U.S. Political Corruption and Management Earnings Forecast

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Abstract

This study shows that US firms headquartered in more corrupt areas tend to use narrower and pessimistic management earnings forecast ranges. Managers in these firms use such strategy to mislead corrupt officials and shield their assets from rent extraction. The results are more pronounced for firms that are prone to rent extraction, such as financially unconstrained firms that have a high level of cash and a low dividend payout and firms with concentrated operations. Finally, we find that issuing narrower management earnings forecasts can mitigate the negative association between political corruption and firm value. Overall, our results suggest that issuing narrower management earnings forecasts is one of the important shielding strategies to deter expropriation from corrupt politicians.

JEL classification: D72; G17; G38

Keywords: Political corruption; Management earnings forecasts; Shielding

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1. Introduction

Management earnings forecasts (MEFs) relate to a firm's future earnings outlook. They could convey to investors about the managers' opinion of what their firms' future earnings per share will be. However, as MEFs are not subject to audits, opportunists could influence the firm's disclosure behaviour, which could potentially result in information misrepresentation (e.g., Karamanou & Vafeas, 2005). Information misrepresentation could negatively affect the qualities of MEFs and results in inefficient resources allocation. Thus, a key question arises: What factors influence the precision of a firm's MEF? Recently, researchers have investigated a variety of macro-level and micro-level determinants of MEFs.[1] In this study, we add to this line of research by considering the role of corruption. Specifically, we examine whether firms located in political corrupted areas tend to issue narrower earnings forecast range to reduce rent extraction from political corruption.[2]

The generally agreed-upon definition of political corruption is the misuse of political power for personal or group gain (Aidt, 2003). Firms may frequently interact with the local government during their operation, which could offer numerous opportunities for corrupt officials to engage in rent-seeking behaviours through various means, such as trading contracts (Smith, 2016; Svensson, 2003). Corruption-related rent seeking reduces tax revenue, raises financial risks, and affects economic development (e.g., Mauro, 1995; Shleifer & Vishny, 1993). The greater a firm's

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[1] For example, Hribar and Yang (2016) find that overconfident CEOs tend to issue narrower MEFs with greater precision, as they underestimate the variance of random events. Chen et al. (2022) find the similar conclusion that managers with sunshine-induced good mood tend to be over-optimistic and issue upward biased MEFs.

[2] US is generally considered one of the countries with the lowest corruption rate in the world. If we can observe a meaningful association between political corruption and MEF in the US, our findings will illustrate the far-reaching influence of political corruption on firms' corporate disclosure policies.

capacity to pay corrupt officials, the more likely it is to be targeted by such officials (Svensson, 2003). Bribes are a tax that firms wish to avoid paying. As a consequence, companies have strong motivations to mitigate the threat from corrupt politicians by implementing strategies to hide their assets from rent-seeking behaviours.

Smith (2016) is one of the earlier studies focusing on the association between political corruption and firms' financing policies. Smith (2016) finds that firms tend to hold low cash and high leverage to shield their assets from corrupted officials. Nguyen et al. (2020) suggest that firms can protect their assets from extortion by transforming assets into difficult-to-extract properties by using excess cash for payment. Hossain et al. (2021) find a similar conclusion that firms located in more corrupt areas tend to distribute more dividend. Their arguments are all based on the reason that firms following these strategies appear to have no "excess" cash to be extracted beyond what they need to pay their existing debt obligations, acquisition cost and dividend.

In the specific context of MEF, we argue that MEF can be a shielding strategy to help firms hide their assets. Specifically, MEFs are an important piece of information for external stakeholders (Ke et al., 2019). Ciconte et al. (2014) suggest that the upper bound of range forecasts represents the true expectation of management due to managers' asymmetric loss functions regarding earnings surprises. Furthermore, they find that investors view the upper bound of an MEF as the true expectation of management. Their results also find that actual earnings are typically close to the upper bound of an MEF. Following the advice of Ciconte et al. (2014) to use the upper bound as the best proxy for managers' earning expectations, we hypothesize that firms that face with political corruption are more likely to reduce the upper bound of an MEF (hence a narrower earnings forecast) to avoid rent extraction. That is because a lower upper bound of an

MEF (a narrower earnings forecast) could potentially misguide corrupt officials and reduce their attention and expectations for firms, which achieves the purpose of shielding assets.[3]

Using a sample of 11,133 forecast-year observations (representing 476 different US firms) for the period from 2002 to 2018, we find that firms located in districts with a high level of corruption tend to use a narrower MEF range to misguide corrupt officials. The result is economically significant, as a one standard deviation change in political corruption leads to a change equal to 6.10% of the mean earnings forecast.

To alleviate endogeneity concerns, several identification strategies have been employed. First, people could argue that the relationship between corruption and MEF precision is driven by omitted variables. The easiest way to address this concern is to include numerous appropriate controls and then to look at the sensitivity of the coefficient movement of the relevant variable. However, even with the rigorous selection of controls, the risk of bias from omitted variables still exists. Thus, two methods have been utilized in this study, which are Oster (2019)'s omitted variable bias approach and the instrumental variable (IV) method. The results indicate that our model does not suffer from this issue. Second, our results could be significantly affected by the difference in observed characteristics between firms located in low corrupt regions and firms located in high corrupt regions. Propensity scoring matching (PSM) has been used to balance covariates between the treatment and control groups. Additionally, we employ the entropy balancing approach (EBA) to solve the limitation of the disposal of observations in the PSM method. The results support our central hypothesis. Third, we employ different-in-different

[3] Although the previous literature (e.g., Nguyen et al., 2020 and Smith, 2016) suggests some shielding strategies (e.g., a higher leverage and more firm acquisition activities) that firms can use, these strategies are time-consuming to implement and may lead to a suboptimal corporate financing policy (Hossain et al., 2020). However, issuing a narrower MEF range is relatively easy and does not require the firm to alter its corporate policy. Thus, exploring such a strategy is a meaningful endeavor for us.

approach to alleviate the endogeneity concern regarding firms' headquarter relocations and the exogenous shock of the Financial Crisis 2008-09 to test the sensitivity of results based on such unexpected event. All results are consistent with our central hypothesis.

Having argued and shown that firms located in more corrupt regions tend to reduce the upper bound of an MEF to shield their assets, we expect that the likelihood of actual earnings falling above the upper bound is higher. Thus, we conduct an additional analysis by examining the relation between political corruption and the probability of pessimistic forecasts as additional empirical evidence to support our main argument. The results suggest that there is a positive relation between political corruption and issuing pessimistic forecasts, which is consistent with our expectation.

Next, we explore the potential channels through which corruption increases MEF precision. If MEF is indeed a shielding strategy, we expect that unshielded firms that do not use dividend payout, cash holdings, leverage level, Last-in-first-out (LIFO) reserve or acquisition activities as a shielding strategy tend to use MEFs to protect their assets from extortion when corruption is high. Moreover, corrupt officials have more bargaining power and capability for rent seeking with firms that mainly operate in only one region (Smith, 2016). Thus, we expect that geographically concentrated firms tend to use narrower MEF ranges as a shielding strategy when the degree of corruption is high. Overall, we find that when firms face a high level of corruption, those with a high geographic concentration, a low dividend payout ratio, a high amount of cash holdings, a low amount of leverage and less LIFO reserve and firms acquisition activities tend to use a narrower MEF range to deter rent extraction, which provide the evidence to support the role of MEF as a shielding strategy and our central hypothesis. Given that using other shielding strategies (i.e., cash holdings, leverage, dividend payout, LIFO reserve and acquisition activities) suggested by previous literature are costly and time-consuming to conduct and will lead to the suboptimal corporate financing policy, which could significantly affect a firm's future investment opportunity, we argue that using MEF to hide assets is a firm's preferred shielding strategy. Additionally, we find that firms with strong external or internal governance tend to use a narrower (inaccurate) MEF range more often than firms with poor governance, indicating that the potential cost of political corruption significantly impacts the way firms with strong corporate governance mechanisms govern the disclosure policies. Our results are also robust to several sensitivity analyses.

Brown et al. (2019) suggest a robust negative relation between political corruption and firm value. Finally, we investigate whether our shielding strategy plays an important mitigating mechanism role to alleviate such negative effect. The results show that using narrower MEFs could reduce the negative influence of political corruption on firm value. Previous literature (e.g., Smith, 2016) suggest several other shielding strategies that firms could employ. However, some of them failed to show the valuation relevance role of these shielding strategies. Thus, we further explore which shielding strategy is more efficient for firms to utilize. Importantly, we find that compared with other shielding strategies, only issuing narrower MEF ranges could help firms alleviate the negative effect of political corruption on firm value, which is a more effective strategy.

Our study makes several important contributions to the literature. First, previous studies link numerous determinants, including litigation risk and equity-based compensation, to the variation in a firm's MEF precision over time and across firms. We contribute to the MEF literature by showing that political corruption is also an important determinant of firms' disclosure precision. Relative to other MEF determinants suggested by the recent literature (e.g., Cheng et al., 2013;

Kim et al., 2016; Xing et al., 2019), the standardized coefficient of our political corruption ranks higher in terms of economics significance.[4]

Second, Brown et al. (2021) explore the association between corruption and the probability of MEFs disclosure. Our current study builds on their work by further exploring, conditional on issuing a MEF forecast, whether firms use a narrower earnings forecast range as a shielding strategy to deter rent seeking from corrupt officials.

Third, previous literature suggests that firms located in more corrupt areas tend to decrease cash holdings, increase leverage level, distribute more dividend, report higher LIFO reserve, and engage in more acquisition activities. Our firm value analysis results indicate that compared with these six shielding strategies, only issuing a narrower MEF range can enhance firm value, suggesting that using MEF is a more effective shielding strategy.

Finally, our study has important implications for different parties, such as regulators. The results suggest that firms located in more corrupt regions tend to use narrower and pessimistic MEFs to misguide corrupt officials. However, issuing inaccurate MEFs deteriorates information asymmetry among investors, which increases the risks and costs of firm operation and negatively influences investor wealth and the social economy. Therefore, introducing more comprehensive antibribery and anticorruption laws is an urgent matter for policymakers if they wish to maintain the healthy functioning of the market.

The remainder of the paper is organized as follows. Section 2 is a literature review and hypothesis. Section 3 describes the data and sample construct. Section 4 provides an analysis of

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[4] For example, the standardized coefficient of legal expertise in Xing et al. (2019) is 0.008, while the standardized coefficient of our political corruption is 0.056. Additionally, a one standard deviation change in insider sell (buy) reported in Cheng et al. (2013) leads to a change equal to 3.38% (3.16%) of the mean MEF, while our results suggest that a one standard deviation change in political corruption leads to a change equal to 6.10% of the mean MEF. Kim et al. (2016) show that a one standard deviation change in macroeconomic uncertainty leads to a change equal to 0.91% of the mean MEF, which is also lower than the economic significance of political corruption.

the empirical results. Section 5 provides some identification tests. Section 6 presents the additional analyses, and Section 7 draws some conclusions.

2. Literature review and Hypothesis

2.1 Factors affecting management earnings forecast

MEF is the most essential information channel used by managers to communicate with the capital market (Tang & Zhang, 2018). These forecasts disclose a firm's future earnings outlook, which can be used as an important determinant by external investors in making investment decisions. This importance of MEF has prompted various studies over the years (Hirst et al., 2008).

Rogers and Stocken (2005) investigate the association between litigation risk and MEF accuracy. As they argue, firms are inclined to give less optimistic projections when litigation risk is high than when it is low and if the industry is more rather than less concentrated as a way to deter new competitors. Cheng et al. (2013) extend Waymire's (1985) study by examining earnings volatility and the interval of MEF ranges. They conclude that firms with volatile earnings tend to issue wider MEF ranges, as wider forecast ranges reduce the probability of actual earnings falling outside the MEF range. Bamber and Cheon (1998) indicate that the qualities of the MEFs are affected by proprietary information costs. Firms with higher proprietary costs are unlikely to disclose specific forecasts.

The extant literature on MEFs has also found that MEFs are affected by (1) CEO ability (Baik et al., 2011); (2) managerial opportunism (Kim et al., 2019); (3) social trust (Guan et al., 2020); (4) social connection within the top management team (Ke et al., 2019); (5) cost stickiness (Ciftci & Salama, 2018); and (6) CEO overconfidence (Hribar & Yang, 2016).

2.2 Effects of political corruption on firm policies

Both developed and developing countries have regarded corruption as a serious social and economic issue (Xu, et al., 2019). From a social perspective, it prevents impoverished people from accessing public services, such as healthcare. From an economic perspective, it harms economic development (World Bank Group, 2016). The cases of corruption convictions in the US have increased dramatically over the last two decades, from less than 300 cases per year to more than 1000 cases per year (Nguyen et al., 2020).

A number of theoretical and empirical studies have been conducted to explore the effect of political corruption. Smith (2016) is one of the earliest studies to examine the effect of corruption on firms' financial policies. The results show that firms in more corrupt districts prefer to have lower cash holdings and greater leverage to shield their assets, which is consistent with the shielding theory. This is because firms following this strategy appear to have no "excess" cash to be extracted beyond what they need to pay their existing debt obligations. Hossain et al. (2021) suggest that paying more dividends to decrease cash holdings is another shielding strategy. Nguyen et al. (2020) indicate that if firms have excess cash, mergers and acquisitions are another way that firms can transform liquid assets into difficult-to-extract properties and relocate assets from high- to low-corruption regions. Bolanda et al. (2017) find that firms in more corrupt regions prefer to use income-decreasing accrual to hide their assets from corrupt officials. Moreover, other studies also suggest that corruption results in lower firm innovation rate (Huang & Yuan, 2021; Ellis et al., 2020), more corporate tax avoidance behaviours (Al-Hadi et al., 2021), higher audit fees and longer audit report lags (Xu et al., 2019), lower firm value (Brown et al., 2021; Dass et al., 2016) and fewer corporate social responsibility behaviours (Hossain & Kryzanowski, 2021). The literature has made significant progress towards exploring the determinants of MEF precision (e.g., Ajinkya et al., 2005; Hirst et al., 2008); however, how local corruption affects MEF ranges in the US is not well understood.

2.3 Hypothesis development

The process by which a sender conveys information to a receiver and the way a receiver perceives that information is referred to as signalling theory (Connelly et al., 2011). Signalling theory can be used to reduce information asymmetry (Spence, 2002). Exhibiting heterogeneous boards to communicate a firm's diversity is a type of signalling platform (Miller & Del Carmen Triana, 2009). Financial statements can be regarded as a signalling platform that highlights the quality of a firm (Zhang & Wiersema, 2009). Similarly, Ke et al. (2019) indicate that MEF is also an important information channel through which firms can convey information to the capital market. They provide important information for external stakeholders (Ke et al., 2019) and can be used by investors to value a firm (Truenman, 1986).

The major type of management earnings forecasts in the last few decades is range forecasts, which accounts for around 80% of all forecasts (Ciconte et al., 2014). Previous studies have consistently used the midpoint of range forecasts as managers' expectations. However, Ciconte et al. (2014) argue that using midpoint of forecasts as managers' expectation is a worse proxy. They find that the upper bound of range forecasts represents the true expectation of management. The upper bound of an MEF will also be viewed by investors as the true expectation of management. Their results also suggest that actual earnings are close to the upper bound of an MEF.

Previous studies have found that firms' strategy is consistent with the aims of shielding their assets. When political corruption is high, we argue that firms located in high corruption areas are more likely to reduce the upper bound of an MEF to decrease rent extraction from corrupt official. That is because instead of issuing a higher upper bound MEF, issuing an MEF with a lower upper bound can misguide corrupt officials, reduce their attention, and decrease their expectations for such firms, which achieves the purpose of shielding assets. A lower upper bound of forecasts could let corrupt officials believe that firms' future earnings may not be as good as they expected. Rent-seeking politicians are motivated to limit extortion to avoid a firm's relocation, insolvency, or significant decrease in stock returns, as these consequences could lower their chances of re-election or increase their chances of being arrested (Smith, 2016). Thus, out of fear that firms will go bankrupt or experience a significant decrease in stock returns, corrupt officials are less willing to seek rents from such firms to avoid further increasing their financial burden. Moreover, there is no need for firms to adjust their lower bound of forecasts, as all investors, including corrupt officials, are not concerned with EPS of the lower bound. Given 80% of the earnings forecasts are range forecasts, we posit the following hypothesis:

Hypothesis 1: Local political corruption is associated with narrower management earnings forecast ranges.

3. Data and Sample Construct

3.1 Sample construct

Our sample period is from 2002 to 2018, as only a few firms disclosed their earnings guidance before the implementation of Regulation FD in 2000. Moreover, the Sarbanes-Oxley Act was passed in 2002. Focusing on the period after 2001 can thus mitigate the potential influence of the pre-Sarbanes-Oxley Act regime. For MEFs, we delete all qualitative and open-ended forecasts, as they are insufficiently detailed to identify forecast errors and ranges. Following Huang et al. (2022), we keep only annual earnings projections and exclude those forecasts made after the fiscal period ends in this study to test our hypothesis. To maximize our final observations of earnings forecasts, we retain all forecasts made by each firm in each year (Huang et al., 2022). Specifically, following Huang et al. (2022), we delete all financial firms [standard industrial classification (SIC) codes 6000–6999] and utility firms [SIC codes 4000–4999]. We winsorize all continuous variables at 1% and 99% to limit the effect of outliers or abnormal extreme values that may confound our results. Our variables are constructed using data from the COMPUSTAT, I/B/E/S, ExecuComp, Thomson, CRSP, Peters and Taylor Total Q, Beta Suite by WRDS, Institutional Shareholder Services (ISS), SDC platinum, US Census Bureau, US Bureau of Economic Analysis, US Bureau of Labor Statistics and US Department of Justice (DOJ). After deleting all missing observations, we have an unbalanced panel of 11133 forecast-year observations (representing 476 different US firms) for our baseline model.

3.2 Dependent variable

Following Cheng et al. (2021) and Huang et al. (2022), we define MEF precision (*PRECISION_SP*) as the range between the earnings forecast upper bound and the earnings forecast lower bound for year *t* divided by the stock price in year *t*-1 and multiplied by -1. *PRECISION_SP* is 0 for the point estimate. Then, we multiply this value by 100. That is, the higher the value for precision is, the narrower the forecast range is.

3.3 Main variable of interest

Following Smith (2016), our political corruption proxy is based on the annual number of government officials convicted of corruption in each of the 94 federal judicial districts in the DOJ. Then, we map the five-digit ZIP code fields to the Federal Information Processing Standard (FIPS) codes to match firms to the corruption level of their corresponding county. Specifically, our corruption per 100,000 (*Corruption*) is defined as the annual number of corruption convictions at the district level scaled by U.S. Census Bureau population data.

3.4 Empirical model

Our baseline model is the MEF precision. Following Huang et al. (2022), we use the following ordinary least squares (OLS) regression model to test our hypothesis.

$$PRECISION\_SP_{i,t} = \alpha + \beta Convict_{i,t-1} + \sum_i \gamma_i Firm\ Characteristics_{i,t-1} + Industry\ dummies + Year\ dummies + \varepsilon_{i,t} \quad (1)$$

Where firm characteristics include *Accruals*, *ACQ*, *Analyst*, *Analyst Dispersion*, *Board Independence*, *Earnings Change*, *Earnings Volatility*, *Equity Issuance*, *Firm Size*, *Horizon*, *HHI*, *Income*, *Loss (Dummy)*, *Litigation Risk*, *MB*, *Population* and *ROA*. Following Huang et al. (2022), all control variables (except for *ACQ*, *Equity Issuance*, *Analyst*, *Horizon* and *Analyst Dispersion*), including our independent variable of interest, are lagged by one period. Moreover, we use industry and year fixed effects to control for time-invariant unobserved heterogeneity (Nguyen et al., 2020).[5] Following Huang et al. (2022) and Nguyen et al. (2020), we use standard errors clustered by firm to consider serial correlation within the cluster.[6] The definitions, predicted signs and brief motivation for these variables are summarized in Appendix A.

4. Main results

[5] Industry fixed effect is based on two-digit SIC codes.

[6] Because our independent variable varies at the district or county level, one could argue that we should cluster at the district or county level. However, Mackinnon and Webb (2017) argue that if cluster sizes are not balanced, the number of clusters must be much higher than the number of districts or counties to achieve consistent standard error estimates. Chy et al. (2021) also follow a similar configuration.

4.1 Summary statistics

Table 1 presents descriptive statistics for the variables used in this paper, including those used in the baseline model. The mean (median) value of *PRECISION_SP* is -0.297 (-0.201) with a standard deviation of 0.319, which is consistent with the descriptive statistics in Huang et al. (2022). Moreover, the average conviction rate is 0.274, with a standard deviation of 0.213, which is similar to the findings in previous literature (e.g., Chen et al., 2021). On average, sample observations are high growth firms (*MB* = 3.99) with a relatively healthy *ROA* of 7%. The mean (median) value of *Board Independence* is 0.791 (0.818), with a standard deviation of 0.116. Having a large number of independent directors on the board who are inclined to consider the best interests of shareholders first can improve the efficiency of firms' operations (Ajinkya et al., 2005; Mace, 1986). These descriptive statistics are similar to those in the prior literature.[7] [8]

[Insert Table 1 here]

Following prior studies (Smith, 2016; Chen et al., 2021), we create three choropleth maps to show the state by state political corruption distributions in 2002, 2018 and from 2002 to 2018 respectively.[9] Darker colour means a higher level of corruption. These three maps indicate that Montana and Louisiana seem to have relatively higher corruption rate. The political corruption level in some of the states (e.g., Alaska and Kentucky) seem to decrease over time, while the political corruption level in other of the states (e.g., Nebraska and South Dakota) seems to increase over time.

[Insert Fig.1 here]

[Insert Fig.2 here]

[7] For example, Cheng et al.'s (2013) *MB* ratio is 3.64 and Huang et al.'s (2022) *ROA* ratio is 7.4%.
[8] In term of multicollinearity issue, Table OA.2 results indicate that this issue does not exist in our baseline model.
[9] The state level corruption distributions for these three maps are not based on our specific sample observations.

[Insert Fig.3 here]

4.2 Baseline results

Table 2 presents the results of the regression using *PRECISION_SP* as the dependent variable. Column (1) contains no control variables aside from *Corruption*. The coefficient of *Corruption* is positive and significant at the 5% level (coefficient = 0.082, *p value* <.05). Column (2) contains all control variables (except for county-level population and per capita income). The coefficient of *Corruption* is positive and significant at the 1% level (coefficient = 0.079, *p value* <.01). In Column (3), which includes the full set of control variables, the coefficient of *Corruption* is positive and highly significant at the 1% level (coefficient = 0.085, *p value* <.01). The adjusted R^2 increases significantly, from 0.186 in the first column to 0.399 in the third column, indicating the strong explanatory power of the controls.

Overall, the results suggest that firms in more corrupt regions tend to use narrower MEF ranges.[10] [11] The findings support our main hypothesis and are consistent with the reasoning that when firms are located in highly corrupt regions, they try to use narrower MEFs than they would otherwise as a shielding strategy to misguide corrupt officials, reduce corrupt politicians' attention and hide their assets from rent seeking.[12] The result is also economically significant. Specifically, a one standard deviation change in political corruption leads to a change equal to 6.10% of the mean MEF.[13]

The significant results for the control variables are consistent with previous literature. For example, we find that larger firms tend to disclose narrow MEF intervals than smaller firms

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[10] We also cluster the standard error by districts, states and years but find qualitatively similar results.
[11] Our results are qualitatively similar if we use the contemporaneous level of political corruption in the model.
[12] The relevant hypothesis assumes a positive relation between political corruption and MEFs precision. This makes sense, as we multiplied our dependent variable by -1 to make it positive.
[13] The estimated regression coefficient on the political corruption is 0.085. The standard deviation of political corruption is 0.213. The sample mean of MEF is -0.297. Then, the economic significance is calculated as |(0.085*0.213)/-0.297|.

(coefficient = 0.02; *p value* < 0.01), which is similar to the findings in Cheng et al. (2013) and Gong et al. (2011). *MB* and *ROA* exhibit a positive and significant relationship with MEF precision, indicating that firms with higher market-to-book ratios and returns on assets tend to use narrower MEF intervals than other firms. We find a significantly negative relation between *Earnings Volatility* and *PRECISION_SP*, an association that confirms the finding in previous literature that firms with more volatile earnings tend to issue a wider MEF range than those with less volatile earnings (Cheng et al. 2013). The coefficient on *Accruals* is both negative and significant (coefficient = -0.261; *p value* < 0.1), suggesting the potential influence of *Accruals* on MEF precision. The significantly negative relation between loss and earnings forecast range suggests that firms issue a wider MEF range when facing an earnings loss than they would otherwise. Overall, the results from our control variables are consistent with the findings in the prior literature.

[Insert Table 2 here]

5. Identification Strategies

Although we include numerous controls in the baseline model, one could argue that the association between political corruption and MEF is sporadic or spurious if the relationship is driven by omitted variables. Furthermore, one can argue that our analysis might suffer from a reverse causality. Another concern could be that our model is misspecified or that firms may choose to relocate to a less corrupt area rather than risk developing a suboptimal capital structure. Therefore, we use the following tests to alleviate these endogeneity concerns.

5.1 Omitted variable bias test using Oster (2019)

Oster (2019) provides a formal approach to solve potential omitted variable bias by focusing on coefficient stability and movements in R-squared values to set up an identified set based on the inclusion or exclusion of controls. The basic logic behind this is that if the identified set does not include zero, then we will reject the null hypothesis and conclude that our model does not suffer from potential omitted variable bias.[14] Table OA.3 reports the results of this test. The results show that neither identified set includes zero, implying that it is highly unlikely that our results suffer from omitted variable bias.

5.2 Propensity Score Matching and Entropy balancing approach

Propensity score matching (PSM) is used to generate sets of treatment groups and control groups based on similar characteristics (Rosenbaum & Rubin, 1983). This method has been widely used in the political corruption literature[15] to mitigate the effect of confounding variables and bias. If firms that tend to avoid issuing narrower MEF ranges establish their headquarters in regions with low corruption, then *Corruption* may not be related to *PRECISION_SP,* as we propose. In addition, if our baseline model is misspecified, then the results will be biased. Thus, we attempt to alleviate these concerns by using the PSM approach. Specifically, we use the mean value of corruption to divide our sample into two subsamples. The group with a high corruption value is defined as the treatment group, and the group with a low corruption value is defined as the control group. We calculate the propensity score by using a logit model (i.e., the likelihood that a unit with specific attributes will be allocated to the treatment group). We use all control variables from the baseline model as covariates. Then, we match observations from the treatment group with observations from the control group based on their four nearest neighbours with common support (Smith, 2016).

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[14] Hossain and Kryzanowski (2021) also apply the same criteria and method.

[15] See, for example, Hossain et al., 2021, Smith, 2016 and Xu et al., 2019.

Table OA.4 reports the results of covariate balancing. The results suggest that none of our covariates are significant, which meets the requirements defined by the PSM method. We report our matched regression results in Columns (1) – (3) of Table 3. The results suggest that political corruption is still positively related to narrower MEF ranges.

Recently, a method called 'entropy balancing' has attracted researchers' attention. It has been used in the social sciences to solve issues in the PSM method (McMullin & Schonberger, 2020). The entropy balancing approach (EBA) is based on the maximum entropy reweighting scheme to improve the covariate balance conditions and the testing power without discarding any observations or random matching (Gaver & Utke, 2019). Thus, we use this method to better eliminate differences between our treatment and control groups (Hossain & Kryzanowski, 2021). We use the mean value of corruption to divide our sample into two subsamples. The treatment group includes those observations with high corruption values, and the control group includes those with low corruption values.

Table OA.5 indicate that after weighting, there is no mean difference in the covariates between the treatment and control groups. Thus, the reweighted treatment and control groups satisfy the specified balance condition adjusted for systematic inequalities in representation. Columns (4) - (6) of Table 3 reports the regression results based on the reweighted sample. The results in all these three columns indicate that there is a significantly positive relation between corruption and MEF precision. This test further mitigates the endogeneity concerns, enhancing the reliability of the results. Overall, our main hypothesis still holds.

[Insert Table 3 here]

5.3 Instrumental variable (IV) approach

It could be said that corruption is not limited to the state in which a firm is located but can also come from bordering states or that some industries are more corrupt than others (Hossain et al., 2021). For example, the mining industry makes enormous political contributions to the government. The majority of mining industry firms are located in Ohio (39) and Pennsylvania (42). It is not surprising, then, that the average corruption rates of these two states are above the average (see Table OA.1). In addition, the IT industry is less likely to be exposed to corruption. The majority of IT firms are located in Washington (53) and California (6). Again, it is not surprising that the average corruption rates of these two states are lower than those of Ohio and Pennsylvania (see Table OA.1). This demonstrates the role of industry.

Moreover, industries are also likely to be regionally clustered. For example, the average corruption rate of the overall mining industry is above the average industry corruption rate, as are the corruption rates of the two states with the greatest mining industry presence (see above). Even more interestingly, these two states (Ohio and Pennsylvania) share a border. Thus, following Hossain et al. (2021), we include these two IVs (neighbouring states and industry political corruption) for the 2SLS regression analysis.[16] We expect that these two IVs will be positively related to political corruption. Additionally, following Huang and Yuan (2021), we also include state constitution age as our third IV for 2SLS analysis.[17] A state's constitution is crucial in the daily governance of that state. When citizens of these states desire to modify the regulations in place, they have an option of amending the current state constitution or introducing a new one. It

[16] We define neighbouring states' corruption as the average corruption rate of bordering states. We define industry corruption as the average corruption rate of a firm's 2-SIC industry excluding this firm. The sample sizes are smaller than those used in other analyses, as we ensure that each 2-SIC industry has at least four firms.
[17] We define this IV as the age of the state's constitution as of 1970. For example, Alabama adopted its state constitution in 1901, yielding an age of 69 years (1901–1970). We use 1970 as a cut-off point, as Dass et al. (2016) indicate that these rules existed long before the majority of firms in our sample period were founded.

is not surprising that the underlying governing norms between the state and its population will be altered when a new state constitution is introduced or adopted (Tarr, 2018). As a result, the age of a state's current constitution can represent the quality of the regulations in place (Huang and Yuan, 2021). We expect that the greater the age of the current state constitution, the lower the corruption rate of the state.

Table 4 reports the results for the 2SLS regression analysis. Column (1) indicates that all three IVs are significantly associated with corruption, which is consistent with our expectations and meets the relevance criterion. It is highly unlikely that these three IVs are positively related to MEF precision, other than through their positive or negative association with corruption, which meets the exclusion restriction. The Kleibergen–Paap rk LM statistic, the Cragg-Donald Wald F-statistic, Durbin-Wu Hausman test and Hansen J statistics results provide evidence that our IVs are suitable, strong and valid. Column (2) reports the results of the second-stage regression. The coefficient of *Corruption* is significantly positive related (coefficient =0.447, *p value* <.01), which continually supports our central hypothesis.

[Insert Table 4 here]

5.4 Quasi-natural experiment with headquarter relocation

In this section, following Chen et al. (2021), Hossain et al. (2021) and Huang and Yuan (2021), we use firm HQ relocation events that affect the level of local corruption encountered by firms and conduct a difference-in-difference analysis. An investigation of how changes in the level of corruption affect the MEF range based on firms' HQ relocation events could further alleviate endogeneity concerns regarding firms' HQ relocations. More specifically, if local political corruption matters for firms' MEF ranges, we expect that firms that move to states with higher levels of corruption tend to use narrower MEF intervals than they did before the move. In contrast, firms that move to states with a lower level of corruption should experience a widening MEF range.

We identify all firm relocation events and explore the MEF ranges of relocating firms one year before and one year after the event. Following Hasan et al. (2017), we delete the year of the relocation event itself and firms with multiple relocation events to mitigate the effect of potential confounding circumstances. The final sample contains 68 forecast-year observations, and we ensure that each firm has both pre- and post- relocation year observations. We use *Corr_increase_event* (dummy variable), which equals one if firms relocate to a state that has a higher level of corruption than their original state and zero otherwise. We also use *Post* (a dummy variable), which equals one if observations are in the post- relocation year and zero otherwise. The interaction term is measured as *Corr_increase_event* × *Post*.

Table 5 reports the results regarding firm relocation events.[18] Our main interested variable is *Corr_increase_event* × *Post*, as it indicates how firms behave or adjust the precision of their MEFs before and after relocation events due to changes in the level of corruption. *Corr_increase_event* × *Post* is positively significant in both columns, suggesting that firms relocating their HQ to more corrupt areas tend to use narrower MEF ranges after the relocation event. The results are consistent with our central hypothesis.[19]

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[18] We do not include *Post* in the model, as *Post* measures time, which is subsumed by year fixed effect.

[19] We also conduct another Quasi-natural experiment using the Financial Crisis of 2008-09 as an exogenous shock (Hossain et al., 2021). For this DID test, the PRE SHOCK period is 2007 and the POST SHOCK period is 2010. *Financial Distress* represents the modified Altman-Z score, which is measured as 3.3*(EBIT/at)+1*(sale/at)+1.2*(act/at)+1.4*(re/at) (Smith, 2016). Higher Altman-Z score means the probability of bankruptcy is lower. We define *Low Financial Distress* as a dummy variable that equals one if *Financial Distress* of a firm is above the sample mean and zero otherwise. This means that treated firms are those with low probability of default. It is possible that corrupt officials will be more likely to seek rent from those firms with low probability of default (or low financial constraints) in the POST SHOCK period when Corporate America was struggling as a whole. Thus, we expect that when corruption increases, firms with low probability of default in the POST SHOCK period are more likely to use narrower MEF ranges to deter such rent extraction. Table OA. 6 reports the results. Our variable of interest is *Corruption*POST SHOCK* Low Financial Distress*. The results in Columns (1)-(2) of Table OA.6 suggest that this interaction term is positively significant, which is consistent with our arguments.

[Insert Table 5 here]

6. Additional Analyses

6.1 Positive association between corruption and narrower MEFs is further supported by the ex-post results of actual earnings announcement

We argue and show that when political corruption is high, ex-ante, firms tend to reduce the upper bound (hence narrower) of an MEF to misguide corrupt politicians and reduce their expectations for firms' future earnings. Similarly, ex-post, we should observe firms located in high corruption areas will be more likely to beat their earnings forecast ranges, hence a positive earnings surprise. Specifically, we expect that actual earnings are more likely to fall outside of a narrower forecast, especially falling outside of the upper bound of the MEF.

To measure whether actual earnings beat the forecast ranges, especially the upper bound of an MEF, we define the following two variables. First, we measure pessimistic forecasts (*Out*) as a dummy variable that takes a value of one if actual earnings are above the upper bound of the MEF interval and zero otherwise. Second, *Out High* is a dummy variable that takes a value of one if actual earnings are greater than the upper bound of MEFs and zero if actual earnings are smaller than the lower bound of MEFs. In other words, *Out High* is conditional on the actual earnings falling outside the range forecasts. Table 6 shows probit regression results of positive earnings surprise on political corruption and reports the average marginal effects. Both results in Columns (1) and (2) of Table 6 show that firms located in more corrupted areas are more likely beat their forecast ranges by approximately 9.0% than their corresponding firms in less corrupted areas. These positive earnings surprise "ex-post" results resonate our "ex-ante" prediction that firms located in corrupted areas are more likely to issue lower upper bound of an MEF.

[Insert Table 6 here]

6.2 Positive association between corruption and MEF is enhanced by lack of shielding

The question is whether our previous finding regarding the positive relationship between political corruption and MEF precision indicate that management earnings forecast is used as a shielding mechanism. Will unshielded firms use MEFs as a means to hide their assets? Further exploration of these two questions will provide additional support for our hypothesis and argument that MEF is indeed a used in shielding strategies.

Hossain et al. (2021) propose a shielding mechanism in which when firms are located in more corrupt states, they tend to distribute more dividends to decrease cash holdings to protect their assets than other firms. Their results support the above statements. If firms use dividend payout as their shielding strategy, they have already achieved the purpose of deterring the rent seeking by decreasing their cash holdings. Thus, there is no need to use other shielding strategies to further hide their assets. Therefore, we expect that unshielded firms that do not use dividend payout as a shielding strategy tend to use MEFs to protect their assets from extortion when corruption is high.

Following Hossain et al. (2021), we define dividend payout as the ratio of cash dividend to market value. We use the mean value of the dividend payout ratio to divide our sample into two subsamples. We expect that firms with a low dividend payout ratio tend to use a narrower MEF range than firms with a high dividend payout ratio, which would support the role of earnings forecasts as a shielding strategy. Columns (1) and (2) in Table 7 present the regression results. The results indicate that firms with a low dividend payout ratio (unshielded firms) tend to use narrower MEFs, and the Chow test of mean difference is significant. Overall, the results support our supposition about the role of MEFs in shielding strategies.[20]

[20] We also measure dividend as a dummy variable that equals one if a firm issues a dividend in year *t* and equals zero otherwise. Then, we use this

[Insert Table 7 here]

Additionally, we explore the effect of geographic concentration in explaining the relation between political corruption and MEF. Corrupt officials have more bargaining power and capability for rent seeking with firms that mainly operate in only one region (Smith, 2016). Thus, geographically concentrated firms facing a high level of corruption or a high probability of extortion have more incentive to use shielding strategies to hide their assets than other firms. We expect that geographically concentrated firms tend to use narrower MEF ranges as a shielding strategy when the degree of corruption is high.

Following Garcia and Norli (2012), we define the percentage of a firm's operational concentration in the state where they are headquartered as the number of times the HQ state is stated in the 10-K form each year relative to the number of times all other states are stated.[21] A value of zero means that this firm operates in one or more states other than the HQ state, while a measure value of one means that this firm operates only in its HQ state. We divide our sample into two subsamples based on the mean value of this measure.

Columns (3) and (4) in Table 7 report the results.[22] The results suggest that geographically concentrated firms tend to use narrower MEFs to hide their assets when the level of corruption increases, and the Chow test of mean difference is significant, which is consistent with our shielding story.

Smith (2016) examines the relation between political corruption and a firm's financial policies (cash and leverage). Smith (2016) argues that decreasing the liquid assets (cash) and increasing the leverage can help firms give corrupt governments the strong impression that they have weak

dummy variable to divide the sample into two subsamples. Our results remain qualitatively similar in the unreported analysis.

[21] We thank Garcia and Norli (2012) for generously sharing their data.

[22] The sample size is relatively small, as Garcia and Norli's (2012) geographical concentration data cover only 1993 to 2008.

liquidity and 'fragile' financial capability, which reduces the probability of extortion. Thus, we expect that firms with a high amount of cash holdings and a low amount of leverage (unshielded firms) tend to use narrower MEF as a shielding strategy. Such shielded firms (low cash holdings and high leverage) are unlikely to use other types of shielding strategies, as the goal of limiting extortion behaviours will already have been achieved. Following Smith (2016), we measure cash holdings as the ratio of cash and cash equivalents divided by book assets and measure leverage as the ratio of long-term debt plus debt in current liabilities scaled by total assets.[23]

Columns (5) and (6) in Table 7 report the results of cash holdings, and Columns (7) and (8) in Table 7 present the results of leverage. The results suggest that firms with a high amount of cash and a low level of leverage tend to use a narrower MEF range than other firms. Although the Chow tests for both cash and leverage are not significant, these regression results still provide some evidence to support our main dependent variable as a shielding mechanism.[24,25]

Although previous literature suggests that a low amount of cash holdings, a high leverage level and reported LIFO reserve and more dividend payout and acquisition activities are shielding strategies that firms could use, these strategies could be costly and time-consuming to conduct and will result in the suboptimal corporate financing policy, which significantly affect firms' future investment opportunities (Hossain et al., 2021). Firms may not have enough cash on hand to make

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[23] For cash holdings, we use the mean value of cash holdings to divide our sample into two subsamples. For leverage, we use the mean value of the leverage ratio to divide our sample into two subsamples.

[24] Zhang and Zhang (2022) suggest that when corruption is high, firms tend to report higher LIFO reserve to depress their earnings to achieve the purpose of shielding assets. We define *LIFO Reserve* as the ratio of LIFO reserve (the difference between LIFO and FIFO carrying value) divided by lagged total assets. We use the mean value of LIFO reserve to divide our sample into two subsamples. Columns (1)-(2) in Table OA.7 present the results. The results indicate that unshielded firms that do not report higher LIFO reserve are more likely to use narrower MEFs to protect their assets from extortion, which is consistent with our shielding story.

[25] Hossain and Kryzanowski (2021) and Nguyen et al. (2020) investigate how political corruption affects firms' mergers and acquisitions. Specifically, Nguyen et al. (2020) suggest that firms will reduce free cash flows by engaging acquisition activities to deter rent seeking from corrupt officials. We measure *Acquisition* as a dummy variable that takes a value of one if a firm issues at least one acquisition announcement in year *t* and zero otherwise. Columns (3) – (4) in Table OA.7 report the results. The coefficient on political corruption in both subsample are positive and statistically significant at the 1% level. The coefficient on political corruption is larger in the sample of firms that did not engage in engagement activities, although the difference in coefficient is not statistically significant. These results imply that firms in corrupted areas are equally likely to use a narrow forecast range to deter rent seeking regardless of whether firms have engaged in acquisition activities.

valuable investment. Significantly raising the leverage level could also impact firms' future financing capability. However, issuing a narrower MEF range can alleviate or avoid these issues. Therefore, we argue that firms are more willing to use narrower MEFs to achieve the shielding purpose.

[Insert Table 7 here]

6.3 Managers' self-interest is most likely not driving the results, as corruption has a stronger effect on precision when firms are well governed

According to Gompers et al. (2003), better corporate governance will increase firm value, as managers will act on the best interest of shareholders and the conflict of interest will be alleviated. Institutional ownership, as an external mechanism, plays an essential role in corporate governance. Ajinkya et al. (2005) suggest that firms with greater institutional ownership tend to issue more accurate and less optimistic MEFs. In terms of internal corporate governance, Karamanou and Vafeas (2005) suggest that firms with better internal governance issue less precise MEF ranges. They argue that firms with effective corporate governance are more sensitive to legal liability issues. Moreover, issuing inaccurate forecasts will significantly increase the information asymmetry (Hirst et al., 2008), raise the cost of capital (Shroff et al., 2013), destroy managers' personal credibility and reputation (Yang, 2012). Therefore, firms with better governance tend to issue less specific forecasts to ensure that actual earnings will fall within the forecast range eventually, which leads to more accurate forecasts. The question has been raised about whether the effect of better internal and external governance on the quality of MEF still holds when we take political corruption into consideration. When a firm has strong internal or external governance but faces a high level of corruption, will the firm tend to issue more accurate forecasts (wider forecast ranges) than it would otherwise, as suggested by previous studies? In this section, we examine the effect of institutional ownership and classified boards in explaining the relation between political corruption and MEF.

We measure institutional ownership as the percentage of institutional ownership of a firm in year *t*. We measure classified board as a dummy variable that equals one if the firm has a classified board and zero otherwise. Additionally, following Bebchuk et al. (2009), we construct an E-index that can represent the quality of internal corporate governance as additional evidence for the effect of internal corporate governance.[26] Each firm will be assigned a rate, from zero to six, based on the number of provisions that they have. Lower E-index scores indicate better internal corporate governance.[27]

Table 8 presents the results, which interestingly indicate that firms with a higher level of institutional ownership (strong external governance) and with a nonclassified board (strong internal governance) tend to issue narrower MEFs than other firms. The Chow tests of mean difference are significant. For the E-index, although the Chow test is not significant, the regression analysis still follows a similar trend. Overall, the results suggest that better governed firms tend to issue narrower forecasts to misguide corrupt officials as the level of corruption increases. This is reasonable, as when making decisions, firms' stakeholders (e.g., institutional investors) always consider the marginal benefit and marginal cost of these decisions. If the benefits outweigh the costs, they will select the option that benefits them most. Political corruption is a cost that firms wish to avoid incurring (Smith, 2016). Thus, although issuing narrower forecasts could increase the cost of capital, both internal and external governance mechanisms see corruption as an even

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[26] This E-index is based on six provisions, which are staggered board, limitation on amending bylaws, limitation on amending the charter, supermajority to approve a merger, golden parachute and poison pill.

[27] We divide the sample into two subsamples based on the mean value of institutional ownership and E-index and based on one or zero for classified board.

greater cost that could significantly increase a firm's financial burden.

[Insert Table 8 here]

6.4 Ruling out alternate explanations

In this section, we add several additional commonly used controls to further alleviate the concern of omitted variable bias. Following previous literature, we use three variables to control for managerial incentives to issue more or less precise forecasts. First, managerial ability score is based on the measure in Demerjian et al. (2012). Second, inside ownership is measured as the percentage of managerial ownership in year *t*. Third, equity-based compensation is measured as option grants and restricted stocks scaled by total compensation. To avoid the uncertainty of a firm, social-level attributes, the quality of auditing and regional effects that could drive our results, following previous literature (e.g., Cheng et al., 2013; Rupasingha et al., 2006; Smith, 2016), we also include the following variables. R&D is measured as research and development expenses scaled by sales. Social capital is an index based on the measure in Rupasingha et al. (2006).[28] Auditor is a dummy variable that equals one if the firm is audited by one of the Big 4 and zero otherwise. Unemployment rate is based on county level. Table OA.8 presents the results of the additional control test.[29] Overall, our main results remain intact.

6.5 Sensitivity analyses

6.5.1 Our results are not sensitive to alternate sample construct

One may argue that our findings are affected by certain dominating states or industries or the 2008 financial crisis. For example, our sample shows that the chemical and allied products industry,

[28] We thank Rupasingha et al. (2006) for generously sharing their data. The data is available only until 2014.

[29] Rupasingha et al. (2006) provide the data on social capital only until 2014. If we do not include social capital in the model, the results are all qualitatively similar.

instruments and the related products and business services industry have the most observations in our sample. Similarly, Table OA.1 indicates that California (code 6), Massachusetts (code 25) and New Jersey (code 34) have the most observations in our samples. Moreover, the 2008–09 financial crisis could lead to biased or less precise results, as corrupt politicians may be less likely to seek rent during such period. Thus, to mitigate such concerns, we rerun our baseline model after deleting these three industries and states and the years 2008 to 2009. Columns (1), (2) and (3) in Table OA.9 report the results. Excluding these data does not qualitatively alter our results. Moreover, Huang et al. (2022) exclude those forecasts with horizons > 365 to avoid the information difference between prior year and current year forecasts and delete point estimates to make a more conservative analysis. Thus, we rerun our model after deleting forecasts with horizon > 365 and point estimates. Columns (4) and (5) in Table OA.9 show that our results are still robust.

We acknowledge that firms' headquarters locations are not randomly determined. If we can find evidence to support that firms made decisions about headquarter locations long ago for reasons unrelated to current corrupt environment, it will further increase the confidence in our interpretation of the results. Thus, we conduct a subsample analysis of those firms that were founded before 1982 and never relocated after 1982. Based on the results summarized in Column (6) of Table OA.9, we find that political corruption is still associated with narrower MEF ranges.[30]

6.5.2 Sensitivity analysis for MEF precision and the MEF disclosure model

Now we perform robustness tests using two alternative measures of MEF precision. Following Cheng et al. (2013), we use *PRECISION_MP* (i.e., the difference between the upper and lower

[30] We thank Gao et al. (2021) for generously sharing U.S. firms historical headquarter location dataset.

bounds of MEFs divided by MEF midpoint) as the first alternative measure of MEF precision. Feng et al. (2009) use several different scalars, such as lagged assets per share. Thus, we use *PRECISION_BVA* (i.e., the difference between the upper and lower bounds of MEFs scaled by lagged assets per share) as the second alternative measure of MEF precision. Columns (1) and (2) in Table OA.10 report the results. We still find that political corruption is positively related to MEF precision.

Furthermore, we test the relation between political corruption and the likelihood of MEF disclosure. Following Baik et al. (2011), we define likelihood (*MEF Issuance*) as a dummy variable that equals one if a firm issues at least one MEF and zero otherwise.[31] The results in Column (3) of Table OA.10 indicate that firms located in more corrupt areas are more likely to issue MEF.

6.5.3 Our results are not sensitive to alternate measures of political corruption

In this section, we use seven alternative measures of political corruption for robustness checks. *Corruption (State)* is measured as state-level corruption scaled by state population (Hossain et al., 2021). *High Corruption* is defined as a dummy variable that equals one if the corruption level is above the top quartile of the sample and zero otherwise (Smith, 2016).[32] *Avg. Corruption* is measured as the average value of corruption over the preceding five years (Chen et al. 2021). *Corruption (Rank4, Rank3 and Rank2*) are somewhat similar to the perception-based measure used by Boylan and Long (2003).[33] *State Integrity Investigation* is based on the outcome of 2015 State Integrity Investigation. *Anti-Ethical Score* is based on a total of 22 criteria covering five different

[31] Unlike the baseline model, which retains all forecasts made by each firm in each year, the final observations of this model are firm-year observations. Thus, we include a newly defined analyst following (*LnAnalyst*) (i.e., the natural logarithm of the number of analysts following the firm in year *t*) in this model. We do not include *Horizon* and *Analyst Dispersion* in the model, as these two variables were specifically designed in prior studies to explain the precision of each MEF.

[32] To be consistent with other tests, we also define corruption as a dummy variable that equals one if the corruption level is above the mean of the sample and zero otherwise. The result is qualitatively similar.

[33] We follow Hossain et al.'s (2021) method to construct this measure.

areas. The results in Columns (1) – (8) of Table OA.11 are all consistent with our main findings.

6.5.4 Our results are not sensitive to alternate model specifications

Hossain et al. (2021) argue that industry-year interaction dummies rather than industry and year dummies could be a better approach to control for industry and year unobserved factors. Column (1) in Table OA.12 reports the results using industry-year fixed effects, and our main results remain unchanged. Furthermore, some prior studies (e.g., Baik et al., 2011) keep only the last forecast for each firm each year (firm-year observations). Therefore, we rerun our model keeping only one last forecast for each firm in one year. The results in Column (2) of Table OA.12 suggest that our results are robust. In this study, although we include both industry and year fixed effects in the model, it is still possible that political corruption is correlated with other dimensions of time-invariant unobserved characteristics. Thus, we use fixed effects estimation (based on the time-demeaned variables) to remove the concerns of all other time-constant unobserved effects. The results in Column (3) of Table OA.12 show that political corruption is still significantly related to narrower MEFs.[34]

To alleviate the concerns of the cross-sectional correlations of error terms of OLS regression, autocorrelation and heteroscedasticity, we run a Fama-Macbeth regression with Newey and West standard deviation and report the results in Column (4) of Table OA.12.[35] Column (5) in Table OA.12 reports results based on Generalized Linear Model (GLM). Additionally, one could argue that the current intervals of MEFs could be heavily determined by their past level. Thus, we add a lagged dependent variable ($PRECISION\_SP_{t-1}$) in the model. The results are reported in

[34] The Hausman test also suggest that using fixed effect model is appropriate.
[35] We only keep one last forecast for each firm in one year to ensure the successful application of this model.

Column (6) of Table OA.12.[36] Overall, all results support our main findings.

6.5.5 Our results are not sensitive to lagged specifications of political corruption

Prior literature typically uses a lagged modelling specification to mitigate reverse causality concerns. Following Hossain et al. (2021), corruption lagged by 2, 3, and 4 years here. Table OA.13 indicates that corruption is still positively related to earnings forecast precision. Ultimately, all sensitivity analyses provide evidence to support our main conclusions.

6.6 Political corruption, forecast precision and firm value

Both developed and developing countries have regarded corruption as a serious social and economic issue (Xu, et al., 2019). From a social perspective, it prevents impoverished people from accessing public services, such as healthcare. From an economic perspective, it harms economic development (World Bank Group, 2016). Brown et al. (2019) find a robust negative relation that corruption reduces firm value through rent seeking. If MEF is an effective shielding strategy, we expect that issuing narrower MEF ranges can alleviate the negative effect of political corruption on firm value by hiding assets.

Following Fan et al. (2019), we define firm value (*Firm Value Q*) based on the measure of Peters and Taylor (2017), who suggest that their firm value measure can capture both a firm's tangible and intangible investment opportunities, making it a better measure than Tobin's Q. Our main independent variables are *Corruption_high* and *PRECISION_SP_narrow*. We define *Corruption_high* as a dummy variable that equals one if the level of the corruption rate is above the sample mean and zero otherwise. *PRECISION_SP_narrow* is measured as another dummy variable

[36] We only keep one last forecast for each firm in one year to ensure the successful application of this model.

that equals one if the interval of MEF range is above the sample mean and zero otherwise. Our variable of interest is *PRECISION_SP_narrow* × *Corruption_high*, as this will indicate the mitigating role of issuing narrower MEFs.

Following previous literature (e.g., Baek et al., 2004; Benson & Davidson et al., 2009; Brown et al., 2021; Jo & Harjoto, 2011; Konijn et al., 2011; Villalonga and Amit, 2006), we use *Firm size, MB, ROA, Board Independence, Incorporation, R&D, Expense, Beta, Equitycomp, Capital Expenditure, Tangibility, Analyst Dispersion, Earnings Volatility* as control variables. To avoid the potential regional effect that could confound our results, we also include *Population* and *Income* in the model.[37,38]

Table 9 reports the results of firm value analysis. Column (1) indicates that issuing narrower MEF ranges can mitigate the negative effect of political corruption on firm value. When corruption is high, firms that issue narrower MEF ranges have higher firm value.

We next investigate whether our MEF shielding strategy is more effective than other shielding strategies (i.e., cash holding, leverage, dividend payout, LIFO reserve and firms' acquisition) suggested by previous literature[39]. Similarly, we define *Leverage_high* as a dummy variable that equals one if the leverage level is above the sample mean and zero otherwise. *Cash_low* is measured as a dummy variable that equals one if the cash level is below the sample mean and zero otherwise. *Dividend Payout Ratio_high* is measured as a dummy variable that equals one if the dividend payout ratio is above the sample mean and zero otherwise. *LIFO Reserve_high* is measured as a dummy variable that equals one if a firm's LIFO reserve level is above the sample mean and zero otherwise. *Acquisition* is measured as a dummy variable that equals one if a firm issues at least one acquisition

[37] The definitions of all variables are provided in Appendix A.
[38] Following Chang and Zhang (2015) and Cremers and Ferrell (2014), we use firm and year fixed effects with standard error clustered at the firm level.
[39] See Hossain et al. (2021), Nguyen et al. (2020), Smith (2016) and Zhang and Zhang (2022).

announcement in year *t* and zero otherwise. Our variables of interest are *Leverage_high* × *Corruption_high*, *Cash_low* × *Corruption_high*, *Dividend Payout Ratio_high* × *Corruption_high*, *LIFO Reserve_high* × *Corruption_high* and *Acquisition* × *Corruption_high* respectively, as they can indicate that whether using other shielding strategies also have the valuation relevance role when corruption is high. The results in Columns (2) – (6) suggest that using acquisition shielding strategy could also alleviate the negative effect of political corruption on firm value. Column (7) reports the results based on all of these shielding strategies. Interestingly, the findings in Column (7) of Table 9 reveal that only using MEF strategy could help firms increase their value when corruption is high. Overall, the results suggest that compared with other shielding strategies, using narrower MEFs is more effective.

[Insert Table 9 here]

7. Conclusion

We investigate how local political corruption affects management earnings forecast (MEF) practice in the US. We find that firms located in more corrupt regions tend to use narrower MEF ranges than other firms to misguide corrupt officials, reduce corrupt politicians' attention and hide their assets. We further show that this shielding strategy can enhance firm value if firms are located in a more corrupt area. Our main result is both statistically and economically significant and it survives a battery of tests, clearly indicating that the association is not sporadic. Overall, our study suggests that MEFs can be used as an effective shielding strategy for firms to prevent rent extraction from corrupt officials.

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Table 1 Summarized descriptive statistics

Variables used in the baseline model	N	Mean	S.D.	p10	p25	p50	p75	p90
PRECISION_SP	11133	-0.297	0.319	-0.666	-0.385	-0.201	-0.097	0.000
Corruption	11133	0.274	0.213	0.054	0.118	0.232	0.372	0.534
Accruals	11133	-0.054	0.051	-0.116	-0.079	-0.050	-0.025	-0.002
ACQ	11133	0.212	0.409	0.000	0.000	0.000	0.000	1.000
Analyst	11133	2.103	0.681	1.099	1.609	2.197	2.639	2.944
Analyst Dispersion	11133	0.002	0.002	0.000	0.001	0.001	0.002	0.005
Board Independence	11133	0.791	0.116	0.625	0.727	0.818	0.889	0.909
Earnings Change	11133	0.002	0.044	-0.028	-0.005	0.005	0.012	0.028
Earnings Volatility	11133	0.051	0.049	0.012	0.020	0.034	0.064	0.114
Equity Issuance	11133	0.089	0.285	0.000	0.000	0.000	0.000	0.000
Firm Size	11133	8.131	1.384	6.375	7.193	8.114	9.001	9.970
Horizon	11133	179.700	103.600	60.000	74.000	162.000	249.000	299.000
HHI	11133	0.247	0.151	0.083	0.140	0.215	0.317	0.441
Income	11133	10.790	0.287	10.440	10.580	10.780	10.980	11.180
Loss (Dummy)	11133	0.064	0.244	0.000	0.000	0.000	0.000	0.000
Litigation Risk	11133	0.333	0.471	0.000	0.000	0.000	1.000	1.000
MB	11133	3.999	4.930	1.301	1.857	2.790	4.210	6.812
Population	11133	13.600	1.006	12.250	13.030	13.630	14.210	14.760
ROA	11133	0.070	0.053	0.017	0.041	0.068	0.098	0.134
Variables used in all other tests								
Acquisition	11133	0.680	0.467	0.000	0.000	1.000	1.000	1.000
Auditor	11133	0.966	0.182	1.000	1.000	1.000	1.000	1.000
Avg. Corruption	9906	0.283	0.177	0.093	0.147	0.242	0.380	0.528
Anti-Ethical Score	11116	9.015	2.737	5.000	6.000	9.000	10.000	13.000
Beta	10556	1.051	0.352	0.612	0.818	1.020	1.249	1.525
Corruption (Dummy)	11133	0.249	0.432	0.000	0.000	0.000	0.000	1.000
Corruption (Industry Avg.)	8196	0.302	0.107	0.195	0.222	0.277	0.351	0.429
Corruption (Neighbouring States)	8196	0.283	0.131	0.115	0.192	0.273	0.358	0.451
Corruption (Rank4)	11126	0.291	0.134	0.070	0.170	0.300	0.390	0.460
Corruption (Rank3)	11126	0.223	0.134	0.060	0.090	0.200	0.310	0.410
Corruption (Rank2)	11126	0.231	0.142	0.040	0.110	0.210	0.370	0.390
Corruption (State)	11133	0.283	0.161	0.108	0.172	0.253	0.361	0.503
Cash	11133	0.134	0.131	0.015	0.036	0.087	0.194	0.324
Capital Expenditure	10556	0.042	0.033	0.012	0.020	0.032	0.052	0.085
Classified Board	11064	0.508	0.500	0.000	0.000	1.000	1.000	1.000
Dividend Payout Ratio	11083	0.012	0.012	0.000	0.000	0.009	0.019	0.029
Expense	10556	0.266	0.161	0.086	0.140	0.244	0.361	0.494
E-index	10927	3.377	1.159	2.000	3.000	3.000	4.000	5.000
Equitycomp	11114	0.097	0.198	0.000	0.000	0.000	0.000	0.467
Financial Distress	897	2.677	0.933	1.674	1.964	2.490	3.334	4.178
Firm Value Q	10556	1.280	1.023	0.328	0.615	1.041	1.624	2.439
Geo. Concentration	4020	0.359	0.253	0.063	0.167	0.311	0.510	0.731
Incorporation	10556	0.619	0.486	0.000	0.000	1.000	1.000	1.000
Institutional Ownership	11077	0.822	0.146	0.638	0.729	0.839	0.922	0.988
Inside_own	11117	0.020	0.038	0.000	0.001	0.007	0.022	0.046
LIFO Reserve	11133	0.005	0.014	0.000	0.000	0.000	0.001	0.019
LnAnalyst	8963	2.346	0.801	1.386	1.792	2.398	2.944	3.296
Leverage	11092	0.229	0.161	0.002	0.106	0.224	0.327	0.443
Managerial Ability Score	8874	0.025	0.154	-0.112	-0.074	-0.024	0.079	0.236
MEF Issuance	8953	0.508	0.500	0.000	0.000	1.000	1.000	1.000
Out	11013	0.479	0.500	0.000	0.000	0.000	1.000	1.000
Out High	7249	0.631	0.482	0.000	0.000	1.000	1.000	1.000
PRECISION_BVA	11133	-0.004	0.003	-0.008	-0.005	-0.003	-0.001	0.000
PRECISION_MP	11124	-0.050	0.058	-0.113	-0.061	-0.033	-0.018	0.000
R&D	11133	0.044	0.072	0.000	0.000	0.014	0.051	0.152
State Constitution Age	8196	0.082	0.055	0.005	0.022	0.090	0.112	0.150

State Integrity Investigation	11126	0.200	0.144	0.020	0.060	0.190	0.300	0.430
Social Capital	9153	-0.373	0.008	-0.385	-0.378	-0.372	-0.367	-0.363
Tangibility	10556	0.727	0.197	0.432	0.601	0.760	0.885	0.970
Unemployment Rate	11133	0.060	0.021	0.037	0.044	0.054	0.072	0.093

Notes: This table presents the descriptive statistics for all variables used in this paper, including those used in the baseline model. The final sample includes 11133 effective forecast-year observations from 2002 to 2018 for the baseline model. We winsorize all continuous variables annually at the 1% and 99% percentiles. All financial and utility firms and missing observations are dropped to remove potential bias and outliers. The definitions of these variables can be found in Appendix A.

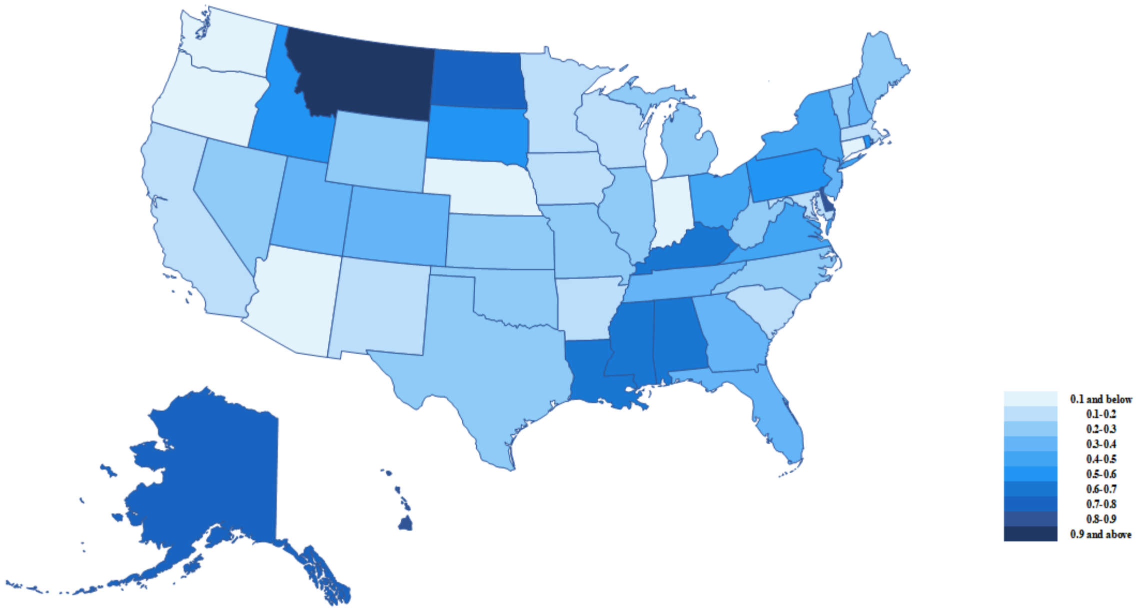

Fig.1. The geography of state by state political corruption distribution in 2002.

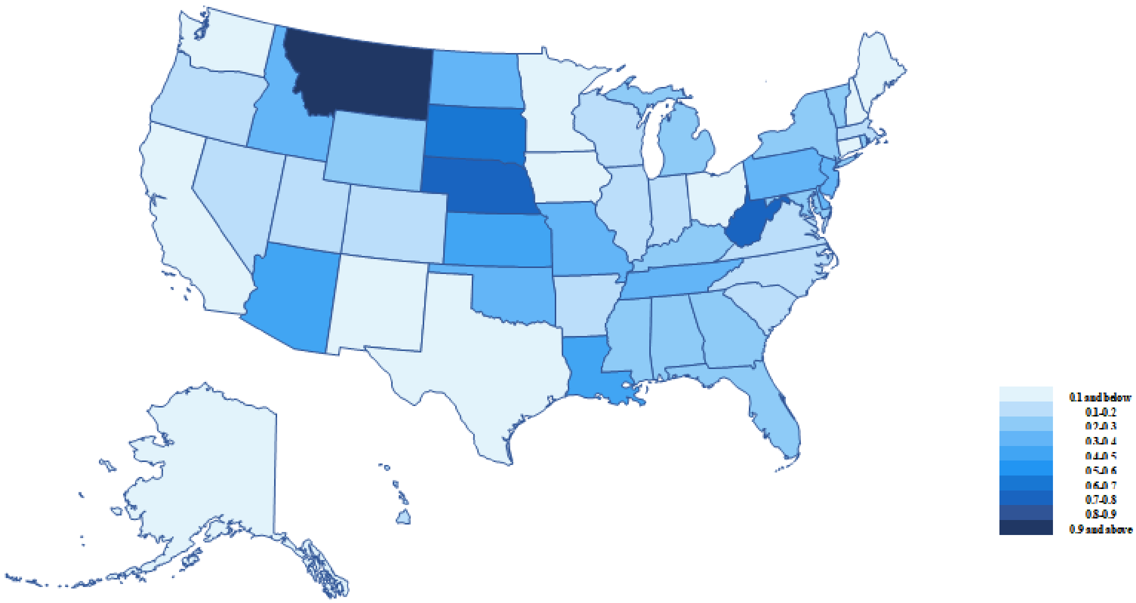

Fig.2. The geography of state by state political corruption distribution in 2018.

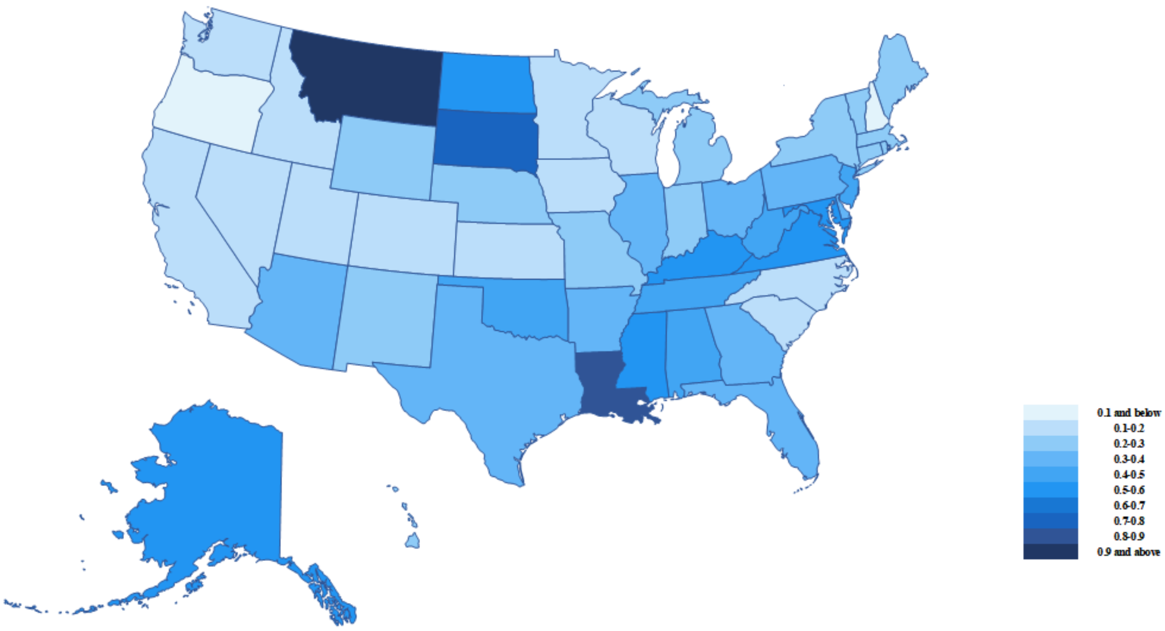

Fig.3. The geography of average state by state political corruption distribution from 2002 to 2018.

Table 2 Impact of corruption on earnings forecast precision

	(1) PRECISION_SP	(2) PRECISION_SP	(3) PRECISION_SP
Corruption	0.082**	0.079***	0.085***
	(2.30)	(2.75)	(3.01)
Firm Size		0.020***	0.020***
		(2.83)	(2.88)
MB		0.003**	0.003**
		(2.49)	(2.58)
ROA		0.891***	0.897***
		(4.50)	(4.50)
Earnings Change		0.155	0.135
		(0.79)	(0.68)
Earnings Volatility		-0.328**	-0.324**
		(-2.09)	(-2.06)
Accruals		-0.274*	-0.261*
		(-1.94)	(-1.86)
Loss (Dummy)		-0.112***	-0.112***
		(-2.98)	(-3.05)
Litigation Risk		0.034	0.029
		(0.90)	(0.79)
HHI		-0.024	-0.031
		(-0.42)	(-0.55)
ACQ		0.027***	0.025***
		(2.98)	(2.77)
Horizon		-0.001***	-0.001***
		(-14.15)	(-14.18)
Board Independence		0.076	0.074
		(0.94)	(0.93)
Analyst		0.031***	0.031***
		(3.63)	(3.64)
Analyst Dispersion		-28.650***	-28.735***
		(-8.63)	(-8.63)
Equity Issuance		0.037***	0.035**
		(2.70)	(2.56)
Population			-0.010
			(-1.28)
Income			0.071**
			(2.11)
Constant	-0.398***	-0.434***	-1.050***
	(-14.18)	(-6.90)	(-3.34)
Year Fixed Effect	Yes	Yes	Yes
Industry Fixed Effect	Yes	Yes	Yes
Observations	11133	11133	11133
Adjusted R^2	0.186	0.396	0.399

Note: This table presents the results for the baseline model. In this table, the values of each variable are the regression coefficients, and the values in parentheses are the t-statistics. Column (1) only presents the regression analysis between political corruption and MEF precision. Column (2) considers all control variables except for demographic variables. Column (3) includes the full set of controls. The dependent variable is *PRECISION_SP*. Our independent variable of interest is *Corruption*. Industry and year fixed effects and standard errors clustered by firm level are used for all three columns. All control variables (except for *ACQ*, *Equity Issuance*, *Analyst*, *Horizon* and *Analyst Dispersion*), including our independent variable of interest, are lagged by one period. We winsorize all continuous variables annually at the 1% and 99% percentiles. The definitions of all variables can be found in Appendix A. ***, **, and * suggest statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 3 Regression analysis based on PSM matched sample and entropy balancing approach reweighted sample

	(1) PRECISIO N_SP PSM	(2) PRECISIO N_SP PSM	(3) PRECISIO N_SP PSM	(4) PRECISIO N_SP EBA	(5) PRECISIO N_SP EBA	(6) PRECISIO N_SP EBA
Corruption	0.061*	0.072**	0.075***	0.086**	0.072**	0.075***
	(1.75)	(2.55)	(2.74)	(2.30)	(2.47)	(2.61)
Firm Size		0.019*	0.020**		0.023***	0.023***
		(1.92)	(2.02)		(2.78)	(2.93)
MB		0.001	0.001		0.003*	0.003*
		(0.65)	(0.70)		(1.83)	(1.90)
ROA		1.142***	1.172***		1.033***	1.049***
		(3.91)	(4.03)		(4.60)	(4.67)
Earnings Change		-0.132	-0.151		0.058	0.035
		(-0.60)	(-0.67)		(0.35)	(0.21)
Earnings Volatility		-0.251	-0.240		-0.306**	-0.298**
		(-1.36)	(-1.31)		(-2.06)	(-2.00)
Accruals		-0.215	-0.229		-0.254*	-0.245
		(-1.09)	(-1.17)		(-1.66)	(-1.60)
Loss (Dummy)		-0.145***	-0.144***		-0.139***	-0.139***
		(-3.02)	(-3.10)		(-3.29)	(-3.41)
Litigation Risk		0.050	0.039		0.054	0.043
		(1.35)	(1.11)		(1.48)	(1.22)
HHI		0.081	0.064		0.019	0.011
		(1.34)	(1.12)		(0.39)	(0.22)
ACQ		0.019	0.016		0.027***	0.024**
		(1.53)	(1.24)		(2.91)	(2.58)
Horizon		-0.001***	-0.001***		-0.001***	-0.001***
		(-12.02)	(-12.04)		(-13.37)	(-13.41)
Board Independence		0.101	0.101		0.0676	0.063
		(1.16)	(1.18)		(0.73)	(0.70)
Analyst		0.034***	0.033***		0.028***	0.027***
		(2.86)	(2.94)		(2.99)	(2.99)
Analyst Dispersion		-25.070***	-24.862***		-26.746***	-26.585***
		(-6.95)	(-6.84)		(-8.34)	(-8.25)
Equity Issuance		0.042*	0.042*		0.038**	0.038**
		(1.86)	(1.82)		(2.43)	(2.37)
Population			-0.012			-0.011
			(-1.20)			(-1.17)
Income			0.089*			0.096**
			(1.96)			(2.47)
Constant	-0.402***	-0.480***	-1.255***	-0.392***	-0.440***	-1.295***
	(-10.86)	(-5.76)	(-3.02)	(-13.14)	(-6.49)	(-3.57)
Year Fixed Effect	Yes	Yes	Yes	Yes	Yes	Yes
Industry Fixed Effect	Yes	Yes	Yes	Yes	Yes	Yes
Observations	5308	5308	5308	11133	11133	11133
Adjusted R^2	0.191	0.412	0.415	0.185	0.406	0.409

Notes: This table reports the results based on the PSM matched sample (four neighbours with common support) and EBA reweighted sample. We use the mean value of political corruption to divide our sample into two subsample groups. In this table, the values of each variable are the regression coefficients, and the values in parentheses are the t-statistics. The treatment group includes those with high observed corruption values, and the control group includes those observations with low observed corruption values. All control variables from the baseline model are included. All control variables (except for *ACQ*, *Equity Issuance*, *Analyst*, *Horizon* and *Analyst Dispersion*), including our independent variable of interest, are lagged by one period. We winsorize all continuous variables annually at the 1% and 99% percentiles. The definitions of all variables can be found in Appendix A. ***, **, and * suggest statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 4 2SLS regression analysis

Variables	Stage 1	Stage 2
Corruption		0.447***
		(3.10)
Corruption (Industry Avg.)	0.518***	
	(5.80)	
Corruption (Neighbouring States)	0.157***	
	(2.89)	
State Constitution Age	-0.399**	
	(-2.22)	
Controls as in Main Model	Yes	Yes
Industry Fixed Effect	Yes	Yes
Year Fixed Effect	Yes	Yes
Standard Error Clustered at Firm Level	Yes	Yes
Observations	8196	8196
Postestimation tests		
Durbin-Wu Hausman Test	8.749	
p value	0.003	
Kleibergen–Paap rk LM Statistic	37.420	
p value	0.000	
Hansen J Statistic	1.686	
p value	0.430	
Craff-Donald Wald F Statistic	162.910	

Notes: This table presents the 2SLS regression analysis results. In this table, the values of each variable are the regression coefficients, and the values in parentheses are the t-statistics. All control variables from the baseline model are included. All control variables (except for *ACQ*, *Equity Issuance*, *Analyst*, *Horizon* and *Analyst Dispersion*), including our independent variable of interest, are lagged by one period. The limited sample sizes are due to missing observations and the exclusion of industries that have fewer than four firms. We winsorize all continuous variables annually at the 1% and 99% percentiles. The definitions of all variables can be found in Appendix A. ***, **, and * suggest statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 5 The results for firm HQ relocation events

	(1) PRECISION_SP	(2) PRECISION_SP
Corr_increase_event × Post	0.122**	0.660***
	(3.19)	(8.10)
Corr_increase_event	-0.002	-5.867***
	(-0.04)	(-17.66)
Firm Size		3.121***
		(18.90)
MB		-3.508***
		(-18.56)
ROA		48.098***
		(15.38)
Earnings Change		-8.629***
		(-10.80)
Earnings Volatility		-194.838***
		(-22.90)
Accruals		-9.008***
		(-51.46)
Loss (Dummy)		3.188***
		(18.00)
Litigation Risk		-2.853***
		(-20.92)
HHI		32.684***
		(18.98)
ACQ		-1.387***
		(-14.94)
Horizon		-0.001***
		(-3.63)
Board Independence		4.191***
		(14.76)
Analyst		-0.055*
		(-1.95)
Analyst Dispersion		-8.196
		(-1.10)
Equity Issuance		-1.624***
		(-21.51)
Population		3.792***
		(19.59)
Income		-1.401***
		(-38.24)
Constant	-0.397***	-61.616***
	(-2.54e+15)	(-16.02)
Year Fixed Effect	Yes	Yes
Industry Fixed Effect	Yes	Yes
Observations	68	68
Adjusted R^2	0.338	0.635

Notes: This table presents the results based on a firm's relocation events. In this table, the values of each variable are the regression coefficients, and the values in parentheses are the t-statistics. *Corr_increase_event* (dummy variable) is one if firms relocate their HQ to a state that has a higher level of corruption than the original state and zero otherwise. *Post* (a dummy variable) is one if observations are in the post-relocation year and equals zero otherwise. The interaction term is measured as *Corr_increase_event* × *Post*. All control variables from the baseline model are included. Industry and year fixed effects and standard errors clustered at the firm level are considered. All control variables (except for *ACQ*, *Equity Issuance*, *Analyst*, *Horizon* and *Analyst Dispersion*) are lagged by one period. The final sample includes 68 effective forecast-year observations. We winsorize all continuous variables annually at the 1% and 99% percentiles. The very limited sample sizes are due to the removal of missing observations and the low frequency of firm HQ relocation events. The definitions of all variables can be found in Appendix A. ***, **, and * suggest statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 6 Pessimistic forecasts analysis

	(1) Out	(2) Out High
Corruption	0.093*	0.095*
	(1.93)	(1.75)
Firm Size	0.014	0.023**
	(1.41)	(2.09)
MB	0.002	0.002
	(0.84)	(0.76)
ROA	0.192	0.365
	(0.67)	(1.16)
Earnings Change	0.370*	0.371*
	(1.82)	(1.87)
Earnings Volatility	0.594**	0.388
	(2.07)	(1.35)
Accruals	-0.925***	-0.881***
	(-4.30)	(-3.73)
Loss (Dummy)	-0.011	0.004
	(-0.24)	(0.08)
Litigation Risk	-0.006	0.030
	(-0.14)	(0.59)
HHI	-0.013	-0.027
	(-0.16)	(-0.31)
ACQ	0.021	-0.009
	(0.99)	(-0.37)
Horizon	-0.000*	-0.001***
	(-1.72)	(-11.52)
Board Independent	0.236	0.111
	(0.93)	(0.99)
Analyst	-0.007	-0.023
	(-0.51)	(-1.33)
Analyst Dispersion	-1.152	-9.735***
	(-0.42)	(-3.33)
Equity Issuance	0.066**	0.124***
	(2.11)	(3.61)
Population	0.019	0.019
	(1.56)	(1.59)
Income	-0.026	-0.049
	(-0.51)	(-0.88)
Year Fixed Effect	Yes	Yes
Industry Fixed Effect	Yes	Yes
Observations	11013	7249
Pseudo R^2	0.048	0.107

Notes: This table reports the results of issuing pessimistic forecasts. In this table, the values of each variable are the average marginal effects, and the values in parentheses are the t-statistics. All control variables from the baseline model are included. *Out* is measured as a dummy variable that takes the value of one if actual earnings are above the upper bound of MEF range and zero otherwise. *Out High* is a dummy variable that takes a value of one if actual earnings are above the upper bound of the earnings forecast and zero if actual earnings are below the lower bound of the earnings forecast. In other words, *Out High* is conditional on the actual earnings falling outside the range forecasts. Industry and year fixed effects and standard errors clustered at the firm level are considered. All control variables (except for *ACQ*, *Equity Issuance*, *Analyst*, *Horizon* and *Analyst Dispersion*), including our independent variable of interest, are lagged by one period. We winsorize all continuous variables annually at the 1% and 99% percentiles. The definitions of all variables can be found in Appendix A. ***, **, and * suggest statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 7 Cross-sectional test analysis (1)

	(1) PRECISION_SP High dividend	(2) PRECISION_SP Low dividend	(3) PRECISION_SP High geographic concentration	(4) PRECISION_SP Low geographic concentration	(5) PRECISION_SP High cash holdings	(6) PRECISION_SP Low cash holdings	(7) PRECISION_SP High leverage	(8) PRECISION_SP Low leverage
Corruption	0.007	0.112***	0.133***	0.001	0.082***	0.074***	0.065***	0.070***
	(0.42)	(6.55)	(4.82)	(0.02)	(4.16)	(4.89)	(3.67)	(4.30)
Chow test statistics	5.23**		5.20**		0.03		0.01	
(Chow test p value)	(0.022)		(0.023)		(0.865)		(0.915)	
Firm Size	0.018***	0.028***	0.038***	0.016***	0.035***	0.010***	0.013***	0.027***
	(4.80)	(7.35)	(7.12)	(2.82)	(8.56)	(2.94)	(3.26)	(7.75)
MB	0.004***	0.002*	0.009***	0.007***	0.005***	0.002***	0.001	0.010***
	(5.66)	(1.89)	(5.14)	(4.44)	(4.46)	(3.79)	(0.99)	(6.48)
ROA	0.642***	1.108***	0.089	1.376***	0.833***	1.126***	1.209***	0.740***
	(6.21)	(12.49)	(0.58)	(7.89)	(8.49)	(10.74)	(10.77)	(8.07)
Earnings Change	0.422***	-0.069	0.996***	0.386*	0.026	0.118	0.011	0.258***
	(4.25)	(-0.84)	(4.39)	(1.87)	(0.24)	(1.48)	(0.12)	(2.86)
Earnings Volatility	-1.290***	-0.213***	-0.407***	-0.863***	-0.307***	-0.340***	-0.373***	-0.327***
	(-10.28)	(-3.01)	(-3.12)	(-5.23)	(-3.61)	(-3.90)	(-3.96)	(-4.14)
Accruals	-0.323***	-0.326***	-0.305**	-0.417***	-0.429***	-0.143*	-0.215**	-0.337***
	(-3.43)	(-4.35)	(-2.35)	(-3.54)	(-5.27)	(-1.68)	(-2.26)	(-4.49)
Loss (Dummy)	-0.075***	-0.114***	-0.075***	0.050*	-0.098***	-0.116***	-0.084***	-0.126***
	(-3.75)	(-6.95)	(-2.69)	(1.89)	(-4.55)	(-7.31)	(-4.70)	(-6.97)
Litigation Risk	0.023	0.022	0.091***	-0.034	-0.030*	0.076***	0.062***	0.021
	(1.41)	(1.48)	(4.15)	(-1.25)	(-1.87)	(4.47)	(4.02)	(1.48)
HHI	-0.031	-0.008	0.117***	-0.136***	-0.064*	0.014	0.036	-0.077***
	(-1.12)	(-0.27)	(3.07)	(-2.94)	(-1.77)	(0.56)	(1.15)	(-2.84)
ACQ	0.007	0.022***	0.026*	-0.033**	0.009	0.028***	0.023**	0.030***
	(0.77)	(2.64)	(1.84)	(-2.48)	(1.00)	(3.52)	(2.43)	(3.76)
Horizon	-0.001***	-0.001***	-0.001***	-0.001***	-0.001***	-0.001***	-0.001***	-0.001***
	(-22.16)	(-21.07)	(-12.12)	(-13.78)	(-17.47)	(-23.87)	(-19.34)	(-22.69)
Board Independence	0.142***	0.017	-0.063	0.174***	-0.090**	0.204***	0.207***	-0.057
	(3.74)	(0.48)	(-1.29)	(4.05)	(-2.12)	(6.48)	(5.64)	(-1.59)
Analyst	0.021***	0.033***	0.022**	-0.000	0.024***	0.032***	0.023***	0.028***
	(3.13)	(5.20)	(2.12)	(-0.01)	(3.23)	(5.45)	(3.29)	(4.46)
Analyst Dispersion	-33.513***	-25.565***	-19.102***	-14.074***	-19.795***	-32.567***	-29.457***	-24.748***
	(-21.13)	(-21.59)	(-9.60)	(-7.85)	(-12.92)	(-27.38)	(-21.51)	(-19.12)
Equity Issuance	0.022	0.052***	-0.004	0.083***	0.012	0.052***	0.034**	0.026**
	(1.55)	(4.64)	(-0.22)	(4.65)	(0.92)	(4.23)	(2.48)	(2.25)

Population	-0.026***	0.006	-0.012*	-0.014**	-0.015***	-0.007**	-0.017***	-0.010***
	(-6.88)	(1.38)	(-1.75)	(-2.33)	(-3.03)	(-1.97)	(-3.81)	(-2.75)
Income	0.149***	0.026	0.058**	0.087***	0.107***	0.043***	0.089***	0.061***
	(9.06)	(1.63)	(2.03)	(3.45)	(5.75)	(3.01)	(5.12)	(3.85)
Constant	-1.530***	-0.962***	-1.095***	-1.277***	-1.391***	-0.644***	-1.271***	-0.645**
	(-6.83)	(-4.29)	(-3.55)	(-4.07)	(-5.42)	(-2.81)	(-5.96)	(-2.17)
Year Fixed Effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry Fixed Effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	4825	6258	1652	2368	4095	7038	5384	5708
Adjusted R^2	0.481	0.399	0.420	0.309	0.406	0.419	0.392	0.439

Notes: This table reports the results of cross-sectional tests. The subsample analysis is based on the mean value of the dividend payout ratio, geographical concentration, cash holdings and leverage. In this table, the values of each variable are the regression coefficients, and the values in parentheses are the t-statistics. Due to data availability and missing observations, some of the tests have relatively small sample sizes. All control variables from the baseline model are included. Industry and year fixed effects and standard errors clustered at the firm level are considered. *Dividend Payout Ratio* is measured as the ratio of cash dividend to market value. *Geo. Concentration* is measured as the percentage of a firm's operations that occur mainly in the state where the firm is headquartered. *Cash* is measured as the ratio of cash and cash equivalents to total book assets. *Leverage* is measured as the ratio of long-term debt plus debt in current liabilities to total book assets. All control variables (except for *ACQ*, *Equity Issuance*, *Analyst*, *Horizon* and *Analyst Dispersion*), including our independent variable of interest, are lagged by one period. We winsorize all continuous variables annually at the 1% and 99% percentiles. The definitions of all variables can be found in Appendix A. ***, **, and * suggest statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 8 Internal and external governance analysis

	(1) PRECISION_SP High institutional ownership	(2) PRECISION_SP Low institutional ownership	(3) PRECISION_SP Classified board	(4) PRECISION_SP Nonclassified board	(5) PRECISION_SP High E-index	(6) PRECISION_SP Low E-index
Corruption	0.126***	0.032*	0.021	0.131***	0.034**	0.101***
	(7.56)	(1.87)	(1.24)	(7.69)	(2.01)	(5.85)
Chow test statistics	3.36*		4.42**		1.84	
(Chow test p value)	(0.067)		(0.035)		(0.175)	
Firm Size	0.021***	0.035***	0.027***	0.014***	0.020***	0.023***
	(5.02)	(10.11)	(7.01)	(3.82)	(4.90)	(6.18)
MB	0.005***	0.002***	0.003***	0.004***	0.003***	0.002***
	(3.83)	(3.69)	(4.16)	(5.46)	(4.52)	(2.64)
ROA	0.863***	1.153***	1.322***	0.634***	0.927***	1.021***
	(8.99)	(11.69)	(13.82)	(6.63)	(9.75)	(10.50)
Earnings Change	0.081	0.196*	-0.104	0.288***	-0.139	0.290***
	(1.01)	(1.90)	(-1.12)	(3.38)	(-1.51)	(3.38)
Earnings Volatility	-0.266***	-0.404***	-0.461***	-0.234***	-0.079	-0.435***
	(-3.44)	(-4.37)	(-5.38)	(-2.71)	(-0.90)	(-5.22)
Accruals	-0.246***	-0.297***	-0.311***	-0.217**	-0.362***	-0.283***
	(-3.07)	(-3.52)	(-3.88)	(-2.54)	(-4.28)	(-3.39)
Loss (Dummy)	-0.152***	-0.029	-0.101***	-0.104***	-0.158***	-0.083***
	(-9.14)	(-1.44)	(-5.73)	(-5.75)	(-8.45)	(-4.77)
Litigation Risk	0.076***	-0.031**	-0.040***	0.100***	-0.041***	0.087***
	(4.90)	(-2.22)	(-2.94)	(6.42)	(-2.92)	(5.91)
HHI	-0.001	-0.070***	-0.028	-0.005	-0.094***	0.010
	(-0.04)	(-2.75)	(-1.08)	(-0.16)	(-3.30)	(0.34)
ACQ	0.040***	0.005	0.014*	0.029***	0.018**	0.025***
	(4.82)	(0.55)	(1.71)	(3.30)	(2.20)	(2.83)
Horizon	-0.001***	-0.001***	-0.001***	-0.001***	-0.001***	-0.001***
	(-22.16)	(-19.54)	(-23.41)	(-18.71)	(-23.11)	(-18.86)
Board Independence	-0.048	0.128***	0.034	0.121***	-0.028	0.197***
	(-1.26)	(3.66)	(1.00)	(2.96)	(-0.71)	(5.35)
Analyst	0.040***	0.012*	0.027***	0.031***	0.043***	0.023***
	(6.21)	(1.81)	(4.39)	(4.53)	(6.82)	(3.36)
Analyst Dispersion	-28.639***	-27.542***	-26.247***	-29.301***	-29.336***	-26.434***
	(-23.58)	(-18.48)	(-20.03)	(-21.84)	(-21.42)	(-20.29)
Equity Issuance	0.038***	0.023*	0.054***	0.023*	0.046***	0.023*
	(3.27)	(1.68)	(4.60)	(1.74)	(3.74)	(1.82)
Population	0.006	-0.036***	-0.020***	-0.002	-0.030***	0.003
	(1.61)	(-8.67)	(-4.91)	(-0.56)	(-7.15)	(0.83)
Income	0.020	0.160***	0.084***	0.047***	0.131***	0.016
	(1.29)	(9.24)	(5.05)	(2.78)	(7.41)	(0.96)
Constant	-0.660***	-1.764***	-1.094***	-0.641***	-1.132***	-0.735***
	(-3.48)	(-7.51)	(-4.52)	(-2.83)	(-4.60)	(-3.29)
Year Fixed Effect	Yes	Yes	Yes	Yes	Yes	Yes
Industry Fixed Effect	Yes	Yes	Yes	Yes	Yes	Yes
Observations	6027	5050	5620	5444	5113	5814
Adjusted R^2	0.416	0.424	0.424	0.428	0.453	0.396

Notes: This table reports the results of cross-sectional tests. The subsample analysis is based on the mean value of institutional ownership, classified board and E-index. In this table, the values of each variable are the regression coefficients, and the values in parentheses are the t-statistics. All control variables from the baseline model are included. Industry and year fixed effects and standard errors clustered at the firm level are considered. *Institutional Ownership* is measured as the percentage of a firm's institutional shareholdings in year *t*. *Classified Board* is a dummy variable that equals one if a firm has a classified board and zero otherwise. *E-index* is measured within a range from zero to six. Each firm is assigned a score based on the number of provisions they have. All control variables (except for *ACQ*, *Equity Issuance*, *Analyst*, *Horizon* and *Analyst Dispersion*), including our independent variable of interest, are lagged by one period. We winsorize all continuous variables annually at the 1% and 99% percentiles. The definitions of all variables can be found in Appendix A. ***, **, and * suggest statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 9 Firm value analysis

	(1) Firm Value Q Narrow MEF	(2) Firm Value Q High Leverag e	(3) Firm Value Q Low Cash	(4) Firm Value Q High Dividen d Payout	(5) Firm Value Q High LIFO reserve	(6) Firm Value Q Acquisiti on announc ed	(7) Firm Value Q All
PRECISION_SP_narrow ×Corruption_high	0.077*						0.072*
	(1.70)						(1.66)
Leverage_high × Corruption_high		-0.020					-0.028
		(-0.32)					(-0.46)
Cash _low × Corruption_high			-0.083				-0.051
			(-1.06)				(-0.69)
Dividend Payout Ratio_high ×Corruption_high				-0.0504			-0.014
				(-0.83)			(-0.23)
LIFO Reserve_high ×Corruption_high					-0.151**		-0.104
					(-2.18)		(-1.59)
Acquisition × Corruption_high						0.101*	0.093
						(1.69)	(1.53)
Corruption_high	-0.011	0.049	0.097	0.0551	0.069	-0.032	0.005
	(-0.27)	(0.95)	(1.21)	(1.08)	(1.58)	(-0.54)	(0.06)
PRECISION_SP_narrow	0.061**						0.058**
	(2.09)						(2.00)
Leverage_high		0.051					0.050
		(0.79)					(0.81)
Cash_low			-0.074				-0.068
			(-1.07)				(-1.00)
Dividend Payout Ratio_high				-0.162**			-0.169**
				(-2.44)			(-2.48)
LIFO Reserve_high					-0.077		-0.064
					(-0.88)		(-0.69)
Acquisition						-0.071*	-0.059
						(-1.68)	(-1.38)
Other controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed Effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm Fixed Effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	10556	10556	10556	10556	10556	10556	10556
Adjusted R^2	0.771	0.770	0.770	0.772	0770	0.770	0.774

Notes: These tables present the results of firm value analysis. Column (1) reports the results based on our MEF shielding strategy. Column (2) – (6) reports the results based on other shielding strategies suggested by previous literature. Column (7) reports the results based on all of these shielding strategies. Firm and year fixed effects and standard errors clustered at the firm level are considered. All independent variables are lagged by one period. We winsorize all continuous variables annually at the 1% and 99% percentiles. The definitions of all variables can be found in Appendix A. ***, **, and * suggest statistical significance at the 1%, 5%, and 10% levels, respectively.

Appendix A Variable Definitions

Variable Name	Predicted Sign	Motivation and Definition
Dependent variables: Management earnings forecast		
$PRECISION\_SP$	na	The difference between the upper bound and lower bound of the MEF, scaled by the stock price in year $t-1$, multiplied by -1, then multiplied it by 100. 0 for point estimate.
$PRECISION\_BVA$	na	The difference between the upper bound and lower bound of the MEF, scaled by total assets per share in year $t-1$, multiplied by -1, then multiplied it by 100.0 for point estimate.
$PRECISION\_MP$	na	The difference between the upper bound and lower bound of the MEF, scaled by forecast midpoint, multiplied by -1, then multiplied it by 100.0 for point estimate.
Main independent variable		
$Corruption$	+	The annual number of corruption convictions at the district level scaled by US Census Bureau population data.
Alternate proxies for corruption		
$Avg. Corruption$	+	Average value of corruption over the preceding five years.
$Anti - Ethical\ Score$	+	This is based on a total of 22 criteria covering five different areas (conflict of interests, financial disclosure, lobbyist regulations, gifts & honoraria, and legislative staff ethics). The data for the Anti-Ethical Oversight Score was hand-collected from state legislature data provided by the National Conference of State Legislatures for the period September 14, 2018 and September 25, 2018. We either assign a score of 1 for a criterion for a state if it is not supportive of ethical behaviour or a score of 0 if it is supportive. We then cumulate the scores for the 22 criteria for each state. The final score can range from 0 to 22, with 22 being the worst possible ethical oversight score and thus an easier environment for corruption.
$Corruption\ (State)$	+	State-level corruption convictions divided by state population.
$Corruption\ (Rank4, Rank3\ and\ Rank2)$	+	This measure is somewhat similar to the perception-based measure used by Boylan and Long (2003). Following Hossain et al. (2021), the data is downloaded from https://fivethirtyeight.com/features/ranking-the-states-from-most-to-least-corrupt/. This source uses four indicators, which are (a). corruption convictions, (b). convictions per capita, (c). reporter rating and (d). lack of stringent law. Then it ranks each state based on each of the indicators with the #1 rank being the most corrupt state and #50 being the least corrupt state. The overall score is the sum of the four rankings. For example, if a state is ranked #1 (most corrupted) in all 4 indicators, then it will

		have a score of 4. Potentially, the combined score could range from 4 to 200. We then rank the states from 1 to 50 with 1 being the least corrupt (highest overall score) and 50 being the most corrupt (lowest overall score). Rank 4 is the version that uses all four indicators mentioned above (a-d); Rank 3 uses only one of the two conviction indicators (b-d); and Rank 2 uses just the two non-conviction-based indicators (c and d). All measures are scaled by 100 for ease of interpretation.
High Corruption	+	A dummy variable that equals one if the corruption level is in the top quartile of the sample, and zero otherwise.
State Integrity Investigation	+	This measure is based on the report of the 2015 State Integrity Investigation conducted by the Centre of Public Integrity to rank each state's transparency, accountability, and the anti-corruption mechanisms. Higher rank corresponds to higher corruption. For example, rank #1 means the least corrupt state and rank #50 means the most corrupt state. Then it is scaled by 100 for ease of interpretation. We obtain the data from www.stateintegrity.org.
Controls used in baseline model		
Accruals	− Huang et al. (2022)	It is one of the indicators used to control for firms' past accruals. Firms disclose less precise forecasts when facing higher accruals. Thus, we expect that *Accruals* is associated with a wider *PREICIOSN_SP*. This variable is measured as the difference between income before extraordinary items and operating cash flows in year t, which is then divided by total assets in year $t-1$.
ACQ	+ Huang et al. (2022)	It is used to control for managerial incentives, as Hribar and Yang (2016) claim that managers have more motivation to offer MEFs during acquisition processes. Firms with higher *ACQ* are more likely to disclose narrower MEF ranges than other firms. Thus, we expect a positive relation between *ACQ* and *PREICIOSN_SP*. This variable is measured as a dummy variable that equals one if a firm's acquisition cost is greater than 5% of its total assets in year t and zero otherwise.
Analyst	+ Cheng et al. (2013)	It is used to control for information availability. A firm increases its forecast precision when there are a large number of analysts following the firm. Thus, we expect a positive relation between *Analyst* and *PREICIOSN_SP*. This variable is measured as natural logarithm of the number of analysts following a firm within 90 days of each MEF for year t.
Analyst Dispersion	− Huang et al. (2022)	It is used to control for firm uncertainty. Including this control in our baseline models can help us explain the movement in MEF ranges that cannot be captured by firm fundamentals. Analyst forecasts tend to be more dispersed and MEFs are inclined to be wider if firms have volatile earnings. Thus, we expect that *Analyst Dispersion* is associated with a wider *PREICIOSN_SP*. This variable is measured as the standard deviation of the latest analyst earnings forecasts for each analyst within 90 days of each

		MEF in year t, divided by stock price in year $t-1$.
$Board\ Independence$	$-$ Ajinkya et al. (2005) and Karamanou and Vafeas's (2005)	It is used to capture the quality of a firm's internal governance mechanism. Firms with more independent directors tend to have more accurate and less optimistic MEFs. Thus, we expect a negative relation between *Board Independence* and *PREICIOSN_SP*. This variable is measured as the percentage of independent directors of a firm in year t.
$Earnings\ Change$	+ Huang et al. (2022)	It is used to control for the effect of firm profitability. Firms increase their forecast precision when facing a greater change in earnings. Thus, we expect a positive association between *Earnings Change* and *PREICIOSN_SP*. This variable is measured as the difference between earnings before extraordinary items in year t and year $t-1$, scaled by the market value of equity in year t.
$Earnings\ Volatility$	$-$ Cheng et al. (2013)	It represents the volatility of firm fundamentals directly. Firms with higher earnings volatility tend to use wider forecast ranges to reduce the probability of actual earnings falling outside the MEF range. Thus, we expect a negative association between *Earnings Volatility* and *PREICIOSN_SP*. This variable is measured as the standard deviation of change in earnings divided by total assets over the past 12 years, including year t.
$Equity\ Issuance$	+ Huang et al. (2022)	It is an indicator used to control for managerial incentives to issue MEFs during a firm's financing processes. Similar to the *ACQ* variable, we also expect a positive relation between *Equity Issuance* and *PREICIOSN_SP*. This variable is measured as a dummy variable that equals one if a firm's net share issuance is greater than 5% of total assets in year t and zero otherwise.
$Firm\ Size$	+ Gong et al. (2011)	It is one of the most commonly used variables, and it can capture firms' specific attributes. Larger firms tend to disclose optimistic MEFs. Thus, we expect a positive relation between *Firm Size* and *PREICIOSN_SP*. This variable is measured as natural logarithm of a firm's total assets in year t.
$Horizon$	$-$ Bamber and Cheon (1998)	It is used to control for information availability when a firm issues an MEF. A longer forecast horizon will lead to a less specific forecast, demonstrating the greater uncertainty associated with having a longer horizon. Thus, we expect a negative relation between *Horizon* and *PREICIOSN_SP*. This variable is measured as the difference between the management guidance date and the fiscal year end date.
HHI	$-$ Bamber and Cheon (1998)	It is used to capture for proprietary costs to control for industry competition. Bamber and Cheon (1998) surmise that the properties of MEFs are affected by proprietary information costs. Firms with higher proprietary costs are unlikely to disclose specific MEFs. We expect a negative relation between *HHI* and *PREICIOSN_SP*. This variable is measured as the Herfindahl-Hirschman index on sales revenue constructed based on 4-digit SIC codes.
$Income$	na	It is used to control for regional effect. This variable is measured as county-level per capita income in year t.
$Loss\ (Dummy)$	$-$	It is another measure for capturing the volatility or

	Cheng et al. (2013)	uncertainty of firm fundamentals. Loss is negatively related to MEF precision. Thus, we expect a negative relation between *Loss (Dummy)* and *PREICIOSN_SP*. This variable is measured as a dummy variable that equals one if a firm has negative earnings in year *t* and zero otherwise.
$Litigation\ Risk$	+ Huang et al. (2022)	It is a measure of a firm's risk. Firms increase forecast precision when litigation risk is high. Thus, we expect a positive relation between *Litigation Risk* and *PREICIOSN_SP*. This variable is measured as a dummy variable that equals one for industries with high litigation risk, including biotech (SIC 2833-2836), computer hardware (SIC 3570-3577), electronics (SIC 3600-3674), retailing (SIC 5200-5961), and computer software (SIC 7371-7379), and equals zero otherwise.
MB	+ Cheng et al. (2021)	It is used to capture the investors' confidence in a firm's ability to generate profit. *MB* is associated with a narrower MEF range. Thus, we expect that there is a positive relation between *MB* and *PREICIOSN_SP*. This variable is measured as the market-to-book ratio, measured as the market value of equity scaled by the book value of equity in year t.
$Population$	na	It is used to control for regional effect. This variable is measured as county-level population in year t.
ROA	+ Huang et al. (2022)	It is one of the measures used to control for the influence of firm performance. A higher *ROA* will result in a narrower forecast range. Thus, we expect that there is a positive relation between *ROA* and *PREICIOSN_SP*. This variable is measured as income before extraordinary items scaled by total assets in year t.
Variables used in other tests		
$Acquisition$		A dummy variable that equals one if a firm issues at least one acquisition announcement in year *t* and zero otherwise.
$Auditor$		A dummy variable that equals one if the audit firm is one of the Big 4, and zero otherwise.
$Beta$		It is the market model beta, estimated using daily returns over the past one year.
$Cash$		Cash and cash equivalents divided by book assets.
$Capital\ Expenditure$		Ratio of capital expenditure to total assets.
$Classified\ Board$		A dummy variable that equals one if a firm has a staggered board and equals zero otherwise.
$Dividend\ Payout\ Ratio$		Ratio of cash dividend to market value.
$Expense$		Sales-related expenses divided by total sales.
$E-index$		Based on six provisions, which are staggered board, limitation on amending bylaws, limitation on amending the charter, supermajority to approve a merger, golden parachute and poison pill. Each firm is assigned a score from zero to six based on the number of provisions that it has.
$Equitycomp$		Option grants and restricted stock scaled by total compensation (in dollars) in year t.
$Financial\ Distress$		Modified Altman-Z measured as 3.3*(EBIT/at) + 1*(sale/at) + 1.2*(act/at) + 1.4*(re/at).
$Firm\ Value\ Q$		Based on Peter and Taylor's total Q.
$Geo. Concentration$		Percentage of a firm's operations that are mainly in the state where its headquarters are located.
$Incorporation$		A dummy variable that equals one if the firm is

	incorporated in the State of Delaware and zero otherwise.
$Institutional\ Ownership$	Percentage of institutional ownership for a firm in year t.
$Inside\_own$	Percentage of a firm's managerial ownership in year *t*.
$LIFO\ Reserve$	LIFO reserve (the difference between LIFO and FIFO carrying value) divided by lagged total assets.
$LnAnalyst$	Natural logarithm of the number of analysts following the firms in year t.
$Leverage$	Long-term debt plus debt in current liabilities and then divided by total assets.
$MEF\ Issuance$	A dummy variable equals one if a firm issue at least one MEF in year t and zero otherwise.
$Managerial\ Ability\ Score$	Managerial ability based on the measure in Demerjian et al. (2009).
Out	Measured as a dummy variable that takes a value of one if actual earnings are above the upper bound of the MEF interval and zero otherwise.
$Out\ High$	A dummy variable that takes a value of one if actual earnings are greater than the upper bound of the MEF and zero if actual earnings are smaller than the lower bound of the MEF conditional on those actual earnings falling outside the range forecast.
$R\&D$	Research and development expenses scaled by total sales.
$Social\ Capital$	A social capital index based on the measure in Rupasingha et al. (2006).
$Tangibility$	Ratio of tangible assets divided by total assets.
$Unemployment\ Rate$	County-level unemployment rate in year *t*.
Instrumental Variables	
$Corruption\ (Industry\ Avg.)$	Average corruption rate of a firm's 2-SIC industry, excluding the firm (there are at least four firms in each industry).
$Corruption\ (Neighboring\ States)$	Average corruption of bordering states. For example, the bordering states for California are Oregon, Nevada and Arizona.
$State\ Constitution\ Age$	The age of a state constitution as measured in 1970 scaled by 1000.

Notes: This tables only summarizes the motivations and predicted signs of control variables used in our baseline model.

Online Appendies

Summary Table

This summary table provides an overview of what is included in each of the following table and which sections they are discussed in the main text.

Table Number	Table topic	In-text reference
Table OA.1	State-by-state corruption contribution	Section 5.3 and section 6.5.1
Table OA.2	Variance Inflation Factors (VIFs) for the baseline model	Section 4.1
Table OA.3	Oster (2019) test of omitted variable bias	Section 5.1
Table OA.4	Covariate balancing based on PSM	Section 5.2
Table OA.5	The results of covariates before and after weighting based on entropy balancing	Section 5.2
Table OA.6	Quasi-natural experiment using an exogenous shock	Section 5.4
Table OA.7	Cross-sectional analysis based on the mean value of LIFO reserve and the indicator variable of corporate acquisition	Section 6.2
Table OA.8	The results of additional control variables	Section 6.4
Table OA.9	The results after excluding observations based on different situations	Section 6.5.1
Table OA.10	Sensitivity analysis for MEF precision and the MEF disclosure model	Section 6.5.2
Table OA.11	Alternative measures of political corruption	Section 6.5.3
Table OA.12	Alternate model specifications	Section 6.5.4
Table OA.13	Lagged specification using 2,3,4 years for political corruption	Section 6.5.5

Table OA.1

State-by-state political corruption distribution

State name (Abbreviation)	State	N	Mean	Median	S.D.
AL	1	9	0.383	0.393	0.136
AZ	4	103	0.392	0.300	0.198
AR	5	73	0.375	0.354	0.229
CA	6	1577	0.187	0.187	0.037
CO	8	73	0.087	0.057	0.080
CT	9	378	0.201	0.167	0.182
DE	10	4	0.830	0.830	0.000
DC	11	5	0.830	0.830	0.000
FL	12	436	0.334	0.322	0.081
GA	13	347	0.351	0.336	0.145
ID	16	17	0.294	0.216	0.167
IL	17	403	0.337	0.319	0.112
IN	18	274	0.243	0.223	0.105
IA	19	116	0.165	0.130	0.101
KS	20	44	0.095	0.069	0.073
KY	21	139	0.620	0.660	0.198
LA	22	67	0.781	0.830	0.113
ME	23	52	0.200	0.189	0.112
MD	24	172	0.472	0.441	0.210
MA	25	833	0.310	0.287	0.083
MI	26	435	0.223	0.239	0.065
MN	27	607	0.105	0.111	0.060
MS	28	3	0.215	0.172	0.075
MO	29	167	0.289	0.296	0.100
NE	31	58	0.179	0.161	0.107
NV	32	17	0.162	0.218	0.089
NH	33	15	0.041	0.000	0.057
NJ	34	819	0.418	0.369	0.133
NY	36	244	0.257	0.242	0.082
NC	37	350	0.175	0.183	0.071
OH	39	802	0.324	0.321	0.138
OK	40	27	0.536	0.568	0.108
OR	41	116	0.091	0.077	0.079
PA	42	579	0.386	0.368	0.098
RI	44	84	0.287	0.190	0.235
SC	45	107	0.104	0.105	0.072
TN	47	315	0.415	0.352	0.130
TX	48	685	0.349	0.331	0.111
UT	49	28	0.140	0.149	0.097
VA	51	16	0.773	0.779	0.047
WA	53	277	0.119	0.103	0.070
WI	55	260	0.191	0.175	0.064

Notes: This table presents the state-by-state corruption distribution based on our sample observations. State represents each state's FIPS code. The table shows that California (CA), Massachusetts (MA) and New Jersey (NJ) have the first (1577), second (833), and third (819) largest samples, respectively. On average, we find that District of Columbia (DC), Louisiana (LA) and Delaware (DE) were the most corrupt states during the sample period, while New Hampshire (NH), Colorado (CO) and Oregon (OR) were the least corrupt states.

Table OA.2

Variance Inflation Factors (VIFs) for the baseline model

Variable	**VIFs**
Corruption	1.16
Firm Size	2.25
MB	1.37
ROA	2.25
Earnings Change	1.36
Accruals	1.62
Earnings Volatility	1.47
Loss (Dummy)	1.72
Litigation Risk	4.19
HHI	1.61
ACQ	1.11
Horizon	1.02
Board Independence	1.56
Analyst	1.78
Analyst Dispersion	1.25
Equity Issuance	1.13
Population	1.45
Income	1.88
AVERAGE	1.68

Notes: This table presents the variance inflation factors (VIFs) for our baseline model. Since all VIFs are below the conventional standard of either five or ten, the multicollinearity issue is unlikely to be a concern.

Table OA.3

Oster (2019) test of omitted variable bias

Assume δ =1 and $R_{MAX} = \min(2.2\tilde{R},1)$						
Variable of Interest	Controlled		Uncontrolled		Identified set	Includes Zero?
	β	R^2	β	R^2		
Corruption	0.085	0.399	0.000	0.000	(0.085,0.187)	No
Assume δ =1 and $R_{MAX} = 1$						
Variable of Interest	Controlled		Uncontrolled		Identified set	Includes Zero?
	β	R^2	β	R^2		
Corruption	0.085	0.399	0.000	0.000	(0.085,0.213)	No

Notes: This table presents the results based on the Oster (2019) test. We set $R_{MAX} = \min(2.2\tilde{R},1)$ and $R_{MAX} = 1$ separately based on the reasons mentioned in Mian and Sufi (2014) and Oster (2019). Our dependent variable is *PRECISION_SP*, and the independent variable of interest is *Corruption*. All control variables from the baseline model are included.

Table OA.4

Covariate balancing based on PSM

Covariates	Treatment Group	Control Group	t-stat for difference
Firm Size	8.073	8.103	0.581
MB	3.766	3.567	-1.152
ROA	0.070	0.070	-0.078
Earnings Change	0.003	0.004	0.237
Accruals	-0.054	-0.053	0.288
Earnings Volatility	0.051	0.050	-0.231
Loss (Dummy)	0.066	0.068	0.219
Litigation Risk	0.285	0.290	0.317
HHI	0.250	0.243	-1.142
ACQ	0.207	0.218	0.675
Horizon	178.488	179.183	0.171
Board Independence	0.791	0.790	-0.223
Analyst	2.054	2.093	1.492
Analyst Dispersion	0.002	0.002	-0.640
Equity Issuance	0.079	0.089	1.020
Population	13.563	13.548	-0.418
Income	10.768	10.761	-0.695

Notes: We use the mean value of corruption to divide our sample into two subsamples. The group with a high corruption value is defined as the treatment group, and the group with a low corruption value is defined as the control group. We calculate the propensity score by using a logit model. We include all control variables from the baseline model as covariates. Then, we match observations from the treatment group with observations from the control group based on their four nearest neighbours with common support. We winsorize all continuous variables annually at the 1% and 99% percentiles. The definitions of all variables can be found in Appendix A. ***, **, and * suggest statistical significance at the 1%, 5%, and 10% levels, respectively.

Table OA.5
The results of covariates before and after weighting based on EBA

Before weighting

Panel A	Treatment			Control		
Variable	**Mean**	**Variance**	**Skewness**	**Mean**	**Variance**	**Skewness**
Firm Size	8.072	1.733	0.048	8.172	2.036	0.252
MB	3.765	20.210	5.548	4.161	27.070	5.031
ROA	0.070	0.003	-0.526	0.070	0.003	-0.186
Earnings Change	0.003	0.003	-0.526	0.001	0.002	-1.613
Accruals	-0.054	0.003	-0.577	-0.054	0.003	-0.394
Earnings Volatility	0.051	0.003	2.197	0.052	0.002	1.919
Loss (Dummy)	0.067	0.062	3.476	0.061	0.058	3.655
Litigation Risk	0.285	0.204	0.954	0.367	0.232	0.554
HHI	0.250	0.025	1.722	0.245	0.021	1.148
ACQ	0.207	0.164	1.444	0.215	0.169	1.139
Horizon	178.400	10747.000	0.686	180.600	10709.000	0.704
Board Independence	0.792	0.013	-0.963	0.791	0.014	-1.097
Analyst	2.054	0.439	-0.289	2.137	0.478	-0.361
Analyst Dispersion	0.002	0.000	3.351	0.002	0.000	3.372
Equity Issuance	0.078	0.072	3.135	0.097	0.088	2.725
Population	13.560	0.822	0.034	13.620	1.141	-0.266
Income	10.770	0.071	0.134	10.810	0.089	0.410

After weighting

Panel B	Treatment			Control		
Variable	**Mean**	**Variance**	**Skewness**	**Mean**	**Variance**	**Skewness**
Firm Size	8.072	1.733	0.048	8.072	1.733	0.048
MB	3.765	20.210	5.548	3.765	20.210	5.548
ROA	0.070	0.003	-0.526	0.070	0.003	-0.526
Earnings Change	0.003	0.002	-1.365	0.003	0.002	-1.365
Accruals	-0.054	0.003	-0.577	-0.054	0.003	-0.577
Earnings Volatility	0.051	0.003	2.197	0.051	0.003	2.197
Loss (Dummy)	0.067	0.062	3.476	0.067	0.062	3.476
Litigation Risk	0.285	0.204	0.954	0.285	0.204	0.954
HHI	0.250	0.025	1.722	0.250	0.025	1.722
ACQ	0.207	0.164	1.444	0.207	0.164	1.444
Horizon	178.400	10747.000	0.686	178.400	10747.000	0.686
Board Independence	0.792	0.013	-0.963	0.792	0.013	-0.963
Analyst	2.054	0.439	-0.289	2.054	0.439	-0.289
Analyst Dispersion	0.002	0.000	3.351	0.002	0.000	3.351
Equity Issuance	0.078	0.072	3.315	0.078	0.072	3.315
Population	13.560	0.822	0.034	13.560	0.822	0.034
Income	10.770	0.071	0.134	10.770	0.071	0.135

Notes: We use the mean value of corruption to divide our sample into two subsample groups. The treatment group includes those with high observed corruption values, and the control group includes those with low observed corruption values. All control variables from the baseline model are included. We winsorize all continuous variables at the 1% and 99% percentiles. The definitions of variables are offered in Appendix A.

Table OA.6

Quasi-natural experiment using an exogenous shock

	(1) PRECISION_SP	(2) PRECISION_SP
Corruption	0.065	0.097
	(0.73)	(1.26)
Low Financial Distress	0.229**	0.082
	(2.57)	(1.00)
Corruption * *Low Financial Distress*	-0.421**	-0.268*
	(-2.22)	(-1.73)
Corruption *POST SHOCK	-0.198**	-0.210**
	(-2.07)	(-2.53)
POST SHOCK* *Low Financial Distress*	-0.333***	-0.234**
	(-2.79)	(-2.60)
Corruption *POST SHOCK* *Low Financial Distress*	0.689**	0.475**
	(2.61)	(2.07)
Firm Size		0.025**
		(2.23)
MB		-0.001
		(-1.01)
ROA		1.364**
		(2.02)
Earnings Change		0.685
		(1.20)
Earnings Volatility		-0.735
		(-1.49)
Accruals		0.319
		(0.65)
Loss (Dummy)		0.000
		(0.00)
Litigation Risk		-0.004
		(-0.05)
HHI		0.036
		(1.04)
ACQ		0.034
		(0.26)
Horizon		-0.001***
		(-7.10)
Board Independence		0.120
		(0.97)
Analyst		0.005***
		(2.64)
Analyst Dispersion		-30.320***
		(-4.48)
Equity Issuance		-0.030
		(-0.62)
Population		-0.018
		(-1.24)
Income		0.099
		(1.35)
Constant	-0.348***	-1.460**
	(-11.55)	(-1.99)
Year Fixed Effect	Yes	Yes
Industry Fixed Effect	Yes	Yes
Observations	897	897
Adjusted R^2	0.388	0.564

Notes: This table presents the results based on the exogenous shock of the Financial Crisis 2008-09. In this table, the values of each variable are the regression coefficients, and the values in parentheses are the t-statistics. *POST SHOCK* (a dummy variable) is one if this is POST SHOCK period (2010) and equals zero if this is PRE SHOCK period (2007).

Low Financial Distress is a dummy variable that take the value of one if *Financial Distress* of a firm is above the sample mean and zero otherwise. Our variable of interest is *Corruption*POST SHOCK* Low Financial Distress*. All control variables from the baseline model are included. Industry and year fixed effects and standard errors clustered at the firm level are considered. All control variables (except for *ACQ*, *Equity Issuance*, *Analyst*, *Horizon* and *Analyst Dispersion*) are lagged by one period. The final sample includes 897 effective forecast-year observations. We winsorize all continuous variables annually at the 1% and 99% percentiles. The definitions of all variables can be found in Appendix A. ***, **, and * suggest statistical significance at the 1%, 5%, and 10% levels, respectively.

Table OA.7
Cross-sectional test analysis (2)

	(1) PRECISION_SP High LIFO reserve	(2) PRECISION_SP Low LIFO reserve	(3) PRECISION_SP Acquisition announced	(4) PRECISION_SP No acquisition announced
Corruption	-0.000	0.116***	0.072***	0.105***
	(-0.01)	(8.47)	(5.15)	(4.77)
Chow test statistics	4.72**		0.48	
(Chow test *p* value)	(0.030)		(0.490)	
Firm Size	0.026***	0.023***	0.008***	0.042***
	(3.43)	(8.07)	(2.69)	(7.85)
MB	0.002***	0.005***	0.004***	0.002**
	(2.68)	(6.44)	(5.33)	(2.09)
ROA	1.527***	0.850***	0.739***	1.176***
	(8.35)	(11.37)	(9.12)	(10.09)
Earnings Change	-0.676***	0.291***	0.114	0.203*
	(-4.44)	(4.20)	(1.47)	(1.90)
Earnings Volatility	-1.032***	-0.280***	-0.185***	-0.695***
	(-4.99)	(-4.45)	(-2.73)	(-6.30)
Accruals	-0.353**	-0.285***	-0.316***	-0.103
	(-2.21)	(-4.52)	(-4.45)	(-1.02)
Loss (Dummy)	-0.073**	-0.122***	-0.083***	-0.141***
	(-2.48)	(-8.69)	(-5.34)	(-6.56)
Litigation Risk	0.066	0.008	0.011	0.110***
	(1.42)	(0.75)	(0.93)	(5.14)
HHI	0.070	-0.022	-0.063***	0.084**
	(1.42)	(-0.97)	(-2.80)	(2.19)
ACQ	0.034**	0.024***	0.008	0.056***
	(2.41)	(3.63)	(1.17)	(4.16)
Horizon	-0.001***	-0.001***	-0.001***	-0.001***
	(-15.69)	(-25.22)	(-24.96)	(-17.21)
Board Independence	0.076	0.103***	0.134***	0.002
	(1.19)	(3.65)	(4.45)	(0.05)
Analyst	0.006***	0.003***	0.004***	0.002**
	(4.12)	(5.98)	(6.77)	(2.15)
Analyst Dispersion	-31.235***	-27.243***	-26.313***	-33.232***
	(-13.77)	(-26.29)	(-23.98)	(-19.26)
Equity Issuance	0.036	0.037***	0.022**	0.067***
	(1.53)	(3.93)	(2.26)	(3.76)
Population	-0.053***	-0.007**	-0.011***	-0.000
	(-6.80)	(-2.24)	(-3.25)	(-0.09)
Income	0.258***	0.036***	0.088***	0.007
	(8.07)	(2.88)	(6.97)	(0.29)
Constant	19.639***	8.180***	5.371**	15.823***
	(3.98)	(3.12)	(2.05)	(3.52)
Year Fixed Effect	Yes	Yes	Yes	Yes
Industry Fixed Effect	Yes	Yes	Yes	Yes
Observations	2064	9069	7566	3567
Adjusted R^2	0.464	0.400	0.394	0.463

Notes: This table reports the results of cross-sectional tests. The subsample analysis is based on the mean value of LIFO reserve and acquisition. In this table, the values of each variable are the regression coefficients, and the values in parentheses are the t-statistics. All control variables from the baseline model are included. Industry and year fixed effects and standard errors clustered at the firm level are considered. *LIFO Reserve* is measured as the ratio of LIFO reserve divided by lagged total assets. *Acquisition* is measured as a dummy variable that equals one if a firm issues at least one acquisition announcement in year *t* and zero otherwise. All control variables (except for *ACQ*, *Equity Issuance*, *Analyst*, *Horizon* and *Analyst Dispersion*), including our independent variable of interest, are lagged by one period. We winsorize all continuous variables annually at the 1% and 99% percentiles. The definitions of all variables can be found in Appendix A. ***, **, and * suggest statistical significance at the 1%, 5%, and 10% levels, respectively.

Table OA.8

The results of additional control variables

	(1) PRECISION_SP	(2) PRECISION_SP	(3) PRECISION_SP	(4) PRECISION_SP	(5) PRECISION_SP	(6) PRECISION_SP	(7) PRECISION_SP	(8) PRECISION_SP
Corruption	0.083***	0.086***	0.086***	0.087***	0.074**	0.082***	0.084***	0.072**
	(2.92)	(3.01)	(3.00)	(3.02)	(2.58)	(2.77)	(2.96)	(2.25)
Auditor	-0.027							-0.016
	(-1.10)							(-0.51)
Equitycomp		-0.085**						-0.107**
		(-2.14)						(-2.44)
Inside_own			-0.184					-0.243
			(-0.96)					(-1.25)
R&D				0.087				0.013
				(0.56)				(0.06)
Managerial Ability Score					0.046			0.085
					(0.86)			(1.27)
Social Capital						-15.605***		-19.457***
						(-4.14)		(-3.71)
Unemployment Rate							-1.026*	-1.032
							(-1.68)	(-1.55)
Firm Size	0.021***	0.020***	0.019***	0.020***	0.018**	0.019**	0.021***	0.014*
	(2.89)	(2.84)	(2.70)	(2.83)	(2.45)	(2.41)	(2.93)	(1.69)
MB	0.003***	0.003***	0.004**	0.003**	0.004**	0.008***	0.003**	0.008**
	(2.62)	(2.61)	(2.58)	(2.58)	(2.39)	(2.86)	(2.48)	(2.41)
ROA	0.894***	0.887***	0.888***	0.893***	0.847***	0.989***	0.906***	0.941***
	(4.49)	(4.36)	(4.38)	(4.45)	(3.71)	(4.13)	(4.56)	(3.54)
Earnings Change	0.136	0.129	0.133	0.138	0.066	0.063	0.144	-0.064
	(0.68)	(0.65)	(0.67)	(0.69)	(0.28)	(0.30)	(0.72)	(-0.28)
Earnings Volatility	-0.327**	-0.320**	-0.330**	-0.354**	-0.409***	-0.466***	-0.308*	-0.543***
	(-2.07)	(-2.01)	(-2.08)	(-2.24)	(-2.64)	(-2.77)	(-1.94)	(-3.11)
Accruals	-0.259*	-0.251*	-0.262*	-0.252*	-0.244*	-0.223	-0.249*	-0.136
	(-1.85)	(-1.77)	(-1.88)	(-1.74)	(-1.68)	(-1.48)	(-1.77)	(-0.83)
Loss (Dummy)	-0.112***	-0.112***	-0.114***	-0.113***	-0.124***	-0.085**	-0.109***	-0.085**
	(-3.04)	(-3.04)	(-3.10)	(-3.13)	(-3.11)	(-2.16)	(-2.97)	(-2.02)
Litigation Risk	0.029	0.030	0.031	0.020	0.022	0.030	0.024	0.016
	(0.78)	(0.82)	(0.83)	(0.53)	(0.51)	(0.72)	(0.66)	(0.36)
HHI	-0.032	-0.035	-0.027	-0.028	-0.044	0.003	-0.033	-0.014
	(-0.56)	(-0.62)	(-0.48)	(-0.50)	(-0.70)	(0.05)	(-0.58)	(-0.22)
ACQ	0.025***	0.024***	0.024***	0.025***	0.030***	0.017*	0.025***	0.018
	(2.79)	(2.68)	(2.68)	(2.75)	(2.93)	(1.75)	(2.78)	(1.56)
Horizon	-0.001***	-0.001***	-0.001***	-0.001***	-0.001***	-0.001***	-0.001***	-0.001***
	(-14.19)	(-14.27)	(-14.23)	(-14.19)	(-13.17)	(-14.27)	(-14.24)	(-13.43)
Board Independence	0.074	0.073	0.063	0.076	0.077	0.090	0.079	0.090
	(0.93)	(0.91)	(0.79)	(0.95)	(0.97)	(1.06)	(0.99)	(1.07)
Analyst	0.031***	0.032***	0.030***	0.030***	0.032***	0.030***	0.031***	0.033***
	(3.64)	(3.73)	(3.54)	(3.68)	(3.56)	(3.11)	(3.74)	(3.31)
Analyst Dispersion	-28.734***	-28.698***	-28.662***	-29.070***	-27.428***	-26.996***	-29.022***	-26.055***
	(-8.62)	(-8.71)	(-8.70)	(-8.71)	(-7.56)	(-8.92)	(-8.72)	(-8.00)
Equity Issuance	0.036**	0.035**	0.036***	0.035**	0.041**	0.033**	0.035**	0.039**
	(2.58)	(2.57)	(2.70)	(2.57)	(2.50)	(2.06)	(2.58)	(2.27)
Population	-0.010	-0.010	-0.009	-0.010	-0.009	-0.013	-0.007	-0.009
	(-1.32)	(-1.30)	(-1.17)	(-1.30)	(-1.12)	(-1.61)	(-0.84)	(-1.07)
Income	0.072**	0.073**	0.070**	0.069**	0.085**	0.092**	0.047	0.076*
	(2.13)	(2.16)	(2.08)	(2.07)	(2.47)	(2.59)	(1.25)	(1.82)
Constant	-1.034***	-1.006***	-1.033***	-1.025***	-1.186***	-7.389***	-0.758**	-8.562***
	(-3.29)	(-3.18)	(-3.29)	(-3.31)	(-3.67)	(-4.53)	(-2.01)	(-3.86)
Year Fixed Effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Industry Fixed Effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	11133	11114	11117	11133	8874	9153	11133	7355
Adjusted R^2	0.399	0.400	0.399	0.399	0.406	0.398	0.400	0.409

Notes: This table presents the results of additional control variables. The limited sample sizes are due to missing observations and the availability of data on social capital. Rupasingha et al. (2006) offer social capital data only until 2014. Industry and year fixed effects and standard errors clustered at the firm level are considered. All control variables (except for *ACQ*, *Equity Issuance*, *Analyst*, *Horizon* and *Analyst Dispersion*), including our independent variable of interest, are lagged by one period. We winsorize all continuous variables annually at the 1% and 99% percentiles. The definitions of all variables can be found in Appendix 1. ***, **, and * suggest statistical significance at the 1%, 5%, and 10% levels, respectively.

Table OA.9

The results after excluding some observations based on different situations

	(1) PRECISION_SP Excluding Industries	(2) PRECISION_SP Excluding states	(3) PRECISION_SP Excluding 2008–09 financial crisis	(4) PRECISION_SP Dropped if horizon > 365	(5) PRECISION_SP Dropped if forecasts are point estimates	(6) PRECISION_SP Headquarter locations never changed after 1982
Corruption	0.083**	0.072**	0.084***	0.085***	0.082***	0.144**
	(2.52)	(2.42)	(2.91)	(2.98)	(2.96)	(3.04)
Firm Size	0.026**	0.014*	0.020***	0.022***	0.015**	0.098***
	(2.56)	(1.82)	(2.98)	(3.11)	(2.15)	(4.69)
MB	0.003**	0.005***	0.003***	0.003**	0.005***	0.006
	(2.02)	(2.88)	(2.70)	(2.30)	(3.05)	(1.55)
ROA	1.098***	0.814***	0.858***	0.936***	0.844***	-0.139
	(4.39)	(3.53)	(4.62)	(4.57)	(4.26)	(-0.27)
Earnings Change	0.269	0.087	0.113	0.113	0.218	-0.372
	(1.05)	(0.36)	(0.57)	(0.57)	(1.18)	(-0.49)
Earnings Volatility	-0.451*	-0.496**	-0.384**	-0.264*	-0.404**	7.949**
	(-1.82)	(-2.20)	(-2.49)	(-1.72)	(-2.54)	(2.87)
Accruals	-0.243	-0.155	-0.298**	-0.250*	-0.172	-1.025**
	(-1.51)	(-1.02)	(-2.03)	(-1.76)	(-1.28)	(-2.36)
Loss (Dummy)	-0.102**	-0.104**	-0.122***	-0.112***	-0.104***	0.195**
	(-2.08)	(-2.27)	(-3.15)	(-3.09)	(-2.82)	(2.73)
Litigation Risk	-0.017	0.029	0.022	0.024	0.038	-0.165
	(-0.18)	(0.65)	(0.68)	(0.65)	(1.00)	(-0.97)
HHI	-0.092	-0.067	-0.080	-0.029	0.026	-0.244
	(-1.38)	(-1.08)	(-1.51)	(-0.50)	(0.46)	(-0.69)
ACQ	0.027**	0.018*	0.026***	0.025***	0.028***	-0.018
	(2.14)	(1.82)	(2.75)	(2.86)	(2.97)	(-0.68)
Horizon	-0.001***	-0.001***	-0.001***	-0.001***	-0.001***	-0.000**
	(-13.01)	(-12.13)	(-12.87)	(-16.98)	(-15.63)	(-2.78)
Board Independence	0.126	0.073	0.067	0.083	0.125	0.217**
	(1.24)	(0.76)	(0.87)	(1.07)	(1.57)	(2.56)
Analyst	0.034***	0.039***	0.023***	0.034***	0.030***	-0.020
	(3.07)	(4.23)	(2.99)	(4.00)	(3.38)	(-1.09)
Analyst Dispersion	-32.481***	-31.995***	-28.320***	-28.103***	-38.818***	-7.283*
	(-7.22)	(-7.22)	(-7.98)	(-8.81)	(-10.79)	(-1.87)
Equity Issuance	0.053**	0.050***	0.022	0.035**	0.018	0.043
	(2.56)	(3.24)	(1.61)	(2.52)	(1.34)	(1.19)
Population	-0.000	-0.006	-0.008	-0.008	-0.011	-0.063
	(-0.03)	(-0.64)	(-1.11)	(-1.09)	(-1.41)	(-1.13)
Income	0.075*	0.061	0.072**	0.070**	0.062*	-0.211
	(1.73)	(1.54)	(2.09)	(2.07)	(1.68)	(-1.12)
Constant	-1.206***	-0.920**	-1.018***	-1.041***	-0.948***	2.165
	(-3.00)	(-2.53)	(-3.17)	(-3.34)	(-2.70)	(0.98)
Year Fixed Effect	Yes	Yes	Yes	Yes	Yes	Yes
Industry Fixed Effect	Yes	Yes	Yes	Yes	Yes	Yes
Observations	7279	7904	9940	10542	9954	371
Adjusted R^2	0.399	0.406	0.409	0.415	0.482	0.655

Notes: These tables present the results of the sensitivity analysis. Column (1) reports the results obtained by dropping the three states that have the highest observations. Column (2) reports the results obtained by dropping the three largest industries. Column (3) reports the results obtained by dropping 2008–09 (financial crisis). Column (4) reports the results obtained by dropping if horizons > 365. Column (5) reports the results obtained by dropping those point forecasts. Column (6) reports the results based on those firms that never changed their headquarter locations after 1982. Industry and year fixed effects and standard errors clustered at the firm level are considered. All control variables (except for *ACQ*, *Equity Issuance*, *Analyst*, *Horizon* and *Analyst Dispersion*), including our independent variable of interest, are lagged by one period. We winsorize all continuous variables annually at the 1% and 99% percentiles. The definitions of all variables can be found in Appendix A. ***, **, and * suggest statistical significance at the 1%, 5%, and 10% levels, respectively.

Table OA.10

Sensitivity analysis for MEF precision and the MEF disclosure model

	(1) PRECISION_MP	(2) PRECISION_BVA	(3) MEF Issuance
Corruption	1.668***	0.127***	0.210*
	(3.17)	(3.72)	(1.72)
Firm Size	0.864***	0.081***	0.081**
	(6.38)	(7.99)	(2.14)
MB	0.025	-0.003	0.028**
	(1.38)	(-1.12)	(2.57)
ROA	18.104***	-1.410***	-0.651
	(5.63)	(-4.84)	(-1.18)
Earnings Change	2.726	0.280*	0.112
	(0.78)	(1.73)	(0.70)
Earnings Volatility	-6.398*	-0.655***	-2.620***
	(-1.84)	(-2.88)	(-5.26)
Accruals	-8.054***	0.081	0.490
	(-3.17)	(0.38)	(1.21)
Loss (Dummy)	-2.626***	-0.145***	-0.411***
	(-3.54)	(-4.28)	(-5.55)
Litigation Risk	-0.688	-0.063*	0.216
	(-0.78)	(-1.66)	(1.63)
HHI	-1.820	-0.036	0.681**
	(-1.47)	(-0.55)	(2.45)
ACQ	0.232	0.017	0.269***
	(1.25)	(1.12)	(5.59)
Horizon	-0.010***	-0.001***	
	(-13.21)	(-14.41)	
Board Independent	1.537	0.064	1.202***
	(1.08)	(0.69)	(4.50)
Analyst	0.095	-0.027**	
	(0.57)	(-2.57)	
LnAnalyst			0.159***
			(2.65)
Analyst Dispersion	-444.508***	-12.730***	
	(-7.28)	(-4.83)	
Equity Issuance	0.270	-0.030	-0.115*
	(0.74)	(-1.03)	(-1.87)
Population	-0.190	-0.011	-0.040
	(-1.37)	(-1.09)	(-1.08)
Income	0.200	-0.016	-0.128
	(0.31)	(-0.36)	(-0.76)
Constant	-12.093**	-0.596	-1.246
	(-2.03)	(-1.46)	(-0.66)
Year Fixed Effect	Yes	Yes	Yes
Industry Fixed Effect	Yes	Yes	Yes
Observations	11124	11133	8963
Adjusted R^2 (or PseudoR^2)	0.337	0.336	0.186

Notes: This table reports the results of the sensitivity tests. In this table, the values of each variable are the regression coefficients, and the values in parentheses are the t-statistics. All control variables from the baseline model are included (except for column (3)). *PRECISION_MP* is defined as the forecast range scaled by the forecast midpoint. *PRECISION_BVA* is measured as the forecast range scaled by lagged assets per share. *MEF Issuance* is defined as a dummy variable that equals one if a firm issues an MEF and zero otherwise. Industry and year fixed effects and standard errors clustered at the firm level are considered. All control variables (except for *ACQ*, *Equity Issuance*, *Analyst*, *Horizon* and *Analyst Dispersion*), including our independent variable of interest, are lagged by one period. We winsorize all continuous variables annually at the 1% and 99% percentiles. The definitions of all variables can be found in Appendix A. ***, **, and * suggest statistical significance at the 1%, 5%, and 10% levels, respectively.

Table OA.11
Alternative measures of political corruption

	(1) PRECISION_SP	(2) PRECISION_SP	(3) PRECISION_SP	(4) PRECISION_SP	(5) PRECISION_SP	(6) PRECISION_SP	(7) PRECISION_SP	(8) PRECISION_SP
Corruption (State)	0.074**							
	(2.01)							
High Corruption		0.030**						
		(2.26)						
Avg. Corruption			0.117***					
			(2.90)					
Corruption (Rank4)				0.119**				
				(2.21)				
Corruption (Rank3)					0.114**			
					(2.15)			
Corruption (Rank2)						0.100*		
						(1.86)		
State Integrity Investigation							0.097*	
							(1.95)	
Anti_Ethical Score								0.005**
								(2.01)
Firm Size	0.020***	0.020***	0.021***	0.019***	0.020***	0.020***	0.021***	0.020***
	(2.74)	(2.85)	(2.77)	(2.77)	(2.77)	(2.80)	(2.97)	(2.77)
MB	0.003**	0.003**	0.003**	0.003***	0.003***	0.003***	0.003**	0.003***
	(2.59)	(2.53)	(2.21)	(2.68)	(2.73)	(2.64)	(2.55)	(2.67)
ROA	0.896***	0.893***	0.816***	0.881***	0.882***	0.883***	0.890***	0.885***
	(4.48)	(4.47)	(3.69)	(4.44)	(4.44)	(4.46)	(4.49)	(4.45)
Earnings Change	0.137	0.134	0.123	0.137	0.141	0.143	0.148	0.142
	(0.69)	(0.67)	(0.57)	(0.69)	(0.71)	(0.71)	(0.74)	(0.71)
Earnings Volatility	-0.340**	-0.319**	-0.290*	-0.323**	-0.323**	-0.322**	-0.314*	-0.322**
	(-2.15)	(-1.97)	(-1.77)	(-2.02)	(-2.01)	(-1.99)	(-1.93)	(-2.00)
Accruals	-0.260*	-0.253*	-0.234	-0.250*	-0.255*	-0.252*	-0.250*	-0.255*
	(-1.85)	(-1.80)	(-1.45)	(-1.77)	(-1.81)	(-1.78)	(-1.78)	(-1.79)
Loss (Dummy)	-0.112***	-0.113***	-0.138***	-0.113***	-0.113***	-0.112***	-0.109***	-0.112***
	(-2.98)	(-3.04)	(-3.22)	(-3.01)	(-3.02)	(-2.98)	(-2.96)	(-2.99)
Litigation Risk	0.030	0.030	0.033	0.034	0.034	0.033	0.027	0.034
	(0.81)	(0.80)	(0.88)	(0.92)	(0.91)	(0.89)	(0.69)	(0.92)
HHI	-0.034	-0.033	-0.015	-0.036	-0.034	-0.032	-0.025	-0.035
	(-0.59)	(-0.57)	(-0.26)	(-0.62)	(-0.59)	(-0.55)	(-0.41)	(-0.61)
ACQ	0.026***	0.026***	0.029***	0.025***	0.024***	0.025***	0.026***	0.025***
	(2.83)	(2.81)	(2.94)	(2.72)	(2.67)	(2.74)	(2.81)	(2.72)
Horizon	-0.001***	-0.001***	-0.001***	-0.001***	-0.001***	-0.001***	-0.001***	-0.001***
	(-14.19)	(-14.20)	(-14.21)	(-14.19)	(-14.21)	(-14.24)	(-14.35)	(-14.19)
Board Independence	0.078	0.073	0.050	0.085	0.086	0.087	0.074	0.084
	(0.97)	(0.91)	(0.61)	(1.06)	(1.06)	(1.07)	(0.92)	(1.05)
Analyst	0.031***	0.031***	0.034***	0.031***	0.032***	0.031***	0.029***	0.031***
	(3.60)	(3.59)	(3.85)	(3.64)	(3.67)	(3.66)	(3.39)	(3.64)
Analyst Dispersion	-28.853***	-28.842***	-29.421***	-28.688***	-28.687***	-28.702***	-28.677***	-28.730***
	(-8.60)	(-8.64)	(-8.49)	(-8.59)	(-8.61)	(-8.63)	(-8.57)	(-8.57)
Equity Issuance	0.034**	0.035**	0.038**	0.035**	0.035**	0.035**	0.036***	0.035**
	(2.50)	(2.56)	(2.40)	(2.54)	(2.58)	(2.56)	(2.61)	(2.53)
Population	-0.009	-0.009	-0.007	-0.010	-0.008	-0.009	-0.007	-0.010
	(-1.22)	(-1.20)	(-0.86)	(-1.34)	(-1.08)	(-1.22)	(-0.82)	(-1.32)
Income	0.069**	0.067*	0.071**	0.076**	0.078**	0.081**	0.076**	0.074**
	(2.02)	(1.96)	(2.09)	(2.22)	(2.34)	(2.45)	(2.28)	(2.19)
Constant	-0.996***	-0.997***	-1.153***	-1.096***	-1.143***	-1.143***	-1.132***	-1.091***
	(-3.18)	(-3.19)	(-3.68)	(-3.45)	(-3.65)	(-3.68)	(-3.56)	(-3.45)
Year Fixed Effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Industry Fixed Effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	11133	11133	9906	11126	11126	11126	11126	11116
Adjusted R^2	0.397	0.397	0.414	0.398	0.397	0.397	0.397	0.397

Notes: This table reports the results of alternative measures of corruption. In this table, the values of each variable are the regression coefficients, and the values in parentheses are the t-statistics. *Corruption (State)* is defined as the ratio of state corruption scaled by state population. *High Corruption* is a dummy variable that equals one if the corruption level is in the top quartile of the sample and zero otherwise. *Avg. Corruption* is measured as the average value of corruption over the last five years. *Corruption (Rank 4, Rank 3 and Rank 2)* are the measures that are somewhat similar to the perception-based measure used by Boylan and Long (2003). *State Integrity Investigation* is a measure obtained from the outcome of 2015 State Integrity Investigation. *Anti-Ethical Score* is based on a total of 22 criteria covering five different areas. All control variables (except for *ACQ*, *Equity Issuance*, *Analyst*, *Horizon* and *Analyst Dispersion*), including our independent variable of interest, are lagged by one period. We winsorize all continuous variables annually at the 1% and 99% percentiles. The definitions of all variables can be found in Appendix A. ***, **, and * suggest statistical significance at the 1%, 5%, and 10% levels, respectively.

Table OA.12
Alternate model specifications

	(1) PRECISION_SP Industry by year fixed effect	(2) PRECISION_SP Firm-year observations	(3) PRECISION_SP Fixed effects	(4) PRECISION_SP Fama-Macbeth model	(5) PRECISION_SP Generalized Linear model	(6) PRECISION_SP Lagged dependent variable
Corruption	0.072**	0.068***	0.044*	0.066***	0.096***	0.045**
	(2.46)	(3.21)	(1.87)	(11.56)	(3.09)	(2.45)
Firm Size	0.022***	0.022***	0.012	0.018***	0.019**	0.011***
	(3.07)	(3.70)	(0.66)	(12.63)	(2.20)	(2.62)
MB	0.002*	0.002*	0.006***	0.003***	0.004**	0.002*
	(1.68)	(1.74)	(3.71)	(5.89)	(2.28)	(1.75)
ROA	1.068***	0.711***	0.502***	0.686***	0.807***	0.283**
	(5.30)	(4.04)	(2.66)	(13.61)	(3.25)	(2.08)
Earnings Change	-0.065	0.094	0.203	-0.030	0.656	0.361*
	(-0.34)	(0.55)	(1.26)	(-0.39)	(1.39)	(1.90)
Earnings Volatility	-0.335**	-0.102	-0.118	-0.213**	-0.177	-0.144
	(-2.32)	(-0.86)	(-0.39)	(-2.78)	(-0.74)	(-1.55)
Accruals	-0.205	-0.128	0.041	-0.069	-0.265	-0.263**
	(-1.28)	(-1.10)	(0.33)	(-1.71)	(-1.55)	(-2.23)
Loss (Dummy)	-0.114***	-0.076**	-0.045	-0.070**	-0.154***	-0.070**
	(-3.29)	(-2.57)	(-1.42)	(-2.93)	(-3.17)	(-2.24)
Litigation Risk	0.037	0.004	-0.062	0.027**	0.022	0.003
	(0.96)	(0.15)	(-0.98)	(2.52)	(0.51)	(0.22)
HHI	-0.008	-0.031	-0.085	-0.023	-0.053	-0.005
	(-0.12)	(-0.78)	(-1.56)	(-0.30)	(-0.79)	(-0.17)
ACQ	0.026***	0.014*	0.011	0.008	0.034***	0.009
	(2.68)	(1.65)	(1.50)	(1.24)	(2.99)	(1.08)
Horizon	-0.001***	-0.001***	-0.001***	-0.001***	-0.001***	-0.001***
	(-14.22)	(-5.80)	(-6.25)	(-10.03)	(-12.81)	(-5.78)
Board Independence	0.066	-0.067	-0.088	-0.015	0.080	-0.020
	(0.77)	(-1.33)	(-1.48)	(-0.70)	(0.96)	(-0.47)
Analyst	0.032***	0.025***	-0.007	0.028***	0.031***	0.004
	(3.88)	(2.94)	(-0.93)	(6.85)	(3.30)	(0.57)
Analyst Dispersion	-25.551***	-17.087***	-14.754***	-18.342***	-41.555***	-13.333***
	(-8.46)	(-5.76)	(-5.06)	(-10.20)	(-4.58)	(-4.83)
Equity Issuance	0.040**	0.018	0.011	0.019	0.037**	0.033**
	(2.52)	(1.33)	(0.78)	(1.41)	(2.30)	(2.40)
Population	-0.011	-0.000	-0.014	0.003	-0.003	-0.002
	(-1.48)	(-0.05)	(-0.89)	(0.47)	(-0.32)	(-0.50)
Income	0.073**	0.033	-0.015	0.033***	0.034	0.007
	(2.16)	(1.22)	(-0.35)	(4.62)	(0.70)	(0.32)
Lagged PRECISION_SP						0.420***
						(10.29)
Constant	-1.117***	-0.718***	0.217	Omitted	-0.691	-0.232
	(-3.47)	(-2.80)	(0.48)	Omitted	(-1.56)	(-1.05)
Year Fixed Effect	No	Yes	No	Yes	Yes	Yes
Industry Fixed Effect	No	Yes	No	Yes	Yes	Yes
Industry-year Fixed Effects	Yes	No	No	No	No	No
Observations	11133	2949	2949	2949	11133	2286
Adjusted R^2	0.476	0.344	0.187	0.103	None	0.495

Notes: This table reports the results of alternate model specifications. The values of each variable are the regression coefficients, and the values in parentheses are the t-statistics. Industry and year fixed effects as well as standard errors clustered at the firm level are considered. All control variables (except for *ACQ*, *Equity Issuance*, *Analyst*, *Horizon* and *Analyst Dispersion*), including our independent variable of interest, are lagged by one period. We winsorize all continuous variables annually at the 1% and 99% percentiles. The definitions of all variables can be found in Appendix A. ***, **, and * suggest statistical significance at the 1%, 5%, and 10% levels, respectively.

Table OA.13

Lagged specification using 2, 3, 4 years for political corruption

	(1) PRECISION_SP Lagged 2	(2) PRECISION_SP Lagged 3	(3) PRECISION_SP Lagged 4
Corruption	0.086***	0.070**	0.055**
	(3.02)	(2.50)	(2.00)
Firm Size	0.021***	0.020***	0.020***
	(2.92)	(2.70)	(2.71)
MB	0.003***	0.004**	0.004**
	(2.61)	(2.51)	(2.32)
ROA	0.891***	0.861***	0.836***
	(4.48)	(4.14)	(3.94)
Earnings Change	0.129	0.159	0.146
	(0.65)	(0.77)	(0.70)
Earnings Volatility	-0.308*	-0.316**	-0.327**
	(-1.95)	(-1.97)	(-1.99)
Accruals	-0.269*	-0.238	-0.245
	(-1.91)	(-1.63)	(-1.61)
Loss (Dummy)	-0.115***	-0.121***	-0.130***
	(-3.13)	(-3.12)	(-3.06)
Litigation Risk	0.029	0.030	0.032
	(0.79)	(0.79)	(0.87)
HHI	-0.028	-0.026	-0.016
	(-0.50)	(-0.46)	(-0.28)
ACQ	0.026***	0.028***	0.029***
	(2.90)	(3.07)	(3.05)
Horizon	-0.001***	-0.001***	-0.001***
	(-14.07)	(-14.11)	(-14.11)
Board Independence	0.063	0.044	0.053
	(0.79)	(0.54)	(0.62)
Analyst	0.030***	0.031***	0.031***
	(3.58)	(3.61)	(3.67)
Analyst Dispersion	-28.815***	-28.912***	-29.063***
	(-8.66)	(-8.53)	(-8.32)
Equity Issuance	0.035**	0.037***	0.041***
	(2.55)	(2.60)	(2.79)
Population	-0.010	-0.009	-0.007
	(-1.25)	(-1.14)	(-0.93)
Income	0.073**	0.071**	0.066*
	(2.16)	(2.09)	(1.96)
Constant	-1.105***	-1.126***	-1.062***
	(-3.51)	(-3.59)	(-3.39)
Year Fixed Effect	Yes	Yes	Yes
Industry Fixed Effect	Yes	Yes	Yes
Observations	11116	10803	10412
Adjusted R^2	0.399	0.402	0.404

Notes: This table presents the results of the lagged specification using 2, 3, and 4 years for political corruption. Column (1) reports the results by lagging 2 years. Column (2) reports the results by lagging 3 years. Column (3) reports the results by lagging 4 years. Industry and year fixed effects and standard errors clustered at the firm level are considered. All control variables (except for *ACQ*, *Equity Issuance*, *Analyst*, *Horizon* and *Analyst Dispersion*) are lagged by one period. We winsorize all continuous variables annually at the 1% and 99% percentiles. The definitions of all variables can be found in Appendix A. ***, **, and * suggest statistical significance at the 1%, 5%, and 10% levels, respectively.