

## Power BI Dashboard Project: Stock Data Analysis (TATAMOTORS)

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### ❖ Step 1: Title Step

- **Title:** TATAMOTORS - Stock Data Analysis (2011–2021)
  - **Subtitle:** Power BI Dashboard Walkthrough
  - **Presented by:** AKASH A B
  - **Tools Used:** Power BI, DAX, Excel/CSV
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### ❖ Step 2: Objective of the Project

- Analyze historical stock performance of TATAMOTORS from 2011 to 2021
  - Create interactive visuals for key metrics
  - Extract insights from price, volume, and VWAP trends
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### ❖ Step 3: Dataset Overview & Preprocessing

- Columns: Date, Open, High, Low, Close, Volume, Deliverable Volume, %Deliverable, Trades
  - Handled nulls and formatted [Date] as datetime
  - Created new columns:
    - Year, Month, MonthYear
    - $VWAP = \frac{SUM(Close * Volume)}{SUM(Volume)}$
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### ❖ Step 4: KPI Cards - Key Metrics

- **Visual Type:** Card
  - **Metrics Displayed:**
    - Max Close Price
    - Min Close Price
    - Total Trades
    - Avg. % Deliverable
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### ❖ Step 5: Line Chart - Closing Price Trend

- **Chart Type:** Line Chart
  - **X-axis:** Year
  - **Y-axis:** Close Price
  - **Title:**  TATAMOTORS Closing Price Trend (2011–2021)
  - **Insight:** Identifies overall stock price movement
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#### ❖ Step 6: Clustered Column - Monthly Avg. Volume

- **X-axis:** Month (MMM)
  - **Y-axis:** Average Volume
  - **Design:** Teal bars, sorted Jan→Dec
  - **DAX:** Created Month, MonthNo, and sorted Month by MonthNo
  - **Insight:** Reveals high trading volume months
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#### ❖ Step 7: Stacked Bar - Deliverable vs Total Volume

- **X-axis:** Year
  - **Y-axis:** Sum of Deliverable Volume & Total Volume
  - **Insight:** Compares market participation year-wise
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#### ❖ Step 8: Area Chart - VWAP

- **Chart Type:** Area Chart
  - **X-axis:** Year
  - **Y-axis:** VWAP
  - **Insight:** Highlights volume-weighted price movement
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#### ❖ Step 9: Matrix Heatmap - Average Close

- **Visual Type:** Matrix
  - **Rows:** Year
  - **Columns:** Month
  - **Values:** Avg. Close
  - **Insight:** Hotspots of high and low monthly close prices
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#### ❖ Step 10: Conclusion & Takeaways

- VWAP trends aligned with high trading months
  - 2012 had **the most trading activity** (volume).
  - 2011–2012 and 2019–2021 showed **larger price movements**, especially visible in the **Closing Price Trend** and **VWAP** charts.
  - Clear cyclical patterns in closing price
  - Data-driven insights can assist portfolio decisions
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#### ❖ Dataset

- Link: <https://www.kaggle.com/datasets/rohanrao/nifty50-stock-market-data?select=TATAMOTORS.csv>

## ❖ TATAMOTORS Stock Market Dashboard (2011–2021)

