1-2014

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School of Accountancy Research Paper Series Vol. 2, No. 2

(Paper No: 2014-15)

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December 2013

Journal of Business Ethics Forthcoming

The authors acknowledge the valuable comments received from Qiang Cheng, Xia Chen, and seminar participants at Jinan University, the American Accounting Association 2012 Conference in Washington DC, the Eastern Finance Association 2012 Conference in Boston and the 2011 China International Symposium on Empirical Accounting Research in Kunming. Wang acknowledges the financial support through a research grant (C206/MSS9A006) from the Office of Research, Singapore Management University. Ye acknowledges the support of the National Natural Science Foundation of China (Approval No. 71072145 and 70532002).

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Media Coverage and Firm Valuation: Evidence from China

ABSTRACT

Drawing on both a managerial-discipline perspective and an information-intermediary perspective, we explore how media coverage of a firm's controlling shareholder influences firm valuation in corporate China. Using 366 listed family firms in China from 2003–2006, we find that firms in which controlling shareholders receive more neutral media reports enjoy higher valuation, whereas negative media reports on controlling shareholders impose adverse effects on firm valuation. Interestingly, favorable media coverage of the controlling shareholders does not enhance firm value. Further analyses reveal that ownership structure and audit quality moderate the relationship between media coverage and firm valuation. Our study complements the emerging literature on the monitoring role of the media on the stock markets.

Keywords**:** media coverage; valuation; family firms; China

I. Introduction

The Chinese media has been highly controlled by the government since the founding of the People's Republic in 1949. The Chinese government, with its dominant ideology and propaganda, does not allow non-state capital to invest, establish, or operate any media, thus limiting the independence and freedom of the media. China's rank on the Press Freedom Index, compiled and published by Reporters Without Borders, was 171 out of 178 countries in 2010. It is commonly believed that the Chinese media is more likely to report good rather than bad news.

However, due to the lack of sufficient funds to support daily operations, China's media are forced to introduce Western-style media management systems to enhance efficiency and performance, and to produce high-quality reporting to attract an audience. In recent years, we have seen the media increasingly acting in a whistle-blower role on the Chinese capital market. In 2001, a Chinese financial magazine, *Caijing*, published an article alleging the misrepresentation of export activities by a listed company, Yingguangxia. The report triggered an investigation by the China Securities Regulatory Commission (CSRC), which revealed a profit overstatement of RMB745 million from 1998 to 2001. Four of the company's top management were arrested and jailed for forging documents and the fraudulent misrepresentation of financial information. The fallout from Yingguangxia, which had been a recent top performer on the Chinese stock market, revealed the deficiencies of the country's internal corporate governance system, while also showing an increase in the monitoring role of the Chinese media.

The literature provides varied results concerning the monitoring role of media coverage. The media may act as an external disciplining mechanism that can reverse

corporate governance violations (Miller 2006; Tetlock 2007; Dyck, Volchkova, and Zingales 2008; Hirshleifer, Lim and Teoh 2009; Tetlock 2011; among others) or as an information intermediary, collecting and sharing information with a wider audience to reduce information asymmetry between insiders and outside investors (Fang and Peress 2009; Bushee et al. 2010; among others). In this study, we examine how media coverage of a firm's controlling shareholder influences its market value in corporate China. We argue that controlling shareholders with more media coverage will be subject to stricter media scrutiny and consequently suffer a higher reputation loss when violating generally accepted governance codes. As a result, the firms whose controlling shareholders receive greater media coverage will be less likely to engage in misconduct and hence enjoy higher valuation. The media may also collect and share more information with investors to reduce information asymmetry. Hence the firms whose controlling shareholders receive greater media coverage will have a lower cost of capital and higher valuation.

Using all Chinese family firms listed on the Shanghai Stock Exchange and the Shenzhen Stock Exchange over the 2003–2006 period, we find that firms whose controlling shareholders receive more neutral media coverage are valued higher by investors, after controlling for various factors, including the potential endogeneity issue. We also find that unfavorable media coverage of controlling shareholders imposes an adverse effect on firm valuation. Interestingly, we do not document that favorable media coverage regarding controlling shareholders leads to higher firm value. This may be because investors cast doubt on the integrity of journalists who portray a controlling shareholder too favorably (Li 2012). Further analyses reveal that ownership structure and audit quality moderate the relationship between media coverage and firm valuation.

Our study complements the existing literature in two ways. First, our study contributes to a growing literature exploring the connection between the media and the stock market. Prior studies have examined the role of the media in mitigating the agency conflict between management and shareholders (i.e., the Type I agency problem) (Miller 2006; Bushee et al., 2010). However, many public firms around the world are better characterized by a concentrated ownership structure, which suffer primarily from the Type II agency problem (a conflict between the controlling and minority shareholders). By investigating how media coverage of a firm's controlling shareholders influences firm value we expand and complement the literature on the monitoring role of the media in the stock markets. In this regard, China provides an appropriate setting in which to test our hypotheses. The controlling shareholders in Chinese listed firms hold, on average, 32% of the total outstanding shares, while the average ownership by the second largest shareholder is merely 12%. This results in a high risk of expropriation of minority shareholders by the controlling shareholder (Aharony et al. 2010, Jiang et al. 2010, among others), and the characteristics and activities of controlling shareholders impose significant influences on firms' value in China.

Second, this study also contributes to our understanding of media governance. Djankov et al. (2003) suggest that government ownership of the media will undermine the monitoring role of the media. The authors find that government ownership of the media is negatively associated with political and economic freedom, including a less free press, fewer political rights for citizens, and increased corruption. Nevertheless, our study suggests that the media can still play an active role in mitigating agency conflicts in corporate China, although it may appear counterintuitive to highlight the salient characteristics of China's state-owned and non-free media. It is also reported that Chinese journalists engage in

misbehavior and malpractices such as individual red-envelope taking and institutional rent seeking (Li 2012). However, in practice, "the Chinese media enjoy significantly more autonomy in reporting on financial misconduct than they do reporting on most other areas of Chinese law and society. The media are perhaps the most effective regulator of corporate wrongdoing in China today (Liebman and Milhaupt 2008, p. 980)." Fierce competition among the media companies also motivates them to produce high quality news to attract readers and advertising agents. This suggests that marketization reform can provide desired incentives even though the media remains under tight control by the government.

The remainder of this paper is organized as follows. Section II provides a literature review and develops the hypotheses. Section III outlines the research design, and Section IV provides the sample collection procedures and descriptive statistics of the main variables. In Section V we present the empirical results. The summary and conclusions are presented in Section VI.

II. Literature Review and Hypothesis Development

The literature has offered several explanations on the role of media coverage in corporate governance. These explanations are based on nonexclusive views of the media as a managerial discipline mechanism or as an information intermediary mechanism.

A. *Media Coverage as a Managerial Discipline Mechanism*

The existing literature argues that media coverage can shape the reputation of market participants and thus pressure them to behave in ways that are socially acceptable. Fombrun and Shanley (1990) interpret reputation as the outcome of a competitive process in which

market participants indicate their key characteristics to maximize their social status. Dyck, Volchkova, and Zingales (2008) were probably the first to comprehensively study the role of the media in corporate governance. They argue that a director or manager will be dissuaded from reputation-hurting action if, and only if:

$$E(\text{Private benefit}) < E(\text{Reputational cost}) + E(\text{Punishment})$$
$$= \alpha * \text{Reputational Cost} + \beta * \text{Punishment}, \quad (1)$$

where α is the probability that the public will receive the news about the manager's action and will believe it and β is the probability of enforcement.

The media will influence all four factors on the right-hand side of Eq. (1). It is obvious that more media coverage will increase probability α, and that the public will receive the news about the manager's action and will believe it. The media can also affect the right-hand side of the equation by increasing the size of reputational cost. Media attention can affect not only managers' reputations with outside shareholders and future employers, but also their societal reputation. In the traditional understanding of reputation (see, for example, Fama 1980; Fama and Jensen 1983), managers' future wages depend on investors' and future employers' beliefs about whether the managers will attend to their interests in situations where they cannot be monitored. With more awareness among investors and employers by spinning the news, the reputational cost in the form of future wage decrement will increase. This concern about a future financial penalty can prevent managers from taking advantage of opportunities for self-dealing, and present themselves as responsible agents.

The media can also impact the right-hand side of Eq. (1) by influencing the probability of enforcement (β) and the size of punishment. Reputational concerns prevent insiders from appropriating corporate assets because they know that if they are caught, share

prices will fall, they may be sued or challenged in a proxy fight, and they will lose status among their peers. This is not merely a threat to their dignity, but more importantly, they will suffer in their service market and be unable to secure other board or management positions. Reputation is also important to policymakers, providing an incentive to react to media coverage of a corporate governance violation. Therefore, policymakers will be more likely to take an action to address a problem and enforce a heavier penalty if the problem is visible to a wider community. In this way, the media also indirectly influences corporate governance practices by putting pressure on policymakers to adjust the legal or regulatory infrastructure of the region in which the violating company operates. The Yingguangxia case we discussed in the introduction section provides good anecdotal evidence.

Dyck, Volchkova, and Zingales (2008) use a Russian case study to empirically demonstrate the role the media plays in corporate governance. They find that in Russia, an investment fund's lobbying increases the coverage of corporate governance violations in the Anglo-American media. They also find that this coverage increases the probability that a corporate governance violation is subsequently reversed. In summary, existing studies support the idea that the media functions as a managerial disciplining mechanism by influencing the reputation of managers. Firms with more media coverage will be subject to stricter media scrutiny and consequently a higher reputation loss when violating generally accepted governance codes (Barton 2005); thus implying that firm insiders with extensive media coverage will be less likely to engage in self-dealing activities. This in turn reduces agency conflicts between insiders (controlling shareholders and management) and outside minority shareholders, and leads to higher firm value (Gompers et al. 2003).

Furthermore, media coverage can propagate favorable firm evaluations because the firm or insider with greater media coverage occupy more central positions in a social network, which in turn enhances a firm's legitimacy and acceptance and improves its market value accordingly (Pollock and Rindova 2003; Bansal and Clelland 2004).

B. *Media Coverage as an Information Intermediary Mechanism*

Media coverage also helps to increase a firm's market value by reducing information asymmetry and the related cost of capital. The market value of a firm's equity equals its expected future cash flows discounted at the expected cost of capital (Gordon and Shapiro 1956). Cost of capital is positively associated with information asymmetry (Diamond and Verrecchia 1991). In certain contexts, media coverage may be viewed as a critical source of information disclosure about a firm, which reduces a possible advantage that insiders may have over outside investors and helps to reduce information asymmetry. Dyck and Zingales (2002) and Dyck, Volchkova, and Zingales (2008) argue that the media is one vehicle through which information is aggregated and credibly communicated to the public (and across firms). Thus, the media can help to substantially reduce the costs associated with contract parties to collect and evaluate information. National newspapers circulate not only within the business community but also throughout the whole population and, as such, can provide warning signals to diverse shareholders who may not otherwise have knowledge of company activities (Tetlock, 2007). Merton (1987), Deephouse (2000), Baker et al. (2002), and Fang and Peress (2009) suggest that media coverage increases the number of investors aware of a firm and decreases investor uncertainty about a firm's characteristics. This in turn increases the firm's stock liquidity, and consequently investors require a lower return for

those stocks. In summary, existing studies support the role of the media as an information intermediary by reducing information asymmetry between a firm's insiders and outside investors. Lower information asymmetry can reduce a firm's cost of capital by attracting more investors due to increased liquidity of its securities (Diamond and Verrecchia 1991). Thus, we expect that media coverage can lead to a lower cost of capital (and higher firm valuation) by reducing information asymmetry on capital markets.

C. *The Impact of Media Coverage Content on Firm Valuation*

The impact of media coverage on a firm's value may be influenced by the content of media reports. Although non-negative media reports may increase a firm's value by disciplining insider misconduct and enhancing legitimacy and reputation, unfavorable media reports would signal negative signs about a firm's future performance, thereby reducing reputation and legitimacy (Pollock and Rindova 2003). Gurun and Butler (2012), Tetlock (2007), and Tetlock et al. (2008) provide empirical support for this argument. They find that a firm's value is lower when it receives negative media reports. Negative news can also impose a reputation penalty that reduces a firm's profitability. For instance, customers may be reluctant to purchase from firms with negative news, and investors would require higher returns on those stocks to compensate for the higher risks associated with a damaged reputation.

Controlling shareholders exert substantial influence over a firm's decision within the context of a concentrated ownership structure (Shleifer and Vishny 1997; Cronqvist and Nilsson 2003). For instance, in September 2006, the imprisonment of Mr. Liangyu Chen, a former senior leader of the Chinese Communist Party, resulted in a significant stock price

slump for a few Chinese listed firms whose controlling shareholders had explicit or implicit connections with Mr. Chen. Investors believe that the change in the political connection of those controlling shareholders would significantly affect their firms' value. Hence we primarily investigate how the media coverage of controlling shareholders influences their firms' value. The above discussions suggest that non-negative media reports can increase a firm's value by both preventing insider misconduct and reducing information asymmetry, while negative media reports would damage a firm's reputation, increase investor perceptions of the firm's risk, and consequently reduce the firm's value. Thus, we have the following hypotheses:

HYPOTHESIS 1: Valuation of firms is *higher* if their controlling shareholders receive more *non-negative* media reports than firms with controlling shareholders receiving less non-negative media reports.

HYPOTHESIS 2: Valuation of firms is *lower* if their controlling shareholders receive more *negative* media reports than firms with controlling shareholders receiving less negative media reports.

III. Research Design

In this section, we describe the research methodology that is designed to test the hypotheses. We employ the following model to examine how media coverage of controlling shareholders affects a firm's valuation:

$$TobinQ_{i,t+1} = \beta_0 + \beta_1 * NonnegativeMedia_{it} + \beta_2 * NegativeMedia_{it} + \beta_3 * Control_{it} + \beta_4 * Size_{it} + \beta_5 * BM_{it} + \beta_6 * Lev_{it} + \beta_7 * ROA_{it} + YearDummies + IndustryDummies + \varepsilon \quad (2)$$

In model (2), the dependent variable is the Tobin's Q of a firm. Tobin's Q is calculated as the sum of the market value of stockholders' equity and the book value of liabilities, divided by the sum of the book value of equity and liabilities in year *t+1* for firm *i*. Our first independent variable is the non-negative media coverage (*NonnegativeMedia*) of a firm's controlling shareholder, which is measured as the logarithm of the number of non-negative media reports covering the firm's controlling shareholder in year *t* for firm *i*. The second independent variable is the negative media coverage of a firm's controlling shareholder (*NegativeMedia*), which is measured as the logarithm of the number of negative media reports covering the firm's controlling shareholder in year *t* for firm *i*. We expect the estimated coefficient on *NonnegativeMedia* to be positive due to both the monitoring role and the information intermediary role played by the media, which prevents controlling shareholder misconduct, reduces information asymmetry, and increases firm value. Similarly, we expect the estimated coefficient on *NegativeMedia* to be negative because negative news damages a firm's reputation, increases investor perceptions of a firm's risk, and consequently reduces its value. In order to alleviate the potential endogeneity issue, we regress the next year's Tobin's Q on the current year's media coverage. In the robustness tests, we further use the Heckman self-selection correction model and the Granger causality test to address the potential endogeneity issue.

We include ownership concentration (*Control*), firm size (*Size*), financial leverage (*Lev*), the ratio of book-to-market value of equity (*BM*), and firm performance (*ROA*) as control variables. The ownership concentration (*Control*) is the percentage of shares held by

the controlling shareholder. Claessens et al. (2002) and Bai et al. (2004) suggest that the expropriation risk of minority shareholders by the controlling shareholder increases as the ownership concentration increases. Hence we expect a negative coefficient on *Control*. Firm size (*Size*) is the natural logarithm of total assets. Bai et al. (2004) find that smaller firms have higher valuation in China. Thus we expect a negative relationship between firm size and Tobin's Q. Financial leverage (*Lev*) is the ratio of total liabilities to total assets. Villalonga and Amit (2006) suggest that highly leveraged firms generally have lower market value. This predicts a negative coefficient on leverage. The ratio of book-to-market value of equity (*BM*) reflects a firm's growth potential. A higher *BM* indicates lower growth potential. We therefore expect that firm value is negatively associated with *BM* (Claessens et al. 2002). A firm's market value is typically positively associated with its financial performance, thus we also include firms' return on assets (*ROA*). Year and industry dummies are included to control for year and industry effects. Table 1 provides the definition of our empirical variables.

[Insert Table 1 here]

IV. Sample and Data Description

Our sample comprises all family firms listed on the Shanghai Stock Exchange and Shenzhen Stock Exchange over the 2003–2006 period. We focus on family firms for two reasons: First, family firms are subject to more severe agency conflict between the controlling and minority shareholders (Claessens et al. 2002; Cronqvist and Nilsson 2003); Second, the controlling shareholders of state-owned firms are typically government agents and Chinese

media are reluctant to report negative news involving government agents. Our sample period begins with 2003, the year that Chinese listed firms were required to disclose controlling shareholder information. We end the sample period in 2006 because of the non-trivial costs of hand collecting the media coverage information about the controlling shareholders.

We hand collect media coverage data from China Infobank (http://www.infobank.cn/), an independent data provider that consolidates data from all major Chinese business newspapers and magazines. We use the controlling shareholder name as the keyword and search the full text of articles in the Infobank database. We exclude the articles that contain the same name as the controlling shareholder but refer to a different person. For each article, two raters separately read and code its tone and classify the tone of the article as favorable, neutral, or unfavorable. When disagreement between these two raters occurs, a third rater makes the final coding after discussing it with the other two raters. Similar to Deephouse (2000), an article was rated favorable when it praised the controlling shareholder for his/her characteristics and/or activities. Examples include an award or outstanding performance by the controlling shareholder, and/or charitable donations. An article was rated unfavorable when the controlling shareholder was criticized for her/his characteristics and/or activities. Examples include tax evasion, business fraud, and other legal or regulatory charges. The remaining articles are classified as neutral. Non-negative media coverage is defined as the logarithm of (1+ the number of favorable and neutral articles containing the name of a firm's controlling shareholder), negative media coverage is defined as the logarithm of (1+ unfavorable articles containing the name of a firm's controlling shareholder). We also further partition non-negative media coverage into positive (favorable) and neutral media coverage to examine whether or not investors perceive favorable and neutral reports differently. We

obtain financial and ownership-structure information from the China Security Market and Accounting Research (CSMAR) database. We exclude firm-year observations with insufficient data to compute the required variables, and obtain a sample of 964 observations representing 366 unique family firms. We winsorize all continuous variables at the 1% and 99% levels to alleviate the impact of outliers.

Table 2 reports the summary statistics of our main variables. The average positive articles for a controlling shareholder is about 0.25 articles per year, the mean neutral articles 1.19, and the mean negative articles 0.43. This suggests that neutral portraits of controlling shareholders comprise approximately 64% of media coverage. Furthermore, controlling shareholders are more likely to receive unfavorable reports than favorable reports. About 66% of controlling shareholders had no media exposure during our sample period.

The mean and median of Tobin's Q are 1.86 and 1.47, respectively. The median (median) ownership concentration is 32% (29%), suggesting that Chinese listed family firms are characterized by concentrated ownership structure. The sample firms typically generate a low return on assets with a mean (median) of -3% (2%) only. The mean ROA is negative because some firms recorded extremely negative ROA during the sample period. On average, the leverage ratio of all sample firms is 32%, suggesting that Chinese family firms are under leveraged. The mean (median) ratio of book-to-market value of equity is 0.47 (0.48).

[Insert Table 2 here]

Table 3 presents the Pearson correlation coefficient matrix for our main regression variables. We find that non-negative media coverage is negatively correlated with Tobin's Q

(with an estimated Pearson correlation coefficient of -0.11), while negative media coverage is unrelated to Tobin's Q (with an estimated Pearson correlation coefficient of 0.06), which contradict our predictions. As both media coverage and Tobin's Q are highly correlated with other control variables, we need to interpret the correlation matrix results with caution, and it is important to control for other firm characteristics when we examine the relationship between media coverage and firm value. We will leave this to the multivariate regression test in the following section. Although the correlation coefficients between some variables are large, the variance inflation factors of all the independent variables are less than 6, indicating there is no serious multi-collinearity problem in our regressions.

[Insert Table 3 here]

V. Empirical Results

A. *Media Coverage and Firm Valuation*

Regression 1 in Table 4 reports the main regression result. As predicted, we find a significantly positive association between non-negative media coverage and firm valuation. Specifically, the estimated coefficient on non-negative media coverage (*NonnegativeMedia*) is positive (0.217) and significant at the 1% level, consistent with Hypothesis 1. In addition, negative media coverage is negatively associated with firm value (the estimated coefficient is -0.336, and significant at the 1% level), suggesting that negative media articles may damage firm reputation and increase investor perceptions of firm risk, hence reducing market value. This supports Hypothesis 2.

We further partition non-negative media reports into two sub-measures: positive media coverage and neutral media coverage of controlling shareholders. Regression 2 in Table 4 reports the estimation result. We find that the positive association between non-negative media coverage and firm value is primarily driven by the neutral reports, while the positive media coverage does not affect firm value. As controlling shareholders may bribe the media in exchange for favorable reports (Li 2012), investors tend to view the favorite media reports as less accurate and therefore less informative, and may even interpret those positive reports as collusion between the controlling shareholders and the media (Huang 2009). Hence, investors are less likely to rely on favorable articles to make investment choices.

The coefficients on control variables are largely consistent with prediction. Firms with higher ownership concentration (Control), with higher book-to-market ratio (*BM*), and with more leverage on debt (*Lev*) are valued lower by investors. The expropriation risk by controlling shareholders increases with the degree of ownership concentration (Bai et al. 2004); therefore firms with higher ownership concentration have lower market value. Larger firms (*Size*) tend to have a lower valuation by investors, which is consistent with the diversification discount argument. However, financial performance (*ROA*) is negatively associated with firm value. ROA primarily reflects the current-period performance while Tobin's Q represents the sum of future cash flows. High-growth firms typically have lower current-period financial performance but enjoy higher future performance. The average revenue growth rate for our sample firms is 25%, indicating that a majority of our sample firms grew rapidly during the sample period. This may explain why current-year ROA is negatively associated with a firm's market value.

In summary, the results reported in Table 4 are consistent with our hypotheses. Those firms whose controlling shareholders receive greater neutral media coverage enjoy a higher valuation by investors, and those with more negative media coverage have a lower market value.

[Insert Table 4 here]

B. *Robustness Checks*

As firms with higher market values are more likely to receive attention from the media, the media coverage variable in our regressions may be endogenous. We perform a two-stage Heckman self-selection correction model to address the potential endogeneity issue (Heckman 1979). The solution is to include the *inverse Mills ratio* in the regression models. The *inverse Mills ratio* is computed from the first-stage regression for the likelihood of a controlling shareholder receiving greater media exposure:

$$\textit{Inverse Mills Ratio} = \frac{\phi(Fit)}{\Phi(Fit)}$$ if a controlling shareholder's media coverage is greater than the median;

$$\text{and} = -\frac{\phi(Fit)}{1-\Phi(Fit)}$$ if a controlling shareholder's media coverage is less than or equal to the median,

where *Fit* is the fitted value computed from the first-stage selection regression, ϕ represents the probability density function of the normal distribution, and Φ represents the cumulative distribution function of the normal distribution.

In the first-stage selection regression we use a Probit model to predict the likelihood of a controlling shareholder receiving more media coverage. The dependent variable is *MediaDummy*, which is a dummy variable equal to one if a controlling shareholder's media coverage is greater than the median, and zero otherwise. Miller (2006) suggests that media coverage is positively related to firms' advertising expense. As Chinese listed firms do not disclose advertising expense information, we use selling expenses as a proxy for advertising expenses. Selling expense primarily includes advertising expenditures, sales salaries, and commissions. Zhang et al. (2010) and Ye and Zhang (2011) suggest that selling expense is an appropriate proxy for a firm's advertising intensity in China. We also include ownership concentration, firm size, BM, leverage, ROA, industry and year dummies in the first-stage selection regression as control variables.

[Insert Table 5 here]

As reported in Table 5, in the first-stage regression, media coverage is positively associated with a firm's selling expense. We also find that media coverage is positively associated with firm size, and negatively associated with *BM*. The pseudo R-square of the first stage regression is 18.8%.

In the second-stage regression, the *inverse Mills ratio* is included to control for the possible endogeneity issue of media coverage. As reported in the second-stage regression of Table 5, Tobin's Q is still positively related to neutral media coverage, and negatively related to negative media coverage. This is qualitatively the same as the results reported in Table 4.

We further perform the Granger causality tests in order to address the potential reverse causality issue. In Regression 1 (Regression 2) of Table 6 we regress the change in neutral media coverage (the change in negative media coverage) during year *t+1* on the change in Tobin's Q as well as the change in neutral media coverage (the change in negative media coverage) during year *t*. In Regression 3 of Table 6 we regress the change in Tobin's Q during year *t+1* on the changes in neutral and negative media coverage during year *t*. The sample size is substantially reduced because one-year lagged values are required for this test. We find that a past change in neutral media coverage positively influences the future change in Tobin's Q (coefficient = 0.164, significant at the 5% level). However, a past change in Tobin's Q does not lead to more neutral media coverage. These results confirm that more neutral media coverage leads to higher market value and there appears to be no reverse causality from market value to media coverage. In addition, we do not find a causality relationship between negative media coverage and firm value. In summary, our main findings are largely robust to the potential endogeneity issue.

[Insert Table 6 here]

C. *The Moderating Effects of Ownership Structure and Audit Quality*

We further examine the moderating effects of firm ownership structure and external audit quality on the relationship between media coverage and firm value. Bai et al. (2004) suggest that the monitoring by non-controlling shareholders can alleviate the agency conflicts between the controlling shareholder and the minority shareholders (the Type II agency problem). Similar to Bai et al. (2004), we use the sum of the percentage of shareholding by

the second to the fifth largest shareholders as a proxy for non-controlling shareholder monitoring. Non-controlling shareholders with higher stake in a firm will have stronger incentive to monitor the controlling shareholder. Hence the Type II agency problem is less severe, and the monitoring role of the media is less pronounced for firms with higher non-controlling shareholder ownership. The Regressions 1 and 2 in Table 7 suggest that the positive relationship between non-negative media coverage and firm value only holds for firms with lower non-controlling shareholder ownership, consistent with our prediction. Fan and Wong (2005) suggest that larger audit firms can alleviate the Type II agency problem. Therefore we anticipate that the monitoring role of the media should be more pronounced for firms audited by smaller audit firms. The Regressions 3 and 4 in Table 7 again support our prediction by documenting that the relationship between media coverage and firm value only holds for firms hiring non-Big-10 audit firms.

[Insert Table 7 here]

VI. Summary and Conclusion

There is a belief that the Chinese media is highly controlled by the Chinese government. However, much anecdotal evidence suggests that it may play an important role in the corporate governance of listed firms in China. We investigate how media coverage of controlling shareholders affects firms' valuation by investors. We find that firms whose controlling shareholders receive more neutral media reports are valued higher by investors, while negative media reports about controlling shareholders will adversely affect firm value.

Further analyses reveal that the impacts of the media on firm valuation only hold for firms with lower ownership by non-controlling shareholders and audited by small audit firms.

Our study has policy implications for China and other emerging countries. The Chinese government has been struggling with the privatization of old, state-owned enterprises. One of the biggest challenges is how to build more effective corporate governance systems to increase a firm's efficiency. In addition, the Chinese government attempts to protect public minority shareholders from expropriation by controlling shareholders. Our results suggest that media coverage can play a very important monitoring role by shaping a controlling shareholder's reputation and reducing information asymmetry. The negative relationship between negative media coverage and firm value also suggests that the media can discipline controlling shareholder misconduct by disseminating fraudulent and other self-serving activities and imposing significant influences over firm valuation. Therefore, the Chinese government should start to incentivize the media to be more active and increase their role as corporate monitors.

The recent financial scandals by listed Chinese firms in the U.S. and other overseas capital markets also highlight the significant role of the media in detecting firm misconduct. For example, on March 30, 2012, *Sino-Forest Corporation* filed for bankruptcy protection in Canada and its shares were delisted from the Toronto Stock Exchange on May 9, 2012. The company's bankruptcy and delisting of shares were triggered by a negative research report by Muddy Waters Research, which alleged that *Sino-Forest* had been fraudulently inflating its assets and earnings. Our research provides more comprehensive evidence of this type of monitoring role by the media.

Interestingly, favorable media reports about a firm's controlling shareholder are not associated with higher market valuation. This suggests that controlling shareholders could not enhance firm value by bribing the media to portray themselves positively. Investors would cast doubt on the integrity of journalists if they write favorable articles about a businessman. A better media strategy for family firms therefore is to truthfully represent their performance in order to gain trust from stakeholders and reduce information asymmetry between insiders and outside investors.

Like most studies, ours is not without its limitations. First, the Chinese media is still highly controlled by the government. The level of control may vary between different levels of government such as the central government and local municipal governments. Thus it would be interesting to examine how the control by different levels of government affects the media's monitoring role. Second, there is pervasive corruption by journalists (Li 2012) that might jeopardize the media's monitoring role because more good news than bad news may be reported for selective companies. This is evidenced by the uncorrelated relationship between favorable media coverage and firm value in China. Third, the media is limited to domestic Chinese media and it is interesting to compare the monitoring roles of domestic media and international media. We anticipate more research will be done on the role of the media in corporate China. Finally, although we attempt to build a causal relationship between media coverage and firm valuation in the robustness tests, statistical analysis alone cannot constitute proof of a causal relationship. The findings from this study therefore should be interpreted with caution, and the managerial implications should not be stretched too far.

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Table 1. Definition of Variables

Variables	Definition
Non-negative Media	The logarithm of (1+ the number of favorable and neutral articles containing the name of a firm's controlling shareholder)
Positive Media	The logarithm of (1+ the number of favorable articles containing the name of a firm's controlling shareholder)
Neutral Media	The logarithm of (1+ the number of neutral articles containing the name of a firm's controlling shareholder)
Negative Media	The logarithm of (1+ the number of unfavorable articles containing the name of a firm's controlling shareholder)
Tobin's Q	The sum of the market value of stockholders' equity and the book value of liabilities, divided by the sum of the book value of equity and liabilities
Control	The percentage of shares held by the controlling shareholder
Size	The natural logarithm of total assets
BM	The ratio of book to market value of equity
ROA	Return on total assets
Lev	The ratio of total liabilities to total assets

Table 2. Descriptive Statistics of Sample

Variables	Mean	Median	Std. Dev.	Min	Max
Positive Media	0.25	0	0.77	0	8
Neutral Media	1.19	0	6.63	0	176
Negative Media	0.43	0	5.24	0	111
Tobin's Q	1.86	1.47	1.23	0.74	9.58
Control(%)	31.57	28.76	12.78	9.31	75.82
Ln(Assets)	20.75	20.74	0.82	18.82	23.19
BM	0.47	0.48	0.37	-0.66	1.90
ROA	-0.03	0.02	0.25	-1.80	0.25
Lev	0.32	0.30	0.30	0.00	2.43

Table 3. Pearson Correlation Matrix of the Variables

	Tobin's Q	*Non-negative Media*	*Negative Media*	*Control*	*Size*	*BM*	*Lev*
Non-negative Media	**-0.1058**	**1**					
Negative Media	0.0628	0.0582	**1**				
Control	**-0.0849**	**0.1029**	-0.0442	**1**			
Size	**-0.4492**	**0.2593**	0.0402	**0.1222**	**1**		
BM	**-0.6919**	**0.1466**	**-0.2038**	**0.0884**	**0.4647**	**1**	
Lev	**0.4668**	**-0.0832**	**0.1541**	**-0.0953**	**-0.0742**	**-0.4587**	**1**
ROA	**-0.4673**	**0.1000**	**-0.3394**	**0.1008**	**0.1284**	**0.4793**	**-0.6419**

Note: The estimated coefficients in bold are significant at a level of 5% (two-tailed).

Table 4. Media Coverage and Firm Valuation

	Regression 1	Regression 2
	Dependent variable: Tobin's Q	Dependent variable: Tobin's Q
Non-negative Media	0.217***	
	(0.064)	
Positive Media		-0.180
		(0.134)
Neutral Media		0.312***
		(0.075)
Negative Media	-0.336***	-0.353***
	(0.119)	(0.119)
Control	-0.008**	-0.008**
	(0.003)	(0.003)
Size	-0.433***	-0.436***
	(0.064)	(0.064)
BM	-1.981***	-1.999***
	(0.164)	(0.163)
Lev	-0.497**	-0.504**
	(0.199)	(0.199)
ROA	-1.817***	-1.804***
	(0.243)	(0.243)
Constant	11.57***	11.68***
	(1.309)	(1.304)
Year and industry dummies	Controlled	Controlled
Observations	964	964
R-squared	0.591	0.594

Note: *, **, and *** denotes significance at the levels of 10%, 5%, and 1% (two-tailed), respectively. Standard errors are reported in parentheses.

Table 5. Two-Stage Heckman Self-Selection Regression Results

	First-stage regression	Second-stage regression
	Dependent variable: Media Dummy	Dependent variable: Tobin's Q
Selling expense	1.098*	
	(0.562)	
Positive Media		-0.122
		(0.137)
Neutral Media		0.332***
		(0.085)
Negative Media		-0.277**
		(0.120)
Control	0.000	-0.008**
	(0.004)	(0.003)
Size	0.509***	-0.373***
	(0.072)	(0.065)
BM	-0.784***	-2.006***
	(0.182)	(0.162)
Lev	-0.207	-0.547**
	(0.255)	(0.213)
ROA	0.108	-1.728***
	(0.287)	(0.249)
Inverse Mills Ratio		-0.108
		(0.078)
Constant	-10.550***	10.19***
	(1.468)	(1.318)
Year and industry dummies	Controlled	Controlled
Observations	940	940
R-squared or Pseudo R-squared	0.188	0.595

Note: *, **, and *** denotes significance at the levels of 10%, 5%, and 1% (two-tailed), respectively. Standard errors are reported in parentheses.

Table 6. Granger Causality Tests

	Regression 1	Regression 2	Regression 3
	Dependent variable: Change in neutral media at year *t+1*	Dependent variable: Change in negative media at year *t+1*	Dependent variable: Change in Tobin's Q at year *t+1*
Change in Tobin's Q at year t	-0.026	-0.001	0.132*
	(0.034)	(0.021)	(0.077)
Change in positive media at year t			-0.114
			(0.145)
Change in neutral media at year t	-0.477***		0.164**
	(0.036)		(0.080)
Change in negative media at year t		-0.422***	-0.008
		(0.054)	(0.279)
Change in Control at year t	0.001	0.002	-0.007
	(0.004)	(0.002)	(0.008)
Change in Size at year t	-0.137	0.211***	-0.955
	(0.116)	(0.072)	(0.252)
Change in BM at year t	-0.268**	0.208***	0.067
	(0.119)	(0.075)	(0.330)
Change in Lev at year t	0.118	-0.017	-2.102***
	(0.176)	(0.108)	(0.415)
Change in ROA at year t	0.119	-0.221***	-1.793***
	(0.113)	(0.072)	(0.321)
Constant	0.359**	0.048	1.540***
	(0.176)	(0.108)	(0.481)
Year and industry dummies	Controlled	Controlled	Controlled
Observations	557	557	583
R-squared	0.446	0.213	0.408

Note: *, **, and *** denotes significance at the levels of 10%, 5%, and 1% (two-tailed), respectively. Standard errors are reported in parentheses.

Table 7. The Moderating Effects of Ownership Structure and Audit Quality

	Regression 1	Regression 2	Regression 3	Regression 4
	Dependent variable: Tobin's Q	Dependent variable: Tobin's Q	Dependent variable: Tobin's Q	Dependent variable: Tobin's Q
	Sub-sample: Minority shareholder ownership> sample median	Sub-sample: Minority shareholder ownership< sample median	Sub-sample: Firms audited by Big-10 auditors	Sub-sample: Firms audited by non-Big-10 auditors
Non-negative Media	0.149	0.232***	0.169	0.212***
	(0.096)	(0.087)	(0.119)	(0.079)
Negative Media	-0.201	-0.542***	-0.204	-0.328***
	(0.163)	(0.183)	(0.419)	(0.127)
Control	-0.008	-0.004	-0.012*	-0.007*
	(0.009)	(0.004)	(0.007)	(0.004)
Size	-0.496***	-0.314***	-0.388***	-0.463***
	(0.101)	(0.083)	(0.139)	(0.076)
BM	-1.932***	-1.845***	-2.342***	-1.855***
	(0.267)	(0.209)	(0.405)	(0.185)
Lev	-0.385	-0.673**	0.231	-0.510**
	(0.288)	(0.294)	(0.779)	(0.218)
ROA	-1.523***	-2.592***	-0.759	-1.955***
	(0.342)	(0.360)	(0.707)	(0.268)
Constant	12.544***	8.987***	9.395***	12.150***
	(2.097)	(1.652)	(2.895)	(1.548)
Year and industry dummies	Controlled	Controlled	Controlled	Controlled
Observations	484	480	197	767
R-squared	0.579	0.640	0.626	0.594

Note: Minority shareholder ownership is the sum of the percentage of shareholding by the second to the fifth largest shareholders. *, **, and *** denotes significance at the levels of 10%, 5%, and 1% (two-tailed), respectively. Standard errors are reported in parentheses.