1. Introduction

Recent research in behavioral finance has led many people to understand that standard finance, by itself, cannot help investors build the most optimal portfolio. The decisions made by investors are influenced by emotions such as fear, confidence, risk aversion and social pressure. However, it is not very easy to measure the quantitative impact of these feelings. The purpose of my research is to analyse the reliability of prominent market sentiment indicators, to help people make better investments.

2. Model

Assumptions

• Investors are not normal rational (Meir Statman, 1995)
• Markets are not efficient even if they are difficult to beat.
• Behavioral Portfolio Theory (Shefrin and Statman, 2000): Portfolios are viewed as distinct mental account layers where mental account layers are associated with particular goals and where attitudes towards risk vary across layers.
• Behavioral Asset Pricing Model: Expected return of a stock = f (market factor, book-to-market factor, market cap factor, momentum, affect factor, social responsibility, status factor, and more)

Experiments

Our model tests the reliability of 4 widely used market sentiment indicators (see Table 1 below) in making a profitable medium-term investment decision. An indicator is considered reliable if it has a correlation coefficient of at least ± 0.5 with the S&P500 prices during a period of 10 years. All calculations are done using Microsoft Excel.

Table 1: Market Sentiment Indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Measurement</th>
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<tbody>
<tr>
<td>CBOE Volatility Index (VIX) (Contrarian)</td>
<td>Volatility</td>
</tr>
<tr>
<td>S&amp;P 500 Moving Averages</td>
<td>Market breadth</td>
</tr>
<tr>
<td>Equity put call ratio (Contrarian)</td>
<td>Put call</td>
</tr>
<tr>
<td>American Association of Individual Investors (AAII) - Sentiment Survey (Contrarian)</td>
<td>Investor sentiment</td>
</tr>
</tbody>
</table>

3. Results

The below chart calculates the correlation between the S&P 500 Index and the market sentiment indicators in figure 1.3 and 4. This step is not done for the indicator in figure 2 since it just calculates the 200 day moving average of S&P 500 prices.

Based on our analysis of the 4 market sentiment indicators, only the CBOE Volatility Index (VIX) proves to be reliable for medium-term investments. Since it is a leading and contrarian indicator, low readings imply a bearish trend (short/sell/put options) and high readings imply a bullish trend (long/buy/call options).

4. Conclusion

While market sentiment indicators provide relevant information about behavioral biases, they must be used with caution and in combination with other analyses such as valuation. Works of Caginalp (1999) and Duran (2006) are helpful for this purpose.

5. Major References

• Books: Behavioral Finance and Investment Management by the CFA Institute (edited by Arnold S. Wood)
• Data: Yahoo Finance, Association of American Investors, Chicago Board Options Exchange