

Corporate Social Responsibility and Financial Reporting Quality

By DMITRIY V. CHULKOV AND XIAOQIONG WANG*

* Chulkov: School of Business, Indiana University, Kokomo, Indiana 46904-9003 (e-mail: dchulkov@iu.edu). Wang: Indiana University, Kokomo, Indiana 46904-9003 (e-mail: xw55@iu.edu).

Abstract

This article examines the relationship between corporate social responsibility (CSR) and financial reporting quality. Our findings show that firms with higher levels of corporate social responsibility are associated with higher accuracy of financial forecasts, fewer earnings surprises, and greater coverage by financial analysts. Empirical results hold after we account for potential endogeneity in this relationship. Additional analyses reveal that firms with lower agency concerns, higher customer awareness, more long-term institutional investors, and fewer financial constraints have a stronger positive relationship between CSR and financial reporting quality. Finally, we document the economic implications of this relationship for firm risk and information disclosure.

JEL Classification Codes: G10, G32, M14, M40

Keywords: Corporate Social Responsibility, Financial Reporting Quality, Financial Economics

1. Introduction

Corporate social responsibility (CSR) has come to the forefront of both academic and popular attention in the business world. Firms publicize their commitments to CSR, establish CSR governance structures, and issue CSR reports (Kim, Li, and Li, 2014; Cahan et al., 2015). CSR is defined as the economic, legal, moral, and philanthropic actions of firms that influence the quality of life of relevant stakeholders (Hill et al., 2007). Socially responsible firms promote efforts to help protect the environment, seek social equality, and improve community relations (Ferrell, Liang, and Renneboog, 2016).

There have been two opposing views of CSR in the literature – the stakeholder value maximization view and the shareholder expense view (Deng, Kang, and Low, 2013). The stakeholder value maximization view argues that focusing on the interests of other stakeholders increases their willingness to support the operations of a firm, which in turn increases shareholder wealth (Deng, Kang, and Low, 2013; Di Giuli and Kostovetsky, 2014; Albuquerque, Koskinen, and Zhang, 2019). This view is encapsulated by the phrase “doing well

by doing good". Ethical, political, and integrative theories of CSR suggest that managers have an incentive to be trustworthy and ethical in their business processes, and thus tend to adhere to a high standard of behavior (Bowen, 1953; Carroll, 1979; Kim, Park, and Weir, 2012; Matten and Crane, 2005). Thus, when managers engage in CSR in the context of a moral imperative, they are more likely to make responsible operating decisions, maintain transparency in financial reporting, and provide investors with more reliable financial information, suggesting a positive connection between CSR and financial reporting quality.

In contrast to the stakeholder value maximization view, the shareholder expense view posits that engaging in socially responsible activities helps stakeholders at the expense of shareholders. In this view, CSR activities serve as a manifestation of managerial agency problems and are linked to the pursuit of a manager's self-interest (Jensen and Meckling, 1976; Bénabou and Tirole, 2010; Masulis and Reza, 2015). Furthermore, Hemingway and Maclagan (2004) show that a manager may engage in CSR activities to cover up corporate misconduct. McWilliams, Siegel, and Wright (2006) and Petrovits (2006) find evidence supporting the view of managers' opportunistic behavior within an agency-theoretic framework of CSR. If managers engage in CSR practices

based on opportunistic incentives, they are more likely to mislead stakeholders regarding a firm's financial performance. Kim, Park, and Wier (2012) argue "this motivation indicates that decisions to participate in CSR activities may be made to give stakeholders the impression that the firm is transparent, when, in fact, the firm 'hides' behind the appearance of transparency while engaging in earnings management."

CSR is related to corporate sustainability management but has a long separate history of research (Bansal and Song, 2017) that has explored its importance for shareholder wealth (Dowell, Hart and Yeung, 2000; Krüger, 2015), firm value (Servaes and Tamayo, 2013), financial performance (Flammer, 2015), firm risk (Albuquerque, Koskinen, and Zhang, 2019; Chintrakarn, Jiraporn, and Treepongkaruna, 2021), the cost of leverage (Bae et al., 2019), and other issues. Nevertheless, prior literature does not present comprehensive evidence on the relationship between CSR and financial reporting quality.

Financial reporting quality is the accuracy with which financial reporting conveys information about a firm's financial position that is complete, neutral, and free from error (Biddle, Hilary, and Verdi, 2012; Garrett, Hoitash, and Prawitt, 2014). The quality of financial reports is often studied in the context of earnings reporting, forecasting, and management

(Hutton, Marcus, and Tehranian, 2009; Kim, Park, and Wier, 2012; Kim, Park, and Song, 2021). The two opposing views of CSR imply different relationships between CSR and financial reporting quality. Some aspects of these relationships have been explored previously with inconsistent results. Bechetti, Ciciretti, and Giovanelli (2013) report that higher CSR quality and accounting transparency contribute to making earnings forecasts unbiased. Sun et al. (2010) examine the link between corporate environmental disclosures and earnings management at UK firms and find no significant relationship. Kim, Park, and Wier (2012) conclude that socially responsible firms are less likely to manage earnings through discretionary accruals, to manipulate real operating activities, and to be the subject of SEC investigations. Wang, Cao, and Ye (2018) describe a quasi-natural experiment in China that mandated a subset of firms to report their CSR activities starting in 2008 and find that mandatory CSR disclosure constrains earnings management and mitigates information asymmetries.

Our study aims to clarify the evidence on the link between CSR and financial reporting quality. To start with, we find that firms with higher levels of CSR measures are associated with higher accuracy of financial forecasts, fewer earnings surprises, and greater coverage

by financial analysts over the period from 1991 to 2018. We further conduct several analyses to address the potential endogeneity in this relationship. Our findings remain consistent with the baseline results in the instrumented variables approach. The evidence suggests that a firm's financial reporting quality measures become better with both higher levels and larger increases in CSR.

We then examine additional factors that affect the relationship between CSR and financial reporting quality. We focus on four areas and examine the impact of agency concerns, customer awareness, long-term institutional holdings, and financial constraints. First, Ferrell et al. (2016) show that well-governed firms that experience fewer agency concerns are more likely to engage in CSR activities. Our results support this conclusion as the positive relationship between CSR and financial reporting quality is stronger for firms that face low agency concerns. Second, Servaes and Tamayo (2013) argue that advertising enhances the benefits of CSR. Customers take into consideration firms' CSR activities when making purchase decisions (Nelson, 1974; Sen and Bhattacharya, 2001; Bhattacharya and Sen, 2004). Advertising creates awareness about firms and their activities, which enhances the impact of CSR on the value of firms by creating goodwill on the part of customers and

strengthening the monitoring effect of customers. Our findings support this view and show that the relationship between CSR and reporting quality is stronger for firms with a high level of customer awareness.

Third, long-term institutional ownership is an effective monitoring mechanism (Harford et al., 2017; Nguyen, Kecskés, and Mansi, 2020). Our results demonstrate that the contribution of CSR to a firm's financial reporting quality is more significant when the firm has more long-term institutional ownership. Fourth, Hong, Kubik, and Scheinkman (2012) argue that firms are more likely to do good when they do well. They document that financial constraints are negatively correlated with CSR, suggesting that CSR is a luxury for firms. Our empirical results suggest that when firms do not face financial constraints, the link between CSR measures and financial reporting quality improves significantly.

Our study contributes to the literature in several ways. First, we construct a data sample covering the period from 1991 to 2018 that is larger than earlier studies and find a positive relationship between CSR and financial reporting quality measures. Second, we contribute to the ongoing debate on the value of CSR. Our results support the stakeholder value view of CSR and shed light on how CSR is associated with another aspect of corporate

behavior - financial reporting quality. Third, our results identify factors that affect the significance of this relationship. We demonstrate that firms with lower agency concerns, higher customer awareness, more long-term institutional investors, and fewer financial constraints face a more significant link between CSR and financial reporting quality.

The article proceeds as follows. Section 2 describes the data. Section 3 presents the research design and baseline empirical results. Section 4 examines additional factors that affect the relationship between CSR and financial reporting quality. Economic implications are discussed in Section 5, and the final section concludes.

2. Data

2.1 Variables and Data Sources

We obtain firms' CSR performance measures from the MSCI ESG KLD database (hereafter referred to as KLD), which has become a de-facto standard in prior empirical studies on CSR (Deng, Kang, and Low, 2013; Di Giuli and Kostovetsky, 2014; Lins, Servaes, and Tamayo, 2017; Chen, Dong, and Lin, 2020). The KLD database measures a firm's Environmental, Social, and Governance (ESG) activities based on various sources: company filings, government data, non-governmental organization data, and media sources (Deng,

Kang, and Low, 2013). KLD rates firms along seven major dimensions of CSR: community, corporate governance, diversity, employee relations, environment, human rights, and product quality. Each dimension is composed of strength and concern indicators. A firm scores one strength (concern) point for each socially good (bad) action in each dimension. Following Lins et al. (2017) and Chen et al. (2020), our study focuses on five dimensions of KLD ratings: community, diversity, employee relations, environment, and product quality. We exclude the corporate governance dimension since it is not considered to be part of a firm's CSR remit (Krüger, 2015; Lins, Servaes, and Tamayo, 2017). We also exclude the human rights dimension since its scores are only available for a few years in the 1990s. To construct the raw CSR measure, we sum the total number of strengths and the total number of concerns across the five dimensions to obtain aggregate strengths and concerns score for each firm. Then, we subtract the concerns score from the strengths score to obtain the overall raw CSR score for each firm.

As documented in prior studies (Deng, Kang, and Low, 2013; Cao, Liang, and Zhan, 2019), the simple summation approach has certain shortcomings. For most dimensions, the number of strengths and concerns varies from year to year. To overcome this issue, we follow Deng,

Kang, and Low (2013) and adjust the raw CSR measure by dividing a firm's strength and concern scores by the total number of strength and concern indicators identified in each year for each dimension. We then take the difference between the adjusted total strength and concern scores – this approach gives equal weights to the five dimensions so that the CSR score is not driven by any individual dimension.

We then construct four measures of financial reporting quality using variables obtained from I/B/E/S and CRSP databases. The first variable is *Accuracy* of financial forecasts for each firm. Greater accuracy of the forecasts is likely to reflect greater transparency of a firm's information environment (Maffett, 2012). Forecast accuracy also captures the ease of information acquisition by analysts and the disclosure policies of firms (Lang and Lundholm, 1996). We also construct a percentile-ranked forecast accuracy measure as *Accuracy_Rank*. A third variable we consider is unexpected earnings reported by the firm (*Earnings_Surprise*). Our final financial reporting quality variable is the number of analysts who issue a forecast for a firm's fiscal year earnings (*Analyst_Num*). Analysts serve an important role in the oversight and processing of firms' financial data (Lang, Lins, and Miller, 2004). A smaller number of analysts following a firm implies lower financial reporting quality.

We also include control variables suggested by prior studies (Kim, Park, and Wier, 2012; Hutton, Marcus, and Tehranian, 2009) such as the market-to-book ratio (*MB*), the log value of a firm's assets (*Assets*), a firm's leverage ratio (*Leverage*), return on assets (*ROA*), research and development expenditures (*R&D*), the number of years a firm exists (*Age*), and institutional ownership (*IO*). Detailed descriptions of these variables are discussed in Appendix Table 1. We obtain stock-level information from CRSP and annual firm fundamental data from COMPUSTAT. Institutional ownership data come from the 13-F filings reported in the Thomson Reuters Institutional Holdings database.

CSR data, firm-level financial data, financial reporting quality data, and institutional holding data are merged to form our final sample, which is composed of 21,633 firm-year observations. The sample period extends from 1991 to 2018 based on the availability of the CSR data. We restrict our sample to US domestic common stocks traded on NYSE, AMEX, and NASDAQ. To minimize the influence of outliers, we winsorize all the fundamental variables at the 1% and 99% levels.

Panel A of Table 1 presents the summary statistics of the key variables. An average firm in our sample has a CSR score of -0.075, indicating that concerns slightly outweigh

strengths. This observed negative CSR score is consistent with Deng, Kang, and Low (2013) and Cao, Liang and Zhan (2019). The CSR score ranges from -2.726 to 3.026. The averages of the financial reporting opacity measures are 0.054, 0.524, 0.008, and 10.575, respectively. All other control variables are consistent with prior studies (Kim, Park, and Weir, 2012; Hutton, Marcus, and Tehranian, 2009; Lang, Lins and Miller, 2004). Panel B of Table 1 reports the correlation matrix for the key variables.

3. Corporate Social Responsibility and Financial Reporting Quality

3.1 Baseline Empirical Results

The two opposing views of CSR imply different relationships between CSR and financial reporting quality. According to the stakeholder value maximization view, managers who engage in CSR are more likely to make responsible operating decisions, maintain transparency in financial reporting, and provide investors with more reliable financial information, suggesting a positive connection between CSR and financial reporting quality. Alternatively, the shareholder expense view suggests that engaging in corporate socially responsible activities helps stakeholders at the expense of shareholders. If CSR practices are motivated within the agency problem

framework, managers are more likely to mislead stakeholders regarding a firm's financial performance and give stakeholders the impression that the firm is transparent while the firm engages in earnings management (Kim, Park, and Weir, 2012; Deng, Kang, and Low, 2013).

In this subsection, we perform empirical analyses to examine the baseline relationship between CSR measures and financial reporting quality. Specifically, we estimate the following model:

$$FRQ_{i,t} = \beta_0 + \beta_1 CSR_{i,t-1} + \beta_j X_{i,t-1} + \varepsilon_{i,t} \quad (1)$$

where $FRQ_{i,t}$ represents the financial reporting quality measures (*Accuracy*, *Accuracy_Rank*, *Earnings_Surprise*, and *Analyst_Num*) of firm i in year t . $CSR_{i,t-1}$ is the aggregate adjusted CSR of firm i in year $t-1$. $X_{i,t-1}$ represents control variables including *MB*, *Assets*, *Leverage*, *ROA*, *R&D*, *Age*, and *IO*. We also include the year and firm fixed effects and cluster robust standard errors at the firm level for all the regressions.

The regression results for this baseline specification are reported in Table 2. As shown in columns 1 and 2, the coefficients of *Accuracy* and *Accuracy_Rank* are 0.032 and 0.015, significant at the 5% level. The findings are economically significant: a one-standard-deviation increase in CSR contributes to a

1.542% increase in reporting accuracy. The evidence indicates that a higher level of CSR is associated with better financial reporting accuracy. In column 3, *Earnings_Surprise* has a coefficient of -0.002, significant at the 10% level. The negative coefficient suggests that as a firm's CSR increases, the earnings surprises are reduced, which increases the quality of financial reporting. In the last column, we observe a significantly positive relationship between CSR and *Analyst_Num*. Overall, the results indicate that higher CSR is positively associated with better financial reporting quality. Our results for control variables are consistent with the prior literature (Chung and Kim, 1994; Becchetti, Ciciretti, and Giovanelli, 2013). Overall, the baseline regression analyses support the notion that firms with higher CSR are more transparent in their financial reporting.

3.2 Addressing Endogeneity Concerns

A potential endogenous relation between CSR and financial reporting quality is a concern in our analysis. In general, endogeneity can arise due to unobservable heterogeneity of firm-specific factors, simultaneity, or reverse causality. In this subsection, we conduct several empirical tests to mitigate such endogeneity concerns.

3.2.1 Decomposition of CSR

Kim, Li, and Li (2014) show that CSR measures are sticky and a firm or an industry tends to adopt a relatively consistent level of CSR over the years. In addition, the stickiness of CSR can be driven by the fact that the KLD database updates its scores once a year to account for newly received information from the previous year (Krüger, 2015). To address this concern, we decompose the lagged level of CSR into the second lag of the level and the first lag of the change in the variable. This decomposition has several advantages. First, it allows us to study the dynamics of CSR by examining both the changes in and the levels of CSR. Second, it controls for the persistence and stickiness via the second lag of the CSR level and allows the change in CSR to serve as a shock. Third, it helps to address the potential selection bias issue (Borochin and Yang, 2017). We modify our baseline model by adding the decomposition of the lagged level of CSR as described in equation (2).

$$FRQ_{i,t} = \beta_0 + \beta_1 CSR_{i,t-2} + \beta_2 \Delta CSR_{i,t-2,t-1} + \beta_j X_{i,t-1} + \varepsilon_{i,t} \quad (2)$$

where $FRQ_{i,t}$ represents the financial reporting quality measures of firm i in year t . $CSR_{i,t-2}$ is the second lag of the level of CSR and $\Delta CSR_{i,t-2,t-1}$ is the first lag of the change in CSR.

Table 3 reports the results of OLS regressions for this specification. As shown in column 1, the coefficients of $CSR_{i,t-2}$ and $\Delta CSR_{i,t-2,t-1}$ are 0.037 and 0.035, significant at the 5% level. The findings indicate that accuracy increases by 0.037 for a 100% increase in $CSR_{i,t-2}$ and it increases by 0.035 for a 100% increase in $\Delta CSR_{i,t-2,t-1}$. We observe similar results for *Accuracy_Rank* and *Analyst_Num* as both measures increase with an increase in the levels and changes in CSR and the relationships are significant at the 5% and 1% levels, respectively. Earnings surprises decrease with an increase in the levels and changes in CSR, but this relationship is insignificant. The findings suggest that a firm's financial reporting quality becomes better with both higher levels and larger increases in CSR. Overall, the evidence is robust when we employ the decomposed lagged level of CSR, implying that our baseline results are unlikely to be driven by the stickiness of CSR.

3.2.2 Instrumented CSR

The firm-level fixed effects in the regression model control for the time-invariant omitted firm characteristics. However, endogeneity concerns can arise from a time-variant omitted variable or reverse causality. To address the potential endogeneity issues, we employ an

instrumented variables (IV) approach using a two-stage least squares (2SLS) estimation.

A valid instrument should not be related to the financial reporting quality through channels other than CSR, indicating that most company-specific characteristics do not qualify (Liang and Renneboog, 2017). Following Kim, Li, and Li (2014), Ferrell, Liang, and Renneboog (2016), and Liang and Renneboog (2017), we use the average CSR scores of other firms in the same Fama–French 48 industries as the instrumental variable. The rationale of using industry peers' average CSR as an IV can be justified in several ways. First, a firm's corporate policies have been documented to be significantly influenced by its industry peers (Cao et al., 2019; Brown, Helland, and Smith, 2006). Second, due to peer pressure and public perception, a firm's CSR is likely to be affected by the CSR of firms in its industry. However, the CSR of industry peers does not directly affect the financial reporting quality of the firm.

In the first stage of the 2SLS estimation, we regress a firm's CSR on its industry peers' CSR and other control variables following Equation (1). In unreported results, industry peer CSR is significantly and positively related to the CSR of a firm. In the second stage, we regress financial report quality measures on the fitted CSR from the first stage and control variables. The results are reported in Table 4. As shown in

columns 1 and 2, for *Accuracy* and *Accuracy_Rank*, the coefficients of the instrumented CSR are 0.219 and 0.108, significant at the 10% level. The significantly positive coefficients are in line with our baseline results reported in Table 2. In columns 3 and 4, we find consistent coefficients of the instrumented CSR for *Earnings_Surprise*, and *Analyst_Num* but the coefficients are not significant. Overall, we find some evidence that supports the positive relationship between CSR and financial reporting quality after controlling for endogeneity based on the instrumental variable methodology.

3.2.3 Financial Crisis and CSR

In this subsection, we employ the 2008 financial crisis as an exogenous shock to firms in order to perform an additional test for causality. The unexpected shock of the financial crisis helps to disentangle the causal relationship between CSR and financial reporting quality (Roberts and Whited, 2013). Firms are faced with limited financial resources during a recession and they tend to reduce investment. Hong et al. (2012) show that corporate goodness is significantly influenced by a firm's financial constraints. Chintrakarn et al. (2021) demonstrate that the negative impact on CSR during the Great Recession is related to board independence. A financial crisis magnifies the

agency problems and costs associated with CSR activities (Johnson et al., 2000). However, the financial crisis is unlikely to affect a firm's financial reporting quality measures directly.

We estimate the following regression model to examine changes in the financial reporting quality measures for firms with different levels of CSR during the financial crisis.

$$FRQ_{i,t} = \beta_0 + \beta_1 CSR_{i,2006} + \beta_2 CSR_{i,2006} * Crisis_{i,t} + \beta_j X_{i,t-1} + \varepsilon_{i,t} \quad (3)$$

where $CSR_{i,2006}$ represents a firm's CSR investment in 2006; $Crisis_{i,t}$ is an indicator variable that equals 1 if the time period is 2008 or 2009, and zero otherwise. We restrict the sample period from 2006 to 2008 to alleviate the influence of other economic shocks. There may also exist a potential concern that results are affected by the changes in a firm's CSR policies in response to the financial crisis over the estimation period. We control for this by benchmarking the CSR level of all firms in this analysis to 2006. Specifically, we use the CSR level in 2006 in our estimations for the period of 2006 to 2008 regardless of how the firms' actual CSR levels change during the financial crisis. Different from previous regression models, we include the year and industry fixed effects and cluster robust standard errors at the firm level for these regressions.

The results are reported in Table 5. In column 2, the significantly negative coefficient of $CSR_{i,2006} * Crisis_{i,t}$ implies that during the financial crisis period, the effect of higher CSR on financial reporting accuracy percentile measure decreases. During this period, firms' financial resources are relatively more scarce and they are more likely to be faced with financial constraints. As a result, firms are more likely to cut their CSR initiatives, especially the higher CSR firms. We also observe significant coefficients for the financial crisis period interaction terms in columns 3 and 4. A higher level of earnings surprises and a lower number of financial analysts covering the firm serve as an indication of a lower level of financial reporting quality. Overall, the findings in columns 2, 3, and 4 suggest that the unexpected exogenous financial crisis reduces firms' CSR measures, and further influences a firm's financial reporting quality. In unreported analysis, we pick a different counterfactual period (2004-2005) to serve as the exogenous shock event and repeat the test in Equation (3). There is no significant effect of the "placebo crisis" period on the relationship between CSR and financial reporting quality. Thus, the evidence supports the validity of the results and the causality in the relationship between CSR and financial reporting quality.

4. Factors Affecting the Relationship between CSR and Financial Reporting Quality

4.1 Agency Concerns

Our empirical evidence supports the shareholder value view of CSR in that high CSR firms are more likely to maintain transparency in financial reporting and provide investors with more reliable financial information. Ferrell, Liang, and Renneboog (2016) show that well-governed firms that experience fewer agency concerns engage more in CSR activities. In this subsection, we perform subsample analyses to examine how agency problems affect the relationship between CSR and financial reporting quality.

We adopt two proxies for agency problems: leverage and free cash flow. First, a higher level of leverage places substantial demands on cash flow, which can constrain managers from spending cash on unprofitable projects and generating private benefits (Jensen and Meckling, 1976; Jensen, 1986). Servaes and Tamayo (2014) document that when a firm generates more free cash flows than what is required to finance all positive net present value projects, agency problems become more serious. When liquid assets are abundant, managers have the discretion to invest the

funds.¹ We split our sample into subsamples with high/low agency concerns firms and re-estimate Equation (1).

The results are presented in Table 6. Panels A and B report the findings using the leverage and free cash flow proxies separately. In both panels, the first four columns show results for high agency concerns firms and the last four columns present findings for low agency firms. As shown in columns 1 to 4 of Panel A, when leverage is used as a proxy for agency concerns, none of the coefficients are significant for low leverage (and therefore high agency concerns) firms. However, in columns 6 to 8, the coefficients are significant and have signs consistent with our baseline results. We observe similar patterns for the results in Panel B. The findings imply that the positive relationship between CSR and financial reporting quality is stronger for firms that face low agency concerns. The evidence supports the good corporate governance view of Ferrell, Liang, and Renneboog (2016) and Jensen (1986) in that tighter cash constraints and more disciplined managerial practice are associated with higher CSR measures.

¹ Following Ferrell et al. (2016), the *Leverage* variable is measured as the ratio of total leverage to total assets. Free cash flow is defined as

earnings before interest and taxes minus the changes in net assets, which is capital expenditure minus depreciation and amortization plus changes in net working capital.

4.2 Customer Awareness and Long-term Institutional Ownership

In this subsection, our goal is to examine how customer awareness and long-term institutional ownership contribute to the relationship between CSR and financial reporting quality. Servaes and Tamayo (2013) argue that advertising intensity enhances the benefits of CSR. Customers consider firms' CSR activities when making purchase decisions (Sen and Bhattacharya, 2001; Bhattacharya and Sen, 2004). When a firm or a product is considered to be socially responsible, this increases the demand from consumers and creates a strategic role for CSR as a value-maximizing strategy (Baron, 2001). However, lack of awareness about CSR activities from the firms' customers limits their ability to respond to CSR initiatives (Schuler and Cording, 2006). Following Servaes and Tamayo (2013), we employ advertising as a proxy for customer awareness to examine its impact in the context of CSR.² Advertising enhances a firm's information environment including information about the firm, its products, and its corporate social attributes (Nelson, 1974). Advertising expenditures enhance the impact of CSR activities on the value of a firm because advertising creates

awareness about the company and its activities, which creates more goodwill from customers and enhances the monitoring effects of customers. As a firm's public awareness increases, high CSR firms are more likely to make responsible operating decisions and maintain transparency in financial reporting. To test this hypothesis, we split our sample into two subsamples covering high and low customer awareness firms based on the median of advertising expenses and then re-estimate Equation (1).

The results are reported in Panel A of Table 7. Columns 1-4 and columns 5-8 present the findings for high and low customer awareness firms, respectively. As shown in columns 1 to 4, the coefficients of CSR are significant at the 10% level and consistent with our baseline results. The evidence indicates that the contribution of CSR to a firm's financial reporting quality is significant when the firm has a high level of customer awareness. As a firm's customer awareness increases, monitoring from consumers increases accordingly. We do not find consistently significant results for firms with a low level of customer awareness in columns 5 to 7. Only the *Analyst_Num* variable retains significance in column 8. Overall, CSR

² Customer awareness is defined as advertising expenses divided by a firm's sales.

and financial reporting quality are positively related for firms with high customer awareness.

Previous literature has also documented that the heterogeneity of institutional investors with different investment horizons can affect monitoring incentives that influence corporate policies and decisions. The investment horizon of institutions has been shown to impact a firm's returns (Yan and Zhang, 2009), and corporate social responsibility (Nguyen, Kecskés, and Mansi, 2020; Kim et al., 2019). Long-term institutions are effective monitors and have more incentives to monitor firms (Harford et al., 2017; Nguyen et al., 2020). Furthermore, the costs of monitoring are lower and the benefits are higher for long-term institutional investors (Wang and Wei, 2019). Thus, in the presence of more institutional investors, higher CSR firms are expected to improve financial reporting quality. In order to examine the impact of institutional investors, we split our sample into two subsamples for the high and low long-term institutional ownership (LIO) firms based on the median of LIO.³ We then re-estimate Equation (1).

The results are reported in Panel B of Table 7. Columns 1-4 and columns 5-8 present the results for high and low LIO firms, respectively.

In the high LIO subsample, the coefficients for CSR are significant for three out of four measures of financial reporting quality and all the signs are consistent with the baseline results. In contrast, the CSR coefficients for all the financial reporting dependent variables are insignificant in the low LIO subsample. The results suggest that when a firm is held by more long-term institutions and is involved in more CSR activities, it is more likely to maintain a higher level of transparency in financial reporting.

4.3 Financial Constraints

Prior work by Hong et al. (2012) argues that firms are more likely to do good when they do well. Hong et al. as well as Zhao and Xiao (2019) demonstrate that financial constraints facing the firm are negatively correlated with CSR engagement, suggesting that CSR is a luxury that firms eliminate when they need money. Regardless of the motive for goodness spending, financially unconstrained firms are free to spend more on goodness. Thus, we expect the CSR-financial reporting quality relationship to be different for firms with high and low financial constraints.

³ Long-term institutional ownership is defined as the fraction of shares owned by institutional investors that are long-term investors. Our

definition of long-term investors follows Gaspar, Massa, and Matos (2005).

We construct two financial constraint measures. First, following Whited and Wu (2006), we construct the WW financial constraints index.⁴ In a second test, we use the financial dependence measure of McLean and Zhao (2014) as a proxy for financial constraints and construct the MZ index. We then split our sample into high and low financial constraint firms based on the median of the WW index and the MZ index, respectively. We then re-estimate Equation (1) for the subsamples.

The results are shown in Table 8. As seen in Panel A, columns 1-4, the coefficients of the financial reporting quality measures are insignificant across the four specifications for financially constrained firms. In contrast, the coefficients of CSR for the reporting quality variables are significant at the 5% level as seen in columns 5-8. The findings indicate that when firms are financially unconstrained, they are more likely to undertake CSR actions, which is associated with higher financial reporting quality. We find consistent evidence in Panel B when the MZ index is employed as a proxy for financial constraints.

5. Economic Implications

Our previous sections document robust evidence that higher CSR is associated with better financial reporting quality. In this section, we examine the economic implications of this relationship. Specifically, we focus on how firms may benefit from better financial reporting quality and how financial reporting quality affects the information environment and firm risk for firms with different levels of CSR.

To start with, we examine the joint effects of financial reporting quality and CSR on a firm's risk level, proxied by return volatility. Return volatility significantly affects a firm's risk which affects economic variables such as stock option valuations in managerial compensation. We split our sample into high and low CSR firms and estimate the following regression.

$$Firm_Risk_{i,t} = \beta_0 + \beta_1 FRQ_{i,t-1} + \beta_j X_{i,t-1} + \varepsilon_{i,t} \quad (4)$$

where $Firm_Risk_{i,t}$ is defined as the annualized standard deviation of daily stock returns within firm i in year t .

The regression results are reported in Panel A of Table 9. As presented in columns 1 to 4, the

⁴ The Whited and Wu (WW) index is defined as $WW = -0.091CF - 0.062DIVPOS + 0.021TLTD - 0.044LNTA + 0.102ISG - 0.035SG$, where cash flow is CF, dividend is DIVPOS, long-term debt is TLTD, total assets is LNTA, sales is SG, and average industry sales is ISG.

coefficients of the financial reporting quality measures are significantly negative for high CSR firms. The evidence suggests that high CSR firms experience a lower level of risk when they are transparent with their financial statement disclosures. In columns 5 to 8, we do not observe significant coefficients for earnings surprise and analysts' coverage, while both the coefficient value and significance are lower on the measures of accuracy. Overall, the findings imply that high CSR firms are more likely to experience a significant negative relationship between financial reporting and return volatility which proxies for risk. This provides an incentive for high CSR firms to improve the accuracy of financial reporting. The observed risk-mitigation impact of CSR supports the findings of Chintrakarn et al. (2021).

In addition, we examine if higher quality of disclosure and CSR contribute to an improved information environment. Previous literature strongly ties higher quality disclosure to an improved information environment for the firm (Brown and Hillegeist, 2007). We use the Amihud (2002) illiquidity measure to proxy for a firm's information environment. A higher level of the Amihud (2002) measure indicates a lower level of liquidity. We split our sample into high and low CSR firms and estimate the regression model in Equation (4) with the

Amihud (2002) illiquidity measure as the dependent variable.

Panel B of Table 9 presents the regression results. As shown in the first two columns, the coefficients of *Accuracy* and *Accuracy_Rank* are significantly negative, suggesting that higher accuracy of financial reporting along with a higher level of CSR improves a firm's liquidity and information environment. However, the coefficients of *Earnings_Surprise* and *Analyst_Num* in columns 3 and 4 generate different conclusions. In comparison, for the low CSR firms, none of the coefficients are statistically significant. Overall, we find some evidence that greater transparency in financial reporting decreases information asymmetry for high CSR firms.

6. Conclusion

This article examines the relationship between corporate social responsibility and the quality of financial reporting empirically. First, we show that firms with higher levels of corporate social responsibility are associated with higher accuracy of financial forecasts, fewer earnings surprises, and greater coverage by financial analysts. These results hold after we account for potential endogeneity in this relationship. Our data sample covering the period from 1991 to 2018 is larger than extant studies. Second, we examine various aspects of the overall

relationship and find that the positive association between CSR and financial reporting quality is stronger for firms that face low agency concerns. Furthermore, the contribution of CSR to a firm's financial reporting quality is more significant when the firm has a high level of customer awareness and more long-term institutional ownership. We also find that when firms are financially unconstrained, the connection between CSR and financial reporting quality is enhanced. Third, we examine how firms may benefit from better financial reporting quality and find that firms with a high level of CSR have a stronger positive link between financial reporting quality and information disclosure as well as a negative link between reporting quality and firm risk.

Theoretical models point out both positive and negative ways CSR performance can impact firms. Our empirical findings provide support for the stakeholder value maximization view of CSR and help to identify the areas of positive impact of CSR initiatives for the firm. The findings also help to put CSR in the context of strategic planning for practitioners who strive to understand the value of CSR. The economic impact of CSR initiatives has been presented as a way to internalize social costs as prescribed by the Coase theorem in an alternative to invasive governmental regulation (Johnston et al., 2021). Therefore, understanding which firms are likely

to benefit from CSR initiatives through enhanced financial reporting quality is also important to policymakers striving to solve the economic dilemma of externalities.

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Table 1: Summary Statistics and Correlation Matrix

This table reports the summary statistics and correlation matrix of firm-level characteristics. Panel A reports the number of observations, mean, standard deviation, minimum, and maximum of the variables. Panel B reports the pairwise correlation matrix of the variables. The sample period ranges from 1991 to 2018. Variable definitions are discussed in Appendix Table 1.

Panel A: Summary Statistics					
Variable	Obs	Mean	Std. Dev.	Min	Max
<i>Accuracy</i>	27,225	0.054	0.651	-3.035	2.980
<i>Accuracy_Rank</i>	27,225	0.524	0.276	0.000	1.000
<i>Earnings_Surprise</i>	27,201	0.008	0.066	-0.267	0.365
<i>Analyst_Num</i>	28,308	10.575	8.134	1.000	55.000
<i>CSR</i>	21,633	-0.075	0.482	-2.726	3.026
<i>MB</i>	27,453	3.646	5.247	0.406	40.545
<i>Assets</i>	27,857	7.508	1.778	3.870	12.106
<i>R&D</i>	27,722	0.240	0.231	0.000	1.177
<i>Leverage</i>	27,837	0.028	0.148	-0.746	0.358
<i>ROA</i>	27,839	0.048	0.099	0.000	0.578
<i>Age</i>	27,862	2.796	1.025	0.000	4.533
<i>IO</i>	27,786	0.669	0.243	0.021	1.142

Table 1 - Continued: Summary Statistics and Correlation Matrix

Panel B: Correlation Matrix												
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
(1) <i>Accuracy</i>	1											
(2) <i>Accuracy_Rank</i>	0.7269	1										
(3) <i>Earnings_Surprise</i>	0.0396	0.0248	1									
(4) <i>Analyst_Num</i>	0.0073	0.0017	0.0198	1								
(5) <i>CSR</i>	0.0002	-0.0078	-0.0158	0.2333	1							
(6) <i>MB</i>	0.0178	0.0312	0.0441	0.1117	0.0586	1						
(7) <i>Assets</i>	-0.0209	-0.0188	-0.0173	0.5375	0.2180	-0.0939	1					
(8) <i>R&D</i>	0.0133	0.0109	-0.0042	0.0639	0.0092	0.1572	0.2967	1				
(9) <i>Leverage</i>	0.0107	0.0212	-0.1209	0.1521	0.0783	0.0159	0.1286	-0.0602	1			
(10) <i>ROA</i>	0.0214	0.0224	0.0122	0.0124	0.0048	0.2304	-0.3462	-0.1726	-0.4232	1		
(11) <i>Age</i>	0.0099	0.0338	-0.0013	0.1864	0.1294	-0.0793	0.4501	0.1044	0.1535	-0.2461	1	
(12) <i>IO</i>	0.0077	0.0224	-0.0225	0.0625	-0.0195	0.0522	-0.0056	0.0316	0.1094	0.0120	-0.0113	1

Table 2: Financial Reporting Quality and CSR

This table reports the panel OLS regressions of financial reporting quality measures on CSR and firm-level control characteristics for the period of 1991-2018. Financial reporting quality measures are Accuracy, Accuracy_Rank, Earnings_Surprise, and Analyst_Num. Firm-level control characteristics include MB, Assets, Leverage, ROA, R&D, Age, and IO. Variable definitions are discussed in Appendix Table 1. We control for the year and firm fixed effects. t-statistics, based on standard errors clustered at the firm level, are reported in parentheses. Statistical significance is denoted by *, **, and *** at the 10%, 5%, and 1% levels, respectively.

	<i>Accuracy</i>	<i>Accuracy_Rank</i>	<i>Earnings_Surprise</i>	<i>Analyst_Num</i>
Variable	(1)	(2)	(3)	(4)
<i>CSR_{t-1}</i>	0.032** (2.25)	0.015** (2.17)	-0.002* (-1.75)	0.510*** (3.35)
<i>MB_{t-1}</i>	0.004* (1.88)	0.004*** (4.38)	0.001*** (6.15)	0.112*** (7.14)
<i>Assets_{t-1}</i>	0.066*** (3.10)	0.043*** (5.16)	-0.015*** (-8.68)	2.953*** (12.81)
<i>Leverage_{t-1}</i>	-0.037 (-0.72)	-0.061*** (-2.84)	0.001 (0.28)	-1.925*** (-5.04)
<i>ROA_{t-1}</i>	0.333*** (3.36)	0.247*** (7.34)	-0.148*** (-11.36)	3.617*** (6.85)
<i>R&D_{t-1}</i>	0.504** (2.39)	0.307*** (3.95)	-0.066*** (-2.87)	3.053** (2.15)
<i>Age_{t-1}</i>	-0.101*** (-4.11)	-0.036*** (-2.87)	0.002 (0.75)	-0.494* (-1.76)
<i>IO_{t-1}</i>	0.180*** (3.00)	0.080*** (3.68)	-0.006 (-1.02)	2.567*** (7.07)
N	20786	20786	20769	21188
Adjusted R^2	0.110	0.071	0.062	0.831
Year FE	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes

Table 3: Financial Reporting Quality and Changes in CSR

This table reports the panel OLS regressions of financial reporting quality measures on $\Delta CSR_{t-2,t-1}$, CSR_{t-2} , and firm-level control characteristics for the period of 1991-2018. Financial reporting quality measures are Accuracy, Accuracy_Rank, Earnings_Surprise, and Analyst_Num. Firm-level control characteristics include MB, Assets, Leverage, ROA, R&D, Age, and IO. Variable definitions are discussed in Appendix Table 1. We control for the year and firm fixed effects. t-statistics, based on standard errors clustered at the firm level, are reported in parentheses. Statistical significance is denoted by *, **, and *** at the 10%, 5%, and 1% levels, respectively.

	<i>Accuracy</i>	<i>Accuracy_Rank</i>	<i>Earnings_Surprise</i>	<i>Analyst_Num</i>
Variable	(1)	(2)	(3)	(4)
$\Delta CSR_{t-2,t-1}$	0.035* (1.84)	0.017** (1.98)	-0.002 (-1.00)	0.450*** (3.36)
CSR_{t-2}	0.037** (2.25)	0.018** (2.27)	-0.002 (-0.97)	0.664*** (3.28)
MB_{t-1}	0.002 (1.05)	0.003*** (3.11)	0.001*** (5.26)	0.113*** (6.45)
$Assets_{t-1}$	0.072*** (2.83)	0.042*** (4.34)	-0.017*** (-8.06)	2.962*** (10.80)
$Leverage_{t-1}$	-0.003 (-0.05)	-0.052** (-2.08)	0.002 (0.43)	-1.916*** (-4.35)
ROA_{t-1}	0.409*** (3.68)	0.281*** (7.29)	-0.155*** (-9.72)	3.646*** (6.15)
$R\&D_{t-1}$	0.764*** (3.14)	0.345*** (3.51)	-0.058** (-2.15)	2.235 (1.25)
Age_{t-1}	-0.114*** (-3.27)	-0.051*** (-2.89)	0.007** (2.06)	-1.110** (-2.46)
IO_{t-1}	0.160** (2.32)	0.080*** (3.25)	-0.007 (-0.95)	2.417*** (6.04)
N	17449	17449	17448	17577
Adjusted R^2	0.122	0.078	0.056	0.834
Year FE	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes

Table 4: Financial Reporting Quality and Instrumented CSR

This table reports the panel OLS regressions of financial reporting quality measures on instrumented CSR and firm-level control characteristics for the period of 1991-2018. Financial reporting quality measures are Accuracy, Accuracy_Rank, Earnings_Surprise, and Analyst_Num. Firm-level control characteristics include MB, Assets, Leverage, ROA, R&D, Age, and IO. Variable definitions are discussed in Appendix Table 1. The instrumental variable is the average CSR of firms within the same Fama-French 48 industries excluding the firm of interest. We control for the year and firm fixed effects. t-statistics, based on standard errors clustered at the firm level, are reported in parentheses. Statistical significance is denoted by *, **, and *** at the 10%, 5%, and 1% levels, respectively.

	<i>Accuracy</i>	<i>Accuracy_Rank</i>	<i>Earnings_Surprise</i>	<i>Analyst_Num</i>
Variable	(1)	(2)	(3)	(4)
\widehat{CSR}_{t-1}	0.219* (1.89)	0.108* (1.93)	-0.005 (-0.57)	1.136 (0.99)
MB_{t-1}	0.004** (2.16)	0.004*** (4.81)	0.001*** (6.54)	0.112*** (7.62)
$Assets_{t-1}$	0.066*** (3.29)	0.044*** (5.57)	-0.016*** (-9.42)	2.974*** (13.84)
$Leverage_{t-1}$	-0.050 (-1.03)	-0.068*** (-3.33)	0.001 (0.34)	-1.978*** (-5.41)
ROA_{t-1}	0.329*** (3.57)	0.245*** (7.80)	-0.148*** (-12.20)	3.592*** (7.27)
$R\&D_{t-1}$	0.548*** (2.80)	0.329*** (4.53)	-0.067*** (-3.13)	3.225** (2.40)
Age_{t-1}	-0.079*** (-2.88)	-0.024* (-1.78)	0.001 (0.55)	-0.449 (-1.55)
IO_{t-1}	0.181*** (3.20)	0.081*** (3.95)	-0.007 (-1.15)	2.563*** (7.59)
N	20692	20692	20675	21091
Adjusted R^2	0.001	0.002	0.018	0.424
Year FE	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes

Table 5: Financial Reporting Quality, CSR, and Financial Crisis

This table reports the panel OLS regressions of financial reporting quality measures on CSR, Crisis, and firm-level control characteristics. Financial reporting quality measures are Accuracy, Accuracy_Rank, Earnings_Surprise, and Analyst_Num. Firm-level control characteristics include MB, Assets, Leverage, ROA, R&D, Age, and IO. Variable definitions are discussed in Appendix Table 1. The sample period is from 2006 to 2009. Crisis equals one if a year is 2008 or 2009, and zero otherwise. We control for the year and industry fixed effects. t-statistics, based on standard errors clustered at the firm level, are reported in parentheses. Statistical significance is denoted by *, **, and *** at the 10%, 5%, and 1% levels, respectively.

	<i>Accuracy</i>	<i>Accuracy_Rank</i>	<i>Earnings_Surprise</i>	<i>Analyst_Num</i>
Variable	(1)	(2)	(3)	(4)
<i>CSR</i> ₂₀₀₆	0.016 (0.40)	0.003 (0.21)	-0.003 (-1.51)	0.981*** (3.07)
<i>CSR</i> ₂₀₀₆ × <i>Crisis</i>	-0.049 (-0.98)	-0.032* (-1.73)	0.010** (2.09)	-0.726*** (-2.91)
<i>MB</i> _{<i>t</i>-1}	0.003 (1.40)	0.003*** (2.79)	0.001*** (4.57)	0.189*** (7.11)
<i>Assets</i> _{<i>t</i>-1}	-0.046*** (-4.91)	-0.023*** (-6.82)	-0.000 (-0.35)	2.696*** (29.78)
<i>Leverage</i> _{<i>t</i>-1}	0.094 (1.60)	0.028 (1.28)	-0.015*** (-2.71)	-4.271*** (-8.16)
<i>ROA</i> _{<i>t</i>-1}	0.467*** (4.35)	0.164*** (4.55)	-0.082*** (-5.42)	6.872*** (8.93)
<i>R&D</i> _{<i>t</i>-1}	0.627*** (3.63)	0.213*** (3.36)	-0.046** (-2.46)	16.670*** (11.49)
<i>Age</i> _{<i>t</i>-1}	0.045*** (3.08)	0.027*** (4.99)	-0.000 (-0.37)	-1.132*** (-7.71)
<i>IO</i> _{<i>t</i>-1}	0.021 (0.43)	0.039* (1.95)	-0.008 (-1.53)	3.641*** (7.72)
N	5236	5236	5233	5282
Adjusted <i>R</i> ²	0.066	0.072	0.044	0.477
Year FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes

Table 6: Financial Reporting Quality, CSR, and Agency Problems

This table reports the panel OLS regressions of financial reporting quality measures on CSR and firm-level control characteristics for the period of 1991-2018 for two subsamples based on high and low agency problems. We use leverage and free cash flow to proxy for agency problems. Financial reporting quality measures are Accuracy, Accuracy_Rank, Earnings_Surprise, and Analyst_Num. Firm-level control characteristics include MB, Assets, Leverage, ROA, R&D, Age, and IO. Variable definitions are discussed in Appendix Table 1. We control for the year and firm fixed effects. t-statistics, based on standard errors clustered at the firm level, are reported in parentheses. Statistical significance is denoted by *, **, and *** at the 10%, 5%, and 1% levels, respectively.

Variable	Low Leverage				High Leverage			
	Accuracy (1)	Accuracy_Rank (2)	Earnings_Surprise (3)	Analyst_Num (4)	Accuracy (5)	Accuracy_Rank (6)	Earnings_Surprise (7)	Analyst_Num (8)
CSR_{t-1}	0.006 (0.25)	0.005 (0.41)	0.001 (0.29)	0.288 (1.32)	0.027 (1.40)	0.015* (1.66)	-0.004** (-2.33)	0.501*** (2.70)
MB_{t-1}	0.005 (0.85)	0.008*** (3.86)	0.002*** (4.16)	0.216*** (5.84)	0.003* (1.80)	0.002** (2.53)	0.001*** (4.44)	0.075*** (4.59)
$Assets_{t-1}$	0.084*** (3.25)	0.054*** (4.59)	-0.016*** (-5.94)	3.722*** (10.41)	0.071* (1.91)	0.039*** (2.99)	-0.017*** (-5.59)	2.441*** (8.46)
$Leverage_{t-1}$	0.030 (0.17)	-0.122 (-1.37)	0.004 (0.20)	-2.455 (-1.38)	-0.007 (-0.09)	-0.021 (-0.69)	0.004 (0.60)	-1.280*** (-2.93)
ROA_{t-1}	0.257** (2.08)	0.185*** (4.10)	-0.130*** (-8.27)	2.911*** (4.37)	0.398** (2.13)	0.295*** (5.01)	-0.194*** (-7.30)	3.629*** (4.71)
$R\&D_{t-1}$	0.397* (1.70)	0.222** (2.33)	-0.048 (-1.63)	2.311 (1.34)	0.596 (1.46)	0.393** (2.40)	-0.161*** (-3.32)	3.835 (1.47)
Age_{t-1}	-0.072* (-1.88)	-0.002 (-0.11)	-0.001 (-0.25)	-0.806** (-2.07)	-0.113*** (-2.75)	-0.044** (-2.28)	0.002 (0.47)	-0.258 (-0.66)
IO_{t-1}	0.190*** (2.00)	0.060* (1.67)	0.003 (0.33)	2.238*** (4.11)	0.156* (1.68)	0.077** (2.41)	-0.012 (-1.24)	2.772*** (5.50)
N	10298	10298	10291	10510	10488	10488	10478	10678
Adjusted R^2	0.151	0.100	0.090	0.854	0.099	0.074	0.066	0.826
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table 6 - Continued: Financial Reporting Quality, CSR, and Agency Problems

Variable	Panel B: Free Cash Flow							
	High Free Cash Flow				Low Free Cash Flow			
	Accuracy (1)	Accuracy_Rank (2)	Earnings_Surprise (3)	Analyst_Num (4)	Accuracy (5)	Accuracy_Rank (6)	Earnings_Surprise (7)	Analyst_Num (8)
<i>CSR_{t-1}</i>	0.011 (0.78)	0.001 (0.18)	0.000 (0.11)	0.497** (2.55)	0.015 (0.52)	0.021* (1.68)	-0.005** (-1.97)	0.591** (2.57)
<i>MB_{t-1}</i>	0.002 (1.19)	0.003*** (3.37)	0.001*** (2.84)	0.117*** (5.72)	0.002 (0.60)	0.003* (1.81)	0.002*** (4.21)	0.103*** (4.39)
<i>Assets_{t-1}</i>	0.051** (2.50)	0.049*** (4.35)	-0.012*** (-5.80)	3.454*** (10.91)	0.082** (2.26)	0.042*** (2.90)	-0.020*** (-5.70)	2.403*** (8.62)
<i>Leverage_{t-1}</i>	-0.085* (-1.78)	-0.065** (-2.53)	0.011** (2.52)	-3.352*** (-6.47)	0.034 (0.38)	-0.035 (-0.93)	-0.003 (-0.32)	-0.624 (-1.17)
<i>ROA_{t-1}</i>	0.563*** (4.27)	0.394*** (7.52)	-0.081*** (-4.65)	5.706*** (5.86)	0.190 (1.14)	0.164*** (2.90)	-0.205*** (-9.31)	2.495*** (3.69)
<i>R&D_{t-1}</i>	0.240 (1.25)	0.156 (1.40)	-0.009 (-0.43)	2.399 (0.87)	0.637* (1.82)	0.320*** (2.66)	-0.158*** (-3.72)	4.454** (2.52)
<i>Age_{t-1}</i>	-0.078*** (-2.59)	-0.034** (-1.97)	0.003 (1.29)	-0.518 (-1.17)	-0.155*** (-3.56)	-0.058*** (-2.77)	0.002 (0.45)	-0.439 (-1.27)
<i>IO_{t-1}</i>	0.169*** (2.88)	0.063** (2.24)	-0.013** (-2.11)	2.746*** (5.44)	0.234** (2.07)	0.103*** (2.70)	-0.001 (-0.12)	2.520*** (4.66)
N	10463	10463	10455	10620	9835	9835	9826	10069
Adjusted R ²	0.257	0.148	0.221	0.836	0.103	0.042	0.059	0.824
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table 7: Financial Reporting Quality, CSR, and Awareness

This table reports the panel OLS regressions of financial reporting quality measures on CSR and firm-level control characteristics for the period of 1991-2018 for two subsamples based on high and low awareness and governance. We use customer awareness and long-term institutional ownership to proxy for awareness and governance. Financial reporting quality measures are Accuracy, Accuracy_Rank, Earnings_Surprise, and Analyst_Num. Firm-level control characteristics include MB, Assets, Leverage, ROA, R&D, Age, and IO. Variable definitions are discussed in Appendix Table 1. We control for the year and firm fixed effects. t-statistics, based on standard errors clustered at the firm level, are reported in parentheses. Statistical significance is denoted by *, **, and *** at the 10%, 5%, and 1% levels, respectively.

Variable	High Customer Awareness				Low Customer Awareness			
	Accuracy (1)	Accuracy_Rank (2)	Earnings_Surprise (3)	Analyst_Num (4)	Accuracy (5)	Accuracy_Rank (6)	Earnings_Surprise (7)	Analyst_Num (8)
CSR_{t-1}	0.036* (1.66)	0.020* (1.83)	-0.007*** (-3.11)	0.359* (1.70)	0.027 (1.29)	0.011 (1.20)	0.002 (0.96)	0.397** (2.06)
MB_{t-1}	-0.001 (-0.22)	0.002* (1.74)	0.001*** (2.94)	0.095*** (4.33)	0.007** (2.12)	0.005*** (3.62)	0.002*** (5.05)	0.131*** (5.58)
$Assets_{t-1}$	0.020 (0.52)	0.041*** (2.85)	-0.017*** (-5.54)	3.265*** (7.73)	0.080*** (2.83)	0.042*** (3.67)	-0.015*** (-5.88)	2.454*** (9.32)
$Leverage_{t-1}$	0.058 (0.65)	-0.037 (-1.06)	0.011* (1.70)	-2.093*** (-3.18)	-0.097 (-1.49)	-0.070** (-2.55)	-0.002 (-0.36)	-1.683*** (-3.63)
ROA_{t-1}	0.609*** (4.52)	0.316*** (6.02)	-0.144*** (-6.97)	3.923*** (3.85)	0.129 (0.90)	0.179*** (3.91)	-0.155*** (-8.87)	3.462*** (5.55)
$R\&D_{t-1}$	0.481 (1.55)	0.348** (2.52)	-0.055* (-1.80)	-0.422 (-0.19)	0.382 (1.26)	0.222** (2.18)	-0.075** (-2.24)	4.075** (2.14)
Age_{t-1}	-0.078** (-2.14)	-0.022 (-1.15)	0.003 (0.86)	-0.605 (-1.29)	-0.107*** (-2.99)	-0.041** (-2.37)	-0.001 (-0.24)	-0.519 (-1.49)
IO_{t-1}	0.089 (0.91)	0.040 (1.10)	-0.009 (-0.83)	2.118*** (3.60)	0.234*** (3.18)	0.108*** (3.78)	-0.002 (-0.27)	2.595*** (5.81)
N	8515	8515	8507	8661	12270	12270	12261	12526
Adjusted R ²	0.041	0.091	0.069	0.844	0.164	0.072	0.068	0.838
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table 7 - Continued: Financial Reporting Quality, CSR, and Awareness

Variable	High LJO				Low LJO			
	Accuracy (1)	Accuracy_Rank (2)	Earnings_Surprise (3)	Analyst_Num (4)	Accuracy (5)	Accuracy_Rank (6)	Earnings_Surprise (7)	Analyst_Num (8)
CSR_{t-1}	0.034* (1.75)	0.012 (1.40)	-0.003* (-1.79)	0.597*** (3.04)	0.033 (1.29)	0.014 (1.16)	-0.001 (-0.21)	0.328 (1.17)
MB_{t-1}	0.003 (1.06)	0.004*** (2.86)	0.001*** (2.68)	0.103*** (4.42)	0.005 (1.58)	0.004*** (3.41)	0.002*** (4.75)	0.120*** (5.54)
$Assets_{t-1}$	0.047 (1.45)	0.026* (1.92)	-0.015*** (-6.10)	2.606*** (8.13)	0.067** (2.03)	0.050*** (3.91)	-0.019*** (-5.88)	3.196*** (9.24)
$Leverage_{t-1}$	0.025 (0.33)	-0.050 (-1.58)	0.007 (1.25)	-1.778*** (-3.12)	-0.092 (-1.15)	-0.085** (-2.58)	-0.002 (-0.24)	-2.440*** (-4.81)
ROA_{t-1}	0.634*** (3.85)	0.392*** (6.84)	-0.134*** (-5.81)	4.674*** (5.76)	0.162 (1.12)	0.171*** (3.61)	-0.166*** (-9.16)	2.704*** (3.85)
$R\&D_{t-1}$	0.117 (0.36)	0.024 (0.14)	-0.043 (-1.64)	3.877 (1.04)	0.424 (1.47)	0.338*** (3.27)	-0.085** (-2.47)	2.272 (1.39)
Age_{t-1}	-0.060 (-1.25)	-0.014 (-0.52)	0.003 (0.85)	-0.052 (-0.09)	-0.095*** (-2.69)	-0.036** (-1.98)	-0.001 (-0.16)	-0.699** (-1.98)
IO_{t-1}	0.275** (2.23)	0.045 (0.92)	-0.009 (-0.65)	2.864*** (3.64)	0.188** (2.21)	0.101*** (3.24)	-0.006 (-0.71)	2.717*** (5.55)
N	11111	11111	11107	11265	9675	9675	9662	9923
Adjusted R^2	0.160	0.094	0.128	0.840	0.093	0.055	0.048	0.839
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table 8: Financial Reporting Quality, CSR, and Financial Constraints

This table reports the panel OLS regressions of financial reporting quality measures on CSR and firm-level control characteristics for the period of 1991-2018 for two subsamples based on high and low financial constraints. We use the WW index and MZ index to proxy for financial constraints. Financial reporting quality measures are Accuracy, Accuracy_Rank, Earnings_Surprise, and Analyst_Num. Firm-level control characteristics include MB, Assets, Leverage, ROA, R&D, Age, and IO. Variable definitions are discussed in Appendix Table 1. We control for the year and firm fixed effects. t-statistics, based on standard errors clustered at the firm level, are reported in parentheses. Statistical significance is denoted by *, **, and *** at the 10%, 5%, and 1% levels, respectively.

Variable	Panel A: WW Index							
	WW Constrained				WW Unconstrained			
	Accuracy (1)	Accuracy (2)	Earnings_Surprise (3)	Analyst_Num (4)	Accuracy (5)	Accuracy_Rank (6)	Earnings_Surprise (7)	Analyst_Num (8)
CSR_{t-1}	0.030 (0.83)	0.009 (0.56)	0.004 (1.14)	0.331 (1.25)	0.036** (2.06)	0.017** (2.10)	-0.006*** (-3.79)	0.424** (2.47)
MB_{t-1}	0.007** (2.46)	0.005*** (4.31)	0.001*** (4.40)	0.126*** (7.17)	0.001 (0.30)	0.002** (1.97)	0.001*** (3.89)	0.088*** (3.43)
$Assets_{t-1}$	0.132*** (3.69)	0.063*** (5.02)	-0.021*** (-6.48)	3.470*** (12.56)	0.058* (1.86)	0.033*** (2.60)	-0.014*** (-5.31)	2.152*** (5.18)
$Leverage_{t-1}$	-0.131* (-1.81)	-0.088*** (-2.94)	0.009 (1.27)	-2.765*** (-6.94)	0.048 (0.62)	-0.025 (-0.75)	0.001 (0.19)	-0.779 (-1.14)
ROA_{t-1}	0.315*** (2.91)	0.227*** (5.90)	-0.134*** (-8.40)	2.399*** (4.36)	0.973*** (3.86)	0.505*** (6.07)	-0.155*** (-5.33)	8.893*** (5.73)
$R\&D_{t-1}$	0.603** (2.29)	0.307*** (3.35)	-0.078*** (-2.91)	3.908** (2.52)	0.164 (0.44)	0.293 (1.56)	-0.049 (-1.11)	-4.214 (-0.66)
Age_{t-1}	-0.119*** (-3.10)	-0.041** (-2.21)	-0.001 (-0.30)	-0.729** (-2.27)	-0.112** (-2.54)	-0.049** (-2.35)	0.005 (1.39)	-0.078 (-0.16)
IO_{t-1}	0.188** (2.37)	0.107*** (3.24)	-0.011 (-1.31)	2.672*** (5.71)	0.233** (2.32)	0.069** (2.12)	0.009 (0.85)	1.468*** (2.67)
N	10092	10092	10091	10184	10221	10221	10221	10283
Adjusted R^2	0.095	0.073	0.058	0.814	0.164	0.091	0.089	0.845
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table 8 - Continued: Financial Reporting Quality, CSR, and Financial Constraints

Variable	Panel B: MZ Index							
	MZ Constrained				MZ Unconstrained			
	Accuracy (1)	Accuracy_Rank (2)	Earnings_Surprise (3)	Analyst_Num (4)	Accuracy (5)	Accuracy_Rank (6)	Earnings_Surprise (7)	Analyst_Num (8)
<i>CSR_{t-1}</i>	0.003 (0.03)	0.003 (0.07)	0.017 (1.57)	0.152 (0.31)	0.032** (2.22)	0.013* (1.91)	-0.003** (-2.29)	0.478*** (2.96)
<i>MB_{t-1}</i>	0.005 (0.52)	0.007** (2.19)	0.002** (2.16)	0.155*** (3.88)	0.002 (1.18)	0.003*** (3.04)	0.001*** (4.85)	0.104*** (5.94)
<i>Assets_{t-1}</i>	0.204*** (2.78)	0.072** (2.47)	-0.022** (-2.24)	3.070*** (6.20)	0.041* (1.85)	0.035*** (3.83)	-0.014*** (-7.89)	2.864*** (11.21)
<i>Leverage_{t-1}</i>	-0.246 (-1.61)	-0.131** (-2.13)	-0.012 (-0.60)	-2.223*** (-2.96)	0.032 (0.54)	-0.035 (-1.45)	0.003 (0.58)	-1.690*** (-3.86)
<i>ROA_{t-1}</i>	-0.166 (-0.74)	0.036 (0.47)	-0.188*** (-6.36)	1.970** (2.19)	0.639*** (5.97)	0.379*** (9.52)	-0.140*** (-8.28)	5.081*** (6.87)
<i>R&D_{t-1}</i>	0.390 (0.80)	0.177 (1.11)	-0.113** (-2.24)	3.933** (2.20)	0.264 (1.22)	0.247** (2.34)	-0.067** (-2.30)	0.158 (0.06)
<i>Age_{t-1}</i>	-0.181*** (-2.11)	-0.081* (-1.89)	-0.004 (-0.40)	-1.347** (-2.21)	-0.061** (-2.27)	-0.023 (-1.61)	-0.000 (-0.00)	-0.223 (-0.66)
<i>IO_{t-1}</i>	0.343 (1.51)	0.169** (2.10)	-0.007 (-0.28)	3.686*** (4.07)	0.130** (2.01)	0.060** (2.51)	-0.004 (-0.64)	2.311*** (5.73)
N	2845	2845	2841	2896	17941	17941	17928	18292
Adjusted R ²	0.091	0.049	0.061	0.802	0.121	0.077	0.064	0.833
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table 9: Financial Reporting Quality, CSR, and Economic Implications

This table reports the panel OLS regressions of economic implication measures on financial reporting quality measures and firm-level control characteristics for the period of 1991-2018 for two subsamples based on high and low CSR. Economic implication measures are firm risk and liquidity. Financial reporting quality measures are Accuracy, Accuracy_Rank, Earnings_Surprise, and Analyst_Num. Firm-level control characteristics include MB, Assets, Leverage, ROA, R&D, Age, and IO. Variable definitions are discussed in Appendix Table 1. We control for the year and firm fixed effects. t-statistics, based on standard errors clustered at the firm level, are reported in parentheses. Statistical significance is denoted by *, **, and *** at the 10%, 5%, and 1% levels, respectively.

Variable	High CSR				Low CSR			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<i>Accuracy_{t-1}</i>	-0.016*** (-3.08)				-0.012*** (-2.93)			
<i>Accuracy_Rank_{t-1}</i>		-0.032*** (-4.09)				-0.027*** (-3.45)		
<i>Earnings_Surprise_{t-1}</i>			-0.123*** (-2.86)				-0.011 (-0.30)	
<i>Analyst_Num_{t-1}</i>				-0.001* (-1.88)				-0.000 (-0.30)
<i>MB_{t-1}</i>	0.001* (1.65)	0.001* (1.70)	0.001* (1.67)	0.001* (1.66)	-0.000 (-0.08)	-0.000 (-0.03)	-0.000 (-0.04)	0.000 (0.07)
<i>Assets_{t-1}</i>	-0.016* (-1.80)	-0.016* (-1.82)	-0.019** (-2.18)	-0.015* (-1.74)	-0.013 (-1.45)	-0.013 (-1.38)	-0.014 (-1.52)	-0.017* (-1.92)
<i>Leverage_{t-1}</i>	0.022 (1.23)	0.020 (1.11)	0.022 (1.23)	0.018 (1.02)	0.007 (0.34)	0.006 (0.30)	0.008 (0.38)	0.008 (0.40)
<i>ROA_{t-1}</i>	-0.184*** (-5.00)	-0.183*** (-5.02)	-0.169*** (-4.40)	-0.191*** (-5.64)	-0.249*** (-6.47)	-0.252*** (-6.48)	-0.260*** (-6.65)	-0.246*** (-6.46)
<i>R&D_{t-1}</i>	0.038 (0.45)	0.043 (0.50)	0.043 (0.51)	0.024 (0.31)	-0.096 (-0.71)	-0.105 (-0.78)	-0.092 (-0.68)	-0.070 (-0.60)
<i>Age_{t-1}</i>	-0.038** (-2.41)	-0.037** (-2.39)	-0.034** (-2.19)	-0.026** (-2.22)	-0.018 (-1.11)	-0.018 (-1.11)	-0.017 (-0.99)	-0.008 (-0.63)
<i>IO_{t-1}</i>	-0.033* (-1.93)	-0.035** (-2.05)	-0.037** (-2.12)	-0.034** (-2.05)	-0.052* (-1.91)	-0.051* (-1.87)	-0.051* (-1.85)	-0.055** (-2.12)
N	7903	7903	7897	8138	5705	5705	5697	5902
Adjusted R ²	0.728	0.728	0.727	0.730	0.768	0.768	0.766	0.767
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table 9 - Continued: Financial Reporting Quality, CSR, and Economic Implications

Variable	Panel B: Liquidity							
	High CSR				Low CSR			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<i>Accuracy_{t-1}</i>	-0.004* (-1.70)				-0.003 (-1.13)			
<i>Accuracy_Rank_{t-1}</i>		-0.006* (-1.74)				-0.003 (-0.66)		
<i>Earnings_Surprise_{t-1}</i>			-0.072*** (-2.80)				-0.039* (-1.81)	
<i>Analyst_Num_{t-1}</i>				0.000* (1.95)				0.000 (1.60)
<i>MB_{t-1}</i>	-0.001*** (-3.41)	-0.001*** (-3.38)	-0.001*** (-3.39)	-0.001*** (-3.78)	-0.001*** (-3.59)	-0.001*** (-3.54)	-0.001*** (-3.24)	-0.001*** (-3.66)
<i>Assets_{t-1}</i>	-0.016*** (-6.37)	-0.016*** (-6.40)	-0.017*** (-6.74)	-0.018*** (-6.75)	-0.010*** (-2.93)	-0.010*** (-2.88)	-0.011*** (-2.98)	-0.012*** (-3.57)
<i>Leverage_{t-1}</i>	0.010* (1.90)	0.010* (1.80)	0.011** (1.99)	0.012** (2.08)	0.004 (0.48)	0.005 (0.50)	0.005 (0.55)	0.010 (1.13)
<i>ROA_{t-1}</i>	-0.083*** (-4.67)	-0.084*** (-4.73)	-0.072*** (-4.04)	-0.088*** (-5.31)	-0.132*** (-5.70)	-0.134*** (-5.66)	-0.127*** (-5.43)	-0.131*** (-5.73)
<i>R&D_{t-1}</i>	-0.071** (-2.39)	-0.070** (-2.35)	-0.067** (-2.22)	-0.066** (-2.38)	-0.031 (-0.96)	-0.033 (-1.00)	-0.024 (-0.72)	-0.042 (-1.32)
<i>Age_{t-1}</i>	0.008 (1.29)	0.008 (1.32)	0.009 (1.47)	0.007 (1.43)	-0.000 (-0.07)	-0.000 (-0.02)	-0.001 (-0.08)	0.007 (1.43)
<i>IO_{t-1}</i>	-0.031*** (-3.91)	-0.032*** (-3.92)	-0.032*** (-3.94)	-0.032*** (-4.10)	-0.013 (-1.34)	-0.013 (-1.32)	-0.012 (-1.26)	-0.011 (-1.20)
N	7903	7903	7897	8138	5705	5705	5697	5902
Adjusted R ²	0.669	0.668	0.671	0.660	0.660	0.659	0.660	0.652
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Appendix Table 1: Variable Definition

Variable	Definitions	Data Source
<i>Accuracy</i>	The residual value from a regression of Raw Accuracy on Earnings Surprise and Forecast Bias, where Raw Accuracy is the absolute value of the forecast error multiplied by -1, scaled by the stock price at the end of the prior fiscal year and where the forecast error is the analysts' mean annual earnings forecast less the actual earnings as reported in the I/B/E/S Summary File	I/B/E/S
<i>Accuracy_Rank</i>	The percentile-ranked residual value from a regression of Raw Accuracy on Earnings Surprise and Forecast Bias, where Raw Accuracy is the absolute value of the forecast error multiplied by -1, scaled by the stock price at the end of the prior fiscal year and where the forecast error is the analysts' mean annual earnings forecast less the actual earnings as reported in the I/B/E/S Summary File	I/B/E/S
<i>Earnings_Surprise</i>	Unexpected earnings scaled by stock price at the end of the prior fiscal year, where unexpected earnings is defined as earnings per share less earnings per share from the prior fiscal year	I/B/E/S
<i>Analyst_Num</i>	The number of unique analysts making a forecast of a firm's annual earnings	I/B/E/S
<i>CSR</i>	The adjusted CSR following Deng, Kang, and Low (2013). Specifically, for each dimension, we divide the strength and concern scores by the total number of strength and concern indicators every year. We then take the difference between the adjusted total strength and concern scores	MSCI KLD
<i>Firm_Risk</i>	The annualized standard deviation of daily stock returns within a year	CRSP
<i>Liquidity</i>	The average of the daily Amihud (2002) liquidity measure within a year	CRSP
<i>MB</i>	The market value of equity plus book value of liability and divided by the book value of total assets at the end of the fiscal year	COMPUSTAT, CRSP
<i>Assets</i>	The log of the total assets at the end of the fiscal year	COMPUSTAT
<i>R&D</i>	The research and development expenses, scaled by lagged assets	COMPUSTAT
<i>Leverage</i>	The sum of longterm debt and shortterm debt, scaled by lagged assets	COMPUSTAT
<i>ROA</i>	Net income, scaled by lagged assets	COMPUSTAT
<i>Age</i>	The log of the number of years since a firm's inception	COMPUSTAT
<i>IO</i>	The number of shares held by institutional investors to the total number of shares outstanding	Thomson Reuters, CRSP