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Stock market response to the statement on the purpose of a corporation: A vindication of stakeholder theory

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Abstract

Research question/issue: On August 19, 2019, the Business Roundtable (2019) released a statement signed by 181 chief executive officers (CEOs) of well-known US corporations, in which they pledged "a fundamental commitment" to "deliver value to all" stakeholders. This study examines the stock market reaction to this new statement on the purpose of a corporation.

Research findings/insights: Based on a sample of 163 publicly listed companies that signed the pledge, the results show that investors react positively to a firm's pledge in the days surrounding the statement release. The consensus among stock market investors was robust, characterized by the low volatility in the share price post-announcement date. The decision by these companies, though intended to maximize the wealth of all stakeholders, rather than shareholders alone, carries an opportunity cost. Specifically, a post-announcement decline in share buybacks by pledge firms relative to control firms is observed, though investors embracing stakeholder theory appear undeterred by the reduction in distributions.

Theoretical/academic implications: This study provides empirical support that, in the evolving business environment, companies must emphasize issues that concern customers, employees, non-governmental organizations (NGOs), and the government. Failure to prioritize these issues may engender public backlash, especially in the age of social media. However, the attention to stakeholders is compatible with the focus on shareholder performance. Performance suffers when customers leave, workers feel dissatisfied, NGOs call for boycotts, and governments levy fines. Corporations seeking to increase shareholder wealth will need to fully embrace stakeholder concerns.

Practitioner/policy implications: This study shows that adopting a stakeholder perspective unlocked value that would not have been achieved had the focus remained on shareholder primacy. The excess values may derive from greater customer loyalty, improved employee motivation, better supplier relations, supportive financiers, maximizing revenue, minimizing costs, and/or yielding higher profits. Shareholders anticipate greater long-term value from companies emphasizing employees, communities, supply chain, financiers, and shareholders.

1 | INTRODUCTION

The Business Roundtable (BRT), established in 1972, is "an association of chief executive officers of America's leading companies, working to promote a thriving U.S. economy and expanded opportunity for all Americans through sound public policy." It is a platform for chief executive officers (CEOs) of some of America's foremost corporations to reflect on business issues and engage with policymakers. On August 19, 2019, 181 CEO members voted to adopt the innovative "Statement on the Purpose of a Corporation," declaring that companies should serve their shareholders and deliver value to their customers, invest in employees, deal fairly with suppliers, and support their communities.[1] This signifies a marked change from a 22-year-old BRT policy that defined the principal purpose of a corporation as "maximizing shareholder return." Several BRT members did not sign the statement (Harrison et al., 2020) but did not issue an affirmative denial.

This study examines how adopting an increased focus on stakeholders, evidenced by voting to adopt the BRT statement, impacts stockholders. BRT's 2019 statement suggests increased recognition of the importance of corporate social responsibility (CSR). The new statement was met with mixed reactions (Colvin, 2020; Eccles, 2020; Firestone, 2019; Winston, 2019); some parties expressed reservations about its merits, while others questioned its authenticity. For many years, the stakeholder approach had been primarily associated with business ethics and businesses' social and environmental impact (Freeman et al., 2018). Notably, stockholders' investment in stocks with a focus on CSR has increased. The Global Sustainable Investment Alliance[2] reports investment in sustainable investing assets had risen by 34% to $31 trillion from 2016 to 2018.

From a corporate governance standpoint, the new statement contradicts the widely accepted "shareholder primacy" model exemplified by Milton Friedman (Friedman, 1962). Friedman (1970) argues that executives are employees (agents) and answer to their employers (principals) and should be engaged in maximizing shareholder interests. Friedman (1970) emphasizes that serving stakeholders includes three simultaneous functions: legislator, executive, and jurist. The assumption of multiple roles is not only impractical and unsustainable but would cause resource allocation to become politically driven rather than based on market mechanisms and forces.

Corporations serve essential functions, and reassessment of purpose can signal changes to the rationale for their existence. BRT views regarding purpose of the corporation have evolved over time. In 1981, the BRT stated that companies should balance shareholder interests with the "legitimate concerns of other constituencies," approaching a stakeholder approach. However, in 1997, the BRT endorsed "shareholder primacy," identifying the principal purpose of the corporation as maximizing shareholder wealth. BRT (1997, p. 3) stated that: "The notion that the board must somehow balance the interests of stockholders against the interests of other stakeholders fundamentally misconstrues the role of directors." The 2019 statement, with an emphasis on stakeholders, stands in sharp contrast to the previous position. CEOs' endorsement of the new statement signals a significant break from previous practices.

Uncertainty exists regarding how CEOs would address the new emphasis on stakeholder interests. First, the reward system for many CEOs is tied to stock performance, not multiple stakeholder interests, limiting the economic incentive to align the firm with stakeholder interests. Benson and Davidson (2010) find no link between changes in stakeholder management and CEO compensation. Additionally, company boards represent the interests of the stockholders, who elect the board of directors. If directors are perceived as failing to prioritize stockholder interests, they may risk their positions. Second, standards to measure various stakeholder interests are ill-defined (Amel-Zadeh & Serafeim, 2018). Reporting on stakeholder interests is applied selectively and is overwhelmingly positive, insinuating that firms engage in systematic greenwashing practices (Cho et al., 2012; International Monetary Fund, 2019). The real-world application of the 2019 BRT statement is uncertain, given the prevailing CEO pay structure and the practices of company boards.

The 2019 BRT statement focuses on the need for corporations to declare their orientation, either to shareholders only or to all stakeholders. This topic has long been debated, and debate continues today with proponents on both sides of the argument. In 1932, the Harvard Law Review published a debate between Adolph Berle (1931), advocate of the "shareholder primacy" model, and Merrick Dodd (1932), advocate of the social function of companies encompassing the interests of employees, customers, and the community. Stout (2002) presents a comprehensive review of the debate and developments from that time. Several noteworthy examples elucidate the evolution of the BRT statement: First, the 1916 Dodge Brothers versus Ford Motor Company landmark lawsuit (Henderson, 2007), where plaintiffs contended that Ford's decision to withhold special dividends for reinvestment was an idiosyncratic preference of Henry Ford. They claimed Ford was attempting to bring social good for workers and customers by providing work and cheap cars rather than maximizing shareholders' wealth. Ford defended the policy as doing "as much good as we can, everywhere, for everybody concerned ... and incidentally to make money." The Michigan Lower Court ordered the dividend payment and upheld shareholder primacy over stakeholders. Ford

appealed, and the Michigan Supreme Court ruled the company's decision to reinvest was legitimate, but if Ford had no apparent plans to increase shareholder profits, it had to pay dividends to its shareholders. In its ruling, the Court wrote: "A business corporation is organized and carried on primarily for the profit of the stockholders. The powers of the directors are to be employed for that end. The discretion of directors is to be exercised in the choice of means to attain that end and does not extend to a change in the end itself, to the reduction of profits, or to the non-distribution of profits among stockholders in order to devote them to other purposes." (Dodge, 204 Mich. at 507.)[3]

Second, the 2008 eBay versus Craigslist lawsuit also centered on the purpose of the corporation. After eBay purchased 28.4% of common stock shares from an original Craigslist shareholder in 2004, the two remaining shareholders feared that eBay would veer Craigslist from its purpose to serve the community. As a result, they adopted a "poison pill" provision restraining eBay from making changes to current ownership. eBay sued, claiming that the two shareholders had breached their fiduciary obligation to maximize profits for all shareholders (Mitchell, 2019). In its ruling, the Chancery Court of Delaware states that companies cannot pursue purely philanthropic ends in the presence of stockholders. Consequently, the Court's opinion was that firms should protect the interests of minority shareholders.

This study considers the stock market response to the 2019 BRT statement on the purpose of the corporation. Harrison et al. (2020) explain that the BRT statement was particularly noteworthy since its signatories, including JPMorgan Chase, Amazon, Apple, and Walmart, represent companies at every point of the spectrum of "social responsibility," across multiple industries including retail giants and energy and chemical companies, and include some of the most venerated organizations. The release of the BRT statement was a lead or front-page story in foremost news outlets, including the New York Times, Washington Post, Financial Times, Wall Street Journal, and Fortune Magazine. Further, following its release, the World Economic Forum published a manifesto urging firms to abandon the traditional "shareholder capitalism" model in favor of "stakeholder capitalism."[4]

The significance of the event becomes evident when considering the size of the firms whose CEOs signed the pledge. Our sample of pledge firms has a combined total market capitalization (assets) of $13.7 ($22.3) trillion, compared to $30.3 ($87.4) trillion for non-pledge firms. The potential impact of change in share prices resulting from the pledge could lead to a meaningful wealth transfer.

Our analysis begins by examining company-specific characteristics explaining the propensity to pledge. An event study centered on the date of the BRT statement, August 19, 2019, identifies the relationship between signing the pledge and market reaction. The average stock market reaction to the BRT statement on the corporation's purpose is positive. Observed cumulative abnormal returns (CARs) range from 0.24% to 0.40%, which translates to a gain of millions of dollars for median pledge firms relative to non-pledge firms, using the sample median market capitalization. A pooled regression analysis of the CARs of both pledge and non-pledge firms is conducted, controlling for various characteristics. Little volatility in the pledge firms' share prices is observed in the days succeeding the announcement, ceteris paribus.

The positive stock performance suggests that investors do not view the 2019 BRT statement as negatively affecting the firm's ability to create value. Reductions in dividend payments or share repurchases could reflect a shift from a focus solely on shareholders to stakeholder interests and an avoidance of undue transfer of wealth from stakeholders. Analysis of the quarters following the BRT statement release shows a statistically significant decrease in payouts to pledge firm shareholders, specifically share repurchases, when compared to non-pledge counterparts. This indicates that the announcement is accompanied by a shift in how pledge firms transfer wealth to shareholders, that is, by reducing payouts.

Our paper differs from the existing literature in the following ways. While stakeholder orientation can increase value, our test provides firsthand evidence of how the market perceives such efforts. Company efforts, especially when not targeted at wealth maximization, may go unnoticed; therefore, the market reaction to such actions is mute. The event under consideration adds visibility to the company's efforts in an unprecedented manner. Here, the companies are communicating their change in orientation to the market. In line with studies on stock market efficiency and the fact that this announcement assists investors in better comprehending the company's efforts, we observe an instantaneous response from investors.

Our findings add to a growing volume of literature on a more inclusive purpose for corporations in society. Stakeholder orientation has been shown to potentially be beneficial through increased government contracts (Flammer, 2018), greater innovation (Flammer & Kacperczyk, 2016), lower cost of debt (Gao et al., 2021), lower stock price crash risk (Li & Zhang, 2020), and lower earnings management (Ni, 2020). This study adds to the literature by showing an additional benefit of stakeholder orientation from the asset pricing perspective.

Additionally, the study contributes to the growing volume of literature on the adoption of constituency statutes by several US states (Flammer & Kacperczyk, 2016; Gao et al., 2021; Leung et al., 2019; Ni, 2020; Ni et al., 2020). Results show that firms incorporated in these states are more likely to sign the stakeholder pledge. Further, signing the pledge is a more tangible message of the firm's CSR intentions than simply incorporating in a state with constituency statutes. Pledge firms experience favorable stock market wealth effects even when incorporated in a constituency statute state. The rest of the paper proceeds with a literature review, followed by hypotheses, data and methodology, results, and the conclusion.

2 | LITERATURE REVIEW

2.1 | The stakeholder theory

Larry Fink of BlackRock, a pledge firm of the BRT statement, defined a firm's purpose as transcending profit maximization and

encompassing value creation for stakeholders (Harrison et al., 2020).[5] Freeman et al. (2018) argue that management guided by stakeholder theory will produce profits and create value for every stakeholder. Shareholder-oriented management may prioritize short-term financial gains over stakeholder interests, possibly engendering ethical problems. Stakeholder orientation allows a firm to adopt a broader view and may lead to better value creation and recognition that issues faced by all stakeholders are intertwined. Bebchuk and Tallarita (2020) examine the goal of maximizing shareholder versus stakeholder value both theoretically and empirically. They find little incentive for managers to act in the interest of stakeholders beyond what serves shareholders.

The stock market reaction embodies the economic significance of the 2019 BRT statement. Literature exists showing that focus on stakeholder interests may create or destroy shareholder wealth. Emphasis on stakeholder interests may enable firms to generate greater revenue due to goodwill (Godfrey, 2005). Stakeholders may take a more proactive stance in monitoring corporations, benefiting shareholders (Flammer & Kacperczyk, 2016). Li and Zhang et al. (2020) explain that enhanced monitoring reduces the firm's stock price crash risk. Cremers et al. (2019) assert that stakeholder orientation in corporate decision-making benefits firms. First, through the "bonding hypothesis," a board with more discretion can better shield the firm from unwanted takeovers. Second, the "stakeholder model hypothesis" asserts that stakeholder orientation mitigates the externalities generated by a firm's endogenous risks.

Conversely, commitment to the BRT statement might signal a firm yielding to demands of interest groups to minimize confrontations. Becchetti et al. (2009) argue that CSR is a useful tool for improving reputation and minimizing the risk of consumer activism and legal actions. Democratic senators Elizabeth Warren and Bernie Sanders have been outspoken opponents of the shareholder singular view. Instead, they call for stakeholder plurality (Fortune, 2020).[6] Commitment to the BRT statement may be one way for a corporation to generate goodwill as a by-product of expenditures that are entirely justified in its own self-interest.

Executives may see commitment to the 2019 BRT statement as a means to deflect criticisms when performance is poor. Accountability to multiple stakeholder interest groups shelters managers from short-term pressures to generate wealth for shareholders. The Council of Institutional Investors discussed that the statement gives CEOs cover to dodge shareholder oversight (WSJ, 2019).[7] Leo Strine, former Chief Justice of the Supreme Court of Delaware, writes: "Declaring that directors may consider other interests … largely shifts power to the directors to couch their own actions in whatever guise they find convenient, without making them more accountable to any interest (Forbes, 2020; Strine, 2015)".[8] The 2019 BRT statement does not demote shareholder interests but maintains that other interests are equally important. Shareholders should only be concerned if accommodating other interest groups affects the firm's ability to generate wealth.[9] An adverse outcome may occur once management's focus is spread over many groups whose demands may compete with profit maximization.[10]

Taking into account that there are company characteristics associated with a propensity to pledge, the focus is on the incremental contribution of the announcement. There is evidence that it caught the market by surprise. Ho (2019) writes that "the recent surprise announcement … has generated speculation …" The 2019 statement is a dramatic shift from decades of corporate orthodoxy and stands in stark contrast to the BRT's own 1997 position: "the paramount duty of management and boards of directors is to the corporation's stockholders." An additional unexpected element is the seeming contrast between pledge firms and the intent of the 2019 BRT statement. The pledge CEOs were among those earning the highest multiple of their median employee pay (New York Times, 2019).[11] Given the surprise element of the announcement, a primary goal of this study is to identify whether firms that signed the BRT 2019 statement experienced abnormal returns in the days surrounding the pledge.

2.2 | The benefits of stakeholder theory

Corporations donate heavily to political parties to preserve shareholder interests (Fisher, 1994). Firm donations allow for access to politicians, and firms use stakeholder lobbying to bolster their political interests (Walker, 2012), to make demands to regulators (Sharratt et al., 2007) and to maximize their financial gains. In this way, stakeholder plurality is used in an egocentric manner to maximize the benefits of political donations to make regulators more amenable to donors.

Catering to the various stakeholders' needs can lead to better satisfied employees, higher employee productivity, better research and innovation, happier customers, improved sales, a smoother supply chain, better trade financing, and an enhanced goodwill factor among the communities in which the firm operates. All these benefits can translate into higher revenue for the firm, better operating efficiency, higher earnings, and wealth for shareholders. The conflict resolution theory (Buchanan et al., 2018) explains that the pursuit of CSR can mitigate conflicts of interest between managers and the non-investing stakeholders, increasing company value.

Gao et al. (2021) explain the value generated by a stakeholder-oriented approach is in mitigating conflicts of interest between shareholders and other stakeholders, limiting risk, and lowering the threat of takeover. Tensions arising from shareholders taking risks at the expense of debtholders, or risk mitigation encouraged by bondholders but adding little to shareholder wealth, are less likely to occur. Likewise, creditors are less concerned with myopic short-term behavior meant to inflate shareholders' wealth after a state adopts constituency statutes. Efficiencies in a firm's operations are generated, leading to a reduced capital cost.

Bower and Paine (2017) examine shareholder theory and observe that it raises grave shareholder accountability problems. Shareholders are not legally obligated to protect or serve the company, with limited liability in the event of bankruptcy. Shareholder identity is largely anonymous, and purchase and sale of shares is unrestricted. There is little beyond financial investment that binds shareholders to the

company. In contrast, stakeholders often have more at stake in the event of bankruptcy: Employees may lose their jobs or suppliers may face significant, possibly crippling, losses.

2.3 | The shortcomings of stakeholder theory

Stakeholder theory is not without detractors; Fassin (2008) provides a review of the critiques. Of concern is that stakeholders are a wide-ranging group with diversity within each subgroup, making it both costly and challenging to keep each constituency and pressure group satisfied, consistent with the overinvestment theory discussed in Buchanan et al. (2018). Additionally, a stakeholder can inhabit several subgroups simultaneously; for example, an employee can also be a shareholder, a member of the local community where the firm operates, and advocate for an environmental pressure group. Managers may be viewed as the central link between stakeholders but are, in fact, another group of stakeholders. The premise of the shareholder primacy model suggests that in dealing with the firm, the shareholders are dealing with top management, which, in turn, handles all remaining stakeholder interests. Conversely, stakeholder theory treats this relationship as just one of the connections, with bilateral relationships between top management and various stakeholders. Shareholder expectation of management's ability to create wealth under a stakeholder orientation may be influenced by a perceived demotion in the relationship between shareholders and management, resulting in a decline in the firm's share price.

Mitchell et al. (2022) argue that managers must overcome a knowledge gap to deliver on stakeholder theory, representing a challenge for them and contributing to a potential lack of accountability. Bebchuk and Tallarita (2020) argue that CEOs and directors try to obtain insulation from hedge fund activists and institutional investors to advance managerialism and exercise greater power. The authors contend that "stakeholderism" destroys shareholder wealth by increasing the insulation of corporate leaders and reducing accountability to shareholders.

Waddock and Graves (1997) express that socially responsible firms suffer a competitive disadvantage from costs that might otherwise be avoided or should be borne by others. There are few readily measurable economic benefits to CSR, while numerous costs exist that impact the bottom line, reducing profits and shareholder wealth (Aupperle et al., 1985). Further, Aupperle et al. (1985) argue that there may be no association between CSR and financial performance; multiple stakeholders compound the difficulty in measuring the interest of each stakeholder.

Firms must contend with the stakeholder priority question and stakeholders' interrelatedness. For example, Walmart, which signed the CEO pledge, can attribute a meaningful measure of its success to favorable contracts with suppliers, contributing to greater shareholder returns. Suppliers have always been key stakeholders for Walmart, and supply chain management is critical to the company's success. Amazon benefits from similar supplier relationships. Due to the nature of their activities, firms such as BP are compelled by governments to minimize the environmental impact of their operations. Constant dialog with government agencies is a necessary component of business operations. The BRT statement is all-encompassing, without necessarily allowing for accurate identification of which stakeholders are more important to a firm's operations and thus key to stock market reaction.

Raghunandan and Rajgopal (2021) find no evidence that pledged firms engage in stakeholder-centric practices. Relative to peers, pledged firms commit more environmental and labor-related compliance violations, pay more compliance penalties, have higher carbon emissions, rely more on government subsidies, and are more likely to disagree with proxy recommendations on shareholder proposals. An examination of the BRT pledge firms found no material change in the language employed regarding stakeholder status and continued alignment of director compensation with shareholder value (Bebchuk & Tallarita, 2022a). Further analysis of the compensation structure of the CEOs who signed the pledge showed that 42% do not use any stakeholder-oriented incentives for their CEOs (Bebchuk & Tallarita, 2022b).

2.4 | Event studies related to stakeholder theory[12]

Many studies have examined the effect of a firms commitment to stakeholder engagement. Lyon and Shimshack (2015) study the impact of Newsweek's 2009 Greenest Companies ranking of the 500 largest US firms and find that the rankings significantly impact shareholder value. Firms in the top 100 experience abnormal returns, 0.6–1.0% higher than those in the bottom 400. Cordeiro and Tewari (2015) performed an event study to capture investor response to the first Newsweek Green Rankings in September 2009 and observe that the rankings caused an upward revision of shareholder expectations for the firms' future cash flows.

Zhang et al. (2022) show that high-CSR acquirers generally enjoy positive returns around the acquisition announcement. CSR engagement could provide an insurance-like effect for acquisition events. Karim et al. (2016) find significant and positive abnormal returns associated with inclusion in the "World's Most Ethical Companies" (WME) list, a ranking based on overall CSR performance. Becchetti et al. (2009) examine the market reaction to corporate entry and exit from the Domini 400 Social Index, a recognized CSR benchmark. They find positive abnormal returns associated with the announcement of addition to the Domini index and a significant adverse effect on abnormal returns following an exit.

3 | HYPOTHESES

3.1 | The decision to pledge

Access to capital is one of the drivers of stakeholder theory, factors beyond shareholder preferences influence the decision to prioritize CSR (Scholtens, 2006). Companies have been responding to a broader

set of forces over time, causing them to measure their actions from a social perspective, while simultaneously paying increasing attention to governance and environmental factors. Waddock and Graves (1997) emphasize that a company's interactions with its various stakeholders comprise an overall corporate social performance record. Strategic management literature identifies various business analysis models that explicitly consider stakeholders. Stakeholder theory has gained greater recognition since the 1984 work of R. Edward Freeman. Stakeholder orientation is not a new concept, and prior to the 2019 BRT statement, numerous companies had already shown commitment to a variety of stakeholders. The 2019 BRT statement may represent a culmination of recognition of the importance of stakeholders that had already been developing among pledge firms.

3.2 | Factors that positively influence the decision to pledge

We expect the following factors to be positively related to the likelihood of a firm signing the BRT pledge.

3.2.1 | Headquarters in states with constituency statutes

Thirty five states adopted constituency statutes between 1984 and 2007. These statutes allow directors to consider non-shareholding stakeholder interests in decision making, a contrast to an exclusive focus on shareholders (Li & Zhang, 2020). Cremers et al. (2019) find that state constituency statute adoption increases the Tobin's Q of affected firms. Li and Zhang et al. (2020) find that statute adoption decreases a firm's stock price crash risk.

3.2.2 | Firm size

Firm size may play a role in the decision to pursue CSR. Small to medium-size firms may lack the resources and drive necessary to pursue CSR initiatives, compared to large firms. Udayasankar (2008) suggest that a U-shaped relationship exists between firm size and CSR participation, and very small and very large firms are equally motivated to participate in CSR in terms of visibility, resource access, and operating scale.

3.2.3 | Institutional ownership

Neubaum and Zahra (2006) suggest that institutional ownership, dependent on investment horizon, frequency, and coordination, positively impacts the corporate social performance of the firm. Buchanan et al. (2018) argue that institutional investors can mitigate the overinvestment problem, such as the one associated with stakeholder theory, through effective monitoring. However, institutional investors' goals may differ from other stakeholders, leading to more conflict.

3.2.4 | Stock runup

To the extent that CSR impacts firm profitability, we expect underperforming firms to shy away from CSR activities to preserve resources. Conversely, profitable firms can expend resources on CSR activities. To account for this possibility and bearing in mind the positive association between profitable firms and their stock performance, we test the hypothesis of whether firms with a stock runup are more likely to take the CEO pledge and sign the BRT statement.

3.2.5 | Profitability

The Slack Resources theory indicates better financial performance can translate into greater availability of resources, financial, and otherwise (Waddock & Graves, 1997). Slack resources provide the opportunity to invest in social performance areas, such as community relations, relationships with employees, or environmental causes. If slack resources are available, better social performance will result from allocating these resources in social areas. We expect that firm profitability will be positively related to the likelihood to pledge.

3.2.6 | Net organization capital

Barton et al. (1989) identify that a firm accrues net organization capital in its dealings with its stakeholders. Net organization capital is the excess of the present value of the benefits derived from a stakeholder over the present value of incurred costs. Consequently, the more stakeholders a firm interacts with, the larger its potential net organizational capital. Relationships with stakeholders contribute to firm growth; market-to-book ratio is a proxy for net organization capital. We expect that firms with greater net organization capital will be more likely to pledge.

3.2.7 | Liquidity

Firms possessing large amounts of cash will find it easier to pursue stakeholder theory and accordingly may be more likely to sign the pledge. Conversely, cash-rich firms may be subject to agency issues, as managers may be inclined to spend cash to maximize their own welfare at the expense of the firms' stakeholders (Myers & Rajan, 1998).

3.2.8 | Defined benefit pension

Firms committed to employee welfare may be more likely to sign the CEO pledge and pursue stakeholder theory. Firms that prioritize employee welfare may enact more favorable employee benefit plans; an important aspect of employee benefit plans are pension plans. Firms may offer defined-benefit (DB) or defined-contribution (DC) plans. Providing a DB pension plan may indicate greater

commitment to employee welfare. DB plans tend to maximize employer contributions and produce more wealth for retirees.

3.2.9 | Earnings management

Prior et al. (2008) argue that earnings management damages the interests of stakeholders and that manipulators might espouse stakeholder theory to assuage stakeholders' concerns. Their results suggest a positive relationship between earnings management and CSR. In line with Prior et al. (2008), firms' earnings management practices are included in the examination of likelihood to pledge. Two proxies for earnings management are used: discretionary accruals and real earnings management.

3.2.10 | Net trade credit

Commitment to stakeholder interests includes mutually beneficial dealings with suppliers and creditors; prompt payment to suppliers and creditors is crucial. Similarly, a firm embracing stakeholder theory would likely implement a more favorable customer credit policy. Xu et al. (2020) provide evidence that high overall CSR scores are related to a higher trade credit level. They observe an increased willingness among suppliers to extend trade credit when a company is engaged in CSR activities. To capture working capital management strategies, we calculate net trade credit as the difference between trade receivables-to-sales (e.g., trade credit offered to customers) and trade payables-to-cost of goods sold (e.g., trade credit provided by suppliers).

3.3 | Factors that negatively influence the decision to pledge

We expect the following factors to be negatively related to the likelihood of a firm signing the BRT pledge.

3.3.1 | Taxation

Gandullia and Piserà (2020) empirically explore the effect of corporate income taxes on investment in CSR activities. They find that average effective tax rates are negatively correlated with CSR ratings, concluding that corporate taxation discourages corporate socially responsible behavior.

3.3.2 | Payouts: Dividends and repurchases

Ni et al. (2020) find that the adoption of constituency statutes is associated with decreased share repurchases. The results may reflect that firms embracing stakeholder theory realize lower total corporate payouts. To examine whether reduced payout is associated with a CEO's

decision to endorse the 2019 BRT statement, the proxies of dividend payments to total assets and the dollar amount of stock repurchases in 2018 to the market value of common equity are included in the analysis.

3.3.3 | CEO compensation

The evidence overwhelmingly associates the shareholder primacy model with CEO compensation (Benson & Davidson, 2010). CEOs with a compensation structure geared toward shareholder value maximization are likely to have less motivation to sign the CEO Pledge. CEO's total compensation is included to capture the impact on the decision to pledge.

3.4 | Wealth effect

The market perception or reaction to the 2019 BRT statement is central to this study. Examining shareholder reaction is critical because, unlike other stakeholders, the loss they suffer if the corporation changes purpose is far more costly. For example, employees who perceive the company as not fulfilling its purpose can leave to find employment elsewhere, and customers may move to the competition. Dissatisfied shareholders must sell their shares and are reliant on the stock market. As discussed, previous studies have found positive effects on firms stock value from a commitment to stakeholder orientation. We expect that pledge firms will experience similar benefits.

3.5 | Change in risk

Examination of the effect of the decision to pledge on firm risk can provide important insight for firms considering a stakeholder orientation. Gao et al. (2021) highlight the potential for stakeholder orientation to mitigate conflict and lower risk. Stakeholder statute adoption, an indication of a stakeholder orientation, resulted in lower risk (Li & Zhang, 2020). We capture the change in total, systematic, and unsystematic risk and expect that pledge firms will experience similar reductions in risk. Examining the factors that impact the change in risk should show that the decision to pledge will be positively related to the reduction in risk.

4 | DATA AND METHODOLOGY

4.1 | Data

The list of 181 CEOs/companies that signed the BRT pledge is available online.[13] Data in Compustat are available for 163 companies, as some companies are private and have more than one pledge or are partnerships. The control sub-samples are identified from the remaining pool of non-pledge firms. Accounting data is obtained from the

Compustat Annual Fundamental database. Stock prices are obtained from CRSP and the Compustat Daily Security databases and are used to calculate the risk measures.

4.2 | Methodology

Pledge and non-pledge firms fundamentally differ from each other; we implement a four-pronged approach to identify non-pledge control firms following Raghunandan and Rajgopal (2021). First, we limit the pool of non-pledge firms to firms in the same asset quintile as the pledge firms in the four quarters preceding the pledge announcement date. We use firm size to identify the pool of non-pledge firms; Raghunandan and Rajgopal (2021) point out that more than half of the pledge firms are members of the S&P 500. Firm size is the most prominent characteristic of pledge firms, as compared to non-pledge firms. We start with a sample of 163 pledge firms and 3436 non-pledge firms in the same size quintile.

Second, we examine the impact of the pledge announcement on the return, risk profile, and payout policy for pledge and matched non-pledge firms while controlling for the Heckman self-selection bias. Firms that wish to improve their return and risk profile could choose to pledge, resulting in a non-casual relationship between pledging and firm return and risk profile.

Third, we follow Raghunandan and Rajgopal (2021) to implement a propensity score matching (PSM) procedure as developed by Rosenbaum and Rubin (1983). We identify for the single, five, and 10 closest firms in propensity score, the predicted probability to engage in the pledge. PSM can help isolate the effects of firm characteristics that drive the firm to engage in the pledge. In the first stage of identifying matching non-pledge firms, we match on firm size LN (MKCAP $i,t-4$ to $t-1$), profitability ROA $i,t-4$ to $t-1$, growth prospect MKBK $i,t-4$ to $t-1$, liquidity holdings CASHRATIO $i,t-4$ to $t-1$, financial leverage LEVERAGE $i,t-4$ to $t-1$, institutional ownership INSTOWN $i,t-4$ to $t-1$, prior stock price performance RETURN $i,t-4$ to $t-1$, and CEO compensation CEOPAY $i,t-4$ to $t-1$.

Fourth, we implement an entropy balancing (EB) procedure as developed by Hainmueller (2012). EB identifies continuous weights for all control non-pledge firms such that the distributional moments of mean, variance, and skewness of control characteristics between the pledge and non-pledge firm samples are equalized. In this way, EB reduces the concern that the baseline results are driven by systematic difference between the two groups. We then examine the impact of the pledge announcement on the outcome variables using the entropy balanced weighted sample of pledge and non-pledge firms. In the first stage, we match on firm size LN (MKCAP $i,t-4$ to $t-1$), profitability ROA $i,t-4$ to $t-1$, growth prospect MKBK $i,t-4$ to $t-1$, liquidity holdings CASHRATIO $i,t-4$ to $t-1$, financial leverage LEVERAGE $i,t-4$ to $t-1$, institutional ownership INSTOWN $i,t-4$ to $t-1$, prior stock price performance RETURN $i,t-4$ to $t-1$, and CEO compensation CEOPAY $i,t-4$ to $t-1$.

The distribution of the pledge and non-pledge control firms in the same size quintiles is reported in Table 1. There is a total of 163 pledge firms and 3436 non-pledge firms. The top 5 industries for pledge firms are business services (BUSSV—9%), insurance (INSUR—6.7%), banks (BANKS—6%), computers (CHIPS—6%), and retail (RTAIL—6%).

In Table 2, the summary statistics of the variables employed in this study are reported, and the values are reported for the end of the third quarter of 2019, the quarter in which the firms signed the pledge. Ni et al.'s (2020) definition is used to create a dummy variable STATE ADOPTION equal to 1 for firms headquartered in states that have adopted constituency statutes with stakeholder orientation, 0 otherwise. The list of adopting states is provided in Ni et al. (2020), and the definitions of the remaining variables appear in Appendix A.

Total assets and market capitalization of all pledge firms are $22.5 trillion and $13 trillion, respectively. The corresponding figures for the non-pledge firms are $79.4 trillion and $27.2 trillion. These figures evidence the significant size of firms that took the CEO pledge. Comparison of sample firms and non-pledge firms shows important differences. Specifically, pledge firms are overwhelmingly large firms, measured by the natural logarithm of total assets and market capitalization and with a preponderance of institutional ownership. Pledge firms are profitable, measured by ROA, and valued favorably, proxied by the market-to-book ratio. Pledge firms exhibit larger workforces and larger employer pension contributions, suggesting a focus on employees. They engage in more real earnings management, pay more dividends, and engage in larger share repurchases. Conversely, they are associated with lower cash ratios. Finally, their CEO compensation-to-sales ratio is typically lower than that of non-pledge firms, possibly reflecting the focus on stakeholders over CEO control.

5 | RESULTS

5.1 | Propensity to pledge

An examination of the factors that impact the decision to sign the BRT statement includes characteristics of the nature of the firm and the stock market sentiment regarding the 163 pledge firms. Table 3 shows the examined variables and contains factors that influence firms to commit to the BRT statement and a stakeholder orientation. A logistic regression is performed on the decision to pledge. The dependent variable PLEDGE is equal to 1 for pledge firms, 0 otherwise. The independent variables follow Raghunandan and Rajgopal (2021) with the addition of several other variables of interest; variable definitions are found in Appendix A. Industry fixed effects are controlled for, and robust standard errors are used.

The propensity of a firm to sign the 2019 BRT pledge is significantly positively related to registration in a state with constituency statutes, although significant only in Model 1, larger size, greater institutional ownership, better stock performance, higher profitability, larger work force, strong working capital management, and more generous pension schemes (STATE ADOPTION, LNMKCAP,

TABLE 1 Sample distribution

Panel A—Non-signatory firms			Panel B—Signatory firms		
Industry	Frequency	Percent	Industry	Frequency	Percent
BUSSV	411	11.96	BUSSV	15	9.2
BANKS	381	11.09	INSUR	11	6.75
DRUGS	368	10.71	BANKS	10	6.13
FIN	345	10.04	CHIPS	10	6.13
OIL	181	5.27	RTAIL	10	6.13
CHIPS	124	3.61	FIN	8	4.91
INSUR	111	3.23	OIL	8	4.91
UTIL	110	3.2	UTIL	8	4.91
OTHER	106	3.08	COMPS	7	4.29
RTAIL	103	3	DRUGS	7	4.29
TELCM	102	2.97	MACH	7	4.29
WHLSL	93	2.71	CHEM	6	3.68
MACH	87	2.53	TRANS	5	3.07
MEDEQ	86	2.5	CNSTR	4	2.45
CHEM	65	1.89	PAPER	4	2.45
COMPS	58	1.69	TELCM	4	2.45
GOLD	57	1.66	WHLSL	4	2.45
TRANS	57	1.66	AUTOS	3	1.84
AUTOS	52	1.51	HSHLD	3	1.84
MEALS	52	1.51	MEALS	3	1.84
FOOD	50	1.46	MEDEQ	3	1.84
RLEST	45	1.31	OTHER	3	1.84
LABEQ	42	1.22	AERO	2	1.23
BLDMT	39	1.14	ELCEQ	2	1.23
CNSTR	39	1.14	MINES	2	1.23
HSHLD	37	1.08	RLEST	2	1.23
MINES	36	1.05	AGRIC	1	0.61
ELCEQ	34	0.99	BEER	1	0.61
STEEL	34	0.99	BLDMT	1	0.61
PAPER	27	0.79	BOXES	1	0.61
CLTHS	19	0.55	CLTHS	1	0.61
AERO	16	0.47	FOOD	1	0.61
BEER	12	0.35	GUNS	1	0.61
TOYS	12	0.35	LABEQ	1	0.61
SODA	11	0.32	SHIPS	1	0.61
BOXES	9	0.26	SODA	1	0.61
SHIPS	7	0.2	STEEL	1	0.61
AGRIC	6	0.17	TOYS	1	0.61
FABPR	6	0.17	Total	163	100
GUNS	6	0.17			
Total	3436	100			

Note: This table reports the distribution by Fama–French 48 sector classifications for the subsample of non-signatory firms (in Panel A) and the subsample of signatory firms (in Panel B).

TABLE 2   Summary Statistics

Panel A—All firms

Variables	N	Mean	Median	25th pctl	75th pctl
MKCAP	3599	11,160.560	1819.885	599.835	6510.158
ASSET	3599	28,037.690	2285.800	639.687	8286.250
LNMKCAP	3599	7.702	7.488	6.362	8.766
LNASSET	3599	7.809	7.725	6.456	9.022
STATE ADOPTION	3599	0.224	0.000	0.000	0.000
INSTOWN	3599	0.491	0.515	0.162	0.830
RETURN	3599	0.077	0.062	−0.029	0.157
ROA	3599	−0.009	0.005	−0.002	0.015
MKBK	3599	3.509	2.013	1.196	4.115
CASH	3599	0.183	0.074	0.026	0.224
LEVERAGE	3599	0.603	0.580	0.391	0.772
EMPLOYEES	3445	1.528	1.158	0.340	2.372
TRADE CREDIT	2791	−0.610	−0.017	−0.420	0.304
TAX PAID	3440	0.018	0.013	0.000	0.033
DBCONTR	3598	0.000	0.000	0.000	0.000
DISACCR	2558	0.045	0.002	−0.050	0.076
REM	3309	0.066	0.029	−0.046	0.252
DIVPAY	3599	0.012	0.005	0.000	0.018
REPURCHASE	3537	0.010	0.002	0.000	0.013
CEOPAY	1438	1.774	1.714	1.089	2.329

Panel B—Comparing signatory firms vs. non-signatory firms

	Non-pledge	Pledge	Difference	t-stats	Wilcoxon-stats
LNMKCAP	7.574	10.394	2.819	24.56***	17.38***
LNASSET	7.680	10.538	2.858	23.83***	16.65***
STATE ADOPTION	0.224	0.209	−0.016	−0.483	−0.47
INSTOWN	0.489	0.542	0.053	2.17**	1.63
RETURN	0.077	0.087	0.010	0.97	1.87*
ROA	−0.011	0.017	0.027	10.53***	8.22***
MKBK	3.447	4.817	1.370	2.53**	3.98***
CASH	0.187	0.103	−0.084	−9.40***	−4.45***
LEVERAGE	0.598	0.698	0.099	5.50***	6.56***
EMPLOYEES	1.414	3.814	2.400	5.50***	17.11***

TABLE 2 (Continued)

Panel B—Comparing signatory firms vs. non-signatory firms

	Non-pledge	Pledge	Difference	t-stats	Wilcoxon-stats
TRADE CREDIT	−0.616	−0.488	0.128	0.343	1.052
TAX PAID	0.018	0.021	0.003	1.16	3.31***
DBCONTR	0.000	0.001	0.001	3.23***	11.23***
DISACCR	0.046	0.031	−0.015	−0.59	−0.978
REM	0.060	0.172	0.112	4.44***	3.49***
DIVPAY	0.012	0.015	0.003	2.76***	6.73***
REPURCHASE	0.010	0.022	0.012	7.15***	9.52***
CEOPAY	1.873	0.879	−0.994	−18.85***	−12.97***

Panel C—Aggregate asset and market capitalization of signatory firms vs. non-signatory firms

Total market capitalizations of all signatory firms in the pledge quarter = 13,000,000 ($ million)

Total assets of all signatory firms in the pledge quarter = 22,500,000 ($ million)

Total market capitalizations of all non-signatory firms in the pledge quarter = 27,200,000 ($ million)

Total assets of all non-signatory firms in the pledge quarter = 79,400,000 ($ million)

Note: This table reports the summary statistics of firm characteristics separately for signatory firms and non-signatory firms. The Pledge column represents the firms that signed the Business Roundtable pledge to prioritize customers, employees, suppliers, and their communities along with shareholders. Non-pledge represents the remaining firms in the same market capitalization quintile as the signatory firms in the quarter preceding the pledge quarter. All firm characteristics are measured as the average of the characteristics in the 4 quarters preceding the pledge quarter. The definitions of the variables appear in Appendix A.

***Statistically significant at the 1% level.

**Statistically significant at the 5% level.

*Statistically significant at the 10% level.

TABLE 3 Logistic regressions of what drives firms' decision to pledge

Variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9
STATE ADOPTION $_{i,t-4 \text{ to } t-1}$	0.501** (1.977)	0.340 (1.337)	0.310 (1.205)	0.368 (1.346)	0.352 (1.391)	0.287 (1.113)	0.454 (1.639)	0.332 (1.312)	−0.121 (−0.422)
LNMKCAP $_{i,t-4 \text{ to } t-1}$	1.279*** (14.727)	1.287*** (14.129)	0.851*** (7.458)	1.253*** (12.590)	1.317*** (14.314)	1.291*** (14.017)	1.256*** (12.725)	1.253*** (13.618)	1.094*** (9.295)
INSTOWN $_{i,t-4 \text{ to } t-1}$	1.332*** (4.355)	1.343*** (4.409)	1.608*** (4.945)	1.262*** (3.903)	1.303*** (4.239)	1.285*** (4.156)	1.250*** (3.615)	1.256*** (3.866)	0.069 (0.174)
RETURN $_{i,t-4 \text{ to } t-1}$	0.904 (1.607)	1.345* (1.927)	1.180 (1.597)	1.433** (2.022)	1.339* (1.921)	1.281* (1.818)	1.017 (1.315)	1.464** (2.125)	2.072* (1.938)
ROA $_{i,t-4 \text{ to } t-1}$		6.287 (1.448)	10.966* (1.740)	4.342 (0.869)	8.308 (1.544)	5.346 (1.319)	7.640 (1.203)	4.381 (1.088)	−1.432 (−0.164)
MKBK $_{i,t-4 \text{ to } t-1}$		0.009 (0.948)	0.016 (1.436)	0.007 (0.759)	0.010 (0.972)	0.007 (0.690)	0.011 (0.984)	0.013 (1.222)	0.020 (1.568)
CASH $_{i,t-4 \text{ to } t-1}$		−4.121*** (−4.159)	−3.015*** (−2.888)	−4.249*** (−4.119)	−4.243*** (−4.202)	−3.789*** (−3.838)	−3.508*** (−3.090)	−4.276*** (−3.998)	−3.682*** (−2.937)
LEVERAGE $_{i,t-4 \text{ to } t-1}$		0.814*** (3.624)	0.989*** (4.052)	0.752*** (3.643)	0.861*** (3.816)	0.767*** (3.419)	0.738*** (3.194)	0.718*** (2.984)	1.521** (2.202)
EMPLOYEES $_{i,t-4 \text{ to } t-1}$			0.630** (5.510)						
TRADE CREDIT $_{i,t-4 \text{ to } t-1}$				0.033* (1.787)					
TAX PAID $_{i,t-4 \text{ to } t-1}$					−8.493*** (−2.818)				
DBCONTR $_{i,t-4 \text{ to } t-1}$						204.274*** (4.696)			
DISACCR $_{i,t-4 \text{ to } t-1}$							0.382 (0.369)		
REM $_{i,t-4 \text{ to } t-1}$							1.241*** (3.505)		
DIVPAY $_{i,t-4 \text{ to } t-1}$								11.026 (1.382)	
REPURCHASE $_{i,t-4 \text{ to } t-1}$								13.556*** (3.375)	
CEOPAY $_{i,t-4 \text{ to } t-1}$									−0.797*** (−3.413)
Constant	−12.215*** (−11.457)	−12.460*** (−11.137)	−10.973*** (−8.475)	−14.980*** (−11.043)	−12.485*** (−11.064)	−12.457*** (−11.097)	−14.731*** (−11.216)	−15.243*** (−11.943)	−11.424*** (−7.694)
Observations	3599	3599	3445	2785	3440	3598	2427	3531	1393
Pseudo R-squared	0.394	0.416	0.432	0.403	0.415	0.428	0.396	0.419	0.426

TABLE 3 (Continued)

Variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9
Chi-squared stats	304.6	296	321.6	251	311.6	313.2	231.9	305.4	222.7
Percent correct classification	95.94%	96.11%	95.91%	95.62%	95.99%	96.08%	95.39%	96.04%	92.68%
Industry fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Robust std err	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Note: In each model, the dependent variable is PLEDGE. All variables are defined in Appendix A.

***Statistically significant at the 1% level.

**Statistically significant at the 5% level.

*Statistically significant at the 10% level.

INSTOWN, RETURN, ROA, EMPLOYEES, TRADE CREDIT, and DBCONTR).

The announcement of the 2019 BRT's statement was met by some publicized concerns. Specifically, a call for CEOs who espouse full support of the stakeholder theory to begin by reconsidering excessive C-suite compensation.[14] Failure to address inequities in compensation might be perceived as failing to commit to stakeholder theory. A negative relationship between total CEO compensation and the likelihood to pledge is observed. A positive association between real earnings management and the likelihood of a CEO signing the pledge is also observed. Real earnings management captures changes to inventory management and discretionary expenses that artificially inflate short-term earnings and adversely affect the firm's ability to generate cash flows from operations (Roychowdhury, 2006). The pledged CEOs' engagement in such practices may suggest that the shareholder primacy model still guides management of operations. Contrary to our expectation, greater corporate payouts, in the form of dividends and share repurchase, are positively related to the firm's likelihood to pledge, although only the REPURCHASE variable was significant. This result may reflect the need for firms who have exhibited greater focus on shareholder primacy, in the form of shareholder payouts, to more clearly signal their commitment to stakeholders by signing the pledge.

5.2 | Short-run market reaction

The short-run market reaction to the firm's announcement of commitment to the 2019 BRT pledge is examined. The CARs in the (−1,0) window around the announcement date, August 19, 2019, are calculated for both pledge and non-pledge control firms.[15] For the event study, day 0 represents the day of the announcement, and −1 represents the day preceding the announcement. We utilize (1) the market model, (2) the Fama–French 3-factor model, and (3) the Fama–French 4-factor model, to capture differences between the actual and predicted returns. The predicted returns are estimated using the daily stock returns in the (−252,−30) window prior to the announcement date.

The univariate comparisons of the CARs between pledge and all non-pledge control firms are reported in Panel A of Table 4. In each case, observed differences in the (−1,0) CARs are positive and statistically significant, ranging from 0.243% to 0.399%. Differences translate to an additional gain of $4,422,320 to $7,261,341 for the median pledge firms relative to non-pledge control firms, using the sample median market capitalization. This evidence may suggest that the benefits of stakeholder theory outweigh previously discussed potential costs. However, additional robustness checks will help clarify potential benefits of the commitment to the 2019 BRT statement.

In Panel B of Table 4, we report the regressions of the CARs while controlling for self-selection bias. From the logistic regressions of the decision to pledge (in Table 3), we calculate the inverse Mills ratio following Heckman (1979) and include the ratio in the CAR regressions

TABLE 4 The wealth effects of pledge announcements

Panel A—Univariate comparisons of CARs

Variables	Non-pledge	Pledge	Difference	t-stats	Wilcoxon-stats
Market model CAR	−0.158%	0.240%	0.399%	3.12***	2.78***
Fama–French 3-factor CAR	−0.123%	0.120%	0.243%	1.89*	1.85*
Fama–French 4-factor CAR	−0.243%	0.060%	0.303%	2.37**	2.16**

Panel B—Regressions of CARs controlling for self-selection bias

Variables	Model 1 Market model CAR	Model 2 Fama–French 3-factor CAR	Model 3 Fama–French 4-factor CAR	Model 4 Market model CAR	Model 5 Fama–French 3-factor CAR	Model 6 Fama–French 4-factor CAR
PLEDGE	0.004** (2.179)	0.003* (1.792)	0.003** (2.023)	0.003** (2.069)	0.003** (2.207)	0.003** (2.519)
MILLS1	−0.006 (−0.882)	−0.007 (−1.024)	−0.009 (−1.217)			
MILLS2				0.012** (2.068)	0.011** (1.958)	0.010* (1.921)
STATE ADOPTION $_{i,t-1}$	0.000 (0.491)	0.000 (0.492)	0.002** (2.030)	0.000 (0.003)	−0.000 (−0.105)	0.000 (0.412)
LN (MKCAP $_{i,t-1}$)	−0.000 (−0.014)	−0.000 (−0.588)	−0.000 (−0.632)	0.001* (1.717)	0.001* (1.985)	0.001** (2.143)
ROA $_{i,t-1}$	0.004 (0.799)	0.004 (0.660)	0.005 (0.873)	−0.076** (−2.079)	−0.083** (−2.255)	−0.066* (−1.880)
MKBK $_{i,t-1}$	−0.000** (−2.545)	−0.000** (−2.122)	−0.000* (−1.785)	−0.000 (−0.273)	−0.000 (−0.061)	0.000 (0.107)
CASHRATIO $_{i,t-1}$	−0.001 (−0.180)	0.004 (1.430)	0.004 (1.457)	0.000 (0.042)	0.006** (2.290)	0.005* (1.759)
LEVERAGE $_{i,t-1}$	0.001 (1.082)	0.001 (0.845)	0.001 (0.964)	0.003 (1.099)	0.003 (0.894)	0.002 (0.570)
INSTOWN $_{i,t-1}$	0.002* (1.735)	0.003** (2.045)	0.004*** (3.095)	0.002 (1.247)	0.002 (1.260)	0.001 (0.803)
RETURN$_{i,t-4 \text{ to } t-1}$	−0.002 (−0.688)	−0.002 (−0.572)	−0.002 (−0.637)	−0.001 (−0.134)	−0.001 (−0.134)	−0.002 (−0.324)
CEOPAY $_{i,t-4 \text{ to } t-1}$				−0.001** (−2.546)	−0.001 (−1.361)	−0.000 (−0.624)
Constant	−0.006 (−0.794)	−0.005 (−0.564)	−0.008 (−0.870)	−0.014 (−1.636)	−0.015* (−1.772)	−0.021** (−2.446)
Observations	3599	3599	3599	1393	1393	1393

TABLE 4 (Continued)

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
			Panel B—Regressions of CARs controlling for self-selection bias			
Variables	Market model CAR	Fama–French 3-factor CAR	Fama–French 4-factor CAR	Market model CAR	Fama–French 3-factor CAR	Fama–French 4-factor CAR
Adj. R-squared	0.0351	0.0375	0.0363	0.138	0.130	0.0926
Industry fixed effect	Yes	Yes	Yes	Yes	Yes	Yes
Robust std err	Yes	Yes	Yes	Yes	Yes	Yes

Note: This table provides the univariate comparisons of the cumulative abnormal returns CARs in Panel A and the regressions of CARs in Panel B. The variables are defined in Appendix A.

Abbreviation: CARs, cumulative abnormal returns.

***Statistically significant at the 1% level.

**Statistically significant at the 5% level.

*Statistically significant at the 10% level.

to control for self-selection bias. We use Model 2 in Table 3 to calculate the first inverse Mills ratio (MILLS1) since this model controls for many firm characteristics as suggested by Raghunandan and Rajgopal (2021) and retains the most observations. Alternatively, we use Model 9 in Table 3 to calculate the second inverse Mills ratio (MILLS2) since this model controls for CEO compensation in addition to many firm characteristics. Industry fixed effects are controlled for, and robust standard errors are used.

The regression analysis in Panel B of Table 4 shows that $(-1,0)$ CARs of pledge firms are significantly higher than those of non-pledge firms. A statistically significant and positive coefficient for the PLEDGE variable is observed in all 6 models. Consistent with the univariate results in Panel A, pledge firms experience a CAR of 0.3% to 0.4% higher than non-pledge firms. To the best of our knowledge, this study is the first to capture the stock market response to the intention of corporations to follow the principles of stakeholder theory.

It is possible that pledge firms are systematically different that non-pledge firms, and any market reactions we observe in Table 4 can be attributable to such systematic differences in firm characteristics. In Table 5, we implement the PSM approach to address this potential endogeneity concern. To retain the greatest number of observations, we first extract the predicted probabilities from Model 2 of Table 3 (e.g., propensity score); treatment (pledge) and control (non-pledge) firms with closest values on propensity scores are paired, then the CARs $(-1,0)$ of the two groups are compared. For robustness checks, we perform a 1-to-1 match (in Panel A), a 1-to-5 match (in Panel B), and a 1-to-10 match (in Panel C).

In Stage 1 of each of the panels, we present the results from the logistic regressions of the decision to pledge before we implement the matching and after the matching. After the matching implementation, none of the control variables are statistically significant, suggesting that pledge firms and their corresponding propensity-score matched firms possess similar characteristics. Furthermore, the Pseudo R-squared decreases from 42% for the pre-match logistic regressions to 7% in the post-match logistic regression. The statistically insignificant variable coefficients coupled with the decreases in the Pseudo R-squared suggests successful PSM procedures. In Stage 2 of each of the panels, we present the results from the regressions of CARs using the pledge firms and their corresponding 1-to-1, 1-to-5 and 1-to-10 matching non-pledge firms. Consistent with the results in Table 4, the coefficient on the PLEDGE variable is 0.4% and significant in all three models of Stage 2 in all three panels.

As we explain in Section 4 (Data and Methodology), the PSM approach has several drawbacks in comparison to the EB approach. Instead of keeping only one, five, or 10 control non-pledge firms based upon the propensity score (as in Table 5 above), EB identifies continuous weights for all control non-pledge firms such that the distributional moments of means, variances, and skewness of control characteristics between pledge and non-pledge firm samples are equalized. EB can minimize the difference between pledge and non-pledge firms, therefore reducing the concern that the baseline results are the results of the systematic difference between these two groups.

TABLE 5 The wealth effects of pledge announcements—Propensity score matching

	Panel A—Single nearest neighbor match				
	Stage 1—Logistic regression of pledge decision		**Stage 2—Regressions of CARs**		
Variables	**Before match**	**After match**	**Market model CAR**	**Fama–French 3-factor CAR**	**Fama–French 4-factor CAR**
PLEDGE			0.004** (2.364)	0.004** (2.251)	0.004** (2.219)
STATE ADOPTION $_{i, t-1}$	0.340 (1.34)	0.483 (1.21)	−0.001 (−0.186)	−0.000 (−0.133)	0.001 (0.155)
LN (MKCAP $_{i,t-1}$)	1.287*** (14.13)	0.158 (1.18)	−0.002 (−1.204)	−0.001 (−1.121)	−0.001 (−1.083)
ROA $_{i,t-1}$	6.287 (1.45)	−14.169 (−1.08)	−0.177 (−1.319)	−0.155 (−1.145)	−0.146 (−1.147)
MKBK $_{i,t-1}$	0.009 (0.95)	−0.001 (−0.07)	−0.000 (−0.624)	−0.000 (−0.309)	−0.000 (−0.103)
CASHRATIO $_{i,t-1}$	−4.121*** (−4.16)	0.915 (0.63)	0.005 (0.413)	0.009 (0.762)	0.006 (0.471)
LEVERAGE $_{i,t-1}$	0.814*** (3.62)	0.846 (1.17)	−0.002 (−0.376)	−0.003 (−0.516)	−0.002 (−0.368)
INSTOWN $_{i, t-1}$	1.343*** (4.41)	0.481 (1.00)	0.002 (0.626)	0.002 (0.503)	0.002 (0.584)
RETURN$_{i,t-4 \text{ to } t-1}$	1.345* (1.93)	0.481 (0.43)	0.011 (1.046)	0.013 (1.255)	0.012 (1.124)
Constant	−12.460*** (−11.14)	−2.261 (−1.42)	−0.007 (−0.531)	−0.006 (−0.426)	−0.019 (−1.430)
Observations	3599	245	245	245	245
Pseudo R^2/Adj. R^2	0.416	0.0673	0.0917	0.0775	0.0882
Industry fixed effect	Yes	Yes	Yes	Yes	Yes
Robust std err	Yes	Yes	Yes	Yes	Yes
	Panel B—Five nearest neighbors matches				
	Stage 1—Logistic regression of pledge decision		**Stage 2—Regressions of CARs**		
Variables	**Before match**	**After match**	**Market model CAR**	**Fama–French 3-factor CAR**	**Fama–French 4-factor CAR**
PLEDGE			0.004** (2.611)	0.004** (2.491)	0.004*** (3.448)
STATE ADOPTION $_{i, t-1}$	0.340 (1.34)	0.077 (0.25)	−0.001 (−0.540)	−0.001 (−0.511)	0.000 (0.002)
LN (MKCAP $_{i,t-1}$)	1.287*** (14.13)	0.284 (1.44)	0.000 (0.270)	0.000 (0.160)	−0.000 (−0.016)
ROA $_{i,t-1}$	6.287 (1.45)	2.779 (0.68)	−0.034 (−1.006)	−0.035 (−1.090)	−0.028 (−1.009)
MKBK $_{i,t-1}$	0.009 (0.95)	−0.016 (−1.19)	−0.000 (−1.499)	−0.000 (−1.293)	−0.000 (−1.320)
CASHRATIO $_{i,t-1}$	−4.121*** (−4.16)	−0.847 (−0.74)	0.000 (0.046)	0.006 (0.970)	0.006 (1.012)
LEVERAGE $_{i,t-1}$	0.814*** (3.62)	0.151 (0.66)	−0.002 (−1.277)	−0.002 (−1.213)	−0.001 (−1.026)
INSTOWN $_{i, t-1}$	1.343*** (4.41)	−0.011 (−0.03)	0.003 (1.679)	0.003 (1.438)	0.003 (1.484)
RETURN$_{i,t-4 \text{ to } t-1}$	1.345* (1.93)	0.994 (1.05)	−0.001 (−0.121)	0.000 (0.042)	−0.000 (−0.015)
Constant	−12.460*** (−11.14)	−3.518*** (−2.74)	−0.021*** (−3.844)	−0.020*** (−3.677)	−0.031*** (−5.443)

TABLE 5 (Continued)

	Panel B—Five nearest neighbors matches				
	Stage 1—Logistic regression of pledge decision		Stage 2—Regressions of CARs		
Variables	Before match	After match	Market model CAR	Fama–French 3-factor CAR	Fama–French 4-factor CAR
Observations	3599	448	457	457	457
Pseudo R^2/Adj. R^2	0.416	0.0504	0.0566	0.0549	0.0724
Industry fixed effect	Yes	Yes	Yes	Yes	Yes
Robust std err	Yes	Yes	Yes	Yes	Yes
	Panel C—10 nearest neighbors matches				
	Stage 1—Logistic regression of pledge decision		Stage 2—Regressions of CARs		
Variables	Before match	After match	Market model CAR	Fama–French 3-factor CAR	Fama–French 4-factor CAR
PLEDGE			0.004*** (2.713)	0.004** (2.617)	0.004*** (3.494)
STATE ADOPTION $_{i, t-1}$	0.340 (1.34)	0.249 (0.84)	0.001 (0.742)	0.001 (0.698)	0.002 (1.166)
LN (MKCAP $_{i,t-1}$)	1.287*** (14.13)	0.520 (1.22)	0.000 (0.450)	0.000 (0.401)	0.000 (0.441)
ROA $_{i,t-1}$	6.287 (1.45)	1.583 (0.40)	−0.052 (−1.415)	−0.056 (−1.525)	−0.050 (−1.528)
MKBK $_{i,t-1}$	0.009 (0.95)	−0.018 (−1.48)	−0.000* (−1.967)	−0.000* (−1.790)	−0.000* (−1.879)
CASHRATIO $_{i,t-1}$	−4.121*** (−4.16)	−1.451 (−1.26)	0.001 (0.226)	0.007 (1.218)	0.005 (0.855)
LEVERAGE $_{i,t-1}$	0.814*** (3.62)	0.146 (0.68)	−0.003* (−1.797)	−0.003* (−1.846)	−0.003* (−1.712)
INSTOWN $_{i, t-1}$	1.343*** (4.41)	0.210 (0.58)	0.004 (1.678)	0.004 (1.667)	0.005* (1.980)
RETURN$_{i,t-4 \text{ to } t-1}$	1.345* (1.93)	0.789 (0.98)	−0.000 (−0.049)	0.001 (0.125)	−0.000 (−0.020)
Constant	−12.460*** (−11.14)	−6.308*** (−4.70)	−0.024** (−2.695)	−0.023** (−2.647)	−0.036*** (−4.025)
Observations	3599	659	673	673	673
Pseudo R^2/Adj. R^2	0.416	0.0704	0.0582	0.0588	0.0646
Industry fixed effect	Yes	Yes	Yes	Yes	Yes
Robust std err	Yes	Yes	Yes	Yes	Yes

Note: This table includes the results from the propensity score matching procedures. Panels A/B/C present the result from 1-to-1/1-to-5/1-to-10 matches. In Stage 1 of each panel, the logistic regressions of the decisions to pledge before versus after the match implementation are presented. In Stage 2, we report the results from the regressions of the cumulative abnormal returns (CARs). The remaining variables are defined in Appendix A.
***Statistically significant at the 1% level.
**Statistically significant at the 5% level.
*Statistically significant at the 10% level.

In Panels A and B of Table 6, we report the three moments of firm characteristics for the pledge and non-pledge firm samples after the implementation of EB. We calculate the standardized differences between the two groups as the differences in the mean scaled by the standard deviation of the pledge firms. In Panel A, we balance the two samples based upon the characteristics in Model 2 of Table 3; we refer to this as balancing 1. In Panel B, we add CEO compensation as an additional control variable, which we refer to as balancing 2. In both Panels A and B, the standardized differences in all control variables between the two samples are less than 1%, suggesting no significant differences between the pledge and non-pledge firms. In Panel C, we report the regressions of the CARs using the weighted samples of pledge and non-pledge firms where the continuous weights are obtained from balancing 1 (in Panel A) and from balancing

TABLE 6 The wealth effects of pledge announcement—Entropy balancing

Panel A—Firm characteristics after entropy balancing 1							
	Non-pledge			Non-pledge			
Variables	Mean	Variance	Skew	Mean	Variance	Skew	Stdz. Diff.
STATE ADOPTION $_{i,t-4\ to\ t-1}$	0.210	0.166	1.423	0.209	0.166	1.434	−0.004
LNMKCAP$_{i,t-4\ to\ t-1}$	10.394	2.038	−0.376	10.394	2.037	−0.268	0.000
ROA $_{i,t-4\ to\ t-1}$	0.017	0.000	−7.861	0.017	0.000	−0.021	−0.002
MKBK $_{i,t-4\ to\ t-1}$	4.801	128.306	−0.401	4.817	128.124	1.139	0.001
CASH $_{i,t-4\ to\ t-1}$	0.103	0.010	1.753	0.103	0.010	1.754	−0.001
LEVERAGE$_{i,t-4\ to\ t-1}$	0.698	0.029	0.178	0.698	0.029	0.016	−0.001
INSTOWN $_{i,t-4\ to\ t-1}$	0.542	0.091	−0.409	0.542	0.091	−0.303	0.000
RETURN$_{i,t-4\ to\ t-1}$	0.087	0.014	0.787	0.087	0.014	0.323	0.000

Panel B—Firm characteristics after entropy balancing 2							
	Non-pledge			Non-pledge			
Variables	Mean	Variance	Skew	Mean	Variance	Skew	Stdz. Diff.
STATE ADOPTION $_{i,t-4\ to\ t-1}$	0.231	0.178	1.276	0.231	0.179	1.278	−0.001
LNMKCAP$_{i,t-4\ to\ t-1}$	10.511	1.846	−0.235	10.514	1.841	−0.180	0.002
ROA $_{i,t-4\ to\ t-1}$	0.017	0.000	−0.765	0.017	0.000	−0.031	0.000
MKBK $_{i,t-4\ to\ t-1}$	5.158	139.646	−0.090	5.161	139.604	1.109	0.000
CASH $_{i,t-4\ to\ t-1}$	0.101	0.010	1.761	0.101	0.010	1.738	−0.001
LEVERAGE$_{i,t-4\ to\ t-1}$	0.706	0.027	0.167	0.706	0.027	−0.036	0.001
INSTOWN $_{i,t-4\ to\ t-1}$	0.548	0.085	−0.240	0.548	0.085	−0.310	0.000
RETURN$_{i,t-4\ to\ t-1}$	0.882	0.311	0.616	0.879	0.306	0.973	−0.004
CEOPAY $_{i,t-4\ to\ t-1}$	0.084	0.015	0.237	0.084	0.015	0.361	0.000

Panel C—Regressions of CARs using weighted samples						
	Balancing 1			Balancing 2		
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Variables	Market model CAR	Fama–French 3-factor CAR	Fama–French 4-factor CAR	Market model CAR	Fama–French 3-factor CAR	Fama–French 4-factor CAR
PLEDGE	0.004** (2.559)	0.003** (2.104)	0.003** (2.304)	0.002*** (2.652)	0.002** (2.256)	0.002** (2.273)
STATE ADOPTION $_{i,\ t-1}$	−0.000 (−0.170)	−0.000 (−0.108)	0.001 (0.642)	−0.001 (−1.394)	−0.001 (−1.203)	−0.000 (−0.477)
LN (MKCAP $_{i,t-1}$)	−0.000 (−0.583)	−0.000 (−0.346)	0.000 (0.040)	−0.000 (−1.002)	0.000 (0.234)	0.000 (1.234)
ROA $_{i,t-1}$	−0.104 (−0.983)	−0.094 (−0.847)	−0.082 (−0.771)	−0.145*** (−6.450)	−0.133*** (−5.865)	−0.113*** (−4.873)
MKBK $_{i,t-1}$	−0.000 (−0.760)	−0.000 (−0.486)	−0.000 (−0.324)	0.000 (0.404)	0.000 (0.591)	0.000 (0.737)
CASHRATIO $_{i,t-1}$	−0.005 (−0.555)	−0.000 (−0.013)	−0.001 (−0.165)	0.009** (2.057)	0.012*** (2.871)	0.008** (1.966)
LEVERAGE $_{i,t-1}$	0.004 (1.172)	0.004 (1.205)	0.007** (1.993)	0.006** (2.409)	0.005** (2.157)	0.006** (2.533)
INSTOWN $_{i,\ t-1}$	0.003 (0.978)	0.002 (0.883)	0.003 (1.089)	0.003** (2.162)	0.003** (2.172)	0.002* (1.903)
RETURN$_{i,t-4\ to\ t-1}$	0.011 (1.392)	0.015* (1.789)	0.013 (1.593)	0.002* (1.932)	0.003*** (3.020)	0.003*** (3.668)
CEOPAY $_{i,t-4\ to\ t-1}$				0.004 (1.541)	0.009*** (3.007)	0.006** (2.070)

TABLE 6 (Continued)

	Balancing 1			Balancing 2		
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Variables	Market model CAR	Fama–French 3-factor CAR	Fama–French 4-factor CAR	Market model CAR	Fama–French 3-factor CAR	Fama–French 4-factor CAR
Constant	−0.019*** (−4.018)	−0.020*** (−4.079)	−0.035*** (−7.128)	−0.016 (−0.289)	−0.022 (−0.400)	−0.026 (−0.462)
Observations	3934	3934	3934	1575	1575	1575
Adj. R-squared	0.202	0.215	0.218	0.222	0.236	0.219
Industry fixed effect	Yes	Yes	Yes	Yes	Yes	Yes
Robust std err	Yes	Yes	Yes	Yes	Yes	Yes

Note: This table includes the results from the entropy balancing procedure. In Panels A and B, we report the comparisons of control characteristics between signatory firms and non-signatory firms after implementing the entropy balancing procedures. In Panel A, we balance the STATE ADOPTION, LNMKCAP, ROA, MKBK, CASH, LEVERAGE, INSTOWN, and RETURN variables between signatory firms and non-signatory firms. In Panel B, we balance the STATE ADOPTION, LNMKCAP, ROA, MKBK, CASH, LEVERAGE, INSTOWN, RETURN, and CEOPAY variables. Stdz. Diff. is the difference in the mean characteristics between the signatory firms and non-signatory firms scaled by the standard deviation of the characteristics of the signatory firms. In Panel C, we report the results from the regressions of the cumulative abnormal returns (CARs) using the weighted samples derived from the balancing procedure in Panel A (e.g., balancing 1) and the balancing procedure in Panel B (e.g., balancing 2). The remaining variables are defined in Appendix A.

***Statistically significant at the 1% level.

**Statistically significant at the 5% level.

*Statistically significant at the 10% level.

2 (in Panel B). Industry fixed effects are controlled for, and robust standard errors are used. Consistent with the results in Tables 4 and 5, the coefficient on the PLEDGE variable ranges from 0.2% to 0.4% and is statistically significant.

The results in Tables 4–6 demonstrate the relevance of the BRT statement on the purpose of the corporation. Purpose statements matter from a financial perspective, given the observed investor reaction and difference from otherwise similar non-pledge firms.

For ease of reference, we summarize the key findings pictorially in Figure 1.

5.3 | Channels affecting the market reaction

Ni et al. (2020) argue that financial distress, default probability, consumer-focused industries, and high-polluting industry sectors individually moderate the impact of the adoption of constituency statutes on corporate payout policy. Likewise, the relationship between similar factors and the likelihood to pledge is investigated. Unlike the firms of interest in the Ni et al. (2020) study, the pledge firms in this study are large and financially sound at the time of signing the stakeholder pledge. Thus, the same factors are not expected to act as moderating channels of the stock market response to the announcement.

The companies included in this study have differing degrees of environmental impact. For example, pledge firms, American Airlines, Delta Airlines, American Electric Power, Bayer USA, BP, Chevron Corporation, and Exxon Mobil Corporation, have operations with larger impacts on the environment than CVS Health, IBM Corporation, KeyCorp, and Intel Corporation, among others. Higher polluting firms could be expected to gain more from pledging. Pledging may signal a greater focus on environmental issues, resulting in lower compliance and litigation costs and less damage to brand reputation. Firms may become more attractive to investors who embrace the stakeholder approach to organization management, consistent with Ni et al. (2020) who found that stakeholder orientation exerted a stronger effect on payout policy for firms operating in high-polluting industries.

Following the approach of Ni et al. (2020), the following variables are included in the analysis: ZSCORE_HI to identify financial distress, a dummy variable equal to 1 for firms with higher Altman's Z score than the sample median value, 0 otherwise; EDF_HI to capture default probability, a dummy variable equal to 1 for firms with higher expected default frequency than the sample median value, 0 otherwise; CONSUMER a dummy variable equal to 1 for firms in "consumer goods" industries, 0 otherwise; and POLLUTING a dummy variable equal to 1 for firms in one of the seven high-polluting industry sectors as defined by Flammer and Kacperczyk (2016), 0 otherwise. The results of the examination of CARs of pledge firms and factor variables are presented in Table 7 using the entropy balanced weighted regressions. Industry fixed effects are controlled for, and robust standard errors are used. The coefficient of the interaction term between PLEDGE and POLLUTING is positive and statistically significant. The CEO pledge has a more substantial impact on the market response for firms operating in high-polluting industries.
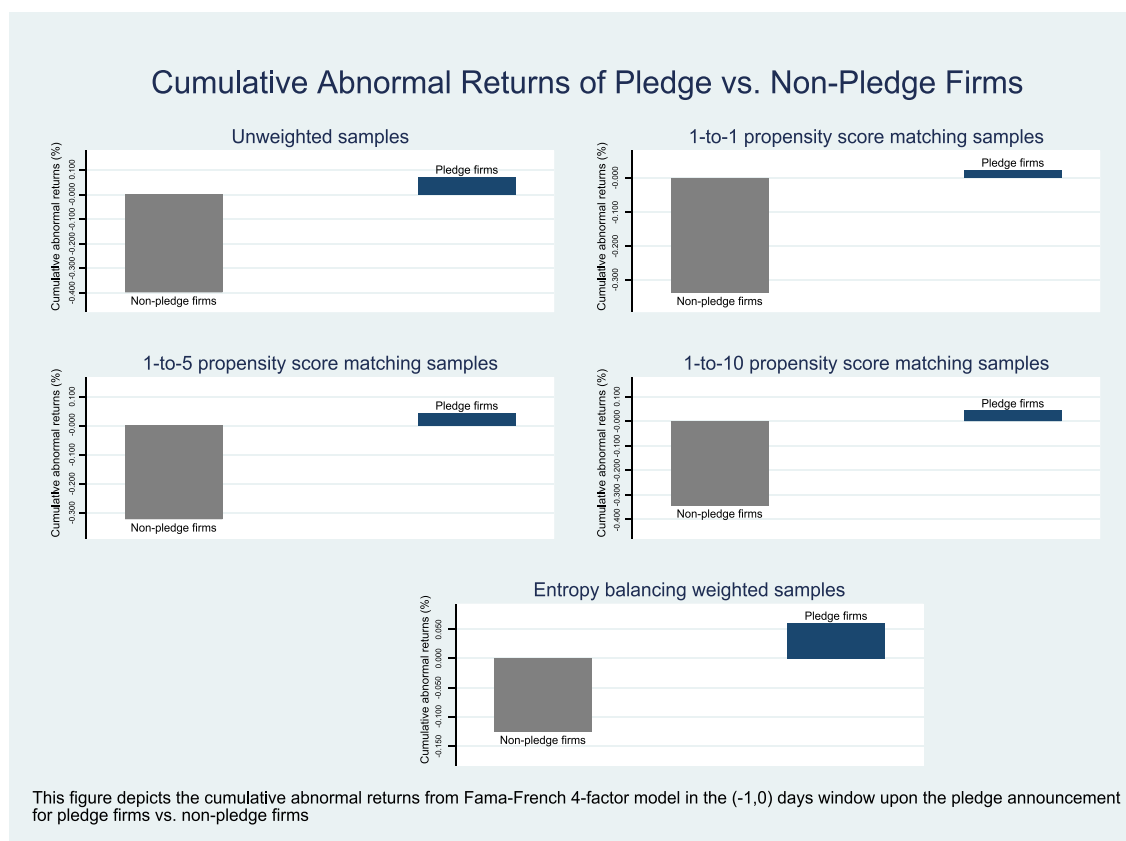
This figure depicts the cumulative abnormal returns from Fama-French 4-factor model in the (-1,0) days window upon the pledge announcement for pledge firms vs. non-pledge firms

FIGURE 1 Cumulative abnormal returns of pledge versus non-pledge firms [Colour figure can be viewed at wileyonlinelibrary.com]

5.4 | Stock price volatility

To the extent that the new BRT statement sends mixed signals to investors, higher volatility for pledge firm's share price post-pledge may be observed. The change in the volatility of stock return post announcement date is examined. The univariate comparisons of risks are reported in Panel A of Table 8. Three definitions of volatility are included: (1) total return volatility, the standard deviation of daily returns; (2) systematic risk, the standard deviation of the predicted returns from the (a) market model, (b) Fama–French three-factor model, and (c) Fama–French four-factor model; and (3) idiosyncratic risk, the standard deviation of the residuals from the three models. Total return volatility, systematic risk, and idiosyncratic risk are calculated for the $(-252,-30)$ window before and $(+30,+252)$ window after the pledge date; the changes in the risk measures are the differences between these two windows.

The results of difference-in-differences tests for the change in risk for the treatment group versus control group are presented in Panel A of Table 8. Industry fixed effects are controlled for, and robust standard errors are used. The difference in volatility of daily stock returns between the pledge and non-pledge firms from the $(-252,-30)$ window to the $(+30,+252)$ window is calculated; day 0 is the BRT announcement date. The change in total risk, systematic risk, and idiosyncratic risk is significantly lower for pledge firms. There is a

decrease in the volatility of the share price for firms following the signature of the BRT statement relative to the control firms. Pledging the 2019 BRT outcome seems to send a clear and credible signal that informs investors about the intentions of the signatories. These results may reflect the potential for reduced conflict among stakeholders and lower stock price crash risk engendered by the commitment to a stakeholder orientation. Pledge firms may benefit from increased stability and efficiency of operations through stronger ties with suppliers and customers and better relationships with lenders (Gao et al., 2021).

The results of the regression analysis of the change in the risk measures are presented in Panel B of Table 8. The control variables are the changes in ASSET, ROA, MKBK, CASH, LEVERAGE, and INS-TOWN in the same window. The coefficient on the PLEDGE variable is negative and statistically significant across all panels. These results further support the univariate findings of lower share price volatility for pledge firms.

5.5 | Wealth distribution to shareholders

Assessment of whether the actions of the pledge firms are in line with announced intentions will take time; indication that firms are creating value for all stakeholders is gradual. Evidence of action may include

TABLE 7 The wealth effects of pledge announcements—Channels

Variables	Model 1	Model 2	Model 3	Model 4
PLEDGE	0.004 (1.272)	0.005** (2.147)	0.003*** (3.541)	0.003*** (2.724)
ZSCORE_HI	−0.003** (−2.064)			
PLEDGE * ZSCORE_HI	0.001 (0.184)			
EDF_HI		0.001 (0.727)		
PLEDGE * EDF_HI		−0.001 (−0.252)		
CONSUMER			0.004** (2.419)	
PLEDGE * CONSUMER			0.005* (1.669)	
POLLUTING				−0.005*** (−2.906)
PLEDGE * POLLUTING				0.006*** (4.436)
STATE ADOPTION $_{i, t-1}$	0.002* (1.740)	0.002 (1.432)	0.002 (1.527)	0.002 (1.462)
LN (MKCAP $_{i,t-1}$)	0.000 (0.300)	−0.000 (−0.424)	−0.000 (−0.190)	−0.000 (−0.177)
ROA $_{i,t-1}$	0.006 (1.146)	0.005 (0.982)	0.005 (1.019)	0.005 (0.966)
MKBK $_{i,t-1}$	−0.000 (−1.496)	−0.000 (−1.655)	−0.000 (−1.619)	−0.000 (−1.618)
CASHRATIO $_{i,t-1}$	0.004 (1.302)	0.003 (1.165)	0.003 (1.097)	0.004 (1.191)
LEVERAGE $_{i,t-1}$	0.001 (0.814)	0.001 (0.768)	0.001 (0.768)	0.001 (0.744)
INSTOWN $_{i, t-1}$	0.004** (2.608)	0.004** (2.456)	0.004** (2.506)	0.004** (2.463)
RETURN$_{i,t-4 \text{ to } t-1}$	−0.002 (−0.624)	−0.002 (−0.622)	−0.002 (−0.627)	−0.002 (−0.612)
Constant	−0.014*** (−6.231)	−0.016*** (−7.570)	−0.020*** (−8.635)	−0.016*** (−7.191)
Observations	3938	3938	3938	3938
Adj. R-squared	0.0429	0.0409	0.0424	0.0414
Industry fixed effect	Yes	Yes	Yes	Yes
Robust std err	Yes	Yes	Yes	Yes

Note: This table includes the channels that affect market reactions to the firm's pledge announcement. The dependent variable is the cumulative abnormal returns (CARs) from the Fama–French 4-factor model in the (−1,0) window around the announcement date, August 19, 2019, for both pledge and control non-signatory firms. The regressions are based upon the weighted samples derived from Panel A of Table 6. All the variables are defined in Appendix A.

***Statistically significant at the 1% level.

**Statistically significant at the 5% level.

*Statistically significant at the 10% level.

passing shareholder resolutions that specify how the companies will deliver on the pledge (WSJ, 2020).[16] Actions that promote stakeholder welfare may consume funds that could have otherwise been distributed to shareholders. Companies may distribute less wealth to shareholders after committing to the 2019 BRT statement than if they adhered to shareholder primacy. Additionally, excessive dividends and share buybacks may starve the firms of capital otherwise available for long-term investments such as research and development, creation of value for customers and the community, and increasing security of the workforce. In 2018, two US senators introduced legislation to limit corporate buybacks to avoid hurting workers.

TABLE 8 The effects of pledge on firm risk

Panel A—Univariate comparisons of risk measures					
Variables	Non-pledge	Pledge	Difference	t-stats	Wilcoxon-stats
TOTRISK before	3.758%	1.608%	−2.150%	−26.13***	−33.97***
TOTRISK after	5.501%	3.268%	−2.233%	−23.43***	−29.83***
TOTRISK change	1.743%	1.660%	−0.083%	−3.95***	−5.51***
SYSRISK before	0.919%	0.535%	−0.384%	−26.08***	−32.57***
SYSRISK after	1.844%	1.110%	−0.734%	−28.86***	−32.24***
SYSRISK change	0.925%	0.575%	−0.350%	−14.16***	−15.99***
IDIORISK before	3.515%	1.265%	−2.250%	−27.58***	−37.27***
IDIORISK after	4.601%	2.011%	−2.590%	−29.94***	−41.25***
IDIORISK change	1.086%	0.746%	−0.340%	−8.19***	−11.59***

Panel B—Regressions of changes in risk measures			
	Model 1	Model 2	Model 3
Variables	TOTRISKCHG	SYSRISKCHG	IDIORISKCHG
PLEDGE	−0.001*	−0.003***	−0.003***
	(−1.906)	(−6.320)	(−6.025)
ASSETCHG	0.001***	0.001***	0.000
	(3.778)	(7.807)	(1.215)
ROACHG	−0.005	−0.001	−0.006
	(−1.177)	(−0.512)	(−1.137)
MKBKCHG	−0.000*	−0.000	−0.000**
	(−1.877)	(−1.307)	(−2.188)
CASHCHG	−0.010***	−0.005***	−0.007***
	(−7.917)	(−6.384)	(−6.491)
LEVERAGECHG	−0.000	0.000	−0.000
	(−0.081)	(1.527)	(−0.009)
INSTOWNCHG	−0.011***	0.001*	−0.003**
	(−8.475)	(1.646)	(−2.532)
Constant	0.011***	0.014***	0.008***
	(6.168)	(16.340)	(5.536)
Observations	3472	3472	3472
Adj. R-squared	0.228	0.141	0.165
Industry fixed effect	Yes	Yes	Yes
Robust std err	Yes	Yes	Yes

Note: This table reports the univariate comparisons of the change in firm risk measures in Panel A and the results from the regressions of the changes in a firm's risk measures in Panel B. The regressions are based upon the weighted samples derived from Panel A of Table 6. All the variables are defined in Appendix A.
***Statistically significant at the 1% level.
**Statistically significant at the 5% level.
*Statistically significant at the 10% level.

CEOs of pledge firms are expected to show evidence of promoting stakeholder interests. A consequence of stakeholder orientation may be reduced distributions to shareholders, consistent with Ni et al. (2020). An examination of whether distributions to shareholders decrease for signatories is included and the findings are presented in Table 9; a difference-in-differences test is utilized. The changes in (i) dividend payout and (ii) share repurchases for the four quarters pre and post August 19, 2019 are calculated. The change of the treatment and control group is compared.

We observe a small, but statistically significant, increase in dividend payouts. Cash dividends tend to increase slowly over time to keep up with the time value of money, and it would be unlikely that companies would alter their existing dividend policies to a large degree. Pledge firms paid higher dividends relative to non-pledge firms prior to the 2019 BRT and continue to do so post-pledge. Notably, a significant decrease in share repurchases for pledge firms is observed across several control groups. Share repurchases are reduced by 0.548%, representing an average decrease of $9.97 million

TABLE 9 The effects of pledge on firm payout policy

Panel A—Univariate comparisons of payout policy measures					
Variables	Non-pledge	Pledge	Difference	t-stats	Wilcoxon-stats
DIVPAY before	0.931%	1.481%	0.549%	10.82***	30.49***
DIVPAY after	0.981%	1.623%	0.642%	11.81***	30.51***
DIVPAY change	0.042%	0.145%	0.102%	2.93***	4.68***
REPURCHASE before	0.788%	2.332%	1.543%	27.22***	33.12***
REPURCHASE after	0.754%	1.823%	1.069%	20.95***	31.35***
REPURCHASE change	−0.051%	−0.599%	−0.548%	−9.36***	−12.98***
TOTPAYOUT before	1.882%	3.969%	2.087%	22.02***	31.67***
TOTPAYOUT after	1.807%	3.462%	1.655%	19.01***	31.43***
TOTPAYOUT change	−0.102%	−0.590%	−0.488%	−5.70***	−9.96***

Panel B—Regressions of changes in payout policy			
	Model 1	Model 2	Model 3
Variables	DIVPAYCHG	REPURCHASECHG	TOTPAYOUTCHG
PLEDGE	0.001	−0.004***	−0.004***
	(1.581)	(−3.590)	(−2.748)
ASSETCHG	0.001***	−0.000***	0.002***
	(9.557)	(−2.641)	(5.801)
ROACHG	−0.002	0.003*	0.001
	(−1.464)	(1.769)	(0.387)
MKBKCHG	−0.000*	−0.000	−0.000*
	(−1.764)	(−0.818)	(−1.660)
CASHRATIOCHG	0.000	0.001	0.001
	(0.547)	(0.826)	(0.778)
LEVERAGECHG	0.000	0.000	0.000
	(0.340)	(0.890)	(0.986)
INSTOWNCHG	−0.001	0.001	−0.001
	(−1.464)	(0.629)	(−0.501)
Constant	−0.001	−0.011	−0.015
	(−0.641)	(−0.993)	(−1.092)
Observations	3824	3824	3824
Adj. R-squared	0.0511	0.0440	0.0600
Industry fixed effect	Yes	Yes	Yes
Robust std err	Yes	Yes	Yes

Note: This table reports the univariate comparisons of the change in firm payout policy in Panel A and the results from the regressions of the changes in a firm's payout policy in Panel B. The regressions are based upon the weighted samples derived from Panel A of Table 6. All the variables are defined in Appendix A.
***Statistically significant at the 1% level.
**Statistically significant at the 5% level.
*Statistically significant at the 10% level.

(based upon the median sample market capitalization), compared to non-pledge firms. Even in the presence of increased dividend payouts, the dominating effect of the reduced stock repurchases results in significant reductions to total payouts. The results provide new evidence of the opportunity cost to shareholders upon the firm's commitment to stakeholder theory. The results are consistent with the intentions conveyed to the public from the decision to pledge; pledge firms will reassess how to create wealth for all stakeholders.

In Panel B of Table 9, we report the findings of the regression analysis of the changes in dividend payout, share repurchase, and total payout on the pledge dummy variable (PLEDGE) and the changes in ASSET, ROA, MKBK, CASH, LEVERAGE, and INSTOWN in the same window. Industry fixed effects are controlled for, and robust standard errors are used. Notably, the coefficient of the PLEDGE variable is negative and statistically significant for the stock repurchase changes and total payout, and it is positive but insignificant for dividend payout. The results suggest that pledge firms reduce stock repurchase activities in the four quarters following the BRT announcement date, consistent with the univariate findings from Panel A of Table 9. This is further evidence of the opportunity cost shareholders may anticipate from the decision to maximize stakeholder wealth, rather than solely shareholder wealth.

Although shareholders may anticipate that share repurchases will decline following the pledge, this does not dampen market enthusiasm, evidenced by the positive market reaction for pledge firms upon the initial announcement. The pledge announcement's signal conveys either new information or confirms investors' expectations. The announcement may affirm investors that embrace stakeholder theory and motivate investors who require a more tangible signal from firms before revaluing the stock. Results show that stock repurchases by pledge firms decline in relation to expectations had the firms not signed the pledge. The drop in share repurchases may be a consequence that investors embracing adoption of a stakeholder approach are prepared to accept. Alternatively, it may indicate that investors who favor the stakeholder approach do not object to a reduction in stock repurchases.

6 | CONCLUSION

Firms signing the 2019 BRT statement on the purpose of the corporation, to serve "stakeholders" in addition to shareholders, are large and of high prominence. Harrison et al. (2020) argue that this stance will progressively pressure others to come forward and declare whether or not they support stakeholder theory. Additionally, the advancement of CSR principles has placed pressure on corporations that focus exclusively on shareholders. Corporate mission statements and even Shareholder Letters increasingly encompass stakeholder interests. These statements distinguish corporations as more attuned to societal concerns, such as rising environmental degradation, inequality, and mistrust in business (Mayer, 2020). Corporations that show support for the stakeholder theory demonstrate a gesture of goodwill or "common sense" corporate principles, as reported by the Wall Street Journal.[17]

Shareholder's concern is whether the new purpose of the corporation has consequences on their wealth. Examining the stock market reaction to the BRT announcement clarifies whether the statement indicates that stakeholder interest will come at the expense of shareholder wealth, as managers may be distracted from the wealth creation process. The results of the analysis indicate that large and profitable firms that rely less on trade credit were predisposed to sign the pledge. Pledge firms spend more on employees with larger workforces, maximized pension contributions, and more frequent operation of DB pension plans. Pledge firms owe less to suppliers, with lower trade payables as a percentage of the cost of goods sold. Regarding stakeholders, pledge firms employ more people, owe less to suppliers, and are profit-maximizing, growing firms, and satisfying shareholders, as evidenced by high institutional ownership.

Controlling for pledge firm specific characteristics, the announcement resulted in a positive stock market reaction when compared with a multitude of control firm sub groups. The positive market reaction suggests that adopting a stakeholder perspective unlocked value that would not have been achieved had the focus remained on shareholder primacy. The excess values may derive from greater customer loyalty, improved employee motivation, better supplier relations, supportive financiers, maximizing revenue, minimizing costs, and

yielding higher profits. Shareholders anticipate greater long-term value from companies that place importance on employees, communities, supply chain, financiers, and shareholders.

The stock market reaction was robust, with low volatility in share prices following the BRT statement. Firms that pledged decreased share repurchases in the quarters following the announcement, relative to non-pledge firms. Higher investor valuation of stocks that pledge "a fundamental commitment" to "deliver value to all" stakeholders more than offset any negative impact of lower shareholder distributions.

In the evolving business environment, companies must place more emphasis on issues that concern customers, employees, non-governmental organizations (NGOs), and the government. Failure to prioritize these issues may engender public backlash, especially in the age of social media. However, the attention to stakeholders is clearly compatible with the focus on shareholder performance, as performance suffers when customers leave, workers feel dissatisfied, NGOs call for product boycotts, and/or governments levy fines. Corporations seeking to increase shareholder wealth will need to fully embrace stakeholder concerns. Our results are reflective of the period in which the BRT statement was made, a period of increased interest from both retail and institutional investors in environmental, social, and corporate governance (ESG) assets. The BRT announcement may have served as vindication for investors focused on ESG. Future research is needed to examine the long-term performance of pledge firms in order to assess how sustainable the pledge has proven over time.

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NOTES

[1] See https://purpose.businessroundtable.org

[2] See gsi.alliance.org

[3] See https://h2o.law.harvard.edu/cases/3965

[4] See https://www.weforum.org/press/2020/01/stakeholder-capitalism-a-manifesto-for-a-cohesive-and-sustainable-world/

[5] Harrison et al. (2019) describe the 2019 BRT stakeholder plurality statement's essential elements and how they contrast with the 1997 shareholder singularity statement.

[6] Fortune. (2020). Revisiting the Business Roundtable's 'Stakeholder Capitalism,' one year later. Accessed at: https://fortune.com/2020/08/19/business-roundtable-statement-principles-stakeholder-capitalism-corporate-governance/

[7] Source: https://www.wsj.com/articles/business-roundtable-steps-back-from-milton-friedman-theory-11566205200

[8] Source: https://fortune.com/2020/08/19/business-roundtable-statement-principles-stakeholder-capitalism-corporate-governance/

[9] Obligations to stakeholders are latent to a firm, and the rule of law safeguards the multitude of legal relationships between a firm and various constituents. Therefore, explicitly recognizing stakeholders' value produces no substantive change in the fiduciary responsibilities that directors owe their stockholders, consistent with Marens and Wicks (1999).

Additionally, the BRT statement does not alter the board's obligation to preserve shareholders' interests.

[10] Lucian Bechuk, the director of the Harvard Law School Program on Corporate Governance, said in an interview with the WSJ that the view that it is possible to strike a win–win for shareholders and stakeholders is misguided. Source: https://www.wsj.com/articles/hows-the-ceo-stakeholder-pledge-working-out-depends-who-you-ask-11598632678

[11] Source: https://www.nytimes.com/2019/08/19/business/business-roundtable-ceos-corporations.html

[12] There are important studies on the correlation between management of stakeholder relations and firm value; Benson and Davidson (2010) provides an exhaustive review of the related literature. The review is not included here, instead the focus is on event studies most related to the topic being considered.

[13] See https://opportunity.businessroundtable.org/ourcommitment/

[14] See https://www.startribune.com/lee-schafer-the-ceo-who-said-attacking-society-s-ills-is-a-good-aim-for-business/558853812/?refresh=true

[15] CARs in various windows for robustness checks are also calculated. For brevity, only the results in the (−1,0) window are reported.

[16] Source: https://www.wsj.com/articles/how-to-give-shareholders-a-say-in-corporate-social-responsibility-11607270401?page=1

[17] http://www.shareholderforum.com/access/Library/20191115_WSJ.htm

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APPENDIX A: DEFINITIONS OF VARIABLES

Variables	Definitions
CAR	Represents cumulative abnormal returns. The cumulative abnormal returns, CARs, are calculated in the $(-1,0)$ days window around the announcement date, August 19, 2019, for both pledge and control non-signatory pledge firms. CARs are the differences between the actual returns and the predicted returns from the (1) market model, (2) Fama–French 3-factor model, and (3) Fama–French 4-factor model, alternatively. The predicted returns are estimated using the daily stock returns in the $(-252,-30)$ days prior to the pledge date.
CASH RATIO	The cash-to-asset ratio
CEO COMPENSATION/SALE	The ratio of CEO total compensation to firm sales in the year 2018; CEO compensation data are only available at annual frequency from Compustat.
CEO EQUITY COMPENSATION	The percentage of CEO compensation that is composed of equity in the year 2018
CONSUMER	A dummy variable equal to 1 for firms in "consumer goods" industries based on the following four-digit SIC codes: 0000–0999, 2000–2399, 2500–2599, 2700–2799, 2830–2869, 3000–3219, 3420–3429, 3523, 3600–3669, 3700–3719, 3751, 3850–3879, 3880–3999, 4813, 4830–4899, 5000–5079, 5090–5099, 5130–5159, 5220–5999, 7000–7299, 7400–9999, 0 otherwise, following Lev et al. (2010).
DISCRETIONARY ACCRUALS	The abnormal discretionary accruals are used to proxy accrual-based earnings management (Cohen & Zarowin, 2010; Zang, 2012). Abnormal discretionary accruals are computed as the difference between a firm's actual level of accruals and its expected accruals level. The following modified Jones (1991) model is used to estimate the accruals: $$\frac{TA_t}{A_{t-1}} = \alpha_0 + \alpha_1\left(\frac{1}{A_{t-1}}\right) + \alpha_2\frac{\Delta S_t}{A_{t-1}} + \alpha_4\frac{PPE_t}{A_{t-1}} + \varepsilon_t$$ where TA_t is the total accruals in year t defined as earnings before extraordinary items and discontinued operations minus operating cash flows from the statement of cash flows, net cash flow minus total receivables. A_{t-1} is the total asset of firm i in year $t-1$, ΔS_t is the change in net sales from year $t-1$ to year t, and PPE_t is the total gross value of property, plant, and equipment of firm i in year t. The residuals from Equation 3 denote abnormal discretionary accruals, which is used as a proxy for accrual management of firm i in year t. The equation is estimated cross-sectionally for each industry-year with at least 15 observations, where industry is based on the Fama and French 48-sectors.
DIVPAYOUT or DIVIDEND PAYOUT	The ratio of cash dividend in 2018 to the market value of common equity
DUMMY FOR FIRMS WITH DB PENSION	A dummy variable equal to 1 for firms that maintain a defined benefit pension plan, 0 otherwise
EDF_HI	A dummy variable equal to 1 for firms with higher expected default frequency, EDF, than the sample median value, 0 otherwise. Following Bharath and Shumway (2008) and Brogaard et al. (2017), EDF is calculated as $N(-DD_{i,t})$. $N()$ is the cumulative standard normal distribution function. $$DD_{i,t} = \frac{\log\left(\frac{Equity_{i,t}+Debt_{i,t}}{Debt_{i,t}}\right) + \left(r_{i,t-1} - \sigma_{Vi,t}^2/2\right) \times T_{i,t}}{\sigma_{Vi,t}^2 \times \sqrt{T_{i,t}}}, \text{ where}$$ $$\sigma_{Vi,t} = \frac{Equity_{i,t}}{\left(Equity_{i,t}+Debt_{i,t}\right)} \times \sigma_{Ei,t} + \frac{Debt_{i,t}}{\left(Equity_{i,t}+Debt_{i,t}\right)} \times (0.05 + 0.25 \times \sigma_{Ei,t})$$ where $Equity_{i,t}$ is the market value of equity, in \$millions, computed as number of shares outstanding of firm i times stock price at the end of quarter t; $Debt_{i,t}$ is calculated as the sum value of debt in current liabilities and one-half of long-term debt for firm i at the end of quarter t; $r_{i,t-1}$ is the daily stock returns of firm i in quarter $t-1$; $\sigma_{Ei,t}$ is the volatility of stock returns of firm i during quarter t by using the daily returns from the previous quarter; $\sigma_{Vi,t}$ is the volatility of assets in firm i during quarter t; $T_{i,t}$ is set to be one quarter.
EMPLOYER PENSION CONTRIBUTION	The ratio of employer contribution to pension plan to total assets
IDIOSYNCRATIC RISK	The standard deviation of the residuals from the (1) market model, (2) Fama–French 3-factor model, and (3) Fama–French 4-factor model, alternatively. Risk is calculated for the $(-252,-30)$ days prior to and for the $(+30,+252)$ days after the pledge date. The change in the risk measure is the difference between these two windows.
INSTOWN	Percent of firm shares held by institutional owners
LNASSET	The natural logarithm of the asset
LNMKCAP	The natural logarithm of the market capitalization
LOG (EMPLOYEES)	The logarithm of 1 plus the number of employees of the company in 2018, the year before the pledge; these data are available only at annual frequency
MILLS	The inverse Mills ratio obtained from Model 2 in Table 3

Variables	Definitions
MKBK	The market-to-book ratio
NET TRADE CREDIT	The difference between TRADE RECEIVABLE/SALE and TRADE PAYABLE/COGS
NON-SIGNATORY PLEDGE	Firms that are not categorized as PLEDGE
PLEDGE	A dummy variable equal to 1 for signatory-pledge firms, 0 otherwise. It represents the firms of the 181 CEOs who signed the Business Roundtable pledge to prioritize customers, employees, suppliers, and their communities along with shareholders.
POLLUTING	A dummy variable equal to 1 for firms in one of the seven high-polluting industry sectors: metal mining NAICS 212, electric utilities NAICS 2211, chemicals NAICS 325, primary metals NAICS 331, paper NAICS 322, food, beverages, and tobacco NAICS 311 and NAICS 312, and hazardous waste management NAICS 5622 and NAICS 5629, 0 otherwise, following Flammer and Kacperczyk (2016).
REAL EARNINGS MANAGEMENT	The total real earnings management in the year 2018. Zang (2012) is followed to construct total real earnings management, *REAL EARNINGS MANAGEMENT*, as the aggregate of abnormal discretionary expenses and abnormal production costs. Roychowdhury (2006) is followed to construct abnormal discretionary expenses and abnormal production costs as follows. Roychowdhury (2006) constructs a third measure as well, abnormal cash flows from operations, but cautions on page 341 that "the net effect [of real activities manipulation] on abnormal CFO is ambiguous." The abnormal level of discretionary expenditure is estimated using the following model: $$\frac{DISX_t}{A_{t-1}} = \alpha_0 + \alpha_1\left(\frac{1}{A_{t-1}}\right) + \alpha_2\left(\frac{S_{t-1}}{A_{t-1}}\right) + \varepsilon_t$$ where $DISX_t$ is the discretionary expenditures, the sum of advertising, R&D, and SG&A expenditures of firm i in year t. A_{t-1} and S_{t-1}, respectively, denote total assets and net sales in year $_{t-1}$. The abnormal level of discretionary expenditures is measured as the residuals from the equation, where lower values suggest that firms cut discretionary expenses excessively to inflate their earnings. Consistent with earlier studies, the abnormal discretionary expenses are multiplied by −1, denoted $ABDISX$, so that higher values indicate higher real earnings management. To estimate the abnormal level of production costs, the following model is used: $$\frac{PROD_t}{A_{t-1}} = \alpha_0 + \alpha_1\left(\frac{1}{A_{t-1}}\right) + \alpha_2\left(\frac{S_{t-1}}{A_{t-1}}\right) + \alpha_3\frac{\Delta S_t}{A_{t-1}} + \alpha_4\frac{\Delta S_{t-1}}{A_{t-1}} + \varepsilon_t$$ where $PROD_t$ is the sum of the cost of goods sold in year t and the change in inventory from year $t-1$ to year t. A_{t-1} is total assets of firm i in year $t-1$, S_t is its net sales in year t, and ΔS_t is the change in net sales from year $t-1$ to year t. Abnormal production cost, denoted $ABPROD$, is measured as the residuals of the equation. The larger the abnormal production costs, the greater the degree of real activities manipulation. The equations are estimated cross-sectionally for each industry-year with at least 15 observations, where industry is based on the Fama and French 48-sectors. The accounting data are from Compustat. The estimated $ABDISX$ and $ABPROD$ are summed to obtain *REAL EARNINGS MANAGEMENT*.
ROA	The return on assets
SALEGR	The sales growth
STOCK REPURCHASE RATIO or SHARE REPURCHASES	The ratio of the dollar amount of stock repurchases in 2018 to the market value of common equity
SYSTEMATIC RISK	The standard deviation of the predicted returns from the (1) market model, (2) Fama–French 3-factor model, and (3) Fama–French 4-factor model, alternatively. Risk is calculated for the $(-252,-30)$ days prior to and the $(+30,+252)$ days after the pledge date. The change in the risk measure is the difference between these two windows.
TAX PAID/SALE	The ratio of total amount of tax paid to sales
TOTAL PAYOUT	The sum of DIVPAYOUT and STOCK REPURCHASE RATIO
TOTAL RETURN VOLATILITY	The standard deviation of daily returns. The total return volatility is calculated for the $(-252,-30)$ days prior to and the $(+30,+252)$ days after the pledge date. The change in the risk measure is the difference between these two windows.
TRADE PAYABLE/COGS	The ratio of trade payable to cost of goods sold
TRADE RECEIVABLE/SALE	The ratio of trade receivables to sales
$Variable_{i,t-4\ to\ t-1}$	The average value of a variable of firm i from 4 quarters prior to the quarter the BRT statement is released to one quarter prior to the release.
ZSCORE_HI	A dummy variable equal to 1 for firms with higher Altman's Z score than the sample median value, 0 otherwise. The Altman's Z score is calculated as Z score $= 1.2X1 + 1.4X2 + 3.3X3 + 0.6X4 + 0.999X5$, where X1 is working capital scaled by total assets, X2 is retained earnings scaled by total assets, X3 is earnings before interest and tax scaled by total assets, X4 is market value of equity scaled by total assets, and X5 is net sales scaled by total assets.