

In this simulation we compare two strategies:

1. Buy and Hold:

In this strategy, we invest \$1,000 every month into a stock of our choice and hold the investment till the expiry of the test period (30 years by default). We do not care whether the market is going up or down but invest consistently the same fixed amount.

2. Active Trading:

In this strategy, we check the market signal before investing.

The strategy can be summarized as:

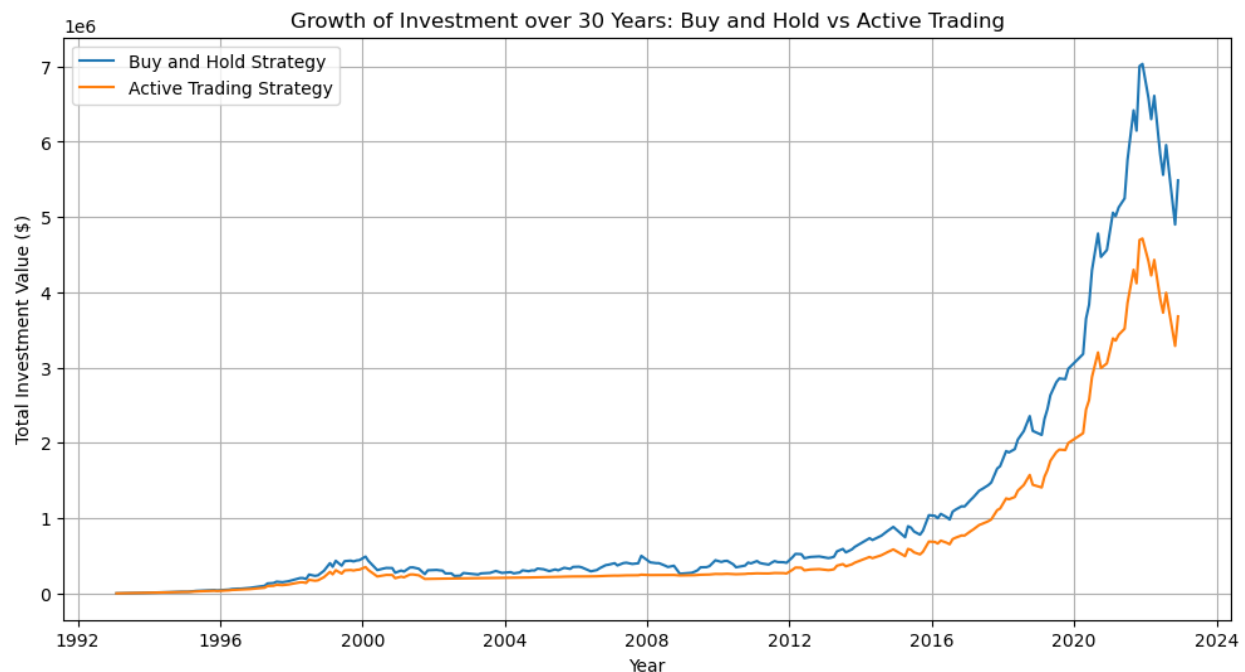
For every month:

If (technical signal is buy) Invest \$1,000 in the stock market

Else if (technical signal is sell) Put \$1,000 in a savings account with 0% APR i.e. no interest

Further, if the signal ever switches from buy to sell, transfer money to savings account with 0% APR, and if the signal switches from sell to buy, transfer money from savings account to the stock market.

Simulation Results

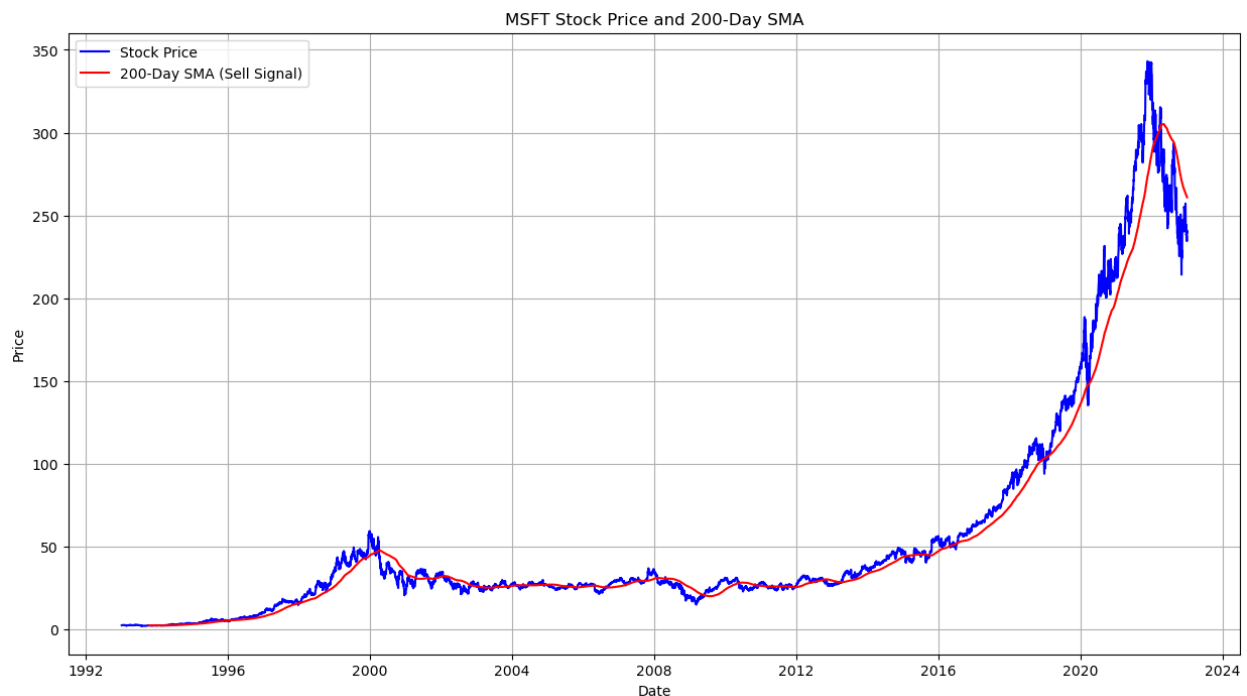


For our chosen stock Microsoft, we see a clear indication that Buy and Holding significantly outperformed Active Trading in this scenario. It appears that in the first ~5 years, Active Trading outperformed Buy and Holding; however, it was slowly overtaken.

Buy and Hold Strategy:
Total Equity: \$5166815.67
Annual Percent Return: 9.29%

Active Trading Strategy:
Total Equity: \$3466604.00
Annual Percent Return: 7.84%

Calculating Total Equity and Annual Percent Return (APR), we can see that Buy and Holding yielded us a much larger total equity and APR than Active Trading.



Looking at our graph of Stock Price and 200-Day SMA, we can see that the graph closely follows our Growth of Investment graph in shape.

In summary, Buying and Holding yielded far greater returns than Active Trading at the end of 30 years. Active Trading did yield better returns in the initial 5 years but eventually tapered off. This reinforces the idea that a low-cost passive portfolio is better than a portfolio that is consistently involved in the stock market.