



# The impact of personal attributes on corporate insider trading



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## ABSTRACT

We analyze the importance of personal attributes in explaining the performance of reported share transactions by corporate insiders. While prior literature has focused on observable firm and trade characteristics, little effort has been made to understand how individual attributes, such as skills, abilities, or personality, impact upon post-trade abnormal returns. We document that personal attributes explain up to a third of the variability in insider trading performance and dominate unobservable and observable firm and trade characteristics by a sizeable margin. Personal attributes are correlated with the insider's year of birth, education and gender, and matter more in companies with greater information asymmetry and when outsiders are inattentive to public information. We shed also new light on the significance of executive hierarchy and regulations in explaining insider trading performance and highlight the importance of controlling for individual fixed effects in insider trading research to avoid omitted variable bias in estimated regression coefficients.

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## 1. Introduction

Do corporate insider attributes have an impact on insider trading performance? Given that trading decisions are individually made by insiders, it is surprising that we still know little about the extent to which insiders' personal characteristics affect returns following their trades. Earlier studies focus predominantly on firm-level characteristics and it is now widely accepted that insider trading patterns and performance differ with the firm's size and book-to-market ratio (e.g. Jenter, 2005; Lakonishok and Lee, 2001; Rozeff and Zaman, 1998; Seyhun, 1986). Extant literature also documents that insider trading profitability depends upon firm-level characteristics such as analyst coverage (Frankel and Li, 2004), ownership structure (Fidrmuc et al., 2006), antitakeover provisions (Ravina and Sapienza, 2010), the role of general counsel (Jagolinzer et al., 2011), the quality of internal control (Skaife et al., 2013), anti-shareholder mechanisms (Cziraki et al., 2014), advertising expenditures (Joseph and Wintoki, 2013), and concentrated sales relationships (Alldredge and Cicero, 2015). Unfortunately, the power of the proposed explanatory variables in capturing insider trading return variability is rather poor.<sup>1</sup>

We argue that insider trading decisions and their performance are to a large extent driven by insiders' individual skills and abilities to acquire and process private and public information. This includes any biases such as overconfidence, optimism or limited attention, as well as attitudes to risk and willingness to trade on private information. Personal characteristics have two main features. First, behavioral economics, psychology and the genetics literature suggest that personality traits are fixed or slow-moving over time. Second, they are unobservable to the econometrician. Consequently, we propose to capture individual heterogeneity using insider

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<sup>1</sup> Although observable firm and transaction-level variables are statistically and economically significant, they explain only a small fraction of the variability of insider trading returns. For example, the adjusted R-square in Fidrmuc et al. (2006) is less than 5%. Cross-sectional regressions without firm fixed effects presented in Ravina and Sapienza (2010) have an R-square statistic of less than 1%.

fixed effects. In a set of tests we ascertain the extent to which variation in abnormal returns following insider trades is explained by individual fixed effects after controlling for known firm and transaction-level determinants of trading profitability. The approach builds on earlier studies in which individual fixed effects are used to identify managerial styles in a variety of contexts (e.g. Bertrand and Schoar, 2003; Coles and Li, 2011a,b; Graham et al., 2012).

We show that individual managerial traits are significant determinants of insider trading performance. Factors that are usually considered in the insider trading literature (firm size, book-to-market ratio, transaction size) explain only a very small proportion of the variation in insider trading performance, and adding insider fixed effects to the regressions substantially improves their explanatory power. Depending on the return horizon and transaction type (purchases or sales), insider fixed effects increase the adjusted R-square from less than 3% to between 19 and 39%, several percentage points more than firm fixed effects alone.

Since firms and insiders do not match randomly, their effects are likely to be correlated. To make sure that insider effects do not pick up firm-level fixed effects, we draw on the method proposed by Abowd et al. (1999), which allows for simultaneous identification of both insider and firm fixed effects. We find that insider fixed effects explain up to a third of the variability of post-trade abnormal returns and have up to three times more explanatory power than firm fixed effects. The effect of individual heterogeneity is also economically very large. The interquartile range of the estimated insider fixed effects is between 15 and 51 percentage points, depending on the model.

The fixed-effect approach sheds light on how much of the variability in insider trading performance is explained by individual characteristics but not on what those characteristics are. To address that point we test the link between estimated individual fixed effects and education, birth cohort and gender. Previous literature argues that those observed characteristics are related to or impact on skills, abilities, conservatism, risk aversion, overconfidence or attitude to social norms and hence overall lead to person-specific styles in financial decision making (Faccio et al., 2014; Falato et al., 2014; Malmendier et al., 2011; Schoar and Zuo, 2011). We show that individual fixed effects in our regression setup are related to the year in which the insider was born, with better trading performance by younger generations of insiders. We also find some evidence that insider trading performance is related to the insider's gender and education.

In further tests we assess the nature of information on which individual insiders trade. We find that personal traits matter for trading on both public and private information as insider fixed effects explain a larger proportion of the post-trade return variability in firms with economically-linked customers (a proxy for a richer public information environment (Alldredge and Cicero, 2015)) and in firms without analyst coverage (a proxy for information asymmetry between insiders and outsiders (Frankel and Li, 2004; Ellul and Panayides, 2012)). We also find that after the Sarbanes–Oxley Act was introduced in 2002, the role of differences across individuals in explaining insider buying performance increased, while the role of firm heterogeneity sharply declined. The results do not apply to insider sales, which are normally regarded as being driven by non-information factors. Individual trading behaviors thus seem to be deeply rooted in personalities, and do not appear to be affected by broad-brush regulation. Controlling for individual fixed effects also allows us to disentangle whether abnormal returns are related to the executive's position in the firm or to the personal traits of the individual. It appears that, in general, the underperformance of CEOs is driven by a higher scrutiny associated with the position, while CFO outperformance is determined by individual attributes such as, for example, superior financial acumen.

The documented importance of individual effects rules out alternative views on what may determine insider trading performance. One such alternative view is that insider-specific characteristics play only a minor role in explaining variability in trading performance since individual behaviors are constrained by the effective public and private enforcement of insider trading regulations (Agrawal and Nasser, 2012; Cohen et al., 2012). Yet another alternative is that firm-level voluntary insider trading restrictions have an important role in shaping individual insider trading choices within a firm (Bettis et al., 2000; Lee et al., 2014). If firm-level insider trading rules are endogenously linked to the risk culture within a firm, then cross-sectional differences in insider trading performance can be captured by firm-specific fixed effects. We find that although firm-level effects are statistically important, they are dominated by person-specific effects.

The importance of individual heterogeneity for insider trading performance can be explained in a number of ways. One interpretation is that trading performance is closely aligned to the abilities and character of individual insiders, irrespective of corporate governance. Formal structures that enhance the independence of boards or improve reporting transparency or disclosure do little to constrain the opportunistic behavior of individuals who choose to exploit any misvaluation in the company's stock price. Alternatively, and consistent with a signaling hypothesis, it may also be the case that corporate insiders with certain characteristics choose to personally signal that their firm's stock price is abnormally high or low. The market thus responds proportionately to the degree to which the insider is respected in the market.

This study contributes to the literature in a number of ways. It adds to the insider trading literature by documenting the significance of personal traits in explaining insider trading performance. The paper also shows the impact of executive hierarchy on insider trading performance given mixed earlier evidence (e.g. Fidrmuc et al., 2006; Jeng et al., 2003; Ravina and Sapienza, 2010; Seyhun, 1986) and highlights the importance of controlling for insider fixed effects to avoid potential omitted-variable bias in estimated regression coefficients.

On a more general note, we build on and contribute to the literature on the investment performance of individuals and on the importance of innate characteristics in financial decision making. For example, Barnea et al. (2010) and Cesarini et al. (2010) find that genetic variation has explanatory power for stock market participation, asset allocation and individual portfolio risk. Barber and Odean (2001) report different rates of portfolio turnover and performance in men and women and attribute this to gender-specific levels of overconfidence. Similarly, Bharath et al. (2009) and Gregory et al. (2013) document different abnormal returns following trades by male and female insiders, and Jia et al. (2014) show a link between a measure of CEO masculinity and the extent of opportunistic insider trading. Grinblatt et al. (2012) find that stock trading decisions and performance are related to IQ score.

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