DIRECTED RISK RESEARCH PROBLEM STATEMENT

Risk Theme	Market Risk	**Problem Nr.**	PS19007

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PS Status	Open	**Date**	15 Oct 2019	**Revised PS**	(Office use)

PROJECT TITLE: THE EFFECTIVENESS OF TECHNICAL ANALYSIS TRADING STRATEGIES IN THE SOUTH AFRICAN INVESTMENT MARKET

PROJECT GOAL

Determine if active investment strategies, such as technical analysis techniques, can outperform a passive investment strategy, such as a buy-and-hold portfolio.

HIGH LEVEL DESCRIPTION OF PROBLEM

The main reason for investing is to make a possible profit by taking on different levels of investment risk (Dickason-Koekemoer & Ferreira, 2018). A large amount of research in modern economics, known as Traditional Finance Theory (TFT), has been built on the assumption that investors are rational and investment markets are efficient (Fabozzi et al, 2002). The foundation of TFT is the Efficient Market Hypothesis (EMH). The EMH assumes that the investment market is efficient, which means that investment prices reflect all public and private information available about the investment. The EMH assumes that when information about an individual stock arises, the news spreads quickly and is incorporated in the price of the stock without any delay. Thus, neither fundamental analysis, which is the analysis of macroeconomic and microeconomic factors to help investors select "undervalued" stocks, nor technical analysis techniques, which is the study of past prices of stocks to predict future prices of stocks, would enable investors to achieve higher returns that can be obtained from holding a randomly selected portfolio of individual stocks, known as the buy-and-hold strategy (Malkiel, 2003).

In active trading, technical analysis is the leading method of study deciding on buy, hold and sell strategies. Investors investigate the market by using technical analysis techniques to predict future market trends. The use of technical analysis techniques has attracted the attention of various researchers. There are thousands of technical analysis techniques, the most used methods are: Moving Average, Relative Strength Index and Bollinger Band Method.

Numerous research who questions the effectiveness of such strategies argue that these techniques cannot outperform a buy-and-hold strategy. Technical analysis strategies were proved to underperform a buy-and-hold strategy when tested on the United States and China's stock market. The research concludes that the United States and China stock market is efficient. In contrast with the United States and China, studies conducted on the Singapore Stock Exchange and Finnish stock market has shown that individual investors benefit from technical analysis techniques, showing that the Singapore stock market may be inefficient and not compliant to the EMH (Tam & Cuong, 2018; Wang et al, 2019).

The question arises whether the South African stock market is efficient?

PROJECT OBJECTIVES

The objectives of this project are:

- To determine if technical analysis techniques (active investment strategy) will outperform a buy-and-hold strategy (passive investment strategy) when using these techniques to buy South African stock

- To determine if an automated program, such as Random Forest, can be used to apply a mixture of technical analysis techniques to outperform a buy-and-hold strategy.

OUTPUTS REQUIRED

- A paper in the academic financial literature

- Development of methodologies to illustrate how industry can measure the effectiveness of technical analysis strategies

STRATEGIC VALUE TO DIRECTED RISK RESEARCH

This research will contribute to a better understanding of the South African investment market and to address a pertinent debate in the financial industry regarding the effectiveness of technical analysis strategies.

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