

Project Report submitted by Naveen Kumar (10609140).

Objective of the Chosen Data

1. **Clarity and Understanding:** Visualisations help to simplify complex financial information and make it easier to understand. This is especially important for stakeholders who may not have a financial background or who may not be familiar with the specific data being presented.
2. **Identifying Trends and Patterns:** By presenting financial data in a visual format, it is easier to identify trends and patterns over time. This can help stakeholders to make more informed decisions about financial strategies, investments, and other business decisions.
3. **Communication and Collaboration:** Visualisations can be used to facilitate communication and collaboration among stakeholders. They provide a common language and a shared understanding of financial data, which can help to build consensus and foster collaboration.
4. **Time-saving:** Visualisations can help to save time by providing a quick and efficient way to review financial data. This is particularly important for busy executives and other stakeholders who may not have the time to review detailed financial reports.
5. **Accuracy:** Visualisations can help to improve the accuracy of financial data by reducing the risk of errors and inconsistencies. By presenting data in a clear and consistent format, visualisations can help to ensure that stakeholders are working with accurate and reliable information.

About the Data

These are data scraped from Yahoo Finance Showing various financial figures of the S&P index listed on the New York Stock Exchange. Annually balance sheets, cash flow statements, income statements from 2012 to 2020 which has the following titles. Source - [Financial data of 4400+ public companies | Kaggle](#)

1. Balance Sheet

- **stock:** The total number of shares of a company's stock that are outstanding.
- **endDate:** The date on which the financial data for a company's financial statement ends.
- **accountsPayable:** The amount of money that a company owes to its suppliers for goods and services received but not yet paid for.
- **inventory:** The value of goods that a company has in stock and available for sale.
- **longTermDebt:** The amount of debt that a company owes that has a maturity date of more than one year.
- **netReceivables:** The amount of money that a company is owed by its customers after deducting any allowances for bad debts.
- **netTangibleAssets:** The value of a company's assets that can be physically touched or felt, such as buildings, equipment, and inventory, after deducting any liabilities.
- **longTermInvestments:** The value of a company's investments that have a maturity date of more than one year.
- **totalCurrentAssets:** The total value of a company's assets that can be converted into cash within one year.

- **propertyPlantEquipment**: The value of a company's tangible assets, such as buildings, land, and equipment, that are used to generate income.
- **otherStockholderEquity**: The value of a company's equity that is not represented by common stock or retained earnings.
- **deferredLongTermAssetCharges**: The amount of money that a company has deferred for expenses that will be paid in future periods.
- **totalCurrentLiabilities**: The total amount of money that a company owes to its creditors and suppliers that is due within one year.
- **cash**: The amount of money that a company has on hand or in a bank account.
- **otherAssets**: The value of a company's assets that are not classified as current or long-term assets.
- **treasuryStock**: The value of a company's own stock that it has repurchased from the market and holds in its treasury.
- **goodWill**: The value of intangible assets such as brand recognition, customer loyalty, and intellectual property.
- **otherLiab**: The value of a company's liabilities that are not classified as current or long-term liabilities.
- **retainedEarnings**: The portion of a company's profits that are retained after dividends have been paid out to shareholders.
- **otherCurrentAssets**: The value of a company's current assets that are not classified as cash, accounts receivable, inventory, or prepaid expenses.
- **commonStock**: The value of a company's equity that is represented by common stock.
- **totalAssets**: The total value of a company's assets.
- **otherCurrentLiab**: The value of a company's current liabilities that are not classified as accounts payable, taxes payable, or short-term debt.
- **deferredLongTermLiab**: The amount of money that a company has deferred for liabilities that will be paid in future periods.
- **totalStockholderEquity**: The total value of a company's equity.
- **totalLiab**: The total amount of money that a company owes to its creditors and suppliers.
- **capitalSurplus**: The value of a company's equity that is generated from sources other than retained earnings or issuing new shares of stock.
- **intangibleAssets**: The value of assets that do not have a physical presence, such as patents, copyrights, and trademarks.
- **shortTermInvestments**: The value of a company's investments that have a maturity date of less than one year.
- **shortLongTermDebt**: The amount of debt that a company owes that has a maturity date of less than one year but more than 90 days
- **minorityInterest**: The portion of a subsidiary's net income or losses that is attributed to shareholders other than the parent company.

2. Income Statement

- **stock**: This could refer to the name or ticker symbol of the company whose financial data is being reported.
- **endDate**: This is the date at which the financial reporting period ends, typically a quarter or a year.
- **netIncomeApplicableToCommonShares**: This is the net income that is available to be distributed among common shareholders after accounting for any preferred stock dividends or other obligations.
- **netIncomeFromContinuingOps**: This is the net income earned by the company from its continuing operations, meaning its ongoing business activities.

- **totalOtherIncomeExpenseNet:** This is the net amount of income or expenses that are not directly related to the company's primary business activities. This might include things like interest income or expense, gains or losses on the sale of assets, or other miscellaneous income or expenses.
- **costOfRevenue:** This is the total cost of producing or acquiring the goods or services that the company sells.
- **totalOperatingExpenses:** This is the total amount of money that the company spends on its ongoing business activities, including things like salaries, rent, utilities, and marketing expenses.
- **totalRevenue:** This is the total amount of money that the company earns from its sales or other business activities.
- **incomeTaxExpense:** This is the amount of money that the company pays in income taxes on its earnings.
- **interestExpense:** This is the amount of money that the company pays in interest on its debt.
- **operatingIncome:** This is the company's income from its ongoing business activities, calculated by subtracting the cost of revenue and operating expenses from total revenue.
- **ebit:** EBIT stands for Earnings Before Interest and Taxes. This is the company's income from its ongoing business activities before accounting for interest expense or income taxes.
- **grossProfit:** This is the difference between the company's total revenue and its cost of revenue, representing the amount of money the company earns from its sales after accounting for the cost of producing or acquiring the goods or services.
- **sellingGeneralAdministrative:** This is the total amount of money that the company spends on selling, general, and administrative expenses, such as salaries, rent, and office supplies.
- **netIncome:** This is the total amount of money that the company earns after accounting for all expenses and taxes.
- **incomeBeforeTax:** This is the company's income before accounting for income taxes.
- **researchDevelopment:** This is the amount of money that the company spends on research and development activities.
- **otherOperatingExpenses:** This is any other expenses that are directly related to the company's ongoing business activities.
- **minorityInterest:** This refers to the portion of a subsidiary's earnings that are attributable to minority shareholders.
- **discontinuedOperations:** This refers to any business activities that the company has discontinued or plans to discontinue in the future.

3. Cash Flow Statement

- **capitalExpenditures:** This represents the amount of money that a company spends on long-term assets, such as property, equipment, and infrastructure, that are expected to generate benefits for the company for more than one accounting period. Capital expenditures are often a key consideration for investors because they can impact a company's ability to generate future earnings and cash flow.
- **changeToNetincome:** This represents the impact of various non-operating items on a company's net income. This can include items such as gains or losses from the sale of assets, restructuring charges, and other one-time expenses or income.
- **otherCashflowsFromFinancingActivities:** This represents cash flows that are generated or used by a company's financing activities that are not classified as dividends paid, repurchase of stock, or net borrowings. This can include items such as debt issuance costs, fees paid to lenders, and other financing-related expenses.

- **changeToAccountReceivables:** This represents the change in a company's accounts receivable balance over a given period. Accounts receivable represent the amounts that a company is owed by its customers for goods or services that have been delivered but not yet paid for.
- **changeToInventory:** This represents the change in a company's inventory balance over a given period. Inventory represents the goods or materials that a company has on hand and is available for sale.
- **dividendsPaid:** This represents the amount of money that a company pays to its shareholders in the form of dividends. Dividends are typically paid out of a company's earnings and are a key consideration for investors who are looking for income-generating investments.
- **otherCashflowsFromInvestingActivities:** This represents cash flows that are generated or used by a company's investing activities that are not classified as capital expenditures or investments. This can include items such as the sale or purchase of investments, proceeds from insurance settlements, and other investing-related cash flows.
- **depreciation:** This represents the amount of money that a company deducts from its earnings each year to account for the wear and tear on its long-term assets. Depreciation is a non-cash expense that can impact a company's net income and cash flow.
- **totalCashFromOperatingActivities:** This represents the total amount of cash that a company generates from its operating activities, which include the sale of goods or services, the collection of accounts receivable, and the payment of accounts payable and other expenses.
- **effectOfExchangeRate:** This represents the impact of changes in exchange rates on a company's financial statements. This can include gains or losses that are recognized when a company converts its foreign currency-denominated financial statements into its reporting currency.
- **repurchaseOfStock:** This represents the amount of money that a company spends on buying back its own stock. Stock buybacks are often used by companies to return cash to shareholders and can have an impact on a company's stock price and earnings per share.
- **changeInCash:** This represents the net change in a company's cash balance over a given period. This can be impacted by a variety of factors, including changes in operating cash flows, investments, and financing activities.
- **netIncome:** This represents the total amount of money that a company earns from its operations, after accounting for all expenses and taxes.
- **changeToOperatingActivities:** This represents the impact of various non-cash items on a company's operating cash flows. This can include items such as changes in accounts receivable, inventory, and accounts payable.
- **totalCashFromFinancingActivities:** This represents the total amount of cash that a company generates from its financing activities, which include the issuance of debt or equity securities.

Approach to Visualisations

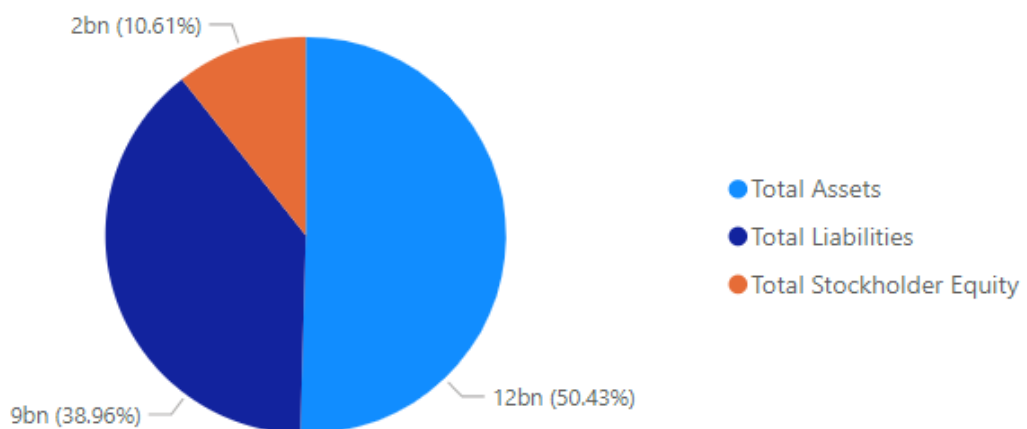
- We use the Income Statement to represent all the Operating Costs. We use the Funnel Chart to distribute the highest expense to the lowest ones. This helps a rational investor to understand which costs to be focused on and direct the company leaders to find ways to reduce them.

Distribution of Operating Expenses



- To show the distribution of Assets, Liabilities and Total Equity we used the pie chart which clearly shows us that Total Assets = Total Liabilities + Equity. Dark Blue Area represents the Total Liabilities, Orange represents the Equity and Light Blue represents the Total Assets.

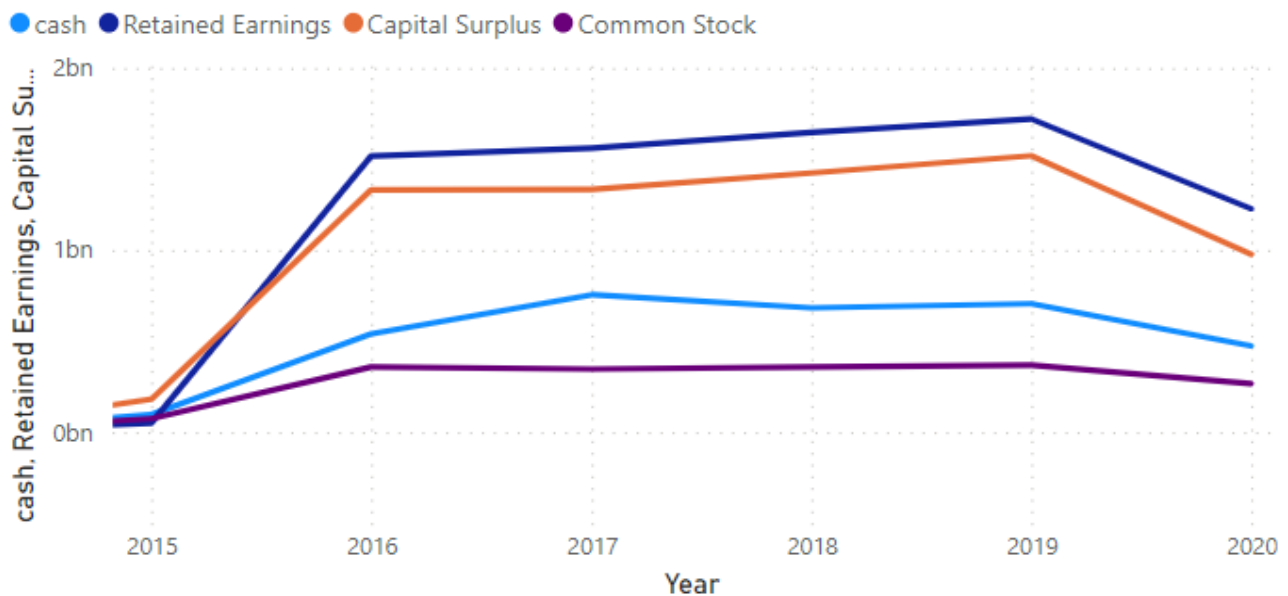
Total Assets Vs Total Liabilities



- For representing the Equity Distribution, we used the line chart. The objective is for the investors is to determine whether the company is in the condition to pay dividends and allow the company to use the Retained earnings to expand the business further or not. Dark Blue represents Retained Earnings,

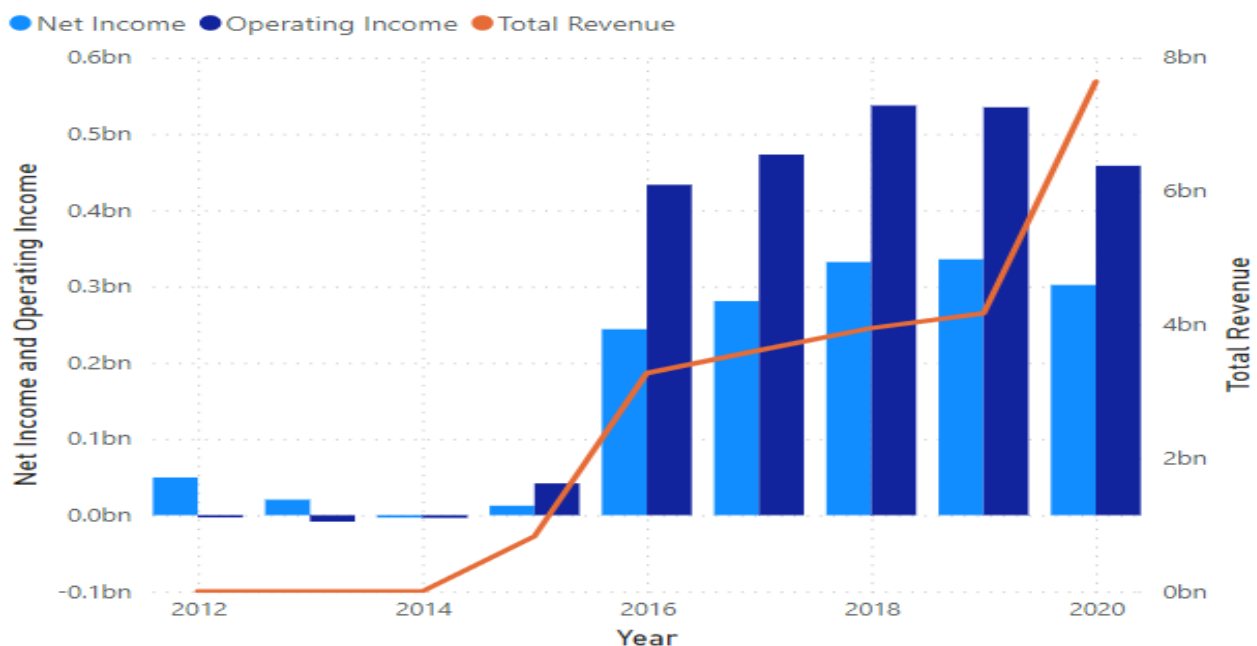
Orange represents Capital Surplus, Light Blue is for Total Cash available and Purple represents the Common Stock Value.

Capital Distribution



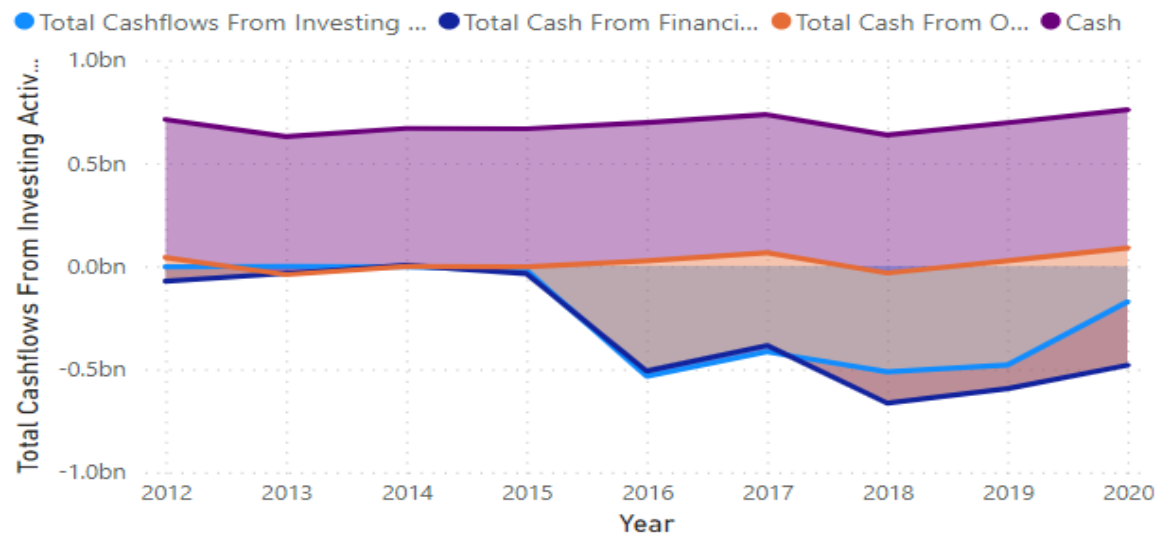
- Then we represent the Income and revenue using the Line and Clustered Column Chart. The Orange Line represents the Total Revenue which has negative values. Net Income and Operating income are represented by Light Blue and Dark Blue respectively. This allows the investor to understand the trend of income and revenue.

Distribution of Income and Revenue



- Next, we represent the Cash Flow Summary using the Stacked Area Chart. This will enable a rational investor to determine the cash flow position of the companies. The Orange area is Cash From Operating Activities, Light Blue area is Cash From Investing Activities, Dark Blue area is Cash from financial Activities and the Purple Area represents the Total Cash. The total area of Cash from Operating, Investing and Financing is equal to the Area representing the Total Cash in the S&P index.

Cash Flow Summary



Conclusion

By Using Power BI to represent the Financial figures, We can Allow Rational Investors understand the financial Position of the S&P index which will allow them to make the decision whether to invest in the Index or not.