



# Commodities momentum: A behavioral perspective



Robert J. Bianchi, Michael E. Drew, John Hua Fan\*

Department of Accounting, Finance and Economics, Griffith Business School, Griffith University, 170 Kessels Road, Nathan, Queensland 4111, Australia

## ARTICLE INFO

### Article history:

Received 27 October 2015

Accepted 4 August 2016

Available online 13 August 2016

### JEL classifications:

G13

G14

### Keywords:

52-week high momentum

Term structure

Hedging pressure

Conservatism

Adaptive markets

Liquidity

## ABSTRACT

The growth in commodity-related investments has sparked interest in the performance of momentum strategies in these markets. This paper introduces a behavioral proxy of the 52-week high and low momentum that explains a significant proportion of the variation of conventional momentum returns after controlling for commodity specific risk factors. Our findings show that the 52-week high strategy generates significant profits after accounting for transaction costs. We report that the 52-week high strategy is a better predictor of returns than conventional momentum. Our findings suggest that term structure and hedging pressure risk factors provide only a partial explanation of the results.

© 2016 Elsevier B.V. All rights reserved.

## 1. Introduction

The 2004–2014 boom and bust in commodity related investments has sparked renewed interest from both academia and industry in better understanding momentum strategies in these markets (see Moskowitz et al., 2012; Gorton et al., 2013; Basu and Miffre, 2013; Narayan et al., 2014; Fuertes et al., 2015; Bianchi et al., 2015).<sup>1</sup> The early work by Keynes (1930) and Working (1949) has led to the development of the term structure and hedging pressure risk factors as the key drivers of commodity futures returns. Erb and Harvey (2006) find that long–short momentum strategies are profitable in commodity futures. Using different datasets, Miffre and Rallis (2007) and Shen et al. (2007) support these findings and demonstrate that momentum profits in commodity futures cannot be fully attributable to systematic risk factors. Despite the intense interest in the literature, the sources of commodities momentum

remain unresolved. For the first time in the literature, this paper introduces a behavioral proxy of the 52-week high momentum that explains a significant proportion of the variation of conventional momentum returns after controlling for commodity specific risk factors.

We posit that the success of the 52-week high momentum strategy rests on the anchoring bias of investors. Under a rational, efficient capital markets framework, prices adjust to new information instantaneously in a random fashion. In contrast, behavioral theorists have long argued that investors are not always rational and a delayed reaction exists as investors respond gradually to new information.<sup>2</sup> In the commodity futures literature, early evidence shows that futures prices do not follow random walks, and that profitable trading strategies can be used to exploit predictable patterns in prices (Stevenson and Bear, 1970; Cargill and Rausser, 1975; Leuthold, 1972). Furthermore, Ma et al., (1990) and Peterson et al. (1992) show that commodity prices do not react to information in a rational manner. These studies conclude that agricultural commodity futures prices overreact to significant events whereas financial futures prices underreact. The overreaction hypothesis is confirmed in Wang and Yu (2004) where they examine the price reversal of commodity futures, and in Shen et al. (2007) where they attribute the success of conventional commodities momentum to investors' overreaction bias. Given these behavioral

\* Corresponding author. Fax: +61 7 3735 7760.

E-mail address: [j.fan@griffith.edu.au](mailto:j.fan@griffith.edu.au)

(J.H. Fan).

<sup>1</sup> From 2003 to 2010, commodity related institutional investments have grown from less than \$20 billion to more than \$250 billion according to a Barclays Capital survey of over 250 institutional investors (see <http://www.barcap.com/about-barclays-capital/press-office/news-releases/2010/12/>). Furthermore, AUM (assets under management) for managed futures have grown from \$45 billion to \$340 billion from 2002 to 2013 (<http://www.barclayhedge.com/>). This is referred by the media, World Bank and IMF as the 'Commodity Investment Boom' or 'Commodity Super Cycle' (see CNBC, 2013; WSJ, 2013; Bloomberg, 2013; World Bank 2014; IMF, 2011).

<sup>2</sup> Various examples of behavioral decisions include conservatism bias (Barberis et al., 1998) and overconfidence bias (Daniel et al., 1998; Hong and Stein, 1999).

findings, we examine the 52-week high momentum strategy to understand how the investment behavior in commodity futures is related to the conservatism bias.

The design of the 52-week high momentum strategy from [George and Hwang \(2004\)](#) (GH thereafter) shows that investors exhibit conservatism bias when they use the 52-week high as a reference/anchoring point in evaluating the potential impact of news on U.S. stocks. When good news pushes stock prices near or above their 52-week high, traders are reluctant to bid the price of the stock higher even if the information warrants it. Similarly, when bad news pushes stock prices far from their 52-week high, investors are initially unwilling to sell at prices implied by the information. When information eventually prevails, prices adjust to a new equilibrium thus resulting in return continuation. Consequently, GH finds that strategies constructed using the 52-week high generate higher abnormal profits than conventional momentum strategies and that the 52-week high better predicts future performance. Other studies by [Gupta et al. \(2010\)](#) and [Liu et al. \(2011\)](#) support the findings of GH in various international stock market settings. We extend the understanding of commodities momentum by examining this behavioral phenomenon in commodity futures.<sup>3</sup>

This study makes four contributions to the literature. First, we argue that if stock investors exhibit conservatism bias in the form of anchoring behavior around the 52-week high level, then commodity investors may also exhibit similar behavior, even though commodity returns are driven by factors different from those in stock markets.<sup>4</sup> [Grinblatt and Han \(2005\)](#) predict that anchoring behavior whereby the acquisition price acts as an anchor leads to momentum effects for stocks whose prices are at or near long-run highs and long-run lows.<sup>5</sup> Contrary to the [Grinblatt and Han \(2005\)](#) predictions, GH does not find abnormal profits when momentum strategies are formed on stocks' nearness to their 52-week low. They attribute the absence of the momentum behavior at the 52-week low momentum to a tax distortion effect.<sup>6</sup> However, this study shows that both the 52-week high and the 52-week low momentum strategies generate statistically significant profits in commodity futures. The findings suggest that the anchoring behavior of commodity investors around the 52-week low may be different from the behavior of stocks investors.<sup>7</sup> Consistent with prior studies on investor irrationality in commodity futures, our results not only confirm the conservatism hypothesis but also indicate that the anchoring behaviors appear to be *stronger* than in the equities markets.

Second, our analyses suggest that the 52-week high momentum is a better predictor of future performance than the 'conventional momentum' identified by [Jegadeesh and Titman \(1993\)](#) and the

52-week low momentum in commodity futures. Consistent with GH, our findings suggest that the profits from the 52-week high momentum strategy are robust after controlling for conventional momentum, but not vice versa. While the 52-week low and conventional momentum can be completely subsumed by each other, the 52-week high momentum alone can explain more than half of the variation of returns of the conventional momentum portfolio. Furthermore, since nearly three-quarters of the variation in returns can be explained by the 52-week high and low momentum combined, we argue that conventional momentum can largely be explained by the anchoring behavior of investors around the 52-week high and the 52-week low of commodity prices. Furthermore, we find that the 52-week high momentum profits *do reverse* in a relatively short period of 12–30 months. Unlike in the stock market literature, whereby 52-week high momentum profits do not reverse over the long-term, our findings suggest that momentum and reversal can co-exist in commodity futures, as predicted by the behavioral models of [Barberis et al. \(1998\)](#), [Daniel et al. \(1998\)](#) and [Hong and Stein \(1999\)](#).

Third, to link the behavior of the 52-week high and low momentum strategies to common risk factors, we find that global funding liquidity and the two commodity-specific dynamic risk factors of term structure and hedging pressure play important roles. Consistent with [Asness et al. \(2013\)](#) and [Bianchi et al. \(2015\)](#), we find that global funding liquidity is a partial information variable that can help in understanding one of the possible sources of commodity momentum returns. Furthermore, we show that a six-factor framework used by [Fuentes et al. \(2010\)](#) and [Moskowitz et al. \(2012\)](#) does not explain commodity momentum portfolio returns, although it seems to explain the winners and losers portfolios. In addition to the six-factor model, the winners and losers (but not momentum) portfolios across strategies are negatively related to the VIX and OVX, suggesting a symmetrical response by winners and losers to changes in market volatility. Moreover, the profits of the 52-week high momentum strategy are completely subsumed by the TED spread. Despite a low  $R^2$ , this finding implies that global funding liquidity is important in understanding the nature of the 52-week high momentum. Furthermore, the 52-week high momentum is negatively related to the bottom quintile of the changes in investor sentiment, suggesting that the strategy tends to perform well in stable market conditions, that is, when there are smaller shifts in market sentiment. Finally, the 52-week high momentum exhibits positive relationships with the dynamic, long-short term structure and hedging pressure risk factors, although a full risk-based explanation appears unlikely based on the evidence presented in this paper.

Fourth, remarkably consistent with the predictions of the adaptive market hypothesis (AMH), our sub-period analysis reveals a significant structural decline in all momentum profits. The AMH proposed by [Amilon \(2008\)](#), [Charles et al. \(2012\)](#), [Lo \(2004, 2012\)](#) and [Neely et al. \(2009\)](#), argue that the behavioral biases of market agents, such as anchoring, heuristics, and underreaction, continue to exist because agents must adjust their behaviors to survive in a rapidly evolving market environment. Since prior studies of the 52-week high momentum offer little guidance on this finding, we conjecture that the anchoring behavior of commodity traders has changed due to the tremendous growth in commodity investments since the early 1990s and the introduction of the Commodity Futures Modernization Act of 2000. As more professionals have entered the commodity futures markets in recent years, competition has intensified causing the gradual erosion of profitable opportunities and anomalies.<sup>8</sup>

<sup>3</sup> [Schwager \(1989\)](#) documents commodity speculators Richard Dennis and William Eckhardt and the famous 'turtle' trading strategy, which constructs long and short speculative positions at a market's intermediate term high and low price levels. This speculative commodity futures strategy reflects and exhibits similarities to the 52-week high momentum strategy examined in this paper.

<sup>4</sup> Studies have shown that commodity investments exhibit low correlations with traditional asset classes, thereby reducing the overall risk associated with traditional portfolios (see [Bodie and Rosansky, 1980](#); [Jensen et al., 2000, 2002](#); [Erb and Harvey, 2006](#); [Gorton and Rouwenhorst, 2006](#)). However, recent studies such as [Tang and Xiong \(2012\)](#), [Choi and Hammoudeh \(2010\)](#), [Silvennoinen and Thorp \(2013\)](#) and [Basak and Pavlova \(2016\)](#) argue that commodity futures returns exhibit high correlations with traditional asset classes during crisis periods.

<sup>5</sup> [Grinblatt and Han \(2005\)](#) argue that investors are subject to a disposition effect, which causes the aversion to sell shares that result in the recognition of losses.

<sup>6</sup> GH states that locked-in capital gains make investors unwilling to sell a stock. Thus, prices of stocks that are winners relative to the 52-week low tend to be above their fundamental values. When the mispricing is corrected, the reversal may offset any momentum generated by the 52-week low.

<sup>7</sup> Perhaps there is little or no tax distortion effect because investors, on aggregate, hold lower levels of investments in commodities compared to stocks.

<sup>8</sup> One may also attribute the declining trading profits of the various momentum strategies to the development of information technology and the emergence of algorithmic and high frequency trading in commodity futures markets.

Download English Version:

<https://daneshyari.com/en/article/5088243>

Download Persian Version:

<https://daneshyari.com/article/5088243>

[Daneshyari.com](https://daneshyari.com)