



Commitment to social good and insider trading[☆]



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ABSTRACT

A firm's investment in corporate social responsibility (CSR) builds a positive image of caring for social good and imposes additional costs on executives' informed trading, which is widely perceived self-serving. We thus expect executives of CSR-conscious firms to be more likely to refrain from informed trading. We find that executives of CSR-conscious firms profit significantly less from insider trades and are less likely to trade prior to future news than executives of non-CSR-conscious firms. The negative association between CSR and insider trading profits is more pronounced when executives' personal interests are more aligned with the interests of the firm.

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1. Introduction

Corporate social responsibility (CSR) has received growing attention from regulators, corporate executives, investors, and various other stakeholders in recent years. In this study, we examine the association between these increasingly important corporate activities of committing to social good and executive insider trading, an action commonly perceived as self-serving.

Managers trading on material private information likely incur higher costs when their firms make larger CSR investments. A firm's commitment to social good helps build a positive image of caring for the society and refraining from corporate greed (Fombrun and Shanley, 1990; McWilliams et al., 2006). While this image benefits the firm in various ways (Fombrun, 1996), it imposes additional costs on managers engaging in activities—in particular, informed trading—that conflict with the appearance of doing social good. Informed trading is prohibited by law and often considered greedy and unfair expropriation of uninformed investors (e.g., Will, 1987). When informed trading is detected, the negative publicity

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likely impairs the firm's positive image and reduces the associated benefits, eventually causing damage to managers' personal interests that are tied to the image of the firm. We thus expect a firm's socially responsible image to constrain profitable insider trading, consistent with reputation being an informal enforcement mechanism against opportunism as predicted in the economic literature (e.g., Klein and Leffler, 1981). In addition, when a firm commits to social good, it often cultivates a corporate culture of “do no evil” (Hoi et al., 2013). Such a culture imposes higher internal costs on executives if they deviate from that norm.

A firm's CSR engagement can also be negatively associated with insider trading if both corporate CSR policies and executives' insider trading reveal heterogeneity in managers' individual degrees of altruism and greed recognized in the economic literature (e.g., Benabou and Tirole, 2006). While standard neoclassical and agency theories allow for a limited role through which individuals can exert idiosyncratic influence on corporate policies, Bertrand and Schoar (2003) propose that extensions of these models allow differences in personal styles to cause heterogeneity in corporate practices. This view suggests that a firm's CSR orientation can be a manifestation of executives' personal differences in the tendency to be a good citizen. CSR-conscious executives are therefore more likely to refrain from self-serving actions such as informed trading.

While the above explanations predict a negative association between CSR and informed trading, some management research suggests the opposite. Godfrey et al. (2009) and Minor and Morgan (2012) argue that CSR engagements provide a form of insurance against fallout from negative events. This suggests that executives of CSR-conscious firms would incur lower expected losses from informed trading, thereby a potentially positive association between CSR and informed trading.

We measure a firm's commitment to social good by examining the social ratings data issued by MSCI ESG STATS (MSCI hereafter; previously known as KLD) from 1991 to 2010. Similar to the literature (e.g., Hong and Kostovetsky, 2012; Kim et al., 2012), we assess a firm's CSR performance with a summary CSR score that reflects various aspects of social responsibility. A firm is classified CSR-conscious if it has more CSR strengths than concerns. Following the literature on insider trading (e.g., Huddart and Ke, 2007; Jagolinzer et al., 2011), we measure executives' insider trading profits as potential profits gained from purchases or potential losses avoided from sales.

Consistent with the prior literature (e.g., Aboody and Lev, 2000; Huddart and Ke, 2007; Jagolinzer et al., 2011), we find that on average executives profit from purchases but not from sales, and therefore we focus on insider purchases only. While executives of CSR-conscious firms still profit from insider purchases, their profits are significantly lower than those made by executives of non-CSR-conscious firms. The difference in trading profits persists after we control for proxies of information asymmetry, insider trading restrictions, and contrarian trading tendencies. The inference remains robust when we use propensity-score matching to alleviate endogeneity concerns. Further analyses of changes in CSR orientation suggest that executives make lower (higher) trading profits as a firm becomes CSR conscious (non-CSR conscious). The negative association between CSR and executives' insider trading profits is consistent with both CSR constraining (although not eliminating) informed trading and individual heterogeneity explaining both CSR and insider trading. It is inconsistent with CSR acting as insurance against the adverse effects of informed trading.

A potential concern of measuring insider trading profits with post-trade price movements is that these movements may in part reflect the market's perception of the trades themselves, not necessarily insiders' superior information (e.g., Ravina and Sapienza, 2010). To address this issue, we examine whether executives trade on future news as an alternative measure of insider trading, following Piotroski and Roulstone (2008). We find that the likelihood of executives of non-CSR-conscious firms purchasing shares increases with future earnings changes and stock returns, suggesting that these executives trade on future corporate news. In contrast, we do not find evidence of executives of CSR-conscious firms trading on future earnings or return performance. Examining propensity-score-matched CSR-conscious and non-CSR-conscious firms yields the same inference—executives of CSR-conscious firms are less likely to trade on future corporate news. An analysis of changes in CSR orientation also indicates that executives trade on future corporate news before a firm becomes CSR conscious, but not afterwards, and after a firm ceases to be CSR conscious, but not beforehand. Taken together, these findings lend support to our interpretation of the trading profit analyses and results.

With the above analyses suggesting a negative association between CSR and informed trading, we next explore channels through which damage to a firm's CSR image translates into personal costs for executives and thus discourages informed trading. First, executives gain personal reputational capital from corporate activities (e.g., Fama, 1980; Brickley et al., 1999). If executives are vocal (or visible) with regard to the firm's CSR activities, their personal reputation is more closely tied to the firm's CSR reputation. We thus expect the firm's CSR orientation to have a stronger constraining effect on these executives' trading. In addition, if being vocal about CSR reveals that these executives are more altruistic or less greedy, we would also expect them to refrain more from informed trading. We determine whether executives are vocal about CSR via a comprehensive search of the internet, news media, press releases, and CSR reports. Consistent with our expectation, we find the constraining effect of CSR on insider trading profits to be stronger for CSR advocates.

Second, damage to the CSR image of the firm can hurt executives through their stock ownership. We expect the constraining effects of CSR to be more pronounced when executives' wealth is more closely tied to firm value. Consistent with this expectation, we find that the negative association between CSR and executives' insider trading profits is stronger when they hold more company shares. This result is more likely explained by the constraining effects of CSR than individual heterogeneity, since executives with higher stock ownership are not necessarily more altruistic or less greedy.

The evidence so far is consistent with CSR constraining insider trading, with much of it also consistent with individual heterogeneity explaining both CSR and insider trading. Next, we explore the constraining effects of CSR on insider trading profits above and beyond the impact of individual heterogeneity. Following prior research on managerial styles (e.g., [Bamber et al., 2010](#)), we assume that executives' personal preferences are time-invariant and estimate a regression model with executive fixed effects accordingly. We find that the executive fixed effects are jointly significant. More importantly, we continue to find a negative association between CSR and executives' insider trading profits. These results suggest that, although individual heterogeneity affects executives' trading activities, the constraining effects of CSR on insider trading are not subsumed by such heterogeneity.

Finally, we perform tests to explore alternative explanations. First, compared with non-CSR-conscious firms, CSR-conscious firms may have lower information asymmetry that is not fully captured by our existing controls drawn from the insider trading literature. To mitigate this concern, we include additional control variables of information asymmetry, namely, whether a firm issues a CSR report and the extent of news coverage of the firm. Our inferences remain robust. To further address the concern that CSR itself may convey information about the firm ([Lys et al., 2013](#)), we explore within-firm variations. We find that executives who are vocal about CSR make lower trading profits than other executives of the same firm. This finding is consistent with our main arguments but cannot be explained by the information asymmetry argument since the firm-level information environment is held constant.

Second, corporate governance mechanisms can restrict insider trading ([Ravina and Sapienza, 2010](#)), and they are likely correlated with CSR activities. To mitigate this concern, we add firm-level fixed effects to control for corporate governance, which is often sticky over time. We also include [Gompers et al.'s \(2003\)](#) corporate governance index and collect data on disclosures of corporate governance policies specifically targeting insider trading as additional control variables. Our main inference is unchanged.

Our paper contributes to the literature in at least two ways. First, it advances the understanding of the relation between committing to social good and self-serving managerial behavior. We document a robust negative association between a firm's CSR consciousness and executive insider trading. Various analyses suggest that the CSR image can act as an unintended governance mechanism restricting informed trading. Thus we add to the growing literature on the implications of CSR engagement (e.g., [Dhaliwal et al., 2012](#); [Kim et al., 2012](#); [Hoi et al., 2013](#); [Ramanna, 2013](#)).

Second, our study suggests an additional constraint on insider trading. Prior research documents that insiders profit significantly from informed trading and focuses on the impact of regulatory constraints and corporate insider trading policies in restricting informed trades ([Bettis et al., 2000](#); [Jagolinzer et al., 2011](#)). We provide evidence suggesting that committing to social good can increase the external and internal costs of informed trading and thus could act as an additional constraint. Nonetheless, firms' CSR engagement does not eliminate informed trading, suggesting that CSR is not sufficient to fully overcome executives' rent-seeking incentives.

The remainder of this paper is organized as follows: [Section 2](#) discusses related studies, develops our main hypothesis, and details our research design. [Sections 3](#) and [4](#) report the main analyses and explore alternative explanations. [Section 5](#) concludes.

2. Related studies, hypothesis development, and research design

2.1. Related studies and hypothesis development

While the literature on whether CSR increases firm value is largely divided (see [Margolis et al. \(2009\)](#) for a review), studies generally conclude that CSR helps firms establish a positive corporate image of caring for the society ([Fombrun and Shanley, 1990](#); [McWilliams et al., 2006](#)). This image can bring benefits to the firm, such as creating reputational capital and extending organizational networks ([Fombrun, 1996](#)), facilitating talent attraction and retention ([Turban and Greening, 1997](#)), increasing pricing premium of products ([Eichholtz et al., 2010](#)), improving consumer evaluations ([Brown and Dacin, 1997](#)), and reducing the threat of regulation ([Maxwell et al., 2000](#)). Evidence provided by practitioners also confirms many of these inferences. For instance, [Adam Friedman Associates \(2012\)](#) survey CSR executives at Fortune 1000 firms and identify reputation building as the primary motivation behind CSR initiatives.

In classic theoretical settings with incomplete contracts and information asymmetry, reputation often serves as an informal enforcement mechanism against opportunistic behavior (e.g., [Klein and Leffler, 1981](#); [Kreps and Wilson, 1982](#)). Reputation helps enforce contracts as counterparties respond to a breach of contract by modifying the contract terms and causing the breaching party to lose the quasi-rents that could have been earned fulfilling the contract. [Klein and Leffler \(1981\)](#) predict that more reputable parties would suffer proportionally larger reputational losses for behaving opportunistically. Empirical evidence supports the role of reputation in disciplining and deterring opportunism.¹ [Atanasov et al. \(2012\)](#), for example, document that the reputational capital of venture capitalists limits their opportunistic behavior ex ante, and their opportunistic behavior leads to losses increasing in reputation ex post.

¹ See [MacLeod \(2007\)](#) for a review of the related research.

Similarly, in the context of CSR reputation, self-serving managerial actions such as informed trading can impair the firm's image of committing to social good and reduce the associated benefits. While it is unclear whether insider trading enhances or hurts economic efficiency (e.g., [Manne, 1966](#); [Schotland, 1967](#)), it is widely considered by the media and the public to be a manifestation of greed and lack of self-control (e.g., [Will, 1987](#)). Insiders are also prohibited by law to trade while in possession of material nonpublic information.² When cases of informed trading are detected and revealed, firms often incur reputational losses from negative publicity ([Bettis et al., 2000](#)). As the court noted in the case of *Diamond v. Oreamuno*, informed trading can “cast a cloud on the corporation's name, injure stockholder relations and undermine public regard for the corporation's securities.” We expect that informed trading leads to greater reputational losses to CSR-conscious firms that have higher reputational capital at stake.

Reputational losses of the firm can translate into executives' personal costs, provided that their interests are connected to the image of the firm. There are at least two channels through which executives' personal interests can be hurt if the firm's CSR image is impaired. First, executives derive personal reputation from corporate performance, including CSR. [Fama \(1980\)](#) argues that firm performance impacts the market value of executives' human capital much like economists' research impacts their personal reputation. When a firm builds an image of being socially responsible, executives, especially those who are vocal about social responsibility, are likely to receive the credit ([Hemingway and MacLagan, 2004](#); [Cespa and Cestone, 2007](#)). With firms' CSR commitment enhancing their personal reputations, these executives would face a greater loss in case of informed trading, as their reputations would be impaired along with the firm's CSR image. Second, damage to the CSR image of a firm can reduce executives' personal wealth tied to the firm value through their stock ownership.

Besides its impact on the external image and reputation, a firm's CSR orientation could also be correlated with corporate culture. Organizational research describes corporate culture as “a system of shared values defining what is important, and norms, defining appropriate attitudes and behaviors, that guide members' attitudes” ([O'Reilly and Chatman, 1996](#)). Individuals are rewarded when their behavior conforms to the corporate culture and punished otherwise ([Sunstein, 1996](#); [Sørensen, 2002](#)). Prior literature suggests that a firm's CSR consciousness fosters a corporate culture of trust, cooperation, and “do no evil” ([Wood, 1991](#); [Hoi et al., 2013](#)). Such a corporate culture is likely to encourage individual behavior that shows care for others and impose costs on nonconforming behavior such as profiting from material private information.

We expect that the increased external and internal costs of informed trading in a CSR-conscious firm provide disincentives for executives to profit from their information advantage. Executives of CSR-conscious firms are likely to avoid highly profitable trading opportunities as large profits could indicate that they are trading on material nonpublic information, which is banned by law and more likely to bring public scrutiny. To the extent that the risk of detection and the degree of negative publicity are an increasing function of trading profits, we expect executives of CSR-conscious firms to refrain from profiting from informed trades.³

While the above discussions focus on the additional economic costs of informed trading associated with a firm's CSR image, a firm's CSR orientation can be a manifestation of executives' personal preferences for good citizenship, which can also affect their insider trading. The economic literature considers both heterogeneity in individuals' degrees of altruism and greed and reputational concerns to be important determinants of their pro-social behavior (e.g., [Benabou and Tirole, 2006](#)). Research on management styles suggests that heterogeneity in corporate practices can result from differences in personal preferences (e.g., [Hambrick and Mason, 1984](#); [Bertrand and Schoar, 2003](#)).⁴ Several recent studies view corporate CSR as reflecting managerial personal preferences or ethics and use it to explain the negative association between CSR and corporate opportunistic behavior such as earnings management and tax aggressiveness (e.g., [Kim et al., 2012](#); [Lanis and Richardson, 2012](#)). Meanwhile, individual preferences also likely affect their tendency to trade on private information. For example, [Davidson et al. \(2013b\)](#) find that executives with a legal record and executives who own luxury goods make higher profits from insider trading. Thus, executives of CSR-conscious firms are more likely to avoid trading on private information if they are more altruistic or less greedy than those of non-CSR-conscious firms.

In summary, executives of CSR-conscious firms face higher external and internal costs of insider trading as informed trading negatively affects the firm's CSR image. These executives may also differ from executives of non-CSR-conscious firms in the individual degrees of altruism and greed. Both views predict that these executives are more likely to refrain from trading on material private information, which brings significant profits but could be subject to legal sanctions and public scrutiny. Therefore we expect that they make lower trading profits than executives of non-CSR-conscious firms.

² See Securities and Exchange Acts of 1933 and 1934, Insider Trading Sanctions Act of 1984, and Insider Trading and Securities Fraud Enforcement Act of 1988.

³ Anecdotal evidence supports the positive association between insider trading profits and the likelihood of detection and negative publicity. For example, a Nov. 27, 2012, article in *The Wall Street Journal*, *Executives' Good Luck in Trading Own Stock*, identified suspicious insider trading cases, including both purchases and sales, by the magnitude of price changes post trades. Two weeks later, the Manhattan U.S. attorney's office launched a criminal investigation into the cases named in the article. (see *Insider Trading Probe Widens*, Dec. 10, 2012, *The Wall Street Journal*).

⁴ Studies show that management styles impact corporate investment and financing policies ([Bertrand and Schoar, 2003](#)), accounting disclosures ([Bamber et al., 2010](#)), corporate tax avoidance ([Dyreng et al., 2010](#)), and financial reporting risk ([Davidson et al., 2013a](#)).

H1. Executives of CSR-conscious firms make lower insider trading profits than executives of non-CSR-conscious firms.

A separate line of research in management argues that CSR engagement could act as a form of insurance, shielding firms and their executives from fallout from negative events (e.g., Godfrey et al., 2009; Minor and Morgan, 2012). This argument suggests that executives of CSR-conscious firms may incur lower losses upon the revelation of informed trading, predicting a positive relation between a firm's CSR image and informed trading.⁵

2.2. Research design

2.2.1. Measure of CSR orientation

We measure a firm's CSR commitment with the CSR ratings issued by MSCI, which uses a combination of surveys, financial statements, and articles in the popular press and academic journals, as well as government reports, to assess a firm's annual CSR performance via approximately 100 indicators. The ratings have been used extensively in the academic literature to measure CSR performance.⁶

The database covers the largest U.S. companies. It includes approximately 650 firms from 1991 to 2000, 1,100 firms from 2001 to 2002, and 3,000 firms since 2003. It notes strengths and concerns in a firm's involvement in a variety of issues including environment, community affairs, human rights, employee relations, diversity, customer relations, and corporate governance. It also notes concerns related to a firm's involvement in controversial industries such as alcohol, gambling, tobacco, firearms, military, and nuclear power. Similar to prior studies (e.g., Kim et al., 2012), we construct a CSR score measured as the total number of strengths minus the total number of concerns in all MSCI's rating categories excluding human rights and corporate governance.⁷ We identify a CSR-conscious firm as a firm with a positive CSR score.⁸

2.2.2. Main model

Our primary analyses are based on the following model of insider trading profits:

$$\text{Trading Profit}_t = \alpha + \beta_1 \text{CSR}_{t-1} + \beta_2 \text{R\&D}_{t-1} + \beta_3 \text{Loss}_{t-1} + \beta_4 \text{Volatility}_{t-1} + \beta_5 \log \text{Analyst}_{t-1} + \beta_6 \text{Turnover}_{t-1} + \beta_7 \text{Restrict}_{t-1} + \beta_8 \text{BTM}_{t-1} + \beta_9 \text{RET}_{t-1} + \beta_{10} \text{EP}_{t-1} + \beta_{11} \text{Avg_Growth}_{-5} + \varepsilon_t \quad (1)$$

Following the literature (e.g., Frankel and Li, 2004; Huddart and Ke, 2007; Jagolinzer et al., 2011), we estimate trading profits using the following transaction-specific regression of daily returns on four common factors:

$$R_i - R_f = \alpha + \beta_1 (R_{mkt} - R_f) + \beta_2 \text{SMB} + \beta_3 \text{HML} + \beta_4 \text{UMD} + \varepsilon$$

where R_i is firm i 's daily stock return; R_f is the daily risk-free interest rate; R_{mkt} is the CRSP value-weighted market return. SMB , HML , and UMD are the size, book-to-market, and momentum factors. Trading Profit_t measures potential gains following purchases and potential losses avoided following sales, that is, it is equal to α for purchases and $-\alpha$ for sales.

The variable of interest, CSR_{t-1} , is an indicator variable equal to one for CSR-conscious firms, that is, firms with a positive aggregate CSR score in the year prior to the trade, and zero otherwise. H1 predicts a negative coefficient on CSR_{t-1} . Following the literature that finds insider trading profits to be increasing in information asymmetry, we include various controls of information asymmetry. Aboody and Lev (2000) document higher insider trading profits in firms with R&D activities. We define R\&D_{t-1} as a dummy variable equal to one if a firm has positive R&D expenses. Following Huddart and Ke (2007) and Brochet (2010), we also include a loss dummy (Loss_{t-1}). Ravina and Sapienza (2010) find stock volatility to be a strong predictor of insider trading profits. They argue that, since executives have superior information about the company, what appears to be volatility and risk for an uninformed investor is not necessarily so for insiders. As in Ravina and Sapienza (2010), Volatility_{t-1} is computed as the variance of daily stock returns over the interval $(-380, -20)$ before each trade. We also follow Frankel and Li (2004) to include analyst following ($\log \text{Analyst}_{t-1}$). We add share turnover (Turnover_{t-1}) to control for the intensity of investor interest. Using survey data, Bettis et al. (2000) find that insider trading restrictions with blackout periods reduce insider trading profits. We follow Roulstone (2003) and Brochet (2010) and control for Restrict_{t-1} ,

⁵ Some argue that CSR activities are used opportunistically to cover up managerial misconduct (e.g., Kim et al., 2012). If this is true, different investments in CSR would not necessarily indicate that executives differ in degrees of altruism and greed. This argument also does not predict a negative relation between a firm's CSR image and informed trading.

⁶ For example, it has been used by Turban and Greening (1997), Berman et al. (1999), Johnson and Greening (1999), Hong and Kostovetsky (2012), Kim et al. (2012), and Servaes and Tamayo (2013).

⁷ We follow Kim et al. (2012) in excluding the human rights dimension due to the lack of variation in data and in excluding the corporate governance dimension because it is commonly perceived as a distinct construct from CSR. Our results are robust to including both dimensions, or to excluding the concern indicator variables for involvement in controversial industries.

⁸ The results are substantially similar if we measure the CSR score following Servaes and Tamayo (2013). They adjust the strengths (concerns) index for each firm-year by dividing the number of strengths (concerns) by the maximum possible number of strengths (concerns) within each CSR category. Our inferences are also unchanged if we classify firms with nonnegative CSR scores as CSR-conscious firms or if we use the continuous CSR score to measure CSR consciousness.

a dummy variable set to one if 75% or more of trades in a fiscal year occur in a 30-day window following an earnings announcement.

Insiders are contrarian traders, that is, they trade against past returns and pricing multiples (Rozeff and Zaman, 1998; Piotroski and Roulstone, 2005). If CSR-conscious firms are strong firms (Lys et al., 2013), insiders' contrarian trading can predict a negative association between CSR_{t-1} and trading profits. We thus follow the prior literature (e.g., Lakonishok et al., 1994; Rozeff and Zaman, 1998) and include controls for contrarian trading tendencies, the book-to-market ratio (BTM_{t-1}), past stock returns (RET_{t-1}), earnings-to-price ratio (EP_{t-1}), and past sales growth (Avg_Growth_{-5}). As in Ravina and Sapienza (2010) and Cao et al. (2011), we cluster standard errors by executive.⁹

3. Main analyses

3.1. Sample and descriptive statistics

We obtain insider trading information from the Thomson Financial Insider Filing Data (TFN), which contains insider trading reported on SEC Forms 3, 4, and 5. We focus on trades of common shares by top executives including the CEO, CFO, CIO, COO, CTO, and president(s). Following the literature (e.g., Frankel and Li, 2004), we include only open-market transactions and require a minimum transaction price of \$2 per share and 100 shares per transaction. We delete transactions with more shares than the CRSP daily volume and prices outside the bid-ask price range.

We merge insider trades with MSCI to gather the CSR ratings data, Compustat to obtain financial data, and CRSP to extract stock price data. Our sample includes 10,496 insider purchases and 43,991 insider sales made by 20,999 unique executives from 12,173 unique firms from 1992 to 2011. Consistent with MSCI's expanded coverage over time, the sample size steadily trends up. Table 1 summarizes the distribution of our sample by year.

3.2. Univariate and regression analyses

Panel A of Table 2 reports the univariate analysis of insider trading profits of executives in CSR-conscious firms versus non-CSR-conscious firms. We present the trading profits following each trade across various windows, i.e. 180 days, 120 days, and 90 days. The mean daily trading profits from purchases made by executives of non-CSR-conscious firms are 0.0564% for the 180-day window, 0.0813% for the 120-day window, and 0.0916% for the 90-day window. In contrast, the mean daily trading profits from purchases made by executives of CSR-conscious firms are 0.0402%, 0.0604%, and 0.0621%, respectively. Although the additional costs associated with CSR activities do not eliminate informed trading, they significantly reduce trading profits. The trading profits from purchases made by executives of non-CSR-conscious firms are at least 35% higher than those from purchases made by executives of CSR-conscious firms, and all differences are statistically significantly at the 1% level. The comparison of the median profits from executive purchases between CSR-conscious firms and non-CSR-conscious firms exhibits the same pattern. These results suggest that executives of CSR-conscious firms make lower trading profits from insider purchases than executives of non-CSR-conscious firms.

Consistent with the prior literature (Aboody and Lev, 2000; Huddart and Ke, 2007; Jagolinzer et al., 2011), we find that insiders do not profit from sale transactions. Instead, they tend to incur losses. The average trading profits from sales are negative for all firms with different trading windows, regardless of their CSR orientation. This is consistent with insider sales being driven by multiple factors, some unrelated to information. For example, executives may sell shares due to the need for diversification or portfolio rebalancing (Ofek and Yermack, 2000). As purchases are more likely information-driven and trading profits are more likely to create an appearance of impropriety than losses, we focus on purchases only, similar to Ravina and Sapienza (2010).

Panel B of Table 2 presents the summary statistics of the control variables for the CSR-conscious and non-CSR-conscious samples separately. About 27.5% (2,887 out of 10,496) of the purchase transactions are made by executives of CSR-conscious firms. In contrast, about 29.84% of unique firm-years (untabulated) are classified as CSR conscious, suggesting that executives of CSR-conscious firms are less likely to purchase compared with executives of non-CSR-conscious firms.¹⁰ On average, the CSR-conscious sample has a higher frequency of engaging in R&D activities, a lower frequency of incurring losses, more analyst coverage, and lower share turnover, compared with the non-CSR-conscious sample. These univariate results do not provide clear evidence of whether CSR-conscious firms have higher or lower information asymmetry. The CSR-conscious sample also has a lower book-to-market ratio, earnings-price ratio, and past growth, and a higher past return.

Panel C reports the correlation matrix, with similar inferences from the Pearson and the Spearman correlations. Similar to the univariate results in Panel A, $Trading\ Profit_t$ is negatively correlated with CSR_{t-1} . Consistent with the prediction that insider trading profits increase with information asymmetry, $Trading\ Profit_t$ is also positively correlated with $R\&D_{t-1}$,

⁹ Our results are robust to clustering standard errors by executive-year or by firm.

¹⁰ The percentage of CSR-conscious firm-years (29.84%) is calculated based on the sample of firm-years with at least one executive purchase transaction. If we broaden the sample to include all firm-years with at least one executive trade (i.e., purchase or sale), the proportion of CSR-conscious firm-years is higher (31.72%).

Table 1

This table reports the sample distribution of executive insider trades by year. The sample consists of open-market transactions made by executives of U.S. firms covered by the MSCI CSR rating database and the Thomson Financial Insider Filing Database, after requiring Compustat and CSRP data for the main analyses. The number of transactions (purchases and sales), unique firms, and unique executives are reported for each year during the sample period from 1992 to 2011.

Year	Transactions						Firms		Executives	
	Total		Purchases		Sales		N	Pct	N	Pct
	N	Pct	N	Pct	N	Pct				
1992	407	0.75%	35	0.33%	372	0.85%	147	1.21%	211	1.00%
1993	343	0.63%	57	0.54%	286	0.65%	129	1.06%	174	0.83%
1994	323	0.59%	81	0.77%	242	0.55%	145	1.19%	176	0.84%
1995	395	0.72%	73	0.70%	322	0.73%	160	1.31%	208	0.99%
1996	574	1.05%	123	1.17%	451	1.03%	196	1.61%	288	1.37%
1997	647	1.19%	159	1.51%	488	1.11%	215	1.77%	344	1.64%
1998	793	1.46%	284	2.71%	509	1.16%	224	1.84%	411	1.96%
1999	776	1.42%	332	3.16%	444	1.01%	243	2.00%	460	2.19%
2000	816	1.50%	343	3.27%	473	1.08%	247	2.03%	475	2.26%
2001	819	1.50%	151	1.44%	668	1.52%	248	2.04%	427	2.03%
2002	1883	3.46%	366	3.49%	1517	3.45%	425	3.49%	763	3.63%
2003	2119	3.89%	243	2.32%	1876	4.26%	451	3.70%	777	3.70%
2004	6388	11.72%	811	7.73%	5577	12.68%	1197	9.83%	2008	9.56%
2005	5462	10.02%	753	7.17%	4709	10.70%	1154	9.48%	1936	9.22%
2006	6197	11.37%	745	7.10%	5452	12.39%	1199	9.85%	2066	9.84%
2007	6314	11.59%	1286	12.25%	5028	11.43%	1276	10.48%	2354	11.21%
2008	5308	9.74%	1672	15.93%	3636	8.27%	1190	9.78%	2140	10.19%
2009	5180	9.51%	1132	10.79%	4048	9.20%	1166	9.58%	2013	9.59%
2010	4919	9.03%	703	6.70%	4216	9.58%	1030	8.46%	1755	8.36%
2011	4824	8.85%	1147	10.93%	3677	8.36%	1131	9.29%	2013	9.59%
Total	54487	100%	10496	100%	43991	100%	12173	100%	20999	100%

$Loss_{t-1}$, and $Volatility_{t-1}$ and negatively correlated with $\log Analyst_{t-1}$. Consistent with the literature on contrarian trading, $Trading\ Profit_t$ is positively correlated with BTM_{t-1} and negatively correlated with RET_{t-1} and Avg_Growth_{-5} .

We report the multiple regression results in Table 3. Consistent with the univariate analysis, our results are similar across different trading windows. We find a negative and significant coefficient on CSR_{t-1} (-0.0174 , $p=0.0134$, for the 180-day window; -0.0233 , $p=0.0144$, for the 120-day window; and -0.0347 , $p=0.0036$, for the 90-day window), suggesting that executives of CSR-conscious firms make significantly lower profits from insider purchases than executives of non-CSR-conscious firms. This finding is consistent with the constraining effect of CSR on insider trading and executives' individual heterogeneity explaining both CSR and insider trading but inconsistent with CSR insuring against the negative impact of insider trading.

The coefficient on $Volatility_{t-1}$ is consistently positive and significant, consistent with Ravina and Sapienza (2010). $Restrict_{t-1}$ does not load significantly, inconsistent with the prediction of Bettis et al. (2000), but consistent with the finding of Jagolinzer et al. (2011) that in recent years blackout periods do not curtail profitable insider trading.¹¹ The coefficients on RET_{t-1} and Avg_Growth_{-5} are consistently negative and mostly significant, providing evidence that executives of CSR-conscious firms are contrarian traders.¹² Since we draw similar inferences across the 180-day, 120-day, and 90-day trading windows, we follow prior studies and focus on the 180-day window in subsequent analyses (e.g., Seyhun, 1998; Huddart and Ke, 2007; Brochet, 2010; Jagolinzer et al., 2011).

3.3. Endogeneity of CSR and propensity-score matching

Table 2 suggests some differences in firm characteristics between CSR-conscious firms and non-CSR-conscious firms. To the extent that a firm's CSR orientation can be endogenously determined by firm characteristics that are omitted from our

¹¹ We reconcile our results with the literature by splitting the sample into the earlier (pre-2000) and the later (post-2000) periods and estimating our main model separately for the two periods. Consistent with the inference from Bettis et al. (2000), we find a negative and significant coefficient on $Restrict$ in the pre-2000 subsample. Similar to Jagolinzer et al. (2011), we find an insignificant coefficient on $Restrict$ in the post-2000 subsample.

¹² Our inferences are robust to adding more controls for past performance using accounting-based measures, including operating cash flows to total assets, return on assets (ROA), free cash flows to total assets, and change in ROA. These four variables are insignificant at conventional levels. Their effects are likely subsumed by the existing measures of past performance.

Table 2

This table reports the univariate analyses of trading profits and descriptive statistics of the sample of executive purchase transactions.

Panel A: Univariate analyses						
This panel reports univariate analyses of trade-specific profits over the 180, 120, and 90 days following executives' insider trades. The trading profits are estimated using the following transaction specific regression of daily returns on four common factors over the 180, 120, and 90 days after each transaction:						
$R_i - R = \alpha + \beta_1(R_{mkt} - R_f) + \beta_2 SMB + \beta_3 HML + \beta_4 UMD + \varepsilon$						
R_i is the daily return of firm i 's equity. R_f is the daily risk-free interest rate. R_{mkt} is the CRSP value-weighted market return. SMB , HML , and UMD are the size, book-to-market, and momentum factors. Trading profits are equal to α ($-\alpha$) for purchases (sales). The mean and median average daily trading profits of CSR-conscious firms vs. non-CSR-conscious firms over the 180, 120, and 90 days following the trades are reported. Trading profits of purchases and sales are separately presented (in percentage terms). t -Tests (Wilcoxon tests) are used to test differences in means (distributions, reported in the Median column). All trading profits numbers are statistically significant at better than 1% level. ***, and * indicate the difference between CSR-conscious and non-CSR-conscious firms is significant at 1% and 10% level, respectively, under two-tailed tests.						
	Purchases			Sales		
	<i>N</i>	Mean (%)	Median (%)	<i>N</i>	Mean (%)	Median (%)
CSR-conscious firms						
Profit ($t+180$)	2887	0.0402	0.0374	12897	−0.0142	−0.0127
Profit ($t+120$)	2887	0.0604	0.0577	12897	−0.0136	−0.0124
Profit ($t+90$)	2887	0.0621	0.0537	12897	−0.0100	−0.0075
Non-CSR-conscious firms						
Profit ($t+180$)	7609	0.0564	0.0524	31094	−0.0118	−0.0112
Profit ($t+120$)	7609	0.0813	0.0739	31094	−0.0058	−0.0098
Profit ($t+90$)	7609	0.0916	0.0861	31094	−0.0048	−0.0111
Difference						
Profit ($t+180$)		−0.0163***	−0.0149***		−0.0024	−0.0016
Profit ($t+120$)		−0.0209***	−0.0162***		−0.0078***	−0.0025***
Profit ($t+90$)		−0.0296***	−0.0325***		−0.0052*	0.0037

Panel B: Descriptive statistics

This panel reports descriptive statistics of the sample of executive stock purchases. CSR-conscious firms are firms with a positive CSR score measured in the year prior to the insider trade ($t-1$), and non-CSR-conscious firms are other firms, where CSR score is the total number of strengths minus total number of concerns MSCI notes for firms' involvement in environment, community, employee relations, diversity, customers, and controversial industries (alcohol, gambling, tobacco, firearms, military, and nuclear power). $R\&D_{t-1}$ is an indicator variable equal to one if a firm has positive R&D expenses in year $t-1$ and zero otherwise. $Loss_{t-1}$ is an indicator variable equal to one if a firm reports negative earnings before extraordinary items in year $t-1$ and zero otherwise. $Volatility_{t-1}$ is the variance of daily stock returns over the interval $(-380, -20)$ before the trade. $\log Analyst_{t-1}$ is the natural logarithm of one plus the number of analysts following the firm in year $t-1$. $Turnover_{t-1}$ is the logarithm of trading volume over the $(-380, -20)$ interval before the trade over shares outstanding. $Restrict_{t-1}$ is an indicator variable set to one if 75% or more of trades during year $t-1$ occur in a 30-day window following an earnings announcement and zero otherwise. BTM_{t-1} is book value of equity over market value of equity at the end of year $t-1$. RET_{t-1} is market-adjusted returns over the interval $(-380, -20)$ before the trade. EP_{t-1} is the ratio of net income before extraordinary items for fiscal year $t-1$ to market value of equity 20 days before the trade. Avg_Growth_{-5} is the weighted average sales growth over the past five years, with year -1 having a weight of 5, year -2 having a weight of 4, etc.; when sales growth is missing in any year during the five-year period, the variable is set equal to sales growth of year -1 . The total number of executive purchases is 10,496.

	CSR-conscious sample (N=2,887)			Non-CSR-conscious sample (N=7,609)		
	Mean	Median	Std. dev.	Mean	Median	Std. dev.
$R\&D_{t-1}$	0.3031	0.0000	0.4597	0.2883	0.0000	0.4530
$Loss_{t-1}$	0.1787	0.0000	0.3832	0.2242	0.0000	0.4171
$Volatility_{t-1}$	0.0011	0.0006	0.0015	0.0011	0.0007	0.0012
$\log Analyst_{t-1}$	2.2442	2.3026	0.8714	1.9025	2.0794	0.9325
$Turnover_{t-1}$	0.4297	0.4263	0.8458	0.4643	0.5146	0.8644
$Restrict_{t-1}$	0.4073	0.0000	0.4914	0.4279	0.0000	0.4948
BTM_{t-1}	0.5647	0.4915	0.3973	0.5872	0.5187	0.4447
RET_{t-1}	-0.0935	-0.1909	0.6350	-0.1315	-0.1879	0.4466
EP_{t-1}	0.0281	0.0532	0.1181	0.0303	0.0493	0.1317
Avg_Growth_{-5}	0.1300	0.0795	0.2142	0.1811	0.1046	0.2991

Table 2 (continued)

Panel C: Correlation matrix

This panel reports Pearson (below diagonal) and Spearman (above-diagonal) correlation coefficients (p -values below) for the sample of executive purchases ($N=10,496$). CSR_{t-1} is equal to one for firms with a positive score measured in the year prior to the insider trade (i.e., CSR-conscious firms) and zero otherwise (i.e., non-CSR-conscious firms). Other variables are as defined in Panel A and Panel B.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
(1) <i>Trading Profit_t</i> (180-day)		−0.0388 <.0001	0.0264 0.0069	0.0252 0.0098	0.0832 <.0001	−0.0359 0.0002	0.0116 0.2331	0.0038 0.6977	0.0330 0.0007	−0.0825 <.0001	0.0224 0.0219	−0.0387 <.0001
(2) <i>CSR_{t-1}</i>	−0.0370 0.0002		0.0145 0.1382	−0.0497 <.0001	−0.0661 <.0001	0.1629 <.0001	−0.0263 0.0070	−0.0186 0.0567	−0.0314 0.0013	−0.0050 0.6058	0.0153 0.1170	−0.0714 <.0001
(3) <i>R&D_{t-1}</i>	0.0235 0.0162	0.0145 0.1382		0.1545 <.0001	0.1687 <.0001	0.1212 <.0001	0.1701 <.0001	0.0327 0.0008	−0.2806 <.0001	−0.0580 <.0001	−0.1695 <.0001	0.0498 <.0001
(4) <i>Loss_{t-1}</i>	0.0294 0.0026	−0.0497 <.0001	0.1545 <.0001		0.3586 <.0001	−0.0883 <.0001	0.1142 <.0001	0.0957 <.0001	0.0999 <.0001	−0.1453 <.0001	−0.7075 <.0001	−0.1205 <.0001
(5) <i>Volatility_{t-1}</i>	0.0680 <.0001	0.0031 0.7506	0.0667 <.0001	0.3509 <.0001		−0.0972 <.0001	0.3883 <.0001	0.0779 <.0001	0.1239 <.0001	−0.2176 <.0001	−0.1436 <.0001	0.0143 0.1443
(6) <i>log Analyst_{t-1}</i>	−0.0285 0.0035	0.1643 <.0001	0.1251 <.0001	−0.0751 <.0001	−0.0930 <.0001		0.3371 <.0001	0.0019 0.8423	−0.0979 <.0001	−0.0681 <.0001	0.0692 <.0001	0.1538 <.0001
(7) <i>Turnover_{t-1}</i>	−0.0071 0.4654	−0.0180 0.0656	0.1687 <.0001	0.1188 <.0001	0.2604 <.0001	0.3695 <.0001		0.1442 <.0001	−0.0218 0.0256	−0.1278 <.0001	0.0193 0.0481	0.2201 <.0001
(8) <i>Restrict_{t-1}</i>	0.0058 0.5556	−0.0186 0.0567	0.0327 0.0008	0.0957 <.0001	0.0658 <.0001	0.0276 0.0046	0.1429 <.0001		0.0451 <.0001	−0.0752 <.0001	−0.0554 <.0001	−0.0310 0.0015
(9) <i>BTM_{t-1}</i>	0.0266 0.0064	−0.0232 0.0173	−0.2312 <.0001	0.1280 <.0001	0.2388 <.0001	−0.0686 <.0001	−0.0080 0.4148	0.0256 0.0088		−0.1095 <.0001	0.0572 <.0001	−0.1251 <.0001
(10) <i>RET_{t-1}</i>	−0.0358 0.0002	0.0336 0.0006	−0.0451 <.0001	−0.0095 0.3303	0.1167 <.0001	−0.0974 <.0001	−0.0253 0.0096	−0.0012 0.9003	−0.0672 <.0001		−0.0340 0.0005	−0.0422 <.0001
(11) <i>EP_{t-1}</i>	−0.0214 0.0285	−0.0077 0.4306	−0.1124 <.0001	−0.7236 <.0001	−0.2907 <.0001	0.0381 <.0001	−0.0336 0.0006	−0.0653 <.0001	−0.0835 <.0001	−0.0789 <.0001		0.1208 <.0001
(12) <i>Avg_Growth₋₅</i>	−0.0612 <.0001	−0.0817 <.0001	0.0635 <.0001	−0.0100 0.3071	0.0134 0.1694	0.0757 <.0001	0.2018 <.0001	0.0019 0.8466	−0.0695 <.0001	−0.0255 0.0090	0.0433 <.0001	

Table 3

This table reports the estimation results of the following regression:

$$\text{Trading Profit}_t = \alpha + \beta_1 \text{CSR}_{t-1} + \beta_2 \text{R\&D}_{t-1} + \beta_3 \text{Loss}_{t-1} + \beta_4 \text{Volatility}_{t-1} + \beta_5 \log \text{Analyst}_{t-1} + \beta_6 \text{Turnover}_{t-1} \\ + \beta_7 \text{Restrict}_{t-1} + \beta_8 \text{BTM}_{t-1} + \beta_9 \text{RET}_{t-1} + \beta_{10} \text{EP}_{t-1} + \beta_{11} \text{Avg_Growth}_{-5} + \varepsilon_t$$

The regression is estimated for executive insider purchases only. Trading Profit_t is the estimated average daily abnormal return over the 180, 120, and 90 days following the trade in year t , stated in percentage terms. CSR_{t-1} is equal to one for firms with a positive CSR score in year $t-1$ and zero otherwise. R\&D_{t-1} is an indicator variable equal to one if a firm has positive R&D expenses in year $t-1$ and zero otherwise. Loss_{t-1} is an indicator variable equal to one if a firm reports negative earnings before extraordinary items in year $t-1$ and zero otherwise. Volatility_{t-1} is the variance of daily stock returns over the interval $(-380, -20)$ before the trade. $\log \text{Analyst}_{t-1}$ is the natural logarithm of one plus the number of analysts following the firm in year $t-1$. Turnover_{t-1} is the logarithm of trading volume over the $(-380, -20)$ interval before the trade over shares outstanding. Restrict_{t-1} is an indicator variable set to one if 75% or more of trades during year $t-1$ occur in a 30-day window following an earnings announcement and zero otherwise. Standard errors are robust standard errors clustered by person. BTM_{t-1} is book value of equity over market value of equity at the end of year $t-1$. RET_{t-1} is market-adjusted returns over the interval $(-380, -20)$ before the trade. EP_{t-1} is the ratio of net income before extraordinary items for fiscal year $t-1$ to market value of equity 20 days before the trade. Avg_Growth_{-5} is the weighted average sales growth over the past five years.

	Profit (t+180)		Profit (t+120)		Profit (t+90)	
	Estimate	p-Value	Estimate	p-Value	Estimate	p-Value
<i>Intercept</i>	0.0508	<.0001	0.0628	<.0001	0.0641	0.0002
CSR_{t-1}	-0.0174	0.0134	-0.0233	0.0144	-0.0347	0.0036
<i>R&D_{t-1}</i>	0.0118	0.1077	0.0102	0.3309	0.0186	0.1505
<i>Loss_{t-1}</i>	-0.0015	0.9135	0.0100	0.5330	0.0214	0.2233
<i>Volatility_{t-1}</i>	11.6720	0.0002	20.5112	<.0001	29.9430	<.0001
<i>log Analyst_{t-1}</i>	-0.0026	0.5314	0.0006	0.9147	0.0065	0.3000
<i>Turnover_{t-1}</i>	-0.0036	0.4627	-0.0047	0.5125	-0.0102	0.2410
<i>Restrict_{t-1}</i>	0.0008	0.9033	0.0084	0.3652	-0.0085	0.4432
<i>BTM_{t-1}</i>	0.0028	0.7246	-0.0072	0.5354	-0.0208	0.1311
<i>RET_{t-1}</i>	-0.0174	0.0070	-0.0236	0.0043	-0.0138	0.2024
<i>EP_{t-1}</i>	0.0026	0.9483	-0.0012	0.9864	0.0251	0.7392
<i>Avg_Growth₋₅</i>	-0.0450	0.0004	-0.0596	0.0004	-0.0573	0.0098
<i>N</i>		10496		10496		10496
<i>R² (%)</i>		1.32		1.59		1.76

analyses, the negative relation between CSR and executives' insider trading profits we document earlier could be spurious. We follow the prior literature (e.g., [Armstrong et al., 2010](#); [Jagolinzer et al., 2011](#)) and adopt the propensity-score matching technique to mitigate this concern. To generate the propensity score, we construct a first-stage logistic regression model for CSR_{t-1} at the firm-year level as follows:

$$\text{Prob}(\text{CSR}_{t-1} = 1) = \text{logit}(\alpha + \beta_1 \text{R\&D}_{t-1} + \beta_2 \text{Loss}_{t-1} + \beta_3 \text{Volatility}_{t-1} + \beta_4 \log \text{Analyst}_{t-1} + \beta_5 \text{Turnover}_{t-1} \\ + \beta_6 \text{Restrict}_{t-1} + \beta_7 \text{BTM}_{t-1} + \beta_8 \text{RET}_{t-1} + \beta_9 \text{EP}_{t-1} + \beta_{10} \text{Avg_Growth}_{-5} \\ + \beta_{11} \text{Size}_{t-1} + \beta_{12} \text{Free Cash Flow}_{t-1} + \beta_{13} \text{Institutional Ownership}_{t-1} + \beta_{14} \text{Firm Age}_{t-1} \\ + \beta_{15} \text{Market Share}_{t-1} + \beta_{16} \text{Sales}_{t-1} + \beta_{17} \text{PM}_{t-1} + \beta_{18} \text{Leverage}_{t-1} + \beta_{19} \text{Advertising}_{t-1} + \varepsilon_{t-1}) \quad (2)$$

We include all the control variables in model (1) and add proxies for firm size (Size_{t-1} , measured as natural logarithm of total assets) and free cash flow ($\text{Free Cash Flow}_{t-1}$, defined as the difference between cash flow from operations and cash flow used in investing activities). We expect that larger firms and firms with more free cash flow have more resources to invest in CSR activities ([Lys et al., 2013](#)). Since institutional investors care about CSR ([Johnson and Greening, 1999](#); [Kim et al., 2012](#)), we also control for $\text{Institutional Ownership}_{t-1}$, measured as the percentage of institutional holdings. We follow [Dhaliwal et al. \(2012\)](#) and add Firm Age_{t-1} and $\text{Market Share}_{t-1}$. [Dhaliwal et al. \(2012\)](#) argue that older firms are more likely to invest in CSR and that a firm's fraction of sales in its industry could capture its visibility and public pressure for CSR performance. We add Sales_{t-1} , PM_{t-1} , Leverage_{t-1} and Advertising_{t-1} , as [Lys et al. \(2013\)](#) argue that firms with better performance and lower risk and firms with higher advertising expenditures are more likely to invest in CSR. Finally, we control for industry- and year-fixed effects.

Panel A of [Table 4](#) tabulates the first-stage logistic regression results. The regression is estimated for 4,114 firm-year observations with data available for model (2), 1,215 of which are classified as CSR conscious. The estimation results show that 11 out of 19 explanatory variables are significant at conventional levels and the pseudo R^2 is 15.27%. Consistent with our expectations, we find that larger firms and firms with better performance, higher share turnover, higher institutional ownership, lower leverage, and more R&D and advertising expenditures are more likely to be CSR conscious.

Table 4

This table reports the relation between CSR and executives' insider trading profits when each CSR-conscious firm-year is matched with a non-CSR-conscious control firm-year with the closest propensity score.

Panel A: Logistic regression to model CSR consciousness

This panel reports the estimation results of the following first-stage logistic regression to model CSR-conscious firms with industry- and year-fixed effects:

$$\begin{aligned} \text{Prob}(\text{CSR}_{t-1} = 1) = & \text{logit}(\alpha + \beta_1 R\&D_{t-1} + \beta_2 \text{Loss}_{t-1} + \beta_3 \text{Volatility}_{t-1} + \beta_4 \log \text{Analyst}_{t-1} + \beta_5 \text{Turnover}_{t-1} + \beta_6 \text{Restrict}_{t-1} \\ & + \beta_7 \text{BTM}_{t-1} + \beta_8 \text{RET}_{t-1} + \beta_9 \text{EP}_{t-1} + \beta_{10} \text{Avg_Growth}_{-5} + \beta_{11} \text{Size}_{t-1} + \beta_{12} \text{Free Cash Flow}_{t-1} \\ & + \beta_{13} \text{Institutional Ownership}_{t-1} + \beta_{14} \text{Firm Age}_{t-1} + \beta_{15} \text{Market Share}_{t-1} + \beta_{16} \text{Sales}_{t-1} \\ & + \beta_{17} \text{PM}_{t-1} + \beta_{18} \text{Leverage}_{t-1} + \beta_{19} \text{Adverti sin g}_{t-1} + \varepsilon_t) \end{aligned}$$

CSR_{t-1} is equal to one for firms with a positive CSR score in year $t-1$ and zero otherwise. $R\&D_{t-1}$ is an indicator variable equal to one if a firm has positive R&D expenses in year $t-1$ and zero otherwise. Loss_{t-1} is an indicator variable equal to one if a firm reports negative earnings before extraordinary items in year $t-1$ and zero otherwise. Volatility_{t-1} is the variance of daily stock returns over the interval $(-380, -20)$ before the trade. $\log \text{Analyst}_{t-1}$ is the natural logarithm of one plus the number of analysts following the firm in year $t-1$. Turnover_{t-1} is the logarithm of trading volume over the $(-380, -20)$ interval before the trade over shares outstanding. Restrict_{t-1} is an indicator variable set to one if 75% or more of trades during year $t-1$ occur in a 30-day window following an earnings announcement and zero otherwise. BTM_{t-1} is book value of equity over market value of equity at the end of year $t-1$. RET_{t-1} is market-adjusted returns over the interval $(-380, -20)$ before the trade. EP_{t-1} is the ratio of net income before extraordinary items for fiscal year $t-1$ to market value of equity 20 days before the trade. Avg_Growth_{-5} is the weighted average sales growth over the past five years. Size_{t-1} is the natural logarithm of total assets at the end of year $t-1$. $\text{Free Cash Flow}_{t-1}$ is cash flow from operations minus cash flow used in investing in year $t-1$ deflated by total assets at the end of year $t-1$. $\text{Institutional Ownership}_{t-1}$ is the percentage of institutional holdings at the end of year $t-1$. Firm Age_{t-1} is the number of years the firm has been listed on CRSP at the end of year $t-1$. $\text{Market Share}_{t-1}$ is the firm's fraction of sales in its two-digit SIC industry in year $t-1$. Sales_{t-1} is sales revenue in year $t-1$ divided by total assets at the end of year $t-1$. PM_{t-1} is the income before extraordinary items divided by net sales for fiscal year $t-1$. Leverage_{t-1} is long-term debt divided by total assets at the end of year $t-1$. Advertising_{t-1} is advertising expense divided by sales revenue in year $t-1$. Industry- and year-fixed effect coefficients are not reported for brevity.

	Estimate	p-Value
<i>Intercept</i>	-4.5971	0.9533
<i>R&D_{t-1}</i>	0.4809	0.0008
<i>Loss_{t-1}</i>	-0.2653	0.0894
<i>Volatility_{t-1}</i>	1.4998	0.9699
<i>log Analyst_{t-1}</i>	-0.0306	0.6100
<i>Turnover_{t-1}</i>	0.2170	0.0027
<i>Restrict_{t-1}</i>	-0.0941	0.2321
<i>BTM_{t-1}</i>	-0.2615	0.0217
<i>RET_{t-1}</i>	0.0234	0.7840
<i>EP_{t-1}</i>	-1.0852	0.0326
<i>Avg_Growth₋₅</i>	-0.4701	0.0147
<i>Size_{t-1}</i>	0.2874	<.0001
<i>Free Cash Flow_{t-1}</i>	0.1028	0.7003
<i>Institutional Ownership_{t-1}</i>	0.3732	0.0649
<i>Firm Age_{t-1}</i>	-0.0077	0.8874
<i>Market Share_{t-1}</i>	-0.8964	0.3493
<i>Sales_{t-1}</i>	0.1367	0.0837
<i>PM_{t-1}</i>	-0.0001	0.9927
<i>Leverage_{t-1}</i>	-0.4979	0.0426
<i>Advertising_{t-1}</i>	5.4002	0.0004
<i>Industry fixed effects</i>		Yes
<i>Year fixed effects</i>		Yes
<i>N of firm-years</i>		4114
<i>N of CSR=1</i>		1215
<i>Pseudo R² (%)</i>		15.27

Panel B: Propensity-score matching results

This panel reports mean and median average daily trading profits (stated in percentage terms) for executives of CSR-conscious firms vs. propensity-matched non-CSR-conscious firms over the 180 days following their purchases. *t*-Tests (Wilcoxon tests) are used to test differences in means (distributions, reported in the Median column). The trading profit numbers are all statistically significant at the 1% level. *** indicates the difference between CSR-conscious and non-CSR-conscious firms is significant at 1% level, two-tailed tests.

	N	Mean (%)	Median (%)
CSR-conscious firms	2399	0.0416	0.0392
Matched firms	2551	0.0633	0.0607
Difference		-0.0217***	-0.0215***

Table 5

This table reports the estimation results of the following regression to test the association between changes from non-CSR conscious to CSR conscious or vice versa and executives' insider trading profits:

$$\text{Trading Profit}_t = \alpha + \beta_1 \text{Post} + \beta_2 \text{R\&D}_{t-1} + \beta_3 \text{Loss}_{t-1} + \beta_4 \text{Volatility}_{t-1} + \beta_5 \text{LogAnalyst}_{t-1} + \beta_6 \text{Turnover}_{t-1} \\ + \beta_7 \text{Restrict}_{t-1} + \beta_8 \text{BTM}_{t-1} + \beta_9 \text{RET}_{t-1} + \beta_{10} \text{EP}_{t-1} + \beta_{11} \text{Avg_Growth}_{-5} + \varepsilon_t$$

The regression is estimated for the sample of insider purchases made by executives of firms that experience a change in CSR orientation. We require a firm to have established the same CSR orientation for the two years before the change and have maintained the new CSR orientation for the two years after the change. *Trading Profit_t* is the estimated average daily abnormal return over the 180 days following the trade, stated in percentage terms. *Post* is an indicator variable equal to one for executive trades during the two years after the firm turns CSR conscious (non-CSR conscious) and zero for their trades during the two years before the change. *R&D_{t-1}* is an indicator variable equal to one if a firm has positive R&D expenses in year *t* – 1 and zero otherwise. *Loss_{t-1}* is an indicator variable equal to one if a firm reports negative earnings before extraordinary items in year *t* – 1 and zero otherwise. *Volatility_{t-1}* is the variance of daily stock returns over the interval (–380, –20) before the trade. *log Analyst_{t-1}* is the natural logarithm of one plus the number of analysts following the firm in year *t* – 1. *Turnover_{t-1}* is the logarithm of trading volume over the (–380, –20) interval before the trade over shares outstanding. *Restrict_{t-1}* is an indicator variable set to one if 75% or more of trades during year *t* – 1 occur in a 30-day window following an earnings announcement and zero otherwise. *BTM_{t-1}* is book value of equity over market value of equity at the end of year *t* – 1. *RET_{t-1}* is market-adjusted returns over the interval (–380, –20) before the trade. *EP_{t-1}* is the ratio of net income before extraordinary items for fiscal year *t* – 1 to market value of equity 20 days before the trade. *Avg_Growth₋₅* is the weighted average sales growth over the past five years. In columns (1) and (3), the regression is estimated for all firms experiencing changes in CSR. In columns (2) and (4), firms are required to have at least one purchase before and one purchase after the change in CSR. Standard errors are robust standard errors clustered by person.

	Increase in CSR				Decline in CSR			
	(1)		(2)		(3)		(4)	
	Estimate	p-Value	Estimate	p-Value	Estimate	p-Value	Estimate	p-Value
<i>Intercept</i>	0.0908	0.0252	0.0647	0.1101	–0.0794	0.0396	–0.0863	0.0241
<i>Post</i>	–0.0474	0.0624	–0.0424	0.0973	0.0525	0.0124	0.0473	0.0338
<i>R&D_{t-1}</i>	–0.0008	0.9770	0.0030	0.9314	–0.0119	0.6212	–0.0090	0.7275
<i>Loss_{t-1}</i>	–0.0588	0.2478	–0.0313	0.5762	–0.0190	0.6357	–0.0250	0.5708
<i>Volatility_{t-1}</i>	7.8117	0.3588	25.1253	0.0551	33.2936	0.0069	29.8931	0.0231
<i>log Analyst_{t-1}</i>	–0.0074	0.4528	–0.0061	0.6032	0.0365	0.0024	0.0311	0.0137
<i>Turnover_{t-1}</i>	0.0020	0.8843	–0.0226	0.1802	–0.0470	0.0012	–0.0416	0.0115
<i>Restrict_{t-1}</i>	–0.0038	0.8726	–0.0182	0.5361	0.0148	0.4679	0.0420	0.0654
<i>BTM_{t-1}</i>	0.0207	0.4769	0.0155	0.6572	0.0041	0.8893	0.0137	0.6751
<i>RET_{t-1}</i>	–0.0546	0.0182	–0.0865	0.0196	–0.0841	0.0011	–0.0698	0.0008
<i>EP_{t-1}</i>	0.0218	0.8957	0.1271	0.4794	–0.1005	0.4400	–0.0887	0.5310
<i>Avg_Growth₋₅</i>	–0.0334	0.3691	0.0555	0.1251	–0.0172	0.6845	0.0369	0.6294
<i>N</i>		603		446		489		408
<i>R² (%)</i>		5.01		8.92		12.53		11.95

Next, we calculate the propensity scores using predicted probabilities from the logistic regression and match each CSR-conscious firm-year to a control firm-year with the closest propensity score, provided that the propensity score of the closest match is within a distance of 0.1. This procedure results in 1,054 matched pairs (i.e., about 87% of the CSR-conscious firm-year observations are matched). The mean (median) propensity score of the CSR-conscious sample is 0.3662 (0.3541), while that of the matched control sample is 0.3706 (0.3542). As in [Armstrong et al. \(2010\)](#), we perform a parametric *t*-test of the difference in means between the CSR-conscious sample and the matched sample and a non-parametric Kolmogorov-Smirnov test of the difference between the two distributions. Neither test shows the difference to be statistically significant at conventional levels. We also examine the covariate balance between the matched CSR-conscious and non-CSR-conscious firms, that is, whether independent variables used in the first-stage prediction model are different between CSR-conscious and non-CSR-conscious firms. Again, neither the means nor the two distributions are significantly different between the two groups along any dimension.

We then compare executives' insider trading profits from purchase transactions in CSR-conscious firms with those in the propensity-score-matched control firms.¹³ The results are presented in Panel B of [Table 4](#). The mean trading profits for executives of CSR-conscious firms are significantly lower than the mean trading profits for executives of control firms (0.0416% versus 0.0633%, *p* < 1%).¹⁴ Comparison of the medians shows the same pattern. These results are similar to our main results reported in [Table 2](#).

¹³ Following [Jagolinzer et al. \(2011\)](#), we perform the first-stage propensity-score matching procedure at the firm-year level but conduct this insider trading test at the transaction level.

¹⁴ The propensity-score-matching procedure creates a pseudo “random” sample such that univariate differences in means between the treatment and control groups should be sufficient to estimate the treatment effects ([Dehejia and Wahba, 2002](#); [Dehejia, 2005](#)). Nonetheless, our inference remains unchanged if we rerun model (1), a multivariate analysis, for the pooled sample of CSR-conscious firms and the propensity-score-matched control firms.

3.4. Changes in CSR orientation

To reinforce our finding of a negative association between CSR and insider trading profits, we examine whether changes in a firm's CSR orientation are associated with changes in executives' insider trading profits. We focus on two subsamples: one group of firms rising from non-CSR conscious to CSR conscious and the other group falling from CSR conscious to non-CSR conscious. To reduce the likelihood of capturing temporary changes, we require a firm to have established the same CSR orientation for the two years before the change and have maintained the new CSR orientation for the two years after the change. Over the four-year window, we identify 603 executive purchases from 123 firms as the subsample experiencing an increase in CSR consciousness and 489 executive purchases from 109 firms as the subsample experiencing a decrease in CSR consciousness. We estimate the following model for these two subsamples separately:

$$\text{Trading Profit}_t = \alpha + \beta \text{Post} + \beta_2 \text{R\&D}_{t-1} + \beta_3 \text{Loss}_{t-1} + \beta_4 \text{Volatility}_{t-1} + \beta_5 \log \text{Analyst}_{t-1} + \beta_6 \text{Turnover}_{t-1} + \beta_7 \text{Restrict}_{t-1} + \beta_8 \text{BTM}_{t-1} + \beta_9 \text{RET}_{t-1} + \beta_{10} \text{EP}_{t-1} + \beta_{11} \text{Avg_Growth}_{-5} + \varepsilon_t \quad (3)$$

The indicator variable *Post* equals one for executive trades during the two years after the firm changes its CSR orientation and zero for their trades during the two years before the change. As a firm rises from non-CSR conscious to CSR conscious, we expect a negative coefficient on *Post*. On the other hand, as a firm experiences a decline in CSR consciousness, we expect a positive coefficient on *Post*.

Table 5 summarizes the estimation results of model (3). Column (1) reports the results for the sample of firms becoming CSR conscious. The coefficient on *Post* is negative and significant ($-0.0474, p=0.0624$), suggesting that executives' insider trading profits decrease as a firm becomes CSR conscious. We then restrict the sample to firms with at least one trade prior to and at least one trade after the change in CSR orientation and report the results in column (2). While the sample size decreases, the coefficient on *Post* remains negative and significant. In contrast, when model (3) is estimated in column (3) for the sample of firms becoming non-CSR conscious, the coefficient on *Post* is positive and significant ($0.0525, p=0.0124$). This suggests that executives' insider trading profits increase when a firm ceases to be CSR conscious. We obtain the same inference in column (4) when we require firms becoming non-CSR conscious to have at least one trade before and at least one trade after the change. These analyses provide further support for our main finding of a negative association between CSR consciousness and insider trading.¹⁵

Our inferences from Table 5 remain intact after we control for executive changes during the period or delete trades made by new executives. Under the assumption that individual preferences are time-invariant, these results cannot be explained by individual heterogeneity, but they are consistent with the explanation that CSR image influences insider trading.¹⁶

3.5. Likelihood of trading on future news

The analyses of insider trading profits using post-trade stock returns may be confounded by investors' reaction to insider transactions. Investors can react positively if they believe executive purchases are driven by their private information about better firm prospects. Thus the negative association between CSR consciousness and executive trading profits can be explained by investor perception if investors consider trades made by executives of CSR-conscious firms less likely information-driven because of their socially responsible image. To alleviate this concern, we use an alternative measure of insider trading activity—the likelihood of executives trading on future corporate news (Kyle, 1985). While this measure requires assumptions about the specific news executives trade on, it is less affected by investor perception. Existing studies show that insiders on average trade on future earnings and return performance (Piotroski and Roulstone, 2005, 2008). We expect executives of CSR-conscious firms to refrain from trading on future corporate news.

3.5.1. CSR and the likelihood of trading on future news

Following Piotroski and Roulstone (2008), we adopt the following logistic model of the likelihood of trading at the firm-year level:

$$\text{Prob}(\text{Purchase}_t = 1) = \text{logit}(\alpha + \beta_1 \Delta \text{Earn}_{t+1} + \beta_2 \text{MAR}_{t+1} + \beta_3 \log \text{MV}_t + \beta_4 \text{R\&D}_t + \beta_5 \text{BTM}_t + \beta_6 \text{MAR}_{t+1} + \beta_7 \text{EP}_t + \beta_8 \text{Avg_Growth}_{-5} + \varepsilon_t) \quad (4)$$

The dependent variable, *Purchase_t*, is an indicator variable equal to one if executives purchase shares in open-market transactions during year *t* and the total shares purchased by all executives of the firm are greater than or equal to total shares sold by all executives. The focus of the analysis is the association between the likelihood of purchase (*Purchase_t*) and future news as captured by upcoming earnings changes (ΔEarn_{t+1}) and returns (MAR_{t+1}). ΔEarn_{t+1} is measured as the change in earnings from year *t* to year *t* + 1 deflated by average total assets in year *t*. MAR_{t+1} is measured as the 12-month

¹⁵ We also examine an alternative specification of a firm-year level regression that regresses changes in yearly average executives' insider trading profits on a variable for changes in CSR orientation and changes in all control variables in model (1). The variable capturing CSR changes equals one for becoming CSR conscious, minus one for ceasing to be CSR conscious, and zero otherwise. We find a negative coefficient on the CSR change variable, suggesting that executive trading profits decrease as a firm's CSR consciousness increases, providing the same inference as in Table 5.

¹⁶ A caveat of the change analysis is that CSR changes are likely endogenous and our control variables may not adequately control for the underlying changes that lead to the change in a firm's CSR orientation.

buy-and-hold market-adjusted return over year $t+1$. If executives trade on their private information about future news, we would expect the coefficients on $\Delta Earn_{t+1}$ and $MARet_{t+1}$ to be positive.

Similar to Piotroski and Roulstone (2008), we control for firm size ($\log MV_t$) and R&D activities ($R\&D_t$). We also control for insiders' contrarian trading with the 12-month buy-and-hold market-adjusted return over year t ($MARet_t$) as well as BTM_t , EP_t , and Avg_Growth_{-5} .¹⁷ Model (4) is estimated separately for CSR-conscious firms and non-CSR-conscious firms.

Table 6 Panel A reports the summary statistics of variables in model (4) for the CSR-conscious and non-CSR-conscious samples separately. Approximately 11% of the CSR-conscious firm-years are classified as having a net purchase, while about 12% of the non-CSR-conscious firm-years are classified as having a net purchase. Although the difference appears small, the Wilcoxon test rejects the null that the two samples have the same distribution, suggesting that executives of CSR-conscious firms are less likely to have net purchases. $\Delta Earn_{t+1}$ and $MARet_{t+1}$ are similar across the two samples. CSR-conscious firms are larger and more likely to engage in R&D. They also have a lower book-to-market ratio, lower stock returns and past growth, and a higher earnings-price ratio than non-CSR-conscious firms. These statistics are similar to those reported in Panel B of Table 2.

We report the results of regression model (4) in Panel B of Table 6. For CSR-conscious firms, the coefficient on $\Delta Earn_{t+1}$ (0.0991, $p=0.7030$) is insignificant, providing no evidence that these executives trade on future corporate earnings news. In contrast, we find a positive coefficient on $\Delta Earn_{t+1}$ (0.6739, $p=0.0149$) for non-CSR-conscious firms, suggesting that these executives trade on future corporate earnings news. Furthermore, the coefficient on $\Delta Earn_{t+1}$ for CSR-conscious firms is significantly smaller than the corresponding coefficient for non-CSR-conscious firms ($p=0.0492$), suggesting that executives of CSR-conscious firms are less likely to trade on future earnings news than executives of non-CSR-conscious firms. When we examine future return news, the results are similar. We do not find evidence that executives of CSR-conscious firms trade on future return news, but we find such evidence for executives of non-CSR-conscious firms. The coefficient on $MARet_{t+1}$ is smaller for CSR-conscious firms, although the difference is not statistically different.¹⁸ Similar to the prior literature (Piotroski and Roulstone, 2005, 2008), we also find evidence that executives are contrarian traders, as the coefficient on BTM_t is consistently positive and significant, while the coefficient on $MARet_t$ is consistently negative and significant.

3.5.2. Propensity-score matched sample and the likelihood of trades

To address the endogeneity concern of CSR in the likelihood of news-based insider trading test, we apply the propensity-score matching methodology as detailed in the insider trading profit analysis. We estimate a first-stage logistic regression model for CSR_{t-1} similar to model (2).¹⁹ For the sake of brevity, we do not tabulate the results. After requiring necessary data, we estimate the regression for a sample of 22,413 firm-years, including 6,973 firm-years classified as CSR conscious. Similar to the results reported in Table 4, we find that firms with lower book-to-market ratios, more R&D and advertising investments, more analyst following, greater free cash flows, and higher institutional ownership, and larger firms are more likely to be CSR conscious. Applying the same matching procedure as in Section 3.3, we retain 6,386 matched pairs. The mean (median) propensity score of being CSR conscious is 0.3682 (0.3568) for the CSR-conscious sample, while that of the matched control sample is 0.3650 (0.3568). We do not find the mean propensity scores or the distributions to be statistically different. We also examine covariate balance between the matched CSR-conscious and non-CSR-conscious firms. Again, for each covariate in the logistic regression, neither the difference in means between the two groups nor the difference between the two distributions is significant.

We report the estimation results of model (4) for the propensity-score-matched CSR-conscious and non-CSR-conscious samples in Panel C of Table 6. We find that, for CSR-conscious firms, the coefficient on $\Delta Earn_{t+1}$ (0.1139, $p=0.6516$) is insignificant. In contrast, for the matched non-CSR-conscious firms, we find a positive coefficient on $\Delta Earn_{t+1}$ (0.8007, $p=0.0878$), significantly larger than that for CSR-conscious firms ($p=0.0661$). These results support our findings in Panel B, suggesting that executives of CSR-conscious firms are less likely to trade on future earnings news than executives of non-CSR-conscious firms. Results on future return news exhibit a similar pattern. We do not find evidence that executives of CSR-conscious firms trade on future return news; however, we find such evidence for executives of non-CSR-conscious firms.

3.5.3. Changes in CSR orientation and the likelihood of trades

We further examine whether changes in a firm's CSR orientation are associated with changes in the likelihood of news-based insider trading. Similar to our tests on insider trading profits, we focus on two subsamples: firms

¹⁷ We also include variables capturing whether executives received grants of restricted stock or options during year t and whether executives exercised options during year t as additional control variables. Untabulated results show that adding these controls reduces our sample size by more than 50%, but our inferences remain unchanged.

¹⁸ We also follow Piotroski and Roulstone (2005) and examine whether the purchase ratio (number of shares purchased divided by the sum of number of shares purchased and number of shares sold) is associated with future news contained in change in earnings and market returns. Results (not reported) are also consistent with executives of CSR-conscious firms being more constrained from trading on future news.

¹⁹ The logistic model is identical to model (2) except that (i) the variable *Restrict* is excluded because it cannot be measured for firms without an insider trade, (ii) $\Delta Earn_{t+1}$, $MARet_{t+1}$, and $MARet_t$ are added since they are included in model (4), and (iii) RET_t is excluded because it largely duplicates the information contained in $MARet_t$. None of the newly added variables is significant in explaining CSR_{t-1} .

Table 6

This table reports the descriptive statistics and test results of the likelihood of purchase conditional on future news.

Panel A: Descriptive statistics

This table reports descriptive statistics of the sample used to test the likelihood of executive purchase conditional on future earnings and return news. $Purchase_t$ is an indicator variable equal to one for a firm-year if any executive of the firm purchased shares in an open-market transaction during year t and total shares purchased by all executives in the firm are greater than or equal to total shares sold by all executives and zero otherwise. $\Delta Earn_{t+1}$ is the change in earnings from year t to year $t+1$, deflated by the total assets at the end of year t . $MARet_{t+1}$ is the buy-and-hold market-adjusted return over year $t+1$. $\log MV_t$ is the natural logarithm of market value of equity at the end of year t . $R\&D_t$ is an indicator variable equal to one if a firm has positive R&D expenses in year t and zero otherwise. BTM_t is book value of equity over market value of equity at the end of year t . $MARet_t$ is the buy-and-hold market-adjusted return over year t . EP_t is the ratio of net income before extraordinary items for fiscal year $t-1$ to market value of equity at the beginning of year t . Avg_Growth_{-5} is the weighted average sales growth over the past five years.

	CSR-conscious firms ($N=7,326$)			Non-CSR-conscious firms ($N=15,873$)		
	Mean	Median	Std. dev.	Mean	Median	Std. dev.
$Purchase_t$	0.1106	0	0.3136	0.1190	0	0.3238
$\Delta Earn_{t+1}$	0.0045	0.0036	0.0644	0.0048	0.0036	0.0702
$MARet_{t+1}$	0.0066	-0.0222	0.3425	0.0056	-0.0264	0.3505
$\log MV_t$	7.8875	7.8527	1.5935	7.2794	7.2168	1.4194
$R\&D_t$	0.4223	0	0.4940	0.3870	0	0.4871
BTM_t	0.4851	0.4226	0.3328	0.5386	0.4786	0.3564
$MARet_t$	0.0151	-0.0162	0.3397	0.0238	-0.0116	0.3569
EP_t	0.0170	0.0480	0.3717	0.0107	0.0470	0.3064
Avg_Growth_{-5}	0.1290	0.0871	0.2298	0.1580	0.0960	0.3064

Panel B: CSR and likelihood of purchasing conditional on future news

This table reports the estimation results of the following regression:

$$\text{Prob}(Purchase_t = 1) = \text{logit}(\alpha + \beta_1 \Delta Earn_{t+1} + \beta_2 MARet_{t+1} + \beta_3 \log MV_t + \beta_4 R\&D_t + \beta_5 BTM_t + \beta_6 MARet_t + \beta_7 EP_t + \beta_8 Avg_Growth_{-5} + \epsilon_t)$$

Variables are defined in Panel A. The regression is estimated at the firm-year level for the CSR-conscious sample (column (1)) and the non-CSR-conscious sample (column (2)) separately. Standard errors are robust standard errors clustered by firm.

To test whether the coefficients on $\Delta Earn_{t+1}$ and $MARet_{t+1}$ for the CSR-conscious sample are lower than those for the non-CSR-conscious sample, we estimate the following regression and test whether the coefficients on $\Delta Earn_{t+1} \times CSR$ and $MARet_{t+1} \times CSR$ are negative:

$$\begin{aligned} \text{Prob}(Purchase_t = 1) = \text{logit}(\alpha + \beta_1 \Delta Earn_{t+1} + \beta_2 MARet_{t+1} + \beta_3 \log MV_t + \beta_4 R\&D_t + \beta_5 BTM_t + \beta_6 MARet_t + \beta_7 EP_t + \beta_8 Avg_Growth_{-5} + \alpha' CSR + \beta_1' \Delta Earn_{t+1} \times CSR \\ + \beta_2' MARet_{t+1} \times CSR + \beta_3' \log MV_t \times CSR + \beta_4' R\&D_t \times CSR + \beta_5' BTM_t \times CSR + \beta_6' MARet_t \times CSR + \beta_7' EP_t \times CSR + \beta_8' Avg_Growth_{-5} \times CSR + \epsilon_t) \end{aligned}$$

	CSR-conscious firms		Non-CSR-conscious firms		(1) < (2)
	(1)		(2)		
	Estimate	p-Value	Estimate	p-Value	p-Value
Intercept	-1.0264	0.0003	-0.6119	0.0023	
$\Delta Earn_{t+1}$	0.0991	0.7030	0.6739	0.0149	0.0492
$MARet_{t+1}$	0.0959	0.3601	0.1192	0.0865	0.4263
$\log MV_t$	-0.1823	<.0001	-0.2365	<.0001	
$R\&D_t$	-0.1101	0.3057	-0.1172	0.0876	
BTM_t	0.7132	<.0001	0.4954	<.0001	
$MARet_t$	-0.3180	0.0117	-0.4231	<.0001	
EP_t	0.1009	0.4801	0.1258	0.2148	
Avg_Growth_{-5}	-0.1154	0.6015	0.1402	0.1098	
N		7326		15873	
Pseudo R^2 (%)		3.66		3.63	

Panel C: Propensity-score matching

This table reports the estimation results of the following regression:

$$\text{Prob}(\text{Purchase}_t = 1) = \text{logit}(\alpha + \beta_1 \Delta \text{Earn}_{t+1} + \beta_2 \text{MAREt}_{t+1} + \beta_3 \log \text{MV}_t + \beta_4 \text{R\&D}_t + \beta_5 \text{BTM}_t + \beta_6 \text{MAREt}_t + \beta_7 \text{EP}_t + \beta_8 \text{Avg_Growth}_{-5} + \varepsilon_t)$$

Variables are defined in Panel A. The regression is estimated at the firm-year level for the sample of matched pairs obtained from the propensity-score-matching procedure detailed in Table 4. Standard errors are robust standard errors clustered by firm.

To test whether the coefficients on ΔEarn_{t+1} and MAREt_{t+1} for the CSR-conscious sample are lower than those for the non-CSR-conscious sample, we estimate the following regression and test whether the coefficients on $\Delta \text{Earn}_{t+1} \times \text{CSR}$ and $\text{MAREt}_{t+1} \times \text{CSR}$ are negative:

$$\text{Prob}(\text{Purchase}_t = 1) = \text{logit}(\alpha + \beta_1 \Delta \text{Earn}_{t+1} + \beta_2 \text{MAREt}_{t+1} + \beta_3 \log \text{MV}_t + \beta_4 \text{R\&D}_t + \beta_5 \text{BTM}_t + \beta_6 \text{MAREt}_t + \beta_7 \text{EP}_t + \beta_8 \text{Avg_Growth}_{-5} + \alpha' \text{CSR} + \beta'_1 \Delta \text{Earn}_{t+1} * \text{CSR} + \beta'_2 \text{MAREt}_{t+1} \times \text{CSR} + \beta'_3 \log \text{MV}_t \times \text{CSR} + \beta'_4 \text{R\&D}_t \times \text{CSR} + \beta'_5 \text{BTM}_t \times \text{CSR} + \beta'_6 \text{MAREt}_t \times \text{CSR} + \beta'_7 \text{EP}_t \times \text{CSR} + \beta'_8 \text{Avg_Growth}_{-5} \times \text{CSR} + \varepsilon_t)$$

	CSR-conscious firms		Non-CSR-conscious firms		(1) < (2)
	(1)		(2)		
	Estimate	p-Value	Estimate	p-Value	p-Value
Intercept	−0.9595	0.0013	−0.8654	0.0044	
ΔEarn_{t+1}	0.1139	0.6516	0.8007	0.0878	0.0661
MAREt_{t+1}	0.0637	0.5602	0.2261	0.0449	0.1485
$\log \text{MV}_t$	−0.1978	<.0001	−0.202	<.0001	
R\&D_t	−0.1426	0.2041	−0.2255	0.0285	
BTM_t	0.7717	<.0001	0.6515	<.0001	
MAREt_t	−0.3316	0.0142	−0.4484	0.0012	
EP_t	0.0512	0.7668	0.1733	0.195	
Avg_Growth_{-5}	−0.0796	0.4658	0.1822	0.0124	
N		6386		6386	
Pseudo R^2 (%)		4.26		4.11	

Table 2 (continued)

Panel D: Change in CSR and likelihood of purchasing

This table reports the estimation results of the following regression:

$$\text{Prob}(\text{Purchase}_t = 1) = \text{logit}(\alpha + \beta_1 \Delta \text{Earn}_{t+1} + \beta_2 \text{MARE}_{t+1} + \beta_3 \text{Log MV}_t + \beta_4 R\&D_t + \beta_5 \text{BTM}_t + \beta_6 \text{MARE}_t + \beta_7 \text{EP}_t + \beta_8 \text{Avg_Growth}_{-5} + e_t)$$

Variables are defined in Panel A. The regression is estimated at the firm-year level for firms experiencing a change of CSR orientation from CSR conscious to non-CSR conscious or vice versa. We require a firm to have established the same CSR orientation for the two years before the change and have maintained the new CSR orientation for the two years after the change. The regression is estimated separately for the after-change period (the two years after the firm turns CSR conscious (non-CSR conscious)) and the before-change period (the two years before the change). Standard errors are robust standard errors clustered by firm. To test whether the coefficients on ΔEarn_{t+1} and MARE_{t+1} for the before-change period are higher (lower) than those for the after-change period for the sample of firms with increasing (decreasing) CSR-consciousness, we estimate the following regression and test whether the coefficients on $\Delta \text{Earn}_{t+1} \times \text{Post}$ and $\text{MARE}_{t+1} \times \text{Post}$ are negative (positive), where *Post* is an indicator variable equal to one for executive trades during the two years after the firm changes its CSR consciousness status and zero for their trades during the two years before the change:

$$\begin{aligned} \text{Prob}(\text{Purchase}_t = 1) = & \text{logit}(\alpha + \beta_1 \Delta \text{Earn}_{t+1} + \beta_2 \text{MARE}_{t+1} + \beta_3 \text{Log MV}_t + \beta_4 R\&D_t + \beta_5 \text{BTM}_t + \beta_6 \text{MARE}_t + \beta_7 \text{EP}_t + \beta_8 \text{Avg_Growth}_{-5} + \alpha' \text{Post} + \beta'_1 \Delta \text{Earn}_{t+1} \times \text{Post} \\ & + \beta'_2 \text{MARE}_{t+1} \times \text{Post} + \beta'_3 \text{Log MV}_t \times \text{Post} + \beta'_4 R\&D_t \times \text{Post} + \beta'_5 \text{BTM}_t \times \text{Post} + \beta'_6 \text{MARE}_t \times \text{Post} + \beta'_7 \text{EP}_t \times \text{Post} + \beta'_8 \text{Avg_Growth}_{-5} \times \text{Post} + e_t) \end{aligned}$$

	Increase in CSR					Decline in CSR				
	(1) Before		(2) After		(2) < (1)	(3) Before		(4) After		(4) > (3)
	Estimate	p-Value	Estimate	p-Value	p-Value	Estimate	p-Value	Estimate	p-Value	p-Value
Intercept	−2.0406	0.0554	−0.8695	0.2674		0.0782	0.9194	−0.2954	0.7293	
ΔEarn_{t+1}	1.6807	0.0100	−0.0083	0.9938	0.0845	0.1066	0.9016	−1.7363	0.1671	0.3899
MARE_{t+1}	−0.2703	0.3655	0.0805	0.7972	0.2803	−0.0893	0.6595	0.4621	0.0647	0.0475
$\log \text{MV}_t$	−0.0284	0.8243	−0.1904	0.0337		0.1025	0.5435	0.2182	0.3861	
$R\&D_t$	0.0051	0.9837	−0.0667	0.7810		−0.3032	0.0013	−0.2476	0.0192	
BTM_t	0.5002	0.2052	0.5465	0.0481		−0.4600	0.1306	−0.1743	0.6419	
MARE_t	−0.5729	0.1159	0.3779	0.0405		0.2286	0.4043	−0.3060	0.2416	
EP_t	−0.3099	0.5289	0.2950	0.1860		−0.2718	0.4155	1.4343	0.0854	
Avg_Growth_{-5}	−1.3636	0.0992	−0.7402	0.2268		−0.4470	0.3559	0.6035	0.2217	
N		993		973			788		758	
Pseudo R^2 (%)		3.88		5.10			4.23		5.02	

becoming CSR conscious and those becoming non-CSR conscious. Again, to lower the likelihood of capturing temporary changes, we require a firm to have established the same CSR orientation for the two years before and maintained the new CSR orientation for the two years after the change. We examine the likelihood of trading over the four-year window.

Panel D summarizes the estimation results of model (4) for firms experiencing changes in CSR consciousness. The first two columns report the results for the subsample of firms that become CSR conscious. Before firms become CSR conscious, we find a positive coefficient on $\Delta Earn_{t+1}$ (1.6807, $p=0.0100$), suggesting that executives trade on future earnings news. After these firms become CSR conscious, however, the coefficient becomes insignificant (-0.0083 , $p=0.9938$), providing no evidence that executives trade on future earnings news. The coefficient on $\Delta Earn_{t+1}$ is significantly lower after firms become CSR conscious ($p=0.0845$). Columns (3) and (4) report the results for the subsample of firms that turn non-CSR conscious. Prior to the change, when firms are CSR conscious, there is no evidence that executives trade on future news—the coefficients on both $\Delta Earn_{t+1}$ (0.1066, $p=0.9016$) and $MARet_{t+1}$ (-0.0893 , $p=0.6595$) are insignificant. After the firms become non-CSR conscious, however, there is some evidence that executives trade on future return performance—the coefficient on $MARet_{t+1}$ is positive and significant (0.4621, $p=0.0647$), significantly higher than when the firms are CSR conscious ($p=0.0475$). Collectively, these results are consistent with our findings in Section 3.5.1 based on the population and in Section 3.5.2 based on the propensity-score-matched sample, supporting the inferences we draw from the trading profit tests.²⁰

In summary, although the analyses using the likelihood of insider trading prior to future news can be less powerful due to the assumption about specific news executives trade on, the results above largely support our inferences from the trading profit analysis. Both sets of results are consistent with CSR constraining insider trading and/or executives' individual heterogeneity explaining both CSR and insider trading, but they are inconsistent with CSR insuring against the adverse impacts of insider trading. We focus on insider trading profits for the remainder of the paper because they are measured at the executive-trade level, allowing us to perform more cross-sectional analyses at the personal level. The news-based likelihood of trading, in contrast, is tested at the firm-year level, and therefore does not allow us to perform such analyses.

3.6. Cross-sectional analyses

The evidence so far points to a negative association between CSR consciousness of a firm and its executives' insider trading. In this section, we explore channels through which damage to a firm's CSR image translates into personal costs for executives and thereby provides disincentives for informed trading. Specifically, we focus on two channels: reputation alignment and wealth alignment.²¹

3.6.1. Personal reputation

Executives' personal reputations can be tied to the reputations of their firms. When a firm builds an image of being socially responsible, executives, especially those who are vocal about social responsibility, are likely to receive credit (Hemingway and MacLagan, 2004; Cespa and Cestone, 2007). To avoid impairing their reputation along with the firm's CSR image, these executives would refrain from informed trading. Also, if individuals' preferences for good citizenship can be revealed in their speeches and actions, executives who are advocates of CSR are likely more altruistic and less greedy than other executives. Both effects predict a more pronounced negative association between CSR consciousness and insider trading profits for CSR advocates.

We manually search various sources to determine whether executives are vocal about CSR practices; our sources include the internet via Google, general news media and press releases via Factiva, CSR news via CSR newswire, and CSR reports via Corporate Register. We use keywords including executive name, company name, and variations of CSR-related terms such as “social responsibility” and “corporate citizenship.” We then read the identified articles to examine whether the executive expresses an opinion about the firm's CSR activities. An executive is classified as an advocate if he or she is pro-CSR, such as giving a speech about CSR, being quoted in CSR-related news, being granted a CSR-related award, or promoting CSR during an interview. In the CSR-conscious sample, we classify about 20% of executives as CSR advocates. In the sample of non-CSR-conscious firms, this percentage is lower at 8.5%.²²

Since executives derive personal reputation from firms' positive CSR image, we first examine whether, among executives of CSR-conscious firms, CSR advocates make lower profits from insider trades. In Column (1) of Table 7, Panel A, we estimate the following model to test our prediction:

$$\begin{aligned} \text{Trading Profit}_t = & \alpha + \beta_1 \text{Advocate} + \beta_2 \text{R\&D}_{t-1} + \beta_3 \text{Loss}_{t-1} + \beta_4 \text{Volatility}_{t-1} + \beta_5 \log \text{Analyst}_{t-1} + \beta_6 \text{Turnover}_{t-1} \\ & + \beta_7 \text{Restrict}_{t-1} + \beta_8 \text{BTM}_{t-1} + \beta_9 \text{RET}_{t-1} + \beta_{10} \text{EP}_{t-1} + \beta_{11} \text{Avg_Growth}_{-5} + \varepsilon_t \end{aligned} \quad (5)$$

²⁰ This change analysis of the likelihood of trading test also helps to alleviate a potential concern over the change analysis of the trading profit test. Profits from purchases before a firm becomes CSR consciousness may be higher because the change in CSR orientation signals good news to the market. It is less clear that this argument would necessarily predict an increase in the sensitivity of the likelihood of purchase to future corporate news.

²¹ We present and discuss results focusing on the 180-day trading profits. Our results are in general robust to examining the 120-day and 90-day trading profits.

²² About 70% of the CSR advocates are CEOs. Adding an indicator variable to control for whether an advocate is the CEO does not affect our inferences on CSR advocates.

Table 7

Panel A: Personal CSR reputation

This table reports the estimation results of variations of the following regression:

$$\text{Trading Profit}_t = \alpha + \beta_1 \text{Advocate} + \beta_2 \text{R\&D}_{t-1} + \beta_3 \text{Loss}_{t-1} + \beta_4 \text{Volatility}_{t-1} + \beta_5 \log \text{Analyst}_{t-1} + \beta_6 \text{Turnover}_{t-1} \\ + \beta_7 \text{Restrict}_{t-1} + \beta_8 \text{BTM}_{t-1} + \beta_9 \text{RET}_{t-1} + \beta_{10} \text{EP}_{t-1} + \beta_{11} \text{Avg_Growth}_{-5} + e_t$$

Trading Profit_t is the estimated average daily abnormal return over the 180 days following the trade in year t , stated in percentage terms. Advocate is set equal to one if an executive is a CSR advocate and zero otherwise. R\&D_{t-1} is an indicator variable equal to one if a firm has positive R&D expenses in year $t-1$ and zero otherwise. Loss_{t-1} is an indicator variable equal to one if a firm reports negative earnings before extraordinary items in year $t-1$ and zero otherwise. Volatility_{t-1} is the variance of daily stock returns over the interval $(-380, -20)$ before the trade. $\log \text{Analyst}_{t-1}$ is the natural logarithm of one plus the number of analysts following the firm in year $t-1$. Turnover_{t-1} is the logarithm of trading volume over the $(-380, -20)$ interval before the trade over shares outstanding. Restrict_{t-1} is an indicator variable set to one if 75% or more of trades during year $t-1$ occur in a 30-day window following an earnings announcement and zero otherwise. BTM_{t-1} is book value of equity over market value of equity at the end of year $t-1$. RET_{t-1} is market-adjusted returns over the interval $(-380, -20)$ before the trade. EP_{t-1} is the ratio of net income before extraordinary items for fiscal year $t-1$ to market value of equity 20 days before the trade. Avg_Growth_{-5} is the weighted average sales growth over the past five years. CSR_{t-1} is equal to one for firms with a positive CSR score in year $t-1$ and zero otherwise. The regressions are estimated for purchases made by executives of CSR-conscious firms only (Column 1) and the entire sample (i.e., executives of CSR-conscious and non-CSR-conscious firms, Column 2) separately. Standard errors are robust standard errors clustered by person.

	CSR-conscious firms only		CSR-conscious and non-CSR-conscious firms	
	(1)		(2)	
	Estimate	p-Value	Estimate	p-Value
<i>Intercept</i>	0.0177	0.4191	0.0504	< .0001
<i>Advocate</i>	-0.0262	0.0246	0.0062	0.5843
<i>CSR_{t-1}</i>			-0.0127	0.0988
<i>CSR_{t-1} × Advocate</i>			-0.0326	0.0469
<i>R&D_{t-1}</i>	-0.0047	0.6677	0.0125	0.0867
<i>Loss_{t-1}</i>	-0.0149	0.5462	-0.0016	0.9022
<i>Volatility_{t-1}</i>	18.5668	< .0001	11.4898	0.0002
<i>log Analyst_{t-1}</i>	0.0061	0.3744	-0.0024	0.5541
<i>Turnover_{t-1}</i>	0.0021	0.7434	-0.0039	0.4285
<i>Restrict_{t-1}</i>	0.0021	0.8451	0.0001	0.9842
<i>BTM_{t-1}</i>	0.0026	0.8583	0.0031	0.6927
<i>RET_{t-1}</i>	-0.0160	0.0518	-0.0174	0.0068
<i>EP_{t-1}</i>	-0.0369	0.6110	0.0022	0.9560
<i>Avg_Growth₋₅</i>	-0.0491	0.0736	-0.0458	0.0003
<i>N</i>		2887		10496
<i>R² (%)</i>		2.78		1.44

Panel B: Financial incentive alignment

This table reports the estimation results of the following regression:

$$\text{Trading Profit}_t = \alpha + \beta_1 \text{CSR}_{t-1} + \beta_2 \text{Ownership} + \beta_3 \text{CSR}_{t-1} \times \text{Ownership} + \beta_4 \text{R\&D}_{t-1} + \beta_5 \text{Loss}_{t-1} \\ + \beta_6 \text{Volatility}_{t-1} + \beta_7 \log \text{Analyst}_{t-1} + \beta_8 \text{Turnover}_{t-1} + \beta_9 \text{Restrict}_{t-1} + \beta_{10} \text{BTM}_{t-1} \\ + \beta_{11} \text{RET}_{t-1} + \beta_{12} \text{EP}_{t-1} + \beta_{13} \text{Avg_Growth}_{-5} + e_t$$

Trading Profit_t is the estimated average daily abnormal return over the 180 days following the trade in year t , stated in percentage terms. CSR_{t-1} is equal to one for firms with a positive CSR score in year $t-1$ and zero otherwise. Ownership is the annual rank of an executive's ownership percentage holding (i.e., shares held by the executive divided by total shares outstanding) in year $t-1$, standardized to range from zero to one. R\&D_{t-1} is an indicator variable equal to one if a firm has positive R&D expenses in year $t-1$ and zero otherwise. Loss_{t-1} is an indicator variable equal to one if a firm reports negative earnings before extraordinary items in year $t-1$ and zero otherwise. Volatility_{t-1} is the variance of daily stock returns over the interval $(-380, -20)$ before the trade. $\log \text{Analyst}_{t-1}$ is the natural logarithm of one plus the number of analysts following the firm in year $t-1$. Turnover_{t-1} is the logarithm of trading volume over the $(-380, -20)$ interval before the trade over shares outstanding. Restrict_{t-1} is an indicator variable set to one if 75% or more of trades during year $t-1$ occur in a 30-day window following an earnings announcement and zero otherwise. BTM_{t-1} is book value of equity over market value of equity at the end of year $t-1$. RET_{t-1} is market-adjusted returns over the interval $(-380, -20)$ before the trade. EP_{t-1} is the ratio of net income before extraordinary items for fiscal year $t-1$ to market value of equity 20 days before the trade. Avg_Growth_{-5} is the weighted average sales growth over the past five years. The regressions are estimated for purchases made by executives of CSR-conscious firms only (Column 1) and the entire sample (i.e., executives of CSR-conscious and non-CSR-conscious firms, Column 2) separately. Standard errors are robust standard errors clustered by person.

Table 7 (continued)

	CSR-conscious firms only		CSR-conscious and non-CSR-conscious firms	
	(1)		(2)	
	Estimate	p-Value	Estimate	p-Value
<i>Intercept</i>	0.0758	0.0014	0.0813	<.0001
<i>Ownership</i>	−0.0448	0.0148	0.0117	0.5642
<i>CSR_{t−1}</i>			0.0096	0.4629
<i>CSR_{t−1} × Ownership</i>			−0.0563	0.0371
<i>R&D_{t−1}</i>	−0.0230	0.0301	0.0035	0.6673
<i>Loss_{t−1}</i>	−0.0143	0.5633	−0.0049	0.7511
<i>Volatility_{t−1}</i>	16.7655	0.0029	11.3570	0.0092
<i>log Analyst_{t−1}</i>	−0.0090	0.1498	−0.0138	0.0023
<i>Turnover_{t−1}</i>	0.0001	0.9925	−0.0046	0.4225
<i>Restrict_{t−1}</i>	0.0139	0.1701	0.0006	0.9364
<i>BTM_{t−1}</i>	0.0028	0.8492	−0.0096	0.3188
<i>RET_{t−1}</i>	−0.0154	0.2410	−0.0272	0.0029
<i>EP_{t−1}</i>	−0.1196	0.1176	−0.0358	0.4776
<i>Avg_Growth_{−5}</i>	−0.0133	0.6257	−0.0109	0.5429
<i>N</i>		2045		6323
<i>R² (%)</i>		3.30		1.56

We define *Advocate* as a dummy variable equal to one if an executive is identified as a CSR advocate and zero otherwise. The coefficient on *Advocate* is negative and significant (-0.0262 , $p=0.0246$), indicating that, among executives of CSR-conscious firms, CSR advocates make lower insider trading profits than non-advocates.

Next, we expand the sample to include trades made by executives of non-CSR-conscious firms and add *CSR_{t−1}* and its interaction with *Advocate* to model (5). The coefficient on *CSR_{t−1}* now measures the difference in non-CSR advocates' trading profits between CSR-conscious firms and non-CSR-conscious firms. The coefficient on *Advocate* measures the difference in trading profits between CSR advocates and non-advocates in non-CSR-conscious firms. Our variable of interest, the interaction term *CSR_{t−1}*Advocate*, captures the incremental constraining effect of CSR when executives are CSR advocates and the coefficient is expected to be negative.

The results are reported in Table 7, Panel A, Column (2). The coefficient on *CSR_{t−1}* remains negative and significant (-0.0127 , $p=0.0988$), suggesting that non-CSR advocates in CSR firms make lower insider trading profits than peers at non-CSR firms, i.e., CSR constrains insider trading profits even for non-CSR advocates. Importantly, the coefficient on *CSR_{t−1}*Advocate* is negative and significant (-0.0326 , $p=0.0469$), suggesting a more pronounced negative association between CSR consciousness and insider trading profits for CSR advocates than for non-CSR advocates. This result supports our argument that executives are more likely to refrain from profiting from insider trades when their personal reputation is tied to the firm's positive CSR image. The coefficient on *Advocate* is insignificant (0.0062 , $p=0.5843$), providing no evidence that CSR advocates profit less from insider trading than non-CSR advocates in non-CSR-conscious firms. This result is consistent with executives deriving personal CSR reputation mostly from a firm's CSR actions rather than from merely paying lip service. Overall, the results suggest that a firm's CSR policy constrains executives' insider trading but the impact is more profound in the presence of individual incentives.

3.6.2. Financial incentives

Damage to the CSR image of the firm can reduce executives' personal wealth through their stock ownership. We expect the constraining effects of CSR to be more pronounced when executives' wealth is more closely tied to firm value, that is, a more negative association between CSR and executives' insider trading profits when executives have greater stock ownership.

We obtain data on executive stock ownership from Execucomp. We match executives with insider trading data with executives covered by Execucomp by their names. This procedure results in a sample of 6,323 transactions, retaining over half of the original sample of 10,496 transactions. Since the distribution of executive stock ownership percentage is right skewed, we construct a variable *Ownership* as the standardized rank of executives' shareholdings. It is measured as the annual rank of executive ownership percentage holdings (i.e., shares held by the executive divided by total shares outstanding) at the end of year $t-1$ divided by the maximum annual rank. By construction, this variable ranges from zero to one. We estimate the following model:

$$\begin{aligned} \text{Trading Profit}_t = & \alpha + \beta_1 \text{CSR}_{t-1} + \beta_2 \text{Ownership} + \beta_3 \text{CSR}_{t-1} \times \text{Ownership} + \beta_4 \text{R\&D}_{t-1} + \beta_5 \text{Loss}_{t-1} \\ & + \beta_6 \text{Volatility}_{t-1} + \beta_7 \log \text{Analyst}_{t-1} + \beta_8 \text{Turnover}_{t-1} + \beta_9 \text{Restrict}_{t-1} \\ & + \beta_{10} \text{BTM}_{t-1} + \beta_{11} \text{RET}_{t-1} + \beta_{12} \text{EP}_{t-1} + \beta_{13} \text{Avg_Growth}_{-5} + \epsilon_t \end{aligned} \quad (6)$$

Our variable of interest is the interaction of *CSR_{t−1}* and *Ownership* and we expect a negative coefficient. We do not have a prediction for the sign of the coefficient on *Ownership*. On the one hand, executives with large ownership stakes may be less

Table 8

This table reports the estimation results of variations of the following regression:

$$\text{Trading Profit}_t = \alpha + \beta_1 \text{CSR}_{t-1} + \beta_2 \text{R\&D}_{t-1} + \beta_3 \text{Loss}_{t-1} + \beta_4 \text{Volatility}_{t-1} + \beta_5 \log \text{Analyst}_{t-1} + \beta_6 \text{Turnover}_{t-1} \\ + \beta_7 \text{Restrict}_{t-1} + \beta_8 \text{BTM}_{t-1} + \beta_9 \text{RET}_{t-1} + \beta_{10} \text{EP}_{t-1} + \beta_{11} \text{Avg_Growth}_{-5} + \sum \gamma_i \text{Executive}_i + \varepsilon_t$$

Trading Profit_t is the estimated average daily abnormal return over the 180 days following the trade in year t , stated in percentage terms. CSR_{t-1} is equal to one for firms with a positive CSR score in year $t-1$ and zero otherwise. R\&D_{t-1} is an indicator variable equal to one if a firm has positive R&D expenses in year $t-1$ and zero otherwise. Loss_{t-1} is an indicator variable equal to one if a firm reports negative earnings before extraordinary items in year $t-1$ and zero otherwise. Volatility_{t-1} is the variance of daily stock returns over the interval $(-380, -20)$ before the trade. $\log \text{Analyst}_{t-1}$ is the natural logarithm of one plus the number of analysts following the firm in year $t-1$. Turnover_{t-1} is the logarithm of trading volume over the $(-380, -20)$ interval before the trade over shares outstanding. Restrict_{t-1} is an indicator variable set to one if 75% or more of trades during year $t-1$ occur in a 30-day window following an earnings announcement and zero otherwise. BTM_{t-1} is book value of equity over market value of equity at the end of year $t-1$. RET_{t-1} is market-adjusted returns over the interval $(-380, -20)$ before the trade. EP_{t-1} is the ratio of net income before extraordinary items for fiscal year $t-1$ to market value of equity 20 days before the trade. Avg_Growth_{-5} is the weighted average sales growth over the past five years. The regression is estimated for the sample in which each executive makes at least two purchase transactions. Column (1) reports the estimation results without executive fixed effects, and column (2) reports the results with executive fixed effects. (The fixed effects coefficients are suppressed for brevity.) Standard errors are robust standard errors clustered by person.

	Without executive fixed effects		With executive fixed effects	
	(1)		(2)	
	Estimate	p-Value	Estimate	p-Value
<i>Intercept</i>	0.0515	0.0004	0.0582	0.0490
CSR_{t-1}	-0.0215	0.0128	-0.0200	0.0767
R\&D_{t-1}	0.0163	0.0720	-0.0135	0.6943
Loss_{t-1}	-0.0037	0.8194	0.0089	0.5166
Volatility_{t-1}	10.6647	0.0033	1.7480	0.6788
$\log \text{Analyst}_{t-1}$	-0.0026	0.6029	-0.0298	0.0030
Turnover_{t-1}	-0.0047	0.4281	-0.0028	0.7631
Restrict_{t-1}	0.0036	0.6652	0.0028	0.7141
BTM_{t-1}	0.0011	0.9044	0.0288	0.0272
RET_{t-1}	-0.0198	0.0117	-0.0728	<.0001
EP_{t-1}	-0.0221	0.6523	-0.0377	0.2783
Avg_Growth_{-5}	-0.0483	0.0015	-0.0325	0.1571
<i>Executive fixed effects</i>		No		Yes
<i>F-stat of executive fixed effects</i>				3.27
<i>p-Value</i>				<0.0001
<i>N</i>		8284		8284
<i>R² (%)</i>		1.58		50.13

likely to exploit their information advantage when their interests are better aligned with those of the firm. On the other hand, they can have more control and a better information advantage and therefore more profitable trading opportunities.

Mirroring the structure in Panel A, we first show in Column (1) the association between executive stock ownership and insider trading profits within CSR conscious firms. The coefficient on *Ownership* is negative and significant (-0.0448 , $p=0.0148$), indicating that executives of CSR-conscious firms make lower insider trading profits when they hold more company stocks.

Panel B of Table 7 tabulates the estimation results of model (6). Consistent with our expectation, the coefficient on $\text{CSR}_{t-1} * \text{Ownership}$ is negative and significant (-0.0563 , $p=0.0371$), suggesting a more pronounced constraining effect of CSR on insider trading profits when executives' financial interests are more aligned with those of the firm. Individual heterogeneity does not seem to explain these results as executives with more shareholdings are not necessarily more altruistic or less greedy.

3.7. Executive fixed effects

Our tests so far provide evidence in support of the constraining effects of a firm's CSR image on executive informed trading. Many of the results are also consistent with executives of CSR-conscious firms having personal preferences for good citizenship. We next explore whether the constraining effects of CSR image are subsumed by executives' individual heterogeneity or vice versa.

Following the literature on managerial personal styles, we conduct the analysis assuming that personal tastes are time-invariant. As in Bamber et al. (2010), we add executive-fixed effects to model (1) to control for the impact of executives' preferences on their insider trading profits. We require at least two transactions per executive officer, reducing our sample to 8,284 transactions.

We first re-estimate model (1) for the reduced sample and report the results in column (1) of Table 8. Similar to the finding for the entire sample, the coefficient on CSR_{t-1} is negative and significant (-0.0215 , $p=0.0128$). We add executive-level fixed

effects in column (2). The F -test rejects the null that the joint effects of executive fixed effects on insider trading profits are zero (F -stat = 3.27, $p < 0.0001$). More importantly, we continue to find a negative association between CSR_{t-1} and executives' insider trading profits (-0.0200 , $p = 0.0767$). These results suggest that executives' individual heterogeneity affects their trading activities; however, the constraining effects of CSR are not subsumed by executives' personal preferences.

4. Alternative explanations

4.1. Information asymmetry

The prior literature suggests that CSR orientation motivates firms' voluntary disclosure and third-party disclosure (Shane and Spicer, 1983; Dhaliwal et al., 2011), improves earnings quality (Kim et al., 2012), and provides signals about the strength of firms' future performance (Lys et al., 2013), all of which could reduce information asymmetry between insiders and outside investors. Furthermore, the insider trading literature finds that information asymmetry is positively associated with insider trading profits (e.g., Frankel and Li, 2004). To the extent that our existing measures of information asymmetry taken from the literature do not fully capture a firm's information environment that is correlated with CSR, information asymmetry might explain our results.

To mitigate this concern, we consider two additional measures of information asymmetry. First, to capture the differences in the information environment between CSR-conscious and non-CSR-conscious firms due to CSR disclosures, we gather CSR reports from Corporate Register and create a dummy variable, $Info_{t-1}$, equal to one if a firm issues a CSR report in the year prior to the executive trades. The estimation results of model (1) with this additional control variable are reported in Column (1) of Table 9, Panel A. The coefficient on CSR_{t-1} remains negative and significant (-0.0168 , $p = 0.0165$). The coefficient on $Info_{t-1}$ is also significantly negative (-0.0201 , $p = 0.0400$), consistent with CSR reports reducing information asymmetry and therefore insider trading profits. When we add in Column (2) the interaction of CSR_{t-1} and $Info_{t-1}$, the coefficients on CSR_{t-1} and $Info_{t-1}$ remain significantly negative. However, the interaction variable $CSR_{t-1} * Info_{t-1}$ is not significant (0.0015 , $p = 0.9409$). The results suggest that the association between CSR consciousness and insider trading is not explained by information asymmetry as proxied by the issuance of CSR report.

Second, we use the extent of news coverage as another proxy for information asymmetry. Following Rajgopal et al. (2006) and Francis et al. (2008), we use a keyword search to collect from Factiva the number of articles covering each firm in major U.S. newspapers (*The Wall Street Journal*, *The New York Times*, *The Washington Post*, and *USA Today*) and press releases (PRNewswire and Business Wire) in the year prior to the executive trades. We estimate model (1), adding news coverage as another control variable for information asymmetry. The results are reported in Columns (3) and (4) of Table 9, Panel A. As expected, the coefficient on news coverage is negative and significant (-0.0044 , $p = 0.0092$), suggesting that lower information asymmetry reduces insider trading profits. However, the coefficient on our variable of interest, CSR_{t-1} , remains negative and significant (-0.0162 , $p = 0.0217$). When we further include the interaction between news and CSR_{t-1} , the interaction term is not significant, similar to the results using CSR report as a proxy for information environment.

The above additional controls cannot fully address the concern about information asymmetry if CSR itself conveys information about the firm and thus reduces firm-level information asymmetry, as Lys et al. (2013) suggest. We thus explore within-firm variations where the information asymmetry argument does not have a prediction. Specifically, we examine trading profits of executives who are vocal about CSR versus those of other executives within the same CSR-conscious firm. We expect these vocal executives to make lower profits if a firm's CSR image has a stronger constraining effect when executives' reputation is aligned with that of the firm or these executives are relatively more altruistic or less greedy or both. However, since the information environment is held constant at the firm level, the information asymmetry argument would not predict any difference in trading profits.

To evaluate these predictions, we estimate model (5) for the sample of CSR-conscious firms with at least one purchase from a CSR-advocate executive and at least one purchase from a non-CSR-advocate executive. This sample includes 964 purchases made by 439 executives from 130 firms. The estimation results are reported in Panel B of Table 9. The coefficient on *Advocate* is negative and significant (-0.0268 , $p = 0.0568$), consistent with the prediction based on our main arguments. This result cannot be explained by the information asymmetry argument.

Taken together, the above analyses suggest that, although information asymmetry is an important determinant of insider trading profits, it is unlikely the sole driver of our results.

4.2. Corporate governance

Corporate governance could be a correlated omitted variable in our analyses if firms with strong CSR orientations also have other governance mechanisms to restrict informed insider trading. Ravina and Sapienza (2010) show that insider trading profits increase as overall governance weakens. Regarding specific insider trading restrictions, Bettis et al. (2000) document that the specification of blackout periods restricts insider trades, whereas Jagolinzer et al. (2011) find that requiring approval from the general counsel before insider transactions is more effective in constraining profitable insider trades. Data on firm-specific blackout periods and general counsel approval requirements are not widely available, so we use the following three approaches to control for governance mechanisms.

Table 9

This table reports the results of exploring two alternative explanations: information environment and corporate governance.

Panel A: Information environment: Additional controls

This table reports the estimation results of variations of the following regression:

$$\text{Trading Profit}_t = \alpha + \beta_1 \text{CSR}_{t-1} + \beta_2 \text{Info}_{t-1} + \beta_3 \text{BTM}_{t-1} + \beta_4 \log \text{MV}_{t-1} + \beta_5 \text{R\&D}_{t-1} + \beta_6 \text{Loss}_{t-1} + \beta_7 \text{Volatility}_{t-1} \\ + \beta_8 \log \text{Analyst}_{t-1} + \beta_9 \text{Turnover}_{t-1} + \beta_{10} \text{Restrict}_{t-1} + \beta_{11} \text{BTM}_{t-1} + \beta_{12} \text{RET}_{t-1} + \beta_{13} \text{EP}_{t-1} + \beta_{14} \text{Avg_Growth}_{-5} + \varepsilon_t$$

Trading Profit_t is the estimated average daily abnormal return over the 180 days following the trade, stated in percentage terms. *CSR_{t-1}* is equal to one for firms with a positive CSR score year *t* and zero otherwise. *Info_{t-1}* is an indicator variable for the disclosure of a CSR report in Columns (1) and (2) and the extent of news coverage in major U.S. newspapers or press releases in Column (3) and (4). *R&D_{t-1}* is an indicator variable equal to one if a firm has positive R&D expenses in year *t-1* and zero otherwise. *Loss_{t-1}* is an indicator variable equal to one if a firm reports negative earnings before extraordinary items in year *t-1* and zero otherwise. *Volatility_{t-1}* is the variance of daily stock returns over the interval (–380, –20) before the trade. *log Analyst_{t-1}* is the natural logarithm of one plus the number of analysts following the firm in year *t-1*. *Turnover_{t-1}* is the logarithm of trading volume over the (–380, –20) interval before the trade over shares outstanding. *Restrict_{t-1}* is an indicator variable set to one if 75% or more of trades during year *t-1* occur in a 30-day window following an earnings announcement and zero otherwise. *BTM_{t-1}* is book value of equity over market value of equity at the end of year *t-1*. *RET_{t-1}* is market-adjusted returns over the interval (–380, –20) before the trade. *EP_{t-1}* is the ratio of net income before extraordinary items for fiscal year *t-1* to market value of equity twenty days before the trade. *Avg_Growth₋₅* is the weighted average sales growth over the past five years. The regression is estimated for executive purchases only. Standard errors are robust standard errors clustered by person.

	CSR report				News coverage			
	(1)	(2)	(3)	(4)	(3)	(4)	(3)	(4)
	Estimate	p-Value	Estimate	p-Value	Estimate	p-Value	Estimate	p-Value
Intercept	0.0501	<.0001	0.0501	<.0001	0.0513	<.0001	0.0510	<.0001
CSR_{t-1}	–0.0168	0.0165	–0.0169	0.0216	–0.0162	0.0217	–0.0156	0.0293
<i>Info_{t-1}</i>	–0.0201	0.0400	–0.0208	0.0514	–0.0044	0.0092	–0.0026	0.0976
<i>CSR_{t-1}*Info_{t-1}</i>			0.0015	0.9409			–0.0025	0.3097
<i>R&D_{t-1}</i>	0.0122	0.0949	0.0121	0.0965	0.0116	0.1116	0.0117	0.1099
<i>Loss_{t-1}</i>	–0.0016	0.9040	–0.0016	0.9037	–0.0021	0.8770	–0.0021	0.8771
<i>Volatility_{t-1}</i>	11.4392	0.0002	11.4402	0.0002	11.6907	0.0002	11.7268	0.0001
<i>log Analyst_{t-1}</i>	–0.0017	0.6734	–0.0017	0.6748	–0.0024	0.5620	–0.0024	0.5535
<i>Turnover_{t-1}</i>	–0.0033	0.4921	–0.0033	0.4927	–0.0034	0.4888	–0.0034	0.4884
<i>Restrict_{t-1}</i>	0.0007	0.9113	0.0007	0.9121	0.0007	0.9187	0.0007	0.9143
<i>BTM_{t-1}</i>	0.0029	0.7134	0.0029	0.7142	0.0025	0.7459	0.0026	0.7382
<i>RET_{t-1}</i>	–0.0168	0.0088	–0.0167	0.0090	–0.0176	0.0064	–0.0177	0.0062
<i>EP_{t-1}</i>	0.0027	0.9452	0.0027	0.9454	0.0012	0.9757	0.0015	0.9704
<i>Avg_Growth₋₅</i>	–0.0455	0.0003	–0.0455	0.0003	–0.0447	0.0004	–0.0449	0.0004
N		10496		10496		10496		10496
R ² (%)		1.37		1.37		1.42		1.42

Panel B: Information asymmetry: CSR advocates

This table reports the estimation results of the following regression:

$$\text{Trading Profit}_t = \alpha + \beta_1 \text{Advocate} + \beta_2 \text{R\&D}_{t-1} + \beta_3 \text{Loss}_{t-1} + \beta_4 \text{Volatility}_{t-1} + \beta_5 \log \text{Analyst}_{t-1} + \beta_6 \text{Turnover}_{t-1} \\ + \beta_7 \text{Restrict}_{t-1} + \beta_8 \text{BTM}_{t-1} + \beta_9 \text{RET}_{t-1} + \beta_{10} \text{EP}_{t-1} + \beta_{11} \text{Avg_Growth}_{-5} + \varepsilon_t$$

Trading Profit_t is the estimated average daily abnormal return over the 180 days following the trade in year *t*, stated in percentage terms. *Advocate* is set equal to one if an executive is a CSR advocate and zero otherwise. *R&D_{t-1}* is an indicator variable equal to one if a firm has positive R&D expenses in year *t-1* and zero otherwise. *Loss_{t-1}* is an indicator variable equal to one if a firm reports negative earnings before extraordinary items in year *t-1* and zero otherwise. *Volatility_{t-1}* is the variance of daily stock returns over the interval (–380, –20) before the trade. *log Analyst_{t-1}* is the natural logarithm of one plus the number of analysts following the firm in year *t-1*. *Turnover_{t-1}* is the logarithm of trading volume over the (–380, –20) interval before the trade over shares outstanding. *Restrict_{t-1}* is an indicator variable set to one if 75% or more of trades during year *t-1* occur in a 30-day window following an earnings announcement and zero otherwise. *BTM_{t-1}* is book value of equity over market value of equity at the end of year *t-1*. *RET_{t-1}* is market-adjusted returns over the interval (–380, –20) before the trade. *EP_{t-1}* is the ratio of net income before extraordinary items for fiscal year *t-1* to market value of equity 20 days before the trade. *Avg_Growth₋₅* is the weighted average sales growth over the past five years. The regression is estimated for purchases made by executives of CSR-conscious firms that have both CSR advocates and non-CSR advocates. Standard errors are robust standard errors clustered by person.

Table 9 (continued)

CSR-conscious firms: CSR advocates versus non-CSR advocates						
	Estimate	p-Value				
Intercept	0.0492	0.1538				
Advocate	−0.0268	0.0568				
$R\&D_{t-1}$	−0.0198	0.1606				
$Loss_{t-1}$	0.0394	0.3310				
$Volatility_{t-1}$	19.5244	0.0160				
$\log Analyst_{t-1}$	−0.0076	0.4517				
$Turnover_{t-1}$	−0.0007	0.9405				
$Restrict_{t-1}$	0.0192	0.2119				
BTM_{t-1}	−0.0205	0.2748				
RET_{t-1}	−0.0068	0.7792				
EP_{t-1}	0.1270	0.2516				
Avg_Growth_{-5}	0.0572	0.2697				
N		964				
R ² (%)		4.13				
Panel C: Corporate governance						
This panel reports the estimation results of variations of the following regression:						
$Trading\ Profit_t = \alpha + \beta_1 CSR_{t-1} + \beta_2 BTM_{t-1} + \beta_3 LogMV_{t-1} + \beta_4 R\&D_{t-1} + \beta_5 Loss_{t-1} + \beta_6 Volatility_{t-1} + \beta_7 \log Analyst_{t-1} + \beta_8 Turnover_{t-1} + \beta_9 Restrict_{t-1} + \beta_{10} BTM_{t-1} + \beta_{11} RET_{t-1} + \beta_{12} EP_{t-1} + \beta_{13} Avg_Growth_{-5} + \beta_{14} Governance + \varepsilon_t$						
<p><i>Trading Profit_t</i> is the estimated average daily abnormal return over the 180 days following the trade, stated in percentage terms. <i>CSR_{t-1}</i> is equal to one for firms with a positive CSR score in year <i>t</i> − 1 and zero otherwise. <i>R&D_{t-1}</i> is an indicator variable equal to one if a firm has positive R&D expenses in year <i>t</i> − 1 and zero otherwise. <i>Loss_{t-1}</i> is an indicator variable equal to one if a firm reports negative earnings before extraordinary items in year <i>t</i> − 1 and zero otherwise. <i>Volatility_{t-1}</i> is the variance of daily stock returns over the interval (−380, −20) before the trade. <i>log Analyst_{t-1}</i> is the natural logarithm of one plus the number of analysts following the firm in year <i>t</i> − 1. <i>Turnover_{t-1}</i> is the logarithm of trading volume over the (−380, −20) interval before the trade over shares outstanding. <i>Restrict_{t-1}</i> is an indicator variable set to one if 75% or more of trades during year <i>t</i> − 1 occur in a 30-day window following an earnings announcement and zero otherwise. <i>BTM_{t-1}</i> is book value of equity over market value of equity at the end of year <i>t</i> − 1. <i>RET_{t-1}</i> is market-adjusted returns over the interval (−380, −20) before the trade. <i>EP_{t-1}</i> is the ratio of net income before extraordinary items for fiscal year <i>t</i> − 1 to market value of equity 20 days before the trade. <i>Avg_Growth₋₅</i> is the weighted average sales growth over the past five years. In column (2), <i>Governance</i> takes the value of one if the value of Gompers et al.'s (2003) index is below the sample median (stronger governance) in year <i>t</i> − 1 and zero otherwise. In column (3), <i>ITR</i> takes the value of one if a firm discloses a standalone insider trading policy or cautions against insider trading in the code of conduct on its website. Standard errors are robust standard errors clustered by person.</p>						
	(1)	(2)	(3)			
	Estimate	p-Value	Estimate	p-Value	Estimate	p-Value
Intercept	0.1088	< .0001	0.0018	0.9301	0.1117	< .0001
CSR _{t-1}	−0.0237	0.0061	−0.0230	0.0225	−0.0203	0.0636
$R\&D_{t-1}$	−0.0528	0.0627	0.0304	0.0051	−0.0050	0.6674
$Loss_{t-1}$	0.0405	0.0003	−0.0199	0.3266	−0.0012	0.9529
$Volatility_{t-1}$	9.2180	0.0048	28.4321	0.0012	5.3036	0.1757
$\log Analyst_{t-1}$	−0.0347	< .0001	0.0021	0.7450	−0.0008	0.9132
$Turnover_{t-1}$	−0.0062	0.3255	−0.0188	0.0151	−0.0175	0.0414
$Restrict_{t-1}$	−0.0049	0.4367	−0.0058	0.5641	−0.0107	0.2644
BTM_{t-1}	0.0179	0.0598	0.0064	0.6810	−0.0018	0.8677
RET_{t-1}	−0.0649	< .0001	−0.0079	0.5733	−0.0135	0.0752
EP_{t-1}	0.0623	0.0823	−0.0094	0.8810	0.0283	0.5940
Avg_Growth_{-5}	−0.0464	0.0151	−0.0081	0.7139	−0.0460	0.0081
Governance			−0.0158	0.1059		
ITR					−0.0231	0.0216
Firm fixed effects		Yes		No		No
N		10496		2872		4988
R ² (%)		44.08		2.28		1.73

First, as governance mechanisms likely persist, we control for firm-level fixed effects in model (1). Column (1) of Panel C of Table 9 reports the estimation results. The coefficient on *CSR_{t-1}* remains negative and significant (–0.0237, *p* = 0.0061), indicating a robust negative relation between CSR and insider trading profits.

Second, similar to *Ravina and Sapienza (2010)*, we control for *Gompers et al.'s (2003)* corporate governance index. Column (2) summarizes the estimation of model (1) after including *Governance*, an indicator variable equal to one if the value of the governance index in *Gompers et al. (2003)* is below the median in the prior year and zero otherwise. Since *Gompers et al.'s (2003)* governance index is not available before 1996 or after 2006, our sample size drops significantly to

2,872 executive purchase transactions. Consistent with Ravina and Sapienza (2010), the coefficient on *Governance* is negative (-0.0158 , $p=0.1059$), indicating that insider trading profits are lower in firms with strong governance. More importantly, the coefficient on CSR_{t-1} remains negative and significant (-0.0230 , $p=0.0225$), suggesting that our results are robust to controlling for overall corporate governance.

Third, we control for the extent of insider-trading-specific governance based on firms' disclosure of insider trading policies. We search companies' websites as of September 2013 to collect data on whether they disclose a standalone insider trading policy or warn against insider trading in the code of conduct.²³ Such highly visible disclosures are likely an indicator of strong insider-trading-specific governance. While most firms have some insider trading policy in place (Bettis et al., 2000), those highlighting such restrictions are more likely to consider restricting informed trading important and take a stronger stance against informed trading.

We obtain the disclosure of insider trading policies for about 70% of the sample as some firms have been acquired or delisted and therefore do not maintain a website as of September 2013. Firms' insider trading policies and disclosures likely persist. We assume that firms with highly visible insider trading restrictions in 2013 had similar disclosures and insider trading policies during the most recent five years of our sample period (i.e., 2007–2011).²⁴ About 73% of this subsample provides these highlighted disclosures. Column (3) summarizes the estimation of model (1) after including this measure of insider trading restrictions, *ITR*, an indicator variable equal to one for firms with highly visible insider trading policy disclosure on their websites and zero otherwise. Consistent with our expectation, the coefficient on *ITR* is negative and significant (-0.0231 , $p=0.0216$). The coefficient on CSR_{t-1} remains negative and significant (-0.0203 , $p=0.0636$), suggesting that our results are robust to controlling for this insider-trading-specific corporate governance mechanism.

5. Conclusion

CSR has gained popularity in recent years. We document a negative association between CSR and insider trading consistent with two non-mutually exclusive explanations: (1) executives of CSR-conscious firms incur additional external and internal costs from insider trading because informed trading contradicts the positive image of being socially responsible, and (2) executives of CSR-conscious firms differ from those of non-CSR-conscious firms in the degrees of altruism and greed.

More specifically, using MSCI's CSR ratings data, we find that executives of CSR-conscious firms make significantly lower profits from their purchases than executives of non-CSR-conscious firms. This result is robust to using propensity-score-matched samples of CSR-conscious and non-CSR-conscious firms. We also find that as firms increase (decrease) CSR consciousness, their executives make lower (higher) trading profits. We obtain similar inferences when we examine the likelihood of executive trades prior to future corporate news.

We also explore two channels through which impairment of firm-level CSR image translates into personal costs for executives and thereby discourages informed trading. We find that the negative association between CSR and insider trading profits is more pronounced when executives are CSR advocates or when their financial interests are better aligned with those of the firm. Next, using an executive-level fixed effects model, we show that executives' individual heterogeneity impacts insider trading profits but does not subsume the constraining effects of CSR. Finally, our results are robust to considering two alternative explanations: information environment and corporate governance.

Collectively, we find a robust negative association between committing to social good and executives' insider trading. We contribute to the literature by suggesting that CSR image can act as an unintended governance mechanism that constrains, although does not eliminate, self-serving behavior such as insider trading.

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²³ Code of conduct can take other names, such as code of ethics, code of business conduct, or standards of conduct.

²⁴ When we assume that the insider trading policy disclosure practice applies to the most recent 10 years in our sample (i.e., 2002–2011), the coefficient on *ITR* remains negative but becomes marginally significant ($p=0.1114$). This could be due to increases in noise when applying the current insider trading policy disclosure to a period further into the past.

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