Momentum strategies on the Swiss stock market

Bachelor Thesis in Banking and Finance

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Executive Summary

The debate whether financial markets are efficient and therefore reflect all available information in its prices has engaged economists for a long time and continues to so to this day. A direct implication of efficient markets is the impossibility to make profits by searching for patterns in past market data like stock price histories or traded volumes. This thesis attempts to add to the evidence against efficient markets by analyzing the profitability of momentum trading strategies on the Swiss stock market. The strategies are based on the assumption that the price of a stock will keep moving up if it has been rising in the recent past and that it will continue to fall if lately the price has fallen as well. By buying the stocks that show an upward trend (hence the term "momentum") and short-selling the stocks with a downward trend the investor hopes to achieve abnormal profits. Since momentum strategies rely on past data, evidence of their profitability is also considered evidence against weakly efficient markets.

In the first part of the thesis, the efficient market hypothesis and its three forms (the weak, semi-strong and strong form of efficiency) are examined and an overview of the existing literature on the matter is presented. Furthermore some of the well-known market anomalies like the January effect, the small firm effect and market overreactions are described and their progression over time is documented.

The second part of the thesis is dedicated to momentum strategies. First, the literature on momentum is split into an early and a more recent period and the most influential papers are summarized. Additionally some of the most common reasons are explained for why momentum strategies are found to be profitable by most studies.

The basic momentum approach used in research literature contains two major phases: an observation period and a subsequent holding period. During the observation period, the individual stocks are ranked according to their returns and a winner portfolio is created containing the top decile of stocks and an analogous loser portfolio is formed containing the bottom decile of stocks. The winner portfolio is purchased, the loser portfolio is sold short and both portfolios are held for a certain amount of time. Observation and holding periods can be varied, with the most common time frames being 1, 2, 3 and 4 quarters. When combining the winner and loser portfolios, a "zero cost" (winner minus loser) portfolio is formed which is funded by the short position of the loser portfolio thus not requiring an initial investment.

The stocks chosen for observation in this thesis are the individual stocks contained in the Swiss Leader Index (SLI) from the year 2000 to 2015. To counteract the circumstance that the sample size of thirty stocks is comparatively small, a second strategy has been created which assigns the stocks with positive returns during the observation to the winner portfolio and the ones with negative returns to the loser portfolio. This ensures that no stock is left out and more data points are available. For the common momentum strategy described above, the top 20% of stocks are put into the winner group and the bottom 20% into the loser group. Finally, the pairs of potential combinations of observation and holding periods has been limited to these five strategies: (6 month observation, 6 month holding), (6,12), (12,3), (12,6) and (12,12).

The results of the study show that the winner portfolios significantly outperform their counterparts in the loser portfolio, proving that a momentum effect is indeed observable. While the returns that are achieved by short-selling the loser portfolio are small and insignificant, the winner and zero-cost portfolios show strongly significant profits. The strongest combination of observation and holding periods is the strategy with a twelve month observation period and a 3 month holding period which generates an annual profit of 8.98% for the zero-cost portfolio of the common momentum strategy. The worst performance of the zero-cost portfolio is delivered by the 6,6 strategy of the self-created strategy with a profit of 3.60%. Furthermore the traditional momentum strategy outperforms the one created in this thesis on every occasion, but the excess returns diminish for longer observation and holding periods. After the strategies have been exposed to a suitable benchmark to find out whether there are excess returns when compared to the market, the results of the zero-cost portfolio lose significance, but still show positive returns. While the winner portfolios keep showing significant returns even after market adjustment, loser portfolios are not capable of outperforming the market and are insignificant when seen separately from the other strategies. A potential explanation for this circumstance is the tendency of loser portfolios to perform worse after a big recession like the most recent global financial crisis or the euro crisis. Additionally, the momentum effects are usually stronger for small firms which are not included in this study because the SLI contains the thirty biggest stocks listed on the Swiss stock exchange.

The thesis concludes that a momentum effect on the Swiss stock market is indeed present. Whether the effect is strong enough to seriously challenge the weak form of efficiency is debatable and a subject for further research with potentially different parameters.