



Commodities Momentum: A Behavioral Perspective

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The authors study the 52-week-high momentum trading strategy in commodity futures markets. Their empirical analysis suggests that this behavioral-finance motivated strategy generates significant profits after accounting for transaction costs, and outperforms the conventional momentum strategy. They further demonstrate that the 52-week-high momentum returns are significantly linked not only to the term structure and hedging pressure risk factors that reflect the inexorable contango and backwardation cycle but also to the TED spread that proxies for global liquidity risk.

Introduction

In a rational, efficient capital-markets setting, asset prices are expected to adjust to new information instantaneously. However, behavioral theorists have long argued that investors are not always rational, and there are sometimes delayed asset price reactions which reflect that investors respond gradually to new information. In particular, early evidence suggests that futures prices do not follow random walks and do not react to news in a fully rational manner (Stevenson and Bear, 1970; Cargill and Rausser, 1975; Leuthold, 1972); therefore, trading strategies can be used profitably to exploit predictable patterns in prices. Against this background, the authors analyze the “52-week-high momentum” strategy to shed light on the behavioral phenomenon known as *conservatism bias* in the context of commodity futures investors.

Relevance of the Research Question

The commodity futures pricing literature has made considerable progress in the last decade. In particular, a three-factor model that consists of term structure/carry, hedging pressure and momentum factors continues to gain acceptance in the commodities pricing literature (Basu and Miffre, 2013; Szymanowska *et al.*, 2014; Bakshi *et al.*, 2017). However, the literature has still not reached a consensus on what constitutes an appropriate commodity futures pricing model. As regards the rationale for commodities momentum, the evidence suggests that the term structure and hedging pressure factors provide only a partial explanation of the abnormal returns. After controlling for these risk factors, the driving forces of conventional momentum in commodities can be seen as largely behavioral. However, previous studies have shown that market sentiment proxies such as the CBOE implied volatility index,

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VIX (or investor fear gauge), and the CBOE Crude Oil ETF volatility index (or OVX) are not able to explain the variation of conventional momentum returns. This paper contributes to the momentum literature by showing that a behavioral 52-week high/low proxy is largely able to explain conventional commodity momentum returns.

Data and 52-Week High and Low Nearness Signal

The sample consists of settlement prices for 30 commodity futures contracts from 6 sectors (energy, precious metals, industrial metals, livestock, grains and softs) from January 1977 through July 2013. At each month end, the commodities are sorted into winner (long) and loser (short) portfolios based on the 52-week high ratio which is defined as $P_{i,t-1}/high_{i,t-1}$, where $P_{i,t-1}$ is the price of commodity i at the end of month $t-1$ and $high_{i,t-1}$ is its highest price during the preceding 52-week period. The 52-week low momentum strategy is constructed in a similar way but the ranking signal is instead the 52-week low ratio defined as $P_{i,t-1}/low_{i,t-1}$, where $P_{i,t-1}$ is the price of commodity i at the end of month $t-1$ and $low_{i,t-1}$ is its lowest price during the prior 52-week window. All portfolios are rebalanced monthly with no monthly gap skipped between ranking and holding periods. The long-short portfolio constituents are equally-weighted.

Performance of 52-Week High and Low Momentum Portfolios

The paper begins by showing that the “52-week-high momentum” and the “52-week-low momentum” strategies are profitable (generating a mean excess return above 14% per annum) in commodity futures. Consistent with prior studies about the influence of investor irrationality in equity markets, these findings confirm the conservatism hypothesis and also indicate the presence of a strong anchoring behavior (i.e., investors rely too heavily on one piece of information when making decisions) in commodity futures markets. This suggests that investors use the 52-week high and low prices as reference points (or “anchors”) in processing news on commodities. When good news pushes the commodity futures price near or above their 52-week high, traders are reluctant immediately to bid the price higher even if the information warrants it. Similarly, when bad news pushes prices far below their 52-week high, investors are initially unwilling to sell. When traders eventually act on the information, prices adjust to a new equilibrium thus resulting in return continuation.

Further the paper shows that the 52-week-high momentum strategy performs better than the conventional momentum strategy proposed by Miffre and Rallis (2007). Furthermore, the 52-week-high momentum strategy is able to explain a large portion of the returns variation in conventional momentum portfolios. This suggests that commodity futures momentum is attributable to the anchoring behavior of investors.

They also find that returns to the 52-week-high momentum strategy become negative from month 12 onwards and fully reverse (back to zero) around month 30. While the equity markets literature has not found evidence of long-term reversals in the 52-week-high momentum returns, the findings in this paper suggest that short-term momentum and long-term reversal co-exist in commodity futures markets.



The authors find that the winner-loser returns of the 52-week-high momentum strategy are significantly explained by the Treasury Bill versus Eurodollar (TED) spread, an indicator of perceived credit risk in the general economy; namely, the returns reflect compensation for global funding liquidity risk exposure. Furthermore, the 52-week-high momentum strategy is negatively related to the bottom quintile of investor sentiment changes; thus, the strategy works better in more stable market conditions, that is, when the shifts in market sentiment are smaller.

Finally, a sub-period analysis confirms a significant decline in the commodity momentum profitability in the last decade. This pattern is consistent with predictions stemming from the adaptive market hypothesis (AMH) which states that the behavioral biases of market agents, such as anchoring, heuristics, and underreaction, continue to exist because agents adjust their behavior to survive in a rapidly evolving market environment. The anchoring behavior of commodity futures traders may have changed due to the relentless growth of commodity markets since the early 1990s and the introduction of the Commodity Futures Modernization Act of 2000; namely, the increased competition of hedge funds, commodity trading advisors, managed futures and commodity index products may have gradually eroded momentum profitability.

Conclusions

Momentum strategies have been examined extensively in the commodities literature. While a number of studies argue that momentum is a proxy for the backwardation/contango cycle, this paper demonstrates that the anchoring behavior of investors plays also a role. The empirical analysis in the paper reveals also a structural decline in recent years in the profitability of conventional and the proposed 52-week high/low momentum strategies. Since the efficient markets hypothesis and behavioral theories are unable to rationalize such a decline, the authors ascribe a role to the evolution-based adaptive market hypothesis, as it provides a better approximation of the changing nature of commodity futures markets as regards its participants.

Endnotes

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Keywords

Momentum, term structure, hedging pressure, conservatism, adaptive markets, liquidity.