

In this report, I will be detailing and explaining the findings of creating an investment plan. This is done to provide the information that can be found in the analysis in a less quantitative way. This investment plan minimizes the risk of investing in selected stock options. It details exactly what percentage of the Investment amount should go to each selected stock

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### **Stocks:**

First, the closing share prices were taken from each stock. The source of the stock data was Yahoo Finance. The data was taken from the closing monthly stock price. The four stock options were Walmart, Amazon, Microsoft, and Chevron.

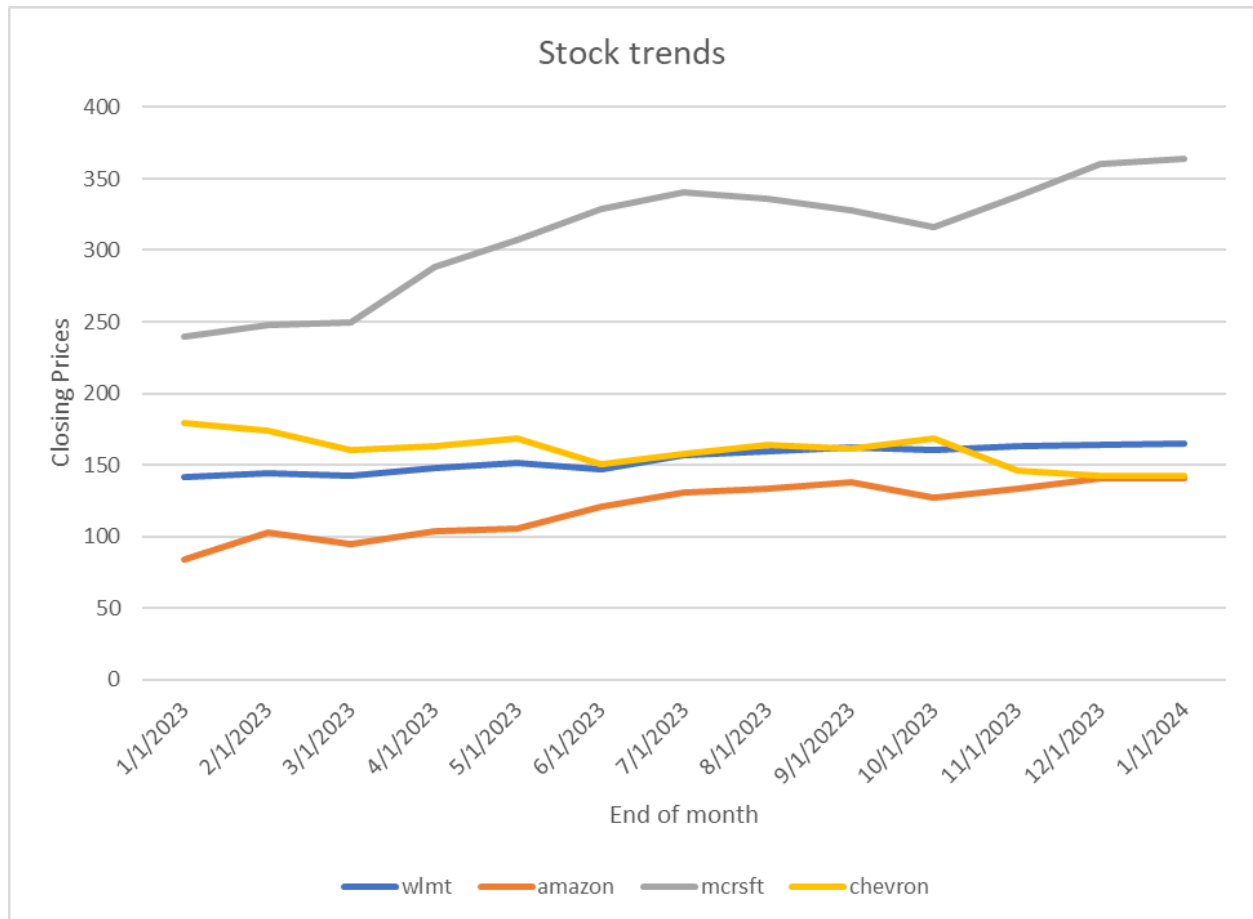
### **Month over Month returns:**

To calculate month-over-month rates, closing prices for all 4 stocks were used. The average of these was calculated and used as the expected ROI of each stock. Furthermore, the month-over-month returns tell us exactly by how much the closing share price increased or decreased within the stock. This information is presented as percentages. The average of the month-over-month returns for Walmart, Amazon, Microsoft, and Chevron are 1.28%, 4.72%, 3.66%, -1.72%. Therefore, we would typically expect stocks to change value by these percentages respectively in a given month.

### **Trends:**

Calculation of the correlation matrix allows us to see any relation between stocks. From this, we can see that there is a significant rate between Walmart, Amazon, and Microsoft. The strong correlation indicates that typically when Walmart stock increases so does Amazon and Microsoft. This may be due to them sharing the same market. Therefore a helpful indicator of Walmart's stock price may be Amazon's stock price and vice versa. The same information can be said of Walmart and Microsoft, and Amazon and Microsoft. In total, it is typical that when there is an upward trend in Amazon stock prices, there is one in Microsoft and Walmart stock prices as well.

In addition, Chevron seems to have a negative correlation between each stock. This tells us that Chevron tends to strongly trend in opposite directions as the other 3 stocks. Therefore we would typically expect that when Amazon, Walmart, and Microsoft stock trends upward, Chevron trends downward and vice versa as well. This relationship is visually represented in the chart below



We can see that Walmart, Amazon, and Microsoft roughly rise at the same steepness relative to where they are on the graph. In addition, as these rise, Chevron drops. The correlation of the separate stocks is not meant to be the sole predictor of stock trends and behavior between the selected options. Moreso it is meant to be a supporting indicator. The numerical values can be found in the Analysis.

### **Investment Plan:**

Based on the above findings, the most optimal plan to invest in the 4 stocks would be to invest as shown below

Walmart: 59%

Amazon: 0%

Microsoft: 0%

Chevron: 41%

This plan minimizes the total amount of risk involved with investing a principal amount into the 4 stocks with the expectation of at least a 5% ROI. Therefore the best course of action for the investment portfolio would be to invest 59% of the principal into Walmart

stocks and 41 % of the principal into Chevron stock. 0% of the principal would be invested in Amazon and Microsoft. As said previously, this plan minimizes risk and is not to maximize profit. It may seem odd that we invest in Chevron and not Microsoft and Amazon. This could be due to the fact that Amazon and Microsoft have greater volatility which is not well represented by the Average ROI or Correlation values.