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Trading activity and price reversals in futures markets

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Abstract

We use the standard contrarian portfolio approach to examine short-horizon return predictability in 24 US futures markets. We find strong evidence of weekly return reversals, similar to the findings from equity market studies. When interacting between past returns and lagged changes in trading activity (volume and/or open interest), we find that the profits to contrarian portfolio strategies are, on average, positively associated with lagged changes in trading volume, but negatively related to lagged changes in open interest. We also show that futures return predictability is more pronounced if interacting between past returns and lagged changes in both volume and open interest. Our results suggest that futures market overreaction exists, and both past prices and trading activity contain useful information about future market movements. These findings have implications for futures market efficiency and are useful for futures market participants, particularly commodity pool operators.

JEL classification: G13; G14
Keywords: Futures markets; Price reversals; Overreaction; Trading volume; Open interest

1. Introduction

A large body of finance literature shows that past prices contain useful information about future market movements in equity markets. For example, Lehmann (1990) and Lo and MacKinlay (1990) find that a short-term contrarian portfolio

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strategy of buying past losers and selling past winners generates significant profits. Lehmann also shows that the contrarian profits remain significant after corrections for plausible transaction costs. The evidence on short-horizon return predictability is consistent with the overreaction hypothesis, namely, traders over-adjust their posterior beliefs to news by more than what is warranted by fundamentals (Lehmann, 1990), although market microstructure biases like lead–lag and bid–ask spread effects may explain away some of the contrarian profits (Lo and MacKinlay, 1990; Conrad et al., 1997).

Both academics and practitioners have also been interested in the role played by trading volume in predicting future market movements. Blume et al. (1994) present a model in which traders can profit from using volume information in addition to historical price information to forecast future price changes. Recent empirical finance research has shown that the relation between trading volume and expected stock returns is in general negative, although the interpretation of the negative relation has been controversial. The traditional liquidity premium hypothesis suggests that trading volume is a measure of liquidity, and high (low) volume assets should command lower (higher) returns, on average (Amihud and Mendelson, 1986; Brennan and Subrahmanyam, 1996; Brennan et al., 1998). [1] Hence, a negative relation between volume and expected returns is consistent with the notion of liquidity premiums. Several behavioral finance studies contend that individuals are overconfident about their ability to evaluate securities, in the sense that they overestimate precision of private information signals, resulting in overreaction to private information and causing asset prices to temporarily swing away from the fundamental value (DeBondt and Thaler, 1985; Odean, 1998; Gervais and Odean, 2001). Overconfidence and overreaction themselves imply a large volume of trading and are thus positively related to the magnitude of price reversals. [2] Therefore, the investor irrationality-induced market inefficiency gives rise to a negative relation between volume and expected returns (DeBondt and Thaler, 1985; De Long et al., 1990; Odean, 1998; Statman and Thorley, 1999). [3]

Although past prices and trading activity are closely watched by futures market participants, the informational role of past prices and trading activity in broader futures markets has not been well studied. Evidence of predictable futures returns has

[1] In the literature, liquidity is often synonymous with bid–ask spread. However, bid–ask spread as a measure of liquidity has some limitations. For example, many large trades occur outside the spread, but many small trades often occur within the spread (Lee, 1993). Brennan and Subrahmanyam (1996) and Glosten and Harris (1988) show that trading volume is a major determinant of market liquidity.

[2] It should be noted that most behavioral models of asset pricing focus on intermediate and long horizons. However, as DeBondt and Thaler (1985) acknowledge, in a given economic setting, the universe of conceivable irrational behavioral patterns is unrestricted.

[3] Lee and Swaninathan (2000) make an attempt to distinguish between the two hypotheses for the volume–return relation by using share turnover as a measure of trading volume and find that both the level of and change in volume are negatively related to subsequent returns. Because this measure of volume is not highly correlated with conventional liquidity proxies, Lee and Swaminathan interpret their results as an indication that the level of and change in volume measure fluctuating investor sentiment rather than liquidity.