Business Analysis

UDACITY DATA ANALYTICS NANODEGREE

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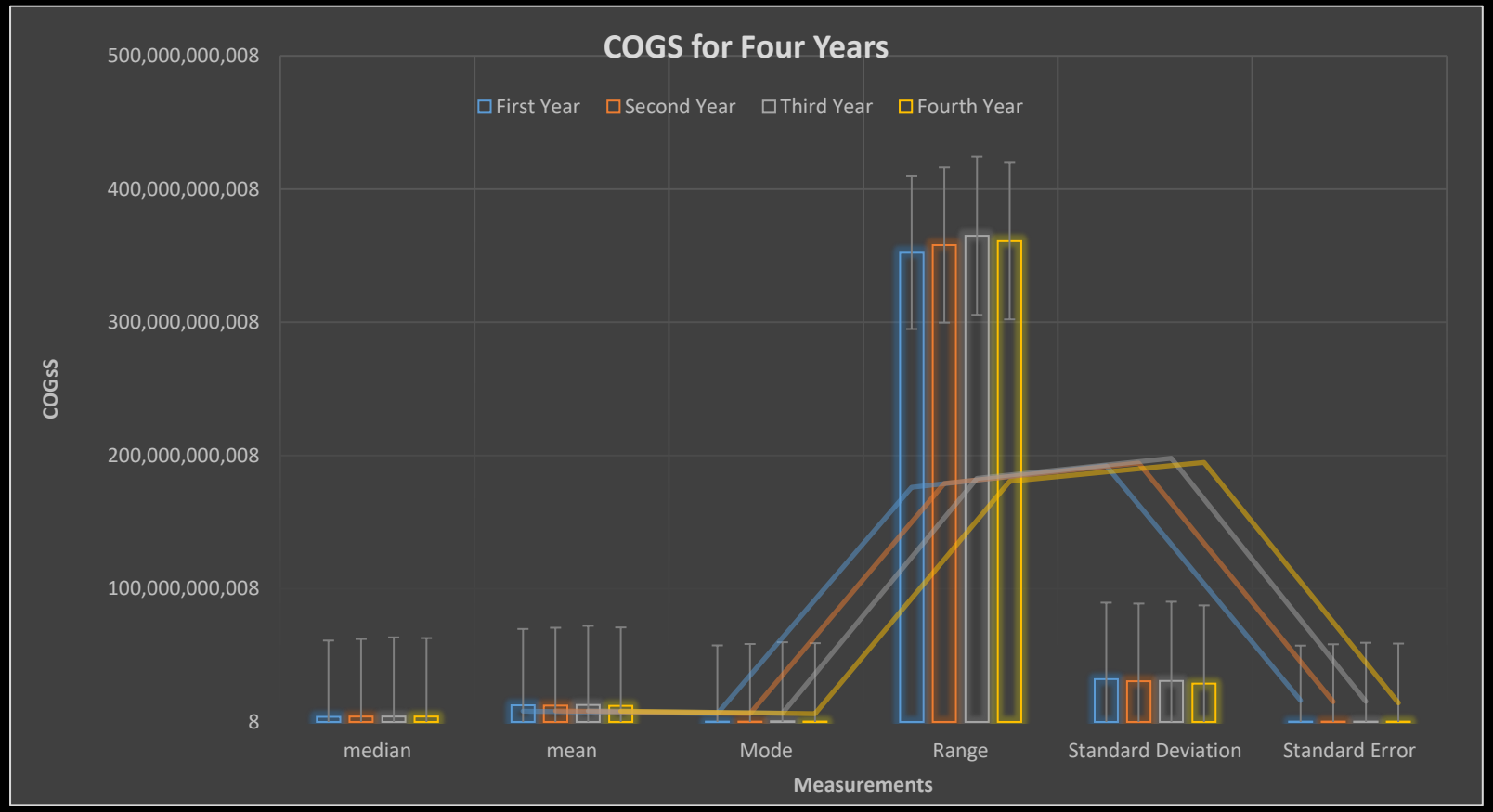
PROJECT 2: ANALYZE NYSE DATA

How has the Cost of Goods Sold(COGsS) (quantitative variable) changed over the years (categorical variable)?



The mean started at approximately 12.46 billion in the first year and dropped slightly to 12.40 billion in the second year. It then increased to 12.71 billion in the third year before dropping significantly to 12.13 billion in the fourth year.

This chart indicates that the middle and mean values of operating expenses has been rising steadily over the past four years. Increased median costs of goods and services can indicate that the company is growing and scaling its operations. The Bar chart clear that the median increased by 184.6 million from the first to the second year, by 117.9 million from the second to the third year, and by 49 million from the third to the fourth year, but the mean decreased by 61.2, 305.1, 574.7 million from the first to the fourth year respectively.

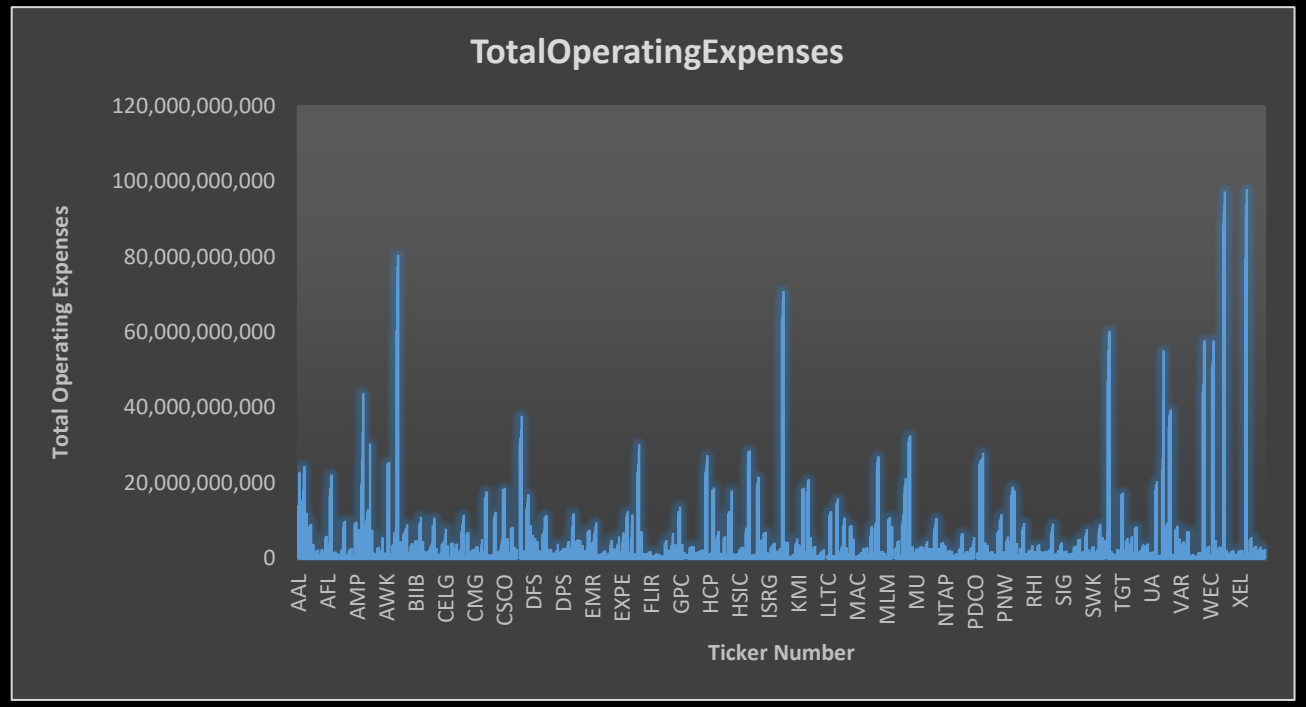
Cont.

Range	352,296,742,000	358,068,858,000	365,046,000,000	360,944,000,000
Standard Deviation	32,247,022,051	30,582,352,607	30,835,779,061	28,684,152,118
median	3,784,370,000	3,969,000,000	4,086,876,500	4,135,900,000
mean	12,462,318,141	12,401,101,010	12,706,247,839	12,131,572,073

In addition, the range and standard derivation of each year is measured. The range calculated based on the maximum and minimum values in that year. The Bar chart clear that the range of each year is spread out.

In the first year of the study, the range of COGS values consistently grew, it increased by 5.77 billion from the first to the second year, followed by an increase of 6.98 billion from the second to the third year, highlighting the growing variability among companies regarding their COGS. In the fourth year, it decreased by 4.1 billion, the decrease may indicate that costs have normalized or come to a point where they have been converging, which would be a good sign for the industry. However, the standard deviation dropped by 1.66 billion between the first and second years, then increased by 253.4 million between the second and third years, and then decreased by 2.15 billion between the third and fourth years. The standard deviation has varied, indicating greater variability among the companies in their COGS that some companies are able to control costs effectively,

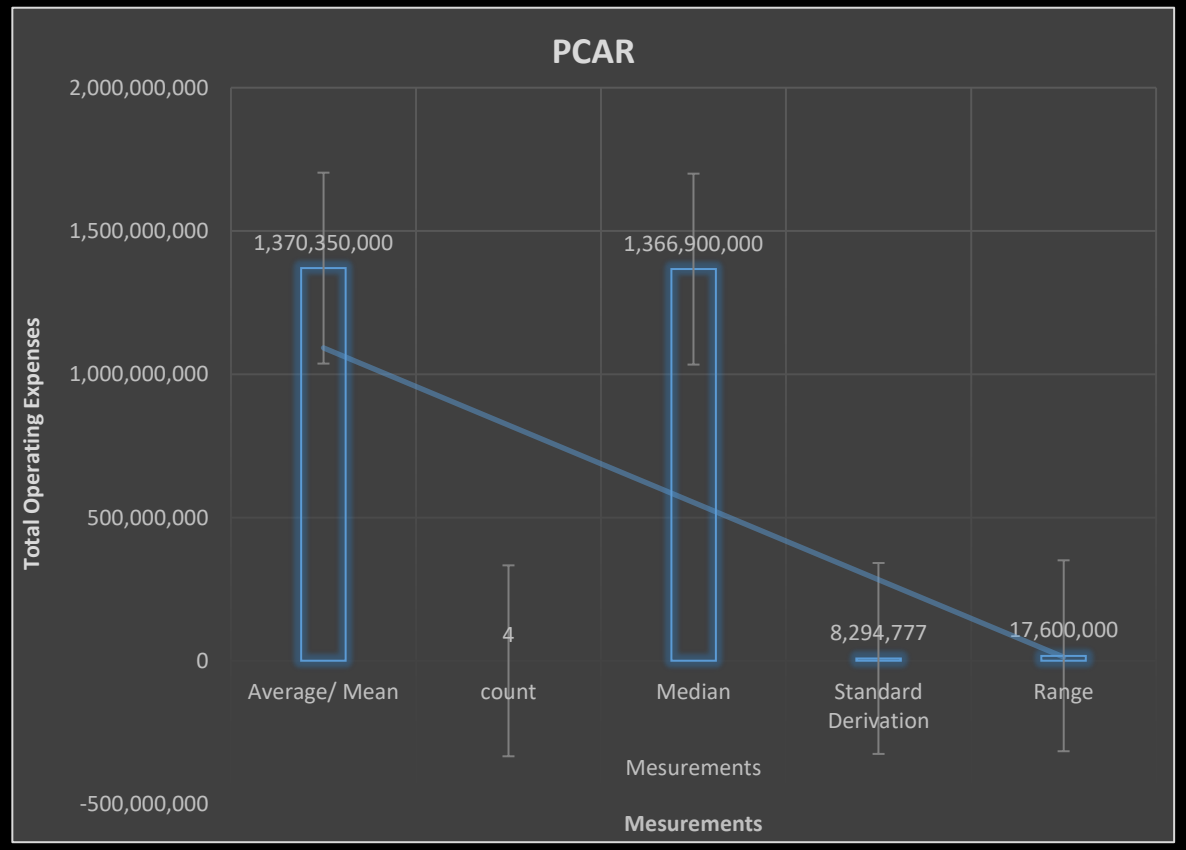
What is the average Total Operating Expenses (quantitative variable) for each Ticker Symbol (categorical variable)?



These charts show a summary of the Total Operating Expenses for each Ticker Symbol, which can be used to compare the operational expenses across different companies, allowing for a better understanding of their costs. The organization with a ticker symbol such as PCAR, CSCO XYL, ZION, which records the lowest average total operating expense can be considered a company with efficient management oaf its operating expenses.

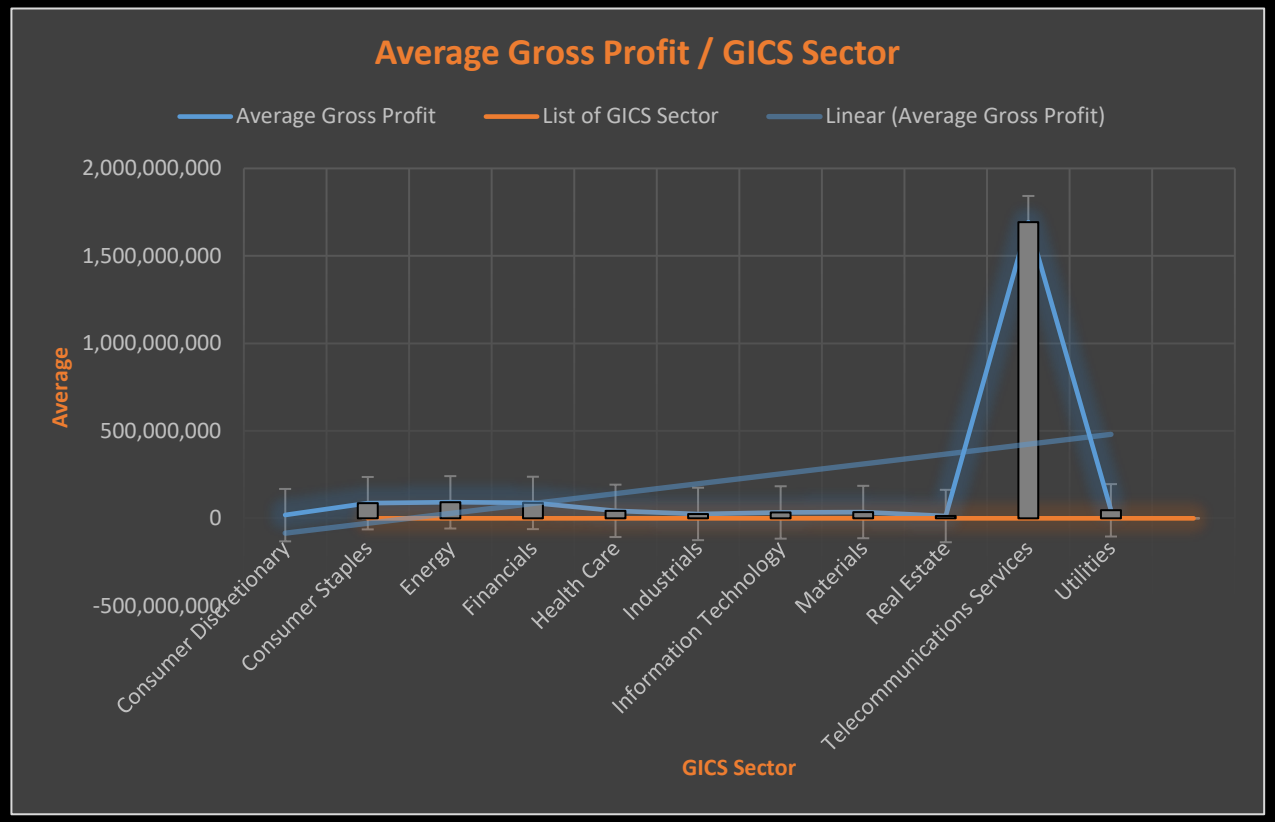
Cont.

List of TickerSymbol	Mesurements				
	Average/ Mean	count	Median	Standard Derivation	Range
PCAR	1,370,350,000	4	1,366,900,000	8,294,777	17,600,000



As PCAR's standard deviation is 8,294,777, it can be seen that its data points are more closely clustered around the mean (1,370,350,000), which indicates that the data point distribution is fairly symmetrical. The median value is very close to the mean, which indicates a relatively even distribution. The median value is 1.37 billion, which is relatively close to the mean, which implies that the data is relatively symmetrically distributed.

How does the average gross profit (quantitative variable) vary across different GICS sectors (categorical variable)?



According to this chart, the median of Telecommunications at $10.39 billion is higher than the energy sector at median of $4.18 billion. The typical company in this sector performs well, reinforcing its overall strength conversely from energy sector that has a significant number of smaller companies which affect the overall average.

There is a significant profit in the **Telecommunications Services sector**, with an average gross profit of $33.86 billion, indicating a strong profitability. It also has a median gross profit of $10.39 billion. **The Finance and Energy sectors** also exhibit high average gross profits, with $14.44 billion and $11.35 billion respectively, suggesting that these sectors generate considerable revenues.

According to the chart, the average gross profit of **Real Estate** is lower than those of other sectors. Real Estate has the lowest standard deviation (884 million dollars), indicating minimal variability and a relatively consistent profit level for companies in this sector.

Thank You!!!