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Google Trends, Swiss Stocks and the Risk Diversification Effect

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Executive summary

The challenging world of digitalism has led to many new research areas, especially in the financial world. One possible new source of valuable data is that of the current widely-used web search engines, such as Google, Bing and Yahoo. Google as a market leader in the web search market offers an insight into the search data via Google Trends. For the companies listed in the Swiss Market Index (SMI) daily trading data from Bloomberg and daily search volume data from Google from 2012 to 2015 are collected.

In a first step, this study addresses to the question whether there is a link between the search and the trading volumes. Therefore, the Pearson cross-correlation coefficients for several time lags between the trading volumes of the 20 SMI stocks and the corresponding Google query volumes are calculated and discussed. To define the direction of the link between search and trading volumes a Granger causality test is performed. Finally, the search volumes are used as an input factor to calculate the stock weights of a portfolio. The weighting process takes into account that for a positive value of the discrimination factor α the more-searched companies in Google receive a relatively lower weight. In case of a negative α , the more popular companies receive a relatively higher weight. The main focus lies on the strategy that companies that are more searched for are receiving a lower, and less popular companies a higher weight. This strategy is based on the idea that there is a positive correlation between the popularity of a stock and its riskiness. Therefore, discriminating popular stocks, measured by Google Trends popularity, should lead to a lower portfolio risk. In contrast, it has been showed in other researches that periods of investor concern, which are measured by web search queries, are followed by notable price drops in financial markets. Adapting this finding to this study, and assuming that large values of web search volumes may also contain investor concerns, this strategy should lead to higher returns. Therefore, the focus lies not only on improved diversification of the portfolio, but also on enhancement of the return. This is best measured using the Sharpe ratio, which takes a two-dimensional view into account.

One main finding in this study is that using company names as search terms leads to a positive average correlation coefficient. It can be said, that a linkage exists between search and trading volumes. Furthermore, the positive lags showed higher values than the corresponding negative lags. A similar result is seen when analyzing the Granger causality of the search and trading volumes. First, one needs to say that both directions show Granger causality. Nonetheless, there is a tendency for the direction from the search volume to the trading volume to be stronger and

more often present than the direction from trading volume to search volume. Finally, the analysis of the portfolio performance of the Google Trends strategies shows following two main results: On one hand, using search data from yesterday to build today's portfolio leads to better results than using same-day search data. On the other hand, discriminating more-searched stocks mostly dominates the strategy to discriminate less-searched stocks and the equally weighted portfolio.