Insider Risk Aversion and Trade Informativeness: Evidence from Pre-Option-Grant Selling

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Abstract

We examine whether corporate insiders' stock sales prior to option grant dates reflect underlying risk preferences and influence the informativeness of their trading. Consistent with previous studies suggesting that insiders increase sales before option grants for risk-aversion purposes, we find that trades by pre-grant sellers are significantly less informative, and that the magnitude of pre-grant selling predicts lower trading profitability. These findings suggest that pre-grant selling behavior serves as a proxy for insiders' risk aversion and helps explain variation in trading informativeness.

Keywords: Insider Trading, Option Grants, Risk Aversion

JEL classification: D80, G10, G14, G34, G39

1. Introduction

Option grants are significant compensation events that can meaningfully alter executives' and directors' exposure to firm-specific risk. In anticipation of such changes, corporate insiders often adjust their equity holdings to manage risk (Chiang et al., 2017; Drobetz et al., 2020; Marin and Olivier, 2008). Specifically, they have incentives to reduce their exposure to firm-specific risk in response to option grants, which increase their equity-based compensation and thus their exposure (Bettis et al., 2015; Ofek and Yermack, 2000). More recently, Fang et al. (2024) shows that insiders increase open-market sales around option grant dates primarily to reduce risks, rather than to exploit private information.

Motivated by this literature, we investigate whether insiders' pre-grant selling behavior reflects their risk preferences and, in turn, influences the informativeness of their trades. Corporate insider transactions have long been recognized as containing valuable, firm-specific information (Cheng et al., 2023; Piotroski and Roulstone, 2004; Seyhun, 1986). A substantial body of research has examined the determinants of insider trading informativeness, most of which focusing on firms' information environment (e.g., Dang et al., 2021; Frankel and Li, 2004; Kyung and Nam, 2023; Liang et al., 2020; Wang and Zhang, 2025) or insiders' historical trading patterns (e.g., Ali and Hirshleifer, 2017; Cohen et al., 2012). Some attribute insider trading informativeness to local cultures and values, such as gambling preferences and individualism (Cline et al., 2021; Tong and Wu, 2025). However, relatively few studies have directly explored the role of insiders' personal characteristics — particularly their risk attitudes — in shaping the informativeness of their trades (Hegde et al., 2023; Jiang et al., 2021~~; Li et al., 2024~~).

Consistent with Fang et al. (2024), we find a substantial increase in insider net sales in the period surrounding option grants, with the peak occurring in the quarter prior to grant issuance, as

shown in Figure 1. We then assess the informativeness of all trades executed by pre-grant sellers, beyond the option grant window. Our analysis reveals that trades by pre-grant sellers are significantly less informative: the three-month cumulative abnormal return (CAR) following their purchases is 3.50% lower, while the CAR following their sales is 0.33% higher, both statistically significant at the 1% level. Further, we find that the intensity of pre-grant selling — measured as net shares sold relative to shares outstanding over the three-month period before option grants — also associates with lower insider trading profitability, reinforcing the notion that pre-grant sellers are more risk-averse and less informed in their trading.

[Insert Figure 1]

Our study contributes to the insider trading literature in two key ways. First, by using pre-grant selling behavior as a proxy for insider risk aversion, we identify a novel determinant of trading informativeness, complementing existing research on how individual characteristics affect insider trading behavior (e.g., Hegde et al., 2023; Jiang et al., 2021; Li et al., 2024). We demonstrate that this measure offers incremental explanatory power beyond established factors such as routine trader classification (Cohen et al., 2012) and past trading performance (Ali and Hirshleifer, 2017). Second, we provide further evidence that insider selling prior to option grants is primarily driven by risk-management motives, contributing to a more nuanced understanding of pre-grant insider trading behavior.

The rest of the study is organized as follows. Section 2 describes our data and variable construction. Section 3 reports the empirical results. Section 4 presents robustness checks and addresses endogeneity concerns. Section 5 concludes.

2. Data and Variables

We obtain insider open market stock transaction data (purchases and sales) and insider option grants data from the London Stock Exchange Group (LSEG) Insiders Data. Our initial sample includes all option grants recorded in this database from 1996 to March 2023.[1] Stock price data are sourced from CRSP, accounting data from COMPUSTAT, and analyst data from LSEG IBES.

Our dependent variables, *EW-CAR3M* and *VW-CAR3M*, are the three-month cumulative abnormal returns (in percentage) following insider trades, calculated using the market model with equal-weighted and value-weighted market indices, respectively. Building on Fang et al. (2024), we define two variables to capture insider trading activity around option grants. Specifically, for each option grant received by insider i, we examine their stock transactions within the three months preceding the grant. Our key variable, *Pre-Grant Seller*, is a binary indicator equal to 1 if insider i executes two or more stock sales within the three months preceding the option grant, and 0 otherwise. We define another continuous variable, *Pre-Grant Net Sale*, as the total number of shares insider i sells on a net basis over the three months before option grant j, scaled by firm k's total number of shares outstanding:

$$Pre-Grant\ Net\ Sale_{i,j,k} = \frac{Net\ Sales_{i,k}^{3\ month\ before\ j}}{Number\ of\ Shares\ Outstanding_k} \qquad (1)$$

We control for a range of potential determinants of insider trading — firm size (*MktCap*, defined as the natural logarithm of market capitalization), valuation (*MTB*, the market-to-book ratio), *Leverage* (total debt as a ratio of total equity), *ROA* (return on assets), and *Analysts* (the

[1] Our sample covers all insiders as defined by the Securities Exchange Act of 1934, with a significant portion of option grants awarded to officers and directors who are not CEOs, CFOs, presidents, or chairs.

natural logarithm of one plus the number of analysts covering the firm). We also include several dummy variables indicating insiders' roles in the firm – *CEOPRE, CFO, CHAIR,* and *OFF_other*, which equal 1 if the insider is the CEO/president, CFO, chair of the board, or an officer in another role, respectively.[2]

On top of the above-mentioned control variables, we use two proxies for insider opportunism. Following Cohen et al. (2012), we classify an insider as a routine insider (*Routine_Trade* = 1) if they execute at least one trade in the same month for three consecutive years. To capture trading profitability, we follow Ali and Hirshleifer (2017) to rank insiders based on their trading gains prior to the most recent quarterly earnings announcement. Insiders in the top quintile are designated as opportunistic, while the rest are classified as routine insiders (*Routine_QEA* = 1). Additionally, we incorporate industry and year fixed effects. All continuous variables are winsorized at the 1% and 99% levels to mitigate the impact of outliers.

We merge an insider's open market stock transactions with their most recent option grants, and the control variables.[3] To mitigate potential bias from small firms, we exclude firms with total book assets under $10 million. Our final sample consists of 4,007 unique firms, 13,464 insiders, 31,087 insider purchases, and 295,085 insider sales.

Figure 1 plots insider net sales over the four quarters surrounding option grants—two quarters before and two quarters after the grants. There is a substantial increase in insider net sales in the quarters immediately before and after the grants, with the peak occurring in the quarter prior.

[2] We follow LSEG manual to categorize insiders into directors and officers. Note that insiders can have multiple roles in the company, so the insider categories are not multiple exclusive.
[3] If an insider makes multiple open-market transactions on the same day, we consolidate them into a single entry.

In Table 1 we report the descriptive statistics of variables used in our study, with Panel A for insider stock purchase, and Panel B for insider stock sales. About 57% of the open-market stock purchases are made by pre-grant sellers, in contrast to about 74% of the open-market stock sales made by pre-grant sellers.

[Insert Table 1]

3. Empirical Analysis

3.1 Pre-Grant Seller

We first investigate whether the pre-grant sellers trade more conservatively and profit less by regressing the profitability of insider trading, measured by the equal-weighted (columns 1 and 3) and value-weighted three-month CAR (columns 2 and 4) on the binary indicator, *Pre-Grant Seller*. The results are presented in Table 2. Panel A reports the results for stock purchases, while Panel B for stock sales. In all regressions, we control for firm-level characteristics, insider roles within the firm, and two proxies for insider opportunism — *Routine_Trade* and *Routine_QEA* — which indicate if the insider is a routine or opportunistic trader. We include industry and year fixed effects and use robust standard errors in all regressions.

[Insert Table 2]

In Panel A, the coefficient estimates of *Pre-Grant Seller* are both negative and statistically significant at the 1% level — the three-month CAR after open-market stock purchases by insiders who make two or more pre-grant sales is 3.50% to 4.29% lower than those by other insiders. In Panel B, the coefficient estimates of *Pre-Grant Seller* are insignificant when using the equal-weighted CAR as the dependent variable, and are positively significant at the 1% level when using the value-weighted CAR. These results are consistent with the view that pre-grant sellers are more

risk-averse and less opportunistic, as their purchases (sales) precede less positive (negative) abnormal returns. In accordance with the literature showing that insider sales tend to be driven by liquidity needs rather than information (Dang et al., 2021; Gilstrap et al., 2019; Liang et al., 2020; Sundaram and Yermack, 2007), we observe results that are statistically more significant for insider purchases in Panel A than for insider sales in Panel B.

The estimated coefficients for the control variables are largely in line with those reported in the literature. Open-market purchases by insiders from large, high-valuation, or high-ROA firms tend to be less profitable, while their open-market sales are more profitable. Higher leverage is associated with lower profitability for insider sales. Trades made by CEOs or presidents are significantly less informative, whereas those by CFOs and chairs of the board are significantly more informative (Wang et al., 2012). Trades by officers in other roles tend to be less informative in general.

Turning to the two routine insider measures proposed by Ali and Hirshleifer (2017) and Cohen et al. (2012) ~~and Ali and Hirshleifer (2017)~~, we find that trades made by routine investors are generally less informative. This "horse race" comparison suggests that our simple proxy for risk preferences, based on pre-grant selling, offers valuable – and potentially more powerful – insights into the informativeness of insider trading, and particularly for insider purchases, which are typically more informative than sales.

3.2 The Amount of Pre-Grant Selling

Next, we investigate whether insiders who sell more prior to option grants trade more conservatively, using *Pre-Grant Net Sale* as the key variable of interest. In Table 3, we present the regression results with the same dependent variables, the three-month CAR.

[Insert Table 3]

The results in Table 3 are largely consistent with those in Table 2. In Panel A, the coefficient estimates of *Pre-Grant Net Sale* are negative and statistically significant at the 1% level, indicating that open-market stock purchases by insiders who sell more prior to option grants are less profitable by between 0.58% and 0.67% over the 60 trading days following the purchases. This suggests that insiders who engage in more pre-grant selling have less informative future stock purchases compared to other insiders. For the regressions on insider sales in Panel B, the coefficient estimates of *Pre-Grant Net Sale* are smaller in magnitude and less significant.

Our continuous measure of pre-grant selling explains the profitability of insider purchases better than *Routine_Trade* and *Routine_QEA*, although the latter two explain the profitability of insider sales more effectively. This suggests that pre-grant selling captures a different aspect of insider behavior—specifically, insiders' risk aversion—and adds incremental explanatory power for insider trading informativeness.

These results, taken together, suggest that the insiders who sell more shares prior to option grants are less likely to trade on material information, and the effect is more pronounced for insider purchases which are typically more information-driven. Consistent with the findings in Table 2, our results suggest that pre-grant selling serves as a strong proxy for insider risk-aversion, and in turn predicts significantly lower profitability following insider trading.

4. Robustness Checks and Endogeneity Tests

In this section, we conduct a series of robustness checks to validate our main findings. We report the results in Table 4 and we omit the coefficients of control variables to conserve space. First, we address unobserved omitted variables concerns at the firm level by re-estimate the

regressions in Tables 2 and 3 using (a) firm and year fixed effects, and (b) firm-by-year fixed effects. These take into account both time-invariant and time-varying firm-level unobserved heterogeneity. The findings, presented in Panels A and B of Table 4, remain consistent with our main conclusion: pre-grant selling activity is associated with less informative insider transactions.

Second, we conduct an instrumental variables (IV) analysis using economic policy uncertainty (EPU) to capture macro-level uncertainty, and blackout policies to capture firm-imposed insider trading restrictions (Bettis et al., 2000), as instruments to address further potential endogeneity issues. The EPU is expected to influence insiders' incentives to trade – either due to risk-aversion or signaling motives – but does not directly affect the informational content of their trades (El Ghoul et al., 2022). We define high-uncertainty periods as those in the top decile of the Equity Market-related Economic Uncertainty Index (Baker et al, 2016).[4] Our blackout policies measure follows Roulstone (2003) and captures the most common firm-imposed insider trading restrictions (Bettis et al., 2000); these policies are shaped by corporate governance practices, but are exogeneous to short-term insider trading profitability. The findings with the two instrumental variables presented in Panel C of Table 4 continue to hold robustly.[5]

Third, in Panel D of Table 4 we present results using one-month CAR instead of three-month CAR. These results are consistent with our main conclusions. Fourth, we use insider investment horizon as an alternate measure of insider opportunism (Akbas et al., 2020). We compute this measure as the absolute average annual net order flow of stock by the insider over the last ten years, multiplied by -1. A value of -1 indicates that the insider has a long investment horizon, while a value greater than or equal to -0.53 indicates a short investment horizon. Our

[4] https://fred.stlouisfed.org/series/WLEMUINDXD.
[5] Both instruments satisfy relevance and exclusion assumptions to a reasonable degree (with F greater than 10 in the first stage regressions) and help strengthen our identification strategy.

results remain robust after including this measure as shown in Panel E of Table 4. Fifth, in Panel F, as another robustness check, we show consistent results with standard errors clustered by industry. Lastly, we divide our sample into two subsamples: 1996 to 2007 and 2008 to 2023, to account for the potential impact of the 2008 financial crisis on insider trading behavior, as major economic shifts can alter risk perceptions. Our conclusions hold for both periods, as shown in Panel G.

5. Conclusion

This study examines a novel measure of insider risk preferences – the increase in selling behavior prior to option grants. We show that this measure can strongly predict the informativeness of insider trades. Inspired by prior research suggesting that insiders adjust their equity exposure around option grant dates for risk-management purposes, we find that such pre-grant selling behavior is not merely a timing artifact but reflects deeper individual characteristics, particularly risk aversion.

Our findings reveal that insiders who engage in higher levels of pre-grant net selling exhibit significantly less informative trading behavior, as reflected by lower post-trade abnormal returns. Specifically, purchases by these insiders are followed by significantly lower positive abnormal returns, while their sales are followed by less negative returns, indicating a reduced informational edge. This diminished informativeness appears to be driven by insiders' heightened sensitivity to firm-specific risk, rather than a lack of access to private information per se.

Furthermore, the results suggest that our measure of pre-grant selling complements and extends the existing measures of insider risk preferences, and this easy-to-construct measure appears to explain insider trading profitability even better than well-documented factors such as the routine trader classification (Cohen et al., 2012) and past trading performance (Ali and

Hirshleifer, 2017). Overall, our study highlights the importance of considering individual risk preferences when evaluating the informativeness of insider trades. Future research may further explore how personal characteristics interact with institutional and market-level factors to shape trading behavior and its implications for market efficiency.

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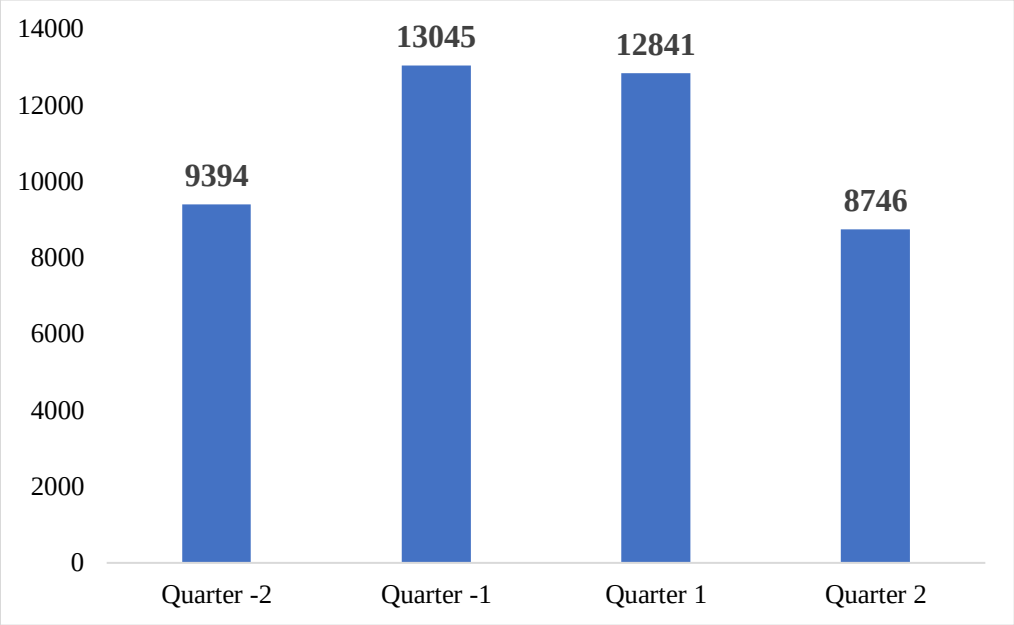
Figure 1: Insider Net Sales Around Option Grants



This figure presents insider net sales during the two quarters before and the two quarters after the option grants.

Table 1 Descriptive Statistics

Panel A Stock Purchase						
	Mean	P25	Median	P75	SD	N
EW-CAR3M	7.90	-8.45	5.30	22.51	29.17	31,087
VW-CAR3M	8.94	-8.75	5.09	23.36	30.53	31,087
Pre-Grant Seller	0.57	0.00	1.00	1.00	0.50	31,087
Pre-Grant Net Sale (%)	-0.04	-0.01	0.00	0.00	0.17	31,087
Size ($ billions)	1.54	0.13	0.37	1.49	3.36	31,087
MTB	1.19	0.36	0.67	1.39	1.44	31,087
Leverage	0.88	0.08	0.43	1.16	2.49	31,087
ROA	-0.07	-0.12	0.01	0.03	0.23	31,087
Analysts	7.32	3.00	5.00	9.00	7.03	31,087
CEOPRE	0.17	0.00	0.00	0.00	0.37	31,087
CFO	0.02	0.00	0.00	0.00	0.15	31,087
CHAIR	0.13	0.00	0.00	0.00	0.33	31,087
OFF_other	0.04	0.00	0.00	0.00	0.20	31,087
Routine_Trade	0.64	0.00	1.00	1.00	0.48	31,087
Routine_QEA	0.34	0.00	0.00	1.00	0.47	31,087

Panel B Stock Sale						
	Mean	P25	Median	P75	SD	N
EW-CAR3M	-4.96	-16.21	-3.66	8.01	21.90	295,085
VW-CAR3M	-5.99	-16.77	-4.69	6.69	21.22	295,085
Pre-Grant Seller	0.74	0.00	1.00	1.00	0.44	295,085
Pre-Grant Net Sale (%)	0.06	0.00	0.00	0.03	0.16	295,085
Size ($ billions)	16.40	0.69	1.69	5.25	55.10	295,085
MTB	2.37	0.88	1.62	3.17	2.15	295,085
Leverage	0.52	0.00	0.14	0.59	1.12	295,085
ROA	0.05	0.03	0.06	0.11	0.15	295,085
Analysts	14.70	6.00	12.00	20.00	10.95	295,085
CEOPRE	0.18	0.00	0.00	0.00	0.38	295,085
CFO	0.03	0.00	0.00	0.00	0.17	295,085
CHAIR	0.09	0.00	0.00	0.00	0.28	295,085
OFF_other	0.14	0.00	0.00	0.00	0.35	295,085
Routine_Trade	0.66	0.00	1.00	1.00	0.47	295,085
Routine_QEA	0.17	0.00	0.00	0.00	0.37	295,085

Note: This table presents descriptive statistics for the main variables, including the mean, 25th percentile, median, 75th percentile, standard deviation, and the number of observations. All continuous variables have been winsorized at the 1st and 99th percentiles.

Table 2 Pre-Grant Seller's Insider Trading Profitability

	Panel A Stock Purchase		Panel B Stock Sale	
	EW CAR	VW CAR	EW CAR	VW CAR
	(1)	(2)	(3)	(4)
Pre-Grant Seller	-4.29***	-3.50***	-0.18	0.33***
	(-8.16)	(-6.50)	(-1.53)	(2.89)
ln(MktCap)	-1.97***	-1.67***	1.73***	2.11***
	(-10.21)	(-8.57)	(43.78)	(55.28)
MTB	1.11***	0.68***	-0.00	0.08***
	(5.97)	(3.54)	(-0.11)	(2.94)
Leverage	-0.09	0.00	-0.94***	-0.89***
	(-0.98)	(0.05)	(-20.72)	(-19.48)
ROA	-3.49**	-3.84***	3.53***	3.24***
	(-2.55)	(-2.66)	(7.87)	(7.21)
ln(Analysts)	2.16***	2.08***	-2.19***	-2.47***
	(6.58)	(6.32)	(-27.29)	(-31.14)
CEOPRE	-2.93***	-3.73***	0.58***	0.77***
	(-3.86)	(-4.94)	(4.08)	(5.58)
CFO	4.60***	3.91***	-3.20***	-4.33***
	(3.68)	(2.89)	(-10.84)	(-15.03)
CHAIR	8.23***	8.57***	-1.15***	-1.51***
	(9.96)	(10.34)	(-7.09)	(-9.55)
OFF_other	-0.91	-1.90**	1.17***	1.27***
	(-1.00)	(-2.01)	(8.39)	(9.40)
Routine_Trade	-0.59	-1.18**	0.84***	0.97***
	(-1.27)	(-2.50)	(8.69)	(10.34)
Routine_QEA	-0.90*	-0.95*	1.41***	1.11***
	(-1.87)	(-1.92)	(12.00)	(9.73)
Constant	15.70***	-0.23	-15.23*	-24.02***
	(4.10)	(-0.06)	(-1.79)	(-3.45)
Observations	31,087	31,087	295,085	295,085
R^2	0.098	0.122	0.066	0.068

Note: *** indicates statistical significance at 1%, ** indicates statistical significance at 5%, and * indicates statistical significance at 10%.

Table 3 Pre-Grant Selling Amount and Insider Trading Profitability

	Panel A Stock Purchase		Panel B Stock Sale	
	EW CAR	VW CAR	EW CAR	VW CAR
	(1)	(2)	(3)	(4)
Pre-Grant Net Sale	-0.67***	-0.58***	0.09***	-0.03
	(-5.40)	(-4.60)	(3.24)	(-1.18)
ln(MktCap)	-2.04***	-1.73***	1.71***	2.11***
	(-10.56)	(-8.89)	(42.61)	(54.33)
MTB	1.05***	0.63***	0.00	0.08***
	(5.66)	(3.27)	(0.03)	(2.98)
Leverage	-0.06	0.03	-0.95***	-0.89***
	(-0.63)	(0.34)	(-20.79)	(-19.57)
ROA	-3.53**	-3.86***	3.53***	3.25***
	(-2.56)	(-2.67)	(7.87)	(7.23)
ln(Analysts)	2.26***	2.18***	-2.17***	-2.46***
	(6.84)	(6.57)	(-27.09)	(-30.97)
CEOPRE	-1.12	-2.26***	0.70***	0.66***
	(-1.51)	(-3.09)	(5.10)	(4.91)
CFO	7.17***	6.00***	-3.11***	-4.46***
	(5.91)	(4.59)	(-10.72)	(-15.75)
CHAIR	9.80***	9.86***	-1.08***	-1.56***
	(12.08)	(12.13)	(-6.72)	(-9.94)
OFF_other	1.76**	0.27	1.32***	1.15***
	(2.05)	(0.31)	(10.14)	(9.04)
Routine_Trade	-0.35	-0.99**	0.86***	0.99***
	(-0.75)	(-2.10)	(8.87)	(10.48)
Routine_QEA	-0.64	-0.75	1.42***	1.12***
	(-1.33)	(-1.50)	(12.06)	(9.81)
Constant	16.17***	0.22	-14.92*	-23.84***
	(4.20)	(0.06)	(-1.75)	(-3.43)
Observations	31,087	31,087	295,085	295,085
R^2	0.097	0.121	0.066	0.068

Note: *** indicates statistical significance at 1%, ** indicates statistical significance at 5%, and * indicates statistical significance at 10%.

Table 4 Robustness Checks and Endogeneity Tests

Panel A Firm and Year Fixed Effects				
	Stock Purchase		Stock Sale	
	EW CAR	VW CAR	EW CAR	VW CAR
	(1)	(2)	(3)	(4)
Pre-Grant Seller	-8.16***	-8.52***	-0.27	-0.19
	(-8.82)	(-9.03)	(-1.59)	(-1.20)
	Stock Purchase		Stock Sale	
	EW CAR	VW CAR	EW CAR	VW CAR
	(1)	(2)	(3)	(4)
Pre-Grant Net Sale	-1.22***	-1.31***	0.03	-0.01
	(-6.03)	(-6.18)	(0.74)	(-0.28)

Panel B Firm × Year Fixed Effects				
	Stock Purchase		Stock Sale	
	EW CAR	VW CAR	EW CAR	VW CAR
	(1)	(2)	(3)	(4)
Pre-Grant Seller	-4.93***	-5.65***	0.30	-0.08
	(-5.03)	(-5.60)	(1.58)	(-0.46)
	Stock Purchase		Stock Sale	
	EW CAR	VW CAR	EW CAR	VW CAR
	(1)	(2)	(3)	(4)
Pre-Grant Net Sale	-0.78***	-1.11***	0.20***	0.17***
	(-3.83)	(-4.75)	(3.80)	(3.65)

Panel C Instrumental Variable Approach				
	Stock Purchase		Stock Sale	
	EW CAR	VW CAR	EW CAR	VW CAR
	(1)	(2)	(3)	(4)
Pre-Grant Seller	-15.86**	-20.86***	71.46***	31.88***
	(-2.13)	(-2.81)	(18.65)	(12.22)
	Stock Purchase		Stock Sale	
	EW CAR	VW CAR	EW CAR	VW CAR
	(1)	(2)	(3)	(4)
Pre-Grant Net Sale	-25.25***	-66.06***	3.26***	7.60***
	(-4.67)	(-5.71)	(4.39)	(9.68)

Panel D One-Month CAR				
	Stock Purchase		Stock Sale	
	EW CAR	VW CAR	EW CAR	VW CAR
	(1)	(2)	(3)	(4)
Pre-Grant Seller	-1.43***	-1.07***	0.08	0.17**
	(-4.45)	(-3.28)	(1.20)	(2.56)
	Stock Purchase		Stock Sale	
	EW CAR	VW CAR	EW CAR	VW CAR
	(1)	(2)	(3)	(4)
Pre-Grant Net Sale	-0.33***	-0.26***	0.04**	0.07***
	(-3.63)	(-2.91)	(2.40)	(3.88)

Panel E Controlling for Additional Measure of Routine Investor				
	Stock Purchase		Stock Sale	
	EW CAR	VW CAR	EW CAR	VW CAR
	(1)	(2)	(3)	(4)
Pre-Grant Seller	-2.64***	-2.51***	-0.12	0.44***
	(-8.16)	(-3.25)	(-0.87)	(3.21)
	Stock Purchase		Stock Sale	
	EW CAR	VW CAR	EW CAR	VW CAR
	(1)	(2)	(3)	(4)
Pre-Grant Net Sale	-0.74***	-0.85***	-0.05	0.03
	(-3.09)	(-3.55)	(-1.61)	(0.91)

Panel F Standard Errors Clustered by Industry				
	Stock Purchase		Stock Sale	
	EW CAR	VW CAR	EW CAR	VW CAR
	(1)	(2)	(3)	(4)
Pre-Grant Seller	-4.29***	-3.50***	-0.18	0.33
	(-3.70)	(-2.87)	(-0.28)	(0.50)
	Stock Purchase		Stock Sale	
	EW CAR	VW CAR	EW CAR	VW CAR
	(1)	(2)	(3)	(4)
Pre-Grant Net Sale	-0.67**	-0.58*	-0.09	-0.03
	(-2.00)	(-1.82)	(-0.53)	(-0.16)

Panel G Subsample Analyses				
Panel G1 1996-2007				
	Stock Purchase		Stock Sale	
	EW CAR	VW CAR	EW CAR	VW CAR
	(1)	(2)	(3)	(4)
Pre-Grant Seller	-6.36***	-5.50***	-0.20	0.17
	(-8.66)	(-7.23)	(-1.25)	(1.10)
	Stock Purchase		Stock Sale	
	EW CAR	VW CAR	EW CAR	VW CAR
	(1)	(2)	(3)	(4)
Pre-Grant Net Sale	-0.32**	-0.23	-0.00	-0.01
	(-2.08)	(-1.45)	(-0.08)	(-0.38)
Panel G2 2008-2024				
	Stock Purchase		Stock Sale	
	EW CAR	VW CAR	EW CAR	VW CAR
	(1)	(2)	(3)	(4)
Pre-Grant Seller	-3.30***	-2.48***	0.49***	0.94***
	(-4.11)	(-3.08)	(2.95)	(5.74)
	Stock Purchase		Stock Sale	
	EW CAR	VW CAR	EW CAR	VW CAR
	(1)	(2)	(3)	(4)
Pre-Grant Net Sale	-1.38***	-1.31***	-0.30	-0.17
	(-6.65)	(-6.31)	(-1.42)	(-0.68)

Note: *** indicates statistical significance at 1%, ** indicates statistical significance at 5%, and * indicates statistical significance at 10%.