Institutional investor sentiment and the mean-variance relation: Some global evidence

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Abstract

As a cornerstone of traditional finance theory, empirical evidence of a positive mean-variance relation is far from conclusive, with the behavior of individual investors commonly thought to be the root cause of departures from this expected relation. More recently the behavior of institutional investors, conventionally thought to be sophisticated and rational, has come under closer scrutiny, including in relation to investor sentiment. Drawing together these two strands of literature, this paper examines the impact of institutional investor sentiment on the mean-variance relation in six regions including Asia (excluding Japan), Eastern Europe, Eurozone, Japan, Latin America, and the US. Empirical evidence shows varying results across different regions that in Asia (excluding Japan) and Eastern Europe, institutional investors’ increased presence over optimistic periods would undermine the risk-return tradeoff, while in Eurozone, institutional investors’ elevated participation over optimistic periods would make the risk-return tradeoff less distorted. The impact pattern is also mixed at the individual market level. To the extent that the cross-market divergences are observed, we conduct a cross-sectional analysis from the perspectives of culture and market integrity, whereby we report that institutional investors in markets with cultural proneness to overreaction and a low level market integrity tend to be sentiment traders and thus distort the risk-return tradeoff.

Keywords: Individualism; Institutional investor sentiment; Market integrity; Mean-variance relation; Overreaction; Uncertainty avoidance

JEL classification: G12; G14; G15; G41

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Extended Abstract

The traditional financial framework theorizes a positive mean-variance relation, i.e., the risk-return tradeoff, showing that bearing high (low) risk is compensated by high (low) returns (Merton, 1973 & 1980). However, empirical evidence is at best mixed, with three main streams. Some studies do present a positive mean-variance relation in spite of some less significant evidence (French et al., 1987; Baillie and DeGennaro, 1990; Campbell and Hentschel, 1992; Scruggs, 1998; Guo and Whitelaw, 2006; Ludvigson and Ng, 2007; Lundblad, 2007; Pástor et al., 2008; Rossi and Timmermann, 2015), while, on the contrary, some reveal a negative mean-variance relation (Campbell, 1987; Whitelaw, 1994; Brandt and Kang, 2004; Brandt and Wang, 2010; Baker et al., 2011; Fiore and Saha, 2015; Booth et al., 2016). Also, some document mixed findings with both positive and negative relations, dependent on different settings and different approaches to filter the unobservable conditional variance (Turner et al., 1989; Glosten et al., 1993; Harvey, 2001; Sun et al., 2017; Wang et al., 2017).

In standard financial theories, asset prices are computed as the discounted future cash flows, and investor sentiment does not bring any persistent impact on markets (e.g., Fama, 1965 & 1970). This claim is challenged by a series of behavioral studies emphasizing the role of investor sentiment. For example, De Long et al. (1990) propose a theoretical framework where sophisticated and uniformed investors trade together, showing that uninformed investors’ participation would bring systematic risk into markets. As such risk is derived from stochastic shifts in investor sentiment, it effectively imposes limits on arbitrage, leading mispricing caused by investor sentiment to be persistent (see, also, Campbell and Kyle, 1993; Shefrin and Statman, 1994; Palomino, 1996; Wang, 2001). Theoretical analyses are widely supported by voluminous empirical research on the US as well as other global markets confirming the impact of investor sentiment on stock returns.¹

Traditional and behavioral theories come from two camps; collectively, a small amount of studies explore the role of investor sentiment in the determination of the mean-variance relation in stock markets. The mechanism, as stated in Yu and Yuan (2011), builds on two cornerstones. First, individual investors are noise traders and are likely to misestimate the variance of returns. As a result, their trading would distort the mean-variance relation. Second, individual investors are more willing to trade when they feel optimistic than when they feel pessimistic due to limits on short

selling (Barber and Odean, 2008). Therefore, one would observe a negative mean-variance relation caused by individual investors’ elevated trading during high-sentiment periods. In a consistent manner, Yu and Yuan (2011) confirm such pattern in the US at the market level, which is also extended in the European stock markets (Wang, 2018a) and at the stock level (Antoniou et al., 2016; Shen et al., 2017).

More recently, DeVault et al. (2018) reveal that in contrast to the theoretical assumption and general intuition that institutional investors are sophisticated and hence immune to irrational sentiment, they, rather than individual investors, tend to be noise traders (see, Chelley-Steeley et al., 2017). Based on this, Wang (2018b) argue that if institutional investors are subject to sentiment, their trading across different sentiment regimes would also undermine the risk-return tradeoff, which is supported by the empirical finding that institutional investors’ increased participation over optimistic times would bring a negative impact on the mean-variance relation in the US stock market. Extending extant evidence, this paper analyzes the role of institutional investor sentiment in the determination of the mean-variance relation in a global context comprising thirty-eight stock markets, including both developed and emerging, for following considerations.

First, the enlarged global dataset provides out-of-sample evidence on the impact of institutional investor sentiment on the mean-variance relation outside the US stock market, which is needed and necessary in surveying market anomalies (Griffin et al., 2003; Ang et al., 2009). Second, in a statistical aspect, the panel dataset comprising of more than one stock market can much enhance the test power (Ang and Bekaert, 2007; Schmeling, 2009). Third, a global sample incorporating both developed and emerging markets helps to provide additional insights concerning the role of institutional investor sentiment that is difficult to present when sample markets exhibit similar economic conditions and exclude those at different stages of development (Ferreira et al., 2012). Fourth, more notably, an application of the international dataset facilitates to test new hypotheses, rendering this global study appropriate. In particular, with a large collection of stock markets, we expect to observe the varying impact of institutional investor sentiment on the mean-variance relation across different regions and individual markets for two reasons. To begin with, the current literature documents the varying impact of individual investor sentiment on market returns in different markets (Schmeling, 2009; Bathia and Bredin, 2013; Wang et al., 2018) and on the mean-

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2 One issue is that unlike individual investors who are reluctant to sell short, institutional investors, due to their sophistication, expertise, and information advantage, they can trade against overpricing of stocks by short selling so that one of the cornerstones stated in Yu and Yuan (2011) might be untenable. However, in practice, most institutional investors are also unwilling to sell short because of direct short-selling costs and indirect institutional constraints (Nagel, 2005).
variance relation (Wang, 2018a); it is, therefore, reasonable to assume the varying impact of institutional investor sentiment on the mean-variance relation across various markets. In addition, as can be inferred from Yu and Yuan (2011) and Wang (2018b), the impact of institutional investor sentiment depends on institutional investors’ dispositions and behaviors that seem to be naturally different from markets to markets. Therefore, to the extent that divergences are observed across markets, we can further probe the possible determinants of the varying impact of institutional investor sentiment on the mean-variance relation from two perspectives including cultural dimensions and market integrity, and reveal whether culturally- and institutionally-related behavioral biases would bring about more evident impact.3

Sentiment is illusive and cannot be observed or quantified straightforwardly; accordingly, many fine sentiment proxies are proposed. Unlike the proxy for individual investor sentiment that can be accessed via various approaches (see, Footnote 4), there are limited direct proxies for institutional investors across the world, especially at the single-market level. We adopt the sentix as the proxy for institutional investor sentiment constructed by the sentix GmbH (Gesellschaft mit beschränkter Haftung, i.e., limited liability company) and dictated by data availability, we incorporate thirty-eight stock markets in six regions: Asia (excluding Japan), Eastern Europe, Eurozone, Japan, Latin America, and the US. Conditional volatility is measured via four models including the rolling window (RW), GARCH, GJR-GARCH, and EGARCH, considering that the reported mean-variance relation is dependent on the choice of volatility models (Turner et al., 1989; Harvey, 2001; Ghysels et al., 2005; Yu and Yuan, 2011).

We start with checking the regional mean-variance relation. Results from the entire sample show a negative mean-variance relation in all regions, inconsistent with the standard financial theoretical framework. To examine the role of institutional investor sentiment in influencing the mean-variance relation, we separate the entire sample into bullish and bearish subsamples. We report quite mixed findings in different regions. In Asia (excluding Japan) and Eastern Europe, there is a positive mean-variance relation over bearish times, while institutional investors’ elevated trading over bullish times would distort risk-return tradeoff and make it negative. By contrast, in Eurozone, there is a negative mean-variance relation over bearish periods while over bullish periods, such relation is less negative due to institutional investors’ increased participation. Latin America markets present similar results with Eurozone markets but with limited significance. The same

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3 For the important role that culture and market integrity play in finance, see, Grinblatt and Keloharju (2001), Guiso et al. (2008), Beugelsdijk and Frijns (2010), Zouaoui et al. (2011), Aggarwal et al. (2012), Bilinski et al. (2013), Ahern et al. (2015), Eun et al. (2015), Zingales (2015), and Scharfstein (2018).
procedure is replicated to individual stock markets and results present with a higher degree of heterogeneity.

The varying impact seems to suggest institutional investors in different markets or regions to be naturally different—that is, they are sentiment traders in some markets but are not in other markets. To provide direct evidence on this, we investigate the potential determinants of such differences in two aspects: cultural dimensions and market integrity. At the cultural level, in markets with collectivistic and uncertainty-avoiding cultures, institutional investors’ increased trading due to their optimism tends to undermine the risk-return tradeoff, while in markets with individualistic and uncertainty-accepting cultures, their elevated presence would help to ease the distortion of the risk-return tradeoff. Since both collectivism and a high level of uncertainty avoidance indicate the proneness to overreaction, by constructing a parsimonious indicator of overreaction via the principal component analysis (PCA), we confirm that institutional investors in markets with cultural inclination to overreaction are more likely to distort the risk-return tradeoff, suggesting them to be sentiment traders. At the market integrity level, we report that in markets with more integrity, institutional investors’ higher participation over bullish periods would make the risk-return tradeoff less distorted.