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# The influence of Investor personality traits on information acquisition and trading behavior: Evidence from Chinese futures exchange

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ABSTRACT

This study investigates the association between information acquisition and trading behavior by analyzing the influence of investor personality. We adopted the Big Five personality framework and examined the survey results of individual investors ($n = 333$) in Chinese futures market. Results of this study indicated that information acquisition is directly proportional to trading frequency. We also add to the existing literature by providing empirical evidence that extraversion and conscientiousness positively moderate the relationship between information acquisition and trading frequency; and openness negatively moderates the relationship between information acquisition and trading frequency. This research combines both the information search literature and the behavioral finance literature to investigate that information acquisition that relates to asset allocation decisions is influenced by investor personality traits.



## 1. Introduction

### 1.1. Information acquisition and trading behavior

Information acquisition is one of the important determinants of investment that can influence investors' financial choice. The information search literature provides sufficient evidence that investors use various information search strategies to help them make trading decisions which are commonly based on frequency criteria: the time spent on information search; the number of contacts by phone or visit; and the number of sources used to gather information (Claxton, Fry, & Portis, 1974; Keil & Layton, 1981; Klein & Ford, 2003). Previous literature shows that information acquisition is positively related to trading frequency (Abrue & Mendes, 2012; Barlevy & Veronesi, 1999; Grossman & Stiglitz, 1980; Holthausen & Verrecchia, 1990; Karpoff, 1986). The theoretical explanation behind this general finding is that the investors, who choose to become informed, either receive more signals or increase the precision of signals they receive. In doing so, the cost of acquiring information is compensated by investing in riskier assets and expecting greater returns. Riskier investments along with more information acquisition lead to frequent adjustments in an investors' portfolio which result in high trading (Peress, 2004).

Miller's (1977) model of difference of opinion also provides a distinctive explanation that relates information and trading behavior. According to Miller (1977), financial forecasting is a complex phenomenon and it is plausible to assume that investors possess divergent opinion to forecast expected returns and probability distribution of returns of all securities. As a result of difference of opinion, published information about a typical stock may cause existing stockholders to either increase or decrease their holdings. But existing holders of that stock are usually a small minority of total investor population. They are vastly outnumbered by non-holders, who will be attracted to buy these stocks by observing trading activity. Thus, the increased visibility of a stock will lead to a higher demand and a higher price of that stock which would

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subsequently result in a higher trading volume. Other researchers such as Harris and Raviv (1993) and Kandel and Pearson (1995) also argued that a difference of opinion has a positive correlation with higher trading volume because traders possess different private information or interpret the common data differently.

It should be noted that portfolio can be chosen both before and after the information is collected. According to Guiso and Jappelli (2006) and Peress (2004), investors choose to trade after they collect information, however from an empirical point of view, investors may also choose to acquire financial information after their trading decisions to check the performance of their portfolio. To the researchers' best knowledge, no research has yet been conducted to document empirical evidence to distinguish between information acquisition before or after asset allocation. Therefore, we have also selected our information acquisition variable on the same theoretical ground that the direction of causality may not be obvious. Moreover, one could also argue that more information should lead to either more trading or no trading (if the information dictated that trading was a bad idea). In this respect, Argentesi, Lütkepohl, and Motta (2010) found no relationship between the sales of an Italian financial newspaper and quantities exchange in the stock market. They argued that the fact that more information is collected by investors does not necessarily imply that more trade will follow (for instance, because information may just suggest that it is optimal not to trade). However in rational and behavioral models of the determinants of investment, more information leads to more trading (see, for example Abrue & Mendes, 2012; Guiso & Jappelli, 2006; Peress, 2004). Guiso and Jappelli (2006) showed that overconfident investors trade more frequently when they acquire more information. Abrue and Mendes (2012) showed that the association between frequency of trading and information acquisition is strengthened with investor's overconfidence. We propose that investor personality traits may dampen or strengthen the association between information acquisition and trading frequency. Our study is based upon Abrue and Mendes (2012) who considered general trading behavior of investors based on the amount of financial information they acquired, rather than distinguishing between quality of trade decisions dictated by the information they acquired.

### 1.2. Personality and trading behavior

In one of the sub-disciplines of psychology, i.e. personality psychology, it is argued that personality is the key determinant of human behavior and performance (Buss, 1992; Dollinger & Orf, 1991; Langston & Sykes, 1997; Soane & Chmiel, 2005). In behavioral finance literature, financial phenomena have been modeled based upon the rich sets of insights taken from psychology. Durand, Newby, and Sanghani (2008) used the “Big Five” on a sample of 21 individual investors from Australia and showed a positive association between negative emotion and trading frequency. Their findings were contrary to Durand, Newby, Peggs, and Seikierka (2013) who performed a clinical study on 115 student investors; and Durand, Newby, Tant, and Trepongkaruna (2013) who conducted an experiment in a simulated foreign exchange market and found negative relationship between neuroticism and trading. The former suggested that low neurotic subjects are emotionally less reactive and less anxious about their trading results; have less personal investment in the stock; and therefore, will trade more to improve their performance. Durand et al. (2008) found a negative relationship between extraversion and trading frequency. Their findings also confirmed the results of Durand, Newby, Tant, et al. (2013) who found a negative relationship between extraversion and overconfidence while considering overtrading as a proxy for overconfidence. These results were at odds with the previous studies showing that the overconfidence causes investors to trade excessively (Barber & Odean, 2001) and that the extraverts are more susceptible to overconfidence bias (Pompian & Longo, 2004), and therefore they trade more often. Abrue and Mendes (2012) argued that the strength of association between information acquisition and trading frequency is dependent upon investor's confidence. Their findings showed that overconfident investors, while investing to seek information, trade more often than rational investors. Their explanation was based on the study of Odean (1998) who showed that rational investors trade and acquire new information only when the expected benefits are relatively higher as compared to the costs. On the other hand, overconfident investors tend to overestimate the value of new information to support their unrealistic beliefs about precisely estimating higher returns, and as a result spend more time and money on information acquisition. Durand, Newby, Tant, et al. (2013) found positive association of agreeableness and conscientiousness with trading, which is in accordance with Durand, Newby, Tant, et al. (2013) who showed positive association of conscientiousness with trading frequency. In a financial experimental market involving a sample of 34 Economics students, van Witteloostuijin and Muehlfeld (2008) used distinctive personality traits namely locus of control, maximizing tendency, regret disposition, self-monitoring, sensation seeking and type-A/B, and found that these personality traits affect trading behaviors and trading performance. Based on the data collected from 206 futures investor-traders dyads, Yang, Hsu, and Tu (2012) examined that the trader personality of extraversion and conscientiousness moderate the relationship between investor confidence and trading volume. Such results are inconsistent with Lo, Repin, and Steenbarger (2005) who assessed personality of day traders using Big Five and found no significant relationship with trading performance. They argued that different personality traits can perform trading function equally after proper instruction and training.

### 1.3. Personality, information acquisition, and trading behavior

The question of how an individual personality influences the information acquisition has been highlighted over the years but literature on the specific context of financial decision making is relatively scarce. Our study seeks to explain that investors of different personality traits may affect the way they acquire and interpret information, thereby influencing their decision to trade in futures. In the current study we combine both the information search literature and the behavioral fiance literature (i.e. information acquisition and trading behavior) and investigate that the information acquisition that relates to asset allocation decisions is influenced by the unique personality traits of individual investor.

Literature involving general personality research shows that openness reflects the tendency of people to be imaginative, creative and open minded. They have natural curiosity of investigating everything eagerly, which helps them to bring new experiences and viewpoints (see e.g., Costa & McCrae, 1992). High openness individuals usually have favorable attitude towards information and welcome it in any context, whether searched out purposefully or encountered incidentally. They use imaginative and creative methods to acquire bulk information from a wide variety of information sources (Kasperson, 1978; Palmer, 1991). They apply the acquired information in an original way and in the same creative manner. Although high open individuals are freethinker and liberal, but it does not imply that they will accept everything readily. Innovators are often inquisitive and try to find alternative solutions to a problem (Brookfield, 1987). “Instead their open-mindedness comes with an analytical ability, a basic questioning attitude that is at the same time inviting and skeptical. This makes them thoughtful information seekers with an aptitude for critical reflection” (Heinström, 2010, p. 18), therefore, we assume that investors with a high openness trait will not trade too much.

**Hypothesis 1.** Openness negatively moderates the relationship between information acquisition and trading frequency in such a way that high information acquisition results in low trading frequency if the level of openness is high.