

Executive Summary

Valuable holding data of funds is provided by the Security and Exchange Commission (SEC) 13f filing data at the end of each quarter. With the data several quantitative methods of portfolio generation can be constructed. Given the limited data used by previous papers, stress tests are necessary to evaluate the 13f filings, appraise and develop the quantitative models.

In this paper, the holding data was firstly filtered through six criteria to pick out funds with long-term investing mentality. Given the lagging issue of the 13f filings, portfolios constructed by the filtered data should provide more promising performance. Then the portfolios are generated in two steps, which are stock picking and weight assignment. Three strategies are suggested in both processes, based on market cap, fund performance and fund overweighted information respectively. As for stock picking, stocks are firstly ranked according to their score, which is graded according to the mentioned three standards. Then the top n will be picked out to generate the portfolio, where n ranges from 2 to 200. As for the weight assignment process, the weightings are also assigned according to the scores calculated above. Therefore, nine strategies will be constructed by combining the three strategies in the two processes.

Following the construction of the portfolios, backtester is applied on all the portfolios in the period from 2004 to 2021 with quarterly rebalancing. While the Subprime Crisis in 2008 and the Corona Pandemic in 2020 were extracted to analyze the strategies under stress. Comparing different circumstances, the methods outperforms the market to the largest extent in the Subprime crisis, while they also managed to achieve a good return during the whole periods. However, in the Corona Pandemic only two strategies managed to reach a better return than the benchmark, which is strong during the crisis with the support from the U.S. government.

In terms of strategies, the model market cap extraction with fund performance balancing leads the performance in all the situations except the Sharpe ratio during Subprime Crisis, when the method fund performance extraction with market cap balancing topped. Given the results, fund performance is valuable information to be considered when generating investment strategies. And a trend for all strategies is also observed, which is that the more holdings are included in the portfolio, the better performance it will reach. But the trend is only tested when the holdings are less than

200.

Overall, 13f filings can provide valuable information for portfolio generation in both bullish and bearish markets. But the added value is less under a crisis with strong market supported by the government.