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Corporate Social Responsibility and Information Flow

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# Abstract

We find that a firm's greater commitment to corporate social responsibility (CSR) increases firm‐specific information incorporated into stock prices. We further show that information searches increase around major disclosure events for firms that are more socially responsible, as observed through requests for newly released annual (10‐K) filings on EDGAR and company ticker searches on Google around earnings announcements. Using alternative empirical specifications, we establish a robust and positive relation between CSR and stock price informativeness. Our results are consistent with the ethical and reputational view that a commitment to CSR encourages information acquisition and facilitates information flow into stock prices.

# Keywords

Corporate social performance, Corporate social responsibility, Idiosyncratic volatility, Information acquisition, Probability of informed trading, Stock price informativeness

# [Introduction](https://0-web-s-ebscohost-com.libus.csd.mu.edu/ehost/detail/detail?vid=3&sid=3ee04797-65d6-4e15-aeab-6119e7fb4823%40redis&bdata=JnNpdGU9ZWhvc3QtbGl2ZQ%3d%3d#toc)

Over the past three decades, corporate social responsibility (CSR) has drawn considerable interest from practitioners, regulators and academics as more managers incorporate CSR activities into their business operations. Demands from multiple stakeholders, including customers, investors, employees, suppliers, community organisations and governments have influenced managers to make greater commitments to CSR (McWilliams and Siegel, 2001).1 As the prevalence of CSR grows, there are calls for research into the measurable economic consequences from CSR activities (HBS, 2011). In this paper, we investigate whether and how CSR facilitates the incorporation of firm‐specific information into stock prices, or stock price informativeness. Understanding the processes through which information is impounded into stock price is fundamental to financial economics. As the seminal work by Fama (1970) states, stock prices can provide accurate signals about productivity and guide efficient capital allocation decisions in an efficient market.

Ex ante, it is unclear whether a greater commitment to CSR can facilitate the incorporation of more or less information into stock prices. On one hand, CSR activities may encourage greater information acquisition and trading. A survey of US chief financial officers (CFO) shows that firms engage in CSR activities primarily to build their reputations and to act as good corporate citizens.2 These ethical and reputational concerns may restrain CSR firms from unethical behaviour such as the manipulation of accounting numbers and the exploitation of outside investors. Outside investors would have greater incentives to acquire and trade on information due to lower information acquisition costs and greater investor protection, leading to more informative stock prices. As a result, the ethical and reputational view suggests a positive association between CSR and price informativeness.

On the other hand, CSR activities may discourage information acquisition and trading. A line of literature argues that CSR is a manifestation of agency problems (Friedman, 1970). Self‐serving managers may engage in CSR activities to advance their personal interests, e.g., to achieve higher social status, at the expense of shareholders (Barnard, 1997; Cespa and Cestone, 2007). In addition, managers may be more likely to commit agency behaviours, such as asset diversion for personal gain, when they serve many masters (all stakeholders) and may not be held accountable (Jensen, 2001). Self‐interested managers may engage in complicated business transactions and accounting manipulation to mask a firm's true cash flows in order to disguise opportunistic behaviour (Desai and Dharmapala, 2009).3 These actions can result in greater information acquisition costs to investors. High information acquisition costs (Grossman and Stiglitz, 1980) and concerns regarding insider exploitation (Morck *et al.,* 2000) can discourage outside investors from doing research and trading on companies with greater CSR involvement, which results in less informative stock prices. Consequently, the agency view predicts that CSR is negatively associated with price informativeness.

Based on these arguments, we empirically examine the association between CSR activities and stock price informativeness. We use idiosyncratic volatility, the stock return variation unexplained by market movement, and the probability of informed trading (PIN) as our main measures of price informativeness. These two proxies are commonly used as measures of firm‐specific information captured in stock prices and have been validated in prior literature (Easley *et al.,* 1997a, 1997b; Morck *et al.,* 2000). Following the literature (Hong *et al.,* 2012; Deng *et al.,* 2013), we use the Kinder, Lydenberg, Domini, and Co. (KLD) database to measure a firm's commitment to CSR. We show that the stock prices of more socially responsible firms have higher levels of idiosyncratic volatility and PIN, consistent with the ethical and reputational view that greater CSR commitment facilitates more firm‐specific information incorporated into stock prices.

We further provide direct evidence on the role of CSR in investors' search activities for firm‐specific information. While it would be ideal to study the association between CSR and investors' search for private information, it is inherently difficult to do so because private information searches are usually unobservable. To overcome this empirical challenge, we study the association between CSR and investors' searches on the SEC's Electronic Data Gathering, Analysis, and Retrieval (EDGAR) website for new 10‐K financial reports and on Google for firms around their earnings announcements.4 We believe that this empirical design is suitable for our study for the following reasons. First, both the 10‐K reports and earnings announcements are important public disclosures that can stimulate private information search in order to profit from the public disclosure events (McNichols and Trueman, 1994; Kim and Verrecchia, 1997). Furthermore, recent literature shows that new information contained in public disclosures is disseminated gradually due to investors' limited attention and the significant cost in information processing (Hirshleifer and Teoh, 2003; Drake *et al.,* 2012).5 We find that investors' searches for information around these major disclosure events is more pronounced for firms that are more socially responsible.

We further examine how CSR is associated with the ability of current stock prices to reflect future earnings. Stock prices are more informative when they incorporate more value‐relevant information including future earnings news (Kothari and Sloan, 1992; Choi *et al.,* 2011). If CSR incentivises (or discourages) information acquisition and trading, then current stock prices should be more (or less) predictive of future firm earnings. We use the future earnings response coefficient (or FERC) that relates current stock returns to lead firm earnings as an alternative measure for price informativeness. We find that the stock prices of socially responsible firms contain more information about firm future earnings.

We conduct a series of robustness checks to verify our main findings. We conduct a lead‐lag analysis and find that the lagged (rather than lead or contemporaneous) levels of CSR is positively associated with price informativeness. The results from the lead‐lag analysis alleviate concerns about reverse causality and simultaneity. We further find results that are consistent with our main finding when using a propensity score matched sample. Furthermore, we find that CSR strengths, rather than concerns, are the primary drivers of our results. Finally, we investigate and show that our results are unlikely driven by several alternative explanations.

This paper contributes to the growing body of literature on CSR. While an extensive body of work examines the relation between CSR and equilibrium firm value (Margolis *et al.,* 2007; Flammer, 2015; Lys *et al.,* 2015; Gregory *et al.,* 2016; Jones and Wright, 2016) and cost of capital (El Ghoul *et al.,* 2011; Goss and Roberts, 2011), few papers take a microstructure approach in examining how CSR relates to the process of price discovery. Given the vital role of stock prices in guiding efficient capital allocation decisions, our paper fills an important void in the literature. We provide a systematic study that examines CSR and stock price informativeness and find a robust positive relation.

This paper complements but differs from prior studies that investigate the relation between CSR and a firm's information environment or CSR and managerial opportunism (Gelb and Strawser, 2001; Petrovits, 2006; Chih *et al.,* 2008; Kim *et al.,* 2012; Gao *et al.,* 2014). While these studies investigate the role of CSR on corporate policy and managerial behaviour, our paper extends the literature by exploring how CSR relates to investor information acquisition. To our knowledge, our work is the first to directly address the relation between CSR and investor information search activities. In addition, the role of CSR on a firm's information environment and managerial opportunism is still subject to debate. Our finding that greater CSR commitment, and CSR strength in particular, is associated with greater investor information acquisition and stock price informativeness suggests that CSR contributes to a better information and trading environment.

Our study also adds to the ongoing debate on the nature of CSR activities. While some academics and practitioners criticise CSR activities as a type of agency problem, our empirical results are consistent with the ethical and reputational motives for CSR. Our findings may also have broader implications for corporate policies on CSR. A growing line of research argues that stock prices can impact corporate decisions and firm value through managers' learning from information embedded in stock prices (Chen *et al.,* 2007; Bond *et al.,* 2012; Zuo, 2016) or being disciplined by stock performance to make value‐maximising decisions (Jensen, 1986; Ferreira *et al.,* 2011). If CSR activities promote greater stock price informativeness, then managers of more socially responsible firms may make better capital allocation decisions that enhance firm value.

Lastly, our paper contributes to the literature on price informativeness. Prior studies have examined a number of determinants of price informativeness including corporate governance (Ferreira and Laux, 2007; Ferreira *et al.,* 2011), board composition (Gul *et al.,* 2011), disclosure activities (Gelb and Zarowin, 2002), analyst coverage (Piotroski and Roulstone, 2004), institutional ownership (Piotroski and Roulstone, 2004) and insider trading (Fernandes and Ferreira, 2009). Nonetheless, research on whether CSR activities affect stock price informativeness remains scarce. Grewal *et al.* (2020) show that material sustainability reports contain value‐relevant firm‐specific information and therefore increase stock price informativeness. Complementing Grewal *et al.* (2020), our study provides supportive evidence that holding CSR disclosure constant, higher CSR ratings further attract more investors to search for firm‐specific information due to socially responsible firms' commitment to a trustworthy information and trading environment. Our study of the impact of CSR on price informativeness is timely and important, as CSR has received increasing attention from business, policymakers and academia.

# [Literature review and hypothesis development](https://0-web-s-ebscohost-com.libus.csd.mu.edu/ehost/detail/detail?vid=3&sid=3ee04797-65d6-4e15-aeab-6119e7fb4823%40redis&bdata=JnNpdGU9ZWhvc3QtbGl2ZQ%3d%3d#toc)

Economic theory suggests that price informativeness is determined by frictions in information acquisition and trading. Traders pay a cost to become informed. These informed traders then trade in the market and, in doing so, incorporate their information into prices. In a frictionless market, a firm's CSR activities should have no impact on the informativeness of the firm's stock price. However, information acquisition costs (Grossman and Stiglitz, 1980; Diamond and Verrecchia, 1981) and poor investor protection (Fishman and Hagerty, 1992) discourage information collection and adversely affect the amount of firm‐specific information incorporated in equilibrium stock prices.6 Theories on costly information (Grossman and Stiglitz, 1980) predict that stock prices cannot perfectly incorporate all available information in equilibrium so that partially informed stock prices can provide investors enough compensation to offset their information acquisition cost. In our study, we maintain the same theoretical assumption. We argue that frictions related to information acquisition and trading can lead CSR activities to have a direct consequence on price informativeness and investor information acquisition, which we elaborate below.

## [CSR and stock price informativeness](https://0-web-s-ebscohost-com.libus.csd.mu.edu/ehost/detail/detail?vid=3&sid=3ee04797-65d6-4e15-aeab-6119e7fb4823%40redis&bdata=JnNpdGU9ZWhvc3QtbGl2ZQ%3d%3d#toc)

Two schools of thought generate contrasting predictions on the relation between CSR and price informativeness. One line of research argues that CSR signals a commitment to ethical behaviour and enhances a firm's image and reputation for being a good corporate citizen (Carroll, 1979; Fombrun and Shanley, 1990; Jones, 1995). Advocates of CSR recognise that corporate actions affect all of the firm's stakeholders including employees, customers, shareholders, community, government and the society, and argue that companies should consider their economic, legal, ethical and philanthropic responsibilities in decision making (Carroll, 1979). Furthermore, some argue that a firm's CSR involvement helps build valuable trust and reputation among its stakeholders (Fombrun and Shanley, 1990; Economist, 2005).

The ethical and reputational motive for CSR can restrain managers from engaging in activities that are socially unacceptable. Agency problems arise due to the separation of ownership and control. An optimally designed compensation contract can only partially mitigate the agency problem due to unobserved managerial effort and information, managerial wealth constraints and managerial risk aversion (Murphy, 1999).7 However, moral and reputational motives can incentivise management to advance the interest of outside investors because self‐seeking behaviour of management damages the valuable social trust and reputation built up over time and impairs future economic benefits to the firm (Noreen, 1988; Diamond, 1989; Ensminger, 2001). The previous literature documents that CSR activities can foster trust from firms' stakeholders (Lins *et al.,* 2017) and generate economic benefits.8 Therefore, protecting a firm's reputation built from CSR can curtail managerial opportunism.

In particular, greater CSR involvement may discourage managerial information manipulation and exploitation of outside investors. Accounting quality and transparency in corporate dealings are considered important aspects of CSR by investors (Economist, 2005). Several empirical studies show that firms with greater CSR commitment have a better information environment. For instance, Kim *et al.* (2012) show that socially responsible firms do less accrual and real earnings management and are less likely to be the subject of Securities and Exchange Commission (SEC) enforcement action for financial misreporting. Kim *et al.* (2014) document that CSR performance is negatively associated with stock price crash risk, consistent with the view that CSR restrains firms from bad news hoarding. Furthermore, studies find that socially responsible firms provide greater investor protection. Ferrell *et al.* (2016) provide evidence of fewer agency problems, as reflected in a lower level of excess cash flow and better corporate governance among firms with higher CSR ratings. Gao *et al.* (2014) find lower insider trading profits for managers of socially responsible firms, suggesting that outside investors in high CSR firms have a lower probability of trading with corporate insiders who have an information advantage.9

The perceived trustworthy information and trading environment can encourage outside investors to collect and trade on information of more socially responsible firms, leading to more informative stock prices. Grossman and Stiglitz (1980) argue that lower information acquisition costs encourage more investors to acquire and trade on information and result in more informative stock prices. If managers of socially responsible firms are more truthful with company news, investors would incur lower costs to collect value‐relevant information. For example, investors can save on costs from verifying the truthfulness of released information when they utilise the information to forecast future firm performance. As predicted by Grossman and Stiglitz (1980), investors may have greater incentive to acquire and trade on information of socially responsible firms, resulting in more informative stock prices.10 In addition, Fishman and Hagerty (1992) and Morck *et al.* (2000) contend that poor investor protection, such as opportunistic insider trading and diversion of assets, can deter outside investors from acquiring and trading on firm information due to fears of trading against and being exploited by insiders. If socially responsible firms provide greater investor protection, investors may devote more effort and resources into acquiring and trading on the information of these firms, leading to more information being impounded into stock prices.

Another strand of literature advocates that CSR is a manifestation of agency problems (Levitt, 1958; Friedman, 1970). Friedman (1970) argues that the only social responsibility of business is to maximise profits and any deviation from this goal would hurt the foundations of a free society. Extending this view, some argue that managers engage in CSR activities to derive private benefits at the expense of shareholders. For example, managers may spend corporate resources to gain favour with board members through contributions to their preferred causes, to achieve higher social status, or to push their own political/ideological agendas (Barnard, 1997). Furthermore, Jensen (2001) argues that if a manager answers to many masters (i.e. all of the stakeholders in a firm instead of only shareholders), the manager may not be held accountable for the misuse of corporate resources and is more likely to engage in self‐serving activities such as asset diversion. To disguise their rent extraction behaviours, managers may intentionally structure complicated business transactions and manipulate their accounting numbers to obscure the true cash flows of the firm (Desai and Dharmapala, 2009).

Several studies show supportive evidence for the agency motive of CSR. In line with the agency perspective, Barnea and Rubin (2010) show that managers overinvest in CSR when they bear little of the cost. Brown *et al.* (2006) provide evidence suggesting that firms with weak corporate governance or creditor monitoring give more cash to charities and are more likely to establish corporate foundations. Cespa and Cestone (2007) show that incumbent CEOs may strategically engage in CSR activities in order to gain favour from social and environmental activists and reduce their probability of future turnover. Furthermore, findings from several studies suggest greater managerial opportunism through earnings management among more socially responsible firms (Petrovits, 2006; Chih *et al.,* 2008; Prior *et al.,* 2008). For example, Petrovits (2006) shows that firms use their charitable foundations as off‐balance‐sheet reserves to manage earnings. In line with the agency view, Kruger (2015) finds that investors respond negatively to positive CSR news.

If the agency view of CSR prevails, outside investors may be discouraged from acquiring information about firms with greater CSR involvement due to higher information acquisition costs and poorer investor protection. Even if the agency problem triggers some sophisticated investors to search for firm‐specific information and short sell the stock, the substantial effort and sophisticated skills needed to uncover the true value‐relevant information (masked through complicated business transactions and accounting manipulation) and the high transaction costs involved in short selling can deter a great majority of investors from acquiring information.11 According to Grossman and Stiglitz (1980), such higher information acquisition costs lead to less information flow into stock prices. In addition, Morck *et al.* (2000) argue that agency problems from a failure to protect outside investors from insiders can discourage firm‐specific information collection. For instance, insiders can shift income among a set of controlled companies through non‐arm's‐length transactions for products, services or capital at artificial prices. Rational investors, knowing that they cannot predict firms' future cash flow, invest fewer resources in acquiring firm‐specific information. Consequently, the agency view of CSR predicts that more socially responsible firms have less informative stock prices.

To summarise, the ethical and reputational motive and the agency motive of CSR leads to the following hypotheses, respectively:

***H1a****(Ethical and reputational motive): All else equal, CSR is positively related to the informativeness of stock prices.*

***H1b****(Agency motive): All else equal, CSR is negatively related to the informativeness of stock prices.*

## [CSR and information acquisition](https://0-web-s-ebscohost-com.libus.csd.mu.edu/ehost/detail/detail?vid=3&sid=3ee04797-65d6-4e15-aeab-6119e7fb4823%40redis&bdata=JnNpdGU9ZWhvc3QtbGl2ZQ%3d%3d#toc)

We further examine the role of CSR on investor information acquisition decisions. Theories on costly information (Grossman and Stiglitz, 1980) predict that lower information acquisition cost attracts more investors to acquire information and become informed, leading to more informative stock prices.12 Therefore, if CSR affects stock price informativeness due to its impact on information acquisition cost, we should see a direct bearing of CSR on investor's search for firm‐specific information. The ethical and reputational motive of CSR suggests that socially responsible firms are more truthful with company news and provide greater investor protection, resulting in a lower cost of information acquisition. Accordingly, this view predicts that socially responsible firms attract more investors to acquire firm‐specific information. On the other hand, the agency motive of CSR argues that CSR is a manifestation of agency problems and may be associated with greater information manipulation and exploitation of outside investors, leading to a higher cost of information acquisition. Therefore, the agency view predicts that CSR deters investors from collecting firm‐specific information.

While it would be ideal to study the association between CSR and investors' search for firm private information, it is inherently difficult to do so because private information searches are usually unobservable. To overcome this empirical challenge, we study the association between CSR and investors' searches for firm‐specific information on the SEC's EDGAR website for new 10‐K financial reports and on Google around firms' earnings announcements.13 We believe that this empirical design is suitable for our study for the following reasons. First, prior research shows that public disclosure events can stimulate private information search in anticipation of and in conjunction with the release of public information (Kim and Verrecchia, 1997; Altschuler *et al.,* 2015). In addition, research shows that information in newly released public disclosures is only gradually incorporated into stock prices due to investors' limited attention and the significant effort needed to process such information in a timely manner (Hirshleifer and Teoh, 2003; Drake *et al.,* 2012). Therefore, we directly test the link between CSR and information acquisition by investigating whether CSR involvement is associated with investor searches for new information around filing dates for 10‐K financial reports posted on the SEC's EDGAR website and Google searches for company information around earnings announcements. Both the filing of 10‐K financial reports and earnings announcements represent significant news events for investors and can dramatically drive investment values. Thus, investors have greater incentives to acquire information around these important events. These arguments lead to the following hypotheses:

***H2a****(Ethical and reputational motive): All else equal, CSR is positively related to investors' information acquisition around major disclosure events.*

***H2b****(Agency motive): All else equal, CSR is negatively related investors' information acquisition around major disclosure events.*

## [CSR and future earnings captured in stock prices](https://0-web-s-ebscohost-com.libus.csd.mu.edu/ehost/detail/detail?vid=3&sid=3ee04797-65d6-4e15-aeab-6119e7fb4823%40redis&bdata=JnNpdGU9ZWhvc3QtbGl2ZQ%3d%3d#toc)

To provide more evidence on the relation between CSR and stock price informativeness, we further examine how CSR is associated with the ability of current stock prices to reflect future earnings. Since current stock prices contain the market expectation of value‐relevant information (Kothari and Sloan, 1992; Choi *et al.,* 2011), the extent to which current stock prices reveal future earnings then indicates the informativeness of stock prices. To the extent that CSR can encourage or discourage information acquisition and trading, we argue that CSR can enhance (ethical and reputational view) or impair (agency view) the incorporation of future earnings information in stock prices. These predictions lead to the following hypotheses:

***H3a****(Ethical and reputational motive): All else equal, CSR enhances the incorporation of future earnings news in contemporaneous stock prices.*

***H3b****(Agency motive): All else equal, CSR impairs the incorporation of future earnings news in contemporaneous stock prices.*

# [Data, measures and descriptive statistics](https://0-web-s-ebscohost-com.libus.csd.mu.edu/ehost/detail/detail?vid=3&sid=3ee04797-65d6-4e15-aeab-6119e7fb4823%40redis&bdata=JnNpdGU9ZWhvc3QtbGl2ZQ%3d%3d#toc)

## [Data sources and sample selection](https://0-web-s-ebscohost-com.libus.csd.mu.edu/ehost/detail/detail?vid=3&sid=3ee04797-65d6-4e15-aeab-6119e7fb4823%40redis&bdata=JnNpdGU9ZWhvc3QtbGl2ZQ%3d%3d#toc)

We obtain the sample for our study from the KLD database on CSR. We combine this sample with the Merged Compustat‐CRSP database, the Investor Responsibility Research Center database, the Thomson‐Reuters 13F institutional holdings and insider trading databases, I/B/E/S analyst forecasts, Google search traffic, and SEC EDGAR filing request data. We exclude financial companies (SIC 6000–6999) and utilities (SIC 4900–4999) because the operation of these firms may be subject to regulatory supervision. As in Jegadeesh and Titman (2001), we further exclude stocks with a share price below $5 as of the end of the fiscal year to ensure that results are not driven by small, illiquid stocks or by the bid‐ask bounce. Panel A of Table 1 shows the sample selection procedure. The final sample of our main price informativeness regressions comes to 11,312 firm‐year observations belonging to 2,414 firms from 1995 to 2010.14 Our resulting sample of firms varies over time as shown in Panel B of Table 1, with a minimum of 224 firms in 1995 and a maximum of 1,330 firms in 2005 and 2006. Such variation is attributed to the fact that the KLD database expanded coverage over the sample time period.15 Panel C of Table 1 presents the sample distribution by industry. As shown in the panel, our sample covers a wide range of industries. Business services and retail make up the largest proportion of firm‐year observations at 12.92 and 8.58 percent, respectively.

1 Table Sample selection and descriptive statistics

|  |  |  |
| --- | --- | --- |
| **Panel A: Sample selection** |  |  |
|  | Firms | Observations |
| KLD database | 5,735 | 29,859 |
| Intersection of observations in KLD, CRSP, and Compustat databases | 4,758 | 26,777 |
| Less: |  |  |
| Firms in the financial sector (SIC 6000–6999) and utilities (SIC 4900–4999) | (1,190) | (6,536) |
| Observations with missing price informativeness ( and PIN) |  | (5,929) |
| Observations with insufficient data for control variables or stock price less than $5 |  | (3,000) |
| Total | 2,414 | 11,312 |

|  |  |  |
| --- | --- | --- |
| **Panel B: Sample distribution by year** |  |  |
| Year | No. of observations | Percent of total observations |
| 1995 | 224 | 1.98 |
| 1996 | 280 | 2.48 |
| 1997 | 290 | 2.56 |
| 1998 | 294 | 2.60 |
| 1999 | 284 | 2.51 |
| 2000 | 272 | 2.40 |
| 2001 | 350 | 3.09 |
| 2002 | 486 | 4.30 |
| 2003 | 654 | 5.78 |
| 2004 | 1,318 | 11.65 |
| 2005 | 1,330 | 11.76 |
| 2006 | 1,330 | 11.76 |
| 2007 | 1,216 | 10.75 |
| 2008 | 753 | 6.66 |
| 2009 | 1,215 | 10.74 |
| 2010 | 1,016 | 8.98 |
| Total | 11,312 | 100 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Panel C: Sample distribution by industry** |  |  |  |  |  |
| Fama‐French 48‐Industry | Observations | Percent | Fama‐French 48‐Industry | Observations | Percent |
| Aircraft | 112 | 0.99 | Consumer Goods | 260 | 2.30 |
| Agriculture | 44 | 0.39 | Measuring and Control Equipment | 312 | 2.76 |
| Automobiles and Trucks | 236 | 2.09 | Machinery | 602 | 5.32 |
| Beer and Liquor | 59 | 0.52 | Restaurants, Hotels, Motels | 237 | 2.10 |
| Construction Materials | 224 | 1.98 | Medical Equipment | 467 | 4.13 |
| Printing and Publishing | 177 | 1.56 | Non‐Metallic and Industrial Metal Mining | 51 | 0.45 |
| Shipping Containers | 59 | 0.52 | Petroleum and Natural Gas | 611 | 5.40 |
| Business Services | 1,461 | 12.92 | Business Supplies | 263 | 2.32 |
| Electronic Equipment | 811 | 7.17 | Personal Services | 193 | 1.71 |
| Apparel | 209 | 1.85 | Retail | 971 | 8.58 |
| Construction | 141 | 1.25 | Rubber and Plastic Products | 74 | 0.65 |
| Coal | 46 | 0.41 | Shipbuilding, Railroad Equipment | 31 | 0.27 |
| Computers | 481 | 4.25 | Tobacco Products | 28 | 0.25 |
| Pharmaceutical Products | 716 | 6.33 | Candy and Soda | 21 | 0.19 |
| Electrical Equipment | 213 | 1.88 | Steel Works Etc. | 187 | 1.65 |
| Fabricated Products | 12 | 0.11 | Communication | 348 | 3.08 |
| Food Products | 266 | 2.35 | Recreation | 89 | 0.79 |
| Entertainment | 172 | 1.52 | Transportation | 387 | 3.42 |
| Precious Metals | 22 | 0.19 | Textiles | 32 | 0.28 |
| Defense | 35 | 0.31 | Wholesale | 440 | 3.89 |
| Healthcare | 212 | 1.87 |  |  |  |
|  |  |  | Total | 11,312 | 100 |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Panel D: Summary Statistics** |  |  | |  | |  |  |
| Variables | Mean | | Median | SD | P25 | | P75 |
|  | 0.949 | | 0.922 | 1.155 | 0.240 | | 1.605 |
| *PIN* | 0.114 | | 0.107 | 0.050 | 0.083 | | 0.137 |
| *CSR* | −0.126 | | −0.161 | 0.501 | −0.375 | | 0.125 |
| *CSR\_STR* | 0.261 | | 0.125 | 0.428 | 0.000 | | 0.333 |
| *CSR\_CON* | 0.387 | | 0.333 | 0.403 | 0.000 | | 0.533 |
| *LOG(EDGAR\_1)* | 2.595 | | 2.773 | 1.524 | 1.609 | | 3.584 |
| *LOG(EDGAR\_3)* | 3.293 | | 3.555 | 1.693 | 2.639 | | 4.317 |
| *LOG(EDGAR\_1WK)* | 3.772 | | 4.094 | 1.804 | 3.296 | | 4.820 |
| *GSEARCH(−5, −1)* | 0.071 | | 0.008 | 0.838 | −0.059 | | 0.089 |
| *GSEARCH(0)* | 0.321 | | 0.035 | 1.588 | −0.029 | | 0.144 |
| *GSEARCH(1,5)* | 0.177 | | 0.014 | 1.443 | −0.053 | | 0.105 |
| *SIZE* | 7.535 | | 7.347 | 1.543 | 6.380 | | 8.493 |
| *MB* | 1.062 | | 0.995 | 0.767 | 0.567 | | 1.472 |
| *ROE* | 0.129 | | 0.137 | 0.317 | 0.053 | | 0.224 |
| *VROE* | 0.298 | | 0.065 | 1.175 | 0.033 | | 0.152 |
| *LEV* | 0.169 | | 0.142 | 0.162 | 0.005 | | 0.272 |
| *AGE* | 2.958 | | 2.944 | 0.717 | 2.398 | | 3.638 |
| *DIV* | 0.500 | | 1.000 | 0.500 | 0.000 | | 1.000 |
| *DIVER* | 0.917 | | 1.000 | 0.276 | 1.000 | | 1.000 |
| *ANALYSTS* | 1.809 | | 1.833 | 0.678 | 1.386 | | 2.277 |
| *BETA* | 1.189 | | 1.130 | 0.509 | 0.834 | | 1.481 |
| *EQ* | −0.045 | | −0.013 | 1.636 | −0.152 | | 0.059 |
| *INSTRADE* | −0.013 | | −0.003 | 0.037 | −0.009 | | −0.001 |
| *CGSCORE* | −0.072 | | 0.000 | 0.176 | −0.167 | | 0.000 |
| *INSTNUM* | 5.100 | | 5.095 | 0.936 | 4.663 | | 5.606 |
| *FREQ* | 1.087 | | 1.099 | 0.982 | 0.000 | | 1.946 |
| *LOGFILESIZE* | 2.084 | | 1.540 | 2.286 | 1.067 | | 2.307 |
| *LOGSUPPLY* | 2.137 | | 2.197 | 0.493 | 1.946 | | 2.485 |
| *SHORT* | 0.063 | | 0.045 | 0.069 | 0.025 | | 0.079 |
| *INSTOWN* | 0.632 | | 0.721 | 0.293 | 0.518 | | 0.848 |
| *|ROA|* | 0.095 | | 0.071 | 0.102 | 0.038 | | 0.118 |
| *TURNOVER* | 0.207 | | 0.163 | 0.175 | 0.098 | | 0.258 |
| *NYSE* | 0.526 | | 1.000 | 0.499 | 0.000 | | 1.000 |
| *NEWS(−5,−1)* | 0.536 | | 0.000 | 1.760 | 0.000 | | 1.000 |
| *NEWS(0)* | 0.630 | | 0.000 | 1.975 | 0.000 | | 1.000 |
| *NEWS(1,5)* | 0.929 | | 0.000 | 2.664 | 0.000 | | 1.000 |
| *RET(m−3, m)* | 0.029 | | 0.036 | 0.203 | −0.069 | | 0.130 |
| *FORECAST* | 0.556 | | 1.000 | 0.497 | 0.000 | | 1.000 |
| *LOSS* | 0.162 | | 0.000 | 0.369 | 0.000 | | 0.000 |
| *|RET|* | 0.014 | | 0.010 | 0.017 | 0.004 | | 0.018 |
| *BIDASK* | −7.406 | | −7.450 | 0.360 | −7.665 | | −7.190 |
| *Log(ANM)* | 2.734 | | 2.708 | 0.260 | 2.708 | | 2.708 |
| *QTR4* | 0.319 | | 0.000 | 0.466 | 0.000 | | 1.000 |
| *RETt* | 0.185 | | 0.121 | 0.503 | −0.133 | | 0.404 |
| *EARN* | 0.030 | | 0.045 | 0.093 | 0.019 | | 0.068 |
| *EARNt+1* | 0.035 | | 0.046 | 0.095 | 0.017 | | 0.074 |
| *RETt+1* | 0.118 | | 0.074 | 0.466 | −0.174 | | 0.341 |
| *ATGROWTH* | 0.126 | | 0.073 | 0.261 | −0.005 | | 0.181 |
| *STDEARN* | 0.056 | | 0.022 | 0.109 | 0.011 | | 0.050 |
| *EARN\_P* | 0.275 | | 0.269 | 0.317 | 0.049 | | 0.509 |

This table reports the sample selection procedure and descriptive statistics. The sample period is from 1995 to 2010. Panel A presents details of the sample selection. Panel B shows the sample mean, median, standard deviation (SD), 25th percentile (P25) and 75th percentile (P75) of the key variables. Variable definitions are provided in the Appendix. Financial and utilities industries (SIC 6000–6999 and 4900–4999) are excluded. All variables are winsorised at the 1st and 99th percentiles.

## [Measures](https://0-web-s-ebscohost-com.libus.csd.mu.edu/ehost/detail/detail?vid=3&sid=3ee04797-65d6-4e15-aeab-6119e7fb4823%40redis&bdata=JnNpdGU9ZWhvc3QtbGl2ZQ%3d%3d#toc)

### [Stock price informativeness measures](https://0-web-s-ebscohost-com.libus.csd.mu.edu/ehost/detail/detail?vid=3&sid=3ee04797-65d6-4e15-aeab-6119e7fb4823%40redis&bdata=JnNpdGU9ZWhvc3QtbGl2ZQ%3d%3d#toc)

We use idiosyncratic volatility and the probability of informed trading (*PIN*) as our main proxies for price informativeness. French and Roll (1986) and Roll (1988) state that idiosyncratic volatility, defined as stock return variation unexplained by market movement, measures the amount of firm‐specific information impounded into stock prices. This measure is further supported and widely used as a measure of information flow into stock prices (Morck *et al.,* 2000; Durnev *et al.,* 2003; Chen *et al.,* 2007; Ferreira and Laux, 2007; Ferreira *et al.,* 2011; Gul *et al.,* 2011).16 As in Chen *et al.* (2007), we estimate by regressing stock returns on an expanded market model including the Fama‐French 48 industry returns. Firm‐specific information is estimated as the variation of stock returns excluding market‐wide and industry‐wide variation. For each firm  in year , the firm‐specific return variation is estimated by computing  from the regression with daily returns in year :

(1)

where  is the return of stock  in industry  on day  is the value‐weighted market return on day  is the return of industry  on day . Because  is skewed (Durnev *et al.,* 2004), we take the logistic transformation of  to ensure a normal distribution. Formally, idiosyncratic volatility is defined as:

(2)

Higher values of  indicate that stock prices are more informative.

We also utilise *PIN* as an alternative measure to capture price informativeness. Proposed and developed by Easley *et al.* (1997a, 1997b, 2002), *PIN* is a theoretically justified measure of private information in stock prices. The measure is calculated based on microstructure trading models and gauges the probability of informed trading. Given that informed traders place informed bets based on their private information, *PIN* is conceptually compelling and is widely used to measure private information in stock prices (Chen *et al.,* 2007; Ferreira and Laux, 2007; Ferreira *et al.,* 2011). *PIN* is defined as:

(3)

where  equals the probability of an event on day  when informed investors acquire private information regarding firm ,  is the arrival rate of buy (sell) orders made by informed traders on day  for firm , and  is the daily arrival rate of buy (sell) orders from uninformed traders. Intuitively, *PIN* is the proportion of informed trades out of all (informed and uninformed) trades. We utilise annual *PIN* estimates as computed in Brown and Hillegeist (2007).17 Higher values of *PIN* indicate greater informed trading and suggest more private information contained in stock prices.18

### [Measure of CSR](https://0-web-s-ebscohost-com.libus.csd.mu.edu/ehost/detail/detail?vid=3&sid=3ee04797-65d6-4e15-aeab-6119e7fb4823%40redis&bdata=JnNpdGU9ZWhvc3QtbGl2ZQ%3d%3d#toc)

We use the KLD database to construct our measure of CSR. The KLD database is considered the most comprehensive and influential database on CSR performance (Chatterji *et al.,* 2009) and has been used extensively in the literature (Hong *et al.,* 2012; Deng *et al.,* 2013). KLD evaluates firms on seven major dimensions of CSR using various sources including surveys, financial reports, mainstream media and government documents. The seven major dimensions are community, corporate governance, diversity, employee relations, environment, human rights, and product quality and safety. Within each dimension, KLD assigns a binary indicator (0 or 1) to a set of strengths and concerns.17

As in Servaes and Tamayo (2013), we exclude the corporate governance dimension of the KLD score to assess firms' CSR performance. Servaes and Tamayo (2013) contend that corporate governance is related to the mechanisms that align the interests of managers to shareholders and is vastly different from the concept of CSR, which concerns corporate social objectives and relationships with stakeholders. Furthermore, Harjoto and Jo (2011) find that better CSR performance is tied to stronger corporate governance. To the extent that Ferreira and Laux (2007) show that firms with better corporate governance have more informative stock prices, excluding the corporate governance dimension can alleviate the confounding effect of corporate governance on price informativeness.

Following Deng *et al.* (2013), we scale each individual firm's strength and concern scores by the total number of strengths and concerns within each dimension in each year and take the difference between the total strength and concern scores.18 Deng *et al.* (2013) point out that because the number of subcategories of many CSR dimensions can change each year, a scaling scheme can strengthen the comparability of CSR scores over time.

### [Information search measures](https://0-web-s-ebscohost-com.libus.csd.mu.edu/ehost/detail/detail?vid=3&sid=3ee04797-65d6-4e15-aeab-6119e7fb4823%40redis&bdata=JnNpdGU9ZWhvc3QtbGl2ZQ%3d%3d#toc)

Our first measure of investors' information search is constructed from recorded internet traffic on the SEC's EDGAR website. We obtain the EDGAR server logs from 2003 to 2010 and count the number of requests for annual financial statement (10‐K filings) on the date that the filing was posted, up to 3 days after the filing was posted, and up to one week after the post date. We use event windows around the date that a new 10‐K filing is posted to capture investors' searches for new firm‐specific information.19 We remove requests made by automated programs following Lee *et al.* (2015). Similar to Loughran and McDonald (2015), we also remove requests for index pages or file that was either relocated or not found. We take the natural logarithm of these request counts to normalise the data.

We next measure investors' search activities by the intensity of internet searches for company information as captured by the Google Search Volume Index (SVI). The Google SVI measures the frequency of searches for a particular term or phrase entered into the Google search engine. Prior research has used the Google SVI for measuring investors' demand for information and their attention (Da *et al.,* 2011; Drake *et al.,* 2012). Similar to Drake *et al.* (2012), we use daily abnormal Google SVI in the 5‐day period prior to earnings announcements, on the announcement date, and the 5‐day post earnings announcement period to capture the intensity of investors' information search. We obtain the abnormal Google SVI data for S&P 500 firms during 2005–2008 from Michael Drake.20 We focus on earnings announcements because they are events in which new financial information about a firm becomes available to investors.

## [Descriptive statistics](https://0-web-s-ebscohost-com.libus.csd.mu.edu/ehost/detail/detail?vid=3&sid=3ee04797-65d6-4e15-aeab-6119e7fb4823%40redis&bdata=JnNpdGU9ZWhvc3QtbGl2ZQ%3d%3d#toc)

Panel D of Table 1 provides the summary statistics of the main variables employed in our regression analyses. Variable definitions are provided in the Appendix. All non‐logarithmic, continuous variables are winsorised at the 1st and 99th percentile to alleviate the influence of outliers.21 The mean (median) value of is 0.949 (0.922) with a standard deviation of 1.155. These statistics suggest that there is wide variation in idiosyncratic volatility. *PIN* has a mean (median) value of 0.114 (0.107) and a standard deviation of 0.050, indicating less variation compared to idiosyncratic volatility. The mean (median) value of *CSR* is −0.126 (−0.161), suggesting that the average (median) firm in our sample has more CSR concerns than strengths. However, the standard deviation is large (0.501), indicating that our sample consists of a wide range of firms on the CSR spectrum. The mean (median) values for the EDGAR search variables *LOG(EDGAR\_1)*, *LOG(EDGAR\_3)* and *LOG(EDGAR\_1WK)* are 2.595 (2.773), 3.293 (3.555) and 3.772 (4.094) respectively, suggesting that investors' searches for information from a newly released 10‐K filing increase over time although at a decreasing rate. Mean (median) values for *GSEARCH(−5, −1)*, *GSEARCH(0)* and *GSEARCH(*[*1*](https://0-web-s-ebscohost-com.libus.csd.mu.edu/ehost/detail/detail?vid=3&sid=3ee04797-65d6-4e15-aeab-6119e7fb4823%40redis&bdata=JnNpdGU9ZWhvc3QtbGl2ZQ%3d%3d#bib1)*,5)* are 0.071 (0.008), 0.321 (0.035) and 0.177 (0.014) respectively. As for the other variables, our summary statistics are largely consistent with the previous literature (Gul *et al.,* 2011).

# [CSR and price informativeness](https://0-web-s-ebscohost-com.libus.csd.mu.edu/ehost/detail/detail?vid=3&sid=3ee04797-65d6-4e15-aeab-6119e7fb4823%40redis&bdata=JnNpdGU9ZWhvc3QtbGl2ZQ%3d%3d#toc)

## [Baseline model](https://0-web-s-ebscohost-com.libus.csd.mu.edu/ehost/detail/detail?vid=3&sid=3ee04797-65d6-4e15-aeab-6119e7fb4823%40redis&bdata=JnNpdGU9ZWhvc3QtbGl2ZQ%3d%3d#toc)

We estimate the following baseline empirical model to analyse the relation between CSR and price informativeness as measured by idiosyncratic volatility and the probability of informed trading (*PIN*):22

(4)

where indexes the firm and indexes the year. Year and firm fixed effects are denoted by  and , respectively.

To mitigate concerns of omitted variable bias, we control for an exhaustive set of covariates that can potentially affect stock price informativeness as suggested in the literature (Gelb and Strawser, 2001; Piotroski and Roulstone, 2004; Jin and Myers, 2006; Ferreira and Laux, 2007; Fernandes and Ferreira, 2009; Gul *et al.,* 2011; Li *et al.,* 2014). These control variables include market capitalisation (*SIZE*), market‐to‐book ratio (*MB*), return on equity (*ROE*), volatility of return on equity (*VROE*), book leverage (*LEV*), firm age (*AGE*), issuance of dividends (*DIV*), corporate diversification in the form of multiple operating segments (*DIVER*), analyst coverage (*ANALYSTS*), firm beta (*BETA*), earnings quality (*EQ*), insider trading (*INSTRADE*), corporate governance (*CGSCORE*), number of institutional investors (*INSTNUM*), and voluntary disclosures measured by the frequency of management forecasts (*FREQ*).23 Detailed variable definitions are provided in the Appendix. Year and firm fixed effects are included in the regressions to control for any unobservable macroeconomic shocks or time‐invariant firm characteristics that could simultaneously drive CSR activity and our measures of price informativeness.

Table 2 presents the baseline regression results on the relation between CSR and price informativeness based on the model specified in Equation ([4](https://0-web-s-ebscohost-com.libus.csd.mu.edu/ehost/detail/detail?vid=3&sid=3ee04797-65d6-4e15-aeab-6119e7fb4823%40redis&bdata=JnNpdGU9ZWhvc3QtbGl2ZQ%3d%3d#bib4)). Column ([1](https://0-web-s-ebscohost-com.libus.csd.mu.edu/ehost/detail/detail?vid=3&sid=3ee04797-65d6-4e15-aeab-6119e7fb4823%40redis&bdata=JnNpdGU9ZWhvc3QtbGl2ZQ%3d%3d#bib1)) reports the results of regressing idiosyncratic volatility on *CSR* after controlling for year and firm fixed effects. As shown in the column, the estimated coefficient of *CSR* is positive and statistically significant. Column ([3](https://0-web-s-ebscohost-com.libus.csd.mu.edu/ehost/detail/detail?vid=3&sid=3ee04797-65d6-4e15-aeab-6119e7fb4823%40redis&bdata=JnNpdGU9ZWhvc3QtbGl2ZQ%3d%3d#bib3)) provides similar results when regressing the probability of informed trading, *PIN*, on *CSR*. The results in both columns provide some preliminary support that greater CSR commitment is associated with more informative stock prices. Columns ([2](https://0-web-s-ebscohost-com.libus.csd.mu.edu/ehost/detail/detail?vid=3&sid=3ee04797-65d6-4e15-aeab-6119e7fb4823%40redis&bdata=JnNpdGU9ZWhvc3QtbGl2ZQ%3d%3d#bib2)) and ([4](https://0-web-s-ebscohost-com.libus.csd.mu.edu/ehost/detail/detail?vid=3&sid=3ee04797-65d6-4e15-aeab-6119e7fb4823%40redis&bdata=JnNpdGU9ZWhvc3QtbGl2ZQ%3d%3d#bib4)) present the results of the full model with additional controls as in Equation ([4](https://0-web-s-ebscohost-com.libus.csd.mu.edu/ehost/detail/detail?vid=3&sid=3ee04797-65d6-4e15-aeab-6119e7fb4823%40redis&bdata=JnNpdGU9ZWhvc3QtbGl2ZQ%3d%3d#bib4)). As column ([2](https://0-web-s-ebscohost-com.libus.csd.mu.edu/ehost/detail/detail?vid=3&sid=3ee04797-65d6-4e15-aeab-6119e7fb4823%40redis&bdata=JnNpdGU9ZWhvc3QtbGl2ZQ%3d%3d#bib2)) shows, the coefficient on *CSR* (coefficient = 0.074, *t*‐statistic = 2.52) remains positive and statistically significant after controlling for the other covariates of . The relation between CSR and is also economically significant. A one standard deviation increase in *CSR* is associated with a 3.21 percent standard deviation increase in .24 The economic magnitude of *CSR* is comparable to some of the important covariates of price informativeness previously documented in the literature.25 The control variables generally have the expected signs and are consistent with the findings of prior studies (Gul *et al.,* 2011). Column ([4](https://0-web-s-ebscohost-com.libus.csd.mu.edu/ehost/detail/detail?vid=3&sid=3ee04797-65d6-4e15-aeab-6119e7fb4823%40redis&bdata=JnNpdGU9ZWhvc3QtbGl2ZQ%3d%3d#bib4)) displays the results regressing *PIN* on *CSR* and other covariates. The coefficient on *CSR* in the regression of *PIN* is positive (0.006) and is also statistically significant at the 1 percent level (*t*‐statistic = 4.99). A one standard deviation increase in *CSR* is associated with a 6.01 percent standard deviation increase in *PIN*.26 In summary, we show a strong positive association between CSR and measures of price informativeness after controlling for year and firm fixed effects and covariates documented in the prior literature. The findings in Table 2 support hypothesis H1a and are consistent with the prediction of the ethical and reputational view that greater CSR encourages information acquisition and trading and enhances the flow of information into stock prices.

2 Table CSR and price informativeness

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **(1)** |  | **(2)** |  | **(3)** |  | **(4)** |  |
|  |  |  |  |  | **PIN** |  | **PIN** |  |
|  | **Coefficient** | ***t*‐Statistic** | **Coefficient** | ***t*‐Statistic** | **Coefficient** | ***t*‐Statistic** | **Coefficient** | ***t*‐Statistic** |
| *CSR* | 0.107\*\*\* | 3.33 | 0.074\*\* | 2.52 | 0.007\*\*\* | 5.16 | 0.006\*\*\* | 4.99 |
| *SIZE* |  |  | −0.223\*\*\* | −6.92 |  |  | −0.006\*\*\* | −3.12 |
| *MB* |  |  | −0.036 | −1.38 |  |  | −0.002\*\* | −2.01 |
| *ROE* |  |  | −0.090\*\* | −2.50 |  |  | 0.001 | 0.80 |
| *VROE* |  |  | 0.023\* | 1.88 |  |  | 0.000 | 0.09 |
| *LEV* |  |  | 0.058 | 0.54 |  |  | 0.002 | 0.49 |
| *AGE* |  |  | −0.616\*\*\* | −5.91 |  |  | −0.006 | −1.33 |
| *DIV* |  |  | 0.097\*\* | 2.43 |  |  | −0.002 | −0.81 |
| *DIVER* |  |  | 0.015 | 0.27 |  |  | −0.001 | −0.39 |
| *ANALYSTS* |  |  | −0.212\*\*\* | −7.53 |  |  | −0.003\*\* | −2.46 |
| *BETA* |  |  | −0.234\*\*\* | −9.61 |  |  | −0.013\*\*\* | −11.12 |
| *EQ* |  |  | 0.013\*\*\* | 3.08 |  |  | 0.000 | 0.83 |
| *INSTRADE* |  |  | −0.660\*\* | −2.28 |  |  | −0.016\* | −1.70 |
| *CGSCORE* |  |  | 0.276\*\*\* | 4.68 |  |  | 0.013\*\*\* | 5.30 |
| *INSTNUM* |  |  | −0.378\*\*\* | −5.79 |  |  | −0.041\*\*\* | −6.26 |
| *FREQ* |  |  | −0.012 | −0.82 |  |  | −0.001\*\* | −2.36 |
| Year FE | Yes |  | Yes |  | Yes |  | Yes |  |
| Firm FE | Yes |  | Yes |  | Yes |  | Yes |  |
| Observations | 11,312 |  | 11,312 |  | 11,312 |  | 11,312 |  |
| Adj. R2 | 0.676 |  | 0.714 |  | 0.692 |  | 0.744 |  |

This table reports the baseline regression results of CSR and stock price informativeness. The sample period is from 1995 to 2010. Coefficients are estimated based on the model presented in Equation ([4](https://0-web-s-ebscohost-com.libus.csd.mu.edu/ehost/detail/detail?vid=3&sid=3ee04797-65d6-4e15-aeab-6119e7fb4823%40redis&bdata=JnNpdGU9ZWhvc3QtbGl2ZQ%3d%3d#bib4)). The dependent variables are idiosyncratic volatility in columns ([1](https://0-web-s-ebscohost-com.libus.csd.mu.edu/ehost/detail/detail?vid=3&sid=3ee04797-65d6-4e15-aeab-6119e7fb4823%40redis&bdata=JnNpdGU9ZWhvc3QtbGl2ZQ%3d%3d#bib1)) and ([2](https://0-web-s-ebscohost-com.libus.csd.mu.edu/ehost/detail/detail?vid=3&sid=3ee04797-65d6-4e15-aeab-6119e7fb4823%40redis&bdata=JnNpdGU9ZWhvc3QtbGl2ZQ%3d%3d#bib2)) and the probability of informed trading (*PIN*) in columns ([3](https://0-web-s-ebscohost-com.libus.csd.mu.edu/ehost/detail/detail?vid=3&sid=3ee04797-65d6-4e15-aeab-6119e7fb4823%40redis&bdata=JnNpdGU9ZWhvc3QtbGl2ZQ%3d%3d#bib3)) and ([4](https://0-web-s-ebscohost-com.libus.csd.mu.edu/ehost/detail/detail?vid=3&sid=3ee04797-65d6-4e15-aeab-6119e7fb4823%40redis&bdata=JnNpdGU9ZWhvc3QtbGl2ZQ%3d%3d#bib4)). The main variable of interest is CSR score (*CSR*). Independent variables are lagged by one year relative to the dependent variable as described in Equation ([4](https://0-web-s-ebscohost-com.libus.csd.mu.edu/ehost/detail/detail?vid=3&sid=3ee04797-65d6-4e15-aeab-6119e7fb4823%40redis&bdata=JnNpdGU9ZWhvc3QtbGl2ZQ%3d%3d#bib4)). Detailed variable definitions, including control variables, are described in the Appendix. Standard errors are adjusted for heteroskedasticity and clustered by firm.\*\*\*, \*\* and \* denote statistical significance at the 1, 5 and 10 percent levels, respectively.

## [CSR and information acquisition](https://0-web-s-ebscohost-com.libus.csd.mu.edu/ehost/detail/detail?vid=3&sid=3ee04797-65d6-4e15-aeab-6119e7fb4823%40redis&bdata=JnNpdGU9ZWhvc3QtbGl2ZQ%3d%3d#toc)

In this section, we analyse the relation between CSR and investor information search. To investigate Hypotheses H2a and H2b, we first examine investors' search activities for new 10‐K filings using the following model:27

(5)

where indexes the firm and indexes the year. *EDGAR\_D*, *D* = *1*, *3*, and *1WK* are the counts of individual requests for 10‐K financial reports on the date that the filing became publicly available (*EDGAR\_1*), up to 3 days after the filing date (*EDGAR\_3*) and up to 1 week after the filing date (*EDGAR\_1WK*). Because of data constraints, the time period is limited to the years between 2003 and 2010. Similar to Drake *et al.* (2015), we further control for 10‐K file size (*LOGFILESIZE*), the supply of firm filings on EDGAR (*LOGSUPPLY*), the number of shorted shares (*SHORT*), market capitalisation (*SIZE*), analyst coverage (*ANALYSTS*), institutional ownership (*INSTOWN*), the number of institutional investors (*INSTNUM*), the magnitude of firm performance (*|ROA|*), market‐to‐book ratio (*MB*), trading volume (*TURNOVER*), book leverage (*LEV*), and whether the firm's stock is traded on the New York Stock Exchange (*NYSE*), cumulative returns over the past three months (*RET(m‐3, m)*), and whether the firm had an earnings loss (*LOSS*). We further control for year, month, weekday and firm fixed effects, denoted by , ,  and , respectively. Similar to Hirshleifer *et al.*  (2009), we cluster the standard errors by firm and filing date to account for correlation of the residuals across firm and time.

Table 3 presents the results. Column ([1](https://0-web-s-ebscohost-com.libus.csd.mu.edu/ehost/detail/detail?vid=3&sid=3ee04797-65d6-4e15-aeab-6119e7fb4823%40redis&bdata=JnNpdGU9ZWhvc3QtbGl2ZQ%3d%3d#bib1)) shows that greater CSR is associated with more requests on the date that a 10‐K filing is available on EDGAR, as evidenced by a coefficient of 0.096 at the 10 percent level for *CSR*. A one standard deviation increase in *CSR* is associated with a 3.16 percent standard deviation increase in searches for new 10‐K filings available through EDGAR on the filing date (*LOG(EDGAR\_1)*).28 Columns ([2](https://0-web-s-ebscohost-com.libus.csd.mu.edu/ehost/detail/detail?vid=3&sid=3ee04797-65d6-4e15-aeab-6119e7fb4823%40redis&bdata=JnNpdGU9ZWhvc3QtbGl2ZQ%3d%3d#bib2)) and ([3](https://0-web-s-ebscohost-com.libus.csd.mu.edu/ehost/detail/detail?vid=3&sid=3ee04797-65d6-4e15-aeab-6119e7fb4823%40redis&bdata=JnNpdGU9ZWhvc3QtbGl2ZQ%3d%3d#bib3)) both provide evidence that is consistent with the findings in column ([1](https://0-web-s-ebscohost-com.libus.csd.mu.edu/ehost/detail/detail?vid=3&sid=3ee04797-65d6-4e15-aeab-6119e7fb4823%40redis&bdata=JnNpdGU9ZWhvc3QtbGl2ZQ%3d%3d#bib1)). Column ([2](https://0-web-s-ebscohost-com.libus.csd.mu.edu/ehost/detail/detail?vid=3&sid=3ee04797-65d6-4e15-aeab-6119e7fb4823%40redis&bdata=JnNpdGU9ZWhvc3QtbGl2ZQ%3d%3d#bib2)), using a three‐day filing request window, shows a statistically significant and positive coefficient for *CSR* (coefficient = 0.088, *t*‐statistic = 2.05), while column ([3](https://0-web-s-ebscohost-com.libus.csd.mu.edu/ehost/detail/detail?vid=3&sid=3ee04797-65d6-4e15-aeab-6119e7fb4823%40redis&bdata=JnNpdGU9ZWhvc3QtbGl2ZQ%3d%3d#bib3)), using a one‐week filing request window, also shows a positive and significant coefficient (coefficient = 0.078, *t*‐statistic = 2.43) for *CSR*.29 These results support hypothesis H2a and provide evidence that more socially responsible firms experience greater searches by investors as evidenced by more requests for new 10‐K filings.30

3 Table CSR and new 10‐K filing requests

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **(1)** |  | **(2)** |  | **(3)** |  |
|  | ***LOG(EDGAR\_1)*** |  | ***LOG(EDGAR\_3)*** |  | ***LOG(EDGAR\_1WK)*** |  |
|  | **Coefficient** | **t‐Statistic** | **Coefficient** | **t‐Statistic** | **Coefficient** | **t‐Statistic** |
| *CSR* | 0.096\* | 1.80 | 0.088\* | 2.05 | 0.078\*\* | 2.43 |
| *LOGFILESIZE* | 0.027\*\*\* | 7.84 | 0.025\*\*\* | 6.29 | 0.024\*\*\* | 4.61 |
| *LOGSUPPLY* | −0.179 | −1.22 | −0.271\*\* | −2.69 | −0.247\*\* | −2.69 |
| *SHORT* | 0.258 | 1.06 | 0.183 | 0.83 | 0.135 | 0.61 |
| *SIZE* | 0.117\*\*\* | 5.43 | 0.144\*\*\* | 3.53 | 0.165\*\*\* | 4.29 |
| *ANALYSTS* | 0.030 | 1.01 | 0.019 | 0.59 | 0.013 | 0.32 |
| *INSTOWN* | −0.092 | −0.60 | −0.100 | −0.80 | −0.126 | −0.94 |
| *INSTNUM* | 0.080 | 1.52 | 0.123\* | 1.81 | 0.140\* | 1.87 |
| *|ROA|* | 0.304\*\* | 2.29 | 0.193 | 1.42 | 0.212 | 1.60 |
| *MB* | 0.009 | 0.19 | −0.017 | −0.22 | −0.011 | −0.15 |
| *TURNOVER* | 0.221 | 1.60 | 0.316\*\* | 2.55 | 0.360\*\* | 2.78 |
| *LEV* | 0.014 | 0.13 | 0.154 | 1.15 | 0.223 | 1.36 |
| *NYSE* | −0.163\*\* | −2.84 | −0.138 | −1.62 | −0.123 | −1.27 |
| *CRET(m‐3, m)* | 0.037 | 0.54 | −0.020 | −0.17 | −0.066 | −0.53 |
| *LOSS* | 0.006 | 0.34 | 0.044\*\* | 2.28 | 0.054\*\* | 2.90 |
| Year FE | Yes |  | Yes |  | Yes |  |
| Month FE | Yes |  | Yes |  | Yes |  |
| Weekday FE | Yes |  | Yes |  | Yes |  |
| Firm FE | Yes |  | Yes |  | Yes |  |
| Observations | 9,517 |  | 9,517 |  | 9,517 |  |
| Adj. R2 | 0.602 |  | 0.713 |  | 0.751 |  |

This table reports the regression results of CSR and requests for new 10‐K filings. The sample period is from 2003 to 2010. Coefficients are estimated based on the model presented in Equation ([5](https://0-web-s-ebscohost-com.libus.csd.mu.edu/ehost/detail/detail?vid=3&sid=3ee04797-65d6-4e15-aeab-6119e7fb4823%40redis&bdata=JnNpdGU9ZWhvc3QtbGl2ZQ%3d%3d#bib5)). The dependent variable is 10‐K requests on the filing date (*LOG(EDGAR\_1)*), in a 3‐day window beginning from the filing date (*LOG(EDGAR\_3)*), and in a 1‐week window starting from the filing date (*LOG(EDGAR\_1WK)*). The main variable of interest is CSR score (*CSR*). Independent variables generally lag dependent variables by one year as described in Equation ([5](https://0-web-s-ebscohost-com.libus.csd.mu.edu/ehost/detail/detail?vid=3&sid=3ee04797-65d6-4e15-aeab-6119e7fb4823%40redis&bdata=JnNpdGU9ZWhvc3QtbGl2ZQ%3d%3d#bib5)). Detailed variable definitions, including control variables, are described in the Appendix. Standard errors are adjusted for heteroskedasticity and clustered by firm and filing date. \*\*\*, \*\* and \* denote statistical significance at the 1, 5 and 10 percent levels, respectively.

For our second test of the hypotheses on information search (Hypotheses H2a and H2b), we estimate the following empirical model to examine investors' search activities on Google for firm‐specific information around earnings announcements:31

(6)

where indexes the firm, indexes the day and indexes the year. *GSEARCH* is the daily abnormal Google SVI, *EARNINGS\_ANNOUNCEMENT[−5,‐1]* is an indicator set to one if the day is in the window from 5 days to 1 day prior to the earnings announcement, *EARNINGS\_ANNOUNCEMENT[0]* is an indicator for the date of the announcement and *EARNINGS\_ANNOUNCEMENT[*[*1*](https://0-web-s-ebscohost-com.libus.csd.mu.edu/ehost/detail/detail?vid=3&sid=3ee04797-65d6-4e15-aeab-6119e7fb4823%40redis&bdata=JnNpdGU9ZWhvc3QtbGl2ZQ%3d%3d#bib1)*,5]* is an indicator set to one if the day is in the period from 1 to 5 days after the earnings announcement. Because of data constraints, the time period is limited to the years between 2005 and 2008. Year, month, weekday and firm fixed effects are denoted by , ,  and , respectively. Following the literature (Drake *et al.,* 2012), we control for the number of news articles that mention the firm (*NEWS*), the absolute value of raw stock returns (|*RET*|), trading volume (*TURNOVER*), the bid‐ask spread (*BIDASK*), the number of firms announcing earnings on the same day (*ANM*), market capitalisation (*SIZE*), market‐to‐book ratio (*MB*), analyst coverage (*ANALYSTS*), institutional ownership (*INSTOWN*), an indicator for earnings announcements made in the fourth quarter (*QTR4*), an indicator for earnings loss (*LOSS*), performance (*|ROA|*), and cumulative returns over the past three months (*RET(m‐3, m)*). We also include *FORECAST*, an indicator set to one if the firm issues a management forecast concurrently with the earnings announcement to control for additional voluntary disclosures. As in Hirshleifer *et al.*  (2009), we cluster the standard errors by firm and earnings announcement date to account for correlation in the residuals across firm and time.

Table 4 presents the results. Consistent with Drake *et al.* (2012), we find greater investor demand for company information around earnings announcements in the periods during and after an earnings announcement. Furthermore, the results suggest that more socially responsible firms have incrementally more Google searches in the period around an earnings announcement. On the date of the earnings announcement, firms that are more socially responsible experience greater search activity for company information as evidenced by the positive and statistically significant coefficient of *EARNINGS\_ANNOUNCEMENT[0]×CSR*. Subsequently, in the five‐day period after an earnings announcement, the interaction term *EARNINGS\_ANNOUNCEMENT[*[*1*](https://0-web-s-ebscohost-com.libus.csd.mu.edu/ehost/detail/detail?vid=3&sid=3ee04797-65d6-4e15-aeab-6119e7fb4823%40redis&bdata=JnNpdGU9ZWhvc3QtbGl2ZQ%3d%3d#bib1)*,*[*5*](https://0-web-s-ebscohost-com.libus.csd.mu.edu/ehost/detail/detail?vid=3&sid=3ee04797-65d6-4e15-aeab-6119e7fb4823%40redis&bdata=JnNpdGU9ZWhvc3QtbGl2ZQ%3d%3d#bib5)*]* *× CSR* is positive and statistically significant at the 5 percent level. In terms of economic significance, a one standard deviation increase in CSR is associated with a 5.14 percent (5.07 percent) standard deviation increase in the abnormal Google searches on the date of (in the five‐day period after) an earnings announcement. Thus, firms with greater CSR experience higher abnormal Google searches surrounding an earnings announcement, suggesting that there is more search activity by investors for information regarding firms that are more socially responsible.

4 Table CSR and abnormal Google searches

|  |  |  |
| --- | --- | --- |
|  | **GSEARCH** |  |
|  | **Coefficient** | **t‐Statistic** |
| *EARNINGS\_ANNOUNCEMENT[−5, −1]×CSR* | 0.021 | 1.06 |
| *EARNINGS\_ANNOUNCEMENT[0]×CSR* | 0.163\*\* | 2.11 |
| *EARNINGS\_ANNOUNCEMENT[1,5]×CSR* | 0.146\*\* | 2.41 |
| *CSR* | −0.053 | −1.47 |
| *EARNINGS\_ANNOUNCEMENT[−5,‐1]* | 0.021\* | 1.68 |
| *EARNINGS\_ANNOUNCEMENT[0]* | 0.324\*\*\* | 3.21 |
| *EARNINGS\_ANNOUNCEMENT[1,5]* | 0.180\*\*\* | 5.13 |
| *NEWS* | 0.012\*\*\* | 2.97 |
| *|RET|* | 2.179\*\*\* | 4.09 |
| *TURNOVER* | 0.096 | 1.42 |
| *BIDASK* | −0.002 | −0.05 |
| *ANM* | −0.022 | −0.50 |
| *SIZE* | −0.046\* | −1.89 |
| *MB* | 0.012 | 0.70 |
| *ANALYSTS* | −0.042 | −1.29 |
| *INSTOWN* | 0.073 | 0.60 |
| *QTR4* | −0.004 | −0.38 |
| *LOSS* | 0.009 | 0.27 |
| *|ROA|* | −0.045 | −0.52 |
| *CRET(m‐3, m)* | 0.062\*\* | 2.05 |
| *FORECAST* | −0.013 | −0.79 |
| Year FE | Yes |  |
| Month FE | Yes |  |
| Weekday FE | Yes |  |
| Firm FE | Yes |  |
| Observations | 197,403 |  |
| Adj. R2 | 0.103 |  |

This table reports the regression results of CSR and abnormal Google searches. Our sample includes S&P 500 firms between 2005 and 2008. Coefficients are estimated based on the model presented in Equation ([6](https://0-web-s-ebscohost-com.libus.csd.mu.edu/ehost/detail/detail?vid=3&sid=3ee04797-65d6-4e15-aeab-6119e7fb4823%40redis&bdata=JnNpdGU9ZWhvc3QtbGl2ZQ%3d%3d#bib6)). The dependent variable is daily abnormal Google search (*GSEARCH*). The main variables of interest are the interaction of the pre‐earnings announcement date indicator and CSR score (*EARNINGS\_ANNOUNCEMENT[−5,‐1] × CSR*), the interaction of the earnings announcement date indicator and CSR score (*EARNINGS\_ANNOUNCEMENT[0] × CSR*), and the interaction of the post earnings announcement date indicator and CSR score (*EARNINGS\_ANNOUNCEMENT[*[*1*](https://0-web-s-ebscohost-com.libus.csd.mu.edu/ehost/detail/detail?vid=3&sid=3ee04797-65d6-4e15-aeab-6119e7fb4823%40redis&bdata=JnNpdGU9ZWhvc3QtbGl2ZQ%3d%3d#bib1)*,*[*5*](https://0-web-s-ebscohost-com.libus.csd.mu.edu/ehost/detail/detail?vid=3&sid=3ee04797-65d6-4e15-aeab-6119e7fb4823%40redis&bdata=JnNpdGU9ZWhvc3QtbGl2ZQ%3d%3d#bib5)*] × CSR*). Independent variables other than the (pre‐ and post) earnings announcement date indicator generally lag dependent variables by one year as described in Equation ([6](https://0-web-s-ebscohost-com.libus.csd.mu.edu/ehost/detail/detail?vid=3&sid=3ee04797-65d6-4e15-aeab-6119e7fb4823%40redis&bdata=JnNpdGU9ZWhvc3QtbGl2ZQ%3d%3d#bib6)). Detailed variable definitions, including control variables, are described in the Appendix. Standard errors are adjusted for heteroskedasticity and clustered by firm and earnings announcement day. \*\*\*, \*\* and \* denote statistical significance at the 1, 5 and 10 percent levels, respectively.

Overall, the results in Tables 3 and 4 support hypothesis H2a and suggest that more socially responsible firms are associated with greater investor search activity for firm‐specific information around major disclosure events. These results provide direct evidence that greater CSR commitment encourages investors to actively acquire information and lends further support to the ethical and reputational view of CSR.

## [CSR and future earnings captured in stock prices](https://0-web-s-ebscohost-com.libus.csd.mu.edu/ehost/detail/detail?vid=3&sid=3ee04797-65d6-4e15-aeab-6119e7fb4823%40redis&bdata=JnNpdGU9ZWhvc3QtbGl2ZQ%3d%3d#toc)

We use an alternative measure of price informativeness as a robustness check and to examine Hypotheses H3a and H3b. Namely, we examine how CSR affects the extent to which current stock prices reflect future firm‐specific information as captured in FERC. The intuition is that if CSR incentivises (or discourages) information acquisition and trading, then current stock returns should be more (or less) predictive of future firm earnings. We follow prior literature (Kothari and Sloan, 1992; Choi *et al.,* 2011) and estimate the following model:33

(7)

In Equation ([7](https://0-web-s-ebscohost-com.libus.csd.mu.edu/ehost/detail/detail?vid=3&sid=3ee04797-65d6-4e15-aeab-6119e7fb4823%40redis&bdata=JnNpdGU9ZWhvc3QtbGl2ZQ%3d%3d#bib7)),  is the annual return for firm  at the end of fiscal year , ,  and  represent earnings per share for fiscal year , , and  deflated by the stock price at the beginning of the fiscal year . The coefficient of interest is . If CSR increases the extent to which future earnings is reflected in current period stock returns, then we would expect to observe a significantly positive . Following prior research, we controls for future firm‐level stock returns , firm size (*SIZE*), total firm asset growth (*ATGROWTH*), an indicator set to 1 (and 0 otherwise) if the firm experienced a loss in the current year (*LOSS*), percentage of shares held by institutional investors (*INSTOWN*), future earnings volatility (*STDEARN*) and firm beta (*BETA*). We also control for earnings persistence and its interaction with *CSR* to account for the potential differences in earnings persistence among firms with different CSR involvement and its effect on FERC. We further include year and firm fixed effects (, ).

The regression results on FERC are reported in Table 5. As the table shows, the coefficient for the interaction term  is positive and statistically significant (coefficient = 0.319, *t*‐statistic = 2.00).34 The results suggest that after controlling for a host of variables suggested by prior literature, firms with greater CSR commitment are associated with a higher FERC. That is, stock prices of socially responsible firms reflect more information about future earnings. This table provides further evidence to support our main findings in Table 2.

5 Table CSR and future earnings captured in stock prices

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | **Coefficient** | **t‐Statistic** |
|  | −0.146 | −0.99 |
|  | 0.017 | 0.09 |
|  | 0.319\*\* | 2.00 |
|  | −1.227\*\*\* | −15.82 |
|  | 0.061 | 1.51 |
|  | −0.048\* | −1.85 |
|  | 0.481\*\*\* | 4.02 |
|  | 1.156\*\*\* | 11.51 |
|  | −0.038\*\* | −2.37 |
|  | −0.022 | −0.87 |
|  | 0.001 | 0.03 |
| *SIZE* | 0.354\*\*\* | 20.84 |
| *ATGROWTH* | 0.114\*\*\* | 4.87 |
| *LOSS* | 0.021 | 0.95 |
| *INSTOWN* | 0.128\* | 1.92 |
| *STDEARN* | 0.500\*\*\* | 6.53 |
| *BETA* | 0.090\*\*\* | 5.24 |
| Year FE | Yes |  |
| Firm FE | Yes |  |
| Observations | 11,141 |  |
| Adj. R2 | 0.381 |  |

This table reports the regression results of CSR and an alternative measure of price informativeness, future earnings response coefficient (or FERC). The sample period is from 1995 to 2010. The dependent variable is the current period stock returns . The main variable of interest is the interaction term of CSR and earnings per share in the following year . Contemporaneous control variables are used as described in Equation ([8](https://0-web-s-ebscohost-com.libus.csd.mu.edu/ehost/detail/detail?vid=3&sid=3ee04797-65d6-4e15-aeab-6119e7fb4823%40redis&bdata=JnNpdGU9ZWhvc3QtbGl2ZQ%3d%3d#bib8)). Detailed variable definitions, including control variables, are described in the Appendix. Standard errors are clustered by firm. \*\*\*, \*\* and \* denote statistical significance at the 1, 5 and 10 percent levels respectively.

# [Interpretation of the relation between CSR and price informativeness](https://0-web-s-ebscohost-com.libus.csd.mu.edu/ehost/detail/detail?vid=3&sid=3ee04797-65d6-4e15-aeab-6119e7fb4823%40redis&bdata=JnNpdGU9ZWhvc3QtbGl2ZQ%3d%3d#toc)

## [Lead‐lag analysis](https://0-web-s-ebscohost-com.libus.csd.mu.edu/ehost/detail/detail?vid=3&sid=3ee04797-65d6-4e15-aeab-6119e7fb4823%40redis&bdata=JnNpdGU9ZWhvc3QtbGl2ZQ%3d%3d#toc)

Prior studies suggest that the information embedded in stock prices can impact corporate decisions such as investments (Chen *et al.,* 2007), corporate governance (Ferreira *et al.,* 2011) and management forecasts (Zuo, 2016). It is possible that managers learn of information in the stock price and make CSR investments accordingly. Similar to Ramalingegowda and Yu (2012), we conduct a lead‐lag analysis by regressing contemporaneous and *PIN* on CSR levels in the lagged, current and lead year. If greater CSR commitment leads to more informative stock prices, only lagged values of CSR should impact contemporaneous levels of price informativeness. In contrast, if there is reverse causality and (or) simultaneity, we would observe significant associations between lead and (or) current levels of CSR and contemporaneous price informativeness.

Table 6 presents the lead‐lag regression results. In column ([1](https://0-web-s-ebscohost-com.libus.csd.mu.edu/ehost/detail/detail?vid=3&sid=3ee04797-65d6-4e15-aeab-6119e7fb4823%40redis&bdata=JnNpdGU9ZWhvc3QtbGl2ZQ%3d%3d#bib1)), when we regress on ,  and , only the coefficient of  is statistically significant (coefficient = 0.144, *t*‐statistic = 3.21). Similarly, in column ([2](https://0-web-s-ebscohost-com.libus.csd.mu.edu/ehost/detail/detail?vid=3&sid=3ee04797-65d6-4e15-aeab-6119e7fb4823%40redis&bdata=JnNpdGU9ZWhvc3QtbGl2ZQ%3d%3d#bib2)), when the dependent variable is *PIN*, the only statistically significant coefficient is . Thus, in both columns, only past year CSR is positively associated with measures of stock price informativeness.35 These results further alleviate the concerns about reverse causality and simultaneity.

6 Table Lead‐lag regressions of CSR and price informativeness

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **(1) ΔPIN** |  | **(2)** |  |
|  |  |  |  |  |
|  | **Coefficient** | ***t*‐Statistic** | **Coefficient** | ***t*‐Statistic** |
|  | 0.045 | 1.20 | 0.002 | 1.51 |
|  | 0.021 | 0.63 | 0.001 | 1.06 |
|  | 0.144\*\*\* | 3.21 | 0.006\*\*\* | 2.96 |
| *SIZE* | −0.270\*\*\* | −7.53 | −0.006\*\* | −2.43 |
| *MB* | −0.060\* | −1.96 | −0.002 | −1.55 |
| *ROE* | −0.076\* | −1.73 | −0.001 | −0.43 |
| *VROE* | 0.014 | 0.98 | −0.000 | −0.21 |
| *LEV* | 0.068 | 0.55 | −0.002 | −0.45 |
| *AGE* | −0.721\*\*\* | −5.91 | 0.002 | 0.29 |
| *DD* | 0.098\*\* | 2.12 | −0.001 | −0.56 |
| *DIVER* | −0.012 | −0.21 | 0.001 | 0.23 |
| *ANALYSTS* | −0.208\*\*\* | −6.41 | −0.003\*\* | −2.30 |
| *BETA* | −0.231\*\*\* | −8.51 | −0.011\*\*\* | −8.15 |
| *EQ* | −0.010\*\* | −2.19 | −0.000 | −0.68 |
| *INSTRADE* | −0.441 | −1.27 | −0.018\* | −1.68 |
| *CGSCORE* | 0.288\*\*\* | 3.65 | 0.014\*\*\* | 4.43 |
| *INSTNUM* | −0.385\*\*\* | −5.02 | −0.044\*\*\* | −5.05 |
| *FREQ* | −0.003 | −0.18 | −0.001 | −1.34 |
| Year FE | Yes |  | Yes |  |
| Firm FE | Yes |  | Yes |  |
| Observations | 8,552 |  | 8,552 |  |
| Adj. R2 | 0.715 |  | 0.733 |  |

This table reports the lead‐lag regression results of CSR and price informativeness ( and PIN). The sample period is from 1995 to 2010. Column ([1](https://0-web-s-ebscohost-com.libus.csd.mu.edu/ehost/detail/detail?vid=3&sid=3ee04797-65d6-4e15-aeab-6119e7fb4823%40redis&bdata=JnNpdGU9ZWhvc3QtbGl2ZQ%3d%3d#bib1)) reports the results with contemporaneous as the dependent variable. Column ([2](https://0-web-s-ebscohost-com.libus.csd.mu.edu/ehost/detail/detail?vid=3&sid=3ee04797-65d6-4e15-aeab-6119e7fb4823%40redis&bdata=JnNpdGU9ZWhvc3QtbGl2ZQ%3d%3d#bib2)) displays the results with contemporaneous PIN as the dependent variable. ,  and  are the lead, current and lagged CSR scores, respectively. Control variables generally lag dependent variables by 1 year as described in Equation ([5](https://0-web-s-ebscohost-com.libus.csd.mu.edu/ehost/detail/detail?vid=3&sid=3ee04797-65d6-4e15-aeab-6119e7fb4823%40redis&bdata=JnNpdGU9ZWhvc3QtbGl2ZQ%3d%3d#bib5)). Detailed variable definitions, including control variables, are described in the Appendix. Standard errors are adjusted for heteroskedasticity and clustered by firm. \*\*\*, \*\* and \* denote statistical significance at the 1, 5 and 10 percent levels.

## [Propensity score matched sample](https://0-web-s-ebscohost-com.libus.csd.mu.edu/ehost/detail/detail?vid=3&sid=3ee04797-65d6-4e15-aeab-6119e7fb4823%40redis&bdata=JnNpdGU9ZWhvc3QtbGl2ZQ%3d%3d#toc)

To address potential endogeneity concerns of the observed positive association between CSR and informative stock prices, we use a propensity score matched (PSM) sample. We begin by estimating the likelihood of a firm having high CSR using a probit model:

(8)

where indexes the firm and indexes the year. *High CSR* is coded as one if CSR is greater than the median and zero otherwise. Our prediction model for CSR is based on the model developed by Lys *et al.* (2015), which synthesises the determinants of CSR documented in the previously literature. Specifically, these determinants are sales to assets (*ATO*), profit margin (*PM*), cash holdings (*CASH*), operating cash flows (*CFO*), book leverage (*LEV*), market‐to‐book (*MB*), firm size (*SIZE*), research and development expenses (*RD*), advertising (*ADVERTISING*), litigation expenses (*LIT*) and corporate governance (*CGSCORE*). Year () and industry fixed effects are included because certain macroeconomic and industry factors may influence firm commitment to CSR. We then match firms with high CSR to firms with low CSR based on the estimated propensity score.

Panel A of Table 7 reports the results of estimating Equation ([8](https://0-web-s-ebscohost-com.libus.csd.mu.edu/ehost/detail/detail?vid=3&sid=3ee04797-65d6-4e15-aeab-6119e7fb4823%40redis&bdata=JnNpdGU9ZWhvc3QtbGl2ZQ%3d%3d#bib8)). In the pre‐match sample, several characteristics differentiate high from low CSR firms as shown in column ([1](https://0-web-s-ebscohost-com.libus.csd.mu.edu/ehost/detail/detail?vid=3&sid=3ee04797-65d6-4e15-aeab-6119e7fb4823%40redis&bdata=JnNpdGU9ZWhvc3QtbGl2ZQ%3d%3d#bib1)). These variables are *CFO*, *LEV*, *MB*, *SIZE* and *CGSCORE*. In the post‐match sample, none of those characteristics are statistically significant as shown in column ([2](https://0-web-s-ebscohost-com.libus.csd.mu.edu/ehost/detail/detail?vid=3&sid=3ee04797-65d6-4e15-aeab-6119e7fb4823%40redis&bdata=JnNpdGU9ZWhvc3QtbGl2ZQ%3d%3d#bib2)), suggesting that the differences in observed firm characteristics largely disappear in the matched sample. Panel B of Table 6 reports the estimation results after re‐running the baseline model, following Equation ([4](https://0-web-s-ebscohost-com.libus.csd.mu.edu/ehost/detail/detail?vid=3&sid=3ee04797-65d6-4e15-aeab-6119e7fb4823%40redis&bdata=JnNpdGU9ZWhvc3QtbGl2ZQ%3d%3d#bib4)), using the matched sample. There remains a significant, positive and significant association between CSR and price informativeness, measured by and *PIN*. The economic and statistical significance of the coefficient for *CSR* is comparable to the coefficient of *CSR* in the baseline regression in Table 2. Overall, this set of results mitigates the endogeneity concern that factors which contribute to a firm's choice of CSR involvement explain the differential in price informativeness.

7 Table Propensity score matched sample

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Panel A: Probit regressions before and after propensity score matching** |  |  |  |  |
|  | Prob(High CSR = 1) |  |  |  |
|  | (1) |  | (2) |  |
|  | Pre‐match |  |  | Post‐match |
|  | Coefficient | t‐Statistic | Coefficient | t‐Statistic |
| *ATO* | 0.026 | 0.38 | 0.079 | 0.99 |
| *PM* | −0.019 | −0.17 | −0.010 | −0.05 |
| *CASH* | −0.291 | −1.06 | −0.446 | −1.07 |
| *CFO* | 1.139\*\*\* | 3.32 | 0.450 | 0.99 |
| *LEV* | −0.719\*\*\* | −3.23 | 0.318 | 1.19 |
| *MB* | 0.213\*\*\* | 4.46 | −0.056 | −0.95 |
| *SIZE* | 0.149\*\*\* | 5.04 | 0.049 | 1.44 |
| *RD* | 0.157 | 0.88 | 0.035 | 0.11 |
| *ADVERTISING* | 0.377 | 0.57 | −0.387 | −0.28 |
| *LIT* | 1.750 | 0.69 | 1.636 | 0.51 |
| *CGSCORE* | 0.467\*\*\* | 2.75 | −0.019 | −0.09 |
| *CONSTANT* | −1.774\* | −1.72 | −0.720 | −0.71 |
| Year FE | Yes |  | Yes |  |
| Industry FE | Yes |  | Yes |  |
| Observations | 11,259 |  | 9,649 |  |
| Adj. R2 | 0.057 |  | 0.047 |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Panel B: Regressions of CSR and price informativeness using propensity score matched sample |  |  |  |  |
|  | (1)  ΔPIN |  | (2) |  |
|  |  |  | PIN |  |
|  | Coefficient | t‐Statistic | Coefficient | t‐Statistic |
| *CSR* | 0.065\*\* | 1.98 | 0.005\*\*\* | 4.05 |
| *SIZE* | −0.225\*\*\* | −5.95 | −0.008\*\*\* | −2.96 |
| *MB* | 0.003 | 0.11 | −0.000 | −0.26 |
| *ROE* | −0.107\*\* | −2.33 | −0.001 | −0.49 |
| *VROE* | 0.018 | 1.08 | 0.000 | 0.50 |
| *LEV* | 0.111 | 0.93 | −0.004 | −0.85 |
| *AGE* | −0.383\*\*\* | −3.34 | −0.007 | −1.27 |
| *DIV* | 0.033 | 0.64 | −0.002 | −1.11 |
| *DIVER* | −0.070 | −1.13 | −0.001 | −0.47 |
| *ANALYSTS* | −0.182\*\*\* | −5.43 | −0.003\* | −1.75 |
| *BETA* | −0.213\*\*\* | −6.96 | −0.012\*\*\* | −8.25 |
| *EQ* | 0.012\*\* | 2.48 | 0.000 | 0.70 |
| *INSTRADE* | −0.715\*\* | −2.37 | −0.014 | −1.18 |
| *CGSCORE* | 0.302\*\*\* | 4.31 | 0.014\*\*\* | 4.26 |
| *INSTNUM* | −0.386\*\*\* | −4.72 | −0.040\*\*\* | −4.95 |
| *FREQ* | −0.006 | −0.38 | −0.001 | −1.25 |
| Year FE | Yes |  | Yes |  |
| Firm FE | Yes |  | Yes |  |
| Observations | 9,649 |  | 9,649 |  |
| Adj. R2 | 0.751 |  | 0.775 |  |

This table reports estimation results from a propensity score matched (PSM) sample. The sample period is from 1995 to 2010. A probit model is first used to estimate the likelihood of firms exhibiting high levels of CSR. Contemporaneous independent variables are used as described in Equation ([7](https://0-web-s-ebscohost-com.libus.csd.mu.edu/ehost/detail/detail?vid=3&sid=3ee04797-65d6-4e15-aeab-6119e7fb4823%40redis&bdata=JnNpdGU9ZWhvc3QtbGl2ZQ%3d%3d#bib7)). The estimation result is reported in column ([1](https://0-web-s-ebscohost-com.libus.csd.mu.edu/ehost/detail/detail?vid=3&sid=3ee04797-65d6-4e15-aeab-6119e7fb4823%40redis&bdata=JnNpdGU9ZWhvc3QtbGl2ZQ%3d%3d#bib1)) of Panel A, with the dependent variable being a dichotomous variable that equals 1 if a firm has a high level of CSR. We then match firms based on the estimated propensity scores. Column ([2](https://0-web-s-ebscohost-com.libus.csd.mu.edu/ehost/detail/detail?vid=3&sid=3ee04797-65d6-4e15-aeab-6119e7fb4823%40redis&bdata=JnNpdGU9ZWhvc3QtbGl2ZQ%3d%3d#bib2)) of Panel A reports the post‐match regression results. Panel B reports the estimation results when we regress measures of price informativeness on CSR using the matched sample. Independent variables lag dependent variables by 1 year as described in Equation ([4](https://0-web-s-ebscohost-com.libus.csd.mu.edu/ehost/detail/detail?vid=3&sid=3ee04797-65d6-4e15-aeab-6119e7fb4823%40redis&bdata=JnNpdGU9ZWhvc3QtbGl2ZQ%3d%3d#bib4)). Detailed variable definitions are given in the Appendix. Standard errors are adjusted for heteroskedasticity and firm‐level clustering. \*, \*\* and \*\*\* indicate a significance level of less than 0.10, 0.05 and 0.01, respectively, based on a two‐tailed test.

## [CSR strengths and concerns](https://0-web-s-ebscohost-com.libus.csd.mu.edu/ehost/detail/detail?vid=3&sid=3ee04797-65d6-4e15-aeab-6119e7fb4823%40redis&bdata=JnNpdGU9ZWhvc3QtbGl2ZQ%3d%3d#toc)

Our measure of CSR follows prior literature (Deng *et al.,* 2013) where we compute a net score, subtracting adjusted CSR concerns from strengths. CSR strengths are reflective of proactive firm policies such as pollution prevention and a diverse labour force, while concerns are often associated with public incidents such as workplace accidents, lawsuits and regulatory problems. While a commitment to CSR can incentivise information acquisition, CSR concerns, such as the 2010 British Petroleum oil spill or other major public incidents, might also draw attention and trigger greater investor search for information. To investigate the differential relation between CSR strengths and weaknesses on price informativeness, we separate our CSR score into a score for CSR strengths (*CSR\_STR*) and a score for CSR concerns (*CSR\_CON*) and rerun our baseline model in Equation ([4](https://0-web-s-ebscohost-com.libus.csd.mu.edu/ehost/detail/detail?vid=3&sid=3ee04797-65d6-4e15-aeab-6119e7fb4823%40redis&bdata=JnNpdGU9ZWhvc3QtbGl2ZQ%3d%3d#bib4)).

Table 8 presents the results. We first examine the inclusion of *CSR\_STR* and *CSR\_CON* separately. As shown in columns ([1](https://0-web-s-ebscohost-com.libus.csd.mu.edu/ehost/detail/detail?vid=3&sid=3ee04797-65d6-4e15-aeab-6119e7fb4823%40redis&bdata=JnNpdGU9ZWhvc3QtbGl2ZQ%3d%3d#bib1)) and ([4](https://0-web-s-ebscohost-com.libus.csd.mu.edu/ehost/detail/detail?vid=3&sid=3ee04797-65d6-4e15-aeab-6119e7fb4823%40redis&bdata=JnNpdGU9ZWhvc3QtbGl2ZQ%3d%3d#bib4)), the coefficient of *CSR\_STR* is positive and statistically significant at the 1 percent level for both and *PIN*. However, in columns ([2](https://0-web-s-ebscohost-com.libus.csd.mu.edu/ehost/detail/detail?vid=3&sid=3ee04797-65d6-4e15-aeab-6119e7fb4823%40redis&bdata=JnNpdGU9ZWhvc3QtbGl2ZQ%3d%3d#bib2)) and ([5](https://0-web-s-ebscohost-com.libus.csd.mu.edu/ehost/detail/detail?vid=3&sid=3ee04797-65d6-4e15-aeab-6119e7fb4823%40redis&bdata=JnNpdGU9ZWhvc3QtbGl2ZQ%3d%3d#bib5)) the coefficient of *CSR\_CON* is statistically insignificant for and significantly negative for *PIN*. Similar results are presented in column ([3](https://0-web-s-ebscohost-com.libus.csd.mu.edu/ehost/detail/detail?vid=3&sid=3ee04797-65d6-4e15-aeab-6119e7fb4823%40redis&bdata=JnNpdGU9ZWhvc3QtbGl2ZQ%3d%3d#bib3)) and ([6](https://0-web-s-ebscohost-com.libus.csd.mu.edu/ehost/detail/detail?vid=3&sid=3ee04797-65d6-4e15-aeab-6119e7fb4823%40redis&bdata=JnNpdGU9ZWhvc3QtbGl2ZQ%3d%3d#bib6)) when both *CSR\_STR* and *CSR\_CON* are included in the same regression. Overall, this table provides evidence suggesting that firms' proactive involvement in CSR activities, as measured by CSR strengths, draws more trading and searches for information and promotes more informative stock prices.

8 Table Differential impact of CSR strengths and concerns

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  | **PIN** |  |  |
|  | **(1)** | **(2)** | **(3)** | **(4)** | **(5)** | **(6)** |
| *CSR\_STR* | 0.122\*\*\*  (3.32) |  | 0.120\*\*\*  (3.29) | 0.006\*\*\*  (5.23) |  | 0.007\*\*\*  (5.36) |
| *CSR\_CON* |  | 0.049  (1.26) | 0.040  (1.06) |  | −0.003\*  (−1.91) | −0.003\*\*  (−2.23) |
| *SIZE* | −0.226\*\*\*  (−7.01) | −0.225\*\*\*  (−7.00) | −0.227\*\*\*  (−7.04) | −0.007\*\*\*  (−3.19) | −0.006\*\*\*  (−3.11) | −0.006\*\*\*  (−3.15) |
| *MB* | −0.033  (−1.26) | −0.037  (−1.41) | −0.033  (−1.24) | −0.002\*  (−1.86) | −0.002\*\*  (−2.16) | −0.002\*  (−1.91) |
| *ROE* | −0.090\*\*  (−2.51) | −0.088\*\*  (−2.45) | −0.090\*\*  (−2.51) | 0.001  (0.82) | 0.001  (0.87) | 0.001  (0.79) |
| *VROE* | 0.023\*  (1.85) | 0.022\*  (1.86) | 0.022\*  (1.84) | 0.000  (0.03) | 0.000  (0.07) | 0.000  (0.07) |
| *LEV* | 0.038  (0.35) | 0.063  (0.59) | 0.036  (0.33) | 0.001  (0.27) | 0.003  (0.69) | 0.001  (0.31) |
| *AGE* | −0.582\*\*\*  (−5.50) | −0.604\*\*\*  (−5.72) | −0.573\*\*\*  (−5.36) | −0.004  (−0.91) | −0.007  (−1.45) | −0.005  (−1.08) |
| *DIV* | 0.096\*\*  (2.38) | 0.096\*\*  (2.38) | 0.095\*\*  (2.36) | −0.002  (−0.87) | −0.002  (−0.80) | −0.002  (−0.84) |
| *DIVER* | 0.018  (0.32) | 0.019  (0.34) | 0.019  (0.35) | −0.001  (−0.27) | −0.001  (−0.33) | −0.001  (−0.32) |
| *ANALYSTS* | −0.210\*\*\*  (−7.46) | −0.212\*\*\*  (−7.53) | −0.210\*\*\*  (−7.45) | −0.003\*\*  (−2.38) | −0.003\*\*  (−2.51) | −0.003\*\*  (−2.40) |
| *BETA* | −0.234\*\*\*  (−9.70) | −0.239\*\*\*  (−9.76) | −0.235\*\*\*  (−9.71) | −0.013\*\*\*  (−11.11) | −0.013\*\*\*  (−11.26) | −0.013\*\*\*  (−11.09) |
| *EQ* | 0.012\*\*\*  (2.88) | 0.014\*\*\*  (3.23) | 0.012\*\*\*  (2.91) | 0.000  (0.68) | 0.000  (0.99) | 0.000  (0.63) |
| *INSTRADE* | −0.667\*\*  (−2.30) | −0.668\*\*  (−2.30) | −0.669\*\*  (−2.31) | −0.016\*  (−1.75) | −0.016\*  (−1.72) | −0.016\*  (−1.73) |
| *CGSCORE* | 0.240\*\*\*  (3.76) | 0.294\*\*\*  (5.26) | 0.241\*\*\*  (3.78) | 0.011\*\*\*  (4.78) | 0.014\*\*\*  (5.95) | 0.011\*\*\*  (4.74) |
| *INSTNUM* | −0.381\*\*\*  (−5.81) | −0.370\*\*\*  (−5.67) | −0.379\*\*\*  (−5.78) | −0.041\*\*\*  (−6.23) | −0.041\*\*\*  (−6.22) | −0.042\*\*\*  (−6.25) |
| *FREQ* | −0.011  (−0.75) | −0.010  (−0.70) | −0.010  (−0.71) | −0.001\*\*  (−2.23) | −0.001\*\*  (−2.29) | −0.001\*\*  (−2.31) |
| Year FE | Yes | Yes | Yes | Yes | Yes | Yes |
| Firm FE | Yes | Yes | Yes | Yes | Yes | Yes |
| Observations | 11,312 | 11,312 | 11,312 | 11,312 | 11,312 | 11,312 |
| Adj.R2 | 0.714 | 0.714 | 0.714 | 0.744 | 0.743 | 0.744 |

This table reports the regression results of CSR strengths (*CSR\_STR*) and concerns (*CSR\_CON*) and price informativeness. The sample period is from 1995 to 2010. The dependent variables are idiosyncratic volatility in columns ([1](https://0-web-s-ebscohost-com.libus.csd.mu.edu/ehost/detail/detail?vid=3&sid=3ee04797-65d6-4e15-aeab-6119e7fb4823%40redis&bdata=JnNpdGU9ZWhvc3QtbGl2ZQ%3d%3d#bib1))–([3](https://0-web-s-ebscohost-com.libus.csd.mu.edu/ehost/detail/detail?vid=3&sid=3ee04797-65d6-4e15-aeab-6119e7fb4823%40redis&bdata=JnNpdGU9ZWhvc3QtbGl2ZQ%3d%3d#bib3)) and the probability of informed trading (*PIN*) in columns ([4](https://0-web-s-ebscohost-com.libus.csd.mu.edu/ehost/detail/detail?vid=3&sid=3ee04797-65d6-4e15-aeab-6119e7fb4823%40redis&bdata=JnNpdGU9ZWhvc3QtbGl2ZQ%3d%3d#bib4))–([6](https://0-web-s-ebscohost-com.libus.csd.mu.edu/ehost/detail/detail?vid=3&sid=3ee04797-65d6-4e15-aeab-6119e7fb4823%40redis&bdata=JnNpdGU9ZWhvc3QtbGl2ZQ%3d%3d#bib6)). The main variables of interest are CSR strengths (*CSR\_STR*) and concerns (*CSR\_CON*). Independent variables generally lag dependent variables by 1 year as described in Equation ([4](https://0-web-s-ebscohost-com.libus.csd.mu.edu/ehost/detail/detail?vid=3&sid=3ee04797-65d6-4e15-aeab-6119e7fb4823%40redis&bdata=JnNpdGU9ZWhvc3QtbGl2ZQ%3d%3d#bib4)). Detailed variable definitions, including control variables, are described in the Appendix. Standard errors are adjusted for heteroskedasticity and clustered by firm. *T*‐statistics are reported in parentheses. \*\*\*, \*\* and \* denote statistical significance at the 1, 5 and 10 percent levels.

## [Alternative explanations](https://0-web-s-ebscohost-com.libus.csd.mu.edu/ehost/detail/detail?vid=3&sid=3ee04797-65d6-4e15-aeab-6119e7fb4823%40redis&bdata=JnNpdGU9ZWhvc3QtbGl2ZQ%3d%3d#toc)

We further address several alternative explanations of our results in this subsection. First, it is possible that CSR is implemented strategically to give firms comparative advantages, such as fostering stronger customer relationships (Brown and Dacin, 1997) or attracting and retaining higher quality workers (Greening and Turban, 2000). The distinct investments in CSR may result in lower systematic risk exposures (Bénabou and Tirole, 2010) and thereby mechanically drive higher idiosyncratic volatilities among firms with higher CSR. To further explore this strategic view of CSR, we directly control for the systematic risk, *BETA*, and continue to find a positive and significant relation between CSR and price informativeness. Our main results continue to hold when we exclude the financial crisis period during which high CSR firms may display a different systematic risk due to their resilience (Bénabou and Tirole, 2010). While we cannot completely rule out the strategic view of CSR, our results suggest that the better information and trading environment of higher CSR firms plays a role in facilitating information flow into stock prices.

Second, greater CSR expenditures may signal better future financial performance (Lys *et al.,* 2015) and attract more information search. Foremost, it is still under debate whether CSR is linked to financial performance. An analysis of 167 studies by Margolis *et al.*  (2007) find only a small positive correlation between CSR and financial performance. Furthermore, even if CSR can signal future financial performance, it is not clear as to why *only* CSR strength can attract more information search. Indeed, if CSR concerns indicate poorer future financial performance, they can also attract greater information search by investors, who actively exploit arbitrage opportunities. However, Table 8 shows that greater CSR concern is *not* associated with more information search, which does not support the CSR signalling view.

Third, because prior and concurrent research suggests that the disclosures of CSR activities can potentially attract more dedicated institutional investors and analyst coverage (Dhaliwal *et al.,* 2011) and enhance price informativeness (Grewal *et al.,* 2020), we further control for CSR disclosures to verify that our results are not driven by CSR disclosures. We measure CSR disclosure by a dummy variable for whether the firm issued a stand‐alone CSR report, as defined by Thomson Reuters Asset4, in our regressions of price informativeness. In untabulated results, we find that CSR ratings remain a positive and significant factor when controlling for the dissemination of CSR activities.36 To further alleviate this concern, we examine investors' requests for new 10‐K filings that rarely contain discussions of CSR issues. A survey by KPMG shows that only 1 percent of the top 100 firms in the United States integrated CSR reports into their 10‐K filings during 2005–2008. Therefore, requests for new 10‐K filings up to 2008 should mostly consist of searches for non‐CSR disclosures. We rerun the regression of 10‐K filing requests using a sample up to year 2008. In untabulated results, we continue to find that higher CSR ratings are associated with more requests for new 10‐K filings on EDGAR. This test further alleviates the concern that CSR disclosures drive our main results.

# [Conclusion](https://0-web-s-ebscohost-com.libus.csd.mu.edu/ehost/detail/detail?vid=3&sid=3ee04797-65d6-4e15-aeab-6119e7fb4823%40redis&bdata=JnNpdGU9ZWhvc3QtbGl2ZQ%3d%3d#toc)

We examine the role of CSR on the flow of information into stock prices. The ethical and reputational view of CSR hypothesises that firms participate in CSR activities to fulfil their expected social responsibilities and to establish a reputation as good corporate citizens. Therefore, a commitment to CSR can incentivise information acquisition by indicating lower information acquisition costs and greater protection for outside investors. However, the agency view of CSR argues that CSR activities are a manifestation of agency problems in the firm. Self‐serving managers may engage in CSR activities to derive private benefits at the expense of shareholders and may manipulate information to disguise their opportunism, which discourages investor information acquisition and leads to less informed stock prices. We empirically examine the association between CSR and stock price informativeness as measured by idiosyncratic volatility and PIN. Our results consistently show a positive association between CSR and firm‐specific information contained in stock prices.

Using data on investors' search activity on EDGAR for new 10‐K filings and on Google for company news around earnings announcements, our findings suggest that investors collect more information from firms that are more socially responsible around these major disclosure events. These results provide direct evidence that CSR engagement encourages more information search activity.

We conduct a number of robustness checks using alternative empirical specifications. The lead‐lag analyses suggest a positive relation between lagged CSR (rather than lead or contemporaneous) and price informativeness. Results from a propensity score matched sample are consistent with our main findings and suggest that CSR is not an aggregate proxy of other firm characteristics. Furthermore, results using FERC as an alternative measure of price informativeness provide further support for our main findings. In addition, we show that our results are unlikely to be driven by several alternative explanations. While these robustness checks help alleviate the potential problem of endogeneity, to the extent that these procedures are not exhaustive, one should be cautious in making casual inferences from the findings in this paper.

Our paper adds to the growing literature on price discovery and CSR. We examine whether and how CSR is associated with the flow of information to stock prices – a fundamental question in financial economics. To the best of our knowledge, no study has investigated this topic in‐depth. Overall, our results are consistent with the ethical and reputational view that firms' active engagement in CSR facilitates information flow into stock prices.

Our study further has some potential policy and research implications. Our results suggest that a commitment to CSR benefits firms with more informative stock prices, which may provide firms more accurate signals to efficiently allocate their capital. The existing literature documents mixed evidence on the relation between CSR and investment efficiency (Bhandari and Javakhadze, 2017; Benlemlih and Bitar, 2018). It can be promising for future research to examine the relation between CSR and corporate capital allocation decisions, particularly how stock price informativeness plays a role in this relation. Our study further informs policy makers. While various policy tools are used to promote capital market efficiency, our study implies that CSR activities can help firms to self‐regulate their information and trading environment and enhance market efficiency.

Appendix Variable definitions

|  |  |  |
| --- | --- | --- |
| **Variables** |  | **Definition** |
| Price informativeness |  |  |
| Idiosyncratic volatility |  | Annual logistic transformed relative volatility estimated from an expanded market model including the Fama‐French 48 industry returns |
| Probability of information‐based trading | *PIN* | Annual probability of information‐based trading as in Easley et al. (2002) |
| Future earnings response coefficient | *FERC* | The coefficient of future earnings captured in stock prices as in Choi et al. (2011) |
| Corporate social responsibility (CSR) |  |  |
| Corporate social responsibility | *CSR* | The sum of yearly adjusted community, diversity, employee relations, environment, human rights, and product quality and safety KLD CSR scores. Adjusted CSR is estimated by scaling the raw strength and concern scores of each category by the number of items of the strengths and concerns of that category in the year and then taking the net difference between the strength and concern scores for that category |
| Corporate social responsibility strengths | *CSR\_STR* | The sum of adjusted strengths across community, diversity, employee relations, environment, human rights, and product quality and safety categories |
| Corporate social responsibility weaknesses | *CSR\_CON* | The sum of adjusted concerns across community, diversity, employee relations, environment, human rights, and product quality and safety categories |
| Investor information search |  |  |
| SEC filing requests (filing date) | *EDGAR\_1* | The number of non‐automated clicks for an EDGAR 10‐K report on the filing date |
| SEC filing requests (3 days) | *EDGAR\_3* | The number of non‐automated clicks for an EDGAR 10‐K report in a 3‐day window from days [0,2] |
| SEC filing requests (1 weeks) | *EDGAR\_1WK* | The number of non‐automated clicks for an EDGAR 10‐K report in a 7‐day window from days [0,6] |
| Company internet information search | *GSEARCH* | Daily abnormal searches for company information as captured by the Google SVI (Drake et al., 2012). When the variable is appended with an earnings announcement event window [−5, −1], [0] or [+1, +5], the number of abnormal Google searches is averaged over the specified window. Day 0 is the earnings announcement date. |
| Other variables |  |  |
| Magnitude of returns | *|RET|* | Absolute value of raw stock returns of the firm on that day |
| Magnitude of firm performance | *|ROA|* | Absolute value of return on assets (earnings before extraordinary items scaled by total assets) |
| Advertising expense | *ADVERTISING* | Advertising expense scaled by net sales |
| Firm age | *AGE* | Natural logarithm of the number of years since the firm's stock was included in CRSP |
| Analyst coverage | *ANALYSTS* | Natural logarithm of 1 plus the number of unique analyst estimates for that firm |
| Earnings announcements | *ANM* | Number of firms announcing earnings on the same day |
| Asset growth | *ATGROWTH* | Growth rate in total assets |
| Sales to assets | *ATO* | Net sales scaled by total assets |
| Capital asset pricing model beta | *BETA* | Market beta estimated from a market model using daily stock returns |
| Bid‐ask spread | *BIDASK* | The high–low estimate of bid‐ask spread for the firm on that day |
| Cash holdings | *CASH* | Cash and short‐term investments scaled by total assets |
| Cash flow from operations | *CFO* | Cash flow from operations scaled by total assets |
| Corporate governance | *CGSCORE* | Corporate governance dimension score of the KLD Index |
| Dividend dummy | *DIV* | A dummy variable that equals 1 if a firm paid dividends, and 0 otherwise |
| Diversification dummy | *DIVER* | A dummy variable that equals 1 if a firm has multiple operating segments, and 0 otherwise |
| Earnings persistence | *EARN\_P* | The first‐order autocorrelation coefficient of quarterly earnings per share over the past 4 years |
| Earnings announcement dummy | *EARNINGS\_ANNOUNCEMENT[0]* | A dummy variable that equals 1 on an earnings announcement day and 0 otherwise |
| Post earnings announcement date dummy | *EARNINGS\_ANNOUNCEMENT[1,5]* | A dummy variable that equals 1 if the day is in the window from 1 day to 5 days after the earnings announcement, and 0 otherwise |
| Prior earnings announcement date dummy | *EARNINGS\_ANNOUNCEMENT[−5,‐1]* | A dummy variable that equals 1 if the day is in the window from 5 days to 1 day prior to the earnings announcement, and 0 otherwise |
| Current earnings | *EARNt* | Earnings per share for the current year, deflated by the stock price at the beginning of the current year |
| Future earnings | *EARNt+1* | Earnings per share in the following year, deflated by the stock price at the beginning of the current year |
| Prior earnings | *EARNt−1* | Earnings per share in the prior year deflated by the stock price at the beginning of the current year |
| Earnings quality | *EQ* | Earnings quality measured as the magnitude of discretionary accruals following Jones (1991) as modified by Dechow et al. (1995) |
| Concurrent earnings forecasts | *FORECAST* | A dummy variable that equals 1 if a management earnings forecast is issued concurrently with the earnings announcement, and 0 otherwise |
| Frequency of earnings forecasts | *FREQ* | The natural logarithm of one plus the number of management earnings forecasts issued in a year |
| Number of institutional investors | *INSTNUM* | Number of institutional investors holding shares in a firm |
| Institutional ownership | *INSTOWN* | Number of shares owned by institutional investors scaled by total shares outstanding |
| Insider trading | *INSTRADE* | Sum of shares purchased/shares outstanding – sum of shares sold/ shares outstanding, where the sum is over each firm's insiders over all days in the year, and where shares outstanding is the number of shares outstanding on the date of the insiders' transaction |
| Book leverage | *LEV* | Long‐term debt scaled by total assets |
| Litigation expense | *LIT* | Litigation expense scaled by net sales |
| Earnings loss | *LOSS* | A dummy variable that equals 1 if a firm experiences negative earnings, and 0 otherwise |
| Market‐to‐book ratio | *MB* | Natural logarithm of market value of equity divided by book value of equity (ln(common shares outstanding × fiscal year end stock price/book value of equity) |
| Number of news articles | *NEWS* | Number of news articles in the Wall Street Journal, New York Times, USA Today and the Washington Post that mention the firm on day t (Soltes, 2009). When the variable is appended with an earnings announcement event window [−5, −1], [0] or [+1, +5], the number of articles is averaged over the specified window. Day 0 is the earnings announcement date. |
| NYSE dummy | *NYSE* | A dummy variable that equals 1 if the stock is traded on the NYSE, and 0 otherwise |
| Profit margin | *PM* | Income before extraordinary items divided by net sales |
| Fourth quarter | *QTR4* | A dummy variable that equals 1 if the day is in the fourth fiscal quarter of a firm, and 0 otherwise |
| Research and development expense | *RD* | Research and development expenses scaled by net sales |
| 3‐month returns | *CRET(m‐3, m)* | Cumulative raw stock returns over the previous three months |
| Current returns | *RETt* | Annual stock returns for a firm in the current year |
| Lead returns | *RETt+1* | Annual stock returns for a firm in the next year |
| Return on equity | *ROE* | Earnings before extraordinary items scaled by book value of equity |
| Shorted shares | *SHORT* | Monthly level of shares held in a short position scaled by total shares outstanding |
| Firm size | *SIZE* | Natural logarithm of annual market capitalisation (common shares outstanding × fiscal year end stock price) |
| Future earnings volatility | *STDEARN* | Standard deviation of earnings per share in the leading three years, deflated by the stock price at the beginning of the current year |
| Supply of company filings | *SUPPLY* | Number of past filings made by a firm |
| Trading volume | *TURNOVER* | Average monthly trading volume of a firm scaled by the average number of shares outstanding over a one‐year period |
| Volatility of return on equity | *VROE* | Variance of annual ROE over the last three years |

# [Footnotes](https://0-web-s-ebscohost-com.libus.csd.mu.edu/ehost/detail/detail?vid=3&sid=3ee04797-65d6-4e15-aeab-6119e7fb4823%40redis&bdata=JnNpdGU9ZWhvc3QtbGl2ZQ%3d%3d#toc)

1 Recently, the Business Roundtable, a group of CEOs representing nearly 200 major US corporations, dropped the long-held notion that business decisions should ﬁrst and foremost serve their shareholders, and stated that corporate leaders should take into account all stakeholders including employees, customers, suppliers and society at large, in their decision making beyond maximising proﬁts (Benoit, 2019).

2 Results are from the 2013 Global Business Outlook Survey conducted by Duke University and *CFO Magazine* [(http://www.reputationxchange.com/csr-through-the-eyes-of-cfos](http://www.reputationxchange.com/csr-through-the-eyes-of-cfos)).

3 For instance, former Enron CEO, Kenneth Lay, placed great importance on charity and philanthropy. As a result, Enron became one of the largest corporate philanthropists in Texas donating millions to arts groups, scholarship funds and medical facilities (Hemingway and Maclagan, 2004). At the same time, Enron used extensive, complex tax shelters and special purpose entities to manipulate and mask its earnings while preventing investors from understanding its sources (Desai and Dharmapala, 2009).

4 We use 10-K ﬁlings rather than 10-Q ﬁlings because 10-K ﬁlings are the most searched ﬁlings on EDGAR (Drake *et al.*, 2012) and are more informative to investors (Loughran and McDonald, 2015). Furthermore, Li and Ramesh (2009) ﬁnd no signiﬁcant stock price and volume reaction to quarterly ﬁlings after controlling for the concurrent release of earnings news.

5 We deﬁne private information as the new information that has not yet been incorporated into the stock price. Even though information in public disclosures is available upon release, such information is not impounded into the stock price instantaneously because investors need to digest the information over time, leading to new information becoming gradually incorporated into the stock price. Therefore, investigation of the dissemination of new information in public disclosures can shed light on investors’ search for private information.

6 We focus our discussions on the costs of information acquisition and not the expected benefits of information acquisition because our hypotheses are motivated by the theoretical predictions of Grossman and Stiglitz (1980). They posit that when information acquisition is costly, price only partially reveals the private information of the informed traders so that the expected benefits of information acquisition are enough to compensate for the costs of information acquisition. In equilibrium, when the information acquisition costs are low (high), price is more (less) informative, leaving a low (high) expected benefit that is just enough to offset the information acquisition costs. Thus, the Grossman and Stiglitz (1980) model provides a clear analytical framework and prediction that it is the costs of information acquisition that determine the informativeness of stock prices.

7 Murphy (1999) surveys the executive compensation literature and concludes that ‘Unfortunately, although there is a plethora of evidence on dysfunctional consequences of poorly designed pay programs, there is surprisingly little direct evidence that higher pay-performance sensitivities lead to higher stock-price performance.’

8 For example, it is argued in the literature that firms’ CSR commitment can build stronger customer relationships (Brown and Dacin, 1997), attract and retain higher quality workers (Greening and Turban, 2000) and reduce adverse political, regulatory and social penalties from negative corporate events (Porter and Linde, 1995; Tran and O’Sullivan, 2020).

9 Fishman and Hagerty (1992) theorise that insider trading discourages outside investors from collecting and trading private information by limiting the gains of outside investors. As a result, while informed trades by insiders might increase, overall informed trading and stock price informativeness can decline because of reduced private information acquisition and trading by outside investors. Empirically, Fernandes and Ferreira (2009) show that the enforcement of laws that restrain insider trading improves stock price informativeness.

10 While one can argue that information manipulation of socially irresponsible firms may also attract investors to search for private information, the cost to discover a firm’s true fundamental value can be prohibitively high due to complex accounting manoeuvres. As argued by Grossman and Stiglitz (1980), higher information acquisition costs lead to fewer traders acquiring information. In equilibrium, the price is less informative, with the expected benefits of acquiring information equal to the higher costs of information acquisition.

11 The existing literature suggests that short-sales are generally executed by sophisticated investors and require greater investing skills given that short sales are exposed to unlimited losses and higher expenses than long positions (Diamond and Verrecchia, 1987; Dechow et al., 2001). Short-sellers are subject to lending fees in order to borrow the stock. In addition, they face the risk of having an involuntarily closed short position due to loan recalls and face constraints including government regulations or institutional charter restrictions (Jones and Lamont, 2002). Both empirical and theoretical studies show that short-sale constraints can hurt the efficiency of stock prices (Diamond and Verrecchia, 1987; Jones and Lamont, 2002; Saffi and Sigurdsson, 2011).

12 In equilibrium, the benefit of information acquisition is low due to the more informative stock price exactly offsetting the low information acquisition cost.

13 See note 4.

14 The sample ends in 2010 to maintain consistency in the sample period across our measures of stock price informativeness, since data on the probability of informed trading (PIN) ends in 2010. Extending the sample to 2013 (the last year that KLD issued CSR ratings as used in this paper) does not qualitatively change the results for idiosyncratic volatility (Ψ), our first measure of stock price informativeness.

15 KLD originally covered only firms in the S&P 500 Index and the Domini 400 Social Management Index. KLD expanded its coverage to firms in the Russell 1000 in 2001 and to firms in the Russell 3000 in 2003.

16 For instance, Durnev et al. (2003) show that the stock prices of firms with more idiosyncratic volatility contain more information about future earnings.

17 PIN data are available at http://scholar.rhsmith.umd.edu/sbrown/pin-data

18 It may appear contradictory that higher CSR is associated with a lower probability of insider trading, yet is positively associated with the probability of informed trading (PIN). The probability of informed trading consists of trades made by corporate insiders (e.g., managers and board of directors) or trades made by outside investors that expense resources to become informed. Thus, while CSR may restrain informed trades from insiders (Gao et al. 2014), it may also encourage more outside investors to collect and trade on private information for higher expected gains because outside investors are less likely to trade with insiders (Fishman and Hagerty 1992; Fernandes and Ferreira 2009). As a result, CSR may be positively related to PIN.

17 For instance, in the environment dimension, a firm can receive a credit for the use of clean energy and a concern for hazardous waste.

18 To illustrate, suppose that a hypothetical firm receives 1, 2, 1, 0, 1 and 1 KLD strengths across the six dimensions, and the total numbers of strength for each dimension are 5, 4, 3, 5, 6 and 4, respectively. According to our definition, the adjusted total strength score for the firm is equal to 1/5 + 2/4 + 1/3 + 0/5 + 1/6 + 1/4 = 1.45. Assuming that the adjusted concern score can be calculated similarly and is equal to 1.35, the adjusted CSR score is 1.45 − 1.35 = 0.1.

19 Consistent with limited investor attention, Drake et al. (2012) find that filings may be requested days or weeks after their initial release.

20 We thank Michael Drake for providing access to the Google search data. Abnormal Google SVI is computed as the raw Google SVI score for firm on day , minus the average Google SVI score for the same day of the week for that firm over the prior 10 weeks, scaled by this average Google SVI score. Please see Drake et al. (2012) for further details on how to compute abnormal searches.

21 As a robustness check, we also winsorise all non-logarithmic, continuous variables at the 2nd and the 98th percentile and at the 5th and 95th percentile, respectively. CSR remains economically and statistically significant in the idiosyncratic volatility and the probability of informed trading (PIN) regressions when we adopt these alternative winsorisation thresholds.

22 Following the previous literature (Ferreira and Laux 2007; Ferreira et al., 2011; Gul et al., 2011), we select the panel data fixed effect model for the price informativeness test to keep our study comparable with prior studies. The unit-root test suggests that our panel data is stationary and does not possess a unit root. We also rerun the baseline model with random effects and find quantitively similar results.

23 In untabulated results, we also include the number of conference calls as an additional measure of voluntary disclosure. Our main results remain qualitatively similar when we control for conference calls. Including conference calls in the regression shortens our sample period and reduces our sample size (we obtain conference call data from Thomson Reuters Street Events, which covers few firms before 2001). As a result, we only include management forecasts as a control in our main regressions.

24 This number is calculated as 0.074\*0.501/1.155. 0.074 is the coefficient of CSR in column (2) of Table 2. 0.501 and 1.155 are the standard deviations of CSR and idiosyncratic volatility (Ψ) from Table 1.

25 For example, based on the estimates in Ferreira and Laux (2007), a one standard deviation decrease in the G-index (better corporate governance) is associated with 1.66% standard deviation increase in idiosyncratic volatility. This number is calculated as 0.0129\*2.833/2.198. 0.0129 is the coefficient of the G-index in column (2) of their table 3. 2.833 and 2.198 are the standard deviations of the G-index and idiosyncratic volatility in their sample presented in their table 2.

26 This number is calculated as 0.006\*0.501/0.05. 0.006 is the coefficient of CSR in column (4) of Table 2. 0.501 and 0.05 are the standard deviations of CSR and probability of informed trading (PIN) from Table 1.

27 We select the panel data fixed effect model for the new 10-K filing search test to keep our study comparable with prior studies (Drake et al. 2015). The unit-root test suggests that our panel data is stationary and does not possess a unit root. A regression model with random effects yields quantitively similar results.

28 The economic magnitudes for the results of EDGAR new 10-K filing searches and abnormal Google searches are calculated in a similar manner as stated in footnotes 23 and 25. To save space, we do not specify the calculations of these economic magnitudes.

29 In terms of economic significance, a one standard deviation increase in CSR is associated with a 2.60 percent standard deviation increase in three-day new 10-K filing searches (LOG(EDGAR\_3)) and a 2.17 percent standard deviation increase in one-week new 10-K filing searches (LOG(EDGAR\_1WK)) on EDGAR, respectively.

30 We acknowledge that investors can obtain annual financial statement data from sources other than EDGAR, such as the firm’s own website. Thus, there is potential measurement error because we only observe requests for filings on EDGAR. This measurement error adds noise to the information search measure and biases against finding any significant results. In addition, our Google search results are consistent with the EDGAR filing request results, providing supportive evidence of our inference.

31 We select the panel data fixed effect model for the Google search test to keep our study comparable with prior studies (Drake et al. 2012). The unit-root test suggests that our panel data is stationary and does not possess a unit root. We further find quantitively similar results with a random effects model.

32 To provide more evidence, we adopt price delay as an additional measure of price efficiency as in Dong et al. (2016). Price delay measures the average delay with which stock prices respond to information. Greater investor information search and trading should facilitate faster incorporation of information into stock prices. We find that CSR is negatively associated with price delay, suggesting that CSR attracts more investor information search and trade and facilitates information flow into stock prices more quickly.

33 We choose the panel data fixed effect model for the FERC test to keep our study comparable with prior studies (Choi et al., 2011). The unit-root test suggests that our panel data is stationary and does not possess a unit root. Our results remain quantitatively similar when we use a random effects model.

34 Some studies use three-year future earnings instead of next year’s earnings in FERC studies (Tucker and Zarowin, 2006). Therefore, we replicate our results using three-year future earnings instead. Our results show that the interaction term of CSR and three-year future earnings is statistically significant at the 10% level. Our result could suggest that the enhanced information acquisition from better CSR performance incorporates more near-term future earnings into the stock price than longer-term future earnings. It is also possible that the reduced significance is due to measurement error in future earnings (Collins et al., 1994).

35 In untabulated results, we also include lagged Ψ and PIN as additional controls and find that only past year CSR is significantly positively associated with stock price informativeness.

36 To save space, results of these alternative explanation tests are not reported but are available upon request.

# [References](https://0-web-s-ebscohost-com.libus.csd.mu.edu/ehost/detail/detail?vid=3&sid=3ee04797-65d6-4e15-aeab-6119e7fb4823%40redis&bdata=JnNpdGU9ZWhvc3QtbGl2ZQ%3d%3d#toc)

Altschuler, D., G. Chen, and J. Zhou, 2015, Anticipation of management forecasts and analysts' private information search, *Review of Accounting Studies* 20, 803 – 838.

Barnard, J. W., 1997, Corporate philanthropy, executives' pet charities and the agency problem, *New York Law School Review* 41, 1147 – 1178.

Barnea, A., and A. Rubin, 2010, Corporate social responsibility as a conflict between shareholders, *Journal of Business Ethics* 97, 71 – 86.

Benabou, R., and J. Tirole, 2010, Individual and corporate social responsibility, *Economica* 77, 1 – 19.

Benlemlih, M., and M. Bitar, 2018, Corporate social responsibility and investment efficiency, *Journal of Business Ethics* 148, 647 – 671.

Benoit, D., 2019, Move over, shareholders: Top CEOs say companies have obligations to society, *Wall Street Journal* (19 August).

Bhandari, A., and D. Javakhadze, 2017, Corporate social responsibility and capital allocation efficiency, *Journal of Corporate Finance* 43, 354 – 377.

Bond, P., A. Edmans, and I. Goldstein, 2012, The real effects of financial markets, *Annual Review of Financial Economics* 4, 339 – 360.

Brown, T. J., and P. A. Dacin, 1997, The company and the product: Corporate associations and consumer product responses, *Journal of Marketing* 6, 68 – 84.

Brown, S., and S. A. Hillegeist, 2007, How disclosure quality affects the level of information asymmetry, *Review of Accounting Studies* 12, 443 – 477.

Brown, W. O., E. Helland, and J. K. Smith, 2006, Corporate philanthropic practices, *Journal of Corporate Finance* 12, 855 – 877.

Carroll, A. B., 1979, A three‐dimensional conceptual model of corporate performance, *The Academy of Management Review* 4, 497 – 505.

Cespa, G., and G. Cestone, 2007, Corporate social responsibility and managerial entrenchment, *Journal of Economic and Management Strategy* 16, 741 – 771.

Chatterji, A. K., D. I. Levine, and M. W. Toffel, 2009, How well do social ratings actually measure corporate social responsibility?, *Journal of Economics and Management Strategy* 18, 125 – 169.

Chen, Q., I. Goldstein, and W. Jiang, 2007, Price informativeness and investment sensitivity to stock price, *Review of Financial Studies* 20, 619 – 650.

Chih, H. L., C. H. Shen, and F. C. Kang, 2008, Corporate social responsibility, investor protection, and earnings management: Some international evidence, *Journal of Business Ethics* 79, 179 – 198.

Choi, J. H., L. Myers, Y. Zang, and D. Ziebart, 2011, Do management EPS forecasts allow returns to reflect future earnings? Implications for the continuation of management's quarterly earnings guidance, *Review of Accounting Studies* 16, 143 – 182.

Collins, D., S. Kothari, J. Shanken, and R. Sloan, 1994, Lack of timeliness versus noise as explanations for low contemporaneous return‐earnings association, *Journal of Accounting and Economics* 18, 289 – 324.

Da, Z., J. Engelberg, and P. Gao, 2011, In search of attention, Journal of Finance 66, 1461 – 1499.

Dechow, P. M., A. P. Hutton, L. Meulbroek, and R. G. Sloan, 2001, Short‐sellers, fundamental analysis, and stock returns, *Journal of Financial Economics* 61, 77 – 106.

Dechow, P., R. Sloan, and A. Sweeney, 1995, Detecting earnings management, *The Accounting Review* 70, 193 – 225.

Deng, X., J. Kang, and B. S. Low, 2013, Corporate social responsibility and stakeholder value maximization: evidence from mergers, *Journal of Financial Economics* 110, 87 – 109.

Desai, M., and D. Dharmapala, 2009, Earnings management, corporate tax shelters, and book‐tax alignment, *National Tax Journal* 62, 169 – 186.

Dhaliwal, D. S., O. Z. Li, A. Tsang, and Y. G. Yang, 2011, Voluntary nonfinancial disclosure and the cost of equity capital: The initiation of corporate social responsibility reporting, *The Accounting Review* 86, 59 – 100.

Diamond, D. W., 1989, Reputation acquisition in debt markets, *Journal of Political Economy* 97, 828 – 862.

Diamond, D. W., and R. E. Verrecchia, 1981, Information aggregation in a noisy rational expectations economy, *Journal of Financial Economics* 9, 221 – 235.

Diamond, D., and R. E. Verrecchia, 1987, Constraints on short‐selling and asset price adjustment to private information, *Journal of Financial Economics* 18, 277 – 311.

Dong, Y., O. Z. Li, Y. Lin, and C. Ni, 2016, Does information‐processing cost affect firm‐specific information acquisition? Evidence from XBRL adoption, *Journal of Financial and Quantitative Analysis* 51, 435 – 462.

Drake, M. S., D. T. Roulstone, and J. R. Thornock, 2012a, Investor information demand: evidence from Google searches around earnings announcements, *Journal of Accounting Research* 50, 1001 – 1040.

Drake, M. S., D. T. Roulstone, and J. R. Thornock. 2015, The determinants and consequences of information acquisition via EDGAR, *Contemporary Accounting Research* 32, 1128 – 1161.

Durnev, A., R. Morck, B. Yeung, and P. Zarowin, 2003, Does greater firm‐specific return variation mean more or less informed stock pricing?, *Journal of Accounting Research* 41, 797 – 836.

Durnev, A., R. Morck, and B. Yeung, 2004, Value‐enhancing capital budgeting and firm‐specific stock return variation, *Journal of Finance* 59, 65 – 105.

Easley, D., M. K. Nicholas, and M. O'Hara, 1997a, The information content of the trading process, *Journal of Empirical Finance* 4, 159 – 186.

Easley, D., M. K. Nicholas, and M. O'Hara, 1997b, One day in the life of a very common stock, *Review of Financial Studies* 10, 805 – 835.

Easley, D., S. Hvidkjaer, and M. O'Hara, 2002, Is information risk a determinant of asset returns?, *Journal of Finance* 57, 2185 – 2221.

Economist, 2005, The importance of corporate responsibility. (Economist Intelligence Unit, London, UK).

Ensminger, J., 2001, Reputation, trust, and the principal agent problem, in: K. S. Cook, ed., *Trust and Society* (Russell Sage Foundation, New York, NY), 185 – 201.

Fama, E. F., 1970, Efficient capital markets: a review of theory and empirical work, *Jour*nal of Finance 25, 28 – 30.

Fernandes, N., and M. Ferreira, 2009, Insider trading laws and stock price informativeness, *Review of Financial Studies* 22, 1845 – 1887.

Ferreira, M., and P. Laux, 2007, Corporate governance, idiosyncratic risk, and information flow, *Journal of Finance* 62, 951 – 989.

Ferreira, D., M. Ferreira, and C. Raposo, 2011, Board structure and price informativeness, *Journal of Financial Economics* 99, 523 – 545.

Ferrell, A., H. Liang, and L. Renneboog, 2016, Socially responsible firms, *Journal of Financial Economics* 122, 585 – 606.

Fishman, M. J., and K. M. Hagerty, 1992, Insider trading and the efficiency of stock prices, *The RAND Journal of Economics* 23, 106 – 122.

Flammer, C., 2015, Does corporate social responsibility lead to superior financial performance?, A regression discontinuity approach, *Management Science* 61, 2549 – 2568.

Fombrun, C., and M. Shanley, 1990, What's in a name? Reputation building and corporate strategy, *Academy of Management Journal* 33, 233 – 258.

French, K., and R. Roll, 1986, Stock return variances: the arrival of information and the reaction of traders, *Journal of Financial Economics* 17, 5 – 26.

Friedman, M. 1970, The social responsibility of business is to increase its profits, New York Times Magazine (13 September), 122 – 126.

Gao, F., L. L. Lisic, and I. Zhang, 2014, Commitment to social good and insider trading, *Journal of Accounting and Economics* 57, 149 – 175.

Gelb, D. S., and J. A. Strawser, 2001, Corporate social responsibility and financial disclosures: An alternative explanation for increased disclosure, *Journal of Business Ethics* 33, 1 – 13.

Gelb, D., and P. Zarowin, 2002, Corporate disclosure policy and the informativeness of stock prices, *Review of Accounting Studies* 7, 33 – 52.

Ghoul, S. E., O. Guedhami, C. C. Y. Kwok, and D. R. Mishra, 2011, Does corporate social responsibility affect the cost of capital?, *Journal of Banking and Finance* 35, 2388 – 2406.

Goss, A., and G. S. Roberts, 2011, The impact of corporate social responsibility on the cost of bank loans, *Journal of Banking and Finance* 35, 1794 – 1810.

Greening, D. W., and D. B. Turban, 2000, Corporate social performance as a competitive advantage in attracting a quality workforce, *Business and Society* 39, 254 – 280.

Gregory, A., J. Whittaker, and X. Yan, 2016, Corporate social performance, competitive advantage, earnings persistence and firm value, *Journal of Business Finance and Accounting* 43, 3 – 30.

Grewal, J., C. Hauptmann, and G. Serafeim, 2017, Material sustainability and stock price informativeness, *Journal of Business Ethics*. https://0-doi-org.libus.csd.mu.edu/10.1007/s10551‐020‐04451‐2

Grossman, S., and J. Stiglitz, 1980, On the impossibility of informationally efficient markets, *American Economic Review* 70, 393 – 408.

Gul, F. A., B. Srinidhi, and A. C. Ng, 2011, Does board gender diversity improve the informativeness of stock prices?, *Journal of Accounting and Economics* 51, 314 – 338.

Harjoto, H., and H. Jo, 2011, Corporate governance and CSR nexus, *Journal of Business Ethics* 100, 45 – 67.

Harvard Business School (HBS), 2011, Conference on "Research in Corporate Accountability Reporting'. Available at: [*http://www.hbs.edu/faculty/conferences/2013&#8208;corporate&#8208;accountability&#8208;reporting/Pages/default.aspx*](http://www.hbs.edu/faculty/conferences/2013&#8208;corporate&#8208;accountability&#8208;reporting/Pages/default.aspx)

Hemingway, C. A., and P. W. Maclagan, 2004, Managers' personal values as drivers of corporate social responsibility, *Journal of Business Ethic* 50, 33 – 44.

Hirshleifer, D., S. Lim, and S. H. Teoh, 2009, Driven to distraction: extraneous events and underreaction to earnings news, *Journal of Finance* 64, 2289 – 2325.

Hirshleifer, D., and S. H. Teoh, 2003, Limited attention, information disclosure, and financial reporting, *Journal of Accounting and Economics* 36, 337 – 386.

Hong, H., J. D. Kubik, and J. A. Scheinkman, 2012, Financial constraints on corporate goodness, NBER Working paper No. 18476. Available at: [*http://0-www-nber-org.libus.csd.mu.edu/papers/w18476.pdf*](http://0-www-nber-org.libus.csd.mu.edu/papers/w18476.pdf)

Jegadeesh, N., and S. Titman, 2001, Profitability of momentum strategies: an evaluation of alternative explanations, *Journal of Finance* 56, 699 – 720.

Jensen, M. C., 1986, Agency costs of free cash flow, corporate finance, and takeovers, *The American Economic Review* 76, 323 – 329.

Jensen, M. C., 2001, Value maximization, stakeholder theory, and the corporate objective function, *Journal of Applied Corporate Finance* 14, 8 – 21.

Jin, L., and S. C. Myers, 2006, R 2 around the world: New theory and new tests, *Journal of Financial Economics* 79, 257 – 292.

Jones, J. J., 1991, Earnings management during import relief investigations, *Journal of Accounting Research* 29, 193 – 228.

Jones, T., 1995, Instrumental stakeholder theory: A synthesis of ethics and economics, *The Academy of Management Review* 20, 404 – 437.

Jones, C. M., and O. A. Lamont, 2002, Short‐sale constraints and stock returns, *Journal of Financial Economics* 66, 207 – 239.

Jones, S., and C. Wright, 2016, Fashion or future: does creating shared value pay?, *Accounting and Finance* 58, 1111 – 1139.

Kim, O., and R. E. Verrecchia, 1997, Pre‐announcement and event‐period private information, *Journal of Accounting and Economics* 24, 395 – 419.

Kim, Y., M. S. Park, and B. Wier, 2012, Is earnings quality associated with corporate social responsibility?, *The Accounting Review* 87, 761 – 796.

Kim, Y., H. Li, and S. Li, 2014, Corporate social responsibility and stock price crash risk, *Journal of Banking and Finance* 43, 1 – 13.

Kothari, S. P., and R. G. Sloan, 1992, Information in prices about future earnings: Implications for earnings response coefficients, *Journal of Accounting and Economics* 15, 143 – 171.

Kruger, P., 2015, Corporate goodness and shareholder wealth, *Journal of Financial Economics* 115, 304 – 329.

Lee, C. M. C., P. Ma, and C. C. Y. Wang, 2015, Search based peer firms: Aggregating investor perceptions through internet co‐searches, *Journal of Financial Economics* 116, 410 – 431.

Levitt, T., 1958, The Dangers of Social Responsibility. (*Harvard Business Review*), 41 – 50.

Li, E. X., and K. Ramesh, 2009, Market reaction surrounding the filing of periodic SEC reports, *The Accounting Review* 84, 1171 – 1208.

Li, B., S. Rajgopal, and M. Venkatachalam, 2014, R2 and idiosyncratic risk are not interchangeable, *The Accounting Review* 89, 2261 – 2295.

Lins, K. V., H. Servaes, and A. N. E. Tamayo, 2017, Social capital, trust, and firm performance: The value of corporate social responsibility during the financial crisis, *Journal of Finance* 72, 1785 – 1824.

Loughran, T., and B. McDonald, 2015, Information decay and financial disclosures, Working paper (University of Notre Dame).

Lys, T., J. P. Naughton, and C. Wang, 2015, Signaling through corporate accountability reporting, *Journal of Accounting and Economics* 60, 56 – 72.

Margolis, J. D., H. A. Elfenbein, and J. P. Walsh, 2007, Does it pay to be good? A meta‐analysis and redirection of research on the relationship between corporate social and financial performance, Working paper (Harvard Business School).

McNichols, M., and B. Trueman, 1994, Public disclosure, private information collection, and short‐term trading, *Journal of Accounting and Economics* 17, 69 – 94.

McWilliams, A., and D. Siegel, 2001, Corporate social responsibility: a theory of the firm perspective, *The Academy of Management Review* 26, 117 – 127.

Morck, R., B. Yeung, and W. Yu, 2000, The information content of stock markets: Why do emerging markets have synchronous stock price movements?, *Journal of Financial Economics* 58, 215 – 260.

Murphy, K. J., 1999, Executive compensation, in: O. C. Ashenfelter, D. Card, eds., *Handbook of Labor Economics*, vol. 3B (Elsevier, Amsterdam), 2485 – 2563.

Noreen, E., 1988, The economics of ethics: a new perspective on agency theory, *Accounting, Organizations and Society* 13, 359 – 369.

Petrovits, C. M., 2006, Corporate‐sponsored foundations and earnings management, *Journal of Accounting and Economics* 41, 335 – 362.

Piotroski, J. D., and D. T. Roulstone, 2004, The influence of analysts, institutional investors, and insiders on the incorporation of market, industry, and firm‐specific information into stock prices, *The Accounting Review* 79, 1119 – 1151.

Porter, M. E., and C. Linde, 1995, Green and competitive: Ending the stalemate, *Harvard Business Review* 73, 120 – 134.

Prior, D., J. Surroca, and J. A. Tribo, 2008, Are socially responsible managers really ethical? Exploring the relationship between earnings management and corporate social responsibility, *Corporate Governance: An International Review* 16, 160 – 177.

Ramalingegowda, S., and Y. Yu, 2012, Institutional ownership and conservatism, *Journal of Accounting and Economics* 53, 98 – 114.

Roll, R. 1988, R2, The Journal of Finance 43, 541 – 566.

Saffi, P. A. C., and K. Sigurdsson, 2011, Price efficiency and short selling, *Review of Financial Studies* 24, 821 – 852.

Servaes, H., and A. Tamayo, 2013, The impact of corporate social responsibility on firm value: The role of customer awareness, *Management Science* 59, 1045 – 1061.

Soltes, E., 2009, News dissemination and the impact of the business press, Working paper (Harvard Business School).

Tran, N., and D. O'Sullivan, 2020, The relationship between corporate social responsibility, financial misstatements and SEC enforcement actions, *Accounting and Finance* 60, 1111 – 1147.

Tucker, J. W., and P. A. Zarowin, 2006, Does income smoothing improve earnings informativeness?, *The Accounting Review* 81, 251 – 270.

Zuo, L., 2016, The informational feedback effect of stock prices on corporate disclosure, *Journal of Accounting and Economics* 61, 391 – 413.