Online Appendix for

"Independent Director Tenure and Corporate

Governance: Evidence from Insider Trading"

Section A Executives' trading profitability and ID tenure: Robustness checks

We conduct some additional robustness checks, the results of which are tabulated in Panels A-H of *Table O.1* in the Online Appendix. First, we replace our measure of *ID tenure* with the median ID tenure for each firm-year and reestimate the baseline regression. The results, presented in Panel A, are qualitatively similar to our main findings. If we use the longest ID tenure in each firm-year as our measure (untabulated for brevity), the results continue to hold. Second, in two separate tests, the results of which are tabulated in Panels B and C, we also control for CEO tenure and the diversity of ID tenure, respectively. Conceptually, two boards with the same average ID tenure but different levels of diversity in terms of ID tenure (e.g., one board with more uniform ID tenure and another with more diverse ID tenure) are likely to differ in the effectiveness of their monitoring. We follow Li and Wahid (2018) to measure the diversity in ID tenure. Specifically, we first sort the IDs in the sample into deciles based on the length of their tenure. Then, the diversity of ID tenure in a given firm-year is measured with the Blau Index as $1 - \sum_{i=1}^{s} p_i^2$, where p_i is the fraction of the firm IDs in decile i and S is the number of deciles into which all of the firm's IDs are assigned in that year. We find that the effects of CEO tenure and of the diversity of ID tenure are both negative for all four horizons and significant, except in the case of R(t+30). It appears that the diversity of ID tenure induces better governance. The effect of insider director tenure is insignificant when CEO tenure is included as an additional control, which is not surprising given the high correlation between insider director tenure and CEO tenure (because CEOs are often one of the few insider directors).[1] Importantly, the effect of ID tenure remains mostly intact in these two tests, both economically and statistically.

Third, the average ID tenure can change due to the passage of time, to a change in ID

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[1]In our sample, the correlation between insider director tenure and CEO tenure is 0.62.

composition (e.g., ID retirement), or to both. To see whether our findings are robust to variation in ID tenure due to the passage of time only (i.e., the same IDs over time), we construct a dummy variable, *No change in IDs*, that equals one if the composition of firm IDs does not change from that of the prior year and zero otherwise, and another dummy variable, *Change in IDs*, that is defined as the opposite of *No change in IDs*. We then interact *ID tenure* with each of the dummy variables. The results, tabulated in Panel D, show that both interaction terms have positive and significant coefficients, confirming the robustness of our findings.

Fourth, as firms mature, the desired mix of board functioning tilts toward monitoring, although advising is still valuable (e.g., Field, Lowry and Mkrtchyan, 2013). Moreover, firm age can be related to both ID tenure and the firm's demand for monitoring. We therefore examine whether our main results continue to hold after controlling for firm age, which is calculated from its founding year or, if its founding year is unknown, the year it first appeared in CRSP. As shown in Panel E, we find that the results hold. The coefficients on *ID tenure* remain significant, while their economic magnitude is only slightly smaller.

Fifth, we check whether the relation between ETP and ID tenure has changed following the SOX Act or more generally over time, as the reputational pressure in the market for directors may not be constant over time. Specifically, for the results in Panel F, we construct an indicator, *afterSOX*, for the time period after the introduction of the SOX Act and interact it with *ID tenure*. For the results in Panel G, we create three time period indicators—1998-2002, 2003-2008, and 2009-2013—and then interact them with *ID tenure* (the reference period is 2014–2018). The results presented in Panels F and G suggest that the relation between ID tenure and ETP does not vary significantly before and after the introduction of the SOX Act or over time, as indicated by the generally insignificant coefficients on the interaction terms.

Finally, we also examine whether the relation between ID tenure and ETP differs across

incorporation locations by including an interaction term between *ID tenure* and *Texas*—an indicator for whether a firm is incorporated in Texas—and another interaction term between *ID tenure* and *Delaware*—an indicator for whether a firm is incorporated in Delaware. The two interaction terms capture the potential differences between Texas, Delaware, and other states. The main effects for *Texas* and *Delaware* are omitted from the specification, as we include firm fixed effects in the regressions. The results, tabulated in Panel H, show that there is generally no systematic difference in the relation between ID tenure and ETP across locations.

Section B   Falsification test: Tenure of affiliated outside directors

We conduct a falsification test for whether an unobservable factor may be driving our findings by examining how the tenure of *affiliated* outside directors is related to ETP. For example, if the observed relation between ID tenure and ETP is due to a need for board stability to conduct a beneficial long-term project (which also affects ETP), then we also expect to observe extended tenures for affiliated directors and a significantly positive relation between their tenure and ETP. Specifically, in the baseline regression, we replace *ID tenure* with affiliated director tenure (*AD tenure*), which is constructed analogously to *ID tenure*. Executives in firms that do not have affiliated outside directors are dropped, which results in a smaller sample for this test. The results, presented in *Table O.6* in the Online Appendix, show that there is no significant relation between affiliated director tenure and ETP. The estimated coefficients on *AD tenure* are statistically insignificant. This finding is unaffected by the inclusion of *ID tenure* as an additional control variable, while the coefficients on *ID tenure* remain significantly positive, as in the baseline regression.

Section C Propensity score matching procedure in the test of sudden ID death

We verify that the propensity score matching procedure creates two groups of firms with similar observable pre-event characteristics. Specifically, we conduct a univariate comparison of the four matching variables between treatment and control firms as of two years prior to the sudden death of an ID. As shown in Panel A of *Table O.7* in the Online Appendix, before matching, the treatment firms are significantly different from the potential control firms that are in the same industry and have never experienced the death of any ID during our sample period. In contrast, as shown in Panel B, after matching, none of the differences are found to be significant. In particular, the pre-event *ID tenure* values for the two groups of matched firms are almost identical.

References

Coles, J.L., Daniel, N.D., Naveen, L., 2008. Boards: Does one size fit all? Journal of Financial Economics 87, 329–356.

Field, L., Lowry, M., Mkrtchyan, A., 2013. Are busy boards detrimental? Journal of Financial Economics 109, 63–82.

Li, N., Wahid, A.S., 2018. Director tenure diversity and board monitoring effectiveness. Contemporary Accounting Research 35, 1363–1394.

Table O.1: The profitability of executives' trading over the course of independent director tenure: Robustness tests

This table presents the OLS regression results for the effect of ID tenure on the profitability of trades made by executives. In Panel A, ID tenure is defined as the median of all IDs' tenure in a firm-year. Following Li and Wahid (2018), the IDs in the sample are sorted into deciles based on the length of their tenure. Then, the diversity in ID tenure for a given firm-year is measured with the Blau Index and calculated as $1 - \sum_{i=1}^{s} p_i^2$, where p_i is the fraction of firm IDs in decile i and S is the total number of deciles that all of the firm's IDs are assigned to in the year. In Panel D, *No change in IDs* is a dummy variable that equals one if the composition of IDs in a firm does not change in the prior year and zero otherwise, and another dummy variable, *Change in IDs*, is defined as the opposite of *No change in IDs*. *Firm age* is calculated from the founding year of the firm or the year that it first appeared in CRSP if its founding year is unknown. The variable *afterSOX* is a dummy variable indicating years after SOX. In Panel G, we create three time period indicators for the periods 1998-2002, 2003-2008, and 2009-2013. *Texas* is an indicator for whether a firm is incorporated in Texas, and Delaware is an indicator for whether a firm is incorporated in Delaware. Other control variables are included as in Table 2 but are not tabulated. The definitions of all variables are given in Appendix A. Constants are included in all regressions but not displayed. Standard errors are in parentheses and are clustered at the individual level. ***, **, and * denote coefficient significance at the 1%, 5%, and 10% levels, respectively.

| Panel A: Median ID tenure | | | | |
Variables	R(t+30)	R(t+60)	R(t+90)	R(t+180)
Median ID tenure	0.050**	0.114***	0.131***	0.241***
	(0.020)	(0.025)	(0.035)	(0.064)

| Panel B: Controlling for CEO tenure | | | | |
Variables	R(t+30)	R(t+60)	R(t+90)	R(t+180)
ID tenure	0.065***	0.140***	0.159***	0.377***
	(0.024)	(0.033)	(0.047)	(0.084)
CEO tenure	-0.015	-0.032**	-0.058***	-0.121***
	(0.011)	(0.016)	(0.022)	(0.038)

Panel C: Controlling for the diversity in ID tenure

Variables	R(t+30)	R(t+60)	R(t+90)	R(t+180)
ID tenure	0.082***	0.151***	0.171***	0.363***
	(0.028)	(0.034)	(0.050)	(0.091)
Tenure diversity	-0.277	-1.363**	-1.892**	-3.493**
	(0.463)	(0.646)	(0.954)	(1.718)

Panel D: Change in ID composition and isolated time effects

Variables	R(t+30)	R(t+60)	R(t+90)	R(t+180)
ID tenure × Change in IDs	0.072**	0.123***	0.122**	0.284***
	(0.029)	(0.036)	(0.051)	(0.093)
ID tenure × No-change in IDs	0.085***	0.157***	0.181***	0.378***
	(0.027)	(0.034)	(0.050)	(0.091)

Panel E: Controlling for firm age

Variables	R(t+30)	R(t+60)	R(t+90)	R(t+180)
ID tenure	0.066**	0.159***	0.147***	0.349***
	(0.026)	(0.034)	(0.050)	(0.093)
Log(firm age)	0.690**	-0.462	0.825	0.219
	(0.310)	(0.390)	(0.627)	(1.145)

Panel F: Comparison of before and after SOX

Variables	R(t+30)	R(t+60)	R(t+90)	R(t+180)
ID tenure	0.056	0.066	0.199***	0.363***
	(0.039)	(0.050)	(0.072)	(0.128)
afterSOX	1.033*	2.893***	3.877***	5.963***
	(0.534)	(0.857)	(1.117)	(1.856)
afterSOX × ID tenure	0.037	0.122**	-0.053	-0.018
	(0.037)	(0.051)	(0.072)	(0.123)

Panel G: Results over time: Base time period is 2014-2018

Variables	R(t+30)	R(t+60)	R(t+90)	R(t+180)
ID tenure	0.134***	0.261***	0.167**	0.255*
	(0.036)	(0.050)	(0.072)	(0.134)
y98_02 × ID tenure	-0.093**	-0.209***	0.021	0.105
	(0.042)	(0.061)	(0.087)	(0.152)
y03_08 × ID tenure	-0.064*	-0.125**	-0.096	-0.024
	(0.036)	(0.053)	(0.076)	(0.138)

y09_13 × ID tenure	-0.008	-0.013	0.092	0.351**
	(0.033)	(0.053)	(0.073)	(0.138)

Panel H: Results across incorporation locations

Variables	R(t+30)	R(t+60)	R(t+90)	R(t+180)
ID tenure	0.077**	0.127***	0.111*	0.138
	(0.031)	(0.041)	(0.060)	(0.106)
Delaware × ID tenure	0.006	0.036	0.097	0.371***
	(0.036)	(0.050)	(0.069)	(0.122)
Texas × ID tenure	0.054	0.049	-0.042	0.003
	(0.179)	(0.191)	(0.296)	(0.724)
Controls	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes

Table O.2: The volume and strength of executives' trading over the course of independent director tenure

This table presents the results of OLS regressions of executives' trading volume and strength on ID tenure, estimated at the executive-year level. *Volume* is the logarithm of one plus the total number of shares traded by each firm executive during a year. *Strength* is defined as the number of shares purchased by each executive net of the number of shares sold by the executive and scaled by the firm's total share volume traded during the year. *Dollar profit* equals the annualized abnormal return multiplied by the dollar value of the transaction and is aggregated to the executive-year level. The dollar profit is in millions of dollars. The definitions of all variables are given in Appendix A. Constants are included in all regressions but not displayed. Standard errors are in parentheses and are clustered at the individual level. ***, **, and * denote coefficient significance at the 1%, 5%, and 10% levels, respectively.

Variables	Volume	Strength	Dollar profit
ID tenure	-0.003	0.000	0.138***
	(0.010)	(0.001)	(0.030)
Inside director tenure	0.041***	-0.001**	-0.023
	(0.004)	(0.000)	(0.016)
ID age	0.033***	0.002	-0.119***
	(0.009)	(0.002)	(0.040)
ID ownership	-0.005	-0.002	0.002
	(0.006)	(0.002)	(0.008)
ID multidirectorship	-0.395***	-0.004	0.412
	(0.045)	(0.006)	(0.496)
Board size	-0.022*	0.001	-0.061
	(0.013)	(0.001)	(0.063)
Board independence	-0.944***	-0.003	-1.099
	(0.203)	(0.033)	(1.147)
CEO–Chairman duality	0.205***	-0.003	0.070
	(0.047)	(0.003)	(0.215)
Classified board	0.070	0.005	0.142
	(0.073)	(0.004)	(0.150)
Size	0.975***	0.008***	0.968***
	(0.044)	(0.003)	(0.313)
MB ratio	0.244***	0.001	-0.723***
	(0.022)	(0.002)	(0.263)
R&D dummy	0.279	0.013	0.360
	(0.177)	(0.009)	(0.261)
Institutional ownership	-0.101	-0.013	0.026
	(0.175)	(0.018)	(1.002)
Return volatility	5.202**	0.806***	16.191

	(2.338)	(0.217)	(10.767)
Loss dummy	-0.315***	0.002	-0.267
	(0.067)	(0.007)	(0.190)
Prior return	-1.263***	-0.029***	-2.862***
	(0.066)	(0.010)	(0.565)
Recent trade	1.468***	-0.072	-1.341
	(0.510)	(0.096)	(0.961)
Observations	100,753	100,753	100,753
R-squared	0.294	0.071	0.027
Firm FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes

Table O.3: Independent director turnover and executives' past trading profitability

This table presents the results of regressions of ID turnover on past ETP. *ID turnover rate* is the percentage of IDs who depart in a year. *Turnover dummy* equals one if at least one ID departs in a year and zero otherwise. We create a dummy for each firm-year that equals one if ETP in the firm-year is in the top quartile of the sample for that year and zero otherwise. The firm-level ETP in a given year is the weighted sum of the trading profitability for each individual trade by its executives, with the weights being the size of each individual transaction occurring in that year. Then, assuming ID turnover in year 0, for each ETP measurement window, we define three dummies as above for each of the past three years. In Panel A, we use R(t+180) to calculate firm-level ETP. Thus, *L1high180*, *L2high180*, and *L3high180* are the dummies for year -1, year -2, and year -3, respectively. We also construct a fourth dummy, *L1-3high180*, which equals one if any of the above three dummies equals one and zero otherwise. From panel A to panel D, we use different holding horizons to identify highly profitable executive trading. Other control variables included in Panels B to D (not tabulated) are the same as in Panel A. The definitions of all variables are given in Appendix A. Constants are included in all regressions but not displayed. Standard errors are in parentheses and are clustered at the individual level. ***, **, and * denote coefficient significance at the 1%, 5%, and 10% levels, respectively.

Panel A: Firm-years with highly profitable executive trading based on R(t+180)								
Variables	ID turnover rate				Turnover dummy			
L1high180	-0.003				-0.011			
	(0.003)				(0.008)			
L2high180		-0.005				-0.019*		
		(0.003)				(0.010)		
L3high180			-0.001				0.004	
			(0.003)				(0.010)	
L1-3high180				-0.002				-0.008
				(0.003)				(0.008)
ID tenure	-0.009***	-0.009***	-0.009***	-0.009***	-0.020***	-0.020***	-0.021***	-0.020***

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	(0.001)	(0.001)	(0.001)	(0.001)	(0.002)	(0.002)	(0.003)	(0.002)
Inside director tenure	-0.000	-0.000	0.000	-0.000	0.000	0.001	0.001	0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)	(0.001)	(0.001)	(0.001)
ID age	-0.002**	-0.002**	-0.002**	-0.002**	-0.008***	-0.010***	-0.010***	-0.008***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.002)	(0.002)	(0.002)	(0.002)
ID ownership	0.000	0.001	0.000	0.000	0.001	0.003	0.001	0.001
	(0.000)	(0.000)	(0.001)	(0.000)	(0.001)	(0.002)	(0.002)	(0.001)
ID multidirectorship	0.005	0.007*	0.006	0.005	0.014	0.022*	0.028**	0.014
	(0.003)	(0.004)	(0.004)	(0.003)	(0.011)	(0.012)	(0.013)	(0.011)
Board size	-0.017***	-0.018***	-0.020***	-0.017***	-0.041***	-0.046***	-0.051***	-0.041***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.004)	(0.004)	(0.004)	(0.004)
Board independence	-0.129***	-0.125***	-0.126***	-0.129***	-0.130***	-0.158***	-0.151**	-0.129***
	(0.015)	(0.017)	(0.018)	(0.015)	(0.048)	(0.054)	(0.060)	(0.048)
CEO–Chairman duality	-0.004	-0.007**	-0.008**	-0.004	-0.023**	-0.025**	-0.029**	-0.023**
	(0.003)	(0.004)	(0.004)	(0.003)	(0.011)	(0.012)	(0.012)	(0.011)
Classified board	0.006	0.006	0.006	0.006	0.034**	0.029	0.037*	0.034**
	(0.005)	(0.005)	(0.006)	(0.005)	(0.017)	(0.018)	(0.019)	(0.017)
Size	0.006**	0.006*	0.008**	0.006**	0.019**	0.015	0.016	0.018*
	(0.003)	(0.003)	(0.004)	(0.003)	(0.010)	(0.011)	(0.012)	(0.010)
MB ratio	-0.006***	-0.006***	-0.007***	-0.006***	-0.025***	-0.026***	-0.027***	-0.025***
	(0.001)	(0.001)	(0.002)	(0.001)	(0.004)	(0.004)	(0.005)	(0.004)
R&D dummy	0.023**	0.031**	0.030**	0.023**	0.077**	0.114***	0.136***	0.077**
	(0.011)	(0.013)	(0.014)	(0.011)	(0.035)	(0.042)	(0.045)	(0.035)
Institutional ownership	-0.021*	-0.020	-0.030**	-0.021*	-0.026	-0.029	-0.055	-0.025
	(0.012)	(0.013)	(0.014)	(0.012)	(0.041)	(0.045)	(0.049)	(0.041)
Return volatility	0.349**	0.349*	0.357*	0.350**	0.062	-0.108	-0.446	0.069
	(0.170)	(0.187)	(0.189)	(0.171)	(0.477)	(0.514)	(0.577)	(0.478)
Loss dummy	-0.000	-0.005	-0.004	-0.000	0.005	-0.002	-0.005	0.005
	(0.005)	(0.005)	(0.005)	(0.005)	(0.013)	(0.015)	(0.016)	(0.013)
Prior return	0.004	0.004	0.006	0.005	0.003	0.002	0.014	0.003
	(0.005)	(0.005)	(0.005)	(0.005)	(0.014)	(0.015)	(0.017)	(0.014)
Observations	19,377	16,956	14,790	19,377	19,377	16,956	14,790	19,377
R-squared	0.597	0.611	0.582	0.597	0.257	0.262	0.258	0.257
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

	ID turnover rate				Turnover dummy			
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Panel B: Firm-years with highly profitable executive trading based on R(t+90)

Variables	ID turnover rate				Turnover dummy			
L1high90	-0.001 (0.003)				-0.005 (0.009)			
L2high90		-0.005* (0.003)				-0.021** (0.009)		
L3high90			0.002 (0.003)				-0.007 (0.010)	
L1-3high90				-0.001 (0.003)				-0.013 (0.008)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Panel C: Firm-years with highly profitable executive trading based on R(t+60)

Variables	ID turnover rate				Turnover dummy			
L1high60	-0.003 (0.003)				-0.016* (0.009)			
L2high60		-0.002 (0.003)				-0.008 (0.009)		
L3high60			0.002 (0.003)				-0.002 (0.010)	
L1-3high60				-0.002 (0.003)				-0.012 (0.008)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Panel D: Firm-years with highly profitable executive trading based on R(t+30)

Variables	ID turnover rate				Turnover dummy			
L1high30	-0.001 (0.003)				-0.009 (0.009)			
L2high30		-0.001 (0.003)				0.011 (0.009)		
L3high30			-0.000 (0.003)				-0.002 (0.010)	
L1-3high30				-0.003 (0.003)				-0.009 (0.008)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table O.4: Independent director trading activities and profitability and their share ownership over the course of their own tenure

Panel A of this table reports the OLS regression results from estimating ID purchases, sales, and firm share ownership over the course of their tenure. *# Purchases* and *# Sales* are measured as the natural logarithm of one plus the total number of purchases or sales, respectively, by an ID in a given year. *Purchase volume* and *Sale volume* are measured as the natural logarithm of one plus the total number of shares purchased and sold, respectively, by an ID in a given year. *ID ownership* is the percent of firm shares owned by the ID. Panel B presents the OLS regression results for the profitability of ID trading over the course of their own tenure. *Purchase* is an indicator for purchases. The definitions of all variables are given in Appendix A. Constants are included in all regressions but not displayed. Standard errors are in parentheses and are clustered at the individual level. ***, **, and * denote coefficient significance at the 1%, 5%, and 10% levels, respectively.

| Panel A: Trading activities and ownership | | | | | |
Variables	# Purchases	# Sales	Purchase volume	Sales volume	Ownership
ID tenure	-0.006***	0.014***	-0.052***	0.096***	0.019***
	(0.000)	(0.000)	(0.002)	(0.003)	(0.002)
ID gender	-0.038***	0.013**	-0.290***	0.115***	-0.070***
	(0.004)	(0.006)	(0.024)	(0.039)	(0.026)
ID meeting attendance	-0.012	-0.028**	-0.054	-0.181**	0.062
	(0.010)	(0.014)	(0.073)	(0.089)	(0.044)
ID committee membership	-0.006***	0.002	-0.052***	0.023*	-0.038***
	(0.001)	(0.002)	(0.009)	(0.013)	(0.008)
ID age	-0.001***	0.002***	-0.006***	0.014***	-0.010***
	(0.000)	(0.000)	(0.001)	(0.002)	(0.002)
ID ownership	0.004**	0.021***	0.021*	0.117***	
	(0.002)	(0.003)	(0.012)	(0.020)	
ID multidirectorship	-0.002*	-0.009***	-0.020**	-0.064***	0.010
	(0.001)	(0.002)	(0.009)	(0.012)	(0.007)

Board size	0.003***	0.003*	0.012*	0.011	-0.001
	(0.001)	(0.001)	(0.007)	(0.009)	(0.003)
Board independence	-0.018	0.014	-0.127	-0.049	0.325***
	(0.017)	(0.024)	(0.111)	(0.150)	(0.083)
CEO–Chairman duality	-0.000	-0.010**	-0.023	-0.035	-0.025**
	(0.003)	(0.005)	(0.023)	(0.031)	(0.011)
Classified board	-0.006	0.027***	-0.033	0.196***	-0.037*
	(0.005)	(0.008)	(0.036)	(0.055)	(0.021)
Size	-0.012***	0.089***	-0.114***	0.696***	-0.084***
	(0.003)	(0.005)	(0.022)	(0.033)	(0.016)
MB ratio	-0.003***	0.037***	-0.035***	0.218***	0.017***
	(0.001)	(0.004)	(0.008)	(0.021)	(0.005)
R&D dummy	-0.020	-0.017	-0.131	-0.124	0.064
	(0.013)	(0.019)	(0.093)	(0.119)	(0.084)
Institutional ownership	-0.019	0.095***	-0.195**	0.603***	-0.152**
	(0.013)	(0.018)	(0.088)	(0.113)	(0.069)
Return volatility	1.514***	-0.299	13.610***	-2.206*	0.344
	(0.171)	(0.209)	(1.258)	(1.313)	(0.532)
Loss dummy	0.018***	-0.039***	0.135***	-0.262***	-0.012
	(0.005)	(0.006)	(0.032)	(0.039)	(0.013)
Observations	117,613	117,613	117,613	117,613	117,613
R-squared	0.149	0.181	0.135	0.201	0.182
Firm FE	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes

Panel B: Trading profitability

Variables	R(t+30)	R(t+60)	R(t+90)	R(t+180)
Purchase	1.991***	3.187***	3.704***	5.866***
	(0.218)	(0.330)	(0.445)	(0.727)
ID tenure	0.010	0.016	0.017	0.041
	(0.011)	(0.015)	(0.019)	(0.033)
ID gender	-0.177	-0.270	-0.398	-0.508

	(0.162)	(0.245)	(0.306)	(0.463)
ID meeting attendance	-1.429	-2.004*	-1.865	-1.479
	(0.890)	(1.143)	(1.226)	(2.019)
ID committee membership	-0.023	-0.085	-0.026	-0.017
	(0.060)	(0.092)	(0.119)	(0.193)
ID age	-0.015	-0.014	-0.011	-0.014
	(0.010)	(0.014)	(0.018)	(0.027)
ID ownership	0.007	-0.095	-0.166**	-0.356**
	(0.045)	(0.082)	(0.084)	(0.140)
ID multidirectorship	-0.077	-0.199**	-0.168	-0.403**
	(0.074)	(0.098)	(0.116)	(0.187)
Board size	0.021	0.131*	0.236**	0.252
	(0.050)	(0.079)	(0.100)	(0.166)
Board independence	0.828	1.722	2.390	1.749
	(1.015)	(1.510)	(2.052)	(3.188)
CEO–Chairman duality	0.128	0.234	0.582	0.990
	(0.219)	(0.313)	(0.404)	(0.643)
Classified board	-0.199	-0.361	-0.543	-1.343*
	(0.262)	(0.370)	(0.468)	(0.800)
Size	0.061	0.691*	0.570	2.597***
	(0.250)	(0.369)	(0.501)	(0.943)
MB ratio	-0.904***	-0.900***	-0.692***	0.264
	(0.100)	(0.135)	(0.208)	(0.341)
R&D dummy	0.545	-0.690	-0.247	0.490
	(0.379)	(0.535)	(0.678)	(1.047)
Institutional ownership	-4.661***	-6.933***	-9.091***	-15.457***
	(1.135)	(1.550)	(2.232)	(3.340)
Return volatility	1.618***	2.108***	2.488***	3.684***
	(0.198)	(0.260)	(0.304)	(0.436)
Loss dummy	-0.749**	-1.282**	-1.230*	0.562
	(0.351)	(0.509)	(0.679)	(1.064)
Prior return	-1.105**	-3.019***	-4.015***	-9.585***
	(0.448)	(0.654)	(0.796)	(1.595)
Recent trade	0.053	-0.032	-0.079	-0.162

	(0.143)	(0.231)	(0.324)	(0.474)
Transaction size	0.021	0.354	0.411	0.544
	(0.133)	(0.270)	(0.377)	(0.384)
Observations	66,007	66,007	66,007	66,007
R-squared	0.140	0.161	0.176	0.220
Firm FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes

Table O.5: Subsample tests based on firm performance and the information environment

This table presents the OLS regression results for the effect of ID tenure on the profitability of trades made by executives. In panels A and B, the sample firms are separated into subsamples based on measures of the firm information environment. Following Coles, Daniel and Naveen (2008), *Operational complexity* is the common factor score for the number of firm business segments, the log value of sales, and leverage. A firm is considered to be "Complex" if its complexity score is higher than the sample median in a given year. Otherwise, it is considered to be "Simple". Firms in the "High coverage" subsample are those with more analysts following them than the sample median during a given year. Other firms are placed in the "Low coverage" subsample. Other control variables are included as in Table 2 but not tabulated. The definitions of all variables are given in Appendix A. Constants are included in all regressions but not displayed. Standard errors are in parentheses and are clustered at the individual level. ***, **, and * denote coefficient significance at the 1%, 5%, and 10% levels, respectively.

Panel A: Complex or simple firm

Variables	Complex				Simple			
	R(t+30)	R(t+60)	R(t+90)	R(t+180)	R(t+30)	R(t+60)	R(t+90)	R(t+180)
Independent director tenure	0.095*	0.154***	0.104	0.107	0.046	0.164***	0.232***	0.687***
	(0.053)	(0.057)	(0.087)	(0.161)	(0.038)	(0.054)	(0.079)	(0.142)

Panel B: Analyst coverage high or low

Variables	High coverage				Low coverage			
	R(t+30)	R(t+60)	R(t+90)	R(t+180)	R(t+30)	R(t+60)	R(t+90)	R(t+180)
Independent director tenure	0.084**	0.165***	0.192***	0.362***	0.086**	0.138**	0.117	0.327**
	(0.043)	(0.050)	(0.067)	(0.115)	(0.037)	(0.054)	(0.086)	(0.165)

Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table O.6: The profitability of executives' trading over the course of affiliated director tenure

This table presents the OLS regression results for the effect of affiliated director tenure and ID tenure on the profitability of trades made by executives. Affiliated directors are outside directors who are either former executives, family members of current or former executives, or have transactional, professional, financial, and/or charitable relationships with the company. Other control variables are included as in Table 2 but are not tabulated. The definitions of all variables are given in Appendix A. Constants are included in all regressions but not displayed. Standard errors are in parentheses and are clustered at the individual level. ***, **, and * denote coefficient significance at the 1%, 5%, and 10% levels, respectively.

Variables	R(t+30)	R(t+60)	R(t+90)	R(t+180)	R(t+30)	R(t+60)	R(t+90)	R(t+180)
AD tenure	0.001	0.008	-0.003	-0.025	-0.004	0.000	-0.010	-0.034
	(0.009)	(0.013)	(0.019)	(0.031)	(0.009)	(0.013)	(0.019)	(0.031)
ID tenure					0.165***	0.266***	0.244***	0.340**
					(0.042)	(0.050)	(0.077)	(0.139)
Observations	125,653	125,653	125,653	125,653	125,636	125,636	125,636	125,636
R-squared	0.136	0.143	0.176	0.238	0.137	0.144	0.176	0.238
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table O.7: A comparison of the matching variables between the treatment and control firms before and after matching

This table reports the mean values for size, MB ratio, ID tenure, and prior return as well as the t statistics for their respective differences between the treatment and control firms, all as of two years prior to the sudden death of an ID in the treatment firm. Panel A presents the results of the comparison with unmatched control firms that are in the same industry as the treatment firm according to the Fama and French 48-industry classification and have never had an ID die suddenly during our sample period. Panel B presents the results of the comparison with control firms that are matched to treatment firms based on having a propensity score within a 0.01 radius of the treatment firm. Propensity scores are estimated using size, MB ratio, ID tenure, and prior return.

Panel A: Before matching

| Variables | Mean | | t test | |
	Treatment	Control	t statistic	$p > \lvert t \rvert$
Size	8.452	8.361	-4.164	0.000
MB ratio	2.321	2.634	11.037	0.000
ID tenure	9.567	8.780	-17.597	0.000
Prior return	0.105	0.092	-3.172	0.002

Panel B: After matching

| Variable | Mean | | t test | |
	Treatment	Control	t statistic	$p > \lvert t \rvert$
Size	8.452	8.453	-0.030	0.980
MB ratio	2.321	2.294	0.880	0.379
ID tenure	9.567	9.497	1.010	0.315
Prior return	0.105	0.106	-0.140	0.887