On the predictive role of large futures trades for S&P500 index returns: An analysis of COT data as an informative trading signal

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This study examines the information role of large S&P500 futures trades (commercial, noncommercial, dealers, asset managers, and hedge funds) in shaping index returns. Using consolidated data across both standard and E-mini futures contracts, we find that commercial firms’ net trading level appears positively correlated with future index returns but the relationship is not stable across time. Based on more recent data, amongst specialist traders, hedge funds appear superior in terms of access to information and/or trading ability but this advantage is only preserved at high frequency. Therefore, the current weekly Commitment of Traders (COT) report – published with a 3-day delay – prevents timely public access to this type of information. Also, trading signals generated by a popular, position-based sentiment index do not produce significant average returns. Overall, this calls into question the reliability of COT-based trading signals used by market professionals.

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1. Introduction

The Commodity Futures Trading Commission (hereafter CFTC) is the independent regulatory agency for futures and options markets in the United States. The agency publishes a weekly report, called Commitment of Traders (COT) report, disclosing the open interest positions of large traders in

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the futures market. In its original format, the report classifies the reportable (large, above-threshold positions) open interest into commercial and noncommercial positions. The former/latter is traditionally considered as being held by hedgers/speculators. In 2006 CFTC released a new, disaggregated COT report that breaks down futures open interest by trader type instead of generic entries such as commercial vs. noncommercial. It therefore gives public access to futures positions such as those of dealers, asset management firms, and hedge funds.

The COT reports have attracted attention from both academic and professional communities. De Roon et al. (2000) employ the difference between short and long positions obtained from COT reports as a measure of hedging pressure. They specifically test the hedging pressure hypothesis of Keynes (1930) – stipulating that hedgers pay a risk premium to speculators – and discover that both ‘own-market’ and ‘cross-market’ hedging pressures are significant factors in shaping futures risk premium and therefore futures returns. A series of studies such as Bessembinder (1992), Leuthold et al. (1994), Wang (2003b), and Tornell and Yuan (2012) support the hedging pressure effect and reiterate the predictive value of large traders’ holding positions in commodity futures returns. On the other hand, studies such as Sanders et al. (2004), Bryant et al. (2006), and Gorton et al. (2012) appear to reject the hedging pressure hypothesis. Studies such as Martikainen and Puttonen (1992), Chu et al. (1999), Blasche et al. (2009), and Li (2009) show that futures markets are generally more efficient in pricing newly arrived information. Moreover, it is well-documented that institutional traders are often perceived as the ‘smart money’ (Chakravarty, 2001; Ke and Petroni, 2004; Schmeling, 2007; Yan and Zhang, 2009). Hence, it is possible that large S&P500 futures traders’ positions contain private information regarding future index returns (Wang, 2003a). Whether this is the case or not, practitioners have been extracting trading signals from the daily COT reports almost from inception. Jiler (1985) finds statistics based on large traders’ positioning data a sensible aid in technical forecasting. Kirkpatrick and Dahlquist (2010) introduce a professional market report that suggests that commercial traders’ net long positions – as a percentage of the total net long positions – have a 3-week lead to cash stock positions. Wang (2003a) introduces an oscillating sentiment index based on large futures traders’ net long positions and finds noncommercial sentiment to be a ‘price continuation indicator’ of future index returns whereas he finds the commercial sentiment a ‘contrary indicator’. Kirkpatrick and Dahlquist (2010) claim this type of sentiment oscillator to be highly indicative of the informed traders’ beliefs regarding market prospects. The predictive value of large futures traders’ positions for market returns is also investigated in other futures markets. For instance, Sanders et al. (2004) investigate the lead–lag relationship between market returns and traders’ net positions in the energy futures markets and find that market returns lead traders’ net positions but not the other way around. Tornell and Yuan (2012) study the information role of currency futures traders’ positions on spot exchange rates and find that peaks and troughs of traders’ net positions have a significant role in exchange rate forecasting. It follows that, if the public can use large traders’ positions data to consistently predict returns, the efficient market hypothesis is seriously in doubt.

In financial futures markets, where the underlying assets are stock indexes, bonds and paper currencies, producers and inventory holders are difficult to conceptualize. Hence, it is possible that the hedging pressure effect may not strongly manifest itself in these markets. Moreover, the role played by large traders in financial futures markets may be different from that in commodity futures markets. Even within the financial futures sector, different contract specifications and market microstructures may lead to a different type of trading behavior. We therefore focus the scope of this research on a specific, individual futures market and elaborate on the information role of large futures traders’ positions in shaping future S&P500 index returns. While several studies exist on the information role of large traders in commodity futures markets, relatively few focus on S&P500 futures. Based on the CFTC’s 2011 COT report, the average (consolidated) open interest of S&P500 futures stands at 1,059,666 which far exceeds the average open interest of most other financial futures contracts (except Eurodollar futures). The particularity of S&P500 futures, in addition to its liquidity, is that there are actually two futures markets for trading the index, namely the S&P500 standard and the E-mini markets.¹

¹ William L. Jiler is the former president of Commodity Research Bureau, Inc., creator of the CRB Futures Price index, and is the author of various technical analysis books such as How Charts Can Help You in the Stock Market (1990).

² The E-mini contract on S&P500 was introduced in 1997.
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