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The shared costs of pursuing shareholder values

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THE SHARED COSTS OF PURSUING SHAREHOLDER VALUES

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Abstract:

We show that visible shareholders—such as prominent individuals—promote costly prosocial actions when crises raise their reputational stakes, while less visible financial blockholders oppose such actions and prefer to donate privately. Exploiting the quasirandom timing of AGMs around COVID-19 and the Russian invasion of Ukraine, we isolate reputational incentives as a driver of firm donations and firm exits from Russia. These actions reduce investment, productivity, and profitability by 1–3%, imposing costs on all shareholders. The findings reveal intra-shareholder conflicts outside formal governance and highlight how private reputational gains can generate shared financial losses.

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The Shared Costs of Pursuing Shareholder Values^{*}

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Abstract

Does shareholder visibility affect firms' prosocial behavior? What implications for other shareholders? Exploiting quasi-experimental variation from media coverage around Annual General Meetings and major crises (COVID-19 pandemic and Russian invasion of Ukraine), we show that prominent shareholders support costly prosocial initiatives when these yield reputational benefits. In contrast, less-visible financial blockholders oppose such expenditures at their portfolio firms and prefer to act themselves. Prosocial actions driven by reputational motives reduce investment, productivity, and profits by 1–3%, imposing costs on other shareholders. Our findings reveal new implications for minority investors of unobservable intra-shareholder conflicts that emerge when examining shareholder incentives.

JEL classifications: G32, G41, M14

Keywords: shareholder value, wealth, conflict, warm glow, reputation, exit and voice, social responsibility, charitable donations, covid, Ukraine, Russia

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1 Introduction

Through private meetings, public letters, and persistent informal engagement, the descendants of John D. Rockefeller, founder of the oil company that became Exxon-Mobil, urged the firm to confront climate change and pivot toward cleaner energy (Kaiser and Wasserman, 2016). This reflects a broader pattern: corporate social responsibility (CSR) initiatives can be driven by shareholders whose public identity is tied to the firm, not only through formal channels like shareholder votes and proposals, but through personal influence and media visibility. While enhancing the activist’s reputation, these actions can impose costs on other shareholders and shape outcomes across the firm’s social and environmental footprint.

Some investors support CSR out of ethical conviction or a desire for reputational rewards such as a “warm glow” from being associated with doing good (Broccardo *et al.*, 2022, Fioretti, 2022). Others pursue CSR for strategic financial reasons, such as mitigating reputational risk or aligning with consumer preferences (Lins *et al.*, 2017, Pástor *et al.*, 2021). Yet despite a growing literature, we still lack causal evidence on when and why shareholders push for costly CSR without clear financial returns (Bonnefon *et al.*, 2025). This is partly because shareholder influence is hard to observe, raising a simple but important question: when do shareholders willingly incur a shared cost to pursue social objectives?

This paper provides a new answer: shareholder reputational incentives. We argue that differences in shareholders’ ability to extract personal image gains from visible firm actions can explain their heterogeneous stance toward CSR (Krueger *et al.*, 2020, Berk and Van Binsbergen, 2025). A prominent individual—closely associated with the firm in public discourse—may gain reputational “rents” from corporate generosity, while an anonymous investor cannot. These private benefits drive visible shareholders to promote prosocial actions, even when costly. In contrast, “faceless” financial shareholders, who operate without public attribution, have little incentive to do so.

This misalignment creates understudied *intra-shareholder* conflict: visible shareholders may steer the firm toward socially beneficial actions that serve their personal image, while imposing costs on others who do not share or internalize those reputational gains.

We test this mechanism by combining a simple theoretical model with new empirical evidence. Our identification strategy exploits predictable variation in media attention around annual general meetings (AGMs), where we observe sharp spikes in news coverage and Google search activity for both firms and their most

prominent shareholders. We compare prosocial actions at firms holding their AGM during periods of heightened public scrutiny—specifically, the early phases of major global crises such as the COVID-19 pandemic and the Russian invasion of Ukraine—to otherwise similar firms whose AGMs fall outside those windows. This creates a *quasi-experimental* setting to study how shareholder visibility shapes corporate behavior.

Building on this variation, our empirical strategy interacts crisis exposure, proxied by the predetermined timing of a firm’s AGM relative to the crisis onset, with shareholder visibility, proxied by the presence of large individual shareholders prior to the event.¹ Because AGM timing provides an exogenous spotlight on firms (independent of managerial or shareholder preferences, access to decision-makers, or financial strength) our design enables a credible inference of shareholders’ reputational motives.

First, we show that firms do indeed act prosocially when shareholder visibility is highest. Over the past ten years, S&P 500 firms with prominent *individual* shareholders have disproportionately announced charitable initiatives and have more positive E&S press releases around their AGMs. By contrast, firms controlled mainly by *financial* investors exhibit no such pattern of strategically timed prosocial news. This suggests that image-conscious shareholders actively influence the firm’s philanthropy and public communications whenever an audience is watching.

These patterns intensify in crisis contexts. During the COVID-19 outbreak, firms with AGMs and visible individual shareholders were significantly more likely to pledge large charitable donations, often 1% of annual profits. A 10pp increase in individual block ownership raised the likelihood of donation by about 9pp. In contrast, firms with large financial shareholders were less likely to donate, even as many of these institutions gave directly through private channels. Consistent with reputational payoffs accruing to visible individuals alone, we show that Google Trends data confirms a surge in public interest in individual shareholders after firm donations, but not for institutional ones.

We observe a similar mechanism during the Russia–Ukraine conflict. Firms with large individual shareholders and AGMs scheduled shortly after the invasion were significantly more likely to exit Russia swiftly, despite the substantial financial losses involved (Jack *et al.*, 2022). These exits often entailed asset write-downs and restructuring charges, but garnered public praise and reputational capital for the shareholders linked to them. Firms lacking either individual ownership or AGM

¹We show robustness to alternative measures of visibility, including Google search trends in place of ownership shares.

visibility responded more slowly, balancing financial risks with muted reputational incentives.

These costs were substantial. While firms may be better positioned than shareholders to deliver certain social goods, such as supplying sanitizers to hospitals or cutting ties with authoritarian regimes, the decision to act was influenced by the reputational priorities of large individual shareholders. To assess the impact on other investors, we use a triple difference design on the 1,000 largest U.S. firms. For each crisis, we compare productivity changes at firms whose AGMs fell exactly at the crisis onset *and* that had large individual shareholders in place just before the crisis with productivity changes at other large firms—either those with AGMs at different times during the crisis year or those without large individual shareholders—before and after the crisis began.

Using operating income and market valuation, our intent-to-treat estimates suggest that firms exposed to both conditions during the pandemic incurred costs equivalent to 5–15% of a standard deviation in the subsequent months. These losses stemmed from higher operating expenses, as revenues remained unchanged. For example, in 2021, investment fell by 12% of a standard deviation, contributing to a 6% decline in EPS. During the Russia–Ukraine crisis, similarly exposed firms increased asset sales by 10% of a standard deviation and incurred restructuring charges that reduced EPS by 1% in 2022. Ultimately, prioritizing the values of a few visible shareholders imposed measurable costs on others.

Our findings advance two strands on the private provision of social goods. First, we build on research linking CSR and philanthropy to reputational pressure, social norms and inclinations of consumers, employees, and investors (e.g., [Bénabou and Tirole, 2010](#), [List, 2011](#), [Kitzmüller and Shimshack, 2012](#), [Elfenbein *et al.*, 2012](#), [Dyck *et al.*, 2019](#), [Hedblom *et al.*, 2019](#), [Akey *et al.*, 2021](#), [List and Momeni, 2021](#), [Conway and Boxell, 2024](#)). Second, we complement recent studies of private sanctions and trade diversion in geopolitical crises ([Korovkin *et al.*, 2024](#), [Nigmatulina, 2023](#), [Steinbach, 2023](#), [Hart *et al.*, 2024](#)). In both settings, we show that shareholder visibility—beyond managerial influence ([Fleurbaey and Ponthière, 2023](#), [Harrison *et al.*, 2019](#))—as a driver of firms’ CSR choices and exit decisions, deepening our understanding of how private actors shape political and economic outcomes (e.g., [Baron, 2001](#)).

The central novelty of this paper lies in uncovering unobserved shareholder preferences and causally linking them to the costs they impose on other shareholders. These findings contribute to a longstanding literature on the objectives of the firm, which gained prominence decades ago through debates on profit maximization

(e.g., [Friedman, 1970](#), [Grossman and Hart, 1979](#), [Hart, 1995](#)), and has recently been reinvigorated by discussions on corporate purpose and the transition to a sustainable economy ([Hart and Zingales, 2017](#), [Rajan *et al.*, 2022](#), [Fioretti, 2022](#), [Bolton *et al.*, 2020](#)). Our results highlight a new dimension of corporate governance: even in the absence of classic manager–shareholder conflicts, divergent shareholder incentives can drive costly firm decisions, mirroring agency problems with multiple principals attempting to influence a common agent (e.g., [Bernheim and Whinston, 1986](#)).²

This insight carries implications for both theory and practice. While it is well established that shareholders and managers may extract private rents ([Shleifer and Vishny, 1997](#)), standard governance remedies—such as legal protections for minority investors ([La Porta *et al.*, 2002](#)) or oversight by large blockholders (e.g., [Shleifer and Vishny, 1986](#), [Burkart *et al.*, 1997](#), [Edmans, 2009](#))—typically presume alignment between investor interests. Our findings suggest a more complex reality: reputational motives can drive visible shareholders to “do good” at others’ expense, revealing an underexplored source of governance frictions—catering to heterogeneous investor preferences. This reframes oversight: protecting minority shareholders may depend not only on ownership concentration, but on the diversity of values among large investors ([Cronqvist and Fahlenbrach, 2008](#), [Choi, 2018](#), [Chen *et al.*, 2020](#), [Azar *et al.*, 2021](#)). In line with this view, we find that firms with multiple large shareholders holding divergent preferences are less likely to pursue costly CSR than those dominated by a single, visible investor.

We extend the catering literature—where managers respond to investor demand for non-fundamental objectives (e.g., [Baker and Wurgler, 2004](#))—by showing that such strategic adjustment can also target the reputational incentives of dominant individual shareholders ([Jiao *et al.*, 2021](#)). This insight underpins our reputational-incentive framework for CSR: visible shareholders extract private, image-based benefits from firm actions (e.g., [Andreoni, 1990](#), [Bar-Isaac *et al.*, 2008](#)), driving prosocial behavior. Whether managers react to direct pressure or preemptively cater to these preferences (for reputational alignment, reappointment, or influence) remains an open question ([Saint-Jean, 2024](#)), but in either case visibility and reputation emerge as the key currency of CSR decisions.

Our approach also extends research on shareholder influence, which has largely focused on formal proposals and votes at AGMs, as these are among the very few shareholders’ observable actions (e.g., [DeMarzo, 1993](#), [Gompers *et al.*, 2003](#), [Cuñat](#)

²Our paper also builds on a growing literature on shareholder activism, which investigates both voice (direct engagement) and exit (share sales) (e.g., [Oehmke and Opp, 2020](#), [Meiowitz and Pi, 2022](#)) and documents similar mechanisms among other stakeholders, from consumers to NGOs and civil society actors (e.g., [Hirschman, 1970](#), [Gans *et al.*, 2021](#), [Fioretti *et al.*, 2025](#)).

(*et al.*, 2012, Bouton *et al.*, 2022, Meiowitz *et al.*, 2024). We introduce a portable empirical framework capturing influence that standard datasets miss. Similar analyses may be especially relevant for sustainability issues, where decisions are less regulated than areas like mergers and acquisitions. For example, no 2020 AGM proposals in our sample addressed COVID-19 interventions.

The paper proceeds as follows. Section 2 develops the conceptual framework, and Section 3 outlines the empirical strategy. Section 4 presents our main findings on how shareholder visibility drives firm actions and reports a range of robustness checks. Section 7 examines the distributional costs of aligning with shareholder preferences and highlights our key contributions. Finally, Section 8 summarizes the results and concludes.

2 Conceptual Framework

This conceptual framework illustrates the scope of our empirical analysis. A firm considers a *costly* but *visible* prosocial action that reduces profits and dividends by $D > 0$ for its two shareholders. Shareholder A , publicly associated to the firm, gains $v_A > 0$ in image benefits if the action is adopted, while shareholder B , with no public connection, gains nothing ($v_B = 0$). Each shareholder can pressure the manager to pursue their preferred action, creating an *externality* on the other shareholder, with the following probability function:

$$\Pr(\text{prosocial action}) = s(e_A, e_B), \quad (1)$$

which is increasing in the influence effort of shareholder A , e_A , and decreasing in that of shareholder B , e_B . The cost of effort to shareholder i , $c(e_i)$, is convex in i 's effort level, with $e_i > 0$. Shareholder i 's utility is

$$U_i = (v_i - D) \cdot s(e_A, e_B) - c(e_i).$$

i 's optimal effort sets marginal benefit equal to marginal cost, according to:

$$\begin{aligned} (v_A - D) \cdot \frac{\partial s(e_A, e_B)}{\partial e_A} &= c'(e_A), \text{ for type } A, \\ -D \cdot \frac{\partial s(e_A, e_B)}{\partial e_B} &= c'(e_B), \text{ for type } B. \end{aligned} \quad (2)$$

Therefore, A will pressure the firm only in case of a clear association with the firm ($v_A > D$). Importantly, an *exogenous increase* in v_A will raise A 's equilibrium effort.

In the case of strategic substitution, shareholder B will adjust their effort to reduce the probability of a donation.³ Thus, the two agents compete to influence the firm and will set effort levels to offset each other, considering the dividend loss and their private returns and effort costs.

This model easily extends to a setting with N shareholders, where shareholder $k \in 1, \dots, N$ is of type A or B and owns $x^k \in (0, 1]$ shares, with $\sum_{k=1}^N x^k = 1$. Denoting by E_i the total effort of all type- i shareholders, the utility of shareholder k of type i is

$$U_i^k = (v_i^k - D \cdot x^k) \cdot s(E_A, E_B) - c(e_i^k).$$

This maximization problem yields similar first-order conditions as the two-shareholder case, providing us with two new *theoretical predictions*, which we will test in the data.

The first prediction is that large- B shareholders (those with higher x^k) will increase their effort more than small- B shareholders as v_A^k rises, since large- B shareholders stand to lose more when A 's effort increases. The second prediction concerns A -type shareholders. If the public is less likely to associate minority type- A shareholders with the firm—a hypothesis we confirm empirically in Figures 1 and 4 of the next sections—then the same increase in v_A^k will elicit a stronger response from large- A shareholders compared to small- A shareholders.

Implications for the empirical analysis In the real world, shareholders have different effort costs for influence and varying dividend expectations. Suppose an exogenous treatment increases v_A at some firms but not others. We expect prosocial actions to be more likely at treated firms with a high proportion of type- A shareholders, particularly blockholders owning large shares. Conversely, prosocial actions should be less likely at treated firms with larger type- B blockholders. The next section explains how we implement this intuition on shareholding data.

3 Annual General Meetings & Shareholder Visibility

According to the framework in Section 2, examining shareholder motives poses three key challenges: distinguishing shareholder types by their potential private gains from prosocial actions (type A vs. type B), quantifying the cost of such actions (D), and measuring shareholder effort (e_A and e_B in Equation 1).

Standard ESG metrics are insufficient for this purpose: they do not capture

³Strategic substitution naturally arise in this setting with $s(e_A, e_B) = \frac{e_A}{e_A + e_B}$ (with $e_A + e_B > 0$) or the logistic probability.

specific, visible actions tied to shareholder advocacy, and shareholder effort remains largely unobservable. We begin Section 3.1 by identifying shareholder types, and then, in Section 3.1.1, show that corporate prosocial behavior around AGM dates is concentrated among firms with shareholders who receive heightened media attention during these events. This motivates our empirical strategy in Section 4, where we leverage the exogenous coincidence of legally pre-scheduled AGMs and unanticipated crises to identify the reputational incentives behind shareholder-led CSR.

3.1 Categorizing Shareholder Types

Following our framework in Section 2, we classify shareholders by their potential visibility gains. As AGMs substantially increase a firm’s media coverage (Fioretti *et al.*, 2025), they may boost the reputational benefits for highly visible shareholders (type *A*), such as prominent individuals.⁴

Data We focus on firms included in the S&P500 from 2011 to 2020. We obtain their quarterly shareholding data from Refinitiv. For each company, we collect monthly Google Trends scores for every shareholder holding at least 1% of shares in any quarter during the sample period, yielding a total of 1,597 distinct shareholders. The Google Trends score ranges from 0 to 100. A score of 100 represents the month with the highest number of Google searches for that shareholder within the selected time period, while all other months are scaled relative to that peak. AGM dates are from *Institutional Shareholder Service* (ISS), a leading proxy advisory and corporate governance firm.

Methodology We align firm calendars so that month 0 is the AGM month for all firms and estimate:

$$y_{ift} = \sum_{m=-4, m \neq -3}^4 \theta_m \text{AGM}_{f(i)t+m} + \gamma_m \text{AGM}_{f(i)t+m} \times \text{Individual}_{i(f)} + \alpha_{ift} + \tau_t + \varepsilon_{ift}, \quad (3)$$

where y_{ift} is the Google Trends score (standardized) for shareholder i of firm f in month t . $\text{AGM}_{f(i)t+m}$ timing indicators for whether f holds an AGM in month $t+m$

⁴As will become clear in this section, we define type-*A* shareholders as individual shareholders. However, this classification is not taken as fixed; in Section 5.4, we assess its robustness using alternative measures of visibility between firms and shareholders.

are interacted with an indicator for whether investor i is an individual shareholder in firm f based on shareholding data seven months before the AGM.⁵ Fixed effects control for shareholder-by-firm-by-year and month-by-year, and standard errors are clustered at the firm-by-shareholder-by-year level. As we discuss in Section 4, we set the reference period at three months before the AGM because widely followed guidelines suggest firms notify shareholders of an upcoming AGMs no longer than 90 days in advance.

Figure 1 shows results for the coefficient of interest γ_m , which compares the differential searches accruing to individual and non-individual shareholders within firms, for three different versions of (3), subsetting the data either to shareholders with $> 1\%$ share (blue dots), shareholders with a $> 2.5\%$ share (red triangles), or with a $> 5\%$ share (green squares). We find that Google searches for individual shareholders increase by about 10% of a standard deviation around AGMs (pink area), peaking above 20% for firms where individuals hold more than 5%. This indicates that individual shareholders—often including public figures, founders, or wealthy individuals—gain more media visibility from AGMs than institutional shareholders. We classify them as type A , while other shareholders (e.g., mutual funds, banks, insurance firms) are type B .

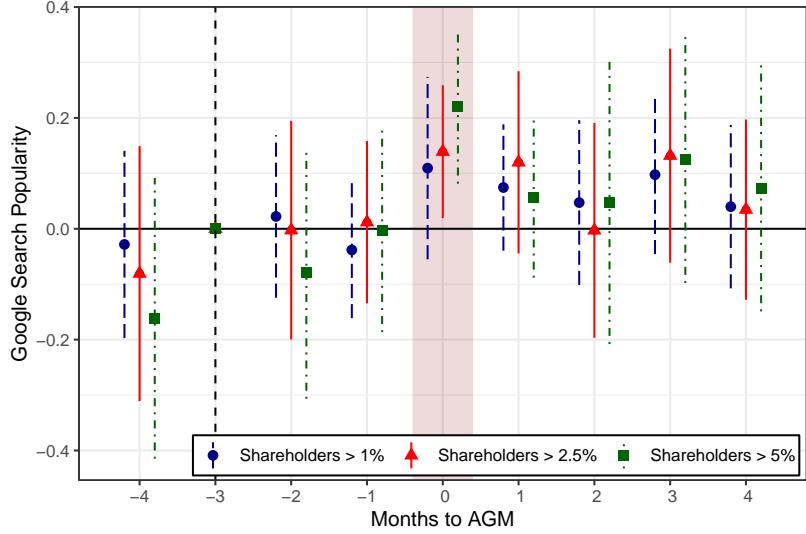
3.1.1 Supporting Evidence of Shareholder Influence

We support our framework with empirical evidence on firms' strategic communication around AGMs, focusing on the timing of positive environmental and social (E&S) press releases and donation announcements. The underlying assumption is that shareholder reputation incentives may lead firms with prominent individual shareholders to cluster favorable news around AGMs, when media attention is heightened.

Data We use data from RavenPack (2011–2020) on donation announcements and press release sentiment, merged with Refinitiv shareholder data and ISS AGM dates for the same sample of firms used in the main analysis. Sentiment is a natural language processing-based measure computed as the share of positive E&S press

⁵In this section, we fix ownership at seven months before the AGM to avoid capturing changes in holdings driven by expectations about the meeting, such as proposals or votes. This timing predates both the typical three-month notice period and the common four- to six-month window for shareholder proposal submissions. In Section 4, we instead fix ownership immediately before the focal crisis to avoid confounding effects from trading.

Figure 1: Visibility of large individual shareholders around AGMs relative to other shareholders with similar shares



Note: Estimates of $\hat{\gamma}_m$ measuring the difference in search rates between individual and non-individual shareholders over the previous month (3). Blue dots, red triangles, and green squares report the $\hat{\gamma}_m$ when subsetting the data to firms with at least one individual shareholder with $>1\%$, $>2.5\%$, $>5\%$ shares, respectively. Vertical bars denote 95% confidence intervals (CI). Standard errors are clustered by firm-shareholder-year.

releases out of all E&S press releases.⁶ We exclude non-E&S press releases, which mechanically spike around AGMs.

Methodology We align firm calendars so week \$0\$ is the AGM month for all firms and estimate:

$$y_{fmt} = \sum_{k=-13, k \neq -12}^{20} \lambda_k \mathbb{1}_{\{m+k, t\}} \times \text{Individual}_{ft} + \mathbf{X}_{fmt} \beta + \tau_{mt} + \varepsilon_{fmt}. \quad (4)$$

where y_{fmt} is measuring a firm's pro-social communication efforts in the previous 4 weeks, and Individual_{ft} is a binary variable equal to 1 if firm f has at least one individual shareholder holding more than 5% of shares as of seven months before the yearly AGM as in equation 3, and 0 otherwise. Controls include firm-by-year and week-by-year fixed effects, and covariates for cash holdings. Standard errors are

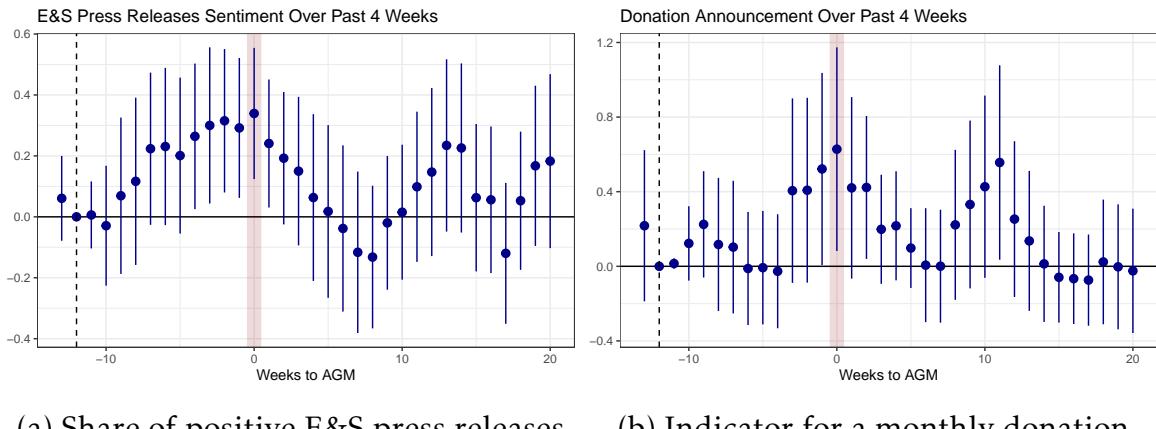
⁶RavenPack News Analytics provides tone scores for news articles from over 40,000 sources, including *Dow Jones Newswires*, the *Wall Street Journal*, *MarketWatch*, *Factiva*, and *Barron's*, and flags articles related to specific events such as donations. The usage of this score has already been validated in the literature (e.g., [Bushman and Pinto, 2024](#)). In its latest release, the tone score ranges from -1 to 1 : news with scores above zero are "positive." The dataset distinguishes media-initiated coverage from firm-issued press releases, allowing us to focus on the latter.

clustered at the firm-by-year level. The independent variable is standardized for interpretability.

Results Figure 2 shows results for the share of E&S press releases in Panel (a) and an indicator for donation announcements in Panel (b). Firms with large individual shareholders increase the share of positive E&S press releases by 35% of a standard deviation in the month before their AGM. This result extends to the announcement of donations, which increase by 50% of a standard deviation before an AGM for those firms.⁷

We interpret these patterns as suggestive evidence of strategic timing: firms with visible shareholders concentrate prosocial announcements during AGMs to maximize reputational returns. This supports our model’s prediction that type A shareholders—those who benefit most from visibility—exert greater pressure for public-facing prosocial actions.

Figure 2: Individual shareholders’ influence on firms around AGMs



(a) Share of positive E&S press releases (b) Indicator for a monthly donation

Note: Estimated $\hat{\lambda}_k$ from (4) using either the share of positive environmental and social (E&S) press releases of firm f (Panel (a)) or an indicator for a donation event (Panel (b)) in the four weeks ending in week t as dependent variables. The sentiment of a press release is categorized in a $[-1, +1]$ scale using a NLP algorithm by RavenPack. We consider those press releases with a positive score as positive. Treated firms have at least one large institutional shareholders with at least 5% shares. Vertical bars denote 95% CI. Standard errors are clustered by firm-year.

4 Empirical Framework

To empirically assess the influence of different shareholder types on corporate decisions, this section operationalizes the framework in Section 2 by leveraging the

⁷Later spikes in Figure 2 are consistent with the occurrence of earning calls, another event driving media attention.

fixed scheduling of AGMs and the unexpected onset of major crises. The coincidence of crisis timing and pre-scheduled AGMs creates an exogenous increase in public attention for a subset of firms. This shift amplifies incentives for visible prosocial behavior among certain shareholders but not others, as detailed below.

Starting from the first-order conditions in equation (2), we take total differentials and perform a first-order Taylor expansion around a reference point $(\bar{e}_A, \bar{e}_B, \bar{v}_A, \bar{D})$. As shown in Appendix A, which reports all derivations, this yields linear approximations of the equilibrium efforts:

$$e_A \approx \alpha_0 + \tilde{\alpha}_1 v_A + \tilde{\alpha}_2 D, \quad \text{and} \quad e_B \approx \delta_0 + \tilde{\delta}_1 v_A + \tilde{\delta}_2 D,$$

where v_A captures the reputational incentive of type- A shareholders, D denotes the cost of prosocial behavior, and the α and δ parameters are equilibrium objects that depend on the model's primitives. Substituting into a reduced-form equation where the likelihood of corporate prosocial action depends linearly on shareholder effort, i.e., $y_f = \tilde{\theta}_0 + \tilde{\theta}_1 e_A + \tilde{\theta}_2 e_B$, we obtain:

$$y_f = \theta_0 + \theta_1 v_{A,f} + \theta_2 D_f + \epsilon_f, \quad (5)$$

where $y_f \in \{0, 1\}$ indicates whether firm f undertakes a prosocial action.⁸

Consider two otherwise identical firms, f and f' , with the same level of damages D and type- A shareholder ownership, but only firm f experiences an exogenous increase in visibility. The expected difference in prosocial behavior is then:

$$\mathbb{E}[y_f - y_{f'}] = \theta_1 \cdot \underbrace{(v_{A,f} - v_{A,f'})}_{\Delta v_A} + \underbrace{\mathbb{E}[\epsilon_f - \epsilon_{f'}]}_{\Delta \epsilon = 0},$$

where the difference in reputational incentives, $\Delta v_A = v_{A,f} - v_{A,f'}$, is induced by the exogenous change in visibility, on which we turn next.

AGM rules and crises Firms hold AGMs annually to review performance and vote on proposals submitted by management or eligible shareholders, who must file at least 120 days before the proxy statement is released, based on the prior year's AGM date (Rule 14a-8, [SEA, 1934](#)). Panel (a) of Appendix Figure B1 shows that AGM timing is stable across years, exhibiting little firm-level variation from 2012 to 2019 for S&P 500 firms.

⁸Appendix A also derives this expression under a logistic specification in which *relative* rather than *absolute* effort levels determine prosocial behavior.

Under *Institutional Shareholder Services* (ISS) guidelines, firms must announce AGMs no more than 90 days before the meeting (ISS, 2022). We therefore define the treatment group as firms with AGMs scheduled in the first 90 days of a crisis. This design exploits the predetermined nature of AGM scheduling relative to crisis onset: while the coincidence of AGM timing with a crisis is orthogonal to firm fundamentals, governance, or managerial preferences (e.g., the cost D), it increases the salience of shareholder behavior (i.e., $v_{A,f}$) as shown in Section 3. Substituting this into equation (5) yields the empirical specification:

$$y_f = \beta_1 \text{Ownership}_f + \beta_2 \text{AGM}_f + \beta_{\text{treat}} \text{Ownership}_f \times \text{AGM}_f + \varepsilon_f, \quad (6)$$

where Ownership_f is an indicator for whether firm f has type- A shareholders before the crisis, and AGM_f indicates whether its AGM was scheduled within 90 days of the crisis onset.

The interaction term, $\text{Ownership}_f \times \text{AGM}_f = 1$, captures the effect of increased shareholder visibility (v_A) by comparing the decision y_f of firms with type- A shareholders *and* an AGM set before the crisis onset (that is $\text{Ownership}_f = 1$ and $\text{AGM}_f = 1$) with that of firms with type- A shareholders *but no* AGM (that is $\text{Ownership}_f = 1$ and $\text{AGM}_f = 0$). Thus, β_{treat} recovers θ_1 from equation (5) and measures the influence of reputational incentives on prosocial corporate behavior.

The regression controls for Ownership_f and AGM_f directly and other control variables and fixed effects can be added. Therefore, as in a randomized controlled trial, identification of β_{treat} relies on the assumption that AGM timing is independent of unobservables correlated with shareholder composition that may affect y_f . Formally, this requires $\text{Corr}(\text{Ownership}_f \times \text{AGM}_f, \varepsilon_f | \text{Ownership}_f, \text{AGM}_f) = 0$, which holds if AGM_f is predetermined, as we argued above.⁹

Illustration We illustrate with the case of the COVID-19 crisis. Equation (6) describes a cross-sectional regression of y_f , an indicator for whether firm f donated to COVID-19, on Ownership_f , which measures pre-crisis shareholder composition (e.g., the share of type A investors as of December 2019 at firm f), and AGM_f , an indicator equal to one if the firm had an AGM scheduled within 90 days of January 15, 2020, the date of the first U.S. COVID-19 case (Holshue *et al.*, 2020).¹⁰

⁹Using (5), the error term in (6) decomposes as $\varepsilon_f = \theta_2 D_f + \varepsilon_f$. Thus, identifying θ_1 requires that the treatment—AGM timing—is uncorrelated with both D_f and ε_f , which is satisfied by design.

¹⁰When investigating the Russian invasion of Ukraine on February 24, 2022, we use a shorter window to define treatment, to avoid potential confounding from sanctions introduced shortly thereafter.

If Ownership_f equals one for firms with individual shareholders and zero otherwise, then β_{treat} captures the difference in donation rates between treated and untreated firms with individual shareholders, net of the analogous difference among firms without them. A positive β_{treat} implies that individual shareholders supported donations in response to crisis-induced salience.

To examine the influence of other shareholder types, we change Ownership_f to refer to, for instance, banks or insurance companies. Following the discussion in Section 2, we expect a negative β_{treat} in this case if they draw less private gains.

Access to managers and other confounding factors Because the interaction between crisis onset and pre-determined AGM timing is orthogonal to firm and shareholder characteristics, our design isolates variation in v_A induced specifically by the crisis and AGM schedule. This variation captures mechanisms such as private image gains to individual shareholders, while differencing out firm-level factors that could otherwise confound identification—such as differential access to managers (e.g., founders may engage more directly with executives), heterogeneous shareholder preferences (e.g., discount rates or risk tolerance), or variation in corporate governance.

A separate concern is that changes in ownership around the crisis could bias the link between shareholder composition and firm behavior. To address this, we fix the shareholder network prior to the crisis, ensuring that post-crisis trading does not contaminate the estimated effect of pre-existing ownership structures.

Distributional consequences To study the distributional effects of shareholder influence on other shareholders, Section 7 adopts an intention-to-treat approach and adapts (6) into a triple difference-in-differences framework, where the crisis start determines the post-period, and AGM_f and Ownership_f define the treatment. We will examine pre-trends and evaluate results with event studies.

Next, we estimate β_{treat} from (6) in two distinct settings. Our main analysis (Section 5) examines shareholder influence on firms' decisions to donate at the onset of the COVID-19 pandemic. Section 6 shows that our findings are robust to alternative contexts, analyzing firms' decisions to exit Russia following its invasion of Ukraine.

5 Shareholder Influence During the Pandemic

This section tests the theoretical framework from Section 2 using the COVID-19 pandemic as a laboratory. We begin by introducing the data (Section 5.1), then present the main result: individual shareholders pushed for prosocial actions, while financial shareholders opposed them (Section 5.2). Section 5.3 explores mechanisms, showing that individual shareholders gained visibility—proxied by spikes in Google searches—while financial shareholders preferred to donate directly. The same section demonstrates robustness to alternative visibility measures and rules out competing explanations such as financial returns, consumer pressure, or policy interventions.

5.1 Data

We construct a dataset of U.S.-based S&P 500 firms using accounting data from Compustat, ownership and ESG data from LSEG, and branches data from Orbis, as detailed in Table 1. The first panel reports financial and operational characteristics. The second panel describes shareholder composition as of December 31, 2019 with a focus on individual and financial investors (defined as banks, mutual funds, and insurers). The third panel summarizes firms' prosocial characteristics, including ESG scores, and donation data collected from media reports, company disclosures, and internet searches. The final panel defines our treatment: firms that held their 2020 AGM before April 15, 2020, based on ISS data. We restrict the sample to 482 U.S. firms with financial and operational data as of December 2019 and not subject to mergers or exit from the index during the entire 2020 year.¹¹

Columns 1–3 of the table report distributional statistics (25th, 50th, and 75th percentiles), while Column 4 reports means. Columns 5–8 compare treated and control firms; t-tests indicate no significant differences in key observables. Financial characteristics (e.g., market capitalization) and operational metrics (e.g., revenue, EPS, and employment) are balanced across groups. Shareholding structures are also similar: both groups display comparable levels of individual ownership and a similar number of firms with large individual shareholders. The same holds for financial shareholders. Donation behavior is likewise balanced: by April 15, 2020, treated and control firms donated an average of \$7.36 million—approximately 0.1% of revenue. These figures exclude in-kind contributions such as medical supplies or software, which are difficult to value. Overall, the balance checks support the exogeneity of

¹¹COVID-19 case and death counts are sourced from Johns Hopkins University ([Dong *et al.*, 2020](#)).

Table 1: Firm and shareholder characteristics at treated and control groups

	Quantiles			Average				p-value (8)
	25% (1)	50% (2)	75% (3)	Overall (4)	Treated (5)	Control (6)	Diff. (5)-(6)	
i. Finance & Operations								
Market Capitalization (bn \$)	13.43	24.24	51.48	52.78	65.05	52.03	13.03	0.40
Revenue (bn \$)	4.91	10.09	21.42	22.36	16.53	22.84	-6.32	0.11
Earnings Per Share	2.07	3.90	6.41	5.08	3.41	5.26	-1.85	0.06
Cash to Total Assets	0.01	0.04	0.10	0.07	0.07	0.07	0.01	0.71
Book-to-Market	0.17	0.34	0.58	0.42	0.40	0.41	-0.02	0.83
Exporter (0/1)	0.00	0.00	1.00	0.45	0.32	0.46	-0.15	0.20
Employees ('000s)	9.00	21.00	56.93	51.14	58.50	50.49	8.01	0.58
Branches	17.00	88.00	388.50	560.89	429.22	575.97	-146.75	0.57
ii. Shareholding Composition								
Ownership Concentration (HHI)	1.96	2.69	3.50	3.01	3.32	2.98	0.34	0.55
Individual Ownership	0.00	0.00	0.00	0.01	0.01	0.00	0.01	0.24
# Firms with individual ownership >1%	0.00	0.00	0.00	0.05	0.09	0.05	0.04	0.36
Institutional Ownership	0.77	0.87	0.94	0.84	0.81	0.84	-0.03	0.12
Financial Ownership	0.66	0.74	0.81	0.73	0.71	0.73	-0.02	0.32
Individual Blockholding (> 5%)	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.47
Financial Blockholding (> 5%)	0.15	0.21	0.27	0.29	0.28	0.29	-0.01	0.02
iii. Prosocial Characteristics								
ESG Score [0-100]	50.98	64.20	73.71	61.69	65.22	61.48	3.73	0.12
Social Score [0-100]	51.55	65.50	78.36	63.69	67.90	63.26	4.64	0.12
Governance Score [0-100]	50.84	65.05	77.08	63.02	63.35	63.23	0.12	0.97
Donations per 100\$ of Revenue	0.04	0.10	0.21	0.32	0.43	0.31	0.13	0.63
Covid donations:								
- Early Covid Donation (0/1)	0.00	0.00	1.00	0.45	0.57	0.44	0.13	0.09
- Early Covid Donation (m \$)	1.00	2.00	5.00	7.36	7.35	7.50	-0.15	0.97
iv. Definition of the Treatment Group								
AGM date relative to April 15	-	-	-	-	Before	After	-	-
Number of firms	-	-	-	482	47	435	-	-

Note: "Treated" in Column (5) refers to firms with an AGM before April 15, 2020. "Control" refers in Column 6 to firms with an AGM after April 15, 2020. Accounting and financial data are measured on Dec. 31, 2019.

AGM timing with respect to firm characteristics and pre-crisis donation behavior.

The sample size, 482 firms, is in line with recent cross-sectional studies leveraging field variation or surveys.¹² In our setting, most S&P 500 firms hold AGMs in the spring. As a result, 53 firms in our sample held their AGMs between January 15 and April 15, 2020, representing 14% of the sample. This imbalance introduces attenuation bias in the estimation of β_{treat} in equation (6), implying that our estimates are conservative.

¹²For example, [Bassi et al. \(2022\)](#) study machine rental markets in carpentry; [Bandiera et al. \(2013\)](#) compare team vs. individual incentives; and [Jones and Olken \(2005\)](#) analyze the role of leaders across regimes—all with similar sample sizes.

5.2 Main Results

Event-study evidence As an initial empirical check, we examine how donation behavior varies with AGM timing across firms with different shareholder types. We estimate the following event-study specification:

$$\begin{aligned}
 \text{Donated by April 15}_f = & \sum_{\substack{w=\text{Week of Jan 15} \\ w=\text{Week of June 15}}}^{\text{Week of June 15}} \beta_w \text{AGM}_{w,f} \\
 & + \sum_{\substack{w=\text{Week of Jan 15} \\ w=\text{Week of June 15}}} \beta_{\text{Ind},w} \text{AGM}_{w,f} \times \text{Individual}_f \\
 & + \sum_{\substack{w=\text{Week of Jan 15} \\ w=\text{Week of June 15}}} \beta_{\text{Fin},w} \text{AGM}_{w,f} \times \text{Financial}_f \\
 & + \beta_1 \text{Individual}_f + \beta_2 \text{Financial}_f + \sigma_{s(f)} + \iota_{i(f)} + \varepsilon_f,
 \end{aligned} \tag{7}$$

where the coefficients β_w capture the likelihood that firm f donates by April 15 if it held an AGM in week w , relative to the omitted category: the week of June 15, 2020.¹³ The coefficients $\beta_{\text{Ind},w}$ and $\beta_{\text{Fin},w}$ capture how this likelihood differs for firms with large individual and financial shareholders, respectively. The fixed effects $\sigma_{s(f)}$ and $\iota_{i(f)}$ control for state and industry variation. Acknowledging differences in average ownership stakes across shareholder types (see Table 1), we define $\text{Individual}_f = 1$ if firm f has at least one individual shareholder with a stake $> 0.1\%$ (a standard reporting threshold) which applies to 24% of firms in our sample. We define $\text{Financial}_f = 1$ if firm f has at least one financial institution holding a stake of 5% or more.

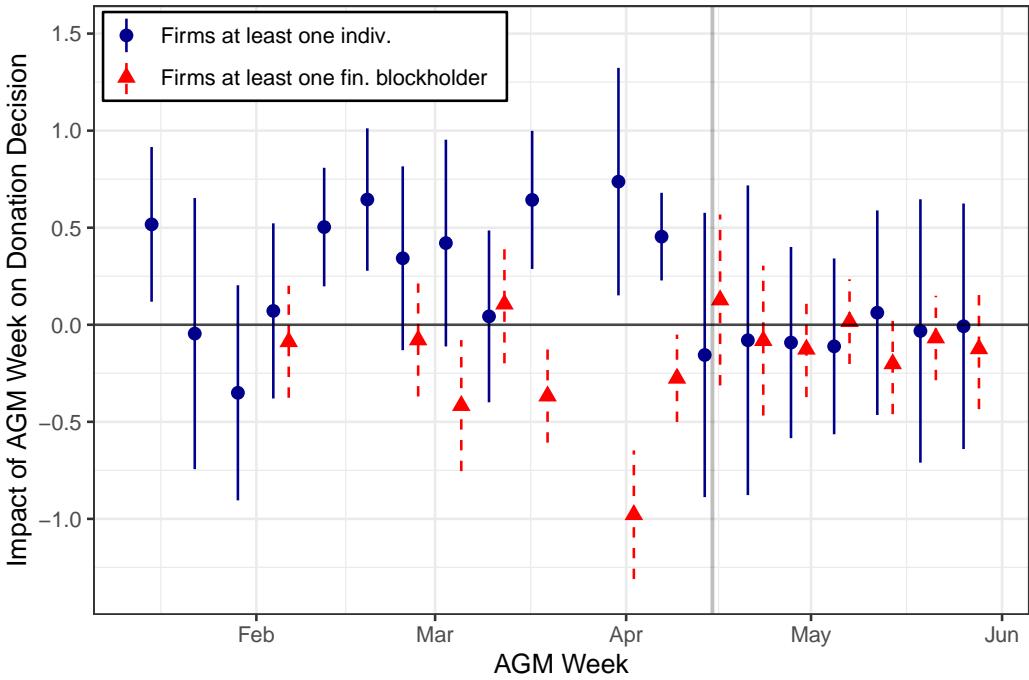
The dependent variable is an indicator equal to one if firm f donated by April 15, 2020 and zero otherwise. We choose this cutoff to match the treatment window (90 days from January 15, the date of the first confirmed U.S. COVID-19 case) and to exclude the period when firms were allowed to postpone or reschedule AGMs under SEC guidance beginning in April 2020. Allowing the window to extend beyond this date could introduce selection concerns, as firms anticipating heightened scrutiny or reputational pressure may have altered both the timing of their AGMs and their propensity to donate.¹⁴

¹³This window—from the week of January 15 to the week of June 15—covers approximately 85% of AGMs in our sample. Extending the horizon yields similar patterns.

¹⁴The [SEC \(2020\)](#) states that a firm “can notify shareholders of a change in the date, time, or location of its shareholder meeting without mailing additional soliciting materials or amending its proxy materials” under certain conditions. Among the seven S&P 500 firms with AGMs between

Figure 3 plots the estimated $\hat{\beta}_{\text{Ind},w}$ (blue circles) and the estimated $\hat{\beta}_{\text{Fin},w}$ (red triangles). Three patterns emerge. First, AGMs held before April 15 significantly increase donations at firms with individual shareholders. Interestingly, the effect is larger as the pandemic intensifies in later months, which is consistent with an increase in media attention around covid. Second, the effect reverses at firms with financial blockholders, consistent with the mechanism in Section 2, which pushes type-B shareholders to oppose donations due to low visibility gains. Third, the treatment effect dissipates after April 15 for both time series, indicating that reputational influence is tied to visibility at the AGM rather than to underlying shareholder preferences.

Figure 3: Shareholders' influence on donations by AGM week



Note: Estimated $\hat{\beta}_{\text{Ind},w}$ (blue dots) and $\hat{\beta}_{\text{Fin},w}$ (red triangles) from (7). The dependent variable is an indicator for whether a firm donated between January 15, and April 15, 2020 (marked with a gray vertical bar). Vertical bars denote 95% CI. Standard errors are clustered by industry. Blue dots estimate the increase in the probability of a donation due to the presence of at least one individual shareholder in the firm's ownership as of December 2019, and red triangles estimate the same increase due to the presence of a financial blockholder, defined as a mutual fund, bank, or insurance company owning at least 5% of the firm's equity, as of December 2019.

Treatment effect estimate We next estimate shareholder influence directly using the linear probability model in equation (6), with the same dependent variable and

April 7 and April 15, 2020, all had similarly timed AGMs in 2019, suggesting no endogenous date changes. Appendix Figure B1, Panel (b), shows that most timing changes in early 2020 involved firms with late-April AGMs in 2019.

fixed effects as in the event study (7). We also control for firm size (log total assets as of December 2019) as larger firms may find donations less expensive.

Table 2 reports the results. Across columns, $Ownership_f$ measures the December 2019 equity share held by individual (Columns 1–3) or financial (Columns 4–6) blockholders, defined at different thresholds: above 10%, 5%, or below 2%. To facilitate comparisons, $Ownership_f$ is standardized.¹⁵

Table 2: Shareholders' influence on covid donations

	Whether Firm f has Donated (0/1)					
	(1)	(2)	(3)	(4)	(5)	(6)
$Ownership$ ($\hat{\beta}_1$)	-0.001 (0.031)	0.018 (0.029)	0.006 (0.031)	-0.032 (0.026)	-0.048* (0.028)	0.025 (0.023)
AGM ($\hat{\beta}_2$)	0.109 (0.091)	0.110 (0.092)	0.073 (0.099)	0.077 (0.089)	0.101 (0.081)	0.139 (0.092)
$Ownership \times AGM$ ($\hat{\beta}_{treat}$)	0.083*** (0.030)	0.088*** (0.031)	0.066 (0.050)	-0.169** (0.082)	-0.163* (0.087)	-0.036 (0.104)
$Ownership$ is defined as $Ownership$ share:	Individuals					
	> 10%	> 5%	(0%, 2%)	> 10%	> 5%	(0%, 2%)
Control for size	✓	✓	✓	✓	✓	✓
Sub-Industry fixed effects	✓	✓	✓	✓	✓	✓
State fixed effects	✓	✓	✓	✓	✓	✓
N	482	482	482	482	482	482
Adjusted R-squared	0.55079	0.55282	0.55073	0.55641	0.55886	0.54760

* – $p < 0.1$; ** – $p < 0.05$; *** – $p < 0.01$.

Note: Estimated coefficient from (6) using an indicator variable that is one if firm f has donated by April 15, 2020. The variable $Ownership$ is the share of either individual (Columns 1–3) or financial investors (Columns 4–6) among all investors owning at least a share of total equity, as defined in the middle panel. The variable $Ownership$ is standardized. The AGM variable is an indicator variable taking value one if the firm has an AGM before April 15, 2020, and zero otherwise. Each regression controls for a firm's size as the log of total assets at December 2019. Standard errors are clustered by industry.

The interaction term $\hat{\beta}_{treat}$ is positive and significant in Columns 1 and 2: a one standard deviation increase in individual shareholder ownership raises the probability of donating by almost 9 percentage points. By contrast, small individual shareholders exert no significant influence (Column 3). These patterns are consistent with the theoretical prediction that prominent individual investors, who face higher visibility gains, are more likely to push for prosocial behavior. Notably, $\hat{\beta}_1$ and $\hat{\beta}_2$ are insignificant across all columns, suggesting no selection on observables, further supporting the exogeneity of the AGM treatment.

Turning to financial investors, we find the opposite pattern. In Column 4, firms

¹⁵Results are robust to a binary indicator equal to one if at least one shareholder exceeds a given threshold. Standard errors are clustered at the industry level following [Deeb and de Chaisemartin \(2019\)](#).

with high financial ownership are significantly less likely to donate, with a one standard deviation increase in financial blockholding reducing donations by roughly 17 pp. Smaller financial investors (Columns 5 and 6) have no significant effect. Again, there is no evidence of selection bias, as $\hat{\beta}_1$ and $\hat{\beta}_2$ remain indistinguishable from zero.

Taken together, the estimates indicate sizable effects. In Column 1, a standard deviation increase in individual or family blockholding (10%+ stake) makes a donation 18% more likely. In contrast, firms with large financial blockholders are 37% less likely to donate (Column 4).

Appendix Table B1 confirms that the results are robust to jointly controlling for both shareholder types, as well as to the inclusion of additional covariates such as cash-to-assets, market valuation, and ESG scores as of December 2019. The table also shows that the findings hold when using continuous measures of individual and financial ownership (Columns 1 and 4). Appendix Table B2 further extends the analysis to include all institutional shareholders—not just financial institutions as in Table 2—thereby capturing also entities such as foundations, pension funds, private equity, and venture capital firms, and finds similar results.

In the next section, we uncover the underlying mechanism in greater detail.

5.3 Mechanism

5.3.1 The Pass-Through of Image Gains

First, we test whether individual and institutional investors experience different levels of public visibility following a donation, as our conceptual framework in Section 2 assumes.

We proxy for public exposure using shareholder-level Google search activity around donation events. Specifically, we estimate the following event-study:

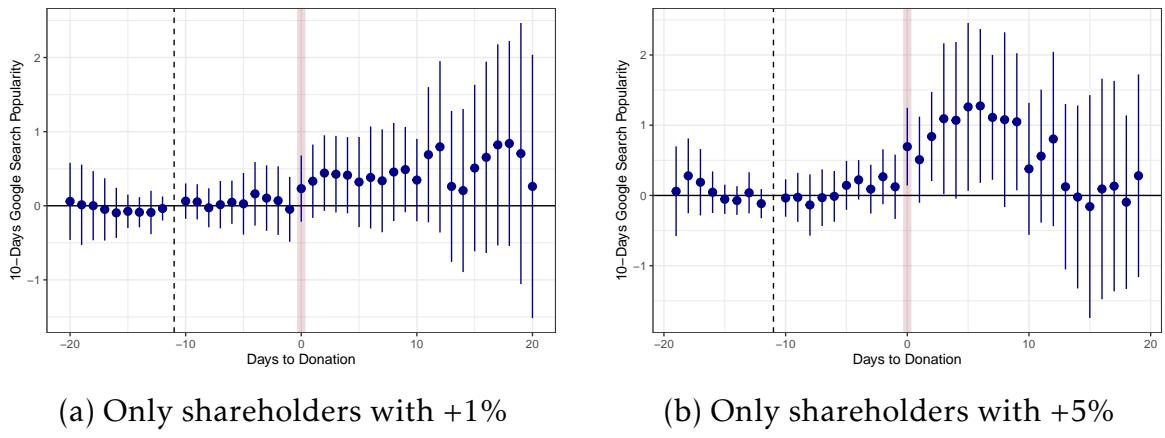
$$y_{ift} = \sum_{d=-20, d \neq -11}^{20} \psi_d \text{News}_{f(i)t+d} + \gamma_d \text{News}_{f(i)t+d} \times \text{Individual}_i + \alpha_{if} + \tau_{p(i)t} + \varepsilon_{ift}, \quad (8)$$

where y_{ift} is the cumulative Google Trends score for shareholder i in firm f over a ten-day window starting on day t . The indicator $\text{News}_{f(i)t+d}$ equals one on each day d relative to a donation announcement by firm $f(i)$. The interaction with Individual_i captures differential visibility for individual shareholders. Since we look within a short window, the specification includes firm-shareholder fixed effects (α_{if}) and

shareholder type(p)-day fixed effects ($\tau_{p(i)t}$). Standard errors are clustered at the firm-shareholder level.

Figure 4 plots the estimated $\hat{\gamma}_d$ coefficients. Panel (a) uses all shareholders with at least 1% equity, while Panel (b) restricts to those with 5% or more. In both panels, search activity for individual shareholders rises sharply after a donation, consistent with a reputational gain. The effect is economically large—about an increase by about 75% of a standard deviation in Panel (b)—and persistent through day 10.

Figure 4: Individual sh. receive more Google searches after a firm donates



Note: Both panels report the estimated gap in Google Trends between individual and institutional shareholders from (8) estimated around a firm's donation on two different samples. Vertical bars represent 95% confidence intervals, with standard errors clustered by firm and shareholder type (bank, company, individual, financial company, government, hedge fund, insurance, mutual fund, self-ownership).

5.3.2 Donate Directly or Through the Financial Footprint?

Do financial investors oppose corporate donations during crises? To shed light on this question and better understand the trade-offs faced by institutional investors, we compare the donation behavior of financial corporations in the S&P 500 (e.g., BlackRock, Bank of America) with the donation decisions of the firms in which they hold equity stakes.

Specifically, we construct two vectors: one records whether each of the 37 financial firms in our sample made a donation by April 15, 2020 (binary indicator), and the other reports the share of portfolio firms (within the S&P 500) that donated. A positive correlation between these two vectors suggests alignment between the donor behavior of financial investors and that of the firms they hold; a negative correlation indicates a divergence—i.e., financial firms may withhold donations while their portfolio companies contribute. Although we limit the analysis to donations of S&P

500 firms due to data constraints, we expect the misalignment to be even more pronounced for smaller, more influenceable firms outside the index.¹⁶

Table 3: Correlation of donations of financial shareholders' and their portfolios

Minimum Equity Share Considered (1)	Spearman Correlations			
	Weighted Average [p-values] (2)	Simple Average [p-values] (3)	Weighted × AGM [p-values] (4)	Avg.
0%	-0.072 [0.704]	0.097 [0.610]	-0.260 [0.165]	
(Average N=377)				
1%	-0.082 [0.762]	0.082 [0.763]	-0.014 [0.959]	
(Average N=103)				
2%	-0.037 [0.900]	-0.148 [0.613]	-0.573** [0.032]	
(Average N=90)				
3%	-0.510 [0.109]	-0.180 [0.597]	-0.564* [0.071]	
(Average N=103)				
4%	-0.478 [0.193]	0.087 [0.825]	-0.44 [0.235]	
(Average N=106)				
5%	-0.304 [0.426]	0.087 [0.825]	-0.588* [0.096]	
(Average N=57)				

Note: The table computes the Spearman correlation between whether a financial firm donates and the share of donations at the firms in its portfolio. In each row, we vary the minimum share ($x\%$) that a firm must have in another firm to be considered part of the portfolio of an investor. Column 1 also reports the average number of S&P500 firms in the portfolio of a financial investor in parenthesis. Column 2 computes the total donations of the firms that financial firm i has invested in using equity shares at Dec 2019 as weights (i.e., $\sum_j share_{ij} \times \mathbf{1}[firm\ j\ donated] \times \mathbf{1}[i's\ share\ in\ j\ is\ greater\ than\ x\%]$), Column 3 computes simple averages (i.e., $N_i^{-1} \times \sum_j \mathbf{1}[firm\ j\ donated] \times \mathbf{1}[i's\ share\ in\ j\ is\ greater\ than\ x\%]$), and Column 4 considers only firms in i 's portfolio with an AGM before April 15 (i.e., $\sum_j share_{ij} \times \mathbf{1}[firm\ j\ donated] \times \mathbf{1}[i's\ share\ in\ j\ is\ greater\ than\ x\%] \times \mathbf{1}[j\ has\ an\ AGM]$). p-values are in square brackets.

Table 3 presents this correlation. Across rows, we vary the minimum ownership share for a firm to be considered in the portfolio of a financial firm.

Column 2 weights donations by the investor's ownership stake in each firm and shows weakly positive, but statistically insignificant, correlations—driven largely by a few large holdings. Column 3 switches to unweighted averages and finds consistently negative correlations when the ownership threshold exceeds 2%, suggesting that financial investors may discourage donations by the firms they own. This pattern becomes more pronounced in Column 4, which imposes causality by restricting the analysis to firms with AGMs at the crisis onset. Here, correlations are negative and statistically significant, approaching -1 at higher thresholds.

¹⁶We focus on financial corporations within the S&P 500 that hold shares in other S&P 500 firms for consistency and data availability.

Overall, financial institutions do not oppose all donations. They donate themselves but tend to discourage firm-level donations when they bear the financial cost without gaining visibility. These findings are consistent with the limited reputational upside shown in Figure 4 and support the idea that these donations have distributional consequences across shareholders, a point on which we will return in Section 7.

5.4 Robustness Checks

Different measures of shareholder-firm association Large shareholding is a proxy for a firm’s association with its most visible shareholders. To refine it, we analyze the correlation between Google Trends data for each firm and its individual shareholders over 2010–2019. We compute the Spearman correlation (and p-value) between every firm-shareholder pair, focusing on shareholders owning at least 1% of the firm’s equity. We then compute the t-statistic of that correlation, and average it by firm. That gives us a measure of a firm’s association to its shareholders.

Overall, results reported in Table B3 shows that those firms more associated with individual shareholders are more likely to donate, confirming our findings from Table 2. Overall, our favorite specification remains shareholding for two reasons. First, Google Trends-based measures correlate with blockholding (the correlation between the estimate and the share of ownership is positive and significant at the 1% level). Second, this alternative measure requires researchers to specify a training period. A shorter training period than 2010–19 increases the salience of current events but lacks statistical power, while a shorter period places more emphasis on them, potentially changing the results qualitatively. Finally, these estimates are consistent with the ATTs estimated in Section 5.2. For these reasons, we focus on shareholding in the rest of the paper.

In Appendix D, we investigate other potential confounding factors that may incentivize donations. We list the main results below.

Pandemic intensity We next examine whether the severity of the pandemic shaped shareholder influence on corporate donations in Appendix D.1. To do so, we extend specification (6) to a panel setting with firm and day fixed effects, and interact the AGM treatment with both $Ownership_f$ and local measures of pandemic intensity—cumulative COVID-19 deaths in the firm’s headquarters state. The results align with those in Table 2: as the pandemic worsens, individual shareholders are more likely to push for donations, while financial shareholders are more likely to oppose them. This

heterogeneity may help explain why donations are not always synchronized with AGM dates, but instead respond flexibly to the evolving public health emergency.

Financial motives We find no evidence that abnormal stock returns drive COVID-related donations in Appendix D.2. Using the Fama–French three-factor model, we compute firm-level abnormal returns (ARs) and cumulative abnormal returns (CARs) around donation announcements. The event study reveals no significant ARs before nor after the news, in line with Krüger (2015). These results indicate that financial markets did not reward donations, reinforcing the interpretation that reputational motives, not shareholder value maximization, underpin prosocial actions during the pandemic.

Consumer pressure We tests whether consumer pressure influenced donations by exploiting variation in firms' local COVID-19 exposure, measured using branch-level weights across U.S. states. Estimating a linear probability model, Appendix D.3 interacts this exposure with the number of branches as a proxy for consumer-facing operations. The results show no significant relationship between local COVID-19 severity and donation behavior, suggesting that consumer pressure was not a key driver of prosocial actions.

Competition Appendix D.4 shows that donations do not follow previous donations by firms in the same industry. These findings are consistent with prior evidence that managers prioritize financial performance around AGMs, and that large crisis-related donations may be perceived as financially costly (Dimitrov and Jain, 2011).

Defense Production Act To rule out confounding effects from government-mandated procurement, we address the potential influence of the Defense Production Act (DPA), which led firms like 3M and GM to fulfill government contracts for essential goods during the COVID-19 pandemic. First, note that, since the relevant executive orders were issued after our sample period (April 20, 2020), they should not affect our main findings. Additionally, Appendix D.5 shows that our results stil holds if we were to exclude firms subject to DPA orders in 2020, confirming that our results are not driven by actual or anticipated DPA procurement.

6 Influence on Russian Invasion of Ukraine

We now assess whether the shareholder influence patterns observed during the COVID-19 pandemic extend to a different geopolitical crisis. Specifically, we examine how shareholders shaped corporate responses to Russia's invasion of Ukraine in early 2022. This episode provides a strong test of external validity: decisions to exit the Russian market were high-cost, highly visible actions that were not legally required during the first month of the war, making them suitable for identifying reputational motives.¹⁷

We focus on 164 US-listed firms tracked by [Sonnenfeld *et al.* \(2022\)](#), which announced their response to the invasion by March 23, 2022.¹⁸ Of these, 51 exited the Russian market entirely. We estimate equation (6) using an indicator for whether a firm made this costly and public-facing decision.

Due to missing AGM or accounting data, the final sample comprises 150 firms. Unlike the previous section, we distinguish firms based on whether they have a share of shareholders of type *A* or *B* that is greater than its median value across the firms in the dataset. Because of the smaller dataset, we do not rely on marginal changes in shareholder composition to estimate β_{treat} but on classifying firms as highly versus minimally exposed to type *A* shareholders, thereby reducing estimation noise. Since the firms in this dataset are more heterogeneous as they are not all S&P 500 firms, we include control variables to account for their sizes prior to the invasion, as well as their cash holdings and exposure to Russian and international customers. Appendix E describes the data, shows balance checks across treated and control firms, and performs the robustness checks described below.

Main results Table E2 estimates Equation (6), discretizing Ownership_f at its median due to the smaller sample size.¹⁹ Columns 1–2 consider individual shareholders; Columns 3–4, financial shareholders; Columns 5–6, institutional shareholders. Consistent with our earlier findings, firms with large individual shareholders were more likely to exit, while those with large financial shareholders were less likely to

¹⁷Exits often required expensive reallocation of assets and operations in the order of several billion dollars ([Jack *et al.*, 2022](#)).

¹⁸We focus on US-listed firms due to the applicability of SEC rules. The emphasis on the first month ensures we capture firms most exposed to the Russian market while excluding actions influenced by government sanctions implemented later. Most firms in the dataset are part of the S&P 500 index, spanning various sectors.

¹⁹Using continuous ownership shares does not change the results qualitatively: the likelihood of exiting Russia in the the first month of conflict increases with individual blockholding (significant at the 5% level) and decreases with financial blockholding (but the coefficient is statistically insignificant).

do so. The magnitude of effects closely matches those in Section 5.2, reinforcing the broader relevance of our conceptual framework.

Table 4: Shareholders' influence on the decision to exit the Russian market

	Exited Russia in the First Month of Conflict (0/1)					
	(1)	(2)	(3)	(4)	(5)	(6)
AGM ($\hat{\beta}_1$)	-0.128 (0.087)	-0.171 (0.134)	0.016 (0.112)	-0.038 (0.153)	-0.034 (0.129)	-0.065 (0.127)
<i>Above Median Ownership</i> ($\hat{\beta}_2$)	-0.240* (0.128)	-0.155* (0.090)	0.098 (0.106)	0.261* (0.150)	-0.005 (0.125)	0.338*** (0.115)
AGM \times <i>Above Median Ownership</i> ($\hat{\beta}_{treat}$)	0.477** (0.190)	0.137 (0.141)	-0.253** (0.122)	-0.100 (0.186)	-0.160 (0.151)	-0.087 (0.138)
<i>Above Median Blockholding</i> (0/1) defined for: <i>Ownership</i> share:	Individual >5%	Individual (0%-2%)	Financial >5%	Financial (0%-2%)	Institutional >5%	Institutional (0%-2%)
Controls	✓	✓	✓	✓	✓	✓
State fixed effects	✓	✓	✓	✓	✓	✓
Sector fixed effects	✓	✓	✓	✓	✓	✓
N	150	150	150	150	150	150
Adjusted R-squared	0.43735	0.43735	0.44100	0.46022	0.43744	0.50406

* – $p < 0.1$; ** – $p < 0.05$; *** – $p < 0.01$.

The table presents the coefficients from OLS regressions of an indicator that is one if firm f has exited Russia by March 23, 2022, and zero otherwise on covariates. The regressions only exploit cross-section variation across firms at March 23, 2022. Italicized variables are defined in the middle panel. *Above Median Blockholding* is one if firm f has more blockholders of the reference category than the median firm and zero otherwise. The reference category and the blockholding thresholds are defined in the middle panel. Control variables include firm logged market capitalization, cash to assets, a dummy indicating that the firm is an S&P500 constituent, the share of revenues that come from activities in the US, the exposure to Russia. All columns include sector-fixed effects and state-fixed effects. Standard errors clustered by industry are reported in parenthesis.

Robustness checks Estimates remain stable when (i) including both types of shareholders simultaneously, (ii) excluding firms that continued business as usual, and (iii) expanding the sample to all S&P 500 firms (assuming firms not tracked by [Sonnenfeld et al. \(2022\)](#) took no action). Exit decisions are also not explained by firm size or profitability, suggesting a key role for shareholder preferences.

Impacts on supply chains Appendix E.3 applies our methodology on Factset data on supply relationships between US and Russia. Setting $y_f = 1$ if firm f cut ties with Russia post-February 24, 2022, we find that large individual shareholders pushed firms to sever Russian suppliers.

7 The Shared Costs of Influence

What are the implications for “unheard” shareholders when others influence managerial decisions? Consider a firm with revenues R , operating costs C , and operating income $\pi = R - C$. The firm can reinvest π to support future income, distribute it as dividends, or yield to shareholder demands by spending π on non-productive activities, such as donations (Section 5) or abrupt exits from markets like Russia (Section 6). Such choices can reduce the discounted value of future incomes, imposing net losses on shareholders who do not benefit privately (e.g., via image returns).

Measuring productivity Measuring a firm’s productivity is challenging, but we leverage two variables to address this, aided by the exogenous timing of AGMs and crises: *operating income* and *market valuation*.²⁰ Operating income reflects how effectively the firm converts costs into revenues and serves as a rough productivity measure given demand (e.g., [Harberger, 1954](#)). Market valuation (measured by the Market to Book ratio), on the other hand, captures shareholder losses through stock price changes.

As productivity influences both R and C , identifying productivity changes requires isolating demand fluctuations affecting R . Consumer demand likely reacted to both COVID-19 and the invasion of Ukraine through lockdowns and protests. However, it is reasonable to assume that demand changes are unrelated to the share of individual or institutional shareholders and to the AGM treatment before a crises as shown in Section 5.4.

Implementation To assess the differential influence of shareholder types, we implement a triple-differences (DDD) design. Treated firms are those holding AGMs at the onset of each crisis (Sections 5.2 and 6), while others serve as controls. We further split firms based on the presence of large individual shareholders just before the crisis. The DDD estimator combines two difference-in-differences (DD) comparisons—each interacting a post-crisis indicator with an AGM-timing indicator—but estimated separately for firms with and without individual blockholders. Identification relies on the standard DDD assumption that the *difference in trends* between these two groups would have remained constant in the absence of treatment; that is, parallel trends need not hold within each group, but only in their difference. This relaxed condition allows for level differences or group-specific shocks, as long as

²⁰Dividends are not a good measure of rent extraction because firms often adopt dividend policies with the aim to keep dividends constant over time (e.g., [La Porta et al., 2000](#)).

they evolve similarly across the two groups (Olden and Møen, 2022).²¹

7.1 Data and Empirical Strategy

We perform our analysis on two distinct samples. The first sample examines the pandemic's effects, focusing on the 1,000 largest US-listed firms as of December 2019. For the Ukraine invasion case, the sample is restricted to firms with dealings in Russia prior to 2022, as identified by Refinitiv. The final sample for the Ukraine-Russia case consists of the largest 1,153 US-listed firms with Russian ties.²²

To assess the costs borne by unheard shareholders and the mechanism, we estimate the following event study in an intent-to-treat framework:

$$y_{ft} = \sum_{k \neq 2019} \theta_k \mathbb{1}_{\{t+k\}} \times \text{AGM}_f \times \text{Ownership}_f + \mathbf{X}_{ft} \beta + \alpha_f + \iota_{i(f)t} + \varepsilon_{ft}, \quad (9)$$

where y_{ft} is a yearly accounting variable or quarterly market valuation, and is standardized for ease of interpretation. AGM_f is 1 for firms holding AGMs at the onset of a crisis, and Ownership_f is the standardized share of individual shareholders with at least a 10% equity stake.²³ Thus, we interpret θ_k as intent-to-treat. The controls in \mathbf{X}_{ft} include the direct effect of these two variables on y_{ft} , and α_f and $\iota_{s(f)t}$ denote firm and industry-by-year or industry-by-quarter fixed effects, respectively. The regression residuals are likely correlated within states (e.g., state policy) and across firms in the same industry (e.g., demand responses). Thus, we cluster the standard errors at these levels.

7.2 Methodology and Results

7.2.1 Crisis 1: Covid Pandemic

To examine the impact of the COVID-19 crisis, we estimate (9) using an indicator variable, AGM_f , which equals 1 if firm f held an AGM within 90 days of the COVID-

²¹For example, if NGOs systematically target firms during AGMs (Fioretti *et al.*, 2025), this would not threaten identification unless targeting varies with shareholder composition. Following Olden and Møen (2022), we include control variables to account for compositional differences between groups, thereby addressing potential biases arising from observable characteristics that may influence treatment state or group assignment.

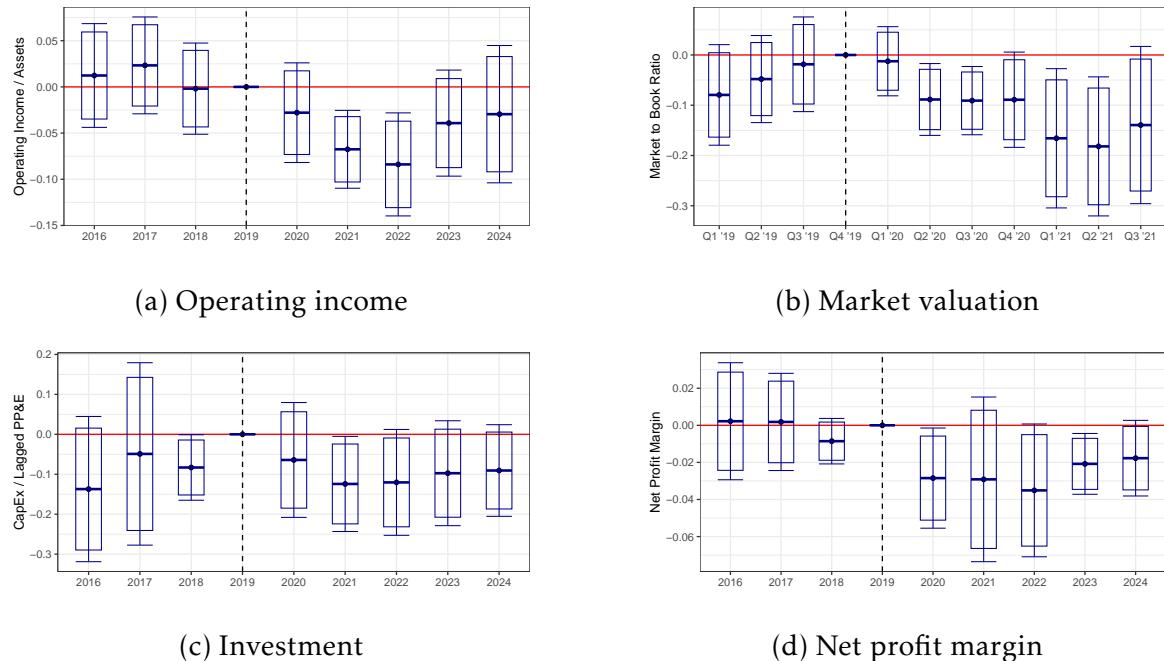
²²As a result, the first sample includes larger firms than the second, with average operating income and market capitalization approximately four times greater. The Ukraine-Russia sample is also more heterogeneous, exhibiting operating incomes nearly twice as skewed as those in the COVID-19 sample. For both samples, historical ownership and financial data are sourced from Refinitiv and Compustat, while AGM dates are from ISS.

²³To avoid outliers, we winsorize yearly variables at 1% level and quarterly variables at 2.5%.

19 outbreak in the U.S. (defined as January 15, 2020).

The top panels of Figure 5 present the estimated effect of a one standard deviation increase in individual blockholding at treated firms on two outcomes: operating income scaled by assets (Panel (a)) and market valuation, measured by the market-to-book ratio (Panel (b)). The results indicate that higher individual blockholding in firms with AGMs led to a decline in operating income beginning in 2020. This effect became both economically meaningful—representing a 7–8% decline relative to a standard deviation—and statistically significant (p -value < 0.05) in 2021 and 2022, before reverting to pre-pandemic levels. In contrast, the decline in market valuation manifested more rapidly: the market-to-book ratio dropped by 10% of a standard deviation as early as the second quarter of 2020 and continued falling, reaching nearly 20% of a standard deviation below pre-pandemic levels by 2021.

Figure 5: Documenting rents: covid case



Note: This figure plots the estimated coefficients from (9), where the coefficients of interest are the interaction between time indicators, an indicator equal to one if the firm holds an AGM between January 15 and April 15, 2020, and the share of individual shareholders with at least a 10% share. The regressions include firm and time-by-industry fixed effects. Regressions reported in panels (c) and (d) also include log total assets to control for firm size. Standard errors are clustered at the industry and state levels. Error bars (boxes) report the 95% (90%) CI. Vertical dashed lines indicate the first covid case in the USA.

Mechanism: fewer investments at treated firms Costly donations led to fewer investment in 2021: Panel (c) estimated a drop by 12% of a standard deviation

relative to 2019, as measured by capital expenditures scaled by lagged property, plants, and equipment (as in [Dessaint *et al.*, 2019](#)). Operating income declined due to increased costs rather than reduced revenues. Panel (a) of Appendix Figure B2 shows that sales as a fraction of total assets did not fall by as much as operating income, consistent with Section 5.4 findings that consumer demand did not influence COVID donations. This is reflected in Panel (d) of Figure 5, reporting a drop in net profit margin by 3% of a standard deviation starting in 2020.

7.2.2 Crisis 2: Invasion of Ukraine

Figure 6 extends the analysis to the Ukrainian invasion, where the AGM treated is defined as 1 for firms with an AGM within a month of the start of the invasion (defined as February 22, 2022). A standard deviation increase in individual blockholding at treated firms is associated with a decrease in operating income by 1% of a standard deviation in 2023 (Panel (a)). Again, market valuation has adjusted more rapidly, with a drop in market-to-book ratio by 10% of a standard deviation as early as in the second quarter of 2022, and falling to 20% starting from the end of 2023 (Panel (b)).

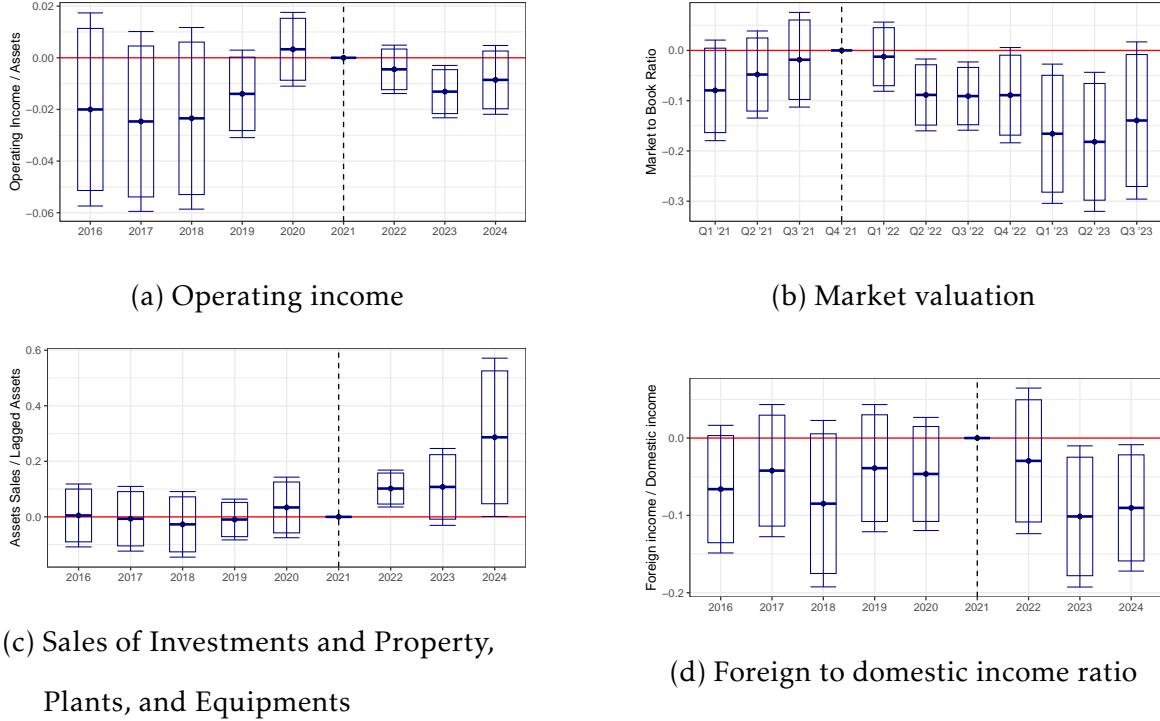
Mechanism: restructuring costs As before, we investigate changes in revenue or costs as the main source of the loss observed at treated firms. Panel (b) of Appendix Figure B2 shows that sales remained constant, suggesting that the costs of rushing out of Russia, such as finding new suppliers (as discussed in Section 6), outweighed the lost Russian revenues. Therefore, rushed exits may primarily increase costs rather than affect consumer demand.

What are these costs? One possibility is that firms were forced to sell past investments at a heavily discounted price or even at a loss. For instance, carmaker Renault sold its plant for \$ 0.01. Panel (c) of Figure 6 shows that treated firms were significantly more likely to sell their past investments than control firms. The magnitude increases by 10% per standard deviation increase in individual blockholders' shares in 2022. Consistent with an exit from the Russian market, the ratio of foreign income to domestic income fell by 10% of a standard deviation in 2023 and 2024 at treated firms (Panel (d)).

7.3 Discussion: The Costs for “Unheard” Shareholders

We estimate that vocal, well-connected shareholders extracting visibility or reputational gains impose measurable costs on passive investors. We now turn on

Figure 6: Documenting rents: Russian invasion of Ukraine



Note: This figure plots the estimated coefficients from (9), where the coefficients of interest are the interaction between time dummies, an indicator equal to one if the firm holds an AGM between February 24 and May 24, 2022, and the share of individual shareholders with at least a 10% share. The regressions include firm and time-by-industry-fixed effects. Standard errors are clustered at the industry and state levels. Error bars (boxes) report the 95% (90%) CI. Vertical dashed lines indicate the start of the invasion of Ukraine.

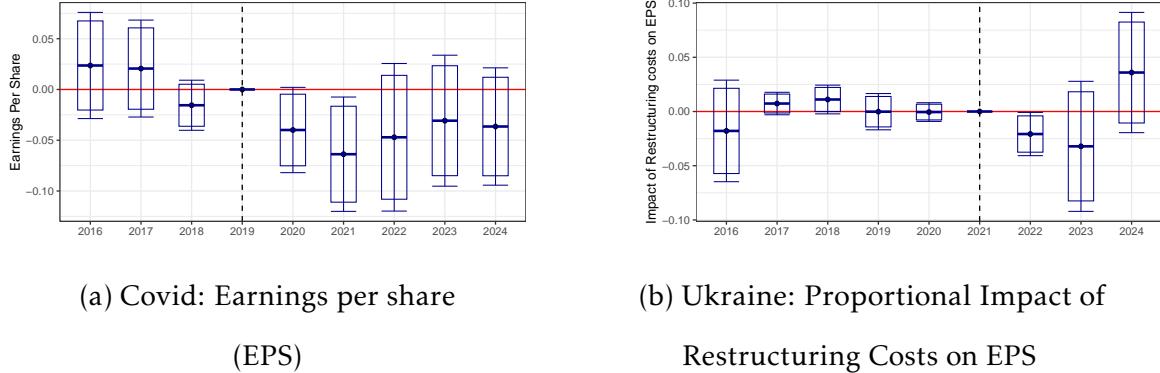
measuring these costs for “silent” shareholders.

In the covid case, Section 5.4 shows that donations increased operating costs without boosting revenues, reducing cash flows and future investments. Panel (a) of Figure 7 shows that earnings per share (EPS) dropped more at treated firms in 2020 and 2021, over 8% of a standard deviation. These donations thus reduced both current and future shareholder payoffs.

In the Ukraine-Russia case, the costs are linked to disorganized exits from Russia, such as relocating activities and selling investments quickly at discounted prices. The higher rate of asset sales estimated in Panel (c) of Figure 6 led to higher restructuring costs, which eroded 2% of EPS per standard deviation in individual blockholding as shown in Panel (b) Figure 7.

Together, these cases demonstrate that majority shareholders—motivated by private benefits—can impose both immediate and persistent losses on minority investors. Protecting “silent” shareholders thus requires more than board-composition

Figure 7: The distributional consequences of shareholders' voice



Note: The figure reports estimated coefficients from (9). The dependent variable is EPS, including extraordinary items (Panel (a)), and the change in EPS due to restructuring gains and costs (Panel (b)), which include Chapter 11 costs, workforce reductions, and relocation charges (incomes are coded as positive, and expenses as negative), scaled by current EPS. Standard errors are clustered at the state and industry levels. Error bars (boxes) represent 95% (90%) CI. Vertical dashed lines indicate the event time.

rules:²⁴ it calls for mechanisms that surface preference heterogeneity, curb undue influence, and align managerial decisions with the broader shareholder base.

Our stylized framework in Section 2 and the empirical evidence demonstrate that large shareholders do not act in isolation but continually monitor one another's incentives before exerting influence on management. This *intra*-shareholder vigilance arises from diverse preferences over prosocial actions, the managerial costs of accommodating those demands, and the threat of reduced future earnings. Consequently, a firm's governance must account not only for the presence of blockholders but for the heterogeneity of their objectives.

Prior work has emphasized how concentrated owners discipline managerial shirking (e.g., [Shleifer and Vishny, 1997](#)). Our findings build on this by highlighting the flipside: when blockholders share aligned preferences—whether to pursue high-visibility donations or to execute rapid asset sales—they can coordinate to extract private rents at the expense of diffuse investors and other stakeholders. By contrast, heterogeneity in blockholder preferences serves as a natural check on such collusion, protecting minority interests, a conclusion that may extend beyond prosocial matters.

These insights suggest that policy and practice should move beyond a narrow focus on board composition or voting thresholds. First, firms might institute formal channels for aggregating and reconciling shareholder preferences—such as mandatory views disclosures or structured investor-management dialogues—so

²⁴Note that board composition is by construction uncorrelated with the AGM treatment.

that divergent voices are visible before costly actions are undertaken. Second, governance mechanisms could require broader consensus among large shareholders before implementing decisions with substantial distributional impacts. Third, increasing transparency around shareholder-manager interactions would allow passive investors to anticipate—and, where appropriate, challenge—efforts at coordinated rent extraction.

The transition to a sustainable economy introduces new rent-seeking opportunities for shareholders, adding concerns such as private image gains to traditional profit motives. As [Grossman and Hart \(1979\)](#) emphasize, “[...] it is the job of the manager of a firm [...] not only to [...] organize production, but also to learn about the *preferences* of the firm’s shareholders.”—a task that has grown more complex as managers must now navigate voices driven by diverse incentives and by agents with different access to managers, with consequences not only for other shareholders but also, though not the focus of this paper, for a broader set of stakeholders (e.g., governments, COVID-19 patients, potential joint ventures in the COVID case, and governments, Russian workers, and consumers in the context of the Russian invasion).

Looking ahead, our analytical framework opens several avenues for research. One important question is whether managers respond more to realized shareholder pressure (clear, observable demands) or to anticipated pressure (expectations about future activism). Microfoundations from behavioral models—such as warm-glow utility ([Andreoni, 1989](#)) or reputational concerns ([Bar-Isaac *et al.*, 2008](#))—could illuminate these channels. Empirical work exploiting variation in shareholder turnover or repeated shocks may help trace how influence wanes or intensifies over time.

8 Conclusion

Stakeholder concerns play a crucial role in shaping a firm’s strategic decisions. This paper introduces a flexible framework that leverages novel quasi-experimental variations typical of listed corporations to analyze how shareholders, as a central stakeholder group, influence corporate strategies, particularly in relation to visible but costly prosocial actions. We apply this framework to two key cases: corporate donations for covid relief and firm exits from the Russian market after the invasion of Ukraine. While prosocial actions can enhance welfare and appeal to shareholders if they derive utility from addressing specific issues related to the firm’s business (e.g., a chemical company donating sanitizing products during a pandemic), a critical

question remains: what is the firm's optimal course of action when shareholder preferences conflict?

Our findings show that firms are more likely to undertake costly prosocial actions when their shareholder base includes identifiable individual or family investors. Conversely, large financial shareholders tend to oppose such actions. This divergence arises from the unequal distribution of reputational benefits, as evidenced by internet search data: while all shareholders share the costs, only some gain image-related benefits. This trade-off privileges the “value” of certain shareholders at the expense of others. The resulting misalignment is reflected in a significant and persistent decline in productivity at treated firms following both the pandemic and the Russian invasion. Therefore, shareholders anticipate efforts by other large shareholders to influence managers—efforts that may remain unobservable due to their private nature, such as bilateral meetings or phone calls. To counterbalance this influence, large shareholders apply pressure in the opposite direction. These findings highlight shareholder preferences as a novel dimension of monitoring and competition among shareholders, offering an important avenue for future research on how stakeholders' actions impact civil society.

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Online Appendix

A Mathematical Derivations

We begin from the first-order conditions for type A and B shareholders, which implicitly define their equilibrium effort levels e_A and e_B :

$$F_A(e_A, e_B; v_A, D) := (v_A - D) \cdot \frac{\partial s(e_A, e_B)}{\partial e_A} - c'_A(e_A) = 0,$$

$$F_B(e_A, e_B; D) := (-D) \cdot \frac{\partial s(e_A, e_B)}{\partial e_B} - c'_B(e_B) = 0.$$

We assume that F_A and F_B are continuously differentiable, and that a unique solution exists around a reference point $(\bar{e}_A, \bar{e}_B, \bar{v}_A, \bar{D})$. To derive a linear approximation, we apply the total differential to both conditions.

A.1 Total Differentials

We now take total differentials of the first-order conditions with respect to the endogenous variables e_A and e_B , and the parameters v_A and D . That is, we assume the functions F_A and F_B are continuously differentiable and expand around a reference point $(\bar{e}_A, \bar{e}_B, \bar{v}_A, \bar{D})$:

$$dF_A = \frac{\partial F_A}{\partial e_A} de_A + \frac{\partial F_A}{\partial e_B} de_B + \frac{\partial F_A}{\partial v_A} dv_A + \frac{\partial F_A}{\partial D} dD = 0,$$

$$dF_B = \frac{\partial F_B}{\partial e_A} de_A + \frac{\partial F_B}{\partial e_B} de_B + \frac{\partial F_B}{\partial D} dD = 0.$$

We now define the following terms for notational convenience:

- $A_1 := \frac{\partial F_A}{\partial e_A} = \frac{\partial^2}{\partial e_A^2} [(v_A - D) \cdot s(e_A, e_B) - c_A(e_A)]$: marginal sensitivity of type A's FOC to their own effort;
- $A_2 := \frac{\partial F_A}{\partial e_B} = \frac{\partial^2 s}{\partial e_A \partial e_B} \cdot (v_A - D)$: cross-sensitivity of A's payoff to B's effort;
- $A_3 := \frac{\partial F_A}{\partial v_A} = \frac{\partial s}{\partial e_A}$: marginal reputational return for type A;
- $A_4 := \frac{\partial F_A}{\partial D} = -\frac{\partial s}{\partial e_A}$: marginal cost effect for type A;
- $B_1 := \frac{\partial F_B}{\partial e_A} = -D \cdot \frac{\partial^2 s}{\partial e_A \partial e_B}$: sensitivity of B's FOC to A's effort;

- $B_2 := \frac{\partial F_B}{\partial e_B} = -D \cdot \frac{\partial^2 s}{\partial e_B^2} - c''_B(e_B)$: marginal sensitivity of B's FOC to their own effort;
- $B_3 := \frac{\partial F_B}{\partial D} = -\frac{\partial s}{\partial e_B}$: marginal cost sensitivity for type B.

Using this notation, the system becomes:

$$\begin{aligned} A_1 de_A + A_2 de_B &= -A_3 dv_A - A_4 dD, \\ B_1 de_A + B_2 de_B &= -B_3 dD. \end{aligned}$$

We solve this system for de_A and de_B using Cramer's rule. Let $\Delta = A_1 B_2 - A_2 B_1$ be the Jacobian determinant. Then:

$$\begin{aligned} de_A &= \frac{-A_3 B_2 dv_A - A_4 B_2 dD + A_2 B_3 dD}{\Delta}, \\ de_B &= \frac{A_3 B_1 dv_A + A_4 B_1 dD - A_1 B_3 dD}{\Delta}. \end{aligned}$$

We can write this as:

$$\begin{aligned} de_A &= \tilde{\alpha}_1 dv_A + \tilde{\alpha}_2 dD, \\ de_B &= \tilde{\delta}_1 dv_A + \tilde{\delta}_2 dD, \end{aligned} \tag{A1}$$

where:

$$\begin{aligned} \tilde{\alpha}_1 &= \frac{-A_3 B_2}{\Delta}, & \tilde{\alpha}_2 &= \frac{-A_4 B_2 + A_2 B_3}{\Delta}, \\ \tilde{\delta}_1 &= \frac{A_3 B_1}{\Delta}, & \tilde{\delta}_2 &= \frac{A_4 B_1 - A_1 B_3}{\Delta}. \end{aligned}$$

A.2 Integrating to Recover Levels

The total differential equations (A1) derived above describe how small changes in the parameters v_A and D affect the optimal effort levels e_A and e_B . To recover approximate expressions for the levels of e_A and e_B , we integrate the total differentials in (A1) around the reference point (\bar{v}_A, \bar{D}) . Assuming that changes in v_A and D are small, we can use a first-order Taylor expansion of the effort functions $e_A(v_A, D)$ and $e_B(v_A, D)$:

$$\begin{aligned} e_A(v_A, D) &\approx e_A(\bar{v}_A, \bar{D}) + \left. \frac{\partial e_A}{\partial v_A} \right|_{\bar{v}_A, \bar{D}} (v_A - \bar{v}_A) + \left. \frac{\partial e_A}{\partial D} \right|_{\bar{v}_A, \bar{D}} (D - \bar{D}), \\ e_B(v_A, D) &\approx e_B(\bar{v}_A, \bar{D}) + \left. \frac{\partial e_B}{\partial v_A} \right|_{\bar{v}_A, \bar{D}} (v_A - \bar{v}_A) + \left. \frac{\partial e_B}{\partial D} \right|_{\bar{v}_A, \bar{D}} (D - \bar{D}). \end{aligned}$$

We denote the base levels $\alpha_0 := e_A(\bar{v}_A, \bar{D})$ and $\delta_0 := e_B(\bar{v}_A, \bar{D})$, and use the total

differential coefficients as estimates for the partial derivatives. This yields the linear approximations:

$$\begin{aligned} e_A &\approx \alpha_0 + \tilde{\alpha}_1 \cdot (v_A - \bar{v}_A) + \tilde{\alpha}_2 \cdot (D - \bar{D}), \\ e_B &\approx \delta_0 + \tilde{\delta}_1 \cdot (v_A - \bar{v}_A) + \tilde{\delta}_2 \cdot (D - \bar{D}). \end{aligned}$$

Without loss of generality, and for notational simplicity, we re-center the data so that $\bar{v}_A = \bar{D} = 0$, yielding:

$$\begin{aligned} e_A &\approx \alpha_0 + \tilde{\alpha}_1 v_A + \tilde{\alpha}_2 D, \\ e_B &\approx \delta_0 + \tilde{\delta}_1 v_A + \tilde{\delta}_2 D. \end{aligned} \tag{A2}$$

A.3 Reduced-Form Outcome Equation

To link the derived efforts to observable firm behavior, we assume that the firm undertakes a prosocial action when the net influence of shareholder pressure exceeds a threshold. Let its latent utility of prosocial behavior be:

$$y_f^* = \tilde{\theta}_0 + \tilde{\theta}_1 e_A + \tilde{\theta}_2 e_B + \tilde{\epsilon}_f,$$

where ϵ_f follows a standard logistic distribution. The observed outcome is then:

$$y_f = \begin{cases} 1 & \text{if } y_f^* > 0, \\ 0 & \text{otherwise.} \end{cases}$$

Hence, the probability of observing a prosocial action is:

$$\mathbb{P}(y_f = 1) = \Lambda(\theta_0 + \theta_1 e_A + \theta_2 e_B),$$

where $\Lambda(z) = 1/(1 + e^{-z})$ denotes the logistic CDF.

We now substitute the linear approximations for e_A and e_B in (A2). This yields:

$$\mathbb{P}(y_f = 1) \approx \Lambda(\beta_0 + \beta_1 v_A + \beta_2 D),$$

where:

$$\begin{aligned} \theta_0 &:= \tilde{\theta}_0 + \tilde{\theta}_1 \alpha_0 + \tilde{\theta}_2 \delta_0, \\ \theta_1 &:= \tilde{\theta}_1 \tilde{\alpha}_1 + \tilde{\theta}_2 \tilde{\delta}_1, \\ \theta_2 &:= \tilde{\theta}_1 \tilde{\alpha}_2 + \tilde{\theta}_2 \tilde{\delta}_2. \end{aligned}$$

Under small variations in v_A and D —as one might expect from the AGM shock we exploit—the logistic function can be well-approximated by a linear function. This leads to the reduced-form equation used in our empirical analysis:

$$y_f \approx \theta_0 + \theta_1 v_A + \theta_2 D + \epsilon_f,$$

which interprets prosocial behavior as a linear function of reputational incentives and cost, even when underlying decisions are interdependent and non-linear.

B Omitted Tables

Table B1: Shareholders' influence on covid donations: horse race and additional control variables

	Whether Firm f has Donated (0/1)							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<i>Individual Ownership</i>	0.020 (0.030)	-0.003 (0.030)	0.013 (0.028)	0.006 (0.032)	0.007 (0.033)	-0.016 (0.033)	0.002 (0.031)	-0.0005 (0.027)
<i>Financial Ownership</i>	-0.020 (0.028)	-0.026 (0.026)	-0.054* (0.028)	0.021 (0.023)	-0.018 (0.028)	-0.021 (0.029)	-0.040 (0.030)	0.007 (0.022)
AGM	0.092 (0.092)	0.032 (0.086)	0.070 (0.094)	0.062 (0.090)	0.042 (0.095)	-0.019 (0.090)	0.021 (0.101)	0.0003 (0.094)
<i>Individual Ownership</i> \times AGM	0.106*** (0.038)	0.067** (0.030)	0.062* (0.036)	0.069 (0.048)	0.122*** (0.038)	0.079** (0.032)	0.083** (0.039)	0.088* (0.044)
<i>Financial Ownership</i> \times AGM	0.018 (0.106)	-0.198** (0.086)	-0.100 (0.091)	0.034 (0.119)	0.008 (0.104)	-0.209** (0.089)	-0.098 (0.091)	0.046 (0.120)
Cash to Assets					-0.247 (0.301)	-0.293 (0.289)	-0.288 (0.288)	-0.196 (0.295)
Book to Market						-0.190* (0.102)	-0.175* (0.103)	-0.157 (0.111)
Social Score						0.075*** (0.025)	0.072*** (0.022)	0.071*** (0.024)
<i>Ownership</i> share:								
		> 10%	> 5%	(0%, 2%)				
Control for firm size	✓	✓	✓	✓	✓	✓	✓	✓
Sub-Industry fixed effects	✓	✓	✓	✓	✓	✓	✓	✓
State fixed effects	✓	✓	✓	✓	✓	✓	✓	✓
<i>N</i>	482	482	482	482	482	482	482	482
Adjusted R-squared	0.55614	0.56153	0.56147	0.55198	0.58370	0.59011	0.58607	0.58081

* – $p < 0.1$; ** – $p < 0.05$; *** – $p < 0.01$.

Note: Estimated coefficient from (6) using an indicator variable that is one if firm f has donated by April 15, 2020. The variable *Ownership* is the ownership share of either individual or financial investors (Columns 1 and 5), the share owned by individual or financial investors owning at least 10% (Columns 2 and 6), at least 5% (Columns 3 and 7), or less than 2% (Columns 4 and 8). The variable *Ownership* is standardized. The AGM variable is an indicator variable taking value one if the firm has an AGM before April 15, 2020, and zero otherwise. All control variables are as of December 2019. Standard errors are clustered by industry.

Table B2: Institutional Shareholders' influence on Covid donations

	Whether Firm f has Donated (0/1)		
	(1)	(2)	(3)
<i>Ownership</i> ($\hat{\beta}_1$)	-0.037 (0.026)	-0.057** (0.028)	0.007 (0.022)
AGM ($\hat{\beta}_2$)	0.039 (0.089)	0.064 (0.096)	0.127 (0.094)
<i>Ownership</i> \times AGM ($\hat{\beta}_{treat}$)	-0.214** (0.089)	-0.139 (0.093)	0.020 (0.111)
<i>Ownership</i> share:	> 10%	> 5%	(0%, 2%)
Control for size	✓	✓	✓
Sub-Industry fixed effects	✓	✓	✓
State fixed effects	✓	✓	✓
N	482	482	482
Adjusted R-squared	0.55990	0.55787	0.54641

* – $p < 0.1$; ** – $p < 0.05$; *** – $p < 0.01$.

Note: Estimated coefficient from (6) using an indicator variable that is one if firm f has donated by April 15, 2020. The variable *Ownership* is the share of institutional shareholders owning at least a share of total equity, as defined in the middle panel. The variable *Ownership* is standardized. The AGM variable is an indicator variable taking value one if the firm has an AGM before April 15, 2020, and zero otherwise. Each regression controls for a firm's size as the log of total assets at December 2019. Standard errors are clustered by industry.

Table B3: Other measure of shareholder-firm association

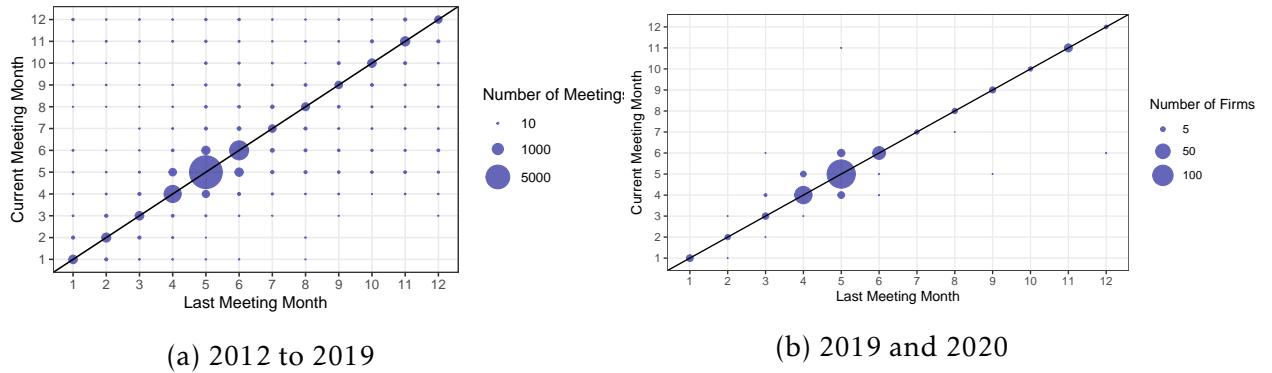
	Whether Firm f has donated (0/1)	
	(1)	(2)
AGM	-0.066 (0.143)	0.128 (0.079)
Firm Size	0.130*** (0.028)	0.129*** (0.029)
Ownership concentration	-0.588 (1.18)	-0.041 (1.25)
Association > 0 (0/1)	0.046 (0.058)	
Association > 0 (0/1) \times AGM	0.334* (0.186)	
Association		0.031 (0.031)
Association \times AGM		0.162** (0.079)
State fixed effects	✓	✓
Sub-Industry fixed effects	✓	✓
N	432	432
R^2	0.59665	0.59681

* – $p < 0.1$; ** – $p < 0.05$; *** – $p < 0.01$.

Note: Estimated coefficient from (6) using an indicator variable that is one if firm f has donated by April 15, 2020. The variable *Association* is the average t-statistic of the correlation between firm f 's Google Trends score and each of its shareholders' Google Trends score. *Association* is standardized in Column 2. The AGM variable is an indicator variable taking value one if the firm has an AGM before April 15, 2020, and zero otherwise. Standard errors are clustered by industry.

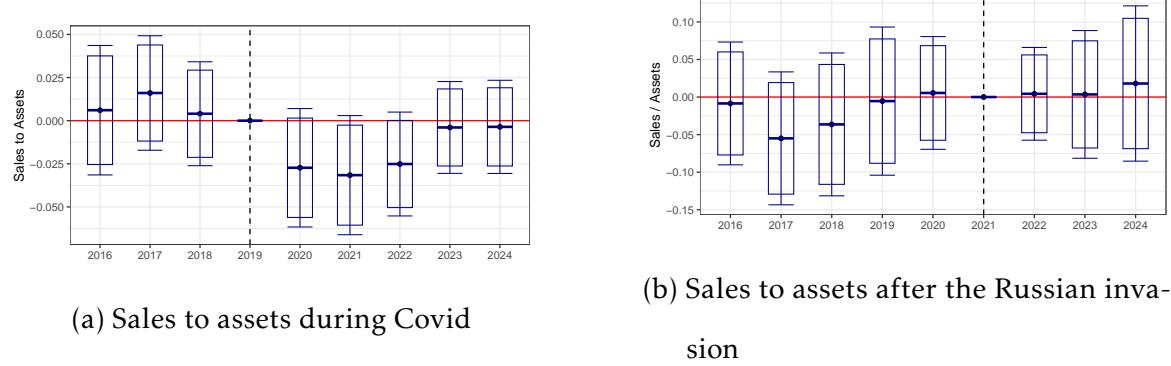
C Omitted Figures

Figure B1: Stability of the AGM month over time



Note: Both panels count the occurrences of the AGM month over two adjacent years. A dot in position (2,3) means that at least one firm with an AGM in March of year t had an AGM in February of year $t-1$. The size of the blue dot refers to the number of firms. Dots on the diagonal solid line indicate firms that did not change AGM month over time. Panel (a) focuses on data from 2012 to 2019, while Panel (b) zooms in on the first six months of 2020. Observations are at the firm-by-year level as firms have more than one AGM, in Panel (a).

Figure B2: Sales or costs: What drove productivity down during crises?



Note: The figure reports the estimated coefficients from an event study as in (9), with sales on total assets as the dependent variable. We report only the estimated coefficients of interest – the interaction between the time dummies and an indicator equal to one if the firm has an AGM in the 90 days after the onset of the emergency and the share of individual shareholders with more than 10% equity shares. Each regression also includes firm and time-by-industry-fixed effects as described in Section 7. The dataset considers the largest 1,000 US-listed firms in Panel (a) and XXX firms with exposure to Russia in Panel (b). Standard errors are clustered at the state and industry levels. Error bars (boxes) report the 95% (90%) CI. Vertical dashed lines indicate the time of the event.

D Robustness Checks

D.1 Intensity of the Pandemic

Firms might be simply responding to the need for ventilators and similar items and our empirical approach could miss this if this need is correlated with the AGM treatment. We modify (6) as follows to control for COVID cases and deaths occurring in a firm's headquarter state over time:

$$y_{ft} = \beta_1 \text{Covid Rate}_{ft} + \beta_2 \text{Covid Rate}_{ft} \times \text{Ownership}_f + \beta_3 \text{Covid Rate}_{ft} \times \text{AGM}_f + \beta_{\text{treat}} \text{Covid Rate}_{ft} \times \text{Ownership}_f \times \text{AGM}_f + \alpha_f + \tau_t + \varepsilon_{ft}, \quad (\text{D1})$$

where the dependent variable, y_{ft} , is equal to one if firm f has publicly committed to donating by day t and zero otherwise. The main coefficient of interest is β_{treat} , which captures the interaction between the cumulative covid rate at firm f 's headquarter state, Covid Rate_{ft} , the fraction of equity owned by the reference blockholder, Ownership_f , which varies across specifications, and the AGM treatment, AGM_f . We use headquarter-state covid rates because Appendix Figure D1 shows a clear spatial pattern across these two variables, with firm f being more likely to donate for covid relief as the pandemic heightens in f 's state. Finally, α_f and τ_t are firm- and day-fixed effects.

The first three columns of Appendix Table D1 present results using individual shareholders as the reference category, with Ownership_f and Covid Rate_{ft} standardized to facilitate comparisons across columns with different x -blockholding percentages, covid deaths. The only significant effect is that of the interaction between the AGM treatment and large individual blockholding. In contrast, treatment effect estimates for banks, mutual funds, and insurers (Columns 4-6) are negative, consistent with previous findings, while the unconditional effect of covid rates remains negligible.

D.2 Financial Motives

Abnormal returns do not explain covid-related donations. To compute abnormal returns, we predict daily stock returns using the Fama-French three factors, namely, daily market returns (R_{ft}^{MKT}), daily returns on a portfolio of “small minus big stocks” (R_{ft}^{SMB}), and daily returns on a portfolio of stocks with “high minus low” book-to-market value ratios (R_{ft}^{HML}). All portfolio returns are from Kenneth French's website. We retrieve the stocks' betas (β_f) of those three portfolios for the stocks in our sample from CRSP. Then, stock f 's abnormal return (AR_{ft}) on day t is given by

the difference between the actual excess return of the stock over the risk-free rate (R_{ft}) and the prediction of the 3-factor model, as $AR_{ft} = R_{ft} - (\beta_f^{MKT} \cdot R_{ft}^{MKT} + \beta_f^{SMB} \cdot R_{ft}^{SMB} + \beta_f^{HML} \cdot R_{ft}^{HML})$.

where the left-hand side refers to either firm f 's abnormal return (AR_{ft}) or its cumulative abnormal return (CAR) on day t . Appendix Figure D2 reports $\hat{\theta}_d$. Panel (a) shows no abnormal returns before the news is broken, nor right after it. Panel (b) reports the CAR over five days, showing no significant pattern around the donation. In summary, we find no effect of the news on firms' financial returns.

D.3 Consumer Pressure

We exploit exogenous variation in a firm's exposure to COVID-19 through its branches to assess whether consumers pressured firms to donate. Using Orbis, we compute the weighted cumulative averages of covid cases and deaths using the number of branches a firm has in each state as weights. We denote the standardized versions of these two new variables by $\text{Exposure at Branches}_{ft}$ and estimate the following linear probability model:

$$y_{ft} = \beta_1 \text{Exposure at Branches}_{ft} + \beta_{\text{treat}} \text{Exposure at Branches}_{ft} \times \text{Number of Branches}_f + \alpha_f + \tau_t + \varepsilon_{ft}, \quad (\text{D2})$$

where $\text{Number of Branches}_f$ is the reported number of branches as of December 2019.¹ Appendix Table D2 shows a null effect of covid exposure.

D.4 Competition

We also examine whether firms donated in response to past COVID-related donations by direct competitors by including in (D1) a variable equal to one if at least one S&P 500 firm in the focal firm's industry donated in the previous week, and zero otherwise.² The results in Appendix Table D3 indicate a limited role of competition, while the treatment effect coefficients remain consistent with those in Table D1.

¹The distribution of the number of branches for S&P 500 firms ranges from 0 to 13,582 with a median of 40 branches; since we do not know whether a branch is a shop or a factory, it is fair to assume that firms with more branches are the most exposed to final consumers.

²Competitors' donations in the past week help isolate a firm's response to peer donations. Results are robust to different lag specifications.

D.5 Defense Production Act

The Defense Production Act (DPA), originally enacted in 1950 during the Korean War, grants the U.S. President broad authority to direct industrial production for national defense purposes. In 2020, President Trump invoked the DPA to address critical supply shortages during the COVID-19 pandemic, requiring companies like 3M and General Motors to prioritize government contracts and produce essential goods such as masks and ventilators.

While the use of the DPA could raise concerns about its potential impact on our results, we offer two arguments to mitigate this concern. First, the initial executive orders under the DPA relevant to our study were issued on April 20, 2020—after the end of our sample period—meaning they should not affect our main findings. Second, we conduct a robustness check by re-running our main analysis excluding firms that were specifically targeted by these orders. The results, presented in Appendix Table D4, show that the estimated coefficients remain stable relative to those reported in Table 2, suggesting that our conclusions are not driven by the (anticipation of) DPA interventions.

Table D1: The impact blockholders on covid donations through pandemic exposure

	Whether Firm f has Donated (0/1)					
	(1)	(2)	(3)	(4)	(5)	(6)
<i>Cum. Covid Deaths</i>	-0.0013 (0.0082)	-0.0017 (0.0082)	-0.0016 (0.0083)	-0.0027 (0.0079)	-0.0027 (0.0079)	-0.0012 (0.0082)
<i>Cum. Covid Deaths</i> \times <i>Ownership</i>	-0.0039 (0.0065)	-0.0072 (0.0077)	-0.0023 (0.0104)	-0.0333** (0.0059)	-0.0307*** (0.0055)	0.0002 (0.0071)
<i>Cum. Covid Deaths</i> \times AGM	0.0296 (0.0197)	0.0291 (0.0197)	0.0213 (0.0221)	0.0200 (0.0175)	0.0275 (0.0182)	0.0359* (0.0191)
<i>Cum. Covid Deaths</i> \times <i>Ownership</i> \times AGM	0.0168** (0.0070)	0.0231*** (0.0084)	0.0155 (0.0121)	-0.0158 (0.0148)	-0.0064 (0.0169)	-0.0076 (0.0190)
<i>Ownership</i> is defined as <i>Ownership</i> share:	Individuals > 10% > 5% (0%, 2%)			Financial > 10% > 5% (0%, 2%)		
Day fixed effects	✓	✓	✓	✓	✓	✓
State fixed effects	✓	✓	✓	✓	✓	✓
<i>N</i>	120,380	120,380	120,380	120,380	120,380	120,380
Adjusted R-squared	0.77799	0.77813	0.77801	0.78217	0.78139	0.77773

* – $p < 0.1$; ** – $p < 0.05$; *** – $p < 0.01$.

Note: The table reports the OLS regressions based on Equation ?? where the dependent variable is an indicator that is one if firm f has donated by day t and zero otherwise on covariates. The variable *Ownership* varies across columns based as the share of a certain class of investors owning at least a given share of total equity (greater than 10%, greater than 5%, or between 0 and 2%). The AGM variable is an indicator variable taking value one if the firm has an AGM before April 15, 2020, and zero otherwise. All columns include day- and firm-fixed effects. The interaction *Ownership* \times AGM and the direct effect of the variables *Ownership* and AGM are accounted for by the firm-fixed effects. The dataset starts on January 15, 2020, and ends on April 15, 2020. Standard errors are clustered by firm and presented in parenthesis.

Table D2: The impact of covid exposure at branches on donations

	Whether Firm f has Donated by Time t (0/1)			
	(1)	(2)	(3)	(4)
<i>Exposure at branches</i>	-0.0260** (0.0129)	-0.0201* (0.0119)	-0.0192 (0.0118)	-0.0190 (0.0118)
<i>Exposure at branches</i> \times Number of branches (ln)	0.0040 (0.0030)			
<i>Exposure at branches</i> \times More than x branches		0.0176 (0.0150)	0.0266 (0.0181)	0.0072 (0.0261)
More than x branches (0/1) is 1 if the firm has more branches than the x quantile:		50%	75%	90%
Time fixed effects	✓	✓	✓	✓
Firm fixed effects	✓	✓	✓	✓
<i>N</i>	110,500	110,500	110,500	110,500
Adjusted R-squared	0.77873	0.77868	0.77882	0.77844

* – $p < 0.1$; ** – $p < 0.05$; *** – $p < 0.01$.

Note: This table finds that consumers were not a driver of covid-related donations because covid exposure in the states where firms had their branches does not correlate with donations rates across firms. The table presents the coefficients from OLS regressions based on Equation D2 based on an indicator variable that is one if firm f has donated by day t and zero otherwise on covariates. Covid exposure is measured by cumulative covid deaths. The variable *Number of branches* in Columns 1 is in log. The remaining columns use a dummy variable (*More than x branches*) for whether the focal firm has more than the x -percentile than the distribution of branches: this value is 88 branches in Column 2, 391 branches in Column 3, and 1,415 branches in Column 4. Orbis data do not report branches for 15 firms, which are therefore omitted from the analysis. All columns include day- and firm-fixed effects. For this reason, the table does not report the direct effect of the *Number of Branches*, which does not vary over time and, thus, is captured by the firm-fixed effects. The dataset starts on January 15, 2020 and ends on April 15, 2020. Standard errors are clustered by firm and presented in parenthesis.

Table D3: The role of peer pressure in driving Covid donations

	Whether Firm f has Donated (0/1)					
	(1)	(2)	(3)	(4)	(5)	(6)
Competitor Donating (0/1)	0.013 (0.010)	0.013 (0.010)	0.012 (0.010)	0.016 (0.010)	0.014 (0.010)	0.012 (0.010)
<i>Cum. Covid Deaths</i>	-0.001 (0.008)	-0.001 (0.008)	-0.001 (0.008)	-0.002 (0.008)	-0.002 (0.008)	-0.001 (0.008)
<i>Cum. Covid Deaths</i> \times <i>Ownership</i>	-0.002 (0.006)	-0.004 (0.007)	0.001 (0.010)	-0.035*** (0.006)	-0.032*** (0.006)	0.002 (0.007)
<i>Cum. Covid Deaths</i> \times AGM	0.034* (0.019)	0.034* (0.019)	0.028 (0.021)	0.025 (0.016)	0.033* (0.017)	0.040** (0.019)
<i>Cum. Covid Deaths</i> \times <i>Ownership</i> \times AGM	0.017** (0.007)	0.020** (0.010)	0.011 (0.015)	-0.021 (0.015)	-0.012 (0.016)	-0.006 (0.019)
<i>Ownership</i> is defined as <i>Ownership</i> share:		Individuals > 10%	Financial > 5% (0%, 2%)		Financial > 5% (0%, 2%)	
Day fixed effects	✓	✓	✓	✓	✓	✓
State fixed effects	✓	✓	✓	✓	✓	✓
<i>N</i>	120,380	120,380	120,380	120,380	120,380	120,380
Adjusted R-squared	0.78551	0.78556	0.78539	0.78997	0.78916	0.78520

* – $p < 0.1$; ** – $p < 0.05$; *** – $p < 0.01$.

Note: The table reports the OLS regressions based on Equation ?? where the dependent variable is an indicator that is one if firm f has donated by day t and zero otherwise on covariates. The variable *Ownership* varies across columns based as the share of a certain class of investors owning at least a given share of total equity (greater than 10%, greater than 5%, or between 0 and 2%). The AGM variable is an indicator variable taking value one if the firm has an AGM before April 15, 2020, and zero otherwise. All columns include day- and firm-fixed effects. The interaction *Ownership* \times AGM and the direct effect of the variables *Ownership* and AGM are accounted for by the firm-fixed effects. The dataset starts on January 15, 2020, and ends on April 15, 2020. Standard errors are clustered by firm and presented in parenthesis.

Table D4: Shareholders' influence on covid donations, excluding firms targeted by the DPA

	Whether Firm f has Donated (0/1)					
	(1)	(2)	(3)	(4)	(5)	(6)
<i>Ownership</i> ($\hat{\beta}_1$)	-0.001 (0.031)	0.023 (0.029)	0.004 (0.032)	-0.026 (0.026)	-0.058** (0.027)	0.018 (0.023)
AGM ($\hat{\beta}_2$)	0.106 (0.090)	0.107 (0.091)	0.074 (0.098)	0.049 (0.089)	0.082 (0.094)	0.130 (0.093)
<i>Ownership</i> \times AGM ($\hat{\beta}_{treat}$)	0.083*** (0.029)	0.081** (0.032)	0.063 (0.049)	-0.210** (0.085)	-0.125 (0.084)	0.013 (0.116)
<i>Ownership</i> is defined as <i>Ownership</i> is the share of investors owning:						
		Individuals		Institutional		
> 10%		> 5%	(0%, 2%)	> 10%	> 5%	(0%, 2%)
Industry fixed effects	✓	✓	✓	✓	✓	✓
State fixed effects	✓	✓	✓	✓	✓	✓
N N	474	474	474	474	474	474
Adjusted R-squared	0.55535	0.55756	0.55486	0.56304	0.56264	0.55165

* – $p < 0.1$; ** – $p < 0.05$; *** – $p < 0.01$.

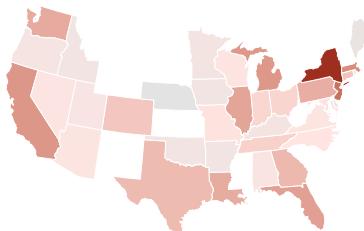
Note: Estimated coefficient from (6) using an indicator variable that is one if firm f has donated by April 15, 2020, and excluding firms targeted by the *Defense Production Act*. The variable *Ownership* is the share of either individual (Columns 1-3) or institutional investors (Columns 4-6) among all investors owning at least a share of total equity, as defined in the middle panel. The variable *Ownership* is standardized. The AGM variable is an indicator variable taking value one if the firm has an AGM before April 15, 2020, and zero otherwise. Standard errors are clustered by industry.

Figure D1: Covid cases, deaths, and corporate donations by US state and month

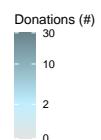
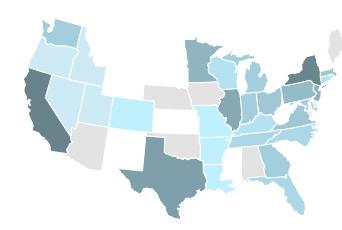
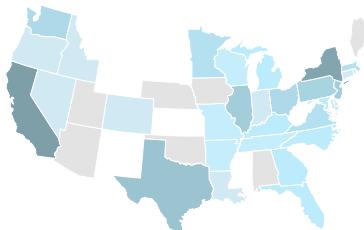
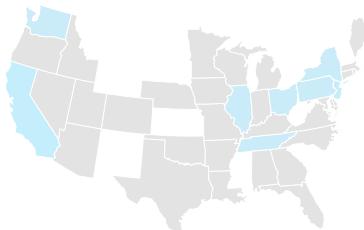
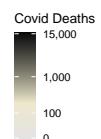
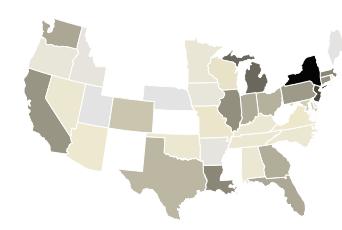
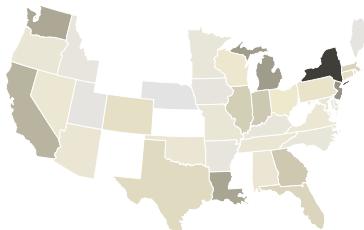
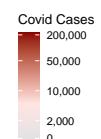
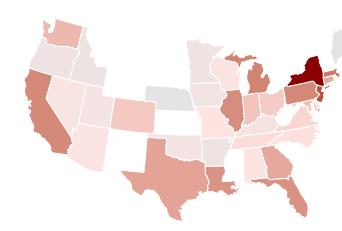
February



March

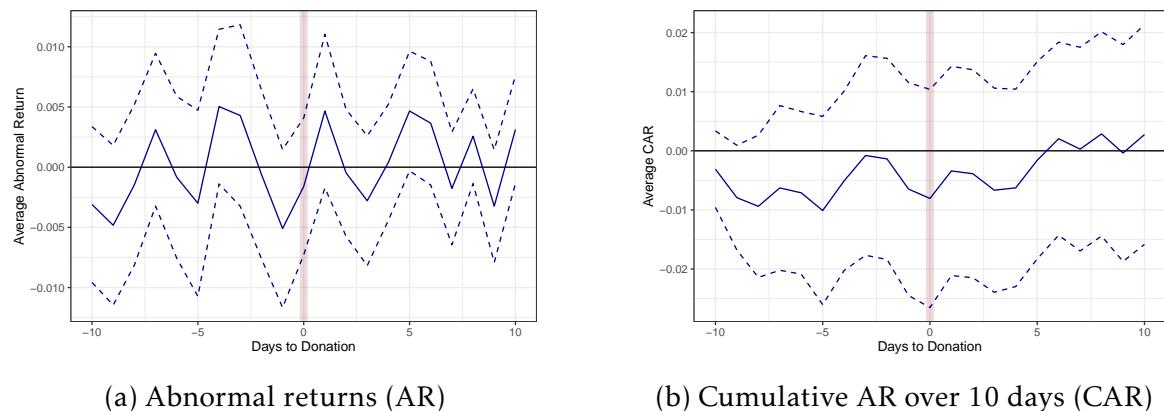


April



Note: The figure highlights the spatial and temporal correlation between the cumulative number of covid cases (first row), deaths (second row), and donations of S&P 500 companies (third row). Each column reports the breakdown for each variable across US states on February 29 (Column 1), March 31 (Column 2), and April 15 (Column 3), when our sample ends. States in white do not house S&P 500 firms. Covid rates come from Johns Hopkins University. Donation data are hand-collected using various online sources.

Figure D2: Abnormal and cumulative abnormal returns - event study



Note: This figure suggests that firms do not choose to donate to improve their performance on the stock market. Panel (a) plots abnormal returns (ARs) while Panel (b) plots cumulative abnormal returns (CARs) computed using the methodology outlined in Section 5.4. Date 0 is the date when the donation was made public. All coefficients are relative to the AR or CAR computed for the day before the donation event. We report the event study for a five-day window around the donation announcement. Appendix Table ?? shows that the analysis is robust to various definitions of ARs and CARs and to various lengths of the event study interval.

E Private Sanctions on Russia

This section focuses on shareholder influence after Russia invaded Ukraine in February 2022 as an external validity exercise for the mechanism exposed in the main text.

E.1 Background and Data

On February 24, 2022, Russia started the so-called “special military operation.” We take this date as the beginning of our sample. [Sonnenfeld *et al.* \(2022\)](#) list firms exposed to the Russian economy (e.g., exporters to Russia) that took a pro or against position vis-à-vis Russia.³

Data construction We accessed this list on March 23, a month after the beginning of the invasion. The list contains 476 international firms operating in Russia at the time. Figure E1a shows a breakdown of this sample based on different firm categories. Most of the observations belong to non-US firms (especially from the UK, Germany, and France) and international sports federations (e.g., UEFA), which quickly denied access to Russian sports teams in the days after the beginning of the invasion. We exclude these firms since our exogenous variation is based on the SEC rules and ISS requirements. Excluding another 12% of the observations that account for US non-listed firms for which we lack shareholding data, we are left with 164 US-listed firms for which the 2022 AGM date is available on the Refinitiv database, and 150 firms when restricting the sample to firms without missing control variables.⁴ This dataset is not the whole universe of US-listed firms operating in Russia but a collection of the firms that took actions, either pro or against Russia, in the first month of the war. By taking early actions, this dataset spans the firms that are most exposed to Russia, and thus, these firms are the most relevant for our analysis. 85% of the firms in this list have a market capitalization above \$8bn, which is the limit for inclusion in the S&P 500 index.

³The list is freely available at <https://som.yale.edu/story/2022/almost-500-companies-have-withdrawn-russia-some-remain>.

⁴We contacted Sonnenfeld about the data construction by email. On March 28, 2022, Professor Sonnenfeld informed us by email that “Our data sources are drawn upon multi-method anchoring with triangulation confirmation across expert and authoritative resources such as US Securities & Exchange Commission filings and along with other global regulatory reports; operational data available through Bloomberg; Thomson Reuters, and FactSet, company annual reports and shareholder communications, industry analyst reports, a wiki network of 300 company insiders across sectors and nations, personal exchanges with company executives, official company pronouncements on websites and press releases. We then review this data as a team in evaluating the categorizations.”

Classification of firms' decisions [Sonnenfeld et al. \(2022\)](#) categorizes firms as: (1) *Grade A - Surgical Removal, Resection* (51 firms) for firms that left Russia; (2) *Grade B – Keeping Options Open for Return* (69 firms) for firms that paused their ongoing projects; (3) *Grade C – Reducing Current Operations* (9 firms), for firms that paused certain operations; (4) *Grade D – Holding Off New Investments/Development* (27 firms), for firms that halted future investments; (5) *Grade F – Defying Demands for Exit or Reduction of Activities* (9 firms), for firms that kept working in Russia.

Data summary Among the 150 firms in our final sample, 84 had an AGM in the three months following the outbreak of the war, whereas the 66 remaining firms had AGMs in another period. Table [E1](#) shows summary statistics comparable to those in Table 1 of the main text for the two groups. Column 8 performs balance checks over observable variables such as market capitalization, revenues, fraction of revenues coming from other countries than the US, and shareholding. Overall, control (treatment) firms are more represented in Grade A (D). Finally, Figure [E1b](#) shows that, within sectors, firms are almost evenly distributed between treatment (blue) and control firms (red) – this further corroborates the exogeneity of selection into treatment.



Note: Panel (a) 34% of the firm surveyed in [Sonnenfeld et al. \(2022\)](#) are U.S.-listed firms. Panel (b) Number of firms by sector. Red (light blue) bars indicate control (treatment) group firms. Firms with a 2022 AGM scheduled between February 24 and May 24, 2022, are in the treated group as they have an AGM in the three months after February 24.

E.2 Robustness Checks

Below, we present robustness checks for the analysis in Section 6, which used (6) to study whether firms with larger shares of individual (institutional) blockholders support (oppose) exiting Russia. Exit is the highest sanction firms can take against Russia, not mandated by international sanctions. We first exclude *Grade F* firms.

Excluding firms that announced they would not exit Russia does not materially affect our results: analyses show that β_{treat} is 0.692 (S.E. 0.266) for firms more exposed to individual shareholders with at least a 5% share, and -0.289 (S.E. 0.129) for the same analysis with institutional shareholders. These coefficients were 0.584 and -0.247 in Table E2, which excludes the nine *Grade F* firms. To capture individual shareholder voice, we also run a “horse race” specification to control for an indicator indicating if a firm has above-median institutional blockholding, as large institutional blockholders may reduce individual shareholder influence, as discussed in Section 2. This ensures proper identification of the coefficient of interest, β_{treat} .

Note Because of space constraints, we report the full regression tables only for selected analyses. For the others, we only discuss the results, which are available upon request.

Measuring large blockholding Table E2 measures the association between a firm and its largest shareholders using a variable that is 1 if a firm has above-median blockholding from a specific shareholder group with at least a $x\%$ share, and zero otherwise. We vary x across columns. Using the continuous variable for the share of a specific shareholder group (e.g., individuals) with at least a $x\%$ share yields qualitatively identical results.

Excluding airline companies Excluding airline companies (3 observations: American Airlines, Delta Airlines, and United Airlines), which may be affected by Russia’s ban on Western carriers, does not change our results qualitatively.

All S&P 500 firms To address potential selection bias, we run (??) on all U.S.-listed S&P 500 firms. Since firms with no business dealings with Russia make no exit decisions, we subset the dataset to include only firms with exposure to Russia above the median for S&P 500 firms. We consistently find that firms most exposed to large individual shareholders are most likely to exit Russia.

Financials in 2022 Exit from Russia could be costly, pushing financially struggling firms to stay. For example, Shell estimated its exit would cost \$4bn to \$5bn.⁵ However, whether a firm had negative financial results is orthogonal to the timing of

⁵CNBC reports that “Shell was forced to apologize on March 8 [2022] for buying a heavily discounted consignment of Russian oil. It subsequently announced that it was withdrawing from Russia.” Source: <https://www.cnbc.com/2022/04/07/shell-to-write-down-up-to-5-billion-in-assets-after-exiting-russia.html>.

the AGM. Unreported results show that negative net income is not associated with Grade F, and Grade A firms are not the most profitable. Furthermore, Grade A and Grade F firms are comparable in terms of market capitalization.

E.3 Dropping Russian Suppliers

This section extends Appendix E by examining the decision to sever supply chain relationships with Russian firms shortly after the invasion. Using Factset's Supply Chain Relationships data, we identify 102 U.S. firms with active relationships with at least one Russian firm as of February 24, 2022, and with available shareholding and AGM data. Ninety-six of these also have all the control variables used in the previous analysis.

Table E1: Summary of the sample of listed firms exposed to the Russian economy by group

	Quantiles			Average				p-value
	25% (1)	50% (2)	75% (3)	Overall (4)	Treated (5)	Control (6)	Diff. (5)-(6)	
i. Firm characteristics								
Market Capitalization (bn \$)	17.19	45.84	124.50	141.03	107.17	184.11	-76.94	0.18
Revenue (bn \$)	4.22	11.08	35.11	28.30	29.04	27.35	1.69	0.83
Earnings Per Share	1.55	3.29	7.56	5.83	5.74	5.94	-0.20	0.90
Cash to Total Assets	0.05	0.10	0.16	0.13	0.10	0.16	-0.06	0.00
Book-to-Market	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04
S&P500 constituent	1.00	1.00	1.00	0.79	0.81	0.76	0.05	0.45
Share of revenue from Russia (%)	0.67	1.27	1.71	1.29	1.36	1.22	0.14	0.43
Share of revenue from abroad (%)	15.66	46.14	71.60	47.44	58.68	33.15	25.54	0.03
ii. Shareholding composition								
22 Ownership concentration	1.55	2.12	3.16	2.73	2.53	2.99	-0.47	0.27
Individual shareholding	0.00	0.00	0.00	0.01	0.00	0.02	-0.02	0.02
Institutional shareholding	0.69	0.80	0.90	0.78	0.80	0.75	0.04	0.15
Financial shareholding	0.60	0.70	0.80	0.67	0.69	0.65	0.04	0.10
Individual blockholding (>5%)	0.00	0.00	0.00	0.01	0.00	0.01	-0.01	0.02
Financial blockholding (>5%)	0.11	0.15	0.24	0.19	0.19	0.18	0.01	0.34
iii. Corporate Actions as of March 23, 2022								
Grade A - Surgical Removal, Resection (40 firms)	0.00	0.00	1.00	0.27	0.20	0.35	-0.15	0.05
Grade B – Keeping Options Open for Return (68 firms)	0.00	0.00	1.00	0.45	0.45	0.45	-0.00	0.98
Grade C – Reducing Current Operations (7 firms)	0.00	0.00	0.00	0.05	0.07	0.02	0.06	0.08
Grade D – Holding Off New Investments/Development (26 firms)	0.00	0.00	0.00	0.17	0.23	0.11	0.12	0.05
Grade F – Defying Demands for Exit or Reduction of Activities (9 firms)	0.00	0.00	0.00	0.06	0.05	0.08	-0.03	0.49
iv. Definition of the treatment group								
AGM date relative to May 24	-	-	-	-	Before	After	-	-
Number of firms	-	-	-	150	84	66	-	-

Note: This table compares the firms in the treatment and control groups used in the empirical analysis of the corporate sanctions against the Russian economy executed in the first month of the 2022 war in Ukraine. This data was collected by Jeffrey Sonnenfeld and his team at Yale SOM, which we thank for sharing the data and explaining the data construction. Columns 5 focuses on firms with AGM within 3 months after the start of the war and Columns 6 the other firms. Accounting variables come from Compustat. Shareholding variables come from Refinitiv.

Table E2: Shareholders' influence on the decision to exit the Russian market

	Exited Russia in the First Month of Conflict (0/1)			
	(1)	(2)	(3)	(4)
AGM	-0.011 (0.110)	-0.079 (0.178)	-0.0002 (0.113)	-0.110 (0.184)
<i>Above Median Financial Ownership</i>	0.080 (0.109)	0.266* (0.148)	0.062 (0.114)	0.247 (0.151)
<i>Above Median Individual Ownership</i>	-0.227* (0.128)	-0.149 (0.093)	-0.260** (0.125)	-0.184* (0.101)
<i>AGM × Above Median Financial Ownership</i>	-0.247** (0.116)	-0.100 (0.185)	-0.290** (0.129)	-0.105 (0.177)
<i>AGM × Above Median Individual Ownership</i>	0.548** (0.217)	0.092 (0.149)	0.692** (0.266)	0.163 (0.146)
<i>Sample</i>	All		Exclud. Grade F firms	
<i>Ownership share:</i>	>5% All	(0%-2%)	>5% Exclud. Grade F firms	(0%-2%)
Controls	✓	✓	✓	✓
State fixed effects	✓	✓	✓	✓
Sector fixed effects	✓	✓	✓	✓
N	150	150	141	141
Adjusted R-squared	0.45193	0.47206	0.49928	0.50445

* – $p < 0.1$; ** – $p < 0.05$; *** – $p < 0.01$.

The table presents the coefficients from OLS regressions of an indicator that is one if firm f has exited Russia by March 23, 2022, and zero otherwise on covariates. The regressions only exploit cross-section variation across firms at March 23, 2022. Italicized variables are defined in the middle panel. *Above Median Blockholding* is one if firm f has more blockholders of the reference category than the median firm and zero otherwise. The reference category and the blockholding thresholds are defined in the middle panel. Control variables include firm logged market capitalization, cash to assets, a dummy indicating that the firm is an S&P500 constituent, the share of revenues that come from activities in the US, the exposure to Russia, All columns include sector-fixed effects and state-fixed effects. Standard errors clustered by industry are reported in parenthesis.

Table E3: Blockholders' influence on the decision to cut supply chain relationships with Russian corporations

	Drop Relationship (0/1)	
	(1)	(2)
<i>Above Median Blockholding</i>	-0.107 (0.129)	-0.380*** (0.060)
AGM	-0.159* (0.088)	-0.103 (0.072)
<i>AGM × Above Median Blockholding</i>	0.152 (0.186)	0.456*** (0.112)
Threshold to be considered a blockholder:	>0%	>5%
Sector FE	✓	✓
Controls	✓	✓
N	96	96
Adjusted R-squared	0.1928	0.2079

* – $p < 0.1$; ** – $p < 0.05$; *** – $p < 0.01$.

Note: This table examines the influence of individual blockholders on U.S. firms' decisions to sever supply chain ties with Russian companies following the Ukraine invasion. It regresses a dummy variable (1 if firm f stopped doing business with at least one Russian firm between February 24 and May 24, 2022) on a dummy for firms with individual shareholding above the median (Column 1) or individual blockholding (> 5%) above the median (Column 2), a dummy for early AGMs (between February 24 and May 24, 2022), and their interaction. The regressions include sector fixed effects and controls for the share of revenue from the U.S. and Canada, revenue from Russia, CEO age, net income, and a dummy for above-median institutional ownership.