

[< Return to Classroom](#)

Analyze NYSE Data

REVIEW

HISTORY

Meets Specifications

Dear Learner,

Overall a very good work, you have completed the required tasks and completed the project

Appreciate the effort made to,

- measured the central tendency and spread of the data you have taken for analysis and provide insights.
- Insights provided for the plot is specific to the data provided and there is no statement which extrapolates to the larger population
- Assumptions are based on the historical data for the company, you have computed the average values and computed the various scenarios based on it for gross margin, revenue growth and operating margin

All the best

Further Reading

- [Data Analytics Tools: Tips, Best Practices & Buyer's Guide](#)
- [A Guide To Data Driven Decision Making: What It Is, Its Importance, & How To Implement It](#)

Submission Phase

A PDF report or / PPT presentation have been uploaded as part of a zipped folder.

Good work, you have submitted Presentation as part of the submission

A PDF report or / PPT presentation have been uploaded as part of a zipped folder. ✓

Reasons why it is better to give a report in PDF than in PowerPoint. 💡

- First, PDFs are more portable. They can be opened on any device that has a PDF reader, which is more likely to be the case than having PowerPoint installed.
- Second, PDFs are more secure. They cannot be easily edited or tampered with, which is important for sensitive information.
- Third, PDFs are more professional. They look more polished and put-together than PowerPoint presentations, which can be helpful in making a good impression.
- Finally, PDFs are easier to share. They can be emailed, uploaded to a website, or shared on social media, which makes it easy to get your report in front of the people who need to see it

Student provided an Excel file as part of a zipped folder or link to Google Sheet (in case the student used Google Sheets instead of Excel) necessary for review. This file should include their Profit and Loss statement and forecasts. The Google link should be included in the PDF or slides document.

The spreadsheet (Excel or Google Sheets) should contain individual tabs for the dataset, calculation of the summary statistics, dashboard for Profit and Loss statement, and Forecasting model with scenarios. There can be additional tabs in the Workbook that are needed for the dashboard and forecasting model.

Good work, you have provided the completed worksheet as part of the submission. Contains required tabs on

Summary Statistics ●

P/L Dashboard ●

Forecast Model ●

Further Reading 📖

- [12 Best Practices in Dashboard Design](#)

Once you know what information to display, you need to triage it. Decide what information is most important and give it a more prominent position on the dashboard.

The areas of the dashboard that get the most attention are the top and down the left. Therefore this is where your most important information, visuals, and interactive elements should be used.

Exploration of Summary Statistics

Student uses the measures of center and spread and at least one numeric summary statistic to generate insights.

Stating the summary statistics is insufficient. Please include in the written description a short insight related to each one.

For example here is an insight based on mean:

The mean total revenue for companies categorized under Pharmaceutical industry (\$26,325,440,909.09) was higher compared to mean total revenue for all healthcare industries (\$23,142,217,458.76). It looks like companies in the Pharmaceutical industry have a higher total revenue on average than all industries categorized under Health Care.

Good work, you have measured the central tendency and spread of the data you have taken for analysis and provide insights.

You have also added the necessary computations in the summary statistics in the worksheet

Tasks Required

- measures of center and spread and at least one numeric summary statistic to generate insights. ●
- written description a short insight related to each one. ●

Why it is important to provide observations and interpretations for a plot 💡

- Observations are the things that you see in the plot. They can be anything from the overall shape of the plot to the specific values of the data points. Interpretations are the explanations that you give for your observations. They should explain what the plot is telling you about the data.
- Without observations and interpretations, a plot is just a bunch of lines and points. It is up to you to make sense of the data and to communicate your findings to others. This is why it is important to provide observations and interpretations for any plot that you create.
- To identify potential problems. Observations and interpretations can help you to identify potential problems with your data. For example, if you see a trend in the data that you do not expect, you can use observations and interpretations to try to explain the trend.

Further Reading 📖

Summary statistics

Summary statistics provide a quick summary of data and are particularly useful for comparing one project to another, or before and after.

There are two main types of summary statistics used in evaluation: measures of central tendency and measures of dispersion.

Measures of central tendency provide different versions of the average, including the mean, the median and the mode.

The student uses standard deviation and range to generate insights.

Stating the standard deviation and range is insufficient. Please include in the written description a short insight related to each one.

For example, please review the finished slide example in the classroom, which can be found in the Analyze NYSE S&P 500 dataset project lesson (Finished Example Slide).

Good work, you have completed steps for computation of Standard deviation and range

- The range is the difference between the largest and the smallest observation in the data. The prime advantage of this measure of dispersion is that it is easy to calculate. On the other hand, it has lot of disadvantages. It is very sensitive to outliers and does not use all the observations in a data set

Range and standard deviation are two important measures of dispersion

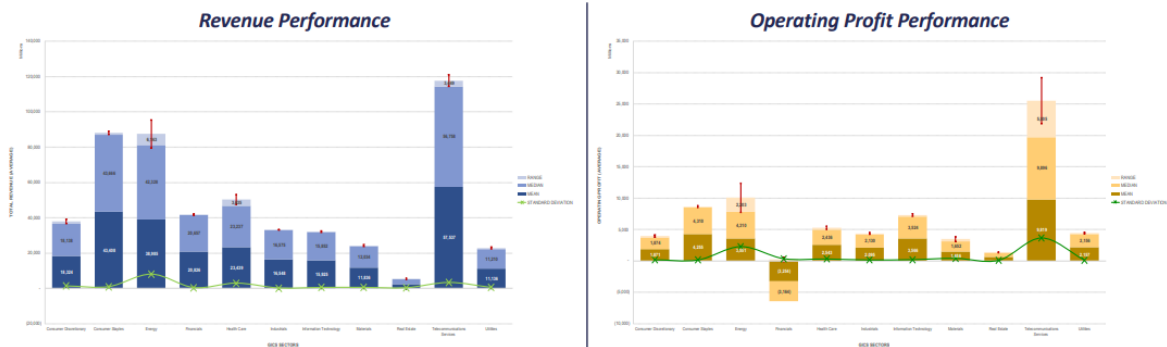
- which is a measure of how spread out the values in a dataset are. Range is the difference between the highest and lowest values in a dataset, while standard deviation is a measure of how much variation there is from the mean.
- Range and standard deviation are important for analysis because they can help you to understand the distribution of the data and to identify outliers.
- Outliers are data points that are significantly different from the rest of the data. They can be caused by errors in data collection or by unusual events.
- To compare different datasets. Range and standard deviation can be used to compare different datasets. For example, if you have two datasets of test scores, you can use range and standard deviation to compare the spread of the scores in the two datasets.

GICS Sectors Performance Comparison



KEY OBJECTIVE OF ANALYSIS

- Identify profitability sectors - which sectors exhibit noteworthy financial success and sustained growth from Year 1 to Year 4



In our pursuit of pinpointing sectors with robust financial performance and sustained growth, a comprehensive examination of crucial indicators was conducted. Central to this evaluation is a meticulous review of each company's Profit and Loss statement, which forms the bedrock for assessing overall financial health. While revenue and operating profit are pivotal metrics, they alone may not offer a complete perspective on a sector's investment potential. To achieve a more comprehensive understanding of the distribution, performance comparison charts were utilized. These charts visually represent the distribution of **MEAN**, **MEDIAN** and **STANDARD DEVIATION** for average Total Revenue and Operating Profit across various sectors from Year 1 to Year 4, offering a more nuanced portrayal of each sector's financial landscape.

- **Challenging Sectors:** The **Energy** and **Financials** sectors face significant challenges, evident in their negative year-on-year revenue growth and operating profit. The variability spread of revenue and operating in these sectors is notably greater compared to others, suggesting that these losses could stem from factors like substantial investments in growth or volatile market conditions. Specifically, the **MEAN** of Energy sector revenue and operating profit exhibits a left-skewed distribution. In contrast, Financials, while displaying a **NORMAL** Distribution for revenue, portrays a left-skewed distribution for operating profit, with a **MEAN** of **-3,254** and a **MEDIAN** of **-3,164**. Likewise, the revenue and operating profit of **Material** sector is left-skewed.
- **Positive Trends:** The **Consumer Discretionary**, **Consumer Staples**, **Industrials**, **Information Technology**, **Real Estate** and **Utilities** sectors reveal positive trends with predictable revenue streams, translating into a **NORMAL** distribution. Similarly, the **MEAN** of operating profits in these sectors follows the same pattern. The **Health Care** sector demonstrating a relatively close **MEAN** of **23,438** and **MEDIAN** of **23,236** for revenue, appears to be less influenced by extreme values. However, the **STANDARD DEVIATION** of revenue shows a value of **2,911**, contrasting with the operating profit **STANDARD DEVIATION**, which exhibits a consistent spread with a higher **RANGE** at **312** compared to a **STANDARD DEVIATION** of **301**.
- **Uncertainty:** Despite leading in revenue generation, the **Telecommunications Services** sector faces uncertainty, particularly in operating profit. The relatively high **STANDARD DEVIATION** of **3,680** in operating profit suggests a considerable amount of variability or dispersion in the data. This is highlighted by operating profit **MEAN** at **9,819** and **MEDIAN** at **9,896** being relatively close.

Conclusion and Recommendations: The analysis unveils a spectrum of financial performances across sectors, with some grappling with challenges while others showcase resilience and positive growth trends. This underscores the significance of a comprehensive understanding of multiple financial indicators when evaluating sectoral investment potential. Further investigation is recommended for sectors displaying unusual patterns or variations in operating profit margins.

The student uses at least one plot to explore the data. The plots may include histograms, box plots, scatterplots, and bar charts to explore data and gain insights.

All slides must contain a visualization. Screenshots of values in a table do not count.

Good work on using a plot to convey the data distribution , appreciate the effort made to use extensive visualizations to cover the data and insights provided

at least one plot to explore the data. 

The plots may include histograms, box plots, scatterplots, and bar charts to explore data and gain insights. 

Further Reading

- [What is Data Science Visualization?: 3 Critical Aspects](#)

Many companies today are data-driven. The data they acquire is sitting in some Data Lake, usually in the cloud.

The data collected is pulled out of the Data Lakes, cleaned, and stored in a Data Warehouse. Data Scientists work with these data to build and train Machine Learning Models, make Predictive Analyses, and visualize them

An appropriate visual is chosen to present the data. All labels are legible and the visual has appropriate axis labels.

Every visualization should have

- chart title (including which year's data the chart depicts)
- x axis title
- x axis labels
- y axis title
- y axis labels

Please refer to the finished slide example page in the classroom for an example.

Overall a good work on annotating the plot.

A reader should clearly understand the components and legends used in the plot

- A good graph will make its story quickly and clearly and how you annotate it will be a major part of telling that story. Clutter confuses and makes it difficult to see the wood from the trees, whereas simplicity enables clear and direct attention.

Best practices in annotating plots/visualizations 💡

- Use clear and concise labels. The labels should be easy to read and understand. They should also be consistent throughout the plot.
- Use a legend to identify different data sets. If you are using multiple data sets in your plot, it is helpful to use a legend to identify them. This will make it easier for the reader to understand the plot.
- Use annotations to highlight important features. Annotations can be used to highlight important features in your plot. For example, you could use an annotation to point out a trend or to call attention to a specific data point.
- Use a consistent style throughout your plot. The style of your plot should be consistent throughout. This means using the same fonts, colors, and line styles. This will make your plot look more professional and polished.

Communication Phase

The results of the analysis are presented such that any limitations are clear. The analysis does not state or imply that one change causes another based solely on a correlation.

The results do not imply facts about a larger group of individuals based on descriptive values. Language is only applied to the specific data provided unless a correct analysis beyond the course material is conducted that allows for inference.

Well done, insights provided for the plot is specific to the data provided and there is no statement which extrapolates to the larger population

This is very important, as extrapolation requires further statistical analysis and the insights/ observations need to be based on the scope of the analysis used

Present Data for Impact

Data analysts work with masses of data that must be shared in a simplistic way for business stakeholders. Therefore, it is important to keep the audience in mind when presenting data in a compelling way that thoroughly explains the findings. Creating visuals from reports and data analytics will facilitate the understanding of the presentation.

The analysis associated with answering a particular question uses the appropriate variables, summary statistics, and plots that could provide an answer.

Good work, The analysis associated with answering a particular question uses the appropriate variables, summary statistics, and plots that could provide an answer ✓

Further Reading 📖

- [5 Effective Communication Techniques for Data Analysts](#)

Storytelling

With endless dashboards, spreadsheets and charts, data analysts can engage stakeholders with a compelling storytelling that thoroughly explains the findings. Storytelling takes data into another dimension, allowing business leaders to understand data in a new perspective. It removes all the noise and focuses on the key insights.

Business Metrics

Student has input the correct formula for each business metric in the income statement and forecast model. Student has built a forecast model for any company of choice. A dropdown for a company in the forecast model is NOT required.

Good work, steps correctly provided as part of P&L dashboards and forecast model.

Computations correctly aligned. You have included Year 4 and projected for year 5 and year 6 correctly
Drop down in the dashboard works and corresponding value for the tick symbol is displayed

Further Reading 📖

- [A Guide To Data Driven Decision Making: What It Is, Its Importance, & How To Implement It](#)

In pursuit to be data-driven, many enterprises are developing three core capabilities: data proficiency, analytics agility, and community. Transforming how your company makes decisions is no easy task, but incorporating data and analytics into decision-making cycles is how you will see the most transformative impact on your organization. This level of transformation requires a dedicated approach to developing and refining your analytics program.

The student provides appropriate assumptions based on gross margin, revenue growth, and operating margin for the financial model scenarios.

Well done, Assumptions are based on the historical data for the company, you have computed the average values and computed the various scenarios based on it for gross margin, revenue growth and operating margin

Further Reading

- [Advanced Financial Modeling Best Practices](#)

Define the model's end goal.

Clearly defining the purpose of a model is key to determining its optimal layout, structure, and end-outputs. As part of this process, take the time to ensure that your model's key stakeholders sign off on your blueprint and process design before starting to build. This gives them the opportunity to voice any final preferences or intentions, thus avoiding any "scope creep" (industry parlance) or painful redirection down the road.

Excel Functions and Modeling

Student demonstrates using VLOOKUP or INDEX and MATCH statements. The student can use the appropriate functions such as OFFSET and MATCH to create forecast scenarios.

Good work on using necessary Excel functions to create the dynamic dashboards

Best Practices 💡

- VLOOKUP and INDEX and MATCH are two of the most powerful functions in Excel. They can be used to find and retrieve data from a table or range of cells. However, they can also be complex and difficult to use correctly.
- Understand the difference between VLOOKUP and INDEX and MATCH. VLOOKUP searches for a value in the first column of a table and returns the value from the corresponding row in the same column. INDEX and MATCH, on the other hand, can return any value from a table, regardless of its column position.
- Use the correct syntax. The syntax for VLOOKUP and INDEX and MATCH is different. It is important to use the correct syntax to ensure that the function works correctly.
- Use the correct range. The range that you specify for VLOOKUP or INDEX and MATCH must contain the data that you want to retrieve.

XLOOKUP

There is a newer function called XLOOKUP that can replace VLOOKUP and INDEX and MATCH. XLOOKUP is more versatile and easier to use than VLOOKUP and INDEX and MATCH. It can be used to find and retrieve data from a table or range of cells, regardless of the column position of the value that you are looking for. XLOOKUP also supports approximate matches, which VLOOKUP does not.

The syntax for XLOOKUP is as follows:

Code snippet

```
XLOOKUP(lookup_value, lookup_array, return_array, [is_sorted], [match_mode])
```

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