Momentum and post-earnings-announcement drift anomalies: The role of liquidity risk

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Received 22 February 2005; received in revised form 5 April 2005; accepted 25 April 2005
Available online 24 October 2005

Abstract

This paper investigates the components of liquidity risk that are important for understanding asset-pricing anomalies. Firm-level liquidity is decomposed into variable and fixed price effects and estimated using intraday data for the period 1983–2001. Unexpected systematic (market-wide) variations of the variable component rather than the fixed component of liquidity are shown to be priced within the context of momentum and post-earnings-announcement drift (PEAD) portfolio returns. As the variable component is typically associated with private information [e.g., Kyle, 1985. Econometrica 53, 1315–1335], the results suggest that a substantial part of momentum and PEAD returns can be viewed as compensation for the unexpected variations in the aggregate ratio of informed traders to noise traders.

JEL classification: G12; G14

Keywords: Liquidity risk; Transaction costs; Price impact; Asset pricing; Momentum trading; Post-earnings-announcement drift

I would like to thank an anonymous referee, Kent Daniel, Michael Gallmeyer, Kathleen Hagerty, Jaehoon Hahn, Ravi Jagannathan, Avi Kamara, Robert Korajczyk, Arvind Krishnamurthy, Luboš Pástor, Ed Rice, Gil Sadka, Andy Siegel, and George Skoulakis for helpful comments and suggestions. I also appreciate the comments of seminar participants at the 2004 Western Finance Association meetings, 2004 the European Financial Management Association meetings, and the 2004 European Finance Association meetings. Any errors are my own.

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1. Introduction

Empirical finance literature has shown the predictability of future stock returns using past returns. Jegadeesh and Titman (1993, 2001) consider the price momentum of individual stocks. They show that one can obtain superior returns by holding a zero-cost portfolio that consists of long positions in stocks that have outperformed in the past (winners) and short positions in stocks that have underperformed during the same period (losers). Momentum strategies exhibit high abnormal returns that to date cannot be explained by measures of risk (see, e.g., Grundy and Martin, 2001; Jegadeesh and Titman, 2001). Therefore, behavioral explanations based on some type of bounded rationality of investors (such as overconfidence or underreaction of investors to information) have been developed to explain momentum continuation (see, e.g., Barberis et al., 1998; Daniel et al., 1998; Hong and Stein, 1999). The momentum anomaly is recognized as one of the biggest challenges to asset pricing (see, e.g., Fama and French, 1996; Fama, 1998).

The literature has shown not only price-momentum drift but also a price drift after earnings announcements. Beginning with the early work of Ball and Brown (1968), the financial literature has argued that investors tend to underreact to earnings information. This follows empirical evidence that good-news firms, i.e., those with high standardized unexpected earnings ($SUE$), outperform bad-news (low $SUE$) firms. The results suggest that investors underreact to the information content of earnings, thereby generating return continuation. This is also known as the post-earnings-announcement drift (PEAD) anomaly. Recent studies such as Francis et al. (2004) and Vega (2005) find that the post-earnings-announcement drift of a given firm is related to the amount of private information available about that firm. Chordia and Shivakumar (2002) suggest that PEAD can be explained by macroeconomic factors, specifically inflation. Also, Kim and Kim (2003) construct a risk factor related to unexpected earnings surprises and find that a four-factor model, including the new factor, reduces the PEAD anomalous returns.

The persistence of these drift anomalies, namely, momentum and PEAD, over the past few decades raises serious doubts about the efficient market hypothesis. In light of a recently growing literature on the limits of arbitrage opportunities, a few studies examine whether strategies constructed to exploit these anomalies can be profitable after taking into account transactions costs. Generally speaking, momentum and PEAD returns are relatively short-lived, as the extreme momentum and PEAD portfolios, the winners and the losers (momentum), and the good-news firms and the bad-news firms (PEAD), exhibit the strongest abnormal performance during the first few months after they are formed. Therefore, the implementation of such trading strategies involves high portfolio turnover (see, e.g., Moskowitz and Grinblatt, 1999; Grundy and Martin, 2001, for the case of momentum strategies). The attempt to exploit potentially profitable momentum and PEAD strategies is therefore likely to involve relatively high transactions costs. In this vein, Lesmond et al. (2004) examine momentum strategies and find that the standard

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1 Subsequent works include Jones and Litzenberger (1970), Joy et al. (1977), Rendleman et al. (1982), Foster et al. (1984), Bernard and Thomas (1989, 1990), and Ball and Bartov (1996).

2 For example, Knez and Ready (1996) find that size-based strategies are too costly to trade; Mitchell and Pulvino (2001) analyze the profits to risk arbitrage of mergers and acquisitions; and Chen et al. (2002) examine a variety of strategies based on size, book-to-market equity, and momentum. For evidence from the mortgage-backed securities market, see Gabaix et al. (2004).
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