Off-the-job Managerial Indiscretion and Insider Trading

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Abstract

We study whether and how personal off-the-job managerial indiscretions impact corporate insiders' trading behavior. We find that executives accused of personal indiscretions earn significantly higher abnormal returns from their insider purchases and sales in a 15-day window around each trade. The results are robust to matched sample analyses. Further, insiders' historical trading pattern or corporate culture has less explanatory power than personal attributes. We also document that exposure of these indiscretions to the public provides a disciplinary effect, as insider trading profits significantly drop following the announcement of an indiscretion, despite this drop being temporary. Corporate governance mechanisms, such as blackout policies, significantly reduce abnormal returns earned by indiscretion executives.

Key words: Managerial indiscretion, Insider trading, Corporate Governance
JEL   classification: G14,   G34,   K42

1. Introduction

The past three decades have witnessed a substantial increase in illegal insider trading activity, which has prompted sweeping regulatory changes to restrict insider trading (Bushman, Piotroski, and Smith, 2005). In general, insider trading is regulated by legislations, industry codes of conduct, company policies, and potential legal and reputational cost of investigation and conviction. Despite the significant public interest in the detection and restraint of illegal insider trading, a good understanding of what determines insiders' trading decisions is necessary to deter corporate insiders from abusing their information advantage and better protect uninformed outside investors.

Existing studies focus predominantly on firm-level characteristics that contribute to insiders' trading patterns. For example, it is widely accepted that firm size and book-to-market ratio (e.g., Seyhun, 1986; Rozeff and Zaman, 1998; Lakonishok and Lee, 2001; Jenter, 2005), analyst coverage (Frankel and Li, 2004), ownership structure (Fidrmuc et al., 2006), anti-takeover provisions (Ravina and Sapienza, 2010), the quality of internal control (Skaife et al., 2013), concentrated sales relationships (Alldredge and Cicero, 2015), advertising expenditures (Joseph and Wintoki, 2013), and corporate culture (Gao et al., 2014; Liu, 2016; Bereskin et al., 2020) are key determinants to insider profitability. However, little attention has been devoted to the role of insiders' personal attributes, namely skills, personality, and perhaps more crucial, their integrity, such as ethical attitudes and beliefs toward what might be deemed unacceptable or unethical.

One potential reason is that much of the previous insider trading research treats insiders as homogenous in their personal attributes. This likely due to the measuring and detecting lapses in integrity specific to the insider and separate from the firm. One stream of research uses

corporate misconduct as a proxy for low personal integrity. The main hypothesis is that executives who misbehave in their professional lives have relatively low moral standards and are more prone to engage in illegal insider trading. For example, Beneish and Vargus (2002) argue that market participants and researchers can use managers' insider trading behavior ex ante to assess the likelihood of earnings management. Summers and Sweeney (1998) also find that insiders in companies with fraudulent financial statements reduce their net position in the company's stock though a high level of insider sales. In a more general perspective, Liu (2016) states that firms with a culture of high corruption are more likely to engage in a stream of corporate misconduct, including earnings management, accounting fraud, option backdating, and opportunistic insider trading.

However, when analyzing insider trading activity, one potential drawback of examining corporate misconduct is that the impact of personal integrity is intertwined with the impact of the resulting corporate actions. For example, the propensity of whether low integrity executives are more likely to trade based on inside information is uncertain since the identification in conditional on corporate misconduct, thus making it difficult to isolate the effect of personal integrity on insider trading.

In contrast to using corporate event, we identify low integrity executives as those accused of off-the-job personal indiscretions including allegations of dishonesty, substance abuse, or violence. Motivated by the criminology literature, we interpret that executives' personal questionable behaviors represent disregard for law and order and a lack of self-control. These personal indiscretions are distinct from corporate operations and provide a cleaner method to analyze whether indiscretion executives are more inclined to trade based on inside information.

We raise several important research questions in regard to the importance of executives' personal integrity and how to link managers' off-the-job behavior to their insider trading decisions. First, are executives displaying questionable ethical behavior in their personal life more likely to engage in insider trading? Second, does corporate culture determine indiscretion insiders' insider trading decision and profits? Previous studies demonstrate that firms with high corruption culture (even the social norms in cities where the firms are located), which tend to be more tolerant toward corrupt behavior, are more likely to engage in corporate misconduct (Hutton, Jiang, and Kumar, 2015; Liu, 2016; Parsons, Sulaeman, and Titman, 2018; Pacelli, 2019). Third, is there a disciplinary effect from the announcement of the indiscretion event that impacts an insider's propensity to earn future profits from their transactions? Specifically, will managers change their insider trading behavior after their personal stories are made public? Studies show that corporate fraud often exhibits a persistent trend. For instance, Ferris, Hanousek, and Tresl (2021) suggest that corporate corruption persists because it provides financial benefits to firms. Fourth, are these executives deterred by efficient corporate governance mechanisms, such as blackout policies?

To answer these questions, we use the hand-collected sample of alleged offenses in executives' personal environment presented in Cline, Walkling, and Yore (2018). We document that the profitability of insider purchases made by indiscretion executives is significantly higher than that of non-indiscretion insiders. Specifically, in a 15-day window around each trade, indiscretion insiders on average earn 1.2 percentage points higher cumulative abnormal return (CAR) than non-indiscretion insiders. This result is robust to the controlling of firm- and individual-specific characteristics relevant to insider trading profits. We also applied the size-

industry matching and propensity score matching methods as robustness tests, and the results are qualitatively unchanged.

Next, we document that with regard to insider trading, personal characteristics are more salient in predicting insider profitability than corporate culture. If the "corrupt culture" hypothesis[1] is correct, misbehaved executives should earn higher abnormal returns from insider trading in "indiscretion firms", meaning the firms they were affiliated with when indiscretions happened. However, our results are contrary to the "corrupt culture" hypothesis, indicating that the abnormal profits earned by indiscretion insiders is more directly related to their personal attributes than corporate culture.

We also consider whether insiders' historical trading pattern, namely whether they are opportunistic or routine traders, explains the abnormal profits. We follow the approach discussed in Cohen, Malloy, and Pomorski (2012) and introduce an interaction term between indiscretion trades and routine trades. Cohen, Malloy, and Pomorski (2012) argue that opportunistic insiders, as opposed to routine insiders, are more likely to exploit their information advantage and hence earn higher profits. However, our results reveal that the interaction is not significant, while indiscretion indicator remains highly significant. This suggests that executives' personal attributes matter more than their trading habit in determining their insider trading profits.

We also examine whether indiscretion executives change their insider trading behavior as a result of their indiscretion being made public. After comparing the profitability of indiscretion insiders' trades before and after the announcement, we find that the abnormal returns earned by indiscretion insiders significantly dropped after the announcement. Compared to the pre-announcement period, indiscretion insider's 15-day CARs decrease by around 6 percentage

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[1] "Corrupt culture" hypothesis states that insider trading is more likely to happen in firms with a corrupt culture. In other words, executives in firms with a corrupt culture should earn higher abnormal returns form their inside transactions.

points. This result indicates that indiscretion insiders' abnormal insider trading profits decline due to the deterrent or disciplinary effect from the market. Unfortunately, the disciplinary effect is only temporary, as these indiscretion insiders' abnormal profits from purchases dropped in the first six months after the announcement but showed significant increase immediately after one year.

Finally, with respect to the effectiveness of corporate governance mechanisms, we focus on corporate blackout policies since they are directly targeted at insider trading. Following Roulstone (2003), we estimate firm-imposed blackout restrictions and find that well-designed corporate governance mechanisms, such as blackout policies, effectively restrain executives and discourage insider trading. Our result supports the argument that policies implemented by firms are more effective than formal rules made by the government.

Our work contributes to the insider trading literature by analyzing the relation between personal integrity and insider trading. One difficulty in both theory and practice is how to detect insider trading. Our work shows that if indiscretions provide a window of insight into the integrity of an insider and their propensity to trade of private information, insiders have a credible signal. Besides, most studies focus on corporate characteristics (e.g., Lakonishok and Lee, 2001; Skaife et al., 2013; Liu, 2016), only a few exceptions examine personal attributes. For instance, Kallunki et al. (2016) show that insiders who have shown noncompliance with the tax law are more prone to exploit private information through their trades. Our work contributes to their work by looking at a more generalized set of low integrity actions. Instead of focusing on tax noncompliance behavior specifically, we show that executives who show a lack of respect for rules and regulations in their personal life are more likely to engage in insider trading. Hillier et al. (2015) document that personal attributes explain up to a third of the variability in insider

trading performance. Although the use of insider fixed effects in their study is insightful, what constitutes the insider fixed effects that explain the variation in insider trading behavior is still unknown. Our study sheds some light on this topic by highlighting the importance of off-the-job managerial indiscretions.

Perhaps the closest study to ours is Davidson, Dey, and Smith (2020), which examine the relation between executives' legal records and insider trading. However, our study differs from theirs in several important aspects. First, we do not focus solely on recordholders; namely those who have already been convicted. Instead, we argue that lower cost, non-illegal but unethical behaviors may better reveal the integrity of a person, thereby having higher explanatory power to evaluate their insider trading decision. Second, the major focus of this paper is on analyzing how personal characteristics determine insider trading decision, while their study aims at answering whether the effectiveness of corporate governance mechanisms varies across executives based on personal characteristics within the same firm. Lastly, our research examines the announcement effect of indiscretion events, pointing out the importance of corporate transparency and the disciplinary effect of the market.

This study also adds to the corporate culture and corporate misconduct literature. As suggested by Liu (2016), corporate culture, especially corrupt corporate culture, is directly related to corporate misconduct, including earnings management, accounting fraud, option backdating, and opportunistic insider trading. Similarly, Bereskin, Campbell, and Kedia (2014) find that philanthropic corporate are negatively associated with corporate misconduct. Our research provides a different angle, indicating that the insider trading decision is determined largely by insiders' personal integrity rather than corporate culture.

Finally, our work contributes to the corporate governance literature. In contrast to Davidson, Dey, and Smith (2020), which posit that the effectiveness of corporate governance mechanisms varies across executives based on personal characteristics, our results are consistent with the mainstream view which argues that there is litter variation of the function of corporate governance systems within the same firm, although it does vary across firms based on firm characteristics (Yermack, 1996; Anderson et al., 2000; Dai et al., 2016).

2. Literature review

2.1 Insider trading literature

The debate over whether insider trading is beneficial has attracted a lot of research attention over the past few decades. The arguments for insider trading land on the increase in price accuracy, market liquidity, and efficiency in compensating managers (e.g., Manne, 1966a, 1966b, 1969; Finnerty, 1976; Meulbroek, 1992; Carlton and Fischel, 1983; Noe, 1997). On the other hand, the arguments against insider trading focus on its adverse impact on market liquidity, information distribution, managerial incentive, and property rights (Bhattacharya and Daouk, 2002; Kraakman, 1991; Easterbrook, 1981; Gilson and Kraakman, 1984; Brudney, 1979; Levmore, 1982; Dooley, 1995; Beny, 2007).

Despite the ongoing debate on the benefits or harms that insider trading brings to the financial market, restrictions on insider trading have been tightened. In practice, the decision to trade based on inside information is typically weighed based on state regulatory legislations against insider trading (Bhattacharya and Daouk, 2002; Beny, 2007), corporate policies (Bettis et al., 2000; Cziraki et al., 2014; Dai et al., 2016), and the potential legal and reputational costs (Alexander, 1999; Bainbridge, 1986; McGee, 2008). Although understanding the detection and monitoring of insider trading gives firms ex post tools to tackle the violation of corporate policy,

studying what drives insiders to exploit their information advantage can help companies identify potential rule breakers ex ante.

A great deal of research is devoted to examining the determinants of insiders' trading behavior at the firm level. Lakonishok and Lee (2001) show that the usefulness of insider trading activity depends on company size. In general, insider trading activities in smaller firms are better prediction of future stock price movements than those in larger firms. Rozeff and Zaman (1998) document that the proportion of buy transactions in insider trades is positively related to book-to-market ratio. Aboody and Kasznik (2000), Cheng and Lo (2006), and Rogers and Stocken (2005) focus on information disclosure and find evidence for managers' incentives to release bad news opportunistically so they can take advantage of lower stock prices before insider trading. Other firm-specific factors include managers' earnings forecast (Kraft, Lee, and Lopatta, 2014), quality of earnings (Beneish and Vargus, 2005; Aboody, Hughes, and Liu, 2005), ownership structure (Fidrmuc et al., 2006), effectiveness of internal corporate governance (Skaife, Veenman, and Wangerin, 2013; Dai et al., 2016), corporate innovation (Aboody and Lev, 2000; Huddart and Ke, 2007), and corporate culture (Gao et al., 2014; Liu, 2016; Bereskin et al., 2020).

However, insider trading decisions are made by individual executives. Therefore, investigating what individual-specific characters incentivize them to exploit their information advantage can be fruitful. Surprisingly, the empirical evidence on the heterogeneity among individual insiders in their trading behavior is limited. On a broader scale, some prior studies focus on identifying managerial characteristics that are associated with corporate decision-making. For example, Malmendier and Tate (2009) and Kaplan et al. (2012) find that CEO abilities are closely associated with firm performance. Overconfidence and narcissism also received extensive attention (Roll, 1986; Malmendier and Tate, 2005; Cain and McKeon, 2016).

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Specific to insider trading decisions, Terpstra, Rozell, and Robinson (1993) is among the few studies to examine the influence of personality as well as demographic variables on ethical decisions related to insider trading. In a more recent study, Hillier et al. (2015) use insider fixed effects to show that personal attributes impact insiders' trading performance. However, they do not point out specific factors that constitute the insider fixed effects. Apart from demographic factors such as age, gender, social class, religious affiliation, and education, very little is known about how insiders' psychological or ethnical traits that may contribute to their insider trading behavior.

Business ethics research shows that insider trading is unethical (Betz et al., 1989; Moore, 1990). Given that insider trading decisions are made individually, we approach this issue by examining executives' personal lapses in integrity and addressing whether executives who misbehave in their personal life are also more prone to engage in insider trading. Among current studies, Kallunki et al. (2016) and Davidson et al. (2020) both consider insiders' legal records and examine how these legal infractions are related to their insider trading decisions. The former explores whether insiders charged with administrative penalties by the tax authorities due to tax noncompliance are more likely to exploit private information. The latter studies whether the effectiveness of corporate governance varies depending on the characteristics of executives, as proxied by their history of legal infractions.

2.2 Insider trading and corporate governance

Insider trading is restricted through both state-level formal regulations and corporate-level governance mechanisms. The law against insider trading in the U.S. was first developed in 1934 (Section 10(b) of the Securities Act of 1934). Subsequent legislations against insider trading include the Insider Trading and Securities Fraud Enforcement Act (ITSFEA), and the

Stock Enforcement Remedies and Penny Stock Reform Act (SERPSRA). However, the effectiveness of formal law in curbing insider trading has been questioned by research. For instance, Seyhun (1992) developed a broad study over a period extending from 1975 to 1989 measuring the effects of increased enforcement of insider-trading regulation on corporate insiders, and he finds that the profitability of insider-trading activity increased during that period. Similarly, Bettis, Duncan, and Harmon (1998) analyze insider trading activities around major corporate events and find that despite strengthened insider trading regulation, insiders continue to purchase shares before "good news" and sell shares before "bad news", and their trading volume has increased over time. Arshadi and Eyssell (1991) provide a more enlightening study as their analysis investigates the impact of regulatory changes on insider trading activity. Their results suggest that insiders' trading habit persists persist despite increasing legislations and aggressive enforcement by the regulatory authorities.

Compared to government-led insider trading restrictions, insider trading rules and protocols established by each firm are more efficient (Carlton and Fischel, 1982; Maug, 2002; Ravina Sapienza, 2010). The first reason is that well-designed corporate governance systems can better align the interests of shareholders with those of the managers, thus providing an ex-ante limit on managerial incentives and abilities to profit from insider trading. Secondly, unlike the government, firms have strong incentives to adopt well-functioning corporate governance mechanisms to limit informed insider trading, since firms face higher legal risk arising from informed insider transactions conducted by their employees [2]. Moreover, good corporate governance systems can also raise shareholders' awareness of managerial abuse of information advantage, thus incentivizing them to monitor the firm more closely.

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[2] Previous literature shows that poorly-government firms are more likely to be involved in class actions (Helland and Sykuta, 2005) and be targeted by the Securities and Exchange Commission (SEC) (Dechow, Sloan, and Sweeney, 1996; Beasley, 1996).

Empirical evidence also supports this argument. For example, Fidrmuc, Goergen, and Renneboog (2006) introduce the notion of outside blockholder monitoring as the corporate governance mechanism, and their results show that insiders' trades in firms with outside blockholders, who in theory monitor the firm more intensively, experience significantly lower Cumulative Abnormal Returns (CARs). This suggests that monitoring by these blockholders reduces informational asymmetry and ensures that the management focuses on value maximization. Similarly, the empirical findings of Betzer and Theissen (2009) also indicate that major block ownership by a nonfinancial firm reduces abnormal returns both after insider purchases and sales.

Another potential channel through which insider trading can be mitigated is that insiders may substitute private benefits (insider trading profits) with contractual benefits (executive compensation or a higher degree of control over corporate decisions) (Cziraki, Goeij, and Renneboog, 2014). Both Roulstone (2003) and Banerjee and Eckard (2001) find evidence in support of this theory. For instance, Roulstone (2003) shows that executive compensation rises significantly after firms impose insider trading restrictions. Although insiders make more profits overall, the direct benefits from insider trading are substantially limited.

There is, however, an opposing view stating that corporate governance mechanisms are largely irrelevant in restricting informed insider trading. Proponents of the managerial power theory argue that existing control mechanisms, including corporate governance, do not prevent managers from exercising self-interest at a cost to shareholders (Bebchuk and Fried, 2003; Weisbach, 2007). These scholars argue that since good corporate governance does not prevent managers from engaging in opportunistic behavior in general, it is not any more likely to have an impact on informed insider trading.

Criticism on the effectiveness of corporate governance also focuses on it treating insiders homogenous. If certain groups of executives (i.e., executives who commit indiscretions outside their working environment) show little respect to rules and orders, they may equally engage in informed insider trading regardless of the governance mechanisms in place. Recent empirical evidence supports this claim. For instance, Davidson, Dey, and Smith (2020) show that the corporate governance mechanisms lower insider trading profits of executives with only minor infractions but not serious infractions.

3. Data and methodology

3.1 Sample and data

We construct a sample of alleged managerial indiscretions in executives' personal environments between 1986 to 2019. Cases are collected and cross-checked from different sources including Factiva, LexisNexis, and Google search. The announcement date is the first news article mentioning the event. Our sample includes three major types of managerial indiscretions: dishonesty, substance abuse, and violence. Dishonesty refers to actions including not being loyal to partners (such as sexual harassments, inter-office romances, extramarital affairs, and the like) and lying (i.e., bribery, falsifying credentials, resume fraud, and the like). Substance abuse includes illegal drug possession or drug use, driving under influence (DUI), etc. Violence refers to domestic violence, sexual battery or rape, or assault.[3]

We identity 317 indiscretion events made by 289 unique executives involving C-suite executives (chief executive officer (CEO), chief financial officer (CFO), chief operating officer

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[3] The distinction between some of the violence acts, such as sexual battery or rape, and sexual misadventure is that the formal cases are criminal in nature, while the latter include only personal or civil complaints that are related to sexual misconduct.

(COO), and chief information officer (CIO)), board members, presidents, and other officers. After screening for complete data, we are left with a total of 184 executives.[4]

To analyze insiders' personal integrity, we create a dummy variable *Indiscretion* that equals to one if the executive has any indiscretion allegations in their personal record as of December 31, 2019, and equals zero otherwise, regardless of when these indiscretions occurred.

Insider trading data on Form 4 open market transaction (trades with transaction codes "P" and "S") are collected from the Thomson Reuters Insider Filing Database from 1986 to 2019. These consist of self-reported Table 1 transactions from all corporate insiders. Amended transactions are dropped, and only trades with cleanse codes "R", "H", "C", "L", and "I" are kept. We further eliminate trades with less than 100 shares, transactions with missing transaction dates, report dates, price, and those where the transaction date is later than the report date. Trades with a transaction price less than $2.00 are also dropped to avoid bias related to penny stocks (Conrad and Kaul, 1998).

Form 4 open market transaction data are then merged with the Center for Research on Securities Prices (CRSP) and Compustat to obtain daily stock return and firm accounting data. Noncommon shares (CRSP share codes other than 10 and 11), Certificates, American Depository Receipts (ADRs), close-end funds, and real estate investment trusts (REITs), etc. are removed. Following Lakonishok and Lee (2001), we also drop transactions where the reported trade price is more than 20% above or below the closing price reported in CRSP. In addition, we exclude trades where the reported shares traded exceed the total shares outstanding. All remaining

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[4] Out of the 294 executives, 69 were dropped due to missing Thomson ID. 21 were excluded due to the criteria in cleaning Thomson Reuters Insider Filing Database (for example, we only include Form 4 open market transactions, etc.) 19 were eliminated because they had insufficient information on Center for Research on Securities Prices (CRSP) and Compustat to conduct our primary analyses.

transactions are aggregated per day and per insider and are separated by purchases and sales (Carter et al., 2003; Brochet, 2010).

Following previous research (Peress, 2010; Cohen, Malloy, Pomorski, 2012; Cline, Gokkaya, and Liu, 2017; Jagolinzer et al., 2020; Hayn, 1989; Sharma, 2009; Greenwood and Schor, 2009), we estimate the profitability of insider trading using 15-day Cumulative Abnormal Returns (CARs) around each transaction date and 30-day Buy-and-Hold Abnormal Returns (BHARs) after each transaction date. As suggested by Cohen and Lou (2012) and Cohen, Malloy, and Pomorski (2012), the benchmark returns used to calculate CARs and BHARs are computed using the value-weighted return of the matching characteristic-sorted benchmark portfolio. Specifically, we follow the methods in Daniel, Grinblatt, Titman, and Wermers (1997) (hereafter DGTW) to generate benchmark portfolio[5].

Firm-specific and insider-specific control variables are included in our model. Lakonishok and Lee (2001) argue that insiders in smaller firms tend to earn higher profits from their insider transactions than insiders in larger firms. Hence, we include the natural logarithm of firm size. Both Rozeff and Zaman (1998) and Finnerty (1976) demonstrate that market-to-book and leverage determine insiders' trading decisions, we include both of in our models.

We also take into consideration the role of the insider at the firm. We include dummy variables indicating whether the insider is a CEO, chairman, or president at the firm. We also include year fixed effects and firm fixed effects to eliminate the variations across different time and different firms.

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[5] We first sort the universe of firms in CRSP into quintiles based on market capitalization in June of each year using NYSE breakpoints. Then the firms are further sorted into quintiles based on book-to-market ratios within each size quintile (now 25 portfolios). Finally, the firms in each of the 25 portfolios are sorted into quintiles according to their 12-month buy-and-hold raw returns ending in May of each year, yielding a total of 125 (5 X 5 X 5) size/book-to-market/momentum portfolios in June of each year.

As for a firm's corporate governance environment, we adopt multiple measures, and the data is collected from several sources. Our primary measure is the existence of a blackout policy, since it directly targets insider trading, and it is quite widespread and effective in restricting insider trading. Bettis, Coles, and Lemmon (2000) provide evidence showing that 78% of their sample firms have explicit blackout periods during which the company prohibits trading by its insiders. They also find that blackout policies can successfully restrict both insider purchases and sales. One limitation of their research is that they acquire blackout policy information by surveying firms, a method that results in both small sample sizes and is subject to self-selection biases.

Instead, we follow the method used in Roulstone (2003) who identify a firm as having a blackout policy if its insiders overwhelmingly execute their trades after earnings announcements. Specifically, we first classify a trade as *Safe* if it is executed within the 30-day period following an announcement. Next, we calculate the percentage of *Safe* trades for each firm and designate a firm as restricting insider trading if *Safe* is 75% or greater. We construct an indicator variable *Restrict* which equals to one if *Safe* is 75% or greater, and zero otherwise.

To reduce the degree to which our results are driven by any one particular corporate governance measure, we also include two additional measures of corporate governance as robustness checks. The first is an indicator variable *Independent* that measures whether at least 50% of a firm's directors are independent, and the second measure is an indicator variable *Duality* which is set to one if a firm's CEO and chairman of the board is not the same person, and zero otherwise. Both measures represent monitoring from the board.

3.2 Calculation of cumulative abnormal returns

We first estimate the cumulative abnormal returns around each trade. We acquire the daily abnormal returns using the appropriate DGTW weighted portfolio returns as the benchmark. Then daily abnormal returns are compiled over the fifteen-day window over the transaction dates to arrive at the Cumulative Abnormal Return (CAR) for each event.

The market-adjusted abnormal return is calculated as follows:

$$AR_{it} = R_{it} - R_{DGTW,t} \quad (1)$$

Where AR_{it} = the abnormal return for firm i on day t;

R_{it} = the return for firm i on day t;

$R_{DGTW,t}$ = the DGTW weighted portfolio return on day t.

The Cumulative Abnormal Return (CAR) is defined as:

$$CAR_{i,a:b} = \sum_{t=a}^{b} AR_{it} \quad (2)$$

Where $CAR_{i,a:b}$ is the Cumulative Abnormal Return (CAR) for firm i over the period from time a to time b.

Cumulative abnormal return, as argued by Ritter (1991) and Barber and Lyon (1997), is a widely used method in analyzing short-term market reaction in event studies. In this study, we report fifteen-day CARs around each transaction.

3.3 Calculation of buy-and-hold abnormal returns

The test statistics of long-term event study are somewhat controversial. Researchers have found that cumulative abnormal returns (CARs) and buy-and-hold abnormal returns (BHARs) each has its own strength and drawbacks. For example, Barber and Lyon (1997) find that CAR method ignores the compounding effect while BHAR method includes the effect of compounding. Moreover, CARs are a biased predictor of long-term BHARs. In a later study, Lyon, Barber, and Tsai (1999) argue that using mean monthly abnormal returns (MMARs) is less

skewed. In addition, Kothari and Warner (1997) state that tests for long-horizon abnormal returns are misspecified, and suggest looking at nonparametric tests.

In our study, we use buy-and-hold abnormal returns to evaluate long-term (30-day) post-event stock performance. Buy-and-hold abnormal returns are defined as:

$$BHAR_{i,a:b} = \prod_{t=a}^{b}(1 + R_{it}) - \prod_{t=a}^{b}(1 + R_{DGTW,t}) \quad (3)$$

Where $BHAR_{i,a:b}$ = the buy-and-hold abnormal return for firm i over the period from time a to time b;

R_{it} = the return for firm i on day t;

$R_{DGTW,t}$ = the DGTW weighted portfolio return on day t.

3.5 Multi-factor model

OLS regressions examining the prediction of CARs and BHARs are also introduced. The dependent variables is the fifteen-day CARs. The primary independent variable of interest is a dummy indicating whether the trade is executed by an indiscretion insider.

The multivariable regression models are shown as follows:

$$CAR_{i,t} = \beta_0 + \beta_1 Indiscretion_{i,t} + \beta_2 Controls + \varepsilon_{i,t} \quad (4)$$

Where $CAR_{i,t}$ = the cumulative abnormal returns for firm i;

$Indiscretion_{i,t}$ = a dummy indicating whether the trade is executed by an indiscretion insider.

4. Indiscretion and insider trading.

4.1 Indiscretion insider characteristics

Table 1 reports descriptive statistics for indiscretion insiders used in our sample. Panel A shows the frequency of sample observations. Of the 184 indiscretion executives, 82 are single offenders with one role (e.g., CEO only), which accounts for almost 45% of the total numbers.

Approximately 30% (54) of indiscretion insiders are single offenders with multiple roles (e.g., CEO with outside directorship) 48 people are repeat offenders, meaning that they commit the indiscretions more than once. Within this group, 33 of them hold one role and 15 of them hold multiple roles.

(Insert Table 1 here)

Panel B reports the frequency according to indiscretion type. Over 80% (150 of 184) of the indiscretion insiders are accused of dishonesty (i.e., disloyal to partners or other personal dishonesty). Substance abuse accounts for just over 9% of the observations (17 of 184), and the remaining 9% of people (17 of 184) involve violence.

We also report their titles in Panel C. Of the 184 insider indiscretions, 115 are CEOs, which accounts for over 60% of our sample; 11 are CFOs (6%); 14 are COOs (7.6%); 10 are director only (5.4%), and the remaining 34 (18.5%) are other subordinate executives (i.e., presidents, division heads, and other executives).

4.2 Summary statistics

Table 2 presents summary statistics for firm and insider characteristics for both indiscretion trades and non-indiscretion trades. The mean level of log of market capitalization for our indiscretion (non-indiscretion) sample is 8.02 (6.08), respectively, indicating that on average executives who commit indiscretions work at larger firms. However, the average market-to-book ratio for the indiscretion sample is 2.22, which is lower than that of the non-indiscretion sample (5.31). This result shows that although indiscretion insiders work at larger firms, these firms have lower market values. 95% of the indiscretion sample are classified as having an independent board, which is higher than the percentage number of non-indiscretion sample (89%). Similarly, 52% of the indiscretion sample are associated with firms where the CEO and

the chairman of the board are not the same person, which is roughly the same number as compared to our non-indiscretion sample (51%).

For trades made by indiscretion (non-indiscretion executives), 33% (10%) are made by CEOs, 64% (49%) are made by directors, 19% (9%) are made by presidents, and 25% (8%) are made by chairmen, respectively. 72% of the trades made by the indiscretion insider involve indiscretion trades are made in the firms where the indiscretion events happened, and 97% are made in the primary firms, namely the principal place of employment of indiscretion insiders. In addition, 52 % of the indiscretion trades occur after the announcement date of the indiscretion events. For indiscretion trades, 79% of insider purchases and 61% of insider sales can be classified as "routine trades" according to the method in Cohen, Malloy, and Pomorski (2012), and the number is 44% for insider purchases and 40% for insider sales with respect to non-indiscretion trades. Lastly, abnormal profits earned by indiscretion insiders are higher than non-indiscretion insiders.[6]

4.3 Empirical results

4.3.1 Univariate analyses

We begin by reporting the unconditional univariate results in Table 3. We test our hypothesis that indiscretion insiders are more likely to exploit their superior inside information by purchasing stocks before an increase in the stock price and by selling stocks before a drop in the stock price. Panel A reports the mean of the 15-day Cumulative Abnormal Returns (CARs) of indiscretion insiders and non-indiscretion insiders and their differences. Panel B reports the 30-day Buy-and-Hold Abnormal Returns (BHARs) results. We use t-test to examine whether the

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[6] Regarding indiscretion trades, average 15-day CAR for purchases (sales) is 2% (1%), and average 30-day BHAR for purchases (sales) is 3% (1%). Regarding non-indiscretion trades, average 15-day CAR for purchases (sales) is 0% (2%), and average 30-day BHAR is 2% (-0%).

means of CARs and BHARs are significantly different between indiscretion insiders and non-indiscretion insiders.

(Insert Table 3 here)

To more closely compare what indiscretion category drives the insiders to exploit their information advantage, we also report the means of CARs and BHARs by different indiscretion groups.

Panel A of Table 3 reports that the mean 15-day CARs around insider purchases are significantly higher for indiscretion insiders than non-indiscretion insiders. Specifically, indiscretion insiders on average earn a CAR of 2.02%, which is 1.86% higher than that of non-indiscretion insiders (0.17%). The results are both statistically and economically significant. As for insider sales, indiscretion insiders on average earn a 15-day CAR of 1.00%, while non-indiscretion insiders earn 1.70%. Although these numbers are positive, meaning the expected stock price drop does not happen after insider sales for both indiscretion insiders and non-indiscretion insiders, we still document a lower CAR for indiscretion insiders. As argued by Lakonishok and Lee (2001), insider sales are not informative as compared to insider purchases due to liquidity and diversification considerations. In the following analyses, we focus primarily on insider purchases.

Insiders who signal dishonesty in their personal life on average earn a significantly positive CAR of 2.49%, on their purchases. We do not observe significant CARs for other indiscretion groups regarding insider purchases. For insider sales, dishonesty group has a positive and significant CAR of 1.07%. Again, due to similar reasons (insider sales are not informative), we cannot conclude that sales made by dishonest insiders do not contain inside information.

Panel B of Table 3 reports the 30-day BHARs. Similar to CARs, indiscretion insiders earn a significantly higher BHAR compared ti non-indiscretion insiders. Specifically, the mean BHAR of insider purchases for indiscretion insiders is 3.42%, which is 1.91% higher than that (1.51%) of non-indiscretion insiders. In addition, insiders displaying dishonesty on average earn a significant BHAR of 3.65%, and the insiders who committed violence earn a significant BHAR of 3.17%.

Combined, the results in Table 3 are in line with our hypothesis, indicating that insiders who commit indiscretions in their personal life also are more likely to exploit inside information to earn abnormal profits.[7]

We also examine and compare the trades made by indiscretion insiders who are CEOs and non-CEOs, and indiscretion insiders who are from big firms and small firms. Following previous literature, we hypothesize that non-CEO trades contain more inside information since CEOs are being watched more closely and are reluctant to trade based on firm-specific information. Similarly, there is more information asymmetry within small firms so insiders in small firms are more likely to exploit their information advantage.

Table 4 reports the results. Regarding purchases, trades made by indiscretion insiders from small firms are associated with a significant 15-day CAR of 2.33%, while the number is -0.20% (also insignificant) for big firms. The result is consistent with previous research that small firms are informationally more opaque than big firms. We also find that non-CEO purchases exhibit a significantly positive 15-day CAR of 2.23%, while CEO purchases only exhibit a 15-day CAR of 0.46%, which is statistically insignificant.

(Insert Table 4 here)

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[7] We also conduct analyses examining trade volume and trade frequency but do not find significant difference between indiscretion insiders and non-indiscretion insiders.

4.3.2 Multivariate analyses

Given univariate results displayed in Table 3, we employ multivariate regressions to explore whether indiscretion insiders benefit from their information advantage through their insider transactions. The dependent variable is 15-day DGTW adjusted CAR. The main independent variable of interest is a dummy indicating whether a trade is made by an indiscretion executive. We control for firm fixed and year fixed effects in all specifications.

Table 5 reports these results. In column (1) we report our baseline model and in columns (2) and (3) we control for widely used firm characteristics including size, leverage, and market-to-book ratio, as well as additional dummies indicating whether the insiders are CEO, director, chairman of the board, or president. The results across columns (1) through (3) suggest that indiscretion insiders earn higher 15-day abnormal returns than non-indiscretion on purchase transaction. Specifically, in column (2), indiscretion buys are associated with an abnormal return of 1.1 percentage points relative to non-indiscretion buys. Similarly, indiscretion insider buys generate 1.2 percentage points abnormal returns as compared to non-indiscretion insiders after adding insider rank dummies. Interestingly, *Size* is positively and significantly linked to 15-day CAR, a result that contradicts previous study showing that insiders in smaller firms tend to make higher profits (Seyhun, 1986). In addition, we find that CEO and director trades are less profitable.

(Insert Table 5 here)

Columns (4) through (6) of Table 4 report regressions on profits around insider sales. Like columns (1), in column (4) we report only the baseline regression, and in columns (5) and (6) we incorporate firm and insider specific controls. The results in all three columns indicate that indiscretion insiders successfully avoid losses (coefficients are negative and significant for

Indiscretion). For instance, in column (5), indiscretion insider sales yield 0.7 percentage points lower abnormal returns relative to non-indiscretion insider sells. The combined differences in insider purchases and sales make up economically significant 1.8 percentage points abnormal returns for indiscretion insiders. Moreover, the coefficients on *Size* are positive and significant and the coefficients on *Market/Book* and *Leverage* are both negative and significant. This indicates that for insider sales, executives in smaller firms, more highly leveraged firms, and firms with higher market ratio tend to avoid greater losses. Surprisingly, for insider sales, CEO trades, director trades, president trades, and chairman trades all contain more information.

Combined, both our univariate and multivariate results are in line with the hypothesis that indiscretion insiders are more prone to take advantage of their superior inside information and earn higher abnormal returns from both their insider purchases and sales relative to non-indiscretion insiders. Moreover, grouped univariate results indicate that insiders who are dishonest on average earn higher profits than insiders who commit substance abuse or violence.

4.3.3 Robustness: Matched sample analyses

It is possible that our results are biased due to control (non-indiscretion) group being not randomly identified. To alleviate this concern, we adopt both size-industry matching and propensity score matching technique.

We first match each firm that has at least one indiscretion insider (indiscretion firms) with firms that do not have any indiscretion insiders (non-indiscretion firms) based on size and industry. Matched firms are required to be in the same industry (two digit SIC code), and the difference in size between sample firms and matched firms is within 25%. Then we redo the multivariate regressions following the same specifications presented in previous section. The results are shown in Table 6.

(Insert Table 6 here)

In general, our size-industry matched sample results are qualitatively similar to the results in Table5, and the magnitude is higher. Specifically, in column (2), indiscretion buys are associated with an abnormal return of 1.5 percentage points relative to non-indiscretion buys, exceeding the 1.1 percentage points difference observed in Table 5. Similarly, for insider sales, indiscretion insiders are more successful in avoiding losses than non-indiscretion insiders.

We further utilize a propensity score matching method. The method involves two steps. First, a logit regression is estimated with the independent variable equal to 1 if the firm is an indiscretion firm, and 0 otherwise. Independent variables include size, book-to-market ratio, and leverage. Then predicted values from the estimation are used to match an indiscretion firm whose chosen characteristics are statistically most similar to non-indiscretion firms.

Table 7 reports the results. Almost identical to the results in Table 6, we find that indiscretion insiders are more likely to profit from insider buys and sales compared to non-indiscretion insiders. And the magnitude of profits is stronger than our original sample.

(Insert Table 7 here)

Overall, the results in Table 6 and Table 7 indicate that our results do not suffer from treatment assignment bias due to confounding.

4.3.4 Opportunistic vs. routine insiders

Cohen, Malloy, and Pomorski (2012) suggest that insiders' trading patterns are not homogeneous. They argue that trades from opportunistic insiders contain more inside information than trades from routine insiders. Following their identification method, we examine whether being both an indiscretion insider and an opportunistic insider is associated with higher

abnormal profit by introducing an interaction term between *Indiscretion* and *Routine*. The results are presented in Table 8.

(Insert Table 8 here)

If our hypothesis is correct, we expect the interaction term between *Indiscretion* and *Routine* (*Indi*Rou*) to be negative and significant for purchases and positive and significant for sales. However, as the results suggest, the coefficients on the interaction term are not significant across columns. This contradicts our hypothesis that being both indiscretion and opportunistic insider will significantly make higher abnormal profits. However, the coefficients on *Indiscretion* still remain positive and significant for purchases, and negative and significant for sales. Specifically, purchases made by indiscretion insiders are associated with 1.1 percentage points cumulative abnormal returns in a 15-day window (column (3)), after controlling for routine trades as well as firm- and insider-specific characteristics. This points to an often-neglected argument that insiders' personal characteristics (i.e., their psychological types) may be more important than their trading pattern when analyzing insider trading.

5. Personal attributes vs. corporate culture

Having established that indiscretion insiders make higher abnormal profits in both their insider purchases and sales, we next explore whether their insider trading decisions can be better explained by their personal attributes or firm culture. The corporate culture hypothesis argues that indiscretion insiders can take advantage of the "corrupt" corporate culture without being disciplined or punished, or there is a clustering effect of bad behavior in firms with notorious corporate culture. If either is true, we should observe that trades made by indiscretion insiders in firms they were employed at while committing indiscretions ("indiscretion firms" thereafter)

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should on average earn a higher profit than trades in firms they were employed at before or after then indiscretions ("non-indiscretion firms" thereafter).

On the contrary, if those indiscretion insiders' personal traits drive them to do insider trading, we should then observe no significant difference between trades made in firms where they committed indiscretion and in firms where they did not.

To test our hypothesis we restrict of sample to indiscretion trades only and compare the 15-day CARs of trades made in "indiscretion firms" and trades made in "non-indiscretion firms". We introduce a dummy, *Indi_firm,* which equals to one if a trade is made in an "indiscretion firm", and zero otherwise. The results are reported in Table 9. Regarding insider purchases, the coefficients on *Indi_firm* are not significant, indicating that abnormal returns made by indiscretion insiders do not vary across firms. In other words, indiscretion insiders consistently make higher profits form their insider purchases, regardless of the firms they are at. This result provides evidence in favor of the "personal attributes" hypothesis and contradicting the "corporate culture" hypothesis.

(Insert Table 9 here)

As a robustness check, we also report the results in primary firms (firms where indiscretion insiders are employed at) versus secondary firms (firms where they sit on the boards). Similar to the argument of "indiscretion firms" versus "non-indiscretion firms", if corporate culture determines indiscretion insiders' trading decisions, we should observe that the abnormal returns from insider trading are higher in primary firms than in secondary firms. In Table 10, the coefficients on *Primary* are significantly negative for insider purchases, suggesting that indiscretion insiders make higher abnormal profits in secondary firms than in primary firms.

For instance, looking at column (3), insider purchases made in primary firms are associated with 28.1 percentage points lower CAR than in secondary firms in a 15-day window.

(Insert Table 10 here)

Collectively, the results in Table 9 and Table 10 provide support for the personal attributes hypothesis, that is, abnormal returns documented from insider trading are largely attributed to insiders' personal traits, not corporate culture.

6. Announcement effect

6.1 Trading pattern before announcement date

At this stage, we have shown that indiscretion insiders generally earn higher profits from their trades relative to other insiders, and most of their insider trading decisions can be ascribed to insiders' person attributes rather than corporate culture. Now we turn to examining how insiders react to the potential reputation loss resulted from indiscretion announcements.

Indiscretion insiders consistently exhibit a symptom of risk-seeking, disregard to rules and laws, and lack of personal integrity (Cline, Walkling, and Yore, 2018; Davidson, Dey, and Smith, 2020). If they are more willing to act opportunistically and take risks that satisfy their personal interests, arguably they are also more likely to continue doing so to gain profits through insider trading when they sense that their unethical misconducts would be disclosed to the public and their future with the firm is uncertain. Therefore, we take a closer look at their insider trading pattern before the announcement date in Table 11.

(Insert Table 11 here)

In Panel A of Table 11, we test whether indiscretion insiders make significantly higher profits six months leading up to the announcement date[8] of the indiscretion event[9]. *Pre_6* is a

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[8] Announcement date is the first news article mentioning the event.

dummy indicating whether a trade is made within the six months leading up to the announcement date; *Indi_6* is the interaction term between indiscretion trades and trades made in the six months prior to the announcement date. As seen, the coefficients on the interaction term are positive and significant for purchases, indicating that indiscretion insiders are more likely to take risks and benefit from inside information when they anticipate that they are under investigation for misbehavior. The marginal effect of the coefficient of *Indi_6* in column (3) (significant at the 0.01 level) suggests that indiscretion insiders make 11.6% more profits from purchases within the six months prior to the announcement date than at other times. However, we do not find significant results for sales.

A potential concern with the results above is that some indiscretion categories are occasional (e.g., DUI or assault) and others are continual (e.g., extramarital affairs or sexual harassment). As a result, examining insider trading patterns within six months ahead of the announcement date for occasional cases are more reasonable since these insiders may make a massive number of trades during that short window to "double up" the risk, while other insiders (i.e., insiders who have extramarital affairs) may have been doing so long ago. We repeat the procedure excluding continual cases.

Panel B of Table 11 presents the findings. Overall the results are similar to Panel A, with sales being significant as well. Specifically, all three coefficients for sales are negative and significant at the 1% level (compared to two out of three coefficients for purchases are significantly at the 10% level), suggesting that insiders who blunder occasionally are more prone to "double up" the risk and profit from negative information in that six-month period.

6.2 Announcement effect

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[9] On average internal investigation takes more than six months. So theoretically indiscretion insiders would start making trades when investigation is initiated if they decide to take more risks. We also test different time frames but six months yield the most significant results.

We further investigate if these indiscretion insiders change their behavior after their indiscretion is known to the public. In doing so, we explore whether there is a disciplinary effect of the announcement of the indiscretion event. We compare the 15-day CARs of trades made before and after the announcement date of the indiscretion event, by indiscretion insiders and surrounding insiders [10] separately. In addition, we require that indiscretion insiders and surrounding insiders make at least one trade both before and after the announcement date. If there is a disciplinary effect of the announcement, we should observe that at least indiscretion insiders will change their insider trading behavior and cease to earn abnormal returns from their insider transactions after the announcement date.

Table 12 reports the results. We generate a dummy *Post_announce* that equals to one if the trade is made after the announcement date of the indiscretion event, and zero otherwise. Panel A reports results for indiscretion insiders and Panel B presents results for surrounding insiders. Looking at Panel A, insider purchases results show that the coefficients of *Post_announce* are significantly negative, indicating that indiscretion insiders do not earn abnormal returns after their stories are made public. Specifically, purchases made after the announcement date by indiscretion insiders earn 5.1 percentage points (column (3)) lower abnormal returns as compared with trades made before the announcement date.

(Insert Table 12 here)

More interestingly, Panel B of Table 11 shows that the surrounding insiders who are in the same firm as those indiscretion insiders also change their insider trading behavior after the announcement date, although the magnitude is smaller than that of the indiscretion insiders. For example, the coefficient on Post-announce in column (3) suggests that purchases made after the announcement date by indiscretion insiders earn 1.9 percentage points lower abnormal returns

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[10] Surrounding insiders are defined as the people who are in the same firm as the indiscretion insiders.

compared to trades made before the announcement date. We argue that this pattern reflets a mentality in which surrounding insiders proactively restrain themselves in fear of being involved with an investigation on their peers.

However, one natural question to ask is how long can the disciplinary effect last? In other words, do indiscretion insiders permanently change their insider trading patterns after the public knows that they have done, or are they going to lay low for a short period of time and then continue exploiting their information advantage?

To answer this question, we consider abnormal profits earned by indiscretion insiders in different time frames after the announcement date, and the results are plotted in Figure 1.

(Insert Figure 1 here)

As seen, the average abnormal returns in the pre-announcement period are positive, but it drops drastically in the first six month after the announcement date. This result suggests that there is a strong deterrent effect from the disclosure of their stories. However, the effect only lasts a short period of time, as the abnormal returns change from -20% in the first six months after the announcement to approximately 0 in the six months to one year period. Furthermore, after the news has been disclosed for more than one year, these indiscretion insiders once again make profits from insider purchases, this time earning even higher abnormal returns.

Table 13 provides formal confirmation of our observations in Figure 1. We compare abnormal returns made in the pre-announcement period and three post-announcement periods (zero to six months, six months to one year, and after 1 year, respectively). The results show that in the first six months after disclosure, indiscretion insiders' trading profit averages at -20.21%, which is almost 22% lower than that of the pre-announcement period (1.67%). However, that negative return does not last long, as they earn a slightly negative (-0.96%) abnormal return in

the six months to one year period, which is a 19.04% increase compared to the previous period. In addition, starting at year two after the announcement, their trading profits increase to a even higher number (2.39%) compared to the pre-announcement period (1.67%).

(Insert Table 13 here)

Overall, the results in this section support our hypothesis that there is a clear disciplinary effect of the announcement of the indiscretion event, as both indiscretion insiders and their peers restrict themselves regarding insider trading after the public is being made aware of the indiscretion event. Unfortunately, this disciplinary effect is rather short. This provides additional evidence that these indiscretion insiders are consistent with respect to their insider trading habit.

7. The impact of corporate governance mechanisms

7.1 Blackout policy

Nest we evaluate whether ex ante corporate governance mechanisms can effectively reduce informed insider trading made by indiscretion executives. Our primary measure of corporate governance mechanism is the existence of a blackout policy which prohibits executives from trading during a specific window (usually 35 days after earnings announcement). We choose blackout policy because it directly targets insider trading.

Table 14 presents the results. *Restrict* equals to one if a firm has a blackout policy, and zero otherwise. Regarding purchases, the coefficients on *Indiscretion* are positive and significant at the 5% level or higher, indicating that indiscretion insiders earn significantly higher CARs as compared to non-indiscretion insiders in firms without blackout policies. More importantly, the coefficients on the interaction term *Indi_restrict* are negative and significant in all three columns, suggesting that the existence of blackout policies can significantly reduce insider purchase profits of indiscretion insiders as compared to non-indiscretion insiders. Specifically, the

existence of blackout policies is associated with a 4.7 percentage point reduction in CAR for indiscretion insiders in a 15-day window.

(Insert Table 14 here)

With respect to insider sales, the results are similar to purchases. Firstly, indiscretion insiders successfully avoid losses after sales (i.e., the coefficients on *Indiscretion* are negative and significant in all three columns). Looking at column (6), indiscretion insiders on average avoid losses by 0.6 percentage points after insider sales. In addition, the coefficients on the interaction term are positive and significant in two out of three columns, indicating that blackout policies are effective. Again, the lack of significance on insider sales could be explained by the fact that insider sales are not informative as compared to insider purchases (Lakonishok and Lee, 2001).

7.2 Sensitivity analyses

To check the robustness of the above results, we perform several additional tests using different corporate governance measures. Following Masulis, Wang, and Xie (2007), we repeat our tests using two proxies for corporate governance: (1) board independence, measured as a dummy variable that equals to one if at least 50% of a firm's directors are independent, and zero otherwise, and (2) CEO/chairman duality, measured as a dummy variable that equals to one if the CEO and the chairman of the board in a firm is not the same person. The results are reported in Table 15 and Table 16.

(Insert Table 15 here)

(Insert Table 16 here)

Overall, the results in Table 15 and Table 16 are similar to Table 14. We obtain negative but insignificant coefficients on *Independent* for insider purchases in Table 15. That indicates

that insider purchases in firms with more independent directors are associated with lower CARs. The coefficients on the interaction term are also negative but insignificant, suggesting that at least indiscretion insiders do not make higher abnormal profits in firms with higher level of independent directors as compared to non-indiscretion insiders. In sum, the existence of independent board appears to be effective in curbing informed insider trading.

As for duality, the results in Table 16 demonstrate that for insider purchases, indiscretion insiders actually make lower abnormal profits in firms where the CEO and the chairman of the board is not the same person relative to non-indiscretion executives (coefficients on the interaction term are negative and significant at the 5% level or better). Specifically, the CARs earned by indiscretion insiders are 5.7 percentage points lower than those earned by non-indiscretion insiders in a 15-day window at firms where the CEO and the chairman of the board are different.

In summary, the evidence in section 7 implies that carefully designed corporate governance mechanisms, including blackout policies, independent board of directors, and reduced CEO power, can effectively discipline executives who make questionable behavior in their personal life.

8. Conclusion

In this paper, we examine whether insiders who commit indiscretions outside work environment are more likely to exploit their information advantage through insider trading. Many previous studies focus on firm characteristics that determine insiders' trading decisions and ignore insiders' individual characteristics. Our work fills this gap.

Using both univariate and multivariate estimates, we find that indiscretion insiders earn significantly higher abnormal profits for both purchases and sales than non-indiscretion insiders.

Insider role and firm size analyses provide evidence in support of previously documented view that CEO trades are not as informative as non-CEO trades, and trades made in smaller firms are more informative than trades made in bigger firms.

To better understand what drives indiscretion insiders to take advantage of their inside information, we compare insider transactions made in firms where indiscretion activities occurred (indiscretion firms) and in other firms (non-indiscretion firms). Our results suggest that it is insiders' personal attributes, rather than corporate culture, that contribute to them exploiting their information advantage. We also conduct analyses that explore whether these insiders will be disciplined after their story being made public. In line with our hypothesis, we find that abnormal returns of indiscretion insiders' purchases significantly drop after the announcement date, indicating that indiscretion insiders do change their insider trading pattern.

Last but not least, we provide evidence that the deterrent effect of corporate governance mechanisms is strong, as abnormal returns earned by indiscretion insiders are significantly lower in firms with better governance. Overall, our study is among the early studies that document the impact of insiders' personal characteristics on insider trading decisions. It is of interest to board of directors who design corporate governance systems and to investors who wish to identify informed   insider   transactions.

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Appendix A. Data Description

Variable	Description
Indiscretion	Dummy variable that equals to one if an executive committed indiscretion in his or her personal life, and zero otherwise. Indiscretions include sexual misconduct, substance abuse, violence, and dishonesty.
Dishonesty	Dummy variable that equals to one if an executive had dishonesty cases, including extramarital affairs, inter-office romances, accusations of sexual harassment, falsifying credentials, lying, perjury, plagiarism, and the like, and zero otherwise.
Substance abuse	Dummy variable that equals to one if an executive had arrests for DUIs, illicit drug use, and so on, and zero otherwise.
Violence	Dummy variable that equals to one if an executive committed instances of domestic violence, sexual battery, rape, or assault, and zero otherwise.
CAR(-7,+7)	15-day DGTW adjusted cumulative abnormal returns around insider transactions.
BHAR(0,+30)	30-day DGTW adjusted buy-and-hold abnormal returns after insider transactions
Big	Indicator variable that equals to one if a firm's market capitalization is above sample mean, and zero otherwise.
CEO	Indicator variable that equals to one if an executive is a CEO, and zero otherwise.
Size	The natural logarithm of a firm's market capitalization at fiscal year-end.
Leverage	The ratio of a firm's total liabilities over its total assets at fiscal year-end.
Market/Book	The ratio of the market and book values of a firm's equity at fiscal year-end.
Director	Indicator variable that equals to one if an executive is a director, and zero otherwise.
President	Indicator variable that equals to one if an executive is a president, and zero otherwise.
Chairman	Indicator variable that equals to one if an executive is the chairman of the board, and zero otherwise.
Routine	Dummy variable that equals to one if a trade is made by an insider who placed a trade in the same calendar month for at least three consecutive years, and zero otherwise.
Indi*rou	The interaction term between *Indiscretion* and *Routine*.
Indi_firm	Dummy variable that equals to one if a company is the one that the indiscretion insider was working at when the indiscretion event happened, and zero otherwise.
Primary	Dummy variable that equals to one if a firm is the principal place of employment of an indiscretion insider, and zero otherwise.
6_month	Dummy variable that equals one if a trade is made in the six months period prior to the announcement date, and zero otherwise.
Indi_6	The interaction between *Indiscretion* and *6_month*.

Post_announce	Dummy variable that equals to one if a trade is made after the announcement date of the indiscretion event, and zero otherwise.
Indi*restrict	The interaction term between *Indiscretion* and the existence of a blackout policy.
Independent	Indicator variable that equals to one if at least 50% of a firm's directors are independent, and zero otherwise.
Indi*indep	The interaction term between *Indiscretion* and *Independent*.
Duality	Indicator variable that equals to one if a firm's CEO and chairman of the board is not the same person, and zero otherwise.
Indi*duality	The interaction term between *Indiscretion* and *Duality*.

Table 1. Indiscretion executive characteristics.

This table presents the composition of out 184 unique executive observations from 1986 to 2019. Panel A reports the number of observations by executive identity at the sample firms. *Number of executives* indicates unique executives in each category. *Percentage* reports the percentage distribution of each category. Panel B itemizes the sample observations of each indiscretion type. *Sexual misconduct* refers to extramarital affairs, inter-office romances, accusations of sexual harassment, and the like. *Substance abuse* includes the arrests for DUIs, illicit drug use, etc. *Violence* represents instances of domestic violence, sexual battery, rape, or assault. *Dishonesty* indicates falsifying credentials, lying, perjury, and plagiarism. Panel C lists the title held by each indiscretion executive. *Director only* indicates that the executive's only role at the firm is the chairman of the board or a corporate director. *Subordinate executive* includes president, division head, and other executives.

Panel A: Frequency of sample observations

Category	Number of executives	Percentage
Single offenders with one role	82	44.6
Single offenders with multiple roles	54	29.3
Repeat offenders with one role	33	17.9
Repeat offenders with multiple roles	15	8.2
Total	184	100.0

Panel B: Frequency by indiscretion type

Type of indiscretion	Number of executives	Percentage
Dishonesty	150	81.6
Substance abuse	17	9.2
Violence	17	9.2
Total	184	100.0

Panel C: Title held by executive

Executive role	Number of executives	Percentage
CEO	115	62.5
CFO	11	6.0
COO	14	7.6
Director only	10	5.4
Subordinate executive	34	18.5
Total	184	100.0

Table 2. Sample statistics.

This table presents sample summary statistics. *Size* is the natural log of market capitalization of a firm. *Market/Book* is the ratio of the market and book values of a firm's equity. *Leverage* measures a firm's total liabilities divided by its total assets. *Independent* is a dummy that equals to one if at least 50% of a firm's directors are independent, and zero otherwise. *Duality* is a dummy that equals to one if a firm's CEO and chairman of the board is not the same person, and zero otherwise. *Indi_firm* is a dummy that equals to one if a company is the one that the indiscretion insider was working at when indiscretion occurred, and zero otherwise. *Primary* is a dummy that equals to one if a firm is the principal place of employment of an indiscretion insider, and zero otherwise. *Post_announcement* is a dummy that equals to one if a trade is made after the announcement date of the indiscretion event, and zero otherwise. *Routine trades: Purchases* and *Routine trades: Sales* indicate the percentage of the purchase transactions and sale transactions that are classified as routine trades, respectively. *CAR(-7,+7): Purchases* and *CAR(-7,+7): Sales* are fifteen-day DGTW adjusted cumulative abnormal returns around purchase and sale transactions, respectively. *BHAR(0,+30): Purchases* and *BHAR(0,+30): Sales* are 30-day DGTW adjusted buy-and-hold abnormal returns after purchase and sale transactions, respectively.

	Indiscretion				Non-indiscretion			
	Mean	SD	25th	75th	Mean	SD	25th	75th
Firm characteristics:								
Size	8.02	2.52	6.23	9.86	6.08	1.93	4.67	7.31
Market/Book	2.22	41.61	2.06	5.79	5.31	671.04	1.33	4.17
Leverage	0.19	0.23	0.01	0.30	0.20	0.22	0.02	0.32
Independent	0.95	0.22	1.00	1.00	0.89	0.32	1.00	1.00
Duality	0.52	0.50	0.00	1.00	0.51	0.50	0.00	1.00
Insider characteristics:								
CEO	0.33	0.47	0.00	1.00	0.10	0.29	0.00	0.00
Director	0.64	0.48	0.00	1.00	0.49	0.50	0.00	1.00
President	0.19	0.39	0.00	0.00	0.09	0.28	0.00	0.00
Chairman	0.25	0.43	0.00	0.00	0.08	0.27	0.00	0.00
Indi_firm	0.72	0.45	0.00	1.00	NA	NA	NA	NA
Primary	0.97	0.17	1.00	1.00	NA	NA	NA	NA
Post_announce	0.52	0.50	0.00	1.00	0.46	0.50	0.00	1.00
Routine trades: Purchases	0.79	0.40	1.00	1.00	0.44	0.50	0.00	1.00
Routine trades: Sales	0.61	0.49	0.00	1.00	0.40	0.49	0.00	1.00
CAR(-7,+7): Purchases	0.02	0.14	-0.06	0.09	0.00	0.13	-0.05	0.05
CAR(-7,+7): Sales	0.01	0.08	-0.03	0.05	0.02	0.12	-0.04	0.06
BHAR(0,+30): Purchases	0.03	0.19	-0.07	0.11	0.02	0.18	-0.07	0.08
BHAR(0,+30): Sales	0.01	0.12	-0.05	0.06	-0.00	0.16	-0.08	0.06

Table 3. 15-day CARs and 30-day BHARs of indiscretion and non-indiscretion trades.

This table shows 15-day CARs around insider transactions and 30-day BHARs after insider transactions for different insider types. Panel A presents 15-day CARs and Panel B shows 30-day post event BHARs. All abnormal returns are DGTW adjusted. *CAR(-7,+7)* is 15-day DGTW adjusted cumulative abnormal returns around insider transactions. *BHAR(0,+30)* is 30-day DGTW adjusted buy-and-hold abnormal returns after insider transactions. *Indiscretion* represents trades made by insiders who committed indiscretions in their personal life. *Non-indiscretion* represents trades made by all other insiders. *Sexual misconduct* refers to extramarital affairs, inter-office romances, accusations of sexual harassment, and the like. *Substance abuse* includes the arrests for DUIs, illicit drug use, etc. *Violence* represents instances of domestic violence, sexual battery, rape, or assault. *Dishonesty* indicates falsifying credentials, lying, perjury, and plagiarism. *Cheating* is created by aggregating trades made by insiders who committed *Sexual misconduct* or *Dishonesty*. *Other* is generated by aggregating trades made by insiders who committed *Substance* or *Violence*. ***, **, and * denote significance at 1%, 5%, and 10%, respectively.

Panel A: 15-day CARs

	Indiscretion		Non-indiscretion		Difference
	N	CAR(-7,+7)	N	CAR(-7,+7)	CAR(-7,+7)
Purchases	1,675	2.02%***	388,266	0.17%***	1.86%***
Sales	3,737	1.00%***	725,784	1.70%***	-0.70%***

By group:

	Dishonesty		Substance abuse		Violence	
	N	CAR(-7,+7)	N	CAR(-7,+7)	N	CAR(-7,+7)
Purchases	1,413	2.49%***	45	-2.14%	217	-0.13%
Sales	3,188	1.07%***	247	0.63%	302	0.54%

Panel B: 30-day BHARs

	Indiscretion		Non-indiscretion		Difference
	N	BHAR(0,+30)	N	BHAR(0,+30)	BHAR(0,+30)
Purchases	1,687	3.42%***	392,398	1.51%***	1.91%***
Sales	3,778	0.56%***	736,366	-0.33%***	0.89%***

By group:

	Dishonesty		Substance Abuse		Violence	
	N	BHAR(0,+30)	N	BHAR(0,+30)	N	BHAR(0,+30)
Purchases	1,423	3.65%***	46	-2.61%	218	3.17%***
Sales	3,221	0.74%***	247	-1.34%	310	0.19%

Table 4. Firm size and insider type.

This table presents univariate results of insider trades made by indiscretion insiders in different firm sizes and by different roles. *CAR(-7,+7)* is 15-day DGTW adjusted cumulative abnormal returns around insider transactions. *Big* indicates trades made in firms whose market capitalizations are above sample mean. *Small* indicates trades made in firms whose market capitalizations are below sample mean. *CEO* represents trades made by CEOs. *Non-CEO* represents trades made by non-CEO executives. ***, **, and * denote significance at 1%, 5%, and 10%, respectively.

Big firm vs. small firm:

	Big		Small		Difference
	N	CAR(-7,+7)	N	CAR(-7,+7)	CAR(-7,+7)
Purchases	202	-0.20%	1,473	2.33%***	-2.53%**
Sales	980	-0.06%	2,757	1.37%***	-1.43%***

CEO vs. non-CEO:

	CEO		Non-CEO		Difference
	N	CAR(-7,+7)	N	CAR(-7,+7)	CAR(-7,+7)
Purchases	199	0.46%	1,476	2.23%***	-1.77%*
Sales	1,528	0.87%***	2,209	1.09%***	-0.22%

Table 5. Multivariate results.

This table presents the results of OLS regressions with 15-day CARs as dependent variable and the dummy whether the trades are made by indiscretion insiders as primary independent variable. *CAR(-7,+7)* is 15-day DGTW adjusted cumulative abnormal returns around insider transactions. *Indiscretion* is a dummy indicating whether the trades are made by indiscretion insiders. *Size* is the natural log of market capitalization of a firm. *Leverage* measures a firm's total liabilities divided by its total assets. *Market/Book* is the ratio of the market and book values of a firm's equity. *CEO* is a dummy indicating whether the trades are made by CEOs. *Director* is a dummy indicating whether the trades are made by corporate directors. *President* is a dummy indicating whether the trades are made by corporate presidents. *Chairman* is a dummy indicating whether the trades are made by chairmen of the board. Year fixed effects and firm fixed effects are controlled in all specifications. Robust standard errors are reported in parenthesis. ***, **, and * denote significance at 1%, 5%, and 10%, respectively.

	Purchases			Sales		
	(1) CAR(-7,+7)	(2) CAR(-7,+7)	(3) CAR(-7,+7)	(4) CAR(-7,+7)	(5) CAR(-7,+7)	(6) CAR(-7,+7)
Indiscretion	**0.012*****	**0.011*****	**0.012*****	**-0.006*****	**-0.007*****	**-0.004*****
	(0.004)	**(0.004)**	**(0.004)**	**(0.002)**	**(0.002)**	**(0.002)**
Size		0.001**	0.001**		0.011***	0.011***
		(0.000)	(0.000)		(0.000)	(0.000)
Leverage		-0.002	-0.002		-0.005***	-0.005***
		(0.002)	(0.002)		(0.002)	(0.002)
Market/Book		0.000	0.000		-0.000*	-0.000*
		(0.000)	(0.000)		(0.000)	(0.000)
CEO			-0.004***			-0.001*
			(0.001)			(0.001)
Director			-0.001*			-0.002***
			(0.001)			(0.000)
President			0.000			-0.002***
			(0.001)			(0.001)
Chairman			0.001			-0.005***
			(0.001)			(0.001)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Constant	0.010***	0.006**	0.007**	0.018***	-0.037***	-0.036***
	(0.002)	(0.003)	(0.003)	(0.001)	(0.002)	(0.002)
Observations	389,941	368,130	368,130	729,521	687,396	687,396
R-squared	0.133	0.136	0.136	0.153	0.159	0.159

Table 6. Robustness: Size and industry matching.

This table presents the size- and industry-matched results of OLS regressions with 15-day CARs as dependent variable and the dummy whether the trades are made by indiscretion insiders as primary independent variable. *CAR(-7,+7)* is 15-day DGTW adjusted cumulative abnormal returns around insider transactions. *Indiscretion* is a dummy indicating whether the trades are made by indiscretion insiders. *Size* is the natural log of market capitalization of a firm. *Leverage* measures a firm's total liabilities divided by its total assets. *Market/Book* is the ratio of the market and book values of a firm's equity. *CEO* is a dummy indicating whether the trades are made by CEOs. *Director* is a dummy indicating whether the trades are made by corporate directors. *President* is a dummy indicating whether the trades are made by corporate presidents. *Chairman* is a dummy indicating whether the trades are made by chairmen of the board. Year fixed effects and firm fixed effects are controlled in all specifications. Robust standard errors are reported in parenthesis. ***, **, and * denote significance at 1%, 5%, and 10%, respectively.

	Purchases			Sales		
	(1)	(2)	(3)	(4)	(5)	(6)
	CAR(-7,+7)	CAR(-7,+7)	CAR(-7,+7)	CAR(-7,+7)	CAR(-7,+7)	CAR(-7,+7)
Indiscretion	**0.014***	**0.015***	**0.015***	**-0.006***	**-0.007***	**-0.005**
	(0.005)	**(0.005)**	**(0.005)**	**(0.002)**	**(0.002)**	**(0.002)**
Size		0.007***	0.007***		0.013***	0.013***
		(0.001)	(0.001)		(0.001)	(0.001)
Leverage		-0.002	-0.002		-0.005*	-0.005*
		(0.005)	(0.005)		(0.003)	(0.003)
Market/Book		-0.000	-0.000		0.000**	0.000**
		(0.000)	(0.000)		(0.000)	(0.000)
CEO			-0.006***			-0.001
			(0.002)			(0.001)
Director			-0.001			-0.004***
			(0.001)			(0.001)
President			-0.000			-0.001
			(0.002)			(0.001)
Chairman			0.003			-0.003***
			(0.002)			(0.001)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Constant	-0.001	-0.0287***	-0.0280***	0.027***	-0.039***	-0.037***
	(0.005)	(0.007)	(0.007)	(0.003)	(0.004)	(0.004)
Observations	118,577	113,189	113,189	269,831	254,214	254,214
R-squared	0.177	0.180	0.181	0.217	0.226	0.227

Table 7. Robustness: Propensity score matching.

This table presents the propensity score-matched results of OLS regressions with 15-day CARs as dependent variable and the dummy whether the trades are made by indiscretion insiders as primary independent variable. *CAR(-7,+7)* is 15-day DGTW adjusted cumulative abnormal returns around insider transactions. *Indiscretion* is a dummy indicating whether the trades are made by indiscretion insiders. *Size* is the natural log of market capitalization of a firm. *Leverage* measures a firm's total liabilities divided by its total assets. *Market/Book* is the ratio of the market and book values of a firm's equity. *CEO* is a dummy indicating whether the trades are made by CEOs. *Director* is a dummy indicating whether the trades are made by corporate directors. *President* is a dummy indicating whether the trades are made by corporate presidents. *Chairman* is a dummy indicating whether the trades are made by chairmen of the board. Year fixed effects and firm fixed effects are controlled in all specifications. Robust standard errors are reported in parenthesis. ***, **, and * denote significance at 1%, 5%, and 10%, respectively.

	Purchases			Sales		
	(1)	(2)	(3)	(4)	(5)	(6)
	CAR(-7,+7)	CAR(-7,+7)	CAR(-7,+7)	CAR(-7,+7)	CAR(-7,+7)	CAR(-7,+7)
Indiscretion	**0.014*****	**0.015*****	**0.015*****	**-0.006*****	**-0.007*****	**-0.004****
	(0.005)	**(0.005)**	**(0.005)**	**(0.002)**	**(0.002)**	**(0.002)**
Size		0.005***	0.005***		0.011***	0.012***
		(0.001)	(0.001)		(0.000)	(0.000)
Leverage		0.002	0.003		0.004**	0.004**
		(0.004)	(0.004)		(0.002)	(0.002)
Market/Book		-0.000	-0.000		-0.000*	-0.000*
		(0.000)	(0.000)		(0.000)	(0.000)
CEO			-0.006***			0.000
			(0.002)			(0.001)
Director			0.001			-0.003***
			(0.001)			(0.000)
President			0.003*			-0.003***
			(0.002)			(0.001)
Chairman			0.002			-0.005***
			(0.002)			(0.001)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Constant	0.006*	-0.015***	-0.015***	0.022***	-0.0377***	-0.037***
	(0.003)	(0.005)	(0.005)	(0.002)	(0.00300)	(0.003)
Observations	175,440	167,596	167,596	403,621	381,331	381,331
R-squared	0.166	0.170	0.171	0.133	0.138	0.139

Table 8. Interaction effect of opportunistic insider trades.

This table presents OLS regression results of the interaction effect between indiscretion and opportunistic trades. *CAR(-7,+7)* is 15-day DGTW adjusted cumulative abnormal returns around insider transactions. *Indiscretion* is a dummy indicating whether the trades are made by indiscretion insiders. *Routine* shows whether the trades can be classified as routine trades. It takes the value of 1 if the transaction is made by an insider who placed a trade in the same calendar month for at least three consecutive years, and 0 otherwise. *Indi*rou* is the interaction between *Indiscretion* and *Routine*. *Size* is the natural log of market capitalization of a firm. *Leverage* measures a firm's total liabilities divided by its total assets. *Market/Book* is the ratio of the market and book values of a firm's equity. *CEO* is a dummy indicating whether the trades are made by CEOs. *Director* is a dummy indicating whether the trades are made by corporate directors. *President* is a dummy indicating whether the trades are made by corporate presidents. *Chairman* is a dummy indicating whether the trades are made by chairmen of the board. Year fixed effects and firm fixed effects are controlled in all specifications. Robust standard errors are reported in parenthesis. ***, **, and * denote significance at 1%, 5%, and 10%, respectively.

	Purchases			Sales		
	(1)	(2)	(3)	(4)	(5)	(6)
	CAR(-7,+7)	CAR(-7,+7)	CAR(-7,+7)	CAR(-7,+7)	CAR(-7,+7)	CAR(-7,+7)
Indiscretion	0.011***	0.011**	0.011**	-0.005***	-0.006***	-0.004*
	(0.004)	(0.004)	(0.004)	(0.002)	(0.002)	(0.002)
Routine	-0.001	-0.000	-0.000	-0.006***	-0.007***	-0.007***
	(0.001)	(0.001)	(0.001)	(0.000)	(0.000)	(0.000)
Indi*rou	0.006	0.005	0.005	-0.000	-0.002	-0.002
	(0.013)	(0.013)	(0.013)	(0.003)	(0.003)	(0.003)
Size		0.001**	0.001**		0.011***	0.011***
		(0.000)	(0.000)		(0.000)	(0.000)
Leverage		-0.002	-0.002		-0.005***	-0.005***
		(0.002)	(0.002)		(0.002)	(0.002)
Market/Book		0.000	0.000		-0.000*	-0.000
		(0.000)	(0.000)		(0.000)	(0.000)
CEO			-0.004***			-0.001*
			(0.001)			(0.001)
Director			-0.001*			-0.002***
			(0.001)			(0.000)
President			0.000			-0.002***
			(0.001)			(0.001)
Chairman			0.001			-0.005***
			(0.001)			(0.001)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Constant	0.010***	0.006**	0.007**	0.018***	-0.038***	-0.037***
	(0.002)	(0.003)	(0.003)	(0.001)	(0.002)	(0.002)
Observations	389,941	368,130	368,130	729,521	687,396	687,396
R-squared	0.133	0.136	0.136	0.153	0.159	0.159

Table 9. "Indiscretion firms" vs. "non-indiscretion firms".

This table shows the OLS regression results of comparing abnormal returns made in "indiscretion firms" and "non-indiscretion firms". We focus on trades made by indiscretion insiders only in this table. *CAR(-7,+7)* is 15-day DGTW adjusted cumulative abnormal returns around insider transactions. *Indi_firm* is a dummy indicating whether the trade is made in "indiscretion firms". It takes the value of 1 if the trade is made in the company where the indiscretion insider was working at when the indiscretion event happened, and 0 otherwise. *Size* is the natural log of market capitalization of a firm. *Leverage* measures a firm's total liabilities divided by its total assets. *Market/Book* is the ratio of the market and book values of a firm's equity. *CEO* is a dummy indicating whether the trades are made by CEOs. *Director* is a dummy indicating whether the trades are made by corporate directors. *President* is a dummy indicating whether the trades are made by corporate presidents. *Chairman* is a dummy indicating whether the trades are made by chairmen of the board. Year fixed effects and firm fixed effects are controlled in all specifications. Robust standard errors are reported in parenthesis. ***, **, and * denote significance at 1%, 5%, and 10%, respectively.

	Purchases			Sales		
	(1)	(2)	(3)	(4)	(5)	(6)
	CAR(-7,+7)	CAR(-7,+7)	CAR(-7,+7)	CAR(-7,+7)	CAR(-7,+7)	CAR(-7,+7)
Indi_firm	**0.056**	**0.057**	**0.056**	**0.022****	**0.020****	**0.006**
	(0.064)	**(0.065)**	**(0.060)**	**(0.010)**	**(0.010)**	**(0.012)**
Size		-0.018	-0.021		0.014***	0.017***
		(0.014)	(0.015)		(0.004)	(0.004)
Leverage		-0.059	-0.061		0.039**	0.042**
		(0.042)	(0.042)		(0.019)	(0.020)
Market/Book		0.001	0.001		0.000	0.000
		(0.001)	(0.001)		(0.000)	(0.000)
CEO			0.015			0.014**
			(0.030)			(0.006)
Director			-0.042			0.008
			(0.031)			(0.007)
President			0.007			-0.007
			(0.027)			(0.007)
Chairman			-0.047*			-0.020***
			(0.028)			(0.005)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Constant	-0.013	0.086	0.123*	-0.077	-0.164***	-0.174***
	(0.037)	(0.071)	(0.072)	(0.061)	(0.062)	(0.063)
Observations	1,675	1,641	1,641	3,737	3,392	3,392
R-squared	0.254	0.263	0.265	0.168	0.193	0.198

Table 10. Primary firms vs. secondary firms.

This table shows the OLS regression results of comparing abnormal returns made in primary firms and secondary firms. We focus on trades made by indiscretion insiders only in this table. *CAR(-7,+7)* is 15-day DGTW adjusted cumulative abnormal returns around insider transactions. *Primary* is a dummy indicating whether the trade is made in primary firms. It takes the value of 1 if the trade is made in the firm that is the executive's principal place of employment, and 0 otherwise. *Size* is the natural log of market capitalization of a firm. *Leverage* measures a firm's total liabilities divided by its total assets. *Market/Book* is the ratio of the market and book values of a firm's equity. *CEO* is a dummy indicating whether the trades are made by CEOs. *Director* is a dummy indicating whether the trades are made by corporate directors. *President* is a dummy indicating whether the trades are made by corporate presidents. *Chairman* is a dummy indicating whether the trades are made by chairmen of the board. Year fixed effects and firm fixed effects are controlled in all specifications. Robust standard errors are reported in parenthesis. ***, **, and * denote significance at 1%, 5%, and 10%, respectively.

	Purchases			Sales		
	(1)	(2)	(3)	(4)	(5)	(6)
	CAR(-7,+7)	CAR(-7,+7)	CAR(-7,+7)	CAR(-7,+7)	CAR(-7,+7)	CAR(-7,+7)
Primary	**-0.329*****	**-0.279*****	**-0.281*****	**-0.111**	**-0.099**	**-0.099**
	(0.070)	**(0.079)**	**(0.085)**	**(0.074)**	**(0.074)**	**(0.072)**
Size		-0.017	-0.014		0.015***	0.017***
		(0.025)	(0.026)		(0.004)	(0.004)
Leverage		-0.153**	-0.154**		0.052***	0.057***
		(0.064)	(0.063)		(0.019)	(0.020)
Market/Book		-0.004	-0.004*		0.000	0.000
		(0.002)	(0.002)		(0.000)	(0.000)
CEO			0.029			0.014**
			(0.046)			(0.006)
Director			-0.070			0.004
			(0.064)			(0.007)
President			0.027			-0.004
			(0.047)			(0.007)
Chairman			-0.007			-0.020***
			(0.041)			(0.005)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Constant	0.321***	0.408**	0.432**	-0.008	-0.112	-0.136*
	(0.074)	(0.177)	(0.189)	(0.077)	(0.077)	(0.076)
Observations	447	433	433	3,257	2,956	2,956
R-squared	0.510	0.563	0.566	0.148	0.170	0.176

Table 11. Trades 6 months before announcement date.

This table shows the OLS regression results of indiscretion trades made in the 6 months prior to the announcement date. Panel A reports all indiscretion categories and Panel B includes one-time categories only. *CAR(-7,+7)* is 15-day DGTW adjusted cumulative abnormal returns around insider transactions. . *Indiscretion* is a dummy indicating whether the trades are made by indiscretion insiders. *6_month* indicates whether a trade is made in the 6 months prior to the announcement date. *Indi_6* is the interaction between *Indiscretion* and *6_month*. *Size* is the natural log of market capitalization of a firm. *Leverage* measures a firm's total liabilities divided by its total assets. *Market/Book* is the ratio of the market and book values of a firm's equity. *CEO* is a dummy indicating whether the trades are made by CEOs. *Director* is a dummy indicating whether the trades are made by corporate directors. *President* is a dummy indicating whether the trades are made by corporate presidents. *Chairman* is a dummy indicating whether the trades are made by chairmen of the board. Year fixed effects and firm fixed effects are controlled in all specifications. Robust standard errors are reported in parenthesis. ***, **, and * denote significance at 1%, 5%, and 10%, respectively.

Panel A: All indiscretion categories

	Purchases			Sales		
	(1)	(2)	(3)	(4)	(5)	(6)
	CAR(-7,+7)	CAR(-7,+7)	CAR(-7,+7)	CAR(-7,+7)	CAR(-7,+7)	CAR(-7,+7)
Indiscretion	0.035***	0.041***	0.033***	-0.002	0.001	0.005
	(0.012)	(0.013)	(0.013)	(0.004)	(0.004)	(0.004)
6_month	-0.008	-0.008	-0.011	0.007*	0.003	0.003
	(0.014)	(0.015)	(0.015)	(0.003)	(0.004)	(0.004)
Indi_6	0.099**	0.107**	0.116***	0.011	0.005	0.004
	(0.047)	(0.045)	(0.044)	(0.011)	(0.012)	(0.012)
Size		-0.010	-0.008		0.000	0.000
		(0.012)	(0.012)		(0.003)	(0.002)
Leverage		0.093	0.102*		-0.016	-0.017
		(0.058)	(0.058)		(0.016)	(0.016)
Market/Book		0.003	0.004		0.000**	0.000**
		(0.003)	(0.003)		(0.000)	(0.000)
CEO			0.088***			-0.001
			(0.022)			(0.005)
Director			-0.039***			-0.002
			(0.014)			(0.003)
President			-0.042**			-0.002
			(0.018)			(0.005)
Chairman			-0.030*			-0.010***
			(0.016)			(0.004)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Constant	0.002	0.004	0.030	0.015	0.013	0.014
	(0.022)	(0.072)	(0.072)	(0.013)	(0.022)	(0.023)
Observations	1,431	1,273	1,273	6,546	6,006	6,006
R-squared	0.192	0.219	0.235	0.120	0.145	0.146

Panel B: One-time indiscretion categories only

	Purchases			Sales		
	(1)	(2)	(3)	(4)	(5)	(6)
	CAR(-7,+7)	CAR(-7,+7)	CAR(-7,+7)	CAR(-7,+7)	CAR(-7,+7)	CAR(-7,+7)
Indiscretion	**-0.059**	**-0.06***	**-0.074****	**-0.001**	**0.007**	**0.010***
	(0.038)	**(0.037)**	**(0.036)**	**(0.005)**	**(0.006)**	**(0.006)**
6_month	**-0.006**	**-0.010**	**-0.014**	**0.005**	**0.001**	**0.001**
	(0.014)	**(0.014)**	**(0.015)**	**(0.003)**	**(0.004)**	**(0.004)**
Indi_6	**0.093**	**0.108***	**0.106***	**-0.021**	**-0.046****	**-0.047****
	(0.059)	**(0.057)**	**(0.056)**	**(0.013)**	**(0.013)**	**(0.013)**
Size		-0.000	-0.001		-0.000	-0.000
		(0.013)	(0.013)		(0.003)	(0.003)
Leverage		0.181***	0.174***		-0.014	-0.014
		(0.051)	(0.052)		(0.016)	(0.016)
Market/Book		0.005	0.004		0.000***	0.000***
		(0.003)	(0.003)		(0.000)	(0.000)
CEO			0.124***			-0.005
			(0.026)			(0.005)
Director			-0.031**			-0.002
			(0.015)			(0.003)
President			-0.040**			0.001
			(0.020)			(0.005)
Chairman			-0.028			-0.006
			(0.018)			(0.004)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Constant	0.034	-0.037	0.003	0.022**	0.024	0.023
	(0.028)	(0.078)	(0.079)	(0.010)	(0.020)	(0.020)
Observations	1,082	938	938	6,049	5,544	5,544
R-squared	0.223	0.259	0.283	0.120	0.144	0.145

Table 12. The announcement effect.

This table presents the OLS regression results of comparing abnormal returns made before and after the announcement of the indiscretion events. Panel A reports trades made by indiscretion insiders and Panel B reports trades made by other insiders who have worked with those indiscretion insiders. *CAR(-7,+7)* is 15-day DGTW adjusted cumulative abnormal returns around insider transactions. *Post_announce* equals 1 if the trade is made after the announcement date of the indiscretion event, and 0 otherwise. *Size* is the natural log of market capitalization of a firm. *Leverage* measures a firm's total liabilities divided by its total assets. *Market/Book* is the ratio of the market and book values of a firm's equity. *CEO* is a dummy indicating whether the trades are made by CEOs. *Director* is a dummy indicating whether the trades are made by corporate directors. *President* is a dummy indicating whether the trades are made by corporate presidents. *Chairman* is a dummy indicating whether the trades are made by chairmen of the board. Year fixed effects and firm fixed effects are controlled in all specifications. Robust standard errors are reported in parenthesis. ***, **, and * denote significance at 1%, 5%, and 10%, respectively.

Panel A: Indiscretion insiders

	Purchases			Sales		
	(1)	(2)	(3)	(4)	(5)	(6)
	CAR(-7,+7)	CAR(-7,+7)	CAR(-7,+7)	CAR(-7,+7)	CAR(-7,+7)	CAR(-7,+7)
Post_announce	**-0.063***	**-0.053**	**-0.051**	**-0.009**	**-0.018**	**-0.011**
	(0.024)	**(0.025)**	**(0.026)**	**(0.007)**	**(0.008)**	**(0.009)**
Size		-0.030**	-0.030**		0.005	0.009*
		(0.013)	(0.013)		(0.005)	(0.005)
Leverage		-0.107***	-0.106**		0.040	0.040
		(0.042)	(0.042)		(0.025)	(0.025)
Market/Book		0.012***	0.012***		-0.000	-0.000
		(0.004)	(0.004)		(0.000)	(0.000)
CEO			-0.011			0.021**
			(0.044)			(0.009)
Director			-0.005			0.002
			(0.035)			(0.008)
President			-0.024			-0.002
			(0.036)			(0.009)
Chairman			-0.023			-0.018**
			(0.029)			(0.008)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Constant	-0.003	0.161**	0.164**	-0.080	-0.119*	-0.144**
	(0.035)	(0.067)	(0.069)	(0.066)	(0.070)	(0.071)
Observations	1,301	1,283	1,283	1,945	1,712	1,712
R-squared	0.158	0.172	0.172	0.132	0.169	0.173

Panel B: Surrounding insiders

	Purchases			Sales		
	(1)	(2)	(3)	(4)	(5)	(6)
	CAR(-7,+7)	CAR(-7,+7)	CAR(-7,+7)	CAR(-7,+7)	CAR(-7,+7)	CAR(-7,+7)
Post_announce	**-0.012**	**-0.019****	**-0.019****	**-0.002**	**-0.002**	**-0.002**
	(0.009)	**(0.010)**	**(0.010)**	**(0.002)**	**(0.002)**	**(0.002)**
Size		0.000	-0.001		0.003*	0.003
		(0.005)	(0.005)		(0.002)	(0.002)
Leverage		0.108***	0.107***		-0.027***	-0.026***
		(0.028)	(0.028)		(0.009)	(0.009)
Market/Book		0.001	0.000		0.000	0.000
		(0.001)	(0.001)		(0.000)	(0.000)
CEO			0.050***			0.006
			(0.016)			(0.004)
Director			-0.015			-0.001
			(0.010)			(0.002)
President			-0.037**			-0.002
			(0.014)			(0.003)
Chairman			-0.045***			-0.008**
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Constant	0.042	0.007	0.057	0.018	0.007	0.008
	(0.038)	(0.050)	(0.052)	(0.016)	(0.020)	(0.020)
Observations	1,983	1,821	1,821	10,165	9,604	9,604
R-squared	0.203	0.229	0.236	0.082	0.088	0.089

Figure 1. Persistence of the announcement effect.

This figure compares abnormal returns for pre-announcement and three post-announcement periods, including 0 to 6 months, 6 months to 1 year, and after 1 year.
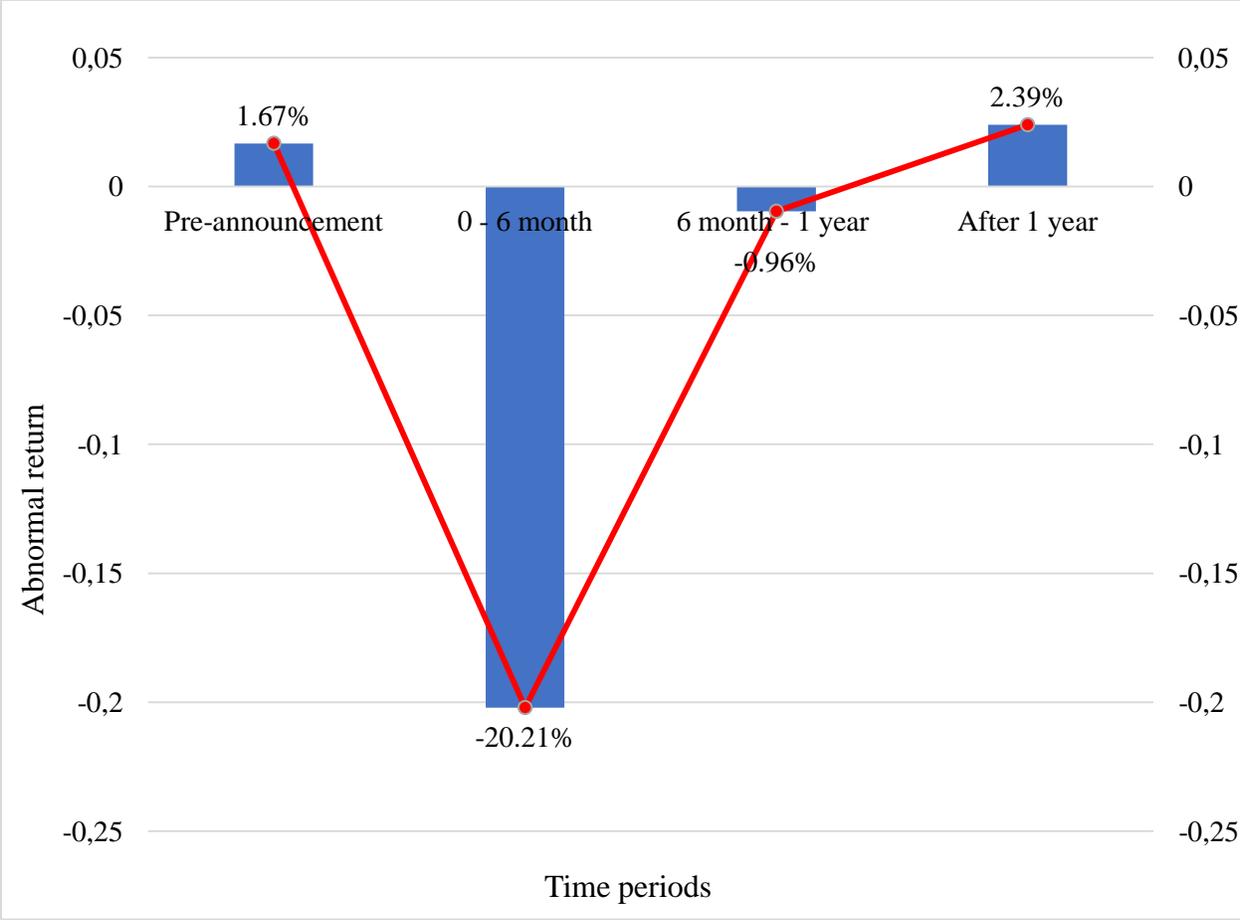
Table 13. Persistence of the announcement effect.

This table presents univariate results of insider trades made by indiscretion insiders in different firm sizes and by different roles. *CAR(-7,+7)* is 15-day DGTW adjusted cumulative abnormal returns around insider transactions. *Big* indicates trades made in firms whose market capitalizations are above sample mean. *Small* indicates trades made in firms whose market capitalizations are below sample mean. *CEO* represents trades made by CEOs. *Non-CEO* represents trades made by non-CEO executives. ***, **, and * denote significance at 1%, 5%, and 10%, respectively.

0 to 6 months:

Pre-announcement		0 to 6 months		Difference
N	CAR(-7,+7)	N	CAR(-7,+7)	CAR(-7,+7)
469	1.67%***	12	-20.21%***	21.88%***

6 months to 1 year:

Pre-announcement		6 months to 1 year		Difference
N	CAR(-7,+7)	N	CAR(-7,+7)	CAR(-7,+7)
469	1.67%***	24	-0.96%	2.63%

After 1 year:

Pre-announcement		After 1 year		Difference
N	CAR(-7,+7)	N	CAR(-7,+7)	CAR(-7,+7)
469	1.67%***	796	2.39%***	0.72%

Table 14. Interaction effect of blackout policy.

This table reports OLS regression results of the interaction effect between indiscretion and the existence of a blackout policy. *CAR(-7,+7)* is 15-day DGTW adjusted cumulative abnormal returns around insider transactions. *Indiscretion* is a dummy indicating whether the trades are made by indiscretion insiders. *Indi*restrict* is the interaction between indiscretion and the existence of a blackout policy. We define the existence of a blackout policy by examining whether 75% or more of the firm's insider trades occurs outside of the blackout period. The blackout period is the period outside the 30 trading days following a quarterly earnings announcement. *Size* is the natural log of market capitalization of a firm. *Leverage* measures a firm's total liabilities divided by its total assets. *Market/Book* is the ratio of the market and book values of a firm's equity. *CEO* is a dummy indicating whether the trades are made by CEOs. *Director* is a dummy indicating whether the trades are made by corporate directors. *President* is a dummy indicating whether the trades are made by corporate presidents. *Chairman* is a dummy indicating whether the trades are made by chairmen of the board. Year fixed effects and firm fixed effects are controlled in all specifications. Robust standard errors are reported in parenthesis. ***, **, and * denote significance at 1%, 5%, and 10%, respectively.

	Purchases			Sales		
	(1)	(2)	(3)	(4)	(5)	(6)
	CAR(-7,+7)	CAR(-7,+7)	CAR(-7,+7)	CAR(-7,+7)	CAR(-7,+7)	CAR(-7,+7)
Indiscretion	**0.013*****	**0.012****	**0.012*****	**-0.007*****	**-0.008*****	**-0.006*****
	(0.005)	**(0.005)**	**(0.005)**	**(0.002)**	**(0.002)**	**(0.002)**
Indi*restrict	**-0.047****	**-0.047****	**-0.047****	**0.017****	**0.017***	**0.014**
	(0.023)	**(0.023)**	**(0.023)**	**(0.009)**	**(0.009)**	**(0.009)**
Size		0.001**	0.001**		0.011***	0.011***
		(0.001)	(0.001)		(0.000)	(0.000)
Leverage		-0.002	-0.002		-0.006***	-0.006***
		(0.002)	(0.002)		(0.002)	(0.002)
Market/Book		0.000	0.000		-0.000*	-0.000*
		(0.000)	(0.000)		(0.000)	(0.000)
CEO			-0.004***			-0.001*
			(0.001)			(0.001)
Director			-0.001			-0.002***
			(0.001)			(0.000)
President			-0.000			-0.002***
			(0.001)			(0.001)
Chairman			0.002			-0.005***
			(0.001)			(0.001)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Constant	0.010***	0.006*	0.007**	0.018***	-0.036***	-0.035***
	(0.002)	(0.003)	(0.003)	(0.001)	(0.002)	(0.002)
Observations	374,847	354,304	354,304	702,381	662,100	662,100
R-squared	0.132	0.135	0.135	0.153	0.159	0.159

Table 15. Robustness: Interaction effect of director independence.

This table reports OLS regression results of the interaction effect between indiscretion and director independence. *CAR(-7,+7)* is 15-day DGTW adjusted cumulative abnormal returns around insider transactions. *Indiscretion* is a dummy indicating whether the trades are made by indiscretion insiders. *Independent* is a dummy which equals one if at least 50% of a firm's directors are independent. *Indi*indep* is the interaction between indiscretion and director independence. *Size* is the natural log of market capitalization of a firm. *Leverage* measures a firm's total liabilities divided by its total assets. *Market/Book* is the ratio of the market and book values of a firm's equity. *CEO* is a dummy indicating whether the trades are made by CEOs. *Director* is a dummy indicating whether the trades are made by corporate directors. *President* is a dummy indicating whether the trades are made by corporate presidents. *Chairman* is a dummy indicating whether the trades are made by chairmen of the board. Year fixed effects and firm fixed effects are controlled in all specifications. Robust standard errors are reported in parenthesis. ***, **, and * denote significance at 1%, 5%, and 10%, respectively.

	Purchases			Sales		
	(1)	(2)	(3)	(4)	(5)	(6)
	CAR(-7,+7)	CAR(-7,+7)	CAR(-7,+7)	CAR(-7,+7)	CAR(-7,+7)	CAR(-7,+7)
Indiscretion	**-0.002**	**0.003**	**0.001**	**0.018***	**0.018**	**0.018***
	(0.024)	**(0.025)**	**(0.025)**	**(0.011)**	**(0.011)**	**(0.011)**
Independent	**-0.002**	**-0.001**	**-0.001**	**0.009*****	**0.009*****	**0.009*****
	(0.006)	**(0.006)**	**(0.006)**	**(0.002)**	**(0.002)**	**(0.002)**
Indi*indep	**-0.003**	**-0.007**	**-0.005**	**-0.024****	**-0.023****	**-0.022****
	(0.027)	**(0.027)**	**(0.028)**	**(0.011)**	**(0.011)**	**(0.011)**
Size		0.014***	0.014***		0.014***	0.014***
		(0.002)	(0.002)		(0.001)	(0.001)
Leverage		-0.037***	-0.037***		0.008***	0.008***
		(0.011)	(0.011)		(0.003)	(0.003)
Market/Book		-0.000	-0.000		0.000	0.000
		(0.000)	(0.000)		(0.000)	(0.000)
CEO			-0.004			-0.002**
			(0.004)			(0.001)
Director			0.004*			-0.002***
			(0.002)			(0.001)
President			-0.006			0.000
			(0.004)			(0.001)
Chairman			0.005			-0.001
			(0.004)			(0.001)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Constant	-0.020**	-0.096***	-0.095***	-0.001	-0.095***	-0.095***
	(0.009)	(0.018)	(0.018)	(0.005)	(0.008)	(0.008)
Observations	28,370	26,849	26,849	132,632	125,653	125,653
R-squared	0.199	0.207	0.208	0.073	0.080	0.080

Table 16. Robustness: Interaction effect of duality.

This table reports OLS regression results of the interaction effect between indiscretion and duality. *CAR(-7,+7)* is 15-day DGTW adjusted cumulative abnormal returns around insider transactions. *Indiscretion* is a dummy indicating whether the trades are made by indiscretion insiders. *Duality* is a dummy which equals one if the CEO and the chairman of the board is not the same person. *Indi*duality* is the interaction between indiscretion and duality. *Size* is the natural log of market capitalization of a firm. *Leverage* measures a firm's total liabilities divided by its total assets. *Market/Book* is the ratio of the market and book values of a firm's equity. *CEO* is a dummy indicating whether the trades are made by CEOs. *Director* is a dummy indicating whether the trades are made by corporate directors. *President* is a dummy indicating whether the trades are made by corporate presidents. *Chairman* is a dummy indicating whether the trades are made by chairmen of the board. Year fixed effects and firm fixed effects are controlled in all specifications. Robust standard errors are reported in parenthesis. ***, **, and * denote significance at 1%, 5%, and 10%, respectively.

	Purchases			Sales		
	(1)	(2)	(3)	(4)	(5)	(6)
	CAR(-7,+7)	CAR(-7,+7)	CAR(-7,+7)	CAR(-7,+7)	CAR(-7,+7)	CAR(-7,+7)
Indiscretion	**0.022**	**0.022**	**0.023**	**-0.005**	**-0.005***	**-0.003**
	(0.014)	**(0.015)**	**(0.0144)**	**(0.003)**	**(0.003)**	**(0.003)**
Duality	**-0.002**	**-0.002**	**-0.002**	**-0.001****	**-0.001****	**-0.001****
	(0.002)	**(0.003)**	**(0.003)**	**(0.001)**	**(0.001)**	**(0.001)**
Indi*duality	**-0.059*****	**-0.054****	**-0.057*****	**0.001**	**0.002**	**0.001**
	(0.021)	**(0.021)**	**(0.021)**	**(0.004)**	**(0.004)**	**(0.004)**
Size		0.014***	0.0134***		0.014***	0.014***
		(0.002)	(0.002)		(0.001)	(0.001)
Leverage		-0.035***	-0.035***		0.008***	0.008***
		(0.011)	(0.011)		(0.003)	(0.003)
Market/Book		-0.000	-0.000		0.000	0.000
		(0.000)	(0.000)		(0.000)	(0.000)
CEO			-0.004			-0.002**
			(0.004)			(0.001)
Director			0.004*			-0.002***
			(0.002)			(0.001)
President			-0.006			0.000
			(0.004)			(0.001)
Chairman			0.005			-0.001
			(0.004)			(0.001)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Constant	-0.020**	-0.095***	-0.095***	0.004	-0.089***	-0.089***
	(0.009)	(0.018)	(0.018)	(0.005)	(0.008)	(0.008)
Observations	28,370	26,849	26,849	132,632	125,653	125,653
R-squared	0.199	0.208	0.208	0.073	0.079	0.080