

Financial Data Report

Data Summary

In this data set analyze real life data from the New York Stock Exchange. That data set is provided by Kaggle that contains historical financial data from S&P 500 companies. But we got the smaller subset of the data from the Udacity class for the project.

Data set column contains-- company name, Years, Cost of Good Sold, Sales, General and Admin, Research and Development, Other Operating Expenses, GIC Sector, GIC Sub-Industry.

We have 1711 rows.

I used Energy and Utility sector for analysing and found central tendency of these sector with plots.

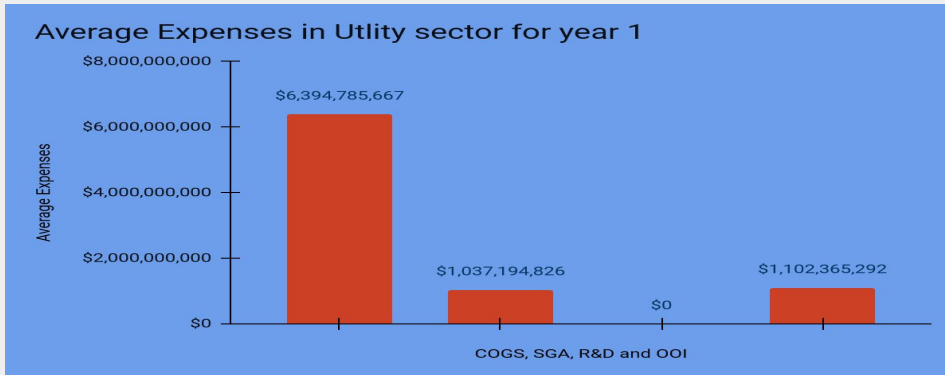
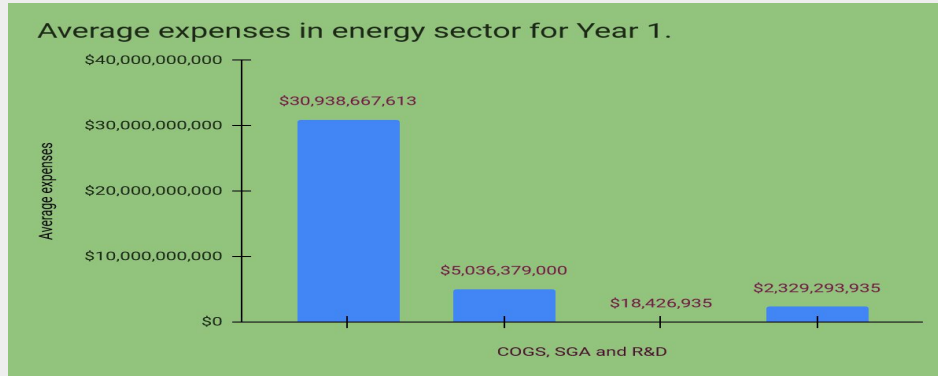
GIC sector and GIC Sub Industry, found which sector and which year expenses were higher/lower.

Additionally, analyzed total revenue for each year.

Here is the Google Sheet link:

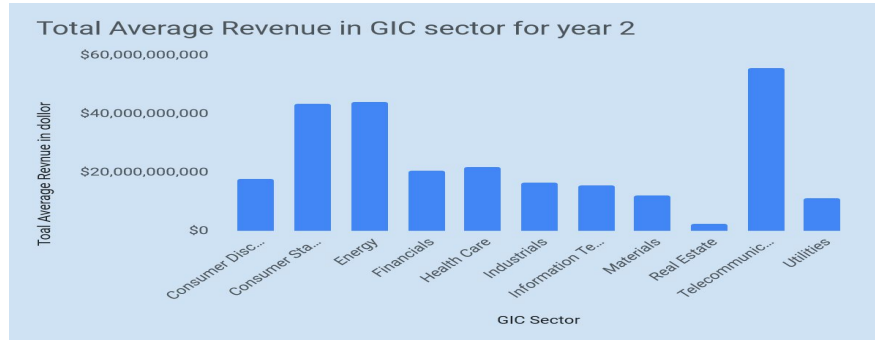
<https://docs.google.com/spreadsheets/d/1TGZ0SECFUJnttYmPMpfZh4WmvDhwE1ztOIIVWPZ6c4g/edit?usp=sharing>

Are average expenditure same as energy and utility sector for year 1, which expenses was most/least?



Here is the bar chart of average expenses(cost of good sold, sales general and admin, research and development and other operating expenses in \$) in energy and utility sector. Average cost of good sold in energy sector is \$30,938,667,613 while utility sector is \$6,394,785,667 which is very less than energy sector. Other operating expenses are also less than energy sector. Both sector's least expenses in research and development area. From the graph we can see average expenses in R&D field is 0 in utility sector. Average Range for the Energy sector is \$30,920,240,677. While in Utility sector is \$6,394,785,667. Both sectors have 0 median, we can conclude that at least 50% of the R&D expenses is 0. Variance is 0 in R&D expenses in utility sector while variability in energy sector is \$99,806,813 in R&D expenses.

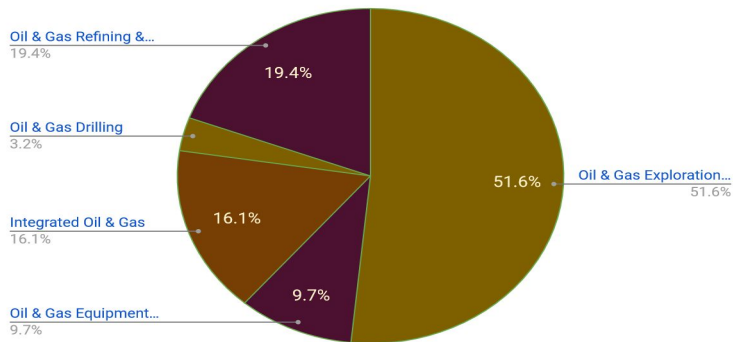
Which GIC sector has maximum average total revenue for year 1?



Here is the bar chart of average total revenue of GIC sector for year 1. Telecommunication has the highest average revenue for year 1 which is \$54,608,770,600 while for year 2 is \$55,694,400,000 which is slightly higher than for year 1. Real State has minimum average revenue for both year 1 and year 2, compare to other GIC sector. However, there is little increment in real state from year 1 to year 2. Only financial sector has decrement from year 1 to year 2. We can say that overall there is a average revenue increment from previous year.

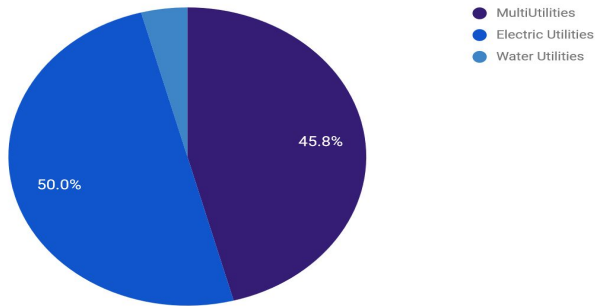
What frequency of GIC sub sector for year 1 in Energy and Utility sector?

Count of GICS Sub Industry in Energy sector for year 1



Here is the pie chart of GIC sub sector in Energy and Utility sector for Year 1. In the first pie chart for energy sector, Oil & gas exploration is in highest frequency which is half of the other whole sub sector. Oil and gas drilling use only 3.2% which is least sub sector in energy sector. Oil & gas refining is 19.4% and oil and gas equipment is 9.7%.

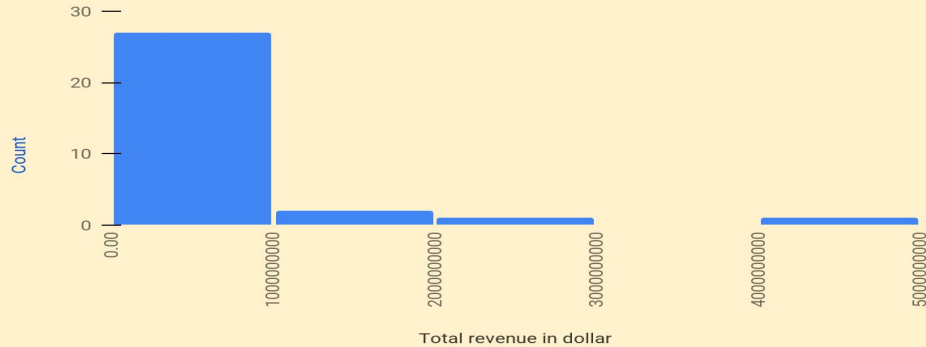
Count of GICS Sub Industry in Utility sector for year 1



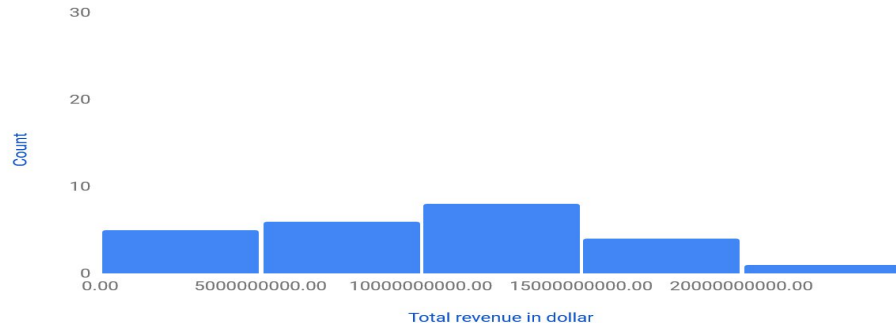
In the second pie chart, electric utility is 50% and multiutilities is 45.5% while water utilities is 4.2% which is least sub sector in utility sector.

Why is a big difference in total revenue count between Energy and Utility Sector

Count of total Revenue in Energy sector for Year1



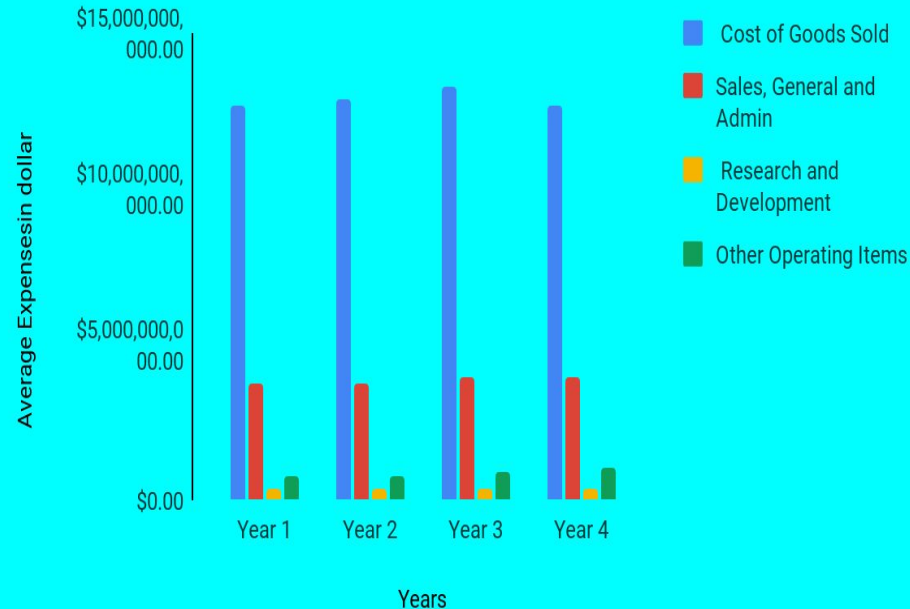
Count of total Revenue/Utility for year 1



Here is the histogram of count of total revenue in Energy and Utility sector for year 1. Plot is right-skewed or positively skewed that means, mean is higher than median. From the chart we can see more than 20 times total revenue occurred that is \$1000,00,000,000. Maximum revenue was 5000,00,000,000 which is occurred 0.1 times. From the utility histogram, maximum revenue count is 15000,00,000,000 which is greater than energy sector's maximum revenue. Range of total revenue in Energy sector is \$450,304,454,000, while is Utility Sector is \$22,034,074,000. There is a big difference of range in both sector.

What is the Average Expenses of each year?

Average expenses of Cost of Goods Sold, Sales, General and Admin, Research and Development and Other Operating Items in each year



Here is the bar chart of average expenses of each year including cost of good sold, sales, general and admin, Research and Development, and Other Operating expenses. Cost of good sold are maximum expenses in each year, there is a little variation in each year, however, cost of good sold was maximum expenses in year 3. Research and Development expenses are smaller in each year than other expenses, but each year that is increases slightly. Other operating expenses are little higher expenses than Research and Development. It was very high expense in year 4 than other previous years.