t}$	-0.069***	-0.018***	-0.033***	-0.023***
	(-5.603)	(-5.262)	(-7.159)	(-6.674)
Business Diversity$_{i,t}$	0.005	-0.001	0.026***	0.019***
	(0.186)	(-0.130)	(2.816)	(2.764)
lnSize$_{i,t-1}$	-0.008**	-0.002**	0.001	0.001
	(-2.305)	(-2.271)	(0.728)	(1.209)
Book-to-Market$_{i,t-1}$	-0.004	-0.004**	-0.002	-0.003*
	(-0.740)	(-2.254)	(-1.365)	(-1.827)
SalesVol$_{i,t-1}$	-0.045***	-0.011**	-0.012***	-0.008***
	(-3.242)	(-2.519)	(-3.037)	(-2.626)
OCFVol$_{i,t-1}$	0.000	0.000	-0.000	-0.000
	(0.744)	(0.174)	(-0.918)	(-1.067)
RetVol$_{i,t-1}$	-1.011***	-0.290***	-0.059	-0.103**
	(-6.980)	(-6.069)	(-1.129)	(-2.424)
Litigation Risk$_{i,t}$	0.001	0.002	0.000	0.000
	(0.123)	(0.812)	(0.121)	(0.089)
$\Delta ROA_{i,t}$	-0.020	0.041**	-0.067***	-0.046***
	(-0.584)	(2.242)	(-3.931)	(-3.355)
SalesGrowth$_{i,t}$	0.016***	0.006***	0.003***	0.002**
	(4.533)	(3.680)	(2.651)	(1.996)
HHI$_{i,t}$	-0.075	-0.022	-0.041	-0.032
	(-0.997)	(-1.177)	(-1.423)	(-1.479)
lnCoverage$_{i,t-1}$	0.077***	0.018***	0.021***	0.014***
	(12.831)	(8.869)	(7.728)	(7.258)
INSTOWN$_{i,t-1}$	0.103***	0.028***	0.008**	0.006**
	(7.831)	(7.029)	(2.040)	(2.010)
Fourth Quarter$_{i,t}$	0.030***	0.013***	0.015***	0.012***
	(5.559)	(5.281)	(5.583)	(5.157)
Lagged Dep Var$_{i,t-1}$		0.747***		0.263***
		(59.622)		(16.075)
Fixed Effects (Industry, Year)	Yes	Yes	Yes	Yes
Observations	179,438	179,438	179,438	179,438
Adjusted R^2	0.164	0.630	0.062	0.129

Table 4. Geographic Diversity and Management Forecast Revisions

This table presents the results from the regression of either *Bundled Last MF*$_{i,t}$ in columns (1) and (2) or *MF Revision*$_{i,t}$ in columns (3) and (4) on the geographic diversity measure and control variables. The sample period ranges from 2002 to 2017. *Bundled Last MF*$_{i,t}$ is an indicator variable equal to one if the last earnings forecast for firm *i* is issued in the [-2,+2] window surrounding the prior quarter's earnings announcement date during quarter *t*, and equal to zero otherwise. *MF Revision*$_{i,t}$ is an indicator equal to one if firm *i* revises an outstanding quarterly earnings forecast from two days after the prior quarter's earnings announcement date and the fiscal quarter end, and equal to zero otherwise. All other variables are defined in Appendix A. Standard errors are clustered by firm and calendar quarter. Robust *t*-statistics are in parentheses. *, **, and *** represent significance level at the 10%, 5%, and 1%, respectively.

	Bundled Last MF$_{i,t}$		*MF Revision*$_{i,t}$	
Independent Variables	(1)	(2)	(3)	(4)
***Geo Diversity*$_{i,t}$**	**0.070*** **	**0.053*** **	**-0.016** **	**-0.013** **
	(4.087)	**(3.601)**	**(-2.214)**	**(-2.199)**
Length$_{i,t-1}$	0.012**	0.019***	-0.008***	-0.009***
	(2.552)	(4.425)	(-2.747)	(-3.170)
Fog$_{i,t-1}$	-0.000	-0.001	0.003	0.002
	(-0.214)	(-0.825)	(1.527)	(1.645)
lnDays_EA$_{i,t}$	0.078***	0.071***	-0.021***	-0.016**
	(4.890)	(4.904)	(-2.654)	(-2.503)
Business Diversity$_{i,t}$	-0.032	-0.023	0.012	0.009
	(-1.195)	(-1.006)	(0.710)	(0.654)
lnSize$_{i,t-1}$	-0.004	-0.004	0.004*	0.004*
	(-0.982)	(-1.094)	(1.826)	(1.922)
Book-to-Market$_{i,t-1}$	-0.007	-0.002	-0.003	-0.003
	(-0.656)	(-0.250)	(-0.704)	(-0.747)
SalesVol$_{i,t-1}$	0.050**	0.046**	-0.014	-0.010
	(2.190)	(2.264)	(-1.228)	(-1.119)
OCFVol$_{i,t-1}$	0.001	0.001	-0.000	-0.000
	(1.363)	(1.343)	(-0.585)	(-0.527)
RetVol$_{i,t-1}$	-0.473*	-0.116	0.076	0.053
	(-1.883)	(-0.497)	(0.681)	(0.559)
Litigation Risk$_{i,t}$	-0.021***	-0.019***	0.002	0.002
	(-3.131)	(-3.002)	(0.630)	(0.690)
$\Delta ROA_{i,t}$	0.695***	0.657***	0.084	0.076
	(5.003)	(5.282)	(1.436)	(1.436)
SalesGrowth$_{i,t}$	-0.017**	-0.016**	-0.001	-0.002
	(-2.157)	(-2.253)	(-0.330)	(-0.520)
HHI$_{i,t}$	0.145	0.138	-0.062	-0.052
	(1.400)	(1.554)	(-1.050)	(-1.084)
lnCoverage$_{i,t-1}$	-0.027***	-0.025***	0.014***	0.011***
	(-3.012)	(-3.220)	(3.221)	(3.131)
INSTOWN$_{i,t-1}$	0.028*	0.022	0.005	0.003
	(1.773)	(1.605)	(0.694)	(0.600)
Fourth Quarter$_{i,t}$	-0.033***	-0.026***	0.012***	0.011***
	(-3.663)	(-3.042)	(3.358)	(3.334)
Lagged Dep Var$_{i,t-1}$		0.156***		0.203***
		(14.180)		(6.076)
Fixed Effects (Industry, Year)	Yes	Yes	Yes	Yes
Observations	32,714	32,714	32,714	32,714
Adjusted R^2	0.124	0.161	0.037	0.072

Table 5. Geographic Diversity and Management Forecast Properties

This table presents the results from the regression of forecast property measures on the geographic diversity measure and control variables. The sample period ranges from 2002 to 2017. *Specificity*$_{i,t}$ in column (1) is defined as -1 multiplied by the difference between the top of the range forecast and the bottom of the range forecast scaled by stock price three days before the date of management forecast. If the management forecast is a point forecast, this variable is set to zero. This variable is then multiplied by 100. *Forecast Bias*$_{i,t}$ in column (2) is equal to the last management earnings forecast prior to earnings announcement during quarter *t* for firm *i* less the I/B/E/S-reported actual EPS scaled by stock price three days prior to the date of management forecast. This variable is then multiplied by 100. *Forecast Error*$_{i,t}$ in column (3) is the absolute value of the *Forecast Bias*$_{i,t}$ variable. All other variables are defined in Appendix A. Standard errors are clustered by firm and calendar quarter. Robust *t*-statistics are in parentheses. *, **, and *** represent significance level at the 10%, 5%, and 1%.

	Specificity$_{i,t}$	*Forecast Bias*$_{i,t}$	*Forecast Error*$_{i,t}$
Independent Variables	(1)	(2)	(3)
***Geo Diversity*$_{i,t}$**	**-0.111****	**-0.250****	**0.178***
	(-2.398)	**(-2.554)**	**(1.824)**
Length$_{i,t-1}$	-0.045***	-0.042**	0.050**
	(-3.680)	(-2.005)	(2.234)
Fog$_{i,t-1}$	-0.000	-0.002	0.005
	(-0.013)	(-0.254)	(0.629)
lnDays_EA$_{i,t}$	0.059*	0.206***	0.000
	(1.719)	(3.127)	(0.003)
Business Diversity$_{i,t}$	0.021	-0.124	0.121
	(0.377)	(-1.074)	(1.062)
lnSize$_{i,t-1}$	0.075***	0.087***	-0.090***
	(6.234)	(4.855)	(-4.535)
Book-to-Market$_{i,t-1}$	-0.273***	0.167**	0.354***
	(-5.639)	(2.092)	(5.060)
SalesVol$_{i,t-1}$	-0.418***	-0.700***	0.936***
	(-4.661)	(-3.939)	(5.130)
OCFVol$_{i,t-1}$	0.012***	0.013**	-0.019***
	(4.021)	(2.448)	(-3.711)
RetVol$_{i,t-1}$	-9.528***	-4.857**	14.550***
	(-8.521)	(-2.493)	(7.411)
Litigation Risk$_{i,t}$	-0.017	0.001	-0.040
	(-0.772)	(0.028)	(-1.077)
$\Delta ROA_{i,t}$	0.401	-12.255***	-3.437***
	(0.597)	(-7.556)	(-2.749)
SalesGrowth$_{i,t}$	0.288***	0.302***	-0.292***
	(6.149)	(4.158)	(-4.208)
HHI$_{i,t}$	-0.303**	0.167	0.341
	(-2.050)	(0.510)	(1.101)
lnCoverage$_{i,t-1}$	-0.006	-0.053	0.035
	(-0.269)	(-1.577)	(0.885)
INSTOWN$_{i,t-1}$	0.449***	0.559***	-0.798***
	(6.346)	(3.965)	(-5.905)
Fourth Quarter$_{i,t}$	-0.038***	-0.019	0.044**
	(-3.197)	(-0.980)	(2.139)
Horizon$_{i,t}$	-0.363**	0.199	0.473
	(-2.246)	(0.588)	(1.441)
Fixed Effects (Industry, Year)	Yes	Yes	Yes
Observations	32,030	32,714	32,714
Adjusted R^2	0.247	0.074	0.168

Table 6. Market Responses to Management Forecast News

This table presents the results from the regression of *AF Revision*$_{i,t,m}$ or *Return [0,2]*$_{i,t,m}$ on the geographic diversity measure and control variables. The sample period ranges from 2002 to 2017. *AF Revision*$_{i,t,m}$ is equal to the consensus analyst forecast five days after the management forecast date less the consensus analyst forecast three days prior to the management forecast date scaled by stock price three days prior to the management forecast date. *Return[0,2]*$_{i,t,m}$ is equal to the three-day buy and hold abnormal return in the [0,+2] window surrounding the management forecast date. All other variables are defined in Appendix A. Standard errors are clustered by firm and calendar quarter. Robust *t*-statistics are in parentheses. *, **, and *** represent significance level at the 10%, 5%, and 1%.

	AF Revision$_{i,t,m}$		*Return [0,2]*$_{i,t,m}$	
Independent Variables	(1)	(2)	(3)	(4)
***MF News*$_{i,t,m}$**	**0.128*** (9.609)**	**0.156*** (8.200)**	**0.008*** (7.143)**	**0.010*** (7.985)**
High Geo Diversity$_{i,t}$		-0.015 (-1.478)		0.003* (1.912)
***MF News*$_{i,t,m}$ × *High Geo Diversity*$_{i,t}$**		**-0.049*** (-2.638)**		**-0.003** (-2.099)**
Length$_{i,t-1}$	-0.027*** (-5.430)	-0.026*** (-5.274)	0.001 (1.629)	0.001 (1.237)
Fog$_{i,t-1}$	0.005** (2.532)	0.005** (2.510)	0.000 (1.094)	0.000 (0.919)
lnDays_EA$_{i,t}$	-0.029*** (-2.650)	-0.026** (-2.409)	-0.011*** (-5.317)	-0.011*** (-4.900)
Business Diversity$_{i,t}$	-0.028 (-1.279)	-0.027 (-1.270)	0.000 (0.057)	0.000 (0.103)
lnSize$_{i,t-1}$	0.025*** (6.388)	0.025*** (6.255)	-0.000 (-0.862)	-0.001 (-1.197)
Book-to-Market$_{i,t-1}$	-0.109*** (-5.781)	-0.107*** (-5.693)	0.018*** (8.002)	0.018*** (7.538)
SalesVol$_{i,t-1}$	-0.064 (-1.649)	-0.075* (-1.944)	-0.027*** (-4.782)	-0.027*** (-4.956)
OCFVol$_{i,t-1}$	-0.002 (-1.403)	-0.002 (-1.286)	0.000 (0.549)	0.000 (0.784)
RetVol$_{i,t-1}$	-2.377*** (-5.302)	-2.415*** (-5.351)	-0.095 (-0.690)	-0.105 (-1.139)
Litigation Risk$_{i,t}$	-0.029*** (-3.233)	-0.029*** (-3.214)	-0.010*** (-4.201)	-0.010*** (-5.525)
$\Delta ROA_{i,t}$	6.703*** (17.342)	6.684*** (17.258)	0.935*** (15.579)	0.934*** (17.367)
SalesGrowth$_{i,t}$	0.143*** (7.805)	0.146*** (8.032)	0.025*** (11.509)	0.026*** (10.276)
HHI$_{i,t}$	-0.051 (-0.785)	-0.070 (-1.022)	-0.013 (-1.317)	-0.013 (-1.202)
lnCoverage$_{i,t-1}$	-0.010 (-1.180)	-0.008 (-0.988)	0.003** (2.369)	0.003** (2.384)
INSTOWN$_{i,t-1}$	0.001 (0.066)	0.002 (0.085)	0.002 (0.580)	0.002 (0.583)
Fourth Quarter$_{i,t}$	-0.003 (-0.442)	-0.003 (-0.517)	-0.002 (-1.192)	-0.002 (-1.186)
Horizon$_{i,t,m}$	0.080 (1.347)	0.073 (1.217)	0.058*** (3.832)	0.057*** (4.637)
Fixed Effects (Industry, Year)	Yes	Yes	Yes	Yes
Observations	34,821	34,821	34,821	34,821
Adjusted R^2	0.347	0.352	0.067	0.067

Table 7. Geographic Diversity and Firm-Initiated Press Releases

This table presents the results from the regression of the number of firm-initiated press releases on the geographic diversity measure and control variables. The sample period ranges from 2002 to 2017. $lnNR\_Other_{i,t}$ in columns (1) and (2) is the natural logarithm of one plus the number of firm-initiated press-releases that do not contain an earnings forecast from two days after the prior quarter's earnings announcement during quarter t to the fiscal end of quarter t. $lnNR\_Earn_{i,t}$ in columns (3) and (4) is the natural logarithm of one plus the number of firm-initiated press-releases that contain an earnings forecast from two days after the prior quarter's earnings announcement during quarter t to the fiscal end of quarter t. All other variables are defined in Appendix A. Standard errors are clustered by firm and calendar quarter. Robust t-statistics are in parentheses. *, **, and *** represent significance level at the 10%, 5%, and 1%.

	$lnNR\_Other_{i,t}$		$lnNR\_Earn_{i,t}$	
Independent Variables	(1)	(2)	(3)	(4)
Geo Diversity$_{i,t}$	**0.092*** **	**0.060*** **	**-0.028*** **	**-0.017*** **
	(3.352)	**(3.627)**	**(-3.932)**	**(-4.090)**
$Length_{i,t-1}$	-0.016*	-0.039***	0.001	0.001
	(-1.803)	(-4.843)	(0.847)	(0.790)
$Fog_{i,t-1}$	0.005**	0.006***	-0.001	-0.000
	(2.407)	(3.977)	(-1.572)	(-1.588)
$lnDays\_EA_{i,t}$	-0.179***	-0.108***	-0.038***	-0.025***
	(-9.333)	(-8.580)	(-6.831)	(-6.734)
Business Diversity	0.107**	0.066***	0.000	-0.000
	(2.534)	(2.624)	(0.005)	(-0.080)
$lnSize_{i,t-1}$	0.138***	0.083***	0.014***	0.009***
	(18.331)	(16.959)	(6.667)	(6.818)
$Book\text{-}to\text{-}Market_{i,t-1}$	0.063***	0.039***	0.008**	0.005**
	(4.984)	(5.128)	(2.308)	(2.154)
$SalesVol_{i,t-1}$	-0.027	-0.008	-0.009*	-0.005
	(-1.185)	(-0.571)	(-1.785)	(-1.541)
$OCFVol_{i,t-1}$	0.000	0.000	0.000	0.000
	(0.439)	(0.334)	(0.455)	(0.522)
$RetVol_{i,t-1}$	2.324***	1.259***	0.343***	0.172***
	(5.067)	(3.515)	(4.134)	(3.137)
$Litigation\ Risk_{i,t}$	0.054***	0.035***	0.007***	0.005***
	(4.849)	(4.575)	(3.404)	(3.176)
$\Delta ROA_{i,t}$	-0.262***	-0.156**	-0.002	0.002
	(-2.943)	(-2.371)	(-0.108)	(0.097)
$SalesGrowth_{i,t}$	0.017**	0.008	-0.002	-0.002*
	(2.351)	(1.631)	(-1.524)	(-1.722)
$HHI_{i,t}$	-0.119	-0.074	-0.050**	-0.033**
	(-1.144)	(-1.145)	(-2.238)	(-2.362)
$lnCoverage_{i,t-1}$	0.116***	0.076***	0.009***	0.005***
	(11.394)	(10.965)	(3.662)	(2.932)
$INSTOWN_{i,t-1}$	-0.114***	-0.087***	-0.011**	-0.007*
	(-4.852)	(-6.022)	(-1.991)	(-1.866)
$Fourth\ Quarter_{i,t}$	0.051***	0.002	0.009***	0.004
	(4.100)	(0.208)	(3.302)	(1.494)
$Lagged\ Dep\ Var_{i,t-1}$		0.408***		0.387***
		(34.421)		(18.782)
Fixed Effects (Industry, Year)	Yes	Yes	Yes	Yes
Observations	142,896	142,896	142,896	142,896
Adjusted R^2	0.271	0.393	0.046	0.190

Table 8. Cross-Sectional Tests: Cultural Tightness

This table presents the regression results examining the effects of geographic diversity on the quantity of managerial earnings forecasts in Panel A and on the quality of managerial earnings forecasts in Panel B conditional on cultural tightness. The sample period ranges from 2002 to 2017. All other variables are defined in Appendix A. Standard errors are clustered by firm and calendar quarter. Robust *t*-statistics are in parentheses. *, **, and *** represent significance level at the 10%, 5%, and 1%, respectively.

Panel A Disclosure quantity

	Bundled $MF_{i,t}$	*Unbundled $MF_{i,t}$*	*Bundled Last $MF_{i,t}$*	*MF Revision$_{i,t}$*	*lnNR_Other$_{i,t}$*	*lnNR_Earn$_{i,t}$*
Independent Variables	(1)	(2)	(3)	(4)	(5)	(6)
Geo Diversity$_{i,t}$	0.014*	-0.022***	0.118***	-0.028***	0.047*	-0.032***
	(1.750)	(-3.234)	(4.619)	(-2.669)	(1.691)	(-5.039)
High Cultural Tightness$_{i,t}$	-0.002	-0.003	0.010	-0.008	0.013	-0.006
	(-0.413)	(-0.788)	(0.618)	(-1.306)	(0.761)	(-1.639)
Geo Diversity$_{i,t}$ × High Cultural Tightness$_{i,t}$	**0.012**	**0.019***	**-0.082****	**0.028***	**-0.008**	**0.025*****
	(0.895)	**(1.943)**	**(-2.427)**	**(1.828)**	**(-0.193)**	**(3.164)**
Controls and Fixed Effects (Industry, Year)	Yes	Yes	Yes	Yes	Yes	Yes
Observations	177,467	177,467	32,115	32,115	141,128	141,128
Adjusted R^2	0.629	0.130	0.162	0.072	0.394	0.192

Panel B Disclosure quality

	Specificity$_{i,t}$	*Forecast Bias$_{i,t}$*	*Forecast Error$_{i,t}$*
Independent Variables	(1)	(2)	(3)
Geo Diversity$_{i,t}$	-0.039	-0.061	0.059
	(-0.602)	(-0.383)	(0.384)
High Cultural Tightness$_{i,t}$	0.011	0.089	-0.083
	(0.202)	(0.932)	(-0.868)
Geo Diversity$_{i,t}$ × High Cultural Tightness$_{i,t}$	**-0.086**	**-0.326**	**0.238**
	(-0.820)	**(-1.496)**	**(1.145)**
Controls and Fixed Effects (Industry, Year)	Yes	Yes	Yes
Observations	31,444	32,115	32,115
Adjusted R^2	0.247	0.074	0.168

Online Appendix

The Effect of Geographic Diversity on Managerial Earnings Forecasts

Bright Gershion Godigbe, Jared Jennings, Hojun Seo, and Lloyd Tanlu

Online Appendix A – Descriptive Statistics

In this Online Appendix A, we provide descriptive statistics for the sample in the paper. Specifically, Table OA1 presents the descriptive statistics for the sample of management forecasts used in our analysis (i.e., Firm-MF panel). If managers issue two forecasts during the quarter, then there is a separate observation for both managerial forecasts. The descriptive statistics for the sample of Firm-Quarter observations are included in Table 1 of the paper.

We also provide the Spearman correlations between the dependent and independent variables in Table OA2. In the paper, we include correlations among the main variables while in this Online Appendix, we include all correlations. In Panel A, we report the correlations for the firm-quarter tests, and in Panel B, we report the correlations for the sample of management forecasts (i.e., Firm-MF panel).

Online Appendix B – Segment Data

In this Online Appendix B, we describe the alternative source of segment data for geographic diversity measures and examine the robustness of the results. The main results reported in the paper rely on Compustat's segment file to construct the geographic diversity measure (*Geo Diversity*$_{i,t}$). The segment data in Compustat are based on companies' regulatory filings and provide historical geographic segment data. However, managers have discretion in how narrowly or broadly segments are defined, which could add measurement error to *Geo Diversity*$_{i,t}$. Also, Compustat's segment data often define geographic segments broadly (e.g., Asia, Europe, Africa, etc.), which could decrease the precision of the variable measurement and increase measurement error. Therefore, it is necessary to assess the robustness of our results reported in the paper using an alternative data source, S&P Capital IQ, to measure the firm's geographic diversity.

S&P Capital IQ provides subsidiary information on public companies (see https://www.capitaliq.com/). S&P Capital IQ collects subsidiary data from various sources including SEC filings/annual reports (e.g., Forms 10-K, 10KSB, 20F, 40-F, DEF 14A) and other sources such as firm websites, stock exchanges, government agencies, insurers, news articles, press releases, firm announcements and so forth. The subsidiary data from S&P Capital IQ is more granular given the more extensive data sources used to collect the subsidiary data. Using this S&P Capital IQ data, we compute alternative geographic diversity measures. We collect the location of all current and prior subsidiaries for each firm detailed in S&P Capital IQ. We have 6,546 unique sample firms in the paper, and we collect 2,344,584 firm-subsidiary-year observations between 2002 and 2017 from S&P Capital IQ for 6,133 of the sample firms.

First, we calculate the number of geographic segments in two ways. First, *# of Geo Seg CIQ (All)*$_{i,t}$ is equal to the number of unique countries in which firm *i*'s current or prior subsidiaries are located as recorded by S&P Capital IQ. Current subsidiaries are active

subsidiaries, and prior subsidiaries are inactive or discontinued. S&P Capital IQ does not provide the point in time when a subsidiary moves from active to inactive or discontinued. Therefore, we cannot determine which subsidiaries are active for each historical year. As a result, we also create *# of Geo Seg CIQ (Current)*$_{i,t}$, which excludes prior subsidiaries because we do not know when these prior subsidiaries were active. *# of Geo Seg CIQ (Current)*$_{i,t}$ is equal to the number of unique countries in which firm *i*'s current subsidiaries are located as recorded by S&P Capital IQ. We then merge these firm-year measures of geographic diversity into our firm-quarter dataset used in the paper.

In Panel A of Table OB1, we present descriptive statistics for the geographic diversity measures calculated using the data in S&P Capital IQ and Compustat segment file. The average (median) *# of Geo Seg CIQ (All)*$_{i,t}$ is equal to 9.082 (3), which suggests that the average (median) firm-quarter in our sample operates in 9.082 (3) unique countries. The average (median) *# of Geo Seg CIQ (Current)*$_{i,t}$ is equal to 7.821 (3), which suggests that the average (median) firm-quarter in our sample currently operates in 7.821 (3) unique countries.

While we cannot observe the point in time when a subsidiary moves from active to inactive or discontinued, we are able to observe the years each subsidiary produces sales. We note that a significant number of (current or prior) subsidiaries' sales revenue is missing from S&P Capital IQ: approximately 94.04% of subsidiaries have missing sales (2,204,882 firm-subsidiary-year observations). Missing sales does not necessarily indicate that a subsidiary is inactive or discontinued, because S&P Capital IQ might not have collected the subsidiary's sales information or the subsidiary might be an active/non-sale producing subsidiary. Put differently, while observing positive sales does suggest that the subsidiary is an active subsidiary for that firm-year, observing missing sales does not necessarily suggest that the subsidiary is inactive or discontinued.

We calculate an alternative geographic diversity measure using the number of unique countries in which firm *i*'s subsidiaries with non-missing positive sales are located, which we label # *of Geo Seg CIQ (Sale)*$_{i,t}$. The mean (median) value of # *of Geo Seg CIQ (Sale)*$_{i,t}$ is equal to 2.960 countries (1 country). For the sake of comparison, the Segment dataset in Compustat states that the average firm operates in 2.344 (median is equal to 1) unique geographic areas (see # *of Geo Seg* in Panel A of Table OB1), which is similar to the descriptive statistics for # *of Geo Seg CIQ (Sale)*$_{i,t}$. Due to the way that S&P Capital IQ aggregates and presents its data, # *of Geo Seg CIQ (Sale)*$_{i,t}$ likely represents a lower bound for the number of unique countries in which firm *i*'s subsidiaries are located, and # *of Geo Seg CIQ (All)*$_{i,t}$ likely represents an upper bound for the number of unique countries in which firm *i*'s subsidiaries are located.

We also calculate *Geo Diversity CIQ*$_{i,t}$, which is equal to one minus the geographic segment Herfindahl-Hirschman index based on the sales in unique countries gathered from S&P Capital IQ. The Herfindahl-Hirschman index is the sum of squared sales for each geographic segment divided by the sum of geographic segment sales in S&P Capital IQ. This variable is most similar to the *Geo Diversity* variable that we use in the paper.

In Panel B of Table OB1, we provide Spearman correlations between the geographic diversity variables based on S&P Capital IQ (# *of Geo Seg CIQ (All)*$_{i,t}$, # *of Geo Seg CIQ (Current)*$_{i,t}$, # *of Geo Seg CIQ (Sale)*$_{i,t}$, and *Geo Diversity CIQ*$_{i,t}$) and geographic diversity variables based on the Compustat segment file (# *of Geo Seg*$_{i,t}$ and *Geo Diversity*$_{i,t}$). We find that the three variables calculated using the S&P Capital IQ data are highly correlated with those calculated using the Compustat segment file. These correlations are reassuring and suggest that the measures calculated using S&P Capital IQ and Compustat capture similar variation. We use the geographic diversity measures based on S&P Capital IQ and re-perform all of our empirical analyses found in the paper. The robustness tests using the S&P Capital IQ measures are presented below.

Table OA1 Descriptive Statistics

This table reports descriptive statistics for the sample with available information. The sample period ranges from 2002 to 2017. This table presents descriptive statistics for Firm-MF observations, which includes a separate observation for each forecast issue by managers. All continuous variables are winsorized at the 1 and 99th percentiles. All variables are defined in Appendix A of the paper.

Variables	N	Mean	Std	Q1	Median	Q3
Main independent variables						
Geo Diversity$_{i,t}$	34,821	0.319	0.282	0.000	0.337	0.578
MF News$_{i,t,m}$	34,821	-0.312	1.370	-0.439	-0.122	-0.007
Dependent Variables						
AF Revision$_{i,t,m}$	34,821	-0.165	0.439	-0.201	-0.066	0.002
Return [0,2]$_{I,t,m}$	34,821	-0.004	0.090	-0.045	0.001	0.046
Control Variables						
Length$_{i,t-1}$	34,821	9.748	0.706	9.242	9.711	10.259
Fog$_{i,t-1}$	34,821	19.984	1.549	19.155	19.860	20.608
Days_EA$_{i,t}$	34,821	29.378	10.634	22.000	28.000	35.000
Business Diversity$_{i,t}$	34,821	0.077	0.169	0.000	0.000	0.000
lnSize$_{i,t-1}$	34,821	7.411	1.607	6.267	7.319	8.467
Book-to-Market$_{i,t-1}$	34,821	0.464	0.306	0.252	0.397	0.607
SalesVol$_{i,t-1}$	34,821	0.214	0.136	0.118	0.177	0.273
OCFVol$_{i,t-1}$	34,821	1.097	2.631	0.457	0.785	1.408
RetVol$_{i,t-1}$	34,821	0.026	0.013	0.017	0.023	0.031
Litigation Risk$_{i,t}$	34,821	0.167	0.373	0.000	0.000	0.000
$\Delta ROA_{i,t}$	34,821	0.000	0.015	-0.005	0.000	0.005
SalesGrowth$_{i,t}$	34,821	1.116	0.245	0.996	1.083	1.192
HHI$_{i,t}$	34,821	0.069	0.067	0.036	0.043	0.070
Coverage$_{i,t-1}$	34,821	10.389	7.043	5.000	9.000	14.000
INSTOWN$_{i,t-1}$	34,821	0.766	0.225	0.667	0.827	0.932
Fourth Quarter$_{i,t}$	34,821	0.263	0.440	0.000	0.000	1.000
Horizon$_{i,t,m}$	34,821	0.235	0.060	0.219	0.249	0.260

Table OA2 Correlations

This table reports Spearman correlations of main variables. Sample period ranges from 2002 to 2017. Panel A presents correlations for firm-quarter observations. Panel B presents correlations for firm-MF observations. All continuous variables are winsorized at 1st and 99th percentiles. Significance level at 1% is bolded. All variables are defined in Appendix A.

Panel A Firm-quarter panel

	Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
(1)	*Geo Diversity*$_{i,t}$													
(2)	*Bundled MF*$_{i,t}$	**0.21**												
(3)	*Unbundled MF*$_{i,t}$	**0.03**	**0.24**											
(4)	*MF Revision*$_{i,t}$	**-0.04**	**-0.06**	**0.34**										
(5)	*Bundled Last MF*$_{i,t}$	**0.12**	**0.66**	**-0.83**	**-0.25**									
(6)	*Specificity*$_{i,t}$	**-0.05**	-0.03	**0.07**	**0.06**	**-0.05**								
(7)	*Forecast Bias*$_{i,t}$	**-0.03**	-0.02	**0.01**	-0.01	-0.01	**0.02**							
(8)	*Forecast Error*$_{i,t}$	**-0.02**	**0.01**	-0.03	-0.01	**0.02**	**-0.27**	**-0.55**						
(9)	*lnNR_Earn*$_{i,t}$	0.00	**0.02**	**0.15**	**0.06**	**-0.29**	**0.04**	0.00	-0.03					
(10)	*lnNR_Other*$_{i,t}$	**0.13**	**0.10**	**0.07**	**0.07**	**-0.04**	**0.11**	0.04	**-0.09**	**0.12**				
(11)	*Length*$_{i,t-1}$	**0.01**	**-0.03**	**-0.06**	**-0.05**	**0.12**	**-0.02**	0.00	-0.02	**0.03**	**0.05**			
(12)	*Fog*$_{i,t-1}$	**-0.02**	0.00	**-0.04**	**-0.02**	**0.10**	-0.01	**-0.01**	-0.01	**-0.02**	**0.03**	**0.39**		
(13)	*lnDays_EA*$_{i,t}$	**-0.09**	**-0.13**	**-0.10**	**-0.06**	**0.12**	**-0.12**	**0.02**	**0.08**	**-0.12**	**-0.18**	**-0.03**	**0.09**	
(14)	*Business Diversity*$_{i,t}$	**0.09**	**0.02**	**0.04**	**0.02**	**-0.06**	**0.08**	-0.01	-0.02	**0.02**	**0.03**	**-0.01**	**-0.03**	0.00
(15)	*lnSize*$_{i,t-1}$	**0.19**	**0.13**	**0.08**	**0.08**	**-0.02**	**0.42**	**0.10**	**-0.30**	**0.14**	**0.34**	**0.20**	**0.04**	**-0.26**
(16)	*Book-to-Market*$_{i,t-1}$	**-0.14**	**-0.10**	**-0.04**	**-0.03**	**-0.02**	**-0.42**	-0.04	**0.23**	**-0.01**	**-0.12**	**0.03**	**-0.02**	**0.04**
(17)	*SalesVol*$_{i,t-1}$	**-0.08**	**-0.04**	**-0.03**	**-0.02**	0.00	**-0.02**	**-0.04**	**0.11**	**-0.05**	**-0.06**	**0.02**	**0.05**	**0.19**
(18)	*OCFVol*$_{i,t-1}$	**0.05**	**0.03**	**0.02**	0.00	-0.03	**-0.16**	**-0.02**	**0.10**	-0.01	**-0.06**	**-0.06**	**-0.07**	**-0.01**
(19)	*RetVol*$_{i,t-1}$	**0.02**	**-0.02**	**-0.01**	**-0.02**	**-0.03**	**-0.32**	**-0.11**	**0.27**	**-0.06**	**-0.11**	**-0.07**	0.02	**0.16**
(20)	*Litigation Risk*$_{i,t}$	**0.08**	**0.08**	**0.03**	0.00	0.00	**-0.16**	0.01	**0.07**	**-0.01**	**0.03**	**0.01**	**0.06**	**0.03**
(21)	Δ*ROA*$_{i,t}$	**0.02**	**0.02**	0.00	0.01	**0.04**	**0.08**	**-0.27**	**0.06**	0.00	0.01	-0.02	-0.01	**-0.04**
(22)	*SalesGrowth*$_{i,t}$	**-0.01**	0.05	0.01	0.00	0.03	**0.24**	-0.09	**-0.05**	**-0.01**	**0.04**	**-0.03**	**0.01**	**0.01**
(23)	*HHI*$_{i,t}$	**0.06**	**0.09**	**0.08**	**0.06**	**-0.11**	0.01	0.00	**0.02**	**-0.02**	**-0.03**	**-0.16**	**-0.12**	**-0.05**
(24)	*lnCoverage*$_{i,t-1}$	**0.19**	**0.19**	**0.10**	**0.09**	**-0.04**	**0.26**	**0.05**	**-0.19**	**0.12**	**0.34**	**0.17**	**0.06**	**-0.24**
(25)	*INSTOWN*$_{i,t-1}$	**0.16**	**0.18**	**0.07**	**0.03**	**0.04**	**0.17**	**0.05**	**-0.14**	**0.04**	**0.15**	**0.04**	**0.02**	**-0.12**
(26)	*Fourth Quarter*$_{i,t}$	0.00	0.00	**0.01**	**0.02**	-0.01	**-0.04**	**0.02**	**0.02**	**-0.02**	**-0.01**	**-0.15**	**0.02**	**0.45**
(27)	*Horizon*$_{i,t}$	0.05	**0.31**	**-0.38**	**-0.12**	**0.46**	**-0.05**	**0.02**	**0.03**	**-0.16**	0.00	**-0.23**	**0.06**	**0.44**

Panel A Firm-quarter panel, continued

	Variables	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)
(1)	*Geo Diversity*$_{i,t}$													
(2)	*Bundled MF*$_{i,t}$													
(3)	*Unbundled MF*$_{i,t}$													
(4)	*MF Revision*$_{i,t}$													
(5)	*Bundled Last MF*$_{i,t}$													
(6)	*Specificity*$_{i,t}$													
(7)	*Forecast Bias*$_{i,t}$													
(8)	*Forecast Error*$_{i,t}$													
(9)	*lnNR_Earn*$_{i,t}$													
(10)	*lnNR_Other*$_{i,t}$													
(11)	*Length*$_{i,t-1}$													
(12)	*Fog*$_{i,t-1}$													
(13)	*lnDays_EA*$_{i,t}$													
(14)	*Business Diversity*$_{i,t}$													
(15)	*lnSize*$_{i,t-1}$	**0.15**												
(16)	*Book-to-Market*$_{i,t-1}$	-0.01	**-0.29**											
(17)	*SalesVol*$_{i,t-1}$	**-0.07**	**-0.20**	**-0.07**										
(18)	*OCFVol*$_{i,t-1}$	**0.07**	**-0.10**	**0.17**	**0.01**									
(19)	*RetVol*$_{i,t-1}$	**-0.10**	**-0.52**	**0.09**	**0.31**	**0.05**								
(20)	*Litigation Risk*$_{i,t}$	**-0.09**	**-0.14**	**-0.05**	**0.12**	**-0.03**	**0.19**							
(21)	$\Delta ROA_{i,t}$	0.01	**0.05**	**-0.11**	**-0.03**	0.00	**-0.05**	0.00						
(22)	*SalesGrowth*$_{i,t}$	**-0.02**	**0.08**	**-0.22**	**0.20**	**-0.03**	**-0.09**	**-0.03**	**0.33**					
(23)	*HHI*$_{i,t}$	**0.13**	**0.01**	**0.00**	**-0.09**	**0.18**	**0.05**	**-0.10**	0.00	**-0.03**				
(24)	*lnCoverage*$_{i,t-1}$	**0.06**	**0.72**	**-0.20**	**-0.07**	**-0.06**	**-0.23**	**-0.02**	**-0.02**	**0.04**	**0.04**			
(25)	*INSTOWN*$_{i,t-1}$	**0.06**	**0.44**	**-0.12**	**-0.14**	**0.04**	**-0.19**	**-0.04**	**0.01**	**0.04**	**0.14**	**0.42**		
(26)	*Fourth Quarter*$_{i,t}$	0.00	0.00	**0.01**	0.00	-0.01	**0.01**	**0.01**	0.01	0.00	0.00	0.00	0.00	
(27)	*Horizon*$_{i,t}$	**-0.04**	**-0.04**	0.00	0.00	**-0.03**	**-0.01**	0.01	**0.03**	**0.02**	**-0.06**	**-0.03**	**0.02**	**0.52**

Panel B Firm-MF panel

	Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
(1)	*Geo Diversity*$_{i,t}$										
(2)	*MF News*$_{i,t,m}$	**0.01**									
(3)	*AF Revisions*$_{i,t,m}$	**-0.02**	**0.66**								
(4)	*Return [0,2]*$_{i,t,m}$	**0.02**	**0.25**	**0.35**							
(5)	*Length*$_{i,t-1}$	**0.19**	**0.03**	**-0.07**	0.01						
(6)	*Fog*$_{i,t-1}$	**0.10**	0.02	-0.02	0.01	**0.41**					
(7)	*lnDays_EA*$_{i,t}$	**-0.06**	**-0.02**	**-0.08**	**-0.03**	0.01	**0.13**				
(8)	*Business Diversity*$_{i,t}$	**0.03**	-0.01	0.01	0.00	-0.02	**-0.04**	**-0.04**			
(9)	*lnSize*$_{i,t-1}$	**0.18**	**0.11**	**0.13**	0.02	**0.15**	**0.03**	**-0.26**	**0.17**		
(10)	*Book-to-Market*$_{i,t-1}$	**-0.03**	**-0.07**	**-0.12**	0.00	-0.02	-0.01	**0.12**	0.02	**-0.37**	
(11)	*SalesVol*$_{i,t-1}$	**-0.07**	**-0.04**	**-0.02**	**-0.01**	**0.06**	**0.03**	**0.09**	**-0.09**	**-0.18**	-0.04
(12)	*OCFVol*$_{i,t-1}$	**-0.10**	**-0.05**	**-0.06**	0.00	**-0.06**	**-0.05**	**0.07**	-0.03	**-0.26**	**0.21**
(13)	*RetVol*$_{i,t-1}$	**-0.02**	**-0.09**	**-0.10**	0.00	-0.01	0.01	**0.11**	**-0.14**	**-0.54**	**0.20**
(14)	*Litigation Risk*$_{i,t}$	**0.04**	**-0.04**	**-0.09**	**-0.05**	**0.06**	**0.04**	**0.03**	**-0.12**	**-0.18**	**0.08**
(15)	$\Delta ROA_{i,t}$	**0.03**	**0.24**	**0.34**	**0.21**	-0.01	**-0.02**	**-0.04**	0.00	**0.03**	**-0.14**
(16)	*SalesGrowth*$_{i,t}$	**-0.04**	**0.15**	**0.25**	**0.13**	0.00	0.02	**0.03**	-0.02	0.04	**-0.26**
(17)	*HHI*$_{i,t}$	**-0.30**	**-0.07**	-0.01	0.00	**-0.18**	**-0.12**	**-0.06**	**0.11**	0.01	0.05
(18)	*lnCoverage*$_{i,t-1}$	**0.10**	**0.05**	**0.05**	0.01	**0.14**	**0.06**	**-0.21**	**0.04**	**0.70**	**-0.24**
(19)	*INSTOWN*$_{i,t-1}$	0.00	**0.03**	**0.02**	**0.03**	0.02	**0.05**	0.01	-0.02	**0.18**	**-0.09**
(20)	*Fourth Quarter*$_{i,t}$	**-0.01**	0.01	0.01	**-0.02**	**-0.15**	**0.05**	**0.47**	0.00	-0.01	**0.03**
(21)	*Horizon*$_{i,t}$	**0.04**	-0.01	-0.05	0.01	**-0.19**	**0.05**	**0.43**	**-0.04**	**-0.08**	**0.02**

Panel B Firm-MF panel, continued

	Variables	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
(1)	*Geo Diversity*$_{i,t}$										
(2)	*MF News*$_{i,t,m}$										
(3)	*AF Revisions*$_{i,t,m}$										
(4)	*Return [0,2]*$_{i,t,m}$										
(5)	*Length*$_{i,t-1}$										
(6)	*Fog*$_{i,t-1}$										
(7)	*lnDays_EA*$_{i,t}$										
(8)	*Business Diversity*$_{i,t}$										
(9)	*lnSize*$_{i,t-1}$										
(10)	*Book-to-Market*$_{i,t-1}$										
(11)	*SalesVol*$_{i,t-1}$										
(12)	*OCFVol*$_{i,t-1}$	**0.19**									
(13)	*RetVol*$_{i,t-1}$	**0.34**	**0.21**								
(14)	*Litigation Risk*$_{i,t}$	**0.11**	**0.06**	**0.21**							
(15)	$\Delta ROA_{i,t}$	**-0.03**	**-0.01**	**-0.03**	**-0.11**						
(16)	*SalesGrowth*$_{i,t}$	**0.26**	-0.02	**-0.02**	**-0.09**	**0.36**					
(17)	*HHI*$_{i,t}$	**-0.06**	**0.13**	**-0.03**	**-0.17**	**-0.03**	**-0.06**				
(18)	*lnCoverage*$_{i,t-1}$	0.00	**-0.15**	**-0.23**	**-0.02**	**-0.05**	0.00	**0.02**			
(19)	*INSTOWN*$_{i,t-1}$	**-0.05**	0.00	**-0.14**	**-0.05**	**-0.03**	**0.06**	**0.07**	**0.21**		
(20)	*Fourth Quarter*$_{i,t}$	-0.01	0.00	**0.03**	0.00	0.01	0.00	0.01	0.00	0.01	
(21)	*Horizon*$_{i,t}$	**0.01**	0.00	0.02	**0.01**	0.01	**0.02**	**-0.06**	**-0.06**	0.01	**0.48**

Table OB1 Descriptive Statistics – S&P Capital IQ

This table presents the descriptive statistics in Panel A and Spearman correlations in Panel B. The sample period ranges from 2002 to 2017. *# of Geo Seg*$_{i,t}$ is the number of geographic segments based on Compustat data. *Geo Diversity*$_{i,t}$ is equal to one minus the geographic segment Herfindahl-Hirschman index (HHI) based on Compustat data for firm *i* in period *t*. The Herfindahl-Hirschman index is the sum of squares of the sales in each geographic segment divided by total firm sales. *# of Geo Seg CIQ (All)*$_{i,t}$ is the number of all geographic segments based on S&P Capital IQ's current or prior subsidiary data for firm *i* in period *t*. *# of Geo Seg CIQ (Current)*$_{i,t}$ is the number of current geographic segments based on S&P Capital IQ's current subsidiary data for firm *i* in period *t*. *# of Geo Seg CIQ (Sale)*$_{i,t}$ is the number of geographic segments with non-missing positive subsidiary sales information in S&P Capital IQ for firm *i* in period *t*. *Geo Diversity CIQ*$_{i,t}$ is equal to one minus the geographic segment HHI based on S&P Capital IQ data for firm *i* in period *t*. The Herfindahl-Hirschman index is the sum of squares of the sales in each geographic segment in S&P Capital IQ divided by the sum of segment sales. Significance level at 1% is bolded in Panel B.

Panel A Descriptive statistics

Variables	N	Mean	Std	Q1	Median	Q3
# of Geo Seg	179,438	2.344	2.094	1.000	1.000	3.000
Geo Diversity	179,438	0.217	0.270	0.000	0.000	0.467
# of Geo Seg CIQ (All)	173,116	9.082	12.498	1.000	3.000	12.000
# of Geo Seg CIQ (Current)	167,727	7.821	11.583	1.000	3.000	9.000
# of Geo Seg CIQ (Sale)	96,264	2.960	3.252	1.000	1.000	3.000
Geo Diversity CIQ	96,264	0.199	0.263	0.000	0.000	0.425

Panel B Correlations

	Variables	(1)	(2)	(3)	(4)	(5)
(1)	*# of Geo Seg*					
(2)	*Geo Diversity*	**0.960**				
(3)	*# of Geo Seg CIQ (All)*	**0.646**	**0.674**			
(4)	*# of Geo Seg CIQ (Current)*	**0.622**	**0.652**	**0.943**		
(4)	*# of Geo Seg CIQ (Sale)*	**0.437**	**0.494**	**0.752**	**0.719**	
(6)	*Geo Diversity CIQ*	**0.433**	**0.486**	**0.687**	**0.660**	**0.938**

Table OB2 Geographic Diversity and Management Forecast Timing

This table presents the results from the regression of either *Bundled* $MF_{i,t}$ in columns (1) and (2) or *Unbundled* $MF_{i,t}$ in columns (3) and (4) on the geographic diversity measure and control variables. The sample period ranges from 2002 to 2017. In Panel A, *# of Geo Seg CIQ (All)*$_{i,t}$ is the number of all geographic segments based on S&P Capital IQ's current or prior subsidiary data for firm *i* in period *t*. In Panel B, *# of Geo Seg CIQ (Current)*$_{i,t}$ is the number of all geographic segments based on S&P Capital IQ's current subsidiary data for firm *i* in period *t*. In Panel C, *# of Geo Seg CIQ (Sale)*$_{i,t}$ is the number of geographic segments with non-missing segment sales information in S&P Capital IQ for firm *i* in period *t*. In Panel D, *Geo Diversity* $CIQ_{i,t}$ is equal to one minus the geographic segment Herfindahl-Hirschman index based on S&P Capital IQ data for firm *i* in period *t*. All variables are defined in Appendix A. Standard errors are clustered by firm and calendar quarter. Robust *t*-statistics are in parentheses. *, **, and *** represent significance level at the 10%, 5%, and 1%, respectively.

Panel A The total number of geographic segments based on all subsidiaries in S&P Capital IQ

	Bundled $MF_{i,t}$		*Unbundled* $MF_{i,t}$	
Independent Variables	(1)	(2)	(3)	(4)
***# of Geo Seg CIQ (All)*$_{i,t}$**	**0.003*** **	**0.001*** **	**0.000**	**0.000**
	(5.190)	**(4.516)**	**(0.988)**	**(0.816)**
$Length_{i,t-1}$	0.002	0.003*	-0.003**	-0.003***
	(0.556)	(1.780)	(-2.442)	(-3.036)
$Fog_{i,t-1}$	0.001	-0.000	0.000	0.000
	(0.646)	(-0.307)	(0.867)	(1.037)
$lnDays\_EA_{i,t}$	-0.068***	-0.017***	-0.033***	-0.023***
	(-5.410)	(-4.964)	(-6.925)	(-6.432)
Business Diversity$_{i,t}$	-0.011	-0.005	0.027***	0.019***
	(-0.382)	(-0.632)	(2.823)	(2.776)
$lnSize_{i,t-1}$	-0.019***	-0.005***	-0.000	0.000
	(-4.856)	(-4.403)	(-0.144)	(0.423)
Book-to-Market$_{i,t-1}$	-0.011*	-0.005***	-0.003*	-0.003**
	(-1.869)	(-3.271)	(-1.838)	(-2.304)
$SalesVol_{i,t-1}$	-0.038***	-0.009**	-0.010**	-0.006**
	(-2.686)	(-1.999)	(-2.531)	(-2.184)
$OCFVol_{i,t-1}$	0.000	-0.000	-0.000	-0.000
	(0.415)	(-0.099)	(-1.258)	(-1.362)
$RetVol_{i,t-1}$	-1.014***	-0.296***	-0.057	-0.102**
	(-6.842)	(-5.986)	(-1.070)	(-2.343)
Litigation Risk$_{i,t}$	0.001	0.002	-0.000	-0.000
	(0.102)	(0.846)	(-0.073)	(-0.093)
$\Delta ROA_{i,t}$	-0.032	0.040**	-0.072***	-0.051***
	(-0.866)	(2.119)	(-4.200)	(-3.665)
$SalesGrowth_{i,t}$	0.017***	0.006***	0.003***	0.002**
	(4.595)	(3.307)	(2.987)	(2.439)
$HHI_{i,t}$	-0.091	-0.026	-0.043	-0.032
	(-1.206)	(-1.423)	(-1.509)	(-1.555)
$lnCoverage_{i,t-1}$	0.079***	0.019***	0.020***	0.013***
	(13.007)	(9.068)	(7.784)	(7.241)
$INSTOWN_{i,t-1}$	0.116***	0.031***	0.010**	0.007**
	(8.550)	(7.523)	(2.459)	(2.397)
Fourth Quarter$_{i,t}$	0.030***	0.013***	0.015***	0.012***
	(5.454)	(5.176)	(5.374)	(4.950)
Lagged Dep Var$_{i,t-1}$		0.748***		0.264***
		(59.384)		(15.834)
Fixed Effects (Industry, Year)	Yes	Yes	Yes	Yes
Observations	173,116	173,116	173,116	173,116
Adjusted R^2	0.169	0.632	0.061	0.128

Panel B The total number of geographic segments based on current subsidiaries in S&P Capital IQ

	Bundled $MF_{i,t}$		*Unbundled* $MF_{i,t}$	
Independent Variables	(1)	(2)	(3)	(4)
# of Geo Seg CIQ (Current)$_{i,t}$	**0.003*** **	**0.001*** **	**0.000**	**0.000**
	(5.044)	**(4.450)**	**(1.391)**	**(1.218)**
Length$_{i,t-1}$	0.003	0.003**	-0.003**	-0.003***
	(0.798)	(1.993)	(-2.376)	(-2.948)
Fog$_{i,t-1}$	0.001	-0.000	0.000	0.000
	(0.713)	(-0.178)	(0.902)	(1.037)
lnDays_EA$_{i,t}$	-0.069***	-0.017***	-0.033***	-0.023***
	(-5.322)	(-4.862)	(-6.862)	(-6.449)
Business Diversity$_{i,t}$	-0.010	-0.005	0.026***	0.019***
	(-0.361)	(-0.626)	(2.763)	(2.717)
lnSize$_{i,t-1}$	-0.018***	-0.005***	-0.000	0.000
	(-4.634)	(-4.272)	(-0.140)	(0.458)
Book-to-Market$_{i,t-1}$	-0.009	-0.005***	-0.003	-0.003**
	(-1.495)	(-2.946)	(-1.530)	(-2.014)
SalesVol$_{i,t-1}$	-0.039***	-0.009**	-0.009**	-0.006**
	(-2.649)	(-2.054)	(-2.358)	(-2.036)
OCFVol$_{i,t-1}$	0.000	-0.000	-0.000*	-0.000*
	(0.206)	(-0.303)	(-1.834)	(-1.955)
RetVol$_{i,t-1}$	-1.037***	-0.299***	-0.060	-0.104**
	(-6.794)	(-6.039)	(-1.110)	(-2.381)
Litigation Risk$_{i,t}$	-0.000	0.002	-0.001	-0.001
	(-0.015)	(0.681)	(-0.360)	(-0.368)
$\Delta ROA_{i,t}$	-0.021	0.046**	-0.074***	-0.052***
	(-0.556)	(2.421)	(-4.084)	(-3.564)
SalesGrowth$_{i,t}$	0.018***	0.006***	0.004***	0.002**
	(4.517)	(3.429)	(2.924)	(2.461)
HHI$_{i,t}$	-0.077	-0.023	-0.034	-0.026
	(-1.004)	(-1.211)	(-1.186)	(-1.219)
lnCoverage$_{i,t-1}$	0.081***	0.019***	0.019***	0.013***
	(12.973)	(9.035)	(7.582)	(7.018)
INSTOWN$_{i,t-1}$	0.117***	0.031***	0.010**	0.008**
	(8.456)	(7.432)	(2.521)	(2.464)
Fourth Quarter$_{i,t}$	0.030***	0.013***	0.015***	0.012***
	(5.401)	(5.149)	(5.347)	(4.916)
Lagged Dep Var$_{i,t-1}$		0.748***		0.264***
		(58.923)		(15.625)
Fixed Effects (Industry, Year)	Yes	Yes	Yes	Yes
Observations	167,727	167,727	167,727	167,727
Adjusted R^2	0.168	0.632	0.060	0.127

Panel C The number of geographic segments with non-missing positive sales in S&P Capital IQ

	Bundled $MF_{i,t}$		*Unbundled* $MF_{i,t}$	
Independent Variables	(1)	(2)	(3)	(4)
# of Geo Seg CIQ (Sale) $_{i,t}$	**0.007****	**0.002****	**0.000**	**0.000**
	(2.552)	**(2.287)**	**(0.352)**	**(0.209)**
Length $_{i,t-1}$	-0.000	0.003	-0.002	-0.002
	(-0.026)	(1.288)	(-1.072)	(-1.367)
Fog $_{i,t-1}$	0.002	0.000	0.000	0.000
	(1.201)	(0.322)	(0.427)	(0.383)
lnDays_EA $_{i,t}$	-0.077***	-0.017***	-0.033***	-0.022***
	(-4.235)	(-3.237)	(-5.225)	(-4.793)
Business Diversity $_{i,t}$	-0.002	-0.003	0.032**	0.022**
	(-0.062)	(-0.371)	(2.586)	(2.508)
lnSize $_{i,t-1}$	-0.010*	-0.002*	0.002	0.002
	(-1.954)	(-1.746)	(1.080)	(1.464)
Book-to-Market $_{i,t-1}$	-0.011	-0.005	-0.002	-0.002
	(-1.038)	(-1.610)	(-0.583)	(-0.870)
SalesVol $_{i,t-1}$	-0.019	-0.004	-0.013*	-0.009*
	(-0.732)	(-0.583)	(-1.934)	(-1.772)
OCFVol $_{i,t-1}$	-0.000	-0.000	-0.000	-0.000
	(-0.359)	(-0.509)	(-0.817)	(-0.983)
RetVol $_{i,t-1}$	-1.315***	-0.378***	-0.107	-0.162**
	(-5.202)	(-4.590)	(-1.284)	(-2.461)
Litigation Risk $_{i,t}$	0.003	0.004	0.002	0.002
	(0.232)	(0.991)	(0.500)	(0.552)
$\Delta ROA_{i,t}$	-0.048	0.031	-0.101***	-0.064**
	(-0.738)	(1.024)	(-3.061)	(-2.332)
SalesGrowth $_{i,t}$	0.024***	0.009***	0.006**	0.004**
	(3.535)	(2.933)	(2.562)	(2.349)
HHI $_{i,t}$	-0.010	-0.005	-0.006	-0.005
	(-0.089)	(-0.180)	(-0.159)	(-0.183)
lnCoverage $_{i,t-1}$	0.077***	0.018***	0.018***	0.012***
	(8.757)	(6.985)	(5.654)	(5.023)
INSTOWN $_{i,t-1}$	0.117***	0.031***	0.007	0.005
	(6.026)	(5.657)	(1.209)	(1.183)
Fourth Quarter $_{i,t}$	0.031***	0.014***	0.015***	0.012***
	(4.138)	(3.803)	(4.661)	(4.191)
Lagged Dep Var $_{i,t-1}$		0.749***		0.268***
		(60.031)		(13.391)
Fixed Effects (Industry, Year)	Yes	Yes	Yes	Yes
Observations	96,264	96,264	96,264	96,264
Adjusted R^2	0.162	0.631	0.055	0.125

Panel D Geographic diversity measure based on S&P Capital IQ

	Bundled $MF_{i,t}$		*Unbundled* $MF_{i,t}$	
Independent Variables	(1)	(2)	(3)	(4)
Geo Diversity CIQ$_{i,t}$	**0.053****	**0.012***	**-0.011**	**-0.008**
	(2.054)	**(1.787)**	**(-1.565)**	**(-1.611)**
Length$_{i,t-1}$	0.000	0.003	-0.002	-0.002
	(0.001)	(1.305)	(-1.025)	(-1.327)
Fog$_{i,t-1}$	0.003	0.000	0.000	0.000
	(1.237)	(0.354)	(0.389)	(0.347)
lnDays_EA$_{i,t}$	-0.077***	-0.017***	-0.033***	-0.022***
	(-4.242)	(-3.245)	(-5.216)	(-4.781)
Business Diversity$_{i,t}$	0.004	-0.002	0.033***	0.023**
	(0.104)	(-0.215)	(2.648)	(2.565)
lnSize$_{i,t-1}$	-0.006	-0.002	0.003	0.003**
	(-1.223)	(-1.107)	(1.635)	(1.978)
Book-to-Market$_{i,t-1}$	-0.010	-0.005	-0.001	-0.002
	(-0.930)	(-1.516)	(-0.423)	(-0.725)
SalesVol$_{i,t-1}$	-0.022	-0.005	-0.015**	-0.010**
	(-0.862)	(-0.699)	(-2.165)	(-1.987)
OCFVol$_{i,t-1}$	-0.000	-0.000	-0.000	-0.000
	(-0.325)	(-0.489)	(-0.787)	(-0.956)
RetVol$_{i,t-1}$	-1.301***	-0.374***	-0.108	-0.163**
	(-5.139)	(-4.541)	(-1.301)	(-2.475)
Litigation Risk$_{i,t}$	0.003	0.004	0.002	0.002
	(0.264)	(1.014)	(0.527)	(0.574)
$\Delta ROA_{i,t}$	-0.047	0.031	-0.100***	-0.063**
	(-0.723)	(1.035)	(-3.031)	(-2.305)
SalesGrowth$_{i,t}$	0.023***	0.009***	0.006**	0.004**
	(3.354)	(2.845)	(2.492)	(2.288)
HHI$_{i,t}$	-0.003	-0.004	-0.007	-0.006
	(-0.030)	(-0.126)	(-0.182)	(-0.208)
lnCoverage$_{i,t-1}$	0.076***	0.018***	0.018***	0.011***
	(8.595)	(6.866)	(5.549)	(4.913)
INSTOWN$_{i,t-1}$	0.111***	0.029***	0.007	0.005
	(5.733)	(5.434)	(1.217)	(1.209)
Fourth Quarter$_{i,t}$	0.031***	0.014***	0.015***	0.012***
	(4.160)	(3.811)	(4.642)	(4.176)
Lagged Dep Var$_{i,t-1}$		0.750***		0.268***
		(60.075)		(13.392)
Fixed Effects (Industry, Year)	Yes	Yes	Yes	Yes
Observations	96,264	96,264	96,264	96,264
Adjusted R^2	0.161	0.631	0.055	0.125

Table OB3 Geographic Diversity and Management Forecast Revisions

This table presents the results from the regression of either *Bundled Last MF*$_{i,t}$ in columns (1) and (2) or *MF Revision*$_{i,t}$ in columns (3) and (4) on the geographic diversity measure and control variables. The sample period ranges from 2002 to 2017. In Panel A, *# of Geo Seg CIQ (All)*$_{i,t}$ is the number of all geographic segments based on S&P Capital IQ's current or prior subsidiary data for firm *i* in period *t*. In Panel B, *# of Geo Seg CIQ (Current)*$_{i,t}$ is the number of all geographic segments based on S&P Capital IQ's current subsidiary data for firm *i* in period *t*. In Panel C, *# of Geo Seg CIQ (Sale)*$_{i,t}$ is the number of geographic segments with non-missing segment sales information in S&P Capital IQ for firm *i* in period *t*. In Panel D, *Geo Diversity CIQ*$_{i,t}$ is equal to one minus the geographic segment Herfindahl-Hirschman index based on S&P Capital IQ data for firm *i* in period *t*. All other variables are defined in Appendix A. Standard errors are clustered by firm and calendar quarter. Robust *t*-statistics are in parentheses. *, **, and *** represent significance level at the 10%, 5%, and 1%, respectively.

Panel A The total number of geographic segments based on all subsidiaries in S&P Capital IQ

	Bundled Last MF$_{i,t}$		*MF Revision*$_{i,t}$	
Independent Variables	(1)	(2)	(3)	(4)
***# of Geo Seg CIQ (All)*$_{i,t}$**	**0.002*** **	**0.001*** **	**-0.000***	**-0.000***
	(4.335)	**(3.983)**	**(-1.767)**	**(-1.743)**
Length$_{i,t-1}$	0.013***	0.020***	-0.009***	-0.009***
	(2.784)	(4.639)	(-2.748)	(-3.149)
Fog$_{i,t-1}$	-0.001	-0.002	0.003	0.003*
	(-0.443)	(-1.039)	(1.606)	(1.717)
lnDays_EA$_{i,t}$	0.076***	0.070***	-0.020**	-0.015**
	(4.757)	(4.824)	(-2.507)	(-2.346)
Business Diversity$_{i,t}$	-0.052*	-0.038*	0.017	0.012
	(-1.953)	(-1.675)	(0.958)	(0.907)
lnSize$_{i,t-1}$	-0.013**	-0.011**	0.006***	0.005***
	(-2.438)	(-2.377)	(2.786)	(2.927)
Book-to-Market$_{i,t-1}$	-0.013	-0.008	-0.002	-0.002
	(-1.195)	(-0.780)	(-0.422)	(-0.468)
SalesVol$_{i,t-1}$	0.059**	0.053***	-0.018	-0.013
	(2.581)	(2.601)	(-1.504)	(-1.418)
OCFVol$_{i,t-1}$	0.001	0.001	-0.000	-0.000
	(1.475)	(1.462)	(-0.543)	(-0.496)
RetVol$_{i,t-1}$	-0.473*	-0.128	0.093	0.073
	(-1.879)	(-0.542)	(0.844)	(0.796)
Litigation Risk$_{i,t}$	-0.020***	-0.018***	0.003	0.003
	(-3.096)	(-2.954)	(0.817)	(0.875)
$\Delta ROA_{i,t}$	0.735***	0.700***	0.077	0.070
	(5.038)	(5.345)	(1.288)	(1.296)
SalesGrowth$_{i,t}$	-0.017**	-0.017**	-0.001	-0.001
	(-2.193)	(-2.320)	(-0.145)	(-0.337)
HHI$_{i,t}$	0.162	0.151*	-0.042	-0.036
	(1.548)	(1.687)	(-0.728)	(-0.756)
lnCoverage$_{i,t-1}$	-0.022**	-0.021***	0.011***	0.009***
	(-2.474)	(-2.754)	(3.342)	(3.206)
INSTOWN$_{i,t-1}$	0.032**	0.025*	0.005	0.004
	(2.007)	(1.817)	(0.759)	(0.661)
Fourth Quarter$_{i,t}$	-0.032***	-0.025***	0.011***	0.010***
	(-3.549)	(-2.919)	(3.194)	(3.135)
Lagged Dep Var$_{i,t-1}$		0.156***		0.197***
		(14.016)		(5.754)
Fixed Effects (Industry, Year)	Yes	Yes	Yes	Yes
Observations	31,775	31,775	31,775	31,775
Adjusted R^2	0.124	0.161	0.034	0.067

Panel B The total number of geographic segments based on current subsidiaries in S&P Capital IQ

	Bundled Last MF$_{i,t}$		*MF Revision$_{i,t}$*	
Independent Variables	(1)	(2)	(3)	(4)
# of Geo Seg CIQ (Current)$_{i,t}$	**0.002*** **	**0.001*** **	**-0.000**	**-0.000**
	(3.650)	**(3.298)**	**(-1.383)**	**(-1.401)**
Length$_{i,t-1}$	0.014***	0.021***	-0.009***	-0.009***
	(2.969)	(4.750)	(-2.749)	(-3.125)
Fog$_{i,t-1}$	-0.001	-0.002	0.003	0.003*
	(-0.391)	(-0.960)	(1.626)	(1.727)
lnDays_EA$_{i,t}$	0.079***	0.074***	-0.021***	-0.016**
	(4.913)	(5.011)	(-2.610)	(-2.495)
Business Diversity$_{i,t}$	-0.047*	-0.035	0.016	0.012
	(-1.790)	(-1.525)	(0.942)	(0.891)
lnSize$_{i,t-1}$	-0.011**	-0.009**	0.006***	0.005***
	(-2.143)	(-2.140)	(2.716)	(2.839)
Book-to-Market$_{i,t-1}$	-0.013	-0.008	-0.001	-0.001
	(-1.177)	(-0.783)	(-0.248)	(-0.278)
SalesVol$_{i,t-1}$	0.052**	0.046**	-0.017	-0.013
	(2.296)	(2.294)	(-1.428)	(-1.370)
OCFVol$_{i,t-1}$	0.001**	0.001**	-0.000	-0.000
	(2.045)	(2.012)	(-0.962)	(-0.946)
RetVol$_{i,t-1}$	-0.423*	-0.086	0.043	0.034
	(-1.696)	(-0.370)	(0.395)	(0.366)
Litigation Risk$_{i,t}$	-0.019***	-0.017***	0.003	0.002
	(-2.861)	(-2.718)	(0.799)	(0.777)
ΔROA$_{i,t}$	0.746***	0.705***	0.081	0.073
	(5.207)	(5.448)	(1.326)	(1.324)
SalesGrowth$_{i,t}$	-0.017**	-0.016**	-0.000	-0.001
	(-2.160)	(-2.194)	(-0.097)	(-0.290)
HHI$_{i,t}$	0.136	0.127	-0.032	-0.027
	(1.287)	(1.406)	(-0.552)	(-0.567)
lnCoverage$_{i,t-1}$	-0.021**	-0.021**	0.011***	0.009***
	(-2.355)	(-2.596)	(3.220)	(3.130)
INSTOWN$_{i,t-1}$	0.029*	0.022	0.006	0.005
	(1.804)	(1.569)	(0.920)	(0.825)
Fourth Quarter$_{i,t}$	-0.030***	-0.023***	0.011***	0.009***
	(-3.460)	(-2.805)	(3.070)	(3.005)
Lagged Dep Var$_{i,t-1}$		0.155***		0.196***
		(13.640)		(5.581)
Fixed Effects (Industry, Year)	Yes	Yes	Yes	Yes
Observations	31,320	31,320	31,320	31,320
Adjusted R^2	0.120	0.157	0.033	0.066

Panel C The number of geographic segments with non-missing positive sales in S&P Capital IQ

	Bundled Last MF$_{i,t}$		*MF Revision$_{i,t}$*	
Independent Variables	(1)	(2)	(3)	(4)
# of Geo Seg CIQ (Sale)$_{i,t}$	**0.003**	**0.002**	**-0.000**	**-0.000**
	(1.610)	**(1.587)**	**(-0.196)**	**(-0.278)**
Length$_{i,t-1}$	0.006	0.013**	-0.002	-0.003
	(1.020)	(2.547)	(-0.591)	(-0.909)
Fog$_{i,t-1}$	0.000	-0.001	0.003	0.002
	(0.179)	(-0.312)	(1.227)	(1.299)
lnDays_EA$_{i,t}$	0.054***	0.052***	-0.012	-0.009
	(3.271)	(3.474)	(-1.581)	(-1.376)
Business Diversity$_{i,t}$	-0.045	-0.033	0.035*	0.028*
	(-1.499)	(-1.272)	(1.675)	(1.741)
lnSize$_{i,t-1}$	-0.009	-0.009*	0.005**	0.005**
	(-1.553)	(-1.740)	(2.081)	(2.208)
Book-to-Market$_{i,t-1}$	-0.020	-0.014	-0.003	-0.003
	(-1.310)	(-1.003)	(-0.612)	(-0.632)
SalesVol$_{i,t-1}$	0.043*	0.037	-0.012	-0.011
	(1.654)	(1.584)	(-0.811)	(-0.894)
OCFVol$_{i,t-1}$	0.001	0.001	0.000	0.000
	(0.828)	(0.766)	(0.327)	(0.479)
RetVol$_{i,t-1}$	-0.460	-0.167	0.077	0.058
	(-1.329)	(-0.540)	(0.504)	(0.443)
Litigation Risk$_{i,t}$	-0.017**	-0.014*	0.005	0.004
	(-2.041)	(-1.838)	(1.124)	(1.077)
ΔROA$_{i,t}$	0.761***	0.675***	0.029	0.030
	(4.199)	(4.137)	(0.354)	(0.401)
SalesGrowth$_{i,t}$	-0.021*	-0.020**	-0.001	-0.001
	(-1.950)	(-1.989)	(-0.149)	(-0.184)
HHI$_{i,t}$	0.087	0.081	-0.019	-0.016
	(0.655)	(0.714)	(-0.295)	(-0.300)
lnCoverage$_{i,t-1}$	-0.021*	-0.020**	0.009**	0.007**
	(-1.920)	(-2.077)	(2.314)	(2.219)
INSTOWN$_{i,t-1}$	0.029	0.024	0.004	0.003
	(1.573)	(1.478)	(0.573)	(0.464)
Fourth Quarter$_{i,t}$	-0.021**	-0.015*	0.007*	0.006*
	(-2.452)	(-1.801)	(1.949)	(1.806)
Lagged Dep Var$_{i,t-1}$		0.153***		0.184***
		(11.369)		(4.491)
Fixed Effects (Industry, Year)	Yes	Yes	Yes	Yes
Observations	21,310	21,310	21,310	21,310
Adjusted R^2	0.106	0.144	0.028	0.057

Panel D Geographic diversity based on S&P Capital IQ

	Bundled Last MF$_{i,t}$		*MF Revision$_{i,t}$*	
Independent Variables	(1)	(2)	(3)	(4)
Geo Diversity CIQ$_{i,t}$	**0.044****	**0.037****	**-0.017*****	**-0.014*****
	(2.541)	**(2.483)**	**(-2.787)**	**(-2.845)**
Length$_{i,t-1}$	0.006	0.013**	-0.002	-0.002
	(1.016)	(2.530)	(-0.548)	(-0.879)
Fog$_{i,t-1}$	0.001	-0.000	0.003	0.002
	(0.295)	(-0.199)	(1.196)	(1.265)
lnDays_EA$_{i,t}$	0.053***	0.051***	-0.012	-0.008
	(3.212)	(3.418)	(-1.491)	(-1.280)
Business Diversity$_{i,t}$	-0.043	-0.031	0.036*	0.029*
	(-1.425)	(-1.195)	(1.675)	(1.744)
lnSize$_{i,t-1}$	-0.008	-0.008*	0.006**	0.005**
	(-1.593)	(-1.787)	(2.233)	(2.398)
Book-to-Market$_{i,t-1}$	-0.021	-0.014	-0.002	-0.002
	(-1.399)	(-1.070)	(-0.389)	(-0.426)
SalesVol$_{i,t-1}$	0.046*	0.039*	-0.015	-0.013
	(1.750)	(1.667)	(-0.963)	(-1.041)
OCFVol$_{i,t-1}$	0.001	0.001	0.000	0.000
	(0.805)	(0.747)	(0.365)	(0.517)
RetVol$_{i,t-1}$	-0.451	-0.160	0.073	0.055
	(-1.301)	(-0.517)	(0.472)	(0.413)
Litigation Risk$_{i,t}$	-0.017**	-0.015*	0.005	0.004
	(-2.066)	(-1.863)	(1.136)	(1.090)
ΔROA$_{i,t}$	0.765***	0.679***	0.032	0.032
	(4.240)	(4.178)	(0.397)	(0.436)
SalesGrowth$_{i,t}$	-0.021*	-0.020**	-0.001	-0.001
	(-1.963)	(-2.005)	(-0.260)	(-0.285)
HHI$_{i,t}$	0.088	0.082	-0.023	-0.019
	(0.665)	(0.722)	(-0.357)	(-0.360)
lnCoverage$_{i,t-1}$	-0.021*	-0.020**	0.008**	0.006**
	(-1.923)	(-2.083)	(2.196)	(2.091)
INSTOWN$_{i,t-1}$	0.024	0.020	0.005	0.004
	(1.354)	(1.266)	(0.681)	(0.581)
Fourth Quarter$_{i,t}$	-0.021**	-0.014*	0.007*	0.006*
	(-2.424)	(-1.773)	(1.857)	(1.721)
Lagged Dep Var$_{i,t-1}$		0.153***		0.184***
		(11.304)		(4.479)
Fixed Effects (Industry, Year)	Yes	Yes	Yes	Yes
Observations	21,310	21,310	21,310	21,310
Adjusted R^2	0.106	0.144	0.028	0.058

Table OB4 Geographic Diversity and Management Forecast Properties

This table presents the results from the regression of forecast property measures on the geographic diversity measure and control variables. The sample period ranges from 2002 to 2017. In Panel A, *# of Geo Seg CIQ (All)*$_{i,t}$ is the number of all geographic segments based on S&P Capital IQ's current or prior subsidiary data for firm *i* in period *t*. In Panel B, *# of Geo Seg CIQ (Current)*$_{i,t}$ is the number of all geographic segments based on S&P Capital IQ's current subsidiary data for firm *i* in period *t*. In Panel C, *# of Geo Seg CIQ (Sale)*$_{i,t}$ is the number of geographic segments with non-missing segment sales information in S&P Capital IQ for firm *i* in period *t*. In Panel D, *Geo Diversity CIQ*$_{i,t}$ is equal to one minus the geographic segment Herfindahl-Hirschman index based on S&P Capital IQ data for firm *i* in period *t*. All other variables are defined in Appendix A. Standard errors are clustered by firm and calendar quarter. Robust *t*-statistics are in parentheses. *, **, and *** represent significance level at the 10%, 5%, and 1%, respectively.

Panel A The total number of geographic segments based on all subsidiaries in S&P Capital IQ

	Specificity$_{i,t}$	*Forecast Bias*$_{i,t}$	*Forecast Error*$_{i,t}$
Independent Variables	(1)	(2)	(3)
***# of Geo Seg CIQ (All)*$_{i,t}$**	**-0.049*** **	**-0.042***	**0.058****
	(-3.905)	**(-1.951)**	**(2.577)**
Length$_{i,t-1}$	0.001	-0.001	0.003
	(0.293)	(-0.099)	(0.480)
Fog$_{i,t-1}$	0.039	0.184***	0.037
	(1.233)	(2.938)	(0.688)
lnDays_EA$_{i,t}$	0.024	-0.109	0.144
	(0.429)	(-0.945)	(1.292)
Business Diversity$_{i,t}$	0.083***	0.087***	-0.094***
	(6.219)	(4.833)	(-4.708)
lnSize$_{i,t-1}$	-0.291***	0.142*	0.384***
	(-6.172)	(1.758)	(5.537)
Book-to-Market$_{i,t-1}$	-0.416***	-0.704***	0.941***
	(-4.542)	(-3.829)	(5.004)
SalesVol$_{i,t-1}$	0.011***	0.012**	-0.018***
	(3.821)	(2.265)	(-3.542)
OCFVol$_{i,t-1}$	-9.190***	-4.663**	14.128***
	(-8.536)	(-2.527)	(7.374)
RetVol$_{i,t-1}$	-0.012	-0.002	-0.035
	(-0.544)	(-0.040)	(-0.937)
Litigation Risk$_{i,t}$	0.258	-12.457***	-3.277***
	(0.417)	(-7.554)	(-2.692)
$\Delta ROA_{i,t}$	0.294***	0.321***	-0.302***
	(6.108)	(4.378)	(-4.270)
SalesGrowth$_{i,t}$	-0.314**	0.215	0.401
	(-2.061)	(0.650)	(1.278)
HHI$_{i,t}$	-0.016	-0.053	0.042
	(-0.727)	(-1.566)	(1.059)
lnCoverage$_{i,t-1}$	0.412***	0.509***	-0.760***
	(6.263)	(3.509)	(-5.620)
INSTOWN$_{i,t-1}$	-0.034***	-0.015	0.032
	(-3.017)	(-0.802)	(1.586)
Fourth Quarter$_{i,t}$	-0.318**	0.329	0.448
	(-1.982)	(0.965)	(1.350)
Horizon$_{i,t}$	-0.604***	-1.508***	0.396
	(-3.403)	(-4.587)	(1.300)
Fixed Effects (Industry, Year)	Yes	Yes	Yes
Observations	31,127	31,775	31,775
Adjusted R^2	0.246	0.070	0.166

Panel B The total number of geographic segments based on current subsidiaries in S&P Capital IQ

Independent Variables	*Specificity*$_{i,t}$ (1)	*Forecast Bias*$_{i,t}$ (2)	*Forecast Error*$_{i,t}$ (3)
***# of Geo Seg CIQ (Current)*$_{i,t}$**	**-0.002****	**-0.005*****	**0.000**
	(-2.348)	**(-3.269)**	**(0.173)**
Length$_{i,t-1}$	-0.049***	-0.043*	0.058**
	(-3.854)	(-1.957)	(2.510)
Fog$_{i,t-1}$	0.002	-0.002	0.002
	(0.539)	(-0.252)	(0.336)
lnDays_EA$_{i,t}$	0.044	0.175***	0.025
	(1.373)	(2.821)	(0.472)
Business Diversity$_{i,t}$	0.034	-0.063	0.134
	(0.638)	(-0.550)	(1.220)
lnSize$_{i,t-1}$	0.075***	0.096***	-0.078***
	(5.653)	(4.939)	(-3.840)
Book-to-Market$_{i,t-1}$	-0.291***	0.156*	0.389***
	(-6.068)	(1.875)	(5.449)
SalesVol$_{i,t-1}$	-0.423***	-0.739***	0.927***
	(-4.578)	(-3.923)	(4.873)
OCFVol$_{i,t-1}$	0.012***	0.012**	-0.018***
	(3.894)	(2.153)	(-3.443)
RetVol$_{i,t-1}$	-8.885***	-4.342**	13.835***
	(-8.337)	(-2.396)	(7.371)
Litigation Risk$_{i,t}$	-0.007	0.007	-0.038
	(-0.318)	(0.169)	(-1.030)
$\Delta ROA_{i,t}$	0.173	-11.967***	-3.036**
	(0.281)	(-7.289)	(-2.555)
SalesGrowth$_{i,t}$	0.297***	0.320***	-0.315***
	(6.105)	(4.420)	(-4.523)
HHI$_{i,t}$	-0.337**	0.197	0.457
	(-2.272)	(0.602)	(1.485)
lnCoverage$_{i,t-1}$	-0.010	-0.046	0.031
	(-0.423)	(-1.356)	(0.772)
INSTOWN$_{i,t-1}$	0.403***	0.490***	-0.752***
	(6.046)	(3.300)	(-5.442)
Fourth Quarter$_{i,t}$	-0.034***	-0.014	0.029
	(-3.076)	(-0.719)	(1.481)
Horizon$_{i,t}$	-0.338**	0.312	0.490
	(-2.084)	(0.917)	(1.451)
Fixed Effects (Industry, Year)	Yes	Yes	Yes
Observations	30,684	31,320	31,320
Adjusted R^2	0.245	0.070	0.165

Panel C The number of geographic segments with non-missing positive sales in S&P Capital IQ

Independent Variables	*Specificity*$_{i,t}$ (1)	*Forecast Bias*$_{i,t}$ (2)	*Forecast Error*$_{i,t}$ (3)
***# of Geo Seg CIQ (Sale)*$_{i,t}$**	**-0.007****	**-0.003**	**0.011****
	(-2.587)	**(-0.656)**	**(2.077)**
Length$_{i,t-1}$	-0.024*	-0.018	0.048**
	(-1.781)	(-0.812)	(2.230)
Fog$_{i,t-1}$	0.000	0.000	0.001
	(0.144)	(0.085)	(0.113)
lnDays_EA$_{i,t}$	0.028	0.125	-0.006
	(0.800)	(1.642)	(-0.093)
Business Diversity$_{i,t}$	0.042	-0.037	0.250*
	(0.735)	(-0.254)	(1.834)
lnSize$_{i,t-1}$	0.062***	0.073***	-0.089***
	(4.904)	(3.828)	(-3.757)
Book-to-Market$_{i,t-1}$	-0.291***	0.204**	0.327***
	(-5.398)	(2.365)	(3.766)
SalesVol$_{i,t-1}$	-0.417***	-0.533**	1.079***
	(-3.925)	(-2.215)	(4.287)
OCFVol$_{i,t-1}$	0.008**	0.015**	-0.022***
	(2.234)	(2.308)	(-3.112)
RetVol$_{i,t-1}$	-7.616***	-2.404	11.782***
	(-7.994)	(-1.281)	(5.823)
Litigation Risk$_{i,t}$	-0.032	-0.024	0.016
	(-1.394)	(-0.660)	(0.445)
$\Delta ROA_{i,t}$	-0.097	-9.617***	-1.876
	(-0.137)	(-5.653)	(-1.396)
SalesGrowth$_{i,t}$	0.223***	0.205**	-0.281***
	(5.499)	(2.493)	(-3.949)
HHI$_{i,t}$	-0.287	0.236	0.361
	(-1.398)	(0.603)	(1.050)
lnCoverage$_{i,t-1}$	0.006	-0.011	0.025
	(0.257)	(-0.286)	(0.520)
INSTOWN$_{i,t-1}$	0.289***	0.397***	-0.547***
	(4.011)	(2.651)	(-4.011)
Fourth Quarter$_{i,t}$	-0.031**	-0.012	0.045*
	(-2.543)	(-0.527)	(1.919)
Horizon$_{i,t}$	-0.096	0.417	0.316
	(-0.426)	(1.078)	(0.767)
Fixed Effects (Industry, Year)	Yes	Yes	Yes
Observations	20,908	21,310	21,310
Adjusted R^2	0.201	0.065	0.148

Panel D Geographic diversity based on S&P Capital IQ

Independent Variables	*Specificity*$_{i,t}$ (1)	*Forecast Bias*$_{i,t}$ (2)	*Forecast Error*$_{i,t}$ (3)
***Geo Diversity CIQ*$_{i,t}$**	**-0.042**	**-0.026**	**0.063**
	(-1.135)	**(-0.421)**	**(0.903)**
Length$_{i,t-1}$	-0.025*	-0.018	0.050**
	(-1.867)	(-0.842)	(2.315)
Fog$_{i,t-1}$	0.000	0.000	0.001
	(0.016)	(0.049)	(0.206)
lnDays_EA$_{i,t}$	0.029	0.125	-0.007
	(0.811)	(1.646)	(-0.097)
Business Diversity$_{i,t}$	0.033	-0.041	0.265*
	(0.589)	(-0.282)	(1.965)
lnSize$_{i,t-1}$	0.056***	0.071***	-0.078***
	(4.761)	(3.923)	(-3.411)
Book-to-Market$_{i,t-1}$	-0.295***	0.202**	0.335***
	(-5.495)	(2.360)	(3.882)
SalesVol$_{i,t-1}$	-0.412***	-0.532**	1.069***
	(-3.902)	(-2.230)	(4.260)
OCFVol$_{i,t-1}$	0.008**	0.015**	-0.022***
	(2.226)	(2.308)	(-3.116)
RetVol$_{i,t-1}$	-7.621***	-2.408	11.787***
	(-8.000)	(-1.281)	(5.842)
Litigation Risk$_{i,t}$	-0.031	-0.024	0.015
	(-1.370)	(-0.653)	(0.420)
$\Delta ROA_{i,t}$	-0.127	-9.629***	-1.829
	(-0.178)	(-5.657)	(-1.355)
SalesGrowth$_{i,t}$	0.226***	0.207**	-0.286***
	(5.547)	(2.508)	(-3.998)
HHI$_{i,t}$	-0.272	0.242	0.332
	(-1.342)	(0.621)	(0.974)
lnCoverage$_{i,t-1}$	0.009	-0.010	0.021
	(0.357)	(-0.258)	(0.428)
INSTOWN$_{i,t-1}$	0.296***	0.401***	-0.559***
	(4.114)	(2.694)	(-4.142)
Fourth Quarter$_{i,t}$	-0.030**	-0.012	0.043*
	(-2.535)	(-0.531)	(1.905)
Horizon$_{i,t}$	-0.106	0.414	0.332
	(-0.473)	(1.074)	(0.808)
Fixed Effects (Industry, Year)	Yes	Yes	Yes
Observations	20,908	21,310	21,310
Adjusted R^2	0.200	0.065	0.148

Table OB5 Market Responses to Management Forecast News

This table presents the results from the regression of *AF Revision*$_{i,t,m}$ or *Return [0,2]*$_{i,t,m}$ on the geographic diversity measure and control variables. The sample period ranges from 2002 to 2017. In Panel A, *# of Geo Seg CIQ (All)*$_{i,t}$ is the number of all geographic segments based on S&P Capital IQ's current or prior subsidiary data for firm *i* in period *t*. In Panel B, *# of Geo Seg CIQ (Current)*$_{i,t}$ is the number of all geographic segments based on S&P Capital IQ's current subsidiary data for firm *i* in period *t*. In Panel C, *# of Geo Seg CIQ (Sale)*$_{i,t}$ is the number of geographic segments with non-missing segment sales information in S&P Capital IQ for firm *i* in period *t*. In Panel D, *Geo Diversity CIQ*$_{i,t}$ is equal to one minus the geographic segment Herfindahl-Hirschman index based on S&P Capital IQ data for firm *i* in period *t*. All other variables are defined in Appendix A. Standard errors are clustered by firm and calendar quarter. Robust *t*-statistics are in parentheses. *, **, and *** represent significance level at the 10%, 5%, and 1%, respectively.

Panel A The total number of geographic segments based on all subsidiaries in S&P Capital IQ

	AF Revision$_{i,t,m}$	*Return [0,2]*$_{i,t,m}$
Independent Variables	(1)	(2)
***MF News*$_{i,t,m}$**	**0.135*****	**0.009*****
	(8.243)	**(8.618)**
High # of Geo Seg CIQ (All)$_{i,t}$	-0.006	0.006***
	(-0.583)	(3.874)
***MF News*$_{i,t,m}$ × High # of Geo Seg CIQ (All)*$_{i,t}$**	**-0.013**	**-0.003***
	(-0.636)	**(-1.933)**
Length$_{i,t-1}$	-0.026***	0.001
	(-5.367)	(1.228)
Fog$_{i,t-1}$	0.005**	0.000
	(2.526)	(1.111)
lnDays_EA$_{i,t}$	-0.026**	-0.012***
	(-2.375)	(-4.809)
Business Diversity$_{i,t}$	-0.023	0.001
	(-1.037)	(0.195)
lnSize$_{i,t-1}$	0.027***	-0.001**
	(6.103)	(-2.500)
Book-to-Market$_{i,t-1}$	-0.109***	0.018***
	(-5.687)	(7.368)
SalesVol$_{i,t-1}$	-0.073*	-0.024***
	(-1.833)	(-4.486)
OCFVol$_{i,t-1}$	-0.002	0.000
	(-1.159)	(0.592)
RetVol$_{i,t-1}$	-2.384***	-0.113
	(-5.225)	(-1.219)
Litigation Risk$_{i,t}$	-0.028***	-0.010***
	(-3.108)	(-5.413)
$\Delta ROA_{i,t}$	6.769***	0.940***
	(17.308)	(16.939)
SalesGrowth$_{i,t}$	0.139***	0.026***
	(7.780)	(9.843)
HHI$_{i,t}$	-0.054	-0.011
	(-0.789)	(-1.018)
lnCoverage$_{i,t-1}$	-0.011	0.003**
	(-1.325)	(2.511)
INSTOWN$_{i,t-1}$	0.008	0.000
	(0.394)	(0.058)
Fourth Quarter$_{i,t}$	-0.004	-0.002
	(-0.592)	(-1.214)
Horizon$_{i,t,m}$	0.071	0.055***
	(1.185)	(4.485)
Fixed Effects (Industry, Year)	Yes	Yes
Observations	33,819	33,819
Adjusted R^2	0.351	0.068

Panel B The total number of geographic segments based on current subsidiaries in S&P Capital IQ

Independent Variables	*AF Revision*$_{i,t,m}$ (1)	*Return [0,2]*$_{i,t,m}$ (2)
***MF News*$_{i,t,m}$**	**0.127*** **	**0.009*** **
	(8.282)	**(8.878)**
High # of Geo Seg CIQ (Current)$_{i,t}$	0.002	0.005***
	(0.193)	(3.258)
***MF News*$_{i,t,m}$ × *High # of Geo Seg CIQ (Current)*$_{i,t}$**	**0.001**	**-0.002**
	(0.042)	**(-1.222)**
Length$_{i,t-1}$	-0.026***	0.001
	(-5.343)	(1.179)
Fog$_{i,t-1}$	0.005**	0.000
	(2.515)	(0.923)
lnDays_EA$_{i,t}$	-0.025**	-0.011***
	(-2.250)	(-4.664)
Business Diversity$_{i,t}$	-0.021	0.000
	(-0.970)	(0.125)
lnSize$_{i,t-1}$	0.024***	-0.001**
	(5.905)	(-2.197)
Book-to-Market$_{i,t-1}$	-0.110***	0.017***
	(-5.838)	(7.045)
SalesVol$_{i,t-1}$	-0.072*	-0.025***
	(-1.772)	(-4.556)
OCFVol$_{i,t-1}$	-0.001	0.000
	(-0.821)	(0.774)
RetVol$_{i,t-1}$	-2.523***	-0.116
	(-5.559)	(-1.250)
Litigation Risk$_{i,t}$	-0.027***	-0.011***
	(-2.987)	(-5.585)
$\Delta ROA_{i,t}$	6.641***	0.926***
	(17.491)	(16.531)
SalesGrowth$_{i,t}$	0.141***	0.025***
	(8.229)	(9.865)
HHI$_{i,t}$	-0.054	-0.010
	(-0.803)	(-0.885)
lnCoverage$_{i,t-1}$	-0.009	0.003**
	(-1.074)	(2.540)
INSTOWN$_{i,t-1}$	-0.000	0.000
	(-0.010)	(0.061)
Fourth Quarter$_{i,t}$	-0.004	-0.002
	(-0.679)	(-1.322)
Horizon$_{i,t,m}$	0.061	0.057***
	(1.049)	(4.697)
Fixed Effects (Industry, Year)	Yes	Yes
Observations	33,274	33,274
Adjusted R^2	0.341	0.064

Panel C The number of geographic segments with non-missing positive sales in S&P Capital IQ

Independent Variables	*AF Revision*$_{i,t,m}$ (1)	*Return [0,2]*$_{i,t,m}$ (2)
***MF News*$_{i,t,m}$**	**0.127*****	**0.007*****
	(6.704)	**(6.121)**
High # of Geo Seg CIQ (Sale)$_{i,t}$	-0.002	0.003**
	(-0.191)	(2.446)
***MF News*$_{i,t,m}$ × *High # of Geo Seg CIQ (Sale)*$_{i,t}$**	**0.002**	**0.001**
	(0.074)	**(0.842)**
Length$_{i,t-1}$	-0.028***	0.002*
	(-5.593)	(1.843)
Fog$_{i,t-1}$	0.002	-0.000
	(1.519)	(-0.823)
lnDays_EA$_{i,t}$	-0.012	-0.013***
	(-0.934)	(-5.093)
Business Diversity$_{i,t}$	-0.028	0.002
	(-1.154)	(0.764)
lnSize$_{i,t-1}$	0.021***	-0.002***
	(4.359)	(-3.562)
Book-to-Market$_{i,t-1}$	-0.098***	0.015***
	(-4.671)	(6.030)
SalesVol$_{i,t-1}$	-0.099**	-0.026***
	(-2.080)	(-4.630)
OCFVol$_{i,t-1}$	-0.001	0.000
	(-0.428)	(0.557)
RetVol$_{i,t-1}$	-2.804***	-0.084
	(-5.124)	(-0.723)
Litigation Risk$_{i,t}$	-0.024**	-0.009***
	(-2.399)	(-3.989)
$\Delta ROA_{i,t}$	6.336***	0.905***
	(15.097)	(11.719)
SalesGrowth$_{i,t}$	0.141***	0.026***
	(7.178)	(7.965)
HHI$_{i,t}$	-0.069	-0.026*
	(-1.024)	(-1.848)
lnCoverage$_{i,t-1}$	-0.011	0.004***
	(-1.236)	(3.124)
INSTOWN$_{i,t-1}$	0.023	0.004
	(1.143)	(1.191)
Fourth Quarter$_{i,t}$	-0.005	-0.002
	(-0.662)	(-1.226)
Horizon$_{i,t,m}$	-0.022	0.059***
	(-0.343)	(4.593)
Fixed Effects (Industry, Year)	Yes	Yes
Observations	22,621	22,621
Adjusted R^2	0.341	0.057

Panel D Geographic diversity based on S&P Capital IQ

Independent Variables	*AF Revision*$_{i,t,m}$ (1)	*Return [0,2]*$_{i,t,m}$ (2)
***MF News*$_{i,t,m}$**	**0.128*** **	**0.007*** **
	(6.456)	**(6.092)**
High Geo Diversity CIQ$_{i,t}$	-0.004	0.003*
	(-0.382)	(1.826)
***MF News*$_{i,t,m}$ × *High Geo Diversity CIQ*$_{i,t}$**	**0.000**	**0.002**
	(0.012)	**(1.343)**
Length$_{i,t-1}$	-0.027***	0.002*
	(-5.551)	(1.867)
Fog$_{i,t-1}$	0.002	-0.000
	(1.520)	(-0.816)
lnDays_EA$_{i,t}$	-0.011	-0.013***
	(-0.910)	(-5.064)
Business Diversity$_{i,t}$	-0.028	0.002
	(-1.134)	(0.804)
lnSize$_{i,t-1}$	0.021***	-0.002***
	(4.608)	(-3.341)
Book-to-Market$_{i,t-1}$	-0.098***	0.015***
	(-4.687)	(6.129)
SalesVol$_{i,t-1}$	-0.099**	-0.027***
	(-2.094)	(-4.704)
OCFVol$_{i,t-1}$	-0.001	0.000
	(-0.431)	(0.578)
RetVol$_{i,t-1}$	-2.804***	-0.085
	(-5.119)	(-0.733)
Litigation Risk$_{i,t}$	-0.024**	-0.009***
	(-2.388)	(-4.032)
$\Delta ROA_{i,t}$	6.333***	0.905***
	(15.093)	(11.721)
SalesGrowth$_{i,t}$	0.141***	0.026***
	(7.243)	(8.039)
HHI$_{i,t}$	-0.069	-0.026*
	(-1.034)	(-1.866)
lnCoverage$_{i,t-1}$	-0.011	0.004***
	(-1.256)	(3.033)
INSTOWN$_{i,t-1}$	0.023	0.004
	(1.129)	(1.207)
Fourth Quarter$_{i,t}$	-0.005	-0.002
	(-0.666)	(-1.231)
Horizon$_{i,t,m}$	-0.022	0.059***
	(-0.332)	(4.624)
Fixed Effects (Industry, Year)	Yes	Yes
Observations	22,621	22,621
Adjusted R^2	0.341	0.057

Table OB6 Geographic Diversity and Firm-Initiated Press Releases

This table presents the results from the regression of the number of firm-initiated press releases on the geographic diversity measure and control variables. The sample period ranges from 2002 to 2017. In Panel A, *# of Geo Seg CIQ (All)$_{i,t}$* is the number of all geographic segments based on S&P Capital IQ's current or prior subsidiary data for firm *i* in period *t*. In Panel B, *# of Geo Seg CIQ (Current)$_{i,t}$* is the number of all geographic segments based on S&P Capital IQ's current subsidiary data for firm *i* in period *t*. In Panel C, *# of Geo Seg CIQ (Sale)$_{i,t}$* is the number of geographic segments with non-missing segment sales information in S&P Capital IQ for firm *i* in period *t*. In Panel D, *Geo Diversity CIQ$_{i,t}$* is equal to one minus the geographic segment Herfindahl-Hirschman index based on S&P Capital IQ data for firm *i* in period *t*. All other variables are defined in Appendix A. Standard errors are clustered by firm and calendar quarter. Robust *t*-statistics are in parentheses. *, **, and *** represent significance level at the 10%, 5%, and 1%, respectively.

Panel A The total number of geographic segments based on all subsidiaries in S&P Capital IQ

	lnNR_Other$_{i,t}$		*lnNR_Earn$_{i,t}$*	
Independent Variables	(1)	(2)	(3)	(4)
# of Geo Seg CIQ (All)$_{i,t}$	**0.006*** **	**0.003*** **	**-0.000***	**-0.000***
	(6.901)	**(6.831)**	**(-1.756)**	**(-1.742)**
Length$_{i,t-1}$	-0.014	-0.037***	0.001	0.001
	(-1.517)	(-4.595)	(0.679)	(0.629)
Fog$_{i,t-1}$	0.005**	0.006***	-0.001	-0.000
	(2.513)	(4.105)	(-1.540)	(-1.547)
lnDays_EA$_{i,t}$	-0.179***	-0.109***	-0.039***	-0.026***
	(-9.170)	(-8.468)	(-6.898)	(-6.854)
Business Diversity	0.075*	0.047*	0.002	0.000
	(1.810)	(1.880)	(0.179)	(0.088)
lnSize$_{i,t-1}$	0.116***	0.071***	0.014***	0.009***
	(15.701)	(14.575)	(6.469)	(6.666)
Book-to-Market$_{i,t-1}$	0.057***	0.036***	0.009**	0.005**
	(4.531)	(4.718)	(2.288)	(2.172)
SalesVol$_{i,t-1}$	-0.007	0.003	-0.008	-0.004
	(-0.312)	(0.233)	(-1.521)	(-1.233)
OCFVol$_{i,t-1}$	0.000	0.000	0.000	0.000
	(0.455)	(0.524)	(0.627)	(0.711)
RetVol$_{i,t-1}$	2.333***	1.281***	0.338***	0.167***
	(5.043)	(3.552)	(3.982)	(2.977)
Litigation Risk$_{i,t}$	0.054***	0.036***	0.007***	0.004***
	(4.713)	(4.482)	(3.230)	(2.948)
ΔROA$_{i,t}$	-0.228**	-0.125*	-0.001	-0.001
	(-2.542)	(-1.833)	(-0.049)	(-0.032)
SalesGrowth$_{i,t}$	0.019**	0.009*	-0.002	-0.002
	(2.535)	(1.670)	(-1.305)	(-1.403)
HHI$_{i,t}$	-0.114	-0.071	-0.051**	-0.033**
	(-1.069)	(-1.067)	(-2.253)	(-2.383)
lnCoverage$_{i,t-1}$	0.124***	0.081***	0.009***	0.005***
	(11.846)	(11.293)	(3.586)	(2.872)
INSTOWN$_{i,t-1}$	-0.104***	-0.082***	-0.011**	-0.007**
	(-4.543)	(-5.705)	(-2.061)	(-1.985)
Fourth Quarter$_{i,t}$	0.052***	0.004	0.009***	0.003
	(4.126)	(0.378)	(3.370)	(1.443)
Lagged Dep Var$_{i,t-1}$		0.403***		0.393***
		(33.546)		(18.958)
Fixed Effects (Industry, Year)	Yes	Yes	Yes	Yes
Observations	138,010	138,010	138,010	138,010
Adjusted R^2	0.278	0.396	0.046	0.194

Panel B The total number of geographic segments based on current subsidiaries in S&P Capital IQ

	lnNR_Other$_{i,t}$		*lnNR_Earn*$_{i,t}$	
Independent Variables	(1)	(2)	(3)	(4)
***# of Geo Seg CIQ (Current)*$_{i,t}$**	**0.005***** **(5.734)**	**0.003***** **(5.634)**	**-0.000***** **(-2.642)**	**-0.000***** **(-2.697)**
Length$_{i,t-1}$	-0.013 (-1.373)	-0.037*** (-4.510)	0.001 (0.653)	0.001 (0.637)
Fog$_{i,t-1}$	0.005** (2.424)	0.006*** (4.033)	-0.001 (-1.550)	-0.000 (-1.551)
lnDays_EA$_{i,t}$	-0.178*** (-8.946)	-0.108*** (-8.188)	-0.040*** (-6.895)	-0.027*** (-6.884)
Business Diversity	0.086** (2.063)	0.054** (2.144)	0.003 (0.354)	0.001 (0.266)
lnSize$_{i,t-1}$	0.123*** (15.948)	0.074*** (14.822)	0.015*** (6.469)	0.009*** (6.698)
Book-to-Market$_{i,t-1}$	0.066*** (5.044)	0.041*** (5.221)	0.009** (2.318)	0.005** (2.192)
SalesVol$_{i,t-1}$	-0.016 (-0.663)	-0.002 (-0.104)	-0.009 (-1.606)	-0.004 (-1.265)
OCFVol$_{i,t-1}$	0.000 (0.565)	0.000 (0.581)	0.000 (0.401)	0.000 (0.454)
RetVol$_{i,t-1}$	2.446*** (5.141)	1.346*** (3.673)	0.347*** (4.000)	0.172*** (3.006)
Litigation Risk$_{i,t}$	0.056*** (4.802)	0.037*** (4.556)	0.007*** (3.088)	0.004*** (2.749)
$\Delta ROA_{i,t}$	-0.180** (-2.021)	-0.080 (-1.201)	-0.005 (-0.226)	-0.004 (-0.218)
SalesGrowth$_{i,t}$	0.017** (2.268)	0.007 (1.236)	-0.002 (-1.188)	-0.002 (-1.341)
HHI$_{i,t}$	-0.091 (-0.836)	-0.056 (-0.838)	-0.050** (-2.196)	-0.033** (-2.315)
lnCoverage$_{i,t-1}$	0.125*** (11.839)	0.082*** (11.298)	0.009*** (3.445)	0.005*** (2.729)
INSTOWN$_{i,t-1}$	-0.108*** (-4.577)	-0.084*** (-5.743)	-0.012** (-2.226)	-0.008** (-2.149)
Fourth Quarter$_{i,t}$	0.051*** (3.989)	0.003 (0.274)	0.009*** (3.312)	0.003 (1.449)
Lagged Dep Var$_{i,t-1}$		0.407*** (33.545)		0.393*** (18.906)
Fixed Effects (Industry, Year)	Yes	Yes	Yes	Yes
Observations	133,974	133,974	133,974	133,974
Adjusted R^2	0.279	0.399	0.047	0.195

Panel C The number of geographic segments with non-missing positive sales in S&P Capital IQ

	lnNR_Other$_{i,t}$		*lnNR_Earn*$_{i,t}$	
Independent Variables	(1)	(2)	(3)	(4)
# of Geo Seg CIQ (Sale)$_{i,t}$	**0.017*** **	**0.010*** **	**-0.002***	**-0.001***
	(4.937)	**(4.951)**	**(-1.708)**	**(-1.689)**
Length$_{i,t-1}$	0.001	-0.027***	0.001	0.000
	(0.079)	(-3.001)	(0.242)	(0.147)
Fog$_{i,t-1}$	0.002	0.005*	-0.001	-0.000
	(0.609)	(1.966)	(-0.790)	(-0.449)
lnDays_EA$_{i,t}$	-0.183***	-0.105***	-0.048***	-0.031***
	(-7.011)	(-6.458)	(-5.554)	(-5.564)
Business Diversity	0.142***	0.083***	-0.002	-0.001
	(2.682)	(2.613)	(-0.160)	(-0.213)
lnSize$_{i,t-1}$	0.147***	0.086***	0.018***	0.011***
	(14.998)	(14.281)	(5.572)	(5.809)
Book-to-Market$_{i,t-1}$	0.104***	0.062***	0.011	0.006
	(5.132)	(5.123)	(1.548)	(1.475)
SalesVol$_{i,t-1}$	-0.072**	-0.030	-0.005	-0.002
	(-1.983)	(-1.351)	(-0.532)	(-0.392)
OCFVol$_{i,t-1}$	0.001	0.001	0.000	0.000
	(0.792)	(0.696)	(1.010)	(1.103)
RetVol$_{i,t-1}$	3.042***	1.642***	0.518***	0.270***
	(4.473)	(3.399)	(3.638)	(3.104)
Litigation Risk$_{i,t}$	0.060***	0.040***	0.008**	0.005**
	(3.566)	(3.460)	(2.463)	(2.025)
$\Delta ROA_{i,t}$	0.145	0.231**	0.018	0.006
	(1.057)	(2.243)	(0.424)	(0.174)
SalesGrowth$_{i,t}$	0.007	-0.004	-0.003	-0.002
	(0.557)	(-0.523)	(-0.797)	(-0.643)
HHI$_{i,t}$	-0.045	-0.028	-0.028	-0.017
	(-0.310)	(-0.322)	(-0.822)	(-0.849)
lnCoverage$_{i,t-1}$	0.123***	0.079***	0.008**	0.004
	(8.763)	(8.680)	(2.041)	(1.504)
INSTOWN$_{i,t-1}$	-0.134***	-0.102***	-0.006	-0.003
	(-4.017)	(-4.996)	(-0.767)	(-0.676)
Fourth Quarter$_{i,t}$	0.050***	0.004	0.011***	0.004
	(3.331)	(0.278)	(2.766)	(1.180)
Lagged Dep Var$_{i,t-1}$		0.422***		0.412***
		(31.196)		(18.247)
Fixed Effects (Industry, Year)	Yes	Yes	Yes	Yes
Observations	77,621	77,621	77,621	77,621
Adjusted R^2	0.307	0.432	0.057	0.217

Panel D Geographic diversity based on S&P Capital IQ

	lnNR_Other$_{i,t}$		*lnNR_Earn*$_{i,t}$	
Independent Variables	(1)	(2)	(3)	(4)
***Geo Diversity CIQ*$_{i,t}$**	**0.073****	**0.046****	**-0.030*****	**-0.018*****
	(2.257)	**(2.463)**	**(-3.306)**	**(-3.463)**
Length$_{i,t-1}$	0.002	-0.027***	0.001	0.000
	(0.153)	(-2.980)	(0.283)	(0.184)
Fog$_{i,t-1}$	0.002	0.005**	-0.001	-0.000
	(0.619)	(1.974)	(-0.841)	(-0.504)
lnDays_EA$_{i,t}$	-0.184***	-0.105***	-0.048***	-0.031***
	(-7.047)	(-6.480)	(-5.543)	(-5.550)
Business Diversity	0.163***	0.094***	-0.003	-0.002
	(3.047)	(2.973)	(-0.229)	(-0.282)
lnSize$_{i,t-1}$	0.162***	0.094***	0.017***	0.011***
	(16.293)	(15.551)	(5.765)	(5.971)
Book-to-Market$_{i,t-1}$	0.109***	0.065***	0.011	0.006
	(5.308)	(5.291)	(1.591)	(1.519)
SalesVol$_{i,t-1}$	-0.092**	-0.040*	-0.006	-0.003
	(-2.488)	(-1.819)	(-0.654)	(-0.519)
OCFVol$_{i,t-1}$	0.001	0.001	0.000	0.000
	(0.887)	(0.771)	(0.998)	(1.095)
RetVol$_{i,t-1}$	3.052***	1.640***	0.506***	0.263***
	(4.459)	(3.383)	(3.554)	(3.014)
Litigation Risk$_{i,t}$	0.062***	0.041***	0.008**	0.005**
	(3.719)	(3.577)	(2.431)	(1.996)
$\Delta ROA_{i,t}$	0.154	0.236**	0.018	0.006
	(1.135)	(2.321)	(0.440)	(0.186)
SalesGrowth$_{i,t}$	0.003	-0.007	-0.002	-0.001
	(0.215)	(-0.803)	(-0.777)	(-0.626)
HHI$_{i,t}$	-0.046	-0.028	-0.030	-0.019
	(-0.315)	(-0.321)	(-0.902)	(-0.930)
lnCoverage$_{i,t-1}$	0.118***	0.076***	0.008**	0.004
	(8.336)	(8.320)	(2.045)	(1.496)
INSTOWN$_{i,t-1}$	-0.150***	-0.112***	-0.003	-0.002
	(-4.379)	(-5.361)	(-0.437)	(-0.336)
Fourth Quarter$_{i,t}$	0.050***	0.003	0.011***	0.004
	(3.340)	(0.259)	(2.745)	(1.163)
Lagged Dep Var$_{i,t-1}$		0.424***		0.412***
		(31.427)		(18.269)
Fixed Effects (Industry, Year)	Yes	Yes	Yes	Yes
Observations	77,621	77,621	77,621	77,621
Adjusted R^2	0.304	0.431	0.057	0.217

Table OB7 Cross-Sectional Tests: Cultural Tightness – Disclosure quantity

This table presents the regression results examining the effects of geographic diversity on the quantity of managerial earnings forecasts conditional on cultural tightness. The sample period ranges from 2002 to 2017. In Panel A, *# of Geo Seg CIQ (All)*$_{i,t}$ is the number of all geographic segments based on S&P Capital IQ's current or prior subsidiary data for firm *i* in period *t*. In Panel B, *# of Geo Seg CIQ (Current)*$_{i,t}$ is the number of all geographic segments based on S&P Capital IQ's current subsidiary data for firm *i* in period *t*. In Panel C, *# of Geo Seg CIQ (Sale)*$_{i,t}$ is the number of geographic segments with non-missing segment sales information in S&P Capital IQ for firm *i* in period *t*. In Panel D, *Geo Diversity CIQ*$_{i,t}$ is equal to one minus the geographic segment Herfindahl-Hirschman index based on S&P Capital IQ data for firm *i* in period *t*. All other variables are defined in Appendix A. Standard errors are clustered by firm and calendar quarter. Robust *t*-statistics are in parentheses. *, **, and *** represent significance level at the 10%, 5%, and 1%, respectively

Panel A The total number of geographic segments based on all subsidiaries in S&P Capital IQ

	Bundled MF$_{i,t}$	*Unbundled MF*$_{i,t}$	*Bundled Last MF*$_{i,t}$	*MF Revision*$_{i,t}$	*lnNR_Other*$_{i,t}$	*lnNR_Earn*$_{i,t}$
Independent Variables	(1)	(2)	(3)	(4)	(5)	(6)
# of Geo Seg CIQ (All)$_{i,t}$	0.001**	-0.000*	0.002***	-0.001***	0.004***	-0.000
	(2.491)	(-1.750)	(4.946)	(-3.878)	(5.493)	(-0.617)
High Cultural Tightness$_{i,t}$	0.001	-0.011***	0.017*	-0.014***	0.022**	-0.003
	(0.343)	(-3.922)	(1.730)	(-2.955)	(2.037)	(-1.052)
***# of Geo Seg CIQ (All)*$_{i,t}$ × *High Cultural Tightness*$_{i,t}$**	**0.000**	**0.001*****	**-0.001*****	**0.001*****	**-0.001***	**-0.000**
	(1.180)	**(3.485)**	**(-2.729)**	**(3.196)**	**(-1.724)**	**(-0.397)**
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Fixed Effects (Industry, Year)	Yes	Yes	Yes	Yes	Yes	Yes
Observations	171,163	171,163	31,176	31,176	136,260	136,260
Adjusted R^2	0.631	0.129	0.162	0.068	0.397	0.195

Panel B The total number of geographic segments based on current subsidiaries in S&P Capital IQ

	Bundled MF$_{i,t}$	*Unbundled MF*$_{i,t}$	*Bundled Last MF*$_{i,t}$	*MF Revision*$_{i,t}$	*lnNR_Other*$_{i,t}$	*lnNR_Earn*$_{i,t}$
Independent Variables	(1)	(2)	(3)	(4)	(5)	(6)
# of Geo Seg CIQ (Current)$_{i,t}$	0.001**	-0.000	0.002***	-0.001***	0.004***	-0.000**
	(2.495)	(-1.266)	(4.529)	(-3.974)	(4.158)	(-2.049)
High Cultural Tightness$_{i,t}$	0.002	-0.010***	0.016	-0.014***	0.019*	-0.004*
	(0.740)	(-3.507)	(1.644)	(-2.948)	(1.828)	(-1.778)
***# of Geo Seg CIQ (Current)*$_{i,t}$ × *High Cultural Tightness*$_{i,t}$**	**0.000**	**0.001*****	**-0.001*****	**0.001*****	**-0.001**	**0.000**
	(0.912)	**(2.998)**	**(-2.639)**	**(3.183)**	**(-1.110)**	**(0.596)**
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Fixed Effects (Industry, Year)	Yes	Yes	Yes	Yes	Yes	Yes
Observations	165,791	165,791	30,721	30,721	132,229	132,229
Adjusted R^2	0.631	0.128	0.158	0.067	0.400	0.196

Panel C The number of geographic segments with non-missing positive sales in S&P Capital IQ

	Bundled $MF_{i,t}$	*Unbundled $MF_{i,t}$*	*Bundled Last $MF_{i,t}$*	*MF Revision$_{i,t}$*	*lnNR_Other$_{i,t}$*	*lnNR_Earn$_{i,t}$*
Independent Variables	(1)	(2)	(3)	(4)	(5)	(6)
# of Geo Seg CIQ (Sale)$_{i,t}$	0.001	-0.002**	0.006***	-0.003***	0.016***	-0.001
	(0.880)	(-2.079)	(3.137)	(-3.911)	(4.520)	(-1.044)
High Cultural Tightness$_{i,t}$	0.005	-0.012***	0.023**	-0.015***	0.028**	-0.007*
	(1.034)	(-2.889)	(1.993)	(-2.724)	(2.030)	(-1.702)
# of Geo Seg CIQ (Sale)$_{i,t}$ × High Cultural Tightness$_{i,t}$	**0.001**	**0.003*****	**-0.006*****	**0.004*****	**-0.008****	**0.000**
	(0.735)	**(2.856)**	**(-2.630)**	**(2.974)**	**(-2.013)**	**(0.231)**
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Fixed Effects (Industry, Year)	Yes	Yes	Yes	Yes	Yes	Yes
Observations	94,808	94,808	20,813	20,813	76,286	76,286
Adjusted R^2	0.631	0.126	0.144	0.059	0.434	0.218

Panel D Geographic diversity based on S&P Capital IQ

	Bundled $MF_{i,t}$	*Unbundled $MF_{i,t}$*	*Bundled Last $MF_{i,t}$*	*MF Revision$_{i,t}$*	*lnNR_Other$_{i,t}$*	*lnNR_Earn$_{i,t}$*
Independent Variables	(1)	(2)	(3)	(4)	(5)	(6)
Geo Diversity CIQ$_{i,t}$	0.010	-0.023***	0.098***	-0.037***	0.069**	-0.023***
	(1.067)	(-3.149)	(5.011)	(-4.361)	(2.446)	(-2.888)
High Cultural Tightness$_{i,t}$	0.008*	-0.008**	0.026**	-0.010**	0.018	-0.008**
	(1.916)	(-2.213)	(2.332)	(-2.318)	(1.511)	(-2.372)
Geo Diversity CIQ$_{i,t}$ × High Cultural Tightness$_{i,t}$	**-0.001**	**0.027*****	**-0.100*****	**0.036*****	**-0.045**	**0.012**
	(-0.079)	**(2.766)**	**(-3.619)**	**(3.318)**	**(-1.269)**	**(1.230)**
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Fixed Effects (Industry, Year)	Yes	Yes	Yes	Yes	Yes	Yes
Observations	94,808	94,808	20,813	20,813	76,286	76,286
Adjusted R^2	0.630	0.126	0.145	0.059	0.432	0.219

Table OB8 Cross-Sectional Tests: Cultural Tightness – Disclosure quality

This table presents the regression results examining the effects of geographic diversity on the quality of managerial earnings forecasts conditional on cultural tightness. The sample period ranges from 2002 to 2017. In Panel A, *# of Geo Seg CIQ (All)$_{i,t}$* is the number of all geographic segments based on S&P Capital IQ's current or prior subsidiary data for firm *i* in period *t*. In Panel B, *# of Geo Seg CIQ (Current)$_{i,t}$* is the number of all geographic segments based on S&P Capital IQ's current subsidiary data for firm *i* in period *t*. In Panel C, *# of Geo Seg CIQ (Sale)$_{i,t}$* is the number of geographic segments with non-missing segment sales information in S&P Capital IQ for firm *i* in period *t*. In Panel D, *Geo Diversity CIQ$_{i,t}$* is equal to one minus the geographic segment Herfindahl-Hirschman index based on S&P Capital IQ data for firm *i* in period *t*. All other variables are defined in Appendix A. Standard errors are clustered by firm and calendar quarter. Robust *t*-statistics are in parentheses. *, **, and *** represent significance level at the 10%, 5%, and 1%, respectively.

Panel A The total number of geographic segments based on all subsidiaries in S&P Capital IQ

	Specificity$_{i,t}$	*Forecast Bias$_{i,t}$*	*Forecast Error$_{i,t}$*
Independent Variables	(1)	(2)	(3)
# of Geo Seg CIQ (All)$_{i,t}$	-0.002***	-0.004	0.002
	(-2.783)	(-1.620)	(0.984)
High Cultural Tightness$_{i,t}$	-0.042	-0.134*	0.047
	(-1.176)	(-1.929)	(0.681)
# of Geo Seg CIQ (All)$_{i,t}$ × High Cultural Tightness$_{i,t}$	**0.001**	**0.003**	**-0.001**
	(0.885)	**(1.225)**	**(-0.350)**
Controls Variables	Yes	Yes	Yes
Fixed Effects (Industry, Year)	Yes	Yes	Yes
Observations	30,541	31,176	31,176
Adjusted R^2	0.247	0.070	0.166

Panel B The total number of geographic segments based on current subsidiaries in S&P Capital IQ

	Specificity$_{i,t}$	*Forecast Bias$_{i,t}$*	*Forecast Error$_{i,t}$*
Independent Variables	(1)	(2)	(3)
# of Geo Seg CIQ (Current)$_{i,t}$	-0.002**	-0.007***	-0.000
	(-1.976)	(-3.241)	(-0.198)
High Cultural Tightness$_{i,t}$	-0.039	-0.124*	0.036
	(-1.170)	(-1.956)	(0.542)
# of Geo Seg CIQ (Current)$_{i,t}$ × High Cultural Tightness$_{i,t}$	**0.001**	**0.004***	**0.000**
	(0.754)	**(1.889)**	**(0.104)**
Controls Variables	Yes	Yes	Yes
Fixed Effects (Industry, Year)	Yes	Yes	Yes
Observations	30,098	30,721	30,721
Adjusted R^2	0.245	0.070	0.165

Panel C The number of geographic segments with non-missing positive sales in S&P Capital IQ

	Specificity$_{i,t}$	*Forecast Bias*$_{i,t}$	*Forecast Error*$_{i,t}$
Independent Variables	(1)	(2)	(3)
# of Geo Seg CIQ (Sale)$_{i,t}$	-0.007*	-0.012	0.009
	(-1.795)	(-1.424)	(0.973)
High Cultural Tightness$_{i,t}$	-0.009	-0.148**	0.008
	(-0.270)	(-2.298)	(0.128)
***# of Geo Seg CIQ (Sale)*$_{i,t}$ × *High Cultural Tightness*$_{i,t}$**	**0.000**	**0.015**	**0.003**
	(0.038)	**(1.515)**	**(0.280)**
Controls Variables	Yes	Yes	Yes
Fixed Effects (Industry, Year)	Yes	Yes	Yes
Observations	20,423	20,813	20,813
Adjusted R^2	0.200	0.066	0.148

Panel D Geographic diversity based on S&P Capital IQ

	Specificity$_{i,t}$	*Forecast Bias*$_{i,t}$	*Forecast Error*$_{i,t}$
Independent Variables	(1)	(2)	(3)
Geo Diversity CIQ$_{i,t}$	-0.019	-0.095	0.045
	(-0.386)	(-0.827)	(0.401)
High Cultural Tightness$_{i,t}$	-0.002	-0.133**	0.020
	(-0.055)	(-2.069)	(0.329)
***Geo Diversity CIQ*$_{i,t}$ × *High Cultural Tightness*$_{i,t}$**	**-0.032**	**0.144**	**0.010**
	(-0.455)	**(1.012)**	**(0.072)**
Controls Variables	Yes	Yes	Yes
Fixed Effects (Industry, Year)	Yes	Yes	Yes
Observations	20,423	20,813	20,813
Adjusted R^2	0.199	0.066	0.148