



TATA MOTORS

Financial Performance Analysis

Using Python+ SQL + Power bi



Helps identify strengths and weaknesses in finances

Helps management take decisions on investment, expansion, and cost control

Helps optimize expenses and increase margins

Tracks growth trends and financial stability

Predicts future revenues, costs, and cash flows

Provides transparency to investors, lenders, and shareholders

Ensures sufficient liquidity for daily operations

Methodology

Analysis Process Overview >

**Data
Collection
using
Web
scrapping
in python**

**Data
Cleaning &
Preparation**

**Data
Structuring
and KPI &
Metric
Creation
(SQL)**

**Data
Visualisation
& Analysis
(Power BI)**

**Insight
Generation**



Use of Python



Data Collection

Using Pandas financial data (Income statement, balance sheet and cash flow) was web-scraped from publicly available source (Screener) and exported into structured datasets.



Data Cleaning & Preparation

- Removed unnecessary columns and handled missing values
- Explored Data using info operator
- Standardized column names and converted financial figures into numeric format
- Selected consistent financial years for analysis

**highest standards
of quality**





TATA

```
import pandas as pd
url = "https://www.screener.in/company/TCS/consolidated/"
tables = pd.read_html(url)
len(tables)
```

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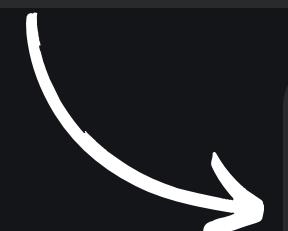
```
print(tables[1].head())
```

	Unnamed: 0	Mar 2014	Mar 2015	Mar 2016	Mar 2017	Mar 2018	Mar 2019	\
0	Sales +	81809	94648	108646	117966	123104	146463	
1	Expenses +	56657	70167	77969	85655	90588	106957	
2	Operating Profit	25153	24482	30677	32311	32516	39506	
3	OPM %	31%	26%	28%	27%	26%	27%	
4	Other Income +	1637	3720	3084	4221	3642	4311	
	Mar 2020	Mar 2021	Mar 2022	Mar 2023	Mar 2024	Mar 2025	TTM	
0	156949	164177	191754	225458	240893	255324	257688	
1	114840	117631	138697	166199	176597	187917	188821	
2	42109	46546	53057	59259	64296	67407	68867	
3	27%	28%	28%	26%	27%	26%	27%	
4	4592	1916	4018	3449	3464	3962	3663	

```
income_statement = tables[1]
balance_sheet = tables[6]
cash_flow = tables[7]
```

```
[ 'Account', 'FY20', 'FY21', 'FY22', 'FY23', 'FY24']
[ 'Account', 'FY20', 'FY21', 'FY22', 'FY23', 'FY24']
[ 'Account', 'FY20', 'FY21', 'FY22', 'FY23', 'FY24']
```

```
Index(['Year', 'Sales +', 'Expenses +', 'Operating Profit', 'OPM %',
       'Other Income +', 'Interest', 'Depreciation', 'Profit before tax',
       'Tax %', 'Net Profit +', 'EPS in Rs', 'Dividend Payout %'],
      dtype='object', name='Account')
```



```
Index(['year', 'sales', 'expenses', 'operating_profit', 'opm', 'other_income',
       'interest', 'depreciation', 'profit_before_tax', 'tax', 'net_profit',
       'eps_in_rs', 'dividend_payout', 'revenue_growth', 'net_profit_margin',
       'company'],
      dtype='object', name='Account')
```

```
print(income_statement.info())
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 12 entries, 0 to 11
Data columns (total 14 columns):
 #   Column           Non-Null Count  Dtype  
--- 
 0   Unnamed: 0        12 non-null    object 
 1   Mar 2014         12 non-null    object 
 2   Mar 2015         12 non-null    object 
 3   Mar 2016         12 non-null    object 
 4   Mar 2017         12 non-null    object 
 5   Mar 2018         12 non-null    object 
 6   Mar 2019         12 non-null    object 
 7   Mar 2020         12 non-null    object 
 8   Mar 2021         12 non-null    object 
 9   Mar 2022         12 non-null    object 
 10  Mar 2023         12 non-null    object 
 11  Mar 2024         12 non-null    object 
 12  Mar 2025         12 non-null    object 
 13  TTM              10 non-null    object 
dtypes: object(14)
memory usage: 1.4+ KB
None
```

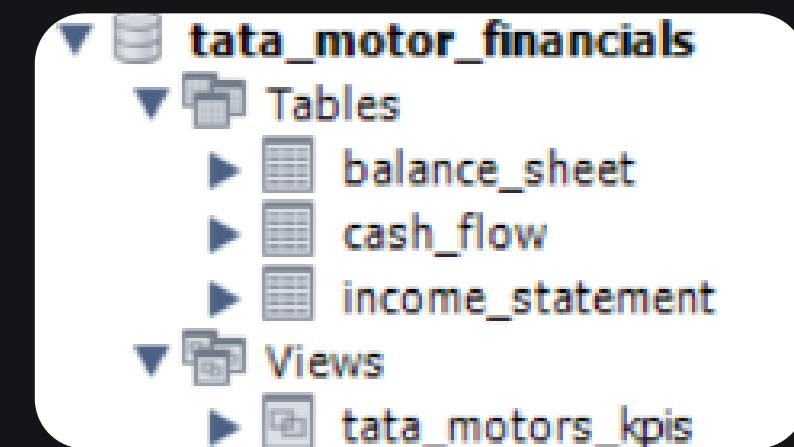
Work done in SQL

Data Structuring

- Imported cleaned datasets into a single database
- Joined financial statements using the financial year as a common key
- Verified data types and ensured year-wise consistency across tables

KPI & Metric Creation

- Created a consolidated KPI view for cross-statement analysis
- Imported income statement, balance sheet, and cash flow tables
- Ran validation queries to ensure data accuracy before visualization



year	risk_level
FY20	Low Risk
FY21	Low Risk
FY22	Low Risk
FY23	Low Risk
FY24	Low Risk

Field	Type	Null	Key	Default
year	text	YES		NULL
sales	double	YES		NULL
expenses	double	YES		NULL
operating_profit	double	YES		NULL
opm	text	YES		NULL
other_income	double	YES		NULL
interest	double	YES		NULL
depreciation	double	YES		NULL
profit_before_tax	double	YES		NULL
tax	text	YES		NULL
net_profit	double	YES		NULL

year	sales	total_assets	cash_from_operating_activity
FY20	156949	120127	32369
FY21	164177	129992	38802
FY22	191754	140924	39949
FY23	225458	142859	41965
FY24	240893	145472	44338

Power BI Utilization

Designed a single-page interactive dashboard with:

- KPI cards for summary performance
- Trend charts for revenue, profit, and expenses
- Cash flow analysis visuals (operating, investing, financing)
- Balance sheet stability visuals (assets and liabilities)

key financial highlights



Connected Power BI to the SQL database containing cleaned financial data

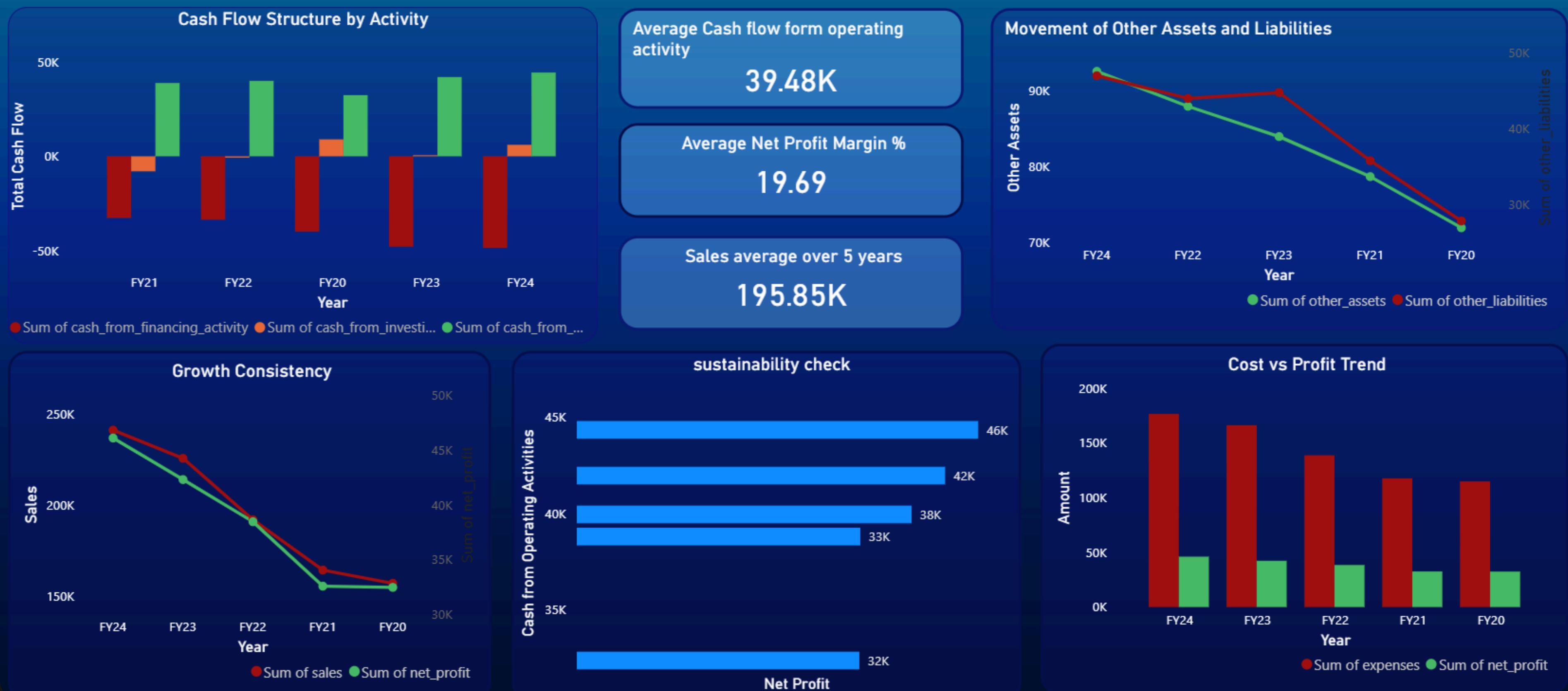
Created calculated measures for key metrics such as: EBITDA

Applied filters and consistent formatting to improve readability and insights

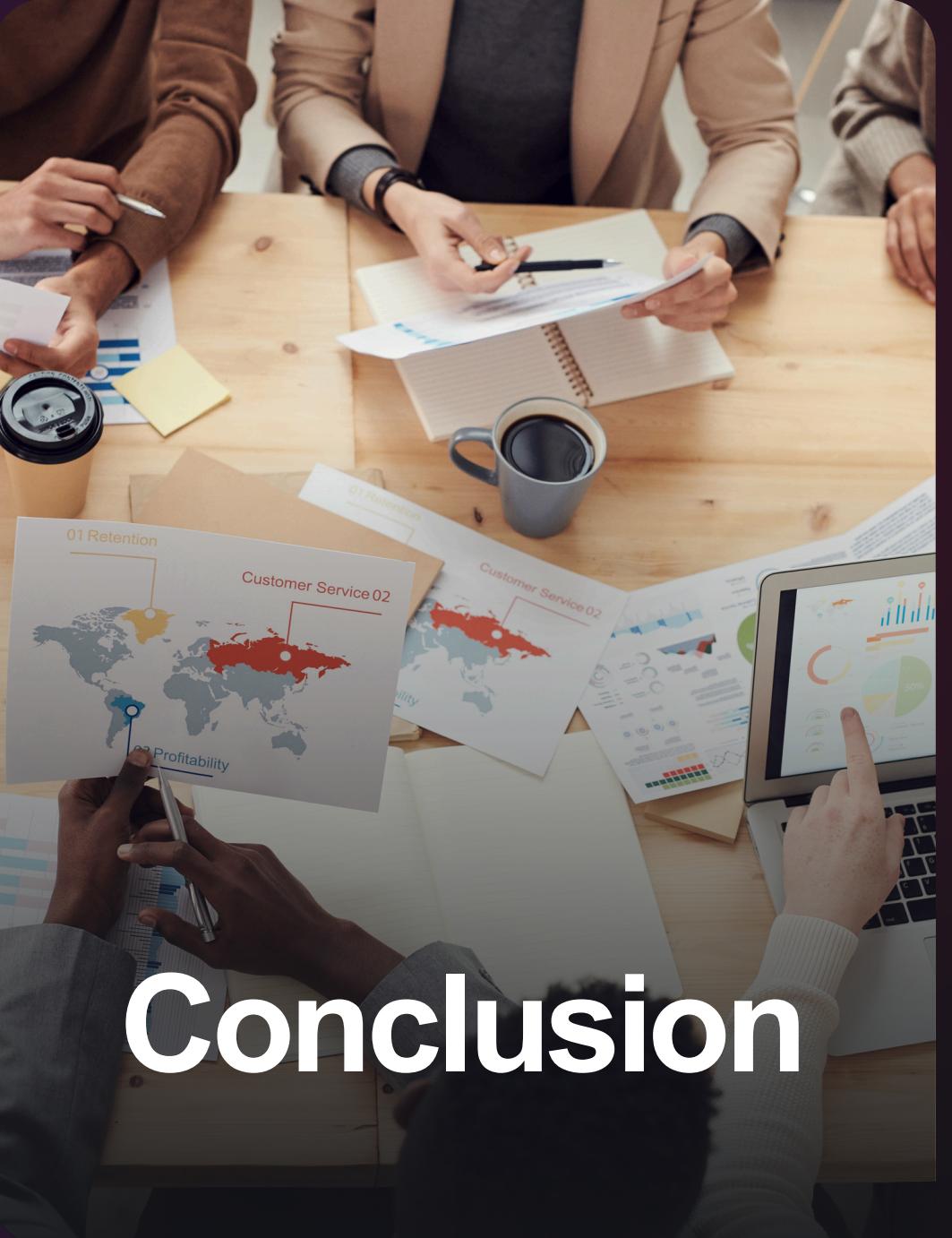
Interpreted visual outputs to derive business-focused financial insights

Dashboard

Tata Motors Finance Report - 2020-2024



Conclusion



- Tata Motors demonstrates **strong and consistent profitability** with net profit margins close to 20% over the last three years.
- The company generates **robust cash flows from core operations**, indicating **high earnings quality**.
- Growth in sales is supported by increasing assets and operating cash flow, reflecting **sustainable business expansion**.
- **Negative financing cash flow** suggests reduced reliance on external funding, **strengthening financial stability**.
- Overall **financial risk remains low**, supported by strong cash generation and stable balance sheet indicators.

BUSINESS RECOMMENDATIONS

- Focus on cost optimisation to further improve net profit margins without compromising growth.
- Continue reinvesting operating cash flows into productive assets to sustain long-term expansion.
- Maintain disciplined capital structure to preserve low financial risk and cash flow strength.
- Strengthen working capital management to balance other assets and liabilities more effectively.
- Leverage strong cash flows for strategic initiatives such as innovation, efficiency improvements, or market expansion.

thank you

By:

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