International Review of Financial Analysis 48 (2016) 67–84

Contents lists available at ScienceDirect

International Review of Financial Analysis

The role of analyst forecasts in the momentum effect ☆

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ARTICLE INFO

Article history:
Received 7 February 2016
Received in revised form 3 September 2016
Accepted 12 September 2016
Available online 14 September 2016

JEL classification:
12
14
20

Keywords:
Momentum
Analysts' forecast revision
Optimistic bias
Recency bias
52-Week-high price

ABSTRACT

We evaluate the extent to which sell-side equity analysts can facilitate market efficiency when there is increasing uncertainty about a stock's future value. The prevalence of the 52-week-high momentum anomaly, that can be largely attributed to information uncertainty, provides a setting for examining the value and timing of analysts' earnings forecast revisions. Our study finds that analysts can provide value-relevant signals to investors by picking up indicators of momentum. The ability to identify under or over-valued stocks suggests that analysts are important information intermediaries in the price-continuation momentum effect. However, we also observe pervasive asymmetric reaction to good and bad news throughout our study that is consistent with incentive-driven reporting and optimistic biases. Nevertheless, analysts' forecast revisions are informative at different stages to re-establish stock prices back to their fundamental valuation.

1. Introduction

Momentum trading profits pose arguably one of the greatest challenges to the semi-strong-form efficient market hypothesis (Fama & French, 2008). Jegadeesh and Titman (1993) demonstrate that individual stock returns exhibit predictable momentum behaviour at intermediate horizons. The simple price-momentum strategy of maintaining a self-funded investment portfolio via simultaneously buying past winners and short-selling past losers, enables momentum traders to earn abnormal profits for the next 12 months (JT strategy).

George and Hwang (2004) investigate the return predictability of the 52-week-high and low price in the US stock market. The 52-week-high momentum strategy is formed based on the current price of stock in relation its' 52-week-high price (GH strategy). When stocks are trade near or far from 52-week-high prices, investors form a psychological "anchor" on the elevated price and subsequently underreact to new information about these stocks. However, as information relating to the true value of stocks continues to persist in the longer term, the correction (adjustment) of investors' prior underreaction behaviour leads to a subsequent price continuation effect. Bhootra and Hur (2013) include a recency measure as an enhancement to the 52-week-high price strategy of George and Hwang (2004). They suggest that the addition of recency bias accentuates anchoring bias. Thus, the 'recency' strategy of Bhootra and Hur (2013) (BH strategy) that conditions recency measure upon the stock's 52-week-high, significantly increases profits to the momentum strategy due to a higher degree of underreaction.[1]

Hao, Chu, Ho, and Ko (2014) find evidence of profitability of the recency strategy in Taiwan. This is an unusual finding as unlike the US, the 52-week-high (and low) prices of individual stocks are not readily reported in the Taiwanese market, therefore the psychological anchor of the 52-week-high price is unavailable. Thus, the evidence of the dissociation of anchoring bias in Hao et al. (2014) leads towards the investigation of other factors that may contemporaneously underpin the profits of the recency strategy. Analysts' forecasts impact stock prices and trading strategies as their recommendations are used by investors to identify under or over-valued stocks. Our paper investigates whether analysts' earnings forecasts provide additional explanatory power for future stock returns and profits in the momentum strategy.

☆ The authors acknowledge funding from the (1) Australia Awards—Endeavour Research Fellowship and (2) Australian Institute for Business and Economics (AIBE) in support of Dr Rand K.Y. Low at the Stern School of Business, New York University. The authors also acknowledge financial support for this research from the following funding bodies (1) Accounting & Finance Association of Australia and New Zealand (AFAANZ) 2013/2014 research grants and (2) UQ Postdoctoral Research Grant entitled 'Portfolio optimization and risk management techniques for financial crises'. The authors acknowledge the helpful comments from Assoc. Professor Jacquelyn Humphrey in the development of this study.

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[1] Bhootra and Hur's (2013) recency of the 52-week-high price strategy applies the notion of proximity, i.e., number of days since a stock has attained its 52-week-high price.

http://dx.doi.org/10.1016/j.irfa.2016.09.007
1057-5219/

Prior studies find that analysts can facilitate market efficiency acting as information intermediaries by collecting and processing information about firms, and their recommendations are important to reconnect stock prices back to their fundamental values (e.g., Barber, Lehavy, McNichols, & Trueman, 2001; Hong & Wu, 2016; Wieland, 2011; Jung, Sun, & Yang, 2012). Womack (1996) suggests that analysts express their opinions of the current price of stocks with earnings forecasts, and this feedback steers investors' investment decisions. Further, Laksanabunsong (2015) suggests that analysts' recent performance affects their credibility, and the magnitude of post-forecast revision drift is greater for stocks associated with positive analysts' performance.

However, several competing studies contend that analysts' forecasts are inefficient as they do not fully incorporate past information into their recommendations. In their forecasts of firm performance, analysts place a greater weight on heuristic valuations than present valuation models known to predict profitability (i.e., residual income models) (Bradshaw, 2004). Jegadeesh, Kim, and Krische (2004) purport that analysts do not take advantage of the various stock characteristics known to predict stock returns and that the implications of their forecasts are in line with economic incentives faced by sell-side brokerage firms. These economic incentives induce analysts to be overly optimistic in their forecasts (Ivković & Jegadeesh, 2004; Chen, Narayanamoorthy, Sougiannis, & Zhou, 2015).

Our study investigates the interaction between analysts' forecast revisions and profits from the recency momentum strategy by using various portfolio-level sorting and regression analyses. We find that the magnitude of analysts' forecast revisions has incremental explanatory power for future stock returns, whereby analysts can facilitate market efficiency by providing earnings forecast revisions that are closely related to price-momentum indicators. Our results show evidence of pervasive asymmetric reaction to good and bad news that is consistent with incentive-driven reporting by analysts. This implies that the direction of analysts' forecast revisions (upwards/downwards) have a significant role at different stages to reconnect stock prices back to their fundamental value. The ability to pick under or overvalued stocks suggests that analysts are an important source of information in the price continuation momentum effect. In addition, our multivariate regressions on stocks in the recency momentum strategy find support for the incremental effects of positive performance for upward revisions.

Our contributions to the literature are two-fold. First, our work is the only study to document the interaction between analysts' forecasts and the 52-week-high momentum trading. We extend the work of Jegadeesh et al.'s (2004) to evaluate analysts' ability to extract value-relevant information from (the 52-week-high) momentum indicators that are closely associated with behavioural factors or information uncertainty. We also incorporate the measure of positive analysts' performance that is relatively new in the literature (Laksanabunsong, 2015), and examine whether analysts' recent performance has an incremental effect on post-forecast revision drift. Second, we evaluate the extent to which sell-side analysts can facilitate market efficiency by picking up indicators of momentum, and translate them into value-relevant information that is incrementally able to predict future stock returns. Burghof and Prothmann (2011) find greater information uncertainty[2] in stocks near and far from the 52-week-high price, thus our results are economically meaningful as they suggest how analysts derive their forecasts when there is ambiguity about stock prospects, and provide valuable signals to investors of the stock's future value. Despite these estimates stemming from heuristic valuations (Bradshaw, 2004), this does not compromise the usefulness of analysts and their ability to provide value-relevant information for investors (Penman, 2010). Furthermore, our research finds evidence in support of the literature documenting evidence of optimistic biases in analysts' forecast revisions that are consistent with the economic incentives faced by sell-side analysts.

The remainder of this paper is structured as follows. Section 2 explores the relevant literature and formally presents the hypotheses. Section 3 describes the data sources, research design and descriptive statistics. Section 4 presents the empirical results and summarizes our findings in relation to our hypotheses. We conclude in Section 5.

2. Literature review and hypothesis development

2.1. Momentum and information uncertainty

George and Hwang (2004) propose a 52-week-high strategy that simultaneously buys stocks near their 52-week-high price and short-sells stocks far from their 52-week-high price. Rather than using past price changes (Jegadeesh & Titman, 1993), they argue that price-levels are more important determinants of momentum returns. Despite the irrelevance of the 52-week-high to the future operating performance of the firm, the 52-week-high strategy (George & Hwang, 2004) exhibits superior returns to the price-momentum strategy (Jegadeesh & Titman, 1993) and has the ability to persist through time without return reversals. In an out-of-sample test, Liu, Liu, and Ma (2011) find that the 52-week-high strategy generates significantly positive momentum returns in 10 out of the 20 international stock markets in their sample.

Based upon a sample period of 1965 to 2008, Bhootra and Hur (2013) find further evidence of significant profits with the 52-week-high momentum strategy, and add a recency measure to refine the broad nearness to the 52-week-high price. This recency strategy of is distinguished by the notion of proximity to the 52-week-high price (i.e., the number of days since a stock has attained its 52-week-high price). By adding this recency measure, they find that stocks that have recently attained the 52-week-high price subsequently outperform those that have attained their 52-week-high price in the distant past by about 0.70% per month. Thus the addition of recency bias enhances the profitability of the 52-week-high price strategy of George and Hwang (2004).

The existence of the 52-week-high price momentum profits can be attributed towards information uncertainty in stocks (Burghof & Prothmann, 2011) that lead to an increase in behavioural biases such as the anchoring and adjustment bias (Tversky & Kahneman, 1974).[3] Burghof and Prothmann (2011) document that stocks nearer to and further from the 52-week-high price have a higher degree of information uncertainty,[4] where information uncertainty refers to the state of scepticism about the impact of new information on a firm's fundamental value. This can surface due to lack of knowledge, quality of information, or implied riskiness of the firm's fundamentals (Zhang, 2006). Burghof and Prothmann's (2011) proposition regarding the 52-week-high strategy is consistent with the studies of Daniel and Titman (1999) and Hirshleifer (2001), where psychological biases are greater when there is increasing information uncertainty about a set of stocks, and investors are slow to adjust their initial underreaction or overreaction to firm-specific information (Barberis, Shleifer, & Vishny, 1998, Daniel, Hirshleifer, & Subrahmanyam, 1998, and Hong & Stein, 1999).

In times of greater information uncertainty (embedded in stocks nearer to and further from the 52-week-high price), investors apply the 52-week-high price as a psychological "anchor" to assess the impact of new information about stocks, and are generally reluctant to update their beliefs (Daniel et al., 1998; Burghof & Prothmann, 2011). Similarly,

[2] Information uncertainty refers to the state of scepticism about the impact of new information on a firm's fundamental value. This can surface either due to lack of knowledge, quality of information, or implied riskiness of the firm's fundamentals (Zhang, 2006).

[3] Tversky and Kahneman (1974) document the tendency of humans to orientate strongly on reference points in order to reduce the complexity of making estimates and assessing probabilities.

[4] Burghof and Prothmann (2011) employ six proxies of information uncertainty: (1) firm size (market value), (2) firm's book-to-market ratio, (3) distance between the 52-week-high price of a stock and its 52-week-low price, (4) stock-price volatility, (5) firm age and (6) cash-flow volatility. These proxies quantify uncertainty regarding the impact of news on the stocks' fundamental value.