

STOCK MARKET ANALYSIS

Project Overview and Objective

- This project involves cleaning, transforming, analysing raw data and creating an interactive Power BI dashboard to derive meaningful business insights.
- The main objective is to demonstrate data pre-processing techniques and an interactive Power BI dashboard visualization to make informed decisions.

Data Sources

- Source Description and Timeline: BSE Sensex Stock Market Index | INDIA | Economics Trade 2021
- Domain: Index Trading

Problem Statement

- To compare the major global indices to identify which markets show stronger momentum, higher liquidity, and better risk-adjusted returns for traders and long-term investors.”
- To examine how macroeconomic variables such as inflation, interest rates, and unemployment influence the movement of major global stock indices, enabling better prediction of market trends and investment decisions.”

Attribute (Column /Features) Details:

Attribute Name	Data Type	Description
Components (commodities, Forex, Cryptocurrency, NIFTY, Country, Companies)	String	Components refer to the individual financial instruments or items being tracked in the dataset.
Actual	Numeric	The current market value of all the above components
Change	Numeric	The difference between the current value (Actual) and the previous value. Shows how much the price has increased or decreased.
Change%	Numeric	The difference between the current value (Actual) and the previous value. Shows how much the price has increased or decreased.

Previous_Value	Numeric	The last recorded market price before the current update. Used to compare how much the instrument has moved."
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Tools & Technologies

- **Power BI:** Data modelling, DAX calculations, visualization, and interactive dashboard created.

Data Pre-Processing (Power Query)

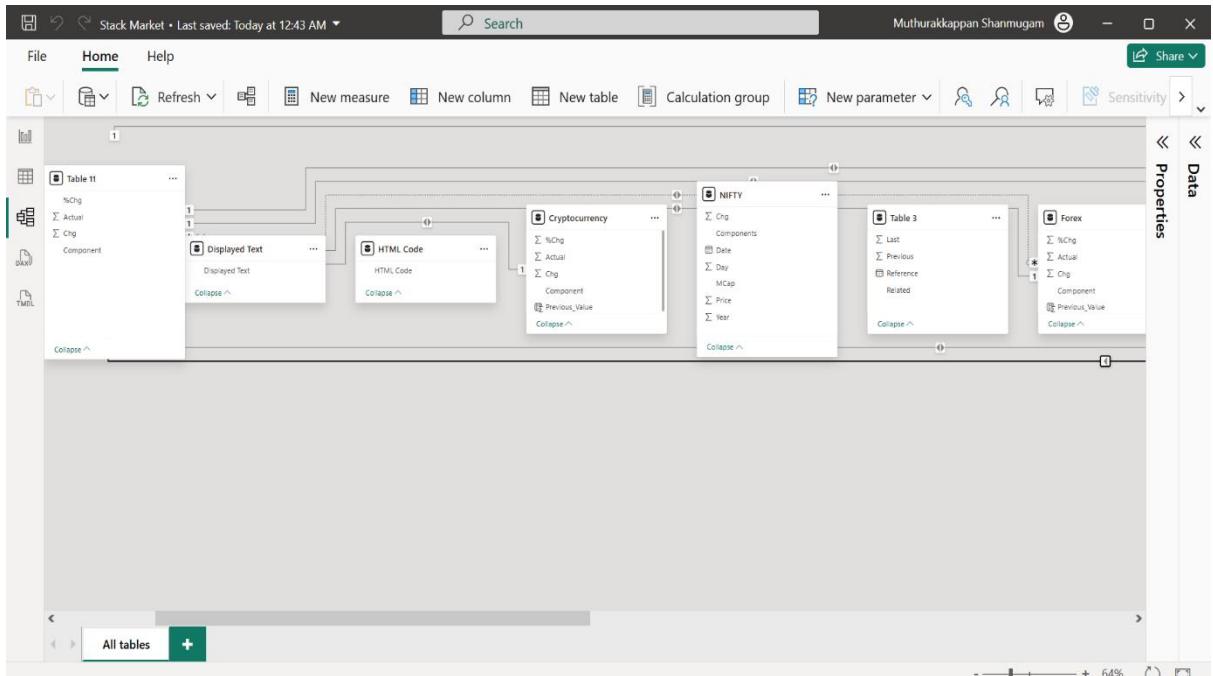
Tasks Performed:

- **Data Cleaning & Transformation:** Removed duplicates, handled missing values, standardized formats, and created calculated fields.
- **Filtering & Sorting:** Organized data to focus on relevant records.
- Convert the data into Fact and Dimension Table.

Data Modelling and DAX (Power BI)

- **Data Model:** Established relationships between tables, defined cardinality, and created lookup tables where necessary.

SCREENSHOT OF DATA MODELLING



- Calculated Columns & DAX Measures:** Implemented DAX formulas for key metrics, such as Previous Sales, GDP%.

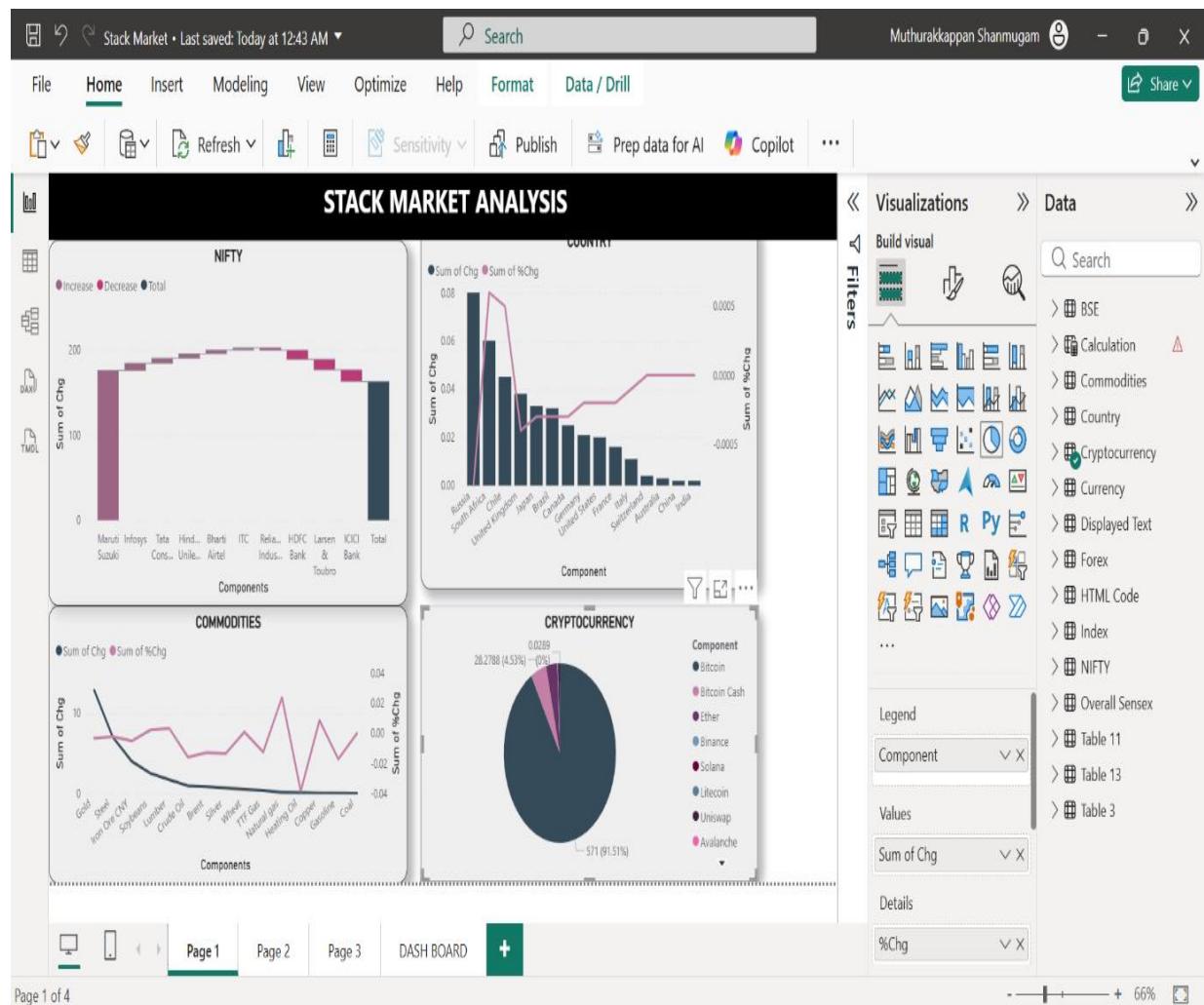
Analysis and Visualizations (Power BI)

Dashboard Features:

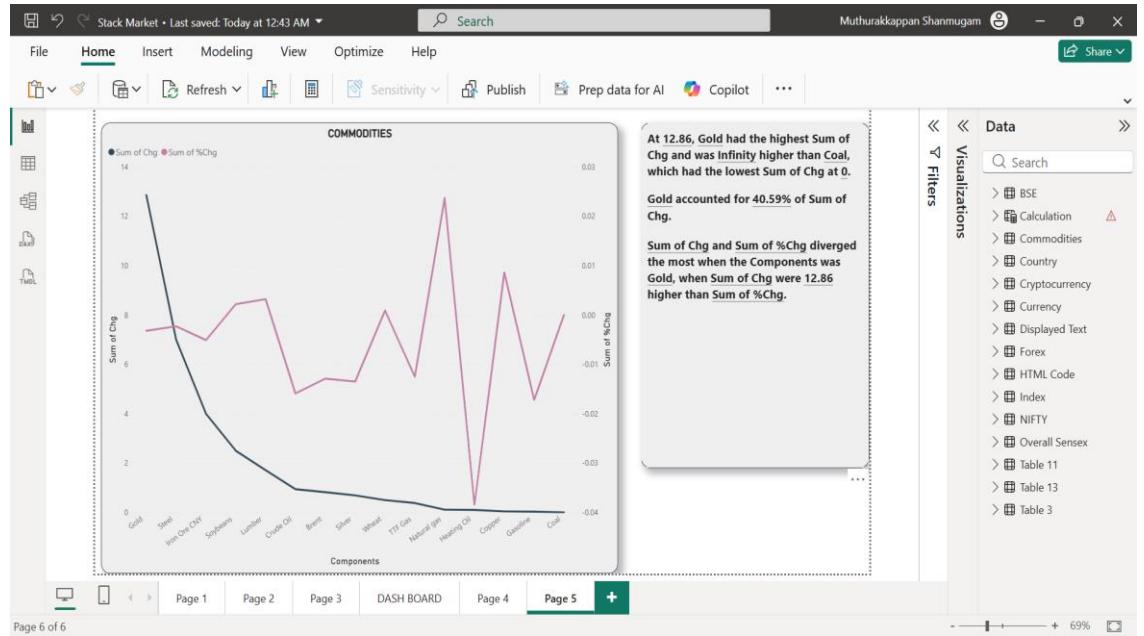
- Multiple Visualizations based on problem statement:** Bar charts, line charts, pie charts, cards, and tables to communicate insights of different components of its actual value and its changed value change.
- Drill-down, Filters and slicers** are created to find all similar components and its change value.
- Bookmarks, Clear Titles for each visuals & Labels** are created
- Created a consolidated **Report /Dashboard**.

SCREENSHOT OF DASHBOARD /REPORT

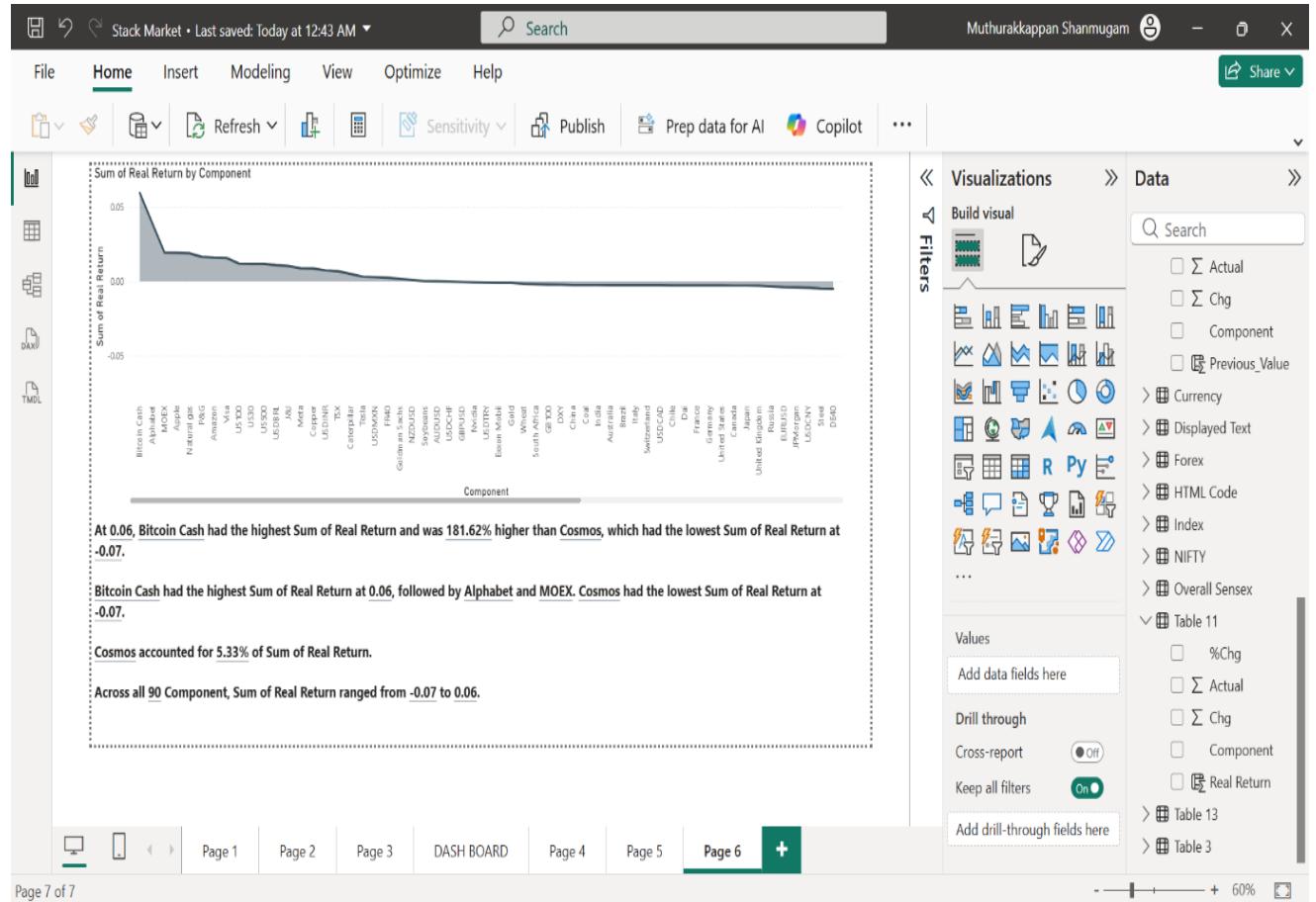
- Descriptive Analysis**



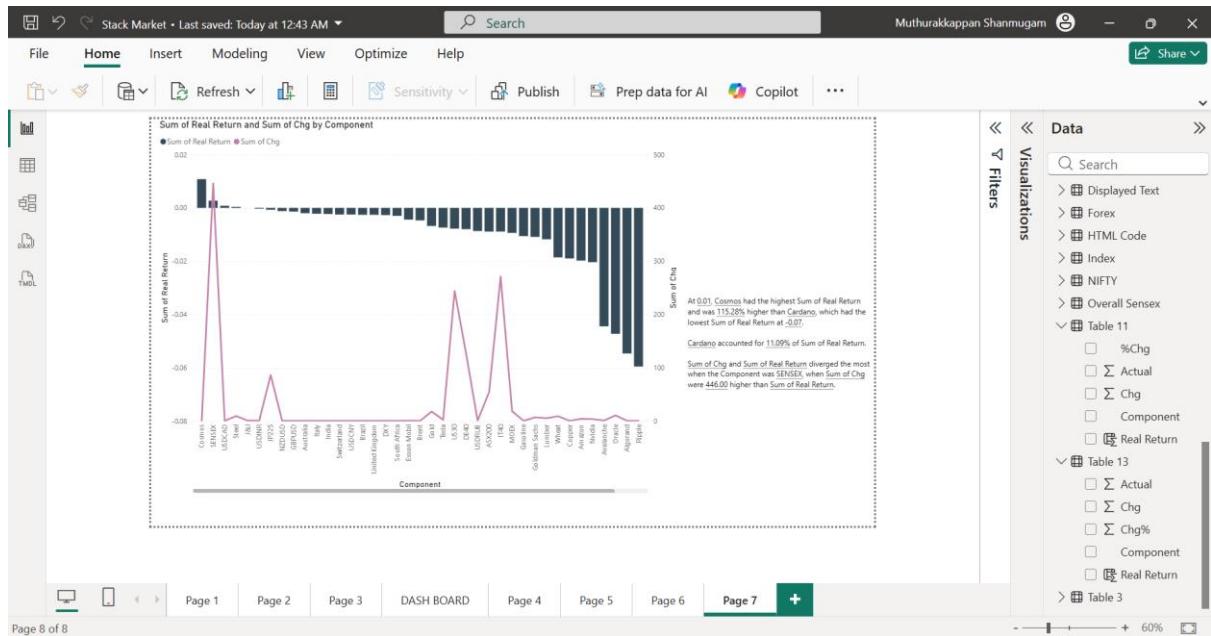
Diagnosis Analysis



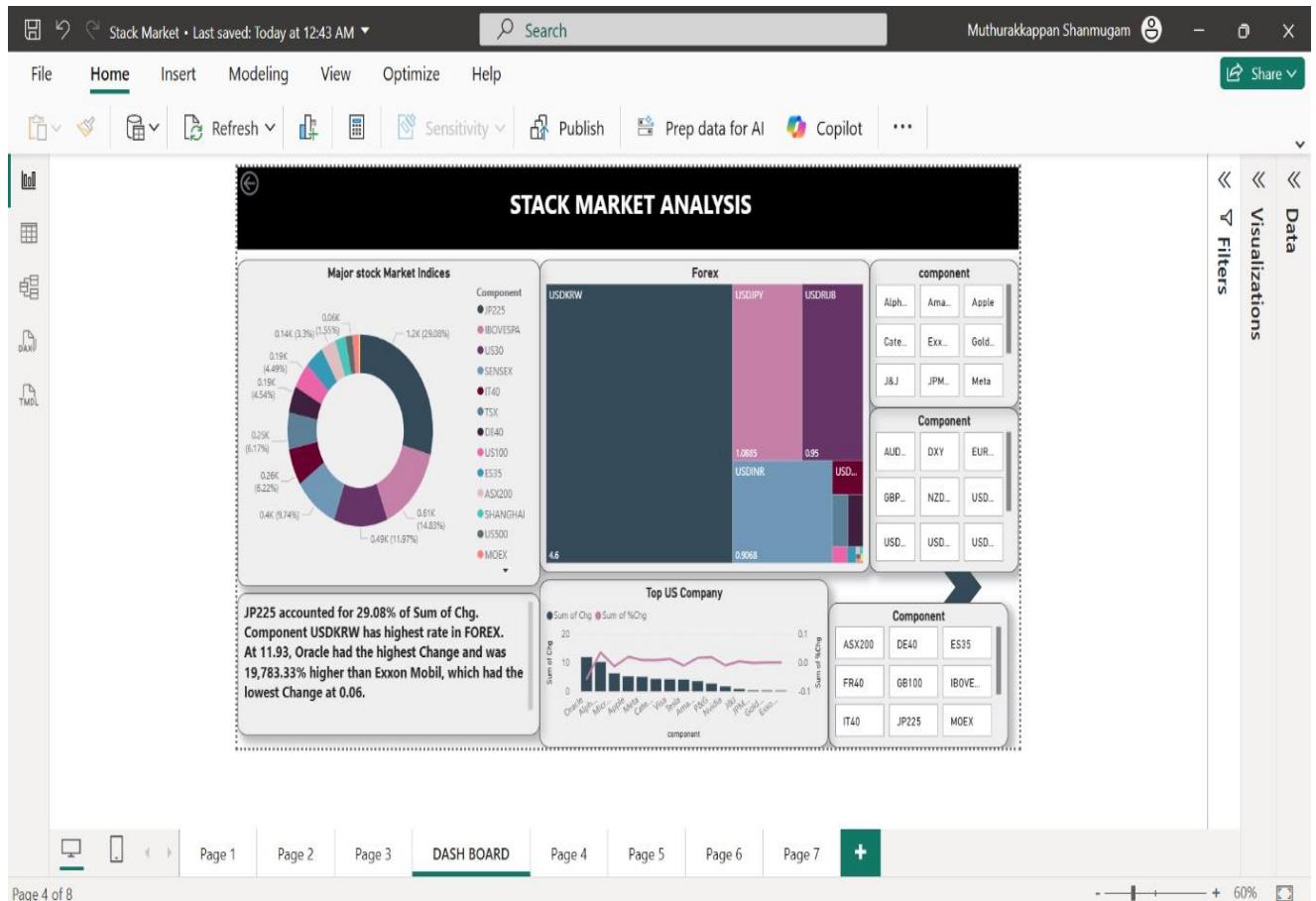
Predictive



Prescriptive



Consolidated Refinery Insights Report



9. Insights & Conclusions

Key Findings:

- All assets displayed an increase and decrease in actual value compared to the previous period, indicating an overall Bullish and Bearish market sentiment.
- **Bullish Market:** Maruti Suzuki, Gold, Bitcoin(cryptocurrency), USDKRW(Forex), Oracle, jp225, Russia(country).
- **Bearish Market:** ICICI BANK, Exxon Mobile

Inflation rate affected real returns

- “We compare each component’s price change percentage with inflation to assess whether it delivered a real gain or loss after adjusting for rising prices. This helps identify **stronger and weaker performers** after inflation adjustment.

Components like Forex pairs, Cryptocurrencies, and market indices showed:

- Larger Chg%
- Higher day-to-day fluctuations
- Indicating these markets are more sensitive to global economic news.

Stocks/Companies showed stable performance

Company components such as Apple, Tesla, Microsoft, etc. showed smaller price swings, indicating:

- Lower volatility
- More predictable movement
- Stronger investor confidence

Company Alphabet and Oracle has stable and increasing Rate.

Inflation pressure influenced commodity prices

- Gold often rises when inflation rises.
- Oil reacts to economic growth and geopolitical news.

10. Conclusions

The analysis of components (stocks, indices, commodities, Forex, and cryptocurrencies) shows a clear pattern of market sentiment. Components with positive Change% indicate a bullish trend, while negative Change% reflects bearish conditions. Volatile assets, such as cryptocurrencies and Forex pairs, respond strongly to macroeconomic news, while major company stocks show more stable performance.

