

Insider Trading and the Legal Expertise of Corporate Executives

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August 2017

We would like to thank Ferhat Akbas, Christopher Anderson, Brad Barber, Anthony Bellofatto, George Bittlingmayer, Lochlann Boyle, Lauren Cohen, Suzanna Emelio, Michael Ettredge, Minjie Huang, Dike Kalu, Destan Kirimhan, Paul Koch, Carl Kruse, Choonsik Lee, Felix Meschke, Michael Schill, Giselle Scott, as well as seminar participants at the University of Kansas, the University of Oklahoma, the Financial Management Association Annual Meeting, the Southern Finance Association Annual Meeting, and the Northern Finance Association Annual Meeting.

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Abstract

We investigate if prior professional legal education either restrains or increases the extent to which the insider trades of company executives and directors are informed. We show that executives and directors with legal expertise (lawyer-insiders) earn significantly lower abnormal returns than non-lawyer-insiders when they purchase their own company's shares. Purchases by lawyer-insiders are associated with lower future earnings surprises and firm profitability than those made by non-lawyer-insiders, and are more muted following months with high levels of SEC enforcement activity. Our results suggest that insiders with legal education may be more conservative in exploiting private information when making insider trades.

Key Words: Insider trading, legal expertise, law degree, asset prices, insider trading regulation

JEL Classification: G14, G30, G38, K20

1. Introduction

Insider trading laws are ambiguous and complex, which may result in divergent beliefs about the legality of specific trading behavior. While insiders and executives in the U.S. are legally allowed to buy and sell securities issued by their companies, congressional statutes and SEC rules explicitly forbid them from doing so when such trades exploit material non-public information. However, the line that divides legal from illegal insider trading has never been a clear or bright one. Since 1934, when the first statutes were passed that could be used to define illegal insider trading, the intensity of enforcement has varied over time. Over the same period, Congress and the Securities Exchange Commission (SEC) have passed additional statutes in an attempt to further clarify what constitutes illegal insider trading, and a broad and complicated body of case law has developed around the civil and criminal prosecution of illegal insider trading.¹

In addition to this, the legal ambiguity of insider trading regulation is set against the backdrop of extensive academic research that suggests that insider trades, especially purchases, may be informed. Specifically, academic studies have found that, on average, insider trades are followed by significant returns favorable to the insider (recent examples include Cohen, Malloy, and Pomorski, 2012; Jeng, Metrick, and Zeckhauser, 2003; Lakonishok and Lee, 2001; Ravina and Sapienza, 2010, among others). Despite this appearance of widespread informed insider trading, the overwhelming majority of insider trades do not attract any enforcement action. This suggests that from the perspective of enforcement authorities, there is significant legal space between what constitutes legal and illegal insider trading behavior, even if the extent of such space is often uncertain. The upshot of all this ambiguity is that individual insiders may face significant challenges in understanding the full legal ramifications of their insider trading behavior, while simultaneously having significant latitude in the extent to which to choose to exploit private information when they make insider trades.

¹ See Seitzinger (2016) for a recent overview of the rules and legal precedents associated with insider trading.

Our study assesses the impact of legal expertise on insider trading behavior in the context of complex laws by comparing the performance of trades from lawyer-insiders (i.e., corporate insiders and executives with prior academic or professional legal education) and non-lawyer-insiders.² When faced with ambiguity and complexity, managers make decisions using inputs, rubrics and ethical considerations that are processed and filtered based on their knowledge, beliefs, assumptions, and values (Bagley, 2008; Cyert and March, 1963; March and Simon, 1958; Hambrick and Mason, 1984). A lawyer's training, experience, and the judgment and beliefs that are formed along with this training, could potentially affect his/her behavior when he/she trades his/her own company's stock.

There are at least two ways in which legal training or a prior legal background could potentially influence insider trading behavior. On one hand, with a better understanding of regulations, executives and insiders with extensive legal training are more aware of the effects and risk of litigation associated with their behavior. This could make these insiders overly hesitant to make use of inside information, leading to lower returns on their trades. Bagley, Clarkson, and Power (2010) find evidence suggesting that knowledge of the law (acquired through formal legal training) leads to a higher likelihood of ethical and legally compliant behavior among managers. Furthermore, behavioral experiments (e.g., Mazar, Amir, and Ariely, 2008) suggest that even salient reminders of rules and laws in general – something that is more likely if you are associated with the legal profession – make participants less likely to engage in behavior that may be considered unethical. Taken together, we might thus expect lawyer-insiders to be more conservative in their use of private information and thus earn lower abnormal returns on their insider trades. We refer to this conjecture as the *restraint effect*.

On the other hand, legal training might help insiders to obtain higher returns by enabling them to come as close as possible to the line between legal and illegal use of information without crossing that line.

² We use the term “lawyer-insiders” throughout the paper as a shorthand for corporate executives who happen to have had prior academic and/or professional legal training. We would like to emphasize that we do not mean that these individuals are practicing attorneys or solicitors, nor do we mean that they hold any sort of legal position with the firm (i.e., they are not “general counsels”). In general, “lawyer-insiders” are simply executives and insiders (e.g., CEO, CFO, CMOs, etc.) with law degrees, and they are not their firms’ general counsels.

Well equipped with legal knowledge, lawyer-insiders know how to defend themselves as long as they do not pass the gray area. In this case, lawyer-insiders may be more aggressive than the average insider when they make insider trades. Therefore, we would find that lawyer-insiders would be less conservative in their use of private information and earn higher abnormal returns on their insider trades. We refer to this alternative conjecture as the *enabling effect*.

While both the *restraint effect* and *enabling effect* may coexist in the marketplace, our analysis suggests that the *restraint effect* appears to be dominant. In a broad sample covering the sixteen-year period from 1997-2012, we find that insider purchases made by lawyer-insiders earn lower future average abnormal stock returns than those made by non-lawyer-insiders. Specifically, insider purchases made by lawyer-insiders earn monthly returns that are between 0.5% and 1% *less* than those made by non-lawyer-insiders. This finding is robust to controlling for various insider attributes (e.g., using the position held by the insider within the firm as a proxy for the extent of access to value relevant information) and several firm characteristics. The under-performance of inside trades made by lawyer-insiders is more pronounced when the intensity of insider trading is higher (i.e., when insiders buy more shares). As has been found in prior literature, informed trading appears to be more significant with insider purchases rather than sales; insider sales made by both lawyer-insiders and non-lawyer-insiders are followed by mean abnormal stock returns that are not significantly different from zero.

One potential alternative explanation for our findings is that the lower stock returns following lawyer-insider purchases, relative to those of non-lawyer-insiders, is due simply to their inability to recognize when their firms' stocks are undervalued rather than a greater reluctance to use private information. Additional analysis suggests that this is unlikely to be the case. We find that lawyer-insider purchases have lower predictive power for future earnings surprises and future profitability than those by non-lawyer-insiders, suggesting that that their trades are less likely to use non-public operating information. Furthermore, we find that compared with non-lawyer-insiders, lawyer-insiders make fewer purchases in months following high levels of public disclosure of SEC enforcement actions. This is in line with the idea

that legal expertise may make the risks of aggressive use of inside information more salient at times when such risks are highly publicized.

We also explore and attempt to rule out a number of other alternative explanations for our findings. The most pertinent one is the possibility of *firm-selection*: firms with a more conservative culture may be more likely to hire lawyer-insiders, and such firms may be less likely to have insiders who make informed trades in general. Additional analysis however casts doubt on this potential explanation. Non-lawyer-insider purchases are no less informed in firms with lawyer-insiders than they are in firms without any lawyer-insiders. Furthermore, in firms with at least one lawyer-insider, the trades of lawyer-insiders are generally less informed than are those of other insiders. We also find that our cross-sectional results are robust to the inclusion of firm fixed effects. These additional analyses suggest that our findings are unlikely to be driven by unobserved firm characteristics that just happen to be coincident with the presence of insider-lawyers.

However, we concede that it is possible that the *restraint effect* can be traced to the intrinsic characteristic of a person who chooses to pursue a legal education, and ultimately becomes a corporate insider. In other words, inherently conservative individuals may be more likely to pursue a legal degree than other individuals, and it is this inherent characteristic rather than their legal education that explains their reluctance to exploit private information. We refer to this possibility as the *self-selection* explanation. Unfortunately, we are unable to rule out this particular alternative explanation, and our inference throughout the study should be interpreted with this caveat in mind.

With limited prior work regarding the impact of personal attributes on insider trading behavior, our study advances the literature by testing how the legal expertise of corporate insiders affects their trading behavior and performance. The previous literature has generally focused on firm-level or trade-level characteristics rather than the background or individual characteristics of executives. However, in a recent study, Davidson, Dey, and Smith (2014) find that profitability and probability of strategic timing of insider trades are higher for executives with criminal records. Our paper is in the same spirit as theirs with respect to our focus on the legal background of executives in trying to understand whether such a background will affect insiders' use of private information. This paper also contributes to a broad literature that relates

personal attributes to financial decision-making and corporate policy (e.g., Barber and Odean, 2001; Bertrand and Schoar, 2003; Grinblatt, Keloharju, and Linnainmaa, 2012; Benmelech and Frydman, 2015, among others.).

The findings in this paper have potential implications for investors and companies. For investors who rely, at least in part, on insider trading behavior as a signal with which to assess the value of firms, our results suggest that the individual characteristics of the insider may be important in the interpretation of this signal. For companies trying to encourage a more conservative attitude amongst their executives towards regulatory compliance, it suggests that educating these executives on legal issues and litigation risk around regulatory issues may be very important. Lack of understanding of legal regulations could lead to unintentional misconduct or incorrect assessment of litigation risk.

Our findings also have policy implications for the regulation of insider trading. Our results are consistent with one of the implications from the theoretical model of DeMarzo, Fishman, and Hagerty (1998) that shows that one of the key elements for an optimal enforcement policy is the clarity of conditions under which the regulator conducts an investigation. While public discourse often focuses on more restrictions and harsher punishments to deter insider trading, our results provide a different perspective. Improving the awareness of insider trading law among corporate insiders may help in regulating and restraining insider trading. Finally, our findings also reinforce those from studies that suggest that the enforcement of insider trading laws are more important than the mere enactment of these laws (Bhattacharya and Daouk, 2002; 2009) since enforcement tends to both raise the salience of, and provide clarity to, the substance of insider trading laws.

2. Literature Review and Hypothesis Development

Insider trading rules and laws that define what constitute illegal insider trading are ambiguous and complex. Even when the broad facts of a specific case are publicized, it is often unclear, even among well-educated and informed individuals, if that particular individual trade tends toward illegality. While our paper obviously holds no position as to the merit of the particular case, a recent anecdotal example of the

ambiguity with respect to defining illegal insider trading arose in April 2014, when William A. Ackman, founder and CEO of the hedge fund Pershing Square Capital, reaped a profit of more than \$1 billion on Allergan stocks and options. Press reports suggest that Mr. Ackman had secretly purchased these over the two months before his hedge fund and Valeant Pharmaceuticals International made an offer for Allergan at a substantial premium.³ It seems that he used material non-public information to make these profits. Such behavior would, at first blush, appear to constitute illegal insider trading. However, the rules are not black and white. The legal definition of insider trading leaves plenty of room for debate when it comes to determining the legality of specific trades. Mr. Ackman asserted that his trade was not illegal as the trade was not based on information received from an individual who had breached a fiduciary duty or duty of confidentiality; indeed Mr. Ackman claimed that he made the deal after prior consultation with an attorney who was a former head of enforcement at the SEC.

Modern insider trading regulation has its origin in section 10b-5 of the Securities and Exchange Act of 1934, which makes it: "...unlawful for any person, directly or indirectly, by the use of any means or instrumentality of interstate commerce, or of the mails or of any facility of any national securities exchange, (a) to employ any device, scheme, or artifice to defraud, (b) to make any untrue statement of a material fact or to omit to state a material fact necessary in order to make the statements made, in the light of the circumstances under which they were made, not misleading, or (c) to engage in any act, practice, or course of business which operates or would operate as a fraud or deceit upon any person, in connection with the purchase or sale of any security..." While the rule does not explicitly use the term "insider trading," it started, especially from the 1960s, to be used as the basis for SEC enforcement action in insider trading cases.⁴ However, the breadth of the rule itself meant that as enforcement actions started to move into law courts, a broad body of case law developed alongside SEC actions to define what constituted illegal insider trading. In subsequent attempts to further clarify the definition of illegal trading, Congress passed the Insider Trading Sanctions Act of 1984 and the Insider Trading and Securities Fraud Enforcement Act of

³ <http://dealbook.nytimes.com/2014/04/23/in-allergan-bid-a-question-of-insider-trading/>

⁴ <http://www.sechistorical.org/>

1988. In 2000, the SEC adopted rule 10b5-1, which explicitly prohibits insider trading based on “material non-public information” (while allowing some affirmative defenses such as pre-planned trades). At the same time, the SEC also adopted rule 10b5-2, which provides guidance on the duty of confidence or trust that insiders have with respect to non-public information, as well as Regulation FD, which prohibits selective public disclosure by insiders of all material non-public information.⁵

In spite of the SEC rules and congressional statutes that have attempted to clarify what constitutes illegal insider trading, the line between legal and illegal insider trading is still far from bright and clear, as our prior anecdotal example suggests. Indeed, a recent high profile Supreme Court ruling (*United States vs. Newman*) that overturned a lower court’s conviction of individuals found guilty of insider trading suggests that, even among legal experts, there is still substantial debate as to what constitutes illegal insider trading.⁶

Alongside the legal ambiguity in insider trading laws, there is significant research alluding to widespread informed insider trading.⁷ Studies have looked at stock prices following insider trades with the idea that an abnormal price increase (decrease) after insider purchases (sales) suggests the trade was likely to be informed. With respect to insider purchases, the evidence that this is the case has been overwhelming (see, for example, Jaffe, 1974; Seyhun, 1988; Lakonishok and Lee, 2001; Jeng, Metrick and Zeckhauser, 2003, among others). On the other hand, the evidence with respect to insider sales has been mixed. This is probably due at least in part to the fact that insiders receive stock as founders or as part of their compensation, and they may sell stocks for liquidity or diversification purposes.⁸

⁵ <https://www.sec.gov/rules/final/33-7881.htm>

⁶ Supreme Court of the United States Blog: <http://www.scotusblog.com/wp-content/uploads/2015/08/15-137-op-below.pdf>

⁷ Previous papers argue that insider trading is a form of executive compensation (e.g., Manne, 1966). Indeed, Roulstone (2003) and Denis and Xu (2013) show that restrictions on insider trading are associated with higher level of total executive compensation.

⁸ A few papers find that insider sales are informative in certain circumstances. For example, Biggerstaff, Cicero and Wintoki (2016) categorize insider trades into isolated trades and trade sequences based on whether the information is long-lived or short-lived. They find that after the completion of the trading sequence, both isolated trades and trade sequences, including sales, predict future stock returns. Cohen et al. (2012) classify insider trades into routine and opportunistic trades based on whether or not the insider has traded during the same month for three years in a row, and find that only opportunistic sales are negatively associated with future stock returns.

The literature suggests that the good performance of stocks following insider purchases may be due to their actual use of private information and not just a general ability to, say, understand when their firms' shares are undervalued. Thus, prior studies have investigated insiders' strategic timing of their trades around firm events. For example, Cheng and Lo (2006) find that insiders strategically choose disclosure policies and the timing of trades to maximize profits. Lee, Mikkelsen, and Partch (1992) document that managers increase their frequency of purchasing and decrease their frequency of selling shares before repurchase announcements. Huddart, Ke, and Shi (2007) find that insiders sell (buy) *after* good (bad) news earnings announcements; however, they avoid profitable trades *before* earnings announcements due to high litigation risk. To circumvent regulations, insiders may hide their informed trades in their children's account (Berkman, Koch, and Westerholm, 2014). However, despite what may seem like significant evidence of informed trading, most insider trades are legal and attract no enforcement scrutiny. This suggests that even from the perspective of regulatory and enforcement, there is significant legal space between what constitutes legal and illegal insider trading behavior, even if this legal space is ambiguous to otherwise well informed observers.

Prior research also shows that the performance of insider trades varies with firm characteristics and the information environment. Lakonishok and Lee (2001) note that the predictive power of insider trading pertains mainly to the stock returns of small firms. Insider trading profitability and the number of insider purchases decrease with analyst coverage (Frankel and Li, 2004). Aboody and Lev (2000) show that insider gains are larger in R&D-intensive firms, while Joseph and Wintoki (2013) find a similar result for advertising-intensive firms. Piotroski and Roulstone (2005) document that insider trades are positively related to the book-to-market ratio and negatively related to past stock returns. Corporate governance and firm internal controls also appear to be associated with insider trading behavior (Cziraki, De Goeij, and Renneboog, 2013; Jagolinzer, Larcker, and Taylor, 2011; Lee, Lemmon, Li, and Sequeira, 2012; and Skaife, Veenman, and Wangerin, 2013).

In contrast, there has been much less work on the effects of personal characteristics and insider trading behaviors. Hillier, Korczak, and Korczak (2014) find that insider fixed effects explain a large

portion of the stock returns following insider trades but observe that “it is surprising that we still know very little about whether and to what extent personal characteristics of corporate insiders affect returns following their trades” (Hillier et al, 2014, page 150). One notable exception is a study by Davidson, Dey, and Smith (2014) which finds that less frugal executives, and executives with criminal records, make more profits when they trade, and they are more likely to strategically time their trades. They argue that executives with criminal records could have relatively low respect for rules and self-control.

However, in a broader context, many studies link personal attributes to financial decision-making and investment performance in other specific situations, providing us some initial motivation for the conjecture that there are potential links between personal attributes and insider trading behavior. Barber and Odean (2001) find that men are more overconfident than women are, leading to higher turnover and worse performance for male investors. Barnea, Cronqvist, and Siegel (2010) and Cesarini, Johannesson, Lichtenstein, Sandewall, and Wallace (2010) find that genetic factors affect stock market participation, asset allocation, and portfolio risk. Grinblatt, Keloharju, and Linnainmaa (2012) document how investor IQ affects stock market participation and performance. Corporate finance literature also finds that personal characteristics of managers play an important role in determining firm policies. Bertrand and Schoar (2003) find that managerial styles affect a firm’s investment and compensation policies, firm value, and risk taking. Cronqvist, Makhija, and Yonker (2012) show that personal leverage choice can explain the leverage of the firms that executives manage.

The legal ambiguity of insider trading laws, coupled with evidence suggesting that some managers may be exploiting private information in their trades, provides further motivation for the conjecture that the background and characteristics of individual managers may affect insider trading behavior. Individual managers generally choose the nature and timing of their insider trades, and they may very well choose the extent to which they exploit non-public information. However, managers’ expertise, beliefs, and values can affect the way they interpret and process information and make decisions in ambiguous and complex environments (Bagley, 2008; Cyert and March, 1963; March and Simon, 1958; Hambrick and Mason, 1984). Hambrick and Mason (1984), for example, argue that a firm’s strategies and performance can partially be

explained by manager characteristics. In their model, managerial perceptions are formed through a “managerial cognitive base” and values, and then affected by “limited field of vision,” “selective perception,” and “interpretation” (page 195). Given that formal education forms part of what makes up a “managerial cognitive base,” it can be expected that a professional legal education will form part of the underlying mental framework with which managers, who have such an education, make professional and managerial decisions. Along these lines, Bagley (2008) argues that a legally astute management team can incorporate both legal and social considerations into their firm operations. Consistent with this view, a number of recent studies find evidence that having a legal background affects managerial behavior and has a distinct impact on how individual corporate executive approach corporate policy. Bamber, Jiang and Wang (2010) find that managers promoted from accounting and legal corporate career tracks exhibit more conservative voluntary disclosure styles. Litov, Sepe, and Whitehead (2014) find that firms with lawyer directors have fewer cases of misconduct and higher firm value. Krishnan, Wen, and Zhao (2011) document that firms with legal experts on their audit committee have higher financial reporting quality. From this perspective, we would expect legal expertise to be related to insider trading behavior.

As we note in the introduction, there are at least two ways in which legal training or a prior legal background could directly influence insider trading behavior. These effects have opposite predictions with respect to the use of private information by lawyer-insiders. On one hand, with a better understanding of regulations, lawyers are more aware of the effects and risk of litigation associated with their behavior. Indeed, executives who are also lawyers may face more censure than non-lawyer-insiders if they end up being convicted for insider trading. They could, for example, be disbarred – a form of censure that cannot be imposed on non-lawyer-insiders. It is even possible that law enforcement is harsher on lawyers when they break laws. For example, Matthew Kluger, who was a lawyer on M&As, was sentenced to twelve years in prison for insider trading in 2013, one of the lengthiest sentences for insider trading in U.S. history.

Katharine Hayden, the judge, said at his sentencing that: "...his actions were particularly egregious because he was a lawyer who had taken oaths of integrity. Kluger fully deserved 12 years in prison..."⁹

Furthermore, behavioral experiments suggest that exposure to the legal training, or even salient reminders of rules and laws in general, may make individual participants less likely to engage in behavior that may be considered unethical. Bagley et al. (2010) survey 112 second-year MBA students at the Harvard Business School (who had at least two years of pre-MBA management experience) before and after they enrolled in a law class entitled "Legal Aspects of Management." They find that following the conclusion of the class, there were statistically significant changes in the perception of participants in a manner that strongly suggests that the exposure to legal training can prompt managers to become more legally compliant and socially responsible. Along similar lines, Mazar et al. (2008) find in a series of experiments that priming students to think of legal rules before a test completely eliminated cheating on the test.¹⁰

After considering the increased risks due to complex regulations, potential reputation costs of breaking the law, and their own professional judgment that comes with their training, lawyer insiders may thus tend to be *more* conservative when it comes to their own insider trading behavior and use of private information, and will thus earn lower abnormal returns on their insider trades. We refer to this conjecture as the *restraint effect* hypothesis.

On the other hand, legal training might help insiders to obtain higher returns by enabling them to come as close as possible to the line between legal and illegal use of information without crossing that line. The regulatory system is often "contested and riddled with loopholes" (Edelman and Suchman, 1997, page 487), and this is certainly the case with respect to the insider trading regulatory regime. Executives with extensive training in the law may be better at understanding the technicalities of insider trading regulation, and consequently exploiting potential loopholes in insider trading rules. Indeed, this understanding may lead lawyer-insiders to feel more confident than non-lawyer insiders in their ability to defend themselves

⁹ (<http://www.bloomberg.com/news/2012-07-31/how-wall-street-lawyer-turned-insider-trader-eluded-fbi.html>; <http://www.forbes.com/sites/walterpavlo/2013/07/09/inside-trader-matthew-klugers-12-year-prison-term-affirmed/>)

¹⁰ In this case, students were primed by being asked to recall as many of the "The Ten Commandments" as possible, a list of laws from the Christian bible.

should their insider trades face enforcement scrutiny. Under such a scenario, we would find that lawyers will be *less* conservative in their use of private information and earn higher abnormal returns on their insider trades. We refer to this alternative conjecture as the *enabling effect* hypothesis.

3. Data and Methodology

We obtain insider transaction information from the Thomson Reuters Insider Filing. Corporate insiders include officers, directors, and any beneficial owners of more than ten percent of a company's stock. We limit our sample to open market purchases and sales of common stocks by insiders. In any given month, we aggregate all of the trades by an insider. We then classify that month as a net sale month or net purchase month for that particular insider based on his/her transactions. We obtain additional firm financial statement information from Compustat and stock returns data from CRSP.

Our primary source for insiders' education or professional legal background is the BoardEx database. An insider with legal expertise (*LEGALEXP* = 1 for such an insider, zero otherwise) is defined as an insider who is listed as having obtained a law degree ("LLB," "BCL," "LLM," "LLD," and "JD"). To be included in the sample, an insider's education background must be available in the BoardEx education file. The sample period spans the period between January 1997 and December 2012.¹¹ The sample also requires a firm to have positive book-to-market ratio and stock price above one dollar. Following previous literature, we also exclude small trades where the dollar value of trades is less than \$10,000.¹²

General Counsels, who are ubiquitous in publicly traded firms, can obviously be considered as insiders with legal expertise – they are explicitly practicing lawyers after all. However, prior literature

¹¹ BoardEx starts to collect most of its data from 2000. However, the education information exists before 2000, allowing this research to use data before 2000. To be conservative, we use data from 1997 to avoid biasing the sample towards executives and directors who have longer experience as insiders. Using 1997 instead of 2000 as the starting point significantly increases the sample size from 32,673 to 40,727. In the robustness tests in Table 7, we use both 2000 and 1986 (when the insider trading data starts) as cutoffs. The results are unaffected.

¹² Previous literature (e.g., Marin and Olivier, 2008) excludes small trades where less than 100 shares of stocks were traded. However, due to the large variation in stock prices, we use dollar value of the transaction to exclude small trades. Transaction value is calculated as the net transaction shares times the month-end stock price. The robustness tests in Table 7 show that including all trades or excluding trades with less than 100 shares of stocks has little impact on the findings of this paper.

suggests that management teams often treat the firm’s general counsel as a “necessary evil” (Nelson and Nielsen, 2000, page 474). The communication between the management team and the general counsel often takes the form of reaction and counter-reaction, leading to lack of broader business context in such communication (Linowitz and Mayer, 1994). Therefore, compared to other lawyer-insiders, general counsels have different roles and access to information than other insiders. Thus, the executives and directors we define as having legal expertise do not include general counsels. In our sample, lawyer-insiders are executives and directors who have law degrees or a legal background but hold other positions in the firm, and we exclude legal counsels from our sample altogether. However, in robustness tests, we find that including general counsels as lawyer-insiders has no material effect on any inference from our analysis.

We start our analysis with both a portfolio approach and a regression approach. For the regression approach, we regress returns in the month following the insider trade month on the indicator variable for lawyer-insider (*LEGALEXP*), and other control variables as follows:

$$AR_{t+1} = \alpha + \beta LEGALEXP_t + \gamma CONTROLS_t + \varepsilon_t \quad (1)$$

where t indicates the month of transaction and AR_{t+1} is the risk adjusted abnormal return for the month after the trade, which is calculated, based on Fama-French four-factor model following Brennan, Chordia, and Subrahmanyam (1998).¹³ Although the dependent variable is risk-adjusted abnormal stock return, to be conservative, we follow Cohen, Malloy, and Pomorski (2012) and include market capitalization ($SIZE_t$), book-to-market (B/M_t), lagged one month stock return ($RET(-1)_t$), and cumulative stock return in the past year ($RET(-2, -13)_t$), the cumulative return from month -2 to -13) as control variables. These control variables may explain return, but may also be correlated with the presence of a lawyer-insider. We winsorize continuous independent variables at 1% and 99% level to mitigate the influence of outliers.¹⁴ Table 1 provides further details regarding the construction of all the main variables used in this paper. Following Cohen, Malloy, and Pomorski (2012), we also include month fixed effects and cluster standard errors at firm level.

¹³ In the robustness tests in Table 7, we also use raw stock return as the dependent variable, and the findings remain.

¹⁴ Unreported analysis shows that our inference throughout the paper is unchanged if the sample is not winsorized.

Table 2 presents the summary statistics for the main sample used in this paper. There are a total of 40,727 purchase months and 173,016 sale months. Out of the 40,727 purchases, insiders who have a law degree make 4,887 of them. For the purchase sample, 11% ($1,792/[1,792+14,498]$) of the insiders are lawyer insiders. Lawyer insiders are less likely to be CEO, CFO, or Chair of the Board. In addition, they are more likely to work in large companies. There is little difference in book-to-market ratio, past month stock return, and cumulative returns from month -13 to month -2 between firms of lawyer-insiders and non-lawyer-insiders. The number of purchases by lawyer-insiders (2.7 purchases per insider) is of an order of magnitude that is economically similar to those made by non-lawyer-insiders (2.5 purchases per insider). For the 173,016 sales in Panel B, lawyer insiders make 9% (15,793). For the sales sample, lawyer insiders are from companies with larger market capitalization and higher book-to-market ratio. Consistent with previous papers, the number of sales per insider is double that of purchases because executives might get their shares as company founders or as a part of their compensation in the form of options and/or grants.

4. Legal Expertise and Insider Trading: Results

4.1. Portfolio Approach

We begin our analysis with using the portfolio approach in which we assign stocks to four portfolios based on the direction of their trades, and whether or not the insider has legal expertise. In each month t , we first group the stocks into two portfolios: a sales portfolio and a purchases portfolio. We then further divide each of these two portfolios into two groups consisting of trades made by lawyer-insiders and non-lawyer-insiders.

The monthly returns from these four portfolios are presented in Table 3. We show average (raw) returns as well as the alpha (α) from a Fama-French four-factor model for the month following portfolio formation. The results show that stock returns are significantly higher in the month following insider purchases for both lawyer-insiders (*LEGALEXP*) and non-lawyer-insiders (*NONLEGALEXP*). However, the returns are significantly *lower* for lawyer-insiders than they are for non-lawyer-insiders. For example, the average raw returns are 2.78% and 2.17% for non-lawyer insiders and lawyer insiders, respectively, and

the difference is 0.61% (t -statistic = 3.18). Similarly, the Fama-French four-factor α s are 1.98% and 1.44% for non-lawyer insiders and lawyer insiders, respectively, and the difference is 0.53% ($t = 2.79$). Using the Fama-French four-factor model, a portfolio that is long the purchases made by non-lawyer-insiders, and short those by lawyer-insiders earns annualized returns of 6.5%.

We also note, however, that there is no significant difference across insider sales made by either lawyer- or non-lawyer-insiders or that, in line with much of the prior literature, insider sales are not followed by any significant returns.

4.2. Regression Approach

In the regression analysis, we regress the monthly risk-adjusted returns from the month following the trade month on the binary variable for lawyer-insider (*LEGALEXP*) while controlling for other factors that may be associated with future stock returns and the presence of a lawyer-insider as specified in Equation (1). We perform the analysis separately for insider purchases and sales. The left (right) panel of Table 4 presents the regression results for purchases (sales). To establish a baseline, we run the regressions, first without, and then with firm controls.

The results in Table 4 show that insider purchases by lawyer-insiders are followed by significantly lower returns than those by non-lawyer-insiders. Without firm controls (column 1), the estimated coefficient on *LEGALEXP* is -1.04% ($t = -3.85$), and with firm controls (column 2) it is -0.98% ($t = -3.62$). These results show that purchases by lawyer-insiders earn about 1% less in the month following their purchase than those made by non-lawyer insiders.¹⁵ This difference is of a similar order of magnitude as that obtained from the portfolio analysis above. As with the portfolio analysis, we find no difference between lawyer-insiders and non-lawyer-insiders in returns following insider sales.

¹⁵ In Appendix 1, we also investigate the longer-term performance of purchases by lawyer-insiders versus non-lawyer-insiders. We find that purchases by lawyer-insiders continue to underperform after three or six months. Most importantly, the economic magnitude of such underperformance increases in the longer term. For example, in columns (2) and (4) of Appendix 1, purchases by lawyer-insiders earn 1.52% ($t = -2.79$) and 2.41% ($t = -2.87$) less in the next three and six months, respectively.

Taken together, the results from the portfolio analysis and regression analysis clearly indicate that purchases made by lawyer-insiders are less informed than those made by non-lawyer-insiders. The results provide support for the hypothesis that legal expertise restrains the extent to which insiders use non-public information when making insider trades.

4.3. Controlling for the Position of the Insider in the Firm and Other Insider Characteristics

The position an insider holds in the firm and the role one plays directly affects his/her access to material information about the firm. If legal expertise is directly related to certain roles, the findings above might just be a reflection of lawyer insiders' access to information rather than their use of information. For example, CEOs, CFOs, and Chairmen of the Board are more likely to have information of higher quantity and quality, and Table 2 shows that lawyer insiders are less likely to be CEOs, CFOs, or Chairmen of the Board. This observation could lead us to find that purchases made by legal insiders are less informed. Therefore, it is important to control for insiders' role in the firm. We also control for other personal characteristics of insiders, like gender, age, and the insider's historical trading styles. These personal characteristics may affect the propensity to use private information but may also be related in some unobserved way to the professional legal background of the insider. Since the results above show that differential performance between lawyer insiders and non-lawyer insiders does not exist for sales, the tests below focus only on insider purchases. We report the results in Panel A of Table 5.

In column (1), we include a binary variable that equals one if the insider is an independent director and zero otherwise. As reported by Ravina and Sapienza (2010), we find that purchases by independent directors have slightly lower subsequent returns than those by executives; however, accounting for whether the insider is an independent director does not affect our inference, and the coefficient on *LEGALEXP* remains negative. In column (2), we include binary indicators (that equal one, zero otherwise) for each case in which the insider is the CEO, CFO, or Chair of the Board. As reported by Wang, Shin, and Francis (2012), we find that CFOs earn higher returns following their purchases than CEOs; however, we find that accounting for any of these insider roles has no effect on our inference. In column (3), we include an

indicator that equals one (zero otherwise) if the insider is another type of senior executive besides the CEO, CFO, and Chair of the Board (Chief Investment Officer, Chief Operating Officer, Chief Technology Officer, President, Senior Vice President, and Executive Vice President). In column (4), we include binary indicators (that equal one, zero otherwise) for each case in which the insider is on the board's audit, compensation, governance, nomination or executive committee. Again, we find in both columns (3) and (4) that accounting for any of these insider roles has no effect on our inference; the coefficient on *LEGALEXP* remains significantly negative, suggesting that insider purchases by lawyer-insiders are less informed than are those by non-lawyer-insiders.

In column (5) we control for two personal characteristics: gender and age. We include a binary variable, *GENDER* that equals one if the executive is female, and zero otherwise. While we find that purchases made by females and those made by older executives are followed by lower subsequent returns, we again find that inclusion of these personal characteristics has no effect on our inference.

Finally, in column (6), we attempt to account for the possibility that prior trading styles that have been found to be correlated with returns following insider trades may reveal personal characteristics that may coincide with being a lawyer-insider. We do this using two binary variables following Cohen, Malloy, and Pomorski (2012) and Cline, Gokkaya, and Liu (2016). First, we create a variable, *NON-ROUTINE*, that equals one (zero otherwise) if an insider can be classified as non-routine (opportunistic) trader. Cohen et al. (2012) categorize an insider as a routine trader if he or she trades in the same month for a certain number of years, and find that trades by non-routine insiders are informative, while those made by routine insiders are not. Second, we create a variable, *PO*, that captures whether or not an insider has been persistently opportunistic in their past insider trades. Cline et al. (2016) classify insiders as persistently opportunistic traders if more than half of their prior trades have been followed by significant abnormal returns, and suggest that these persistently opportunistic insiders continue to make informed trades. The results in column (6) indeed find that subsequent returns after insider purchases are higher for both non-routine (*NON-ROUTINE*) and persistently opportunistic (*PO*) traders. However, even after accounting for these

individual “trading style” characteristics, the relation between legal expertise and informed trading remains significantly negative.

4.4. Controlling for Firm Level Characteristics

In the previous subsection, we controlled for various insider characteristics. In Panel B of Table 5, we further control for a battery of firm-level characteristics that might affect insider trading behavior, but may also be related to the presence of lawyer insiders. In column (1), we include two of measures of corporate governance – G-INDEX, a composite of anti-takeover provisions from Gompers, Ishii, and Metrick (2003), and E-INDEX, the management entrenchment index from Bebchuk, Cohen, and Ferrell (2009). The quality of a firm’s governance may affect both the likelihood of having a lawyer insider and the insider trading behavior of executives. In column (2), we include measures of board structure including board size, board independence, and CEO duality as proxies for the quality of governance.

In column (3), we control for the firm’s environment using R&D expenditure. Aboody and Lev (2000) argue that firms with higher levels of information asymmetry (like R&D intensive firms) offer more scope for insider gains; however, R&D intensity may also affect the likelihood of having a lawyer-insider. In column (4), we include the number of analysts following the firm as an alternative proxy for the firm’s information environment. In column (5), we include measures of firm insider ownership and institutional ownership as these may affect both insider trading behavior and the type of executives that the firm has. In column (6), we include several other financial statement variables that have been shown to directly affect future stock returns that may also affect the likelihood of having a lawyer-insider. These include gross profit (Novy-Marx, 2013; Fama and French, 2015), asset growth (Cooper, Gulen, and Schill, 2008), composite measure of the firm’s financial strength (Piotroski, 2000), and accruals (Sloan, 1996). We also control for turnover and return volatility.

Across all our specifications, we find that the legal expertise variable remains negative and statistically significant. Taken together with our results in Section 4.3, these findings suggest that the restraint effect of a legal background or education on informed trading is not explained by insider

characteristics that may proxy for insider access to information or by firm characteristics that may be related to likelihood of having a lawyer-insider.

4.5. Legal Expertise, Insider Trading, and Trading Intensity

In this subsection, we investigate whether the differential trading performance between lawyer and non-lawyer insiders increases with trading intensity. If lawyer-insiders are reluctant to use private information, we expect that they would be even more conservative in doing so when making large purchases than non-lawyer-insiders. To do this, we create two variables to measure trading insider purchase intensity or strength: *STR_VOL* or *STR_SHROUT*. To get *STR_VOL* (*STR_SHROUT*), we first scale net shares purchased by insider *i* in month *t* by total trading volume by all investors in month *t* (shares outstanding at the end of month *t*). Then, we rank the scaled insider purchases into quintiles across all insiders in month *t*. *STR_VOL* and *STR_SHROUT* are the ranks of scaled monthly insider purchases. A larger value of insider purchase intensity essentially indicates a higher level of insider trading activity by that insider.

We then regress the return in the month following the purchase month on the binary legal expertise dummy (*LEGALEXP*), our measure of insider purchase strength (*STR*), their interactions, and other control variables, as follows:

$$AR_{t+1} = \alpha + \beta_1 LEGALEXP_t + \beta_2 STR_t + \beta_3 LEGALEXP_t * STR_t + \gamma CONTROLS_t + \varepsilon_t \quad (2)$$

where *t* indicates the month of transaction and *AR_{t+1}* is the risk adjusted abnormal return. We use the same control variables as in Equation (1), including capitalization (*SIZE_t*), book-to-market (*B/M_t*), lagged one-month stock return (*RET(-1)_t*), and cumulative stock return in the past year (*RET(-2, -13)_t*), the cumulative return from month -2 to -13). We carry out the analysis both with and without the control variables.

We present the results in Table 6. Across all specifications, we find that the interaction between the legal expertise variable and our measures of insider trading strength are negative and significant. The difference in subsequent returns between purchases made by lawyer-insiders and those by non-lawyer-insiders increases with the strength or intensity of insider trading. This finding is consistent with the conjecture that lawyer insiders are even more cautious when they make large purchases.

4.6. Additional Robustness Tests

In Table 7, we present a battery of additional tests to assess the robustness of the main results in Table 4. In column (1), instead of excluding small trades where less than \$10,000 of stocks were traded, we follow prior literature (e.g., Marin and Olivier, 2008) and exclude small trades where less than 100 shares of stocks were bought. In column (2), we drop all restrictions on trade size and include all trades in the analysis. The results from both column (1) and column (2) confirm that the inclusion or exclusion of small trades does not affect our inference.

BoardEx, which is our primary data source for insider education and professional background, started to collect most of the education information for executives and directors in 2000. However, there are many cases where insiders' education experience happened long before 2000 and they traded before 2000. Consequently, the sample period can be extended to before 2000 to obtain a larger sample size (which is the main reason why our base sample starts from 1997). However, the extension means that both lawyer-insiders and non-lawyer-insiders who were present at the start of the sample have been executives and/or directors for an undetermined length compared to those who come in to the sample after 2000. This long tenure could affect insider trading behavior. To ensure that incorporation of data before 2000 (as we do in our main sample) does not affect the main findings, in column (3), we restrict the sample to the period of 2000 to 2012. However, on the other hand, we have insider trading data going back to 1986 and we are able to identify the education and background of many of our insiders all the way back to 1986. To fully utilize all the information available, we extend (in column (4)) the starting point of our sample back to 1986. The results in columns (3) and (4) show that inference is unaffected by the starting date of our sample.

In creating our main sample (as described in Section 3), we exclude general counsels who by definition could be considered as lawyer-insiders (since they have law degrees) because they may have significantly different types of access to operating information from that of other executives. In column (5), we relax this assumption and allow firms' general counsels to be classified as lawyer-insiders. The result

suggests that this does not affect our inference; even if we include legal counsels as lawyer-insiders, we find that their trades are still less informed than those of other executives.

Additionally, in the initial creation of our main sample, we only included insiders whose educational and professional background could be verified by BoardEx, and all other insiders were dropped. In column (6), we include all insiders, whether or not their educational background was available on BoardEx, and assume that all insiders for whom we have no verifiable education information are non-lawyer-insiders. It is worth noting that this classification is conservative because insiders who have a legal background that is not covered by BoardEx would thus be inadvertently classified as non-lawyer-insiders. This has the potential effect of making it harder to differentiate between the subsequent returns following purchases of the lawyer-insiders and non-lawyer-insiders. Nevertheless, even with this “noisier” classification, we still find that the estimated coefficient on the legal expertise (*LEGALEXP*) remains significantly negative – purchases by lawyer-insiders remain less informed than are those by non-lawyer-insiders.

In column (7), we include industry fixed effects to account for the possibility that a firm’s industry may affect both the ability (and propensity) of insiders to make informed trades, and the likelihood of having lawyer-insiders. In column (8), we use raw returns rather than risk-adjusted returns as the dependent variable. Again, in both cases, our inference remains unchanged, and we find that purchases by lawyer-insiders are less informed than are those by non-lawyer-insiders.

5. Earnings Surprises and Firm Profitability Following Insider Purchases

Our analysis thus far shows that purchases of own company stock by lawyer-insiders earn lower subsequent returns than those by non-lawyer-insiders. While this is clearly suggestive of the fact that lawyer-insiders are less likely to use private information than other insiders are, it is not conclusive. For example, this finding may be because executives with legal expertise are simply less able to judge when their firms are undervalued. In this section, we carry out further tests to assess the likelihood that the differential stock return performance of insider purchases between lawyer- and non-lawyer-insiders is

indeed related to the use of private information. To do this, we analyze future earnings and profitability following insider purchases. Future earnings and profitability are among the most important information that could affect future stock prices. Insiders are privy to continuous information on the effectiveness of internal investments that have a direct impact on short and long-term profitability, while outsiders often only get this information at discrete intervals such as earnings announcements. If insiders with legal expertise are more conservative at exploiting their informational advantage because of their knowledge of law and legal astuteness, we should expect them to be less likely to trade on future unexpected earnings and future profitability information.

For the unexpected earnings tests, we use both the standardized unexpected earnings (*SUE*) and the three-day cumulative abnormal stock returns (*CAR*) around the next quarter's (following the insider purchase) earnings announcement day as measures of earnings surprise. *SUE* is constructed as the difference between the earnings in quarter *q* and earnings in quarter *q-4* (scaled by price), as in Livnat and Mendenhall (2006). *CAR* is calculated as $\frac{1}{3} \sum_{t=-1}^{+1} (RET_{i,t} - VWRETD_t)$, where $RET_{i,t}$ is the stock return for firm *i* on day *t*, $VWRETD_t$ is the value-weighted market return, and $t=0$ is the earnings announcement date.

We present the results in Panel A of Table 8. Models (1) and (2) are two OLS regressions in which the dependent variable is *SUE*, the key explanatory variable is our binary variable for legal expertise (*LEGALEXP*), and the control variables are the same as in Table 4. Models (3) and (4) are probit regressions in which the dependent variable is a dummy variable for *positive* earnings surprise, $CAR > 1\%$, which takes a value of one if *CAR* is greater than 1%, and is zero otherwise.¹⁶ The results across all models show that compared with other insider purchases, lawyer-insider purchases are associated with lower future earnings

¹⁶ To be consistent with other tests in this paper, we control for time fixed effects and cluster standard errors in the probit models. We note the potential “incidental parameters problem” when estimating probit models with a large amount of dummy variables when controlling for fixed effects (e.g., see Greene, 2004). In unreported analysis, we also estimate these probit models without time fixed effects and obtain similar results.

surprises.¹⁷ In other words, lawyer-insiders appear less likely than are other insiders to trade on non-public future positive earnings information. In unreported analyses, we also create a dummy variable for negative earnings surprise, $CAR < -1\%$, which takes a value of one if CAR is less than -1% . We find no association between lawyer-insider purchases and negative earnings surprises. This further supports the argument that lower trading performance of legal insiders arises from conservative usage of their private information, and is not due to their inferior access to information. For the latter to be true, we should also see that compared with non-legal insider purchases, legal insider purchases are more likely to be associated with negative earnings surprises because of their informational disadvantage.

In Panel B of Table 8, instead of earnings surprises, we examine the association between legal expertise and firm profitability. Firm profitability is measured by annual gross profit, which equals total revenue minus cost of goods sold, scaled by total assets. The dependent variable is GP , which is the first annual gross profit reported after insider purchases. In models (3) and (4), we further control for the industry fixed effects based on two-digit SIC codes since firm profitability might vary across different industries.¹⁸ Across all specifications, we find that lawyer-insider purchases are associated with about 1% lower future gross profitability than non-lawyer-insider purchases.

6. SEC Investigation Activities and Insider Trading

The evidence in prior sections suggests that having legal training appears to restrain rather than enable informed insider trading. As we note in our literature review part, this restraint may arise from the fact that lawyer-insiders are more acutely aware of the risk of litigation that may follow informed trading. This raises the possibility that lawyer-insiders may be especially restrained when the salience of legal censure is particularly high. Announcements of SEC (or other legal) actions against insider trading may raise such salience. If legal training makes insiders more concerned about litigation risk, we might expect

¹⁷ In terms of marginal effect, take the probit model in column (4) as an example, changing from purchases of non-lawyer insiders to those of lawyer-insiders reduces the likelihood of a following positive earnings surprise ($CAR > 1\%$) by 5.4%.

¹⁸ In unreported analysis, we also use changes in profitability as the dependent variable and find similar results.

legal insiders to make fewer trades following periods when the SEC announces more illegal insider trading cases.

To test this conjecture, we follow the methodology used by Cohen, Malloy, and Pomorski (2012), who find a negative association between opportunistic trading intensity and SEC investigation activities. We report the results in Table 9. Specifically, the dependent variable in each specification is the fraction of all insider purchases made by lawyer-insiders in each month t (lawyer-insider trading intensity). We measure the intensity of SEC investigations associated with insider trading using both the proportion of all announced SEC enforcement actions within a particular month that are against insider trading, as well as the total number of investigation announcements against illegal insider trading in the past three months.

The results in Table 9 show that lawyer-insider trading intensity is lower in the three months following higher periods of announcements of SEC actions associated with insider trading, especially two and three months after such high periods of SEC activity. This is consistent with the idea that insiders with legal expertise restrain their trading when their perception of litigation risk becomes especially high because of the increased salience arising from announcements of SEC action against potential illegal insider trading.

7. Alternative Explanations

In this section, we further explore three other explanations for our findings: (i) firm-selection; (ii) lawyer-insider ability; and (iii) self-selection.

7.1. Firm-Selection

Firm-selection refers to the possibility that firms with certain unobserved characteristics may be more likely to employ lawyer-insiders. For example, it is possible that those firms, which choose to employ executives with law degrees, are more concerned with litigation risks than other firms. Such firms may choose to hire an executive who has formal legal training or to appoint a lawyer to their board of directors.

If this were the case, our findings in this paper would simply be a reflection of an omitted characteristic, say, the culture of the firms with lawyer-insiders.¹⁹

In Table 10, we explore this firm-selection argument in several ways. In order to facilitate comparison with our prior results, we start, in column (1), by presenting our main result, which shows that lawyer-insider trades are generally less informed (from column (2) of Table 4). In column (2) of Table 10, we create a new variable, *LEGALFIRM*, which takes a value of one (zero, otherwise) for all firms that have at least one lawyer-insider. We then regress subsequent monthly returns following insider purchases on this variable and other firm controls.²⁰ The idea behind this test is that, if the alternative explanation holds and firms with lawyer-insiders are generally more conservative, then all (both lawyer and non-lawyer) insider purchases at such firms will be less informed, and the estimated coefficient on *LEGALFIRM* will be negative. However, the results in column (2) clearly show that this is not the case; the estimated coefficient on *LEGALFIRM* is insignificant. In column (3), we replicate the analysis in column (2) while reintroducing our binary variable for legal expertise (*LEGALEXP*). While the estimated coefficient on *LEGALEXP* remains negative and significant as in prior analysis, that on *LEGALFIRM* remains insignificant, confirming that it is indeed the trades of lawyer-insiders that are less informed, and not just the trades from any insiders in a firm that chooses to hire lawyer-insiders.

In column (4) of Table 10, we drop all the firms without at least one lawyer-insider and examine the effect of legal expertise on insider purchase returns. The aim of this test is to remove the potential effect of choosing a lawyer-insider on returns following insider purchases since all the firms in this subsample have at least one lawyer-insider. However, even in this subsample, we find that lawyer-insider trades are less informed; their insider purchases earn about 1% less than those of non-lawyer insiders, a magnitude similar to that obtained for the full sample. Thus, even among those firms that have chosen to employ

¹⁹ Another example of unobserved firm characteristics is that firms may voluntarily adopt their own policies to restrict insider transactions (Bettis, Coles, and Lemmon, 2000). For example, a firm may impose a blackout period that restricts its insiders from trading during a certain number of days around a quarterly earnings announcement. Analyses in this subsection will also address this issue.

²⁰ In unreported analysis, we also construct the percentage of executives and directors in BoardEx who have a law degree for each firm. Further controlling for this ratio has little impact on our finding.

lawyer-insiders, the trades of lawyer-insiders appear to be less informed than those of their colleagues without legal expertise.

As a final examination of the firm-selection alternative explanation, we also perform a within-firm analysis of the main results by including firm fixed effects in a regression framework similar to that employed in Table 4. We present the results in Table 11. Our inference remains unchanged. Even *within firms*, we continue to find that lawyer-insider purchases are less informed than are those of non-lawyer insiders.

Taken together, the results in Tables 10 and 11 cast significant doubt on the possibility that our results can be explained by firm selection. While it is possible that there are unobserved factors that may affect the choice by firms to employ executives or other insiders with legal backgrounds, our analysis suggests that these unobserved factors do not explain the behavior underlying the restraint effect that legal training appears to have on the use of private information in insider trading.

7.2. Lawyer-Insider Ability

Another potential alternative explanation for our results is that they are due in some form to the ability of lawyer-insiders. On the face of it, it is not clear how such ability would explain our results. On one hand, if legal education is a proxy for better ability and such ability makes lawyer-insiders better able to determine when their firms' are undervalued, we should expect lawyer insiders to have *better* trading performance, which is *inconsistent* with findings documented thus far. On the other hand, ability and education are strongly correlated; lawyer-insiders are well educated, which means they are more likely to have broader professional and social networks. This may suggest that instead of exploiting private information through their insider trades, they may choose to do so through these broad networks (Akbas, Meschke, and Wintoki, 2016).

To further assess the possibility that education in law relates to some unobserved abilities, we examine the trading behavior of insiders with other types of professional or advanced degree qualifications that could be considered of similar length and intellectual rigor as education in the law. Specifically, we

use purchases made by insiders with MBAs or doctoral degrees as control groups. In addition, to the extent that the length or type of schooling is related to the size of one's professional and social networks, executives with these qualifications are likely to have networks of similar size to those of lawyer-insiders.

We present the results from this analysis in Table 12. Again, to facilitate comparison with our prior results, we start, in column (1), by presenting our main result, which shows that lawyer-insider trades are generally less informed (from column (2) of Table 4). In columns (2), (3) and (4), we find that stock returns following purchases by insiders with MBAs or doctoral degrees are not significantly different from that of other (non-lawyer) insiders. These results suggest the possibility that the ability of lawyer-insiders may not be a potential alternative explanation for our results.

7.3. *Self-Selection*

Another possibility is that both the restraint effect and the enabling effect can be traced to the intrinsic characteristics of a person who chooses to pursue legal education. We refer to this potential alternative explanation as the *self-selection* explanation. For example, it is possible that individuals who choose to attend law school and find themselves serving as insiders tend to be more honest, righteous, and concerned with ethics and laws, in comparison with the average corporate insider. Such a tendency could ultimately be reflected in the lower returns following their insider purchases.

Unfortunately, this potential explanation is difficult to measure or analyze empirically. We have no observable measures of the intrinsic factors that lead individuals who subsequently end up as corporate insiders to opt for an education in law early in their lives or careers. As a result, this paper cannot completely rule out the possibility that our findings are driven by this form of self-selection.

8. Summary and Conclusion

In this paper, we study the returns following the purchase and sale of own company stock by insiders with legal education, and those of other insiders. We find that purchases by insiders with legal expertise are followed by lower stock returns than those by insiders without legal expertise. This result

holds even after we account for potential access to information that may result from the insider's position in the firm. We further investigate to what extent this is driven by the use of private information, and we find that lawyer-insider purchases are associated with lower future earnings surprises and future profitability than those of other insiders. Furthermore, we show that, compared with other insiders, lawyer-insiders make fewer purchases of their own company stock following months with more announced SEC investigations against illegal insider trading. This is consistent with the idea that legal education predisposes insiders with legal expertise to further restrain their potentially informed trading when the litigation risk is especially salient. Taken together, our findings suggest that insiders with legal expertise are less likely to exploit private information when they buy their own company's stock.

We also conduct analysis that casts doubt on two potential alternative explanations: firm-selection (i.e., certain types of firms choose to have legal insiders) and ability (i.e., legal education is a proxy for better ability). However, this paper does not rule out the possibility of self-selection, which refers to the possibility that certain types of unobservable personality traits that drive a person's decision to pursue legal education also lead to more conservative and ethical insider trading behavior. We leave this for future research.

We view our study as having several managerial and other implications for investors, regulators, and other parties in the firm's "nexus of contracts." Our findings suggest that the nature of a manager's education may affect managerial behavior and the attitude of the manager towards litigation risk and regulatory compliance. While our study has been within the context of insider trading, our results also suggest that clarity in the communication and enforcement of regulatory rules may improve compliance with regulatory rules in general.

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Table 1. Main Variable Descriptions and Construction

Variable Name	Description & Construction
AR(+1)	AR(+1) is the leading one month ($t+1$) risk-adjusted abnormal stock return (i.e., FF4 Alpha). The risk-adjustment is based on the Fama-French three-factor model (Fama and French, 1993) augmented with a momentum factor. The adjustment procedure closely follows Brennan, Chordia, and Subrahmanyam (1998). For each firm in a given month, $AR = RET - (rf + \beta_1 \times MKT_RF + \beta_2 \times SMB + \beta_3 \times HML + \beta_4 \times UMD)$ where RET is the raw monthly stock return in the current month; r_f is the risk-free rate; MKT_RF, SMB, and HML are the Fama-French three factors; UMD is the momentum factor. $\beta_1, \beta_2, \beta_3, \beta_4$ are the factor loadings estimated using monthly data over the previous 36 months based on the Fama-French three-factor model augmented with the momentum factor. We require at least 24 months of non-missing data for the estimation.
BM	The natural log of the book-to-market ratio.
CAR	A measure of earnings surprise. It is calculated as $\frac{1}{3} \sum_{t=-1}^{+1} (RET_{i,t} - VWRETD_t)$, where $RET_{i,t}$ is the stock return for firm i on day t ; $VWRETD_t$ is the value-weighted market return; and $t=0$ is the earnings announcement date.
LEGALEXP	A dummy variable that takes the value of one if an insider has a law degree and zero elsewhere.
RET(+1)	RET(+1) is the leading one month ($t+1$) stock raw return.
RET(-13, -2)	RET(-13, -2) is the cumulative stock return from month $t-13$ to $t-2$.
RET(-1)	RET(-1) is the stock return from month $t-1$.
SIZE	Market capitalization (SIZE) is the number of shares (SHROUT) times price per share (abs(PRC)) in month t . We take the natural log of market capitalization in the analysis.

Table 2. Sample Composition and Summary Statistics

This table presents a summary of the core sample used in this paper. The sample includes publically disclosed trades of common stocks from Thomson Reuters Insider Filing. The trades made by one insider are aggregated on a monthly level. For a certain insider, a month is defined as a net purchases (sale) month if her purchases (sales) exceed sales (purchases) in that month. The stock return data and financial statement data are from CRSP and Compustat, respectively. This table provides summary statistics of market capitalization (SIZE), book-to-market ratio (B/M), lagged one-month stock return (RET(-1)), and cumulative stock return from month -13 to month -2 (RET(-13, -2)). The summary statistics (except trade months per insider, which is based on the pooled sample) are time series averages of the monthly cross-sectional summary statistics. All variables are described in Table 1. Continuous variables are winsorized at the 1% and 99% levels to mitigate the influence of outliers. The sample period covers January 1997 through December 2012. The t-statistics (except trade months per insider) are based on Newey-West robust standard errors. * indicates significance at the .10 level; ** at the .05 level; and *** at the .01 level.

Panel A. Net Purchases by Insiders

	Insiders With Legal Expertise (LEGALEXP)			Insiders Without Legal Expertise (NONLEGALEXP)			
<i>Sample Composition</i>							<i>Total</i>
Number of Firms	1,539			4,162			
Number of Insiders	1,792			14,498			
CEO, CFO, Chair	257			4,033			
Number of Trade Months	4,887			35,840			40,727
<i>Summary Statistics</i>							<i>Mean Diff t-statistic</i>
	<i>Mean</i>	<i>Std Dev</i>	<i>Median</i>	<i>Mean</i>	<i>Std Dev</i>	<i>Median</i>	
Market Capitalization (\$mils)	6,237	15,361	857	4,203	14,483	425	3.21***
Book-to-Market (B/M)	0.72	0.58	0.57	0.72	0.61	0.55	0.60
RET(-1)	-1.3%	12.8%	-1.8%	-1.2%	13.9%	-2.0%	-0.60
RET(-13, -2)	10.2%	47.7%	2.1%	10.5%	54.1%	0.8%	-0.20
Trade Months/Insider(pooled)	2.7	3.3	2.0	2.5	3.0	2.0	3.40***

Panel B. Net Sales by Insiders

	Insiders With Legal Expertise (LEGALEXP)			Insiders Without Legal Expertise (NONLEGALEXP)			
<i>Sample Composition</i>							<i>Total</i>
Number of Firms	1,984			4,356			
Number of Insiders	3,029			27,526			
CEO, CFO, Chair	405			6,613			
Number of Trade Months	15,793			157,223			173,016
<i>Summary Statistics</i>							<i>Mean Diff t-statistic</i>
	<i>Mean</i>	<i>Std Dev</i>	<i>Median</i>	<i>Mean</i>	<i>Std Dev</i>	<i>Median</i>	
Market Capitalization (\$mils)	10,766	23,907	2,102	9,397	23,871	1,688	3.89***
Book-to-Market (B/M)	0.54	0.50	0.41	0.45	0.43	0.33	9.85***
RET(-1)	4.4%	11.5%	3.2%	4.6%	12.4%	3.4%	-1.15
RET(-13, -2)	35.8%	57.3%	22.2%	37.9%	61.2%	24.0%	-1.37
Trade Months/Insider(pooled)	5.2	6.5	3.0	5.7	7.1	3.0	-3.63***

Table 3. Legal Expertise and Insider Trades: Portfolio Analysis

This table presents the results of portfolio analysis of returns following insider trades. For each month t , the stocks are first grouped into two portfolios: a sales portfolio and a purchases portfolio. Then, we further divide the sales portfolio and the purchases portfolio based on whether the trades are made by lawyer-insiders or non-lawyer-insiders, resulting in four portfolios. We then hold each portfolio during month $t+1$. We report the average monthly results (average raw return in the upper panel and average Fama-French four-factor alpha in the bottom panel) based on equally-weighted portfolio returns. All variables are described in Table 1. The sample period covers January 1997 through December 2012. The t-statistics (in parentheses) are based on Newey-West robust standard errors. * indicates significance at the .10 level; ** at the .05 level; and *** at the .01 level.

	NONLEGALEXP	LEGALEXP	L-N
<i>Average Return</i>			
SALES	0.78	0.81	0.03
(t)	(1.59)	(1.74)	(0.21)
PURCHASES	2.78	2.17	-0.61***
(t)	(4.61)	(4.30)	(-3.18)
P-S	2.00***	1.36***	-0.64***
(t)	(3.78)	(2.92)	(-2.91)
<i>Fama-French 4-Factor</i>			
SALES	-0.06	-0.05	0.01
(t)	(-0.39)	(-0.21)	(0.09)
PURCHASES	1.98	1.44	-0.53***
(t)	(4.62)	(4.08)	(-2.79)
P-S	2.04***	1.49***	-0.55**
(t)	(4.66)	(3.76)	(-2.56)

Table 4. Legal Expertise and Insider Trades: Regression Analysis

This table reports regressions of risk-adjusted abnormal returns on indicators of lawyer-insiders (LEGALEXP) and other control variables. The regression analyses are performed for purchases and sales separately. The dependent variable is the future one-month stock return (AR(+1)) that is adjusted for risks based on Fama-French three-factor model augmented by the momentum factor. B/M is the natural log of book-to-market ratio. SIZE is the natural log of market capitalization. RET(-1) is the lagged one-month stock return. RET(-13, -2) is the cumulative stock return from month -13 to month -2. All variables are described in Table 1. All continuous independent variables are winsorized at the 1% and 99% levels to mitigate the influence of outliers. The sample period covers January 1997 through December 2012. Monthly fixed effects are included. Standard errors are clustered at the firm level. t-statistics are shown in parentheses. *, **, and *** indicates statistical significance at the .10, .05, and .01 level, respectively.

	Purchases		Sales	
	(1)	(2)	(3)	(4)
LEGALEXP	-0.0104*** (-3.85)	-0.0098*** (-3.62)	0.0001 (0.13)	0.0003 (0.27)
B/M		-0.3099* (-1.75)		0.0183 (0.24)
SIZE		-0.4075*** (-6.63)		-0.0860*** (-2.85)
RET(-1)		-0.0318*** (-2.74)		-0.0013 (-0.22)
RET(-13,-2)		-0.0051* (-1.84)		0.0005 (0.41)
Fixed Effects (Month)	Yes	Yes	Yes	Yes
Clustered (Firm)	Yes	Yes	Yes	Yes
N	40,727	40,727	173,016	173,016

Table 5. Legal Expertise and Insider Purchases: Controlling for Additional Insider and Firm Attributes

This table reports regressions of risk-adjusted returns on indicators of lawyer-insiders (LEGALEXP) and other control variables. It extends analyses in Table 4 by controlling for additional insider level (Panel A) and firm level (Panel B) characteristics. The dependent variable is the future one-month stock return (AR(+1)) that is adjusted for risks based on Fama-French three-factor model augmented by the momentum factor. INDP is an indicator for independent director. CEO (CFO) is an indicator for CEO (CFO). CHAIR is an indicator for Chair of the Board. OTHER_SENIOR_EXE is an indicator for other senior executives, including Chief Investment Officer, Chief Operating Officer, Chief Technology Officer, President, Senior Vice President, and Executive Vice President. COMMIT_AUDIT, COMMIT_COMPEN, COMMIT_GOV, COMMIT_NOMINAT, and COMMIT_EXECUTIVE are indicators for the audit committee, compensation committee, governance committee, nomination committee, and executive committee, respectively. GENDER is a dummy variable that takes a value of one if an insider is female and zero if an insider is male. AGE is the age of an insider. NON_ROUNTINE is an indicator variable for opportunistic insiders following Cohen, Malloy, and Pomorski (2012). PO is an indicator variable for persistently opportunistic insiders defined as in Cline, Gokkaya, and Liu (2014). G-INDEX is the corporate governance index from Gompers, Ishii, and Metrick (2003). E-INDEX is the management entrenchment index from Bebchuk, Cohen, and Ferrell (2009). Higher values of G-INDEX or E-INDEX indicate weaker corporate governance. BOARDSIZE is the natural log of the total number of board directors. PCT_INDPT is the proportion of the board that is independent. CEO-CHAIR takes a value of one if the CEO is the Chair of the Board and zero otherwise. R&D is firm R&D scaled by total assets. NANALYST is the number of analysts. INSIDER_OWN is the proportion of shares owned by insiders. IO is the institutional ownership. GP is gross profit ((revenue-cost of goods sold)/total assets). ATGTH is asset growth. PT is the composite measure of the firm's financial strength. See Piotroski (2000) and Fama and French (2006, p. 516) for details. Following Sloan (1996), the firm's accounting measure of accruals (ACCRUAL) equals the change in non-cash current assets, less the change in current liabilities (exclusive of short term debt and taxes payable), less depreciation expense, all divided by total assets. TURNOVER is defined as trading volume (i.e., the number of shares traded) divided by the total number of shares outstanding. We take the natural log of TURNOVER. STDRET is the firm's volatility of daily stock returns during month t . All other variables are described in Table 1. All continuous independent variables are winsorized at the 1% and 99% levels to mitigate the influence of outliers. The sample period covers January 1997 through December 2012. Monthly fixed effects are included. Standard errors are clustered at the firm level. t-statistics are shown in parentheses. *, **, and *** indicates statistical significance at the .10, .05, and .01 level, respectively.

Panel A. Controlling for Additional Insider Attributes

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
LEGALEXP	-0.0092*** (-3.38)	-0.0092*** (-3.35)	-0.0098*** (-3.60)	-0.0100*** (-3.63)	-0.0090*** (-3.32)	-0.0099*** (-3.66)	-0.0087*** (-3.14)
B/M	-0.3163* (-1.78)	-0.3117* (-1.76)	-0.3106* (-1.75)	-0.3063* (-1.73)	-0.3131* (-1.77)	-0.2914* (-1.65)	-0.2882 (-1.63)
SIZE	-0.3982*** (-6.47)	-0.4049*** (-6.56)	-0.4070*** (-6.62)	-0.4134*** (-6.52)	-0.3920*** (-6.35)	-0.3978*** (-6.48)	-0.3940*** (-6.16)
RET(-1)	-0.0315*** (-2.72)	-0.0317*** (-2.72)	-0.0318*** (-2.73)	-0.0312*** (-2.71)	-0.0319*** (-2.74)	-0.0314*** (-2.70)	-0.0308*** (-2.68)
RET(-13,-2)	-0.0050* (-1.82)	-0.0051* (-1.84)	-0.0051* (-1.84)	-0.0057** (-2.07)	-0.0051* (-1.86)	-0.0054* (-1.95)	-0.0061** (-2.22)
INDP	-0.0041** (-2.01)						-0.0074* (-1.79)
CEO		-0.0021 (-0.71)					-0.0045 (-1.25)
CFO		0.0108*** (3.03)					0.0071* (1.73)
CHAIR		0.0035 (0.78)					0.0024 (0.50)
OTHER_SENIOR_EXE			0.0004 (0.19)				-0.0038 (-1.12)
COMMIT_AUDIT				-0.0014 (-0.71)			0.0017 (0.77)
COMMIT_COMPEN				-0.0040* (-1.86)			-0.0017 (-0.73)
COMMIT_GOV				0.0019 (0.57)			0.0038 (1.06)
COMMIT_NOMINAT				0.0016 (0.46)			0.0019 (0.53)
COMMIT_EXECUTIVE				-0.0034 (-0.98)			-0.0022 (-0.61)
GENDER					-0.0063* (-1.92)		-0.0057* (-1.71)
AGE					-0.0003** (-2.39)		-0.0002 (-1.57)
NON-ROUTINE						0.0104** (2.12)	0.0103** (2.06)
PO						0.0064*** (2.73)	0.0063*** (2.62)
Fixed Effects (Month)	Yes						
Clustered (Firm)	Yes						
N	40,727	40,727	40,727	39,897	40,533	40,727	39,724

Panel B. Controlling for Additional Firm Attributes

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
LEGALEXP	-0.0107*** (-2.68)	-0.0095*** (-3.49)	-0.0094*** (-3.48)	-0.0092*** (-3.40)	-0.0113*** (-3.30)	-0.0115*** (-3.72)	-0.0164*** (-3.26)
B/M	-0.1837 (-0.63)	-0.3302* (-1.87)	-0.1034 (-0.56)	-0.2628 (-1.45)	-0.3617* (-1.73)	-0.1673 (-0.82)	-0.3954 (-1.01)
SIZE	-0.6228*** (-4.67)	-0.4800*** (-6.08)	-0.3444*** (-5.43)	-0.6753*** (-6.02)	-0.4461*** (-4.95)	-0.5659*** (-5.53)	-1.0926*** (-3.74)
RET(-1)	-0.0203 (-1.00)	-0.0315*** (-2.73)	-0.0326*** (-2.80)	-0.0281** (-2.37)	-0.0281** (-2.07)	-0.0252** (-2.02)	-0.0142 (-0.56)
RET(-13,-2)	-0.0015 (-0.27)	-0.0048* (-1.75)	-0.0045* (-1.65)	-0.0034 (-1.21)	-0.0038 (-1.15)	-0.0055* (-1.88)	-0.0009 (-0.14)
G-INDEX	-0.0011 (-1.17)						-0.0015 (-1.23)
E-INDEX	0.0003 (0.15)						0.0009 (0.38)
BOARDSIZE		0.0037 (0.84)					0.0078 (0.90)
PCT_INDPT		0.0124 (1.00)					-0.0255 (-1.02)
CEO-CHAIR		0.0312 (1.43)					0.0761** (2.03)
R&D			0.0450** (2.39)				0.0435 (0.93)
NANALYST				0.0069*** (2.79)			0.0083 (1.60)
INSIDER_OWN					0.0078 (0.65)		0.0177 (1.01)
IO					-0.0011 (-0.17)		-0.0283* (-1.69)
GP						-0.0004 (-0.07)	-0.0011 (-0.10)
ATGTH						-0.0018 (-0.41)	-0.0078 (-0.75)
PT						0.0024*** (2.66)	0.0040** (2.37)
ACCRUAL						-0.0008 (-0.04)	0.0264 (0.70)
TURNOVER						0.0066*** (4.08)	0.0037 (0.99)
STDRET						0.1024 (0.91)	-0.2345 (-0.90)
Fixed Effects (Month)	Yes						
Clustered (Firm)	Yes						
N	14,185	40,524	40,727	40,727	27,739	33,234	9,681

Table 6. Legal Expertise and Insider Purchase Strength

This table reports regressions of risk-adjusted returns on indicators of lawyer-insiders (LEGALEXP), insider purchase strength (STR_VOL or STR_SHROUT), their interaction, and other control variables. Insider purchase strength measures the size of insider purchase and it is calculated in two steps. First, to obtain STR_VOL (STR_SHROUT), we scale monthly insider purchase by total trading volume by all investors in the same month (shares outstanding). Then, we rank them into quintiles. STR_VOL and STR_SHROUT are the ranks of scaled monthly insider purchases. All other variables are described in Table 1. All continuous independent variables are winsorized at the 1% and 99% levels to mitigate the influence of outliers. The sample period covers January 1997 through December 2012. Monthly fixed effects are included. Standard errors are clustered at the firm level. t-statistics are shown in parentheses. *, **, and *** indicates statistical significance at the .10, .05, and .01 level, respectively.

	(1)	(2)	(3)	(4)
LEGALEXP	-0.0013 (-0.31)	-0.0005 (-0.12)	-0.0002 (-0.04)	0.0001 (0.04)
STR_VOL	0.0034*** (3.72)	-0.0018 (-1.43)		
LEGALEXP*STR_VOL	-0.0045** (-2.51)	-0.0046** (-2.53)		
STR_SHROUT			0.0052*** (5.91)	0.0018* (1.65)
LEGALEXP*STR_SHROUT			-0.0051*** (-2.73)	-0.0051*** (-2.72)
B/M		-0.2985* (-1.69)		-0.3036* (-1.71)
SIZE		-0.5373*** (-6.14)		-0.3448*** (-4.38)
RET(-1)		-0.0309*** (-2.66)		-0.0318*** (-2.74)
RET(-13,-2)		-0.0051* (-1.85)		-0.0049* (-1.80)
Fixed Effects (Month)	Yes	Yes	Yes	Yes
Clustered (Firm)	Yes	Yes	Yes	Yes
N	40,727	40,727	40,727	40,727

Table 7. Legal Expertise and Insider Purchases: Robustness Tests

This table reports regressions of risk-adjusted returns on indicators of lawyer-insiders (LEGALEXP) and other control variables. It extends analyses in Table 4 in a series of robustness tests. Following previous literature, column 1 excludes small trades where less than 100 shares of stocks were traded. Column 2 does not exclude any small trades. Column 3 (column 4) uses data starting from 2000 (1986 due to availability of the insider trading data). Column 5 includes a firm's general counsel as legal insiders. In column 6, we treat all insiders with missing education data as non-legal insiders. Column 7 controls for industry (two-digit SIC code) fixed effects. Column 8 repeats the baseline model (column 2 in Table 4) using future one-month stock raw return rather than the risk-adjusted abnormal return as the dependent variable. All variables are described in Table 1. All continuous independent variables are winsorized at the 1% and 99% levels to mitigate the influence of outliers. The fixed effects, clusters, and sample periods are indicated in the table. t-statistics are shown in parentheses. *, **, and *** indicates statistical significance at the .10, .05, and .01 level, respectively.

	(1) Shares >=100	(2) All Trades	(3) Restricted Period	(4) Extended Period	(5) General Counsel	(6) Re-Define LEGALEXP	(7) Industry Fixed Effects	(8) Raw Return
LEGALEXP	-0.0089*** (-3.69)	-0.0086*** (-3.92)	-0.0100*** (-3.31)	-0.0074*** (-3.24)	-0.0074*** (-2.79)	-0.0053** (-2.03)	-0.0088*** (-3.25)	-0.0071*** (-2.89)
B/M	-0.3401** (-2.09)	-0.3661** (-2.36)	-0.2397 (-1.23)	-0.2320 (-1.46)	-0.3197* (-1.76)	-0.2648* (-1.72)	-0.0767 (-0.40)	-0.0050 (-0.03)
SIZE	-0.3696*** (-6.49)	-0.3913*** (-7.46)	-0.3971*** (-5.80)	-0.4291*** (-8.18)	-0.4126*** (-6.67)	-0.2548*** (-4.70)	-0.3236*** (-4.80)	-0.4481*** (-8.07)
RET(-1)	-0.0176* (-1.65)	-0.0199* (-1.92)	-0.0354*** (-2.67)	-0.0274** (-2.56)	-0.0321*** (-2.72)	-0.0211** (-2.28)	-0.0328*** (-2.80)	-0.0360*** (-3.58)
RET(-13,-2)	-0.0061** (-2.40)	-0.0055** (-2.18)	-0.0054* (-1.81)	-0.0040 (-1.64)	-0.0050* (-1.77)	-0.0010 (-0.41)	-0.0047* (-1.70)	-0.0034 (-1.38)
Fixed Effects (Month)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Clustered (Firm)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Clustered (Month)	No	No	No	No	No	No	No	No
N	53,054	57,726	32,673	48,963	41,423	75,780	40,727	40,727
Sample Period	Jan. 1997 -Dec. 2012	Jan. 1997 -Dec. 2012	Jan. 2000 -Dec. 2012	Jan. 1986 -Dec. 2012	Jan. 1997 -Dec. 2012	Jan. 1997 -Dec. 2012	Jan. 1997 -Dec. 2012	Jan. 1997 -Dec. 2012

Table 8. Insider Purchases, Earnings Surprises, and Firm Profitability

This table presents results from analyses of insider trading and future earnings surprises (Panel A) as well as firm profitability (Panel B). For Panel A, models (1) and (2) report results from OLS regressions. The dependent variable is the standardized unexpected earnings (SUE). SUE is constructed as the difference between the earnings in quarter q and earnings in quarter $q-4$ (scaled by price), as in Livnat and Mendenhall (2006). Models (3) and (4) are probit regressions. The dependent variable ($CAR > 1\%$) is a dummy variable for large positive earnings surprises. Specifically, if the three-day cumulative abnormal stock return around earnings announcement, CAR , is bigger than 1%, the dummy variable will take a value of one and zero elsewhere. CAR is calculated as $\frac{1}{3} \sum_{t=-1}^{+1} (RET_{i,t} - VWRETD_t)$, where $RET_{i,t}$ is the stock return for firm i on day t ; $VWRETD_t$ is the value-weighted market return; and $t=0$ is the quarterly earnings announcement date. For Panel B, the dependent variables are future firm profitability. It is measured by gross profit ((revenue-cost of goods sold)/assets). For insider purchases in month t , GP is the next annual gross profit reported after month t . All other independent variables are described in Table 1. All continuous independent variables are winsorized at the 1% and 99% levels to mitigate the influence of outliers. The sample period covers January 1997 through December 2012. Monthly fixed effects are included. Standard errors are clustered at the firm level. t-statistics are shown in parentheses. *, **, and *** indicates statistical significance at the .10, .05, and .01 level, respectively.

Panel A. Earnings Surprises Analysis

	Panel OLS		Probit Model	
	(1) SUE	(2) SUE	(3) CAR>1%	(4) CAR>1%
LEGALEXP	-0.0050** (-2.40)	-0.0050** (-2.46)	-0.0546** (-2.24)	-0.0499** (-2.05)
B/M		0.0691 (0.30)		-5.7055*** (-4.34)
SIZE		-0.2131*** (-2.95)		-3.4780*** (-5.48)
RET(-1)		0.0584*** (5.83)		-0.0664 (-1.03)
RET(-13,-2)		0.0121*** (4.15)		0.0406** (2.08)
Fixed Effects (Month)	Yes	Yes	Yes	Yes
Clustered (Firm)	Yes	Yes	Yes	Yes
N	36,092	36,092	37,756	37,756

Panel B. Firm Profitability Analysis

	(1)	(2)	(3)	(4)
	GP	GP	GP	GP
LEGALEXP	-0.0090*** (-3.15)	-0.0087*** (-3.06)	-0.0053* (-1.94)	-0.0055** (-2.00)
GP _{T-1}	0.8843*** (41.78)	0.8807*** (40.73)	0.8361*** (31.55)	0.8342*** (31.19)
B/M		-0.1843 (-0.61)		0.0364 (0.12)
SIZE		-0.5520*** (-5.44)		-0.3612*** (-3.84)
RET(-1)		0.0499*** (5.04)		0.0514*** (5.26)
RET(-13,-2)		0.0137*** (4.51)		0.0162*** (5.34)
Fixed Effects (Month)	Yes	Yes	Yes	Yes
Fixed Effects (Industry)	No	No	Yes	Yes
Clustered (Firm)	Yes	Yes	Yes	Yes
N	40,096	40,096	40,096	40,096

Table 9. SEC Investigations and Insider Purchases

This table relates insider trading behavior to SEC investigation activities. The dependent variable is the proportion of insider purchases made by insiders with legal expertise in month t . The independent variables of interest are, SEC_INSIDER_PCT, which is the number of SEC releases regarding litigation cases against illegal insider trading scaled by the total number of SEC litigation cases, and SEC_INSIDER_NUM $_{t-1, t-3}$, which is the raw monthly average number of SEC releases regarding litigation cases against illegal insider trading from month $t-3$ to month $t-1$. SEC_INSIDER_PCT $_{t-1, t-3}$ is the monthly average of SEC_INSIDER_PCT from month $t-3$ to month $t-1$. The control variables include lagged one-month market return (MKTRET $_{t-1}$) and the twelve-month cumulative market return from month $t-13$ to month $t-2$ (MKTRET $_{t-2, t-13}$). The sample period covers 1997 through 2012. t -statistics based on robust standard errors are shown in parentheses. *, **, and *** indicates statistical significance at the .10, .05, and .01 level, respectively.

	(1)	(2)	(3)	(4)	(5)
SEC_INSIDER_PCT $_{t-1}$	-0.0436 (-1.02)				
SEC_INSIDER_PCT $_{t-2}$		-0.1060*** (-2.60)			
SEC_INSIDER_PCT $_{t-3}$			-0.0853** (-2.08)		
SEC_INSIDER_PCT $_{t-1, t-3}$				-0.1247** (-2.27)	
SEC_INSIDER_NUM $_{t-1, t-3}$					-0.0016** (-2.08)
MKTRET $_{t-1}$	0.1032** (2.46)	0.1055** (2.55)	0.1041** (2.50)	0.1027** (2.48)	0.1030** (2.48)
MKTRET $_{t-2, t-13}$	0.0093 (0.91)	0.0084 (0.81)	0.0086 (0.84)	0.0085 (0.84)	0.0080 (0.79)
N	189	188	187	187	187

Table 10. Purchases from Firms with Legal Insiders

This table reports regressions of risk-adjusted returns on indicators of lawyer insiders (LEGALEXP) and other control variables. It extends analyses in Table 4 by controlling for the presence of other lawyer-insiders or in a sample that excludes firms with no lawyer-insiders. The dependent variable is the future one-month risk-adjusted abnormal stock return (AR(+1)). LEGALFIRM is an indicator for firms with at least one legal insider, and it takes a value of one if a firm has at least one legal insider and zero elsewhere. All other variables are described in Table 1. All continuous independent variables are winsorized at the 1% and 99% levels to mitigate the influence of outliers. The sample period covers January 1997 through December 2012. Monthly fixed effects are included. Standard errors are clustered at the firm level. t-statistics are shown in parentheses. *, **, and *** indicates statistical significance at the .10, .05, and .01 level, respectively.

	(1)	(2)	(3)	(4) Excluding Firms without Lawyer- Insiders
LEGALEXP	-0.0098*** (-3.62)		-0.0103*** (-3.82)	-0.0102*** (-3.80)
LEGALFIRM		0.0006 (0.15)	0.0023 (0.57)	
B/M	-0.3099* (-1.75)	-0.3148* (-1.76)	-0.3158* (-1.77)	-0.2855 (-1.49)
SIZE	-0.4075*** (-6.63)	-0.4144*** (-6.39)	-0.4214*** (-6.50)	-0.4226*** (-6.20)
RET(-1)	-0.0318*** (-2.74)	-0.0319*** (-2.74)	-0.0318*** (-2.73)	-0.0367*** (-2.76)
RET(-13,-2)	-0.0051* (-1.84)	-0.0051* (-1.84)	-0.0050* (-1.83)	-0.0052* (-1.68)
Fixed Effects (Month)	Yes	Yes	Yes	Yes
Clustered (Firm)	Yes	Yes	Yes	Yes
N	40,727	40,727	40,727	33,584

Table 11. Legal Expertise and Insider Purchases: *Within Firm Analysis*

This table reports within-firm regression results for purchases while controlling for firm fixed effects. The dependent variable is the future one-month risk-adjusted abnormal stock return (AR(+1)). All variables are described in Table 1. All continuous independent variables are winsorized at the 1% and 99% levels to mitigate the influence of outliers. The sample period covers January 1997 through December 2012. Standard errors are clustered at the month level. t-statistics are shown in parentheses. *, **, and *** indicates statistical significance at the .10, .05, and .01 level, respectively.

	(1)	(2)
LEGALEXP	-0.0069** (-2.46)	-0.0070** (-2.47)
B/M		-0.1231 (-0.33)
SIZE		-3.7666*** (-11.93)
RET(-1)		-0.0129 (-0.84)
RET(-13,-2)		-0.0005 (-0.13)
Fixed Effects (Firm)	Yes	Yes
Clustered (Month)	Yes	Yes
N	40,727	40,727

Table 12. Other Types of Education and Insider Purchases

The dependent variable is the future one-month risk-adjusted abnormal stock return (AR(+1)). MBA (PhD) is a dummy variable that takes a value of one if an insider has an MBA (a doctoral) degree. All other variables are described in Table 1. All continuous independent variables are winsorized at the 1% and 99% levels to mitigate the influence of outliers. The sample period covers January 1997 through December 2012. Monthly fixed effects are included. Standard errors are clustered at the firm level. t-statistics are shown in parentheses. *, **, and *** indicates statistical significance at the .10, .05, and .01 level, respectively.

	(1)	(2)	(3)	(4)
LEGALEXP	-0.0098*** (-3.62)			-0.0102*** (-3.68)
MBA		0.0009 (0.48)		-0.0006 (-0.28)
PhD			-0.0030 (-0.79)	-0.0039 (-1.04)
B/M	-0.3099* (-1.75)	-0.3127* (-1.76)	-0.3175* (-1.79)	-0.3158* (-1.79)
SIZE	-0.4075*** (-6.63)	-0.4117*** (-6.69)	-0.4106*** (-6.66)	-0.4067*** (-6.62)
RET(-1)	-0.0318*** (-2.74)	-0.0319*** (-2.74)	-0.0318*** (-2.74)	-0.0317*** (-2.73)
RET(-13,-2)	-0.0051* (-1.84)	-0.0051* (-1.84)	-0.0051* (-1.86)	-0.0051* (-1.85)
Fixed Effects (Month)	Yes	Yes	Yes	Yes
Clustered (Firm)	Yes	Yes	Yes	Yes
N	40,727	40,727	40,727	40,727

Appendix 1. Legal Expertise and Insider Purchases: Longer-Term Stock Returns

This table reports regressions of long-term risk-adjusted abnormal returns on indicators of lawyer-insiders (LEGALEXP) and other control variables. The regression analyses are performed for purchases only. The dependent variable is the future three- or six-month stock return (AR(+3) or AR(+6)) that is adjusted for risks based on Fama-French three-factor model augmented by the momentum factor. B/M is the natural log of book-to-market ratio. SIZE is the natural log of market capitalization. RET(-1) is the lagged one-month stock return. RET(-13, -2) is the cumulative stock return from month -13 to month -2. All variables are described in Table 1. All continuous independent variables are winsorized at the 1% and 99% levels to mitigate the influence of outliers. The sample period covers January 1997 through December 2012. Monthly fixed effects are included. Standard errors are clustered at the firm level. t-statistics are shown in parentheses. *, **, and *** indicates statistical significance at the .10, .05, and .01 level, respectively.

	AR(+3) (1)	AR(+3) (2)	AR(+6) (3)	AR(+6) (4)
LEGALEXP	-0.0163*** (-2.99)	-0.0152*** (-2.79)	-0.0257*** (-3.04)	-0.0241*** (-2.87)
B/M		-0.8482** (-2.25)		-0.7469 (-1.23)
SIZE		-0.9491*** (-7.61)		-1.5078*** (-6.70)
RET(-1)		-0.0227 (-1.00)		-0.0167 (-0.43)
RET(-13,-2)		-0.0001 (-0.01)		0.0170 (1.57)
Fixed Effects (Month)	Yes	Yes	Yes	Yes
Clustered (Firm)	Yes	Yes	Yes	Yes
N	40,491	40,491	39,720	39,720