

Financial Performance and Stock Price

A correlation case study

By: Rafael Eduardo Loboguerrero

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Summary of case study

In order to invest in a company's stocks, first and foremost, the investor must evaluate the Balance Sheet, the Income Statement and the Cash Flow to ensure the financial stability of the company.

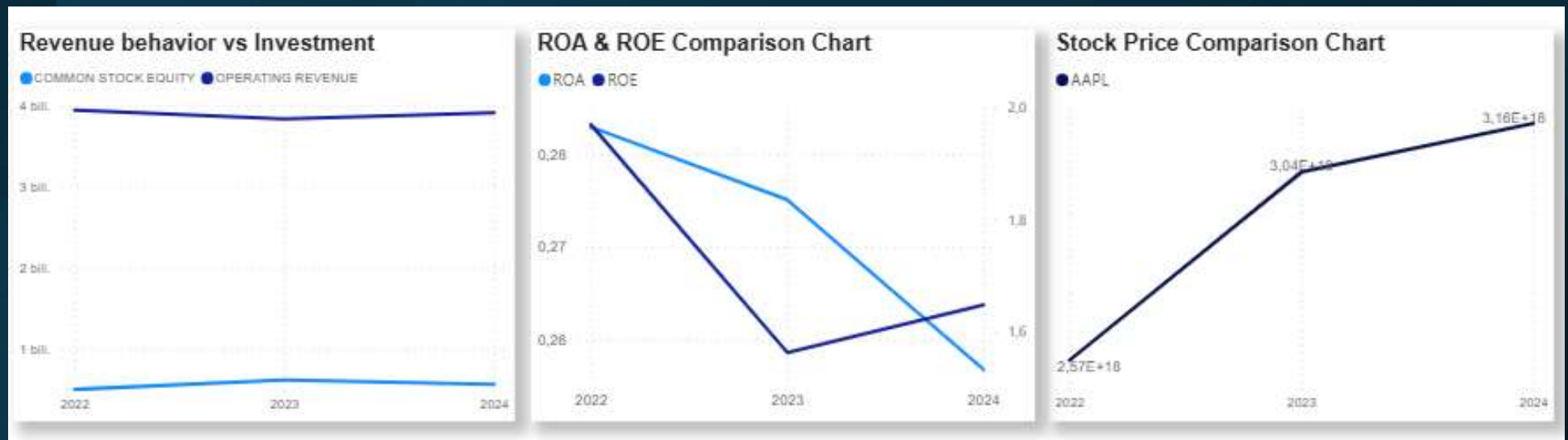
If so, we might wonder whether a company's financial performance has a positive effect on its stock price

Financial stability affects the stock price in the long-term, however, market speculation can influence the price in the short term.

Despite the ROE fell in 2023, the financial stability of the company has increased the stock value.

The company's profitability is strong and above 15% of benchmark.

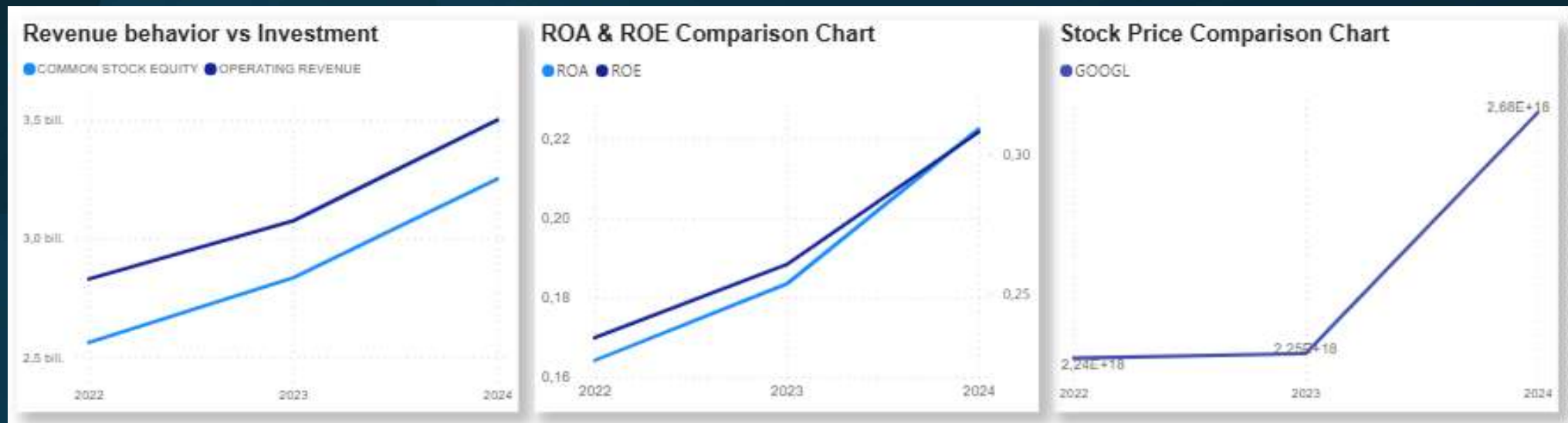
Case: Apple



The stock price shows a consistent trend of rising over the long run

Revenue, investment and Stocks have a clear pattern with ROE and ROA

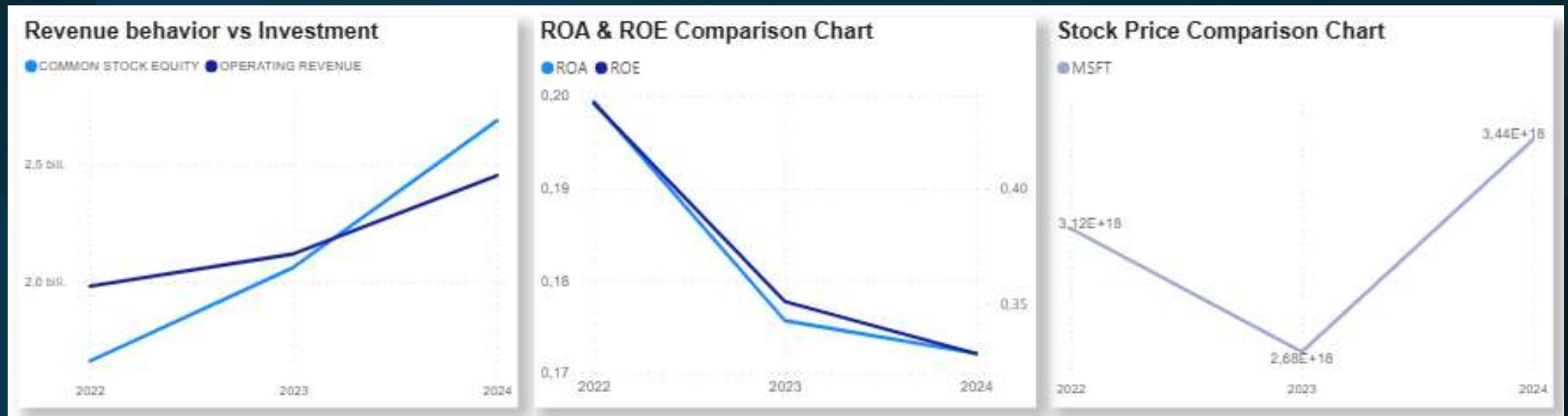
Case: Google



By the end of 2024, the company's ROE and ROA is expected to increase

During 2023, the company received a large infusion of money, which led to a substantial increase in its stock price.

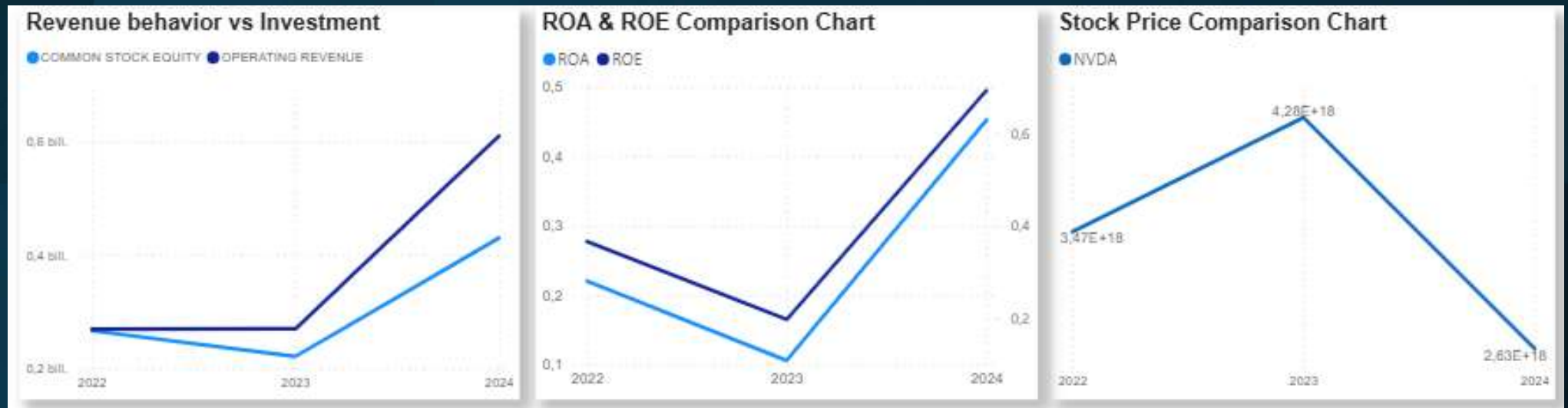
Case: Microsoft



Despite a financial stability and good ROE & ROA margins, stock price dropped down.

Many reasons, such as speculations, could have drop prices on stocks.

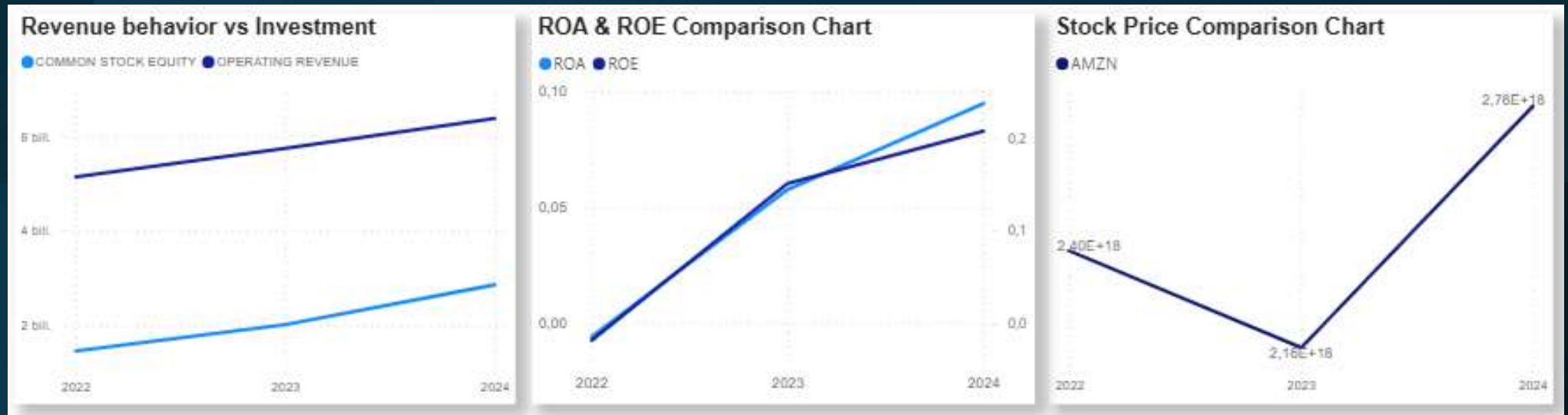
Case: Nvidia



There is a clear pattern of increased revenue, investment and stocks.

Stocks may have behaved different in 2022, however, increased its price in 2023

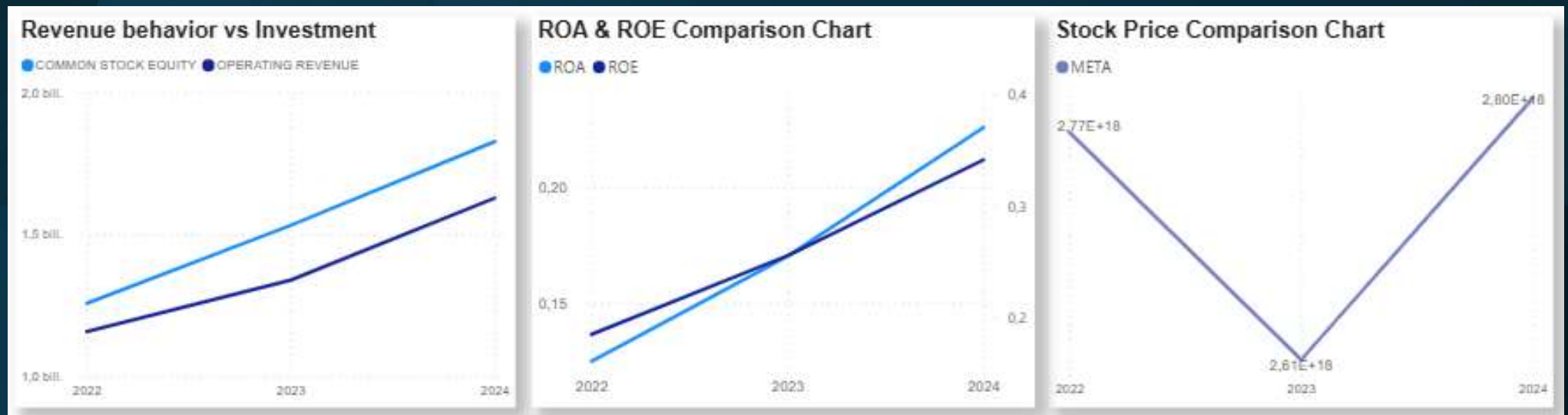
Case: Amazon



Even though the company is financially stable, stock prices dropped.

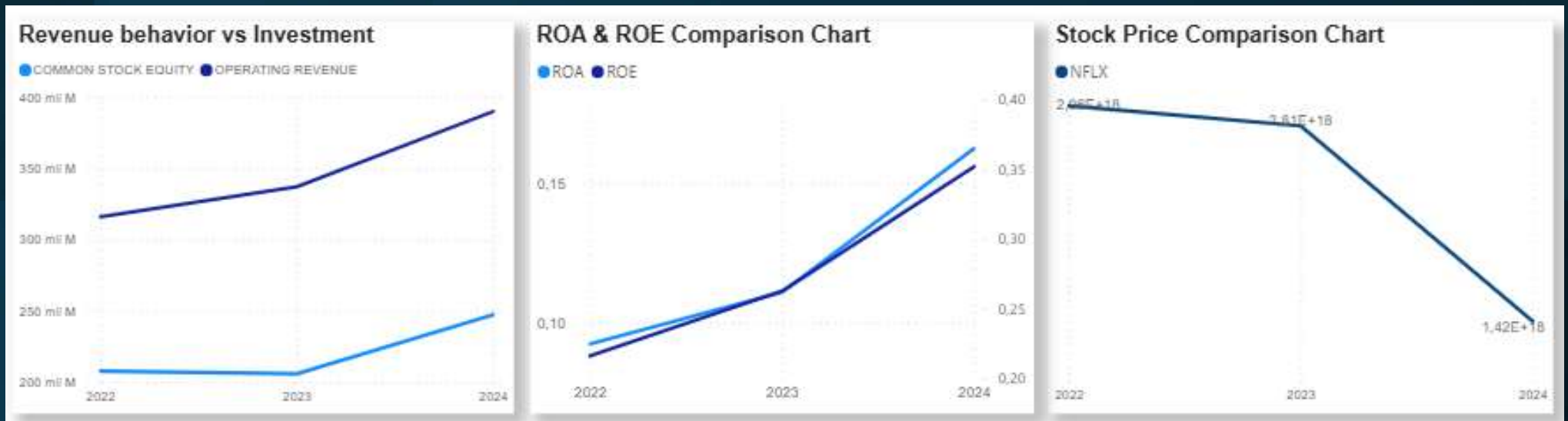
There is a huge drop in stocks in 2023, but financial stability recovered showed in ROE and ROA might increase its value

Case: META



Although there is financial stability and increase on investment, stocks value decreased in 2023

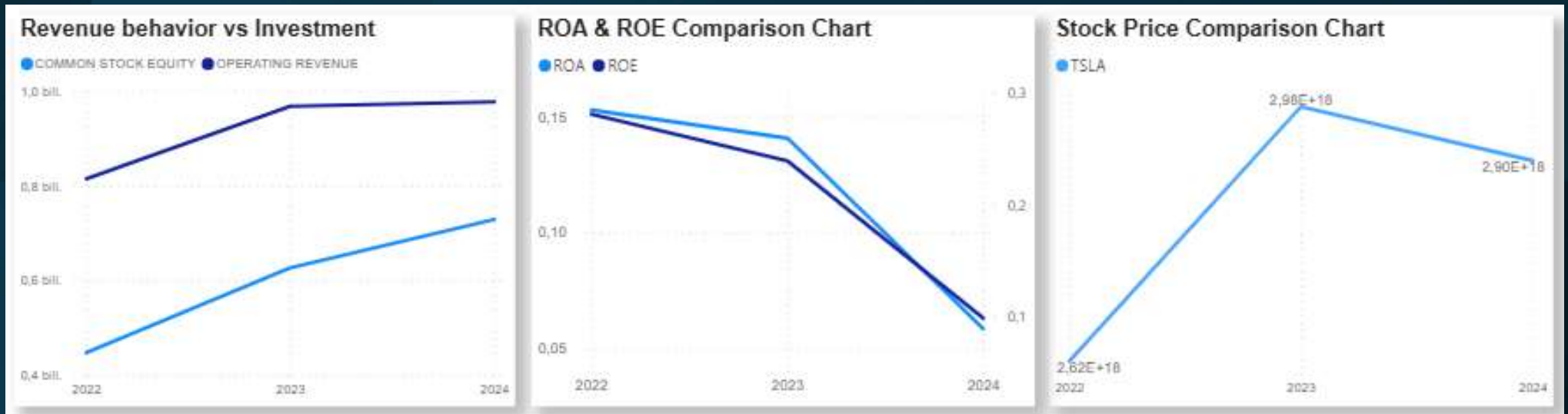
Case: Netflix



Revenue did not grow in 2023, as a result, stocks price and ratios decreased considerably

When the company is not growing, it can give a message to investors that there are problems within the company, and may have dropped the price on stocks

Case: Tesla



Appendix #1: Tools

1. Tools:

- Excel Files: Sourcing data
- SQL Azure: cleaning data.
- Power BI: visualization
- Power Point: storytelling

Appendix #2: Naming Conventions

General Principles:

- Naming Conventions: use snake_case, with lowercase letters and underscores (_) to separate words.
 - Language: Use English for all names.
 - Avoid Reserve Words: do not use SQL reserve words as object names.
 - All names must use meaningful, business-aligned names for tables, starting with the category prefix.
- <category>: describes the role of the table, such as dim (dimension) or fact (fact table).
<entity>: descriptive name of the table, aligned with the business domain ex: balance_sheet, income_statement, stock_market.

Example:

Fact_balance_sheet

Pattern	Meaning	Examples
Dim	Dimension table	Dim_balance_sheet
Fact	Fact table	Fact_income_statement
Agg	Aggregated table	Agg_stock_market

Column Naming Conventions:

- All primary keys in dimensions tables must use the suffix: `_key`

`<table_name>_key`

`<Table_name>`: refers to the name of the table or entity the key belongs to

`_key`: a suffix indicating that this column is a surrogate key.

Example: customer key=surrogate key in the `dim_customer` table

Technical column:

- All technical columns must start with the prefix of the company's name.

Ex: `TSLA_2024`

`TSLA` : company's name.

`_2024`: year

Store procedure:

- All store procedures used for loading data must follow the naming pattern:

`Load_<layer>`

`<layer>` represents the layer being loaded, such as bronze, silver, or gold.

Example:

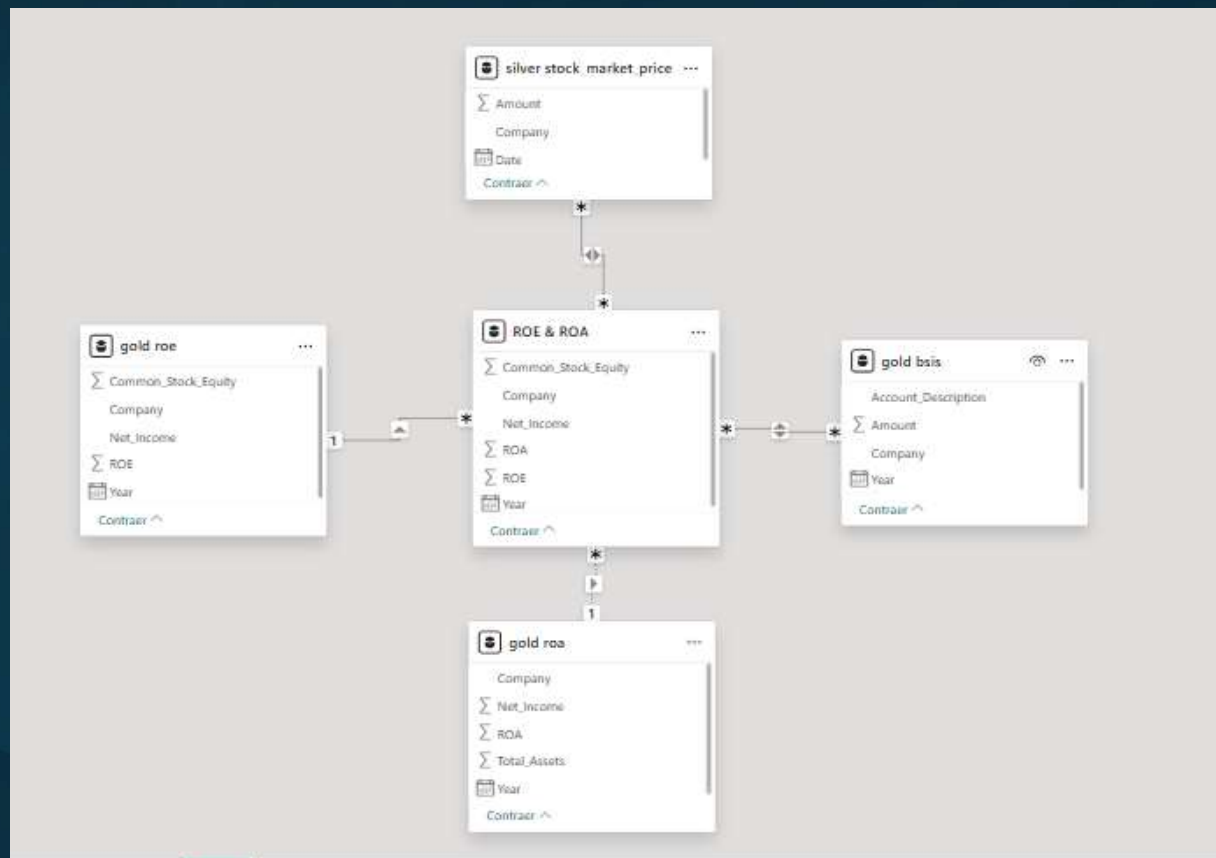
Load bronze: store procedure for loading data into the bronze layer

Load_silver: store procedure for loadind data into the silver

Appendix #3: Data Cleansing

1. Remove duplicates: This process identifies and gets rid of identical rows or entries in a dataset. This ensures each piece of information is unique and prevents skewing analysis.
2. Data filtering: This involves selecting a subset of data based on specific criteria. For example, you might filter a sales dataset to show only transactions from the last quarter or to look at sales in a specific region.
3. Handling missing data: This is about dealing with empty or null values in a dataset. Common methods include deleting the rows or columns with missing data or filling the gaps with an estimated value (like the average of the available data).
4. Handling invalid values: This means finding and correcting data that doesn't make sense. For instance, if a column for age contains a value like "250," it would be considered invalid and needs to be fixed or removed.
5. Handling unwanted spaces: This involves cleaning up extra spaces at the beginning, end, or middle of text strings. These "hidden" spaces can cause errors in data matching and analysis.
6. Data type casting: This is the process of converting data from one type to another. For example, you might change a column of numbers that are stored as text into an actual numeric format so you can perform calculations on them.
7. Outlier detection: This is the process of identifying values that are far outside the typical range of the other data points.

Appendix 4: Data Model, star schema



Appendix 5: Data Architecture



Appendix 5: Data flow



The background features a complex, abstract geometric pattern. It consists of multiple sets of parallel, light blue lines that intersect to form a series of diamond and rectangular shapes. Some of these shapes have rounded corners. The lines are arranged in a way that creates a sense of depth and movement across the dark blue background.

Thank you!