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Do Chinese mutual funds time the market?

Li Yi^{a,*}, Zilan Liu^a, Lei He^a, Zilong Qin^b, Shunli Gan^a^a Business School, Hunan Normal University, Changsha, Hunan 410081, China^b Guosen Securities Co. Ltd Postdoctoral Programme, Shenzhen, Guangdong 518001, China

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ABSTRACT

This paper explores market timing abilities of Chinese mutual fund managers from the three dimensions: market return, volatility, and liquidity. Using a sample of equity funds from July 2005 to June 2016, we find strong evidence that mutual funds can time the market volatility and liquidity. Our results show that only growth-oriental funds have the ability to time the market returns. We also find that among funds with different investment objectives, balance funds have the most significant volatility timing while growth funds have the most significant liquidity timing ability. Our findings are robust to alternative explanations, including style timing, illiquid holdings, and market reaction. Bootstrap analysis indicates that the evidence cannot be attributable to luck. For all three forms of market timing, a successful timer tends to have higher turnover rate. Finally, we find that Chinese equity mutual funds are able to demonstrate market volatility and liquidity timing persistence in the out-of-sample test. No evidence is found for the presence of return timing persistence.

1. Introduction

Do mutual fund managers really have the ability to time the market? This concern has been very appealing to academics and investors since the pioneering paper of Treynor and Mazuy (1966). If mutual fund managers can correctly anticipate the market movement, investors who hold shares of the funds should benefit from their timing skills. Thus, many researchers attempt to employ various timing models to detect the presence of timing ability, e.g., Henriksson and Merton (1981), Henriksson (1984), Chang and Lewellen (1984), Jagannathan and Korajczyk (1986), Grinblatt and Titman (1989), Lee and Rahman (1990), Ferson and Schadt (1996), Goetzmann et al. (2000), Jiang (2003), Jiang et al. (2007), Chen et al. (2010b), Bodson et al. (2013), and Ferson and Mo (2016). However, there exists little evidence that mutual fund managers are able to adjust their portfolios' market exposure or beta according to a market return prediction.¹ It seems that mutual fund managers cannot time the market from the return dimension.

In addition to return timing, mutual fund managers also possibly time two other market dimensions: volatility and liquidity. On the one hand, as emphasized by Busse (1999), compared with market returns, market volatility is relatively predictable due to its persistence. This suggests that mutual fund managers tend to time the market volatility. That is, when present volatility is high (low), mutual fund managers can expect future volatility to be high (low) and thereby decrease (increase) their portfolios' market exposure. Using daily mutual fund returns, Busse (1999) provides the first test of volatility timing and demonstrates that mutual fund managers are successful volatility timers. Since then, a number of studies on volatility timing have shown that mutual fund managers are able to time the market from the volatility dimension, e.g., Giambona and Golec (2009), Kim and In (2012), Bodson et al. (2013), and Ferson

* Corresponding author.

E-mail address: yilieagle@126.com (L. Yi).¹ On the contrary, Bollen and Busse (2001) who use daily returns, and Jiang et al. (2007) who exploit non-public information on portfolio holdings, find that mutual funds can successfully time the market return.

and Mo (2016).²

On the other hand, as suggested by Cao et al. (2013b), like market volatility, market liquidity is more persistent than market returns and thus delivers more predictability. This means that the liquidity timing is likely to be a new dimension which mutual fund managers time the market. In other words, mutual fund managers tend to increase their portfolios' market exposure during periods of high expected liquidity while they decrease market exposure when market liquidity is expected to be low. Cao et al. (2013b) examine whether mutual fund managers have the ability to time the market-wide liquidity and find supportive evidence of positive liquidity timing ability. Overall, the literature on volatility and liquidity timing reveals that both market volatility and liquidity play an important role in optimal investment strategies actively managed mutual funds make.

More recently, Cao et al. (2013b) have paid attention to the relation among the three different dimensions and jointly examined mutual fund managers' return timing, volatility timing, and liquidity timing abilities. Based on a first-order Taylor expansion, they model a timer's time-varying market exposure as a linear function of his expectation about future market return, volatility, and liquidity. At the aggregate level, they find that return timing ability is either significantly negative or insignificant, but volatility timing is significantly negative and liquidity timing is also significant and positive.³ Furthermore, Bodson et al. (2013) use a Kalman filter method to estimate all the three different timing skills at the same time. Rather than putting an average market beta to mutual funds as in traditional timing researches (e.g., Treynor and Mazuy, 1966), in the presence of dynamics of the market exposure of mutual funds, they specify the change in a fund's market exposure as a linear function of changes in market return, volatility, and liquidity. At the individual level, they show that a pretty small proportion (about 6%) of mutual funds have return timing skills while the higher proportions of the funds have volatility timing skills (more than 13%) and liquidity timing skills (more than 18%). In this paper, we also examine the market timing ability of Chinese equity mutual funds from the three dimensions: market return, market volatility, and market liquidity. Specifically, we ask the following vital issues: Do Chinese mutual funds time the equity market? If timing ability is observed, is this due to skill of the fund manager or is it only because of luck? Is fund manager's timing skill persistent over time? These questions are very important for investors to understand the role of market timing in fund performance-enhancing strategies.

Since the non-tradable share reform in April 2005, Chinese equity market has become more efficient (e.g., Chong et al., 2012). It seems that investors hardly take advantage of serial correlation in market returns to obtain additional values. Meanwhile, Chinese equity market is extremely volatile and has a relatively high liquidity, particularly in the financial crisis (e.g., Jun et al., 2014), which further increases the difficulty of profit making for professional investors. Even so, there exist reasons to believe that Chinese mutual fund managers have the ability to time the complex market.⁴ First, several papers have indicated that patterns of time-series return (volatility) predictability originally recognized in the US market usually exist in the Chinese market (e.g., Jiang, 2010; Chen et al., 2014; and Cai et al., 2017).⁵ More importantly, market predictability has much to do with irrational behaviors of retail investors who dominate Chinese equity trades. A few papers have shown that Chinese retail investors display significant behavioral biases such as disposition effect, overconfidence, and herding (e.g., Feng and Seasholes, 2005; Chen et al., 2007; Kim and Nofsinger, 2008; Tan et al., 2008; and Yao et al., 2008). And there is some evidence that these biases are weaker for professional institutional investors (e.g., Feng and Seasholes, 2005; Chen et al., 2007; Lee et al., 2010). Furthermore, in the presence of short-sales constraints in China, it is difficult for retail investors to quickly arbitrage mispriced equities away (e.g., Chen et al., 2010a). These observations offer the information advantage to sophisticated investors such as mutual fund managers to actively analyze the predictable market.

Second, Chinese retail investors are often sentiment driven, making mutual fund managers easier to be tracked of their trading activities. As of the end of 2016, the number of investors with A and B share accounts on the Shanghai and Shenzhen markets reached 117 million and 2.4 million respectively, which implies that their investing sentiment exerts an important effect on future market movement.⁶ Moreover, Shanghai composite index rose rapidly from 2000 points in June 2014 to more than 5100 points in June 2015 while dropped by 30% in less than a month and subsequently went through many limit downs for thousands of shares, which means that the Chinese equity market is still immature and speculative. On the one side, as documented by Wang (2003), speculator sentiment is a useful market timing indicator and large speculators lean to have superior forecasting abilities, which is consistent with Yu and Zhong (2009), who suggest that institutional investors manipulate Chinese equity market and possess more inside information than retail investors.⁷ On the other side, as shown by Baker and Stein (2004), market liquidity can be viewed as a sentiment indicator. For example, high liquidity may reflect a positive sentiment of irrational speculators, who tend to underreact to trading activities such as equity issues. Specifically, the Chinese equity market is an order-driven one and thus its liquidity might be successfully timed by more rational investors like mutual fund managers.

Third, the Chinese equity market is highly affected by government policies and activities. Most policy events influence the Chinese equity market by affecting retail investors' trading behaviors. For example, the changes of the deposit reserve rate make an impact on the financing availability for equity trading. Since retail investors are the major force of the Chinese equity market and respond to

² Using a sample of market timing hedge funds, Chen and Liang (2007) also find that a significant proportion of the funds have successful volatility timing skills.

³ After controlling for return timing and volatility timing, Cao et al. (2013a) still find that hedge funds can exhibit liquidity timing skills.

⁴ We thank an anonymous referee for suggestions on Chinese mutual funds' timing motivations.

⁵ The best-known predictors include the normal interest rate of Fama and Schwert (1977), the term structure of Campbell (1987), the dividend yield of Campbell and Shiller (1988) and Fama and French (1988), the book-to-market ratio of Kothari and Shanken (1997) and Pontiff and Schall (1998), and the equity share of Baker and Wurgler (2000). Emphasized by these studies, if the equity market as a whole exhibits inefficiency, managers may exploit these important economic variables to time the market.

⁶ Refer to the web site: <http://www.chinaclear.cn/>.

⁷ For example, Chen et al. (2016) find that some US hedge funds possess the ability to time sentiment.

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