Private Benefits and Corporate Investment and Financing Decisions: The Case of Corporate Philanthropy

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Keywords: Corporate giving, charitable contributions, private benefits of control, financing decisions, hedge fund activism

JEL Classifications: G30, G31, G32, G34, G3

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Abstract

We find that corporate giving as a private benefit of control distorts investment and financing decisions, results supporting Jensen's (1986) free cash flow theory. These investment distortions reduce shareholder wealth, especially in cash-financed, diversifying acquisitions. Corporate giving also encourages managers to avoid external financing, especially debt financing. Reductions in charitable contributions after the 2003 dividend cut and hedge fund activism boost corporate investment, suggesting that one important opportunity cost of private benefit consumption is reduced investment. Furthermore, the negative effects of corporate giving on investment are more pronounced in firms able to avoid external capital market monitoring and in firms with poor corporate governance.

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1. Introduction

The separation of ownership and control, which shapes much of our understanding of managerial behavior, recognizes the incentives to extract private benefits at the expense of shareholder wealth creation. Since private benefits are often elusive and difficult to measure, assessing the importance of this opportunistic behavior has been found to be challenging. Consequently, existing studies have resorted to using various indicators of potential private benefit extraction such as excess control rights, i.e., the difference between voting and cash flow rights, and large block premiums to measure the costs of these private benefits of control.[1] Other indicators of private benefits include CEO shirking, weak pay (turnover) for performance sensitivity, excess compensation, and other forms of wealth expropriation. Since expropriation activities are largely unobservable (and therefore non-contractible), the various estimates found in the literature are based on strong assumptions that are subject to challenge. Moreover, it is extremely difficult to isolate the private benefit portions of these variables.

By focusing on charities with CEO ties, we explore whether corporate giving provides an avenue for CEOs to extract private benefits, since these actions provide clear benefits to CEOs at shareholder expense. One important aspect of these corporate charitable activities is that due to the IRS filing requirements, we are able to directly measure their dollar costs. We find that these costs are economically significant and on average are larger in magnitude than other private benefits such as a CEO's private use of corporate jets. Exploiting this opportunity to more directly track one important private benefit of control, we analyze whether consumption of these private benefits creates a managerial aversion to new external financing due to the threat of enhanced scrutiny from external capital providers (Jensen 1986). We also examine whether this aversion to external financing leads to non-optimal corporate investment decisions. Consistent with this conjecture, we find evidence that in the face of substantial corporate giving, managers

[1] Evaluating the effect of private benefit consumption on corporate investments, Eckbo and Thorburn (2003) highlight the difficulty of measuring control benefits and rely on an estimation procedure that depends on CEO and firm characteristics. See also Barclay and Holderness (1989), Dyck and Zingales (2004), Doidge (2004), and Masulis, Wang, and Xie (2009).

avoid raising capital from the external market, especially the debt market. Moreover, corporate giving significantly reduces investments in firms that avoid external financing.

Drawing on agency theory, we hypothesize that the existence of private benefits of control can affect the investment-cash flow relation, which has been extensively studied over the last 30 years. Managers make decisions about discretionary expenditures on private benefits based on cash flow anticipations or realizations. Thus, the cash flow levels reported in financial reports are understated as a result of this rent extraction. It follows that artificially low cash flow levels inflate the measured sensitivity of investment to observed cash flows, leading to a positive bias. Studying corporate giving allows us to directly test for this bias and compare the cost of this private benefit to the cost of indirect estimates of managerial empire building (Lang, Stulz, and Walkling 1991; Harford 1999), CEO overconfidence (Malmendier and Tate 2005), and other economically important frictions caused by manager-shareholder agency conflicts in combination with asset intangibility and political/policy uncertainties (Almeida and Campello 2007; Julio and Yook 2012; Gulen and Ion 2016).

We then analyze the effect of investment distortions on shareholder wealth. While it is widely recognized that private benefit consumption is costly and thus, reduces firm value, it is difficult to measure this relation empirically. As a result, existing studies take various indirect approaches that often include the analysis of specific events to evaluate the effects of private benefit extraction (Masulis and Reza 2015; Yermack 2006).[2] Analyzing market reactions to investment decisions, which have first-order effects on firm value and are related to private benefits consumption, enable us to shed more light on this prediction. We provide new evidence that investment distortions caused by private benefit consumption significantly reduce shareholder wealth and that this effect is in addition to the generally recognized direct costs of these private benefits.

[2] Several approaches to estimating private benefits found in the literature include equity market value changes following changes in cash holdings as in Faulkender and Wang (2006), which assumes that cash is easier to expropriate, and valuing the costs of empire building (Harford 1999) measured by announcement returns to certain questionable diversifying acquisitions.

Concerns over the private benefits of corporate philanthropy have a long history in the corporate finance literature. Milton Friedman (1970) viewed corporate giving as a waste of corporate resources, while Jensen and Meckling (1976) identify it as a form of non-pecuniary benefits to managers (pg. 312). Recent empirical studies find evidence consistent with this agency perspective (Navarro 1988; Brown, Helland, and Smith 2006; Masulis and Reza 2015; Cai, Xu, and Yang 2017). Although corporate charitable contributions appear small relative to the size of large companies, these expenses can have much larger impacts on firm value if they effectively weaken corporate governance oversight and entrench a CEO, raising the expectations of further private benefits consumption.[3]

One caveat concerning this analysis is that in some instances corporate giving can benefit shareholders. For example, an R&D intensive firm can make targeted charitable contributions to nonprofit research institutions that carry out studies in collaboration with the firm. However, the net effect of corporate philanthropy documented in the literature is much more consistent with managerial agency problems than it is with firm value maximization (Galaskiewicz 1985; Galaskiewicz 1997, Cespa and Cestone 2007; Masulis and Reza 2015; Cai, Xu, and Yang 2017). Moreover, we argue that one dollar spent in the name of corporate philanthropy can represent a dollar foregone from traditional investment projects, where managers and shareholders can more clearly and unambiguously measure the associated value creation or destruction.

Going beyond the prior evidence in the existing literature, we offer two new lines of evidence on the relation between corporate giving and private benefits of control. First, we analyze corporate donations to CEO-affiliated charities, as they reflect a more direct form of rent extraction and conflict of interests, based on a simple quartile sorting of the amount of total corporate donations. We find that donations to

[3] For example, Masulis and Reza (2015) and Cai, Xu, and Yang (2017) show evidence of potential co-option of independent directors by corporations directing corporate donations to independent director linked charities. Similarly, Galaskiewicz (1985), Galaskiewicz (1997), and Cespa and Cestone (2007) suggest that one possible indicator of managerial entrenchment is when corporate donations are used strategically by CEOs to obtain favorable support from outside social and environmental activists at later CEO employment contract renewal dates or in the face of potential employment turnover decisions.

CEO-affiliated charities rise monotonically with corporate giving quartiles, suggesting that total corporate giving is one explicit measure of rent extraction behavior. Second, across each quartile of corporate giving, we further categorize firms based on their cash flows and find in each quartile of corporate giving that it increases with cash flows, consistent with the Jensen (1986) free cash flow hypothesis. Moreover, in the higher two quartiles of cash flows, we find an inverse relation between corporate giving and investment, but *not* between corporate giving and Tobin's *q*. This evidence suggests that instead of using cash to benefit shareholders, managers engaging in charitable contributions often shift corporate resources to pursue their own charitable preferences and as such, this has negative implications for shareholder wealth (Masulis and Reza 2015).

Given the premise of the free cash flow problem is that each dollar of charitable donations is one less dollar of internal cash flow available to finance new corporate investment, we investigate whether the investment-cash flow relation is affected by corporate giving. We trace the accounting implications of discretionary charitable contributions on firm cash flows and then assess its effects on corporate investment. If private benefits of corporate giving represent a drain on cash flow, then we should observe that corporate giving has a negative effect on investment, at least for firms not needing or wanting to raise more external capital. Based on a standard investment-cash flow analysis, our private benefits measure can be treated as an unnecessary expense, and without its recognition, the estimated investment-cash flow relation appears to overemphasize the role of frictions in the capital market, falsely suggesting the lack of external financing availability for profitable investment projects. However, the lack of external financing is unlikely to be a problem for less financially constrained firms that have high expected free cash flows.

Our empirical investigation provides new evidence consistent with the free cash flow hypothesis. Specifically, we find that in firms with higher levels of cash flows, corporate giving reduces a firm's investment. In other words, corporate giving reduces cash flows available for internally financed investment. Consequently, the sensitivity of investment to internal cash flows (adjusting for corporate giving) is significantly lower for firms that spend more on managerial private benefits. As a result, firms

with free cash flow problems may erroneously be labeled as cash constrained under the conventional analysis of the investment-cash flow relation. Our study offers an alternative perspective on this estimated relation that raises fresh doubts about the interpretation of the conventional investment-cash flow estimates as a reliable measure of a firm's financial constraints (Fazzari, Hubbard, and Petersen 1988; Kaplan and Zingales 1997; Gomes 2001; Alti 2003; Almeida and Campello 2007).

We find that the effect of corporate giving on corporate investments is economically important. Using the cash flows of a typical firm in our sample as a benchmark, we find after controlling for cash flows, growth opportunities, firm size, tangible assets, as well as firm and year fixed effects that a one standard deviation increase in corporate giving reduces investment expenditures by 1.69%. These results continue to hold if we combine R&D expenses with capital expenditures, which again supports our main hypothesis. These findings have important implications for estimating cash flow and the investment-cash flow sensitivity correctly. To benchmark our result, we compare it to the impacts of other determinants of corporate investment in the existing literature. For example, a one standard deviation rise in tangible assets that Almeida and Campello (2007) label as a credit multiplier increases investment expenditures by 10.88%, while election years that Julio and Yook (2012) use as a measure of political uncertainty reduce corporate investments by 4.8%. Similarly, a one standard deviation rise in uncertainty about taxation, government spending or monetary policy is associated with a 6.3% fall in quarterly investments (Gulen and Ion 2016).

To understand more clearly the nature of the cash flow problems associated with corporate giving, we perform two falsification tests. First, we consider the possibility that corporate giving is similar to investment in advertising, so that the negative relation we document could be suggesting a substitution effect between different types of investments. We reject this argument by showing that advertising expense does not negatively affect investment-cash flow sensitivity, mainly because such expenses are incurred on an ex-ante basis as a percent of sales. On the other hand, opportunistic managers can time corporate donations so that these decisions are made based on realized or anticipated additions to free cash flow (Petrovits 2006). Second, the timing of corporate donations predicts a contemporaneous relation to firm

cash flows under the free cash flow hypothesis. We provide results consistent with this prediction. Specifically, with lagged corporate giving, we find no incremental effect of private benefit consumption captured by corporate giving on investment-cash flow sensitivity. While it is impossible to completely reject the possibility that charitable giving is not a positive NPV project, these falsification tests establish clear testable predictions in terms of the results that we should observe if corporate giving were in fact a type of profitable investment similar to advertising expense.

In further analysis, we separately test for these cash flow biases in financially constrained and unconstrained firms. If our free cash flow prediction is correct, then we should observe an investment-cash flow relation that declines with private benefits only in the sample of unconstrained firms that can avoid capital market scrutiny of managerial extraction of private benefits (Jensen 1986). In contrast, external financing leads to external investor scrutiny of managerial extraction of private benefits, and as a result, managers pursuing these private benefits can find external financing unattractive. Furthermore, unconstrained firms can finance future investment shortfalls with future external financing, so managers can be better off extracting private benefits from current cash flows at the expense of reduced current investment, consistent with the classic free cash flow problem of Jensen (1986). This suggests a negative relation between corporate giving and investment expenditures, especially in financially *unconstrained* firms. Categorizing firms as financially constrained following several established approaches in the literature, we find results consistent with our prediction that private benefits extracted from corporate philanthropic activities produce serious biases in cash flows and investment to cash flow sensitivity in firms categorized as financially unconstrained.

One possible alternative explanation for the results documented above is weak corporate governance. If private benefits are a manifestation of weak corporate governance, then we should find a stronger effect of corporate giving on the investment-cash flow relation in firms with poor corporate governance measures. We analyze board independence, CEO ownership, antitakeover defenses, CEO-chairman duality, and product market competition as key governance characteristics, which have strong

theoretical motivations and established empirical importance. In a further robustness test, we analyze firm-years after external CEO appointments since such appointments are often associated with CEOs with strong reputations, who should be concerned with the reputational damage of self-serving activities (Milbourn 2003). Our findings suggest that the negative effect of corporate giving on investment is more pronounced when a firm can avoid monitoring by the external capital market, faces low product market competition, the CEO is an internal appointment, and when boards do not appear to be critically evaluating corporate giving.

Another possible critique of the estimated association between corporate giving and investment expenditure is that the direction of causality is unclear. One could argue that firms make large charitable contributions when their investment opportunities are depressed, which would produce a spurious negative correlation between Tobin's *q* and corporate philanthropic activities. To address such concerns, we conduct a quasi-natural experiment using the 2003 dividend tax cut, which reduces the personal income tax rates on dividends from a maximum rate of 35% to 15% (Chetty and Saez 2005). By cutting the personal tax rate on dividends, the U.S. Tax Reform Act raises the after-tax cost of private benefit consumption. Using this approach, Masulis and Reza (2015) show that corporate giving declines after the 2003 dividend tax cut. We extend their analysis by examining whether subsequent reductions in corporate giving result in increased investments in firms with high levels of cash flows and find the predicted effects. We also show that the tax effect is more pronounced in the subsample of firms where CEOs bear higher costs of corporate giving. In addition to identifying a causal relation, our quasi-natural experiment also addresses the correlation problem between corporate giving and investment opportunities, because such a problem should only be observable for changes in the cost of corporate giving of a typical firm after 2003. Therefore, our quasi-natural experiment measures an effect that is strictly due to the change in the cost of corporate giving.

In yet another experiment, we consider the effect of hedge fund activism on corporate charitable contributions. Brav, Jiang, Partnoy, and Thomas (2008) find increased stock performance after hedge fund activism because such activism reduces the free cash flow problem by disciplining managers. The improved

firm governance structure due to hedge fund activism is attractive to test our hypothesis as this allows us to observe changes in corporate giving that is brought exogenously to firms. Consistent with Brav, et al (2008), we find that firms reduce charitable contributions substantially after hedge funds acquire more than 5% ownership. In regression analysis, we also show that the reduced amount of corporate giving is associated with increased corporate investment in firms with high cash flows, confirming our earlier findings supporting the Jensen's free cash flow hypothesis.

Having established a causal effect of corporate giving on firm internal capital expenditures, we next focus on major external corporate investments, specifically mergers and acquisitions (M&A), as they are large and observable corporate decisions that can intensify the conflict of interests between managers and shareholders. Existing studies use different methods to estimate if firms have free cash flow problems in this context. For example, Lang, Stulz, and Walkling (1991) use high cash flow and low *q* to predict firms with negative NPV projects, whereas Harford (1999) estimates a model to identify firms with abnormally high agency problems due to high cash reserves. In contrast, using an observable characteristic of managerial private benefit consumption, we again find a negative impact of corporate giving on the level of M&A investment by firms with high cash flows.

Despite our findings on internal and external investments, one may still argue that corporate giving may not reduce shareholder value as it could generate future cash flows in less obvious ways. Since net shareholder wealth effects are observable in M&A transactions, we next focus on acquirer shareholder announcement returns. Consistent with the free cash flow hypothesis of Jensen (1986), we document that acquirers with high level of private benefits and high cash flows experience significantly lower returns on acquisition announcements, suggesting that shareholders use the extent of corporate charitable giving to form an estimate of the likely managerial rent extraction from newly acquired assets. Moreover, the effect is concentrated in the sample of diversifying or cash-financed acquisitions. While diversifying acquisitions can reduce managers' idiosyncratic risk even if the investments are not value enhancing (Harford 1999), cash-financed transactions help managers to avoid monitoring by the external capital market. Major

diversifying acquisitions also make it easier for managers to hide the extraction of personal benefits and poor managerial performance since comparisons of firm performance metrics across time are made more difficult, if not impossible (Amihud and Lev 1981; Berger and Ofek 1995).

While we show that managers extract private benefits from internal cash flows, the above analysis does not investigate their aversion to external financing formally. To test, we first model net debt and equity issuances and find that a typical firm raises about 33.5 cents for every dollar of internal cash flow shortfall. However, external financing reduces by 2.5 cents if a firm changes its charitable contributions from the 50th to the 75th percentile. Furthermore, we find a strong managerial aversion to external debt financing. Specifically, modeling a firm's net debt issuance, we find that a typical firm raises about 94 cents of debt for every dollar increase in its financing deficit. However, debt issuance declines by 3.5 cents if a firm raises its charitable contributions from the 50th to 75th percentile. Given that debt disciplines managers from wasting valuable corporate resources, this finding provides direct evidence supporting Jensen's (1986) free cash flow hypothesis. We also show that these effects on external financing are more pronounced in the subsample of firms where managers are protected from the market for corporate control and product market competition.

While the above results are consistent with the existing literature on corporate philanthropy (Navarro 1988; Galaskiewicz 1985; Galaskiewicz 1997; Brown, Helland, and Smith 2006; Cespa and Cestone 2007; Masulis and Reza 2015; Cai, Xu, and Yang 2017) and agency theory (Jensen and Meckling 1976; Jensen 1986; Lang, Stulz, and Walkling 1991; Harford 1999; Malmendier and Tate 2005;), on the surface they stand in stark contrast to the recent literature on corporate social responsibility (CSR), which shows that CSR activities increase firm value. One possibility is that corporate philanthropy has a quite different economic effect from other forms of CSR activities. CSR could be part of a firm's overall strategy for improving firm value, while corporate giving could be an exception to this strategy where managers create large opportunities for rent extraction. If true, then it follows that conventional measures of CSR

could be improved by excluding charitable giving to more accurately represent truly socially responsible activities (see Chatterji, Levine, and Toffel (2009) for a discussion of the validity of CSR measures).

2. Motivation

In the spirit of Froot, Scharfstein, and Stein (1993) and Kaplan and Zingales (1997), we model the investment (I) of a profit maximizing firm with the production function $F(I)$ that depends on internal resources (W) as

$$\frac{dI^*}{dW} = \frac{C_{11}}{C_{11} - F_{11}}, \tag{1}$$

where $C(E, k)$ is the cost of external funds as a function of the size of externally raised funds (E) and the wedge between internal and external costs of funds (k). Without considering whether the above relation is monotonic across all values of k, which is a topic of much discussion, we emphasize the degree of accuracy with which W is empirically measured. Specifically, it is widely established that managers have influence over different types of corporate expenditures. For example, Petrovits (2006) documents that the timing of corporate charitable contributions is consistent with CEOs' pursuit of earnings management. Morse, Nanda, and Seru (2011) establish that managers influence incentive contracts ex-post to obtain higher compensation, and Yermack (1997) finds robust evidence of executive option backdating. Such activities are based on cash flow realizations or anticipations, so a firm's internal cash flow, W, in the Kaplan and Zingales (1997) and Fazzari, Hubbard, and Petersen (1988) models must of necessity be understated given the extraction of private benefits by managers. Thus, ignoring consumption of private benefits understates internal cash flows, which results in artificially high investment-cash flow sensitivity estimates.

Our alternative formulation of the investment problem is different from a pure empire-building model with costly external finance, where managers extract private benefits from overinvestments, which justifies adding a term equal to $\gamma F(I)$ to the objective function. In contrast, the problem we analyze is more focused on perquisite consumptions where opportunistic managers extract rents which are normally treated as operating expenses that lower the firm's observed W. Therefore, the framework is more akin to the

model of Hart and Moore (1998), where managers can expropriate ex-post project returns, which importantly cannot be verified in a court of law. Intuitively, the operating assumption that makes our study different from models of empire building is that managers do not need to build empires to extract private benefits from corporate donations.

It is critical in this context to account for such private benefits of discretionary corporate expenditures in regressions that estimate the investment sensitivity of cash flow. While, it is difficult to isolate (say) the manipulated or excess portion of executive compensation (Morse, Nanda, and Seru 2011) or stock options (Yermack 1997) from pure optimal managerial compensation. On the other hand, corporate charitable contributions provide a much clearer measure of the private benefits of control for one form of rent seeking behavior (Cespa and Cestone 2007; Galaskiewicz 1985; Galaskiewicz 1997; Masulis and Reza 2015), providing us with an opportunity to evaluate its impact on the relation between corporate investment and internal cash flows. This leads to the following hypothesis:

H1: Corporate giving negatively affects a firm's investment sensitivity to cash flow. Or equivalently, corporate giving reduces investments in firms with high level of cash flows.

Note that hypothesis H1 is also a test of the Jensen (1986) free cash flow hypothesis, which states that managers with access to more free cash flows waste corporate resources at the expense of outside shareholders. This analysis is also similar to Rauh (2006), who studies the negative consequences of defined benefit pension plans on corporate investments. Firms pledge employee retirement benefits in defined benefit pension plans, so these plans represent contractually binding financial liability given to retirees that must be met before any investments are made. On the other hand, corporate philanthropy is voluntary and managers have considerable influence on where and when these contributions are distributed.

We also argue that a manager's rent seeking activities should be more pronounced in firms that are less financially constrained, generate more cash flows, and can avoid the disciplinary role of the external capital market. This is implicit in the Myers and Majluf (1984) model that finds that raising outside financing is problematic due to adverse-selection problems. The existing literature also documents the

severity of this problem. For example, Eckbo, Masulis, and Norli (2007) document that only a quarter of public firms undertake seasoned equity offerings (SEO). Moreover, the SEO announcement returns are between negative 2% and 3%, which along with sizable underwriting costs in the range of 3% – 8% of gross proceeds, produce very costly flotation costs. These flotation costs reduce the per share value of SEO firms, making SEO funding of unprofitable empire building activities less attractive to managers with sizable shareholdings in the firm. Thus, managers of firms that rely on external financing for investment opportunities have weaker incentives to extract private benefits from empire building. This also highlights the fact that the external capital market acts as a monitor of the firm by employing financial intermediaries to assess the firm before underwriting and marketing its security offerings. Furthermore, the market prices the firm's securities to reflect this expected managerial rent extraction and by limiting the amount of new stock that is easily sold without requiring a large price discount. This makes this source of capital more costly for managers who plan to use investment decisions as a further opportunity for rent extraction (Banerjee, Humphery-Jenner, Masulis, Nanda, and Xu 2015). This prediction is also consistent with Jensen (1986), which predicts intensified agency problems in firms that can avoid monitoring by capital markets through the use of internal sources of capital. This analysis leads to the following hypothesis:

H2: The consumption of private benefits creates a managerial aversion to new external financing. Therefore, the negative effect of corporate giving on the investment sensitivity to cash flow is more pronounced in financially unconstrained firms or firms that are less likely to be monitored by the external capital market.

To test the first part of H2, we follow Almeida and Campello (2010) and model external financing as a function of cash flow, corporate giving, and other economically important variables. To further analyze managerial aversion to debt financing, we follow Shyum-Sunder and Myers (1999) and model net debt financing by a firm's financing deficit adjusted for corporate giving. To test the second part of H2, we follow Rauh (2006) who finds for a sample of firms that rely more heavily on internal resources that the investment sensitivity to cash flow is larger than that for a sample of firms that rely more heavily on external capital to fund investments. Therefore, using an existing methodology, we test the second part of H2 by

assessing whether investment-cash flow sensitivity is decreasing in the level of private benefits for the sample of firms that can potentially avoid raising external capital.

3. Data

We analyze a sample of Compustat/CRSP firms over 1998 – 2006 to analyze the investment sensitivity to cash flows.[4] We then merge this firm level financial data with corporate charitable contributions data from Masulis and Reza (2015), which is based on the list of Fortune 500 firms as of April 17, 2006. Corporate charitable contributions data is hand-collected from the National Directory of Corporate Giving (NDCG), which bases its information on the 990-PF filings with the IRS and disclosures by individual firms. After merging datasets, we have a sample of 2,551 firm-year observations based on firm level identifiers (GVKEY and PERMNO) taken from Compustat and CRSP. Of this sample, approximately 60% of firms make charitable contributions.

In addition to Masulis and Reza (2015), who document five different channels through which corporate philanthropic activities benefit managers, we provide two separate pieces of evidence shown in Table 1 that support the conclusion that corporate giving is a frequently used instrument for rent extraction, indicating free cash flow conflicts. We rely on nonparametric tests that are based on simple sorts of corporate giving and firm cash flows, so they are free of strong distributional assumptions common to regression model specifications. However, this analysis faces a curse of dimensionality and does not address the direction of causation. Therefore, these tests provide us with initial evidence on associations of corporate giving across different corporate characteristics.

In the first experiment presented in Table 1, we sort firms into quartiles according to total charitable contribution levels and then calculate the amount of corporate contributions to nonprofits where CEOs hold positions as directors, trustees, advisors, etc. We use biographical sections of annual reports, and news

[4] We stop hand-collecting data in 2006 because the global financial crisis which begins in the middle of 2007 had serious impacts on corporate investments and firm liquidity (Campello, Giambona, Graham, and Harvey 2011). Given the absence of an economically meaningful event that exogenously changes the cost of corporate giving, we do not collect further charitable giving data in the post-crisis period.

articles in Businessweek and Forbes to obtain data on CEO affiliations to specific nonprofit organizations. We then use the Foundation Directory Online Database, which is available from 2004, to collect data on charity names and levels of corporate giving related to CEO linked nonprofits.[5] These affiliated contributions provide strong and measurable evidence of conflict of interests and a mechanism through which managers extract rents at the expense of existing shareholders. We find that corporate contributions to CEO affiliated nonprofits increase monotonically across corporate giving quartiles. Given that these affiliated donations are greater than the combined costs of CEO corporate jet use and other CEO perks, while they are similar in magnitude to CEO cash severance payments (see Masulis and Reza 2015 for more details), this result strongly suggests that corporate charitable contributions is an important avenue for managerial rent extraction. In a further test, we find that the amount of corporate charitable contributions that is not directed to CEO nonprofit organizations also increases monotonically with affiliated CEO contributions. While CEO affiliated contributions directly benefit managers, these unaffiliated charitable contributions can also help CEOs co-opt the board (Masulis and Reza 2015) and build ties with outside stakeholders who can help in future contract renewal decisions (Cespa and Cestone 2007). Therefore, we treat the total amount of corporate giving, which includes CEO affiliated and unaffiliated charitable contributions, as our measure of the CEO's private benefits of control.

In the second experiment in Table 1, we further divide each of the corporate giving quartiles into four categories according to firm cash flows. If managers in firms with higher levels of cash flows are able to more easily extract rents in the form of corporate giving, then we should see higher amounts of corporate giving at firms in the high cash flow categories of each corporate giving quartile. Consistent with this prediction, we find that corporate charitable contributions increase with higher cash flow categories across all quartiles of corporate giving. While this simple exercise does not control for differences in firm or market-wide characteristics, it does offer suggestive evidence that corporate giving is prone to free cash flow problems.

[5] We limit our analysis to the Fortune 100 firms to keep the manual data collection procedure manageable.

To put the relation among corporate investment, cash flows, and corporate giving in perspective, we also analyze their correlation structure. In untabulated analysis, we find that the correlation between cash flows and capital expenditures is 0.487 (p-value = 0.000), while the correlation between cash flows and corporate giving is 0.569 (p-value = 0.000), suggesting that corporate giving is more tightly tied to firm cash flows than capital expenditures. Overall, results from these nonparametric tests suggest that a close relationship exists between firm cash flows and corporate charitable contributions and that this relation is likely to affect corporate investment decisions.

4. Empirical specification

To evaluate whether corporate giving negatively affects the investment-cash flow sensitivity using the firm-level panel data, we employ statistical models that are standard in this literature to facilitate comparisons to prior findings. Specifically, we consider an investment model in the spirit of Fazzari, Hubbard, and Petersen (1988), Kaplan and Zingales (1997), Malmendier and Tate (2005), and Almeida and Campello (2007) where we modify this basic specification by adding a corporate giving variable. To be more specific, we estimate the following regression:

$$\begin{aligned} Investment_{i,t} = {} & \alpha Q_{i,t-1} + \beta Cash\ flow_{i,t} + \gamma_1 Tangibility_{i,t} + \gamma_2 (Tangibility_{i,t} \text{ x } Cash\ flow_{i,t}) \\ & + \delta_1 Firm\ size_{i,t} + \delta_2\ (Firm\ size_{i,t} \text{ x } Cash\ flow_{i,t}) + \theta_1 Corporate\ giving_{i,t} \\ & + \theta_2 (Corporate\ giving_{i,t} \text{ x } Cash\ flow_{i,t}) + f_i + y_t + \varepsilon_{i,t}, \end{aligned} \quad (2)$$

where the dependent variable $Investment_{i,t}$ is the ratio of a firm's capital expenditures to beginning-of-period capital stock. Our explanatory variables include $Q_{i,t-1}$ which measures investment opportunities and is defined as the ratio of market value of assets to beginning-of-period capital stock, $Cash\ flow_{i,t}$ which is defined as income before extraordinary items plus depreciation divided by beginning-of-period capital stock, $Tangibility_{i,t}$ which is as defined by Almeida and Campello (2007) to equal $(0.715\ X\ Receivables + 0.547 \text{ x } Inventory + 0.535 \text{ x } Capital + Cash\ holdings)$ divided by book value of assets, $Firm\ size_{i,t}$ which is the logarithm function of the book value of assets,

$Corporate\ giving_{i,t}$ which measures the amount of charitable contributions divided by beginning-of-period capital stock, and f_i and y_t which are firm and year fixed effects, respectively. To minimize the effect of extreme observations, we winsorize the dependent and all control variables at the 1% and 99% level. All standard errors are robust and clustered at the firm level.

We scale all regression variables by beginning-of-period capital stock to be consistent with Chen and Chen (2012). Interestingly, they find that investment-cash flow sensitivity has disappeared in recent years.[6] Therefore, we begin with a regression model specified by equation (2) and estimate it using data from Fortune 500 firms that are unlikely to be financially constrained. These firms are unlikely to exhibit significant investment-cash flow sensitivity and therefore, we are unlikely to find any effect of corporate giving on investment. We add $Tangibility_{i,t}$ and $Size_{i,t}$ in our specification because pledgeable assets allow further investments (Almeida and Campello 2007) and larger firms have significantly less investment sensitivity to cash flows (Malmendier and Tate 2005). The coefficient β in equation 2 measures the investment sensitivity to cash flows. The main coefficient of interest is θ_2, which measures the effect of corporate giving on investment-cash flow sensitivity. Equivalently, θ_2 measures the magnitude by which corporate giving affects capital expenditures in firms with high levels of cash flows. We expect the coefficient θ_2 to be negative. Given our use of firm and year fixed effects and controls for firm size and pledgeable (tangible) assets, it is relatively difficult to argue that θ_2 merely measures some undefined or unobservable firm characteristics.

While Fazzari, Hubbard, and Petersen (1988) argue for the inclusion of cash flows in a standard investment equation, subsequent studies raise serious criticisms about the interpretation of the β coefficient. One criticism focuses on the (mis)measurement of investment opportunities, while other researchers criticize the use of investment sensitivity to cash flows as a good measure of a firm's financial constraints.

[6] Although we report results using beginning-of-period capital stock, in untabulated results we also scale regression variables by book value of assets and find similar results. Note that $Tangibility_{i,t}$, is generally scaled by total assets, which is a convention that we also follow.

However, there is no study that highlights a manager's influence over the use of a firm's internal resources, W, which can result in potential mismeasurement of firm cash flows. Therefore, by putting aside prior criticisms of the basic statistical model, our investigation shows another important reason that the standard approach to investment-cash flow sensitivity measurement fails to yield an unbiased estimator of this relationship.

5. Results

5.1 Summary statistics

Panel A of Table 2 provides summary statistics of the main variables used in equation (2), which are based on a sample of 1,317 firm-year observations with strictly positive firm charitable contributions. We find that average corporate capital expenditures as a fraction of the firm's capital stock ($Investments_{i,t}$) is 0.204, similar to the findings of Chen and Chen (2012). Total assets of a typical firm ($Size_{i,t}$) in our sample are approximately $13.67 billion, which is similar to Masulis and Reza (2015), but larger than Malmendier and Tate (2005), who study a sample of firms compiled from Forbes magazine over the earlier 1984 – 1994 period. The average beginning-of-period Tobin's Q is 1.826, which falls within the range of the values reported in Chen and Chen (2012). Average cash flows as a fraction of the firm's capital stock ($Cash\ flows_{i,t}$) is 0.717, which is somewhat higher than in Chen and Chen (2012), Almeida and Campello (2007), and Malmendier and Tate (2005). However, given that we are analyzing a sample of the largest and probably most profitable U.S. firms, this finding is not surprising. Moreover, Chen and Chen (2012) document an increasing trend in firm cash flows that overlaps with our sample period. Our measure of the fraction of tangible assets, $Tangibility_{i,t}$, has an average value of 0.43, which is slightly lower than the statistic reported in Almeida and Campello (2007).

The main variable of interest, $Corporate\ giving_{i,t}$, has an average value of 0.567%. Although small relative to other variables in equation (2), this variable is economically important as an instrument of private benefits and if compared with the average total pension contributions scaled by total assets of 0.3%,

which is known to have a significant economic effect on corporate investments (Rauh 2006). Moreover, if managers use corporate giving strategically to co-opt board members (Masulis and Reza 2015) or to build ties with outside entities that can help CEOs in future contract renewal decisions (Cespa and Cestone 2007), then the negative effects of corporate charitable contributions could be far reaching. In short, there are good reasons to view the level of corporate giving as a useful instrument of manager rent seeking behavior.

In Table 2, Panel B, we analyze the effect of corporate giving on investment and Tobin's *q* in firms with high cash flows following a sorting exercise similar to what is done in Table 1. We find that corporate giving accounts for approximately 12% of capital expenditures in firms with high cash flows. Moreover, in high cash flow quartiles, there is an inverse relation between corporate giving and capital expenditures, but *not* between corporate giving and Tobin's *q*. While this result suggests that corporate giving is likely to produce a cash flow problem, it does not support the conjecture that poor investment opportunities lead to more corporate charitable contributions.

5.2 Baseline regression results

Panel A of Table 3 uses a multivariate regression analysis to evaluate the effect of corporate giving on the investment sensitivity of cash flows. We begin with a simplified specification in model 1 where we explain corporate investments based on investment opportunities and cash flows only. In this initial step, we reassess the findings of Chen and Chen (2012) for a sample of large and profitable firms. We find that coefficients of both investment opportunities and cash flows are positive and statistically significant. In particular, we find the estimated investment-cash flow sensitivity is 0.094 with a *t*-test statistic of 2.45. While inconsistent with the findings of Chen and Chen (2012), the model 1 investment-cash flow sensitivity estimate is consistent with many other well-known studies of firm financial constraints, e.g., Almeida and Campello (2007), Rauh (2006), and Hadlock and Pierce (2010).

Model 2 includes corporate giving and its interaction with cash flows as new regressors, in addition to investment opportunities and cash flow, both of which continue to have positive and statistically significant coefficients. The coefficient of corporate giving interacted with cash flow is negative and

statistically significant at the 1% level, suggesting that investment sensitivity of cash flows decreases with higher level of private benefits, consistent with the main hypothesis of our analysis. In model 3, we also add firm size, tangibility, and their interactions with cash flow to isolate the effect of corporate giving from firm size and other predictable measures of financial constraints. The estimated coefficients of firm size, tangibility, and their interactions with cash flows have signs that are consistent with Malmendier and Tate (2005) and Almeida and Campello (2007).

After controlling for all the commonly used variables found to help explain corporate investments, we continue to find in model 3 that corporate giving reduces capital expenditures in firms with high cash flows. Put differently, private benefits reduce investment-cash flow sensitivity. Because corporate contributions are treated as an operating expense, this result suggests that conventional ways of measuring cash flows may be misleading if based on anticipated or realized cash flows managers are making charitable decisions to opportunistically benefit themselves. From this perspective, our study is related to the literature on executive rent extraction (Bertrand and Mullainathan 2001; Garvey and Milbourn 2006; Morse, Nanda, and Seru 2011; Yermack 1997). Our result on the effect of corporate giving is also economically important. Specifically, given the cash flows of a typical firm in our sample, a one standard deviation increase in corporate giving above the sample average is associated with approximately 1.69% lower capital expenditures. Comparing our result to the existing literature, we estimate from model 3 that a one standard deviation rise in tangibility (credit multiplier in Almeida and Campello (2007)) is associated with 10.88% increase in corporate investments.

The dependent variable in Panel B of Table 3 combines R&D expenses with traditional capital expenditures, as R&D expenses are important long-term investments that affect firm value (Almeida and Campello 2007; Rauh 2006). We repeat all three models of Panel A and find similar results for the control variables. Consistent with Almeida and Campello (2007), who argue that intangible asset investments should not have a credit multiplier effect, we find that the coefficient on the interaction of firm tangibility and cash flows is only marginally significant when corporate investments include R&D expenses. The main

coefficient of interest, the interaction of corporate giving and cash flows, continues to be negative and remains statistically significant at the 1% level.

Overall, our results using different control variables and firm and year fixed effects suggest that investment-cash flow sensitivity is not significant in a well specified model that includes private benefits of charitable giving. Furthermore, for a typical firm this estimated investment-cash flow sensitivity declines with higher levels of private benefits of control, as measured by charitable giving. This result suggests that large and profitable firms are not financially constrained, but rather they are susceptible to free cash flow problems in the spirit of Jensen (1986).

5.3 Falsification tests

A common concern with our baseline analysis is the assumption that corporate charitable contributions are a waste of corporate resources. Although we show considerable evidence in favor of this argument, which is also consistent with much of the existing literature, one could argue that corporate giving (or at least a part of it) is firm value enhancing. Therefore, the negative coefficient we document above might simply measure a substitution effect between two different types of investments.

If corporate giving enhances firm value, then it is important to know the specific channels through which it affects firm value. For example, Benabou and Tirole (2010) argue for a greater prevalence of corporate philanthropic activities among more visible firms, suggesting a selection issue. However, this should not weaken our findings because our baseline regression specification considers firm fixed effects and controls for firm size and tangibility and their interactions with cash flows. Another argument that resonates in the corporate giving literature is that charitable contributions are similar to advertising which can enhance a firm's expected sales and earnings (Navarro 1988; Brown, Helland, and Smith 2006). This could be particularly important for our regression analysis, as we did not account for the time-varying patterns of advertising expenditures.

To test the above conjecture, we perform a falsification test. We replace corporate giving with advertising expenses in our baseline model and present results in model 1 of Table 4. For a sample of firms that report advertising expenses, we find that the coefficient of this variable interacted with cash flows is positive. This result implies that the sensitivity of capital expenditures to cash flow is *not* decreasing in the level of advertising, which is fundamentally different from our earlier results on corporate giving. Moreover, the interaction term between advertising and cash flow is not statistically significant. One reason for this finding could be that advertising expenses are considered a legitimate business expense and are determined as a percent of sales, so that advertising decisions are not made in anticipation of or concurrently with the level of firm cash flows. We conclude that corporate giving has a very different effect on capital expenditures than advertising expenses. In further (untabulated) regressions, we add advertising expenses in our baseline regression model and again find a negative effect of corporate giving on capital expenditures in firms with high cash flows, further confirming the free cash flow hypothesis.

Our second falsification test provides more evidence on the free cash flow problem by focusing on the timing of corporate charitable contributions. The free cash flow problem should induce a concurrent relation between cash flows and corporate giving, as managers make decisions on discretionary expenditures opportunistically. If corporate giving measures other firm characteristics, then lagging this variable in our baseline regression should not change our basic findings. In contrast, we find in model 2 of Table 4 that *lagged* corporate giving has no statistically significant effect on the investment-cash flow sensitivity, although the coefficient estimate is negative. Moreover, the investment sensitivity of cash flow is positive and highly statistically significant, suggesting that a dollar decrease in internal cash flow is associated with $0.302 decrease in corporate investments. This falsification test also misclassifies the largest and most profitable companies in the U.S. as financially constrained and gives us further confidence about our earlier conclusion that charitable giving on average is associated with free cash flow problems.

5.4 Subsample analysis

In this subsection, we analyze the incremental effects of corporate giving in different subsamples of firms where the negative effect of CEO rent extraction on investment is expected to be more pronounced. This analysis is in the spirit of Kaplan and Zingales's (1997) cost structure, $C(E, k)$, which is a function of the amount of externally funds raised (E) and the wedge between internal and external costs of funds (k). The first few explanatory variables focus on k and consider different measures of financial constraints. Specifically, we consider the KZ index, relative firm size, firm credit ratings, and dividend paying patterns to categorize firms as relatively more financially constrained. We then consider E and categorize firms according to their dependence on the external capital market.

The KZ index is widely used to categorize firms as financially constrained (Lamont, Polk, and Saaá-Requejo 2001; Malmendier and Tate 2005; Baker, Stein, and Wurgler 2003). As it is constructed, higher values of this index indicate a higher degree of financial constraint. Firm size is also used to separate financially constrained and unconstrained firms (Malmendier and Tate 2005; Hadlock and Pierce 2010). The intuition is that larger firms have more tangible assets that help facilitate external financing. The third criterion we focus on is firm credit rating, which is based on a firm's long-term credit rating provided by S&P. Firms with at least BBB rating have better access to external financing because k is expected to be lower (Lemmon and Zender 2010; Farre-Mensa and Ljungqvist 2016). The last category is based on a firm's dividend paying pattern (Rauh 2006). Firms that primarily rely on internal capital for funding investments due to their financial constraints are less likely to pay dividends.

Considering different subsamples of financially unconstrained firms, we report in models 2, 3, 5, and 7 of Table 5 that the effect of corporate giving on the sensitivity of investment to cash flow is more negative than in models 1, 4, 6, and 8 representing different samples of financially constrained firms. Moreover, the main coefficient of interest changes sign across these different subsamples of financially constrained firms and is never statistically significant.

In models 9 and 10 of Table 5, we divide firms according to their demand for external financing. Specifically, we follow Rauh (2006) and categorize firms as financially unconstrained if their cash flows

are greater than their capital expenditures. In untabulated results, we first analyze the traditional investment regressions similar to Fazzari, Hubbard, and Petersen (1988) and Kaplan and Zingales (1997). Consistent with Panel 5, Table VI of Rauh (2006), we find that the cash flow coefficient is more positive and statistically significant in the subsample of firms that do not require trips to the external capital market. On the other hand, for the sample of firm-years where capital expenditures are greater than cash flows, this coefficient is positive, but not significant at conventional levels, suggesting that these firms primarily depend on external financing for investments. Thus, although we report results for both samples, our primary focus is on the subsample that does not require external financing as the investment-cash flow sensitivity for this sample is economically meaningful for testing our second hypothesis.

To be consistent with our other models, we estimate our baseline regression model considering both subsamples of firms in models 9 and 10. For the sample of firms where cash flows exceed capital expenditures, we find that corporate giving reduces capital expenditures in firms with high level of cash flows, consistent with our earlier findings. This evidence is also consistent with the argument that managers are less likely to extract private benefits at the cost of shareholders when operating cash flows are inadequate to cover internal investment needs, supporting our second hypothesis. Overall, this subsample analysis along with our baseline regressions and falsification tests offer robust evidence that is largely consistent with the free cash flow hypothesis and highlight the importance of private benefits in affecting traditional regression estimates of investment sensitivity to cash flows.

5.5 Corporate governance

So far, our results suggest that managers' pursuit of private benefits from corporate giving is associated with reduced level of investments in firms with high cash flows. Although we consider firm and year fixed effects and different established covariates in our investigation, one could plausibly argue that private benefits of control are a manifestation of poor corporate governance structures. Therefore, corporate philanthropic contributions should not have any explanatory power in the sample of firms with strong corporate governance measures. In this subsection, we test this line of arguments by considering cross-

sectional difference in board independence, CEO ownership, antitakeover defenses, and CEO power, as measured by CEO-chairman duality.

There is a growing consensus that board independence positively affects firm value. For example, Weisbach (1988) finds that CEO turnover is more sensitive to firm performance when boards are dominated by independent directors. Guo and Masulis (2015) show similar evidence while also highlighting the important role that an independent nominating committee plays. Similarly, Duchin, Matsusaka, and Ozbas (2010) find that outside directors increase firm performance when cost of acquiring information is low. To test the importance of board composition, we define board independence conservatively as boards having at least 60% independent directors and a nominating committee composed solely of independent directors. We obtain this data from the RiskMetrics database.

As further governance measures, we include CEO ownership, which is mainly motivated by Jensen and Meckling (1976), who argue that managers are less likely to extract private benefits if their economic interests are better aligned with the interests of minority shareholders. We also include two alternative measures of antitakeover defenses, specifically the G-index and the E-index, motivated by Gompers, Ishii, and Metrick (2003) and Bebchuk, Cohen, and Ferrell (2009), respectively. Several studies show that managers in firms with more antitakeover defenses are relatively immune to market discipline and therefore are more likely to make value reducing corporate decisions (Cremers and Nair 2005; Masulis, Wang, and Xie 2007). Furthermore, we consider a CEO's dual role as board chair, because this role provides CEOs with significant additional influence over board committee assignments and director nominations. Consistent with this argument, Core, Holthausen, and Larcker (1999), Goyal and Park (2002), and Bebchuk and Cohen (2005) show that CEOs with dual roles are more able to extract rents. We also obtain information on these variables from RiskMetrics. Lastly, we examine corporate sales to calculate the industry's Herfidahl-Hirschman index (HHI), since firms in industries with less product market competition face weaker managerial discipline. Consistent with this, Giroud and Mueller (2010) argue that agency problems are more serious in firms with lower product market competition.

We perform a subsample analysis based on these corporate governance measures, as managers are more likely to extract private benefits when corporate governance is weak. Thus, we expect the negative effect of corporate giving to be concentrated in samples of firms where corporate boards are not independent, CEO ownership is low, antitakeover defenses are many, CEOs are more powerful as indicated by holding the board chair position, or product market competition is low. In Table 6, we report samples of firm-years with good (poor) corporate governance measures in odd (even) columns. We find that the interaction of corporate giving with cash flows is negative and statistically significant only in the sample of firms with poor corporate governance measures, suggesting that corporate giving, as a cash flow problem, has a more pronounced effect on investment decisions when the interests of managers and shareholders are less closely aligned.

5.6 A natural experiment with the 2003 dividend tax cut

Despite finding a robust association between corporate giving and capital expenditures in firms with high level of cash flows, a common critique is the direction of causation. The concurrent timing of cash flows, corporate giving, and investments make this problem particularly challenging. Another potential concern with our analysis is that managers may strategically give away corporate resources when investment opportunities are depressed. While this does not contradict our hypothesis, one may argue that depressed investment opportunities may be correlated with both high cash flows and discretionary expenditures like corporate giving, raising suspicion about which of these two explanatory variables actually affects corporate investments.

To address these concerns, we conduct a quasi-natural experiment exploiting the 2003 Tax Reform Act, which reduced the personal tax rate on dividends from a maximum rate of 35% to 15% (Chetty and Saez 2005). This tax cut substantially increases the after-tax value of equity distributions and was largely a surprise to the market (Lin and Flannery 2013). Because the cost of extracting private benefits is affected positively by the personal income tax for a fixed amount of CEO ownership, the 2003 Tax Reform Act raises the cost of private benefits consumption by cutting the personal tax rates on dividends. Consistent

with this argument, Masulis and Reza (2015) find that corporate giving falls after 2003.[7] In this study, we go beyond this evidence to analyze whether subsequent reductions in corporate giving are associated with increases in corporate investments. Specifically, we interact the post-2003 indicator variable with cash flows and corporate giving, and modify our statistical model using two alternative approaches to accommodate this natural experiment.

In the first formulation, we define a variable called *Corporate giving*$_{t,2003}$ that considers the set of firms making charitable contributions before 2003. We then track the corporate giving patterns of these firms before and after 2003 and relate them to capital expenditures by interacting *Corporate giving*$_{t,2003}$ with the *Post-2003* indicator variable. If managers extract private benefits from corporate charitable contributions, the higher costs of consuming private benefits after 2003 should result in reduced corporate giving in firms with high levels of cash flows, allowing the firm to invest more in capital expenditures. Or equivalently, managers may not have the incentive to time private benefits after 2003, given the dramatic increase in the cost of private benefits consumption. To test this proposition, model 1 of Table 7 focuses on the interaction of *Post-2003* x *Cash flow*$_t$ x *Corporate giving*$_{t,2003}$, while also controlling for *Post-2003* x *Cash flow*$_t$ and *Post-2003* x *Corporate giving*$_{t,2003}$ separately.

Examining firms making charitable contributions before 2003, we find that the investment sensitivity to cash flows is negative and statistically significant in the post 2003 period. Specifically, given a typical firm's average level of cash flow, one standard deviation decrease in corporate giving after the year 2003 is associated with a 3.03% increase in capital expenditures. All control variables have signs and significance levels consistent with estimates in our baseline regressions. However, the negative coefficient of the interaction between corporate giving and cash flows is no longer significant, suggesting that the power of our results could potentially arise from the time-varying relation between corporate giving and capital expenditures in the pre and post 2003 periods.

[7] Using this 2003 dividend tax cut, Cheng, Hong, and Shue (2013) document a significant reduction in CSR activity, Lin and Flannery (2013) find decreases in leverage, and Dhaliwal, Krull, and Li (2007) report reductions in the cost of equity.

In further investigations, we categorize firms by analyzing whether they overinvested in corporate giving before 2003, as managers of these firms are most likely to cut back on charitable contributions due to the increased cost of private benefits. To test this proposition, we replace *Corporate giving*$_{t,2003}$ in model 4 of Table 7 with *Corporate giving of the treated*$_t$, which tracks corporate giving of firms that overinvested in corporate charitable contributions before 2003. We employ an OLS model similar to the specification presented in model 3, Table 2 of Masulis and Reza (2015) to categorize firms as overinvesting in corporate giving if the predicted residual falls in the highest quartile.[8] With this second formulation, we again find that the negative effect of corporate giving on the investment sensitivity of cash flows is concentrated in the post 2003 period. Economically, the result suggests that a one standard deviation reduction in corporate giving after 2003 is associated with 2.76% increase in the investment rate.

Perhaps more interestingly, we find in models 2, 3, 5, and 6 of Table 7 that the post-2003 negative effect of corporate giving is more pronounced in the sample of firms with high CEO ownership, where a higher portion of corporate giving cost must be borne by CEOs. Overall, the results of this subsection confirm our earlier finding by exploiting an exogenous shock to the cost of corporate giving. It may be the case that managers give away corporate resources when investment opportunities are depressed. However, it is difficult to perceive that a typical firm will have a very different set of investment opportunities before and after 2003, which would induce predictable changes in corporate giving coinciding with the effect of the dividend tax cut and thus, affect investments. Moreover, to the extent that the change in the cost of private benefits produces a substitution effect between capital expenditures and corporate giving, this identification strategy should be fruitful and yield further evidence supporting our hypothesis.

5.7 Hedge fund activism: an exogenous shock to the firm governance

In an influential paper, Brav, Jiang, Partnoy, and Thomas (2008) document increased stock performance of firms targeted by hedge fund activists. They argue that hedge fund activism reduces the

[8] The specification models corporate giving as a function of advertising expenses, R&D expenses, the number of employees, and several other profit maximizing variables of corporate giving.

expected free cash flow problems as target firms subsequently increase their payout and leverage ratios. Consistent with Brav, et al (2008), Figure 1 shows that one particular way hedge funds help target firms to boost performance is through rationing discretionary expenditures.[9] Specifically, we find that the average (median) amount of corporate charitable contributions in firm-years without hedge fund activism is $5.55 million ($15.30 million), whereas it is only $2 million ($3.25 million) in the subsequent firm-years with hedge fund activism.

While the observed changes in corporate charitable contributions are most likely forced on a firm's board and thus exogenous, one could argue that there are potentially more important cost reductions due to hedge fund activism, which could make firms more cost-efficient and hence, more profitable. However, this concern should not undercut our analysis because corporate giving then would be correlated with the reduction in other discretionary expenditures that benefit managers at the expense of shareholders. Based on this argument, we re-estimate our baseline regression model after including an indicator for $HF\ activism_t$, which takes the value of 1 for all years after hedge funds cross the 5% stock ownership level in target firms. We also interact $HF\ activism_t$ with $Cash\ flow_t$ x $Corporate\ giving_t$. Table 8 shows that a decreased amount of corporate giving, documented in Figure 1, is associated with an increased level of investments following the onset of hedge fund activism. The effect is also economically significant. Specifically, a one standard deviation decrease in corporate charitable contributions is associated with an approximate 4.4% increase in corporate investment for a firm experiencing average cash flows. This again suggests a robust negative causal relation between corporate giving and investment, especially in firms with free cash flow problems, supporting Jensen's free cash flow hypothesis.

5.8 M&A deals as external investments

Up to now, our investigation is primarily limited to capital expenditures, although our free cash flows hypothesis does not specify a particular form of investment. Moreover, we cannot measure

[9] We thank Professor Alon Brav for generously sharing data on hedge fund activism during our sample period.

shareholder reaction to internal investments, because of the proprietary nature of a firm's internal business operations. In contrast, external investments, specifically M&A transactions, provide us with a promising opportunity to quantify shareholder reactions. This is particularly helpful since we can estimate how shareholders react to future investments given their knowledge of managers' extraction of rents from current cash flows. Existing studies use different proxies to gauge the effect of private benefits of control on M&A transactions. For example, Lang, Stulz, and Walkling (1991) consider high cash flows in low *q* firms to proxy for free cash flow problems, assuming managers of such firms waste resources pursuing private benefits. Taking a more direct approach, Masulis, Wang, and Xie (2009) use the wedge between manager voting and cash flow rights to measure private benefits of control. In contrast, we are able to use the actual dollar costs of a specific private benefit to gauge shareholders' reaction to future investments.

By analyzing 1,072 completed mergers by our sample firms over the 1998-2006 period, we first present regressions on M&A deal value. Similar to previous studies, we use SDC data where acquirers obtain more than 50% of target shares to obtain 100% ownership after the deal completion. The average and median target values are $180 million and $1,219 million, respectively, suggesting that some mergers in our sample are particularly large. The average deal size is 8.79% of acquirer's total assets, which is slightly greater than that reported in Guner, Malmendier, and Tate (2008). We find that 26.68% of these deals represent acquisitions of public firms, whereas approximately 53% represent acquisitions from outside the acquirer's industry, based on Fama-French 48 industry classifications.

Panel A of Table 9 presents our baseline regression results, where we scale all variables by book value of total assets to be consistent with the M&A literature. We find that the investment-cash flow sensitivity is large, positive and statistically significant in these regression models, suggesting that the average M&A transaction is partly financed by the acquirer's internal capital. More interesting is the finding that the interaction term between corporate giving and cash flow is negative and statistically significant at the 1% level. Similar to our earlier results, this result again shows that the investment-cash flow sensitivity is overstated if private benefits of charitable giving are not controlled for in the traditional investment

specifications of Fazzari, Hubbard, and Petersen (1988), Kaplan and Zingales (1997) and Almeida and Campello (2007). Also, consistent with the free cash flow hypothesis, our analysis of M&A transactions confirms our earlier findings based on internal investment activity, namely that corporate charitable contributions reduce investments of firms with high cash flow levels.

Based on the evidence provided so far, one might still argue that private benefits do not pose any problem as they are part of an optimal employment contract. In other words, private benefits may not represent unusual CEO rent extraction at the expenses of shareholders if boards reduce compensation in anticipation of a CEO's rent seeking incentives (Fama 1980). We argue that this is simply not the case. If private benefits from corporate giving were part of an optimal employment contract, then shareholders would not use this information to value future corporate investments that are publicly disclosed. On the other hand, if shareholders view such private benefits as unexpected rent seeking, then they would use this information to discount returns on future corporate investments. In contrast to a firm's internal investment, M&A transactions provide us with an opportunity to test these predictions systematically in a regression framework since we observe detailed information on deal value, deal announcement date, acquirer ownership in the target firm before and after the transaction, the type of target, etc.

We analyze five-day abnormal returns around M&A announcements in Panel B of Table 9. We calculate the cumulative abnormal returns (CARs) by taking the difference between the stock's daily returns and CRSP value-weighted index returns over the five-day announcement period using a conventional one-factor market model. For our sample of 1,072 M&A transactions, the average CAR is 0.158% with a *t*-statistic of 2.53. So, the average acquisition performance is better than that documented in several existing studies (Mueller, Schlingemann, and Stulz 2005; Guner, Malmendier, and Tate 2008), which could be due to our larger acquirer sample, i.e. Fortune 500 firms. Next, we are interested in analyzing whether there is heterogeneity across CARs that could be explained by private benefits of corporate giving.

Model 1 reports the analysis with CAR regressions by using all the explanatory variables from our baseline regression model, i.e., equation 2. In addition, model 2 controls for other variables known to

explain abnormal returns around M&A announcement dates (Mueller, Schlingemann, and Stulz 2005; Masulis, Wang, and Xie 2007; Lin, Officer, and Zou 2011). In all these models, the main variable of interest, the interaction between corporate giving and cash flows, is negative and highly statistically significant. This finding suggests that shareholders forecast future rent seeking behavior of managers by examining managers' current consumption of private benefits. Economically, our results suggest that for a typical firm with average cash flows, a one standard deviation rise in corporate giving is associated with a 0.30% reduction in cumulative abnormal returns around an acquisition announcement.

In models 3 and 4, we separate the sample of M&A deals based on the overlap between acquirer and target industries. If the acquirer and target operate in different industries, we categorize the transaction as a diversifying acquisition. Harford (1999), among many others, argue that managers can reduce their undiversified portfolio risk or increase their ability to extract rents through diversifying acquisitions. Therefore, diversifying acquisitions are predicted to be associated on average with lower M&A announcement-period returns. In the context of our study, we should observe a stronger negative effect of corporate giving in diversifying acquisitions, as they signal that managers are particularly focused on managerial rent extraction. Consistent with this prediction, we find that the effect of corporate giving is entirely concentrated in the sample of diversifying acquisitions. In models 5 and 6, we further separate acquirers by the deal consideration, because managers are more able to pursue their private interests when they can avoid the scrutiny of the external capital market, which is possible when acquisitions are financed with a firm's internal cash. Examining deals financed entirely with stocks, we fail to identify any effect of corporate giving. In contrast, we find a negative and statistically significant effect of corporate giving in firms with high cash flows when deals are partially or completely cash financed. Overall, the capital market appears to discount the future returns on investments by taking into account managers' past consumption of private benefits of control.

5.9 Managerial aversion to external financing

So far, our analysis hinges on the assumption that the consumption of private benefits creates a managerial aversion to external financing. In this section, we formally test this proposition. Following Almeida and Campello (2010), we first consider a model that explains a firm's net debt and equity issuance as a function of cash flow, investment opportunity, firm size, cash holding, inventory, PPE, and debt-to-equity ratio. Augmenting this model with corporate giving and its interaction with cash flow, we are able to measure the effect of corporate giving on external financing. Panel A of Table 10 presents the results of this test. We find that a typical firm raises about 33.5 cents for every dollar of internal cash flow shortfall. However, this effect falls by almost 2.5 cents if a firm raises its corporate giving from the 50th to the 75th percentile, which suggests that managers have a tendency to avoid external financing when extracting private benefits from the firm.

In a further test, we analyze whether managers have an aversion to debt financing when firms raise capital from the external market. Because managers are required to pay a fraction of future cash flows as debt service payments, debt issuance solves agency problems of free cash flows (Jensen 1986). To test this prediction, we consider a model that explains net debt financing by financing deficit and its interaction with corporate giving (Shyum-Sunder and Myers 1999). If managers avoid debt financing when extracting private benefits from the firm, then the effect of financing deficit should decline as a function of corporate giving. Results are presented in panel B, Table 10. We find that a typical firm raises about 93.8 cents of debt for every dollar of financing deficit. However, debt issuance declines by 3.48 cents if a firm raises charitable giving from the 50th to the 75th percentile.

Since different corporate governance mechanisms interplay (see, e.g., Giroud and Mueller 2011), we also expect managers who are protected from the market for corporate control and product market competition to be less likely to raise external capital so as to avoid monitoring from the external capital market. To test this premise, we report subsample analysis based on firm antitakeover defenses and product market competition in columns 2-5 where we analyze the total amount of external financing as well as total debt financing. We find that the negative effect of corporate giving is concentrated in the subsample of

firms that have very high number of antitakeover defenses (column 2) and face low product market competition (column 4). Overall, the analysis in this section supports the prediction of external financing aversion and suggests that managers of firms undertaking corporate giving exhibit a strong aversion to undertaking external financing in general and debt financing in particular, especially when they are relatively insulated from the market for corporate control and product market competition.

5.10 Robustness

As additional tests, we re-estimate the baseline regression model by scaling variables by beginning-of-period book value of total assets. The interaction between cash flow and corporate giving remains negative and statistically significant. In a further test, we rule out the possibility that managers make corporate charitable contributions when their firms' investment opportunities are depressed. Specifically, we split the sample by median Tobin's *q*. We find that the interaction coefficient of $Cash\ flow_t$ x $Corporate\ giving_t$ is -0.216 (*p*-value = -1.91) in the subsample with higher investment opportunities, while it is positive and statistically significant (1.827 with a *p*-value = 0.015) in the subsample of firms with lower than median investment opportunities. This evidence suggests that managers give away corporate resources when there are high cash flows and greater investment opportunities.

Another approach for testing the free cash flow hypothesis is to analyze whether firms continue to make substantial charitable contributions after CEO turnovers, especially when new CEOs are recruited from outside. If charitable contributions represent private benefits of the CEO, then when a new CEO arrives, it is unlikely that they will have the same preference for charitable contributions. Moreover, outside CEO appointments often indicate a strong reputation (Milbourn 2003), which suggests that these outside CEOs are more likely to discount private benefits that accrue from corporate giving. On the other hand, if these contributions are beneficial to firms and their shareholders, then we would expect these contributions to continue under the new CEOs, even if they are external hires. We find that the negative effect of corporate giving is statistically significant only in the sample of firm-years that appoint internal candidates as CEOs, which again suggests that entrenched managers support corporate giving at the cost of underinvestment.

We also perform subsample analysis based on CEO tenure and find that the negative effect of corporate giving on investment is prevalent in the subsample of firms where CEO tenure is greater than the sample median, indicating that this relation between corporate giving and investment is due to potential managerial entrenchment associated with very long CEO tenure.

While our analysis supports a strong negative effect of corporate giving on investment, it does not specify what type of investments are adversely affected. So in further analysis, we focus on advertisement and R&D expenses separately using equation (2). In unreported tables, we consider R&D expenses as the dependent variable in equation (2) and find a significant negative coefficient of corporate giving (θ_1= -0.055, *p*-value = 0.063). We also find a negative coefficient of corporate giving that is statistically significant when we consider advertising expenses as the dependent variable (θ_1= -0.785, *p*-value = 0.011).[10] Overall, these results suggest that corporate giving significantly crowds out R&D and advertising expenses, which are expenses that are not associated with rent extraction and are widely believed to enhance firm value.

6. Conclusion

We uncover a wide range of evidence that corporate charitable contributions provide managers with the ability to expropriate rents at the expense of shareholders. Since managers appear to opportunistically extract rents when operating profits are strong, the investment sensitivity to cash flow in traditional regression models of capital expenditures are likely to be over-estimated. Using corporate giving as an instrument for private benefits, we show that the investment-cash flow sensitivity is not significant when private benefits of corporate giving are taken into account. Specifically, we find this sensitivity to decrease in the level of corporate giving. Or equivalently, corporate giving reduces capital expenditures in firms with high level of cash flows, consistent with Jensen's (1986) free cash flow hypothesis. We provide

[10] While this evidence contradicts Brown, Helland, and Smith (2006) who report that corporate giving is complementary to advertising expenses, it is consistent with the results in Masulis and Reza (2015) where advertising expenses does not have any explanatory power in a model of corporate giving.

falsification tests, where we use advertising expenses in place of corporate giving, to show that the effects of corporate giving on investments are qualitatively different from the effects of advertising expenditures, which enhance expected sales and earnings. Consistent with a free cash flow problem, we show that the *concurrent* amount of corporate giving, but not its lagged value, reduces investment. Our conclusions are strengthened with two quasi-natural experiments that use the 2003 dividend tax cut as an exogenous shock that raises the cost of private benefit extraction and hedge fund activism, which strengthens the firm governance structure exogenously. The effect of corporate giving is more pronounced in firms that are financially unconstrained and less prone to external capital market monitoring. We also show that consumption of private benefits creates a managerial aversion to external debt financing.

Overall, our results support the free cash flow hypothesis and suggest another reason why the conventional estimates of investment sensitivity to cash flow has produced poor measures of financial constraints. We also show that managerial consumption of private benefits has real economic consequences. After raising this serious problem, we offer a solution that entails using an instrument for managerial extraction of private benefits. One implication of this study is that shareholders may benefit from participating in a firm's decision to make charitable contributions and by requiring firms to plan ahead for corporate giving much like they do for advertising expenses. Alternatively, the SEC and shareholders could simply require timely disclosure of corporate charitable contributions and whether senior managers and directors have ties to charities that receive these corporate donations. Based on the analysis, we also recommend excluding corporate donations to improve measures of CSR.

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Figure 1: Average and median charitable contributions of publicly listed Fortune 500 firms before and after hedge fund activism (HFA) during 1998-2006. The darker (lighter) column presents median (average) values.

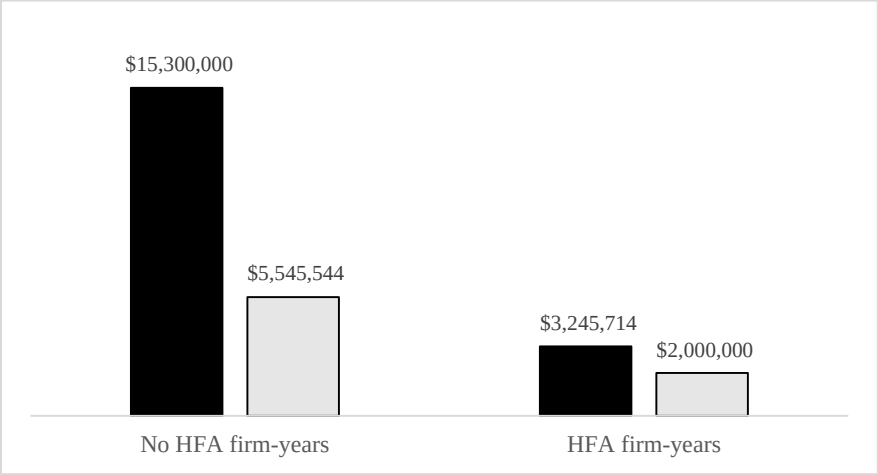

Table 1: Corporate giving, CEO affiliated donations, and the free cash flow problem

This table reports average levels of corporate giving to CEO affiliated nonprofit organizations and firm cash flow. We first sort total amount of corporate contributions into quartiles and then report in column 1 (2) the amount of CEO affiliated (unaffiliated) contributions based on Fortune 100 firms. In columns 3 – 6, we further categorize each corporate giving quartile into four cash flow categories and report total amount of charitable contributions for 2,551 firm-year observations based on the Fortune 500 firms.

Quartile sorting based on the amount of corporate giving (2,551 observations)						
	CEO affiliated donations	*CEO unaffiliated donation*	*Cash flow*			
			Quartile 1 Low	*Quartile 2*	*Quartile 3*	*Quartile 4 High*
Quartile 1 low			No corporate giving			
Quartile 2	542,042	1,920,334	1,673,900	1,758,502	1,800,283	1,815,058
Quartile 3	2,174,843	10,292,828	5,966,703	6,151,769	6,261,733	5,877,258
Quartile 4 high	2,761,779	86,407,269	19,495,194	50,573,089	62,452,632	66,473,484

Table 2: Summary statistics

The sample consists of 1,317 firm-year observations of Fortune 500 firms with positive corporate charitable contributions during 1998-2006. All variables are defined in the Data section. Panel A presents summary statistics of variables in equation 2. Panel B reports averages of corporate giving, investment, and Tobin's *q* (in parentheses) as percentages of beginning-of-period capital stock.

Panel A: Summary statistics of giving firms

	Average	Standard deviation	25th percentile	Median	75th percentile
Corporate giving$_t$ (%)	0.567	2.081	0.025	0.111	0.372
Investment$_t$	0.204	0.173	0.107	0.167	0.249
Firm size$_t$	9.523	0.980	8.806	9.641	10.431
Tobin's q$_{t-1}$	1.826	1.146	1.153	1.413	2.087
Cash flow$_t$	0.717	1.181	0.173	0.366	0.807
Tangibility$_t$	0.430	0.126	0.349	0.436	0.516

Panel B: Quartile sorting based on corporate giving and cash flow

	Cash flow			
	Quartile 1 Low	*Quartile 2*	*Quartile 3*	*Quartile 4 High*
Quartile 1 Low	No corporate giving			
Quartile 2				
Corporate giving (%)	0.047	0.090	0.145	0.433
Investment$_t$	(0.114)	(0.175)	(0.231)	(0.324)
Tobin's q$_{t-1}$	[1.619]	[1.589]	[1.690]	[1.997]
Quartile 3	0.124	0.144	0.367	1.428
	(0.112)	(0.161)	(0.213)	(0.311)
	[2.104]	[2.071]	[2.188]	[2.619]
Quartile 4 High	0.334	0.424	1.128	3.300
	(0.140)	(0.168)	(0.201)	(0.278)
	[2.178]	[2.145]	[2.105]	[2.088]

Table 3: Baseline regressions on private benefits and corporate investments

The samples in both panels are based on 1,317 annual observations of Fortune 500 firms with corporate giving data available. We use OLS regressions to estimate investment-cash flow sensitivity as specified in equation (2). All variables are defined in the Data section. Standard errors are robust and clustered at the firm level. *t*-statistics are reported in parenthesis. ***, **, and * denote statistical significance based on two-sided tests at the 1%, 5%, and 10% level, respectively.

Panel A

	$Investment_t / K_{t-1}$		
	(1)	(2)	(3)
Corporate giving$_t$		1.257	1.400*
		(1.62)	(1.70)
Cash Flow$_t$ x *Corporate giving*$_t$		-0.204***	-0.231***
		(-2.82)	(-3.04)
Tobin's q_{t-1}	0.005***	0.006***	0.006***
	(3.06)	(3.10)	(2.78)
Cash Flow$_t$	0.094**	0.095**	0.054
	(2.45)	(2.46)	(0.73)
Firm size$_t$			0.021
			(0.65)
Cash Flow$_t$ x *Firm size*$_t$			-0.006
			(-1.09)
Tangibility$_t$			-0.458***
			(-3.52)
Cash Flow$_t$ x *Tangibility*$_t$			0.246***
			(3.33)
Adjusted R^2	0.626	0.632	0.660
Observations	1,317	1,317	1,317
Year fixed effects	Yes	Yes	Yes
Firm fixed effects	Yes	Yes	Yes

Panel B

	$(Investment_t + R\&D_t) / K_{t-1}$		
	(1)	(2)	(3)
Corporate giving$_t$		0.963	1.310
		(1.12)	(1.43)
Cash Flow$_t$ x *Corporate giving*$_t$		-0.192*	-0.263***
		(-1.94)	(-2.87)
Tobin's q_{t-1}	0.009*	0.009*	0.008*
	(1.90)	(1.96)	(1.82)
Cash Flow$_t$	0.034	0.034	-0.093
	(0.40)	(0.41)	(-0.62)
Firm size$_t$			0.116
			(1.03)
Cash Flow$_t$ x *Firm size*$_t$			-0.008
			(-0.98)
Tangibility$_t$			-1.167***
			(-2.64)
Cash Flow$_t$ x *Tangibility*$_t$			0.500*
			(1.69)
Adjusted R^2	0.703	0.704	0.660
Observations	1,317	1,317	1,317
Year fixed effects	Yes	Yes	Yes
Firm fixed effects	Yes	Yes	Yes

Table 4: Falsification tests

The sample analyzed in model 1 is based on firm-year observations for which we have advertising data during 1998-2006, whereas model 2 consists of 1,317 annual observations of Fortune 500 firms with corporate giving data available. All variables are defined in the Data section. Standard errors are robust and clustered at the firm level. *t*-statistics are reported in parenthesis. ***, **, and * denote statistical significance based on two-sided tests at the 1%, 5%, and 10% level, respectively.

	$Investment_t / K_{t-1}$	
	(1)	(2)
Advertising$_{t-1}$	-0.075	
	(-0.92)	
Cash Flow$_t$ x *Advertising*$_t$	0.008	
	(0.66)	
Corporate giving$_{t-1}$		-0.461
		(-1.12)
Cash Flow$_t$ x *Corporate giving*$_{t-1}$		-0.056
		(-1.10)
Tobin's q$_{t-1}$	0.004**	0.003**
	(2.49)	(2.44)
Cash Flow$_t$	-0.074	0.302***
	(-1.32)	(5.26)
Firm size$_t$	-0.014	0.032
	(-0.46)	(1.38)
Cash Flow$_t$ x *Firm size*$_t$	0.010	-0.027***
	(1.48)	(-6.25)
Tangibility$_t$	-0.407***	-0.203**
	(-3.56)	(-2.53)
Cash Flow$_t$ x *Tangibility*$_t$	0.186**	0.128**
	(2.50)	(2.42)
Adjusted R^2	0.733	0.693
Observations	981	1,317
Year fixed effects	Yes	Yes
Firm fixed effects	Yes	Yes

Table 5: Subsample analysis of private benefits and corporate investments

This table is based on a sample of Fortune 500 firms with positive corporate giving data during 1998-2006. Panel B reports OLS regression estimates. All variables and subsampling criteria are defined in the Data section. Standard errors are robust and clustered at the firm level. *t*-statistics are reported in parenthesis. ***, **, and * denote statistical significance based on two-sided tests at the 1%, 5%, and 10% level, respectively.

Panel A

	KZ ≥ sample median	KZ < sample median	Size ≥ sample median	Size < sample median	Rating better than BBB	Rating worse than BBB	Dividend payers	Dividend non-payers	Investment > Cash flow	Investment < Cash flow
Corporate giving$_t$	0.001	0.010***	0.005	0.005	0.006	0.004***	0.006	0.004*	0.003	0.006***
	(9.12)	(9.11)	(10.608)	(10.608)	(15.31)	(10.90)	(9.33)	(4.07)	(5.831)	(9.135)

Panel B

	KZ ≥ sample median (1)	KZ < sample median (2)	Size ≥ sample median (3)	Size < sample median (4)	Rating ≥ BBB (5)	Rating < BBB (6)	Dividend payer (7)	Dividend non-payers (8)	Investment > Cash flow (9)	Investment < Cash flow (10)
	Investment$_t$ / K$_{t-1}$									
Corporate giving$_t$	0.545	1.207	1.639*	0.220	2.327*	0.150	1.209	1.915	-11.172	1.412*
	(0.19)	(1.63)	(1.77)	(0.67)	(1.78)	(0.17)	(1.52)	(0.40)	(-0.78)	(1.70)
Cash flow$_t$ x *Corporate giving*$_t$	0.790	-0.190***	-0.437*	-0.122	-1.202*	-0.121	-0.216***	-0.544	-15.635	-0.218***
	(0.47)	(-2.73)	(-1.80)	(-1.23)	(-1.87)	(-1.37)	(-2.92)	(-0.17)	(-0.57)	(-2.84)
Tobin's q$_{t-1}$	0.007***	0.007***	0.006**	0.005**	-0.000	0.008***	0.007***	0.006	0.014	0.004**
	(3.82)	(2.75)	(2.01)	(2.19)	(-0.16)	(6.12)	(4.09)	(1.64)	(1.17)	(2.39)
Cash flow$_t$	-0.369	0.022	0.079	0.037	0.268*	-0.066	0.047	-0.649	0.418	0.102
	(-0.43)	(0.37)	(0.89)	(0.32)	(1.75)	(-0.64)	(0.85)	(-1.39)	(0.49)	(1.24)
Firm size$_t$	0.030*	-0.054	0.031	-0.039	-0.035	0.007	-0.032	-0.023	0.053	0.000
	(1.41)	(-0.73)	(0.77)	(-1.44)	(-0.94)	(0.18)	(-0.78)	(-0.37)	(0.83)	(0.00)
Cash flow$_t$ x *Firm size*$_t$	0.036	-0.004	-0.010	-0.011	-0.024*	0.002	-0.009***	0.063	-0.023	-0.006
	(0.42)	(-0.80)	(-1.34)	(-0.85)	(-1.89)	(0.22)	(-2.83)	(1.46)	(-0.32)	(-0.96)
Tangibility$_t$	-0.089	-0.595***	-0.511***	-0.432**	-0.550***	-0.264	-0.430***	-0.871***	0.225	-0.396***
	(-0.67)	(-2.86)	(-3.54)	(-3.47)	(-3.98)	(-1.38)	(-3.29)	(-2.87)	(0.50)	(-2.73)
Cash flow$_t$ x *Tangibility*$_t$	0.220	0.166	0.305**	0.326**	0.199***	0.363*	0.267**	0.408**	-0.227	0.187**
	(0.83)	(1.42)	(2.82)	(3.38)	(3.43)	(1.78)	(2.36)	(2.47)	(-0.37)	(2.12)
Adjusted R^2	0.670	0.631	0.566	0.790	0.664	0.712	0.615	0.671	0.809	0.667
Observations	659	658	658	659	442	851	1,076	241	228	1,089
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table 6: Investment, corporate giving, and corporate governance

The table is based on a sample of Fortune 500 firms with corporate giving data available during 1998-2006. All variables, including the new corporate governance variables, are defined in the *corporate governance* section. Standard errors are robust and clustered at the firm level. *t*-statistics are reported in parenthesis. ***, **, and * denote statistical significance based on two-sided tests at the 1%, 5%, and 10% level, respectively.

Subsample analysis based on corporate governance measures

	Board indep. = 1 (1)	Board indep. = 0 (2)	CEO ownership ≥ sample median (3)	CEO ownership < sample median (4)	G-index < 10 (5)	G-index ≥ 10 (6)	E-index < 2 (7)	E-index ≥ 2 (8)	Duality = 0 (9)	Duality =1 (10)	HHI ≥ sample median (11)	HHI < sample median (12)
	Investment$_t$ / K$_{t-1}$											
Corporate giving$_t$	0.676	1.425	0.726	5.738*	1.912	1.365	0.867	1.032	3.353**	1.272	2.072**	-0.129
	(0.99)	(1.02)	(0.87)	(1.78)	(0.82)	(1.48)	(0.69)	(1.34)	(2.25)	(1.27)	(2.44)	(-0.15)
Cash flow$_t$ x	-0.147	-0.216*	-0.225	-0.601**	-0.501	-0.236***	0.394	-0.227***	-1.193	-0.149*	-0.189***	0.707
Corporate giving$_t$	(-0.84)	(-1.80)	(-0.71)	(-2.13)	(-0.74)	(-2.79)	(0.61)	(-3.23)	(-1.54)	(-1.70)	(5.77)	(1.56)
Tobin's q$_{t-1}$	-0.001	0.006***	0.001	0.005**	0.005	0.007***	0.867	0.007***	0.012***	0.005*	0.008**	0.004**
	(-0.66)	(2.85)	(0.65)	(2.28)	(1.57)	(3.89)	(0.69)	(5.58)	(3.05)	(1.67)	(2.21)	(2.40)
Cash flow$_t$	0.226***	-0.003	-0.190	0.170	-0.226	0.027	0.211	0.057	0.023	0.102	-0.006	0.307***
	(4.43)	(-0.02)	(-0.58)	(1.63)	(-1.22)	(0.28)	(0.91)	(0.66)	(0.13)	(0.95)	(-0.04)	(7.46)
Firm size$_t$	0.055*	-0.006	0.052	-0.008	0.074	0.012	0.035	0.042	0.089*	0.034	0.024	0.075***
	(1.76)	(-0.10)	(1.32)	(-0.16)	(1.26)	(0.28)	(0.63)	(0.99)	(1.69)	(0.88)	(0.50)	(3.08)
Cash flow$_t$ x	-0.018***	-0.001	0.014	-0.010	0.019	-0.003	0.022	-0.006	-0.006	-0.010	-0.004	-0.022***
Firm size$_t$	(-3.04)	(-0.07)	(0.47)	(-1.37)	(1.17)	(-0.35)	(-1.09)	(-0.86)	(-0.26)	(-1.17)	(-0.25)	(-6.38)
Tangibility$_t$	-0.090	-0.581***	-0.401**	-0.295	-0.333*	-0.350**	-0.766***	-0.288*	-0.539***	-0.337**	-0.284*	-0.116
	(-0.60)	(-2.71)	(-2.33)	(-1.50)	(-1.89)	(-2.39)	(-3.21)	(-1.77)	(-2.67)	(-2.30)	(-1.77)	(-0.89)
Cash flow$_t$ x	0.105	0.282***	0.376**	0.124	0.177	0.242**	0.308	0.215**	0.314**	0.207*	0.320***	-0.096
Tangibility$_t$	(1.40)	(2.70)	(2.57)	(0.92)	(1.31)	(2.51)	(1.63)	(2.24)	(2.02)	(1.87)	(3.68)	(-1.53)
Adjusted R^2	655	662	0.728	0.634	0.536	0.718	0.616	0.705	0.805	0.612	0.735	0.661
Observations	0.733		629	688	408	909	465	852	359	958	637	673
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table 7: Natural experiment using the 2003 dividend tax cut

This table reports on corporate giving by Fortune 500 firms during 1998-2006, with a focus on pre- and post-2003 dividend tax cut periods. In models 1-3, *Corporate giving*$_{t,2003}$ is defined as the sample of firms that made charitable contributions before 2003. In models 4-6, we estimate if a firm overinvested in charitable contributions before 2003. We define firm overinvestment in corporate giving if the difference between a firm's actual donation level and its predictable corporate contributions (considering an OLS model similar to model 3, Table 2 of Masulis and Reza (2015)) falls in the highest corporate giving quartile. All other variables are defined in the Data section. Standard errors are robust and clustered at the firm level. *t*-statistics are reported in parenthesis. ***, **, and * denote statistical significance based on two-sided tests at the 1%, 5%, and 10% level, respectively.

	Investment$_t$ / K$_{t-1}$					
	Whole sample (1)	CEO ownership > sample median (2)	CEO ownership < sample median (3)	Whole sample (4)	CEO ownership > sample median (5)	CEO ownership < sample median (6)
Post-2003 x *Corporate giving*$_{t,2003}$	0.569	7.634**	1.247			
	(0.32)	(2.04)	(1.13)			
Post-2003 x *Cash Flow*$_t$ x *Corporate giving*$_{t,2003}$	-0.939**	-3.415*	-1.533*			
	(-2.00)	(-1.94)	(-1.96)			
Post-2003 x *Corporate giving of treated*$_t$				-0.275	-3.837	
				(-0.22)	(-0.91)	
Post-2003 x *Cash Flow*$_t$				-0.602***	-0.067**	-0.028
x *Corporate giving of the treated*$_t$				(-3.67)	(-2.11)	(0.964)
Post-2003 x *Cash Flow*$_t$	0.011	0.005	0.034	0.008	0.002	-1.033
	(0.56)	(0.19)	(1.59)	(0.39)	(0.06)	(0.357)
Cash Flow$_t$	0.557	1.666	0.213	0.593	-0.119	0.051
x *Corporate giving*$_t$	(0.69)	(0.99)	(0.38)	(0.83)	(-0.08)	(0.926)
Corporate giving$_t$	1.146	-2.630	0.604	0.339	2.219	0.995
	(0.57)	(-0.76)	(0.49)	(0.23)	(0.70)	(0.366)
Tobin's q$_{t-1}$	0.007***	0.003	0.005**	0.006***	0.003	0.005**
	(2.82)	(1.55)	(2.48)	(2.68)	(1.08)	(0.014)
Cash Flow$_t$	0.031	0.278**	-0.122	0.049	0.251	0.157
	(0.48)	(2.52)	(-0.82)	(0.74)	(1.34)	(0.453)
Firm size$_t$	0.002	-0.032	0.066*	0.010	-0.032	0.019
	(0.06)	(-0.74)	(1.69)	(0.34)	(-0.58)	(0.72)
Cash Flow$_t$ x *Firm size*$_t$	-0.004	-0.028	0.006	-0.008	-0.024	-0.023
	(-0.77)	(-2.80)	(0.43)	(-1.29)	(-1.48)	(-1.19)
Tangibility$_t$	-0.321***	-0.727	-0.339***	-0.501***	-0.690***	-0.287**
	(-2.63)	(-4.06)	(-3.31)	(-3.94)	(-3.09)	(-2.01)
Cash Flow$_t$ x *Tangibility*$_t$	0.209***	0.323	0.313***	0.248***	0.304***	0.236
	(2.74)	(3.30)	(4.53)	(3.48)	(2.69)	(1.54)
Adjusted R^2	0.634	0.597	0.742	0.641	0.587	0.758
Observations	1,683	875	808	1,377	716	661
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Firm fixed effects	Yes	Yes	Yes	Yes	Yes	Yes

Table 8: Hedge fund activism and corporate giving

This table analyzes the effect of hedge find activism on the relation between corporate giving and investment. *HF activism* takes the value of 1 for years after a hedge fund acquires more than 5% firm ownership, and 0 otherwise. All other variables are defined in the Data section. Standard errors are robust and clustered at the firm level. *t*-statistics are reported in parenthesis. ***, **, and * denote statistical significance based on two-sided tests at the 1%, 5%, and 10% level, respectively.

	Whole sample (1)
HF activism$_t$	-0.041
	(-1.43)
HF activism$_t$ x *Corporate giving*$_t$	8.161**
	(2.41)
HF activism$_t$ x *Cash Flow*$_t$ x *Corporate giving*$_t$	-1.610**
	(-2.04)
HF activism$_t$ x *Cash Flow*$_t$	0.103***
	(2.99)
Cash Flow$_t$	-0.193*
x *Corporate giving*$_t$	(-1.81)
Corporate giving$_t$	0.245
	(0.40)
Tobin's q_{t-1}	0.004***
	(2.67)
Cash Flow$_t$	0.032
	(0.53)
Firm size$_t$	-0.013*
	(-1.93)
Cash Flow$_t$ x *Firm size*$_t$	-0.001
	(-0.22)
Tangibility$_t$	0.026
	(0.50)
Cash Flow$_t$ x *Tangibility*$_t$	0.066
	(1.01)
Adjusted R^2	0.399
Observations	1,312
Year fixed effects	Yes
Firm fixed effects	Yes

Table 9: Corporate charitable contributions and M&A performance

This table is based on M&A transactions by a sample of Fortune 500 firms with corporate giving data available during 1998-2006. Panel A uses deal value as the dependent variable, whereas Panel B reports five-day (-2, +2) cumulative abnormal returns calculated using a conventional one-factor market model around initial M&A announcement dates. All *M&A* related variables are defined in the *external investment* section. Standard errors are robust and clustered at the firm level. *t*-statistics are reported in parenthesis. ***, **, and * denote statistical significance based on two-sided tests at the 1%, 5%, and 10% level, respectively.

Panel A: M&A – cash flow sensitivity	
	Deal value / K_{t-1}
Corporate giving$_t$	0.605***
	(2.65)
Cash flow$_t$ x *Corporate giving*$_t$	-0.303***
	(-3.01)
Tobin's q_{t-1}	-0.006
	(-0.84)
Cash flow$_t$	1.625**
	(2.56)
Firm size$_t$	-0.093**
	(-1.35)
Cash flow$_t$ x *Firm size*$_t$	-0.173
	(3.25)
Tangibility$_t$	-1.500***
	(-1.98)
Cash flow$_t$ x *Tangibility*$_t$	1.503**
	(2.26)
Adjusted R^2	0.239**
Observations	1,072
Year fixed effects	Yes

Panel B: M&A announcement analysis

	CAR (-2, +2)					
	Whole sample		Diversifying acquisition = 1	Diversifying acquisition = 0	Stock Financed	Cash Financed
	(1)	(2)	(3)	(4)	(5)	(6)
Corporate giving$_t$ x *10^2*	0.951**	1.204***	3.280***	0.346	0.692	0.967**
	(2.21)	(2.78)	(3.37)	(1.02)	(0.36)	(2.31)
Cash flow$_t$ x	-0.468**	-0.582***	-1.791***	-0.069	-0.534	-0.448**
Corporate giving$_t$ x *10^2*	(-2.39)	(-3.08)	(-4.46)	(-0.34)	(-0.44)	(-2.20)
Deal value$_t$	-0.399***	-0.343***	-418*	-0.346***	-0.538	-0.281**
	(-3.78)	(-3.13)	(-1.82)	(-3.20)	(-2.93)	(-2.01)
Tobin's q$_{t-1}$	-0.009	0.005	0.028	-0.029***	0.018	-0.013
	(-0.60)	(0.32)	(1.19)	(-2.64)	(0.54)	(-0.84)
Cash flow$_t$	0.352	1.001	1.429	-0.305	0.376	0.312
	(0.42)	(1.17)	(0.83)	(-0.45)	(0.12)	(0.37)
Firm size$_t$	-0.764***	-0.719***	-0.491*	-0.931***	-1.470	-0.631***
	(-4.46)	(-4.16)	(-1.87)	(-4.35)	(-3.05)	(-3.25)
Cash flow$_t$ x *Firm size$_t$*	-0.029	-0.081	-0.208	0.062	0.064	-0.041
	(-0.34)	(-0.95)	(-1.55)	(0.76)	(0.24)	(-0.47)
Tangibility$_t$	-1.933	-1.233	-3.359	-1.570	3.894	-2.802
	(-0.98)	(-1.62)	(-0.81)	(-0.76)	(0.48)	(-1.40)
Cash flow$_t$ x *Tangibility$_t$*	1.257	-0.809	3.275*	0.626	-0.478	1.435
	(1.21)	(0.84)	(1.66)	(0.73)	(-0.14)	(1.23)
Stock price run-up		-1.230				
		(-1.60)				
Leverage		2.840**				
		(1.97)				
All cash		-0.355				
		(-0.99)				
Friendly		-0.218				
		(-0.12)				
Diversifying acquisition		-0.427				
		(-1.57)				
Public target		-0.862				
		(-2.17)				
Adjusted R^2	0.052	0.068	0.086	0.080	0.140	0.039
Observations	1,072	1,072	501	571	166	906
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes

Table 10: Corporate charitable contributions and external financing

This table is based on a sample of publicly traded Fortune 500 firms with corporate giving data available during 1998-2006. Panel A explains external financing, which is the summation of net equity and issuances, as a function of corporate giving and other variables reported in Almeida and Campello (2010). Panel B reports the analysis of net debt issued as function of financing deficit and corporate giving (Shyam-Sunder and Myers 1999). Standard errors are robust and clustered at the firm level. *t*-statistics are reported in parenthesis. ***, **, and * denote statistical significance based on two-sided tests at the 1%, 5%, and 10% level, respectively.

Panel A: External financing

	Whole sample	E-index ≥ 2	E-index < 2	HHI ≥ sample median	HHI < sample median
Corporate giving$_t$	0.142*	0.179*	-0.065	0.064	0.053
	(1.90)	(1.96)	(-0.56)	(0.54)	(0.52)
Corporate giving$_t$ x *cash flow*$_t$	0.939*	1.028*	0.088	0.862**	-0396
	(1.91)	(1.67)	(0.11)	(2.21)	(-0.60)
Cash flow$_t$	-0.335***	-0.286***	-0.371***	-0.241**	-0.409***
	(-5.23)	(-3.58)	(-3.10)	(-2.00)	(-6.00)
Tobin's q$_t$	-0.002	-0.002	-0.012	0.008	-0.011**
	(-0.48)	(-0.31)	(-1.64)	(0.97)	(-1.98)
Firm size$_t$	-0.018***	0.003	0.016	0.005	-0.001
	(-3.49)	(0.43)	(1.21)	(0.56)	(-0.10)
Cash holding$_{t-1}$	-0.029	0.089	0.037	-0.035	0.129
	(-0.61)	(1.57)	(0.32)	(-0.46)	(1.55)
Inventory $_{t-1}$	0.060	0.105	-0.164	-0.002	0.098
	(1.26)	(1.82)	(-1.48)	(-0.00)	(1.11)
PPE $_{t-1}$	-0.053	-0.072	-0.136*	-0.042	-0.187***
	(-1.44)	(-1.59)	(-1.88)	(-0.63)	(-3.61)
Debt / equity $_{t-1}$	-0.003*	-0.002	-0.005	-0.005	-0.003
	(-1.65)	(-1.07)	(-0.83)	(-1.20)	(-1.25)
Adjusted R^2	0.393	0.459	0.505	0.428	0.343
Observations	1,958	1,339	619	1,062	896
Year fixed effects	Yes	Yes	Yes	Yes	Yes
Firm fixed effects	Yes	Yes	Yes	Yes	Yes

Panel B: Net debt issued

	Whole sample	E-index ≥ 2	E-index < 2	HHI ≥ sample median	HHI < sample median
Corporate giving$_t$	0.107	0.142	0.102	0.203	-0.013
	(1.52)	(1.58)	(1.08)	(1.56)	(-0.67)
Financing deficit$_t$ x	-1.365***	-1.299***	0.618	-1.240**	-0.469
corporate giving$_t$	(2.94)	(-2.65)	(0.32)	(-2.42)	(-1.39)
Financing deficit$_t$	0.938***	0.952***	0.785***	0.935***	0.907
	(12.58)	(10.67)	(6.39)	(9.32)	(7.76)
Adjusted R^2	0.683	0.736	0.632	0.759	0.666
Observations	2,289	1,579	710	1,276	1,013
Year fixed effects	Yes	Yes	Yes	Yes	Yes
Firm fixed effects	Yes	Yes	Yes	Yes	Yes

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