# The Dark Side of Corporate Charitable Donations: Evidence from an Emerging Market

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## ABSTRACT

This study investigates whether and how independent director-affiliated corporate charitable donations affect investment efficiency. Using a sample of 20,735 firm-year observations for 3,570 unique Chinese firms over the 2010-2020 period, we document a strong negative link between affiliated corporate donations and investment efficiency, even after controlling for a wide range of firm characteristics, addressing potential endogeneity, and accounting for a number of alternative explanations. On average, a one-standard-deviation increase in affiliated donations can lead to an increase of 1.69% in inefficient investment. Further analysis suggests that the negative relation between affiliated corporate donations and investment efficiency is more pronounced for firms with poor corporate governance and weaker external monitoring. Overall, these findings are consistent with the agency view that affiliated donations reduce the monitoring effectiveness of independent directors, resulting in less efficient investment. Our study highlights the important monitoring role of independent directors in shaping corporate investment decisions.

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## 1. INTRODUCTION

In the literature, the value of independent directors has long been recognized. Theoretically speaking, independent directors should play a crucial role in monitoring managerial decisions, reducing agency problems, optimizing resource allocation, and thereby, increasing the investment efficiency of a firm (Fama and Jensen, 1983; Rajkovic, 2020). In practice, the independence status of corporate directors, as defined by the Securities and Exchange Commission (SEC), depends primarily on their (or their immediate family members') employment and financial affiliations with the firm. Beyond employment and financial ties, however, independent directors may have other indirect connections to the firm that may interfere with their independence and affect the effectiveness of the internal governance mechanism (Hope et al., 2019; Khedmati et al., 2020; Zaman et al., 2021). The increased attention on various indirect ties has fueled a growing body of research, of which one novel stream focuses on corporate donations affiliated with independent directors (i.e., affiliated donations), as exemplified in a recent study by Cai, Xu, and Yang (2021). The aim of the study presented here is to further explore the value of director independence by comparing corporate investment efficiency between firms with and without the presence of affiliated donations.

Charitable donations, as a key component of corporate social responsibility, have attracted considerable academic attention due to their potential influence on corporate image and policies. From the strategic perspective, it is argued that firms can utilize charitable donations as a means to distract from negative publicity (Brammer and Millington, 2005; Koehn and Ueng, 2010; Lys et al., 2015; Shiu and Yang, 2015). Moreover, such donations can assist firms in forming political alliances, securing government aids, enhancing their public image, and boosting product sales (Sánchez, 2000; Godfrey, 2005; Su and He, 2010; Zhang et al., 2010; Gao et al., 2017). Alternatively, the agency perspective suggests that managers may

exploit charitable donations for their own interests, and thus, negatively impact investors. Building upon these very different views, this paper investigates whether affiliated donations, or more specifically, corporate charitable contributions to foundations where independent directors undertake senior management positions, can act as a mechanism to interfere with directors' independence, and thereby, affect corporate investment efficiency.

Hypothetically speaking, affiliated donations can affect corporate investment efficiency in two different ways. One view is motivated by the resource dependence perspective. Given that independent directors often serve on multiple boards (Hauser, 2018; Chen and Guay, 2020), being busy may prevent them from effectively performing their duties (Fich and Shivdasani, 2006). Affiliated donations can mitigate this problem by releasing independent directors from their fundraising duties at the foundations that they are affiliated with. In addition, if affiliated donations can be considered as implicit payments to independent directors (Cai et al., 2021), such incentives may encourage independent directors to more diligently discharge their responsibilities, consequently improving corporate investment efficiency. The other view is motivated by the agency perspective. Independent directors are expected to be independent of management and serve as watchdogs of public interest. The director-management ties built through affiliated donations may largely impair the monitoring incentives of independent directors (Cai et al., 2021). Thus, affiliated donations may also decrease corporate investment efficiency due to reduced monitoring.

Drawing on a sample of hand-collected affiliated donations data consisting of 3,570 Chinese firms over the 2010-2020 period, we document evidence that the presence of affiliated donations tends to reduce corporate investment efficiency, even after controlling for various influential firm characteristics documented in related empirical literature. On average, a one-standard-deviation increase in affiliated donations can lead to a 1.69% increase in investment

inefficiency. Our findings are robust to alternative measures of investment inefficiency, alternative measure of affiliated donations, and alternative explanations. Our results also remain robust after addressing potential endogeneity using three advanced econometric methodologies, including propensity score matching (PSM), the change model, and the instrumental variable (IV) estimation.

To gain additional insights into how affiliated donations shape investment efficiency, we further explore potential mediating and moderating mechanisms underlying this relationship. In particular, we examine whether affiliated donations decrease investment efficiency through reduced monitoring effectiveness of independent directors. Using non-affirmative opinions on management proposals to proxy for independent director's monitoring effectiveness, we document consistent evidence that independent directors of firms with affiliated donations tend to express non-affirmative opinions less frequently. Further investigation indicates that the negative association between affiliated donations and investment efficiency is more pronounced for firms with weaker internal corporate governance, more dispersed ownership structure, and lower external monitoring, as proxied by analyst coverage and institutional ownership.

The present study contributes to the literature in many ways. First, this study identifies the less observable connection between management and independent directors and relates this link to corporate investment, which largely extends and complements the literature on corporate investment efficiency (Malmendier and Tate, 2005; Biddle et al., 2009; Chen et al., 2011; Rajkovic, 2020; Jiang and Xin, 2022). Second, this study adds to the literature on corporate charitable donations. Previous studies have recognized the positive impact of philanthropy on firm value from a "strategic perspective". For example, firms can establish and maintain political connections through charitable donations, which can help them secure

government subsidies and tax benefits (Sánchez, 2000; Su and He, 2010; Gao et al., 2017). In addition, these donations can be used for marketing purposes to enhance corporate reputation (Godfrey, 2005; Zhang et al., 2010; Gao et al., 2012). Motivated by but different from previous studies, this study distinguishes between affiliated and non-affiliated donations and explores the "dark side" of charitable donations. Finally, in a broader sense, this study adds to our understanding of the impact of management-director ties (Hoitash, 2011; Fracassi and Tate, 2012; Lee et al., 2014; Schmidt, 2015; Khedmati et al., 2020; Lim et al., 2020; Zaman et al., 2021; Cai et al., 2021). Exploring this issue in China is particularly important and relevant, because unlike most rule-base western countries, China is a typical relation-based society. In a society that values immensely on personal relationships, we should expect more significant impact of director-executive ties on various corporate governance measures and outcomes. Moreover, as a classic relation-based society and the largest emerging economy in the world, the Chinese context may also enable researchers to better understand the evolution of other emerging economies and relation-based societies around the world.

The remainder of the paper is organized as follows. Section 2 provides a brief description of related literature and develops empirical hypotheses. Section 3 describes our data, sample, and methodology. Section 4 presents main results on the relation between affiliated donations and investment efficiency. Section 5 reports the results of further analyses and additional tests. Section 6 concludes.

## 2. RELATED LITERATURE AND HYPOTHESIS DEVELOPMENT

### *2.1 Board Governance Mechanism and Investment Efficiency*

Corporate investment decisions, which are crucial in determining firm value and investor wealth, serve as a vital engine for a firm's development (Modigliani and Miller, 1958).

Existing literature suggests that the primary cause of investment inefficiency is often due to information asymmetry and agency problems (Jensen and Meckling, 1976; Myers and Majluf, 1984; Biddle and Hilary, 2006; Biddle et al., 2009; Chen et al., 2011). In response to these challenges, robust board governance comes to the fore, acting as an essential countermeasure to reduce agency problems and to enhance the efficiency of a firm's resource allocation. For instance, prior research shows that non-executive directors, lead independent directors, and independent directors with industry expertise may help improve corporate investment efficiency by restraining excessive corporate investment (Rajkovic, 2020). In addition to the characteristics of independent directors, previous research also explores the impact of social connections on investment efficiency, but with mixed evidence. For example, Chen and Xie (2011) discover a positive correlation between the centrality levels of independent directors in their networks and corporate investment efficiency. Conversely, Khedmati et al. (2020) suggest that the CEO's informal ties with independent directors, formed through common educational or professional backgrounds or social organization memberships, tend to impair director independence, thereby reducing the firm's labor investment efficiency.

### *2.2 Corporate Charitable Donations*

Corporate charitable donations, as a significant component of corporate social responsibility, have garnered substantial interest (Peloza and Shang, 2011). In recent years, with the rapid development of the market economy, firms are striving to differentiate themselves amid intense competition. Consequently, charitable donations have transcended their traditional "philanthropic" scope and now serve as a vital strategic instrument to fulfill other business purposes. Existing research confirms this "strategic view" of corporate charitable behaviors, in which some firms establish and maintain links with the government through charitable activities in order to secure government subsidies and tax benefits (Sánchez,

2000; Su and He, 2010; Gao et al., 2017), and some firms use charitable donations for marketing purposes and corporate reputation enhancement (Godfrey, 2005; Zhang et al., 2010; Gao et al., 2012). Despite the different motivations behind corporate philanthropy, the aforementioned studies suggest that charitable donations can be used to facilitate information and resource exchange among companies, the government, and the market. This view is consistent with the resource dependence theory.

In the context of agency theory, however, management may be motivated to use charitable donations for personal benefits or to influence director independence. For example, Cai et al. (2021) find that CEO compensation is much higher, on average, among firms making affiliated donations, and that underperforming CEOs are less likely to be replaced when firms donate to charities affiliated with a large portion of the board or when they donate large amounts. They argue that this is because affiliated donations are likely to impair independent directors' monitoring incentives. Grounded in the context of emerging capital markets, our study explores the role of independent director-affiliated corporate donations in shaping firm investment efficiency, as well as the underlying mediating and moderating mechanisms.

### *2.3 Empirical Hypotheses*

Theoretically, affiliated donations can affect investment efficiency in two different ways. On the one hand, the resource dependence theory posits that providing external resources to the firm is a pivotal role of independent directors. As outsiders to the firm, independent directors have different knowledge and experience than managers and inside directors. They can provide valuable insights and have a significant impact on the firm's investment decisions (Chen and Xie, 2011). This underlines the unique value of independent directors in guiding corporate investment decisions (Granovetter, 1973). In addition, existing studies show that the social connection between the management and independent directors facilitates trust and

information sharing between corporate insiders and outsiders, which improves the quality of board advising (Hwang and Kim, 2009; Schmidt, 2015). Moreover, given that independent directors often serve on multiple boards (Hauser, 2018; Chen and Guay, 2020), being busy may prevent them from effectively performing their board duties (Fich and Shivdasani, 2006). Affiliated donations not only help release independent directors from their fundraising duties at the foundations that they are affiliated with, but also provide additional incentives for independent directors to devote more time and effort to the board if affiliated donations can be perceived as implicit director compensation as Cai et al. (2021) suggest. Therefore, affiliated donations may lead to better board advising.

On the other hand, the agency theory suggests that corporate managers may engage in charitable activities for their own personal benefits, which may be detrimental to the firm and investors. Moreover, previous studies show that various director-management ties, such as affiliated donations, would make independent directors less independent, and thus, undermine their monitoring incentives and effectiveness (Souther, 2018; Hope et al., 2019; Khedmati et al., 2020; Cai et al., 2021; Zaman et al., 2021). For example, Khedmati et al. (2020) find that connections between CEOs and board members, established through shared educational backgrounds, professional experiences, and affiliations with social organizations, can undermine board members' independence and thus lead to reduced labor investment efficiency. Cai et al. (2021) show that the director-management ties built through affiliated donations are likely to reduce the monitoring incentives of independent directors. Therefore, affiliated donations may potentially undermine director independence, leading to sub-optimal investment decisions and reduced investment efficiency.

While we cannot draw a definitive conclusion from the two competing theoretical views, we develop our hypothesis based on prior empirical research on affiliated donations (Cai et al.,

2021), which suggests that agency theory has more explanatory power than resource dependence theory for understanding the impact of affiliated donations on various governance measures and outcomes. Therefore, we posit the following hypotheses to empirically investigate the relationship between affiliated donations and corporate investment efficiency, as well as the underlying intermediate mechanism:

*H1. All else being equal, affiliated donations are negatively associated with corporate investment efficiency.*

*H2. The negative relationship between affiliated donations and corporate investment efficiency is driven by reduced monitoring effectiveness of independent directors.*

Sound internal and external governance mechanisms can alleviate agency dilemmas through vigilant monitoring of managerial decisions (An and Zhang, 2013). Thus, a conducive governance framework may partially counteract the effects of affiliated donations on a firm's investment efficiency. In light of this, we explore the moderating role of a firm's governance structure on the impact of affiliated donations.

First, the negative impact of affiliated donations on a firm's investment efficiency can be mitigated by effective internal corporate governance. One argument is that an effective internal control mechanism can restrain managers' self-interest and opportunism, thereby enhancing the firm's operational and investment efficiency (Cheng et al., 2013; Feng et al., 2015; Cheng et al., 2018). In addition to standard measures of internal governance, such as the DIB China index, concentrated ownership may also be used to capture the effectiveness of internal control mechanism. Concentrated ownership is found to help improve internal governance and mitigate managerial self-dealing (Xu et al., 2020). In firms with a high degree of equity dispersion, shareholders may succumb to free-riding behavior, thereby undermining their ability to effectively monitor the management. On the contrary, in situations where equity

is more concentrated, large shareholders are more motivated to exercise rigorous monitoring. As Xu et al. (2020) point out, concentrated large shareholders can effectively monitor the firm's internal governance and business decisions due to their inherent power and motivation. Overall, prior research suggests that effective internal governance mechanisms can, to a large degree, mitigate the negative impact of affiliated donations on firm investment efficiency.

These discussions lead to the following hypothesis:

*H3: All else being equal, the negative association between affiliated donations and investment efficiency is more pronounced for firms with poor internal corporate governance.*

Moreover, the negative impact of affiliated donations on a firm's investment efficiency can be mitigated by strong external monitoring. First, securities analysts, as key information intermediaries in the stock market, can help mitigate the information asymmetry between corporate management and external investors (Hong et al., 2000; Frankel and Li, 2004). Their acuity in detecting management misconduct makes them powerful external regulators (Yu, 2008). Irani and Oesch (2013) find that firms followed by a larger number of analysts engage in fewer earnings management activities. In the context of this study, we argue that when a firm is followed by a larger number of analysts, managers tend to allocate corporate resources more deliberately to avoid indiscriminate investments. Therefore, analyst coverage may help mitigate the negative impact of affiliated donations on the firm's investment efficiency. In addition, institutional investors are widely believed to have a positive influence on corporate governance and managerial decision-making through various channels, such as increased external monitoring and activism. For instance, Aggarwal et al. (2011) find that institutional investors curb managers' opportunistic behaviors and effectively steer management to focus on the long-term performance of the firm by actively participating in corporate governance. Overall, these previous studies suggest that securities analysts and institutional investors are

effective external monitors that may largely help mitigate the negative impact of affiliated donations on investment efficiency.

Based on the above discussions, the following hypothesis is derived:

*H4: All else being equal, the negative association between affiliated donations and investment efficiency is more pronounced for firms with weak external monitoring.*

## 3. DATA, SAMPLE, AND METHODOLOGY

### *3.1 Data and Sample*

We manually collect donation data from the following sources: (1) the official websites of 4,290 different foundations, (2) financial statements of all Chinese A-share listed firms, (3) social responsibility reports of all A-share listed firm, (4) the official website of CNINFO (an exchange-designated platform for listed Chinese firms to disclose information), (5) the official website of "Charity in China" (https://cszg.mca.gov.cn/), and (6) the website of foundation center (http://www.foundationcenter.org.cn/). We compile a dataset which includes detailed information on a total of 86,454 records of corporate donations over the 2010-2020 period with a minimum of 0.5 million RMB. We also cross-check our donation data with CNRDS (Chinese Research Data Services Platform), which provides information on a smaller number of 24,139 corporate donations over the 2010-2020 period.

We use the following two-step procedure to identify the link between corporate donations and listed firms. First, we obtain information on top management of 4,290 foundations from the CNRDS database. We also obtain information on independent directors of all A-share listed firms from CSMAR (China Stock Market & Accounting Research Database). In cases where the information extracted from CNRDS is incomplete or missing, we manually supplement the missing information from the following three sources: the website

of foundation center, the official website of "Charity in China", and the official websites of individual foundations. Second, following Wasi and Flaaen (2015) and Cai et al. (2021), we rely on a fuzzy matching procedure augmented with human checking to merge our donation data with listed firms. More specifically, we search among the universe of publicly listed firms, their subsidiaries, and joint venture firms where donating firms have shareholdings of more than 10% to influence corporate decisions. This procedure links 19,836 corporate donations to 2,866 listed firms and identifies 1,053 affiliated donations made by 552 unique firms.

To create a sample of listed firms with and without affiliated donations, we start with all 4,483 firms listed on the Shenzhen Stock Exchange (SZSE) and the Shanghai Stock Exchange (SHSE) (33,345 firm-year observations over the 2010-2020 period). Following the literature, we exclude financial firms and firms with ST/*ST status from our empirical analysis, resulting in a smaller sample of 31,732 firm-year observations. We further exclude 9,976 firm-year observations with no corporate donations. This filtering procedure is important since our analysis is based upon firms making corporate donations, and the comparison is between firms with and without affiliated donations, i.e., whether or not their donations go to foundations where their independent directors assume senior positions. We further require all firms to have information necessary for our empirical analysis, losing another 1,021 firm-year observations with incomplete information. This screening procedure yields a final sample of 20,735 firm-year observations from 3,570 unique firms. To mitigate the influence of outliers, we winsorize all continuous variables at the 1% and 99% levels.

Table 1 presents the distribution of our sample by year in Panel A and by industry in Panel B. According to Panel A, our final sample includes 1,053 affiliated donations over the sample period. On average, 5.08% of our sample firms have made affiliated donations. This number hits the lowest of 3.72% in 2017 while reaches its record high of 7.96% in 2014. An

interesting observation from Panel B is that firms in the health industry (Q) and the real estate industry (J/K) are most likely to make affiliated donations (the proportion of firms with affiliated donation for these two industries are 10.64% and 8.45%, respectively), while firms in the agriculture industry (A) and civil engineering construction industry (E) are least likely to make affiliated donations (only 1.63% and 2.25%, respectively).

*** Insert Table 1 about here ***

### *3.2 Measuring Affiliated Donations*

We follow Cai et al. (2021) in measuring affiliated donations. In particular, the propensity of affiliated donations, *Tie*, is a dummy variable, which equals to 1 if a firm makes donations to at least one foundation affiliated with its independent directors in a given year and 0 otherwise. The amount of affiliated donations, *Amount*, is defined as the natural logarithm of 1 plus all donations (>=0.5 million) made to the foundations affiliated with a firm's independent directors in a given year.

### *3.3 Measuring Investment Efficiency*

Following the prior literature (Chen et al., 2011), we define investment inefficiency as the absolute difference between the actual and expected investments. The expected investment is calculated using the following investment model:

$$Invest_t = \beta_0 + \beta_1 Growth_{t-1} + \beta_2 NEG_{t-1} + \beta_3 Growth_{t-1} \times NEG_{t-1} + \sum Year + \sum Ind + \varepsilon_t \quad (1)$$

where $Invest_t$ is the sum of total investment expenditure in a given year, which is calculated as the sum of annual growth in construction, intangible assets, and fixed assets, scaled by total assets. $Growth_{t-1}$ is the annual sales growth rate for firm *i* in year *t*-1. The indicator variable $NEG_{t-1}$ takes the value of 1 for negative revenue growth and 0 otherwise. We estimate Equation (1) using the ordinary least squares (OLS) method and define inefficient investment, *InvEff*, as the absolute value (multiplied by 100) of the residuals in Equation (1). A larger value of *InvEff* implies a greater extent of inefficient investment.

### *3.4 Control Variables*

Following previous studies (Chen et al. 2011; Rajkovic, 2020; Khedmati et al., 2020), we consider a number of firm-level control variables that may influence investment efficiency, including firm size (*SIZE*), leverage (*LEV*), listing age (*Age*), the growth rate of operating revenues (*Growth*), the book-to-market ratio (*MB*), state ownership (SOE), institutional ownership (*INS*), cash flow (*Cashflow*), management shareholding (*MO*), and the Big 4 auditor dummy (*Big4*). We also control for a number of board characteristics, such as CEO duality (*Duality*), busyness of independent directors (*BusyDirector*), board independence (*IndDirector*), and board size (*Boardsize*), because previous studies show that these board characteristics affect the monitoring effectiveness of outside directors (Hoitash and Mkrtchyan, 2022). Appendix A provides a full list of variables used in this study and their detailed definitions.

### *3.4 Baseline Model*

We examine the empirical relation between affiliated donations and corporate investment efficiency by estimating the following regression model:

$$InvEff_{i,t} = \beta_0 + \beta_1 Tie_{i,t}\left(or Amount_{i,t}\right) + \sum \beta_i \left(Control\ Variables\right)_{i,t} + \sum Firm + \sum Year + \varepsilon_{i,t} \quad (2)$$

where $InvEff$ is a measure of inefficient investment; *Tie* is a dummy variable which takes the value of 1 if a firm has affiliated donations and 0 otherwise; *Amount* is the amount of affiliated donations, defined as the natural logarithm of 1 plus all donations (>=0.5 million) made to the foundations affiliated with a firm's independent directors in a given year. *Control Variables* is a vector of control variables as defined in Section 3.4. All regressions control for year and firm fixed effects.

## 5. MAIN RESULTS

### *4.1 Descriptive Statistics*

Table 2 presents descriptive statistics for all variables used in the baseline regression of Equation (2). First, while the mean (median) firm-level *InvEff* stands at 0.068 (0.051), it exhibits substantial variation ranging from the minimum of 0.001 to the maximum of 0.373. Second, the average value of *Tie* across our sample firms is 0.051, indicating that 5.1% of our sample firms make affiliated donations. The sample mean of *Amount* is 0.692, implying that the average value of affiliated donation amount is about RMB 0.64 million. Finally, about 35.7% of our sample firms are state-owned and 6% of our sample firms are audited by Big Four auditing firms. On average, independent directors account for 37.5% of board seats. More than 25% of independent directors are busy directors who serve on at least three boards.

*** Insert Table 2 about here ***

### *4.2 Baseline Results*

Table 3 presents the regression results for our baseline model shown in Equation (2). Column (1) presents the regression results when we use *Tie* as the independent variable while column (2) provides results from the regression using *Amount* as the independent variable. The t-values in parentheses are calculated using robust standard errors clustered by firm.

*** Insert Table 3 about here ***

Consistent with H1, we find evidence of a negative relationship between affiliated donations and corporate investment efficiency. More specifically, the coefficient on *Tie* is 0.005 (t-stat = 2.015), which implies that a one-standard-deviation increase in affiliated donations can lead to an increase of 1.69% in inefficient investment. Thus, this result is not only statistically significant but also economically meaningful. Likewise, the coefficient on *Amount* is 0.0003 (t-stat = 1.980), also significant at the 5% level, indicating that a one-standard-deviation increase in the amount of affiliated donations can lead to an increase of 4.4% in inefficient investment.

The coefficients on *SIZE*, *Age*, and *MB* are all significantly negative, indicating that large firms, mature firms, and firms with high market-to-book ratio tend to have less inefficient corporate investment. Busy independent directors are associated with more inefficient investment, as indicated by the positive and significant coefficient on *BusyDirector*.

### *4.3 Robustness Checks on Alternative Measures*

In this section, we conduct a series of robustness tests to further validate our baseline results. First, we examine whether our findings are robust to alternative measures of affiliated

donations. In particular, we define affiliated donations using whether or not the donation amount is greater than RMB 0.75 million or RMB 1 million as the threshold. Therefore we have four alternative measures of affiliated donations: *Tie1* (*Tie2*), which takes the value of 1 if a firm donates an amount greater than or equal to RMB 0.75 million (or RMB 1 million) to at least one foundation affiliated with one or more of its independent directors in a given year and 0 otherwise; *Amount1* (*Amount2*), which is measured as the natural logarithm of 1 plus all donations greater than RMB 0.75 million (RMB 1 million) made to the foundations affiliated with a firm's independent directors in a given year.

Second, we examine whether our findings are robust to alternative measures of investment inefficiency. Following the Biddle et al. (2009) methodology, we define investment inefficiency (*InvEff1*) as the residuals estimated from Equation (3):

$$Invest_t = \beta_0 + \beta_1 Growth_{t-1} + \sum Year + \sum Ind + \varepsilon_t \quad (3)$$

where $Invest_t$ is the sum of total investment expenditures in a given year, and $Growth_{t-1}$ is the annual sales growth rate for firm *i* in year *t*-1.

Finally, we exclude firm-year observations with annual donations less than RMB 0.5 million to mitigate the concern that our baseline findings are driven by the potential bias that firms with total annual donations of less than RMB 0.5 million are being counted as those without affiliated donations.

We repeat our multivariate regression analysis using these alternative measures and the alternative subsample with the same set of control variables used in our baseline analysis. The regression results presented in Table 4 are mostly consistent with our baseline findings. The coefficients on the measures of investment inefficiency are positive and significant across all regressions in columns (1) – (8).

*** Insert Table 4 about here ***

### *4.4 Addressing Potential Endogeneity Concerns*

Our empirical analysis so far documents a robust and statistically significant positive relationship between affiliated donations and inefficient corporate investments. However, our findings might be driven by the omitted-variable problem that arises when there are unobservable factors associated with both affiliated donations and corporate investments. In addition, there could be a potential reverse causality issue in this study. For example, a firm may engage in affiliated donations when its investment efficiency is low, striving to build up relationships with independent directors to seek high quality advice and recommendations. In this section, we use three econometric approaches to address potential endogeneity: (1) propensity score matching (PSM), (2) the change model, and (3) the instrumental variable (IV) estimation.

First, because firms that make affiliated donations may differ from those that make unaffiliated donations in terms of firm characteristics, the decision of making affiliated donations or not could be endogenous. To control for those observable differences, we rely on PSM to construct a carefully matched sample such that each treatment firm making affiliated donations is matched with an otherwise comparable control firm making non-affiliated donations. More specifically, we use three different methods in matching treatment and control groups, including (1) nearest neighbor matching, (2) caliper matching method (with a caliper of 0.01), and (3) entropy balancing (EB) matching (Hainmueller, 2012), and the results are reported in Panels A, B, and C in Table 5, respectively. Columns (1) and (2) use the full sample to estimate the propensity to make affiliated donations, while columns (3) and (4) use the subsample with independent directors who assume senior positions at the foundations. Taken

together, we find consistent evidence of a positive relationship between affiliated donations and investment inefficiency across all four model specifications.

*** Insert Table 5 about here ***

Second, we repeat our analysis using the change model, or known as the first-order difference equation. This is to mitigate the concern that firms making affiliated donations may differ from other firms due to reasons not considered in our regression analyses. In particular, we examine the changes in investment efficiency when a firm commences (or terminates) affiliated donations. More specifically, we first regress the annual change in investment inefficiency (*ΔInvEff*) on a dummy variable which equals to 1 in the year when a firm makes an affiliated donation for the first time (*Initiation*) and 0 otherwise. We then regress the annual change in investment inefficiency (*ΔInvEff*) on a dummy variable which equals to 1 in the year when a firm stops making affiliated donations (*Termination*) and 0 otherwise. We include the same set of control variables as in our previous analyses. We expect a larger increase in investment inefficiency when firms begin to make affiliated donations for the first time and a larger decrease in investment inefficiency when firms terminate such dubious corporate activities. Table 6 presents the regression results. Consistent with our expectations, the coefficient on *Initiation* in column (1) is positive and significant at the 1% level, indicating a significant decrease in investment efficiency upon the initiation of affiliated donations. In sharp contrast, the coefficient on *Termination* in column (2) is negative and significant at the 5% level, suggesting that there is an increase in investment efficiency upon the termination of affiliated donations. These findings lend strong support to our baseline results.

*** Insert Table 6 about here ***

Finally, we employ an instrumental variable approach to examine the empirical relationship between affiliated donations and investment efficiency. Previous studies suggest that independent directors tend to join firms and organizations that are located nearby (Fee et al., 2013; Knyazeva et al., 2013; Yonker, 2017). Moreover, our unreported empirical analysis reveals that firms prefer to make charitable donations to local foundations. Therefore, we use the number of foundations within a range of 30 kilometers around the firm's headquarters (*Number*) as our instrumental variable. This instrument is relevant because geographic distance should be highly correlated with affiliated donations. The exclusion requirement is met because the number of local foundations are not likely to affect a firm's investment efficiency.

Table 7 presents the two-stage regression results using this instrumental variable. Since the number of foundations within 30 kilometers of a listed firm remains constant over time and controlling for firm fixed effects would result in a reduction in the number of firm-year observations, we estimate the two-stage model controlling for year and industry fixed effects. The coefficients on the instrumental variable in the first-stage regression are positive and significant (columns 1 and 3), indicating that it is indeed a relevant instrument. The second-stage regression results are presented in columns (2) and (4), where the coefficients on the propensity to donate (*Tie*) and the amount of affiliated donations (*Amount*) continue to remain positive and significant. Note that the F-statistics obtained from a weak instrument test in the two first-stage regressions are greater than 10, suggesting that Number is a valid instrument that is unlikely to bias our estimation. These results lend further empirical support to our baseline findings that affiliated donations can increase investment inefficiency.

*** Insert Table 7 about here ***

### *4.5 Alternative Explanations*

As previously noted, Table 3 shows that there is a significant positive relationship between affiliated donations and investment inefficiency, supporting the agency perspective. However, there may be other explanations for this baseline finding.

First, social ties between the CEO (chairman) and independent directors developed in the foundations may explain our finding. To address this possibility, we include an additional control variable to account for such social ties (*Relation*). As shown in columns (1) and (2) of Table 8, the relationship between affiliated donations and investment inefficiency remains economically and statistically significant. Our results suggest that the effect of affiliated donations on investment efficiency is not driven by common charitable interests or social ties between the CEO (chairman) and independent directors developed in the foundations.

Second, the characteristics of independent directors may drive our results. In order to rule out this possible explanation, we construct a subsample in which the independent directors serve on two corporate boards or more in the same year, where only one firm makes independent director-affiliated donations. We repeat our baseline regressions using this subsample controlling for director fixed effects, in addition to industry and year fixed effects. The results presented in column (3) of Table 8 continue to support a significantly positive relation between affiliated donation and investment inefficiency.

*** Insert Table 8 about here ***

Finally, in our sample, 10.26% (108 out of 1053) affiliated donations are associated with independent directors with industry expertise. These donations can be used to test the alternative explanation of resource dependence perspective, as firms striving for high-quality advising would be more inclined to establish connections with independent directors with industry expertise. To test for this possibility, we identify a subsample of firms that make at least one affiliated donation to independent directors with industry expertise in a given year as the treatment group. We then construct two control groups: (1) firms that make affiliated donations only to independent directors without industry expertise, and (2) firms that have independent directors with industry expertise but have not made any affiliated donations. To minimize any potential impact of discernible disparities at the firm level, we use PSM to construct the subsample.

We use *Expert* to represent affiliated donations to independent directors with industry expertise, which equals 1 if a firm makes at least one donation to foundations affiliated with independent director with industry expertise in a given year and 0 otherwise. When we focus on the first control group, as shown in column (1) of Table 9, the coefficient on *Expert* is negative but statistically insignificant, suggesting that there is no significant difference in investment efficiency between firms that make donations affiliated with independent directors with industry expertise and those without industry expertise. Turning to the second control group, as presented in column (2) of Table 9, the coefficient on *Expert* is significantly positive at the 1% level, indicating that, regardless of the presence of independent directors with industry expertise, there is a decrease in a firm's investment efficiency when the firm makes affiliated donations.

*** Insert Table 9 about here ***

## 5. FURTHER ANALYSES

### *5.1 Mediating Analysis of Director Independence*

Our empirical analysis thus far documents robust evidence of a positive relation between affiliated donations and investment inefficiency. In this section, we perform additional tests to examine the mediating role of director independence in shaping the relationship between affiliated donations and corporate investments.

The agency perspective suggests that affiliated donations can compromise directors' independence, which in turn, weaken their motivation to monitor management, leading to inefficient corporate investments. In this section, we use voting records of independent directors obtained from the CNRDS database to test whether affiliated donations indeed undermine director independence. In particular, we use the number of non-affirmative opinions expressed by independent directors to proxy for the independence of independent directors, where non-affirmative opinions include a wide range of dissenting opinions such as "abstention", "reserved opinions", "unable to express opinions", and "raising objections".

We adopt the classical three-stage method for mediation testing as follows:

$$InvEff_{i,t} = \beta_1 + \beta_2 Tie_{i,t}(or\ Amount_{i,t}) + \sum \beta_i\ (Control\ variables)_{i,t} + \sum Firm + \sum Year + \varepsilon_{i,t} \quad (4)$$

$$NUM_{i,t} = \gamma_1 + \gamma_2 Tie_{i,t}(or\ Amount_{i,t}) + \sum \gamma_i\ (Control\ variables)_{i,t} + \sum Firm + \sum Year + \varepsilon_{i,t} \quad (5)$$

$$InvEff_{i,t} = \mu_1 + \mu_2 Tie_{i,t}(or\ Amount_{i,t}) + \mu_3 NUM_{i,t} + \sum \mu_i\ (Control\ variables)_{i,t} + \sum Firm + \sum Year + \varepsilon_{i,t} \quad (6)$$

Table 10 presents the results of the mediation analysis. In columns (1) and (3) where *NUM* is the dependent variable, we observe that both the coefficient estimates on *Tie* and *Amount* are significantly negative, indicating that affiliated donations tend to weaken the monitoring incentives of independent directors, making them more likely to remain silent and less likely to raise different voices. Columns (2) and (4) further incorporate the mediating variable NUM into the baseline regression where *InvEff* is the dependent variable to examine the relative explanatory power of the underlying mechanism. The coefficient of *NUM* is negative and significant, implying that director independence helps improve a firm's investment efficiency. The finding indicates that the negative effect of affiliated donations on investment efficiency is, to a large extent, due to reduced director independence, with a statistically significant mediating effect at the 10% level. Overall, the results suggest that affiliated donations decrease investment efficiency due to reduced monitoring incentives and effectiveness of independent directors (hypothesis H2 is supported).

*** Insert Table 10 about here ***

### *5.2 Moderating Analysis of Internal Corporate Governance*

Prior research suggests that effective internal and external governance mechanisms play an important role in mitigating agency problems (An and Zhang, 2013). Thus, we further investigate whether the firm's internal and external governance mechanisms mitigate the negative correlation between affiliated donations and the firm's investment efficiency.

To test for hypothesis H3, we use the quality of internal control and ownership concentration to proxy for the effectiveness of internal corporate governance. Following Gunn et al. (2023), we use the DIB China index to measure the quality of internal control (*Incontrol*).

DIB Internal Control and Risk Management Database (www.dibdata.cn) is the leading database on internal control and risk management for listed companies in China, and it has been widely used in the literature. Following Xu et al. (2020), we use the proportion of shares held by the largest shareholder to measure ownership concentration (*Top1*). If the quality of internal control and ownership concentration of a firm is higher than the upper quartile of the corresponding industry in a given year, it is classified as in the high quality internal corporate governance group. The subsample regression results are presented in Table 11.

*** Insert Table 11 about here ***

Consistent with our expectations, the coefficient of *Tie* (*Amount*) is only significant in groups with poor internal control and dispersed ownership. These findings suggest that the negative association between affiliated donations and investment efficiency is more pronounced among firms with weak internal corporate governance, providing strong support to hypothesis H3.

***5.3 Moderating Analysis of External Monitoring***

To test for hypothesis H4, we use analyst coverage (*Analyst*) and institutional ownership (*INS*) to proxy for the degree of external monitoring. External monitoring is considered high if analyst coverage or the percentage of institutional ownership is higher than the upper quartile of the corresponding industry in a given year. The regression results are presented in Table 12.

*** Insert Table 12 about here ***

Consistent with our expectations, we find that the coefficient of *Tie* (*Amount*) is only significant in groups with less analyst coverage and lower institutional ownership. These findings suggest that the negative association between affiliated donations and investment efficiency is more pronounced among firms with poor external monitoring, lending strong support to hypothesis H4.

## 6. CONCLUSION

Using a large sample of Chinese firms over the 2010-2020 period, this paper document robust evidence that corporate donations to foundations affiliated with independent directors reduce board independence and monitoring effectiveness, which in turn, decrease corporate investment efficiency. On average, a one-standard-deviation increase in affiliated donations is associated with a decrease of about 1.69% in investment efficiency. Our results are robust to various endogeneity tests, including different PSM methods, the change model, and the instrumental variable approach. Further analysis reveals that affiliated donations affect investment efficiency through their impact on director independence, as exemplified by fewer objections to management proposals. Consistent with this view, we document evidence that the negative effect of affiliated donations on investment efficiency is more pronounced among firms with less effective internal corporate governance and weak external monitoring. Overall, our results suggest that affiliated donations may be an important channel through which independent directors' monitoring incentives can be compromised.

The present paper adds to both the corporate governance and finance literature by highlighting the role of affiliated donations as an important determinant of investment efficiency. Our empirical evidence underlies the value of director independence, suggesting that agency theory has more explanatory power than resource dependence theory for

understanding the impact of affiliated donations on firm outcomes. In addition to its contributions to the academic literature, our study also offers important practical implications and calls for an increased attention on affiliated donations as they may largely impair the monitoring effectiveness of independent directors. Moreover, policy makers should mandate the disclosure of affiliated donations to better inform shareholders about director independence.

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## Table 1. Sample Distribution

This table presents the distribution of sample firms by year (Panel A) and by industry (Panel B).

***Panel A: Sample Distribution by Year***

| Year | Firms with affiliated donations | | Firms without affiliated donations | | Full Sample | |
|---|---|---|---|---|---|---|
| | No. of Obs | % | No. of Obs | % | No. of Obs | % |
| 2010 | 56 | 4.19 | 1,281 | 95.81 | 1,337 | 6.45 |
| 2011 | 62 | 4.26 | 1,395 | 95.74 | 1,457 | 7.03 |
| 2012 | 65 | 4.12 | 1,511 | 95.88 | 1,576 | 7.60 |
| 2013 | 93 | 5.93 | 1,476 | 94.07 | 1,569 | 7.57 |
| 2014 | 123 | 7.96 | 1,422 | 92.04 | 1,545 | 7.45 |
| 2015 | 87 | 5.31 | 1,552 | 94.69 | 1,639 | 7.90 |
| 2016 | 76 | 4.42 | 1,642 | 95.58 | 1,718 | 8.29 |
| 2017 | 77 | 3.72 | 1,995 | 96.28 | 2,072 | 9.99 |
| 2018 | 138 | 5.86 | 2,217 | 94.14 | 2,355 | 11.36 |
| 2019 | 126 | 5.07 | 2,357 | 94.93 | 2,483 | 11.97 |
| 2020 | 150 | 5.03 | 2,834 | 94.97 | 2,984 | 14.39 |
| Total | 1,053 | 5.08 | 19,682 | 94.92 | 20,735 | 100.00 |

***Panel B: Sample Distribution by Industry***

| Industry | Firms with affiliated donations | | Firms without affiliated donations | |
|---|---|---|---|---|
| | No. of Obs | % | No. of Obs | % |
| Agriculture(A) | 5 | 1.63 | 302 | 98.37 |
| Mining and Construction(B) | 28 | 4.98 | 534 | 95.02 |
| Real estate(J/K) | 86 | 8.45 | 932 | 91.55 |
| Transportation(C) | 642 | 4.69 | 13,049 | 95.31 |
| Computer(G) | 47 | 7.65 | 567 | 92.35 |
| Civil engineering construction(E) | 13 | 2.25 | 566 | 97.75 |
| Environmental governance (N) | 10 | 4.57 | 209 | 95.43 |
| Comprehensive(M/S) | 29 | 8.33 | 319 | 91.67 |
| Health(Q) | 5 | 10.64 | 42 | 89.36 |
| Video recording production(R) | 13 | 5.37 | 229 | 94.63 |
| Wholesale and retailing(F/H) | 91 | 7.50 | 1,122 | 92.50 |
| Power production(D) | 27 | 4.21 | 614 | 95.79 |
| Services (L/I) | 56 | 4.55 | 1,175 | 95.45 |
| Education (P) | 1 | 4.35 | 22 | 95.65 |
| Total | 1,053 | 5.08 | 19,682 | 94.92 |

## Table 2. Summary Statistics

This table reports the summary statistics of main variables used in our empirical tests. Our sample consists of 20,735 firm-year observations over the period 2010-2020. The number of observations, mean, standard deviation, minimum value, median value, and maximum value are reported. Appendix A provides a full list of variables and their definitions.

| Variable | Obs | Mean | SD | Min | Median | Max |
|---|---|---|---|---|---|---|
| InvEff | 20,735 | 0.068 | 0.065 | 0.001 | 0.051 | 0.373 |
| Tie | 20,735 | 0.051 | 0.220 | 0.000 | 0.000 | 1.000 |
| Amount | 20,735 | 0.692 | 2.996 | 0.000 | 0.000 | 13.816 |
| SIZE | 20,735 | 22.293 | 1.282 | 20.061 | 22.100 | 26.272 |
| LEV | 20,735 | 0.431 | 0.208 | 0.054 | 0.423 | 0.895 |
| Age | 20,735 | 2.033 | 0.918 | 0.000 | 2.197 | 3.296 |
| Growth | 20,735 | 0.173 | 0.378 | -0.518 | 0.114 | 2.354 |
| MB | 20,735 | 0.640 | 0.241 | 0.137 | 0.645 | 1.160 |
| SOE | 20,735 | 0.357 | 0.479 | 0.000 | 0.000 | 1.000 |
| INS | 20,735 | 0.066 | 0.097 | 0.000 | 0.024 | 0.485 |
| Cashflow | 20,735 | 0.240 | 0.286 | 0.012 | 0.146 | 1.750 |
| MO | 20,735 | 0.119 | 0.194 | 0.000 | 0.002 | 0.686 |
| Big4 | 20,735 | 0.058 | 0.234 | 0.000 | 0.000 | 1.000 |
| Duality | 20,735 | 0.277 | 0.447 | 0.000 | 0.000 | 1.000 |
| BusyDirector | 20,735 | 0.287 | 0.253 | 0.000 | 0.333 | 1.000 |
| IndDirector | 20,735 | 0.375 | 0.053 | 0.333 | 0.357 | 0.571 |
| Boardsize | 20,735 | 8.665 | 1.700 | 5.000 | 9.000 | 15.000 |

## Table 3. Affiliated Donations and Corporate Investment Efficiency

This table presents the regression results on the relationship between affiliated donations and investment efficiency. The dependent variable is the investment inefficiency (*InvEff*). The independent variables are propensity to make affiliated donations (*Tie*) and the donation amount (*Amount*). Firm fixed effects and year fixed effects are controlled in all regressions. *t*-statistics in parentheses are calculated using heteroscedasticity-robust standard errors. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

| | *(1)*<br>*InvEff* | *(2)*<br>*InvEff* |
|---|---|---|
| *Tie* | 0.005** | |
| | (2.015) | |
| *Amount* | | 0.0003** |
| | | (1.980) |
| *SIZE* | -0.003** | -0.003** |
| | (-2.009) | (-2.010) |
| *LEV* | 0.008 | 0.008 |
| | (1.439) | (1.439) |
| *Age* | -0.012*** | -0.012*** |
| | (-4.871) | (-4.869) |
| *Growth* | 0.001 | 0.001 |
| | (1.056) | (1.056) |
| *MB* | -0.009** | -0.009** |
| | (-2.148) | (-2.147) |
| *SOE* | 0.004 | 0.004 |
| | (1.165) | (1.164) |
| *INS* | -0.008 | -0.008 |
| | (-1.229) | (-1.230) |
| *Cashflow* | -0.001 | -0.001 |
| | (-0.366) | (-0.366) |
| *MO* | -0.001 | -0.001 |
| | (-0.170) | (-0.169) |
| *Big4* | -0.003 | -0.003 |
| | (-0.707) | (-0.706) |
| *Duality* | 0.001 | 0.001 |
| | (0.699) | (0.700) |
| *BusyDirector* | 0.004* | 0.004* |
| | (1.656) | (1.666) |
| *IndDirector* | 0.003 | 0.003 |
| | (0.200) | (0.202) |
| *Boardsize* | 0.0001 | 0.0001 |
| | (0.014) | (0.015) |
| *Intercept* | 0.184*** | 0.184*** |
| | (5.681) | (5.681) |
| *Firm Fixed Effects* | Yes | Yes |
| *Year Fixed Effects* | Yes | Yes |
| *Observations* | 20,735 | 20,735 |
| *Adj.* $R^2$ | 0.054 | 0.054 |

## Table 4. Robustness Checks on Alternative Measures

This table presents the robust checks on the relation between affiliated donations and investment efficiency. Columns (1)-(4) use donations of at least 0.75 million (or 1 million) to define whether the firm engages in affiliated donations. Columns (5) and (6) use Biddle et al.'s (2009) alternative measure of investment efficiency, *Inv Eff1*. Columns (7) and (8) exclude sample firms with annual donations of less than 0.5 million. Firm and year fixed effects are controlled in all regressions. *t*-statistics in parentheses are calculated using heteroscedasticity-robust standard errors. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

| | (1) *InvEff* | (2) *InvEff* | (3) *InvEff* | (4) *InvEff* | (5) *InvEff1* | (6) *InvEff1* | (7) *InvEff* | (8) *InvEff* |
|---|---|---|---|---|---|---|---|---|
| *Tie1* | 0.005* | | | | | | | |
| | (1.934) | | | | | | | |
| *Amount1* | | 0.000* | | | | | | |
| | | (1.943) | | | | | | |
| *Tie2* | | | 0.005* | | | | | |
| | | | (1.942) | | | | | |
| *Amount2* | | | | 0.000* | | | | |
| | | | | (1.942) | | | | |
| *Tie* | | | | | 0.002** | | 0.009** | |
| | | | | | (2.099) | | (2.379) | |
| *Amount* | | | | | | 0.000** | | 0.001** |
| | | | | | | (2.055) | | (2.372) |
| *Control variables* | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| *Firm Fixed Effects* | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| *Year Fixed Effects* | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| *Observations* | 20,735 | 20,735 | 20,735 | 20,735 | 20,735 | 20,735 | 9,313 | 9,313 |
| *Adj. $R^2$* | 0.055 | 0.055 | 0.055 | 0.055 | 0.050 | 0.050 | 0.066 | 0.066 |

## Table 5. Propensity Score Matching (PSM)

This table reports the PSM results using three different matching methods, including (1) nearest neighbor matching, (2) caliper matching method (with a caliper of 0.01), and (3) entropy balancing (EB) matching, and the results are reported in Panels A, B, and C, respectively. Columns (1) and (2) use the full sample to generate propensity scores, while columns (3) and (4) use the subsample of independent directors who hold senior positions in the foundations to match propensity scores. Firm and year fixed effects are controlled in all regressions. *t*-statistics in parentheses are calculated using heteroscedasticity-robust standard errors. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

***Panel A: Nearest Neighbor Matching***

| | Full sample | | Independent directors serve in the foundations | |
|---|---|---|---|---|
| | （1） | （2） | （3） | （4） |
| | *InvEff* | *InvEff* | *InvEff* | *InvEff* |
| *Tie* | 0.011* | | 0.008** | |
| | (1.888) | | (2.192) | |
| *Amount* | | 0.001* | | 0.001** |
| | | (1.756) | | (2.105) |
| *Control variables* | Yes | Yes | Yes | Yes |
| *Firm Fixed Effects* | Yes | Yes | Yes | Yes |
| *Year Fixed Effects* | Yes | Yes | Yes | Yes |
| *Observations* | 2,106 | 2,106 | 2,106 | 2,106 |
| *Adj.* $R^2$ | 0.094 | 0.093 | 0.071 | 0.071 |

***Panel B: Caliper Matching***

| | Full sample | | Independent directors serve in the foundations | |
|---|---|---|---|---|
| | （1） | （2） | （3） | （4） |
| | *InvEff* | *InvEff* | *InvEff* | *InvEff* |
| *Tie* | 0.011*** | | 0.007** | |
| | (2.787) | | (2.116) | |
| *Amount* | | 0.001*** | | 0.001** |
| | | (2.704) | | (2.022) |
| *Control variables* | Yes | Yes | Yes | Yes |
| *Firm Fixed Effects* | Yes | Yes | Yes | Yes |
| *Year Fixed Effects* | Yes | Yes | Yes | Yes |
| *Observations* | 3,023 | 3,023 | 2,424 | 2,424 |
| *Adj.* $R^2$ | 0.073 | 0.073 | 0.090 | 0.090 |

***Panel C: Entropy Balancing Matching***

| | Full sample | | Independent directors serve in the foundations | |
|---|---|---|---|---|
| | （1） | （2） | （3） | （4） |
| | *InvEff* | *InvEff* | *InvEff* | *InvEff* |
| *Tie* | 0.006*** | | 0.004* | |
| | (3.410) | | (1.843) | |
| *Amount* | | 0.0002*** | | 0.0003* |
| | | (3.133) | | (1.712) |
| *Control variables* | Yes | Yes | Yes | Yes |
| *Firm Fixed Effects* | Yes | Yes | Yes | Yes |

| | | | | |
|---|---|---|---|---|
| *Year Fixed Effects* | Yes | Yes | Yes | Yes |
| *Observations* | 20,735 | 20,735 | 3,905 | 3,905 |
| *Adj.* $R^2$ | 0.481 | 0.480 | 0.538 | 0.538 |

## Table 6. Changes in Investment Efficiency around Initiation and Termination of Affiliated Donations

This table examines the change in investment efficiency around the initiation and termination of affiliated donations. The dependent variable is the annual change in investment inefficiency (*ΔInvEff*). *Initiation* equals 1 if a firm makes its first affiliated donation in a given year and 0 otherwise. *Termination* equals 1 if a firm stops making affiliated donations in a given year and 0 otherwise. Firm and year fixed effects are controlled in all regressions. *t*-statistics in parentheses are calculated using heteroscedasticity-robust standard errors. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

| | *(1)*<br>*ΔInvEff* | *(2)*<br>*ΔInvEff* |
|---|---|---|
| *Initiation* | 0.011*** | |
| | (2.603) | |
| *Termination* | | -0.011** |
| | | (-2.163) |
| *Control variables* | Yes | Yes |
| *Firm Fixed Effects* | Yes | Yes |
| *Year Fixed Effects* | Yes | Yes |
| *Observations* | 15,263 | 15,263 |
| *Adj.*$R^2$ | 0.034 | 0.028 |

## Table 7. Regression Results using an Instrumental Variable (2SLS)

This table presents the results from the two-stage model using the number of foundations within a distance of 30 kilometers away from the listed firm as the instrumental variable. Columns (1) and (3) present the first-stage results. The dependent variable is the propensity to make affiliated donations (*Tie*) and the donation amount (*Amount*). Columns (2) and (4) present the second-stage regression results using the predicted values of affiliated donations obtained from columns (1) and (2). The dependent variable is investment inefficiency (*InvEff*). Industry and year fixed effects are controlled in all regressions. *t*-statistics in parentheses are calculated using heteroscedasticity-robust standard errors. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

| | (1) | (2) | (3) | (4) |
|---|---|---|---|---|
| | First stage | Second stage | First stage | Second stage |
| | *Tie* | *InvEff* | *Amount* | *InvEff* |
| *Number* | 0.000*** | | 0.003*** | |
| | (21.380) | | (21.341) | |
| *Tie* | | 0.031*** | | |
| | | (3.731) | | |
| *Amount* | | | | 0.002*** |
| | | | | (3.728) |
| *Control variables* | Yes | Yes | Yes | Yes |
| *Industry effect* | Yes | Yes | Yes | Yes |
| *Year effect* | Yes | Yes | Yes | Yes |
| *Observations* | 20,735 | 20,735 | 20,735 | 20,735 |
| *Adj.*$R^2$ | 0.070 | 0.130 | 0.070 | 0.130 |
| *Minimum eigenvalue statistic* | | 1222.82 | | 1216.36 |
| *F-statistic (coefficient estimate for IV = 0)* | | 12.942 | | 12.953 |

## Table 8. CEO-Director Social Ties and Characteristics of Independent Directors

This table presents the regression results on CEO-director social ties as an alternative explanation for the relationship between affiliated donations and investment efficiency. In particular, columns (1) and (2) include a dummy variable, *Relation*, to capture the social ties between the CEO (chairman) and independent directors, which equals to 1 if the CEO or chairman serves in the same foundation as the independent director and 0 otherwise. Column (3) presents the regression results on a subsample of firms with independent directors serving on two corporate boards or more in the same year, where only one firm makes independent director-affiliated donations. This subsample analysis tests the characteristics of independent directors as an alternative explanation for the relationship between affiliated donations and investment efficiency. Firm and year fixed effects are controlled in columns (1) and (2). Industry, year, and director fixed effects are controlled in column (3). *t*-statistics in parentheses are calculated using heteroscedasticity-robust standard errors. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

| | *(1)* *InvEff* | *(2)* *InvEff* | *(3)* *InvEff* |
|---|---|---|---|
| *Tie* | 0.005** | | 0.006** |
| | (2.002) | | (1.966) |
| *Amount* | | 0.0004** | |
| | | (1.967) | |
| *Relation* | 0.009 | 0.009 | |
| | (0.666) | (0.666) | |
| *Control variables* | Yes | Yes | Yes |
| *Firm Fixed Effects* | Yes | Yes | No |
| *Year Fixed Effects* | Yes | Yes | Yes |
| *Industry Fixed Effects* | No | No | Yes |
| *Director Fixed Effects* | No | No | Yes |
| *Observations* | 20,735 | 20,735 | 1,442 |
| *Adj.*$R^2$ | 0.054 | 0.054 | 0.169 |

## Table 9. Resource Dependence Explanation

This table presents the regression results on possible resource dependence explanation. *Expert* is a dummy variable which equals 1 if a firm makes affiliated donations to at least one independent directors with industry expertise in a given year and 0 otherwise. In this analysis, we identify firms that make at least one affiliated donation to independent directors with industry expertise as the treatment group. In column (1), we use firms that make affiliated donations only to independent directors without industry expertise as the control group. In column (2), we use firms that have independent directors with industry expertise but have not made any affiliated donations as the control group. To mitigate the influence of observable differences at the firm level, we use PSM to construct the sample. Firm and year fixed effects are controlled in all regressions. *t*-statistics in parentheses are calculated using heteroscedasticity-robust standard errors. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

| | (1) | (2) |
|---|---|---|
| | *InvEff* | *InvEff* |
| *Expert* | -0.002 | 0.038*** |
| | (-0.110) | (3.510) |
| *SIZE* | 0.0001 | 0.027 |
| | (0.003) | (1.232) |
| *LEV* | -0.049 | 0.028 |
| | (-0.844) | (0.659) |
| *Age* | -0.049 | -0.032 |
| | (-1.303) | (-1.141) |
| *Growth* | -0.025 | -0.014 |
| | (-1.367) | (-0.948) |
| *MB* | -0.054 | -0.043 |
| | (-1.042) | (-1.126) |
| *SOE* | 0.126*** | -0.0004 |
| | (2.825) | (-0.016) |
| *INS* | -0.131* | -0.074* |
| | (-1.678) | (-1.800) |
| *Cashflow* | 0.019 | 0.015 |
| | (0.437) | (0.621) |
| *MO* | 0.022 | 0.008 |
| | (0.256) | (0.117) |
| *Big4* | 0.018 | -0.027 |
| | (0.407) | (-1.384) |
| *Duality* | -0.009 | 0.006 |
| | (-0.539) | (0.528) |
| *BusyDirector* | 0.019 | -0.021 |
| | (0.498) | (-0.951) |
| *IndDirector* | 0.046 | -0.073 |
| | (0.273) | (-0.675) |

| | | |
|---|---|---|
| *Boardsize* | -0.0004 | -0.002 |
| | (-0.180) | (-0.525) |
| *Intercept* | -0.015 | -0.355 |
| | (-0.037) | (-0.781) |
| *Firm Fixed Effects* | Yes | Yes |
| *Year Fixed Effects* | Yes | Yes |
| *Observations* | 414 | 708 |
| *Adj.*$R^2$ | 0.158 | 0.153 |

## Table 10. The Mediating Effect of Director Independence

This table presents the results regarding the role of director independence in mediating the association between affiliated donations and investment efficiency. The dependent variables in columns (1) and (3) is *NUM*, which is the number of non-affirmative opinions expressed by independent directors. The dependent variable in columns (2) and (4) is *InvEff*, which captures the magnitude of investment inefficiency. Firm and year fixed effects are controlled in all regressions. *t*-statistics in parentheses are calculated using heteroscedasticity-robust standard errors. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

| | *(1)* | *(2)* | *(3)* | *(4)* |
|---|---|---|---|---|
| | *NUM* | *InvEff* | *NUM* | *InvEff* |
| *Tie* | -0.026** | 0.004** | | |
| | (-2.262) | (1.993) | | |
| *Amount* | | | -0.002** | 0.0003** |
| | | | (-2.258) | (1.964) |
| *NUM* | | -0.004*** | | -0.004*** |
| | | (-2.730) | | (-2.726) |
| *SIZE* | -0.011* | -0.003** | -0.011* | -0.003** |
| | (-1.654) | (-2.402) | (-1.651) | (-2.398) |
| *LEV* | 0.123*** | 0.008 | 0.123*** | 0.008 |
| | (4.867) | (1.641) | (4.871) | (1.636) |
| *Age* | -0.020** | -0.012*** | -0.019** | -0.012*** |
| | (-1.992) | (-6.382) | (-2.003) | (-6.377) |
| *Growth* | -0.020*** | 0.001 | -0.020*** | 0.001 |
| | (-3.228) | (0.980) | (-3.232) | (0.975) |
| *MB* | -0.043** | -0.009** | -0.044** | -0.009** |
| | (-2.302) | (-2.469) | (-2.300) | (-2.473) |
| *SOE* | -0.028 | 0.004 | -0.028 | 0.004 |
| | (-1.567) | (1.193) | (-1.558) | (1.187) |
| *INS* | -0.009 | -0.009 | -0.009 | -0.008 |
| | (-0.291) | (-1.333) | (-0.287) | (-1.336) |
| *Cashflow* | 0.014 | -0.001 | 0.014 | -0.001 |
| | (1.132) | (-0.431) | (1.129) | (-0.428) |
| *MO* | -0.058** | -0.001 | -0.059** | -0.001 |
| | (-2.387) | (-0.234) | (-2.393) | (-0.226) |
| *Big4* | -0.010 | -0.003 | -0.010 | -0.003 |
| | (-0.406) | (-0.650) | (-0.413) | (-0.647) |
| *Duality* | 0.009 | 0.001 | 0.009 | 0.001 |
| | (1.092) | (0.742) | (1.088) | (0.736) |
| *BusyDirector* | -0.023** | 0.004* | -0.023** | 0.004* |
| | (-1.993) | (1.668) | (-1.987) | (1.672) |
| *IndDirector* | -0.014 | 0.003 | -0.015 | 0.003 |
| | (-0.191) | (0.210) | (-0.188) | (0.208) |
| *Boardsize* | -0.003 | -0.0001 | -0.003 | -0.0001 |
| | (-0.852) | (-0.002) | (-0.848) | (-0.001) |
| *Intercept* | 0.305** | 0.185*** | 0.305** | 0.185*** |
| | (2.152) | (6.623) | (2.148) | (6.617) |
| *Firm Fixed Effects* | Yes | Yes | Yes | Yes |

| | | | | |
|---|---|---|---|---|
| *Year Fixed Effects* | Yes | Yes | Yes | Yes |
| *Observations* | 20,735 | 20,735 | 20,735 | 20,735 |
| *Adj. $R^2$* | 0.010 | 0.056 | 0.005 | 0.037 |
| *Sobel-Z test* | | 0.000* | | 0.000* |
| *Pct. Of Mediated Effect* | | 0.023 | | 0.024 |

## Table 11. The Moderating Effect of Internal Corporate Governance

This table presents the regression results regarding the moderating effect of internal corporate governance. Specifically, columns (1) to (4) use DIB China index to proxy for the effectiveness of internal corporate governance. Columns (5) to (8) use ownership concentration to proxy for the effectiveness of internal corporate governance. If the quality of internal control and ownership concentration of a firm is higher than the upper quartile of the corresponding industry in a given year, it is classified as in the high quality internal corporate governance group. Firm and year fixed effects are controlled in all regressions. *t*-statistics in parentheses are calculated using heteroscedasticity-robust standard errors. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
|---|---|---|---|---|---|---|---|---|
| | *InvEff* | *InvEff* | *InvEff* | *InvEff* | *InvEff* | *InvEff* | *InvEff* | *InvEff* |
| | *Internal Control* | | | | *Ownership Concentration* | | | |
| | *High* | *Low* | *High* | *Low* | *High* | *Low* | *High* | *Low* |
| *Tie* | 0.006 | 0.004* | | | 0.001 | 0.006** | | |
| | (0.941) | (1.826) | | | (0.259) | (2.319) | | |
| *Amount* | | | 0.0004 | 0.001* | | | 0.0001 | 0.001** |
| | | | (0.876) | (1.850) | | | (0.166) | (2.329) |
| *SIZE* | -0.006 | -0.002 | -0.006 | -0.002 | -0.005 | -0.002 | -0.005 | -0.002 |
| | (-1.400) | (-0.848) | (-1.397) | (-0.847) | (-1.173) | (-1.155) | (-1.174) | (-1.154) |
| *LEV* | 0.028 | 0.009 | 0.028 | 0.009 | 0.010 | 0.005 | 0.010 | 0.005 |
| | (1.603) | (1.604) | (1.598) | (1.603) | (0.775) | (0.855) | (0.774) | (0.854) |
| *Age* | -0.014* | -0.009** | -0.014* | -0.009** | -0.015*** | -0.012*** | -0.015*** | -0.012*** |
| | (-1.944) | (-2.372) | (-1.943) | (-2.372) | (-3.035) | (-4.089) | (-3.034) | (-4.088) |
| *Growth* | 0.003 | -0.001 | 0.003 | -0.001 | 0.004 | -0.001 | 0.004 | -0.001 |
| | (1.303) | (-0.545) | (1.303) | (-0.545) | (1.633) | (-0.375) | (1.631) | (-0.375) |
| *MB* | -0.009 | -0.015*** | -0.009 | -0.015*** | -0.016* | -0.007 | -0.016* | -0.007 |
| | (-0.880) | (-3.025) | (-0.882) | (-3.025) | (-1.708) | (-1.425) | (-1.706) | (-1.424) |
| *SOE* | 0.006 | 0.002 | 0.006 | 0.002 | 0.013* | 0.003 | 0.013* | 0.003 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | (0.388) | (0.453) | (0.388) | (0.451) | (1.665) | (0.861) | (1.681) | (0.861) |
| *INS* | 0.001 | -0.003 | 0.001 | -0.003 | -0.009 | -0.010 | -0.009 | -0.010 |
| | (0.070) | (-0.285) | (0.068) | (-0.285) | (-0.623) | (-1.282) | (-0.625) | (-1.282) |
| *Cashflow* | 0.003 | 0.004 | 0.003 | 0.004 | -0.005 | 0.0002 | -0.005 | 0.0002 |
| | (0.373) | (1.142) | (0.371) | (1.141) | (-0.742) | (0.042) | (-0.742) | (0.042) |
| *MO* | 0.006 | -0.009 | 0.006 | -0.009 | 0.006 | -0.007 | 0.006 | -0.007 |
| | (0.340) | (-1.480) | (0.343) | (-1.480) | (0.491) | (-1.189) | (0.493) | (-1.189) |
| *Big4* | 0.004 | -0.003 | 0.005 | -0.003 | -0.004 | -0.005 | -0.004 | -0.005 |
| | (0.577) | (-0.574) | (0.580) | (-0.573) | (-0.561) | (-1.054) | (-0.560) | (-1.053) |
| *Duality* | -0.006 | 0.003 | -0.006 | 0.003 | -0.001 | 0.001 | -0.001 | 0.001 |
| | (-1.311) | (1.560) | (-1.314) | (1.560) | (-0.297) | (0.753) | (-0.300) | (0.754) |
| *BusyDirector* | -0.002 | 0.002 | -0.002 | 0.002 | 0.004 | 0.005* | 0.004 | 0.005* |
| | (-0.284) | (0.707) | (-0.283) | (0.706) | (0.701) | (1.832) | (0.702) | (1.831) |
| *IndDirector* | 0.005 | -0.003 | 0.006 | -0.003 | -0.001 | 0.009 | -0.001 | 0.009 |
| | (0.150) | (-0.149) | (0.152) | (-0.149) | (-0.050) | (0.490) | (-0.049) | (0.490) |
| *Boardsize* | 0.0001 | 0.0001 | 0.0001 | 0.0001 | -0.001 | 0.0004 | -0.001 | 0.0005 |
| | (0.064) | (0.029) | (0.066) | (0.029) | (-0.579) | (0.542) | (-0.580) | (0.542) |
| *Intercept* | 0.253*** | 0.148*** | 0.252*** | 0.148*** | 0.231*** | 0.156*** | 0.231*** | 0.156*** |
| | (2.617) | (3.909) | (2.613) | (3.908) | (2.585) | (4.313) | (2.585) | (4.312) |
| *Diff-test(P)* | 0.020 | | 0.020 | | 0.005 | | 0.000 | |
| *Firm Fixed Effects* | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| *Year Fixed Effects* | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| *Observation* | 4,730 | 14,525 | 4,730 | 14,525 | 5,094 | 15,641 | 5,094 | 15,641 |
| *Adj. $R^2$* | 0.062 | 0.042 | 0.062 | 0.043 | 0.059 | 0.053 | 0.059 | 0.053 |

## Table 12. The Moderating Effect of External Monitoring

This table presents the regression results regarding the moderating effect of external corporate governance. Specifically, columns (1) to (4) use analyst coverage to proxy for better external monitoring. Columns (5) to (8) use institutional ownership to proxy for better external monitoring. External monitoring is considered high if analyst coverage or the percentage of institutional ownership is higher than the upper quartile of its industry peers in a given year. Firm and year fixed effects are controlled in all regressions. *t*-statistics in parentheses are calculated using heteroscedasticity-robust standard errors. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
|---|---|---|---|---|---|---|---|---|
| | *InvEff* | *InvEff* | *InvEff* | *InvEff* | *InvEff* | *InvEff* | *InvEff* | *InvEff* |
| | *Analyst Coverage* | | | | *Institutional Ownership* | | | |
| | *High* | *Low* | *High* | *Low* | *High* | *Low* | *High* | *Low* |
| *Tie* | 0.005 | 0.007* | | | 0.005 | 0.006** | | |
| | (0.662) | (1.950) | | | (0.777) | (2.204) | | |
| *Amount* | | | 0.0003 | 0.0005* | | | 0.0003 | 0.001** |
| | | | (0.675) | (1.917) | | | (0.661) | (2.211) |
| *SIZE* | -0.011** | -0.002 | -0.011** | -0.002 | -0.005 | -0.003 | -0.005 | -0.003 |
| | (-2.057) | (-0.629) | (-2.057) | (-0.630) | (-1.127) | (-1.582) | (-1.126) | (-1.582) |
| *LEV* | 0.008 | 0.008 | 0.008 | 0.008 | 0.017 | 0.004 | 0.017 | 0.004 |
| | (0.467) | (1.008) | (0.467) | (1.009) | (1.145) | (0.708) | (1.147) | (0.707) |
| *Age* | -0.010 | -0.013*** | -0.010 | -0.013*** | -0.017*** | -0.010*** | -0.017*** | -0.010*** |
| | (-1.439) | (-3.641) | (-1.438) | (-3.641) | (-3.096) | (-3.507) | (-3.094) | (-3.507) |
| *Growth* | 0.001 | 0.001 | 0.001 | 0.001 | 0.0004 | 0.001 | 0.0004 | 0.001 |
| | (0.383) | (0.722) | (0.384) | (0.721) | (0.120) | (0.814) | (0.120) | (0.814) |
| *MB* | -0.011 | -0.014** | -0.011 | -0.014** | -0.015 | -0.012** | -0.015 | -0.012** |
| | (-0.881) | (-2.307) | (-0.881) | (-2.306) | (-1.617) | (-2.319) | (-1.618) | (-2.319) |
| *SOE* | 0.002 | 0.003 | 0.002 | 0.003 | 0.005 | 0.002 | 0.005 | 0.002 |
| | (0.126) | (0.508) | (0.125) | (0.509) | (0.477) | (0.564) | (0.476) | (0.564) |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| *INS* | -0.009 | -0.013 | -0.009 | -0.013 | -0.003 | -0.008 | -0.003 | -0.008 |
| | (-0.554) | (-0.661) | (-0.555) | (-0.659) | (-0.207) | (-0.369) | (-0.207) | (-0.369) |
| *Cashflow* | 0.008 | -0.003 | 0.008 | -0.003 | 0.006 | -0.002 | 0.006 | -0.002 |
| | (1.093) | (-0.794) | (1.093) | (-0.795) | (0.947) | (-0.580) | (0.948) | (-0.580) |
| *MO* | 0.023* | -0.002 | 0.023* | -0.002 | 0.014 | -0.002 | 0.014 | -0.002 |
| | (1.708) | (-0.249) | (1.708) | (-0.247) | (1.252) | (-0.328) | (1.255) | (-0.327) |
| *Big4* | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | -0.002 | 0.003 | -0.002 |
| | (0.288) | (0.542) | (0.287) | (0.543) | (0.438) | (-0.358) | (0.441) | (-0.357) |
| *Duality* | 0.003 | 0.002 | 0.003 | 0.002 | 0.004 | 0.002 | 0.004 | 0.002 |
| | (0.654) | (0.649) | (0.653) | (0.649) | (1.051) | (0.883) | (1.054) | (0.883) |
| *BusyDirector* | 0.004 | 0.006* | 0.004 | 0.006* | 0.002 | 0.005* | 0.002 | 0.005* |
| | (0.517) | (1.888) | (0.517) | (1.890) | (0.302) | (1.697) | (0.304) | (1.696) |
| *IndDirector* | 0.033 | 0.007 | 0.033 | 0.007 | 0.017 | -0.006 | 0.017 | -0.006 |
| | (0.713) | (0.314) | (0.713) | (0.316) | (0.492) | (-0.306) | (0.493) | (-0.307) |
| *Boardsize* | -0.0001 | -0.0001 | -0.0001 | -0.0001 | -0.001 | -0.0003 | -0.001 | -0.0003 |
| | (-0.044) | (-0.038) | (-0.044) | (-0.037) | (-0.633) | (-0.350) | (-0.634) | (-0.351) |
| *Intercept* | 0.329*** | 0.152*** | 0.329*** | 0.152*** | 0.222** | 0.189*** | 0.222** | 0.189*** |
| | (2.930) | (3.045) | (2.930) | (3.046) | (2.499) | (4.789) | (2.498) | (4.789) |
| *Diff-test(P)* | 0.020 | | 0.020 | | 0.000 | | 0.000 | |
| *Firm Fixed Effects* | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| *Year Fixed Effects* | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| *Observation* | 3,849 | 11,889 | 3,849 | 11,889 | 5,091 | 15,644 | 5,091 | 15,644 |
| *Adj. $R^2$* | 0.072 | 0.055 | 0.072 | 0.055 | 0.065 | 0.052 | 0.065 | 0.052 |

## APPENDIX A: Variable Definitions

This table provides names and definitions of all variables used in the empirical analysis.

| Variable | Definition and measurement |
|---|---|
| ***Dependent Variables*** | |
| InvEff | The magnitude of investment inefficiency, calculated as the absolute value of the residuals estimated from Equation (1). |
| InvEff1 | The magnitude of investment inefficiency, calculated as the absolute value of the residuals estimated from Equation (3). |
| ***Key Independent Variables*** | |
| Tie | A dummy variable that equals 1 if a firm donates to at least one foundation affiliated with one or more of its independent directors in a given year and 0 otherwise. |
| Amount | Logarithm of 1 plus all donations (>=0.5 million) made to foundations affiliated with a firm's independent directors in a given year. |
| ***Control Variables*** | |
| SIZE | Natural logarithm of total assets. |
| LEV | Total liabilities scaled by total assets. |
| Age | Natural logarithm of 1 plus the number of years a firm has been listed. |
| Growth | Growth rate of a firm's operating income. |
| MB | Market value of equity divided by its book value at the end of the year. |
| SOE | A dummy variable that equals 1 if the firm is controlled by the government and 0 otherwise. |
| INS | Percentage of shares held by institutional investors. |
| Cashflow | Operating income before depreciation minus interest expenses, income taxes, and capital expenditures, scaled by total assets. |
| MO | Percentage of shares held by managers |
| Big4 | A dummy variable that equals 1 if the auditor is one of the big 4 auditing firms and 0 otherwise. |
| Duality | A dummy variable that equals 1 if the CEO is also Chairman of the board and 0 otherwise. |
| BusyDirector | Percentage of independent directors who serve on three or more boards. |
| IndDirector | Percentage of independent board members. |
| Boardsize | Number of directors on the board. |
| ***Variables Used in Further Analyses*** | |
| Initiation | A dummy variable that equals 1 if a firm donates to at least one charity affiliated with at least one independent director for the first time and 0 otherwise. |
| Termination | A dummy variable that equals 1 if a firm stops donating to all foundations that are affiliated with any independent directors and 0 otherwise. |
| Number | Number of foundations within 30 km distance of a listed company. |
| Relation | A dummy variable that equals 1 if the CEO or chairman serves in the same foundation as the independent director and 0 otherwise. |
| Expert | A dummy variable that equals 1 if a firm makes donations affiliated with at least one independent directors with industry expertise in a given year and 0 otherwise. |
| NUM | Number of non-affirmative responses issued by independent directors during a given year. |
| Turnover | Total revenue scaled by total assets. |
| InControl | The DIB China index obtained from DIB Internal Control and Risk Management Database (www.dibdata.cn) |
| Top1 | Shareholding ratio of the largest shareholder, computed as the number of shares held by the largest shareholder divided by total shares. |
| Analyst | The natural logarithm of 1 plus the number of analyst coverage |