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## North American Journal of Economics and Finance



# Investor trading behavior, investor sentiment and asset prices



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### ARTICLE INFO

#### Article history:

Received 4 May 2015

Received in revised form 25 August 2015

Accepted 26 August 2015

Available online 6 September 2015

#### Keywords:

Asset prices

Factor model

Investor trading behavior

Investor sentiment

Excess returns

### ABSTRACT

This paper examines the roles of investor trading behavior and investor sentiment on asset prices. We find that both the investor trading behavior and investor sentiment have significant effects on excess returns beyond the three factors of [Fama and French \(1993\)](#), and more importantly, the investor trading behavior has more significant impacts on excess returns than investor sentiment. Furthermore, the empirical results reveal that the impacts of investor trading behavior and investor sentiment on the excess returns of small stocks are greater than large stocks, which is failure to explain small stock returns in [Fama and French \(1993, 2012, 2015\)](#). Moreover, this paper demonstrates the term structure of investor sentiment effect and the term structure of investor trading behavior effect. Collectively, our findings support the roles of investor trading behavior and investor sentiment on the formation of excess returns.

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## 1. Introduction

Understanding how investor trading behavior and investor sentiment affect stock prices in financial markets is one of the most important issues in finance. Specially, [Shiller \(2011, 2014\)](#) highlights that researches in light of actual human behavior should take account of how people really think and act.

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The traditional asset pricing theory demonstrates that the changes of stock return depends on the changes of fundamentals (cash flows or discount rates) and the cross-section of returns depends only on the cross-section of systematic risks (Fama & French, 1993, 1995, 2012, 2015). Fama and French (1993) use the overall market factor, size factor and book-to-market factor to explain excess returns. According to the Fama and French (1993) three-factor model, Fama and French (2015) use a five-factor model directed at capturing the size, value, profitability and investment patterns in average stock returns to explain average returns. But one of the main messages in Fama and French (1993, 2012, 2015) is that the most problems of asset pricing models are in small stocks, that is, these papers are failure to explain the returns on small stocks.

However, a large literature in finance demonstrates that the stock excess returns are not easily explained by their fundamentals, and further demonstrates that the stock excess returns are affected by investor sentiment (Baker & Wurgler, 2006, 2007; Baker, Wurgler, & Yuan, 2012; Brown & Cliff, 2004; Greenwood & Shleifer, 2014; Kim & Ha, 2010; Liao, Huang, & Wu, 2011; Yang & Gao, 2014; Yang & Zhang, 2014; Yu & Yuan, 2011). Specially, some recent studies use the BW sentiment index to investigate the role of investor sentiment on stock returns in US Stock Markets (Cen, Lu, & Yang, 2013; Fong & Toh, 2014; Stambaugh, Yu, & Yuan, 2012, 2014; Yu & Yuan, 2011). Specially, Yang and Gao (2014) find the term structure of investor sentiment effect in stock index futures market, which is consistent with the experiment results of McClure, Laibson, Loewenstein, and Cohen (2004) that irrational factors have more effect on the short-term decision-making, and the rational factors still affect the long-term decision-making.

An alternative theory argues that stock returns are affected by retail investor trading behavior or institutional investors' trading behavior (Barber, Odean, & Zhu, 2009; Chen, Lin, Ma, & Tsai, 2014; Han & Kumar, 2013; Hvidkjaer, 2006, 2008; Lee & Radhakrishna, 2000; Malmendier & Shanthikumar, 2007; Qian, 2014). Several recent studies use transaction data to classify trades as buyers or sellers and infer the investor trading behavior according to the Lee and Ready (1991) algorithm: if a trade is executed at a price above (below) the quote midpoint, it is classified as a buy (sell). However, these literatures focus on the small-sized trades (but not the aggregate trade) and explore whether the retail investors move markets. They show that a significant, positive contemporaneous relation between the buy–sell imbalance of retail investors and stock returns. What's more, some related literatures attribute retail investor trading behavior to investor sentiment (Hvidkjaer, 2006; Kumar & Lee, 2006; Barber et al., 2009; Kumar, Page, & Spalt, 2013; Qian, 2014). And some related literatures investigate the institutional investors' trading behavior (Han & Kumar, 2013). However, these studies do not investigate whether the market investor trading behavior has a significant impact on asset prices, and explore the combined effects of investor trading behavior and investor sentiment on asset prices. In this paper, we will fill these gaps.

Motivated by these earlier studies, this paper uses the investor trading behavior and investor sentiment to examine their combined effects on stock returns in the Chinese Stock Markets. First, we use four daily underlying proxies for sentiment (relative strength index (*RSI*), psychological line index (*PSY*), trading volume (*VOL*) and adjusted turnover rate (*ATR*) to construct a parsimonious investor sentiment index based on the principle component analysis by Baker and Wurgler (2006) and further construct the investor sentiment index that explicitly removes the market excess return variation from the parsimonious investor sentiment index. Second, we measure the market investor trading behavior as the aggregate buy and sell imbalance: if a trade is executed at a price above (below) the quote midpoint, it is classified as a buy (sell), and we use the buy and sell imbalance of stock index to capture the parsimonious investor trading behavior of stock index and construct the investor trading behavior index that explicitly removes the market excess return variation from the parsimonious investor trading behavior index. Finally, we use the investor sentiment index and investor trading behavior index to verify our main conjecture that investor trading behavior and investor sentiment have great impacts on excess returns beyond the three-factor of Fama–French, in addition, the investor trading behavior has more significant effects on asset prices than investor sentiment.

Using the daily investor trading behavior index and the daily investor sentiment index, we first examine the roles of investor trading behavior and investor sentiment on daily excess returns beyond the Fama–French three factors. We find a significant, positive contemporaneous relation among the investor trading behavior, the investor sentiment and stock market excess returns; and more

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