sustainability

MDPI

Article

Does Analyst Coverage Enhance Firms' Corporate Social Performance? Evidence from Korea

Hong-Min Chun and Sang-Yi Shin *

School of Business, Chungbuk National University, Cheongju-si 28644, Korea; hmchun@cbnu.ac.kr

* Correspondence: ssyend@naver.com; Tel.: +82-43-261-2349

Received: 20 June 2018; Accepted: 15 July 2018; Published: 21 July 2018

Abstract: This paper examines the association between analyst coverage and corporate social performance, using comprehensive donation expense data from Korea. Following analyst "investor recognition view", analyst coverage might be the one of the key determinants of firms' CSP to higher firms' reputational capital. The empirical results suggest that analyst coverage is, on average, positively associated with corporate social performance (CSP) and that this positive association is more pronounced in a non-chaebol (i.e., non-large industrial conglomerate) sample. Further this result is consistent with a battery of robustness tests, such as alternative use of CSP, interaction analysis, two-stage least square regression (2SLS) and alternative use of analyst coverage. This paper goes beyond prior literature using audited donation expense and chaebol data, this paper shows that analysts could partially provide information to enhance firms' reputations and thus their reputational capital by attending to CSP which would be regarded as pertinent firms' sustainability. Furthermore, this tendency is more pronounced in relatively lower-reputation firms, such as non-chaebol ones in Korea. Mainstream literature on CSR is conducted within the context of developed countries, such as the U.S. or the U.K., leaving the empirical question as to whether such results apply to other developing countries such as Korea. So, using unique corporate giving data, this paper investigate analyst coverage might enhance firms' CSP even in a relatively poor information environment such as Korea.

Keywords: analyst coverage; non-chaebol firms; donation expense; corporate social performance; reputation

1. Introduction

This study investigates whether analyst coverage affects the extent of corporate social performance in the Korean market. In addition, this study examines the potential differentiated effect when the firm belongs to chaebol or non-chaebol groups.

Corporate social performance (Hereafter, CSP) is a necessary strategy to enhance consumer perception of firms' product quality and companies' reputations [1] and thereby lower the companies' cost of capital [2,3]. Researchers have recently focused on, among the many relevant aspects of corporate social responsibility (Hereafter, CSR), corporate charitable contributions might be regarded as a direct measure of CSR [4–7]. A growing body of literature investigates why firms engage in charitable giving and how it affects firms' future financial performance.

Firms make corporate charitable contributions for a diversity of reasons. Prior papers suggest that slack resources [8]; firm size [9]; ownership structure [10]; managerial altruism [11]; reputational capital [4]; business awards [5], and internationalization [7]. Among them, altruistic theory consistently insists that corporate giving enhances a firm's informational environment and reputation.

Despite the growing importance of corporate charitable contribution, there are few studies that examine how organizational visibility affects it. Campbell and Slack [12] show that publicly more

visible firms make more charitable contribution on corporate giving. This study aims to fill the void by examining analyst coverage as a one of the proxies for the firms' organizational visibility of firm facts and corporate charitable contributions in Korea. We extend prior studies, e.g., Zhang et al. [4] by focusing on Korean firms. There is relatively scarce comprehensive firm/year donation expense data available for the U.S. or the U.K. However, as the Korean government requires that firms disclose individual firm/year donation expense data to the public, a vast amount of donation expense data could be obtained and used as a proxy for CSP. In addition, Korean firms report their contributions in their financial statements [5,6].

Thus, there is access to high-quality corporate-giving data as well, which facilitates the obtainment of a large sample on donation expenses in Korea. Therefore, Korea is a good and unique research setting in which to examine the association between analyst coverage and corporate charitable contributions. Also, Korea provides a special setting that is related to chaebol and non-chaebol firms. Chaebol firm is defined as a large business conglomerate which has large firm size and diverse affiliated firms, over 20 to 30 controlled subsidiary companies and operated in multiple countries such as multinational firms. On the other hand, non-chaebol firm is relatively small firm size and one or two subsidiary company, so this is similar to small and medium sized firm (SMEs). Further, non-chaebol firms, which regarded as relatively low reputation firms, have incentive in more CSP to acquire the necessary resources conveniently [13] and more cheaply [14]. However, for chaebols, CSP does not function in a similar vein because chaebols already enjoy some privileges, such as government subsidies, many kinds of business licenses [15,16]. So, it might be different results between analyst coverage and CSP whether the firm belongs to chaebol or non-chaebol firms.

Using an extensive data set for Korea from 2002 to 2015, we report several empirical results. First, we find that a higher level of analyst coverage is significantly and positively related to greater levels of CSP. So following analyst "investor recognition view", analyst coverage might be the one of the determinants of firms' CSP to higher firms' reputational capital. Second, the positive association between analyst coverage and CSP is more pronounced in non-chaebols. These findings suggest that non-chaebol firms' top managements face a higher risk of dismissal when firm' performance is poor. Consequently, CEOs of non-chaebol firms tend to be more concerned about reputation than those of chaebol firms because a high reputation might help to improve their job security more securely. Finally, we conduct a battery of robustness analyses to address various endogeneity issues, using two-stage least square regression (2SLS), three-stage least square regression (3SLS) then our main results remain qualitatively unchanged. Lastly, we conduct alternative proxy for CSP and analyst coverage then alternative proxy show similar result. So, overall robustness tests support our main result in this study.

This paper has several contributions to the literature. First, few studies examine the association between analyst coverage and CSP because of the lack of donation expense data in the U.S. Therefore, this study might be the first attempt to use qualified donation expense data in Korea to investigate the direct association between analyst coverage and CSP. So, extending analysts' "investor recognition view" [17,18], this paper shows that analyst coverage enhances firms' organizational visibility and this would higher firms' CSP which might be the pertinent factor for the firm' sustainability.

Second, this paper shows that analyst coverage and CSP are more pronounced in non-chaebol firms. These results show empirically that non-chaebol firms and chaebol firms react differently to firms' levels of analyst coverage and the need to lay more emphasis on, or desist from, CSP activities. So, in Korea, non-chaebol firms more need reputation then analyst coverage makes more role for the non-chaebol firms to higher firms' visibility and likely to enhance investors' recognition of the firms.

Third, a gap is filled in the mainstream literature on CSR within the context of developed countries, such as the U.S. or the U.K., leaving the empirical question as to whether such results apply to other developing countries. The economic consequences or determinants of CSR may vary according to a country's information environment and legal origin [19]; hence, it is important to investigate CSR's

determinants and economic consequences in emerging countries such as Korea. So, using unique corporate giving data, which is direct measure in CSR, this paper investigate analyst coverage might enhance firms' CSP even in a relatively poor information environment such as Korea.

Fourth, we conduct a battery of endogeneity analysis to reduce related problem. In this study, we use 2SLS 3SLS to reduce endogeneity problem inherent to analyst coverage and CSP then this battery of analysis lead to marginal contribution to the sustainability related study to reduce inherent endogeneity problem.

2. Prior Literature and Hypotheses Development

2.1. Corporate Social Performance

CSR is a corporation's commitment to act ethically. Numerous studies suggest that CSR activities improve society overall by enhancing the quality of life of employers and other members of society [20]. These studies assert that the beneficial effects of CSR enhance shareholder wealth, promote information transparency, and provide easier access to capital markets. That is, managers involved in CSR activities are more likely to improve financial reporting quality, strategies, and philanthropy. Accordingly, information asymmetry between firms and investors is reduced, thus mitigating firm risk [21]. Firms with high CSR have low capital costs [3], increase employee loyalty [22] and increase firm value [23,24]. CSR has a sustainable impact on short- and long-term economic performance [25]. CSR is also influenced by the motivations of various stakeholders in the firm [26] and is affected by managerial ownership [27], foreign ownership [28], institutional ownership [10] and board structure [27] labor unions [29,30] and business diversification [31].

Firms' charitable contributions were recently identified as an attribute of CSR activities. Similarly, the emphasis on charitable contributions is still in progress. According to altruistic theory, corporate philanthropic behavior is attributable to firms' legal and ethical responsibilities [11,32,33]. In line of this research, Campbell and Slack [12] assert that firms choose to engage in charitable giving to achieve the dual objective of charitable benevolence and corporate value creation. Choi and Wang [11] argue that corporate charitable contributions are the result of top managers' benevolence, integrity, and values.

Shareholder wealth maximization theory would suggest that CSP boosts to improve corporate financial performance. Margolis and Walsh [34] show that, among 109 studies that examined the relationship between the level of CSP and financial performance, 54 papers reported a positive relationship, implying that CSP, enhance future firms' financial performance. More directly, Lev et al. [35] documented that growth of corporate philanthropy is followed by future revenue growth. On the other hand, some studies show that managers use corporate philanthropy as a main means of corporate marketing. Summing up the above discussion, firms undertake greater charitable giving to enhance public scrutiny.

Next, some of prior papers try to investigate the determinant of firm' corporate giving. The award winners maintain a high level of charitable giving [5] and charitable giving is not a distribution of corporate profits [35] Also, public firms and business groups affiliated make more charitable giving [6] and Kim et al. [6] interpret this result that business group' strategic coordination of their affiliates' philanthropic decisions to maximize the value of the business group. Internationalization might play a pertinent role in promoting corporate philanthropy because of the mounting interaction of corporate philanthropic recognition among multinational firms [7]. Also, firms with high public scrutiny make more donations than those with low public scrutiny [5,36,37].

2.2. Analyst Coverage

Analysts take an informational intermediary between companies and shareholders to enhance information quality as well as quantity [38,39]. They analyze publicly available data including financial statements, earnings related disclosure data, and other announcements, and they disseminate to the

public regarding the financial information which they have analyzed. Investor usually cannot analyze whole of the investing firm, so analysts have a significant influence on investor behavior by giving up-to date information to the investor [40]. Hence, analysts usually interact with management directly during earnings releases via conference calls. Further, analysts express their opinion by research reports or through the mass media, such as newspaper or television interview.

Merton [17] theoretically shows that investor does not know all stocks; thus; stocks with higher investor recognition have higher investor demand. So, we label this view as the "investor recognition view". This view focuses on the role of financial analysts in enhancing the "investor recognition" for the firms' stock. So according this view, higher analyst coverage increases a stock's visibility, and as such, it is also likely to increase public awareness [18,41]. So, prior papers investigated that analyst coverage with cost of equity capital [42], firm value [41], irresponsible activities [43] and tax aggressiveness [18] in line of this view. Especially Jo and Harjoto [43] suggest that analysts provide indirect but additional social pressure to the firms to eventually reduce firms' irresponsible activities. Zhang et al. [4] show that analyst coverage is positively associated with CSP in the Chinese stock market. And this positive association is even more pronounced in non-state-owned firms.

2.3. Hypotheses Development

As discussed above, corporate charitable contributions have been an integral part of CSR. Following altruistic theory, corporate charitable contribution benefits both firms and society [11,44]. In addition, firms involved in CSR activities are more likely to engage in socially responsible outcomes. Hence, analyst coverage becomes a pertinent mechanism to improve organizational visibility [39,43,45]. Of course, analysts help to reduce information asymmetries between firms and external stakeholders by engaging in private and public information production [46–48]. Firms with higher analyst coverage usually receive more attention from the public and are more likely to be positively evaluated by stakeholders when they achieve good CSP. Further, this process helps firms to accumulate more reputational capital and in turn encourage them to continue to engage in CSP.

To the best of our knowledge, there are only few study [4] that investigate the direct relationship between analyst coverage and CSP. Taken together, it is plausible to predict that high-analyst-coverage firms will more likely receive attention from the public and outside investors with respect to their corporate-giving activity. Based on this discussion, the first hypothesis is as follows:

Hypothesis 1. *Analyst coverage is positively associated with corporate social performance.*

Next, we examine whether there is cross-sectional variation in CSP and analyst coverage between chaebol and non-chaebol firms. Korean chaebol firms are known for their high reputation and privileges. For example, in 2012, Samsung and Hyundai's operating profits accounted for 22.4% of all domestic subsidiaries' operating profits (based on information obtained from the National Tax Service). As of the end of 2017, the share of the two groups' affiliates in the domestic stock market reached 36.5%. Korean chaebols enjoy high brand name recognition for their diversification, scale and scope economy which is accumulated from many business fields.

In the meantime, the Korean economy has grown at the national level, along with the growth of these large corporations such as chaebol firms, by stimulating leadership in export-led enterprises fostered by the government. Korea's government gives chaebol firms many opportunities to grow sharply, enabling chaebol firms to become global firms with enhanced reputations. Further, for chaebols, corporate philanthropy does not operate in the same vein with non-chaebols because chaebols already enjoy the privileges that the government provides, such as the number of subsidies, business licenses [15,16].

Further, CEOs of non-chaebols tend to be more concerned regarding their reputations than do those of chaebols because greater reputations might help to improve their market job security. Most of CEOs of non-chaebols is non-owner CEOs then they concerned their CEO tenure. So, non-chaebol

CEOs make use of corporate giving as their tools to higher firms' reputation. Further, analyst coverage might increase firms' visibility and investor recognition so this benefit is more effective in non-chaebol firms. Hence, in contrast to CEOs of chaebol firms, those of non-chaebol firms try to pursue higher reputations by in diverse ways, and corporate giving by directing more public attention to them might be important. In this paper, we assume that analyst coverage of CSP is more pronounced for non-chaebols. Accordingly, the second hypothesis is as follows:

Hypothesis 2. *The relationship between analyst coverage and corporate social performance is more pronounced in non-chaebol firms.*

3. Research Methodology

3.1. Model Specification

This paper examines analyst coverage and CSP with several control variables. We show our topic in the Figure 1 above. To measure CSP, we calculate the two proxies: (1) the natural logarithm of donation expense and (2) donations divided by total assets following Zhang et al. [4].

$$CSP1(CSP2)_{i,t} = \beta_0 + \beta_1\, ANALYST_{i,t} + \beta_2 LNSIZE_{i,t} + \beta_3 ROA_{i,t} + \beta_4 OCF_{i,t} + \beta_5 LEV_{i,t} + \beta_6 MB_{i,t} + \beta_7 TAXBURN_{i,t} + Year\ Dummies + Industry\ Dummies + \varepsilon \quad (1)$$

CSP1	=	natural logarithm of the amount of donation expense;
CSP2	=	donation expense divided by total assets, which is multiplied by 10,000;
ANALYST	=	the number of analyst coverage;
LNSIZE	=	the natural log of total assets;
ROA	=	return of assets;
OCF	=	cash and cash equivalents divided by total assets;
LEV	=	leverage ratio;
MB	=	market value divided by book value of equity;
TAXBURN	=	tax burden ratio;
Year Dummies	=	year dummies;
Industry Dummies	=	industry median dummy variables;
ε	=	Error term.

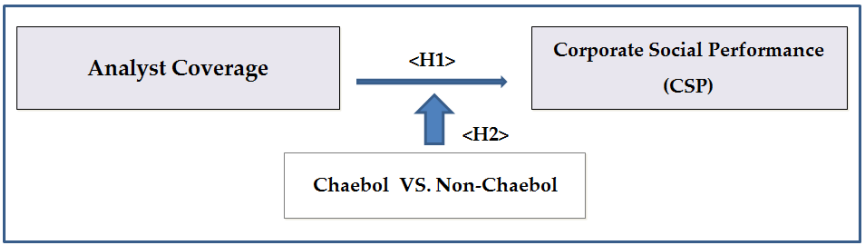

Figure 1. Analyst Coverage and Corporate Social Performance.

In this study, a positive (+) sign was shown for β_1 if analyst coverage was positively associated with CSP consistent with Zhang et al. [4].

Besides, prior papers suggest that leverage, firm size, and profitability are significantly associated with CSP activities [5]. So, high leverage firms have difficulty in carrying out CSP activities actively, thereby expected sign might be a negative (−). Also, if a firm size is large, firms try to carry out CSP to higher reputation, thereby resulting in a positive (+) expectation. Last, a highly profitable firm might carry out CSP activities more positively, thereby resulting in a positive (+) expectation.

OCF is a part of the profitability measure. Hence, there might be a positive (+) association between OCF and CSP. The MB, which adequately represents the risks and growth potential, was added to the

regression as control variables [5,6]. The value of its tax burden was included as a control variable because tax burden might be directly related to the consumption of internal resources by firms. Therefore, higher tax burden is negatively associated with CSP, resulting in a negative (−) expectation. Last, as industry-specific effects are likely to make a impact on CSP activities, the industry median dummy variables were included in the regression to reduce such effects. Further, this paper input year dummies to reduce yearly effects.

Endogeneity could be a major concern in our study. Analysts could choose to cover firms with high CSP activity, which could drive the effect found here. To mitigate the endogeneity problem of analyst coverage and CSP activity, 2SLS regression analysis was performed. We adopt two instrumental variables to capture exogenous variations in analyst coverage: (1) Industry mean value of analyst coverage and (2) firm's inclusion in Korea Stock Price Index 200 (KOSPI 200). The equation is as follows:

$$\begin{aligned} \text{First stage: } ANALYST_{i,t} = {} & \beta_0 + \beta_1 \, Industry\ mean\ value\ of\ analyst\ coverage_{i,t} + \\ & \beta_2 KOSPI200_{i,t} + \beta_3 LNSIZE_{i,t} + \beta_4 ROA_{i,t} + \beta_5 OCF_{i,t} + \beta_6 LEV_{i,t} + \\ & \beta_7 MB_{i,t} + \beta_8 TAXBURN_{i,t} + Year\ Dummies + Industry\ Dummies + \varepsilon, \end{aligned} \tag{2}$$

where Industry mean value of analyst coverage is the industry mean value of analyst coverage for firms in the same industry as firm *i* in year t. KOSPI200 is a dummy variable for whether the firm is belongs to the KOSPI200 then 1; otherwise then 0.

$$\begin{aligned} \text{Second stage: } CSP1(CSP2)_{i,t} = {} & \beta_0 + \beta_1 \, Fitted\ value\ of\ first\text{-}stage\ regression_{i,t} + \\ & \beta_2 LNSIZE_{i,t} + \beta_3 ROA_{i,t} + \beta_4 OCF_{i,t} + \beta_5 LEV_{i,t} + \beta_6 MB_{i,t} + \\ & \beta_7 TAXBURN_{i,t} + Year\ Dummies + Industry\ Dummies + \varepsilon \end{aligned} \tag{3}$$

Thus, we expect a positive (+) relationship between Industry mean value of analyst coverage, KOSPI200 and its value in Equation (2). Then, we calculated the fitted value of analyst coverage, after which we applied this value as the predicted value for Equation (3).

3.2. Sample

Our empirical analysis is based on a sample of Korean firms from 2002 to 2015. We extract accounting and donation expense data from Korea Information Service Value (hereinafter: Kis-Value) as well as TS2000. Korean government requires that firms disclose individual firm/year donation expense data to the public, then we can use audited donation expense data as a proxy for CSP in our sample. Also, analyst coverage data is obtained from Fn-guide which is the most famous sell side analyst information data-providing firm in Korea. So, our sample is randomly selected in our sample period. Our sample meets following criteria. (1) if they have financial statement data, which is required for the computation of the main variables, such as analyst coverage and donation expense data; (2) if they have all proxies available; (3) if they are a non-financial firm; (4) if their fiscal year end is in December. This process yielded the final sample of 3,146 annual firm/year observations from KOSPI / KOSDAQ-listed companies between 2002 and 2015.

4. Empirical Results

4.1. Descriptive Statistics

Table 1 provides descriptive statistics for the variables. Because of skewness, the variables are winsorized at the 1%, 99% level. The mean (or median value) of CSP1 and CSP2 are 19.29 (19.40) and, 13.93 (5.18) respectively. The average (or median value) of analyst coverage is 6.22 (3.00). Also, in this sample, 39% of the firms were affiliated with chaebol firms. Other control variables showed similar statistical values with those found in prior papers [5,49].

Table 1. Descriptive statistics.

Variables	N	Mean	Std. dev.	Min	25th	Median	75th	Max
CSP1	3146	19.29	2.93	0.00	17.31	19.40	21.44	26.73
CSP2	3146	13.93	22.73	0.01	1.40	5.18	15.10	129.94
ANALYST	3146	6.22	6.74	0.00	1.00	3.00	10.00	26.00
CHAEBOL	3146	0.39	0.49	0.00	0.00	0.00	1.00	1.00
LNSIZE	3146	27.11	1.68	23.21	25.84	26.86	28.23	32.76
ROA	3146	0.06	0.06	−0.15	0.03	0.06	0.09	0.24
OCF	3146	0.06	0.07	0.00	0.02	0.04	0.09	0.32
LEV	3146	0.41	0.19	0.06	0.26	0.41	0.56	0.84
MB	3146	1.60	1.29	0.24	0.77	1.22	1.95	7.82
TAXBURN	3146	0.18	0.24	−1.06	0.13	0.23	0.28	0.92

CHAEBOL = A dummy variable that equals 1 if the firm is a member of the top-30 business groups identified annually by the Korea Fair Trade Commission, and 0 otherwise; Please refer the research methology for the detaild other variable definition.

4.2. Univariate Analysis

Table 2 gives the Pearson correlations. Our dependent variables CSP1 and CSP2 are positively (+) associated with ANALYST. So, if analyst coverage increases, then CSP increases. However, the implication of the univariate analysis is very limited. Therefore, we performed multivariate regression analyses.

Table 2. Univariate correlations among key variables.

Variables	*CSP1*	*CSP2*	*ANALYST*	*CHAEBOL*	*LNSIZE*	*ROA*	*OCF*	*LEV*	*MB*
CSP2	**0.477**								
ANALYST	**0.475**	**0.095**							
CHAEBOL	**0.477**	−0.008	**0.392**						
LNSIZE	**0.688**	**0.051**	**0.627**	**0.671**					
ROA	0.021	**0.189**	**0.093**	**−0.128**	**−0.150**				
OCF	**−0.140**	**0.046**	**−0.062**	**−0.192**	**−0.240**	**0.203**			
LEV	**0.148**	**−0.100**	**0.056**	**0.299**	**0.306**	**−0.389**	**−0.207**		
MB	−0.000	**0.098**	**0.215**	**−0.074**	**−0.084**	**0.248**	**0.176**	−0.012	
TAXBURN	**0.107**	**0.119**	0.011	−0.003	**0.050**	**0.142**	**0.040**	**−0.045**	−0.012

Bold numbers indicate the significance level at the 5% level or better (two-tailed).

4.3. Multivariate Analysis

Table 3 shows the association between the analyst and CSP to testing for hypothesis one, and various analytical methods were used to prove hypothesis one. According to Peterson [50], in the case of panel data, the method of correcting standard errors as a clustered standard error in regression analysis is the best way to eliminate autocorrelation and variance. In this study, clustering regression analysis is added as a method of adjusting this variance according to Peterson [50]. In addition, the fixed-effect model and the random-effect model are tried to enhance the robustness of the empirical results. Column 1 of Table 3 shows that the coefficient of ANALYST is 0.042 and that it is statistically significant at the 1% level. Column 2 of Table 3 shows that the coefficient of ANALYST is 0.042 and that it is statistically significant at the 1% level in firm-level clustering analysis. Column 3 of Table 3 shows that the coefficient of ANALYST is 0.033 and that it is statistically significant at the 5% level in the fixed-effect regression analysis, with robust standard errors clustered at the firm level. Column 4 of Table 3 shows that the coefficient of ANALYST is 0.032 and that it is statistically significant at the 1% level in the random-effect regression analysis. Hence, this empirical result shows that, consistent with correlation analysis, analyst coverage increased firms' CSPs to enhance reputational capital in Korea. This result is consistent with that of Zhang et al. [4], who investigated the Chinese stock market. We can

thus conjecture that high analyst-coverage firms are more likely to be attracted by public and external investors in their business activities, and participate in CSP. The results reported above are consistent with Hypotheses one that analyst coverage is positively associated with corporate social performance.

Table 3. Regression Results for Analyst Coverage and Corporate Social Performance.

	(1)	(2)	(3)	(4)
Variables	***CSP 1***	***CSP 1***	***CSP 1***	***CSP 1***
	OLS	**Cluster**	**Fixed**	**Random**
ANALYST	0.042 ***	0.042 ***	0.033 **	0.032 ***
	(4.826)	(3.103)	(2.441)	(2.820)
LNSIZE	1.123 ***	1.123 ***	1.157 ***	1.159 ***
	(28.957)	(17.124)	(6.713)	(21.059)
ROA	4.716 ***	4.716 ***	4.853 ***	4.597 ***
	(6.723)	(5.549)	(5.279)	(6.281)
OCF	−0.553	−0.553	−1.146	−0.686
	(−0.919)	(−0.648)	(−1.186)	(−0.937)
LEV	−0.275	−0.275	−0.848	−0.681 *
	(−1.139)	(−0.688)	(−1.475)	(−1.926)
MB	0.023	0.023	0.018	0.049
	(0.648)	(0.400)	(0.215)	(0.882)
TAXBURN	0.485 ***	0.485 ***	0.138	0.299 *
	(3.126)	(2.699)	(0.787)	(1.890)
Constant	−10.370 ***	−10.370 ***	−11.676 ***	−11.966 ***
	(−10.029)	(−6.061)	(−2.616)	(−8.673)
Industry Dummy	Yes	Yes	No	No
Year Dummy	Yes	Yes	Yes	Yes
Firm Dummy	No	No	Yes	Yes
Firm Cluster	No	Yes	Yes	Yes
Observations	3146	3146	3146	3146
R-squared	0.533	0.533	0.085	0.084
Number of Stocks	722	722	722	722

***, **, and * indicate, respectively, the significance level at the 1%, 5%, and 10% level or better.

Table 4 shows the results from the regression of CSP at the level of analyst coverage regarding chaebol and non-chaebol samples and analyst coverage is only effective in the non-chaebol sample. So, as we expected from the hypotheses two, CEO's of non-chaebol firms try to enhance CSP more and analyst coverage is especially and positively associated with CSP in non-chaebol firms. These results show that, unlike CEOs of chaebol firms, CEOs of non-chaebol firms strive to gain high reputation in various ways and that analyst coverage is more effective for non - chaebol firms' CSP. The results reported above are consistent with hypotheses two that the relationship between analyst coverage and corporate social performance is more pronounced in non-chaebol firms. Also, our whole firm/year observations equal to 3146 then we divide our sample into two groups, such as chaebol group and non-chaebol group. So, chaebol group firm/year observations equal to 1238 and non-chaebol group firm/year observations equal to 1908.

Table 4. Regression Results for Analyst Coverage and Corporate Social Performance. (Chaebols vs. Non-Chaebols)

	(1)	(2)
Variables	***CSP 1***	***CSP 1***
	Chaebol	**Non-Chaebol**
ANALYST	0.028 (1.513)	0.062 *** (3.440)
LNSIZE	1.023 *** (9.380)	1.145 *** (11.182)
ROA	4.755 *** (3.438)	4.835 *** (4.622)
OCF	−0.014 (−0.010)	−0.507 (−0.518)
LEV	0.127 (0.177)	−0.649 (−1.429)
MB	0.189 *** (2.835)	−0.055 (−0.739)
TAXBURN	0.370 * (1.701)	0.524 ** (2.022)
Constant	−7.525 *** (−2.610)	−10.992 *** (−3.995)
Industry Dummy	Yes	Yes
Year Dummy	Yes	Yes
Firm Cluster	Yes	Yes
Observations	1238	1908
R-squared	0.543	0.339

***, **, and * indicate, respectively, the significance level at the 1%, 5%, and 10% level or better.

4.4. Robustness Analysis

This section reviews whether the main results of the research hypothesis are robust to alternative CSP variables, interaction analysis, 2SLS analyses and alternative analyst coverage proxy. The overall results, which are summarized in Tables 5–8, reinforce our primary findings that high-analyst-coverage leads to high CSP. In Table 5, we conduct robustness test using alternative proxy for CSP. So, we label this CSP proxy as CSP2. Then ANALYST is positively and statistically significant for CPS2 in full and non-chaebol sample. So, our empirical results are consistent with both the full and non-chaebol samples with using CSP2 as an alternative proxy for CSP.

Table 5. Robustness Test: Another Corporate Social Performance Variable.

	(1)	(2)	(3)
Variables	***CSP 2***	***CSP 2***	***CSP 2***
	Full	**Chaebol**	**Non-Chaebol**
ANALYST	0.281 ** (2.146)	0.125 (0.933)	0.602 *** (2.765)
LNSIZE	0.983 (1.631)	0.012 (0.011)	3.789 *** (2.873)
ROA	53.212 *** (4.934)	44.565 *** (3.097)	56.060 *** (4.160)

Table 5. *Cont.*

	(1)	(2)	(3)
Variables	***CSP 2***	***CSP 2***	***CSP 2***
	Full	**Chaebol**	**Non-Chaebol**
OCF	−0.510 (−0.047)	−17.629 (−1.074)	7.958 (0.632)
LEV	−6.494 (−1.594)	−7.543 (−1.253)	−3.472 (−0.739)
MB	0.566 (0.616)	1.971 *** (2.776)	−0.277 (−0.264)
TAXBURN	5.634 *** (3.769)	2.478 (1.250)	5.678 *** (2.940)
Constant	−6.619 (−0.422)	30.207 (1.099)	−88.929 ** (−2.524)
Industry Dummy	Yes	Yes	Yes
Year Dummy	Yes	Yes	Yes
Firm Cluster	Yes	Yes	Yes
Observations	3146	1238	1908
R-squared	0.151	0.141	0.208

***, **, and * indicate, respectively, the significance level at the 1%, 5%, and 10% level or better.

Table 6. Robustness Test: Interaction Analysis.

	(1)	(2)
Variables	***CSP 1***	***CSP 2***
	Full	**Full**
ANALYST × *NON-CHAEBOL*	0.033 ** (2.472)	0.808 *** (5.869)
ANALYST	0.030 *** (2.912)	−0.043 (−0.408)
NON-CHAEBOL	−0.439 *** (−3.258)	−1.489 (−1.062)
LNSIZE	1.087 *** (24.762)	1.875 *** (4.098)
ROA	4.686 *** (6.687)	51.761 *** (7.091)
OCF	−0.434 (−0.722)	1.140 (0.182)
LEV	−0.299 (−1.237)	−5.994 ** (−2.383)
MB	0.005 (0.128)	0.200 (0.543)
TAXBURN	0.490 *** (3.151)	4.893 *** (3.021)

Table 6. *Cont.*

	(1)	(2)
Variables	***CSP 1***	***CSP 2***
	Full	**Full**
Constant	−9.135 ***	−30.480 **
	(−7.570)	(−2.425)
Industry Dummy	Yes	Yes
Year Dummy	Yes	Yes
Observations	3146	3146
R-squared	0.535	0.163

***, **, and * indicate, respectively, the significance level at the 1%, 5%, and 10% level or better.

Table 7. Robustness Test: 2SLS Regression.

	First Stage	**Second Stage**	
	(1)	**(2)**	**(3)**
Variables	***ANALYST***	***CSP1***	***CSP2***
Industry Mean Value of Analyst Coverage	0.605 ***		
	(11.280)		
KOSPI200	0.796 ***		
	(3.509)		
PREANAL		0.131 ***	1.569 ***
		(3.117)	(3.576)
LNSIZE	3.058 ***	0.830 ***	−3.270 **
	(41.549)	(5.883)	(−2.219)
ROA	10.101 ***	3.830 ***	40.364 ***
	(7.209)	(4.707)	(4.750)
OCF	1.156	−0.623	−1.530
	(0.955)	(−1.032)	(−0.243)
LEV	−3.922 ***	0.107	−0.962
	(−8.052)	(0.356)	(−0.308)
MB	1.204 ***	−0.092	−1.090 *
	(17.770)	(−1.448)	(−1.649)
TAXBURN	0.180	0.465 ***	5.346 ***
	(0.575)	(2.986)	(3.285)
Constant	−81.416 ***	−2.930	101.242 ***
	(−42.598)	(−0.816)	(2.699)
Industry dummy	Yes	Yes	Yes
Year dummy	Yes	Yes	Yes
Observations	3146	3146	3146
R-squared	0.637	0.531	0.152

***, **, and * indicate, respectively, the significance level at the 1%, 5%, and 10% level or better.

Table 8. Robustness Test: Alternative proxy for analyst coverage.

Variables	(1) *CSP1*	(2) *CSP2*	(3) *CSP1*	(4) *CSP2*
ANALYST2	0.044 ***	0.285 **		
	(3.306)	(2.153)		
ANALYST3			0.044 ***	0.319 **
			(3.363)	(2.359)
LNSIZE	1.102 ***	0.879	1.112 ***	0.815
	(15.958)	(1.357)	(16.880)	(1.318)
ROA	4.610 ***	52.624 ***	4.534 ***	51.615 ***
	(5.435)	(4.820)	(5.311)	(4.739)
OCF	−0.651	−1.136	−0.623	−1.046
	(−0.768)	(-0.106)	(-0.737)	(-0.097)
LEV	−0.240	−6.310	−0.264	−6.298
	(−0.597)	(−1.537)	(−0.663)	(−1.554)
MB	0.016	0.535	0.020	0.510
	(0.279)	(0.564)	(0.348)	(0.545)
TAXBURN	0.472 ***	5.551 ***	0.480 ***	5.590 ***
	(2.631)	(3.729)	(2.670)	(3.746)
Constant	−9.893 ***	−4.326	−10.010 ***	−1.757
	(−5.565)	(−0.256)	(−5.778)	(−0.107)
Industry Dummy	Yes	Yes	Yes	Yes
Year Dummy	Yes	Yes	Yes	Yes
Firm Cluster	Yes	Yes	Yes	Yes
Observations.	3,146	3,146	3,146	3,146
R-squared	0.534	0.152	0.534	0.152

***, **, and * indicate, respectively, the significance level at the 1%, 5%, and 10% level or better.

Table 6 shows that our main result is consistent in interaction analysis. Hence, ANALYST multiplied by NON-CHAEBOL is statistically significant for both CSP1 and CSP2, respectively. As we compare the coefficient of ANALYST and the coefficients of ANALYST multiply Non-chaebol, non-chaebol variable could be moderating variable to amplifying analyst coverage and CSP relationship, on average. Consequently, the empirical results show that analyst coverage increases with the non-chaebol sample, leading to higher CSP in Korea.

There may be potential endogenous problems in our analysis that may be caused by adverse causalities that may affect the interpretation of causal relationships between analysts and CSP. Our main result suggests that greater analyst coverage leads to greater CSP, while analysts were already analyzing firms with greater CSP. Hence, in Table 7, we tackle this concern using 2SLS estimation. For the 2SLS regression, we used industry mean value of analyst coverage as well as KOSPI200 as an exogenous instrument variable. We use industry mean value of analyst coverage as instrumental variable following Chen et al. [51] and Feng et al. [52]. Also, Yu [53] suggests that when the firm is involved in standard and Poor's 500(S&P 500), then it leads to high analyst coverage because institutional investor invest their money more on S&P 500 stocks(Feng et al. [52] use China's CSI 300 as an instrument variable.). So, we use KOSPI200 because KOSPI200 is the Korean version of S&P500.

As Table 7 shows, in the first-stage regression, the industry mean value of analyst coverage was statistically significant at the 1% level (t-value = 11.280) with ANALYST and KOSPI200 was statistically significant at the 1% level (t-value = 3.509) with ANALYST. So this first-stage regression association is consistent with our expectation. We then use this fitted value from the first-stage regression, called PREANAL, as our main variable for the second-stage regression. Column 2 of Table 7 shows

that PREANAL (the fitted value for analyst coverage) is still significantly and positively associated with CSP1 and CSP2 in the full sample. This indicates that analyst coverage increases CSP even after controlling for the endogeneity of analyst coverage.

In untabulated result, we conduct additional test to reduce endogeneity problem. we conduct fixed effect two-stage least square regression (FE2SLS) then our empirical result is generally consistent with OLS result. Further, we conduct three-stage least square regression (3SLS) for the simultaneous equations model. We estimate a system of equations using a three-stage least square approach following Khan et al. [54]. Then our empirical result is consistent with OLS results in CSP1. So, we conclude that even though we conduct robustness test regarding endogeneity analysis, then our empirical result is consistent with main result.

Last, we conduct robustness test using alternative proxy for analyst coverage. Then we use total number of security firms' stock recommendation (ANALYST2) as well as total number of security firms' stock target price (ANALYST3) as the alternative proxy for the analyst coverage. As we see in Table 8, ANALYST2(ANALYST3) is statistically significant for CSP1 as well as CSP2. So, we conclude that our empirical result is consistent with using alternative proxy for analyst coverage.

In untabulated empirical results, we find almost similar results for the six months analyst coverage which analyst coverage in the past six months before financial statements are disclosed.

5. Conclusions

This study shows that analyst coverage is positively associated with CSP activities in Korea and that this positive association is more pronounced in non-chaebol samples. Also, this main result is consistent with interaction analysis, using 2SLS, 3SLS regression and using alternative proxy for analyst coverage and CSP. Hence, in Korea, firms try to utilize donation expense as a tool for upping reputational capital, thus analyst coverage might be one of the key factors enhancing a firm's reputation capital. So, following altruistic theory, analyst coverage would enhance firm' corporate giving and this behavior concurrently higher firm' reputation. Further, this positive association is more pronounced in non-chaebol firms, which are regarded as having relatively low reputation in Korea. Hence, these firms try to use analyst coverage to enhance reputation building.

In the case of the largest conglomerates in most developing countries, it is common that they belong to the business group except for public enterprises [13]. In the case of Korea, Taiwan, India, Mexico, and Brazil, the business group is a representative type of company. In the case of large-scale businesses in developing countries, diversified business groups, dominated by family members, are the main players. (For example, Tata Group in India, Hon Hai in Taiwan and Formosa Plastic companies are similar to Samsung and Hyundai Group in Korea.) In Korea, the companies that make up a large group of companies like Samsung and Hyundai are called chaebol. Developing countries have been forced to use chaebol-oriented growth policies as a strategy to achieve economic growth with limited resources. The chaebol is already well known for its aggressive support from the government and business diversification, finally reputation is usually higher than non-chaebol firms. So, this study will complement the study of Zhang et al. [4] using Chaebols and Non-chaebol data in Korea.

Nonetheless, these findings come with some limitation. There might be other omitted factors related to CSP that bias our empirical results. Many factors could influence to firms' CSP then we try to control variables to reduce omitted variable problem following prior papers. To tackle and reduce this concern, we conduct a battery of robustness tests and there is qualitatively unchanged and consistent result with it. However, it remains an interesting area for the future research which would still be to study whether the analyst coverage and CSP relationships still holds when using an international large panel data. Nevertheless, even as a study with such limitations, this Korean study has its own significance, and as further country-specific studies are done, looking at a broader spectrum of findings may lead to more generalized conclusions.

Further future research would suggest that media coverage could effect on firms' organizational visibility so we need to study more on these issues. We assume that high media coverage firms' try to

higher CSP to higher reputational capital. There might be limited study has been done regarding media coverage or exposure might influence to firms' CSP. So, future study would conduct this research to know more about the impact of media coverage on firms' CSP. In addition, we need to broaden our research topic in international evidence then verify our empirical result is valid in international context. Further, there might be differentiate results according to firm belongs to different information environment by country to country and firm belongs to developed or developing countries. So, it needs more research to figure it out regarding analyst coverage and CSP in the international context.

Besides the result of this paper, the findings also have some practical implications. Managers of non-chaebol firms in developing countries should be actively interact with sell side or buy side analyst to higher firms' reputational capital by implementing corporate giving.

Author Contributions: H.-M.C. and S.-Y.S. designed the research papers; H.-M.C. and S.-Y.S. analyzed and collected the data; H.-M.C. and S.-Y.S. wrote the paper. H.-M.C. and S.-Y.S. contributed equally in this paper.

Conflicts of Interest: The authors declare no conflict of interest.

References

1. Milgrom, P.; Roberts, J. Price and advertising signals of product quality. *J. Polit. Econ.* **1986**, *94*, 796–821. [CrossRef]
2. Beatty, R.P.; Ritter, J.R. Investment banking, reputation and the underpricing of initial public offering. *J. Financ. Econ.* **1986**, *15*, 213–232. [CrossRef]
3. Ghoul, S.; Guedhami, O.; Kwok, C.; Mishra, D. Does corporate social responsibility affect the cost of capital? *J. Bank. Financ.* **2011**, *35*, 2388–2406. [CrossRef]
4. Zhang, M.; Tong, L.; Su, J.; Cui, Z. Analyst coverage and corporate social performance: Evidence from China. *Pacific-Basin Fin. J.* **2015**, *32*, 76–94. [CrossRef]
5. Yoo, C.; Pae, J. Corporate charitable contributions: Business award winners' giving behaviors. *Bus Eth: A Euro. Rev.* **2016**, *25*, 25–44.
6. Kim, B.; Pae, J.; Yoo, C. Business Groups and Tunneling: Evidence from Corporate Charitable Contributions by Korean Companies. *J. Bus. Eth.* **2017**, 1–24. [CrossRef]
7. Du, X.; Zeng, Q.; Chang, Y. To be philanthropic when being international: Evidence from Chinese family firms. *J. Manag. Org.* **2018**, *24*, 424–449. [CrossRef]
8. Waddock, S.A.; Graves, S.B. The corporate social performance-financial performance link. *Strat. Manag. J.* **1997**, *18*, 303–319. [CrossRef]
9. Amato, L.H.; Amato, C.H. The effects of firm size and industry on corporate giving. *J. Bus. Eth.* **2007**, *3*, 229–241. [CrossRef]
10. Barnea, A.; Rubin, A. Corporate social responsibility as a conflict between shareholders. *J. Bus. Eth.* **2010**, *97*, 71–86. [CrossRef]
11. Choi, J.; Wang, H. The promise of a managerial values approach to corporate philanthropy. *J. Bus. Eth.* **2007**, *75*, 345–359.
12. Campbell, D.; Slack, R. The strategic use of corporate philanthropy: Building societies and demutualisation defences. *Bus Eth: A Euro. Rev.* **2007**, *16*, 326–343. [CrossRef]
13. Colpan, A.; Takashi, H.; James, L. *The oxford Handbook of Business Group*; Oxford University Press: Oxford, UK, 2010.
14. Gregory, J.R. *Marketing Corporate Image: The Company as Your Number one Product*; NTC Business Books: Chicago, IL, USA, 1991.
15. Shleifer, A.; Vishny, R.W. Politicians and firms. *Q. J. Econ.* **1994**, *109*, 995–1025.
16. Byun, H.S.; Lee, J.H.; Park, K.S. Ownership Structure, Intensive Board Monitoring, and Firm Value: Evidence from Korea. *Asia-Pacific J. Fin. Stud.* **2013**, *42*, 191–227. [CrossRef]
17. Merton, R.C. A simple model of capital market equilibrium with incomplete information. *J. Fin.* **1987**, *42*, 483–510. [CrossRef]
18. Allen, A.; Francis, B.B.; Wu, Q.; Zhao, Y. Analyst coverage and corporate tax aggressiveness. *J. Bank. Fin.* **2016**, *73*, 84–98. [CrossRef]

19. Ghoul, S.; Guedhami, O.; Kim, H.; Park, W. Corporate environmental responsibility and the cost of capital: International evidence. *J. Bus. Eth.* **2018**, *149*, 335–361. [CrossRef]
20. Hillman, A.J.; Keim, G.D. Shareholder value, stake-holdermanagement, and social issues: What's the bottomline? *Strateg. Manag. J.* **2001**, *22*, 125–140. [CrossRef]
21. Jensen, M.C.; Meckling, W.H. Theory of the firm: Managerial behavior, agency costs and ownership structure. *J. Financ. Econ.* **1976**, *3*, 305–360. [CrossRef]
22. Turban, D.B.; Cable, D.M. Firm reputation and applicant pool characteristics? *J. Organ. Behav.* **2003**, *24*, 733–752. [CrossRef]
23. Fombrun, C.J.; Shanley, M. What's in a name? Reputation building and corporate strategy. *Acad. Manag. J.* **1990**, *33*, 233–258.
24. Su, J.; He, J. Does giving lead to getting—Evidence from Chinese private enterprises. *J. Bus. Ethics.* **2010**, *93*, 73–90. [CrossRef]
25. Feng, Y.; Chen, H.H.; Tang, J. The impacts of social responsibility and ownership structure on sustainable financial development of China's energy industry. *Sustainability* **2018**, *10*, 301. [CrossRef]
26. Aguilera, R.V.; Rupp, D.E.; Williams, C.A.; Ganapathi, J. Putting the S Back in corporate social responsibility: A multilevel theory of social change in organizations. *Acad. Manag. Rev.* **2007**, *32*, 836–863. [CrossRef]
27. Johnson, R.; Greening, D. The effects of corporate governance and institutional ownership types on corporate social performance. *Acad. J. Manag. J.* **1999**, *42*, 564–576.
28. Oh, W.Y.; Chang, Y.K.; Martynov, A. The effect of ownership structure on corporate social responsibility: Empirical evidence from Korea. *J. Bus. Eth.* **2011**, *104*, 283–297. [CrossRef]
29. Kinderman, D.P.; Lutter, M. *Explaining the Growth of CSR within OECD Countries: The Role of Institutional Legitimacy in Resolving the Institutional Mirror vs. Substitute Debate*; MPIfG Discussion Paper; Social Science Research Network: Rochester, NY, USA, 2018.
30. Dawkins, C.E. A test of labor union social responsibility: Effects on union member attachment. *Bus. Soc.* **2016**, *55*, 214–245. [CrossRef]
31. Chun, H.M. Corporate international diversification and corporate social responsibility: Evidence from Korean firms. *Asian Soc. Sci.* **2014**, *21*, 54–63. [CrossRef]
32. Carroll, A.B. A three-dimensional conceptual model of corporate performance. *Acad. Manag. Rev.* **1979**, *4*, 497–505. [CrossRef]
33. Haley, U.C. Corporate contributions as managerial masques: Reframing corporate contributions as strategies to influence society. *J. Manag. Stud.* **1991**, *28*, 485–510. [CrossRef]
34. Margolis, J.D.; Walsh, J.P. Misery loves companies: Rethinking social initiatives by business. *Admin. Sci. Quart.* **2003**, *48*, 268–305. [CrossRef]
35. Lev, B.; Petrovits, C.; Radhakrishnan, S. Is doing good good for you? How corporate charitable contributions enhance revenue growth. *Strat. Manag. J.* **2010**, *31*, 182–200. [CrossRef]
36. Gan, A. The Impact of Public Scrutiny on Corporate Philanthropy. *J. Bus. Eth.* **2006**, *69*, 217–236. [CrossRef]
37. Brammer, S.; Millington, A. Corporate Reputation and Philanthropy: An Empirical Analysis. *J. Bus. Eth.* **2005**, *61*, 29–44. [CrossRef]
38. Chou, R.K.; Shiah-Hou, S.-R. Quality of Corporate Governance, Analyst Coverage, and Analyst Forecast Error: Do analysts serve as external monitors to managers? In Proceedings of the European Financial Management Association 2010 Annual Meetings, Aarhus, Denmark, 23–26 June 2010.
39. Jiraporn, P.; Chintrakarn, P.; Kim, Y.S. Analyst following, staggered boards, and managerial entrenchment. *J. Bank. Fin.* **2012**, *36*, 3091–3100. [CrossRef]
40. Graham, J.R.; Harvey, C.R.; Rajgopal, S. The economic implications of corporate financial reporting. *J. Account. Econ.* **2005**, *40*, 3–73. [CrossRef]
41. Li, K.; You, H. What is the value of sell-side analysts? Evidence from Coverage Initiations and terminations. *J. Account. Econ.* **2015**, *60*, 141–160. [CrossRef]
42. Richardson, S.; Sloan, R.; You, H. What makes stock prices move? Fundamentals vs. investor recognition. *Fin. Anal. J.* **2012**, *68*, 30–50. [CrossRef]
43. Jo, H.; Harjoto, M. Analyst coverage, corporate social responsibility, and firm risk. *Bus. Eth.* **2014**, *23*, 272–292. [CrossRef]
44. Porter, M.E.; Kramer, M.R. The competitive advantage of corporate philanthropy. *Harv. Bus. Rev.* **2002**, *80*, 56–68. [PubMed]

45. Healy, P.M.; Palepu, K.G. Information asymmetry, corporate disclosure, and the capital markets: A review of the empirical disclosure literature. *J. Account. Econ.* **2001**, *31*, 405–440. [CrossRef]
46. Francis, J.; Hanna, J.D.; Philbrick, D.R. Management communications with securities analysts. *J. Account. Econ.* **1997**, *24*, 363–394. [CrossRef]
47. Ayers, B.C.; Freeman, R.N. Evidence that analyst following and institutional ownership accelerate the pricing of future earnings. *Rev. Account. Stud.* **2003**, *8*, 47–67. [CrossRef]
48. Piotroski, J.D.; Roulstone, D.T. The influence of analysts, institutional investors, and insiders on the incorporation of market, industry, and firm-specific information into stock prices. *Account. Rev.* **2004**, *79*, 1119–1151. [CrossRef]
49. Chun, H.; Shin, S. The impact of labor union influence on corporate social responsibility. *Sustainability* **2018**, *10*, 1922. [CrossRef]
50. Peterson, M. Estimating Standard Errors in Finance Panel Data Sets: Comparing Approaches. *Rev. Financ. Stud.* **2009**, *22*, 435–480. [CrossRef]
51. Chen, Z.; Huang, Y.; Wei, J. Executive pay disparity and the cost of equity capital. *J. Fin. Quan. Anal.* **2013**, *48*, 849–885. [CrossRef]
52. Feng, X.; Na, H.; Johansson, A.C. Ownership, analyst coverage, and stock synchronicity in China. *Inter. Rev. Fin. Anal.* **2016**, *45*, 79–96. [CrossRef]
53. Yu, F. Analyst coverage and earnings management. *J. Fin. Econ.* **2008**, *88*, 245–271. [CrossRef]
54. Khan, A.; Mather, P.; Balachandran, B. Managerial share ownership and operating performance: Do independent and executive directors have different incentives? *Aust. J. Manag.* **2014**, *39*, 47–71. [CrossRef]