CEO Social Media Activity and Insider Trading

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Abstract

This paper studies the relationship between CEOs' social media activity and their insider trading behavior. Drawing on psychological evidence linking online activity to risk-taking, we find that active CEOs on social media exhibit higher risk preferences and engage more in insider trading—particularly in terms of incidence, intensity, and profitability. The effects are primarily driven by insider buys (rather than sells), which are more likely to involve material non-public information, and such opportunistic trades may increase firm reputational risk. Further analysis reveals that certain corporate governance mechanisms, such as blackout policies and compensation structures, help mitigate the negative impact.

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1. INTRODUCTION

Corporate insiders, such as executives and directors, are not allowed to trade their company's shares based on material, non-public information under the Securities Exchange Act of 1934 (Rule 10b-5). In practice, however, violations of insider trading rules are often hard to detect and prosecute (Adams et al., 2018; Cline & Posylnaya, 2019). Empirical research shows that insider trades are informative, as they effectively predict stock returns (Seyhun, 1986; Lakonishok & Lee, 2001) and future financial performance (Piotroski & Roulstone, 2005; Cline et al., 2017). Motivated by the significant informational value of insider trades, prior research has identified several determinants of insider trading, focusing primarily on firm characteristics (Aboody & Lev, 2000; Frankel & Li, 2004; Fidrmuc et al., 2006; Dang et al., 2021) and trade patterns (Cohen et al., 2012; Ali & Hirshleifer, 2017; Cline et al., 2017; Biggerstaff et al., 2020). Despite the clear implication of the agency problem in insider trading, empirical research on the impact of insiders' personal characteristics on their trading behavior remains limited and inconclusive (Hillier et al., 2015; El-Khatib et al., 2021; Jiang et al., 2021; Hegde et al., 2022).

In this paper, we investigate CEOs' social media use, a relatively new personal characteristic with growing importance, and its relation with insider trading behaviors. Over the past two decades, online social media has fundamentally transformed how people communicate and connect. Businesses have been quick to embrace this change, and now almost every company has a digital strategy. While a growing body of business literature explores how firm-level social media usage benefits businesses or affects consumer behavior (e.g. Lee et al., 2013; Wilcox & Stephen, 2013; Motyka et al., 2018; Al Guindy,

2021), studies specifically addressing corporate executives' use of social media remain relatively scarce (Capriotti & Ruesja, 2018; Chen et al., 2022).

Despite potential benefits, such as an improved information environment (Chen et al., 2022), a recent strand of literature suggests that social media use of firm executives (especially CEOs) can pose substantial risks to firms, such as cyber security concerns, ill-advised posts that damage firm reputation, and potential price manipulation (Heavey et al., 2020; Houghton et al., 2020). One prominent example is the controversial tweets made by Elon Musk, CEO of Tesla Motors, which drew criticism and allegations of market manipulation by the U.S. Securities and Exchange Commission (SEC) in 2018.[1]

Moreover, while social media creates a sense of community among its users that enhances self-esteem and well-being (e.g. Gonzales & Hancock, 2011), it may lower self-control and promote impulsive, risk-taking behavior (Wilcox & Stephen, 2013; Motyka et al., 2018). The literatures of psychology, crime, and consumer behavior further suggest that social media presence and activeness reinforce risk-taking (Gottfredson & Hirschi, 1990; Ahern et al., 2015; Chan & Saqib, 2015; Vannucci et al., 2020). Hence, a corporate executive's decision to engage on social media may serve as a proxy for their underlying

[1] In 2018, Musk tweeted that his firm had "secured funding to go private" when Tesla stock tumbled. This caused an immediate stock price jump, and the SEC responded by charging Musk with securities fraud for publishing false and misleading information. The allegation led to a 16% price drop; Tesla paid a $20 million fine and Musk had to step down as board chairman. The Co-Director of the SEC's Enforcement Division Stephanie Avakian commented "Taking care to provide truthful and accurate information is among a CEO's most critical obligations" and "That standard applies with equal force when the communications are made via social media or another non-traditional form." Source: https://www.sec.gov/news/press-release/2018-219.

risk-taking preference (Fogel & Nehmad, 2009; Moreno et al., 2009; Pujazon-Zazik & Park, 2010; Richards et al., 2015), and is therefore associated with their decisions to engage in opportunistic insider trades (Hegde et al., 2022). Such decisions are particularly risky for CEOs, who face greater scrutiny from regulators, media, and market participants (Seyhun, 1986; Lustgarten & Mande, 1995; Fidrmuc et al., 2006; Dai et al. , 2015; Hegde et al., 2022). Indeed, while the financial gains from insider trades are relatively modest compared to CEOs' overall wealth, these actions have high litigation, reputation, and ethical risks (Moore, 1990; McGee, 2009; Klaw & Mayer, 2019; Aleksanyan et al., 2022). Given these risks, top executives (especially CEOs) have greater incentives to exercise good self-control and refrain from opportunistic trades (Cohen et al., 2012; Wang et al., 2012; Knewtson & Nofsinger, 2014).

We hypothesize that CEOs with social media presence, and similarly, those who are more active on social media, are more likely to venture into the risky "gray area" of insider trading. Further, the results should be more pronounced for insider purchases than sales, as sales are often motivated by liquidity or diversification considerations, given the prevalence of equity-based compensation in CEOs' pay packages (e.g., Sundaram & Yermack, 2007). In contrast, open-market *purchases* of CEOs' own company stock are less frequent and are likely driven by information and profit motives (Lakonishok & Lee, 2001; Beneish & Vargus, 2002; Gilstrap et al., 2019). Hence, we expect CEOs' trades, particularly purchases, to be more opportunistic, meaning such trades are more likely driven by private-information and followed by greater abnormal returns.[2] In our empirical

[2] An anecdotal example is Elon Musk, who made 4 open-market trades (3 buys and 1 sell) during our sample period. Musk made more trades than an average CEO does, and his trades seem to be extremely informative

tests, we follow the literature to use open-market purchases as our primary measure of CEOs' risk-taking behavior.

Using a hand-collected sample of CEOs' online social media presence and activeness for U.S. public firms, extracted from the ExecuComp database between 2013 and 2020, we find evidence consistent with our hypotheses.[3] Specifically, CEOs with social media accounts or activities are associated with established measures for risk preferences, such as informed or delayed stock option exercises (Bradley et al., 2014; Malmendier & Tate, 2015). These CEOs are also more likely to conduct open-market purchases and purchase more shares compared to CEOs without social media accounts or activities. Moreover, these purchases are substantially more profitable over the subsequent three- to six-month period, indicating that these trades are more likely to be information-driven and

with 6-month buy-and-hold abnormal returns greater than 10% for two out of three buys, and about -20% after his sell. The trading intensity and profitability of Elon Musk are consistent with our hypotheses.

[3] We define that a CEO has a presence on a social media platform if he/she has an account on LinkedIn or Twitter (also known as "X" since July 2023) in a year and the profile clearly indicates their CEO status. LinkedIn and Twitter are by far the most popular social media platforms among CEOs as CEO presence on other platforms appears to be scarce. For example, we checked 100 random CEOs on Facebook and did not find any of them with an active Facebook page that is clearly associated with their CEO status. We define that a CEO is social media active if the CEO has some activity (in addition to having an account) on LinkedIn, such as comments and posts, in a given year. Because this variable is manually collected by searching each CEO's LinkedIn page for activity each year, scrolling through early-year timelines can be extremely difficult and time-consuming and hence, our social media active variable only goes back to 2018. We did not manually collect CEOs' Twitter activities for the same reason, because although fewer CEOs are on Twitter, some Tweet frequently, making the data collection for earlier years extremely difficult.

opportunistic. The associations between CEO social media use and insider trading activity and profitability are stronger if a CEO is more active on social media. In robustness checks, we employ a propensity score matching approach and a difference-in-difference test surrounding CEOs' first year on social media, with results remaining consistent.

Taken together, our findings suggest that CEOs with online social media use are more likely to engage in risk-taking behavior and profit from aggressive insider trades. Hence, CEOs' social media use can be an additional risk factor for companies, as suggested by Heavey et al. (2020) and Houghton et al. (2020). We test whether corporate governance mechanisms can moderate this association and find that blackout restrictions reduce active CEOs' trading profits from purchases while CEO/board chair duality has the opposite effect (Roulstone, 2003; Rechner & Dalton, 1991). Moreover, CEOs who hold more inside debt or whose stock-based compensation has a greater Delta are less likely to have social media presence or activity, consistent with greater risk aversion, while CEOs whose compensation has a greater Vega are more likely to use social media, consistent with a greater risk preference (Caliskan & Doukas, 2015).

The contribution of this study is prominent and timely. Social media has changed our lives and social behaviors in the past two decades, yet the existing business research primarily focuses on the social media presence of companies rather than executives (e.g. Lee et al., 2013; Al Guindy, 2021). Our study addresses this gap by documenting novel connections between CEOs' social media usage and their behavior. We first provide empirical evidence that CEOs who have social media presence/activity exhibit greater risk preferences. Such evidence supports prior findings in non-business literatures, such as psychology, medicine, and youth development, where social media engagement is often

linked to risk-seeking behaviors. Next, consistent with higher risk preferences, we find that CEOs with social media presence/activity are more prone to opportunistic insider trading activity, which imposes litigation and reputation risks on firms (Aleksanyan et al., 2022).

We also contribute to the literature on corporate governance and insider trading (e.g., Cziraki et al., 2014; Skaife et al., 2013) by providing empirical evidence that the link between CEO social media activity and insider trading profits weakens with insider trading restrictions, while it strengthens when CEOs are more powerful. Finally, our study adds to the growing literature on how CEOs' characteristics relate to their insider trading behavior, complementing earlier work on firm characteristics (e.g., Aboody & Lev, 2000; Beneish & Vargus, 2002; Fidrmuc et al., 2006; Frankel & Li, 2004; Gider et al, 2016; Huddart & Ke, 2010; Liang et al, 2020). Specifically, recent studies show that insiders' gender (Gregory et al., 2013; Hillier et al, 2015), marital status (Hegde et al., 2022), year of birth (Hillier et al, 2015), stock holdings (Kallunki et al, 2009), and wealth and income (Kallunki et al, 2018) affect insider trading behaviors. We extend this literature by showing the connection between CEOs' social media usage and insider trading intensity and profitability.

2. LITERATURE AND HYPOTHESES DEVELOPMENT

2.1. Literature

Online social media has experienced explosive growth since its emergence in the early to mid-2000s.[4] It has become an important platform for people to communicate and share

[4] LinkedIn was launched in 2003. Facebook, first launched in 2004 as a networking site for Harvard students, expanded access to the general public in 2006. Twitter was launched in 2006.

information with others. Businesses also view social media as an important medium for reaching and interacting with target customers. Prior research documents many benefits associated with online social media usage for both individuals and businesses. For example, social media fulfills people's need for affiliation, self-expression, and self-presentation (Back et al., 2010). Receiving positive feedback from online networks also provides emotional support to users and enhances their well-being (Valkenburg et al., 2006; Buechel & Berger, 2012). On the business side, firms that communicate information on social media have a lower cost of capital (Al Guindy, 2021), and companies can improve their information environment when their CEOs or CFOs adopt social technologies (Chen et al., 2022).

However, recent anecdotal and research evidence suggest that there are significant downsides associated with social media use for both individuals and businesses. On the individual side, there is selective self-presentation, for instance when posting information on social media, users tend to omit negative content and present only the positive images they want others to see (Gonzales & Hancock, 2011). Consequently, laboratory evidence suggests that people experience a temporary boost in self-esteem after using social media (Gonzales & Hancock, 2011), and this heightened self-esteem lowers self-control and leads to impulsive and risk-taking behavior, such as impulsive buying, binge eating, and debt-financed purchases (Wilcox & Stephen, 2013; Motyka et al., 2018). Such evidence is consistent with prior findings on consumer behavior that a momentary increase in self-esteem encourages indulgent and risky behavior in subsequent unrelated tasks (Khan and Dhar, 2006; Wilcox et al., 2011). The literature on crime further suggests that people with low self-control are impulsive, indulgent, risk seeking, and insensitive to others and thus

more prone to unethical behavior (Gottfredson & Hirschi, 1990). Exposure to social media may further reinforce the risk-taking tendencies (Ahern et al., 2015; Chan & Saqib, 2015; Vannucci et al., 2020). As such, a CEO's presence on social media can be viewed as a salient proxy for their risk preference (Fogel & Nehmad, 2009; Moreno et al., 2009; Pujazon-Zazik & Park, 2010; Richards et al., 2015). More specifically, CEOs who enjoy attention from social media may be more inclined to engage in risk-taking behavior that deviates from their fiduciary duties of loyalty to their firms and shareholders, i.e. more problematic, impulsive, reckless behavior or a willingness to exploit others for self-gain (McCain & Campbell, 2018; O'Reilly et al., 2018; O'Reilly & Hall, 2021). Hence, Houghton et al. (2020) warn that CEO social media presence can be a valid source of risk for firms and can even damage firm reputation and value.

Insider trading is a type of CEO's personal risk-taking behavior which is potentially unethical. Insiders profiting from trading their own companies' shares can violate the Securities Exchange Act of 1934 (Rule 10b-5) and betray their fiduciary duties to the shareholders (Moore, 1990). Insider trading is prevalent and frequent,[5] and despite the potential legal and reputational liabilities, is a convenient way for CEOs to abuse their informational advantage for personal gain. Among trades conducted by insiders, the prior literature finds that insider buy orders tend to be more opportunistic and informative than sell orders (Lakonishok & Lee, 2001; Beneish & Vargus, 2002; Cohen et al., 2012; Gilstrap et al., 2019). Due to the prevalent use of equity-based compensation in executive pay packages (Ofek & Yermack, 2000; Sundaram & Yermack, 2007; Edmans & Liu, 2011; Edmans et al., 2017), executives often need to sell stock for liquidity and diversification

[5] Our sample includes approximately 23,000 insider trades by CEOs.

needs. In contrast, open-market purchases are unnecessary and thus more opportunistic because such trades would substantially increase executives' exposure to firm-specific and litigation risks, which cannot be justified unless they expect to be compensated by sizable profits associated with such trades. Insider buys by CEOs are much less common relative to other insiders (Cohen et al., 2012; Wang et al., 2012; Knewtson & Nofsinger, 2014), suggesting that CEOs are generally mindful of the unethical aspects and potential risks associated with these trades.

2.2. Hypotheses

Based on the aforementioned discussions, we posit that CEOs who use social media are more likely to exploit their inside information advantage and engage in risky insider trading behavior. To empirically test this conjecture, we develop two hypotheses as discussed below.

First, we investigate how CEOs' social media use affects their decision to trade their company shares. While CEOs tend to refrain from unethical insider trading to some degree, those who use social media may be less bound by such norms and thus more likely to engage in risky, opportunistic insider trading, especially in open-market purchases which are more likely to be information-driven (Lakonishok & Lee, 2001; Beneish & Vargus, 2002; Gilstrap et al., 2019). That is, we expect CEOs on social media to be more likely to engage in open-market purchases and to purchase larger quantities of their company's stock.

In addition to insider trading likelihood and intensity – both indicative of risk-taking – we also investigate whether CEO social media use leads to greater trading profits. Higher profitability would further confirm the opportunistic nature of such behavior as CEOs make personal gains while exposing themselves, their firms, and outside investors

to greater risks. This concern is particularly salient given that CEOs are top earners of equity-based compensation and are subject to close regulatory and market scrutiny, and the heightened risk associated with trading leads to less frequent trading and lower profitability compared to other executives such as CFOs (Wang et al., 2012). Therefore, we hypothesize that CEOs on social media are less likely to exercise good self-control and are more likely to opportunistically trade on inside information, resulting in greater trading profits, especially from insider buying. Since the short-swing profit rule requires company insiders to return any short-term profits made from insider trading, we focus on longer-term insider trading gains, such as three- and six-month windows when we analyze insider trading profits.

We define CEO social media use to encompass both social media presence and social media activeness. While a CEO's decision to create a social media account signals a strong inclination toward risk-taking, their decision to remain active on social media over time may better capture the intensity of their risk-taking behavior. CEOs who are more active on social media tend to experience more frequent boosts in self-esteem, which in turn can make them more risk-seeking and more inclined to engage in opportunistic insider trading. Since it is difficult to compare activeness levels across social media platforms, we instead apply a simple filter: active vs. inactive.[6] We argue that CEOs who are active on social media should exhibit greater insider trading intensity as well as greater insider trading profitability compared to CEOs who are inactive on social media or do not have social media accounts.

[6] We define a CEO to be active on social media in a year if he/she has a LinkedIn account and has some activity on the platform, such as posting or commenting on others' posts.

Based on the above discussions, we propose the following two hypotheses:

H1: CEOs with a social media presence (or being active on social media) are more likely to conduct open-market purchases (i.e. buy orders) of their companies' stock than CEOs without a social media presence (or being present but inactive on social media).

H2: Open-market purchases conducted by CEOs with a social media presence (or being active on social media) are more profitable than open-market purchases by CEOs without a social media presence (or being present but inactive on social media).

3. SAMPLE AND METHODS

3.1. Sample and variables

We analyze CEOs' social media use from 2013 to 2020, focusing on the S&P 1500 firms listed in the ExecuComp database. We drop observations that cannot be matched to Compustat, ExecuComp, or I/B/E/S. Our final sample consists of 13,248 CEO-year observations. We start by hand collecting data on CEOs' personal social media accounts as of the end of 2013 and 2020, searching social media platforms such as LinkedIn, Facebook, Twitter, Google+, Instagram, Pinterest, YouTube, and personal blogs. We do not include official firm accounts as these are typically managed by marketing or public relations departments. To ensure data accuracy, we cross-reference information such as company name, location, and personal photos. We find that LinkedIn is by far the most frequently used platform among CEOs, followed by Twitter, while other platforms such as

Instagram and Google+ have low adoption especially in 2020.[7]

Next, we manually check each CEO's LinkedIn and Twitter pages to determine account ownership for each year. Our first social media use measure, *Social Media Account*, is a dummy variable equal to 1 if a CEO has either a LinkedIn or a Twitter account in a given year, and 0 otherwise. For Twitter, which displays the user's join date on their profile, we compare this date to the relevant year to determine the value of *Social Media Account*. For LinkedIn, which does not display a join date, we use the following approach. If a CEO has a LinkedIn account in both 2013 and 2020, we assume the CEO to have an account over the entire period. If a CEO has no account in 2013 but has one in 2020, we manually review their LinkedIn activity going back as early as 2018; if any activity is found, we infer LinkedIn account ownership for the specific year.

One potential limitation of the *Social Media Account* measure is that it may capture CEOs who have accounts but are inactive. To address the concern, we complement the analysis with a more refined social media activeness measure based on manual searches over a shorter time frame. Specifically, we examine each CEO's LinkedIn activity dating back to 2018 and construct a dummy variable, *Social Media Active*, which equals 1 if the CEO has engaged in at least one activity – such as posting content or commenting on others' posts – in a given year, and 0 otherwise.[8] Because this *Social Media Active* variable is

[7] Of all the CEOs on social media identified in 2013, 93.4% have LinkedIn accounts and 10% have Twitter accounts. Facebook users make up less than 8% in 2013, but the number drops to almost zero in 2020. Less than 3% use other platforms such as Instagram or Google+.

[8] We do not count "likes" as qualifying activity because LinkedIn only displays a user's past posts and comments.

manually collected by reviewing each CEO's LinkedIn page, scrolling through early-year timelines can be extremely difficult and time-consuming. As a result, our *Social Media Active* variable only goes back to 2018. We do not include Twitter activity for the same reason: while fewer CEOs actively use Twitter, those who do often post frequently, making comprehensive data collection for earlier years impractical. In our sample, 30.7% of CEO-year observations are associated with a LinkedIn or Twitter account; of these, 25.2% are on LinkedIn and 10.3% are on Twitter. In the post-2018 subsample, 31.5% of CEO-year observations are associated with active social media use. Over the same period, approximately 40% of CEO-year observations are associated with LinkedIn or Twitter accounts, indicating that while the majority of CEOs on social media are somewhat active, a significant proportion have social media accounts without actively using them.[9]

We obtain insider trading data from Thomson Reuters. For each CEO-firm observation, we measure insider trading activities in year t+1, i.e., the one-year period following the year in which CEO social media use is measured. We restrict our sample to open-market purchases and sales, excluding other types of transactions.[10] We use several measures of insider trading. First, to measure insider trading incidence, we use dummy variables for whether the CEO engaged in any trading (buying, selling) activity in a given year. Second, to measure insider trading intensity, we use the log volume of a CEO's total trades (purchases, sales) to construct continuous measures of trading intensity. Third, to

[9] We focus on CEO social media presence and activeness, without attempting to compare activity levels across various social media platforms because making meaningful comparisons of activity across social media sites is inherently difficult due to differences in format, engagement norms, and usage patterns.

[10] Such transactions include option-related transactions, stock grants, bona-fide gifts, and so on.

measure CEO trading profitability, we calculate the character-based abnormal return following Daniel et al. (1997) and the buy-and-hold abnormal returns (BHAR) over the 3-month and 6-month windows following insider transactions. These insider trading measures are similar to those used in previous studies such as Huddart et al. (2007), Cline et al. (2017), Levine et al. (2017), and Dang et al. (2021). For each aforementioned insider trading measure, we distinguish buys from sells because insider buys are more likely to be information-driven, while sells are often driven by diversification or liquidity needs (Lakonishok & Lee, 2001; Jeng et al., 2003; Gider & Westheide, 2016).

Prior studies in psychology and marketing suggest that social media activity may promote risk-taking behavior (Wilcox & Stephen, 2013; Motyka et al., 2018). Hence before we conduct tests on our proposed hypotheses, we first examine the association between CEO social media use and risk-taking. We compare CEO social media activity to three well-established measures related to risk-taking in the finance literature. First, we use a dummy variable *Long Holder* which equals 1 if the CEO holds an in-the-money option until the last year of its duration, and 0 otherwise. Malmendier and Tate (2005; 2015) argue that this variable suggests failure to reduce their personal exposure to company-specific risk, and hence is associated with a CEO's overconfidence; overconfident CEOs are more risk tolerant (holding greater company-specific risk) and tend to underestimate the likelihood of bad outcomes. Second, we define *Opportunistic* as a dummy variable which equals 0 if a CEO makes at least one transaction in the same month over the previous three years, and 1 otherwise. Cohen et al. (2012) show that this measure separates routine insiders from opportunistic insiders; opportunistic insiders make more profitable trades and are more likely to have SEC enforcement action taken against them, indicating their

heightened willingness to engage in risky behavior. Third, we follow Bradley et al. (2014) and define *Informed Exercises* as the ratio of informed option exercises (option exercises that are not around a vesting, maturity date, or ex-dividend date) scaled by the number of shares outstanding. Bradley et al. (2014) suggest that *Informed Exercises* measures insiders' willingness to engage in opportunistic option exercises.

We include a set of control variables that are commonly used in the insider trading literature. *Size* is the natural logarithm of book assets, measured in U.S. million dollars. *Book/Market* is the book-to-market ratio, i.e. book value of equity divided by market value of equity. Both *Size* and *Book/Market* are important firm characteristics that affect stock returns and hence potential determinants of insider trading patterns (Fama & French, 1993). *R&D* is research and development expense divided by total assets. Prior research finds that R&D intensity is a proxy for information asymmetry between inside and outside investors and an important determinant of insider trading profitability (Aboody & Lev, 2000; Huddart & Ke, 2007; Liang et al. , 2020). *ROA* is the percentage return on assets defined as net income divided by total assets; *ROA* could affect stock returns (Fama & French, 2016) as well as insider trading volumes (Piotroski & Roulstone, 2004). *Analysts* is the natural logarithm of the number of financial analysts in I/B/E/S following the firm plus one. Analyst following is an important determinant of both insider trading intensity and profitability documented in previous studies (Frankel & Li, 2004; Huddart & Ke, 2007; Dang et al., 2021). *Female CEO* is a dummy variable that equals one if the CEO is female, and zero otherwise. *CEO Age* is the natural logarithm of CEO age in years. *CEO Compensation* is the natural logarithm of CEO total compensation in US$ thousands. We also include two controls related to corporate governance mechanisms: *CEO Duality* is a

dummy variable which equals 1 if a CEO also serves as the board chair, and 0 otherwise. "Dual" CEOs are associated with greater CEO power and weaker corporate governance guardrails (Rechner & Dalton, 1991), and hence there is less deterrence to risky insider trades by such CEOs. *Blackout* is a dummy variable which equals 1 if at least 75% insider trades occur within the one-month period following an earnings announcement for a firm, and 0 otherwise, following Roulstone (2003). Such firm-imposed blackout policies may discourage opportunistic insider trading and hence lower insider trading profitability. These control variables are chosen based on determinants of insider trading identified in the literature (Huddart et al., 2007; Cline et al., 2017; Levine et al., 2017; Dang et al., 2021). We provide variable definitions in Appendix A. All control variables are measured at the beginning of the year, and continuous variables are winsorized at the 1st and 99th percentage levels. Descriptive statistics of all variables are reported in Table 1, and the correlation matrix is reported in Table 2.

[Table 1]

[Table 2]

3.2. Research design

Before analyzing the association between CEO social media use and insider trading, we first investigate if CEO social media use is associated with the three established measures of risk-taking: *Long Holder*, *Opportunistic*, and *Informed Exercises*. In Table 3, we report logistic regression results with these three risk-taking measures as the dependent variables and CEO social media use as the variable of interest. We find that both *Social Media*

Account and *Social Media Active* are positively associated with all three risk-taking measures, and the coefficients are statistically significant at the 5% (10%) level in 4 (5) out of 6 regressions. The preliminary analysis indicates that social media use is indeed associated with established measures of risk-taking, consistent with the view that social media use proxies for CEO risk-taking.

[Table 3]

We next continue to investigate if CEO social media use can predict insider trading incidence, intensity, and profitability. Our baseline research design is straightforward: we regress insider trading measures on CEO social media use (either *Social Media Account* or *Social Media Active*), along with the control variables, to study whether CEOs with social media use (1) are more likely to engage in insider trading, (2) conduct trades at a higher intensity, and (3) make greater profits from insider trading. Hence, our regression model is:

$$Insider\ Trading_{i,t} = \alpha + \beta * Social\ Media\ Account\ (or\ Activity)_{i,t} + \gamma * Controls_{i,t} + \varepsilon_{i,t}$$

The measures of insider trading, i.e. the dependent variables in our tests, are (1) insider trading incidence, (2) insider trading intensity, and (3) insider trading profitability, as defined in Section 3.1. For each type of measure discussed in (1) above, we use logistic regressions and examine three categories of insider transactions: all trades (buy and sell), buys, and sells. For (2) and (3), we use OLS regressions and examine buys and sells separately. In all regressions, we include SIC 2-digit industry fixed effects, year fixed effects, and the control variables discussed in Section 3.1. Standard errors are clustered at

the firm level. We expect *Social Media Account* and *Social Media Active* to have positive coefficients, especially for insider buys.

We run regressions at the CEO-year level in most of our empirical analyses. However, when we analyze insider trading profitability, we perform trade-level analysis, where each observation is an insider buy or sell. Our trade-level analysis hence consists of 15,142 CEO buys and 44,209 CEO sells. This is consistent with previous findings that insiders conduct sell orders more frequently for diversification and liquidity reasons (Seyhun, 1986).

4. EMPIRICAL RESULTS

4.1. CEO trading incidence and intensity

First, we examine whether CEO social media use affects their likelihood of engaging in insider trading. In Table 4, we report the results of Logit regressions where the dependent variables are dummy variables indicating whether a firm's CEO makes at least one trade (buy or sell) in a given year. The coefficient of *Social Media Account* is not statistically significant in column 1, where both buy and sell orders are included, or in column 3 where only sells are analyzed. However, it is statistically significant at the 5% level in column 2, where only buys are included. The results suggest that, although social media presence does not affect the likelihood of insider trading overall, it does strongly predict insider buys in the following year. In columns 4-6, we see somewhat similar results: the coefficient of *Social Media Active* is statistically significant in columns 4 and 5, but not in column 6. Overall, the results in Table 4 indicate that the positive association between social media use and insider trading incidence only exists for buy orders. This is consistent with our

baseline hypothesis that CEOs using social media are more likely to take advantage of their inside information and engage in more aggressive, information-driven insider buys.

[Table 4]

We next investigate insider trading intensity. In Table 5, we report empirical results where the dependent variables are the log of the trading volume of all trades (columns 1 and 4), buys (columns 2 and 5), and sells (columns 3 and 6). To avoid losing observations of zero trade, we add one to the trading volume before taking the logarithm. We include the same control variables and industry/year fixed effects in the analysis. We find results consistent with those in Table 4: social media use strongly predicts greater insider buying volumes but not insider selling in a statistically significant way, and we do not observe statistically significant results for the total volume of trades (buys + sells). In untabulated results, we also analyze the effect of social media presence on the number of insider trades (frequency) in a year, and the results are similar to those in Table 5.

[Table 5]

4.2. CEO trading profits

Because CEOs often own a significant stake in their firms and accumulate more stocks every year through equity-based compensation, buying more of their own firms' stocks is against investment principles such as diversification and risk management. Therefore, CEO buys are more likely to be opportunistic and profitable. In this subsection, we investigate whether CEOs using social media make abnormally high returns from their trades, especially with buys.

In Table 6, we regress the 3- and 6-month character-based abnormal returns and buy-and-hold abnormal returns following insider buys (Panel A) and sells (Panel B) on CEO social media use. The character-based abnormal returns are estimated following Daniel et al. (1997), and the buy-and-hold abnormal returns are estimated using the Fama-French three-factor model (Fama & French, 1993).[11] In Panel A, we find positive coefficient estimates for *Social Media Account* and *Social Media Active*, and five (six) out of eight coefficient estimates are statistically significant at the 1% (5%) level. The only exception is that we do not find significantly positive coefficients when we regress character-based abnormal returns on *Social Media Account*. Overall, our results suggest that social media use, especially the refined activeness measure *Social Media Active*, predicts CEO buying profits in a significant way.

[Table 6]

In Panel B, where the dependents are the abnormal returns following insider sells, we find that the coefficient estimates of social media use are largely insignificant. This clearly contrasts with the results in Panel A, and is consistent with the insider trading literature that insider sells are generally not opportunistic and are mostly driven by diversification needs.

Tables 4 - 6 present consistent results. We find a statistically significant positive association between CEO social media use and insider buying incidence, intensity, and profitability, while similar relations are not found with insider selling or the overall insider trading activity (buys + sells). These results suggest that the channel behind such an

[11] Specifically, the BHAR is the product of all daily abnormal returns plus one over the event window. Expected returns are estimated over a window of 100 days, ending 50 days before the start of event windows.

association is most likely related to the private information held by CEOs, which is typically used to make abnormal profits through opportunistic buying rather than selling. Overall, these results provide empirical support to our hypotheses – CEOs with social media presence/activity are more likely to engage in unethical, risky insider trading of their companies' stock.

4.3. Corporate governance and compensation-based risk incentives

In this subsection, we explore two complementary mechanisms that may influence the relationship between CEO social media use and insider trading behavior: (1) corporate governance features that increase or lessen the constraints on opportunistic insider trading, and (2) risk-related incentives embedded in CEO compensation that may motivate social media engagement.

We begin by examining how corporate governance mechanisms—specifically, CEO duality and insider trading blackout policies—moderate the association between CEO social media activeness and opportunistic trading. We focus on the profitability of insider purchases as our key outcome, measured by character-based abnormal returns and buy-and-hold abnormal returns following insider buys. In particular, we interact the variable *Social Media Active* with two governance indicators: *CEO Duality* and *Blackout*.

As reported in Table 7, the interaction term between *Social Media Active* and *CEO Duality* is positive and statistically significant, suggesting that the positive relationship between social media activeness and trading profitability is amplified when the CEO holds dual roles. In contrast, the interaction term between *Social Media Active* and *Blackout* is negative and significant, indicating that the presence of blackout policies mitigates the opportunistic trading associated with social media activeness. These findings support the

view that stronger governance structures (e.g., absence of CEO/chairman duality and presence of trading restrictions) discourage CEOs from exploiting their informational advantage, particularly when they are active on social media.

[Table 7]

We further investigate whether risk-related incentives embedded in CEO compensation influence their engagement with social media platforms, following Caliskan and Doukas (2015). Specifically, we examine whether CEOs with greater incentives to take risks—proxied by compensation Vega—are more likely to maintain a social media presence or engage actively. Conversely, we assess whether risk-averse incentives—captured by Inside Debt and Delta—discourage social media use. Delta and Vega are calculated following Core and Guay (2002) and Coles et al. (2006).

In Table 8, we report the results of logistic regressions where the dependent variables are *Social Media Account* and *Social Media Active*. Our findings reveal a consistent pattern: CEOs with higher *Inside Debt* or *Delta* are significantly less likely to have social media accounts or engage actively on such platforms. These forms of compensation tie CEO wealth closely to firm stability, discouraging risk-taking behavior. On the other hand, *Vega*, which measures sensitivity of CEO wealth to stock return volatility, is positively associated with both having a social media account and being active. These results suggest that CEOs with stronger risk-taking incentives are more inclined to use social media, possibly as a strategic communication tool or as a signal of confidence and engagement.

[Table 8]

Overall, the results in Tables 7-8 highlight the important role of corporate governance mechanisms and CEO compensation design in reducing potential harm to a company's reputation arising from unethical CEO insider trades associated with CEO social media use.

4.4. Endogeneity and further analysis

We acknowledge that our results are subject to alternative interpretations and endogeneity concerns, and we discuss these issues in this subsection. First, insider trading profitability and a CEO's social media use may both be related to other factors such as the CEO's ability to collect or analyze information. While we recognize that this is a valid alternative story, our findings suggest that CEOs with social media use do not just passively make better trades – they *choose* to make more open-market purchases, especially opportunistic purchases, in periods when their trades are more likely to be information-driven. At the very least, these CEOs choose to take the risk by trading on private information, while ethical guidelines strongly suggest that they should refrain from doing so.

To address the concern that CEOs' social media decisions are endogenous, we perform propensity score matching by matching the "treated" CEOs on social media with CEOs who are not on social media but have similar propensity scores based on firm and CEO characteristics, industry, and year. Specifically, we first regress *Social Media Account* (or *Active*) on a set of firm and CEO characteristics, including firm size, book to market, ROA, R&D intensity, number of analysts following, CEO gender, CEO age, CEO compensation, CEO duality, and blackout policies. We then use the estimated propensity

scores from this model to perform one-to-one nearest neighbor matching (without replacement), ensuring balance between the treatment and control groups for subsequent analysis. Using the matched firm-year observations, we re-estimate our main regressions to assess the robustness of our results.

We report the results in Table 9. As Panel A Column 1 of Table 9 shows, the decision for a CEO to use social media is affected by firm and CEO characteristics. CEOs from smaller, R&D intense, and less profitable growth firms are more likely to use social media. Furthermore, CEOs who are female, younger, and compensated more generously are more likely to be on social media. These findings match what we know about social-media-savvy CEOs: they tend to come from innovative growth firms and tend to be younger.

[Table 9]

We report our insider trading incidence results in Panel B, insider trading intensity results in Panel C, and insider profitability results in Panel D. Overall, Table 9 reports results that are largely consistent with those in Tables 4-6: CEOs using social media are more likely to make insider buys, buy more shares, and profit more from these buys compared to observationally similar CEOs without social media use.

To further strengthen the causal interpretation of the relationship between CEO social media use and insider trading behavior, we implement a difference-in-differences (DiD) analysis surrounding the first year in which a CEO is identified as having a personal LinkedIn or Twitter account. This approach helps isolate the impact of social media adoption by comparing changes in trading behavior before and after social media presence becomes observable. Specifically, we define a dummy variable, *After*, which takes the

value of 1 for all years following the first identified year of social media presence, and 0 otherwise. We then interact After with the *Social Media Account* dummy to capture the differential change in insider trading behavior associated with social media adoption. We report the results in Table 10.

[Table 10]

In Panel A of Table 10, we examine CEO-level trading behaviors, including insider trading incidence (measured by buy/sell dummies) and trading intensity (measured by log total transaction volumes). When we include the interaction term (*Social Media Account* × *After*) in the regressions, we find that the main effect of *Social Media Account* becomes statistically insignificant, while the interaction term becomes positive and significant—specifically for insider purchases. These results suggest that the increase in insider trading activity occurs primarily after the CEO begins using social media, rather than being driven by persistent differences between CEOs with and without accounts.

In Panel B, we turn to the trade level and investigate the profitability of insider transactions. The dependent variables include both characteristic-based abnormal returns and buy-and-hold abnormal returns over three- and six-month windows. Across all four specifications, we find that the interaction term *Social Media Account* × *After* is positive and statistically significant. This pattern indicates that CEOs earn higher abnormal returns from their trades after adopting social media, consistent with more opportunistic or better-timed trading behavior.

Taken together, this difference-in-differences evidence supports the hypothesis that CEO social media use is associated with a meaningful shift in insider trading behavior, particularly in the form of more profitable purchase transactions. These findings strengthen

the argument that social media engagement may reflect or reinforce underlying behavioral traits such as risk-taking and opportunism.

We conducted additional robustness tests, which are not included in the main tables due to space constraints. In Appendix B, we compare CEOs with social media accounts who remain inactive ("Social Media Inactive") to those who are active ("Social Media Active") in terms of insider trading incidence and intensity (Panel A), as well as insider trading profitability (Panel B). Our findings indicate that the results are statistically significant only for Social Media Active CEOs, and not for their inactive counterparts.

In Online Appendix A, we further explore two alternative continuous measures of CEO social media presence. First, we define *Social Media Count* as the number of social media platforms used by the CEO—for example, a score of 1 if the CEO uses only LinkedIn, and 2 if the CEO uses both LinkedIn and Twitter. Second, we construct a LinkedIn-specific measure, *LinkedIn Activity*, coded as 0 if the CEO does not have a LinkedIn account, 1 if the CEO has an account but no activity in a given year, and 2 if the CEO has an account and exhibits at least one activity during the year. In Online Appendix B, we perform an additional robustness check by excluding CEOs of IT firms (SIC two-digit code 73), which includes companies such as Meta, Google, and Microsoft, as these CEOs are naturally more inclined to use social media. We also exclude Tesla due to Elon Musk, who represents an extreme outlier in terms of social media activity. Across all these robustness checks, our main results remain consistent and statistically robust.

5. CONCLUSION

Social media has become an integral part of our daily lives and a critical medium through

which companies and executives communicate and interact with stakeholders. However, prior research on laboratory subjects has documented that social media usage can proxy for personal risk preference, which plays a key role in corporate decisions and yet is extremely difficult to measure. Our study provides novel large-sample empirical evidence on the connection between CEO social media use and unethical, risky insider trades. Using a sample of CEOs from the ExecuComp database between 2013 and 2020, we find that CEOs with social media use—those with accounts or activity—are more likely to engage in unethical, risky insider trading activity in terms of incidence, intensity, and profitability. These effects are primarily driven by insider buys (rather than sells), which are more likely to contain material private information and are therefore considered more opportunistic and risky.

These results suggest that companies should be aware of top executives' social media use and its connection to problematic, risky behaviors. In particular, boards of directors may want to closely examine the influence of executives' online presence on their decision-making processes, as social media can amplify personal biases and alter perceptions of risk. Our study offers preliminary, first-step evidence on how social media, with its ever-growing influence, can interact with business conduct and ethics, which should appeal to both researchers and practitioners. Future research could further explore the underlying mechanisms through which social media influences executives' ethical decision-making, focusing on the psychological factors that drive social media use in high-stakes corporate environments.

Additionally, our findings have practical and policy implications. By understanding the dynamics between social media use and corporate governance, regulators can craft

policies that promote transparency while reducing the likelihood of unethical behavior arising from executives' online interactions. When implementing social media strategies, corporate leaders and stakeholders should be aware of the potential drawbacks associated with CEOs' social media activity and find ways to mitigate the risks. For example, company boards and regulators in industries where risky behavior is hard to detect should provide proper training and guidance to top executives on the use of social media and closely monitor, or even limit, the social media activity of CEOs and potential risky behaviors. We provide evidence showing that compensation design can influence CEOs' social media engagement decisions, and firm blackout policies on insider trading can further limit the trading profitability of CEOs using social media, while CEO/chair duality enhances profitability. Firms should consider implementing tailored communication strategies that encourage responsible social media use, ensuring that executive conduct on social platforms aligns with the company's ethical standards and long-term goals.

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Table 1. Descriptive statistics

This table reports the descriptive statistics of the main variables used in this study. Variable definitions are provided in Appendix A. The sample period is 2013-2020, but *Social Media Active* is manually collected over a shorter period of 2018-2020.

Variable	Obs	Mean	Std. dev.	Min	Max
Social Media Account	13,248	0.307	0.461	0.000	1.000
Social Media Active	5,819	0.315	0.464	0.000	1.000
Size	13,248	8.284	1.802	1.272	15.198
R&D	13,248	0.021	0.046	0.000	0.251
Book/Market	13,248	0.657	0.283	0.110	1.422
ROA	13,248	0.031	0.096	-0.452	0.270
Analysts	13,248	12.251	9.954	0.000	98.000
Female CEO	13,248	0.035	0.183	0.000	1.000
CEO Age	13,248	57.049	6.008	34.000	93.000
CEO Compensation	13,248	6.164	3.922	0.000	14.641
CEO Duality	13,248	0.389	0.487	0.000	1.000
Blackout	13,248	0.418	0.493	0.000	1.000
Opportunistic	13,248	0.731	0.443	0.000	1.000
Long Holder	13,248	0.004	0.061	0.000	1.000
Informed Exercises	13,248	0.186	3.671	0.000	402.339
# Insider Trades	13,248	4.388	32.020	0.000	1,351
Volume of Insider Trades (mil)	13,248	0.078	0.327	0.000	9.846

Table 2. Correlation matrix

This table reports the pairwise correlation matrix among variables. Bold numbers indicate significance at the 5% level. Variable definitions are provided in Appendix A. The sample period is 2013-2020, but *Social Media Active* is manually collected over a shorter period of 2018-2020.

		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]	[16]
[1]	Social Media Account																
[2]	Social Media Active	**0.83**															
[3]	Size	**-0.03**	**-0.05**														
[4]	R&D	**0.11**	**0.09**	**-0.28**													
[5]	Book/Market	**-0.09**	**-0.08**	**0.22**	**-0.37**												
[6]	ROA	**-0.02**	**-0.03**	**0.12**	**-0.12**	**-0.39**											
[7]	Analysts	**0.04**	**0.03**	**0.47**	**0.03**	**-0.19**	**0.17**										
[8]	Female CEO	**0.03**	**0.03**	0.00	-0.01	-0.01	**0.03**	0.01									
[9]	CEO Age	**0.02**	-0.01	0.01	**-0.02**	-0.01	**0.06**	**0.04**	**0.12**								
[10]	CEO Compensation	**0.03**	0.01	**0.11**	**-0.03**	**-0.04**	**0.08**	**0.12**	**0.12**	**0.97**							
[11]	CEO Duality	**-0.08**	**-0.07**	**0.14**	**-0.06**	**-0.02**	**0.08**	**0.09**	**-0.02**	**0.04**	**0.04**						
[12]	Blackout	-0.01	0.00	**0.03**	**-0.04**	**-0.02**	**0.06**	**0.16**	0.00	0.01	0.02	0.02					
[13]	Opportunistic	-0.01	-0.01	**-0.04**	**-0.12**	**0.20**	**-0.13**	**-0.20**	0.01	-0.01	**-0.03**	**-0.05**	**-0.04**				
[14]	Long Holder	-0.01	0.02	**-0.02**	**0.03**	**-0.04**	0.01	0.01	0.00	0.00	0.00	**0.02**	0.01	**-0.06**			
[15]	Informed Exercises	**0.02**	**0.03**	**-0.03**	0.01	**-0.04**	**0.03**	0.01	0.00	-0.02	**-0.02**	0.00	-0.01	**-0.04**	**0.03**		
[16]	# Insider Trades	**0.06**	**0.06**	-0.01	**0.16**	**-0.23**	**0.12**	**0.19**	0.00	-0.01	0.01	**0.06**	-0.01	**-0.61**	**0.10**	**0.10**	
[17]	Volume of Insider Trades (mil)	**0.04**	**0.07**	**0.03**	0.12	**-0.19**	**0.10**	**0.23**	-0.01	-0.01	0.01	**0.06**	**0.08**	**-0.65**	**0.07**	**0.07**	**0.82**

Table 3. Social media and measures of risk-taking

This table reports Logit (columns 1-4) and least squares (columns 5 & 6) regression results examining the association between social media and other measures of CEO risk-taking. In columns 1 & 2, the dependent variable *Opportunistic* is a dummy variable equal to 1 if the insider is not a routine trader as defined by Cohen et al. (2012), and 0 otherwise. In columns 3 & 4, the dependent variable *Long Holder* is a dummy variable equal to 1 if the insider holds in-the-money options for long periods, and 0 otherwise, following Malmendier and Tate (2015). In columns 5 & 6, the dependent variable *Informed Exercises* is the total volume of informed option exercises scaled by shares outstanding, following Bradley et al. (2014). Other variable definitions are provided in Appendix A. The sample period is 2013-2020, but *Social Media Active* is manually collected over a shorter period of 2018-2020. Industry and year fixed effects are included in all regressions. Standard errors are clustered at the firm level. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	Opportunistic	Opportunistic	Long Holder	Long Holder	Informed Exercises	Informed Exercises
Social Media Account	0.104**		0.731		0.190**	
	(2.12)		(1.25)		(2.55)	
Social Media Active		0.173**		1.124**		0.048*
		(2.29)		(2.12)		(1.84)
Size	0.051***	0.072**	-0.366***	-0.705***	-0.117***	-0.059***
	(2.75)	(2.26)	(-2.77)	(-2.82)	(-4.29)	(-5.69)
R&D	-2.975***	-3.587***	-0.703	-13.029	-0.239	0.565
	(-5.13)	(-3.93)	(-0.25)	(-1.46)	(-0.25)	(1.62)
Book/Market	0.926***	0.877***	-0.538	-0.621	-0.194	-0.129**
	(7.73)	(4.68)	(-0.85)	(-0.40)	(-1.20)	(-2.25)
ROA	-1.742***	-1.777***	1.077	1.748	0.870**	0.392***
	(-5.98)	(-3.80)	(0.77)	(0.89)	(2.18)	(2.72)
Analysts	-0.600***	-0.565***	0.516**	1.118*	0.104**	0.051***
	(-16.82)	(-8.20)	(2.30)	(1.77)	(2.23)	(2.71)
Female CEO	0.249***	0.182**	-0.494	-0.983**	-0.064	-0.029
	(4.32)	(2.06)	(-1.14)	(-2.01)	(-0.76)	(-0.98)
CEO Age	-0.123***	-0.123***	0.252	0.355	0.016	0.019
	(-4.64)	(-3.09)	(1.25)	(1.48)	(0.42)	(1.39)
CEO Compensation	-0.178***	-0.183**	0.556*	0.901	0.036	0.099***
	(-4.02)	(-2.50)	(1.88)	(1.57)	(0.53)	(3.87)
CEO Duality	-0.078*	-0.179***	0.293	-0.015	-0.108	-0.053**
	(-1.80)	(-2.58)	(1.05)	(-0.03)	(-1.62)	(-2.17)
Blackout	-0.036	-0.080	-0.410	(dropped)	-0.032	0.086
	(-0.31)	(-0.48)	(-0.41)		(-0.18)	(1.41)
Constant	2.446***	1.741**	-3.035***	-2.340	1.000	0.503
	(2.93)	(2.05)	(-3.14)	(-1.05)	(0.84)	(1.22)
Industry & Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	13,227	5,777	9,503	3,392	13,248	5,819
R-squared	0.116	0.116	0.086	0.169	0.008	0.030

Table 4. Social media and likelihood of insider trading

This table reports Logit regression results examining the impact of social media on the likelihood of insider trading, buying, or selling activity. The dependent variables are dummy variables equal to 1 if the CEO makes any open market insider trade (columns 1 & 4), purchase (columns 2 & 5), or sale (columns 3 & 6) in a year, and 0 otherwise. Variable definitions are provided in Appendix A. The sample period is 2013-2020, but *Social Media Active* is manually collected over a shorter period of 2018-2020. Industry and year fixed effects are included in all regressions. Standard errors are clustered at the firm level. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	All Trades	Buys	Sells	All Trades	Buys	Sells
Social Media Account	0.060	0.187**	-0.050			
	(1.13)	(2.32)	(-0.83)			
Social Media Active				0.154**	0.222**	0.034
				(2.08)	(2.08)	(0.40)
Size	-0.137***	-0.243***	-0.053**	-0.166***	-0.254***	-0.077**
	(-5.86)	(-6.41)	(-2.01)	(-5.05)	(-5.00)	(-2.05)
R&D	2.036**	-0.823	2.237**	2.045*	-3.364*	2.841**
	(2.50)	(-0.64)	(2.53)	(1.80)	(-1.87)	(2.35)
Book/Market	-0.343***	1.889***	-1.292***	-0.340**	1.901***	-1.442***
	(-2.68)	(10.70)	(-8.27)	(-2.01)	(8.37)	(-6.86)
ROA	0.891***	-1.874***	2.381***	0.794**	-1.518***	1.969***
	(3.13)	(-5.15)	(6.70)	(2.03)	(-2.96)	(3.88)
Analysts	0.588***	0.214***	0.614***	0.524***	0.255**	0.539***
	(13.89)	(3.13)	(12.67)	(8.04)	(2.52)	(7.49)
Female CEO	-0.006	-0.145	0.068	0.079	-0.226	0.167
	(-0.04)	(-0.68)	(0.45)	(0.49)	(-0.90)	(0.91)
CEO Age	-0.237***	0.208**	-0.391***	-0.227***	0.114	-0.327***
	(-3.62)	(2.08)	(-5.76)	(-2.75)	(1.08)	(-3.62)
CEO Compensation	0.109***	-0.094**	0.180***	0.119***	-0.070	0.183***
	(3.61)	(-2.00)	(5.75)	(3.14)	(-1.43)	(4.42)
CEO Duality	0.098*	-0.198**	0.185***	0.142*	-0.172	0.239***
	(1.73)	(-2.23)	(2.96)	(1.85)	(-1.46)	(2.82)
Blackout	0.240***	0.688***	-0.052	0.314***	0.645***	0.010
	(5.03)	(9.42)	(-1.01)	(4.55)	(6.32)	(0.13)
Constant	0.243	-2.795***	0.041	-1.145***	-3.696***	-1.184
	(0.48)	(-3.10)	(0.06)	(-3.58)	(-3.36)	(-1.51)
Industry & Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	13,208	13,192	13,208	5,803	5,797	5,803
Pseudo R-squared	0.087	0.112	0.134	0.097	0.136	0.139

Table 5. Social media and volume of insider trading

This table reports least-squares regression results examining the impact of social media on the intensity of insider trading, buying, or selling activity. The dependent variables are the logarithm values of open market trading volumes of all insider trades (columns 1 & 4), purchases (columns 2 & 5), or sales (columns 3 & 6) in a year. Variable definitions are provided in Appendix A. The sample period is 2013-2020, but *Social Media Active* is manually collected over a shorter period of 2018-2020. Industry and year fixed effects are included in all regressions. Standard errors are clustered at the firm level. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	All Trades	Buys	Sells	All Trades	Buys	Sells
Social Media Account	0.113	0.189**	-0.106			
	(0.87)	(2.51)	(-0.80)			
Social Media Active				0.247	0.228**	0.011
				(1.41)	(2.23)	(0.07)
Size	-0.207***	-0.195***	-0.032	-0.250***	-0.195***	-0.070
	(-3.94)	(-5.80)	(-0.59)	(-3.74)	(-4.53)	(-1.07)
R&D	5.001**	0.462	4.459**	5.751**	-0.995	6.649**
	(2.45)	(0.41)	(2.10)	(2.03)	(-0.83)	(2.33)
Book/Market	-1.303***	1.870***	-3.040***	-1.188***	1.928***	-3.058***
	(-4.35)	(9.73)	(-10.54)	(-3.19)	(8.09)	(-8.80)
ROA	2.197***	-2.432***	4.726***	1.805**	-1.967***	3.866***
	(3.35)	(-4.99)	(7.87)	(2.06)	(-2.97)	(4.86)
Analysts	1.355***	0.173***	1.214***	1.050***	0.175**	0.898***
	(17.10)	(3.30)	(15.51)	(9.17)	(2.14)	(8.95)
Female CEO	-0.128	-0.217	0.070	0.237	-0.158	0.346
	(-0.41)	(-1.45)	(0.21)	(0.62)	(-0.83)	(0.86)
CEO Age	-0.617***	0.206*	-0.824***	-0.549***	0.067	-0.607***
	(-4.30)	(1.94)	(-6.54)	(-3.28)	(0.63)	(-4.14)
CEO Compensation	0.286***	-0.092*	0.382***	0.306***	-0.048	0.357***
	(4.27)	(-1.91)	(6.42)	(3.94)	(-1.01)	(5.18)
CEO Duality	0.496***	-0.120	0.598***	0.598***	-0.084	0.670***
	(3.49)	(-1.54)	(4.22)	(3.25)	(-0.81)	(3.79)
Blackout	0.439***	0.640***	-0.212*	0.565***	0.654***	-0.123
	(3.71)	(9.27)	(-1.83)	(3.45)	(6.42)	(-0.79)
Constant	3.891***	1.388**	2.556***	2.024**	1.190*	0.792
	(6.20)	(2.26)	(4.13)	(2.42)	(1.69)	(1.12)
Industry & Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	13,248	13,248	13,248	5,819	5,819	5,819
R-squared	0.130	0.083	0.173	0.135	0.100	0.170

Table 6. Social media and profitability of insider trading

This table reports regression results examining the impact of social media on the profitability of insider trading. The dependent variables are the character-based abnormal returns and Fama-French three-factor buy-and-hold abnormal returns (BHAR) estimated over the 3-month and 6-month windows following an insider trade. In Panel A, we analyze insider buys only, while in Panel B we analyze insider sells. Variable definitions are provided in Appendix A. The sample period is 2013-2020, but *Social Media Active* is manually collected over a shorter period of 2018-2020. Industry and year fixed effects are included in all regressions. Standard errors are clustered at the firm level. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

Panel A. Buys

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Character-Based Abnormal Return				Three-Factor Buy-and-Hold Abnormal Return			
VARIABLES	3 Mo	6 Mo	3 Mo	6 Mo	3 Mo	6 Mo	3 Mo	6 Mo
Social Media Account	-0.010	0.002			0.044***	0.142***		
	(-0.85)	(0.14)			(4.28)	(7.40)		
Social Media Active			0.044**	0.089***			0.078***	0.230***
			(2.38)	(3.32)			(3.80)	(5.85)
Size	-0.017***	-0.026***	-0.008**	-0.028***	-0.004**	-0.008*	-0.001	-0.007
	(-6.82)	(-8.83)	(-2.50)	(-5.09)	(-1.98)	(-1.95)	(-0.23)	(-0.91)
R&D	-0.079***	-0.029*	-0.041**	-0.081***	0.016	0.063***	-0.035*	0.016
	(-5.34)	(-1.84)	(-2.46)	(-3.13)	(1.23)	(2.62)	(-1.69)	(0.38)
Book/Market	-0.054	-0.048	0.207***	0.055	0.055	0.065	0.155**	0.326**
	(-1.17)	(-0.94)	(3.37)	(0.65)	(1.24)	(0.75)	(2.21)	(2.26)
ROA	0.267***	0.414***	0.363***	0.590***	0.119***	0.247***	0.215***	0.484***
	(11.69)	(17.97)	(14.26)	(15.33)	(5.92)	(6.00)	(6.58)	(6.68)
Analysts	-0.038***	-0.055***	-0.027***	-0.058***	0.011***	0.005	0.017**	-0.001
	(-7.86)	(-9.93)	(-4.49)	(-6.16)	(2.58)	(0.61)	(2.38)	(-0.06)
Female CEO	0.039	0.058*	0.143**	0.160**	-0.018	-0.029	0.165**	0.332**
	(1.55)	(1.95)	(2.32)	(2.58)	(-0.52)	(-0.50)	(2.03)	(2.54)

CEO Age	0.004	-0.015	0.039*	0.017	0.030***	0.027**	0.060***	0.041**
	(0.24)	(-0.90)	(1.72)	(0.50)	(3.44)	(2.08)	(5.25)	(2.38)
CEO Compensation	0.001	0.013*	-0.018*	-0.005	-0.013***	-0.010	-0.027***	-0.016*
	(0.18)	(1.68)	(-1.68)	(-0.29)	(-3.02)	(-1.48)	(-4.89)	(-1.94)
CEO Duality	0.013	0.045***	-0.013	0.036*	-0.003	0.020	0.007	0.091***
	(1.41)	(4.10)	(-0.93)	(1.65)	(-0.32)	(1.29)	(0.46)	(2.99)
Blackout	-0.005	-0.042***	-0.041***	-0.106***	-0.002	-0.013	-0.015	-0.046**
	(-0.73)	(-5.01)	(-4.12)	(-7.28)	(-0.25)	(-1.09)	(-1.47)	(-2.29)
Constant	0.239***	0.305***	0.243***	0.460***	-0.021	-0.073*	0.020	-0.049
	(7.42)	(8.13)	(4.78)	(6.94)	(-1.02)	(-1.90)	(0.57)	(-0.73)
Industry & Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	11,509	11,469	5,279	5,277	15,142	14,939	7,020	6,817
R-squared	0.080	0.160	0.129	0.212	0.023	0.027	0.037	0.048

Panel B. Sells

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Character-Based Abnormal Return				Three-Factor Buy-and-Hold Abnormal Return			
VARIABLES	3 Mo	6 Mo	3 Mo	6 Mo	3 Mo	6 Mo	3 Mo	6 Mo
Social Media Account	-0.008	0.001			-0.003	0.008		
	(-0.83)	(0.07)			(-0.54)	(0.56)		
Social Media Active			0.011	0.024			-0.000	0.005
			(0.73)	(0.99)			(-0.03)	(0.14)
Size	0.019***	0.033***	0.029***	0.058***	0.015***	0.034***	0.020***	0.040**
	(4.19)	(3.41)	(3.38)	(3.15)	(6.15)	(5.40)	(3.94)	(2.25)
R&D	-0.108***	-0.176***	-0.157***	-0.275***	-0.065***	-0.076**	-0.078***	-0.020
	(-6.57)	(-5.12)	(-5.48)	(-4.50)	(-4.50)	(-2.21)	(-2.69)	(-0.17)
Book/Market	-0.066	-0.245	-0.120	-0.454	-0.008	0.013	-0.029	-0.227
	(-0.87)	(-1.38)	(-0.97)	(-1.58)	(-0.17)	(0.10)	(-0.25)	(-0.50)
ROA	0.116***	0.201**	0.140**	0.207	0.066**	0.155***	0.125**	0.446**
	(2.75)	(2.06)	(2.00)	(1.28)	(2.53)	(2.65)	(2.34)	(2.57)
Analysts	-0.037***	-0.069***	-0.053***	-0.100***	0.000	-0.002	0.015	0.093
	(-5.74)	(-4.70)	(-4.13)	(-3.57)	(0.09)	(-0.16)	(1.03)	(1.43)
Female CEO	0.001	0.028	0.013	0.049	-0.026	-0.034	-0.044	-0.079
	(0.04)	(0.78)	(0.31)	(0.94)	(-1.44)	(-1.53)	(-1.09)	(-1.62)
CEO Age	0.020*	0.054**	0.022	0.073**	0.018**	0.052***	0.031**	0.077*
	(1.76)	(2.16)	(1.29)	(2.43)	(2.20)	(2.59)	(1.97)	(1.71)
CEO Compensation	-0.008	-0.020*	-0.011	-0.030**	-0.009**	-0.022**	-0.016**	-0.034
	(-1.51)	(-1.80)	(-1.40)	(-2.28)	(-2.35)	(-2.43)	(-2.15)	(-1.54)
CEO Duality	-0.014	-0.033	-0.037*	-0.087**	0.000	0.005	-0.012	-0.028
	(-1.30)	(-1.36)	(-1.95)	(-2.11)	(0.03)	(0.38)	(-1.21)	(-0.88)
Blackout	0.005	0.006	0.009	0.007	-0.006	-0.003	-0.003	0.035
	(0.88)	(0.56)	(0.98)	(0.38)	(-1.11)	(-0.24)	(-0.33)	(1.14)
Constant	0.016	0.019	0.043	0.001	-0.048	-0.293***	-0.083	-0.466**
	(0.39)	(0.31)	(0.50)	(0.00)	(-0.86)	(-5.83)	(-0.67)	(-1.99)

Industry & Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	39,482	39,391	18,711	18,676	44,209	43,057	21,298	20,146
R-squared	0.039	0.065	0.051	0.084	0.032	0.052	0.038	0.046

Table 7. Social media, corporate governance, and insider trading profitability

This table reports regression results examining the impact of the interaction between social media and corporate governance on the profitability of insider trading. The dependent variables are the character-based abnormal returns and Fama-French three-factor buy-and-hold abnormal returns (BHAR) estimated over the 3-month and 6-month windows following insider purchases. We interact social media measures with two proxies of corporate governance: *CEO Duality* and *Blackout*. Variable definitions are provided in Appendix A. The sample period is 2013-2020, but *Social Media Active* is manually collected over a shorter period of 2018-2020. Industry and year fixed effects are included in all regressions. Standard errors are clustered at the firm level. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Character-Based Abnormal Return				Three-Factor Buy-and-Hold Abnormal Return			
VARIABLES	3 Mo	6 Mo	3 Mo	6 Mo	3 Mo	6 Mo	3 Mo	6 Mo
Social Media Active	0.019	0.028	0.040**	0.088***	0.035	0.113***	0.110***	0.295***
	(0.84)	(0.85)	(1.97)	(2.73)	(1.47)	(2.59)	(4.54)	(5.84)
CEO Duality	-0.031*	-0.009	-0.012	0.036	-0.019	0.017	0.001	0.079***
	(-1.95)	(-0.35)	(-0.85)	(1.60)	(-1.13)	(0.51)	(0.08)	(2.58)
Blackout	-0.040***	-0.102***	-0.042***	-0.106***	-0.012	-0.038*	-0.010	-0.036*
	(-3.94)	(-6.99)	(-4.03)	(-6.98)	(-1.16)	(-1.88)	(-0.96)	(-1.74)
Social Media Active * CEO Duality	0.075**	0.185***			0.141***	0.380***		
	(2.32)	(3.74)			(3.44)	(4.45)		
Social Media Active * Blackout			0.010	0.003			-0.082**	-0.167***
			(0.29)	(0.06)			(-2.31)	(-2.61)
Size	-0.008**	-0.027***	-0.008**	-0.028***	-0.001	-0.006	-0.001	-0.006
	(-2.42)	(-4.97)	(-2.52)	(-5.09)	(-0.18)	(-0.84)	(-0.16)	(-0.83)
R&D	-0.042**	-0.084***	-0.041**	-0.081***	-0.037*	0.011	-0.034*	0.017
	(-2.54)	(-3.26)	(-2.46)	(-3.13)	(-1.78)	(0.26)	(-1.65)	(0.42)
Book/Market	0.206***	0.054	0.207***	0.055	0.155**	0.325**	0.151**	0.319**
	(3.36)	(0.64)	(3.37)	(0.65)	(2.20)	(2.25)	(2.15)	(2.21)
ROA	0.363***	0.591***	0.363***	0.590***	0.217***	0.488***	0.215***	0.483***
	(14.28)	(15.38)	(14.27)	(15.33)	(6.62)	(6.73)	(6.56)	(6.65)
Analysts	-0.026***	-0.057***	-0.027***	-0.058***	0.018**	0.000	0.017**	-0.001
	(-4.43)	(-6.07)	(-4.48)	(-6.15)	(2.45)	(0.03)	(2.35)	(-0.09)
Female CEO	0.144**	0.164***	0.143**	0.160**	0.176**	0.361***	0.165**	0.332**
	(2.37)	(2.72)	(2.32)	(2.58)	(2.13)	(2.73)	(2.03)	(2.55)

CEO Age	0.045*	0.031	0.039*	0.017	0.066***	0.058***	0.060***	0.041**
	(1.96)	(0.88)	(1.72)	(0.50)	(5.67)	(3.26)	(5.25)	(2.43)
CEO Compensation	-0.020*	-0.010	-0.019*	-0.005	-0.029***	-0.022**	-0.027***	-0.016*
	(-1.86)	(-0.58)	(-1.68)	(-0.29)	(-5.18)	(-2.55)	(-4.86)	(-1.95)
Constant	0.243***	0.461***	0.243***	0.460***	0.018	-0.053	0.015	-0.058
	(4.81)	(6.99)	(4.79)	(6.94)	(0.53)	(-0.79)	(0.44)	(-0.86)
Industry & Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	5,279	5,277	5,279	5,277	7,020	6,817	7,020	6,817
R-squared	0.129	0.214	0.129	0.212	0.038	0.050	0.037	0.048

Table 8. CEO risk incentives and social media activity

This table reports logistic regression results examining the impact of CEO risk incentives on their social media activity. The dependent variables are dummy variables equal to 1 if the CEO has social media accounts (columns 1 & 3) or is active on social media (columns 2 & 4) in the year, and 0 otherwise. Variable definitions are provided in Appendix A. The sample period is 2013-2020, but *Social Media Active* is manually collected over a shorter period of 2018-2020. Industry and year fixed effects are included in all regressions. Standard errors are clustered at the firm level. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

VARIABLES	(1) Social Media Account	(2) Social Media Active	(3) Social Media Account	(4) Social Media Active
Inside Debt	-4.485**	-4.617*		
	(-2.41)	(-1.89)		
Delta			-0.050***	-0.088***
			(-4.53)	(-5.67)
Vega			0.009	0.036**
			(0.78)	(2.25)
Size	-0.008	-0.071**	-0.013	-0.072**
	(-0.41)	(-2.44)	(-0.69)	(-2.52)
R&D	1.992***	0.170	2.089***	0.385
	(3.52)	(0.21)	(3.74)	(0.47)
Book/Market	-0.341***	-0.104	-0.390***	-0.176
	(-3.39)	(-0.75)	(-3.92)	(-1.27)
ROA	-1.269***	-1.414***	-1.130***	-1.201***
	(-5.13)	(-4.07)	(-4.62)	(-3.47)
Analysts	0.101***	0.146***	0.121***	0.172***
	(3.18)	(2.82)	(3.85)	(3.35)
Female CEO	0.321***	0.247*	0.335***	0.274*
	(3.05)	(1.69)	(3.20)	(1.90)
CEO Age	-0.212***	-0.367***	-0.218***	-0.367***
	(-3.71)	(-4.28)	(-3.80)	(-4.33)
CEO Compensation	0.100***	0.183***	0.105***	0.189***
	(3.77)	(4.63)	(3.92)	(4.85)
CEO Duality	-0.203***	-0.218***	-0.193***	-0.177***
	(-4.59)	(-3.37)	(-4.44)	(-2.71)
Blackout	-0.035	-0.037	-0.042	-0.044
	(-0.83)	(-0.60)	(-0.99)	(-0.73)
Constant	0.386*	-0.177	0.515**	0.050
	(1.79)	(-0.54)	(2.43)	(0.15)
Industry & Year FE	Yes	Yes	Yes	Yes
Observations	13,114	5,782	13,248	5,813
Pseudo R-squared	0.104	0.055	0.105	0.058

Table 9. Propensity score matching results

This table reports Propensity Score Matching (PSM) results. Panel A reports the matching model. Panels B, C, and D replicate results in Tables 4, 5, and 6 using PSM. Variable definitions are provided in Appendix A. The sample period is 2013-2020, but *Social Media Active* is manually collected over a shorter period of 2018-2020. Industry and year fixed effects are included in all regressions. Standard errors are clustered at the firm level. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

Panel A. Propensity score matching model

	(1)	(2)
VARIABLES	Social Media Account	Social Media Active
Size	-0.021	-0.087*
	(-1.21)	(-1.77)
Book/Market	-0.332***	-0.047
	(-3.35)	(-0.23)
R&D	3.426***	1.684
	(6.30)	(1.31)
ROA	-1.104***	-1.174***
	(-4.48)	(-2.72)
Analysts	0.093***	0.144*
	(3.03)	(1.81)
Female CEO	0.350***	0.263
	(3.31)	(1.16)
CEO Age	-0.211***	-0.364***
	(-3.92)	(-3.29)
CEO Compensation	0.097***	0.180***
	(3.87)	(3.47)
CEO Duality	-0.267***	-0.257***
	(-6.23)	(-2.67)
Blackout	-0.031	-0.038
	(-0.75)	(-0.55)
Constant	-0.730*	-1.259
	(-1.69)	(-1.07)
Industry & Year FE	Yes	Yes
Observations	13,248	5,792
Pseudo R2	0.100	0.044

Panel B. Insider trading likelihood

VARIABLES	(1) All Trades	(2) Buys	(3) Sells	(4) All Trades	(5) Buys	(6) Sells
Social Media Account	0.090	0.209**	-0.022			
	(1.58)	(2.39)	(-0.33)			
Social Media Active				0.199**	0.272**	0.074
				(2.53)	(2.29)	(0.83)
Size	-0.143***	-0.230***	-0.061*	-0.174***	-0.270***	-0.081**
	(-5.01)	(-5.02)	(-1.92)	(-4.77)	(-4.53)	(-1.98)
R&D	2.734***	-0.617	2.905***	2.688**	-3.466*	3.490**
	(2.90)	(-0.46)	(2.81)	(2.03)	(-1.68)	(2.46)
Book/Market	-0.352**	1.867***	-1.283***	-0.297	2.020***	-1.426***
	(-2.36)	(8.84)	(-6.96)	(-1.59)	(7.72)	(-6.17)
ROA	1.105***	-2.110***	2.862***	1.099**	-1.220**	2.145***
	(3.08)	(-4.69)	(6.13)	(2.36)	(-2.02)	(3.66)
Analysts	0.615***	0.241***	0.623***	0.554***	0.267**	0.562***
	(11.76)	(2.93)	(10.42)	(7.60)	(2.36)	(6.76)
Female CEO	-0.084	-0.273	-0.009	0.036	-0.138	0.088
	(-0.58)	(-1.10)	(-0.05)	(0.21)	(-0.51)	(0.44)
CEO Age	-0.264***	0.161	-0.371***	-0.231**	0.063	-0.273**
	(-3.24)	(1.24)	(-4.32)	(-2.14)	(0.43)	(-2.38)
CEO Compensation	0.126***	-0.085	0.184***	0.120**	-0.049	0.160***
	(3.34)	(-1.38)	(4.61)	(2.42)	(-0.70)	(3.05)
CEO Duality	0.060	-0.168*	0.121*	0.071	-0.226*	0.156
	(0.89)	(-1.65)	(1.64)	(0.81)	(-1.69)	(1.63)
Blackout	0.210***	0.690***	-0.092	0.255***	0.646***	-0.056
	(3.54)	(7.70)	(-1.45)	(3.25)	(5.50)	(-0.65)
Constant	0.001	-2.696***	-0.386	-1.108***	-3.603***	-1.207
	(0.00)	(-3.01)	(-0.59)	(-3.24)	(-3.18)	(-1.48)
Industry & Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	7,621	7,617	7,621	4,219	4,213	4,210
R-squared	0.091	0.114	0.141	0.091	0.133	0.135

Panel C. Insider trading volume

VARIABLES	(1) All Trades	(2) Buys	(3) Sells	(4) All Trades	(5) Buys	(6) Sells
Social Media Account	0.162	0.195**	-0.061			
	(1.15)	(2.45)	(-0.43)			
Social Media Active				0.271	0.239**	0.030
				(1.45)	(2.17)	(0.16)
Size	-0.221***	-0.183***	-0.062	-0.279***	-0.212***	-0.091
	(-3.36)	(-4.25)	(-0.98)	(-3.64)	(-4.27)	(-1.25)
R&D	6.256***	0.581	5.536**	5.694*	-1.137	6.656**
	(2.66)	(0.49)	(2.27)	(1.72)	(-0.88)	(1.97)
Book/Market	-1.285***	1.844***	-2.994***	-1.126***	2.050***	-3.109***
	(-3.70)	(8.20)	(-8.76)	(-2.71)	(7.72)	(-7.79)
ROA	2.652***	-2.729***	5.529***	2.321**	-1.623**	4.104***
	(3.22)	(-4.60)	(7.21)	(2.25)	(-2.26)	(4.40)
Analysts	1.417***	0.214***	1.235***	1.152***	0.215**	0.956***
	(14.30)	(3.31)	(12.76)	(8.69)	(2.41)	(7.93)
Female CEO	-0.278	-0.279	-0.061	0.098	-0.141	0.194
	(-0.80)	(-1.60)	(-0.17)	(0.23)	(-0.66)	(0.43)
CEO Age	-0.595***	0.199	-0.792***	-0.509**	0.022	-0.532**
	(-3.10)	(1.51)	(-4.60)	(-2.20)	(0.17)	(-2.57)
CEO Compensation	0.298***	-0.100	0.403***	0.291***	-0.031	0.330***
	(3.32)	(-1.64)	(4.95)	(2.71)	(-0.52)	(3.43)
CEO Duality	0.404**	-0.107	0.482***	0.467**	-0.131	0.565***
	(2.38)	(-1.20)	(2.87)	(2.21)	(-1.13)	(2.76)
Blackout	0.341**	0.618***	-0.298**	0.455**	0.623***	-0.207
	(2.35)	(7.23)	(-2.10)	(2.42)	(5.43)	(-1.15)
Constant	3.794***	1.351*	2.475***	2.373**	1.499*	0.915
	(4.64)	(1.71)	(3.61)	(2.33)	(1.87)	(1.10)
Industry & Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	7,621	7,621	7,621	4,220	4,220	4,220
R-squared	0.137	0.084	0.182	0.125	0.097	0.164

Panel D. Insider trading profitability

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Character-Based Abnormal Return				Three-Factor Buy-and-Hold Abnormal Return			
VARIABLES	3 Mo	6 Mo	3 Mo	6 Mo	3 Mo	6 Mo	3 Mo	6 Mo
Social Media Account	0.010	0.004			0.038***	0.101***		
	(0.60)	(0.23)			(2.66)	(3.98)		
Social Media Active			0.067***	0.124***			0.085***	0.175***
			(3.27)	(4.22)			(3.83)	(4.49)
Size	0.007	0.022***	0.002	0.032**	0.006	0.037***	0.012	0.051***
	(1.21)	(2.78)	(0.28)	(2.02)	(1.07)	(3.54)	(1.31)	(2.82)
R&D	-0.019	-0.094**	0.049	-0.091	-0.012	-0.164***	-0.007	-0.232**
	(-0.53)	(-2.16)	(0.97)	(-1.15)	(-0.36)	(-2.91)	(-0.12)	(-2.42)
Book/Market	0.310*	0.438*	0.943	0.071	0.360*	0.563*	0.275	-0.667
	(1.94)	(1.92)	(1.56)	(0.10)	(1.95)	(1.84)	(0.44)	(-0.80)
ROA	0.035	-0.121	-0.062	-0.040	-0.092	-0.337***	-0.044	0.018
	(0.60)	(-1.61)	(-0.54)	(-0.26)	(-1.34)	(-2.76)	(-0.26)	(0.07)
Analysts	-0.050***	-0.112***	-0.060***	-0.153***	-0.019*	-0.112***	-0.029*	-0.136***
	(-4.58)	(-6.41)	(-4.14)	(-5.95)	(-1.77)	(-5.74)	(-1.74)	(-4.27)
Female CEO	0.060	0.090*	0.149**	0.198**	0.012	0.025	0.133	0.222
	(1.55)	(1.93)	(2.09)	(2.55)	(0.24)	(0.32)	(1.37)	(1.59)
CEO Age	0.035	0.008	0.022	0.026	0.031**	-0.009	0.071***	0.033
	(1.57)	(0.41)	(0.72)	(0.58)	(2.48)	(-0.51)	(4.29)	(1.39)
CEO Compensation	-0.010	0.004	-0.003	-0.004	-0.013**	0.003	-0.025***	-0.009
	(-0.95)	(0.45)	(-0.20)	(-0.20)	(-2.29)	(0.37)	(-3.78)	(-0.97)
CEO Duality	0.007	0.053***	-0.001	0.048	0.002	0.045*	0.019	0.109***
	(0.39)	(3.16)	(-0.05)	(1.60)	(0.18)	(1.94)	(0.84)	(2.80)
Blackout	-0.009	-0.050***	-0.017	-0.087***	-0.016	-0.057**	-0.014	-0.065*
	(-0.59)	(-2.93)	(-0.86)	(-2.78)	(-1.26)	(-2.47)	(-0.69)	(-1.74)
Constant	0.013	0.071	-0.066	0.028	0.030	0.023	-0.010	0.091
	(0.24)	(1.01)	(-0.75)	(0.22)	(0.49)	(0.20)	(-0.09)	(0.47)
Industry & Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,565	1,564	710	709	1,972	1,972	960	960
R-squared	0.069	0.160	0.194	0.277	0.061	0.111	0.116	0.200

Table 10. Difference-in-difference tests

This table reports Difference-in-Difference results for insider trading incidence and intensity in Panel A, and insider trading profitability in Panel B. Variable definitions are provided in Appendix A. The sample period is 2013-2020. Industry and year fixed effects are included in all regressions. Standard errors are clustered at the firm level. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

Panel A. Difference-in-difference: insider trading likelihood and volume

	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	Trade	Buy	Sell	Log(Vol)	Log(BuyVol)	Log(SellVol)
Social Media Account	0.017	0.019	0.007	0.197	0.073	0.137
	(0.18)	(0.14)	(0.06)	(0.84)	(0.58)	(0.57)
Social Media Account X After	0.065	0.210**	-0.049	0.077	0.166**	-0.115
	(1.06)	(2.29)	(-0.71)	(0.52)	(1.99)	(-0.78)
Size	-0.138***	-0.223***	-0.063**	-0.195***	-0.195***	-0.021
	(-5.82)	(-5.77)	(-2.36)	(-3.60)	(-6.20)	(-0.39)
R&D	1.866**	-0.597	2.001**	6.167***	-0.113	6.183***
	(2.23)	(-0.45)	(2.19)	(3.05)	(-0.10)	(2.93)
Book/Market	-0.353***	2.001***	-1.426***	-1.328***	2.018***	-3.214***
	(-2.69)	(11.10)	(-9.11)	(-4.40)	(10.29)	(-11.27)
ROA	0.881***	-1.799***	2.333***	1.976***	-2.362***	4.454***
	(3.08)	(-4.79)	(6.60)	(3.07)	(-4.96)	(7.48)
Analysts	0.600***	0.225***	0.625***	1.364***	0.199***	1.198***
	(14.14)	(3.25)	(12.90)	(17.49)	(3.75)	(15.62)
Female CEO	0.014	-0.113	0.097	-0.020	-0.176	0.142
	(0.11)	(-0.54)	(0.67)	(-0.06)	(-1.18)	(0.45)
CEO Age	-0.219***	0.211**	-0.384***	-0.585***	0.210*	-0.794***
	(-3.36)	(2.14)	(-5.57)	(-4.03)	(1.91)	(-6.29)
CEO Compensation	0.101***	-0.096**	0.177***	0.268***	-0.094*	0.365***
	(3.33)	(-2.08)	(5.58)	(3.95)	(-1.89)	(6.13)
CEO Duality	0.115**	-0.175*	0.192***	0.483***	-0.110	0.575***
	(2.02)	(-1.96)	(3.05)	(3.42)	(-1.46)	(4.08)
Blackout	0.246***	0.700***	-0.048	0.440***	0.647***	-0.216*
	(5.17)	(9.54)	(-0.93)	(3.74)	(9.41)	(-1.86)
Constant	1.006**	-2.705***	0.794	7.682***	0.446	7.222***
	(2.16)	(-2.62)	(0.76)	(5.30)	(0.30)	(2.87)
Industry & Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	13,234	13,211	13,234	13,248	13,248	13,248
R-squared	0.092	0.123	0.141	0.136	0.094	0.180

Panel B. Difference-in-difference: insider trading profitability

	(1)	(2)	(3)	(4)
	Character-Based Abnormal Return		Three-Factor Buy-and-Hold Abnormal Return	
VARIABLES	3 Mo	6 Mo	3 Mo	6 Mo
Social Media Account	0.018	0.086***	-0.023**	-0.016
	(1.59)	(3.98)	(-2.36)	(-1.03)
Social Media Account X After	0.048**	0.100***	0.028*	0.048**
	(2.54)	(2.79)	(1.82)	(2.06)
Size	-0.002	-0.003	-0.012***	-0.024***
	(-0.62)	(-0.66)	(-5.16)	(-7.18)
R&D	0.086*	0.137	0.017	-0.019
	(1.88)	(1.52)	(0.43)	(-0.35)
Book/Market	0.013	0.050**	-0.024**	-0.035**
	(0.99)	(2.02)	(-2.24)	(-2.17)
ROA	0.113***	0.226***	0.225***	0.396***
	(5.62)	(5.52)	(14.17)	(16.97)
Analysts	0.011**	0.011	-0.029***	-0.049***
	(2.54)	(1.23)	(-7.31)	(-8.29)
Female CEO	-0.002	-0.040	0.063**	0.073**
	(-0.07)	(-0.65)	(2.33)	(2.17)
CEO Age	0.029***	0.020	0.004	-0.019
	(3.35)	(1.55)	(0.30)	(-1.15)
CEO Compensation	-0.013***	-0.007	-0.000	0.014*
	(-3.05)	(-1.14)	(-0.07)	(1.77)
CEO Duality	-0.001	0.013	0.019**	0.042***
	(-0.16)	(0.85)	(2.46)	(3.68)
Blackout	-0.004	-0.016	-0.014**	-0.046***
	(-0.64)	(-1.34)	(-2.39)	(-5.31)
Constant	0.021	-0.008	0.053	0.132***
	(0.39)	(-0.15)	(0.94)	(3.30)
Industry & Year FE	Yes	Yes	Yes	Yes
Observations	15,142	14,939	11,509	11,469
R-squared	0.032	0.046	0.102	0.168

Appendix A. Variable definitions

Variable Name	Definition	Notes
Social Media Account	Dummy variable equal to 1 if a CEO has a LinkedIn or Twitter account in a given year, 0 otherwise.	Full sample (2013–2020)
Social Media Active	Dummy variable equal to 1 if a CEO posted or commented on LinkedIn in a given year, 0 otherwise.	Only available for 2018–2020
Size	Natural logarithm of total assets (in millions of US$).	From Compustat
Book/Market	Book-to-market ratio: book value of equity divided by market value of equity.	From Compustat
R&D	R&D expenses divided by total assets.	Missing values set to 0 if R&D not reported
ROA	Return on assets: net income divided by total assets.	In percentage terms
Analysts	Natural logarithm of the number of analysts following the firm plus one.	From I/B/E/S
Female CEO	Dummy variable equal to 1 if CEO is female, 0 otherwise.	From Execucomp
CEO Age	Natural logarithm of CEO age in years.	From Execucomp
CEO Compensation	Natural logarithm of total CEO compensation (in thousands of US$).	From Execucomp (TDC1)
CEO Duality	Dummy variable equal to 1 if the CEO also serves as board chair, 0 otherwise.	From Execucomp
Blackout	Dummy variable equal to 1 if ≥75% of insider trades occur in the one-month window post-earnings announcements, 0 otherwise.	Roulstone (2003)
Insider Trading Volume	Total number of shares traded by the CEO in a year (in millions).	From Thomson Reuters Insider Data
Long Holder	Dummy variable equal to 1 if the CEO holds an in-the-money option until the final year of its duration, 0 otherwise.	Malmendier and Tate (2015)
Opportunistic	Dummy variable equal to 1 if the CEO has not traded in the same calendar month over the past three years, 0 otherwise.	Cohen et al. (2012)
Informed Exercises	Ratio of informed option exercises (not linked to vesting, maturity, or ex-dividend dates) to total shares outstanding.	Bradley et al. (2014)
Inside Debt	Sum of pensions and deferred compensation in the CEO's pay package (in millions of US$).	Caliskan and Doukas (2015)

Delta	Sensitivity of CEO compensation to stock price changes.	Caliskan and Doukas (2015)
Vega	Sensitivity of CEO compensation to stock return volatility.	Caliskan and Doukas (2015)
After	Dummy variable equal to 1 if the observation year is after the first year a CEO is identified with a LinkedIn or Twitter account, 0 otherwise.	Used in DiD analysis
Character-based abnormal return	Cumulative stock return minus the cumulative return of the portfolio having the same characteristics (size, market-to-book, and momentum)	Daniel et al. (1997)
Three-factor buy-and-hold abnormal return	Fama-French three factor buy-and-hold abnormal returns	

Appendix B. Social media active vs. social media inactive

This table compares CEOs who have social media accounts but remain inactive ("Social Media Inactive") with those who are active ("Social Media Active") in a given year for insider trading incidence and intensity in Panel A, and insider trading profitability in Panel B. Definitions of other variables are provided in Appendix A. The sample period is 2018-2020. Industry and year fixed effects are included in all regressions. Standard errors are clustered at the firm level. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

Panel A. Insider trading likelihood and volume

	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	Trade	Buy	Sell	Log(Vol)	Log(BuyVol)	Log(SellVol)
Social Media Active	0.164**	0.245**	0.078	0.315*	0.221**	0.162
	(2.16)	(2.23)	(0.91)	(1.76)	(2.12)	(0.93)
Social Media Inactive	0.152	-0.053	0.213*	0.355	-0.034	0.372
	(1.34)	(-0.31)	(1.68)	(1.34)	(-0.22)	(1.45)
Size	-0.164***	-0.226***	-0.076**	-0.249***	-0.195***	-0.042
	(-5.05)	(-4.46)	(-2.04)	(-3.71)	(-4.53)	(-0.63)
R&D	1.503	-2.272	2.861**	5.730**	-0.993	8.827***
	(1.29)	(-1.30)	(2.37)	(2.03)	(-0.82)	(3.23)
Book/Market	-0.359**	1.875***	-1.445***	-1.185***	1.928***	-3.087***
	(-2.13)	(8.38)	(-6.88)	(-3.18)	(8.09)	(-8.91)
ROA	0.813**	-1.431***	1.987***	1.810**	-1.967***	3.853***
	(2.07)	(-2.70)	(3.92)	(2.07)	(-2.97)	(4.87)
Analysts	0.519***	0.213**	0.537***	1.045***	0.176**	0.855***
	(7.89)	(2.16)	(7.47)	(9.12)	(2.14)	(8.66)
Female CEO	0.084	-0.180	0.172	0.249	-0.160	0.373
	(0.52)	(-0.71)	(0.95)	(0.65)	(-0.84)	(0.93)
CEO Age	-0.224***	0.111	-0.331***	-0.550***	0.067	-0.621***
	(-2.69)	(1.04)	(-3.66)	(-3.29)	(0.63)	(-4.30)
CEO Compensation	0.119***	-0.069	0.185***	0.306***	-0.048	0.360***
	(3.10)	(-1.40)	(4.46)	(3.94)	(-1.00)	(5.31)
CEO Duality	0.164**	-0.155	0.236***	0.593***	-0.084	0.622***
	(2.12)	(-1.33)	(2.79)	(3.23)	(-0.80)	(3.56)
Blackout	0.309***	0.656***	0.011	0.569***	0.654***	-0.103
	(4.48)	(6.38)	(0.15)	(3.48)	(6.42)	(-0.66)
Constant	-1.171***	-2.519***	-1.855***	1.971**	1.195*	0.973
	(-3.17)	(-4.56)	(-3.33)	(2.34)	(1.70)	(1.09)
Industry & Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	5,819	5,797	5,819	5,819	5,819	5,819
R-squared	0.095	0.133	0.14	0.136	0.100	0.173

Panel B. Insider buying profitability

	(1)	(2)	(3)	(4)
	Character-Based Abnormal Return		Three-Factor Buy-and-Hold Abnormal Return	
VARIABLES	3 Mo	6 Mo	3 Mo	6 Mo
Social Media Active	0.037*	0.092***	0.062***	0.213***
	(1.88)	(3.16)	(2.91)	(5.20)
Social Media Inactive	-0.028	0.013	-0.082***	-0.086
	(-1.05)	(0.29)	(-2.62)	(-1.59)
Size	-0.008**	-0.028***	-0.001	-0.007
	(-2.51)	(-5.09)	(-0.21)	(-0.90)
R&D	0.207***	0.055	0.156**	0.327**
	(3.36)	(0.65)	(2.22)	(2.27)
Book/Market	-0.041**	-0.081***	-0.034	0.017
	(-2.46)	(-3.13)	(-1.64)	(0.41)
ROA	0.362***	0.590***	0.216***	0.484***
	(14.25)	(15.33)	(6.59)	(6.68)
Analysts	-0.027***	-0.058***	0.018**	-0.001
	(-4.48)	(-6.16)	(2.41)	(-0.04)
Female CEO	0.138**	0.162***	0.157*	0.323**
	(2.25)	(2.58)	(1.93)	(2.48)
CEO Age	0.040*	0.017	0.059***	0.040**
	(1.77)	(0.49)	(5.19)	(2.32)
CEO Compensation	-0.018	-0.005	-0.025***	-0.014
	(-1.64)	(-0.29)	(-4.42)	(-1.60)
CEO Duality	-0.011	0.035	0.012	0.097***
	(-0.77)	(1.58)	(0.77)	(3.16)
Blackout	-0.041***	-0.106***	-0.015	-0.047**
	(-4.14)	(-7.26)	(-1.52)	(-2.32)
Constant	0.242***	0.460***	0.017	-0.051
	(4.76)	(6.94)	(0.51)	(-0.76)
Industry & Year FE	Yes	Yes	Yes	Yes
Observations	5,279	5,277	7,020	6,817
R-squared	0.129	0.212	0.037	0.048

Online Appendix A. Alternative social media measures

In this table, we construct two alternative continuous measures of CEO social media use. First, we define Social Media Count as the number of social media platforms the CEOs use, i.e., 0 if the CEO does not use LinkedIn or Twitter, 1 if the CEO uses only LinkedIn, and 2 if the CEO uses LinkedIn and Twitter. Second, we develop a LinkedIn-specific variable, LinkedIn Activity, coded as 0 if a CEO has no LinkedIn account, 1 if the CEO has an account but no activity in a given year, and 2 if the CEO both maintains an account and exhibits at least one activity within the year. Panels A, B, C report the results using these measures with insider trading likelihood, volumes, and profitability as the dependent variables, respectively. The sample period is 2013-2020. Industry and year fixed effects are included in all regressions. Standard errors are clustered at the firm level. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

Panel A. Insider trading likelihood

	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	Trade	Buy	Sell	Trade	Buy	Sell
Social Media Count	0.040	0.155**	-0.050			
	(0.92)	(2.39)	(-1.01)			
LinkedIn Activity				0.058*	0.125**	-0.013
				(1.67)	(2.40)	(-0.32)
Size	-0.137***	-0.242***	-0.054**	-0.137***	-0.243***	-0.053**
	(-5.86)	(-6.38)	(-2.02)	(-5.85)	(-6.39)	(-2.00)
R&D	2.039**	-0.838	2.249**	2.030**	-0.796	2.214**
	(2.50)	(-0.66)	(2.54)	(2.50)	(-0.62)	(2.50)
Book/Market	-0.343***	1.890***	-1.294***	-0.342***	1.887***	-1.289***
	(-2.69)	(10.69)	(-8.27)	(-2.67)	(10.67)	(-8.25)
ROA	0.889***	-1.876***	2.378***	0.898***	-1.874***	2.388***
	(3.12)	(-5.15)	(6.69)	(3.16)	(-5.15)	(6.71)
Analysts	0.587***	0.212***	0.615***	0.587***	0.213***	0.613***
	(13.88)	(3.10)	(12.68)	(13.88)	(3.12)	(12.65)
Female CEO	-0.005	-0.147	0.069	-0.007	-0.145	0.065
	(-0.04)	(-0.69)	(0.46)	(-0.06)	(-0.68)	(0.44)
CEO Age	-0.236***	0.210**	-0.393***	-0.234***	0.209**	-0.390***
	(-3.62)	(2.10)	(-5.77)	(-3.59)	(2.10)	(-5.73)
CEO Compensation	0.109***	-0.095**	0.181***	0.108***	-0.095**	0.180***
	(3.60)	(-2.02)	(5.77)	(3.57)	(-2.02)	(5.72)
CEO Duality	0.098*	-0.199**	0.185***	0.099*	-0.198**	0.187***
	(1.71)	(-2.25)	(2.95)	(1.75)	(-2.23)	(2.98)
Blackout	0.241***	0.689***	-0.052	0.241***	0.688***	-0.052
	(5.03)	(9.44)	(-1.02)	(5.04)	(9.42)	(-1.00)
Constant	0.246	-2.818***	0.051	0.232	-2.789***	0.023
	(0.49)	(-3.20)	(0.07)	(0.47)	(-3.08)	(0.03)
Industry & Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	13,208	13,192	13,208	13,208	13,192	13,208
Pseudo R-squared	0.087	0.112	0.134	0.097	0.136	0.139

Panel B. Alternative social media measures and insider trading volumes

VARIABLES	(1) Log(Vol)	(2) Log(BuyVol)	(3) Log(SellVol)	(4) Log(Vol)	(5) Log(BuyVol)	(6) Log(SellVol)
Social Media Count	0.096	0.151**	-0.078			
	(0.89)	(2.53)	(-0.71)			
LinkedIn Activity				0.118	0.111**	-0.006
				(1.34)	(2.14)	(-0.06)
Size	-0.199***	-0.214***	-0.006	-0.253***	-0.222***	-0.045
	(-3.76)	(-6.81)	(-0.12)	(-3.72)	(-5.26)	(-0.68)
R&D	6.819***	-0.194	6.874***	7.191***	-1.841	8.852***
	(3.46)	(-0.18)	(3.36)	(2.63)	(-1.56)	(3.23)
Book/Market	-1.323***	1.861***	-3.051***	-1.190***	1.952***	-3.087***
	(-4.47)	(9.70)	(-10.66)	(-3.21)	(8.20)	(-8.88)
ROA	2.049***	-2.479***	4.618***	1.738**	-2.005***	3.810***
	(3.17)	(-5.22)	(7.70)	(2.00)	(-3.10)	(4.81)
Analysts	1.347***	0.188***	1.194***	1.046***	0.208**	0.862***
	(17.00)	(3.57)	(15.30)	(9.35)	(2.54)	(8.71)
Female CEO	-0.048	-0.182	0.114	0.260	-0.159	0.369
	(-0.15)	(-1.25)	(0.35)	(0.67)	(-0.85)	(0.91)
CEO Age	-0.642***	0.194*	-0.836***	-0.571***	0.064	-0.627***
	(-4.45)	(1.78)	(-6.69)	(-3.42)	(0.58)	(-4.35)
CEO Compensation	0.296***	-0.087*	0.386***	0.313***	-0.048	0.364***
	(4.39)	(-1.74)	(6.54)	(4.04)	(-0.97)	(5.36)
CEO Duality	0.450***	-0.132*	0.564***	0.541***	-0.094	0.624***
	(3.18)	(-1.74)	(4.00)	(2.97)	(-0.91)	(3.56)
Blackout	0.427***	0.645***	-0.229*	0.581***	0.657***	-0.107
	(3.59)	(9.33)	(-1.95)	(3.55)	(6.48)	(-0.69)
Constant	6.041***	0.291	5.742***	2.827***	-0.515	3.296**
	(4.39)	(0.36)	(3.28)	(3.12)	(-0.54)	(1.97)
Industry & Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	13,208	13,208	13,208	5,803	5,803	5,803
R-squared	0.129	0.085	0.173	0.137	0.103	0.172

Panel C. Insider buying profitability

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Character-Based Abnormal Return				Three-Factor Buy-and-Hold Abnormal Return			
VARIABLES	3 Mo	6 Mo	3 Mo	6 Mo	3 Mo	6 Mo	3 Mo	6 Mo
Social Media Count	-0.010	0.018*			0.035***	0.132***		
	(-1.40)	(1.73)			(4.20)	(7.85)		
LinkedIn Activity			0.016*	0.028**			0.040***	0.116***
			(1.73)	(1.99)			(3.87)	(5.98)
Size	-0.010***	-0.024***	-0.007**	-0.030***	-0.001	-0.001	-0.001	-0.006
	(-5.23)	(-8.06)	(-2.20)	(-5.37)	(-0.24)	(-0.15)	(-0.33)	(-0.79)
R&D	-0.025**	-0.032**	-0.040**	-0.102***	0.015	0.061**	-0.039*	0.011
	(-2.40)	(-2.04)	(-2.38)	(-3.97)	(1.18)	(2.54)	(-1.91)	(0.27)
Book/Market	0.025	-0.009	0.211***	0.215**	0.084*	0.133	0.225***	0.567***
	(0.65)	(-0.17)	(3.43)	(2.48)	(1.85)	(1.49)	(3.20)	(3.91)
ROA	0.229***	0.397***	0.365***	0.563***	0.113***	0.220***	0.208***	0.460***
	(14.45)	(17.06)	(14.34)	(14.41)	(5.66)	(5.42)	(6.36)	(6.44)
Analysts	-0.032***	-0.055***	-0.028***	-0.045***	0.010**	0.006	0.020***	0.010
	(-8.97)	(-10.12)	(-4.75)	(-4.66)	(2.39)	(0.73)	(2.83)	(0.70)
Female CEO	0.045**	0.055**	0.133**	0.144**	0.000	0.014	0.150*	0.279**
	(1.97)	(2.02)	(2.18)	(2.35)	(0.01)	(0.27)	(1.88)	(2.15)
CEO Age	0.006	-0.017	0.049**	0.047	0.033***	0.028**	0.055***	0.026
	(0.51)	(-1.05)	(2.03)	(1.29)	(3.78)	(2.12)	(4.80)	(1.60)
CEO Compensation	-0.001	0.014*	-0.022*	-0.016	-0.015***	-0.012*	-0.025***	-0.010
	(-0.19)	(1.83)	(-1.91)	(-0.93)	(-3.43)	(-1.72)	(-4.53)	(-1.23)
CEO Duality	0.017**	0.034***	-0.013	0.019	-0.004	0.012	0.006	0.086***
	(2.34)	(3.13)	(-0.96)	(0.87)	(-0.49)	(0.77)	(0.41)	(2.89)
Blackout	-0.013**	-0.043***	-0.044***	-0.129***	-0.004	-0.017	-0.023**	-0.066***
	(-2.39)	(-5.15)	(-4.34)	(-8.76)	(-0.63)	(-1.45)	(-2.28)	(-3.27)
Constant	0.033	0.090**	0.116**	0.450***	-0.151***	-0.163***	0.193**	0.213
	(1.37)	(2.44)	(2.41)	(5.59)	(-3.98)	(-2.72)	(2.54)	(1.30)
Industry & Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	11,509	11,469	5,279	5,277	15,142	14,939	7,020	6,817
R-squared	0.094	0.164	0.133	0.213	0.022	0.030	0.031	0.045

Online Appendix B. Excluding IT and Tesla

This table repeats tests in Tables 4-6 excluding all CEOs of IT firms (SIC 2-digit codes 73) and Tesla from our analysis. Variable definitions are provided in Appendix A. The sample period is 2013-2020, but Social Media Active is manually collected over a shorter period of 2018-2020. Industry and year fixed effects are included in all regressions. Standard errors are clustered at the firm level. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

Panel A. Insider trading likelihood

	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	Trade	Buy	Sell	Trade	Buy	Sell
Social Media Account	0.057	0.199**	-0.059			
	(1.02)	(2.34)	(-0.94)			
Social Media Active				0.176**	0.252**	0.034
				(2.31)	(2.27)	(0.39)
Size	-0.138***	-0.248***	-0.049*	-0.167***	-0.257***	-0.070*
	(-5.54)	(-6.31)	(-1.73)	(-4.97)	(-5.02)	(-1.80)
R&D	2.151**	0.073	2.049**	2.771**	-2.902	3.566**
	(2.36)	(0.05)	(2.00)	(2.07)	(-1.55)	(2.50)
Book/Market	-0.285**	1.958***	-1.302***	-0.225	1.971***	-1.414***
	(-2.14)	(10.69)	(-7.95)	(-1.29)	(8.52)	(-6.40)
ROA	1.006***	-1.414***	2.221***	1.066**	-0.884	1.921***
	(3.27)	(-3.62)	(5.84)	(2.52)	(-1.64)	(3.52)
Analysts	0.559***	0.211***	0.583***	0.504***	0.255**	0.514***
	(12.58)	(2.97)	(11.45)	(7.41)	(2.50)	(6.82)
Female CEO	-0.065	-0.121	0.003	0.001	-0.255	0.096
	(-0.46)	(-0.54)	(0.02)	(0.01)	(-0.98)	(0.49)
CEO Age	-0.205***	0.200*	-0.357***	-0.176**	0.112	-0.270***
	(-2.80)	(1.88)	(-4.61)	(-2.08)	(1.02)	(-2.70)
CEO Compensation	0.094***	-0.092*	0.164***	0.097**	-0.070	0.157***
	(2.76)	(-1.85)	(4.55)	(2.48)	(-1.37)	(3.42)
CEO Duality	0.125**	-0.157*	0.197***	0.160**	-0.120	0.237***
	(2.10)	(-1.69)	(3.00)	(2.00)	(-1.00)	(2.67)
Blackout	0.264***	0.667***	-0.019	0.345***	0.633***	0.042
	(5.32)	(8.86)	(-0.35)	(4.81)	(6.06)	(0.54)
Constant	0.236	-2.867***	0.091	-1.295***	-3.765***	-1.280
	(0.47)	(-3.13)	(0.12)	(-3.98)	(-3.38)	(-1.62)
Industry & Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	11,989	11,973	11,989	5,270	5,264	5,270
Pseudo R-squared	0.084	0.110	0.128	0.096	0.130	0.131

Panel B. Insider trading volume

VARIABLES	(1) Log(Vol)	(2) Log(BuyVol)	(3) Log(SellVol)	(4) Log(Vol)	(5) Log(BuyVol)	(6) Log(SellVol)
Social Media Account	0.087	0.206**	-0.153			
	(0.65)	(2.55)	(-1.12)			
Social Media Active				0.294	0.269**	0.007
				(1.64)	(2.47)	(0.04)
Size	-0.218***	-0.202***	-0.036	-0.262***	-0.203***	-0.072
	(-3.96)	(-5.67)	(-0.65)	(-3.96)	(-4.59)	(-1.12)
R&D	5.114**	1.473	3.387	8.118**	-0.958	8.658***
	(2.21)	(1.11)	(1.37)	(2.44)	(-0.72)	(2.59)
Book/Market	-1.152***	1.989***	-3.017***	-0.881**	2.072***	-2.918***
	(-3.73)	(10.00)	(-10.11)	(-2.32)	(8.51)	(-8.15)
ROA	2.549***	-1.849***	4.505***	2.483***	-1.229*	3.844***
	(3.63)	(-3.65)	(6.99)	(2.71)	(-1.85)	(4.58)
Analysts	1.272***	0.167***	1.138***	0.984***	0.175**	0.832***
	(15.31)	(3.00)	(13.98)	(8.34)	(2.04)	(8.19)
Female CEO	-0.274	-0.211	-0.077	0.031	-0.179	0.164
	(-0.87)	(-1.33)	(-0.23)	(0.08)	(-0.91)	(0.41)
CEO Age	-0.576***	0.189	-0.762***	-0.467***	0.066	-0.519***
	(-3.74)	(1.63)	(-5.69)	(-2.82)	(0.56)	(-3.54)
CEO Compensation	0.266***	-0.085	0.352***	0.271***	-0.046	0.317***
	(3.70)	(-1.61)	(5.57)	(3.55)	(-0.87)	(4.63)
CEO Duality	0.551***	-0.087	0.623***	0.613***	-0.041	0.646***
	(3.73)	(-1.05)	(4.23)	(3.27)	(-0.37)	(3.58)
Blackout	0.525***	0.630***	-0.115	0.650***	0.651***	-0.036
	(4.27)	(8.84)	(-0.96)	(3.85)	(6.18)	(-0.23)
Constant	4.081***	1.299**	2.848***	1.865**	1.098	0.746
	(6.29)	(2.10)	(4.48)	(2.22)	(1.55)	(1.06)
Industry & Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	12,029	12,029	12,029	5,286	5,286	5,286
R-squared	0.124	0.082	0.164	0.129	0.097	0.157

Panel C. Insider trading profitability

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Character-Based Abnormal Return				Three-Factor Buy-and-Hold Abnormal Return			
VARIABLES	3 Mo	6 Mo	3 Mo	6 Mo	3 Mo	6 Mo	3 Mo	6 Mo
Social Media Account	-0.017	-0.002			0.036***	0.131***		
	(-0.79)	(-0.11)			(3.34)	(6.46)		
Social Media Active			0.038**	0.071**			0.076***	0.237***
			(2.08)	(2.56)			(3.72)	(5.95)
Size	-0.009	-0.018***	-0.001	-0.019***	-0.002	-0.002	-0.001	-0.002
	(-1.52)	(-5.52)	(-0.29)	(-3.13)	(-0.90)	(-0.53)	(-0.33)	(-0.24)
R&D	-0.107**	-0.052***	-0.069***	-0.156***	-0.003	0.011	-0.085***	-0.098**
	(-2.09)	(-3.20)	(-3.77)	(-5.53)	(-0.25)	(0.45)	(-3.87)	(-2.22)
Book/Market	-0.034	0.004	0.175***	0.207**	0.044	0.060	0.140*	0.453***
	(-0.31)	(0.06)	(2.68)	(2.24)	(0.90)	(0.61)	(1.88)	(2.89)
ROA	0.242***	0.365***	0.324***	0.494***	0.093***	0.175***	0.183***	0.397***
	(3.31)	(14.01)	(11.46)	(11.48)	(4.23)	(3.87)	(5.09)	(5.02)
Analysts	-0.044***	-0.064***	-0.037***	-0.072***	0.005	-0.002	0.010	-0.013
	(-3.41)	(-11.19)	(-5.72)	(-7.09)	(1.35)	(-0.29)	(1.44)	(-0.88)
Female CEO	0.020	0.027	0.044	0.064	-0.028	-0.058	0.123	0.151
	(0.64)	(1.09)	(1.11)	(1.33)	(-0.87)	(-1.24)	(1.37)	(1.27)
CEO Age	0.016	-0.004	0.028	0.032	0.031***	0.026*	0.046***	0.005
	(0.69)	(-0.20)	(1.14)	(0.77)	(3.18)	(1.79)	(3.94)	(0.33)
CEO Compensation	-0.006	0.008	-0.015	-0.011	-0.013***	-0.008	-0.021***	0.000
	(-0.52)	(0.79)	(-1.22)	(-0.58)	(-2.63)	(-1.12)	(-3.61)	(0.03)
CEO Duality	0.007	0.035***	-0.004	0.036	-0.004	0.011	0.005	0.092***
	(0.37)	(3.10)	(-0.26)	(1.59)	(-0.49)	(0.71)	(0.34)	(2.97)
Blackout	-0.012	-0.033***	-0.042***	-0.107***	-0.005	-0.016	-0.028***	-0.064***
	(-0.87)	(-3.71)	(-3.90)	(-6.85)	(-0.82)	(-1.32)	(-2.66)	(-3.04)
Constant	0.088	0.072*	0.107**	0.457***	-0.131***	-0.120**	0.244***	0.323**
	(1.59)	(1.90)	(2.21)	(5.54)	(-3.39)	(-1.98)	(3.19)	(1.97)
Industry & Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	10,315	10,295	4,556	4,622	13,783	13,629	6,257	6,103
R-squared	0.079	0.148	0.121	0.194	0.022	0.028	0.036	0.048