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Labor Pressure and Capital Structure as Joint Determinants of Voluntary CSR Reports

Elizabeth O. Kohl
Isho Tama-Sweet
University of Montana, USA

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Abstract

We consider voluntary corporate social responsibility (CSR) reporting in the United States as a unique setting to examine the interaction of stakeholder pressure and capital structure policy on voluntary disclosure activity. We find the likelihood of CSR reporting is statistically higher when *both* labor pressure and leverage are higher. Our findings suggest it is the system of stakeholders *and* firm policies (capital structure) that collectively impacts the likelihood of voluntary CSR reporting. We contribute to the literature by expanding our understanding of labor's influence on firm activities and highlighting how our interpretation of voluntary disclosure is improved by considering the interactive influences of multiple stakeholders and firm policies. We extend prior literature by explicating the interaction of multiple stakeholders in our empirical analyses. And we contribute to the literature by helping better understand how the demand for voluntary non-financial disclosure arises from the conflicting interests of multiple stakeholders. The findings in this study can be used to model and examine further the debt shield tactics used during labor negotiations and to discern the broad impacts of debt shield tactics on labor cost, debt servicing costs, and reporting.

Keywords: CSR reporting; voluntary disclosure; stakeholder systems; labor economics

Introduction

In this study, we take advantage of voluntary corporate social responsibility (CSR) reporting in the United States (U.S.) as a unique setting to examine how the interaction of stakeholder interests and corporate capital structure policies influence firm disclosures. Specifically, we consider the influence of labor and management's response to labor pressure via capital structure strategy. Prior research suggests that firms strategically utilize debt financing, increasing their leverage and thereby increasing their debt service, to reduce free cash flows available to labor and improve the firm's bargaining power with workers (Matsa, 2010). This 'debt shield' tactic creates a unique environment of stakeholder frictions – increasing the financial risk of the firm, which simultaneously imposes unemployment risk on employees who are sensitive to capital structure (Berk *et al.*, 2010).

Our paper provides evidence on how voluntary CSR reporting may be used by management to mitigate stakeholder frictions created by capital structure strategies. Prior literature finds an association between labor pressure and CSR reporting (e.g., Chantziaras *et al.,* 2020). Our primary innovation is to demonstrate this association is interactive with the use of debt shield financing. More broadly, we shed light on voluntary disclosure choices arising in the complex stakeholder system of the firm.

Although a large body of extant CSR literature focuses on CSR performance (Alakent and Goktan, 2025; Huang and Watson, 2015; Humphrey *et al.*, 2012; Magnanelli and Izzo, 2017; Mattingly, 2017), this study concentrates on the real disclosure activity of firms engaging in voluntary CSR reporting. In the United States, voluntary CSR reporting stands in contrast with U.S. equity market regulatory filings (mandatory disclosures), which are directed at investors as tools to insure fair and honest markets (U.S. Securities Exchange Act of 1934). Underscoring the lack of stakeholder focus in mandatory disclosures in the U.S., public companies were not required to disclose the number of employees, descriptions of human capital resources, or any human capital measures or objectives prior to the U.S. Security and Exchange Commission's August 2020 modernization of Regulation S-K items 101, 103, and 105. As such, the pre-2021 disclosure environment creates a useful setting to examine the influence of a system of stakeholders on firms' decisions to engage in real voluntary disclosure activities.

The information in voluntary CSR reports pertains to many stakeholders (Amini *et al.*, 2018). However, employee stakeholders hold a unique position in the ecosystem of a firm. Employees have contracts with the firm, act as a component of the firm's production function, and are claimants on firm cash flows. Much like shareholders and debtholders, employee contracts are shaped in response to particular market factors and

frictions. However, compared to capital providers, we argue that employees face greater risks. The vast majority of capital providers invest in a diversified portfolio of firms, with only a small portion of their capital position held with any single firm. In contrast, the vast majority of employees have all their human capital invested in a single firm. Therefore, the performance and contractual outcomes of a single firm have a much larger impact on providers of labor than providers of capital. Specifically, employees face risks associated with stagnant wages (i.e., compensation risk) and termination in the event of bankruptcy (i.e., unemployment risk). While the strength of individual employees varies from firm to firm, prior research finds that when employees unionize, their collective bargaining power can influence compensation (Matsa, 2010) as well as firm behavior, e.g., accounting choice (D'Souza *et al.*, 2001) and tax aggressiveness (Chyz *et al.*, 2013).

Prior literature examining financial disclosures suggests that management is incentivized to remain opaque when facing strong labor (Bova, 2013; Depoers, 2000; Hilary, 2006) as unionized employees use voluntary disclosures to extract above-market rents during the collective bargaining process. Thus, conventional wisdom suggests firms with strong employee stakeholders are less likely to issue voluntary disclosures in order to maintain their bargaining position. However, Chantziaras *et al.* (2020) find labor unionization increases the likelihood of voluntary CSR reporting.

Unlike financial disclosures, voluntary CSR reports provide firm-wide, labor-specific information, which may include employee diversification statistics; training and education information; ethics policies; benefits; and volunteerism. CSR Global Reporting Index ('GRI') guidelines also suggest CSR reports contain disclosures on the sustainability of the firm as a whole. In other words, CSR reports are a mechanism by which firms can address employees' concerns about compensation risk by detailing the non-salary financial benefits provided by the firm (e.g., training as a vehicle to increase employees' human capital), as well as non-financial measures that may add utility to the employees' experience (e.g., working at a firm that embraces diverse hiring). In addition, CSR reports can help firms address employees' concerns about unemployment risk by discussing the long-term sustainability and viability of the firm. Thus, CSR disclosures are an opportunity for firms to provide positive employee specific content to offset informational demands from the union during contract negotiations.

Chantziaras *et al.* (2020), examine U.S. firms listed in the Kinder, Lydenberg, and Domini (KLD) database from 2002-2015. Studying the impact of labor unions on CSR reporting, the authors documents that, in the presence of unions, managers tend to more intensively incorporate CSR reporting into their stakeholder integration and communications strategies

(2020). In this study, we look beyond the influence of a single stakeholder on the likelihood of a firm to engage in voluntary disclosure. Borveau *et al.* (2024) note public disclosure can reduce friction in contracting relationships by increasing credibility of both private communication and public information signaling. Because voluntary CSR disclosures can be utilized by a company to disclose a wide-range of information to multiple stakeholders (Amini *et al.*, 2018), the decision to engage in CSR reporting provides a unique setting in which to examine not just individual stakeholder influence on voluntary disclosure, but the interaction of multidimensional stakeholder pressures *and* corporate policy on the likelihood of voluntary disclosure. We extend the work of Chantziaras *et al.* (2020) by (1) extending the sample window from 2015 to 2020; (2) broadening the sample from U.S. firms listed in the KLD database to all publicly traded U.S. firms engaging in CSR reporting per CorporateRegister.com; (3) expanding the scope of stakeholders to consider the interactive effect of a system of stakeholders on CSR reporting; and (4) engaging in cross sectional analyses related to debt shield tactics by firms.

Given the content of CSR reports, we hypothesize that firms engaging in debt shield tactics when faced with strong labor pressure are more likely to voluntarily issue CSR reports as a form of non-pecuniary compensation used to offset higher unemployment risk and stagnating compensation. Our dataset spans the years 2002 to 2020 and includes financial data from Compustat, CSR report data from CorporateRegister.com, and unionization data from the Union Membership and Coverage Database. Consistent with Chantziaras *et al.* (2020), we find firm-level labor pressure increases the likelihood of voluntary CSR reporting. Furthermore, we find that that the likelihood of firms issuing CSR reports increases with labor pressure or leverage, and the likelihood of issuing reports is strongest for firms with the combination of high labor pressure and high leverage. This result holds for initial CSR reports and ongoing CSR reporting.

Prior voluntary disclosure literature emphasizes the relationship between capital market participants, such as investors and analysts, and management's propensity to engage in voluntary disclosure (Dhaliwal *et al.*, 2011; Healy and Palepu, 2001; Lundholm and Van Winkle, 2006). We contribute to the voluntary disclosure literature by investigating how financing contracts (i.e., debt) and employee contracts influence firms' disclosure choices. Specifically, we add to the literature regarding labor's influence on voluntary disclosure, extending the traditional research of Bova (2013); Depoers (2000); and Hilary (2006) beyond financial disclosure.

As stakeholders rarely impact firms in isolation, we consider multidimensional stakeholder interactions and contribute to the literature by

broadening Chantziaras *et al.*'s (2020) understanding of the relationship between employee stakeholders and voluntary CSR disclosure. By considering multidimensional stakeholder interactions, our findings provide nuance and texture to our understanding of the influence of labor and capital structure strategy on voluntary disclosure. Furthermore, our findings suggest that voluntary disclosure of CSR reports is best considered and understood in the context of a system of stakeholders, including capital providers, management, and labor.

Finally, we contribute to the debt-CSR literature (Attig *et al.*, 2013; Goss and Roberts, 2011; Magnanelli and Izzo, 2017), shedding light on the interaction of leverage and labor pressure as a determinant of CSR reporting. The findings in this study increase our understanding of the influence of capital structure policy on voluntary disclosure activity. We suggest that debt shield tactics used during labor negotiations have broad impacts on labor cost, debt servicing costs, financial reporting outcomes, and that these tactics have a spillover influence on voluntary disclosure, specifically CSR reporting.

Review of Literature and Hypothesis Development

Voluntary, stand-alone CSR reporting has been present in the U.S. public and private sector for over thirty years. With an emphasis on *shareholder*-value impact, extant literature finds these discretionary disclosures are associated with better analyst coverage (Dhaliwal *et al.*, 2012), an increase in institutional investors (Dhaliwal *et al.*, 2011), a reduction in firms' cost of equity capital (Dhaliwal *et al.*, 2011), higher earnings quality (Kim *et al.*, 2012), greater tax avoidance (Watson, 2015), and positive reputational effects (Dhaliwal *et al.*, 2011; Pflugrath *et al.*, 2011; and Simnett *et al.*, 2009). But the content, timing, and stand-alone disclosure approach of CSR reports in the U.S. suggest these voluntary disclosures are unlikely to be solely intended for equity market consumption. Of primary interest in this study is a better understanding of the systems of stakeholders in the firm and how the interaction of contractual obligations to different stakeholders give rise to voluntary CSR reports.

Labor Pressure

Employees (labor) act as both a component of the firm's production function and a claimant on firm cash flows. Labor applies economic pressure on the firm through demands for greater compensation and tax compliance, social pressure via demands for community involvement and virtuous behavior (i.e., reputation), and indirectly creates regulatory pressure from government agencies (e.g., the U.S. Department of Labor). The influence of employees as a stakeholder group varies from firm to firm and industry to

industry, but when employees elect to bargain collectively for wages and benefits, the extant economic literature finds unionized employees exert greater compensation pressure than their non-unionized counterparts, historically garnering premiums between 13 and 22 percent (Bratsburg and Ragan, 2002). Hereafter, we refer to the influence of unionized employees on managers and other stakeholders through economic, social, and regulatory channels as 'labor pressure,' which is standard terminology in this line of research. Labor pressure has been found to influence accounting choice (D'Souza *et al.*, 2001), tax aggressiveness (Chyz *et al.*, 2013), equity value of the firm (Lee and Mas, 2012), capital structure (Matsa, 2010), debt choice (Cheng, 2017), and management's incentive to signal a negative outlook (Bova, 2013).

Prior literature studying the association between unionized employees and voluntary disclosure finds managers disclose less when facing higher labor pressure. Reynolds *et al.* (1998) and Kleiner and Bouillon (1988) note that firm disclosures – such as: financial condition, productivity, future investments, and relative wages – increase wages and benefits for employees. Reynolds *et al.* (1998) find firms with organized labor are incentivized to hoard information in order to maintain bargaining power with unions. These findings are consistent with Depoers (2000) who examined voluntary disclosures in French firms and found that as labor pressure increases, voluntary disclosure decreases. Using a sample of 103 firms with unionized employees, Bova (2013) finds unionized firms are more likely than non-unionized firms to miss mean consensus analysts' earnings forecasts. This association does not depend on the exact timing of earnings miss compared to contract negotiations, suggesting unionized firms appear to signal a negative outlook more generally. These findings are consistent with the hypothesis that managers of unionized firms are more sensitive to the signaling impact of firm financial performance compared to managers of non-unionized firms.

The U.S. National Labor Relations Board (NLRB) requires 'good faith' bargaining between management and labor unions. Unions have the right to request information from the firm, but that information must be easy to provide (i.e., not unduly burdensome on the firm to furnish) and relevant to the bargaining process. It is common for information requests to include employee wage and benefits information as well as terms and conditions of employment. The information sharing outlined by the NLRB is subject to some level of judgement and discretion (i.e., is the information easy or burdensome for the firm to provide?). Thus, despite the NLRB regulations, Leap (1991) argues that unions usually do not obtain detailed financial, personnel, or production information of the firm. In sum, the findings in

prior research indicate firms reduce voluntary disclosure when facing increased labor pressure from a unionized workforce.

However, stand-alone CSR reports appear to be an exception. Chantziaras *et al.* (2020) suggest labor unionization increases the likelihood of voluntary CSR reporting. Estimating the determinants of CSR initiation for a sample of U.S. firms from 2002 to 2015, Chantziaras *et al.* (2020) document that firms with unionized employees are more likely to issue CSR reports than a matched sample of non-unionized firms. Their results support the stakeholder theory argument that managers utilize CSR disclosures to form an alignment of interests and develop collaborative relationship with unions. Because of this established result, we do not make this a formal hypothesis in our paper. To extend the findings of Chantziaras *et al.* (2020), we first begin our empirical analysis by examining whether labor pressure increases the likelihood of CSR reporting for a broader sample – five additional years and approximately ninety-six thousand additional firm-year observations. This baseline result provides assurances that our further analyses, tests, and interpretations are not driven by differences in sample period or slightly different research designs but instead represent novel contributions to the literature and extend and complement the previous findings.

Labor Pressure and Capital Structure Strategy

Foundational economic theory states the production function of a firm utilizes financial capital (debt and equity financing) and human capital (labor). Prior research in finance and economics indicates labor and employee unemployment risk is associated with corporate financing choices (Agrawal and Matsa, 2013; Berk *et al*., 2010; Graham and Leary, 2011) and that corporate financing decisions (e.g., debt versus equity financing) impact firms' negotiation positions with unionized labor (Benmelech *et al*., 2012; Brander and Lewis, 1986; Matsa, 2010). Therefore, in this study, we examine the interactive impact of labor pressure and leverage on firms' voluntary, stand-alone CSR disclosure.

Agrawal and Matsa (2013) examine the relation of workers unemployment risk with firm leverage and find a reduction in unemployment risk (measured by legally required payments for unemployment benefits) is associated with increased use of debt financing. Other studies focus not just on general unemployment risk, but on unemployment risk generated by bankruptcy. Graham and Leary (2011) note that leverage increases risk for employees who would likely become unemployed if the firm declared bankruptcy. Berk *et al*. (2010) study the interplay between bankruptcy, capital structure, and human capital. The authors examine a setting in which a firm has access to both debt and equity financing and derive an optimal

compensation contract for that scenario. Berk *et al*. (2010) show that if the firm cannot make interest payments at the contracted wage level, the employee takes a temporary pay cut to ensure full payment of the debt and continuation of the firm. This finding demonstrates how employee compensation is sensitive to capital structure. Next, Berk *et al*. (2010) examine how bankruptcy can impact employees, noting that firms can cancel employment contracts and terminate employees, potentially replacing them with more productive (or lower cost) employees. Berk *et al*. (2010) indicate that entrenched employees will be forced to take a wage cut and earn current market compensation. The paper suggests that, ceteris paribus, higher leverage should be associated with higher average wages to compensate employees for bearing bankruptcy risks. As noted previously, Bratsburg and Ragan (2002) find unionized employees earn a significant wage premium (in the range of 13 to 22 percent) relative to non-unionized employees. Given the findings in prior literature, we argue that unionized employees will to be more sensitive to default risk than non-unionized workers because unionized employees have a larger wage premium loss if they become unemployed during bankruptcy.

Employees can also bear the cost of firm financial distress prior to default on debt or bankruptcy. Berk *et al*. (2010) suggest firms with high leverage and substantial debt service payments can argue employees must accept reduced wages to help the firm avoid (or recover from) financial distress. The authors argue that managers can utilize high leverage as a negotiating device with employees because, in bankruptcy, firms can abrogate contracts and employees can be terminated and replaced with more productive employees. Similar to Berk *et al.* (2010), Brander and Lewis (1986) suggest firms with substantial debt can argue employees must take a pay cut to help the firm avoid (emerge from) financial distress. The authors also suggest management can use debt as a negotiating tool with employees. Matsa (2010) extends this research and presents empirical results that an additional 10 percent unionization is associated with an increase in the debt ratio of approximately 100 basis points. Matsa (2010) suggests firms facing unionization increase leverage (and the resulting debt service payments) for later use in collective bargaining (a "debt shield") to help reduce wage premiums that are usually garnered by unionized employees.

However, there is a trade-off for firms strategically increasing leverage to create a debt shield in collective bargaining. When a firm increases debt servicing costs enough to meaningfully reduce cash flows available for employees, that reduction in cash flows also increases debt default risk. Increased default risk, in turn, imposes additional unemployment risk on employees. Rational, risk averse employees will demand increases in compensation for bearing the additional unemployment

risk. In other words, while limiting employee demands on increases in wages through a debt shield, the firm simultaneously increases the demand for compensation by the union for employees bearing increased unemployment risk. The objective of the labor union persists: to minimize unemployment risk and maximize wages, benefits, and non-financial compensation for its members. When the cash flows of the firm must be utilized for debt service, wages may stagnate. In this case, the labor union will rationally argue for increases to non-wage compensation, such as additional benefits, employee training, professional development, or improved working conditions. For the firm, stand-alone, voluntary CSR reports are an opportunity to provide information about the non-wage benefits provided to employees. These voluntary disclosures can, therefore, help satisfy the union demands for non-wage compensation in a cash flow constrained environment. Therefore, we posit that firms engaging in collective bargaining and utilizing debt shields are more likely to engage in voluntary CSR reporting to compensate employees for bearing greater unemployment risk. Our hypothesis follows:

H_1: The likelihood of firms issuing CSR reports increases with labor pressure or leverage and is greatest for firms with the combination of high labor pressure and high leverage.

Sample Selection and Research Design

Sample

The sample period for this study inaugurates in 2002 with the subjection of firms to the Sarbanes-Oxley Act disclosure environment and closes in 2020, prior to the U.S. Securities and Exchange Commission Regulation S-K update. Table I, Panel A, provides a description of the sample, which begins with 212,547 non-duplicated observations from Compustat North America Fundamentals Annual (Compustat) and diminishes as we drop observations missing data. The final sample includes 98,659 firm-year observations from 12,494 firms.

Table I: Sample Details

Panel A: Sample Determination	**Sample**
All Compustat FUNDA NA Observations (2002–2020)	212,547
Firms	24,872
Drop observations with missing:	
Total Assets (AT)	42,676
Mkt. Value Equity (SIZEMVE)	31,340
Growth (TOBINQ)	23,362
Employees (EMP)	14,023
Labor Pressure (LP)	2,265
Profitability (ROA)	222
Sample Observations (N)	98,659
Sample Firms (n)	12,494

In conjunction with Compustat, we collect a sample of firms issuing voluntary stand-alone CSR reports from CorporateRegister.com. We identify each publicly traded U.S. CSR issuer by company name and manually match it with Compustat data. Table I, Panel B, reports the annual CSR report sample. Our final sample includes 924 first-time U.S. CSR reports and 5,647 total firm-year observations of CSR reporting across 1,040 U.S. firms from 2002 to 2020.

Table I: Continued

Panel B: CSR Report Data for United States Public Firms			
Year	**Sample**	**CSR Initiations[1]**	**CSR Reports**
2002	5,751	21	83
2003	5,803	17	93
2004	5,733	19	110
2005	5,780	30	130
2006	5,694	27	141
2007	5,612	31	167
2008	5,582	47	202
2009	5,315	70	253
2010	5,133	72	324
2011	5,088	53	341
2012	5,050	36	352
2013	5,080	29	353
2014	5,068	24	367
2015	5,015	50	374
2016	4,830	27	379
2017	4,690	24	382
2018	4,595	67	413
2019	4,493	88	496
2020	4,347	192	687
Obs. (N)	98,659	924	5,647
Firms (n)	12,494	924	1,040

[1]Note: Represents the number of publicly traded firms initiating issuance of US stand-alone CSR reports in the sample period (per CorporateRegister.com).

Primary Research Design

In this study, we model the determinants of voluntary CSR reporting. CSR disclosure policies may be sticky, particularly if standards are not used to create consistency across years and firms. Therefore, measuring CSR reporting by CSR initiation (i.e., the first CSR report issued by a firm) is considered less prone to endogeneity concerns than measuring CSR reporting by examining ongoing CSR reporting (i.e., every firm year a CSR report is issued). However, using only CSR initiation reduces the power of tests and is potentially confusing in terms of how to treat firms that engage in ongoing CSR reporting. Therefore, we utilize both measures of CSR reporting in our tests, adopting models from prior literature to examine the

influence of labor and debtholders in the prior year on the likelihood of management to initiate voluntary CSR reporting. The logistic regression model is specified as follows:

$$CSR_{i,t} = \beta_0 + \beta_1 SIZEMVE_{i,t-1} + \beta_2 LP_{i,t-1} + \beta_3 LEV_{i,t-1} + \beta_4 LEV_{i,t-1}*LP_{i,t-1} + \beta_5 ADV\_INT_{i,t-1} + \beta_6 REG_{i,t-1} + \beta_7 GLOBAL_{i,t-1} + \beta_8 PCT\_CSR_{i,t-1} + \beta_9 COMPETITION_{i,t-1} + \beta_{10} ROA_{i,t-1} + \beta_{11} TOBINQ_{i,t-1} + \beta_{12} LITRISK_{i,t-1} + \Sigma IND_{i,t} + \Sigma YEAR_{i,t} + \varepsilon_{i,t} \quad (1)$$

The dependent variable CSR is an indicator variable. For examination of CSR report initiation, CSR is equal to 1 in the first year (CSR_YR1 initiating year) a stand-alone CSR report is recorded for firm *i* in the CorporateRegister.com database, and 0 otherwise. For ongoing CSR reporting, CSR is equal to 1 in any year (CSR_PUBYR) a stand-alone CSR report is recorded for firm *i* in the CorporateRegister.com database, and 0 otherwise.

There are three independent variables of interest. Labor pressure (LP) is a proxy for the economic influence of labor on the firm. Labor pressure is calculated as the firm-level labor intensity multiplied by the industry-level unionization rate (Hilary, 2006; S.S Chen *et al*., 2015; T.K Chen *et al*., 2011). Industry-level unionization rates are collected from the Union Membership and Coverage Database (Unionstats.com). Hirsch and Macpherson (2003) provide a description of this data source. Labor intensity captures the relative amount of labor in the firm's production function. Labor intensity is computed as the total number of employees divided by total assets for each firm. Firms with greater labor intensity have a greater reliance on labor. Leverage (LEV) captures the capital structure of the firm. LEV is computed as total debt divided by total assets. Higher leverage is a proxy for increased default and bankruptcy risk, as well as the debt shield tactic of managers. Prior literature notes managers may use social responsibility disclosures to meet some specific expectations of debtholders (Roberts, 1992). Our primary variable of interest is the interaction of labor pressure (LP) and leverage (LEV). Our hypothesis predicts the interaction term (LEV*LP) has a positive coefficient, which suggests that the likelihood of a firm issuing a CSR report increases with labor pressure and leverage together.

All the control variables in the model come from prior literature. Our first control variable is firm size (SIZEMVE), measured as the market value of equity at the beginning of each year. Prior research finds firm size is associated with a firm's information environment, disclosure practices, contractual relationships, and political pressure (Dhaliwal *et al*., 2011; Healy and Palepu, 2001; Lang and Lundholm, 1993). We control advertising intensity (ADV_INT) in the model, computed as advertising expense divided

by average total assets per three-digit NAICS industry classification (Casey and Grenier, 2015; Luo and Bhattacharya, 2006; Servaes and Tamayo, 2013). We include advertising intensity because CSR reports have the potential to serve as branding and marketing tools for the firm. Prior literature finds that CSR reports are positively associated with global brand equity, credibility, image, awareness, and engagement (Hoeffler and Keller, 2002; Torres *et al*., 2012).

Prior research also indicates that industry-level regulation is a predictor of CSR policies and actions (Buehler and Shetty, 1974; Fineman and Clarke, 1996). Following Hogan and Jeter (1999) and Ozbas and Scharfstein (2010), we control for regulated industries by creating an indicator variable (REG) equal to one if the firm is in a highly regulated industry; zero otherwise. Examples of regulated industries include utilities, mining, food and beverage, oil and gas, transportation, and communication. Our tests focus on internal pressure to issue a CSR report (i.e., labor pressure and debt service); therefore, we control for two external pressures to issue CSR reports. We include PCT_CSR, which is computed as the percentage of the top 50 firms in the three-digit NAICS industry that issue CSR reports. This controls for pressure to report similarly to peer firms. The higher PCT_CSR, the higher pressure on the firm to issue a CSR report. Firms operating internationally may face greater pressure because of regulator, cultural, or social factors in other countries. Thus, we include an indicator variable (GLOBAL) for firms with international operations. Specifically, GLOBAL is equal to one if a firm reports non-zero foreign income, and zero otherwise.

The proprietary cost hypothesis argues that firms are reluctant to disclosure material information because this information could provide insight to their competitors and thereby damage firm position and profitability in product markets (Healy and Palepu, 2001; Verrecchia, 1983). As is common in the literature, we use the Herfindahl-Hirschman Index to control for product competition (COMPETITION). This index measures the relative competitiveness of the firm within its industry. Next, we control for firm performance using Tobin's Q (TOBINQ) and return on assets (ROA). TOBINQ controls for growth opportunities of the firm. Dhaliwal *et al*. (2011) indicates that expanding firms with higher growth opportunities face greater financial constraints and therefore have fewer resources to devote to CSR activities and disclosure. ROA is computed as income before extraordinary items divided by total assets. Lang and Lundholm (1993) find disclosure ratings are positively related to firm performance, and Luo and Bhattacharya (2006) and Dhaliwal *et al*. (2011) suggest that financial performance is positively associated with the likelihood firms engage in CSR activities. Litigation risk has been found in prior literature to reduce

voluntary disclosure (Healy and Palepu, 2001; Skinner, 1979) as firms fear lawsuits based on information they disclose. We control for litigation risk following Dhaliwal *et al.* (2011). The indicator variable (LITRISK) is equal to 1 if a firm operates in a high litigation industry and 0 otherwise. Finally, we control for macroeconomic events by including year fixed effect, and we control for general industry impacts (beyond litigation and regulation) using industry fixed effects (three-digit NAICS).

Alternative Research Design

Applied economic research argues that assessing the statistical significance of interaction effects in nonlinear models, such as the logit model used in our study, with a simple statistical test on the coefficient on the interaction term is subject to complication (Ai and Norton, 2003; Greene, 2010; Ozer Balli and Sørensen, 2013). Greene (2010) notes the interaction effect in the nonlinear model is at least partly an artifact of the functional form chosen. Both LP and LEV are continuous variables, which further complicates the interpretation of the interaction in our study. To address this concern, we also utilize an alternate research design that does not rely on interaction terms. Specifically, we perform additional analysis by examining the effect of debtholders (labor pressure) on voluntary CSR reporting at two levels of labor pressure (leverage). We bisect the sample into firms characterized as having lower LP (LEV) – below the industry-year mean – and higher LP (LEV) – above the industry-year mean. This test is designed to examine the influence of debtholders (labor pressure) in the prior year on the likelihood of management to initiate voluntary CSR reporting under low levels of labor influence (debtholder influence) and high levels of labor influence (debtholder influence). These alternate research designs are intended to explore thresholds of stakeholder influence within the system of the firm.

Results and Analysis

Descriptive Statistics

Descriptive results reported in Table II suggest firms engaging in CSR reporting are significantly larger than non-CSR reporting firms. Results reported in Table II also suggest that mean labor pressure is similar for CSR reporters compared to the full sample of publicly traded U.S. firms. While the mean LEV is higher for the full sample than CSR reporters, the median LEV is smaller for the full sample than CSR reporters.

Multivariate Analysis of Hypothesis

We report our results in Table III. Panel A reports the stakeholder influence with respect to CSR report initiation and Panel B with respect to

ongoing CSR reporting. Columns I and III consider the impact of labor pressure on CSR reporting, extending Chantziaras *et al.* (2020). Examination of the expanded sample aligns with the Chantziaras *et al.* (2020) findings, where LP in the prior year is positive and significantly associated with CSR report initiation (coef: 180.08; z-score > 2.580) and ongoing CSR reporting (coef: 280.62; z-score > 2.580). LEV is positive and statistically significant at the one percent level across all model specifications. Columns II and IV include the interaction of leverage and labor pressure (LEV*LP), which is the explicit test of our hypothesis. The coefficient on LEV*LP is positive and statistically significant in both the CSR initiation model (coef: 0.028; z-score > 2.580) and the ongoing CSR reporting model (coef: 0.047; z-score > 2.580), which supports our hypothesis.

Multivariate Analysis with Alternate Research Design

Next, we present the results of our alternative approaches to testing our hypothesis. Table IV displays results of our analyses when we partition the sample into lower and higher labor pressure (LP) and examine the association between LEV and CSR reporting in the two samples. When the sample is partitioned by mean industry-year LP, the difference in the lower LP/higher LP samples are positive (2.310 and 2.420, for Panels A and B, respectively) and statistically significant at the five percent level (z-score > 1.960 for Panels A and B, respectively) for both CSR report initiation (Panel A) and ongoing CSR reporting (Panel B). These findings support the positive and statistically significant results for the interaction term (LEV*LP) reported in Table III, Columns II and IV, by suggesting the influence of the previous year's leverage (LEV) on the likelihood of a firm to engage in CSR reporting is statistically stronger at higher levels of labor pressure (LP).

Table V displays results of our analyses when we partition the sample into lower and higher leverage (LEV) and examine the association between labor pressure (LP) and CSR reporting in the two samples. When the sample is partitioned by mean industry-year LEV, the difference in the lower LEV/higher LEV samples are positive (0.547 and 5.340, for Panels A and B, respectively) but only the ongoing CSR reporting sample (Panel B) reports a statistical difference between low LEV and high LEV (z-score > 2.580). The Table V, Panel B, findings support the positive and statistically significant results for the interaction term (LEV*LP) reported in Table III, Columns II and IV, by suggesting the influence of the previous year's labor pressure (LP) on the likelihood of a firm to engage in ongoing CSR reporting is statistically stronger at higher levels of leverage (LEV). The inferences from Table III, Table IV, and Table V are consistent in supporting our hypothesis.

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Table II: Descriptive Statistics for the Full Sample: 2002-2020

	Full Sample					U.S. CSR Reporting Initiation *CSR_YR1 = 1*					Ongoing U.S. CSR Reporting *CSR_PUBYR = 1*				
	Min	**Max**	**Mean**	**Median**	**SD**	**Min**	**Max**	**Mean**	**Median**	**SD**	**Min**	**Max**	**Mean**	**Median**	**SD**
SIZEMVE	-9.009	13.8863	5.5578	5.5917	2.5919	2.655	13.5110	8.3770	8.3464	1.4133	0.285	13.8863	9.2118	9.2365	1.5282
LP	0	0.0056	0.0004	0.0001	0.0008	0	0.0056	0.0003	0.0001	0.0005	0	0.0056	0.0003	0.0001	0.0005
LEV	0	5.2903	0.3415	0.1920	0.7091	0	1.466	0.3008	0.2902	0.1905	0	2.439	0.3010	0.2898	0.1738
ADV_INT	0	0.0594	0.0106	0.0068	0.0118	0	0.0594	0.0100	0.0052	0.0127	0	0.0594	0.0099	0.0054	0.0123
REG	0	1	0.2593	0	0.4382	0	1	0.2955	0	0.4565	0	1	0.3379	0	0.4730
GLOBAL	0	1	0.3357	0	0.4722	0	1	0.6699	1	0.4705	0	1	0.7137	1	0.4521
PCT_CSR	0	0.6667	0.0453	0.0321	0.0503	0.0034	0.4545	0.0941	0.0685	0.0731	0.0022	0.6667	0.0995	0.0759	0.0789
COMPETITION	-0.450	-0.0143	-0.0784	-0.0552	0.0765	-0.450	-0.0143	-0.0815	-0.0568	0.0780	-0.450	-0.0143	-0.0797	-0.0537	0.0835
ROA	-12.11	0.5754	-0.3617	0.0147	1.6207	-0.7258	0.5754	0.0417	0.0475	0.1005	-0.7258	0.5754	0.0552	0.0531	0.0825
TOBINQ	0.3677	128.95	4.465	1.481	14.810	0.3677	15.51	1.931	1.418	1.611	0.3677	19.28	1.831	1.460	1.274
LITRISK	0	1	0.5156	1	0.4998	0	1	0.4394	0	0.4966	0	1	0.4239	0	0.4942
N					98,659					924					5,647
n					12,494					924					1,040

For detailed variable descriptions, see section 3.2 Primary Research Design

CSR_YR1	= 1 if t is the first year a firm issues a U.S. CSR report; 0 otherwise.	GLOBAL	= 1 if the firm reports non-zero foreign income; 0 otherwise.
CSR_PUBYR	= 1 if a firm issues a U.S. CSR report; 0 otherwise.	PCT_CSR	= percentage of CSR reports per three-digit NAICS industry year.
SIZEMVE	= the market value of equity at the beginning of each year.	COMPETITION	= Herfindahl-Hirschman Index multiplied by -1.
LP	= labor pressure.	ROA	= total return on assets per firm year.
LEV	= leverage ratio.	TOBINQ	= Tobin's Q.
ADV_INT	= advertising intensity.	LITRISK	= 1 if two-digit SIC industry *k* is a high litigation-risk; 0 otherwise.
REG	= 1 if the two-digit SIC industry k is regulated; 0 otherwise.		

Note 1: This table presents descriptive statistics where all continuous variables are winsorized at the 1st and 99th percentiles.

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Table III: Determinants of Stand-Alone U.S. CSR Reporting: 2002-2020

	Panel A: CSR Report Initiation						Panel B: Ongoing CSR Reporting					
	(I)			(II)			(III)			(IV)		
	Dep. Variable: CSR_YR1			*Dep. Variable: CSR_YR1*			*Dep. Variable: CSR_PUBYR*			*Dep. Variable: CSR_PUBYR*		
Variables	**Coef.**	**SE**	**Z-score**	**Coef.**	**SE**	**Z-score**	**Coef.**	**SE**	**Z-score**	**Coef.**	**SE**	**Z-score**
$SIZEMVE_{t-1}$	0.427 ***	0.018	23.730	0.426 ***	0.018	23.730	0.916 ***	0.013	70.630	0.916 ***	0.013	70.630
LP_{t-1}	180.08 ***	56.636	3.180	179.91 ***	56.653	3.180	280.62 ***	32.597	8.610	280.46 ***	32.596	8.600
LEV_{t-1}	0.446 ***	0.126	3.540	0.444 ***	0.126	3.530	0.550 ***	0.084	6.580	0.547 ***	0.084	6.540
LEV_{t-1} * LP_{t-1}				0.028 ***	0.007	4.030				0.047 ***	0.005	9.790
ADV_INT_{t-1}	16.549 *	9.268	1.790	16.546 *	9.268	1.790	1.999	5.324	0.380	1.996	5.324	0.370
REG_{t-1}	-0.210	0.304	-0.690	-0.210	0.304	-0.690	0.492 ***	0.156	3.160	0.492 ***	0.156	3.160
$GLOBAL_{t-1}$	0.878 ***	0.083	10.560	0.878 ***	0.083	10.560	1.517 ***	0.046	32.790	1.517 ***	0.046	32.790
PCT_CSR_{t-1}	5.088 ***	1.121	4.540	5.088 ***	1.121	4.540	9.358 ***	0.598	15.660	9.359 ***	0.598	15.660
$COMPETITION_{t-1}$	0.416	1.138	0.370	0.416	1.138	0.370	-0.406	0.641	-0.630	-0.405	0.641	-0.630
ROA_{t-1}	1.393 ***	0.238	5.850	1.395 ***	0.238	5.850	1.014 ***	0.166	6.110	1.015 ***	0.166	6.110
$TOBINQ_{t-1}$	-0.065 **	0.030	-2.21	-0.065 **	0.029	-2.22	-0.213 ***	0.018	-12.04	-0.213 ***	0.018	-12.04
$LITRISK_{t-1}$	-0.235	0.194	-1.210	-0.234	0.194	-1.210	-0.185 *	0.107	-1.720	-0.185 *	0.107	-1.720
Year Indicators			Yes			Yes			Yes			Yes
Industry Indicators			Yes			Yes			Yes			Yes
Pseudo R2			0.1853			0.1853			0.4394			0.4394
Pseudo likelihood			-4,082			-4,082			-11,716			-11,716
N: number of obs.			89,800			89,800			89,848			89,848

For detailed variable descriptions, see section 3.2 Primary Research Design

*Note 1: This table presents logistic regression results where all continuous variables are winsorized at the 1st and 99th percentiles. ***, **, and * indicate the estimated coefficient is statistically significant at the 1%, 5%, and 10% levels, respectively. Robust estimated standard errors used in all models. All t-statistics are corrected using the Huber-White Procedure.*

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Table IV: Determinants of Stand-Alone U.S. CSR Reporting Partitioned by Mean Labor Pressure: 2002-2020

	Panel A: CSR Report Initiation						Panel B: Ongoing CSR Reporting					
	(I)			(II)			(III)			(IV)		
	Lower Labor Pressure[1]			Higher Labor Pressure[1]			Lower Labor Pressure[1]			Higher Labor Pressure[1]		
	Dep. Variable: CSR_YR1			*Dep. Variable: CSR_YR1*			*Dep. Variable: CSR_PUBYR*			*Dep. Variable: CSR_PUBYR*		
Variables	**Coef.**	**SE**	**Z-score**	**Coef.**	**SE**	**Z-score**	**Coef.**	**SE**	**Z-score**	**Coef.**	**SE**	**Z-score**
$SIZEMVE_{t-1}$	0.487 ***	0.027	18.110	0.375 ***	0.023	16.150	1.033 ***	0.021	48.970	0.841 ***	0.016	51.330
LEV_{t-1}	0.030	0.198	0.150	0.822 ***	0.202	4.070	0.211 *	0.117	1.800	0.687 ***	0.138	4.960
ADV_INT_{t-1}	13.818	13.264	1.040	0.370	15.372	0.020	0.600	8.472	0.070	-12.763 *	7.501	-1.700
REG_{t-1}	-1.228 **	0.602	-2.040	0.137	0.413	0.330	-1.945 ***	0.424	-4.580	1.184 ***	0.173	6.850
$GLOBAL_{t-1}$	0.949 ***	0.140	6.780	0.793 ***	0.105	7.570	1.563 ***	0.078	19.950	1.481 ***	0.058	25.530
PCT_CSR_{t-1}	7.328 ***	2.241	3.270	5.079 ***	1.427	3.560	13.747 ***	1.268	10.840	8.596 ***	0.714	12.030
$COMPETITION_{t-1}$	0.236	1.424	0.170	0.121	2.466	0.050	0.730	0.853	0.860	-2.600 *	1.393	-1.870
ROA_{t-1}	1.042 ***	0.306	3.400	1.692 ***	0.424	3.990	0.594 ***	0.210	2.830	1.111 ***	0.300	3.700
$TOBINQ_{t-1}$	-0.025	0.029	-0.86	-0.143 ***	0.052	-2.75	-0.153 ***	0.022	-7.11	-0.289 ***	0.029	-9.89
$LITRISK_{t-1}$	-0.595 **	0.235	-2.540	0.447	0.330	1.360	-0.397 ***	0.142	-2.790	-0.724 ***	0.215	-3.380
Year Indicators			Yes			Yes			Yes			Yes
Industry Indicators			Yes			Yes			Yes			Yes
Pseudo R2			0.2294			0.1614			0.4770			0.4173
Pseudo likelihood			-1,712			-2,346			-4,529			-7,090
N: number of obs.			46,187			44,340			46,253			44,996

	CSR Initiation[2]	Ongoing CSR[2]
Difference in Lower/Higher LEV_{t-1} Coef. (*Z-score*)	2.310 **	2.420 **

For detailed variable descriptions, see section 3.2 Primary Research Design.

[1] Each panel is partitioned in two halves based on industry-year mean labor pressure (LP). Observations with LP values below mean are in the "Lower LP" partition; "Higher LP" otherwise.

[2] Additional testing finds the coefficients for LEV_{t-1} from Panel A (Columns I & II) and Panel B (Columns III & IV) are statistically different at the 5% level, respectively.

*Note 1: This table presents logistic regression results where all continuous variables are winsorized at the 1st and 99th percentiles. ***, **, and * Indicate the estimated coefficient is statistically significant at the 1%, 5%, and 10% levels, respectively. Robust estimated standard errors used in all models. All t-statistics are corrected using the Huber-White Procedure.*

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Table V: Determinants of Stand-Alone U.S. CSR Reporting Portioned by Industry Mean Leverage: 2002-2020

	Panel A: CSR Report Initiation						Panel B: Ongoing CSR Reporting					
	(I) Lower Leverage[1] *Dep. Variable: CSR_YR1*			(II) Higher Leverage[1] *Dep. Variable: CSR_YR1*			(III) Lower Leverage[1] *Dep. Variable: CSR_PUBYR*			(IV) Higher Leverage[1] *Dep. Variable: CSR_PUBYR*		
Variables	**Coef.**	**SE**	**Z-score**	**Coef.**	**SE**	**Z-score**	**Coef.**	**SE**	**Z-score**	**Coef.**	**SE**	**Z-score**
$SIZEMVE_{t-1}$	0.423 ***	0.019	21.740	0.484 ***	0.049	9.940	0.914 ***	0.014	64.030	0.967 ***	0.034	28.570
LP_{t-1}	141.07 **	66.740	2.110	214.94 *	123.387	1.740	242.74 ***	39.381	6.160	410.47 ***	68.689	5.980
ADV_INT_{t-1}	16.811	10.720	1.570	32.442	21.362	1.520	2.201	6.499	0.340	4.548	10.471	0.430
REG_{t-1}	-0.450	0.372	-1.210	0.309	0.547	0.560	0.465 **	0.195	2.380	0.850 ***	0.269	3.160
$GLOBAL_{t-1}$	0.939 ***	0.095	9.850	0.821 ***	0.177	4.640	1.665 ***	0.055	30.340	1.210 ***	0.098	12.390
PCT_CSR_{t-1}	6.205 ***	1.360	4.560	4.625 **	2.225	2.080	9.796 ***	0.771	12.700	7.970 ***	1.067	7.470
$COMPETITION_{t-1}$	-0.091	1.298	-0.07	0.410	3.197	0.13	-0.138	0.684	-0.2	-1.411	1.485	-0.95
ROA_{t-1}	1.386 ***	0.249	5.570	0.816	0.717	1.140	1.114 ***	0.173	6.430	-0.101	0.153	-0.660
$TOBINQ_{t-1}$	-0.042	0.028	-1.480	-0.199 **	0.091	-2.190	-0.200 ***	0.019	-10.430	-0.284 ***	0.047	-6.080
$LITRISK_{t-1}$	-0.252	0.220	-1.150	-0.558	0.411	-1.360	-0.211 *	0.119	-1.770	-0.180	0.251	-0.720
Year Indicators			Yes			Yes			Yes			Yes
Industry Indicators			Yes			Yes			Yes			Yes
Pseudo R2			0.1896			0.1964			0.4393			0.4590
Pseudo likelihood			-3,142			-876			-9,208			-2,384
N: number of obs.			71,741			14,846			72,529			16,647
Dep. Var = 1			711			213			4,393			1,254
Difference in LP_{t-1} Coef. across Lower/Higher leverage (*Z-score*)[2]						0.547						5.340 ***

For detailed variable descriptions, see section 3.2 Primary Research Design.

Robustness Tests

We conduct a series of robustness tests to ensure our results our not driven by researcher choice of model specification or research design. First, we re-estimate all of our models using complimentary log-log instead of logit regression. Our tabulated results employ logit regression for consistency with prior research on the determinants of voluntary CSR reporting (Chantziaras *et al.*, 2020; Dhaliwal *et al.*, 2011). However, the complimentary log-log technique best fits asymmetric data, such as a dependent variable where CSR non-reporting observations (93,012 observations where CSR_PUBYR = 0) significantly outnumber CSR reporting observations (5,647 observations where CSR_PUBYR = 1). Untabulated results for the complimentary log-log specifications support the findings reported in Tables III through V.

To further explore thresholds of stakeholder influence within the system of the firm, we replicate the alternative research design presented in Table V across several specifications of 'high' and 'low' LEV. Specifically, we consider the partition point for 'high' to be at the beginning of the top tercile, and the beginning of the top quartile. Untabulated results are consistent with Table V. Furthermore, the results of Table V also hold when we exclude financially distressed firms from the sample.

Finally, coefficients in logit models represent log-odds units and are interpreted differently than standard OLS coefficients. For an additional interpretation of the results, we estimate the odds ratios of the dependent variable. Odds ratios range between zero and infinity and are generated from probabilities. The odds of CSR initiation increases (decreases) if the coefficient for the independent variable is greater than 1 (less than 1). Untabulated odds ratios for LP, LEV, and LEV*LP are all greater than 1 when considering CSR report initiation and greater than 1 when considering ongoing CSR reporting. Consistent with prior analysis, these results suggest the odds of voluntary CSR disclosures increase with increasing labor pressure, debt, and interactive stakeholder positions.

Conclusion

We examine the influence of labor pressure, debt, and stakeholder strategy on the likelihood of U.S. firms to engage in voluntary disclosures, proxied by stand-alone U.S. CSR reports. We find the likelihood of CSR reporting is statistically higher when both labor pressure *and* leverage are higher. Our results suggest the interaction of pressure from labor interests and strategic use of a debt shield via higher leverage influence voluntary disclosure activity. This provides nuance to how the influence of multiple stakeholders relates to firms' voluntary disclosure activities and builds on prior studies that examine labor pressure and capital structure as independent

determinants of voluntary disclosure. Our paper makes several contributions. First, we contribute to the voluntary disclosure literature by investigating how financing contracts (i.e., debt) and employee contracts influence firms' disclosures. Specifically, we extend the traditional research of Depoers (2000); Hilary (2006); and Bova (2013) beyond financial disclosure to include CSR reporting. Our findings provide nuance and texture, increasing our understanding of the influence of labor pressure and the interaction of labor pressure with leverage on the likelihood of voluntary CSR disclosure.

Explicit modeling of the interactive relationship between leverage and labor pressure also contributes to the debt-CSR literature, shedding light on the combined interaction of leverage and labor pressure as a determinant of CSR reporting. Our findings suggest that voluntary disclosure of CSR reports is best considered and understood in the context of a system of stakeholders, including capital providers, management, and labor. That debt shield tactics used during labor negotiations can have broad impacts on labor cost, debt servicing costs, financial reporting outcomes on the balance sheet and statement of cash flows, and can spillover to influence voluntary CSR reporting. We conclude that ultimately it is the system of stakeholders, not an isolated stakeholder, that collectively impact the voluntary CSR reporting likelihood.

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Data Availability: The data used in this study can be found in publicly available resources referenced in the paper, specifically: CorporateRegister.com and Compustat.

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