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Openness endangers your wealth: Noise trading and the big five

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A R T I C L E   I N F O

A B S T R A C T

We examine the cross-sectional determinants of individual trading activity based on given Big Five personality traits. Our unique data set is obtained by a self-reported questionnaire with 2147 individual investors. We find that Agreeableness, Extraversion and Openness are central in explaining cross-sectional differences in trading activity. Openness is found to be a main driver of excess trading. Overconfidence as predicted by low levels of Agreeableness relates to excessive trading, while high levels of Extraversion do not. Our performance prediction conditional on investor personality is that Agreeableness saves individual investors from losing money via trading, while Openness will endanger terminal wealth.

1. Introduction

Why do individual market participants trade? Despite various studies in the present literature it is still unclear what drives the high extent of trading activity that can be observed in today's financial

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markets. Moreover, financial markets are commonly found to be hard to beat on a risk-adjusted basis even for skilled and well-informed institutional investors.[1] Consistent with this finding, evidence as in Odean (1999) suggests that trading negatively affects individual private investors' expected terminal wealth. Trading can therefore be considered as hazardous to individual investors' performance as Barber and Odean (2000) and Barber et al. (2009) point out. Private market participants—who typically do neither possess above-average skills nor informational advantages—should only trade to meet their liquidity needs, for rebalancing purposes or for the reason of tax-loss selling. However, considering actual market trading activity, it is hard to argue that such rational motives alone are sufficient for an explanation of the observed levels of trading activity; see Barber and Odean (2000), for example. The question arises as to why we observe individual trading activities that well exceed our expectations and at the same time with high probability induce losses in individual investors' wealth.

Approaching the answer to this puzzling degree of individual investors' noise trading in the present paper directly leads to the behavioral aspects of decision making under risk. Noise trading as part of overall trading activity is neither motivated by available private information nor by individual liquidity or rebalancing needs. According to Black (1986), market participants happen to treat non-information as if it was information and therefore trade in response to noise. A key question is how responsive individual traders react to noise. Several approaches related to psychological concepts have been suggested in the literature.[2] Approaches that explain trading activity by referring to single psychological attributes include the following: The *competence effect* (see e.g. Graham et al. (2009))[3], investor *overconfidence* (see e.g. Benos (1998) and Odean (1998))[4] and *entertainment* (see e.g. Dorn and Sengmueller (2009) and Grinblatt and Keloharju (2009)).[5]

While all the studies mentioned above consider single psychological attributes of the respective individuals in isolation, our contribution is based on a comprehensive psychological model of personality. We consider established psychological traits as a description of overall personality and relate their reported individual levels to reported individual trading activity. We do this based on the well-established five factor model of personality, which is also known as the *Big Five*. The model identifies cross-sectionally stable personality traits, and derives five common factors for a classification of personality. Its factors are commonly denoted as *Neuroticism, Agreeableness, Extraversion, Conscientiousness* and *Openness* (see e.g. the surveys by Digman (1990), McCrae and John (1992) and McCrae (2009)).

Our results are based on a unique data set which is obtained by a self-reported questionnaire delivered by 5111 representative individuals of which 2147 hold an active securities account. Our main finding is that the personality traits Agreeableness, Extraversion and Openness are central in explaining differences in individual trading activity. High scores in Openness are a driver of excess trading. High levels of Agreeableness and Extraversion in contrast relate to below average trading activity.

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[1] This finding was established in the finance literature starting in the 1960s as one of the supportive pieces of evidence for the Efficient Market Hypothesis. Recent evidence is by Fama and French (2010) and Cuthbertson, Nitzsche and O'Sullivan (2012), for example.

[2] An early study on behavioral trading motives by Shefrin and Statman (1985) analyses the disposition effect, which implies that investors trade less on losing positions relative to winning ones.

[3] Heath and Tversky (1991) hypothesize that people are more willing to take bets on their own judgments when they feel competent and knowledgeable rather than in situations where they do not. Graham, Harvey and Huang (2009) find that investors who feel more competent when making financial decisions do indeed trade more frequently.

[4] Overconfidence is one of the best-known behavioral attributes that is related to individual investors' trading activity. It can be understood in at least two ways. First, overconfidence is the tendency to overvalue private information and abilities. Second, overconfidence is the tendency to judge available private information with regard to too tight confidence intervals; see e.g. Barberis and Thaler (2003). In both cases it is assumed that overconfidence positively relates to trading activity as the empirical results in the literature suggest; see e.g. Benos (1998), Odean (1998), Odean (1999), Gervais and Odean (2001), Barber and Odean (2001). Deaves et al. (2009) consider (i) calibration-based overconfidence, (ii) the better-than-average effect and (iii) illusion of control as different manifestations of overconfidence. They find that calibration-based overconfidence and the better-than-average effect relate to above-average trading activity.

[5] Conlisk (1993) argues that decision makers may in some cases experience a non-pecuniary positive utility derived from gambling. Dorn and Sengmueller (2009) find that investors who see trading as entertainment trade almost twice as much as investors that do not. They argue that there are three motives for entertainment trading, namely (i) recreation, (ii) sensation seeking and (iii) aspiration for riches. Grinblatt and Keloharju (2009) consider sensation seeking and overconfidence. They find that both attributes jointly relate to above-average trading activity.