Corporate Charitable Giving and Agency problem: Evidence from a Business Group

Joon Chae*, Eun Jung Lee**, and Yu Kyung Lee***

This version: October 30, 2019

Abstract

We examine how agency conflict distorts the resource allocation in a business group with special attention to the incentives of the controlling shareholder. Specifically, we analyze whether the controlling shareholder's wealth in each affiliate systematically affects the amount of corporate giving in that affiliate. We find that the affiliate in which a controlling shareholder has more (less) her own equity stake makes less (more) corporate giving. This result indicates that a controlling shareholder, pursuing her own interest, intends to raise her reputation through corporate philanthropy with bearing less cost to her. This interpretation is also supported by other results including the relation between corporate giving and firm's financial performance, effect of corporate governance on this relation, and result with the sub-sample of firms with family CEO's. Generally, our findings are consistent with the exploitation hypothesis of corporate giving.

Keywords: Corporate Social Responsibility; Corporate Giving; Controlling Shareholder; Agency Problem

JEL: G32, G11, G01, L22

---

* Graduate School of Business, Seoul National University, Seoul, Korea. Email: joonchae@snu.ac.kr
** Hanyang University, Ansan, Korea. Email: ejunglee@hanyang.ac.kr
*** Graduate School of Business, Seoul National University, Seoul, Korea. Email: yukyung88@snu.ac.kr

1. Introduction

Two contrasting perspectives on Corporate Social Responsibility (CSR) have been proposed, namely, the value enhancing perspective and the exploitation perspective for a long time. From the perspective that CSR enhances the firm value (Edmans, 2011; Servaes and Tamayo, 2013; Dowell, Hart, and Yeung, 2000), firms invest in CSR activities to maintain the relationship with stakeholders including employees, suppliers, and communities, and then this leads to firm value maximization. Firms with CSR activities have business advantage which enables them to obtain financial benefit. On the other hand, the exploitation perspective suggests that insiders have strong incentives to pursue private benefits through investment in CSR at the expense of other shareholders (Masulis and Reza, 2015; Barnea and Rubin, 2010). CSR activities allow insiders to further their own objectives, attract media attention, satisfy their private altruistic needs, and promote their careers but not serve shareholders' interests. Because exploitation incentives and firm value maximization incentives may function on firms' decisions simultaneously, the net incentive to CSR is still empirical questions. Therefore, in this paper, under a situation where one controlling shareholder controls several firms, we investigate the relative importance of these two conflicting views in explaining the reason for CSR activities.

Mostly the Korean business group known as *chaebols* is defined as an aggregation of *'firms which, though legally independent, are bound together by a constellation of formal and informal ties and are accustomed to taking coordinated action,'* (Khana and Rivkin 2001, p. 47-48). One of the distinct features in Korea business group is that a controlling shareholder, *chongsu,* owns multiple affiliates in a business group by investing their own wealth. Therefore, relative weights of her invested wealth can be different in

various affiliates. Nevertheless, she has the ability to make all decisions and to privately use resources in all affiliates (Lim and Kim 2005; Almeida and Wolfenzon, 2006; Bae et al., 2002).[1] On the basis of these characteristics, we examine which incentives better explain the purpose of the controlling shareholder's CSR activities in Korea business group which is the best platform for this analysis.

More specifically, the existence of a sole controlling shareholder provides an optimal environment to completely distinguish between value enhancing incentive and exploitation incentive. For instance, under wealth maximization assumption, if the CSR is advantageous for value enhancing, then a controlling shareholder may choose affiliates that can increase her own wealth and thus actively invests in CSR activities at affiliates in which she heavily invests her own wealth. However, if CSR does not enhance a firm's value, to pursue her personal interest, she may selectively opt to carry out more CSR activities at affiliates in which her money is less invested. Therefore, this ideal setting allows us to better discriminate between the two incentives.

Moreover, since a single *chongsu* decides the level of CSR activities in different firms, the effect of CEO characteristics on CSR activities is entirely controlled in this analysis. For example, a CEO who has less career concern is less likely to engage in CSR because the substantial reputation is no longer crucial. On the other hand, the CEO who enjoys the spotlights would more actively participate in CSR. However, unlike in many stand-alone companies, in a business group, since all affiliates are managed by one person, i.e. the controlling shareholder,[2] consequently the incentive of CSR can be grasped more

[1] *Chongsu* also strategically allocates not only tangible resources but also intangible resources such as R&D and advertising intensities among affiliates in business groups (Chang and Hong, 2000).

[2] Even if there is a manager for each affiliate in a business group, the manager of affiliates faithfully serves the one shareholder, the controlling family, disregarding other shareholders.

accurately ruling out characteristics of the CEO. Thus, we investigate how a controlling shareholder who has substantial power decides on CSR strategy, and especially which of the two incentives is the primary drive.

The goal of this paper is to examine whether a controlling shareholder determines the level of CSR activities of each affiliate depends on the amount of wealth invested in each affiliate of the business group. To shed light on this question, following Kang et al. (2017), we make our key explanatory variable, Controlling Shareholder's Value (CSV). CSV is defined as the value of the controlling shareholder's shares in an affiliate divided by the aggregated value of the controlling shareholder's shares in all of the affiliates within the group. And also, we utilize the amount of corporate charitable giving as the dependent variable.[3] Most of the CSR literature on the US widely use CSR rating or CSR score from the various database as a proxy for CSR activities (Jha and Cox, 2015; El Ghoul et al., 2016; Krüger 2015; Ferrell et al., 2016).[4] However, these proxies signify the ex-post performance of the CSR and do not directly consider the incurred expense in CSR activities. Unlike the US, firms in Korea should disclose the amount of corporate charitable giving on the audited income statement. Therefore, by using this credible data, we can accurately figure out how much amount is used as CSR activities. To our knowledge, our study is the first to investigate whether the controlling shareholder determines the level of corporate philanthropy of each affiliate based on the amount of her wealth invested in each affiliate.

Firstly, we find strong statistical evidence that firms with lower CSV spend more

[3] It is commonly believed that firms can use charitable giving to reduce corporate taxes. However, corporate giving is insensitive to the corporate tax rate. Navarro (1988) reports that corporate taxes do not influence the level of charitable giving. And also, recently Masulis and Reza (2015) empirically shows that insignificant relation between corporate giving and corporate tax rates, suggesting that costs outweigh benefits.

[4] The database that provides data related to CSR is as follows: Kinder, Lydenberg, and Domini Research and Analytics (KLD) database, MSCI's Intangible Value Assessment (IVA) database, Vigeo Corporate environmental, social and governance (ESG) database, and Thomson Reuters' ASSET4.

corporate giving than those with higher CSV. We argue that when deciding the level of corporate giving to each affiliate in the business group, a controlling shareholder strategically curtails the cost of CSR in affiliates in which her money is heavily invested to further pursue her private benefit. These results are consistent with the exploitation perspective. A controlling shareholder participates in CSR activities at the expense of minority shareholders in her affiliates. But she fully enjoys various personal benefits that come with CSR activities by less spending corporate giving at affiliates with higher CSV.[5] Particularly, in a Korean business group, president identity (PI) which reflect the image of the owner is directly linked to the corporate identity (CI). For example, when Samsung group comes to mind, the controlling shareholder, Lee Kun-hee, naturally spring to mind at the same time.[6] According to such rationales, regardless of which affiliates perform their CSR activities within a business group, a controlling shareholder can experience an increase in their reputation. Therefore, it may be advantageous for a controlling shareholder to strategically determine the cost of CSR in affiliates according to her money invested in each affiliate. Consequentially, these results cast doubt on the view that considers corporate giving as a firm value enhancing behavior.

Our key explanatory variables, CSV is rarely changing over time. Therefore, we employ the fixed-effects vector decomposition(FEVD) estimation model which is a superior alternative to the regular panel estimation models when independent variables are time-invariant (Plumper and Troeger, 2007; 2011). We find that all coefficients on CSV remain negative and statistically significant when applying a FEVD estimation model. And also, to

[5] Especially, the superior reputation is crucial for family firms who want to pass their firms on to next generations generation (Gómez-Mejía et al., 2007). The favorable reputation can influence on firm performance as well as the family's name (Dyer and Whetten, 2006; Zellweger et al., 2011).

[6] Reputation management of Owner family's successor, Edaily news, 2014. 12, 19

alleviate reverse causality concern, we adopt the instrumental variable technique. We construct two instrumental variables (IVs). First, we estimate the Ln(equity), which reflects the size of the group. Second, we utilize the lagged values of the key explanatory variables as IVs (Reed, 2015). With IVs, the findings consistently support our main results that the affiliates in which a controlling shareholder has more investment make less corporate contribution. We again confirm that the choice concerning the level of corporate giving in an affiliate is determined by the amount of the controlling shareholder's wealth invested in the affiliate.

To ensure the explanatory power of the two competitive perspectives, we further investigate how the inefficient use of cash affects stock returns in affiliates of the business group. The greater cash holdings make it easier for controlling shareholder to pursue private interests, sacrificing the shareholder value (Jensen and Meckling 1976). If corporate giving reflects inefficient use of cash and greater agency problem (Masulis and Reza, 2015; Barnea and Rubin, 2010), the controlling shareholder can easily extract private benefits from cash holdings in the firm when making charitable donations. As a result, investors may consider corporate giving to be costly to the firm, thus lowering the value on extra cash to the firm. To estimate the impact of charitable giving on equity value, we use the cash valuation specification following Faulkender and Wang (2006) and Masulis and Reza (2015). We find that corporate giving has an adverse effect on a firm's financial performance, supporting the exploitation hypothesis. This result indicates that as firms increase their charitable donations, investors anticipate a serious misuse of cash holding and thus significantly discount the value of cash assets.

Furthermore, we test the role of corporate governance which can be a crucial factor in expropriation incentives of the controlling shareholder. Prior studies show that good

governance mechanism could sufficiently reduce agency problems such as the opportunistic use of charitable giving (Masulis and Reza, 2015; Brown et al. 2006). We thus consider the subsamples of affiliates with stronger or weaker governance structures based on their governance grades (Masulis and Reza, 2015; Black et al., 2006) and board independence (Masulis and Reza, 2015; Hermalin and Weisbach, 1998). We find that only among firms with bad corporate governance, the negative relationship between CSV and the level of corporate giving has statistical significance.

We also find a statistically significant and negative relationship between CSV and corporate giving in firms with the charity foundation, while in firms with the non-foundation the relationship between CSV and the corporate giving has no statistical significance. In general, monitoring in the charity foundation is carried out by representatives of sponsoring firms (Fama and Jensen, 1983). The problem is, however, that in the Korean business groups most board members of the charity foundation are controlling family. By exercising substantial control over the charity foundation (Carter and Werbel, 2002), the controlling family can exploit assets of foundation in ways that are in conflict with value enhancing, but instead benefit their private interests (Masulis and Reza, 2015). In addition, charity foundations set up by a Korean business group hold a considerable portion of shares in their affiliates. This has led to speculation that foundations may help the owner families maintain control over the business groups and enjoy their private benefits.[7] Considering all these discussions, our results indicate that the controlling family may use their charity foundations to seek their private interests and the agency problem in business groups with charity foundations can be more severe (Carter and Werbel, 2002; Masulis and Reza, 2015).

[7] Korea Fair Trade Commission Press Release, June 29, 2018

Lastly, we find that corporate giving decreases as CSV increases only in subsamples of firms with family CEO. The previous papers find that family CEO can further strengthen family control which can broaden the chance of rent extraction (Anderson and Reeb, 2003; Villalonga and Amit, 2006). Furthermore, Demsetz and Lehn (1985) argue that the controlling family is more likely to serve as CEO when they can better meet their ulterior intentions through their firm's wealth rather than through their wealth. As with the existing literature, our result also suggests that having a family CEO has more serious agency problem than having a non-family CEO.

Our study contributes to the literature that corporate giving is associated with agency problem. Although there are numerous CSR studies on value enhancing and exploitation incentives, yet most of the existing literature have reported inconclusive results. The existence of the controlling shareholder in Korea makes it possible to distinguish the two incentives clearly, and depict perfectly the agency problems between controlling and minority shareholders. The absolute power given to the controlling shareholder could make it easier to choose a beneficial strategy that increases personal reputation at the expense of other shareholders and this means the agency problems.[8] Therefore, using this institutional setting, we are better able to identify the influence of the controlling shareholder's incentives on corporate giving and understand the reason why corporate giving of controlling shareholder differ between affiliates, hence providing an explanation for the mixed results in prior literature.

This paper is related to the literature on family firms by suggesting evidence of how the behavior of family firms influence CSR performance. Prior studies suggest that

[8] Generally, unless the benefits of CSR are at least offset by reduced her wealth or ownership stake, corporate spending on CSR stands for agency costs (Brown et al., 2006).

controlling family are associated with lower CSR performance (El Ghoul et al., 2016; Barnea and Rubin, 2010). Whereas, some papers argue that family firms are more likely than other firms to invest in CSR to maximize long-term value (Bartkus et al., 2002; Berrone et al., 2010; Dyer and Whetten, 2006; Block and Wagner, 2014). These conflicting results of studies motivate our empirical work, and we argue that family firms increase the amount of charitable giving for certain affiliates and decrease for others, depending on the extent to which wealth of controlling family is invested in each affiliate.

This paper also has implications for the literature that ownership structure and CSR generally focus on a single firm and find mixed results across settings (Johnson and Greening, 1999; Zahra, 1996; Ghazali, 2007; Barnea and Rubin, 2010; Masulis and Reza, 2015). For example, some literature reports a positive relationship between ownership concentration and CSR (Johnson and Greening, 1999; Zahra, 1996; Zahra, Oviatt, and Minyard, 1993), while the others discover a significantly negative relationship (Ghazali, 2007; Barnea and Rubin, 2010; Oh et al., 2011; Masulis and Reza, 2015). These studies focus on the relationship between ownership structure and CSR decision in a single firm, while our study examines how the relationship varies when a sole controlling shareholder of a business group pursues private interests in each affiliate.

The remainder of this article is organized as follows. Section 2 presents the sample and main variables in this study. Section 3 reports the empirical results. Section 4 describes the results of robustness tests. Section 5 concludes.

2. Sample selection and Data

2.1 Data

This study analyzes that corporate giving is determined by the relative amount of controlling shareholder's wealth invested in each affiliate within the Korean business group. Therefore, our sample requires the affiliates in which a *chongsu* is the controlling shareholder over the period from 2010 to 2016.[9] The sample of this study includes public firms and private firms. Since private firms are subject to a mandatory external audit, there is no difference in the financial statement between public and private firms. Non-external audit firms, however, are excluded from the sample because we cannot grasp the financial information of non-external audit firms.

Table 1 reports the composition of sample firms. To calculate CFR and CSV, we collect 9,880 firm-year observations which consist of 1,585 firm-years for listed firms, 5,210 firm-years for external audit firms, and 3,085 firm-years for non-external audit firms. Since we cannot make financial variables for non-external audit firms, our initial sample has 6,795 firm-year observations from 274 business groups. And also, since the date of incorporation is missing, 5 firm-year observations are excluded.[10] After removing these firms with insufficient financial data to construct the regression variables, the final sample comprises 6,790 firm-years.

- Insert Table 1 about here -

2.2 CSV variable and corporate philanthropy

[9] Only the business groups existing the controlling shareholder as a natural person are included in the sample. When the business group is owned by the government or does not have a controlling shareholder, the Fair Trade Commission (FTC) defines the controlling shareholder as an affiliate that possesses the top of the investment structure. In that case, we cannot calculate controlling firms' CFR and CSV (Kang et al., 2017).

[10] The establishment date of Hanwha Eagles, an affiliate of the Hanwha Group, is not disclosed.

To determine the relationship between corporate philanthropy and the amount of the controlling shareholder's wealth invested in each affiliate, we calculate controlling shareholders' value (*CSV*) following Kang et al. (2017). Online Provision of Enterprises Information System (OPNI) provides ownership information and the intra-group shareholding matrix among affiliates. Prior to calculating the *CSV*, we measure the controlling shareholders' cash flow right (*CFR*) following Kim et al. (2007) and Kang et al. (2017). *CFR* is comprised of indirect ownership and direct ownership of controlling shareholders. We then calculate CSI_i in an affiliate i which is defined as the controlling shareholders' *CFR* in the affiliate multiplied by the affiliate's book value of equity. This variable represent the value of the controlling shareholder's shareholding in an affiliate i. Lastly, CSV_i is measured as the value of the controlling shareholders' shares in each affiliate (CSI_i) divided by the combined value of the controlling shareholders' shares in all of the affiliates in the group.[11]

Corporate giving can be defined as unconditional transferring cash or other assets to the entity other than as related parties, regardless of the business. Unlike the US, Korean companies should specify the amount of corporate giving in their audited financial statements.[12] Corporate giving data in Korea are therefore highly credible. The amount of

[11] The calculation Method of CSV is in detail Appendix A.

[12] In Korea, corporate giving includes not only cash donations but also donations in kind. If firms make in-kind donations using firms' inventory assets rather than cash donations, this may not directly lead to an increase in corporate costs. Unfortunately, corporate donations cannot be classified as in-kind donations and cash donations, respectively. Therefore, we can deduce the level of corporate in-kind contribution through the fundraising of the Social Welfare Organization Community Chest of Korea (hereafter CCK), the largest charity in Korea. In 2007, of the total 599.6 billion won, individual donations amounted to 196.9 billion won, accounting for 32.8%, and corporate donations amounted to 402.7 billion won, accounting for 67.2%. In addition, the proportion of cash contributions is 25.9%(155 billion) of the total and the remaining 74.1%(444.6 billion) is cash donations. If all in-kind contributions of 25.9% of the total are from corporate giving, it can be inferred that the corporate cash

corporate giving shows us more plainly how much of the firm's expense is used by controlling shareholders to pursue their private objectives. To standardize corporate giving data, we divide corporate giving by operating income, ordinary income, sales, and assets.[13] We then take the natural logarithm of one plus scaled corporate giving to handle the right skewness of giving data (Navarro, 1988; Masulis and Reza, 2015). Since corporate giving is a small fraction of denominator, we also multiply the logarithmic function by 10^3 or 10^2. We neglected variables when operating income, ordinary income, and sales are negative. In addition, we use just natural logarithm of one plus corporate giving as a dependent variable.[14] As a result, a total of five giving variables, *Giving to Operating Income*, *Giving to Ordinary Income, Giving to Sales, Giving to Asset,* and *Log(Corporate Giving),* are used as dependent variables.

2.3 Control variables

In our empirical analyses, we include various control variables for a number of firm characteristics that might affect the level of corporate giving. We control for *Size*, *Leverage*, *Age*, *Profitability*, *Free Cash Flow Dummy*, *Financial Dummy*, *List Dummy, Advertising, and R&D*. *Size* is defined as the natural logarithm of total assets. *Leverage* is defined as the ratio of total debt to total assets. *Age* is calculated as the natural logarithm of the number of year

---

contribution is more than 40%.

[13] Because corporate giving is the cost which is not directly related to the business, it is categorized as other non-operating expenses. Thus, it is also standardized by ordinary income.

[14] The public would be very interested in how much they have donated, and as a result, the bigger the donation, the higher the recognition would be. Therefore, the donation that does not standardized is also used as dependent variables.

and months since foundation. *Profitability* is measured by earnings before interest and taxes divided by total assets. To capture empire building incentives (Jensen, 1986), we include *Free Cash Flow Dummy* that takes the value of one if free cash flow is greater than 0 and zeroes otherwise. *Financial Dummy* is an indicator variable that takes the value of one if the firm is in the financial sector and zeroes otherwise. *List Dummy* has the value of one if a firm is listed and zero otherwise.

According to Navarro (1988) and Brown, Helland, and Smith (2006), we include *Advertising* and *R&D* expenditures which are scaled by sales. Corporate giving is part of an advertising policy designed to promote the corporate image and products. Therefore, firms with high advertising intensive are more associated with corporate giving. In addition, corporate giving in firms with large R&D investments boosts expected profits. For instance, firms with large invested R&D can make significant contributions to nonprofit research organizations such as universities that conduct research with firms. We also incorporate two additional variables. Since *Advertising* and *R&D* have many missing values, we measure two dummy variables, *Advertising Dummy*, and *R&D Dummy*, that takes the value of zero if the data is missing and one otherwise (Flannery and Rangan, 2006). In addition, as a variable for the characteristics of the business group, we include *No. of Affiliates* that is defined as the natural log of the number of affiliates in a business group.

We also control for industry-fixed effects by including dummies for each industry using two-digit SIC codes. Since all affiliates within a single business group are effectively controlled by the controlling shareholder, the inclusion of business group dummies does allow us to decrease the omitted variable bias that would make our estimated coefficients biased and inconsistent (Wooldridge, 2002). We control for time-varying effects by using dummy variables for each year.

- Insert Table 2 about here -

3. Empirical evidence

3.1 Descriptive statistics

Panel A of Table 3 reports descriptive statistics for basic characteristics for the sample of firms. An average sample firm makes *Corporate Giving* of KRW 1,429,522. The median of *Corporate Giving* (3,250) is less than the mean value, which implies that the distribution of *Corporate Giving* is right skewed. The average of *Giving to Operating Income* is 0.0842, the median is 0.0034, and the maximum is 0.8390. The average of *Giving to Sales* is 0.1468, the median is 0.0035, and the maximum is 2.9834. The average *CSV* is 4.04%, while the average *CFR* is 31.01%. The median of *CSV* is 0.91%, and the maximum is 92.71%. With these statistics, we understand that *CSV* has right skewness. On the other hand, *CFR* has an average value of 21.65% and a median value of 100%. *No. of affiliates* in a group ranges from 7 to 96, with an average of 49.76. The *Age* ranges from 0.0833 to 86.0833, with a mean of 19.2335 and a median of 13.9167.

In Panel B, we separate the sample into listed affiliates and unlisted affiliates. We have 1,503 firm-year observations for listed affiliates and 5,278 firm-year observations for unlisted affiliates. The average (median) *Corporate Giving* is 5,146,430 (271,570) for public firms and 372,871 (952) for private firms. The average of *CSV* is 9.17% for listed affiliates, whereas the average of *CSV* is 2.57% for unlisted affiliates.

- Insert Table 3 about here -

3.2 Regression analysis

3.2.1 Main results

The goal of this paper is to examine whether controlling shareholder determines the level of corporate philanthropic giving of each affiliate in the business group as her private interests. To shed more light on the impact of *CSV* on *Corporate Giving*, we run the following specification:

$$Corporate\ Giving_{i,t} = \beta_1 + \beta_2 CSV_{i,t} + \beta_3 Contol\ Variables + \beta_4 Fixed\ Effects + \varepsilon_{i,t} \quad (1)$$

where *Corporate Giving* is scaled by operating income, ordinary income, total sales, and total asset and is measured as log(1+ *Corporate Giving*), *CSV* is measured as the value of the controlling shareholders' shares in each affiliate divided by the combined value of the controlling shareholders' shares in all of the affiliates in the group, Controls is a vector that incorporate the firm-characteristic control variables (*Size, Leverage, Age, Profitability, No. of affiliates, Free cash flow dummy, Financial dummy, List dummy, Advertising, Advertising dummy, R&D,* and *R&D dummy*), and Fixed effects is a vector that contains the year, industry, and group fixed effects. Following Petersen (2009), we calculate t-statistics using the standard errors, adjusted for heteroskedasticity and clustering at the firm level.

Table 4 presents the regression results of the test on the relation between CSV and corporate giving. Model (1) of Table 4 shows a regression result between *CSV* and *Giving to Operating Income*. The regression coefficient is -0.2095 with a *t*-statistic of -2.18, suggesting that a firm with more of the controlling shareholders' money tends to make fewer contributions. In Model (2), we employ our second measure of corporate giving, *Giving to Ordinary Income* as the dependent variable. The impact of *CSV* on *Giving to Ordinary Income* is again negative and significant, consistent with the previous findings. Following

Masulis and Reza (2015) and Brown, Helland, and Smith (2006), we use *Giving to Sales* and *Giving to Asset* as dependent variables in the model (3) and (4). We document negative and significant coefficients on *CSV*. These results complement the finding in the model (1) and (2) by showing that an increase in controlling shareholder's value is associated with a decrease in corporate giving. In model (5), employing the *Log(1+corporate philanthropy)* as dependent variables, we consider alternative proxies for corporate giving. We find that the coefficient on *CSV* is negative and statistically significant, supporting that in line with the exploitation perspective, the controlling shareholder attempts to determine the level of charitable contribution in the pursuit of her interests.

In all regression specification, the coefficient on *Age* is positive and statistically significant. *Size* also has a statistically significant positive effect on corporate giving for Models (1) – (3) and (5), but not for Model (4). These results indicate that larger and older firms are more likely to engage in corporate giving (Boatsman and Gupta, 1996; Burlingame and Frishkoff, 1996; Dunn, 2004; Ferrell, Liang, and Renneboog, 2016). *Leverage* is negatively associated with corporate giving in the Model (1), (3), and (4), indicating that monitoring by creditors effectively curbs rent extraction behaviors (Brown, Helland, and Smith, 2006; Kim, Pae, and Yoo, 2017). *List dummy* also has a statistically significant positive effect on corporate philanthropy for Models (1), (2), (4), and (5), but not for Model (3). The positive coefficient on *List dummy* supports an argument that public firms are encouraged to make more corporate charitable contributions (Kim, Pae, and Yoo, 2017). Also, previous studies view advertising to be a major motivation for corporate contribution (Navarro, 1988; Masulis and Reza, 2015). In Model (2) – (5), *Advertising* has statistically significant positive coefficients, supporting that an argument that charitable giving is an alternative and complementary means of improving a firm's public image (Navarro, 1988;

Masulis and Reza, 2015).

Based on the statistical evidence in Table 4, we confirm our conjecture that a controlling shareholder determines the level of corporate giving of each affiliate in her business group based on the amount of her wealth that is invested in each affiliate. These results are in line with the exploitation perspective.

- Insert Table 4 about here -

3.2.2 Corporate giving and the value of cash

The results so far show that an increase in controlling shareholder's value is associated with a decrease in corporate philanthropy. These results indirectly indicate that the corporate giving stand for the agency problem. In this section, we further investigate how the inefficient use of cash by the controlling shareholder affects stock returns. To measure the impact of corporate giving on cash holding, we employ cash valuation specification from the Faulkender and Wang (2006) and Masulis and Reza (2015). In this specification, the coefficient of the change in cash is captured the marginal value which investors impose on one additional dollar of liquid assets. Faulkender and Wang (2006) find that an increase in changes in cash holdings lead to a lower market valuation of a firm. Especially, Masulis and Reza (2015) show that after augmenting the previous specification with a corporate giving, an increase in corporate giving result in a reduced market valuation of firm cash holdings. We also utilize their cash valuation specification as follow:

$$r_{i,t} - R_{i,t}^{B} = \beta_1 + \beta_2 Corporate\ Giving_{i,t} + \beta_3 \frac{\Delta C_{i,t}}{M_{i,t-1}} * Corporate\ Giving_{i,t}$$
$$+ \beta_4 \frac{\Delta C_{i,t}}{M_{i,t-1}} + \beta_5 \frac{\Delta E_{i,t}}{M_{i,t-1}} + \beta_6 \frac{\Delta NA_{i,t}}{M_{i,t-1}} + \beta_7 \frac{\Delta RD_{i,t}}{M_{i,t-1}} + \beta_8 \frac{\Delta I_{i,t}}{M_{i,t-1}} + \beta_9 \frac{\Delta D_{i,t}}{M_{i,t-1}}$$
$$+ \beta_{10} \frac{C_{i,t-1}}{M_{i,t-1}} + \beta_{11} Lev_{i,t} + \beta_{12} \frac{NF_{i,t}}{M_{i,t-1}} + \beta_{13} \frac{C_{i,t-1}}{M_{i,t-1}} * \frac{\Delta C_{i,t}}{M_{i,t-1}} + \beta_{14} Lev_{i,t}$$
$$* \frac{\Delta C_{i,t}}{M_{i,t-1}} + \varepsilon_{i,t}$$

The dependent variable in regression is the excess stock return, $r_{i,t} - R_{i,t}^{B}$, where $r_{i,t}$ is the firm's raw stock returns for firm i during fiscal year t and $R_{i,t}^{B}$ is Fama and French (1993) size and book-to-market portfolio returns at year t. The excess stock return captures the change in market value of firm. We regress excess stock return on changes in idiosyncratic firm characteristics. We mainly focus on the estimated coefficient on interaction terms with corporate giving ($\frac{\Delta C_{i,t}}{M_{i,t-1}} * Corporate\ Giving_{i,t}$). We predict that the main coefficient of interest β_3 on the interaction term between changes in cash holdings and corporate philanthropy is negative and statistically significant. If corporate giving involves inefficient use of cash and greater agency problem (Brown, Helland, and Smith, 2006; El Ghoul et al., 2016; Masulis and Reza, 2015), the controlling shareholder can easily extract private benefits from cash holdings in affiliates when making huge charitable donations. As a result, investors perceive such controlling shareholder benefits to be costly to the firm, thus lowering the value on extra cash to the firm.

Consistent with Faulkender and Wang (2006), we control for changes in firms' profitability, financial policy, and investment policy. These variables may be correlated with both firm's cash holdings and returns. The firm's profitability variable is included earnings before interest and extraordinary items ($\Delta E_{i,t}$). We also contain changes in the firm's

investment by controlling for net assets ($\Delta NA_{i,t}$) and R&D expenditures ($\Delta RD_{i,t}$). We control for changes in the financial policy using the cash holdings ($\Delta C_{i,t}$), interest expense ($\Delta I_{i,t}$), total dividends ($\Delta D_{i,t}$), leverage ($Lev_{i,t}$), and the net equity and debt financing during the fiscal year t ($NF_{i,t}$). We standardize the firm characteristics by the one-year lagged market value of equity ($M_{i,t-1}$), with the exception of leverage, to avoid having the biggest firms dominate the results.

Table 5 presents regression estimates for cash valuation regression. All model except Model (3), we find that negative and highly statistically significant coefficients on the interaction of corporate giving and the change in cash. In Model (3), the coefficient on the interaction term is negative but statistically insignificant. These findings imply that controlling shareholder extracts private benefits from corporate cash holdings when firms make large charitable contributions. As firms increase their charitable donations, investors anticipate a serious misuse of cash holding and thus significantly discount the value of cash assets. These results are in line with the hypothesis that corporate giving has an adverse effect on a firm's financial performance.

- Insert Table 5 about here –

3.2.3 Corporate governance

Prior studies show that good governance structure could sufficiently reduce agency problems such as the opportunistic use of charitable giving (Masulis and Reza, 2015; Brown et al., 2006). Thus, the degree of agency problems can differ depending on the level of corporate governance. To capture the role of corporate governance, we split the sample based on corporate governance grades (Hermalin and Weisbach, 1998) and board independence

(Masulis and Reza, 2015; Hermalin and Weisbach, 1998). We define the *Governance Grade Dummy* which is measured as 1 if the firms have a corporate governance rating of A+ or A from KCGS and 0 otherwise. Korea Corporate Governance Service(KCGS) evaluates the grades of corporate governance based on five categories: Board of Directors, Shareholder Rights, Audit Committee, Disclosure, and Ownership Parity. These grades are divided into seven: S, A +, A, B +, B, C, and D. A higher grade for corporate governance reflects the firm has better governance mechanism.[15] We also use *Independent Board Dummy* is defined as 1 if at least 60% of board members are independent and 0 otherwise. Through an efficient board of directors, firms can enhance corporate governance system and suppress agency problems. Indeed, empirical studies assist the argument that independent directors are more effective in monitoring (Coughlan and Schmidt, 1985; Hermalin and Weisbach, 1988; Masulis and Reza, 2015). We then conduct the regression analysis using subsamples. In the exploitation view, a decrease in corporate giving of the business group with an increase in CSV should be more pronounced in the subsamples of firms with bad corporate governance.

The results of subgroup analyses are reported in Table 6. Model (1) - (5) and (6) - (10) present the results of firms with good governance mechanism and bad governance mechanism, respectively. In Panel A of Table 6, for the subsample split by governance grades, the coefficients on *CSV* are statistically insignificant in the Model (1) - (5). Even in the model (2), the coefficients on *CSV* are significantly positive. In contrast, the coefficients on *CSV* are significantly negative only for the subsamples of firms with lower grades. These results are consistent with the exploitation view. In Panel B of Table 6, we find that the coefficients on *CSV* are significantly negative only for the subsample of firms with bad governance system

[15] Unfortunately, there is no affiliate of the business groups received 'S' grade in Korea.

based on the split by board independence. For the subsample with better governance system, the coefficients on *CSV* are insignificant. In sum, we find that only among firms with bad corporate governance, the negative relationship between CSV and the level of corporate giving has statistical significance. These results are consistent with anecdotal accounts and prior literature that corporate governance can serve as an effective means to mitigate conflicting interests and support our main results.

- Insert Table 6 about here -

3.2.4 Non-profit foundation

According to Brown et al. (2006) and Masulis and Reza (2015), foundations are associated with severe agency problems because these are more likely to be used for the personal benefits of insiders. Especially, this side effect will be more prominent in Korea for several reasons. First, by law, the charitable foundation established for the public good refers to nonprofit organizations that financially assist other organizations or individuals. But in Korea, they have faced suspicions which are actually fronts for tax evasion and ensuring family succession. When the business group and controlling family contribute their shares to fund charity foundations, they are generally exempt from inheritance taxes or gift taxes.[16] The stake held by the charity foundations, meanwhile, remains as a friendly stake for the owner family. Therefore, the controlling family may be using their nonprofit organizations to tighten their control over their business empires. Second, monitoring in the charity foundation is generally carried out by representatives of sponsoring firms (Fama and Jensen, 1983). In

[16] Korea Fair Trade Commission Press Release, June 29, 2018

the Korean business groups, however, the controlling family are members of the board in charitable foundations and even serve as the foundation head.[17] Using their absolute power, the controlling family can exploit foundation assets to benefit their private interests (Masulis and Reza, 2015). Lastly, foundations receive irreversible large contributions from affiliates in business groups. Foundation in the business group cannot reallocate any of its assets back to the firm or shareholders. As a result, contribution to family foundation indicates a permanent loss of firm assets which can harm shareholders.

Based on the above discussion, we conjecture that the agency conflicts in the business group with charitable foundation may be more severe than a business group with non-charitable foundation (Werbel and Carter 2002; Masulis and Reza, 2015). Thus, we separately analyze by dividing the business group with the foundation and the non-foundation.

The results of subsample analysis are reported in Table 7. We find that the coefficient on *CSV* is negative and statistically significant at the 1% or 5% level in the subsample of firms with the charitable foundation, but statistically insignificant in the subsample of firms with non-foundation. These results suggest that controlling family may use their charity foundations to seek their private interests and also family foundations are more associated with severe agency problems.

- Insert Table 7 about here -

3.2.5 Family CEO

[17] In fact, the Korea Fair Trade Commission discovered that about 84 percent of business groups-run nonprofit organizations gave board seats to the members of controlling families. And also, family members served as the foundation head at 41.2 percent of them. (July 03,2018 Chaebol nonprofits strengthen family grip: FTC, Korea Joongang Daily)

The controlling family is more likely to serve as CEO when they can better meet their ulterior intentions through their firm's wealth rather than through their wealth (Demsetz and Lehn, 1985). And also, the family CEO could further strengthen family control to expand the chance of rent extraction (Anderson and Reeb, 2003; Villalonga and Amit, 2006). Therefore, having a family CEO in the firm has a more serious agency problem than having a non-family CEO. We predict that when the affiliates with the family CEO makes donations, the agency problem becomes more serious, and corporate giving would decrease as CSV increases.

To test this conjecture, we employ a split sample analysis depending on whether family is a CEO or not. The results are reported in Table 8. The results reveal that the coefficient on *CSV* is significantly negative only for the subsamples of firms with family CEO. In contrast, for firms with non-family CEO, coefficient on *CSV* is statistically insignificant. These results suggest that when the controlling shareholder or her family serve as CEO in affiliates the more direct form of agency conflicts occurs because the controlling shareholder more easily require these firms to make donations in line with her interests.

- Insert Table 8 about here -

3.2.6 Cash flow right

Our main explanatory variable, *CSV*, is in contrast with the generally used ownership variable, *Cash Flow Right* (CFR) calculated as the ownership of an affiliate's shares by controlling shareholders (Kang et al., 2017).[18] Kang et al. (2017) shows *CSV* has greater

[18] For instance, a controlling shareholder of a business group has 200 and 20 shares of two affiliates, A and B, respectively, with outstanding shares are 400 and 200, and prices are $1 and $100 in turn. In this case, CFRA

explanatory power on firm value than *CFR*. In their study, the coefficient of firm value on *CFR* is statistically insignificant but the coefficient of firm value on *CSV* is strongly significant. And also, the analysis including both *CFR* and *CSV* shows only the coefficient of firm value on *CSV* is significant. These results imply that the controlling shareholder is more concerned with the value of the relative wealth directly invested in the affiliate than the ownership. Following Kang et al. (2017), in this paper, we also include *CFR* to verify the impact of the traditional variables in all regression models.

Table 9 shows that our results are qualitatively similar to those reported in Table 4. Despite the inclusion of *CFR*, the estimated coefficient of *CSV* remains still negative and statistically significant across all regression models. However, the coefficient of *CFR* is insignificant. Thus, we confirm that *CFR* has no explanatory power on corporate giving, and the choice on the level of corporate giving in each affiliate within the business group can be determined by the amount of the controlling shareholder's wealth invested in each affiliate.

- Insert Table 9 about here -

4. Robustness tests

4.1 FEVD approach

In general, the ownership of controlling shareholder is time-invariant. Consequentially, our key explanatory variables, *CSV* also rarely change over time. Therefore, we employ the fixed-effects vector decomposition(FEVD) estimation model. If independent variables do not change over time, general fixed-effects estimation models are inappropriate,

and CFRB are 50 percent and 10 percent while CSVA and CSVB are 9.09 percent (= \$200/(\$200+\$2000)) and 90.9 percent (=\$2000/(\$200+\$2000)), respectively.

and a superior alternative to the regular panel estimation models are the FEVD technique (Plumper and Troeger, 2007; 2011).

The results of Table 10 which are applied the FEVD approach are similar to those of Table 4. We find that all coefficients on *CSV* are negative and statistically significant. We confirm that the controlling shareholder determines the level of corporate giving of each affiliate in her business group based on the amount of her wealth that is invested in each affiliate.

- Insert Table 10 about here -

4.2 Reverse causality

It is possible that our empirical evidence is induced by reverse causality from corporate giving to *CSV*. For instance, socially irresponsible affiliates have few expenses for CSR activities, which can lead to an increase in net income. Thus the controlling shareholder might invest a higher wealth in these affiliates. To alleviate these concerns, we adopt the instrumental variable technique. We construct two instrumental variables (IVs). First, we estimate the *Ln(equity)*, which reflects the size of the group. We attempt to identify variables that are related to CSV but not to corporate giving. Instinctively, a wealthy controlling shareholder can increase CSV in several affiliates compared to controlling shareholder with less property. But, the property of controlling shareholders does not affect corporate giving. Unfortunately, the wealth of the controlling shareholder is not announced publicly. Therefore, we employ the group size as a proxy for controlling shareholder's property. Second, we utilize the lagged values of the key explanatory variables as IVs. According to Reed (2015), if the lagged values do not themselves belong in the respective estimating equation, and if they

are sufficiently correlated with the simultaneously determined explanatory variable then, using lagged values of the endogenous variable is effective estimation strategy.

Table 11 shows the results of the first- and second-stage regressions. Except for applying *Giving to Operating income* as the dependent variable, the coefficients of *CSV* in second-stage regressions still remain negative and statistically significant. With IVs, the coefficient estimates continue to indicate that the choice concerning the level of corporate giving in an affiliate is determined by the amount of the controlling shareholder's wealth which is invested in the affiliate.

The potential problem with IV techniques is weak IV. The weak instrumental variables cause inconsistency and imprecision in the IV estimators. To confirm the quality of our IVs, we estimate first-stage F-statistic of instrumental variables and Partial R2 which are indicated whether given instruments are weak.[19] As shown in Table 11, all F-statistics and R2 are sufficiently large, alleviating concerns that the IV estimators suffer from biases that result from weak instruments.

- Insert Table 11 about here -

5. Conclusions

Although there are numerous CSR studies on value enhancing and exploitation perspective, the existing literature still fails to report the consensus results. Since a sole controlling shareholder dominates multiple firms in Korea business group, this noble setting allows us to better discriminate between the two incentives. This paper examines which

[19] F-statistic in the first stage less than 10 or a low partial R^2 indicates that the instruments are weak and that 2SLS will be biased in this case (Staiger and Stock, 1997).

perspective better explain the motivation of the controlling shareholder's CSR activities. Specifically, this paper study whether a controlling shareholder determines the level of corporate giving of each affiliate depends on the amount of wealth invested in each affiliate in the business group. To shed light on this question, following Kang et al. (2017), we make our key explanatory variable, Controlling Shareholder's Value (CSV).

In this paper, we find strong statistical evidence that firms with lower CSV disburse more corporate giving than those with higher CSV. These results are consistent with the exploitation perspective. In this perspective, since the controlling shareholder of Korean chaebol have absolute power, to pursue her private interests she chooses a strategy that raises reputation through corporate philanthropy while minimizing potential costs. For robustness, we adopt the fixed-effects vector decomposition(FEVD) estimation and the instrumental variable technique. When independent variables are time-invariant (Plumper and Troeger, 2007; 2011), FEVD is more superior than regular panel estimation. We also use a two-stage least square (2SLS) approach to control for reverse causality. Our results still remain to hold when we apply the FEVD model and IV technique.

We also find that corporate giving has an adverse effect on a firm's financial performance, supporting the exploitation hypothesis. This result indicates that as firms increase their charitable donations, investors anticipate a serious misuse of cash holding and thus significantly discount the value of cash assets. In addition, we find that only among firms with bad corporate governance, the negative relationship between CSV and the level of corporate giving has statistical significance. We also find a statistically significant and negative relationship between CSV and corporate giving in a firm with the charity foundation, while in a firm with the non-foundation the relationship between CSV and the

corporate giving has no statistical significance. These results suggest that the controlling family may use their charity foundations to seek their private interests. Finally, we find that corporate giving decrease as CSV increases only for the subsamples of firms with family CEO. The controlling family is more likely to serve as CEO when the chance of rent extraction is high. Thus having a family CEO has more serious agency problem than having a non-family CEO.

References

Almeida, H. V., & Wolfenzon, D. (2006). A theory of pyramidal ownership and family business groups. The Journal of Finance, 61(6), 2637-2680.

Anderson, R. C., & Reeb, D. M. (2003). Founding-family ownership and firm performance: evidence from the S&P 500. The journal of finance, 58(3), 1301-1328.

Bae, K., Kang, J., & Kim, J. (2002). Tunneling or value added? Evidence from mergers by Korean business groups. The Journal of Finance, 57(6), 2695-2740.

Barnea, A. and A. Rubin (2010). Corporate social responsibility as a conflict between shareholders. Journal of Business Ethics, 97 (1), pp.71–86.

Bartkus, B. R., Morris, S. A., & Seifert, B. (2002). Governance and corporate philanthropy: restraining Robin Hood?. Business & Society, 41(3), 319-344.

Berrone, P., Cruz, C., Gomez-Mejia, L. R., & Larraza-Kintana, M. (2010). Socioemotional wealth and corporate responses to institutional pressures: Do family-controlled firms pollute less?. Administrative science quarterly, 55(1), 82-113.

Black, B. S., Jang, H., & Kim, W. (2006). Predicting firms' corporate governance choices: Evidence from Korea. Journal of corporate finance, 12(3), 660-691.

Block, J. H., & Wagner, M. (2014). The effect of family ownership on different dimensions of corporate social responsibility: Evidence from large US firms. Business Strategy and the Environment, 23(7), 475-492.

Boatsman, J. R., & Gupta, S. (1996). Taxes and corporate charity: empirical evidence from microlevel panel data. National Tax Journal, 193-213.

Brown, W. O., Helland, E., & Smith, J. K. (2006). Corporate philanthropic practices. Journal of Corporate Finance, 12(5), 855–877.

Burlingame, D. F., & Frishkoff, P. A. (1996). How does firm size affect corporate philanthropy. Corporate philanthropy at the crossroads, 86-104.

Carter, S. M., and J. D.Werbel. 2002. The CEO's influence on corporate foundation giving. Journal of Business Ethics 40:47–60.

Chang, S. J., & Hong, J. (2000). Economic performance of group-affiliated companies in Korea: Intragroup resource sharing and internal business transactions. Academy of Management Journal, 43(3), 429–448.

Coughlan, A. T., & Schmidt, R. M. (1985). Executive compensation, management turnover, and firm performance: An empirical investigation. Journal of accounting and economics, 7(1-3), 43-66.

Demsetz, H., & Lehn, K. (1985). The structure of corporate ownership: Causes and consequences. Journal of political economy, 93(6), 1155-1177.

Dowell, G., Hart, S., & Yeung, B. (2000). Do corporate global environmental standards create or destroy market value?. Management science, 46(8), 1059- 1074.

Dunn, P. (2004). Professional corporate donation programs in Canada: An exploratory study. Nonprofit and Voluntary Sector Quarterly, 33(2), 334-345.

Dyer Jr, W. G., & Whetten, D. A. (2006). Family firms and social responsibility: Preliminary evidence from the S&P 500. Entrepreneurship Theory and Practice, 30(6), 785-802.

Edmans, Alex, 2011, Does the stock market fully value intangibles? Employee satisfaction and

equity prices, Journal of Financial Economics 101, 621-640.

El Ghoul, S., Guedhami, O., Wang, H., & Kwok, C. C. (2016). Family control and corporate social responsibility. Journal of Banking & Finance, 73, 131-146.

Fama, E. F., & Jensen, M. C. (1983). Separation of ownership and control. The journal of law and Economics, 26(2), 301-325.

Faulkender, M., & Wang, R. (2006). Corporate financial policy and the value of cash. The Journal of Finance, 61(4), 1957-1990.

Faulkender, M., & Wang, R. (2006). Corporate financial policy and the value of cash. The Journal of Finance, 61(4), 1957-1990.

Ferrell, A., Liang, H., & Renneboog, L. (2016). Socially responsible firms. Journal of Financial Economics, 122(3), 585-606.

Ferrell, A., Liang, H., Renneboog, L., 2016. Socially responsible firms. Journal of Financial Economics 122 (3), 585–606

Flannery, M. J., & Rangan, K. P. (2006). Partial adjustment toward target capital structures. Journal of financial economics, 79(3), 469-506.

Ghazali, N. A. M. (2007). Ownership structure and corporate social responsibility disclosure: some Malaysian evidence. Corporate Governance, 7(3), 251-266

Gómez-Mejía, L. R., Haynes, K. T., Núñez-Nickel, M., Jacobson, K. J., & Moyano-Fuentes, J. (2007). Socioemotional wealth and business risks in family-controlled firms: Evidence from Spanish olive oil mills. Administrative science quarterly, 52(1), 106-137.

Hermalin, B. E., & Weisbach, M. S. (1998). Endogenously chosen boards of directors and their monitoring of the CEO. American Economic Review, 96-118.

Jensen, M. C. (1986). Agency costs of free cash flow, corporate finance, and takeovers. The American economic review, 76(2), 323-329.

Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. Journal of financial economics, 3(4), 305-360.

Jha, A., Cox, J., 2015. Corporate social responsibility and social capital. Journal of Banking and Finance 60, 252–270

Johnson, R. A. & Greening, D. W. 1999. The effects of corporategovernance and institutional ownership types on corporatesocial performance. The Academy of Management Journal, 42:564–576.

Kang, H. C., Anderson, R. M., Eom, K. S., & Kang, S. K. (2017). Controlling shareholders' value, long-run firm value and short-term performance. Journal of Corporate Finance, 43, 340-353.

Khanna, T., & Rivkin, J. W. (2001). Estimating the performance effects of business groups in emerging markets. Strategic management journal, 22(1), 45-74.

Kim, B., Pae, J., & Yoo, C. Y. (2019). Business groups and tunneling: Evidence from corporate charitable contributions by Korean companies. Journal of Business Ethics, 154(3), 643-666.

Kim, W., Lim, Y., & Sung, T. (2007). Group control motive as a determinant of ownership structure in business conglomerates: Evidence from Korea's chaebols. Pacific-

Basin Finance Journal, 15(3), 213-252.

Krüger, P., 2015. Corporate goodness and shareholder wealth. Journal of Financial Economics 115 (2), 304–329.

Lim, U., & Kim, C. S. (2005). Determinants of ownership structure: An empirical study of the Korean conglomerates. Pacific-Basin Finance Journal, 13(1), 1-28.

Masulis, R. and S. Reza (2015). Agency problems of corporate philanthropy. The Review of Financial Studies, 28 (2), pp.592–636.

Navarro, P. (1988). Why do corporations give to charity?. Journal of business, 61(1), 65.

Oh, W. Y., Chang, Y. K., & Martynov, A. (2011). The effect of ownership structure on corporate social responsibility: Empirical evidence from Korea. Journal of Business Ethics, 104(2), 283-297.

Petersen, M. A. (2009). Estimating standard errors in finance panel data sets: Comparing approaches. The Review of Financial Studies, 22(1), 435-480.

Plümper, T., & Troeger, V. E. (2007). Efficient estimation of time-invariant and rarely changing variables in finite sample panel analyses with unit fixed effects. Political Analysis, 15(2), 124-139.

Plümper, T., & Troeger, V. E. (2011). Fixed-effects vector decomposition: properties, reliability, and instruments. Political Analysis, 19(2), 147-164.

Reed, W. R. (2015). On the practice of lagging variables to avoid simultaneity. Oxford Bulletin of Economics and Statistics, 77(6), 897-905.

Servaes, Henri, and Ane Tamayo, 2013, The impact of corporate social responsibility on firm

value: The role of customer awareness, Management Science 59, 1045-1061.

Staiger, D., Stock, J. H., & Watson, M. W. (1997). The NAIRU, unemployment and monetary policy. Journal of economic perspectives, 11(1), 33-49.

Villalonga, B., & Amit, R. (2006). How do family ownership, control and management affect firm value?. Journal of financial Economics, 80(2), 385-417.

Werbel, J. D., & Carter, S. M. (2002). The CEO's influence on corporate foundation giving. Journal of Business Ethics, 40(1), 47-60.

Wooldridge, J. M. (2003). Further results on instrumental variables estimation of average treatment effects in the correlated random coefficient model. Economics letters, 79(2), 185-191.

Zahra, S. A. 1996. Governance, ownership, and corporate entrepre-neurship: The moderating impact of industry technologicalopportunities. Academy of Management Journal, 39: 1713–1735.

Zahra, S. A., Oviatt, B. M., & Minyard, K. 1993. Effects of corporate ownership and board structure on corpo- rate social responsibility and financial performance. Academy of Management Best Paper Proceedings: 336-340.

Zellweger, T., Sieger, P., & Halter, F. (2011). Should I stay or should I go? Career choice intentions of students with family business background. Journal of Business Venturing, 26(5), 521-536.

Appendix A.

Following Kang et al. (2017), we use the data set from the KFTC's Online Provision of Enterprises Information System (OPNI).[20] OPNI produces the ownership data: controlling shareholders, family members, nonprofit organizations, non-family executives, treasury stocks, affiliates, and others. OPNI also distributes the intra-group shareholding matrix among affiliates.

Prior to calculating the CSV, we measure the controlling shareholders' cash flow right (CFR), as in Kang et al. (2017). Following Kim (2000), Kim et al. (2007), and Kang et al. (2017), CFR include indirect ownership and direct ownership of controlling shareholders. Therefore, as a result, CSI and CSV also contain both indirect and direct ownership. For an affiliate *i*, the controlling shareholder's direct ownership (f_i) consists of the sum of family ownership, where the family ownership includes what the controlling shareholders and their family members, non-profit organizations, and non-family executives own. Suppose that A is the intra-group shareholding matrix among affiliates. Then the element a_{ij} is the fraction of shares in affiliate *i* owned directly by affiliate *j;* $a_{ii} = 0$ for each *i*, $a_{ij} \geq 0$, and $\sum_{j=1}^{n} a_{ij} \leq 1$. In addition, let **F** be the column vector with i^{th} element f_i, and let $\mathbf{I_n}$ be the $n \times n$ identity matrix. Then the controlling shareholders' CFRs (cfr_i) for firm *i* is the i^{th} element of column vector (CFR). As explained in Kim (2000), $\mathbf{CFR} = (\mathbf{I_n} + \mathbf{A} + \mathbf{A}^2 + \cdots)\mathbf{F}$, so we have

$$\mathbf{CFR} = (\mathbf{I_n} - \mathbf{A})^{-1}\mathbf{F} \qquad (1)$$

[20] Website: https://groupopni.ftc.go.kr/

CSI_i in an affiliate i is defined as the product of the controlling shareholders' CFR in the affiliate and the affiliate's value, which makes the variable represent the value of the controlling shareholder's shareholding in an affiliate i. Finally, $\boldsymbol{CSV_i}$ is measured as CSI_i divided by the sum of the controlling shareholders' investment in all of the business group's affiliates:

$$\boldsymbol{CSV}_i = CSI_i / \sum_{j=1}^{n} CSI_j \qquad (2)$$

Table 1

Sample description

This table reports the composition of sample firms. The initial sample consists of 1,585 firm-years for listed firms, 5,210 firm-years for External audit firms, and 3,085 firm-years for non-external audit firms. From this sample, we remove 3,085 firm-years for non-external audit firms because we cannot make financial variables for these firms. And also, 5 firm-year observations are excluded since the date of incorporation is missing. After eliminating these firms with insufficient financial data to construct the regression variables, the final sample comprises 6,790 firm-year observations presenting 274 business group over the period 2010–2016.

Panel A

Year	The number of groups	Listed firms	External audit firms	Non-external audit firms	All firms
2010	38	229	671	464	1364
2011	43	244	757	564	1565
2012	43	247	799	473	1519
2013	40	232	781	407	1420
2014	41	233	806	407	1446
2015	45	230	808	458	1496
2016	24	170	588	312	1070
Total	274	1,585	5,210	3,085	9,880

Panel B

Total firms	9,880 firm-years
- Non-external audit firms	- 3,085 firm-years
- Firms with missing data for established date	- 5 firm-years
Final sample	6,790 firm-years

Table 2

Definitions of variables

This table provides the definitions of variables used in this study.

Variable	Definition
Corporate Giving	The amount of charitable contributions made by an affiliate from audited financial statements
Giving to Operating Income	Log(1+corporate giving / operating income) $x10^2$
Giving to Ordinary Income	Log(1+corporate giving / ordinary income) $x10^2$
Giving to Sales	Log(1+corporate giving / total sales) x10
Giving to Asset	Log(1+corporate giving / total asset) x10
Log(Corporate Giving)	Log(1+corporate giving)
CSV	The value of the controlling shareholders' shares in each affiliate divided by the combined value of the controlling shareholders' shares in all of the affiliates in the group
CFR	The sum of controlling shareholder family's direct and indirect ownership
Size	The natural logarithm of total assets
Leverage	Total debt to total assets
Age	The natural logarithm of the number of year and months since foundation
Profitability	Earnings before interest and taxes divided by total assets
No. of Affiliates	The number of affiliates in a business group
Free Cash Flow	Income before extraordinary items + depreciation and amortization – capital expenditure.
Free Cash Flow Dummy	1 if free cash flow is greater than 0 and 0 otherwise
Financial Dummy	1 if the firm is in the financial sector and 0 otherwise
List Dummy	1 if a firm is listed and 0 otherwise
Advertising	The advertising expenditure divided by total sales
Advertising Dummy	0 if the advertising data is missing and 1 otherwise
R&D	The R&D expenditure divided by total sales
R&D Dummy	0 if the R&D data is missing and 1 otherwise
Family CEO Dummy	1 if either the controlling shareholder or her family member is CEO and 0 otherwise

Governance Grade Dummy	1 if the firms have corporate governance rating of A^+ or A from Korea Corporate Governance Service(KCGS) and 0 otherwise
Independent Board Dummy	1 if at least 60% of board members are independent
Charitable Foundation	1 if the business group has established a charitable foundation and 0 otherwise
Year Dummies	1 if the year of observation belongs to a specific year and 0 otherwise
Industry Dummies	1 if the firm belongs to a specific industry under two-digit KSIC code and 0 otherwise
Group Dummies	1 if when the firm belongs to a business group or 0 otherwise

Table 3

Descriptive statistics

This table presents descriptive statistics for our sample during the period 2010–2016. Panel A documents the summary statistics for the entire sample. Panel B reports the comparison for variables used in our analyses between listed and unlisted firms. *Corporate Giving* is the total amount of charitable contributions made by an affiliate in millions of KRW. *Giving to Operating Income* is Log(1+corporate giving / operating income) $x10^3$. *Giving to Ordinary Income* is Log(1+corporate giving / ordinary income) $x10^3$. *Giving to Sales* is Log(1+corporate giving / total sales) $x10^3$. *Giving to Asset* is Log(1+corporate giving / total asset) $x10^3$. *Log(Corporate Giving)* is Log(1+corporate giving). *CSV* is measured as the value of the controlling shareholders' shares in each affiliate divided by the combined value of the controlling shareholders' shares in all of the affiliates in the group. *CFR* is calculated as the sum of controlling shareholder family's direct and indirect ownership. *Asset* is book value of total asset in billions of KRW. *Leverage* is the ratio of total debt to total assets. *Age* is number of years after foundation (Months are in decimal). *Profitability* is earnings before interest and taxes divided by total assets. *No. of Affiliates* is the number of affiliates in a business group. *Free Cash Flow Dummy* is 1 if free cash flow is greater than 0 and 0 otherwise. *Advertising* is the advertising expenditure divided by total sales. *Advertising Dummy* is 0 if the advertising data is missing and 1 otherwise. *R&D* is the R&D expenditure divided by total sales. *R&D Dummy* is 0 if the R&D data is missing and 1 otherwise. *Family CEO Dummy* is 1 if either the controlling shareholder or her family member is CEO and 0 otherwise. *Governance Grade Dummy* is 1 if the firms have corporate governance rating of A+ or A from Korea Corporate Governance Service(KCGS) and 0 otherwise. *Independent Board Dummy* is 1 if at least 60% of board members are independent. *Charitable Foundation* is 1 if the business group has established a charitable foundation and 0 otherwise.

Panel A : Entire sample

Variable	N	Mean	STD	Q1	Median	Q3	Min	Max
Corporate Giving	6790	1429	11458	0	3	129	0	405257
Giving to Operating Income	6784	0.0842	0.1858	0.0000	0.0034	0.0604	0.0000	0.8390
Giving to Ordinary Income	6790	0.0682	0.1903	0.0000	0.0024	0.0385	0.0000	1.3177
Giving to Sales	6014	0.1468	0.4158	0.0000	0.0035	0.0921	0.0000	2.9834
Giving to Asset	5821	0.1574	0.4793	0.0000	0.0026	0.0882	0.0000	3.5802
Log(Corporate Giving)	6790	6.7450	5.8751	0.0000	8.0867	11.7736	0.0000	17.0398
CSV	6790	0.0404	0.0835	0.0020	0.0091	0.0375	0.0000	0.9271
CFR	6790	0.3101	0.2796	0.1033	0.2165	0.4289	0.0000	1.0000
Asset	6790	1566	4374	39	136	690	7	28479

Leverage	6790	0.5480	0.3005	0.3225	0.5525	0.7415	0.0025	1.3316
Age	6790	19.2335	16.4587	6.5000	13.9167	27.7500	0.0833	86.0833
Profitability	6790	0.0324	0.0960	-0.0008	0.0285	0.0721	-0.3897	0.3238
No. of affiliates	6790	49.7623	24.0870	26.0000	49.0000	73.0000	7.0000	96.0000
Free Cash Flow Dummy	6790	0.6483	0.4775	0.0000	1.0000	1.0000	0.0000	1.0000
Financial Dummy	6790	0.0826	0.2753	0.0000	0.0000	0.0000	0.0000	1.0000
List Dummy	6790	0.2214	0.4152	0.0000	0.0000	0.0000	0.0000	1.0000
Advertising	6790	0.0068	0.0188	0.0000	0.0002	0.0033	0.0000	0.1231
Advertising Dummy	6790	0.7159	0.4510	0.0000	1.0000	1.0000	0.0000	1.0000
R&D	6790	0.0046	0.0160	0.0000	0.0000	0.0001	0.0000	0.1104
R&D Dummy	6790	0.3345	0.4718	0.0000	0.0000	1.0000	0.0000	1.0000
Family CEO Dummy	6790	0.2825	0.4502	0.0000	0.0000	1.0000	0.0000	1.0000
Governance Grade Dummy	1381	0.1296	0.3360	0.0000	0.0000	0.0000	0.0000	1.0000
Independent Board Dummy	1395	0.1857	0.3890	0.0000	0.0000	0.0000	0.0000	1.0000
Charitable Foundation Dummy	6790	0.8719	0.3343	1.0000	1.0000	1.0000	0.0000	1.0000

Panel B : Listing status

	Listed affiliates				Unlisted affiliates			
	N	Mean	Median	STD	N	Mean	Median	STD
Corporate Giving	1503	5146430.3	271570	23461911.89	5287	372871.5063	952	2676357.121
Giving to Operating Income	1502	0.1266	0.0359	0.2033	5282	0.0721	0.0006	0.1786
Giving to Ordinary Income	1503	0.0857	0.024	0.173	5287	0.0632	0.0007	0.1946
Giving to Sales	1338	0.2404	0.0741	0.4795	4676	0.12	0	0.3915

Giving to Asset	1251	0.2576	0.0737	0.559	4570	0.1299	0	0.4512
Log(Corporate Giving)	1503	10.8377	12.5119	5.4999	5287	5.5814	6.8596	5.4422
CSV	1503	0.0917	0.0358	0.1313	5287	0.0257	0.0061	0.0556
CFR	1503	0.2199	0.1707	0.1726	5287	0.3362	0.2325	0.298
Asset	1503	4935288830	1811663923	7257884524	5287	609370762.5	76501096	2338301941
Leverage	1503	0.5032	0.5105	0.2368	5287	0.5607	0.5709	0.315
Age	1503	35.8194	36.6666	19.1642	5287	14.5183	11.5	11.9623
Profitability	1503	0.0344	0.0306	0.0586	5287	0.0317	0.0271	0.1042
No. of Affiliates	1503	47.9015	46	24.3613	5287	50.2912	49	23.9844
Free Cash Flow Dummy	1503	0.666	1	0.4717	5287	0.6432	1	0.479
Financial Dummy	1503	0.0924	0	0.2898	5287	0.0798	0	0.271
Advertising	1503	0.0107	0.0013	0.0234	5287	0.0056	0.0001	0.017
Advertising Dummy	1503	0.817	1	0.3867	5287	0.6871	1	0.4636
R&D	1503	0.0079	0	0.0191	5287	0.0036	0	0.0147
R&D Dummy	1503	0.4943	0	0.5001	5287	0.289	0	0.4533

Table 4

The relation CSV and corporate philanthropy

This table reports results from multivariate regression. The sample comprises 6,790 firm-year observations presenting 274 business group over the period 2010–2016. *Giving to Operating Income* is Log(1+corporate giving / operating income) x10^3. *Giving to Ordinary Income* is Log(1+corporate giving / ordinary income) x10^3. *Giving to Sales* is Log(1+corporate giving / total sales) x10^3. *Giving to Asset* is Log(1+corporate giving / total asset) x10^3. *Log(Corporate Giving)* is Log(1+corporate giving). *CSV* is measured as the value of the controlling shareholders' shares in each affiliate divided by the combined value of the controlling shareholders' shares in all of the affiliates in the group. *Size* is the natural logarithm of total sales. *Leverage* is the ratio of total debt to total assets. *Age* is number of years after foundation (Months are in decimal). *Profitability* is earnings before interest and taxes divided by total assets. *No. of Affiliates* is the number of affiliates in a business group. *Free Cash Flow Dummy* is 1 if free cash flow is greater than 0 and 0 otherwise. *Advertising* is the advertising expenditure divided by total sales. *Advertising Dummy* is 0 if the advertising data is missing and 1 otherwise. *R&D* is the R&D expenditure divided by total sales. *R&D Dummy* is 0 if the R&D data is missing and 1 otherwise. All regressions contain year, business group, and industry fixed effects. The numbers in parentheses are t-statistics using robust standard errors adjusted for heteroskedasticity and clustering at firm level. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% level, respectively.

	(1) *Giving to Operating Income*	(2) *Giving to Ordinary Income*	(3) *Giving to Sales*	(4) *Giving to Asset*	(5) *Log (Corporate Giving)*
CSV	-0.2095**	-0.2420**	-0.0960**	-0.0897***	-2.8176*
	(-2.18)	(-2.17)	(-2.15)	(-2.61)	(-1.78)
Size	0.0182***	0.0177***	0.0149***	-0.0029	1.2995***
	(3.08)	(2.62)	(4.97)	(-1.11)	(15.76)
Leverage	-0.0636**	-0.0211	-0.0412***	-0.0378***	-0.5783
	(-2.42)	(-0.73)	(-3.05)	(-2.96)	(-1.58)
Age	0.0288***	0.0382***	0.0129***	0.0102**	0.9902***
	(3.10)	(3.70)	(2.89)	(2.56)	(8.83)
Profitability	-0.2292***	-0.1388*	0.1079***	0.2450***	5.2398***
	(-3.46)	(-1.93)	(2.92)	(5.23)	(5.67)
No. of Affiliates	0.0342	0.0364	0.0424**	0.0175	0.1248
	(0.82)	(0.71)	(2.09)	(0.92)	(0.27)
Free Cash Flow Dummy	0.0213	0.0074	0.0010	0.0087*	0.3534**
	(1.42)	(0.40)	(0.19)	(1.65)	(2.30)
Financial Dummy	-0.0275	0.0581	0.0042	0.0167	-1.2715
	(-0.40)	(0.73)	(0.12)	(0.62)	(-1.03)
List Dummy	0.0766**	0.0661**	0.0091	0.0280**	0.8077**
	(2.46)	(1.98)	(0.66)	(2.07)	(2.27)
Advertising	0.6151	0.9310*	2.0249***	0.7646***	18.4099***
	(1.50)	(1.91)	(7.11)	(3.82)	(3.22)
Advertising Dummy	0.0448**	0.0640***	0.0151**	0.0164*	1.2230***
	(2.32)	(2.99)	(1.99)	(1.86)	(5.32)

R&D	-0.0306	0.0173	0.7961***	0.3017	12.2729*
	(-0.07)	(0.04)	(3.88)	(1.54)	(1.76)
R&D Dummy	-0.0119	-0.0135	-0.0222***	0.0018	0.2039
	(-0.65)	(-0.65)	(-2.84)	(0.24)	(0.84)
Intercept	-0.4529**	-0.5639**	-0.4292***	-0.0585	-21.0935***
	(-2.28)	(-2.41)	(-4.35)	(-0.66)	(-7.85)
Year fixed effect	Yes	Yes	Yes	Yes	Yes
Group fixed effect	Yes	Yes	Yes	Yes	Yes
Industry fixed effect	Yes	Yes	Yes	Yes	Yes
No. of observations	6014	5821	6784	6790	6790
Adjusted R-squared	0.1024	0.1013	0.2290	0.1794	0.4367

Table 5

Corporate philanthropy and the value of cash

This table reports the results of regressing the excess stock return on changes in idiosyncratic firm characteristics. The dependent variable in regression is the excess stock return, $r_{i,t} - R^B_{i,t}$, where $r_{i,t}$ is the firm's raw stock returns for firm i during fiscal year t and $R^B_{i,t}$ is Fama and French (1993) size and book-to-market portfolio returns at year t. *Giving to Operating Income* is Log(1+corporate giving / operating income) x10^3. *Giving to Ordinary Income* is Log(1+corporate giving / ordinary income) x10^3. *Giving to Sales* is Log(1+corporate giving / total sales) x103. *Giving to Asset* is Log(1+corporate giving / total asset) x10^3. *Log(Corporate Giving)* is Log(1+corporate giving). $\Delta C_{i,t}$ is the change in cash holdings. $\Delta E_{i,t}$ is measured as the change in earnings before interest and extraordinary items. $\Delta NA_{i,t}$ is calculated as the change in total assets minus cash holdings. $\Delta RD_{i,t}$ is the change in R&D expenditures and $\Delta I_{i,t}$ is the change in interest expense. $\Delta D_{i,t}$ is the change in total dividends and $Lev_{i,t}$ is the leverage ratio. $NF_{i,t}$ is net equity issuance and debt issuance. All the firm characteristics are standardized by the one-year lagged market value of equity ($M_{i,t-1}$), with the exception of leverage, to avoid having the biggest firms dominate the results. All regressions contain year, business group, and industry fixed effects. The numbers in parentheses are t-statistics using robust standard errors adjusted for heteroskedasticity and clustering at firm level. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% level, respectively.

	(1)	(2)	(3)	(4)	(5)
Giving to Operating Income x ΔC_t	-0.2510**				
	(-2.46)				
Giving to Operating Income	0.0343				
	(1.18)				
Giving to Ordinary Income x ΔC_t		-0.0647*			
		(-1.68)			
Giving to Ordinary Income		0.0378			
		(1.11)			
Giving to Sales x ΔC_t			-0.2969		
			(-1.35)		
Giving to Sales			0.0981		
			(1.24)		
Giving to Asset x ΔC_t				-0.6840***	
				(-2.96)	
Giving to Asset				0.0466	
				(0.72)	
Log(Corporate Giving) x ΔC_t					-0.0060**
					(-2.53)
Log(Corporate Giving)					0.0013
					(0.53)
C_{t-1} x ΔC_t	0.0809	0.0321	0.0948	0.0647	0.0253
	(1.12)	(0.42)	(1.23)	(0.89)	(0.35)
L_t x ΔC_t	0.1296	0.1740**	0.0676	0.0674	0.0753

	(1.62)	(1.97)	(1.01)	(1.00)	(1.11)
ΔC_t	-0.0167	-0.0153	-0.0174*	-0.0178*	-0.0160*
	(-1.58)	(-1.40)	(-1.70)	(-1.77)	(-1.66)
ΔE_t	-0.0319	-0.0622	0.0019	-0.0074	0.0381
	(-0.52)	(-0.90)	(0.04)	(-0.17)	(0.72)
ΔNA_t	-0.1655	-0.1578	-0.1284	-0.0247	-0.1306
	(-0.83)	(-0.73)	(-0.60)	(-0.14)	(-0.86)
$\Delta R\&D_t$	-0.3345***	-0.2278**	-0.2886***	-0.2928***	-0.2907***
	(-3.45)	(-2.27)	(-3.49)	(-3.65)	(-3.79)
ΔI_t	0.0922**	0.0751*	0.0838*	0.0776*	0.0728*
	(2.17)	(1.85)	(1.93)	(1.83)	(1.67)
ΔD_t	0.0391	0.0385	-0.0397	-0.0425	-0.0475
	(0.37)	(0.33)	(-0.35)	(-0.37)	(-0.42)
C_{t-1}	0.1715**	0.1237*	0.1139*	0.1763**	0.2531***
	(2.18)	(1.65)	(1.72)	(2.36)	(2.61)
L_t	-0.0390	-0.0157	-0.0188	-0.0240	-0.0140
	(-1.34)	(-0.50)	(-0.66)	(-0.87)	(-0.56)
NF_t	-0.0014	-0.0028	0.0010	0.0005	0.0010
	(-0.34)	(-0.71)	(0.23)	(0.12)	(0.27)
Intercept	-0.0018	-0.0043	-0.0013	0.0142	-0.0045
	(-0.02)	(-0.04)	(-0.01)	(0.14)	(-0.04)
Year fixed effect	Yes	Yes	Yes	Yes	Yes
Group fixed effect	Yes	Yes	Yes	Yes	Yes
Industry fixed effect	Yes	Yes	Yes	Yes	Yes
No. of observations	1137	1054	1269	1270	1270
Adjusted R-squared	0.1438	0.1320	0.1360	0.1391	0.1373

Table 6

Effect of corporate governance level on corporate philanthropy

This table represents the influence of a corporate governance on the corporate giving of a controlling shareholder. We split the sample based on corporate governance grades (Hermalin and Weisbach, 1998) and board independence (Masulis and Reza, 2015; Hermalin and Weisbach, 1998). *Governance Grade Dummy* is measured as 1 if the firms have a corporate governance rating of A+ or A from KCGS and 0 otherwise. *Independent Board Dummy* is defined as 1 if at least 60% of board members are independent and 0 otherwise. *Giving to Operating Income* is Log(1+corporate giving / operating income) $x10^3$. *Giving to Ordinary Income* is Log(1+corporate giving / ordinary income) $x10^3$. *Giving to Sales* is Log(1+corporate giving / total sales) $x10^3$. *Giving to Asset* is Log(1+corporate giving / total asset) $x10^3$. *Log(Corporate Giving)* is Log(1+corporate giving). *CSV* is measured as the value of the controlling shareholders' shares in each affiliate divided by the combined value of the controlling shareholders' shares in all of the affiliates in the group. *Size* is the natural logarithm of total sales. *Leverage* is the ratio of total debt to total assets. *Age* is number of years after foundation (Months are in decimal). *Profitability* is earnings before interest and taxes divided by total assets. *No. of Affiliates* is the number of affiliates in a business group. *Free Cash Flow Dummy* is 1 if free cash flow is greater than 0 and 0 otherwise. *Advertising* is the advertising expenditure divided by total sales. *Advertising Dummy* is 0 if the advertising data is missing and 1 otherwise. *R&D* is the R&D expenditure divided by total sales. *R&D Dummy* is 0 if the R&D data is missing and 1 otherwise. All regressions contain year, business group, and industry fixed effects. The numbers in parentheses are t-statistics using robust standard errors adjusted for heteroskedasticity and clustering at firm level. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% level, respectively.

Panel A	**Corporate governance rating: A+, A**					**Corporate governance rating: B+, B, C, D**				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Giving to Operating Income	*Giving to Ordinary Income*	*Giving to Sales*	*Giving to Asset*	*Log(Corporate Giving)*	*Giving to Operating Income*	*Giving to Ordinary Income*	*Giving to Sales*	*Giving to Asset*	*Log(Corporate Giving)*
CSV	-0.9711	0.4396	-0.2470	-0.1729	10.1519*	-0.3350*	-0.4451*	-0.1337*	-0.1386**	-5.4142**
	(-1.48)	(0.97)	(-1.08)	(-1.57)	(1.77)	(-1.87)	(-1.78)	(-1.69)	(-2.40)	(-1.99)
Size	-0.0688	-0.0858	0.0509	-0.0112	1.2160	0.0162	0.0111	0.0123	-0.0075	1.1847***
	(-0.60)	(-0.62)	(1.26)	(-0.42)	(1.65)	(0.88)	(0.52)	(1.36)	(-0.90)	(5.40)
Leverage	-0.5219	0.2871	0.1996	-0.0746	1.9203	0.0078	0.3514*	-0.1346**	-0.0602	-1.3525
	(-0.79)	(0.53)	(0.83)	(-0.41)	(0.24)	(0.05)	(1.72)	(-2.47)	(-0.95)	(-0.83)
Age	-0.1262	-0.0114	0.0371	0.0203	1.2868	0.0262	0.0491	-0.0027	-0.0012	-0.1893
	(-1.09)	(-0.08)	(0.66)	(0.75)	(1.45)	(0.57)	(0.95)	(-0.15)	(-0.06)	(-0.52)

Profitability	-2.4558	-0.2629	0.7730*	0.8001***	19.8093	-1.2691***	-0.6976	-0.0655	0.2590*	3.6379
	(-1.42)	(-0.29)	(1.85)	(2.75)	(1.38)	(-3.16)	(-1.24)	(-0.47)	(1.80)	(1.10)
No. of affiliates	-0.6594	0.1033	-0.1316	-0.0538	1.5834	0.1270	-0.0009	0.0268	0.0328	0.4947
	(-1.01)	(0.38)	(-0.89)	(-0.85)	(0.58)	(0.97)	(-0.01)	(0.53)	(0.66)	(0.48)
Free Cash Flow Dummy	-0.1283	-0.1980	0.0065	0.0024	-0.3493	0.0656	-0.0516	0.0139	0.0195	0.7590**
	(-1.02)	(-1.60)	(0.17)	(0.09)	(-0.30)	(1.60)	(-0.75)	(1.00)	(1.57)	(2.10)
Financial Dummy	0.2801	0.0283	0.1526	0.0861	-1.6454	0.0505	0.0115	0.0403	-0.0562	-3.7420**
	(0.56)	(0.05)	(0.85)	(1.01)	(-0.26)	(0.17)	(0.03)	(0.30)	(-0.44)	(-2.03)
List Dummy						-0.5707	-0.9023*	-0.0896	-0.0012	-1.0515
						(-1.54)	(-1.81)	(-0.66)	(-0.01)	(-0.61)
Advertising	-0.1371	-1.9649	0.4098	-0.2435	-53.0507	0.0975	1.3925	2.3145***	0.7197	30.3275**
	(-0.03)	(-0.30)	(0.22)	(-0.19)	(-1.18)	(0.08)	(0.90)	(4.27)	(1.20)	(2.39)
Advertising Dummy	-0.2478	0.1550	-0.0589	0.0000	-1.5432	0.0978	0.0593	0.0213	0.0242	0.6033
	(-1.23)	(0.80)	(-0.72)	(0.00)	(-0.81)	(1.60)	(0.71)	(1.00)	(1.08)	(0.84)
R&D	3.3025	-0.0490	1.3991	0.3035	28.9435	0.3443	1.2131	-0.2128	0.0619	26.7147
	(0.91)	(-0.01)	(0.93)	(0.33)	(0.87)	(0.29)	(0.72)	(-0.38)	(0.11)	(1.41)
R&D dummy	0.1051	-0.1362	0.0916*	0.0468*	2.6274	-0.0079	-0.0878*	-0.0360*	-0.0146	0.3509
	(0.63)	(-0.90)	(1.74)	(1.91)	(1.46)	(-0.16)	(-1.80)	(-1.94)	(-0.87)	(0.62)
Intercept	5.8107	1.7174	-0.7038	0.4192	-24.4091	-0.4194	0.2691	-0.1138	0.1174	-12.3962*
	(1.54)	(0.65)	(-0.85)	(0.76)	(-1.10)	(-0.48)	(0.27)	(-0.36)	(0.35)	(-1.80)
Year fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Group fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
No. of observations	164	152	178	179	179	1052	981	1202	1202	1202
Adjusted	0.0832	0.1959	0.3997	0.4672	0.4966	0.4257	0.3431	0.4037	0.4380	0.4252

R-squared

Panel B	**Independent board dummy=1**					**Independent board dummy=0**				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Giving to Operating Income	*Giving to Ordinary Income*	*Giving to Sales*	*Giving to Asset*	*Log(Corporate Giving)*	*Giving to Operating Income*	*Giving to Ordinary Income*	*Giving to Sales*	*Giving to Asset*	*Log(Corporate Giving)*
CSV	-0.1013	0.2158*	-0.1293	-0.0427	3.2829	-0.4736**	-0.4591	-0.1873**	-0.1554***	-4.6829*
	(-0.28)	(1.73)	(-1.00)	(-0.66)	(0.85)	(-2.58)	(-1.64)	(-2.04)	(-2.90)	(-1.81)
Size	0.0529	-0.0182	0.0304*	-0.0158	0.7643	0.0368**	0.0464**	0.0222***	0.0023	1.3876***
	(0.71)	(-0.53)	(1.91)	(-1.44)	(1.35)	(2.27)	(2.19)	(2.60)	(0.40)	(6.29)
Leverage	0.3063	0.3460	0.0505	0.0311	0.3166	-0.1123	0.3060	-0.0897	-0.0022	-1.6530
	(0.34)	(0.95)	(0.33)	(0.40)	(0.08)	(-0.78)	(1.55)	(-1.56)	(-0.05)	(-0.89)
Age	0.0155	-0.0946*	0.0250	-0.0082	1.2952**	0.0374	0.0761**	0.0141	0.0133	-0.1416
	(0.22)	(-1.98)	(1.03)	(-0.43)	(2.16)	(1.12)	(2.10)	(0.89)	(1.04)	(-0.39)
Profitability	-1.3922	1.2839	0.3045	0.6677**	1.2511	-0.9687***	-0.1785	0.1125	0.4152***	7.0024**
	(-0.91)	(1.51)	(1.08)	(2.31)	(0.14)	(-2.63)	(-0.38)	(0.79)	(2.79)	(2.11)
No. of affiliates	0.4293	0.0983	0.0552	0.0821*	-2.5518	-0.1410	0.0847	0.0214	0.0217	0.3292
	(1.04)	(0.95)	(0.55)	(1.72)	(-0.74)	(-1.12)	(0.64)	(0.40)	(0.42)	(0.40)
Free Cash Flow Dummy	0.1704	-0.0543	0.0394	-0.0171	1.3086	-0.0001	-0.1086	0.0022	0.0140	0.4105
	(1.56)	(-0.80)	(0.96)	(-0.56)	(1.37)	(-0.00)	(-1.49)	(0.14)	(1.09)	(0.99)
Financial Dummy	-0.3699	-0.5369***	-0.2383***	-0.1471***	-6.1968**	0.0111	-0.2868	0.0430	-0.1477	-4.3345*
	(-0.78)	(-2.77)	(-2.66)	(-3.51)	(-2.57)	(0.04)	(-0.84)	(0.28)	(-1.48)	(-1.72)
List Dummy	.	.	.	.	.	0.0403	-0.2126	-0.0165	-0.0123	-2.3415
	.	.	.	.	.	(0.35)	(-1.44)	(-0.33)	(-0.26)	(-1.52)
Advertising	7.8493*	3.1985**	2.5961	1.3596	62.2625*	-0.2784	0.5799	1.6250***	0.7825	14.1278
	(1.71)	(2.13)	(1.38)	(1.38)	(1.73)	(-0.26)	(0.50)	(2.75)	(1.58)	(1.05)

Advertising Dummy	0.1648	0.0674	0.0316	0.0062	1.4722	0.0454	0.0138	0.0059	0.0108	0.5172
	(1.45)	(0.88)	(0.73)	(0.29)	(1.09)	(0.75)	(0.18)	(0.27)	(0.58)	(0.76)
R&D	6.3803	-2.0822	-0.2218	0.1462	26.2824	0.1874	2.0810	0.3780	0.4760	32.1379*
	(1.08)	(-0.87)	(-0.15)	(0.14)	(0.77)	(0.16)	(1.11)	(0.63)	(0.84)	(1.82)
R&D dummy	-0.1530	0.1062	-0.0030	0.0381	1.2160	0.0090	-0.1538***	-0.0350*	-0.0192	0.3326
	(-0.91)	(1.50)	(-0.06)	(1.15)	(1.04)	(0.18)	(-2.81)	(-1.83)	(-1.16)	(0.57)
Intercept	-2.9549	0.7918	-0.6291	0.1344	4.2595	-0.0704	-1.3142*	-0.4071	-0.0352	-13.5886**
	(-0.93)	(0.95)	(-1.05)	(0.46)	(0.20)	(-0.11)	(-1.84)	(-1.45)	(-0.15)	(-2.28)
Year fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Group fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
No. of observations	231	215	259	259	259	1007	939	1135	1136	1136
Adjusted R-squared	0.1857	0.3791	0.3299	0.3464	0.4312	0.3240	0.2572	0.3574	0.3848	0.4380

Table 7

Effect of charitable foundation on corporate philanthropy

This table reports the influence of a charitable foundation on the corporate giving of a controlling shareholder. We divided the sample based on the existence of the charitable foundation in a business group. *Giving to Operating Income* is Log(1+corporate giving / operating income) x10^3. *Giving to Ordinary Income* is Log(1+corporate giving / ordinary income) x10^3. *Giving to Sales* is Log(1+corporate giving / total sales) x10^3. *Giving to Asset* is Log(1+corporate giving / total asset) x10^3. *Log(Corporate Giving)* is Log(1+corporate giving). *CSV* is measured as the value of the controlling shareholders' shares in each affiliate divided by the combined value of the controlling shareholders' shares in all of the affiliates in the group. *Size* is the natural logarithm of total sales. *Leverage* is the ratio of total debt to total assets. *Age* is number of years after foundation (Months are in decimal). *Profitability* is earnings before interest and taxes divided by total assets. *No. of Affiliates* is the number of affiliates in a business group. *Free Cash Flow Dummy* is 1 if free cash flow is greater than 0 and 0 otherwise. *Advertising* is the advertising expenditure divided by total sales. *Advertising Dummy* is 0 if the advertising data is missing and 1 otherwise. *R&D* is the R&D expenditure divided by total sales. *R&D Dummy* is 0 if the R&D data is missing and 1 otherwise. All regressions contain year, business group, and industry fixed effects. The numbers in parentheses are t-statistics using robust standard errors adjusted for heteroskedasticity and clustering at firm level. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% level, respectively.

	Business group with charitable foundation					**Business group without charitable foundation**				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Giving to Operating Income	*Giving to Ordinary Income*	*Giving to Sales*	*Giving to Asset*	*Log(Corporate Giving)*	*Giving to Operating Income*	*Giving to Ordinary Income*	*Giving to Sales*	*Giving to Asset*	*Log(Corporate Giving)*
CSV	-0.2856**	-0.3375***	-0.1624***	-0.1357***	-4.4808**	-0.0129	-0.0382	0.0687	0.0394	0.8252
	(-2.57)	(-2.86)	(-3.32)	(-3.31)	(-2.24)	(-0.06)	(-0.13)	(0.65)	(0.52)	(0.37)
Size	0.0177***	0.0188***	0.0143***	-0.0029	1.3207***	0.0187	0.0133	0.0210***	-0.0028	1.1428***
	(2.80)	(2.65)	(4.50)	(-1.03)	(15.04)	(1.34)	(0.95)	(2.81)	(-0.50)	(5.49)
Leverage	-0.0678**	-0.0293	-0.0423***	-0.0435***	-0.6441	-0.0222	0.0440	-0.0073	0.0094	-0.0225
	(-2.36)	(-0.94)	(-2.85)	(-3.06)	(-1.62)	(-0.41)	(0.66)	(-0.28)	(0.40)	(-0.02)
Age	0.0325***	0.0442***	0.0137***	0.0120***	1.0296***	0.0164	0.0237	0.0089	0.0067	0.9787***
	(3.24)	(4.08)	(2.79)	(2.73)	(8.45)	(1.33)	(1.62)	(1.24)	(1.43)	(4.08)
Profitability	-0.2245***	-0.1539**	0.0989**	0.2375***	5.0428***	-0.2504	0.0113	0.1914**	0.2755**	6.7366**

	(-3.30)	(-2.06)	(2.57)	(5.02)	(5.09)	(-0.96)	(0.04)	(1.98)	(1.97)	(2.52)
No. of affiliates	0.0389	0.0377	0.0671***	0.0364	0.2719	0.1744**	0.1447*	0.0027	0.0640	0.5738
	(0.77)	(0.57)	(2.88)	(1.56)	(0.50)	(2.12)	(1.84)	(0.06)	(1.44)	(0.56)
Free Cash Flow Dummy	0.0202	0.0069	0.0039	0.0107*	0.3425**	0.0214	0.0056	-0.0180	-0.0010	0.2443
	(1.21)	(0.34)	(0.64)	(1.87)	(2.09)	(0.77)	(0.19)	(-1.50)	(-0.09)	(0.62)
Financial Dummy	-0.0065	0.0917	0.0087	0.0228	-0.9649	-0.2967*	-0.2680*	-0.1697	0.3572*	2.0779
	(-0.09)	(1.06)	(0.26)	(0.78)	(-0.75)	(-1.96)	(-1.91)	(-0.92)	(1.68)	(0.47)
List Dummy	0.0968***	0.0824**	0.0170	0.0346**	0.7034*	-0.0070	0.0105	-0.0153	-0.0040	2.4604***
	(2.78)	(2.23)	(1.13)	(2.31)	(1.81)	(-0.16)	(0.23)	(-0.50)	(-0.17)	(3.41)
Advertising	0.7705	0.7439	1.9279***	0.7595***	17.5165***	0.4030	1.9824*	3.1950***	0.9587**	32.2800***
	(1.58)	(1.38)	(6.26)	(3.31)	(2.65)	(0.54)	(1.70)	(4.75)	(2.10)	(2.99)
Advertising Dummy	0.0419**	0.0658***	0.0138*	0.0146	1.1404***	0.0419	0.0073	0.0185	0.0287**	1.1828**
	(1.98)	(2.82)	(1.69)	(1.54)	(4.54)	(1.35)	(0.23)	(1.16)	(2.57)	(2.56)
R&D	-0.2444	-0.2140	0.6855***	0.1949	11.0935	3.5247*	4.5806	2.1033*	3.0442*	58.7761*
	(-0.49)	(-0.45)	(3.17)	(0.99)	(1.50)	(1.84)	(0.95)	(1.71)	(1.82)	(1.92)
R&D dummy	0.0009	-0.0016	-0.0170**	0.0051	0.2959	-0.0804**	-0.0656*	-0.0471***	-0.0249*	-0.6231
	(0.05)	(-0.07)	(-1.99)	(0.63)	(1.14)	(-2.25)	(-1.71)	(-2.78)	(-1.80)	(-1.02)
Intercept	-0.4850**	-0.6198**	-0.5397***	-0.1485	-22.3894***	-0.9477**	-0.7722**	-0.2005	-0.6610**	-25.8468***
	(-2.05)	(-2.11)	(-4.88)	(-1.39)	(-7.48)	(-2.46)	(-2.26)	(-0.74)	(-2.51)	(-4.13)
Year fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Group fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
No. of observations	5228	5036	5915	5920	5920	786	785	869	870	870
Adjusted R-squared	0.1148	0.1160	0.2146	0.1888	0.4244	0.0876	0.0915	0.4715	0.2477	0.5866

Table 8

Effect of Family CEO vs. Non Family CEO on corporate philanthropy

This table reports the influence of a family CEO on the corporate giving of a controlling shareholder. *Giving to Operating Income* is Log(1+corporate giving / operating income) x10^3. *Giving to Ordinary Income* is Log(1+corporate giving / ordinary income) x10^3. *Giving to Sales* is Log(1+corporate giving / total sales) x10^3. *Giving to Asset* is Log(1+corporate giving / total asset) x10^3. *Log(Corporate Giving)* is Log(1+corporate giving). *CSV* is measured as the value of the controlling shareholders' shares in each affiliate divided by the combined value of the controlling shareholders' shares in all of the affiliates in the group. *Size* is the natural logarithm of total sales. *Leverage* is the ratio of total debt to total assets. *Age* is number of years after foundation (Months are in decimal). *Profitability* is earnings before interest and taxes divided by total assets. *No. of Affiliates* is the number of affiliates in a business group. *Free Cash Flow Dummy* is 1 if free cash flow is greater than 0 and 0 otherwise. *Advertising* is the advertising expenditure divided by total sales. *Advertising Dummy* is 0 if the advertising data is missing and 1 otherwise. *R&D* is the R&D expenditure divided by total sales. *R&D Dummy* is 0 if the R&D data is missing and 1 otherwise. All regressions contain year, business group, and industry fixed effects. The numbers in parentheses are t-statistics using robust standard errors adjusted for heteroskedasticity and clustering at firm level. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% level, respectively.

	Family CEO					**Non Family CEO**				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Giving to Operating Income	*Giving to Ordinary Income*	*Giving to Sales*	*Giving to Asset*	*Log(Corporate Giving)*	*Giving to Operating Income*	*Giving to Ordinary Income*	*Giving to Sales*	*Giving to Asset*	*Log(Corporate Giving)*
CSV	-0.2046	-0.3687**	-0.1403**	-0.1090**	-3.9561*	-0.1667	-0.0920	-0.0609	-0.0415	-1.4648
	(-1.54)	(-2.12)	(-2.36)	(-2.33)	(-1.70)	(-1.27)	(-0.70)	(-0.93)	(-0.84)	(-0.82)
Size	0.0150	0.0341**	0.0200***	-0.0034	1.2115***	0.0177**	0.0076	0.0146***	-0.0035	1.2672***
	(1.23)	(2.34)	(3.31)	(-0.86)	(7.11)	(2.42)	(0.97)	(4.14)	(-1.08)	(13.49)
Leverage	-0.1404**	-0.0111	-0.0473*	-0.0288	-1.0590	-0.0543*	-0.0192	-0.0321**	-0.0407**	-0.6231
	(-2.56)	(-0.18)	(-1.85)	(-1.22)	(-1.33)	(-1.75)	(-0.57)	(-2.06)	(-2.58)	(-1.53)
Age	0.0270**	0.0323*	0.0171**	0.0108**	0.8076***	0.0221**	0.0342***	0.0082*	0.0087*	0.9664***
	(1.99)	(1.96)	(2.11)	(2.00)	(4.26)	(1.98)	(2.62)	(1.78)	(1.77)	(7.52)
Profitability	-0.5352***	-0.3498*	0.0806	0.2670***	5.9544***	-0.2300***	-0.1412*	0.0861**	0.1874***	4.4486***
	(-3.10)	(-1.89)	(1.16)	(3.69)	(2.82)	(-3.14)	(-1.80)	(2.33)	(4.19)	(4.50)

No. of affiliates	0.0436	-0.0390	0.0591	0.0555	0.0967	0.0268	0.0586	0.0364	0.0111	0.3416
	(0.55)	(-0.32)	(1.27)	(1.57)	(0.11)	(0.56)	(1.00)	(1.62)	(0.51)	(0.61)
Free Cash Flow Dummy	-0.0319	-0.0727*	-0.0187*	-0.0066	-0.1665	0.0409**	0.0323*	0.0082	0.0149**	0.5025***
	(-1.05)	(-1.84)	(-1.65)	(-0.71)	(-0.61)	(2.43)	(1.65)	(1.39)	(2.51)	(2.80)
Financial Dummy	-0.0501	-0.1352	-0.2888*	-0.0010	-4.9156**	0.0034	0.1232	0.0252	0.0288	-0.4578
	(-0.34)	(-0.92)	(-1.81)	(-0.01)	(-2.43)	(0.05)	(1.44)	(0.81)	(0.94)	(-0.36)
List Dummy	0.1439***	0.0780	0.0092	0.0457**	1.5310**	0.0501	0.0675*	0.0123	0.0252	0.4781
	(3.10)	(1.32)	(0.50)	(2.55)	(2.54)	(1.34)	(1.68)	(0.70)	(1.53)	(1.11)
Advertising	1.3208*	1.7162**	2.3183***	0.6168**	23.2191***	0.7336	0.9106*	1.9535***	0.8798***	22.7463***
	(1.72)	(2.09)	(5.47)	(2.12)	(2.78)	(1.54)	(1.74)	(5.63)	(3.11)	(4.20)
Advertising Dummy	0.0278	0.0254	0.0164	0.0160	1.5245***	0.0541**	0.0791***	0.0210**	0.0179*	1.2710***
	(0.81)	(0.61)	(1.17)	(1.18)	(3.66)	(2.28)	(2.98)	(2.51)	(1.76)	(4.85)
R&D	0.8000	-0.8753	0.8753**	0.9323**	9.9924	-0.0987	0.0968	0.7618***	0.1925	11.8300
	(0.98)	(-0.80)	(2.11)	(2.46)	(0.85)	(-0.18)	(0.18)	(3.04)	(0.86)	(1.51)
R&D dummy	-0.0292	-0.0577	-0.0354**	-0.0133	0.5050	-0.0139	0.0017	-0.0142	0.0092	0.0108
	(-0.82)	(-1.35)	(-2.51)	(-1.21)	(1.08)	(-0.72)	(0.07)	(-1.60)	(1.04)	(0.04)
Intercept	-0.5559	-0.6129	-0.4103	-0.2593	-27.0175***	-0.4428*	-0.5512**	-0.4230***	-0.0365	-21.8239***
	(-1.54)	(-1.20)	(-1.59)	(-1.19)	(-5.46)	(-1.94)	(-2.02)	(-3.78)	(-0.35)	(-7.16)
Year fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Group fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
No. of observations	1720	1634	1916	1916	1916	4294	4187	4868	4874	4874
Adjusted R-squared	0.1921	0.1506	0.3605	0.4240	0.5133	0.0963	0.1057	0.2323	0.1589	0.4166

Table 9. The effect of CSV and CFR on corporate philanthropy

This table reports results from multivariate regression including CFR. The sample comprises 6,790 firm-year observations presenting 274 business group over the period 2010–2016. *Giving to Operating Income* is Log(1+corporate giving / operating income) x10^3. *Giving to Ordinary Income* is Log(1+corporate giving / ordinary income) x10^3. *Giving to Sales* is Log(1+corporate giving / total sales) x10^3. *Giving to Asset* is Log(1+corporate giving / total asset) x10^3. *Log(Corporate Giving)* is Log(1+corporate giving). *CSV* is measured as the value of the controlling shareholders' shares in each affiliate divided by the combined value of the controlling shareholders' shares in all of the affiliates in the group. *CFR* is calculated as the sum of controlling shareholder family's direct and indirect ownership. *Size* is the natural logarithm of total sales. *Leverage* is the ratio of total debt to total assets. *Age* is number of years after foundation (Months are in decimal). *Profitability* is earnings before interest and taxes divided by total assets. *No. of Affiliates* is the number of affiliates in a business group. *Free Cash Flow Dummy* is 1 if free cash flow is greater than 0 and 0 otherwise. *Advertising* is the advertising expenditure divided by total sales. *Advertising Dummy* is 0 if the advertising data is missing and 1 otherwise. *R&D* is the R&D expenditure divided by total sales. *R&D Dummy* is 0 if the R&D data is missing and 1 otherwise. All regressions contain year, business group, and industry fixed effects. The numbers in parentheses are t-statistics using robust standard errors adjusted for heteroskedasticity and clustering at firm level. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% level, respectively.

	(1) *Giving to Operating Income*	(2) *Giving to Ordinary Income*	(3) *Giving to Sales*	(4) *Giving to Asset*	(5) *Log(Corporate Giving)*
CSV	-0.2058**	-0.2436**	-0.0999**	-0.0895***	-3.0817*
	(-2.12)	(-2.16)	(-2.20)	(-2.58)	(-1.94)
CFR	-0.0101	0.0045	0.0102	-0.0004	0.6938
	(-0.31)	(0.11)	(0.63)	(-0.03)	(1.58)
Size	0.0181***	0.0177***	0.0150***	-0.0029	1.3045***
	(3.05)	(2.61)	(4.98)	(-1.11)	(15.85)
Leverage	-0.0635**	-0.0211	-0.0413***	-0.0378***	-0.5844
	(-2.41)	(-0.73)	(-3.06)	(-2.96)	(-1.59)
Age	0.0290***	0.0382***	0.0127***	0.0102**	0.9800***
	(3.09)	(3.64)	(2.87)	(2.53)	(8.73)
Profitability	-0.2284***	-0.1391*	0.1069***	0.2450***	5.1649***
	(-3.48)	(-1.95)	(2.88)	(5.24)	(5.58)
No. of affiliates	0.0344	0.0364	0.0422**	0.0175	0.1127
	(0.83)	(0.71)	(2.08)	(0.92)	(0.24)
Free Cash Flow Dummy	0.0214	0.0073	0.0009	0.0087	0.3439**
	(1.42)	(0.40)	(0.16)	(1.64)	(2.24)
Financial Dummy	-0.0285	0.0585	0.0051	0.0167	-1.2107
	(-0.41)	(0.74)	(0.15)	(0.62)	(-0.96)
List Dummy	0.0756**	0.0665*	0.0102	0.0280**	0.8826**
	(2.41)	(1.96)	(0.74)	(2.03)	(2.45)
Advertising	0.6111	0.9328*	2.0287***	0.7644***	18.6605***

	(1.48)	(1.91)	(7.10)	(3.80)	(3.26)
Advertising Dummy	0.0448**	0.0640***	0.0151**	0.0164*	1.2229***
	(2.32)	(2.99)	(1.99)	(1.86)	(5.33)
R&D	-0.0319	0.0178	0.7954***	0.3017	12.2266*
	(-0.07)	(0.04)	(3.88)	(1.54)	(1.76)
R&D Dummy	-0.0120	-0.0135	-0.0221***	0.0018	0.2131
	(-0.66)	(-0.65)	(-2.81)	(0.23)	(0.87)
Intercept	-0.4503**	-0.5653**	-0.4317***	-0.0584	-21.2655***
	(-2.27)	(-2.42)	(-4.37)	(-0.66)	(-7.87)
Year fixed effect	Yes	Yes	Yes	Yes	Yes
Group fixed effect	Yes	Yes	Yes	Yes	Yes
Industry fixed effect	Yes	Yes	Yes	Yes	Yes
No. of observations	6014	5821	6784	6790	6790
Adjusted R-squared	0.1022	0.1012	0.2290	0.1792	0.4371

Table 10

Fixed Effects Vector Decomposition

This table shows the results of fixed effects vector decomposition model. The sample comprises 6,790 firm-year observations presenting 274 business group over the period 2010–2016. *Giving to Operating Income* is Log(1+corporate giving / operating income) x10^3. *Giving to Ordinary Income* is Log(1+corporate giving / ordinary income) x10^3. *Giving to Sales* is Log(1+corporate giving / total sales) x10^3. *Giving to Asset* is Log(1+corporate giving / total asset) x10^3. *Log(Corporate Giving)* is Log(1+corporate giving). *CSV* is measured as the value of the controlling shareholders' shares in each affiliate divided by the combined value of the controlling shareholders' shares in all of the affiliates in the group. *Size* is the natural logarithm of total sales. *Leverage* is the ratio of total debt to total assets. *Age* is number of years after foundation (Months are in decimal). *Profitability* is earnings before interest and taxes divided by total assets. *No. of Affiliates* is the number of affiliates in a business group. *Free Cash Flow Dummy* is 1 if free cash flow is greater than 0 and 0 otherwise. *Advertising* is the advertising expenditure divided by total sales. *Advertising Dummy* is 0 if the advertising data is missing and 1 otherwise. *R&D* is the R&D expenditure divided by total sales. *R&D Dummy* is 0 if the R&D data is missing and 1 otherwise. All regressions contain year, business group, and industry fixed effects. The numbers in parentheses are t-statistics using robust standard errors adjusted for heteroskedasticity and clustering at firm level. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% level, respectively.

	(1) *Giving to Operating Income*	(2) *Giving to Ordinary Income*	(3) *Giving to Sales*	(4) *Giving to Asset*	(5) *Log(Corporate Giving)*
CSV	-0.1005**	-0.1092**	-0.2483**	-0.2745**	-3.1950**
	(-2.20)	(-2.26)	(-2.13)	(-1.97)	(-2.50)
Size	0.0168***	-0.0014	0.0261***	0.0280***	1.4668***
	(6.28)	(-0.51)	(3.95)	(3.66)	(19.74)
Leverage	-0.0082	0.0009	-0.0102	0.0365	-0.1059
	(-0.38)	(0.04)	(-0.17)	(0.53)	(-0.18)
Age	0.0103	0.0150	-0.0253	-0.0352	0.3939*
	(1.15)	(1.61)	(-1.09)	(-1.31)	(1.67)
Profitability	0.0289	0.1175***	-0.4193***	-0.2456*	0.3014
	(0.75)	(2.92)	(-3.62)	(-1.85)	(0.29)
No. of affiliates	0.0519*	0.0266	0.0421	0.0628	0.5642
	(1.91)	(0.96)	(0.63)	(0.80)	(0.79)
Free Cash Flow Dummy	-0.0028	-0.0007	-0.0044	-0.0279	0.1722
	(-0.50)	(-0.12)	(-0.29)	(-1.48)	(1.18)
Financial Dummy	-0.0634	-0.0457	0.0438	0.0877	-1.5105
	(-0.41)	(-0.28)	(0.12)	(0.21)	(-0.35)
List Dummy	0.0151	0.0287**	0.1204***	0.1253***	1.3656***
	(1.16)	(2.10)	(3.75)	(3.34)	(3.81)
Advertising	1.6342***	0.4455*	0.9128	1.1745	7.5188
	(7.23)	(1.83)	(1.09)	(1.27)	(1.21)
Advertising Dummy	0.0037	0.0050	0.0380	0.0366	0.1744

	(0.38)	(0.49)	(1.56)	(1.22)	(0.66)
R&D	0.2705	0.1554	0.1975	0.6032	5.1953
	(0.87)	(0.49)	(0.23)	(0.58)	(0.65)
R&D dummy	-0.0243**	-0.0055	-0.0519*	-0.0417	-0.3768
	(-2.25)	(-0.48)	(-1.86)	(-1.24)	(-1.29)
Intercept	-0.3177*	-0.0232	-0.4505	-0.5048	-20.2368***
	(-1.75)	(-0.12)	(-1.01)	(-0.99)	(-4.04)
Year fixed effect	Yes	Yes	Yes	Yes	Yes
Group fixed effect	Yes	Yes	Yes	Yes	Yes
Industry fixed effect	Yes	Yes	Yes	Yes	Yes
No. of observations	6734	6740	5978	5786	6740
Adjusted R-squared	0.5862	0.5653	0.4503	0.3687	0.7309

Table 11

Two-stage least square regression

This table represents the result of 2SLS regression by using two instrumental variables: *Ln(equity)* and *Lagged CSV*. *Ln(equity)* is the natural logarithm of the business group's total equity. *Lagged CSV* is the CSV of the previous year. *Giving to Operating Income* is Log(1+corporate giving / operating income) $x10^3$. *Giving to Ordinary Income* is Log(1+corporate giving / ordinary income) $x10^3$. *Giving to Sales* is Log(1+corporate giving / total sales) $x10^3$. *Giving to Asset* is Log(1+corporate giving / total asset) $x10^3$. *Log(Corporate giving)* is Log(1+corporate giving). *CSV* is measured as the value of the controlling shareholders' shares in each affiliate divided by the combined value of the controlling shareholders' shares in all of the affiliates in the group. *Size* is the natural logarithm of total sales. *Leverage* is the ratio of total debt to total assets. *Age* is number of years after foundation (Months are in decimal). *Profitability* is earnings before interest and taxes divided by total assets. *No. of Affiliates* is the number of affiliates in a business group. *Free Cash Flow Dummy* is 1 if free cash flow is greater than 0 and 0 otherwise. *Advertising* is the advertising expenditure divided by total sales. *Advertising Dummy* is 0 if the advertising data is missing and 1 otherwise. *R&D* is the R&D expenditure divided by total sales. *R&D Dummy* is 0 if the R&D data is missing and 1 otherwise. All regressions contain year, business group, and industry fixed effects. The numbers in parentheses are t-statistics using robust standard errors adjusted for heteroskedasticity and clustering at firm level. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% level, respectively.

	Giving to Operating Income		*Giving to Ordinary Income*		*Giving to Sales*		*Giving to Asset*		*Log(Corporate Giving)*	
	1st stage	2nd stage	1st stage	2nd stage	1st stage	2nd stage	1st stage	2nd stage	1st stage	2nd stage
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
CSV		-0.0812		-0.4061***		-0.1107**		-0.0913*		-2.5249*
		(-0.73)		(-2.82)		(-2.33)		(-1.82)		(-1.96)
Size			0.0085***	0.0197***	0.0087***	0.0146***	0.0087***	-0.0034*	0.0087***	1.2822***
			(17.45)	(4.00)	(18.08)	(8.79)	(18.05)	(-1.92)	(18.05)	(28.43)
Leverage	-0.0001	-0.0580***	-0.0015	-0.0205	-0.0021	-0.0392***	-0.0022	-0.0372***	-0.0022	-0.5459***
	(-0.02)	(-2.82)	(-0.56)	(-0.85)	(-0.82)	(-5.02)	(-0.86)	(-4.50)	(-0.86)	(-2.58)
Age	0.0031***	0.0332***	0.0005	0.0388***	0.0000	0.0143***	0.0000	0.0113***	0.0000	1.0067***
	(3.90)	(5.58)	(0.63)	(5.55)	(0.04)	(6.16)	(0.01)	(4.60)	(0.01)	(15.96)
Profitability	-0.0107	-0.2023***	-0.0213**	-0.1540**	-0.0234***	0.1190***	-0.0232***	0.2561***	-0.0232***	5.5374***
	(-1.20)	(-3.03)	(-2.57)	(-2.01)	(-2.96)	(4.80)	(-2.94)	(9.75)	(-2.94)	(8.22)
No. of affiliates	-0.0267***	0.0351	-0.0255***	0.0249	-0.0278***	0.0404**	-0.0279***	0.0181	-0.0279***	0.1263
	(-4.20)	(0.75)	(-4.23)	(0.46)	(-4.67)	(2.21)	(-4.70)	(0.94)	(-4.70)	(0.25)

Free Cash Flow Dummy	-0.0102***	0.0226*	-0.0092***	0.0104	-0.0090***	0.0005	-0.0089***	0.0074	-0.0089***	0.3522***
	(-5.97)	(1.77)	(-5.62)	(0.69)	(-5.79)	(0.10)	(-5.73)	(1.45)	(-5.73)	(2.68)
Financial Dummy	-0.0082	0.1456	0.0353	0.0439	-0.0041	-0.0653	-0.0042	-0.0443	-0.0042	-2.4924
	(-0.21)	(0.51)	(0.72)	(0.10)	(-0.11)	(-0.57)	(-0.11)	(-0.36)	(-0.11)	(-0.80)
List Dummy	0.0186***	0.1139***	0.0004	0.0695***	0.0018	0.0095	0.0018	0.0295***	0.0018	0.8077***
	(8.91)	(7.07)	(0.17)	(3.39)	(0.81)	(1.41)	(0.83)	(4.11)	(0.83)	(4.40)
Advertising	0.0994**	0.7238**	0.0835**	1.0083***	0.0869**	2.0276***	0.0882**	0.7566***	0.0882**	18.5621***
	(2.29)	(2.23)	(2.09)	(2.73)	(2.32)	(17.35)	(2.36)	(6.11)	(2.36)	(5.84)
Advertising Dummy	0.0027	0.0514***	-0.0014	0.0661***	0.0004	0.0161***	0.0004	0.0169***	0.0004	1.2470***
	(1.57)	(4.02)	(-0.83)	(4.40)	(0.25)	(3.19)	(0.24)	(3.16)	(0.24)	(9.11)
R&D	0.0234	0.0558	0.0408	0.2413	0.1129**	0.7294***	0.1126**	0.2790*	0.1126**	12.0840***
	(0.41)	(0.13)	(0.76)	(0.49)	(2.26)	(4.68)	(2.26)	(1.69)	(2.26)	(2.86)
R&D dummy	-0.0023	-0.0104	-0.0042**	-0.0174	-0.0043**	-0.0220***	-0.0043**	0.0010	-0.0043**	0.1874
	(-1.23)	(-0.75)	(-2.42)	(-1.08)	(-2.55)	(-4.15)	(-2.52)	(0.18)	(-2.52)	(1.30)
Log(Equity)	0.0045		0.0011		-0.0006		-0.0007		-0.0007	
	(0.80)		(0.20)		(-0.11)		(-0.13)		(-0.13)	
Lagged CSV	0.6208***		0.5939***		0.5825***		0.5827***		0.5827***	
	(67.16)		(63.89)		(65.65)		(65.71)		(65.71)	
Intercept	0.1572**	-0.2354	-0.0062	-0.4227	0.0462	-0.2574*	0.0478	0.0453	0.0478	-17.4809***
	(2.54)	(-0.68)	(-0.09)	(-0.83)	(0.78)	(-1.83)	(0.81)	(0.30)	(0.81)	(-4.58)
Year fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Group fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
F-statistic [p-value]	2255.39		2042.33		2157.11		0.3993		0.3993	
Partial R-square	0.4391		0.423		0.3991		2161.19		2161.19	
No. of observations	5896	5896	5707	5707	6632	6632	6638	6638	6638	6638