
Executive Summary

Not only since the publication by Jegadeesh and Titman (1993) Fama's Efficient Market Hypothesis has been questioned by trend followers but since then the profitability of momentum trading has been documented. Momentum or relative strength is the phenomenon that prices of rising assets will rise in the future or that past winners will outperform past losers significantly. This is widely studied and accepted. However, whether momentum or trend following can be used to control the equity exposure of a whole portfolio has not been analyzed yet. There are studies that investigate momentum as a signal for tactical asset allocation decisions within the same asset class (see for instance Bhojraj and Swaminathan, 2006). Momentum strategies to control and to time the exposure of a whole asset class, namely the equities, are barely studied. Tactical asset allocation decisions regarding the equity exposure are often made based on macroeconomic factors and on expectations of the development of the economy.

The main contribution of the thesis at hand is the evaluation of three momentum strategies as investment strategies to control the equity exposure in multi-asset class portfolios. Not only are the returns adjusted for systematic risk and analyzed subsequently but the thesis tests also whether macroeconomic factors can explain the success of the momentum strategies.

Problem Description

In a first step, momentum strategies have to be found that are applicable as an investment strategy to control the exposure to the equity market. Existing approaches sell assets with the worst recent return and buy the ones with the best return. This is not possible in the case of a weighting decision across asset classes. In a second step, the rules are applied on a very simple portfolio that can only invest either in the equity market or in a risk free asset. The momentum strategies will assign the point of time to invest in the equity market and when to invest in the risk free asset. In a further step, the portfolio becomes a balanced portfolio consisting of equities and bonds and the momentum strategies control the equity exposure of the portfolio; that is they will assign an over-, underweight or neutral position for the equity quota.

Methodology

The study is executed individually in five different regional markets on the basis of historic equity index futures prices, namely the S&P 500, the Nikkei 225, the SMI, the DJ Euro Stoxx 50 and the FTSE 100. Futures contracts have been chosen because of their low transaction costs and high transaction volumes. The portfolio that applies the momentum strategy is compared to a benchmark portfolio that uses a buy-and-hold strategy.

One out of three momentum strategies excels as the most successful. This strategy is then analyzed in more detail. The strategy applies a very simple method of trend following: It assigns a maximum overweight in the equity exposure as long as the actual index price is higher than the one prior to 232 trading days, otherwise a maximum underweight.

Whether the success of the strategy is statistically significant, is tested using the traditional Capital Asset Pricing Model and a model that tests benchmark timing, which means it tests if the portfolio has a significant lower beta in down markets than in rising markets. Moreover, macroeconomic factors, namely the price earnings ratio and the realized equity risk premium, are tested whether they can explain the excess return.

Results

The most successful investment strategy exceeds the benchmark in all regional markets in the case of assigning only whether or not to invest in the equity market as well as in the case of controlling the equity exposure against the bond market. Moreover, the statistical analysis shows weak evidence for significance. Adjusting for market risk cannot explain the excess return, nor can the tested macroeconomic factors, realized equity risk premium and price earnings ratio.