



# Analyzing Stock Market Trends using MATLAB

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## Introduction

- Purpose: Identify the best / worst stock out of 22 companies
- Problem: Effectively analyze data to determine the best investment
- Earliest organized market was in Rome in 2 BC (Smith 10)
- Crash of 1929 led to the Great Depression (Hur 1)
- Stock market has provided around +10 % annual returns (U.S. SEC)
- Prediction modeling and stock analysis methods help investors

## Methodology

### MATLAB Code

- Import excel data and compute statistical markers
- Create tables and graphs

### Data Analysis

- Calculate percent difference using initial and final close price of each company
- % Difference =  $((\text{final close price} \times 100) \div (\text{initial close price}))$
- Sort companies into appropriate industries
- Determine most stable, risky, and best overall investment using the flowchart seen in Figure 1

## Results and Figures

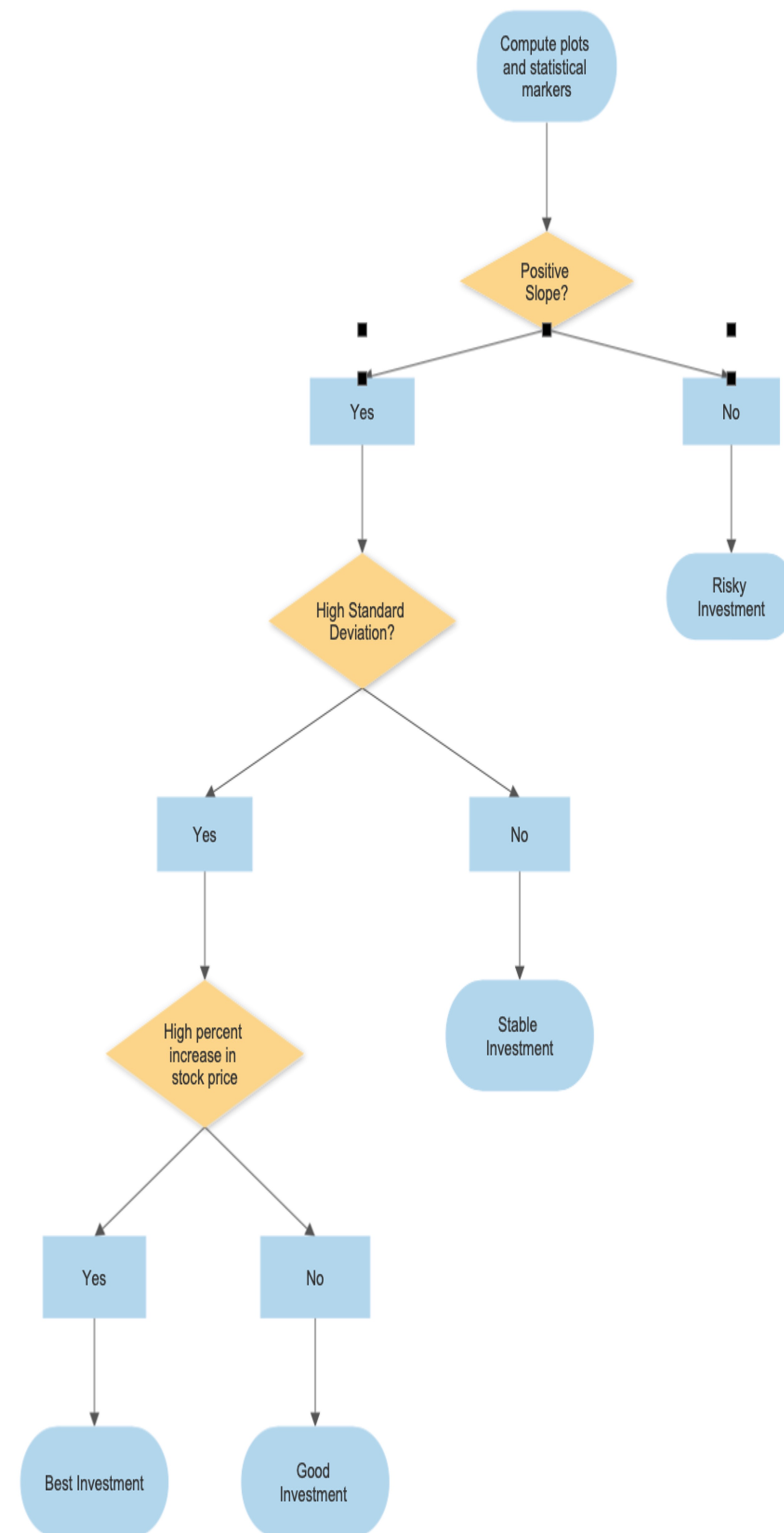


Figure 1. Decision Making Flowchart

## Results

### Plot Trends

- Dominos - steep positive slope
- General Motors - slightly positive slope
- Chipotle - positive slope (fluctuations)
- McDonald's - positive slope

### Table Facts

- Dominos - high standard deviation; high positive % difference
- General Motors - low standard deviation; low positive % difference
- Chipotle - high standard deviation; fairly high % difference
- McDonalds - low standard deviation; fairly high % difference

Table 1. Companies of Interest Statistics

Company	Standard Deviation Close (\$)	Percent Difference Close Value
Dominos	\$59.13	+459.3%
General Motors	\$3.79	+105.5%
Chipotle	\$127.99	+130.2%
McDonalds	\$26.51	+168.1%

## Discussion

### Best Overall Company

- Dominos due to steep positive slope and high standard deviation

### Most Stable Company

- GM due to having a positive slope and low standard deviation value

### Riskiest Company to Invest In

- Chipotle due to its fluctuations and high standard deviation value

### Best Industries to Invest In

- Fast Food Industry for risk taking investors
- Beverage Industry for more conservative investors

## Conclusion

- Goal of the project was met by suggesting investment recommendations
- Best industry depends on the type of investment (Long-term or Short-term)
- Future works include using P/E or PEG ratios to analyze market trends
- Other industries like technology, healthcare, banking can be analyzed

## References

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