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Can hedge funds time market liquidity? ☆

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ABSTRACT

We explore a new dimension of fund managers' timing ability by examining whether they can time market liquidity through adjusting their portfolios' market exposure as aggregate liquidity conditions change. Using a large sample of hedge funds, we find strong evidence of liquidity timing. A bootstrap analysis suggests that top-ranked liquidity timers cannot be attributed to pure luck. In out-of-sample tests, top liquidity timers outperform bottom timers by 4.0–5.5% annually on a risk-adjusted basis. We also find that it is important to distinguish liquidity timing from liquidity reaction, which primarily relies on public information. Our results are robust to alternative explanations, hedge fund data biases, and the use of alternative timing models, risk factors, and liquidity measures. The findings highlight the importance of understanding and incorporating market liquidity conditions in investment decision making.

1. Introduction

Can sophisticated investors forecast and exploit changes in market conditions? Academic investigations of this fascinating question have a long history, dating back over seven decades to Cowles (1933). Since then, an extensive literature on market-timing ability has emerged, in which various linear and nonlinear measures with and without conditioning information have been proposed to detect the presence of timing skills. In their pioneering work, Treynor and Mazuy

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(1966) develop a framework to measure market timing by examining whether fund managers adjust their market exposure based on a market return forecast. Subsequently, many other measures have been proposed for identifying market return-timing and volatility-timing skills, e.g., Henriksson and Merton (1981), Jagannathan and Korajczyk (1986), Grinblatt and Titman (1989), Ferson and Schadt (1996), Busse (1999), Jiang, Yao, and Yu (2007), and Chen, Ferson, and Peters (2010).

In this paper, we explore a new dimension of fund managers' timing ability—their ability to time market liquidity.[1] In particular, we ask the following questions: Can hedge fund managers, among the most sophisticated of investors, time market liquidity by strategically adjusting fund betas based on their forecasts of future market liquidity conditions? If so, how much economic value does liquidity-timing skill bring to fund investors? These issues are essential to an understanding of the role of market liquidity in professional fund management.

Market-wide liquidity represents an important dimension of market conditions. Pástor and Stambaugh (2003) and Acharya and Pedersen (2005) show that market liquidity, which captures the aggregate ease of transacting a large quantity of assets in a short time without incurring high costs, is a priced state variable important for asset pricing. As underscored by the 2008–2009 financial crisis, market liquidity deteriorates when many investors exit the market at the same time, which causes more liquidation that further reduces market liquidity through so-called liquidity spirals. Therefore, a savvy manager who can correctly forecast market-wide liquidity deterioration would naturally wish to reduce his fund's market exposure before the event occurs.

We examine hedge funds' liquidity-timing ability for several reasons. First, hedge funds are managed by highly sophisticated managers and have experienced dramatic growth in the past two decades.[2] Over that period, many talented managers have joined the industry and hence, it is natural to ask whether hedge fund managers have the skills to time market conditions.[3] Second, liquidity is crucial to hedge funds. Since the collapse of Long-Term Capital Management (LTCM) in 1998, the interaction between liquidity at various levels (asset, funding, and market liquidity) and traders such as hedge funds has become better understood. Though other levels of liquidity (e.g., funding liquidity) perhaps are equally important (e.g., Aragon and Strahan, 2012), we focus on market-wide liquidity because timing strategies are essentially about aggregate market conditions. Third, hedge funds often employ dynamic strategies and have time-varying market exposure (e.g., Fung and Hsieh, 1997, 2001; and Patton and Ramadorai, forthcoming). The combination of time-varying market exposure and the importance of market liquidity implies that hedge funds provide an ideal platform to study liquidity-timing ability. Finally, given the evidence of positive risk-adjusted performance among hedge funds (e.g., Ackermann, McEnally, and Ravenscraft, 1999; Brown, Goetzmann, and Ibbotson, 1999; Fung, Hsieh, Naik, and Ramadorai, 2008; and Jagannathan, Malakhov, and Novikov, 2010), it is reasonable to ask whether liquidity timing is one source of the superior performance.

We build on the Treynor-Mazuy framework to explore the dynamics of hedge funds' market exposure in relation to market liquidity conditions, which is based on the relation between a fund's beta determined in month t and the market's return in month t+1. We estimate a regression model to evaluate how a fund's beta in month t changes with market liquidity realized in month t+1 (e.g., proxied by the Pástor-Stambaugh liquidity measure), while controlling for the fund's exposures to other relevant factors. If fund beta varies positively with market liquidity conditions, it indicates successful liquidity timing, i.e., the fund has relatively high (low) market exposure in anticipation of conditions where market liquidity is good (poor). Given the increasing importance of liquidity concerns in asset management, our investigation makes an important contribution to the hedge fund and timing literatures.

Using a large sample of 5,298 equity-oriented hedge funds (including funds of funds) over the period 1994–2009, we evaluate liquidity-timing ability at the individual fund level, which allows us to distinguish top liquidity-timing funds from the rest. We focus on fund managers' ability to time aggregate equity market liquidity because most hedge funds bear significant exposure to equity markets. For funds with at least 36 consecutive non-missing monthly observations, we estimate the timing skill using the fund's monthly returns. To assess statistical significance of timing ability and to separate timing skill from luck, we conduct a bootstrap analysis. For each cross-sectional statistic of the timing coefficients (e.g., the 10th percentile of t-statistics across all funds), we compare the actual estimate with the corresponding distribution of the statistics based on bootstrapped pseudo-funds that share similar risk exposure as actual funds but, by construction, have no timing skill. The findings strongly suggest that liquidity timing ability exists among hedge funds, and top-ranked liquidity timers cannot be attributed to pure luck.

Next, we explore the economic significance of liquidity timing by examining out-of-sample alphas (i.e., risk-adjusted returns) for the portfolios of funds at different levels of liquidity-timing skill. Specifically, in each month we sort funds into ten decile portfolios based on their liquidity-timing coefficients estimated from the previous 36 months. Then, we measure out-of-sample alphas of the portfolios for different holding periods ranging from three to 12 months. The results suggest that liquidity-timing skill generates significant abnormal returns. For example, over a six-month holding period, the decile portfolio consisting of top liquidity timers delivers an out-of-sample alpha of 0.63% per month (or 7.6% per year), which is more than three times the alpha of the portfolio of bottom timers (0.19% per month). The spread in out-of-sample alphas between the top and bottom liquidity timers remains significant even 12 months after forming the portfolios. We also find evidence of persistence in liquidity-timing skill, consistent with Jagannathan,

[1] In this paper, we refer to aggregate equity market liquidity simply as "market liquidity."

[2] According to estimates of Hedge Fund Research Inc., the hedge fund industry has grown from a few hundred funds managing less than $50 billion in the early 1990s to more than 9,000 funds managing more than $2 trillion by the end of 2010.

[3] We use "hedge funds" and "hedge fund managers" interchangeably.