20020742 | 2020/IS/074 | M.D.M.N Perera

Report on Analysis of S&P 500 Companies with Financial Information

1. Introduction

The report describes the analysis of the S&P 500 dataset, which focuses on financial metrics like Market Capitalization, Stock Prices, and Sector-wise comparisons. The objective is to extract financial trends and relationships in the dataset and their significance for business decision-making.

Dataset link: S&P 500 Companies with Financial Information

2. Data Selection and Preprocessing

The dataset contains financial data of S&P 500 companies, like market capitalisation, stock prices, and sector classifications, etc. The following preprocessing steps were performed:

- Missing Values: Rows with missing values were dropped to ensure data integrity.
- Data Types: Categorical and numerical columns were identified and formatted accordingly.
- Duplicate Checks: Ensured unique records to prevent biased analysis.

3. Exploratory Data Analysis (EDA)

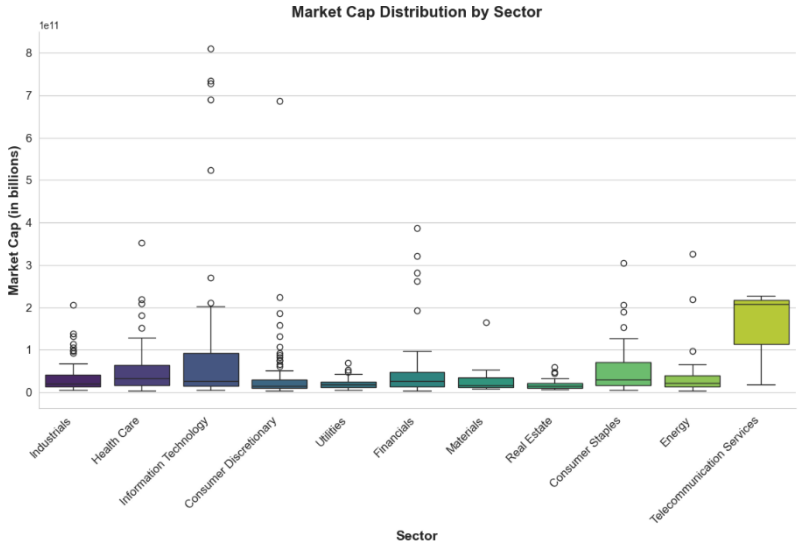
3.1 Summary Statistics

Descriptive statistics provided an overview of the dataset's distribution:

- Market Cap: Ranges from small-cap to mega-cap companies.
- Stock Prices: Variation across sectors with notable outliers.

3.2 Sector-wise Market Capitalization Distribution

A box plot was generated to visualize the spread of Market Capitalization across different sectors.

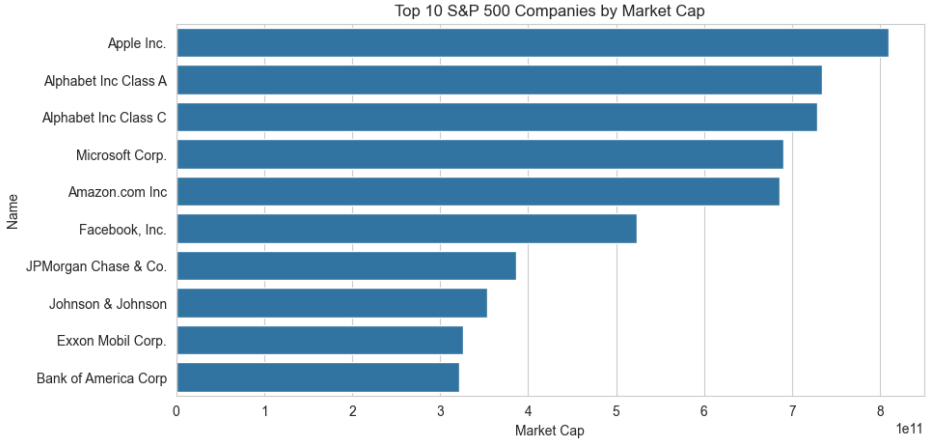


Key Insights:

- Technology and Healthcare sectors dominate in terms of market capitalization.
- Real Estate and Utilities sectors have relatively lower market caps.

3.3 Top 10 Companies by Market Capitalization

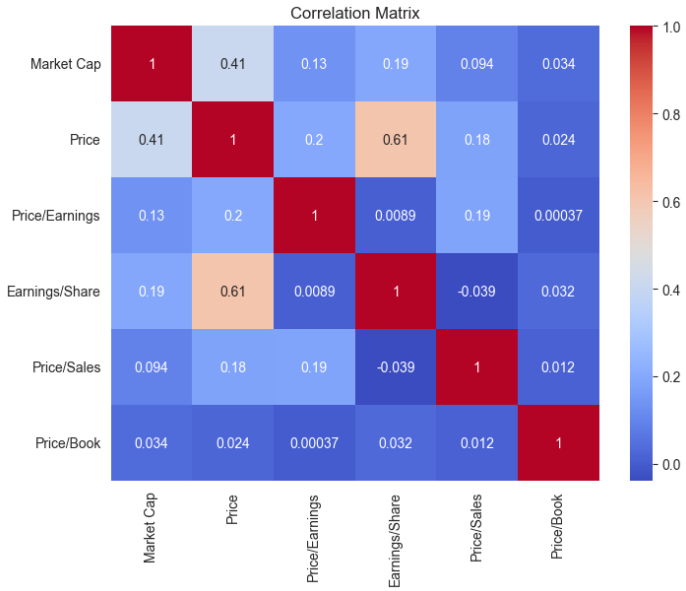
A bar chart identified the top 10 companies, mainly from the Technology and Financial sectors.



Business Implication: Companies in these sectors tend to have higher investor confidence and valuation.

3.4 Correlation Analysis

A heatmap was used to examine correlations between financial metrics.

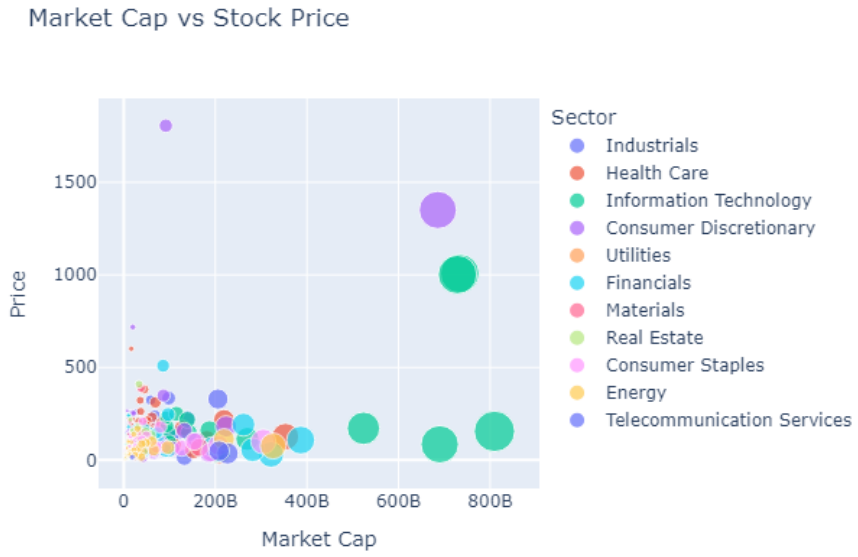


Findings:

- Market Cap and Stock Price show a positive correlation.
- Revenue and Market Cap are strongly related, suggesting that higher revenues contribute to higher valuations.

4. Predictive Analysis

4.1 Market Cap vs. Stock Price



A scatter plot demonstrated the relationship between Market Cap and Stock Price.

Higher stock prices generally correspond to larger market caps, though some deviations exist.

4.2 Linear Regression for Market Cap Prediction

A linear regression model was trained to predict Market Cap based on financial indicators.

Model Performance: The model showed a moderate predictive capability, suggesting additional factors influence Market Cap beyond the variables considered.

5. Business Implications

- Investment Strategy: Investors should prioritize investing on Technology and Healthcare sectors because of their consistent growth.
- Stock Valuation: High revenue companies often achieve a higher Market Cap, directing valuation assessments.
- Predictive Insights: While stock price and revenue impact Market Cap, external factors need to be considered in valuation models.

6. Conclusion

This report provides the summary of the analysis done on the S&P 500 companies dataset, highlighting sector trends, financial correlations, and predictive analysis. The findings can be used by investors and businesses for making decisions in stock market investments and company planning.

7. GitHub repository link

https://github.com/michellenikeetha/BIS_assignment.git