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Disaster Relief, Inc.: When Is Corporate Philanthropy Good or Bad for Shareholders?

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We have benefited from conversations with Teresa Harrison, Jianfeng Hu, Alexander Ljunqvist, Roger Loh, Ron Masulis, Michael Weisbach, Joe Zhang, as well as We conference and seminar participants and discussants at ASSA, FIRN, AsiaPacific Corporate Finance Online Workshop, Australasian Banking and Finance Conference, PRI Academic Seminar Series, Financial Markets and Corporate Governance Conference, Fordham University, Fudan University, Peking University HSBC Business School, Singapore Management University, University of New South Wales, and Yonsei University. This work was supported by Australian Research Council Grant DE220100362. 1

Abstract

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Keywords: Natural disasters, corporate philanthropy, shareholder value, strategic benefits, agency costs

JEL Classifications: G32, G34, L21, M14

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1. Introduction

Corporate philanthropy is increasingly popular worldwide, with corporate giving amounting to more than US$21 billion in 2021 in the United States alone (Giving USA 2022). Corporations donate millions of dollars in cash and resources to charities through corporate foundations and corporate giving programs, particularly in response to disasters (Ballesteros, Usteem, and Wry 2017). For example, the Great East Japan Earthquake and Tsunami, which occurred in March 2011 off the Pacific coast of Tohoku, claimed over 15,000 lives and displaced about 500,000 people. The disaster triggered a humanitarian response totalling more than US$3.5 billion in donations, with two–thirds coming from non–governmental organizations and at least US$300 million from corporations (IDC Japan; U.S. Chamber of Commerce).

In this paper, we explore corporate philanthropy in the context of disaster relief giving to investigate the value implications of firms' engagement in charitable activities. Corporate philanthropy offers a clear and direct form of corporate social responsibility (CSR) that is comparable across firms, industries, and over time. Despite the large amounts of corporate resources dedicated to charity, standard economic theory predicts that firms should not make charitable donations unless doing so maximizes profits (Friedman 1970; Benabou and Tirole 2010; Kitzmueller and Shimshack 2012). Given the significant corporate expenditures on charitable giving, it is worth questioning why firms donate and what the value implications for shareholders are.

Consistent with the view that corporate philanthropy contradicts the profit–maximizing purpose of a firm, the prevailing perspective is that corporate giving is driven by insiders' pursuit of private benefits at the expense of shareholder value (Masulis and Reza 2015; Cai, Xu, and Yang 2021). Under this agency view, charitable giving reflects deeper agency issues within the firm,

which can diminish firm value. However, corporate philanthropy can also generate reputational benefits for firms. The strategic philanthropy view posits that corporate giving can increase firm value by enhancing the company's social image and raising customer awareness (Navarro 1988). This view aligns with the "doing well by doing good" approach in the CSR literature (e.g., Hong, Kubik, and Scheinkman 2012; Ferrell, Liang, and Renneboog 2016), suggesting that corporate giving can lead to better financial performance.

Although the agency and strategic views are not mutually exclusive, they are often contested. The existing CSR literature faces challenges in distinguishing between these two motivations since both agency costs and strategic benefits are related to a firm's governance quality, which is an intrinsic part of CSR when measured through environmental, social, and governance (ESG) performance (Servaes and Tamayo 2013). As a result, there is limited systematic evidence on the relative importance of agency motives versus strategic benefits and the conditions under which each dominates. This is partly due to the endogenous nature of firms' social activities. For instance, the decision to donate is not random; it may result from a firm's financial and operating performance, and both philanthropy and firm performance may be driven by unobservable firm or industry characteristics. These factors pose empirical challenges in identifying the causal effects of corporate philanthropy on firm value and in disentangling the agency and strategic effects.

In this paper, we provide a comprehensive analysis of the agency costs and strategic benefits of corporate philanthropy by investigating charitable donations following natural disasters. Natural disasters are large, salient shocks that attract widespread media attention, drawing interest from customers, shareholders, and other stakeholders (Barber and Odean 2008). Research in psychology and behavioral economics has shown that people tend to overestimate the probability of extreme events, such as natural disasters, and react disproportionately to them, as these events are more

readily brought to mind and induce an "availability heuristic" (Bordalo et al. 2012). The attention–grabbing nature of natural disasters amplifies the reputational and social capital–building benefits of corporate giving, providing a cleaner context in which we can distinguish strategic giving from agency–motivated giving.

Distinct from other types of corporate giving, disaster relief donations are typically announced in highly visible communications in the days and weeks following a disaster. Because disasters and the corresponding disaster relief donations are generally unanticipated, we can use an event study approach to directly capture investors' reactions to corporate giving. Unlike other CSR studies that assess the strategic benefits of corporate charitable giving using annual donation and performance data (e.g., Choi, Park, and Xu 2023), our study leverages more granular data at the donation announcement level. This allows us to more precisely quantify the market value trade–off between agency–motivated and strategic corporate giving. Additionally, natural disasters enable us to exploit disaster–specific factors, such as the timing of the disaster, to construct variables that capture firms' donation decisions but are unlikely to be related to firm–level characteristics.

Given that donations are usually made from a budget set at the beginning of the fiscal year for philanthropic use, firms' stock prices should already account for the pure effect of giving away cash. Therefore, we hypothesize that the extent to which cumulative abnormal returns (CARs) around a disaster relief donation announcement reflect agency costs versus strategic benefits depends on the saliency of the disaster. We expect that, in the absence of strong saliency, market reactions to disaster relief giving reflect its agency motive: donating directly reduces the firm's cash flows and may signal new information to the market about the size and severity of agency issues within the firm. However, larger and more salient disasters, which attract more stakeholder

attention, increase the reputation–building benefits and perceived legitimacy of using corporate funds for relief, leading to stronger stakeholder support and higher strategic benefits.

Based on a manually collected international sample of disaster relief donation announcements by publicly listed firms, we find that disaster relief giving by firms is associated with 0.06% lower cumulative abnormal returns (CARs) in the [–1, +1] day window around the donation announcement. This translates into a US$26.2 million loss in market value, far exceeding the direct mechanical effect of giving away cash resources. This result suggests that such donations might signal deeper agency concerns within the firm. These negative market reactions echo the idea that, on average, disaster relief giving reflects an agency problem, as managers "do good with other people's money" (Cheng, Hong, and Shue 2023).

However, consistent with the notion that saliency amplifies the strategic benefits of donating, we find that returns to corporate giving increase with disaster saliency. We proxy saliency through disaster severity (in terms of damage caused) and relevance (measured by web search intensity). Every percentage point increase in disaster severity and search intensity boosts the returns from donating by 0.05% and 0.17%, respectively. Moreover, while donations to small disasters are associated with 0.13% lower returns, these effects are mitigated for donations to larger disasters. In other words, market reactions reflect the higher strategic benefits of donating as disaster saliency increases.

To address concerns that a firm's decision to donate is not random, we use the timing of the disaster relative to the firm's financial year–end as an instrument for donation propensity. A common reason for firms to donate is to meet financial reporting goals and benefit from the tax–exempt status of donations (Petrovits 2006). As a result, donations tend to exhibit a strong seasonal pattern that correlates with firms' financial reporting dates and fiscal cut–off periods. We argue

that firms are more likely to donate if a disaster occurs early in their financial year, as they often set aside a fixed amount for charitable programs at the start of the year. Our data confirms that the donation likelihood for unaffected firms is almost twice as high for disasters occurring in the first three months of the firm's financial year, compared to those occurring later in the year. We validate our results in this instrumental variable setting and find that, on average, the instrumented donation propensity is negatively related to returns. However, returns increase with disaster saliency.

We further show that disaster relief donations may provide new information to the market about the presence and magnitude of agency concerns in the firm, as the negative returns for donating firms are amplified for "less anticipated" donations by first–time donors. Moreover, we show that these donations do not reflect the mechanical effect of giving away cash resources, as returns remain significantly negative for firms that do not make follow–up grant announcements. We also confirm that donating firms do not earn significantly different returns in a [–4, –2] placebo event window preceding the disaster or preceding the donation.

Next, we distinguish strategic philanthropy from agency–motivated giving by exploring how market reactions to disaster relief giving depend on various donation characteristics. For example, cash donations directly reduce the firm's liquid resources and can be used by managers to tunnel money to affiliated charities (Masulis and Reza 2015), whereas in–kind donations can provide a less costly and more transparent form of reputation and social–capital building. We indeed find that in–kind relief donations earn higher returns relative to cash donations. Additionally, direct donations made via a firm's corporate giving program are likely subject to fewer agency concerns compared to donations made through a firm's corporate foundation. Foundations are separate legal entities, funded primarily by the firm, and typically have a board of directors composed of both corporate executives and foundation–specific directors. This structure may result in more severe agency problems due to

(i) the separation of the economic and accounting effects of giving (Petrovits 2006), (ii) the divergence between shareholder and foundation management incentives (Masulis and Reza 2015), and (iii) the monitoring of the foundation, which is primarily conducted by representatives of the firm (Carter and Werbel 2002). Consistent with the view that corporate foundations may amplify agency costs, we find that donations made via foundations are associated with lower returns relative to direct donations. Moreover, we find that donation amount is non–linearly related to returns, suggesting a trade–off between shareholder and public sentiment.

To further disentangle the strategic and agency–motivated donation mechanisms, we focus on firm–level characteristics. We find that returns are less negative for donating firms with more domestically oriented operations and for firms that rely more on marketing in their day–to–day operations. Consistent with the existing literature, returns from providing disaster relief donations are more negative (i.e., more likely to reflect agency–motivated giving) in firms with poor governance. Moreover, we find that the strategic benefits of donating affect returns by influencing the firm's reputation, customer awareness, and stakeholder support. Firm–specific web searches are higher for firms donating to a large disaster, as are domestic sales, analyst recommendations, employee satisfaction scores, and the likelihood of winning a CSR award.

These results are robust to various other measures of disaster saliency, strategic benefits, and agency issues, and hold across various subsamples that, for example, distinguish U.S. and non–U.S. firms, and high– and low–market efficiency countries. We also confirm our results in a broader sample covering 52,499 firm–disaster observations for which we investigate the role of institutional characteristics and socially responsible investors, and show that our results are robust to excluding, for example, subsidiaries, suppliers, and customers in affected areas.

Our paper contributes to the growing literature on corporate charitable giving by reconciling two

main strands of the literature. On the one hand, some studies find that CEOs use corporate resources to give to charities in which they or other insiders serve as trustees, directors, or advisers. Such agency–motivated affiliated donations typically represent a misuse of corporate funds, which may distort investment and financing decisions (Masulis and Reza 2015; 2023) and impair independent directors' monitoring incentives (Cai et al. 2021). On the other hand, some studies find that corporate giving can provide strategic benefits by attracting customers and increasing sales (Madsen and Rodgers 2014; Choi et al. 2023), reducing future litigation and regulatory enforcement costs (Godfrey, Merrill, and Hansen, 2009; Lev, Petrovits, Radhakrishnan 2010), and increasing support from local stakeholders and employees (Montgomery and Ramus 2007; Patten 2008; Mithani 2017). Our disaster relief setting allows us to provide a more nuanced view of corporate philanthropy. It enables us to (i) observe the announcement date of the donation, allowing us to measure its market effects, and (ii) exploit arguably exogenous characteristics of the disaster, such as its timing, to construct an instrument, thereby enabling the identification of strategic benefits and agency costs in a cleaner, more precise setting. We find that, although on average the strategic benefits of disaster relief giving do not outweigh the costs associated with signaling agency problems in the firm, these agency costs can be mitigated when firms use philanthropy to build social capital in salient, attention–grabbing events.[1]

A related strand of the literature focuses on corporate charitable giving as a substitute for political lobbying. Bertrand et al. (2020) estimate that 6.3% of corporate giving may be politically motivated and show that firms direct donations to non–profits in constituencies of politicians that cover issues relevant to the firm. Moreover, Bertrand et al. (2021) find that corporate donations may also distort policy indirectly by incentivizing recipient non–profits to influence relevant

[1] Although a saliency mechanism may be less generalizable to philanthropy in other contexts, such as medical research or environmental protection, our findings indicate that the net effect of corporate philanthropy on firm value is a function of the relative importance of agency–motivated and strategic corporate giving, both of which can coexist in other types of charitable giving.

regulatory rulings, and Ahn, Houston, and Kim (2023) show that non–profits with corporate directors on their boards are more likely to lobby in favor of the corporation's interests. Our study contributes to this literature, as political influence–seeking may also be considered a strategic benefit of donating. Our findings complement the literature on politically motivated giving by identifying strategic benefits unique to disaster relief giving that are unlikely to overlap with political influence–seeking, as recipient districts are determined by the disaster zone rather than by the local legislator's presence on committees or other influence–seeking factors.

Our paper also contributes to the literature on the value implications of CSR, which generally shows a positive relationship between CSR and firm outcomes (e.g., Servaes and Tamayo 2013; Kruger 2015; Flammer 2015; Albuquerque et al. 2019). We exploit corporate philanthropy as a specific, direct form of CSR investment that is easily measurable, comparable and, in most cases, represents a pure cash outflow. Other forms of CSR, measured by ESG ratings, inherently measure governance (the "G" pillar of ESG), which is more indirect and ambiguous, and often face challenges in terms of objectivity and comparability (e.g., Chatterji et al. 2016; Berg et al. 2021; Berg et al. 2022). Moreover, CSR can affect firm value through various mechanisms that are not easily isolated. Our setting allows us to disentangle the agency problems and strategic benefits of CSR, offering a more nuanced perspective on firms' CSR investments.

2. Data and Summary Statistics

2.1 Data

Our main sample consists of manually collected disaster relief donation announcements from press releases and media reports. We construct this sample by starting with the universe of publicly listed firms for which accounting and financial data are available from Datastream, Compustat, or CRSP.

We then zoom into a sample of firms located in a disaster–affected country, but in an unaffected locality, and measure their abnormal stock returns around such disasters and the corresponding disaster relief donations using an event study approach around donation announcements to assess investors' reactions to corporate giving. We focus on firms headquartered in countries that were affected by at least one natural disaster during our sample period (2006–2018), for which data on charitable giving are available.

We obtain data on natural disasters from EM–DAT, an international disaster database that records all disasters worldwide since 1900 with at least 10 or more deaths, 100 or more people affected, a state of emergency declared, or an international call for assistance. The database details the cities, counties, and regions affected, allowing us to distinguish between firms headquartered in affected areas and those located elsewhere. We focus on sudden disasters such as earthquakes, landslides, volcanic activity, and tropical storms, excluding long–term events like droughts or heat waves, to ensure the disasters are unanticipated.

We collect data on corporate donations from Foundation Maps, a comprehensive data source providing global coverage of donations by publicly listed firms. We identify 1,219 firm–disaster observations linked to disaster relief donations. The majority of donations are announced by firms headquartered in the U.S., Japan, and China. We manually match the donation announcements to their corresponding firm–disaster pairs and collect data on announcement dates, resulting in 1,162 donation announcements (95% coverage). Appendix A provides details on the manual data collection process.

Because we cannot observe donation announcement dates for non–donating firms, we construct a nearest–neighborhood matched sample of non–donors, selecting up to five controls for each donating firm in the same headquarter country–year bracket, ranked by firm size (in terms of

total assets) and industry. Our final sample consists of 6,302 observations, of which 1,162 reflect actual disaster relief donations.[2]

In our main analysis, we calculate a firm's cumulative abnormal returns (CARs) in a [–1, +1] window around the donation announcement ($CAR_{don.}$), where abnormal returns are calculated relative to expected returns estimated using the capital asset pricing model (CAPM) over a [–252, –2] window, and where we use the local market index of the firm's home country as the benchmark index. This approach ensures we capture market reactions to the donation decision, rather than to other potential confounding factors. In additional tests, we also calculate $CAR_{dis.}$ over a [–1, +21]–day event window around the disaster in an unmatched sample of 52,499 firm–disaster observations for which we do not utilize—though may still observe—precise announcement dates, but which covers a wider range of firms, countries, and disasters. In Figure 1, we show that more than 70% of donations are made inside the [–1, +21]–day window around a disaster. The broader coverage of this sample implies we observe more variations in terms of cross–country institutional differences and firm ownership structures, which we exploit in robustness tests in Section 3.8 to gain deeper insight into the factors driving market reactions to firms' disaster relief donations.

2.2 Summary Statistics

We distinguish average [–1, +1]–day industry– and country–adjusted donation announcement CARs for donating and non–donating firms based on disaster saliency (in terms of damage caused) in Figure 2. We find that (i) CARs are insignificantly different from zero for non–donating firms following both small and large disasters, (ii) CARs are insignificant for firms donating to small

[2] The sample size is larger than the sample used in our baseline estimations in Table 2 as the inclusion of highly granular fixed effects at the administrative area–by–year level drops some observations. We however report summary statistics for the entire sample, as we use these observations in estimations with less granular fixed effects in, e.g., Tables 5 and 7.

disasters, and (iii) CARs are significantly positive for firms donating to large disasters. These figures provide a cursory indication of the diverging patterns in returns for different levels of disaster saliency.

In Panel A of Table 1, we report summary statistics for the explanatory variables used in our main estimations for donating and non–donating firms. Donor and non–donor firms are comparable in terms of total assets, indicating the appropriateness of our matching procedure. However, firms that make disaster–specific donations tend to be more profitable, have more fixed assets, and are less likely to engage in foreign activities. We exploit the latter finding in our investigation of strategic benefits of providing disaster relief donations. One economic reason for firms to engage in philanthropy is its tax deductibility (Navarro 1988). However, because there is limited variation in tax rates for firms located in the same country, we find no significant differences in tax rates after our matching procedure.

We investigate disaster– and donation–specific variables in Panel B. We find that, by construction, donor and non–donor firms are exposed to the same disasters. The average disaster results in US$4.3 billion in damages, and our sample skews toward larger disasters relative to the universe of disasters in EM–DAT: 65% of donation announcements are made following large disasters in the top quartile of the distribution (damages exceeding US$550 million), and 8% are made following small disasters in the bottom quartile of the distribution (damages below US$2 million). Among donor firms, firms donate on average 0.02% of their total assets (approx. US$1.5 million), although the median donation is much lower at 0.001% of assets (approx. US$250,000). 57% of donations are cash and 13% consist of in–kind donations, including donated equipment, products, or volunteering time. 33% of donations are made via the firm's corporate foundation, with the remainder made as one–off donations or via the firm's corporate giving program.

[Insert Table 1 about here]

3. Results

3.1 Market Reactions to Disaster Relief Donations

We investigate the relation between corporate philanthropy and firm value by evaluating stock market reactions around disaster relief donations for donating firms and their matched controls following an unexpected, sudden natural disaster. In particular, we estimate the following regression:

$$CAR_{don.}[-1,+1]_{i,d} = \alpha + \beta \cdot (Disaster\ Relief\ Donation)_{i,d} + \boldsymbol{\gamma \cdot (Controls)_{i,t-1}} + e_{ind} + f_{j,t} + \varepsilon_{i,d} \quad (1)$$

where *Disaster Relief Donation* is a binary indicator for whether firm *i* donated to disaster *d*. We include a vector of firm–level control variables (***Controls***), which includes firm profitability (*ROA*), fixed assets (*PPE/Assets*), firm size based on the natural logarithm of its total assets (*Size*), as well as an indicator for foreign activities to proxy for a firm's foreign customer base (*Foreign Activities*) and the firm's effective tax rate to capture tax–motivated giving (*Effective Tax Rate*). All accounting variables are measured in the year before the disaster happened. *e* denotes industry fixed effects, and *f* represents administrative area (county, state, province, or district) × year fixed effects. The inclusion of these various fixed effects subsumes all location– and industry–specific factors that may affect stock returns and corporate philanthropy decisions, and compares donors and non–donors in the same location in the same year and in the same industry. In doing so, we can account for any potential regulatory changes made following the disaster. Heteroskedasticity–robust standard errors are clustered at the administrative area level, and our results are robust to double clustering standard errors at the disaster and administrative area level.

Table 2 reports the results from OLS estimations for our main specification as set out in

Equation (1). First, we show in column (1) that donating firms located in unaffected areas earn 0.60% lower returns in the [–1, +1]–day window around the donation announcement relative to non–donating firms. The negative stock market reaction is in line with findings in previous studies, and consonant with the notion that corporate philanthropy is, on average, agency–motivated and may signal deeper and more tangible agency issues in the firm. Although there may be a mechanical effect from firms giving away cash when making a donation, the average market value loss for donating firms—approximately US$26.2 million, given average market capitalizations of US$43,634 million in our sample—far exceeds the average donation amount of US$1.5 million. This discrepancy potentially reflects the market's reaction to new information regarding agency issues within the firm, a notion we investigate in Section 3.3. The consistency with previous studies reduces the concern that these findings are driven by our sample choice or that they are specific to disasters. The coefficients for size and asset tangibility are insignificant. Profitability and tax rates are negatively related to CARs, but foreign activities are positively related to CARs, which may indicate firms' growth opportunities.

We then investigate the hypothesis that the returns from donating increase with the saliency of the disaster, which increases the strategic benefits of giving. We capture disaster saliency by considering disaster severity and relevance. More severe disasters are generally subject to more extensive media coverage and publicity and increase the legitimacy of the donation. Firms' charity campaigns are more visible and can provide a stronger signal of a firm's commitment and support to its stakeholders. We therefore expect that the returns from donating increase with the scale of and attention to the disaster.

In column (2), we proxy for disaster saliency by considering disaster severity in terms of (the logarithm of) the total damage caused in dollar value (*ln(Disaster Size)*). Consistent with the

argument that larger disasters attract more attention and increase the legitimacy of donating, we find that corporate giving increases CARs by 0.048% for every percentage increase in disaster size. Expressed in terms of disaster size deciles, disaster relief donations in the lowest decile reduce returns by –0.56%, and moving up one decile increases returns by 0.08%, such that returns turn positive for disasters in the 80th percentile of the disaster size distribution. [3]

In column (3), we investigate disaster relevance in terms of public awareness, proxied by web search intensity for disaster–related search terms. If more salient disasters attract more attention, this should be reflected in how often they appear in web searches. Search intensity is measured as the logarithm of the number of web searches for a specific disaster in the month that it occurred (e.g., the frequency of people searching for information using keywords such as "hurricane," "tsunami," "earthquake," etc.) (*ln(Web Search Intensity)*). The results in column (3) align closely with those for disaster size: every percentage increase in search intensity increases firm returns by 0.17%. These results therefore reflect the increased strategic benefits of donating when public awareness of the disaster is higher.

We then also consider indicators for small disasters (damage amount in the bottom quartile of the disaster damage distribution in EM–DAT, i.e., less than US$2 million (*Small Disaster*) and for large disasters (damage amount in the top quartile, i.e., greater than US$550 million (*Large Disaster*)). Although we find no significantly negative returns for donations to small disasters in column (4), we do find in additional analysis that returns are more negative for overly large donations to small disasters: above–median donations (averaging US$1,994,011) to small disasters trigger 0.80% lower returns, whereas below–median donations (averaging US$23,278) do not earn significantly different returns. Column (5) shows that donors earn 0.127% lower CARs than non–

[3] In additional tests in column (1) of Panel A in Table IA.A, we find that our results also hold when considering disaster size in terms of deaths caused.

donors if the disaster is small or medium, equivalent to a market value loss of US$55 million, but this effect is almost entirely offset for large–scale disasters. This again confirms that disaster saliency matters: for firms making donations following small–scale disasters, the lack of strategic benefits, reduced legitimacy, and potentially higher agency concerns result in negative shareholder returns. For larger, more salient disasters, the strategic value of disaster relief giving is higher, offsetting the agency–related costs.

It should be noted that, due to the coverage of Foundation Maps and disaster frequency in the U.S., a large fraction of our sample consists of U.S.–based firms, which may drive our results. In columns (1) and (2) of Panel B in Internet Appendix Table IA.A, we split the sample into U.S. and non–U.S. firms. Our findings are sustained for both subsamples, with the effect of disaster saliency slightly larger in the non–U.S. sample. We thereby not only confirm the existence of agency–motivated donations as documented in prior U.S.–based studies (e.g., Masulis and Reza 2015), but also highlight the importance of investigating an international sample of donations.

[Insert Table 2 about here]

3.2 Instrumental Variable Approach

Although natural disasters are largely exogenous, the decision to provide disaster relief giving is still an endogenous choice by the firm. To identify the causal effect of corporate donations on firm value, we exploit exogenous disaster–level factors to account for the decision to donate using an instrumental variable (IV) approach. Specifically, we use the timing of the disaster relative to the firm's financial year as an instrument for the endogenous decision to donate.

The underlying assumption is that, all else equal, firms are more likely to donate if a disaster occurs at the start of the financial year, when firms tend to set aside a fixed amount for philanthropy

for the whole year. If an unexpected disaster occurs later in the year, these funds may have been exhausted, decreasing the likelihood that the firm will provide a disaster relief donation. As the timing of a disaster is largely random, this IV likely satisfies exclusion restrictions. We confirm in Panel A of Table 3 that the likelihood of a firm donating to large disasters occurring in the first three months of its financial year is almost 2 times higher than the likelihood of donating to disasters at other times in the year. This setting therefore allows us to exploit the arguably exogenous variation in firms' financial reporting dates and disaster dates. We construct an indicator for donations occurring in the first three months of a firm's financial year and label this IV *Early Disaster*. We then instrument *Disaster Relief Donation* with *Early Disaster*, and *Disaster Relief Donation* × *Large Disaster* with *Early Disaster* × *Large Disaster*.

Panel B of Table 3 presents the 2SLS results from this IV analysis based on our main sample, which considers [–1, +1] CARs around the donation announcement. We test the relevance condition in columns (1), (3), and (4), where column (1) estimates first–stage results without conditioning on disaster saliency, and columns (3) and (4) estimate first–stage results when including the interaction between *Disaster Relief Donation* and *Large Disaster*. We confirm that firms are more likely to donate if a disaster occurs at the start of their financial year. In the second–stage estimations, we find that a higher donation likelihood, as predicted by the timing of the disaster, is negatively related to CARs: on average, donating decreases CARs by 2.66% (column (2)). However, disaster saliency mitigates this negative effect: donation likelihood is positively related to returns for large disasters, offsetting the negative main effect by 8.11% (column (5)).[4]

[4] It should be noted that the local average treatment effect (LATE) for donating firms in our IV analysis is larger than the OLS average treatment effect (ATE), which may reflect that certain types of firms (e.g., firms with stronger financial constraints) are more sensitive to the relative timing of the disaster. In the case of financial constraints, on the one hand, the negative market reactions to the non–productive use of company resources when making agency–motivated donations may be stronger for constrained firms. On the other hand, the strategic benefits of donating in terms of domestic sales growth, customer awareness, etc. are also likely to be more important for such firms, as such effects may alleviate future financial constraints.

We report additional robustness tests for our IV analysis in Table IA.B, addressing the concern that certain types of disasters, such as tropical cyclones and storms, are more likely to occur at specific times of the year. This seasonality could potentially violate the exclusion condition if firms anticipate such disasters and adjust their annual philanthropy funds accordingly. To address this, we exclude tropical storms and cyclones from the analysis. Column (1) presents the second–stage results, showing that our main findings remain robust even after excluding these disaster types. In column (2), we conduct a placebo test to ensure that both the disaster and the associated donations are indeed unanticipated. Specifically, we examine firms' abnormal returns in the three–day window prior to the disaster. If firms were anticipating the disaster and preparing their donations in advance, we would expect to see abnormal stock returns before the event. However, our IV analysis finds no significant differences in stock returns between donor and non–donor firms before the disaster, supporting the assumption that the disaster and donations are unexpected.

In the next section, we further explore the assumption of unanticipated donations by investigating the timing and characteristics of the donations made.

[Insert Table 3 about here]

3.3 Are Donations Unanticipated?

A key assumption underlying our ability to capture market reactions to firms' disaster relief donations is that the donation decision signals new information to the market about the size and severity of agency issues within the firm. Agency issues, due to their intangible nature, are difficult to observe. Donations may therefore provide a concrete realization of agency–motivated behavior by corporate insiders. Moreover, the market may learn about an increased severity of agency issues, which could signal a greater potential for future misuse of corporate resources, private benefit

extraction by insiders, diversion of cash holdings, and other forms of investment inefficiency.[5] If this is the case, we would expect stronger market reactions to less anticipated donations, e.g. by firms with no history of disaster relief giving.

We proxy for "less anticipated" donations by examining donations by firms that have not previously donated to any natural disaster during our sample period (first–time donors). In columns (1) and (2) of Panel A in Table 4, we exclude "anticipated" donations—i.e., donations from firms that have previously provided disaster relief—and compare the abnormal returns for first–time donors to those of non–donating firms. Consistent with the idea that less anticipated donations allow the market to learn about agency issues within the firm, we observe a stronger negative market reaction to firms' disaster relief donations in column (1) compared to our baseline results: donating is associated with 0.28% lower returns. In column (2), we test our disaster saliency hypothesis and find, as before, that these negative returns are mitigated for donations made in response to larger, more salient disasters.[6]

A potential concern is that the negative market reactions to firms' disaster relief donations—especially with the magnitude much greater than the donating amount—reflect the market's anticipation of further contributions, indicating a mechanical effect of giving away money rather than a signal of agency conflicts within the firm. To address this concern, in columns (3) and (4), we exclude firm–disaster observations where the firm made multiple donation announcements.

[5] Donating may signal a pattern in which firms' disaster relief donations coincide with other non–value creating practices and excessive corporate expenditures. For example, managers may use charitable giving to enhance their personal reputation in the media by using corporate funds to donate, thereby diverting resources away from the firm's core business operations and operational investments. Moreover, markets may also suspect donations are made to relief funds affiliated with a board member of executive, such that the firm's relief giving signals individual enrichment rather than genuine socially responsible behavior. Giving away cash resources without a clear strategy may also signal a lack of commitment by management to prudent financial management.

[6] We exclude firms that have their main exchange listing outside of the headquarter country (4% of the sample) in column (5) of Panel B in Table IA.A, as a domestic disaster should be less salient to international investors. We again find that our results remain.

This reduces the possibility that our baseline results capture the market's anticipation of follow–up donations. In column (3), we find that, if anything, the magnitude of our baseline results increases slightly, showing 0.077% lower returns for donor firms. We also continue to observe in column (4) that these negative effects are mitigated for donations following more salient disasters, as proxied by disaster size.

In Panel B, we aim to rule out the possibility that the differences in returns between donors and non–donors are driven by unobservable firm characteristics, independent of the donation decision. To do this, we estimate abnormal returns in a three–day placebo event window preceding either the disaster associated with the donation event, or the donation event itself. We replicate our baseline estimations from Table 2 using firms' [–4, –2] CARs prior to the disaster (columns (1) and (2)) or prior to the donation (columns (3) and (4)) as the dependent variable. If the differences in returns between donors and non–donors reflect the decision to provide disaster relief, we should not observe any significant differences prior to the donation event or prior to the disaster associated with the donation event. Indeed, we find no evidence that donors and non–donors earn significantly different returns in our baseline results, without conditioning on disaster saliency, in columns (1) and (3). Similarly, we find no differences in returns when investigating the saliency hypothesis in columns (2) and (4). These findings reduce concerns that disaster relief donations may be confounded by other underlying firm characteristics.[7]

[Insert Table 4 about here]

3.4 Donation Characteristics

[7] It is possible that firms' incentives to donate are driven by the extent to which their supply chain is affected by the disaster. Barrot and Sauvagnat (2016) show that disaster–related shocks propagate through firms' supply chains via input specificity. In column (6) of Panel B in Table IA.A, we show that our results still hold when accounting for input specificity, proxied by being in an industry with non–differentiated goods.

Although corporate giving is arguably one of the more standardized forms of socially responsible investment, it can take several forms. We next investigate how firms choose to donate, focusing on three aspects: (i) whether they donate cash or in–kind, (ii) whether they donate directly or via a corporate foundation, and (iii) the amount donated. These donation characteristics are indicative of the firm's agency and strategic incentives, helping to further distinguish agency–motivated from strategic giving.[8] We first investigate the type of donation in column (1) of Table 5. The distinction between cash and in–kind donations can influence the cost–benefit trade–off of giving (Seifert et al. 2003). Cash donations directly reduce a firm's liquid resources and may be used by managers to divert funds to affiliated charities (Masulis and Reza 2015). In contrast, in–kind donations, such as excess inventory, written–off equipment, or the use of unused facilities, provide a less costly and more transparent form of reputation and social–capital building, which makes it harder for managers to derive private benefits.

In most countries, in–kind donations receive the same tax treatment as cash donations, with their value determined through market–based, donor–provided, or independent assessments. A prominent example of in–kind charity is Amazon's establishment of an inventory and logistics infrastructure specifically designed to distribute relief items to victims of natural disasters in the U.S. This form of relief aligns closely with Amazon's core business and is likely to attract more positive market reactions from its shareholders compared to cash donations. Consistent with the notion that in–kind donations are less likely to reflect agency–driven giving, we find that in–kind donations are associated with 0.65% higher returns (column (1)).

We also distinguish between donations made directly by the firm (e.g., through corporate giving programs) and those made through the firm's charitable foundation. Direct donations are

[8] Unfortunately, data limitations in Foundation Maps and in our manual sample do not allow us to further separate in–kind donations into support provided via, e.g., volunteering or other community building initiatives.

part of the firm's operations, while corporate foundations are separate legal entities that allow firms to enjoy similar tax benefits but often involve significant ongoing administrative expenses. Corporate foundations typically receive the bulk of their funding from the firm and have boards of directors composed primarily of corporate executives alongside foundation–specific directors. Although this additional layer of governance could reduce agency problems, it may also exacerbate them due to (i) the separation of economic and accounting effects, as the foundation's financial statements are separate from the firm's (Petrovits 2006), (ii) the separation of shareholder incentives from those of the foundation's management, since shareholders do not own the foundation, and donated assets cannot be reclaimed by the firm (Masulis and Reza 2015), and (iii) the monitoring of the foundation, which is primarily done by representatives of the firm who have significant influence over the foundation's assets (Carter and Werbel 2002).

CEOs and executives often have considerable influence over their firm's foundation's assets, either directly or through their influence on board appointments, and may use these assets in ways that are inconsistent with shareholder value maximization due to the absence of residual claimants (shareholders) and external monitors. Even when foundations operate with a predetermined budget, executives can influence how the funds are allocated, potentially favoring causes that benefit them personally. Consistent with the notion that foundation giving is more likely to reflect agency conflicts, and with Masulis and Reza's (2015) finding that foundation giving is more prevalent in firms with weaker governance, we find that donations made via a firm's foundation are associated with 0.27% lower returns (column (2)).

We also explore the impact of donation size. The relation between donation amount and shareholder value may not necessarily be linear: small donations might disappoint the public, while overly large donations could disappoint shareholders, both of which could signal agency problems.

For example, Amazon's donation of US$690,000 to victims of Australia's 2020 bushfires was criticized for being "too small," leading to negative press coverage.[9] In contrast, donating a "reasonable" amount can provide strategic benefits by enhancing public sentiment. To test this, we regress [–1, +1] donation CARs on the donation amount (as a fraction of total assets) and its square term. We find a quadratic, concave relation between donation amount and shareholder value. Although the overall relation between donation amount and returns is insignificant (column (3)), returns are higher for medium–sized donations and lower for both small and large donations (column (4)). In economic terms, this suggests that CARs increase with donation amounts up to 0.17% of total assets, after which they begin to decrease.[10] This reflects the trade–off firms face in balancing public and shareholder sentiment.

In column (2) of Panel A of Table IA.A, we further address the concern that negative returns to donating may reflect a firm's disaster exposure rather than agency costs. We do this by examining donation announcements that explicitly mention the CEO's name in media reports. These donations are more likely to reflect the CEO's pursuit of personal benefits, such as enhancing their own reputation, rather than the firm's social capital. Indeed, we find that such donations are associated with 0.35% lower [–1, +1] CARs, suggesting that market reactions to donations do, to some extent, reflect agency concerns within the firm.[11]

[Insert Table 5 about here]

3.5 Distinguishing Strategic and Agency–Motivated Philanthropy

[9] See: "'You can do better': Jeff Bezos ripped for $690K Australian wildfire relief donation." USA Today, January 13, 2020.
[10] This falls within the feasible range of donation amount, which ranges from 0 to 6.45%.
[11] For firms that do not donate, the mentioning of CEO name is not relevant. Therefore, we report the coefficient for the main effect of *CEO Mention*, which we name *Disaster Relief Donation* × *CEO Mention* for clarity.

In this section, we aim to further distinguish agency–motivated giving from strategic philanthropy by interacting *Disaster Relief Donation* with firm–specific characteristics that either reflect the importance of reputation to the firm or indicate the potential for agency problems. Panel A in Table 6 presents the results.[12] We first interact the donations indicator with an indicator for whether the firm only operates domestically (*Domestic Focus*). Internationally active firms may source inputs, sell products abroad, or have foreign subsidiaries, making them less reliant on customers and suppliers in their home country. As a result, a domestic natural disaster may be less relevant to their overall reputation. In column (1), we find that donations by international firms are associated with 0.407% lower returns, whereas donations by domestic firms offset these more negative returns by 0.237%.

In column (2), we focus on firms that spend relatively more on marketing, as these firms may benefit more from the increased visibility and awareness generated by their charity programs (Servaes and Tamayo 2013). We use high *Selling, General, and Administrative (SG&A) Expenses* as a proxy for marketing intensity. We find that donations by firms with low SG&A expenses are associated with 0.681% lower returns, but this negative effect is largely offset for firms with high SG&A expenses.[13]

We conduct a similar analysis focusing on firms' R&D expenses. Prior research, such as Navarro (1988) and Brown, Helland, and Smith (2006), suggests that high–R&D firms (e.g., pharmaceutical companies) can benefit more from making donations, as they are often subject to public scrutiny and rely more heavily on intangible assets. Consistent with this, we find in column

[12] The sample is reduced due to data availability for some our strategic benefits and agency proxies.
[13] We investigate a similar mechanism in column (3) of Panel A of Table IA.A, where we consider whether firms operating in Business–to–Consumer (B2C) industries obtain higher benefits from donating, as they may be more likely to benefit from an increase in the firm's reputational and social capital with consumers. We confirm that donating firms in B2C industries earn 0.17% (= 0.28% – 0.11%) higher returns.

(3) that donations by low–R&D firms decrease shareholder value by 0.399%, while donations by high–R&D firms offset these negative returns by 0.288%.[14]

As indicated by the negative coefficient on the donation indicator in Table 2, natural disasters may increase the strategic benefits of donating, but this context does not fully eliminate the possibility of agency–motivated giving. To further examine the agency view of corporate giving, we focus on firm characteristics that heighten the potential for agency–motivated giving in Panel B. Following the literature, we use several proxies for the quality of corporate governance, as poor governance is typically associated with greater agency costs. First, we consider a firm's overall governance quality using the *MSCI Governance Index*, which includes measures of board independence, anti–takeover provisions, accounting quality, and board diversity. In column (1), we find that donor firms with below–average governance scores earn 0.292% lower returns than non–donor firms, consistent with agency–motivated philanthropy. In column (2), we observe similar results, with 0.411% lower returns for donor firms with low levels of institutional ownership. This aligns with findings from previous research showing that institutional investors help improve governance in portfolio companies (e.g., Aggarwal et al., 2011).

Next, we examine the ratio of the CEO's total wage to that of the second–highest–paid executive, a proxy for the CEO's power within the top management team (e.g., Bebchuk, Cremers, and Peyer 2011; Chen, Huang, and Wei 2013; Correa and Lel 2016; Lie and Yang 2023). Firms with more powerful CEOs are typically associated with higher agency concerns. We find in column (3) that donating firms with powerful CEOs are associated with 0.518% lower returns

[14] In column (4) of Panel A of Table IA.A, we investigate whether firms in more competitive markets are more likely to use donations to build their brand. We find that returns increase for donors with the level of competition in the firm's industry, as proxied by the inverse Herfindahl–Hirschman Index (HHI), relative to non–donors in less competitive industries. These results are consistent with Choi, Park, and Xu (2023) who find that charitable giving by banks reflects changes in local deposit market competition.

relative to other firms, supporting the notion that agency problems are more pronounced in firms with more powerful CEOs. Overall, these results confirm that donations are related to lower returns in firms with poor governance, consistent with prior studies and our baseline results in Table 2.

[Insert Table 6 about here]

3.6 Where Do Strategic Benefits Come From?

We next take an in–depth look at the channels through which disaster relief donations can affect shareholder returns. It is relatively straightforward to understand how agency–motivated giving reduces firm value: managers make value–destroying decisions by giving away shareholders' money. However, the strategic benefits of giving are less clear. We therefore investigate the mechanisms through which strategic giving may enhance firm value. As an illustrative example, consider the case of Chinese sports company Hongxing Erke, whose donation to victims of the 2021 Henan floods went viral on the internet, resulting in a 280% increase in sales. The firm received praise from government authorities, and local attractions even offered discounts to Erke employees (Yan 2021). In this case, donating boosted the company's returns by increasing customer awareness, driving sales, and improving employee satisfaction. However, many investors questioned the legitimacy of such a large flood–relief donation by a company that had recorded a US$33.7 million deficit in 2020, highlighting the trade–off between strategic philanthropy and agency–motivated giving.

In Table 7, we first examine whether public awareness increases more for donor firms compared to non–donor firms, using firm–specific web search intensity in the month of the disaster as a proxy for public awareness. We find that donor firms experience a 1.4% increase in web searches relative to non–donor firms during the disaster month following large disasters (column

(1)). This suggests that disaster relief giving in more salient events indeed increases public awareness of the donating firm.

Next, we investigate whether increased public awareness translates into greater sales growth and enhanced stakeholder support. Although, on average, donations do not significantly affect sales growth, we find that donating to large disasters is associated with 2.1% higher domestic sales growth (but not foreign sales growth) compared to not donating (column (2)). Furthermore, donating firms are 1.6% more likely to receive an analyst recommendation upgrade following large disasters (column (3)), and they are 4.0% more likely to win a CSR award (column (4)). We also examine the effect of donations on employee support, measured by changes in employee satisfaction scores. While donating is generally negatively related to employee support, it increases employee satisfaction by 0.17% (= 1.51% – 1.34%) following large disasters (column (5)). Taken together, these results demonstrate that donations affect firm returns through fundamental changes in future cash flows by enhancing firm reputation, increasing customer awareness, and building stakeholder and employee support.

[Insert Table 7 about here]

3.7 Robustness Test: Disaster–Level Sample

Next, we change our empirical approach by investigating firms' abnormal returns around the disaster event ($CAR_{dis.}$) over a [–1, +21]–day event window in an unmatched sample of 52,499 firm–disaster observations. Although we do not utilize precise donation announcement dates, this approach allows us to test the robustness of our results in a more generalized sample of market responses to firms' disaster relief donations. The percentage of publicly listed firms making disaster–specific donations in this sample is relatively small (1,219 observations), as the majority

of publicly listed firms do not donate to small– or medium–sized disasters. Figure IA.A in the Internet Appendix provides a geographic overview of this sample's distribution, where darker shades represent countries that are more frequently observed in our sample. Countries with more disasters (e.g., the U.S. and China) or with a larger number of publicly listed firms (e.g., Japan, Australia, and India) appear more often in the sample. Figure IA.B shows average country–, industry–, and administrative area–adjusted [–1, +21]–day disaster CARs. Consistent with our saliency hypothesis, we find that average CARs are insignificantly different from zero for non–donating firms following both small and large disasters, whereas they are significantly negative for firms donating to small disasters and significantly positive for firms donating to large disasters.

In column (1) of Panel A in Table IA.C, we estimate our baseline result as in Equation (1), using the firm's [–1, +21] disaster CARs as the dependent variable. As before, we find that donating is associated with negative market returns: donating firms earn 1.35% lower returns than non–donating firms. When splitting the 23–day event window into a [–1, +3]–day window (which is more likely to capture any direct effect of the disaster on the firm) and a [+4, +21]–day window (which is more likely to capture the donation effect), we find that returns for donating firms are 0.07% lower in the [–1, +3] window (column (2)) and 1.28% lower in the [+4, +21] window (column (3)) compared to returns for non–donating firms. The difference in magnitude suggests that the negative stock market reaction is not entirely triggered by the disaster itself, but is largely driven by the firm's disaster relief giving, aligning with the agency view of corporate philanthropy. In column (4), we additionally control for firm fixed effects, obtaining qualitatively similar results.

When interacting *Disaster Relief Donation* with our proxies for disaster saliency, we also find similar results as in our main donation announcement sample: returns for donating firms are negative on average, reflecting agency–motivated donations to small disasters. However, returns

increase with disaster saliency when proxied by disaster severity (column (1)), relevance (column (2)), or an indicator for large disasters (column (4)). In contrast, returns are significantly more negative for donations to small disasters (column (3)). Thus, even when changing our empirical approach, we continue to find that market reactions to disaster relief donations improve with greater stakeholder awareness and the legitimacy of the donation, as proxied by disaster saliency.[15]

3.8 Robustness Tests and Further Analysis

In this section, we conduct additional robustness tests to rule out alternative explanations for our findings and explore the roles of supply chain disruptions, regional and institutional differences, responsible investors, disaster types, non–disaster giving, and corporate ESG profiles in shaping the cost–benefit trade–off of donations. Since many of these robustness tests rely on highly specific subsamples or data sources with limited coverage, we estimate them using the larger, disaster–level sample.

3.8.1 Disaster or Donation Effects? Affected Subsidiaries, Suppliers, and Customers

A remaining major concern is that non–donating firms may be indirectly affected by the disaster, which could result in fewer available resources for donations and lower returns (e.g., due to supply chain disruptions). We address this concern in Table IA.E. Using U.S. firms' data on subsidiaries (from WRDS Subsidiary Data), major customers (from WRDS Segments), and suppliers (from FactSet Revere), we manually verify whether these are located in affected states or counties. We

[15] We also estimate our IV analysis for this disaster–level sample in Table IA.D. The results for this sample are similar in magnitude and significance to those from our main sample in Table 3, reducing potential concerns about the validity of our instrumental variable. In columns (1), (3), and (4), we confirm that both *Early Disaster* and *Early Disaster* × *Large Disaster* are positively correlated with the donation decision. We also continue to find that instrumented donation likelihood is, on average, negatively related to [–1,+21] CARs (column (2)), and that donations to large disasters offset these negative returns (column (5)).

then exclude firms with subsidiaries, customers, or suppliers in these regions, which may be indirectly affected by the disaster. We continue to find significant results, reducing the concern that the negative coefficient for donating firms reflects the disaster's effects on the firm's operations, customers, or suppliers.

3.8.2 The Role of Institutional Characteristics

Although corporations provide significant relief after natural disasters, most relief funding comes from governments and NGOs. We investigate country–level characteristics that affect the costs and benefits of corporate donations in Table IA.F. We find that returns for donating firms are lower when substantial relief funding has already been provided by non–corporate charities and NGOs (column (1)), in countries with strong ESG regulations (column (2)), and when governments provide large disaster relief grants (column (3)). These results suggest a substitution effect between corporate and other types of relief funding.

Although we control for firms' effective tax rates in all specifications, we also examine whether firms strategically use tax incentives when making donation decisions. Since tax rates are generally set at the country level, we treat this as an institutional factor. Consistent with the taxation benefits of donating, we find that returns increase by 0.31% for every 10% increase in the effective tax rate (column (4)). Additionally, we find that returns are higher for firms in more religious countries (column (5)), suggesting that social norms supporting philanthropy and altruism can enhance the strategic value of corporate philanthropy.[16]

[16] It also illustrates the "delegated philanthropy" view on corporate giving, which states that corporate giving reflects stakeholder and societal demands for firms to assume social responsibilities, as coordination problems complicate scaling up individual stakeholder's philanthropic efforts (Benabou and Tirole 2006; 2010).

3.8.3 Further Disentangling Disaster and Donation Effects: Small Disasters and Family Firms

To further rule out the possibility that differences in returns between donating and non–donating firms reflect firms' direct or indirect disaster exposure, we refer to column (3) of Panel B in Table IA.C, which shows that the negative effects of donating are primarily driven by donations to small disasters. This increases our confidence that these negative market reactions are tied to the donation decision rather than exposure to the disaster: small–scale disasters are less likely to severely impact a firm's operations, supply chain, or subsidiaries, which could otherwise lead to negative market reactions. Simultaneously, small disasters diminish the perceived legitimacy of using corporate resources for relief efforts, provide limited reputational and strategic benefits due to their lower saliency, and may be more likely motivated by insiders seeking private benefits, heightening agency concerns.

We further investigate this hypothesis by focusing on the subsample of donations to small disasters in Panel A of Table IA.G. We find that within the sample of small disasters, the negative value effects of donating are concentrated in firms with weaker governance: returns from donating are significantly lower for firms with low governance scores (column (1)), low institutional ownership (column (2)), or a high CEO wage ratio (column (3)). These results again suggest that negative market reactions to donations reflect firms' agency concerns.

We substantiate these results on a subsample of family–owned firms. Family firms typically have less separation between ownership and control, which reduces the incentive for CEOs to engage in value–destroying, agency–motivated behavior. In Panel B, we find that donating is not associated with negative value effects in the sample of family firms. This also indicates that the negative value effects observed in our main sample are unlikely to result from a firm's direct disaster exposure, which is unrelated to family ownership. Importantly, we continue to observe

that disaster saliency increases the strategic benefits of donating: market reactions are significantly higher for donating family firms relative to non–donating family firms as disaster saliency increases (columns (1), (2), and (4)), leading to positive returns for donating family firms.

It is worth noting that, within our sample of family firms, we do not observe any cases where firms donate to small–scale disasters (column (3)). Since donations to small disasters offer limited reputational and social capital benefits, this finding is consistent with our assumption that family firms face fewer agency concerns. Taken together, these results support our hypothesis that market reactions to disaster relief donations reflect a trade–off between agency costs and strategic benefits. When agency costs are lower, market reactions primarily reflect strategic benefits, resulting in positive net returns.

3.8.4 The Role of Responsible Investors

Next, we investigate whether higher returns for donating firms in the context of more salient disasters can be partially attributed to increased holdings by socially responsible investors, which can push returns to responsible investing away from equilibrium (Pastor, Stambaugh, and Taylor 2021). Increased demand for socially responsible investment, especially by institutional investors, may provide an additional strategic benefit from donating. In Table IA.H, we test the role of SRI funds and find that donating firms with at least one SRI fund owner earn significantly higher returns than firms without any SRI investors (column (1)).[17] This suggests that SRI owners value the firm's decision to make disaster relief donations.

[17] Because data on SRI investors' portfolio holdings is difficult to obtain for international firms, combined with the challenge of applying SRI standards that are comparable across countries, we limit this analysis to US firms. We obtain data on US fund holdings from CRSP and define SRI investors as funds that have a Morningstar sustainability mandate or that are a member of the U.S. Forum for Sustainable and Responsible Investment.

We observe similar results in column (2), where we consider the share of institutional owners classified as SRI investors. While the main effect of donating for firms without SRI owners is no longer significant, we continue to find significantly positive returns for donating firms with higher SRI ownership. These results indicate that returns from donating increase with SRI ownership. In columns (3) and (4), we examine a subsample of firms with SRI owners and find that returns from donating increase with both the absolute number of SRI owners and the relative fraction of institutional owners classified as SRI investors.

3.8.5 Other Robustness Tests

We report the results from additional robustness tests in Table IA.I. First, we relax the restriction that firms must be headquartered in the same country as the disaster event. In column (1), we find that while our main results remain upheld, they are weaker in magnitude. Second, we focus on long–term disasters such as droughts, floods, and heat waves. Since firms are unlikely to donate within the [–1, +21] window following the start of a long–term disaster, we do not expect abnormal returns in this window. This is confirmed by the insignificant coefficients in column (2).

To ensure that we capture firms' disaster–specific philanthropy rather than their overall giving behavior, we consider whether the firm engaged in non–disaster–related philanthropy in the same year as the disaster (proxied by firms' annual giving). In column (3), we find that market reactions are driven only by firms' disaster–specific giving.

We also investigate whether the firm's supply chain was directly affected by the disaster, in the spirit of Barrot and Sauvagnat (2016), in column (4). We find that returns are less negative for donating firms with an affected customer or supplier, consistent with the disaster being more salient to firms that are directly or indirectly affected.

Finally, in column (5), we examine whether more environmentally conscious firms benefit more from donating to climate–related disasters. We use firms' environmental performance scores (based on emissions reductions, resource efficiency, and environmental R&D) from Refinitiv ESG. We find that every unit increase in the environmental score (ranging from –50 to +50) increases returns from donating by 0.03%, suggesting that donations by less environmentally friendly firms are perceived as less legitimate, limiting their strategic benefits.

4. Conclusion

In this paper, we study the motivations and value implications of corporate philanthropy using a global sample of publicly listed companies that provide disaster relief donations to affected communities. We estimate firms' abnormal returns in the [–1, +1]–day window around donation announcements in a matched sample to examine the conditions under which agency concerns and strategic benefits dominate. Our findings reveal that agency–motivated and strategic corporate giving are not mutually exclusive. Strategic philanthropy can mitigate the negative returns associated with agency–motivated giving, particularly when the firm donates around an attention–grabbing event.

We exploit natural disasters as large, salient events that amplify the strategic benefits of donating, and we use exogenous disaster timing to account for the decision to donate. Consistent with the agency–motivated view of corporate giving, we find that disaster relief donations are generally associated with lower returns. However, this negative effect is mitigated when donations are made following more salient disasters, which enhance investor and customer awareness and boost the reputation–building benefits of donating. We confirm these results using an instrumental variable approach, where we leverage disaster timing relative to firms' financial year to account

for the decision to donate. Additionally, we document the conditions and donation characteristics under which the strategic benefits of donating outweigh the agency costs.

Overall, our results suggest that the reputation– and social capital–building benefits of disaster relief giving can mitigate—and in certain cases, more than offset—the agency costs of corporate philanthropy. In other words, corporate giving can add value for shareholders when firms are able to sufficiently enhance their reputation and social capital. This provides a more holistic view of the nature and implications of corporate philanthropy, which is a fundamental issue in economics and finance as corporations around the world increasingly engage in CSR and philanthropic activities. Our findings indicate that whether and how corporate philanthropy should be encouraged depends on a range of contextual factors. At a deeper level, our results offer a plausible answer to the long–standing puzzle of why corporations donate to charity, despite criticisms from many economists. That is, corporate philanthropy may still contribute to shareholder value maximization when saliency makes the strategic benefits sufficiently large.

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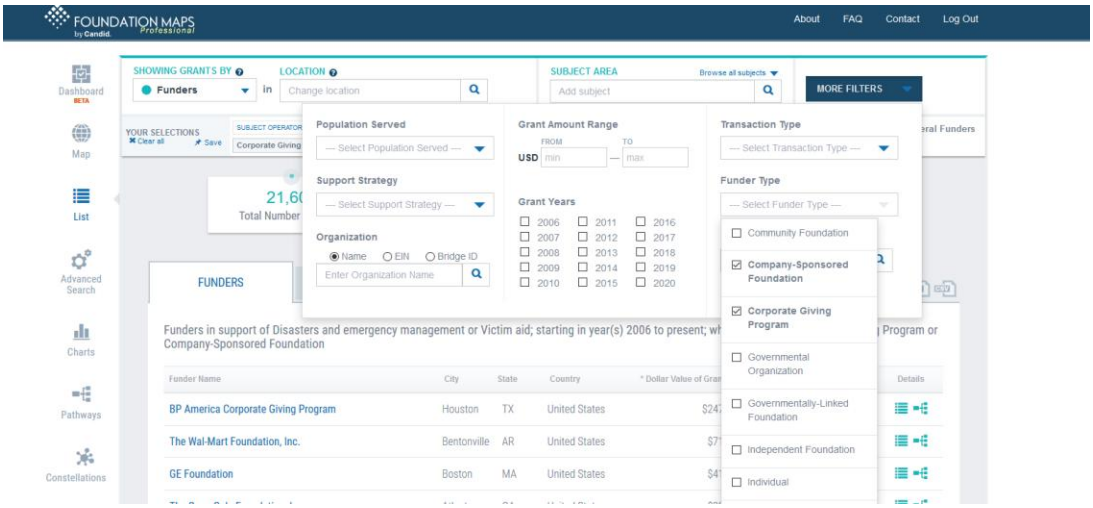
Appendix A: Manual Data Collection Process

This section describes our manual data collection process.

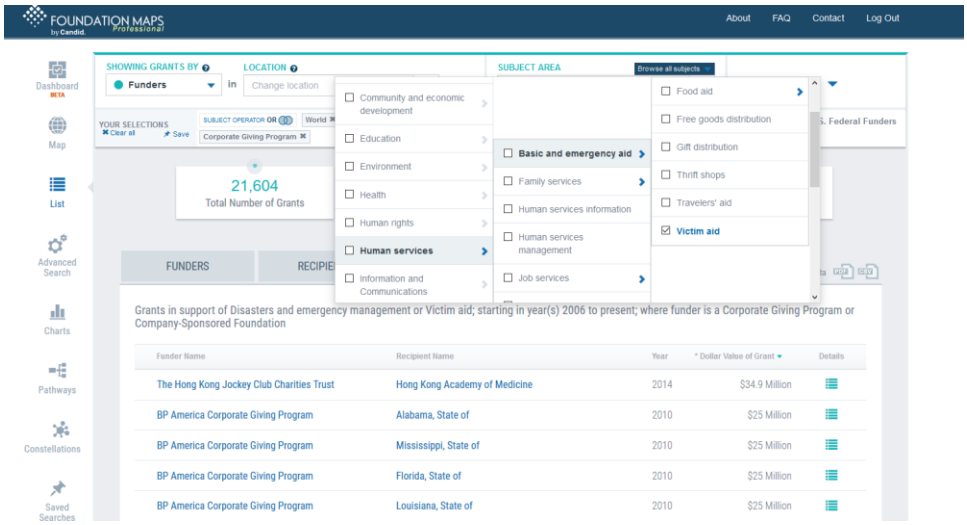
A. Foundation Maps:

Our initial sample consists of all firm–disaster observations that can be linked to disaster relief giving in Foundation Maps. In Foundation Maps, we collect data on disaster relief grants made by global publicly listed corporations between 2006 and 2018. Grants by corporations are identified as those that have "company–sponsored foundations" or "corporate giving programs" as the funder type.



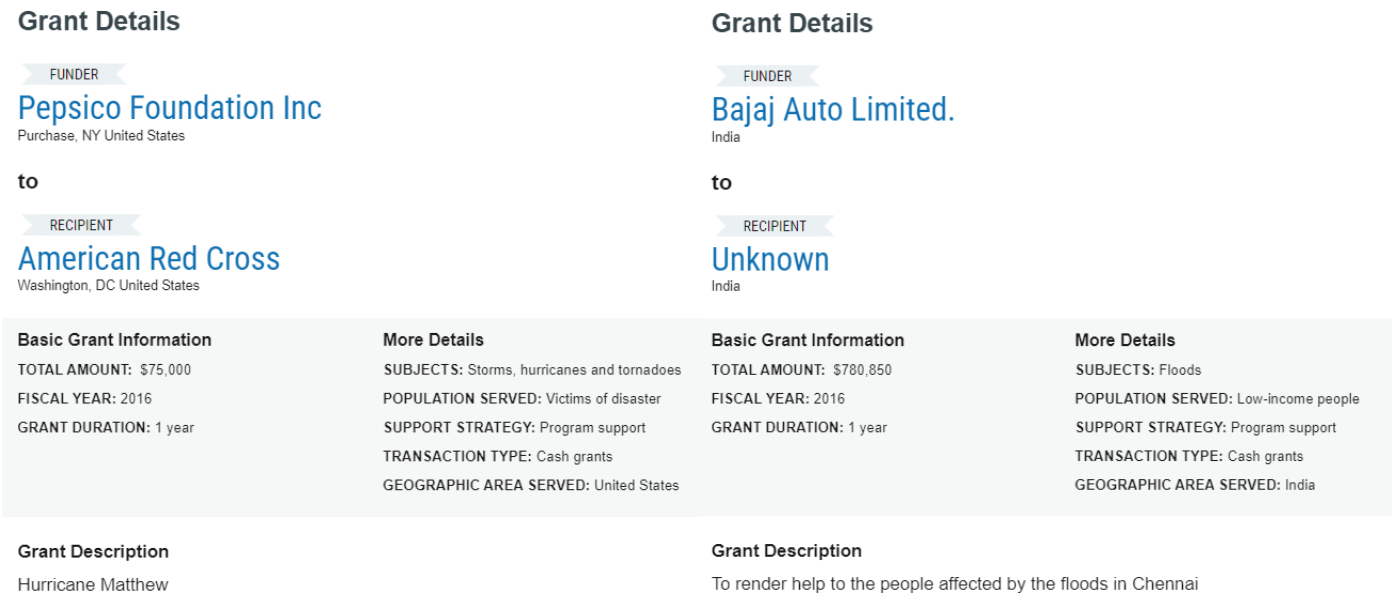
[Image Alt Text: Screenshot showing data search portal in Foundation Maps with Funder Types "Company–Sponsored Foundation" and "Corporate Giving Program" selected.]

Disaster relief grants are identified based on the grant's subject area or the population served. We include them in our search criteria if either of the following requirements is met: the subject area is "Victim Aid" or "Disaster and Emergency Management"; the population served is "Victims of Disaster".



[Image Alt Text: Screenshot showing data search portal in Foundation Maps with Subject Area "Victim Aid" selected.]

From Foundation Maps, we also obtain data on the funder's name, address details, identifiers (EIN), and website, as well as the recipient's name, address, and any available information on the grant amount, year awarded, subject areas, population served, transaction type, geographic area served, and grant description.



[Image Alt Text: Screen captures of the Foundation Maps portal showing details of a 2016 $75,000 grant from the Pepsico Foundation Inc. to the American Red Cross in response to Hurricane Matthew and a 2016 $780,850 grant from Bajaj Auto Limited to an unknown recipient in response to floods in Chennai.]

We match this grant–level data with our firm–disaster dataset based on the name of the funder (i.e., a publicly listed firm or a foundation/corporate giving program owned by a publicly listed firm), the grant recipient's location, geographic area served, and the description of the grant to ensure grants are matched to the correct firm and disaster observation. This process results in a sample of 2,095 firm–disaster observations that can be matched to a disaster relief grant in Foundation Maps.

Since Foundation Maps does not provide the precise date the grant was awarded, we manually collect information on each grant's announcement date. To do this, we perform a manual search for media articles and press releases across a variety of global news sources. In descending order of importance, we search for media items in Lexis Advance, Factiva, EGSCO Regional Business News, Google, Twitter, and Facebook. Because some nations have country–specific media sources, we also use Baidu for Chinese firms and Yahoo Japan for Japanese firms.

For each news source, we search for a set of keywords related to the firm or corporate foundation and the disaster. Specifically, we search for the firm's name or the corporate foundation/giving program's name; words starting with *donat** (e.g., donate, donation), *contrib** (e.g., contribute, contribution), or *relief*; and keywords relating to the disaster (i.e., the disaster type, name, or a general search for the disaster). We provide a more detailed description of the search process for each individual media source below.

We then manually verify every media article that meets the above criteria to ensure its relevance to the firm's disaster relief grant. Where a search results in multiple matches, we include the earliest announcement date in our sample. After this manual verification process, we match 1,636 disaster relief grants to media items with observable announcement dates.

We then calculate cumulative abnormal returns (CARs) for the donating firm over a [–1,+1] window around the donation announcement, using the capital asset pricing model (CAPM) to estimate expected returns over a [–252,–2] estimation window preceding the announcement. We use the local market index of the firm's home country as the benchmark index. Since we cannot calculate announcement CARs for the non–donating firms in our analysis, we construct a nearest–neighborhood matched sample, where each actual donation observation is matched with up to five control observations. We select controls in the same headquarter country–year, closest in terms of firm size (total assets) and industry. After this matching process, we obtain a final sample of 1,162 actual disaster relief observations and 3,339 control observations for which we can calculate CARs. This sample forms the basis of our analysis in Table 2.

B. Finding Donation Announcement Dates in Media Sources:

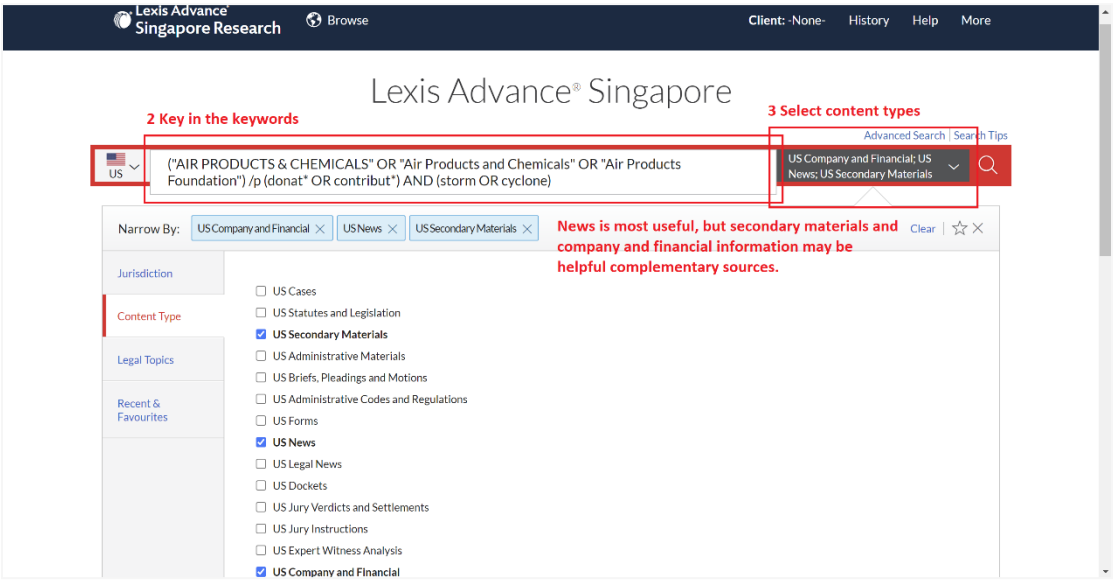
1. Lexis Advance

- Suggested keywords:

("firm name" OR "firm foundation name") AND (donat* OR contribut* OR relief) AND (disaster type OR disaster subtype OR disaster name OR disaster)

- Substitute the underlined contents with the corresponding information of each observation.

E.g., ("AIR PRODUCTS & CHEMICALS" OR "Air Products and Chemicals" OR "Air Products Foundation") AND (donat* OR contribut* OR relief) AND (storm OR cyclone)

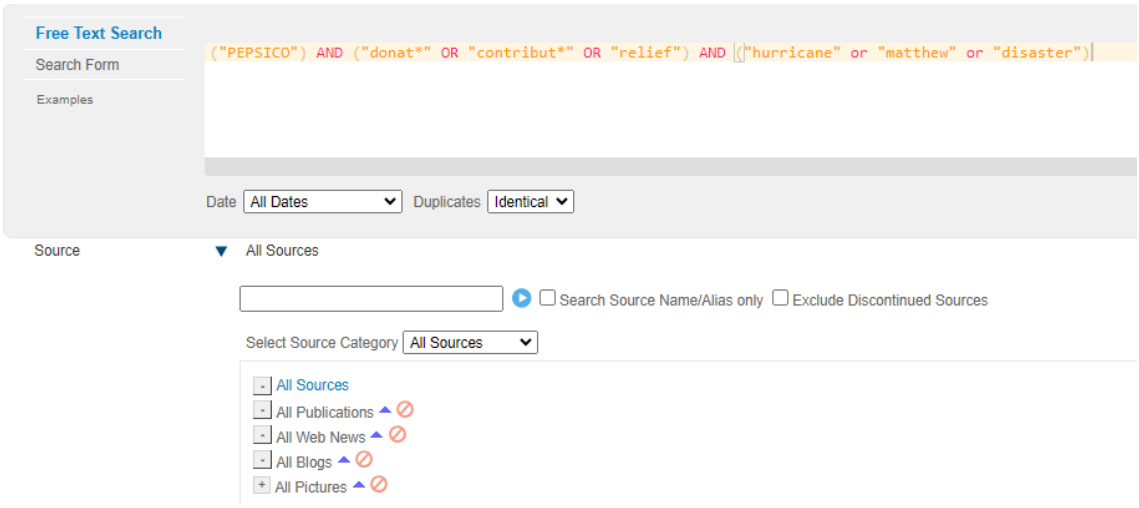


[Image Alt Text: Screenshot showing the Lexis Advance portal highlighting the steps to search for the suggested keywords.]

2. Factiva

- Suggested keywords:
("firm name" OR "firm foundation name") AND (donat* OR contribut* OR relief) AND (disaster type OR disaster subtype OR disaster name OR disaster)

- Substitute the underlined contents with the corresponding information of each observation.
E.g., ("PEPSICO") AND (“donat*” OR “contribut*” OR “relief”) AND (“hurricane” OR “matthew” OR “disaster”)



[Image Alt Text: Screenshot showing the Factiva portal indicating where to enter the suggested keywords.]

3. EBSCO (Regional Business News)

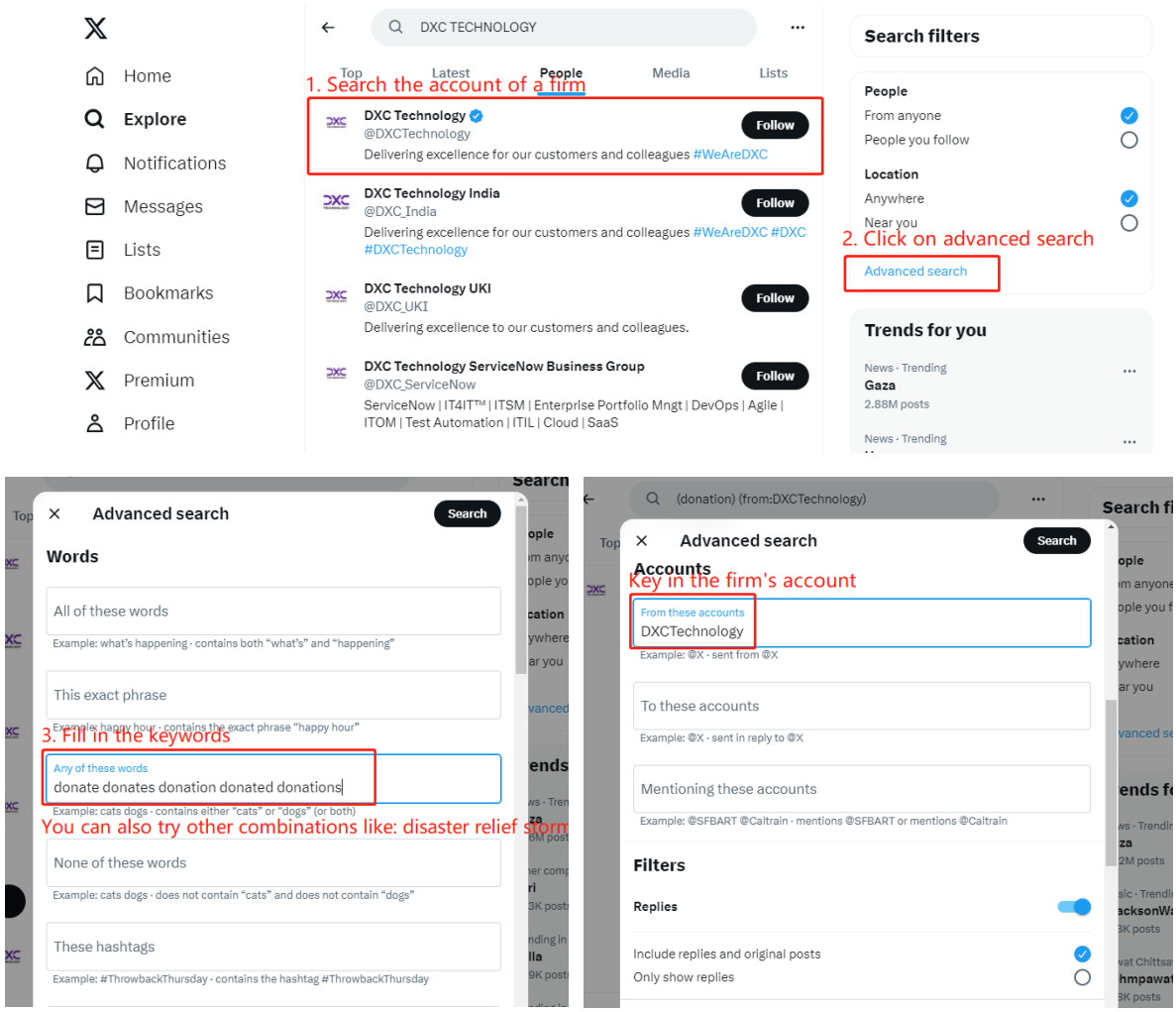
- Suggested keywords: ("firm name" OR "firm foundation name") AND (donat* OR contribut*) AND (disaster type OR disaster subtype OR relief)
- Select the field “TX All Text”

4. Google

- Change the results region in Google Search to where the firm is located.
- Suggested keywords:
("firm name" OR "firm foundation name") ~donate (disaster type OR disaster subtype OR relief)
- Substitute the underlined contents with the corresponding information of each observation.
E.g., "Brown–Forman" ~donate (storm OR cyclone)

5. Twitter/X

- The screenshots below provide detailed instructions for data collection from Twitter/X.



[Image Alt Text: Screenshots showing the Twitter/X interface, highlighting the steps need to search for firm–specific keywords.]

6. Facebook

- Similar methodology as for Twitter, and additionally filter results by year of the disaster.

7. Chinese Firms: Baidu (recommended) / Google

- Use firm name and the word donation, both in Chinese, as keywords to search on Baidu.

8. Japanese Firms: Yahoo Japan (recommended) / Google

- Translate firm name, disaster type, and the word donation into Japanese and search these keywords on Yahoo Japan.

- Some example words:
  Donation: 物品に寄贈する; 寄付金; 支援

Storm: 大雨; 台風; 暴風雨
Earthquake: 地震
Natural Disasters: 自然災害

- Since Yahoo does not support filtering the results by a specific date period, we directly add the disaster year as a keyword.

- We also explore firms' websites, as some firms disclose their support for natural disasters on their websites (e.g., PANASONIC CORP: https://holdings.panasonic/jp/corporate/sustainability/citizenship/disaster.html).

Appendix B: Variable Definitions

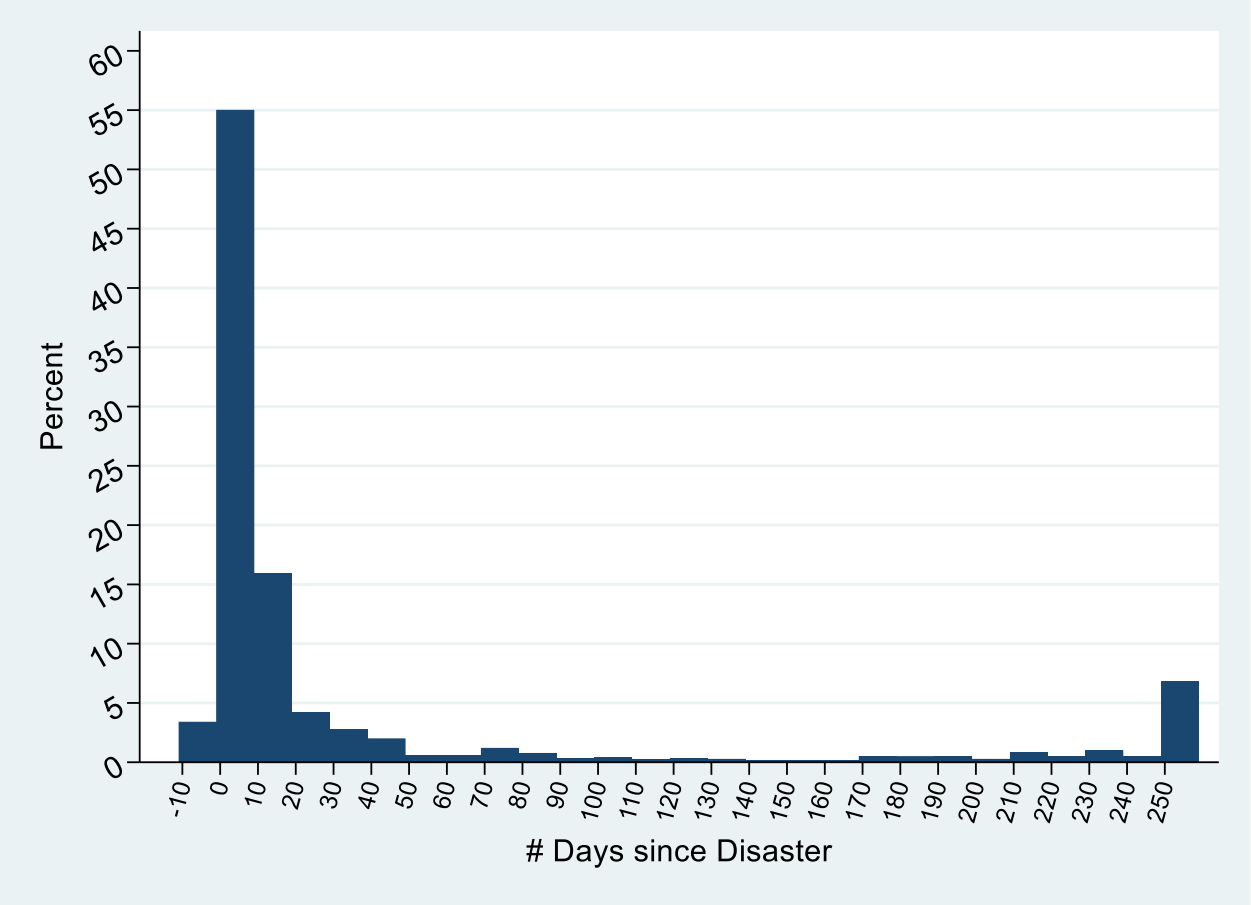
Variable	Definition
$CAR_{don}[-1,+1]$	Cumulative abnormal returns for days –1 to +1 around the disaster relief grant announcement, benchmarked against the expected CAPM–based market returns of the headquarter country's major equity index, calculated using a [–252, –2] day estimation window. *Data sources: CRSP, Compustat, Datastream.*
$CAR_{dis}.[-1,+21]$	Cumulative abnormal returns (in percent) from days –1 to +21 around the disaster event, where day 0 marks the first day the disaster struck. These returns are benchmarked against the expected CAPM–based market returns of the country's major equity index, calculated using a [–252, –2] day estimation window. *Data sources: CRSP, Compustat, Datastream.*
$CAR_{dis}.[-1,+3]$	Cumulative abnormal returns (in percent) from days –1 to +3 around the disaster event, with day 0 being the first day the disaster struck. These returns are benchmarked against the expected CAPM–based market returns of the country's major equity index, calculated using a [–252, –2] day estimation window. *Data sources: CRSP, Compustat, Datastream.*
$CAR_{dis}.[+4,+21]$	Cumulative abnormal returns (in percent) from days +4 to +21 around the disaster event, with day 0 marking the first day the disaster struck. These returns are benchmarked against the expected CAPM–based market returns of the country's major equity index, calculated using a [–252, –2] day estimation window. *Data sources: CRSP, Compustat, Datastream.*
CAR[–4,–2] Prior to Disaster/Donation	Cumulative abnormal returns from days –4 to –2 prior to the disaster event or the disaster relief grant announcement, benchmarked against the expected CAPM–based market returns of the country's major equity index, calculated using a [–252, –30] day estimation window. *Data sources: CRSP, Compustat, Datastream.*
Disaster Relief Donation	A dummy variable equal to one if the firm made disaster relief donations to recipients in the disaster–affected area following the disaster event, and zero otherwise. *Data sources: Foundation Maps and manual data collection.*
Foundation Donation	A dummy variable equal to one if a donation was made by a foundation–owning firm that reports engaging in disaster relief giving, with the foundation established prior to the disaster event, and zero otherwise. *Data sources: Foundation Maps and manual data collection.*
In–Kind Donation	A dummy variable equal to one if the donation consisted of products, equipment, or other in–kind goods or services, as reported in press releases or media announcements, and zero otherwise. *Data source: Manual data collection.*
Donated Amount/Assets	The ratio of the total donation amount, as reported in the press release or media announcement, to the firm's total assets. *Data source: Manual data collection.*
Unanticipated Donation	A dummy variable equal to one if a disaster relief donation marks the first time a firm provided such a donation during the sample period, and zero otherwise. *Data sources: Foundation Maps and manual data collection.*

Single Donation	A dummy variable equal to one if the firm made no follow–up donations toward a disaster event beyond the initial disaster relief donation, and zero otherwise. *Data source: Manual data collection.*
Size	Firm size, measured as the natural logarithm of the book value of total assets in USD. *Data sources: Datastream and Compustat Global*.
ROA	Return on assets, measured as the ratio of EBIT to total assets in the year of the disaster. *Data sources: Datastream and Compustat Global*.
PPE/Assets	The ratio of property, plant, and equipment (PPE) to total assets in the year of the disaster. *Data sources: Datastream and Compustat Global*.
Effective Tax Rate	The firm's total income taxes as a percentage of EBIT. *Data sources: Datastream and Compustat Global*.
Foreign Activities	A dummy variable equal to one if the firm has foreign activities outside its headquarters country, indicated by the presence of foreign currencies on the firm's annual statements, and zero otherwise. *Data sources: Datastream and Compustat Global*.
Domestic Focus	A dummy variable equal to one if the firm has no activities outside its headquarters country, and zero otherwise. *Data sources: Datastream and Compustat Global*.
Administrative area	The administrative area, county, province, or state where the firm's headquarters is located. *Data source: EM–DAT.*
Disaster Size	The total value of damages attributed to the disaster, measured in millions of U.S. dollars. *Data source: EM–DAT.*
Small Disaster	A dummy variable equal to one if the total value of damages attributed to the disaster falls in the bottom quartile (below the 25th percentile) of the disaster damage distribution, and zero otherwise. *Data source: EM–DAT.*
Large Disaster	A dummy variable equal to one if the total value of damages attributed to the disaster falls in the top quartile (above the 75th percentile) of the disaster damage distribution, and zero otherwise. *Data source: EM–DAT.*
ln (Web Search Intensity)	The natural logarithm of the number of monthly Google searches for disaster–related terms, such as "hurricane," "earthquake," "tsunami," "landslide," "cyclone," etc., in the month of the disaster. *Data source: Google Trends.*
Early Disaster	A dummy variable equal to one if the disaster occurred in the first three months of the firm's financial year, and zero otherwise. *Data sources: WRDS and EM–DAT*.
High SG&A Expenses	A dummy variable equal to one if the firm's ratio of selling, general, and administrative (SG&A) expenses to total assets in the year of the disaster is above the sample average, and zero otherwise. *Data sources: Datastream and Compustat Global.*

High R&D Expenses	A dummy variable equal to one if the firm's ratio of research and development (R&D) expenses to total assets in the year of the disaster is above the sample average, and zero otherwise. *Data sources: Datastream and Compustat Global.*
Low Institutional Ownership	A dummy variable equal to one if the firm has below–average institutional ownership, and zero otherwise. *Data source: FactSet.*
High CEO Wage Ratio	A dummy variable equal to one if the ratio of the CEO's total wage to that of the second highest–paid executive is above the industry–adjusted sample average, and zero otherwise. *Data source: ExecuComp.*
Low Governance Index	A dummy variable equal to one if the firm has a below–average governance index, and zero otherwise. *Data source: MSCI Governance*.
% Domestic Sales Growth	The percentage change in domestic sales from year t to year t+1 (the year following the disaster). *Data sources: Datastream and Compustat*.
% Change in Firm Web Searches	The percentage change in the number of monthly web searches for the firm's official name via the Google search engine in the month of the disaster. *Data source: Google Trends.*
Employee Satisfaction Change	A continuous variable capturing the change in the employee satisfaction score, as reported by the firm, in the year of the disaster relative to the previous year. *Data source: Refinitiv ESG.*
CSR Award	A dummy variable equal to one if the firm won a CSR award in the year of the disaster, and zero otherwise. *Data source: Refinitiv ESG.*
Recommendation Increase	A dummy variable equal to one if the firm's average analyst recommendation improved in the year of the disaster, and zero otherwise. *Data source: I/B/E/S.*
Disaster–Related Deaths	The total number of deaths attributed to the disaster event. *Data source: EM–DAT.*
B2C Industry	A dummy variable indicating firms with 2–digit SIC codes between 52 and 59 (Retail Trade), 70 and 72 (Hotels and Personal Services), or between 75 and 80 (Auto Services, Miscellaneous Repair Services, Motion Pictures, Amusement Services, and Health Services). *Data source: Standard Industrial Classification Code List.*
CEO Mention	A dummy variable equal to one if the firm's CEO was mentioned in the disaster relief donation press release or media announcement, and zero otherwise. *Data source: Manual data collection.*
Industry Competition	The inverse of the firm's industry's Hirshman–Herfindahl Index (HHI). *Data source: Refinitiv.*
Country R^2	The country–level R^2 of the country where the firm's headquarters is located, obtained from an expanded market model that measures stock price comovement. The country R^2 is the equal–weighted average of the R^2 values of the individual stocks in the country. *Data source: Eun et al. (2015).*

Input Specificity	The firm's industry input specificity, defined as the share of differentiated inputs in the industry, following Barrot and Sauvagnat (2016). *Data sources: Rauch (1999) and Feenstra (1996).*
High Other Commercial and NGO Grants	A dummy variable equal to one if a country has an above–average share of disaster relief giving by non–corporate and non–governmental charities as a fraction of GDP, and zero otherwise. *Data source: Foundation Maps.*
Strong ESG Regulation	A dummy variable equal to one if a country has an above–average sustainability score, which captures the country's rules and regulations concerning environmental and social policies, and zero otherwise. *Data source: Vigeo.*
High Government Relief Grants	A dummy variable equal to one if a country's government provided an above–average amount of disaster relief funding as a fraction of GDP, and zero otherwise. Data source: OECD.
High Religiousness	A dummy variable equal to one if the country has an above–average percentage of people who visit religious institutions more than once a week, and zero otherwise. *Data source: World Value Surveys.*
Affected Supply Chain	A dummy variable equal to one if a firm in an unaffected zip code has a customer or supplier in an affected zip code, and zero otherwise. *Data source: FactSet Revere.*
Annual Non–Disaster Donations	A dummy variable equal to one if the firm made donations in the year of the disaster (donations not necessarily specific to the disaster), and zero otherwise. *Data source: Refinitiv ESG.*
Environmental Score	A firm's environmental score, measuring its performance in emissions reductions, resource efficiency, and environmental R&D relative to its industry peers. The score ranges from –50 to +50, with 0 representing the industry average. *Data source: Refinitiv ESG.*
SRI Investment	A dummy variable equal to one if a firm has at least one institutional investor classified as a socially responsible investor, defined as either having a Morningstar sustainability mandate or being a member of the U.S. Forum for Sustainable and Responsible Investment (US SIF), and zero otherwise. *Data sources: CRSP, Morningstar, US SIF.*
% of SRI Funds	The ratio of the number of SRI (Socially Responsible Investment) fund investors to the total number of institutional investors in a given firm. *Data sources: CRSP, Morningstar, US SIF.*
Number of SRI Funds	The absolute number of institutional investors in a firm classified as socially responsible investment (SRI) funds. *Data sources: CRSP, Morningstar, US SIF.*

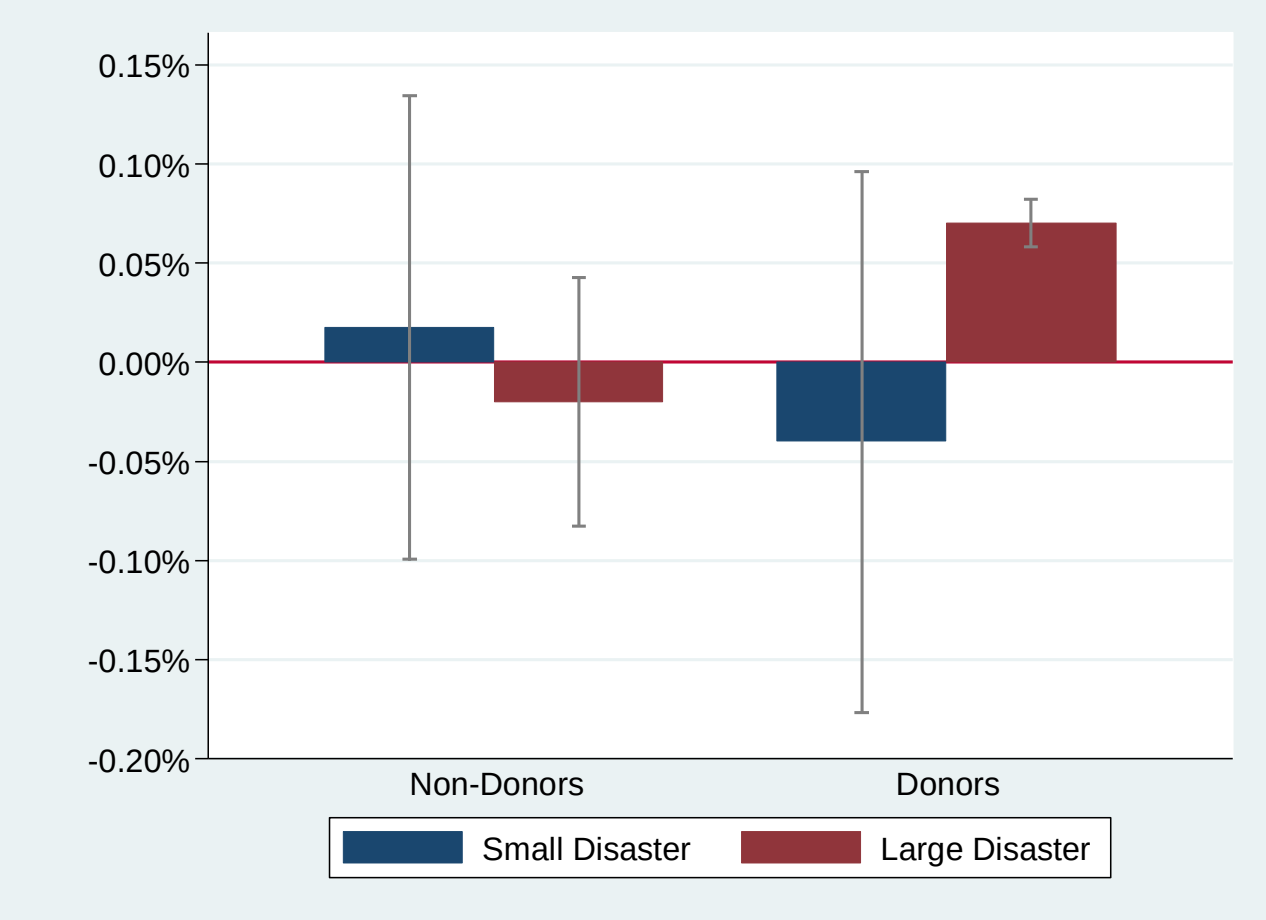
Figure 1: Number of Days between Disaster Event and Donation Announcements (*N*=1,162)
This figure illustrates the distribution of the number of days between the start of the disaster event and the associated disaster relief announcements in press releases and media articles. The vertical axis represents the percentage frequency of observations in our sample.



[Figure 1 Alt Text: Histogram showing the distribution of donation announcement timing relative to the disaster date.]

Figure 2: Donation Announcement CARs

This figure plots the average [–1, +1]–day CARs around the donation announcement for donors and matched non–donors following small (bottom quartile)– and large (top quartile)–scale disasters. CARs are demeaned relative to industry and country averages. Confidence intervals are set at the 90% level.



[Figure 2 Alt Text: Bar plot with confidence intervals showing magnitude and significance of donation announcement CARs categorized by disaster size and donor status.]

Table 1: Summary Statistics of Explanatory Variables for Donating vs Non–Donating Firms

This table presents the summary statistics of key explanatory variables for the subsamples of donors and non–donors. Asterisks (*, **, ***) indicate statistical significance at the 10%, 5%, and 1% levels, respectively. Continuous variables are winsorized at the 1% and 99% levels, and accounting variables are measured at the year of the disaster. Definitions of the variables can be found in Appendix B.

	Donors				**Non–Donors**				
Variable	*N*	Mean	Median	SD	*N*	Mean	Median	SD	*Difference*
Panel A: Firm–Level Characteristics									
Total Assets (HC Mil)	1,162	493,439	30,201	2,015,270	5,140	454,057	26,663	1,811,596	*–39,381*
Total Assets ($Mil)	1,162	63,367	17,972	133,332	5,140	57,979	15,860	107,918	*–5,388*
ROA	1,162	0.107	0.098	0.077	5,140	0.088	0.076	0.073	*–0.018****
PPE/Assets	1,162	0.288	0.215	0.245	5,140	0.253	0.171	0.247	*–0.035****
Effective Tax Rate	1,162	0.084	0.024	0.142	5,140	0.086	0.025	0.145	*0.002*
D[Foreign Activities]	1,162	0.401	0	0.490	5,140	0.445	0	0.497	*0.044****
Panel B: Disaster and Donation Characteristics									
Disaster Size ($Mil)	1,162	4,344	1,000	6,220	5,140	4,506	1,000	6,344	*162.4*
Web Search Intensity	1,162	34.32	27	21.67	5,140	34.68	27	21.71	*0.358*
D[Small Disaster]	1,162	0.079	0	0.270	5,140	0.076	0	0.265	*–0.003*
D[Large Disaster]	1,162	0.646	1	0.478	5,140	0.660	1	0.474	*0.014*
Donated Amount/Assets (%)	746	0.020	0.001	0.234					
Donated Amount ($Mil)	746	1.514	0.250	1.290					
D[Cash Donation]	1,162	0.572	1	0.495					
D[In–Kind Donation]	1,162	0.127	0	0.333					
D[Foundation Donation]	1,162	0.330	0	0.471					

Table 2: Abnormal Returns around Donation Announcement Dates

This table reports the results of OLS estimations where the dependent variable is the [–1,+1]–day CARs for unaffected firms surrounding disaster relief donation announcements in media articles and press releases. The sample consists of a nearest–neighbor matched sample of donating and (up to five) non–donating firms within the same country and year, matched on size and industry. The main independent variables include a binary indicator for whether the firm donated (*Disaster Relief Donation*, column (1)), interacted with indicators for disaster size in terms of dollar damage caused (*ln(Disaster Size)*, column (2)), the disaster's search intensity (*ln(Web Search Intensity)*, column (3)), and indicators for small (*Small Disaster*, column (4)) and large disasters (*Large Disaster*, column (5)). All specifications incorporate a set of control variables (foreign activities, size, ROA, PPE/Assets, and effective tax rate) as well as fixed effects for industry and administrative area–by–year. Definitions of all variables can be found in Appendix B. Standard errors are clustered by administrative area. Asterisks (*, **, ***) indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

Dep. Var.: $CAR_{don.}[-1,+1]$	(1)	(2)	(3)	(4)	(5)
Disaster Relief Donation	–0.060**	–0.500***	–0.652**	–0.102*	–0.127***
	(0.028)	(0.086)	(0.276)	(0.053)	(0.039)
ln (Disaster Size)		–0.036***			
		(0.010)			
Disaster Relief Donation × ln (Disaster Size)		0.048***			
		(0.007)			
ln (Web Search Intensity)			0.015		
			(0.141)		
Disaster Relief Donation × ln (Web Search Intensity)			0.175**		
			(0.082)		
Small Disaster				0.042	
				(0.063)	
Disaster Relief Donation × Small Disaster				0.114	
				(0.101)	
Large Disaster					–0.008
					(0.056)
Disaster Relief Donation × Large Disaster					0.122*
					(0.069)
Size	–0.031	–0.029	–0.032	–0.030	–0.032
	(0.028)	(0.029)	(0.029)	(0.028)	(0.032)
PPE/Assets	–0.218	–0.203	–0.214	–0.223	–0.213
	(0.267)	(0.264)	(0.269)	(0.268)	(0.240)
ROA	–1.796***	–1.837***	–1.811***	–1.781***	–1.804***
	(0.292)	(0.297)	(0.306)	(0.296)	(0.351)
Foreign Activities	0.399***	0.394***	0.397***	0.398***	0.399***
	(0.037)	(0.037)	(0.037)	(0.037)	(0.040)
Effective Tax Rate	–1.530***	–1.576***	–1.525***	–1.538***	–1.523***
	(0.099)	(0.100)	(0.103)	(0.098)	(0.167)
Control Variables	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes
Admin. Area × Year FE	Yes	Yes	Yes	Yes	Yes
Observations	4,428	4,428	4,428	4,428	4,428
R–squared	0.249	0.251	0.249	0.249	0.249

Table 3: Two–Stage Least–Square Test using Disaster Timing as IV

This table presents results from a two–stage least squares (2SLS) test using an indicator for disasters occurring in the first three months of the firm's fiscal year (*Early Disaster*) as an instrument for the firm's decision to donate (*Disaster Relief Donation*). **Panel A** shows the univariate difference in donation likelihood between *Early Disasters* and disasters occurring at other times in the firm's fiscal year (*Other Timing*). **Panel B** reports the IV results, with first–stage results in columns (1), (3), and (4). Column (1) regresses the binary indicator *Disaster Relief Donation* on *Early Disaster*, and columns (3) and (4) regress *Disaster Relief Donation* and the interaction of *Disaster Relief Donation* with *Large Disaster*, respectively, on *Early Disaster* and *Early Disaster* × *Large Disaster*. Columns (2) and (5) present the second–stage results, where the dependent variable is the firm's [–1,+1]–day CARs around the donation announcement date, regressed on the predicted donation likelihoods and predicted *Disaster Relief Donation* × *Large Disaster* from the first–stage estimations. All specifications control for foreign activities, ROA, PPE/Assets, firm size, the firm's effective tax rate, and disaster type, as well as fixed effects for industry–by–year and administrative area. Definitions of all variables are provided in Appendix B. Asterisks (*, **, ***) indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

Panel A: Donation Likelihood for Large Disasters

Sample	*Early Disaster*	*Other Timing*	*Difference*
Donation Likelihood	1.32%	0.72%	*0.60%***

Panel B: 2SLS Results for Donation Announcements Sample

Dep. Var.:	(1) Disaster Relief Don.	(2) $CAR_{don.}$ [–1,+1]	(3) Disaster Relief Don.	(4) Disaster Relief Don. × Large Disaster	(5) $CAR_{don.}$ [–1,+1]
	1st Stage	*2nd Stage*	*1st Stage*	*1st Stage*	*2nd Stage*
Early Disaster	1.535***		1.132***	1.406***	
	(0.366)		(0.253)	(0.241)	
Early Disaster × Large Disaster			0.596***	1.337***	
			(0.058)	(0.095)	
Disaster Relief Donation		–2.658*			–14.838**
		(1.425)			(5.946)
Large Disaster			–0.131***	–0.053**	–2.012***
			(0.010)	(0.027)	(0.727)
Disaster Relief Donation × Large Disaster					8.105**
					(2.790)
Control Variables	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes
Admin. Area × Year FE	Yes	Yes	Yes	Yes	Yes
Observations	4,428	4,428	4,428	4,428	4,428
F–Statistic (IV)	17.57		72.57	144.50	

Table 4: Unanticipated Donations and Placebo Test

This table reports the reports of testing on subsamples of unanticipated and single donations, as well as placebo tests. **Panel A** presents OLS estimations where the dependent variable is the firm's [–1,+1]–day CAR around a disaster relief donation announcement in the media or press releases in a sample of a nearest–neighbor matched sample of donating and (up to five) non–donating firms in the same country and year, matched on size and industry. In **Panel B**, the dependent variable is the firm–level CAR over a [–4,–2]–day event window prior to the disaster associated with the disaster relief donation announcement in columns (1) and (2) and prior to the donation announcement in columns (3) and (4). In both panels, the main explanatory variable is an indicator for whether a firm provides a disaster–specific donation (*Disaster Relief Donation*), interacted with measures of disaster saliency (*ln(Disaster Size)*). In Panel A, *Disaster Relief Donation* only captures unanticipated (first–time) donations in columns (1) and (2), and single donations (where the firm does not make follow–up donations) in columns (3) and (4). In other words, non–first–time donations are excluded in columns (1) and (2), and donation announcements where follow–up donations are made are excluded in columns (3) and (4). All specifications include a set of control variables (indicator for foreign activities, ROA, PPE/Assets, firm size, and the firm's effective tax rate) as well as industry fixed effects and administrative area–by–year fixed effects. Definitions of all variables are in Appendix B. Standard errors are clustered by administrative area. Asterisks (*, **, ***) indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

Panel A: Unanticipated and Single Donations				
Dep. Var.: CAR_{don}.[–1,+1]	(1)	(2)	(3)	(4)
Sample: Non–Donating + …	*Unanticipated Donations*		*Single Donations*	
Disaster Relief Donation	–0.285***	–0.669***	–0.077***	–0.500***
	(0.052)	(0.155)	(0.029)	(0.088)
ln(Disaster Size)		–0.035***		–0.033***
		(0.012)		(0.010)
Disaster Relief Donation		0.043***		0.046***
× ln(Disaster Size)		(0.012)		(0.007)
Control Variables	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes
Administrative Area × Year FE	Yes	Yes	Yes	Yes
Observations	3,983	3,983	4,314	4,314
R–squared	0.263	0.265	0.250	0.251
Panel B: Placebo Test				
	(1)	(2)	(3)	(4)
Dep. Var.:	CAR[–4,–2] Prior to Disaster		CAR[–4,–2] Prior to Donation	
Disaster Relief Donation	0.056	0.134	–0.035	–0.073
	(0.055)	(0.159)	(0.081)	(0.160)
ln(Disaster Size)		0.005		0.007
		(0.006)		(0.009)
Disaster Relief Donation ×		–0.008		0.004
ln (Disaster Size)		(0.011)		(0.011)
Control Variables	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes
Admin. Area × Year FE	Yes	Yes	Yes	Yes
Observations	4,589	4,589	4,482	4,482
R–squared	0.282	0.282	0.211	0.211

Table 5: Donation–Level Characteristics

This table presents OLS estimations where the dependent variable is the firm's [–1,+1]–day CAR around a disaster relief donation announcement in the media or press releases for a sample of donating firms. The main explanatory variable in column (1) is an indicator for whether the donation was made in–kind; in column (2), it is an indicator for donations made via the firm's foundation; in column (3), the donated amount as a fraction of total assets; and in column (4), its squared term. The sample is limited to donations with data availability regarding the donated amount in columns (3) and (4). All specifications include a set of control variables (indicator for foreign activities, ROA, PPE/Assets, firm size, and the firm's effective tax rate), as well as country–by–year fixed effects and industry fixed effects. Definitions of all variables are provided in Appendix B. Standard errors are clustered by administrative area. Asterisks (*, **, ***) indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

Dep. Var.: $CAR_{don.}[-1,+1]$	(1)	(2)	(3)	(4)
In–Kind Donation	0.649**			
	(0.255)			
Foundation Donation		–0.272*		
		(0.151)		
Donated Amount/Assets			4.690	20.287**
			(3.362)	(9.548)
$(\text{Donated Amount/Assets})^2$				–58.025*
				(34.117)
Observations	1,006	1,006	621	621
R–squared	0.143	0.140	0.189	0.195
Control variables	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes
Country × Year FE	Yes	Yes	Yes	Yes

Table 6: Distinguishing Strategic Benefits and Agency Costs

Panel A reports the results of regressing firms' [–1,+1]–day CARs around donation announcements on a binary indicator for disaster–specific donations (*Disaster Relief Donation*) interacted with indicators for domestic–focused firms in column (1), high SG&A expenses in column (2), and high R&D expenses in column (3). **Panel B** presents the results of regressing [–1,+1]–day CARs on the interaction between *Disaster Relief Donation* and indicators for low governance (using the MSCI Governance Index) in column (1), low institutional ownership in column (2), and a high CEO wage ratio in column (3). All specifications control for foreign activities, ROA, PPE/Assets, firm size, and the effective tax rate, as well as industry fixed effects and administrative area–by–year fixed effects. Definitions of all variables are provided in Appendix B. Standard errors are clustered by administrative area. Asterisks (*, **, ***) indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

Panel A: Strategic Philanthropy Proxies			
Dep. Var.: $CAR_{don.}[-1,+1]$	(1)	(2)	(3)
Disaster Relief Donation	–0.407***	–0.681***	–0.399***
	(0.061)	(0.031)	(0.045)
Domestic Focus	–0.668***		
	(0.070)		
Disaster Relief Donation	0.237***		
× Domestic Focus	(0.068)		
High SG&A Expenses		–0.441***	
		(0.076)	
Disaster Relief Donation		0.726***	
× High SG&A Expenses		(0.073)	
High R&D Expenses			–0.024
			(0.079)
Disaster Relief Donation			0.288*
× High R&D Expenses			(0.173)
Control Variables	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes
Administrative Area × Year FE	Yes	Yes	Yes
Observations	1,784	1,702	1,784
R–squared	0.303	0.308	0.298
Panel B: Agency Proxies			
Dep. Var.: $CAR_{don.}[-1,+1]$	(1)	(2)	(3)
Disaster Relief Donation	–0.190**	–0.148	0.035
	(0.077)	(0.246)	(0.086)
Low Governance Index	0.361***		
	(0.055)		
Disaster Relief Donation	–0.292***		
× Low Governance Index	(0.079)		
Low Institutional Ownership		0.120	
		(0.112)	
Disaster Relief Donation		–0.411*	
× Low Institutional Ownership		(0.222)	
High CEO Wage Ratio			–0.005
			(0.111)
Disaster Relief Donation			–0.518***
× High CEO Wage Ratio			(0.086)
Control Variables	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes
Administrative Area × Year FE	Yes	Yes	Yes
Observations	1,784	1,784	1,784
R–squared	0.304	0.298	0.304

Table 7: Where Do Strategic Benefits Come From?

This table presents OLS results where the dependent variables are the percentage change in monthly Google searches for the firm's name from the month before the disaster to the disaster month (column (1)), the percentage increase in domestic sales growth in the year after the disaster (column (2)), an indicator for whether there is an increase in analyst recommendations for the company in the year of the disaster (column (3)), an indicator for whether the firm receives a CSR award in the year of the disaster (column (4)), and the change in the employee satisfaction score in Refinitiv ESG ratings from the year before the disaster to the disaster year (column (5)). In all panels, the main explanatory variable is a binary indicator for whether the firm provided disaster relief donations (*Disaster Relief Donation*), interacted with an indicator for large disasters (*Large Disaster*). Columns (1)–(4) include control variables (foreign activities, ROA , PPE/Assets, firm size, and the firm's effective tax rate) as well as industry fixed effects and administrative area–by–year fixed effects. Column (5) includes all controls and industry–by–year fixed effects. Definitions of all variables are provided in Appendix B. Standard errors are clustered by administrative area. Asterisks (*, **, ***) indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

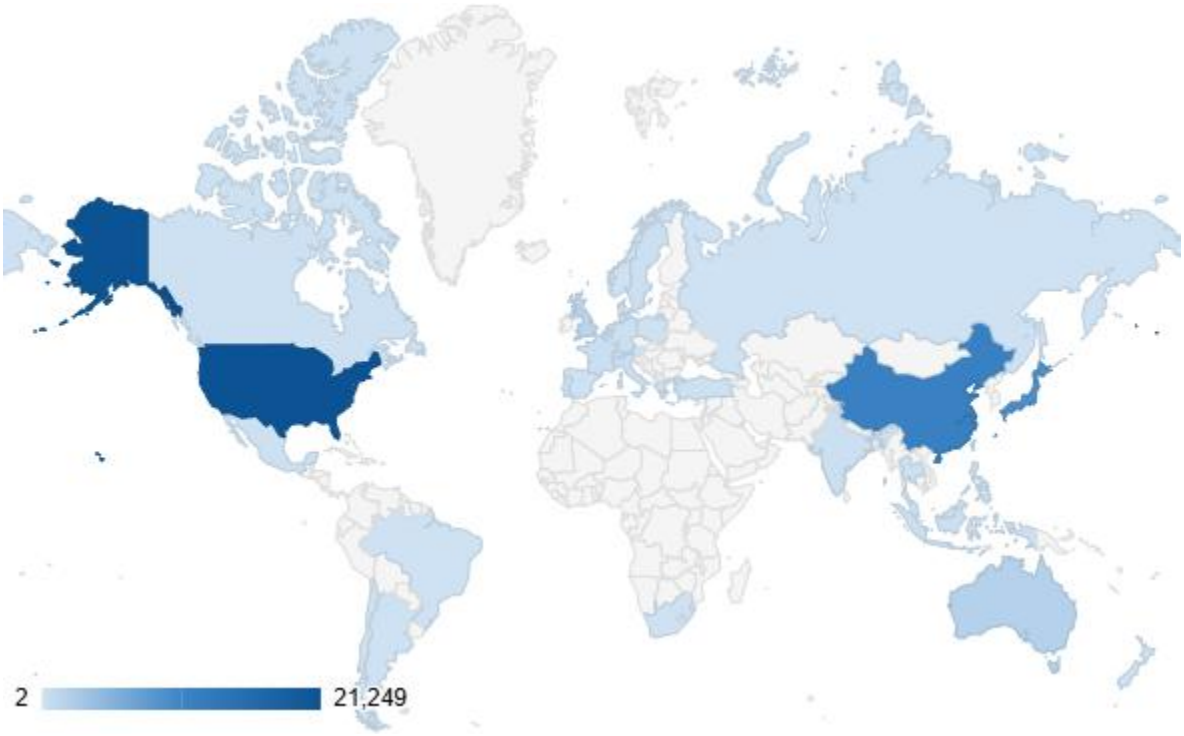
Dep. Var.:	(1) *% Change in Firm Web Searches*$_{m-1,m}$	(2) *% Domestic Sales Growth*$_{t,t+1}$	(3) *Recommendation Increase*$_t$	(4) *CSR Award*$_t$	(5) *Employee Satisfaction Change*$_{t-1,t}$
Disaster Relief Donation	–0.002	0.002	–0.022***	0.254***	–1.336**
	(0.002)	(0.001)	(0.002)	(0.002)	(0.599)
Large Disaster	0.036***	–0.033***	0.008	0.028***	–0.296
	(0.005)	(0.004)	(0.007)	(0.005)	(0.377)
Disaster Relief Donation × Large Disaster	0.014**	0.021*	0.016**	0.040***	1.510*
	(0.005)	(0.011)	(0.008)	(0.004)	(0.852)
Control Variables	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	No
Administrative Area × Year FE	Yes	Yes	Yes	Yes	No
Industry × Year FE	No	No	No	No	Yes
Observations	4,208	2,188	3,780	1,053	195
R–squared	0.147	0.425	0.214	0.385	0.840

Disaster Relief, Inc.: When Is Corporate Philanthropy Good or Bad for Shareholders?

Internet Appendix

Figure IA.A: Geographic Sample Distribution (Disaster × Firm)

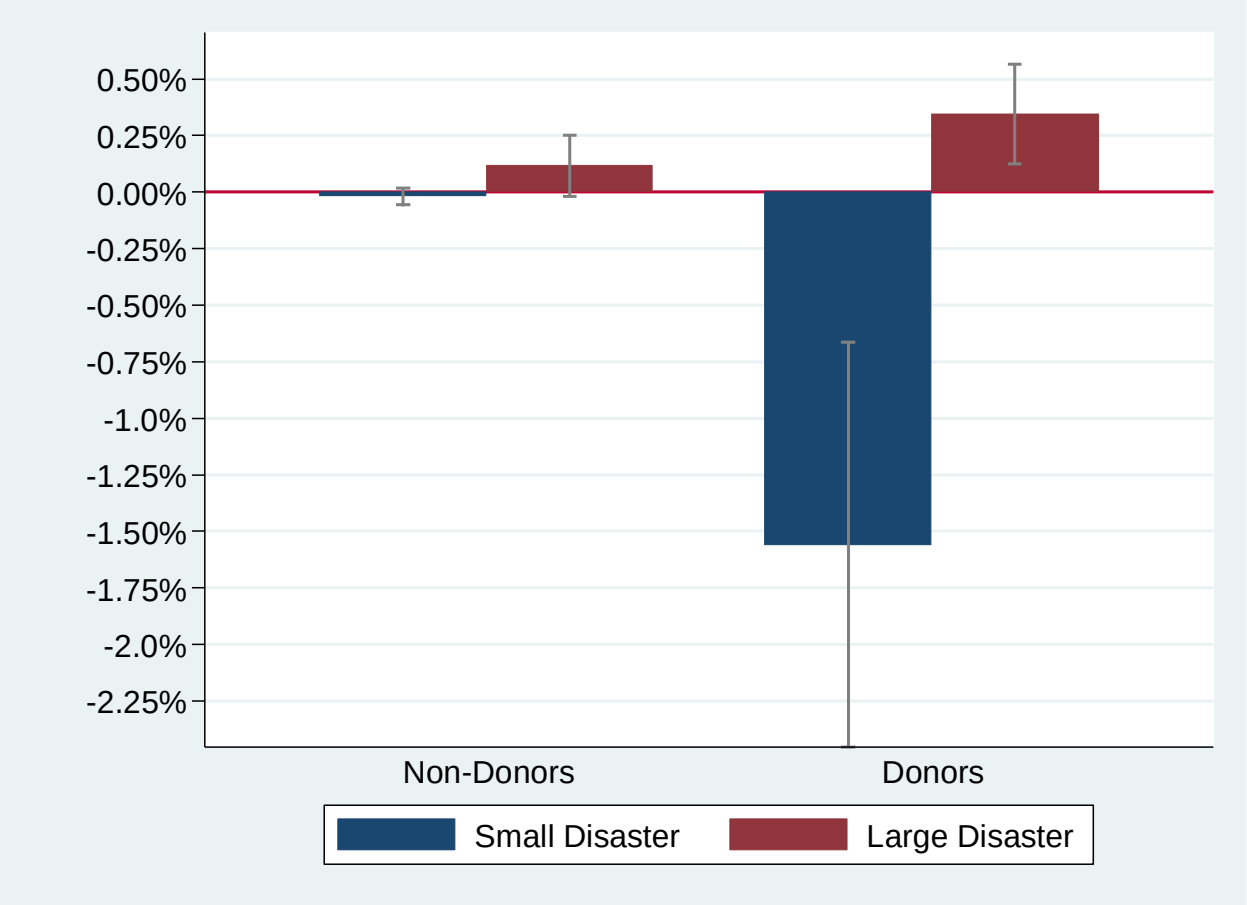
This figure shows the frequency of firm–disaster observations at the country level for the disaster–level sample, consisting of 52,499 disaster–firm observations. Countries that are more represented in the sample are indicated in darker shades. Countries with no recorded disasters in the EM–DAT database between 2006 and 2018, or without any publicly listed companies in CRSP or Compustat, are not included in our sample and are shown in gray.



[Figure IA.A Alt Text: World map showing distribution of observations across countries. Darker colors indicate higher representation in the sample.]

Figure IA.B: Cumulative Abnormal Returns around Disaster Window

This figure displays the average [–1,+21]–day CARs around the disaster date for donors and non–donors, distinguishing small (bottom–quartile)– and large (top–quartile)– scale disasters. CARs are demeaned relative to country, industry, and administrative area–level averages. Confidence intervals are set at the 90% level.



[Figure IA.B Alt Text: Bar plot with confidence intervals showing magnitude and significance of CARs grouped by disaster severity and donor status.]

Table IA.A: Donation Announcements – Other Robustness Tests

This table presents OLS estimations of firms' [–1,+1]–day CARs around a disaster relief donation announcement, regressed on an indicator for treated firms (*Disaster Relief Donation*). Panel A interacts *Disaster Relief Donation* with the total number of disaster–related deaths in column (1), an indicator for whether the CEO is mentioned in the announcement in column (2), an indicator for firms in a B2C industry in column (3), and a measure of industry competition, proxied by the inverse HHI, in column (4). In Panel B, *Disaster Relief Donation* is interacted with *ln(Disaster Size)* for a sample of U.S. and non–U.S. firms in columns (1) and (2), for firms with high and low market efficiency, proxied by low or high country–level R–squared values, in columns (3) and (4), for firms without a foreign listing in column (5), and controlling for industry–level input specificity in column (6). All specifications include a set of control variables (an indicator for foreign activities, ROA, PPE/Assets, firm size, and the firm's effective tax rate) as well as industry–by–year fixed effects (FE) and administrative area–by–year FE. Definitions of all variables are provided in Appendix B. Standard errors are clustered by administrative area. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

Panel A: Additional Interactions

Dep. Var.: $CAR_{don.}[-1,+1]$	(1)	(2)	(3)	(4)
Disaster Relief Donation	–0.080	0.037	–0.112***	–0.414***
	(0.140)	(0.124)	(0.029)	(0.136)
Disaster Relief Donation × Disaster–Related Deaths	0.008***			
	(0.002)			
Disaster Relief Donation × CEO Mention		–0.345**		
		(0.161)		
Disaster Relief Donation × B2C Industry			0.285***	
			(0.090)	
Disaster Relief Donation × Industry Competition				0.005***
				(0.001)
Observations	4,428	4,428	4,428	4,359
R–squared	0.253	0.249	0.249	0.250
Control Variables	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes
Administrative Area × Year FE	Yes	Yes	Yes	Yes

Panel B: Various Samples and Controls

Dep. Var.: $CAR_{don.}[-1,+1]$	(1)	(2)	(3)	(4)	(5)	(6)
Sample	*US*	*Non–US*	*Low R^2*	*High R^2*	*No foreign listing*	*All*
Disaster Relief Donation	–0.363***	–1.289**	–0.348***	–1.298**	–0.609*	–0.796***
	(0.052)	(0.514)	(0.058)	(0.539)	(0.318)	(0.266)
ln(Disaster Size)	–0.034***	–0.068	–0.031***	–0.132*	–0.037***	–0.035***
	(0.008)	(0.073)	(0.006)	(0.069)	(0.011)	(0.012)
Disaster Relief Donation × ln(Disaster Size)	0.039***	0.114*	0.037***	0.092	0.053**	0.069***
	(0.007)	(0.066)	(0.007)	(0.081)	(0.026)	(0.020)
Industry Input Specificity						–0.110
						(0.086)
Observations	3,183	1,242	3,522	905	3,535	2,278
R–squared	0.094	0.616	0.116	0.656	0.129	0.224
Control Variables	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Administrative Area × Year FE	Yes	Yes	Yes	Yes	Yes	Yes

Table IA.B: Instrumental Variable Test – Robustness Test

This table presents the second–stage estimations for a two–stage least squares test, as in Table 3, where in the first stage the *Disaster Relief Donation* dummy is instrumented with *Early Disaster*, and the interaction *Disaster Relief Donation* × *Large Disaster* is instrumented with *Early Disaster* × *Large Disaster*. In column (1), the dependent variable is the firm's [–1,+1]–day CARs around the donation announcement, and in column (2), the dependent variable is the firm's CARs over a [–4,–2] window prior to the disaster. Column (1) excludes disasters classified as tropical storms or tropical cyclones. All specifications control for foreign activities, ROA, PPE/Assets, firm size, the firm's effective tax rate, disaster type, industry fixed effects (FE), and administrative area–by–year FEs. Definitions of all variables are provided in Appendix B. Standard errors are clustered by administrative area. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

	(1)	(2)
Dep. Var.:	$CAR_{don.}[-1,+1]$	CAR[–4,–2] Prior to Disaster
Sample	*Excluding Tropical Storms*	*All*
Disaster Relief Donation	–9.021	276.45
	(6.198)	(3,226)
Large Disaster	–1.417*	25.93
	(0.726)	(298.1)
Disaster Relief Donation ×	5.450*	102.3
Large Disaster	(2.862)	(1,182)
Observations	4,272	4,589
F–Stat (IV)	73.70	0.01
Control Variables and FEs	Yes	Yes

Table IA.C: Disaster–Level Sample – Firm CARs around Disasters

This table presents OLS estimations where the dependent variable are the firm–level CARs around a disaster. The main explanatory variable in Panel A is a binary indicator for whether an unaffected firm provides a disaster–specific donation (*Disaster Relief Donation*), while in Panel B, it is interacted with measures of disaster size (*ln(Disaster Size)*), search intensity (*ln(Web Search Intensity)*), and indicators for small and large disasters (*Small Disaster* and *Large Disaster*, respectively). In **Panel A**, the dependent variable is the firm's [–1,+21]–day CAR around the disaster date in columns (1) and (4), the [–1,+3]–day CAR in column (2), and the [+4,+21]–day CAR in column (3). In **Panel B**, the dependent variable is the [–1,+21]–day CAR around the disaster date. All specifications include a set of control variables (indicator for foreign activities, ROA, PPE/Assets, firm size, and the firm's effective tax rate) as well as industry × year fixed effects and administrative area × year fixed effects, with firm fixed effects included in column (4) of Panel A. Definitions of all variables are provided in Appendix B. Standard errors are clustered by administrative area. Asterisks (*, **, ***) indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

Panel A: Market Reactions to Disaster Relief Donations

Dep. Var.:	(1) $CAR_{dis.}[-1,+21]$	(2) $CAR_{dis.}[-1,+3]$	(3) $CAR_{dis.}[+4,+21]$	(4) $CAR_{dis.}[-1,+21]$
Disaster Relief Donation	–1.351*	–0.069**	–1.282*	–2.409***
	(0.704)	(0.032)	(0.680)	(0.241)
Control Variables	Yes	Yes	Yes	Yes
Industry × Year FE	Yes	Yes	Yes	Yes
Administrative Area × Year FE	Yes	Yes	Yes	Yes
Firm FE	No	No	No	Yes
Observations	52,499	52,499	52,499	44,640
R–squared	0.128	0.088	0.131	0.389

Panel B: Disaster Salience

Dep. Var.: $CAR_{dis.}[-1,+21]$	(1)	(2)	(3)	(4)
Disaster Relief Donation	–9.140***	–6.719**	0.138	–1.773**
	(2.281)	(2.934)	(0.715)	(0.809)
ln(Disaster Size)	–0.000			
	(0.042)			
Disaster Relief Donation × ln (Disaster Size)	0.560***			
	(0.130)			
ln(Web Search Intensity)		0.243		
		(0.148)		
Disaster Relief Donation × ln (Web Search Intensity)		1.695**		
		(0.741)		
Small Disaster			0.074	
			(0.218)	
Disaster Relief Donation × Small Disaster			–6.887***	
			(0.684)	
Large Disaster				0.050
				(0.157)
Disaster Relief Donation × Large Disaster				1.829***
				(0.606)
Control Variables	Yes	Yes	Yes	Yes
Industry × Year FE	Yes	Yes	Yes	Yes
Administrative Area × Year FE	Yes	Yes	Yes	Yes
Observations	52,499	52,499	52,499	52,499
R–squared	0.128	0.128	0.129	0.128

Table IA.D: Two–Stage Least–Square Test using Disaster Timing as IV (Disaster Sample)

This table presents results from a two–stage least squares (2SLS) test using an indicator for disasters occurring in the first three months of the firm's fiscal year (*Early Disaster*) as an instrument for the firm's decision to donate (*Disaster Relief Donation*) on the disaster sample. First–stage results are reported in columns (1), (3), and (4). Column (1) regresses the binary indicator *Disaster Relief Donation* on *Early Disaster*, and columns (3) and (4) regress *Disaster Relief Donation* and the interaction of *Disaster Relief Donation* with *Large Disaster*, respectively, on *Early Disaster* and *Early Disaster* × *Large Disaster*. Columns (2) and (5) present the second–stage results, where the dependent variable is the firm's [–1,+21]–day CARs around the disaster event date, regressed on the predicted donation likelihoods from the first–stage estimations. All specifications control for foreign activities, ROA, PPE/Assets, firm size, the firm's effective tax rate, as well as industry–by–year fixed effects and administrative area fixed effects. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

	(1)	(2)	(3)	(4)	(5)
Dep. Var.:	Disaster Relief Don.	$CAR_{dis.}$ [–1,+21]	Disaster Relief Donation	Disaster Relief Donation × Large Disaster	$CAR_{dis.}$ [–1,+21]
	1st Stage	*2nd Stage*	*1st Stage*	*1st Stage*	*2nd Stage*
Early Disaster	1.256***		1.161***	0.075***	
	(0.134)		(0.152)	(0.017)	
Early Disaster × Large Disaster			0.242	1.348***	
			(0.168)	(0.046)	
Disaster Relief Donation		–7.199**			–8.076*
		(3.671)			(4.184)
Large Disaster			–0.003***	–0.002***	0.066
			(0.001)	(0.000)	(0.196)
Disaster Relief Donation × Large Disaster					6.040*
					(3.584)
Control Variables	Yes	Yes	Yes	Yes	Yes
Industry × Year FE	Yes	Yes	Yes	Yes	Yes
Administrative Area FE	Yes	Yes	Yes	Yes	Yes
Observations	52,512	52,512	52,512	52,512	52,512
F–Statistic (IV)	88.26		252.59	430.66	

Table IA.E: Excluding Indirectly Affected Subsidiaries, Suppliers, Customers (Disaster Sample)

Panel A shows OLS estimations on the disaster sample where unaffected firms' [–1,+21]–day CARs around sudden disasters are regressed on an indicator for disaster–specific donations (*Disaster Relief Donation*), interacted with proxies for disaster saliency. The table focuses on a subsample of U.S. firms, excluding firms with subsidiaries, suppliers, or customers in affected states. Proxies for disaster saliency include disaster size and web search intensity in columns (1) and (2), and dummies for small and large disasters in columns (3) and (4). All specifications control for foreign activities, ROA, PPE/Assets, firm size, and the effective tax rate, as well as industry–by–year fixed effects and state fixed effects. Definitions of all variables are provided in Appendix B. Standard errors are clustered by state. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

Dep. Var.: $CAR_{dis.}[-1,+21]$	(1)	(2)	(3)	(4)
Disaster Relief Donation	–11.836***	–8.721***	1.115	–2.422***
	(3.045)	(1.599)	(0.806)	(0.823)
ln(Disaster Size)	0.112			
	(0.088)			
Disaster Relief Donation × ln (Disaster Size)	0.697***			
	(0.206)			
ln(Web Search Intensity)		0.520		
		(0.413)		
Disaster Relief Donation × ln (Web Search Intensity)		2.076***		
		(0.440)		
Small Disaster			–0.521	
			(0.582)	
Disaster Relief Donation × Small Disaster			–18.533***	
			(2.297)	
Large Disaster				0.221
				(0.244)
Disaster Relief Donation × Large Disaster				1.586**
				(0.619)
Control Variables	Yes	Yes	Yes	Yes
Industry × Year FE	Yes	Yes	Yes	Yes
State FE	Yes	Yes	Yes	Yes
Observations	15,478	15,478	15,478	15,478
R–squared	0.080	0.080	0.081	0.080

Table IA.F: Institutional Variables and Other Donors (Disaster Sample)

This table reports the results of regressing firms' [–1,+21]–day CARs around sudden disasters on a binary indicator for disaster–specific donations (*Disaster Relief Donation*) interacted with an indicator for a high ratio of other commercial and NGO grants to GDP in the country (column (1)), a high country–level sustainability score (i.e., strong ESG regulation) in column (2), high country–level government disaster relief grants in column (3), the firm's effective tax rate (proxying for the country's tax regime) in column (4), and high religiousness of the country in column (5). All specifications include a set of control variables (an indicator for foreign activities, ROA, PPE/Assets, firm size, and the effective tax rate), as well as industry–by–year fixed effects and administrative area–by–year fixed effects. Definitions of all variables are provided in Appendix B. Standard errors are clustered by administrative area. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

Dep. Var.: $CAR_{dis.}[-1,+21]$	(1)	(2)	(3)	(4)	(5)
Disaster Relief Donation	–1.143**	0.046	4.400*	–1.669***	–1.283**
	(0.516)	(0.198)	(2.617)	(0.500)	(0.549)
Disaster Relief Donation	–3.583**				
× High Other Commercial & NGO Grants	(1.420)				
Disaster Relief Donation		–1.618**			
× Strong ESG Regulation		(0.738)			
Disaster Relief Donation			–6.297***		
× High Government Relief Grants			(2.196)		
Disaster Relief Donation				3.140*	
× Effective Tax Rate				(1.736)	
Disaster Relief Donation					1.297**
× High Religiousness					(0.633)
Control Variables	Yes	Yes	Yes	Yes	Yes
Industry × Year FE	Yes	Yes	Yes	Yes	Yes
Administrative Area × Year FE	Yes	Yes	Yes	Yes	Yes
Observations	52,499	51,589	34,897	52,499	52,521
R–squared	0.128	0.127	0.106	0.128	0.032

Table IA.G: Donations to Small Disasters and Family Firms (Disaster Sample)

This table presents OLS estimations where the dependent variable is the firm's [–1,+21]–day CARs around a disaster. The sample in Panel A consists of small disasters (disaster damage in the bottom quartile of the distribution). The main explanatory variable is *Disaster Relief Donation*, interacted with proxies for agency–motivated donations (*Low Governance Index*, *Low Institutional Ownership*, and *CEO Wage Ratio*, respectively) in columns (1), (2), and (3). Panel B presents estimations for a sample of family firms, where *Disaster Relief Donation* is interacted with measures of disaster saliency: *ln(Disaster Size)* in column (1), search intensity (*ln(Web Search Intensity)*) in column (2), *Small Disaster* in column (3), and *Large Disaster* in column (4). All specifications include control variables (indicator for foreign activities, ROA, PPE/Assets, firm size, and the firm's effective tax rate) as well as industry–by–year and administrative area–by–year fixed effects in Panel A, and country, industry, and year fixed effects in Panel B. Definitions of all variables are provided in Appendix B. Standard errors are clustered by administrative area. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

Panel A: Small Disasters

Dep. Var.: $CAR_{dis.}[-1,+21]$	(1)	(2)	(3)
Disaster Relief Donation	5.802***	–2.119	-3.491
	(0.559)	(1.403)	(5.326)
Low Governance Index	2.448***		
	(0.343)		
Disaster Relief Donation × Low Governance Index	–10.963***		
	(2.999)		
Low Institutional Ownership		–0.709**	
		(0.333)	
Disaster Relief Donation × Low Institutional Ownership		–10.892***	
		(1.597)	
CEO Wage Ratio			0.220
			(0.395)
Disaster Relief Donation × CEO Wage Ratio			–2.236***
			(0.554)
Control Variables	Yes	Yes	Yes
Industry × Year FE	Yes	Yes	Yes
Admin. Area × Year FE	Yes	Yes	Yes
Observations	1,556	12,286	12,286
R–squared	0.226	0.158	0.158

Panel B: Family Firms

Dep. Var.: $CAR_{dis.}[-1,+21]$	(1)	(2)	(3)	(4)
Disaster Relief Donation	–1.732	–12.748	0.469	–1.319
	(3.281)	(9.313)	(3.226)	(3.359)
ln(Disaster Size)	–0.445**			
	(0.180)			
Disaster Relief Donation × ln(Disaster Size)	2.344***			
	(0.557)			
ln(Web Search Intensity)		–0.884		
		(0.603)		
Disaster Relief Donation × Low ln(Web Search Intensity)		4.013**		
		(1.980)		
Small Disaster			1.380	
			(1.838)	
Disaster Relief Donation × Small Disaster			N/A	
Large Disaster				0.118
				(0.872)
Disaster Relief Donation × Large Disaster				5.807**
				(2.519)
Control Variables	Yes	Yes	Yes	Yes
Country, Industry, and Year FE	Yes	Yes	Yes	Yes
Observations	591	591	591	591
R–squared	0.138	0.135	0.135	0.135

Table IA.H: The Role of Responsible Investors (Disaster Sample)

This table presents OLS estimations where the dependent variable is the firm's [–1,+21]–day CARs around a disaster for a sample of U.S. firms. The main explanatory variable is an indicator for whether a firm provides a disaster–specific donation (*Disaster Relief Donation*), interacted with an indicator for whether the firm has non–zero SRI fund ownership (column (1)), the percentage of SRI owners as a fraction of total institutional owners (columns (2) and (4)), and the number of SRI fund owners (column (3)). The sample consists of all U.S. firms in columns (1) and (2) and all U.S. firms with non–zero SRI fund ownership in columns (3) and (4). All specifications include a set of control variables (indicator for foreign activities, ROA, PPE/Assets, firm size, and the firm's effective tax rate) as well as industry–by–year fixed effects and administrative area–by–year fixed effects. Definitions of all variables are provided in Appendix B. Standard errors are clustered by administrative area. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

Dep. Var.: $CAR_{dis.}[-1,+21]$	(1)	(2)	(3)	(4)
Sample	*All US Firms*		*US Firms with SRI Investment*	
Disaster Relief Donation	–2.542***	–0.280	–0.539***	–0.758***
	(0.901)	(0.286)	(0.116)	(0.204)
SRI Investment	–0.807***			
	(0.090)			
Disaster Relief Donation × SRI Investment	1.788**			
	(0.704)			
% of SRI Funds		–0.040***		–0.031***
		(0.006)		(0.007)
Disaster Relief Donation × % of SRI Funds		0.075***		0.162***
		(0.018)		(0.009)
Number of SRI Funds			0.041***	
			(0.007)	
Disaster Relief Donation × Number of SRI Funds			0.063***	
			(0.023)	
Control Variables	Yes	Yes	Yes	Yes
Industry × Year FE	Yes	Yes	Yes	Yes
Admin. Area × Year FE	Yes	Yes	Yes	Yes
Observations	21,189	9,990	4,436	4,436
R–squared	0.105	0.105	0.150	0.150

Table IA.I: Other Robustness Tests (Disaster Sample)

This table presents OLS estimations where the dependent variable is the firm's [–1,+21]–day CAR following a disaster. The main explanatory variable is the binary indicator *Disaster Relief Donation*, interacted with an indicator for large disasters (*Large Disaster*) in columns (1) and (2), non–disaster–specific donations (*Annual Non–Disaster Donations*) in column (3), an indicator for having a customer or supplier in an affected area (*Affected Supply Chain*) in column (4), and the firm's environmental score (ranging from –50 to +50) in column (5). The sample in column (1) does not restrict firms to those located in the disaster country, column (2) consists of long–term disasters only, column (4) includes firms with supply chain information, and column (5) includes firms with Refinitiv coverage. The remaining columns consist of the main disaster–level sample. All specifications include controls for foreign activities, ROA, PPE/Assets, firm size, and the firm's effective tax rate, as well as industry–by–year fixed effects and administrative area–by–year fixed effects. Definitions of all variables are provided in Appendix B. Standard errors are clustered by administrative area. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

Dep. Var.: $CAR_{dis.}[-1,+21]$	(1)	(2)	(3)	(4)	(5)
Sample	*Incl. Non–Local Listed Firms*	*Long–Term Disasters*	*All*	*Supply Chain Cov.*	*Refinitiv Coverage*
Disaster Relief Donation	–0.004**	6.917	–1.397*	–1.469***	–4.246***
	(0.002)	(8.226)	(0.775)	(0.566)	(0.263)
Large Disaster	–0.001	0.133			
	(0.001)	(0.103)			
Disaster Relief Donation × Large Disaster	0.010**	–0.533			
	(0.005)	(0.594)			
Annual Non–Disaster Donations			–0.127		
			(0.262)		
Disaster Relief Donation × Annual Non–Disaster Donations			0.230		
			(0.532)		
Affected Supply Chain				0.199	
				(0.207)	
Disaster Relief Donation × Affected Supply Chain				1.101**	
				(0.508)	
Environmental Score					–0.009
					(0.024)
Disaster Relief Donation × Environmental Score					0.035***
					(0.013)
Control Variables	Yes	Yes	Yes	Yes	Yes
Industry × Year FE	Yes	Yes	Yes	Yes	Yes
Administrative Area × Year FE	Yes	Yes	Yes	Yes	Yes
Observations	2,345,936	158,006	52,499	21,189	784
R–squared	0.060	0.047	0.128	0.105	0.323

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