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AN OVERVIEW OF INVESTOR SENTIMENT IN STOCK MARKET

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Investing decisions affect many individuals. Investment sentiment, a metric seeking to quantify the expectations of future returns, can cause counterintuitive individual actions. To help individuals with investment decisions, we discuss the investor sentiment, its measurement, its impact in stock market, and its association with behavioral finance concepts. We also discuss a decision making process incorporating the investor sentiment concepts.

Introduction

While Malkiel and Fama's (1970) Efficient Market Hypothesis (EMH) indicates that securities prices fully reflect all publicly available information, Shiller (2003) finds that, "The efficient markets model, for the aggregate stock market, has still never been supported by any study effectively linking stock market fluctuations with subsequent fundamentals." Hall (2001) adds that many high tech companies with negative earnings maintained high stock prices for long periods of time. Malkiel (2003) and other economists challenged the EMH, to explain diverging market sentiment, including how psychological and behavioral elements impact stock prices.

Sentiment describes a group of people's opinions, emotions or views, and market sentiment sums such expectations for the market as a whole (Thorp 2004). Investor sentiment is an approach to measure market sentiment. Behavioral finance examines the impact of investor sentiment in the stock market, and investor sentiment can help to explain stock values poorly correlating with 'pure' fundamental financial analysis (Brown and Cliff 2005). Investor sentiment surveys have long displayed interesting investor attitudes over the years. For example, despite large April 2000 market losses, investor expectations of future returns did not significantly fall (Dreman et al. 2001). Instead of adjusting portfolios, many individual investors "expected" a positive reversal despite current financial facts and figures. Extremely bullish levels of sentiment often come after strong market run-ups when investors are fully invested in the market (Thorp 2004). Some advocates even recommended using investor sentiment as a contrarian indicator for the overall market in certain specific situations.

We will discuss investor sentiment measurement, how the behavioral finance literature examines investor sentiment, and propose a decision making process to incorporate investor sentiment to assess stocks.

Measurements for Investor Sentiment

Various methods can measure investor sentiment, such as surveying investor's expected future returns. Groups conducting these surveys include the CFA Institute's Global Market Sentiment Survey, Barron's Investor Sentiment Readings, Franklin Templeton Global Investor Sentiment Survey, and the American Association of Individual Investors (AAII) weekly poll of investor sentiment. AAI asks its members the simple question, "What direction do you feel the market will be moving over the next 6 months?" Most investors believing the market will fall (grow) will cause a bearish (bullish) investor sentiment. The AAI Survey also measures the percentage of individual investors who are bullish, bearish, or neutral on the stock market.

Behavioral finance researchers develop alternative models to better explain dramatic change in stock prices over the past century, e.g., the Roaring Twenties; Great Crash of 1929; the Go-Go Years of the 1960s; the Nifty Fifty bubble of the early 1970s; the Black Monday crash of 1987; and the Dot.com bubble of the 1990s (Baker and Wurgler 2007). Brown and Cliff (2004) construct a sentiment index including twelve measures and test its correlation with stock return. They indicate that "the sentiment levels and changes are strongly correlated with contemporaneous market returns." But sentiment cannot predict near-term future stock returns.

Baker and Wurgler's (2006) sentiment index uses size, profitability, volatility, NYSE turnover, the IPO's average first-day returns and other measures to predict stock portfolio returns. Baker and Wurgler (2007) examine companies that are particularly sensitive to investment sentiment such as young, growing, highly volatile, financially distressed, non-dividend paying firms with low capitalization and low profitability. The methodology is designed to track the effect of an aggregate sentiment to market returns and individual stocks. This comprehensive "top-down" approach seeks to improve the predictability of sentiment, and it includes not only economic bubbles or crashes as well as everyday stock price patterns. This index can predict returns of different portfolios at the start of the year. The top-down approach shows where sentiment, rather than the stock market in aggregate, will most likely influence certain stock prices.

Investor Sentiment and the Stock Market

Many studies have examined investor sentiment's impact on stock prices. However, much potential remains for this index to serve as a strong forecasting model. Barberies, Shleifer, and Vishny (1998) find investor sentiment associated unreliably with stock prices. Interestingly, investor sentiment under-reacted to more factual information such as earnings announcements, share repurchases, dividend initiations, and overreacted to a prolonged record of extreme (good or bad) performances. However, Baker and Wurgler (2006) conclude that "...waves of sentiment have clearly discernible, important, and regular effects on individual firms and on the stock market as a whole."¹ Thorp (2004) also comments on the lagging feature of sentiment as well as the potential irrational emotions that drive prices. He notes that "week to week changes in member sentiment do not reveal meaningful relationships between

¹The standard finance model's main assumption is that capital market prices equal the rational present value of expected future cash flows. However, behavior finance is built on two basic assumptions: investors are subject to sentiment and betting against sentimental investors is costly and risky. (Baker and Wurgler 2007) De Long, Shleifer, Summers and Waldmann's (1990) model explains the notion that investors are subject to sentiment, and they suggest that behavior of professional arbitrageurs can respond to noise trading rather than as trading on fundamentals. Shleifer and Vishny (1997) indicate that betting against sentiment is costly and risky because the noise trader sentiment can push prices a long way away from fundamentals before disconfirming evidence becomes available.

sentiment and market performance,” but he does discover that excessive investor sentiment in either a bullish or bearish direction would signal a significant opposing response over the following 52 weeks. This perspective leads to viewing the investor sentiment as a contrarian indicator in the specific situations of extremely bullish or bearish environments.

Several studies find some measures of investment sentiment predicting stock returns (Lee et al., 1991; Neal and Wheatley 1998; Lemmon and Portniaguina 2006; Ling, Naranjo and Scheick 2014; Kaplanski, Levy, Veld and Veld-Merkoulova 2015; Massa and Yadav 2015; Zheng 2015). Lemmon and Portniaguina (2006) find that investor sentiment forecasts the returns of small stocks. Zheng (2015) documents a negative predictive relation between sentiment and metal futures’ returns. Kaplanski et al. (2015) affirm that more positive sentiment associates with higher return expectations and higher intentions to buy stocks. Massa and Yadav (2015) show mutual funds employ portfolio strategies based on market sentiment. Ling et al. (2014) find a positive association between investor sentiment and subsequent private market returns. Chang, Hsieh, and Wang (2015) also conclude that individual investors had stronger mis-reaction to information during periods of high investor sentiment in the Taiwan options market. Lastly, Babu and Kumar (2015) document that negative sentiment has a greater bearing on the NSE index return than positive sentiments.

Focusing from stock market responses to investor sentiment towards the investor sentiment response to the stock market derives some interesting observations. In early 2001, publicly traded stock values decreased sharply and market observers deliberated on an expected corresponding pessimistic response from the investor sentiment. Concurrently, outside observers were curious to see if investors would invest more conservatively. Dreman et al. (2001) compare investor expectations and confidence in times of rapid rise of valuations in 1998 with a period of large losses in 2001. Surprisingly, examining such factors as the amount of risk investors plan to undertake, they find relatively minor differences in investor sentiment. The exceptional optimism seen in 2001 investor confidence despite extreme financial losses exemplifies the importance of factoring in psychological processes influencing investors.

The above research literature finds a substantial body of research of significant associations between investor sentiment and market return related measures. We will further discuss the importance of investor sentiment and how to utilize this perceived information.

Investor Sentiment and Behavioral Finance

Before individual investors implement investor sentiment in a pricing model, we should examine the behavioral finance literature that provides the rationale for investor sentiment. Shefrin (2004) denotes three behavioral finance themes: heuristic-driven bias, frame dependence, and inefficient markets. Heuristics call problem solving techniques “rules of thumb and not strict logic.” These often simple and efficient mental process rules tend to help people with decision making; a limited focus could lead to errors from cognitive bias. Framing is the process to see the world with all of our mental and emotional filters from our past experiences. Inefficient markets denote the price or rate of return that appears to contradict the EMH.

Overconfidence becomes important when analyzing market inefficiencies. Psychology studies generally agree that human beings tend to overestimate their abilities. Regarding financial decisions, Barber and Odean (1999) present that investors’ overconfidence creates bias in their abilities and in regretting poor decisions. The Psychological - Overconfidence Theory indicates that investors tend to overweight private information while ignoring public information (e.g., Daniel, Hirshleifer, and Subrahmanyam 1998; Chuang and Lee 2006). Chung and Lee (2006) examined the impact of public and private information shock on trading volume and equal-weighted stock prices, finding that value-weighted stock prices strongly overreact to private information shock and under react to public

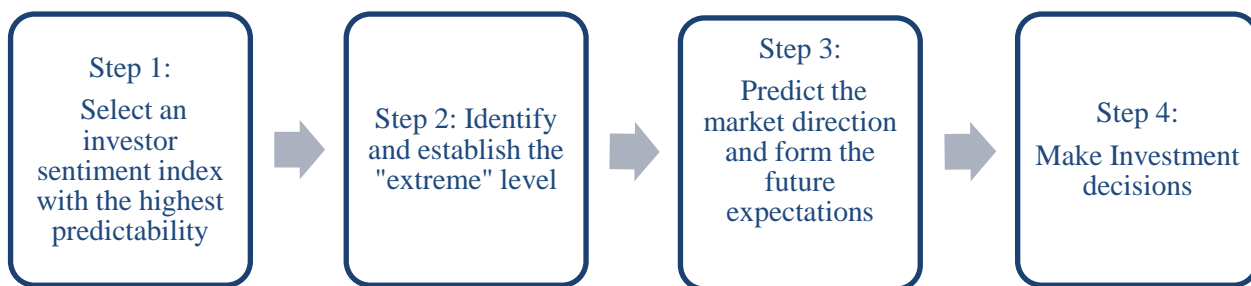
information shock. Also, private information has an earlier impact than public information on stock prices and equal-weighted stock prices under-react to a public information shock for a longer period. Thus, overconfident investors trade more aggressively in subsequent periods when making market gains. Their findings are consistent with the expectation of the overconfidence hypothesis. Furthermore, Odean (1998) shows that overconfident investors conducted more trades and believed they were better in choosing investment options than their less-confident counterparts. Unfortunately, Odean (1998) also finds that overconfident investors yield significantly less than the market average.

Why Investor Sentiment Matters

To help apply investor sentiment for financial purposes, the following decision making matrix works well. We construct a decision tree using sentiment data as a contrarian indicator as Thorp (2004) recommends, stating that the market will move in opposition to the highest levels of bullish and bearish sentiments. Large market increases occur with extreme levels of bullish sentiment and with many investors becoming fully invested in the market. In this setting, a downturn should be anticipated. A corresponding situation occurs with high levels of bearish sentiment. Market sentiment indicators can also help to find market tops and bottoms, by using extreme levels of investor sentiment as an overall market contrarian indicator.

We recommend the following decision making process: First, an individual investor should assess the predictability between ex-post sentiments and ex-post stock market to select the best investor sentiment index from available resources (e.g., AAIL, CFA Institute and Barron's sentiment survey conducted). Second, identify and establish the "extreme" level based on the mean of bullish and bearish sentiment. Third, predict the direction of the market prescribed by contrarian thought and form future expectations. Finally, make a sell, buy or hold investment decision. The figure 1 below illustrates the above process.

Figure 1. The investment decision making process) about here



Conclusion

While incorporating investor sentiment into stock valuation cannot predict such financial collapses as the 2008-2009 great recession, investor sentiment provides a tool to help analyze stock portfolios. While it is not "financial" information, investor sentiment can impact the stock market underscoring the need to understand human behavior's underlying psychological factors. Using the investor sentiment can definitely help individual investors to make optimal decisions. In this study, we recommend a decision making process. We suggest testing this process with data in future research.

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