

# CSE 544 Project Proposal

## Analyzing Financial Performance and Market Trends for S&P 500 Companies from 1992-2023

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### 1 Project Description

This project is to analyze financial performance of the top 500 publicly-traded in Northern America. It will compare the financial performance of companies accross different industries using core financial metrics such as return on assets (ROA), return on equity (ROE), gross profit margin. It will also report the trends in revenue and net income throughout the years to see if there is any correlation between financial performance of firms and economic cycle such as during and after the Covid-19 pandemic or 2008 financial crisis. Additionally, this project is also aimed at exploring the relationship between stock price and the financial performance of firms. We are also interested in the relationship between executive compensation and firm's financial performance. To be more specific, this project can help us answer many questions including but not limited to:

- How has the revenue of companies in different industries changed over the past five years?
- What is the average ROE for companies in the technology sector compared to the healthcare sector?
- What is the correlation between the ROA and stock prices of companies in the dataset?
- How has the stock price volatility of technology companies changed over the last decade?
- Are there any patterns in the total returns of companies after significant events, such as mergers or acquisitions? Alternatively, one can ask: What impact did mergers have on the financial performance (e.g., ROE) of the involved companies?
- Compare the average ROA of companies within the same sector. Are there significant variations?

- How do macroeconomic factors, such as interest rates, impact the financial performance of different sectors?
- Identify outliers in sector performance and investigate the factors contributing to their performance.
- What is the relationship between CEO/CFO compensation and the company's stock volatility? This can help us explore questions that have been of interest to researchers such as whether bank's executive compensation is related to risk-taking behaviors of firms.[1]

## 2 Datasets and Tools

This project makes use of data from the Wharton Research Data Services[2] including Compustat, Execucomp, CRSP (Center for Research in Security Prices) and possibly, FRED Economic Data by Federal Reserve Bank of St. Louis. We are thankful to the UW Library for granting us access to the WRDS. This project will make use Postgresql for data analysis as well as Python for data visualization and additional financial or economic regression analysis.

## References

- [1] L. Guo, A. Jalal, and S. Khaksari. Bank executive compensation structure, risk taking and the financial crisis. *Review of Quantitative Finance and Accounting*, 45:609–639, 2015.
- [2] W. R. D. Services. Wharton Research Data Services — wrds-www.wharton.upenn.edu. <https://wrds-www.wharton.upenn.edu/>. [Accessed 02-02-2024].