

Abstract of doctoral thesis

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Title:

Evaluation of the performance of portfolios with automated trading compared to random portfolios and investment funds.

Interest of the study:

This Ph.D considers the question that millions of investors have been raised at some point: Which is the best option for your savings, investment funds, random investment, or strategies based on technical analysis?

Goals:

List of goals:

- 1) Analyze the performance of Spanish funds managers.
 - 1.a Explain advantages and disadvantages for the investor in funds.
- 2) Describe the performance of moving averages as an investment strategy.
 - 2.a Comparison with random strategies.
 - 2.b Measurement of the performance in bull and bear periods.
 - 2.c Differences in the implementation of the strategies in different markets: USA and Europe.
- 3) Evaluation of the differences in performance between mutual funds, moving averages and random portfolio.

Elements of the methodology include:

The method employed in this work is the computer simulation using databases on historical quotes. At the same time, historical data from investment funds for comparing the results have been obtained.

For the simulation of portfolios using technical analysis strategies is has been used the cross of moving averages. Moments for buying and selling stocks are determined with the cross of moving averages. The number of days to employed to calculate moving averages is a configurable variable that is used to generate sets of simulations. Random generated portfolios are also simulated. It can be determined a target of liquidity and approximate number of operations. Those liquidity parameters and number of operation at random portfolios have to be similar to those in moving average strategy portfolios in order to compare better the performance. Both parameters clearly affect the final performance of the portfolio. Firstly, because the moving average strategies have high liquidity in bear markets and secondly because a commission is included in each transaction penalizing portfolios with high number of operations.

In terms of data management, simulations and results have been implemented with Matlab GUI application including a user interface. This interface allows the visualization of the strategies on the chart of each value as well as the overall portfolio. Moreover for each simulation provides comprehensive statistical and graphical information on the parameters of the portfolios.

Results:

An investment portfolio (long or short and long) based on moving averages does not expect beating a bullish market. However, in bearish market, the moving average strategy has lower losses than the market and the random strategy. Therefore, in the long run, including different phases of market, is expected from moving average strategy to yield at or above the market. The expected long-term performance of moving average portfolio would be much higher in the case of allowing short sell operations. Although the portfolio allowing long and short operations always behaves worse than the market in a pure bullish phase

On the other hand, during the bullish periods 2001-2011 and 2009-2011, spanish investment funds studied obtained much worse results than comparative indexes including dividends. Only during the bearish period 2007-2011 investment funds yielded as bad as market.

From the results it is concluded that among the three investment options evaluated, the best option when market expectations are unknown is the use of moving averages cross allowing long and short positions.