**Senior Capstone Project**

Evaluating Success of Technical Analysis Investment Strategies

Chapter 1: Buy and Hold Investment Strategy



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**Background**

The buy and hold strategy is one of the most popular investing techniques. It is well known due to its simplicity and proven success in recent decades. It follows the widely accepted understanding that an economy is going to continue to prosper and grow which will return returns on investments over periods of times. As the time increases the impact of volatility and short term economic fluctuations are mitigated. Most passive investors will undertake an investment technique that closely resembles a buy and hold technique as it reduces risks, requires small trading frequency and returns a strong return on investments. Chapter 1 is going to answer the question ‘what are the expected returns for buy and hold strategy over a 90-day period during different economic cycles’.

**Reference to other articles**

An article written by

**Base Model**

**Methodology**

The base model for buy and hold strategy is going to be very simple. You purchase a stock on day 1 and you hold the stock for 90 days. This will mean that the stock is held for 60 trading days. You will then compare the price at the end of the time period with how it was at the start to get a return on investment. By simulating this over 1000 iterations it should be relatively close to the expected return of a buy and hold strategy.

**Results**

A table of numbers with different colored numbers

Description automatically generated

Image 1: The mean expected returns from sector ETF’s across a 90 day investment period.

Observing the average returns, there is a clear indication that short term investment during different macroeconomic periods are going to yield different returns. With the trough by far being the worst time period to be investing in the stock market while expansions and peaks outperform the standard 4% return during a 90 day period from 2005-2024.

A screenshot of a calculator

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Image 2: The relative mean expected returns from sector ETF’s across a 90 day investment period

The green signals a top three performance during that business cycle meanwhile the red signals a bottom three performance.

Trough

Winners- Materials, Technology, Communication Services

Losers – Financial, Real Estate, Industrials

Expansion

Winners – Healthcare, consumer discretionary, financials

Losers – Energy, Real Estate, Materials

Peak

Winners – Technology, financials, healthcare

Losers – energy, consumer discretionary, materials

Contraction

Winners – Energy, consumer staples, real estate

Losers – Financials, communication services, industrials

**Discussion**

There is a clear relationship between the economic time period and expected returns. The expansion and peak show a return of about 6% across a 90 day period where as a contraction displays a -3.1% return and an even worse -6.58% return on the trough.

Using sector ETFs it is also very helpful to represent how different industry sectors perform during different macroeconomic time periods. For example, the financial sector shows terrible returns during a trough and a contraction where as during a peak and an expansion it yields some of the highest returns. This suggests that the financial sector follows the state of the economy very closely.

The results show that XLK or the technology sector far outweighed every single other sector from 2005 to 2024. This is likely due to the massive expansion of companies such as AAPL, MSFT and NVDA which are all component of the technology sector where they saw very high average returns even during troughs as seen by their 9% better than average return during a trough time period.