The use of management forecasts to dampen analysts' expectations by Chinese listed firms

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ABSTRACT

This paper studies the use of management earnings forecasts (MEF) to dampen analysts' expectations, i.e. expectation management, by Chinese listed companies. We reveal several important findings: Firstly, information asymmetry is positively associated with the use of MEF to dampen analysts' expectations. State control has been found to moderate this relationship. Secondly, dampening analysts' expectations using MEF leads to negative stock return reactions and downward analysts' forecast revisions. Thirdly, the effectiveness of "pre-empting bad news through MEF" appears mixed and dependent on the information content of MEF and measures of actual earnings surprises. Finally, firms that disclose MEF are found to engage in more earnings management to meet the forecasts than firms that do not.

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1. Introduction

The Chinese stock market is characterized with strong government influences, weak corporate governance, and high information asymmetry. The recent decade has seen consistent regulatory reforms in this market aimed at enhancing market efficiency and improving minority investor protection. For instance, a non-tradable shares reform took place in 2005 and transformed non-tradable shares in the form of state shares and legal person shares into tradable shares (Liao, Liu, & Wang, 2014). In addition to that, the stock exchanges in Shanghai and Shenzhen have imposed more stringent disclosure requirements on information disclosures aimed at improving corporate governance (Huang, 2015). This paper examines the nature of management earnings forecasts (MEF, or earnings guidance) and the consequences of MEF disclosures by Chinese listed companies. The disclosures of MEF by Chinese listed companies (also referred to as "performance pre-announcements" in Chinese) are currently governed by listing requirements in Shanghai and Shenzhen exchanges. Unlike the US market where MEF disclosure is voluntary, MEF disclosure in China is mandatory if firms expect their annual, or interim, or third quarter net profit will be any of the three cases: (1) negative; (2) change by more than 50% compared to the same period of the previous financial year; and

(3) positive after previous loss or losses. Although these mandatory disclosure rules were instituted since 2000, and modified in 2004 and 2006, they are hardly enforced due to difficulties in detection of violations and selective punishment by regulators (Song & Ji, 2012). Furthermore, firms retain some control over the content of earnings information that is disclosed. For instance, about 60% of the listed companies have issued MEF during 2005–2013 by stating the categories of forecasted earnings, among which only about half issued range or point forecasts of earnings.[1]

The literature on MEF of US firms has mainly focused on the motivations for and the consequences of MEF disclosures under its voluntary disclosures regime. Extant studies indicate that voluntarily disclosure of management earnings forecasts by listed firms reduces information asymmetry, lowers bid-ask spread, and decreases cost of capital (Coller & Yohn, 1997; Diamond & Verrecchia, 1991; Easly & O'Hara, 2004; McNichols, 1989). Moreover, there has been an increasing tendency of firms using MEF to dampen analysts' expectations towards achievable targets and pre-empt the effects of bad earnings news (Ajinkya & Gift, 1984; Anilowski, Feng, & Skinner, 2007; Baik & Jiang, 2006; Bartov, Givoly, & Hayn, 2002; Cotter, Tuna, & Wysocki, 2006; Kross, Ro, & Suk, 2011; Matsumoto, 2002; Skinner, 1994).[2] Such activities are often referred to as "expectation management" (Cotter et al.,

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[1] See Section 3 for these categories.
[2] Alternatively, information asymmetry may decrease if managers have less pressure to manage reported earnings to meet guidance numbers (Hu, Hwang, & Jiang, 2014).

2006). This strand of literature has mainly focused on the US stock market and very limited attention has been paid to the emerging markets where disclosure requirements are less stringent and corporate governance is weaker. Nevertheless, these markets provide ideal testing ground for empirical studies on MEF disclosures due to relatively higher information asymmetry and stronger managerial and controlling shareholder incentives to manipulate investor expectations under weaker institutional environment. A recent study by Huang, Li, Tse, and Tucker (2013) reviews the MEF disclosure rules in China and suggests that voluntary MEF have better quality than mandatory MEF and government state-owned enterprises are reluctant to provide MEF voluntarily. Although this pioneering study provides an empirical analysis of the special regulatory environment in China compared to the US, the associations among firms' information environment, analysts' forecasts, and the nature of MEF are unclear. Moreover, the stock market consequences of using MEF to dampen analysts' forecasts in the Chinese stock market remain unexplored.

Our paper therefore contributes to the existing literature by extending prior studies dominated by evidence from the US market to China, the world's largest emerging market. We show that the institutional environment and corporate governance structure in this transition economy affect firm disclosure incentives and the nature of MEF. To our knowledge, this paper is among the first studies that comprehensively examines the use of MEF for expectation management in an emerging market. Our findings are as follows: First, information asymmetry is positively associated with the use of MEF to dampen analysts' expectations and state control moderates this relationship. Second, dampening analysts' expectations using MEF leads to negative stock return reactions and downward analysts' forecast revisions. Third, the effectiveness of "pre-empting bad news through MEF" appears mixed and dependent on the information content of MEF and measures of actual earnings surprises. Finally, firms that disclose MEF engage in more earnings management to meet the forecasts than firms that do not.

The remainder of the paper is structured as follows: Section 2 discusses China's institutional background and develops our hypotheses. Section 3 outlines the data and variable measurement. Section 4 provides analysis and discusses the results. Section 5 concludes.

2. Institutional background and hypotheses development

The stock exchanges in China were established in Shanghai and Shenzhen in the early 1990s to provide a vehicle for share issue privatization of China's state-owned enterprises (SOEs). The Chinese government kept dominant equity stakes in the listed firms after their privatizations, in the form of state shares and legal person shares which are non-tradable, to retain its control (Wei, Xie, & Zhang, 2005; Sun & Tong, 2003). The dominance of non-tradable shares in listed firms' ownership structure hindered the proper functioning of the stock market and corporate governance (Firth, Lin, & Zou, 2010; Liao et al., 2014). Although the Chinese government implemented a Split Share Structure Reform in 2005 which has significantly reduced the percentages of non-tradable shares over the past decade, controls of more than half of the listed companies in China are still in the hands of the government today. State association has been criticized for reducing operational efficiency (Liao et al., 2014), and controlling shareholder tunneling (Jiang, Lee, & Yue, 2010; Huang, 2015; Huyghebaert & Wang, 2012; Liu & Tian, 2012; Qian & Yeung, 2015; Zhang, Gao, Guan, & Jiang, 2014). Moreover, La Porta, Lopez-De-Silanes, and Shleifer (1999), Claessens, Djankov, Fan, and Lang (2002), and Lins (2003) illustrate that listed companies in the emerging markets around the world are often closely held by large and dominating shareholders. Ownership concentration is prevalent among Chinese firms. For instance, top 10 block-shareholders often collectively represent more than half of the total equity interests in listed firms. Shleifer and Vishny (1997) suggest that large shareholders who gain effective control of the firms often have incentives to pursue their own interests which are often different

from the interests of minority shareholders. In this case, concentrated ownership does not improve incentive alignment and instead leads to exacerbated tunneling (Johnson, La Porta, Lopez-de-Silanes, & Shleifer, 2000). In addition to that, the controlling shareholders often have excess control rights beyond their cashflow/ownership rights that can facilitate expropriations of minority interests (Claessens et al., 2002; Liu & Tian, 2012). These features give strong structural power to the large shareholders of Chinese firms in determining corporate policies including information disclosures often at the cost of minority shareholders. For instance, Tan, Zhu, Zeng, and Gao (2014) suggest that Chinese non-state-owned enterprises (non-SOEs) face stronger external finance pressure than state-owned enterprises (SOEs) and document that such pressure affects corporate disclosures.

There are two channels through which China's institutional environment may influence MEF disclosures and the consequences of MEF disclosures. First, information asymmetry. Prior literature on the US firms generally document reduced information asymmetry for firms' disclose MEF (Coller & Yohn, 1997; Diamond & Verrecchia, 1991; Easly & O'Hara, 2004; McNichols, 1989). Information asymmetry problems are likely to be associated with state ownership as governments try to conceal the politically motivated diversion of corporate resources in order to pursue non-value-maximizing goals such as maximizing employment and wages, promoting regional development, and providing cheaper goods and services (Chaney, Faccio, & Parsley, 2011). In addition, earlier international studies such as Ali and Hwang (2000) and Ball, Kothari, and Robin (2000) on the value relevance of accounting information argue that the role of accounting information is more limited in environments that are characterized by low investor protection and more concentrated ownership structure. Empirical evidence on the Chinese stock market also supports these arguments. For instance, Gul, Kim, and Qiu (2010) document less share price informativeness among Chinese firms with a higher degree of ownership concentration or state ownership. Kuo, Ning, and Song (2014) find that the quality of accounting information in Chinese market has not improved after the Split Share Structure Reform because ownership concentration remains high. Haß, Vergauwe, and Zhang (2014) and Huang and Wright (2015) suggest that the quality of analysts' earnings forecasts reflects the quality of corporate governance and information environment of Chinese firms and illustrate that analysts' forecasts are poorer and more upward biased for state associated firms. Firms characterized with weak corporate governance and high information asymmetry may be incentivized to increase information disclosure to avoid adverse selection by investors (Charoenwong, Ding, & Siraprapasiri, 2011) and reduce the cost of capital (Easly & O'Hara, 2004; Zhang & Ding, 2006). In particular, when firms disclose MEF, the nature of the MEF may be associated with the quality of analysts' forecasts due to the negative association between government control and analysts' forecast quality (Haß et al., 2014; Huang & Wright, 2015).

Second, incentives of beating market expectation. The literature on the US market suggests that beating analysts' expectations leads to positive excess returns during post-earnings announcement periods (see Adut, Duru, & Galpin, 2011; Bartov et al., 2002; Kross et al., 2011 for reviews of this literature). Moshirian, Ng, and Wu (2009) analyze a sample of 13 emerging countries including China over the decade from 1996 to 2005 and find that investors can act on the valuable information provided by stock analysts to make abnormal gains in emerging markets. In a related study on Chinese firms, Truong (2011) also documents that trading on earnings surprises, defined relative to analysts' forecasts, is profitable in China. Hence, Chinese firms may be incentivized to dampen analysts' expectations using MEF as firms in the US (Ajinkya & Gift, 1984; Anilowski et al., 2007; Baik & Jiang, 2006; Bartov et al., 2002; Cotter et al., 2006; Kross et al., 2011; Matsumoto, 2002; Skinner, 1994). Consequently, such activities may lead to negative stock reactions and analysts' forecast revisions. However, the incentives to dampen analysts' expectations may differ between government-controlled firms and private-controlled firms. This argument is also grounded in

the literature on earnings management in China. Prior studies such as Liu and Lu (2007), Wang and Yung (2011), Kuo et al. (2014), and Hou, Jin, Yang, Yuan, and Zhang (2015) on earnings management indicate state-controlled Chinese firms engage in less earnings management. Tan et al. (2014) further document that earnings manipulations are more pronounced among Chinese non-SOEs with weaker political connections. A general implication from these studies is that state-controlled firms and non-SOEs with stronger political connections care less about beating analysts' earnings expectations due to holdings of non-tradable shares, pursuit of objectives other than value maximization, and weaker external financing pressure. In this view, one may expect that state-controlled firms are less likely to adopt expectation management as well. Alternatively, considering information disclosure is generally welcomed by the market (Zhang & Ding, 2006) and earnings management reduces quality of financial reporting (Anagnostopoulou & Tsekrekos, 2015; Dechow & Dichev, 2002), it is also possible that state-controlled firms use expectation management as a substitute for earnings management. In this case, state association may lead to more expectations management.[3] In conclusion, it is unclear if expectation management is complementary or substitutional to earnings management. The above argument leads to the following hypotheses:

H1. Information asymmetry is positively related to the use of MEF to dampen analysts' forecasts and government control moderates this relationship.

H2. The use of MEF to dampen analysts' forecasts leads to negative stock return reactions and downward analysts' forecast revisions.

The aforementioned institutional environment in China can also affect the stock market consequences of MEF. According to Anagnostopoulou and Tsekrekos (2015), information risk has a significant impact on implied volatility behavior around earnings announcements. Pre-empting of bad earnings news may lead to negative excess returns upon MEF disclosures but reduced negative shocks around actual earnings announcements (Anilowski et al., 2007; Baik & Jiang, 2006; Cotter et al., 2006). If investors do not perceive MEF to be equally credible among different types of Chinese issuing firms with various corporate governance and ownership features, market response to MEF disclosures may also differ. In addition, as the information content contained in MEF also varies across firm-year observations, for instance firms may disclose range or point forecasts along with expected earnings categories, market reaction at the time of the MEF disclosure as well as upon actual earnings announcements may also differ subject to the type of information announced in MEF. To test these likely effects, we conjecture:

H3. MEF disclosure reduces stock return shocks responding to actual earnings announcements.

Last but not the least, disclosure firms' behavior may also be affected by firm ownership and control features. Controlling shareholders of listed companies often have incentives to conceal information and manipulate earnings in order to facilitate tunneling (Jiang et al., 2010; Huang, 2015; Hou et al., 2015; Liu & Lu, 2007; Wang & Yung, 2011). For similar reasons mentioned earlier regarding the potential substitutional or complementary relationship between expectation management and earnings management in China, the type of control and firm political connections may also influence firm engagement of earnings management should it disclose MEF as they are under pressure to meet the guided earnings targets (Hirst, Koonce, & Venkataraman, 2007; Hu et al., 2014; Tan et al., 2014). The above discussions lead to the following hypotheses:

H4. MEF disclosure increases firm engagement in earnings management.

3. Sample and variables

3.1. Sample

We collect MEF and analyst consensus earnings forecasts from WIND. Our sample covers years 2005–2013 as earnings forecasts by either managers or analysts prior to this period are mostly unavailable. Financial years in China are calendar years for all listed firms. China Securities Regulatory Commission (CSRC) regulations require listed firms to publish annual reports before the end of April whereas the stock exchanges require mandatory disclosures of MEF before the end of January. Due to the limited analyst coverage and MEF data for Chinese firms, we follow Truong (2011), Haß et al. (2014), and Huang and Wright (2015) by focusing on forecasts of annual earnings instead of quarterly earnings. The majority of the annual MEF announcements are made in January, and the majority of actual earnings announcements are made in March and April. We exclude firms in the financial industry due to different natures of assets, liabilities, and earnings. Other financial report information and data on corporate governance measures are obtained from China Stock Market and Accounting Research (CSMAR) database. Our sample consists of 2339 firms and 14,617 firm-year observations. On average, around one-third of the sample are covered by analysts each year and 62% of the sample issued MEF categories and among these issuing firm-years only about half provided range or point earnings forecasts. We calculate $MEFCAR(-2,2)$ (and $EACAR(-2,2)$) as the compounded cumulative excess return against the Shanghai Composite Stock Index for firm i during the 5-day window around its MEF (and earnings) announcement date.

3.2. The nature of MEF and earnings surprise

Under mandatory disclosures, firms announce that they expect earnings to fall into one of the following categories: large increase, large decrease, first time loss, continued loss, and turning profit. Under voluntary disclosures, firms announce that they expect earnings to fall into one of the following categories: small increase, small decrease, and continued profit. About 2/3 of the MEF disclosed are mandatory over the 2005–2013 period (see Huang et al., 2013 for an analysis on mandatory vs. voluntary MEF in China). Corresponding to these standard categories, we define the nature of MEF disclosed using five variables as follows:

1. *MEF issuance* is a dummy variable which equals to 1 if MEF was issued for the firm-year observation, or 0 if otherwise.
2. *Bad News MEF* is a dummy variable which equals to 1 if the MEF falls into the following categories: large or small decrease compared to the previous year, first time loss, continued loss. It equals to 0 if MEF falls into other categories.
3. *Below Analyst MEF* is a dummy variable which equals to 1 if the MEF value is less than the median of analysts' forecasts made during the 6-months prior to the MEF announcement date and 0 if it is higher than the median analysts' forecasts.[4]
4. *MEF Surprise Analyst* is the median analysts' forecasts made during the 6 months prior to the MEF announcement date minus the MEF value scaled by the firm's market capitalization.
5. *MEF Range* is the range of MEF, the forecasted high value minus the low value, scaled by the firm's market capitalization.[5]

We also calculate a measure of *Analyst Revision* as the median of analysts' forecasts made between the dates of MEF and earnings announcement minus the one that made during the 6 months prior to

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[3] We also note that Yuan, Zhang, and Zhang (2007) find greater earnings management among Chinese state-controlled listed firms.

[4] The MEF value is calculated as the average of the high and the low forecasts within the forecast range, or equals to the point forecast when the MEF is point forecast and not range forecast (see Hirst, Koonce, & Miller, 1999 for similar measurement).

[5] See Libby, Tan, and Hunton (2006) for discussions on the form (point, narrow range, wide range) of MEF and its effect on analysts' forecasts.

the MEF issuance dates scaled by the firm's market capitalization. In addition, we construct several measures of actual earnings surprise based on the collected MEF values and analysts' forecasts: *Negative Earnings Surprise MEF* is a dummy variable equals to 1 if reported earning is less than MEF value. *Earnings Surprise MEF* is the reported earning minus the MEF value scaled by the firm's market capitalization. *Negative Earnings Surprise Analyst* is a dummy variable equals to 1 if reported earning is less than the median analysts' forecasts made between the dates of MEF issuance and earnings announcement (the revised consensus analyst forecasts). *Earnings Surprise Analyst* is the reported earning minus the median analysts' forecasts value made between the dates of MEF issuance and earnings announcement scaled by the firm's market capitalization. Fig. 1 illustrates the sequence of events in the timeline of earnings forecasts and announcement and how some of the above variables are measured.

Table 1 Panel A summarizes these variables. As shown in the table, the dummy variable *Bad News MEF* has a mean of 0.53 suggesting that management earnings forecasts are on average neutral in comparison with earnings from previous years. However, they tend to be pessimistic compared to recent months' analyst consensus forecasts since the dummy variable *Below Analyst MEF* has a mean of 0.72. This is consistent with the mean value (0.62) of the continuous variable *MEF Surprise Analyst* which gives the size of the negative earnings surprise. We also show that analysts' forecast revisions are on average negative suggesting pessimistic MEF on average dampen analysts' expectations. This preliminary finding is consistent with the statistics on the variables measured upon earnings announcements. In particular, the mean values of the dummy variable *Earnings Surprise MEF* and the continuous variable *Earnings Surprise MEF* are 0.54 and −0.08, respectively. These mean values generally indicate that MEF is on average accurate predictors of actual earnings. Similarly, the mean values of the dummy variable *Negative Earnings Surprise Analyst* and the continuous variable *Earnings Surprise Analyst* are 0.49 and 0.06, respectively. They indicate that the revised analyst consensus expectations prior to the actual earnings announcements are on average precise.

3.3. Measures of information asymmetry

We calculate three proxy variables for information asymmetry based on the quality of pre-MEF analysts' forecasts in line with Haß et al. (2014) and Huang and Wright (2015). First, we collect the consensus analyst forecast for firm i and financial year t prior to the MEF announcement as the median of analysts' earnings forecasts made during the 6 months prior to the MEF announcement date. Based on these median values, we define *Analyst Optimism* as the analysts' median earnings forecast minus the reported earnings for firm i and year t scaled by the firm's market capitalization. We also define *Analyst Error* as the absolute value of analyst optimism. Second, we collect *Analyst*

Dispersion from WIND as the standard deviation of analysts' earnings forecasts made during the 6 months prior to the MEF announcement date scaled by the firm's market capitalization. Scaling these proxy measures by firm market capitalization follows variable measurement by Truong (2011), Haß et al. (2014), and Huang and Wright (2015) and ensures consistent comparisons across the samples. By definition, higher values of these proxy variables indicate higher information asymmetry.

3.4. Corporate governance and financial information

We further calculate a number of variables for this sample based on financial and accounting data from CSMAR as follows: *Log(MC)* is the log of the market capitalization of common equity at the year end, with non-tradable share values equal to book values. *Leverage* is the ratio of book value of debt to the firm's market capitalization. *Growth* is the growth rate of total assets. *Price-to-book* is the price-to-book ratio of tradable A-shares on the MEF announcement date. *No. 1* is the percentage shareholding of the largest shareholder. *Nos. 2–10* is the total percentage shareholding of the top 10 shareholders excluding the largest one. *Government Control* is a dummy variable which equals to 1 if the firm is under control of the Chinese government or government agency, and 0 if under control of a private firm or investor. *Big4 Audit* is a dummy variable for audit quality which equals to 1 if the firm's auditor is one of the "Big 4" accounting firms, and 0 if not. *CEO Duality* is a dummy variable which equals to 1 if the CEO and Chairman are the same person and 0 if they are two persons. *Board Independence* is the percentage of independent directors among all directors. Table 1 Panel B summarizes these variables. All variables are winsorized at 1% and 99% to control for outliers. More detailed descriptions of these variables are provided in Appendix A.

4. Analysis and results

We now turn to the regression analysis to test our hypothesis H1. We predict that higher information asymmetry measured by lower pre-MEF analysts' forecast quality is associated with higher likelihood of dampening analysts' expectations using MEF. This is tested by the regressions in Table 2 following Eq. (1).

$$\text{Prob}(Bad\ News\ MEF_{it})\ \text{or}\ \text{Prob}(Below\ Analyst\ MEF_{it})\ \text{or}\ MEFCAR(-2,2)$$
$$= \alpha + \beta_1 \text{InfAsy}_{it} + \beta_2 \text{InfAsy}_{it} * \text{Gov}_{it} + \lambda \text{Controls}_{it} + \gamma \text{YEAR}_t \quad (1)$$
$$+ \delta \text{IND}_i + \varepsilon_{it}.$$

The dependent variables are as follows: the dummy variable "*Bad News MEF*" defined according to the MEF categories in Probit models 1–3, the dummy variable "*Below Analyst MEF*" defined according to the MEF values and pre-MEF analysts' consensus forecasts in Probit regressions 4–6, and the excess return measure *MEFCAR*(−2,2) in OLS

|---|---|

| Pre-MEF Analyst Forecasts (A1) | MEF | Post-MEF Analyst Forecasts (A2) | Earnings Announcements (EA) |

Analyst Optimism = A1-EA

Analyst Error = |A1-EA|

Below Analyst MEF = 1 if MEF<A1 and 0 if MEF>=A1

MEF Surprise Analyst = A1-MEF

Analyst Revision = A2-A1

Earnings Surprise MEF = EA- MEF

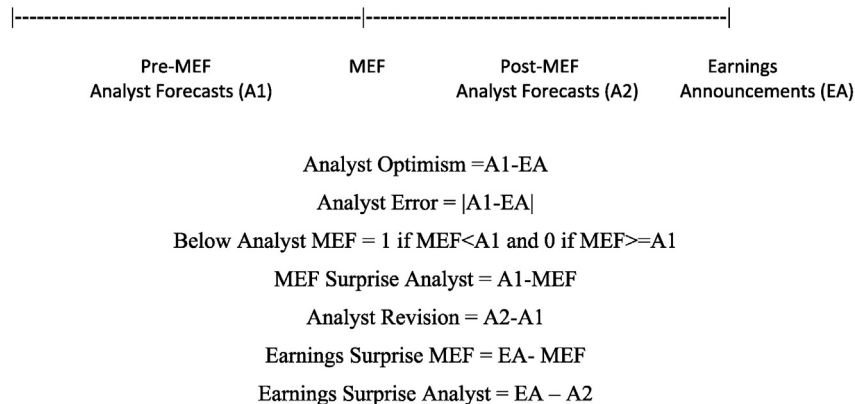Earnings Surprise Analyst = EA − A2

Fig. 1. The sequence of events in the timeline of earnings forecasts and announcements.

Table 1
Descriptive statistics.

Variable	Description	Obs.	Mean	Std. dev.	Min	Max
Panel A: The nature of MEF and earnings surprises						
Bad News MEF	Dummy, defined using MEF categories	9142	0.53	0.50	0.00	1.00
Below Analyst MEF	Dummy, MEF < Pre-MEF Analyst Forecast	2387	0.72	0.45	0.00	1.00
MEF Surprise Analyst	(Pre-MEF Analyst Forecast — MEF) / MC	2404	0.62	1.88	2.36	13.61
MEF Range	(High — Low MEF) / MC	4767	0.53	0.63	0.00	3.70
Analyst Revision	(Post-MEF — Pre-MEF Analyst Forecast) / MC	3249	− 0.18	0.87	− 5.46	1.99
Negative Earnings Surprise MEF	Dummy, Earning < MEF	4708	0.54	0.50	0.00	1.00
Earnings Surprise MEF	(Earning — MEF) / MC	4767	− 0.08	1.14	− 6.53	4.00
Negative Earnings Surprise Analyst	Dummy, Earning < Post-MEF Analyst Forecast	6077	0.49	0.50	0.00	1.00
Earnings Surprise Analyst	(Earning — Post-MEF Analyst Forecast) / MC	6155	0.06	1.52	− 8.44	5.85
Panel B: Summary of other variables						
MEF Issuance	Dummy, MEF issued	14,617	0.62	0.48	0.00	1.00
Analyst Optimism	(Pre-MEF Analyst Forecast — Earning) / MC	9553	1.19	2.08	− 1.72	13.68
Analyst Error	|Analyst Optimism|	9553	1.33	2.02	0.01	13.81
Analyst Dispersion	(High — Low Pre-MEF Analyst Forecast) / MC	7689	0.59	0.70	0.02	4.32
Log(MC)	Log of market capitalization	14,617	21.98	1.05	19.52	25.59
Leverage	Market value financial leverage	14,617	0.58	0.77	0.01	5.49
Growth	Growth rate of assets	14,617	20.83	35.77	− 31.06	153.56
Price-to-book	The price-to-book ratio	14,617	4.15	4.68	0.66	37.37
No. 1	Largest shareholder % holding	14,617	37.11	15.30	2.20	75.05
Nos. 2–10	No. 2 to No. 10 shareholders total % holding	14,617	20.68	13.71	0.45	54.96
Government Control	Dummy, government control	14,617	0.50	0.50	0.00	1.00
Big 4 Auditor	Dummy, Big 4 auditor	14,617	0.06	0.23	0.00	1.00
CEO Duality	Dummy, CEO duality	14,617	0.80	0.40	0.00	1.00
Board Independence	Independent director %	14,617	36.59	5.13	27.27	57.14

See Appendix A for detailed variable definitions.

regressions 7–9. The main independent variables we are most interested in are the proxy measures of information asymmetry, namely Analyst Optimism, Analyst Error, and Analyst Dispersion. In order to control for potential endogeneity due to reversed causality, InfAsy$_{it}$ in Eq. (1) indicates pre-MEF analysts' forecast quality which we have introduced in the previous section. Gov$_{it}$ Stands for the dummy variable *Government Control*. Controls$_{it}$ represents a number of control variables. We further control for fixed year effects with the year dummies YEAR$_t$ and industry effects with industry dummies IND$_i$ following industry classifications by CSRC. By incorporating interaction terms between the proxies of information asymmetry and the dummy variable for government control InfAsy$_{it}$ * Gov$_{it}$ in Eq. (1), our model also allows us to explore the influence of firm controlling shareholders on the causal relationship between information asymmetry and the use of MEF to dampen analysts' expectations in light of extensive evidence on controlling shareholders tunneling in China (see Huang, 2015 for reviews of this literature).

The results in Table 2 indicate that when information asymmetry is higher the MEF is more likely to fall into the "*Bad News MEF*" categories according to models 1–3 and its value is more likely to be "*Below Analyst MEF*" according to models 4–6. Consistent with these results, in models 7 and 9 we find that these information asymmetry proxies are negatively associated with the stocks' excess returns during 5-day event windows around the MEF issuance dates. When analysts' forecast dispersion is used as the proxy for information asymmetry, model 9 shows no association between forecast dispersion and stocks' excess returns around MEF disclosures. Due to inclusions of the interaction variables, the coefficients of Analyst Optimism, Analyst Error, and Analyst Dispersion in Table 2 represent the influence of information asymmetry on the likelihood of "*Bad News MEF*" and "*Below Analyst MEF*", and the market return response upon MEF disclosures for private-controlled firms (when GOV equals to 0). The coefficients on the interactions then give the influence of information asymmetry on the likelihood of "*Bad News MEF*" and "*Below Analyst MEF*", and the market return response upon MEF disclosures for government-controlled firms in excess of private-controlled firms (when GOV equals to 1). These interactions may be interpreted as follows: At given level of information asymmetry, models 1–6 suggest that state-controlled firms are less likely to issue

"*Bad News MEF*" and "*Below Analyst MEF*" than private-controlled firms and models 7 and 8 show that state-controlled firms have higher excess stock returns around MEF disclosures than private-controlled firms. Therefore state-control moderates the positive association between information asymmetry and the use of MEF to dampen analysts' forecasts. We conclude that hypothesis H1 is supported.

Regressions in Tables 3 and 4 test hypothesis H2 regarding the stock market and analysts' reactions to the nature of MEF by adopting an OLS specification as in Eq. (2) with a consistent set of control variables as in Table 2.

$$MEFCAR(-2,2) \text{ or Analyst Forecast Revision}_{it} = \alpha + \beta_1 Bad\ News\ MEF_{it}$$
$$+ \beta_2 Below\ Analyst\ MEF_{it} + \beta_3 MEF\ Suprise\ Analyst_{it} + \beta_4 MEF\ Range_{it} \quad (2)$$
$$+ \lambda Controls_{it} + \gamma YEAR_t + \delta IND_i + \varepsilon_{it}.$$

Recent studies on Chinese analysts by Haß et al. (2014) and Huang and Wright (2015) indicate analysts are effective information intermediaries and their forecasts mirror the quality of corporate governance. We expect that analysts should be able to at least partially predict "bad news". Recall that the dummy variable *Bad News MEF* is defined according to the forecast categories used by Chinese firms. We notice that in model 1 of Table 3, this dummy variable is only marginally (10%) significant and with a positive coefficient. This indicates that the "Bad News" is at least partially expected by the market and a confirmation upon MEF issuance reduces earnings uncertainty therefore increases excess return. Our result here is in line with earlier study by Clement, Frankel, and Miller (2003) which find that the market's reaction to confirming forecasts is significantly positive, indicating that benefits accrue to firms that disclose forecasts that corroborate existing market expectations about future earnings. This may also indicate that analysts tend to be over-pessimistic when they expect "Bad News" which results in a positive correction upon MEF announcements.

The remaining models Table 3 rely on the availability of range or point MEF earnings forecasts and consequently have smaller numbers of observations compared to model 1. We find these additional information disclosed along with MEF categories has stronger influence on market reaction than "Bad News" in model 1. Excess returns are significantly lower (by 2.4%) with *Below Analyst MEF* in model 2 and negatively

Table 2
The use of MEF to dampen analysts' forecasts.

Model	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Method	Probit	Probit	Probit	Probit	Probit	Probit	OLS	OLS	OLS
Dep. var.	Bad News MEF	Bad News MEF	Bad News MEF	Below Analyst MEF	Below Analyst MEF	Below Analyst MEF	MEFCAR(−2,2)	MEFCAR(−2,2)	MEFCAR(−2,2)
Analyst Optimism	0.103*** (4.34)			1.251*** (6.46)			−0.512*** (−8.36)		
Analyst Optimism * Government Control	−0.076*** (−2.64)			−0.824*** (−3.91)			0.163** (2.24)		
Analyst Error		0.138*** (5.34)			0.967*** (5.77)			−0.442*** (−7.29)	
Analyst Error * Government Control		−0.081*** (−2.60)			−0.700*** (−4.05)			0.170** (2.34)	
Analyst Dispersion			0.494*** (5.32)			0.749*** (4.09)			−0.279 (−1.34)
Analyst Dispersion * Government Control			−0.406*** (−3.62)			−0.516*** (−2.64)			−0.001 (−0.00)
Government Control	0.201** (2.38)	0.207** (2.38)	0.232** (2.18)	0.289* (1.75)	0.376** (2.15)	0.078 (0.44)	−0.211 (−0.96)	−0.212 (−0.95)	−0.089 (−0.33)
No. 1	−0.007*** (−2.90)	−0.007*** (−2.79)	−0.009*** (−3.01)	0.010** (2.32)	0.008** (2.05)	0.010** (2.36)	−0.015** (−2.40)	−0.014** (−2.20)	−0.017** (−2.31)
Nos. 2–10	−0.011*** (−3.75)	−0.010*** (−3.54)	−0.014*** (−4.32)	−0.002 (−0.38)	−0.000 (−0.08)	0.000 (0.04)	−0.008 (−1.14)	−0.007 (−1.03)	−0.007 (−0.90)
Log(MC)	0.253*** (5.94)	0.260*** (6.08)	0.291*** (5.90)	−0.089 (−1.30)	−0.120* (−1.79)	−0.168** (−2.27)	0.178* (1.74)	0.202** (1.97)	0.305*** (2.60)
Leverage	0.013 (0.22)	−0.029 (−0.48)	−0.015 (−0.22)	−0.520*** (−5.26)	−0.440*** (−4.83)	−0.256*** (−2.90)	0.203 (1.63)	0.135 (1.06)	−0.124 (−0.90)
Growth of Assets	0.000 (0.40)	0.000 (0.57)	0.001 (0.82)	−0.000 (−0.30)	−0.001 (−0.47)	−0.003** (−2.03)	0.001 (0.62)	0.002 (0.87)	0.002 (0.77)
Price-to-book	0.024* (1.95)	0.023* (1.88)	0.030* (1.76)	0.009 (0.48)	0.005 (0.29)	−0.027 (−1.10)	0.067** (2.17)	0.065** (2.09)	0.094** (2.27)
Big 4 Auditor	0.165 (0.95)	0.162 (0.93)	0.191 (1.00)	−0.483* (−1.71)	−0.429 (−1.58)	−0.479* (−1.73)	0.218 (0.59)	0.185 (0.49)	0.166 (0.40)
CEO Duality	0.027 (0.39)	0.025 (0.36)	0.080 (1.02)	0.051 (0.45)	0.035 (0.32)	−0.027 (−0.23)	−0.092 (−0.50)	−0.088 (−0.48)	−0.104 (−0.49)
Board Independence	−0.006 (−1.01)	−0.006 (−0.99)	0.002 (0.26)	0.014 (1.49)	0.015 (1.55)	0.015 (1.53)	−0.033** (−2.12)	−0.034** (−2.16)	−0.038** (−2.08)
Observations	4828	4828	3849	2328	2328	1991	5766	5766	4589
R-squared							0.068	0.060	0.051

Robust t-statistics in parentheses. Models 1–6 are Probit models. *Bad News MEF* is a dummy variable which equals to 1 if the MEF falls into the following categories: large or small decrease compared to the previous year, first time loss, continued loss. It equals to 0 if MEF falls into other categories. *Below Analyst MEF* is a dummy variable which equals to 1 if the MEF value is less than the median of analysts' forecasts made during the 6 months prior to the MEF announcement date and 0 if it is higher than the median analysts' forecasts. The MEF value is calculated as the average of the high and the low forecasts within the forecast range, or equals to the point forecast when the MEF is point forecast and not range forecast. Models 7–9 are OLS models in which the dependent variable *MEFCAR*(−2,2) is the compounded cumulative excess return against the Shanghai Composite Stock Index for firm i during the 5-day window following the MEF announcement. Analyst Optimism, Analyst Error, and Analyst Dispersion refer to the pre-MEF values of Analyst Optimism, Error, and Dispersion calculated using analysts forecasts made during 6 months prior to the MEF issuance. All regressions control for industry and year effects. See Appendix A for other variable definitions.

*** p < 0.01.
** p < 0.05.
* p < 0.1.

associated with the size of *MEF Surprise Analyst* in models 3–5. Models 4 and 5 are based on subsamples of negative MEF surprises and positive MEF surprises to analysts, respectively. While both coefficients on *MEF Surprise Analyst* are negative and significant, the coefficient for negative surprises is much larger than that for positive surprises. This is consistent with stronger market reaction to negative news than positive news documented by prior studies such as Anilowski et al. (2007) upon MEF issuances by US firms. Another important variable in these models is *MEF Range*. Libby et al. (2006) suggests that treating the mean of the range endpoints as equivalent to a point estimate may paint an incomplete picture of how management guidance affects analysts and investors. In light of this prior study, we further control for *MEF Range* in the model and it appears to have negative and generally significant effects on excess returns. This is to be expected according to Hirst et al. (1999) that investors are more confident when MEF takes the form of more precise point guidance than less precise range guidance and Hughes and Pae (2004) that less precise guidance form is used for MEF when earnings' uncertainty is higher.

Table 4 regressions further investigate analysts' forecast revisions in post-MEF issuance periods before the announcements of actual

earnings. Given that analysts' long-term forecasts are mostly unavailable in the Chinese market, we focus on short-term forecast revisions.[6] In line with the market reaction we observe in Table 3, Table 4 regressions show that analysts revise earnings forecasts based on the magnitude of MEF shocks to their prior expectations and not to the "Bad News" MEF categories. In particular, the dummy *Bad News MEF* in model 1 is positively associated with analyst revisions at 10% significance level which weakly suggests that analysts adjust positively to the verifications of "bad news" they seem to expect prior to MEF issuances. Model 2 indicates that analysts revise earnings forecasts downwards upon *Below Analyst MEF*. Models 3–5 show that the size of downward revisions made is based on the *MEF Surprise Analyst* value, with stronger revisions upon negative surprises in model 4 than positive surprises in model 5. We conclude from Tables 3 and 4 that hypothesis H2 is supported. The coefficients on the control variables in these tables generally indicate that ownership and governance features are not important for market reaction and analyst revisions.

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[6] See Lacina and Karim (2004) and Feng and McVay (2010) for both short-term and long-term analyst forecast revisions associated with MEF disclosures among US firms.

Table 3
Market reaction to the nature of MEF.

Model	(1)	(2)	(3)	(4)	(5)
Sample	All MEF disclosure	All MEF disclosure	All MEF disclosure	Negative surprise	Positive surprise
Dep. var.	MEFCAR(−2,2)	MEFCAR(−2,2)	MEFCAR(−2,2)	MEFCAR(−2,2)	MEFCAR(−2,2)
Bad News MEF	0.315*				
	(1.84)				
Below Analyst MEF		−2.400***			
		(−8.82)			
MEF Surprise Analyst			−0.448***	−1.953***	−0.234**
			(−5.36)	(−3.66)	(−2.52)
MEF Range	−0.438***	−0.400**	−0.392**	−1.041***	−0.186
	(−3.26)	(−2.16)	(−2.08)	(−2.82)	(−0.87)
Log(MC)	0.202*	0.042	0.025	−0.176	0.086
	(1.74)	(0.28)	(0.16)	(−0.55)	(0.50)
Leverage	−0.041	−0.034	0.143	−0.191	0.058
	(−0.31)	(−0.19)	(0.80)	(−0.56)	(0.27)
Growth of Assets	0.001	−0.001	−0.001	0.001	−0.002
	(0.49)	(−0.27)	(−0.42)	(0.18)	(−0.54)
Price-to-book	0.027	0.202***	0.225***	0.304**	0.187***
	(1.45)	(3.71)	(4.08)	(2.40)	(3.34)
No. 1	0.001	−0.005	−0.008	−0.013	−0.002
	(0.19)	(−0.55)	(−0.86)	(−0.64)	(−0.21)
Nos. 2–10	−0.000	−0.004	−0.006	−0.004	−0.005
	(−0.06)	(−0.36)	(−0.50)	(−0.19)	(−0.36)
Government Control	0.171	−0.276	−0.126	0.081	−0.443
	(0.77)	(−0.85)	(−0.39)	(0.13)	(−1.19)
Big 4 Auditor	0.470	0.549	0.788	1.435	−0.005
	(0.85)	(0.89)	(1.20)	(1.27)	(−0.01)
CEO Duality	0.052	0.162	0.238	−0.769	0.498
	(0.26)	(0.60)	(0.88)	(−1.44)	(1.64)
Board Independence	−0.036**	−0.036	−0.040	−0.039	−0.037
	(−2.14)	(−1.47)	(−1.62)	(−0.84)	(−1.31)
Observations	4323	2387	2404	671	1716
R-squared	0.040	0.090	0.073	0.108	0.058

Robust t-statistics in parentheses. All regressions are OLS regressions control for industry and year effects. The dependent variable MEFCAR(−2,2) is the compounded cumulative excess return against the Shanghai Composite Stock Index for firm i during the 5-day window following the MEF announcement. Bad News MEF is a dummy variable which equals to 1 if the MEF falls into the following categories: large or small decrease compared to the previous year, first time loss, continued loss. It equals to 0 if MEF falls into other categories. Below Analyst MEF, a dummy variable which equals to 1 if the MEF value is less than the median of analysts' forecasts made during the 6-months prior to the MEF announcement date and 0 if it is higher than the median analysts' forecasts. The MEF value is calculated as the average of the high and the low forecasts within the forecast range, or equals to the point forecast when the MEF is point forecast and not range forecast. MEF Surprise Analyst, the median analysts' forecasts made during the 6-months prior to the MEF announcement date minus the MEF value scaled by the firm's market capitalization. MEF Range, the range of MEF, the high value minus the low value, scaled by the firm's market capitalization. See Appendix A for other variable definitions.

*** p < 0.01.
** p < 0.05.
* p < 0.1.

In line with existing studies such as Ajinkya and Gift (1984), Skinner (1994), Bartov et al. (2002), Matsumoto (2002), Baik and Jiang (2006), Cotter et al. (2006), and Anilowski et al. (2007), stock market and analysts' reactions we document in Tables 3 and 4 should lead to reduced stock return shocks to announcements of actual earnings as "bad news" are pre-empted upon MEF disclosures. We test hypothesis H3 on the influence of MEF on market reaction to the actual earnings announcement measured by the 5-day excess returns around these announcements EACAR(−2,2) in Table 5. Models 1 through 4 correspond to different choices of actual earnings surprise measures. We are most interested in the coefficients of the variables that capture the nature of the actual earnings news in comparison with MEF and analyst revised forecasts during the post-MEF periods and prior to the actual earnings announcements. In particular, the dummy variable Negative Earnings Surprise MEF in model 1 is negatively and significantly related to the excess returns but the magnitude of the surprise as measured by the continuous variable Earnings Surprise MEF in model 2 is insignificantly related to the excess returns. Therefore, the influence of actual earnings surprises compared to MEF on stock returns appears to be mixed.

We further find that both the dummy variable Negative Earnings Surprise Analyst in model 3 and the continuous variable Earnings Surprise Analyst in model 4 have significant influence on excess returns. Their coefficients suggest that, for MEF non-disclosure firms (or when "MEF issuance" dummy equals to zero), negative surprises on average leads to −0.87% excess return and 1 unit of earnings surprise, calculated as the actual earnings minus the analyst median expectation and scaled by market capitalization, leads to 0.31% of excess stock return. The interaction variables Negative Earnings Surprise Analyst ∗ MEF Issuance and Earnings Surprise Analyst ∗ MEF Issuance in models 3 and 4 capture the marginal influence of MEF disclosure on market reaction to earnings surprises to analysts (or when "MEF issuance" dummy equals to 1). We note that Earnings Surprise Analyst ∗ MEF Issuance in model 4 is significantly and negatively related to excess returns which indicates that earnings news were pre-empted by MEF disclosures. However, in model 3 the interaction Negative Earnings Surprise Analyst ∗ MEF Issuance appears to be insignificant. We conclude from Table 5 that the effectiveness of "pre-empting bad news" using MEF appears to be mixed and dependent on the information content disclosed in MEF.

According to prior studies such as Hirst et al. (2007) and Hu et al. (2014), MEF disclosure may influence disclosure firms' behavior through earnings management as firms are under pressure to meet the guided earnings targets. This may be particularly true in China as the majority of the MEF disclosures in our sample were mandatory. To test our hypothesis H4, we adopt a random-effects model as follows:

$$EM_{it} = \alpha_i + \beta_1 MEF\ Issuance_{it} + \beta_2 GOV_{it} + \beta_3 MEF\ Issuance_{it} * GOV_{it} \\ + \lambda Controls_{it} + \gamma YEAR_t + \delta IND_i + \varepsilon_{it}. \quad (3)$$

The dependent variable EM_{it} denotes two measures of earnings management which are consistent with prior studies on Chinese firms

Table 4
Analyst forecast revisions after MEF disclosures.

Model	(1)	(2)	(3)	(4)	(5)
Sample	All MEF disclosure	All MEF disclosure	All MEF disclosure	Negative surprise	Positive surprise
Bad News MEF	0.056*				
	(1.72)				
Below Analyst MEF		−0.573***			
		(−15.19)			
MEF Surprise Analyst			−0.282***	−0.609***	−0.244***
			(−6.38)	(−5.82)	(−4.95)
MEF Range		−0.103*	−0.079	−0.164**	−0.034
		(−1.74)	(−1.20)	(−2.32)	(−0.48)
Log(MC)	0.038	−0.011	−0.035	0.049**	−0.068**
	(1.62)	(−0.40)	(−1.48)	(2.18)	(−2.11)
Leverage	−0.159***	−0.133**	−0.050	−0.063	−0.106
	(−3.00)	(−2.35)	(−0.96)	(−1.07)	(−1.44)
Growth of Assets	0.002***	0.001	0.000	−0.000	0.000
	(5.05)	(1.55)	(0.18)	(−0.97)	(0.30)
Price-to-book	0.000	−0.001	0.011	−0.016**	0.020*
	(0.04)	(−0.11)	(1.24)	(−2.28)	(1.94)
No. 1	−0.001	0.002	0.000	0.003	0.001
	(−0.96)	(1.04)	(0.05)	(1.11)	(0.46)
Nos. 2–10	0.000	0.002	0.001	0.001	0.002
	(0.24)	(0.66)	(0.49)	(0.39)	(0.77)
Government Control	−0.009	0.018	0.077	0.038	0.037
	(−0.22)	(0.31)	(1.51)	(0.66)	(0.53)
Big 4 Auditor	−0.332***	−0.182	−0.147	−0.313**	−0.051
	(−2.64)	(−1.21)	(−1.10)	(−2.17)	(−0.28)
CEO Duality	0.032	0.050	0.055*	−0.033	0.090**
	(1.04)	(1.45)	(1.85)	(−1.12)	(2.25)
Board Independence	0.006***	0.007**	0.007***	−0.003	0.009***
	(2.68)	(2.52)	(2.68)	(−0.82)	(2.59)
Observations	2613	1455	1467	458	997
R-squared	0.116	0.246	0.397	0.395	0.417

Robust t-statistics in parentheses. All regressions are OLS regressions control for industry and year effects. The dependent variable is *Analyst Revision* which equals to the median analysts' forecasts made during the period between the MEF announcement date and actual earnings announcement date minus that made during the 6 months prior to the MEF announcement date scaled by the firm's market capitalization. *Bad News MEF* is a dummy variable which equals to 1 if the MEF falls into the following categories: large or small decrease compared to the previous year, first time loss, continued loss. It equals to 0 if MEF falls into other categories. *Below Analyst MEF*, a dummy variable which equals to 1 if the MEF value is less than the median of analysts' forecasts made during the 6 months prior to the MEF announcement date and 0 if it is higher than the median analysts' forecasts. The MEF value is calculated as the average of the high and the low forecasts within the forecast range, or equals to the point forecast when the MEF is point forecast and not range forecast. *MEF Surprise Analyst*, the median analysts' forecasts made during the 6 months prior to the MEF announcement date minus the MEF value scaled by the firm's market capitalization. *MEF Range*, the range of MEF, the high value minus the low value, scaled by the firm's market capitalization. See Appendix A for other variable definitions.
*** $p < 0.01$.
** $p < 0.05$.
* $p < 0.1$.

Table 5
Market reaction to actual earnings announcements.

Model	(1)	(2)	(3)	(4)
Dep. var.	EACAR(−2,2)	EACAR(−2,2)	EACAR(−2,2)	EACAR(−2,2)
MEF Issuance			−0.067	0.130
			(−0.34)	(0.87)
Negative Earnings Surprise MEF	−0.424***			
	(−2.74)			
Earnings Surprise MEF		0.022		
		(0.28)		
Negative Earnings Surprise Analyst			−0.866***	
			(−4.37)	
Negative Earnings Surprise Analyst * MEF Issuance			0.311	
			(1.15)	
Earnings Surprise Analyst				0.308***
				(4.37)
Earnings Surprise Analyst * MEF Issuance				−0.267***
				(−2.95)
Log(MC)	0.046	0.084	0.102	0.150*
	(0.45)	(0.83)	(1.27)	(1.86)
Leverage	0.113	0.115	0.107	0.100
	(1.09)	(1.10)	(1.19)	(1.11)
Growth	−0.001	−0.001	0.000	0.000
	(−0.45)	(−0.39)	(0.01)	(0.05)
Price-to-book	0.030*	0.031**	0.091***	0.091***
	(1.94)	(2.04)	(3.33)	(3.33)
No. 1	−0.004	−0.004	0.003	0.001
	(−0.69)	(−0.66)	(0.52)	(0.13)
Nos. 2–10	0.013*	0.013*	0.013**	0.011*
	(1.90)	(1.90)	(2.01)	(1.75)
Government Control	−0.041	−0.017	0.037	0.016
	(−0.22)	(−0.09)	(0.22)	(0.09)
Big 4 Auditor	−0.109	−0.216	0.036	0.005
	(−0.26)	(−0.51)	(0.15)	(0.02)
CEO Duality	0.252	0.259	−0.023	−0.024
	(1.42)	(1.46)	(−0.12)	(−0.13)
Board Independence	0.037**	0.034**	0.013	0.013
	(2.47)	(2.24)	(0.97)	(0.99)
Observations	4708	4767	6077	6155
R-squared	0.022	0.021	0.020	0.018

Robust t-statistics in parentheses. All regressions are OLS regressions control for industry and year effects. The dependent variable *EACAR*(−2,2) is the compounded cumulative excess return against the Shanghai Composite Stock Index for firm i during the 5-day window following the actual earnings announcement date. *MEF Issuance*, a dummy variable which equals to 1 if firm i issued management earnings forecast for year t, and 0 if there was no issuance. *Negative Earnings Surprise MEF*, a dummy variable equals to 1 if reported earning is less than MEF value. *Earnings Surprise MEF*, the reported earning minus the MEF value scaled by the firm's market capitalization. *Negative Earnings Surprise Analyst*, a dummy variable equals to 1 if reported earning is less than the median analysts' forecasts value. *Earnings Surprise Analyst*, the reported earning minus the median analysts' forecasts value scaled by the firm's market capitalization. See Appendix A for other variable definitions.
*** $p < 0.01$.
** $p < 0.05$.
* $p < 0.1$.

(Hou et al., 2015; Liu & Lu, 2007; Wang & Yung, 2011) and US firms (Anagnostopoulou & Tsekrekos, 2015; Dechow & Dichev, 2002): the absolute values of total accruals |ACC| and the discretionary accruals |DACC|.[7] Test results are reported in Table 6. In both models 1 and 2, we find the dummy variable *MEF Issuance* is positively and significantly associated with earnings management. We further notice that the coefficient on *Government Control* dummy is negative and significant suggesting government-controlled firms in our sample engage in less earnings management than private-controlled firms. This appears to be consistent with Liu and Lu (2007), Wang and Yung (2011), and Hou et al. (2015). The interaction variable *MEF Issuance * Government Control* is insignificant indicating government control has no marginal influence on the relationship between MEF disclosure and earnings management. In models 3 and 4, we adopt *MEF Surprise Analyst* as an alternative measure to test its influence on earnings management. The sample is then restricted to MEF disclosure firms that are also covered by analysts. Results indicate the difference between analysts' forecasts and MEF is positively associated with earnings management. We conclude that firms disclose MEF engage in more earnings management to meet the forecasted earnings. Hypothesis H4 is supported.

5. Conclusion

This paper extends the management earnings forecast literature by examining the use of MEF to dampen analysts' expectations, i.e. expectation management, under the special institutional environment in China. As the majority of the Chinese listed companies are carve-outs

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[7] The value of discretionary accruals is measured as the prediction error when regressing total accruals against change in sales, fixed assets, and industry and year fixed effects.

Table 6
MEF disclosure and earnings management.

Model	(1)	(2)	(3)	(4)
Dep. var.	|ACC|	|DACC|	|ACC|	|DACC|
MEF issuance	1.353***	1.033***		
	(8.23)	(6.57)		
MEF Surprise Analyst			0.530***	0.420***
			(4.08)	(3.65)
Government Control	−0.479***	−0.487***	0.252	0.098
	(−2.63)	(−2.85)	(0.67)	(0.28)
MEF issuance * Government Control	0.270	0.268		
	(1.28)	(1.32)		
MEF Surprise Analyst * Government Control			0.114	0.199
			(0.68)	(1.33)
No. 1	−0.015***	−0.009*	−0.011	−0.015
	(−2.71)	(−1.78)	(−1.04)	(−1.50)
Nos. 2–10	−0.011*	−0.011*	−0.013	−0.019*
	(−1.73)	(−1.87)	(−1.01)	(−1.69)
Tradable shares %	0.000	0.006**	−0.005	−0.001
	(0.15)	(2.29)	(−1.02)	(−0.27)
Log(MC)	−0.317***	−0.318***	0.135	−0.034
	(−3.84)	(−4.24)	(0.84)	(−0.23)
Leverage	0.243***	−0.119	0.168	0.070
	(2.78)	(−1.45)	(0.77)	(0.34)
Big 4 Auditor	−0.019	−0.205	0.024	−0.260
	(−0.07)	(−0.90)	(0.04)	(−0.45)
CEO Duality	0.069	0.192	−0.116	0.004
	(0.44)	(1.34)	(−0.45)	(0.02)
Board Independence	0.003	0.006	0.032	0.018
	(0.24)	(0.61)	(1.40)	(0.87)
Obs.	14,536	14,515	2391	2390
Number of firms	2339	2337	1198	1197

Robust t-statistics in parentheses. All regressions are random-effects regressions controlling for industry and year effects. The dependent variables |ACC| and |DACC| refer to the absolute values of total accruals and discretionary accruals, respectively. The value of discretionary accruals is measured as the prediction error when regressing total accruals against change in sales, fixed assets, and industry and year fixed effects. See Appendix A for other variable definitions.

*** $p < 0.01$.
** $p < 0.05$.
* $p < 0.1$.

from state-owned enterprises during China's privatization process, more than half of the listed companies in China today are under control of the Chinese government. Studying MEF disclosures by Chinese firms has a meaningful contribution to this literature because government association has important influence on firms' information environment and performance. We document that information asymmetry measured by the quality of analysts' forecasts prior to MEF disclosures is positively associated with expectation management and government control moderates this relationship. This finding supports the view that inferior information environment motivates firms to engage in expectation management but state influence moderates this effect due to SOEs' weaker incentives to meet analyst expectations. Consistent with prior studies on US firms, we also find that dampening analyst expectations using MEF leads to negative stock market reactions and downward analysts' forecast revisions. However, the effectiveness of "pre-empting bad news through MEF" in China appears mixed and dependent on measures of actual earnings surprises and the information content in MEF. Therefore, firms should be cautious of the consequences of expectation management. For instance, our results indicate that disclosing the categories of MEF is often not as effective as providing range or point earnings forecasts. Finally, we find that MEF disclosure firms engage in more earnings management to meet the forecasts. Investors must remain vigilant when incorporating MEF into their portfolio strategies. Regulators need to consistently adopt policies aimed at strengthening corporate governance and institute rules to ensure financial reporting quality while enforcing MEF disclosures.

Appendix A. Variable definitions

MEFCAR(−2,2), the compounded cumulative excess return against the Shanghai Composite Stock Index for firm i during the 5-day window following the MEF announcement.

EACAR(−2,2), the compounded cumulative excess return against the Shanghai Composite Stock Index for firm i during the 5-day window following the actual earnings announcement date.

MEF Issuance, a dummy variable which equals to 1 if firm i issued management earnings forecast for year t, and 0 if there was no issuance.

Bad News MEF, a dummy variable which equals to 1 if the MEF falls into the following categories: large or small decrease compared to the previous year, first time loss, continued loss. It equals to 0 if MEF falls into other categories.

Below Analyst MEF, a dummy variable which equals to 1 if the MEF value is less than the median of analysts' forecasts made during the 6 months prior to the MEF announcement date and 0 if it is higher than the median analysts' forecasts. The MEF value is calculated as the average of the high and the low forecasts within the forecast range, or equals to the point forecast when the MEF is point forecast and not range forecast.

MEF Range, the range of MEF, the high value minus the low value, scaled by the firm's market capitalization.

MEF Surprise Analyst, the median analysts' forecasts made during the 6 months prior to the MEF announcement date minus the MEF value scaled by the firm's market capitalization.

Analyst Revision, the median of analysts' forecasts made between the dates of MEF and earnings announcement minus that made during the 6 months prior to the MEF issuance dates scaled by the firm's market capitalization.

Negative Earnings Surprise MEF, a dummy variable equals to 1 if reported earning is less than MEF value.

Earnings Surprise MEF, the reported earning minus the MEF value scaled by the firm's market capitalization.

Negative Earnings Surprise Analyst, a dummy variable equals to 1 if reported earning is less than the median analysts' forecasts made between the dates of MEF issuance and earnings announcement, or the revised consensus analyst forecasts.

Earnings Surprise Analyst, the reported earning minus the median analysts' forecasts value made between the dates of MEF issuance and earnings announcement scaled by the firm's market capitalization.

Analyst Optimism, analysts' median earnings forecast minus the reported earnings for firm i and year t scaled by the firm's market capitalization.

Analyst Error, the absolute value of analyst optimism.

Analyst Dispersion, the standard deviation of analysts' earnings forecasts scaled by the firm's market capitalization.

Log(MC),the log of the market capitalization of common equity at the year end, with non-tradable shares values equal to book values.

Leverage, the ratio of book value of debt to the firm's market capitalization.

Growth, the growth rate of total assets.

Price-to-book, the price-to-book ratio of tradable A-shares on the MEF announcement date.

No. 1, the percentage shareholding of the largest shareholder.

Nos. 2–10, the total percentage shareholding of the top 10 shareholders excluding the largest one.

Government Control, a dummy variable which equals to 1 if the firm is under control of the Chinese government or government agency, and 0 if under control of a private firm or investor.

Big4 Audit, a dummy for audit quality which equals to 1 if the firm's auditor is one of the Big 4 accounting firms, and 0 if not.

CEO Duality, a dummy variable which equals to 1 if the CEO and Chairman are the same person, and 0 if they are two persons.

Board Independence, the percentage of independent directors among all directors.

|ACC|, the absolute value of total accruals scaled by total assets.

|DACC|, the absolute value of discretionary accruals measured as the prediction error when regressing total accruals against change in sales, fixed assets, and industry and year fixed effects.

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