



INNOVATION. AUTOMATION. ANALYTICS

PRESENTATION ON
FINANCIAL DATA ANALYSIS

Presented By:
Mirudoddi Pavan
Annam Vinay Reddy

AGENDA:

- Business Problem
- Introduction
- Objective
- Galaxy Schema Description
- Company-Level Financial Insights
- Income Statement Analysis
- Cash Flow Analysis
- Balance Sheet & Growth Analysis
- Conclusion
- Recommendations

About Business Problem?



The company lacks clarity on its overall financial health, making it difficult to understand whether profits, liquidity, and cash flows are stable or declining.

Management cannot identify which revenue streams, expenses, or balance sheet components are driving financial fluctuations or creating risks.

The organization is unable to predict future performance due to inconsistent financial trends, limiting strategic planning and investment decisions.

Introduction:

This financial analysis project aims to understand the company's overall financial condition using Income Statement, Balance Sheet, and Cash Flow data. The study reviews profits, expenses, assets, liabilities, and cash movements to identify strengths and weaknesses. By examining trends and key indicators, the analysis helps evaluate stability, performance, and future financial direction in a clear and simple manner.

Objective:

The goal is to clearly understand the company's financial condition by studying profits, cash flow, and debts. This analysis helps find what is causing changes, shows possible financial risks, and supports better planning for the company's future.

Galaxy Schema Description

- **Galaxy Schema** uses **multiple fact tables** connected to common dimension tables.
- It is useful when **different business processes share the same dimensions**.
- Common shared dimension include **Stock**.
- It combines **multiple star schemas** into one unified data model.
- This schema supports **complex reporting** with better performance and flexibility.

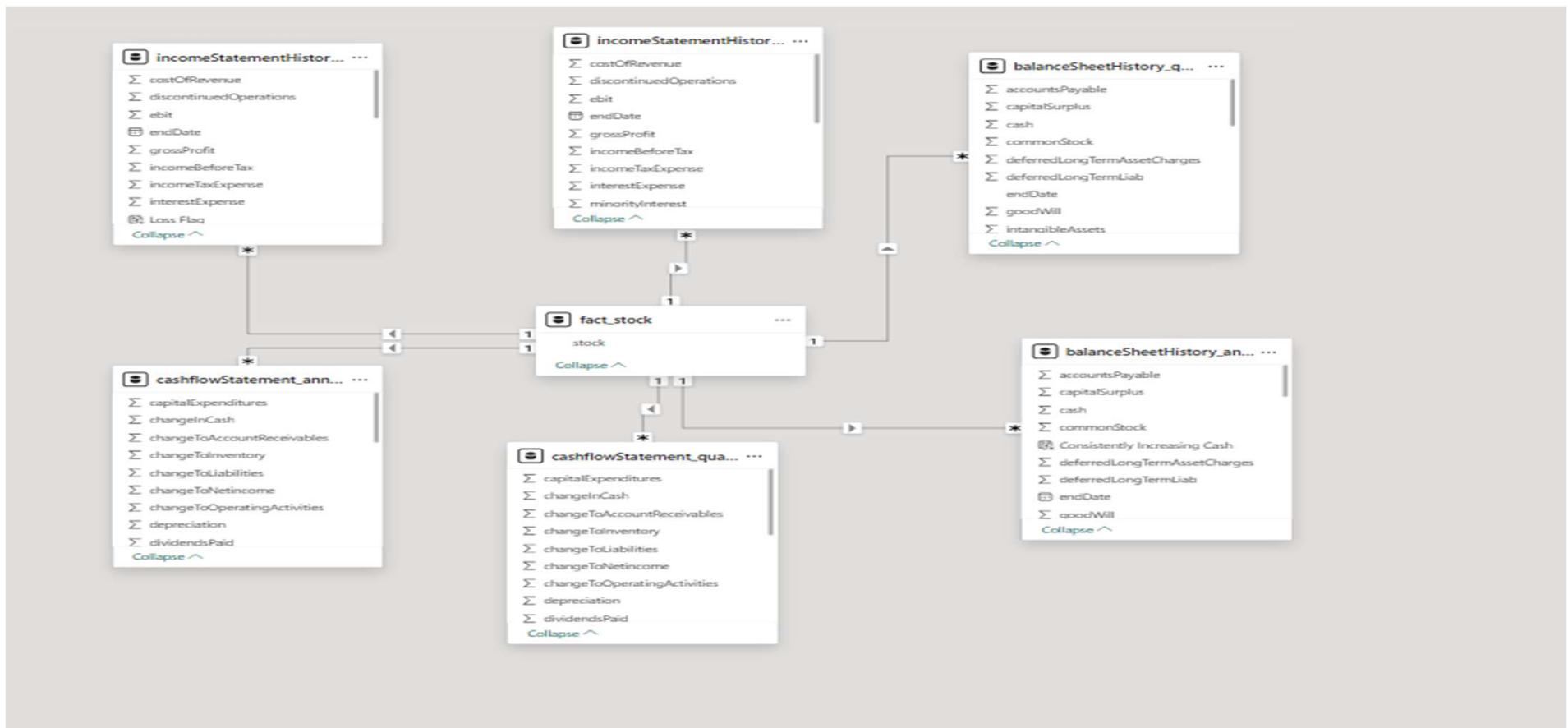
One-to-Many (1:*) — Most Common

One table has **unique values** (Dimension table).

The other has **repeated values** (Fact table).

Example: **Date Table (1) → Sales Table (*)**

DATA MODELLING



Company-Level Financial Insights

18T

Total Revenue (Quarterly)

5T

Sum of netIncome

85T

Total Revenue

67T

Total Revenue (Annual)

36T

Sum of totalLiab

Net Income (Annual) by stock



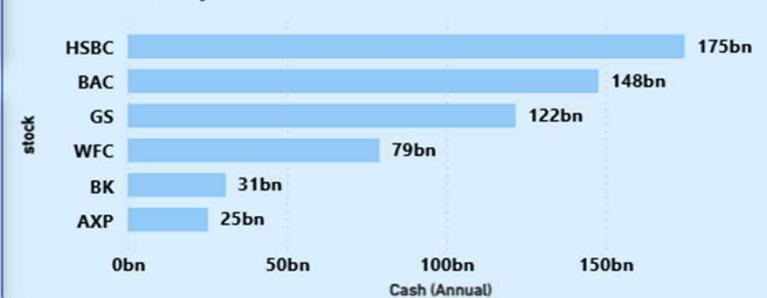
stock

All

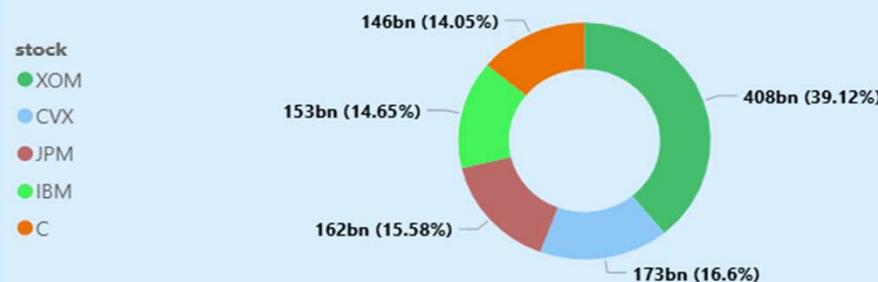
Year

2012 2016

Cash (Annual) by stock



Sum of retainedEarnings by stock



Sum of totalLiab and Sum of totalAssets by Year



Income Statement Analysis

Cost of Revenue by stock



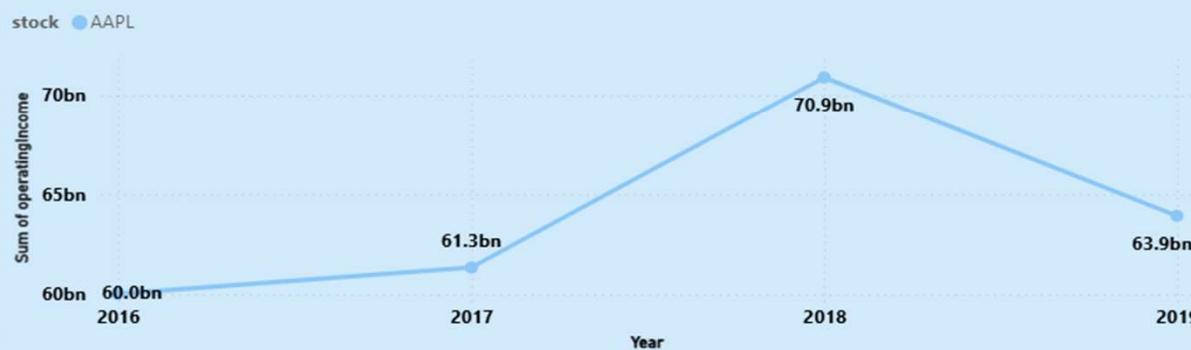
Revenue vs Net Income (Annual)



Margin Changes by Company and Year

stock	2012	2013	2014	2015	2016	2017	2018	2019	2020
A						0.52	0.54	0.55	0.54
AA						0.17	0.24	0.25	0.18
AAL						0.33	0.31	0.27	0.27
AAME						0.28	0.26	0.07	0.07
AAN						0.50	0.50	0.50	0.47
AAOI						0.33	0.43	0.33	0.24
AAON						0.31	0.31	0.24	0.25
AAP						0.44	0.44	0.44	0.44
AAPL						0.39	0.38	0.38	0.38
AAT						0.65	0.65	0.65	0.65
Total	0.54	0.50	0.43	0.12	0.38	0.37	0.37	0.37	0.29

Sum of operatingIncome by Year and stock

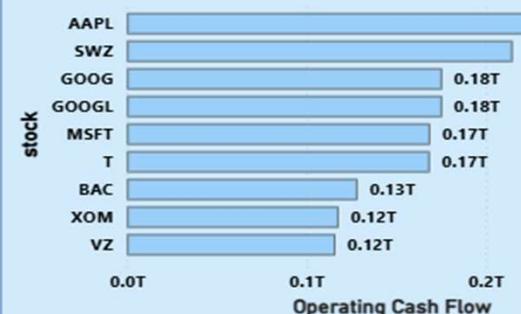


Companies Had Losses And When

stock	Loss	Profit	Total
A	-848844652469	6084564499311	5235719846842
AA	-848844652469	6084564499311	5235719846842
AAL	-848844652469	6084564499311	5235719846842
AAME	-848844652469	6084564499311	5235719846842
AAN	-848844652469	6084564499311	5235719846842
AAOI	-848844652469	6084564499311	5235719846842
AAON	-848844652469	6084564499311	5235719846842
AAP	-848844652469	6084564499311	5235719846842
AAPL	-848844652469	6084564499311	5235719846842
AAT	-848844652469	6084564499311	5235719846842
Total	-848844652469	6084564499311	5235719846842

Cash Flow Analysis

Operating Cash Flow by stock



Year

- 2012
- 2013
- 2014
- 2015
- 2016
- 2017
- 2018
- 2019
- 2020

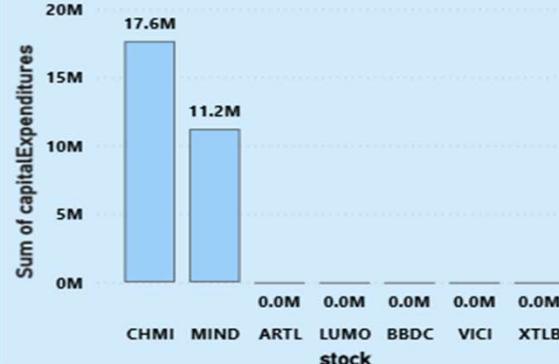
Cash Flow Breakdown by Company and Year

Year	2017	2018	Financing Cash Flow	Operating Cash Flow	Investing Cas
stock					
AAPL	-105000000	77434000000		-745,000	
SWZ	24357000000	53733000000		50	
GOOG	-3366000000	47971000000		589,000	
GOOGL	-3366000000	47971000000		589,000	
MSFT	-190000000	43884000000		50	
T	2518000000	43602000000		50	
BAC	48214000000	39520000000		-50,370,000	
XOM	-334000000	36014000000		986,000	
Total	786794804724	2871875570853		-93,848,654,	

Financing Cash Flow by stock



Sum of capitalExpenditures by stock



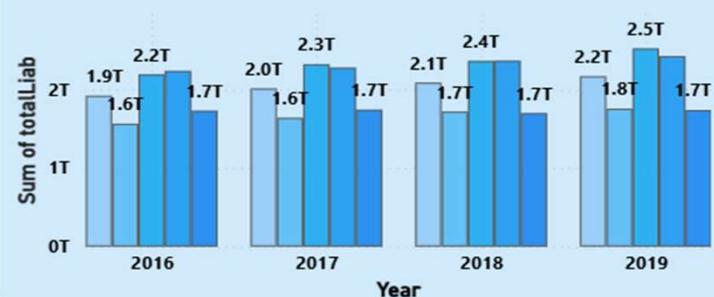
Negative Free Cash Flow?

stock	Free Cash Flow	Negative Free Cash Flow
AAME	-1738000	Yes
ABCB	-1145016000	Yes
ABEO	-120669000	Yes
ABIO	-45481000	Yes
ABR	-306452000	Yes
ABUS	-232410000	Yes
ACAD	-739170000	Yes
ACER	-66808772	Yes
ACHV	-34957000	Yes
ACLS	-7907000	Yes
ACMR	-10357000	Yes
Total	-681581041676	

Balance Sheet & Growth Analysis

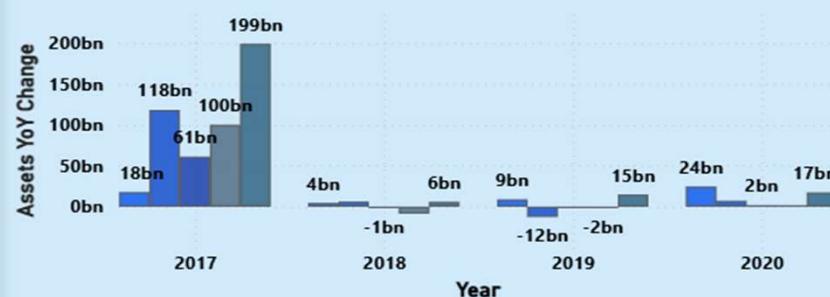
Sum of totalLiab by Year and stock

stock ● BAC ● C ● HSBC ● JPM ● WFC



Assets YoY Change by Year and stock

stock ● CRM ● DELL ● MCK ● MDT ● WMT



42.32T

Total Debt

stock

All

Year

All

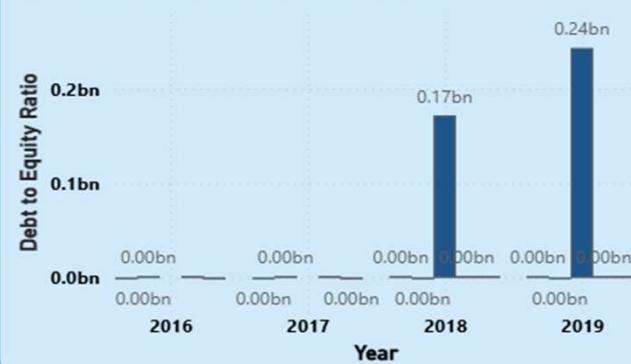
Sum of totalStockholderEquity and Total Debt

stock ● BAC ● C ● HSBC ● JPM ● WFC



Debt to Equity Ratio by Year and stock

stock ● CVM ● DGLY ● NREF ● NRT ● XERS



Declining asset base

stock	Total Assets	Declining Ass.
A		Yes
AA	30763000000	Yes
AAL	59995000000	Yes
AAME		Yes
AAN		Yes
AAOI	466825000	Yes
AAON		Yes
AAP	28771474000	Yes
AAPL	1079560000000	Yes
AAT	2198250000	Yes
AAWW	5385641000	Yes
Total	37316577617405	Yes

key insights:

Company Level Financial Analysis : High revenue and assets exist, but profits and cash are dominated by a few companies, while post-2015 liabilities are rising faster than stability.

Income Statement Analysis: Revenues are high but heavily eaten by costs, margins fluctuate across years, and profits peak around 2018 before dropping, showing unstable profitability despite strong sales.

Cash Flow Analysis: Operating cash flow is strong but concentrated in a few tech leaders, while heavy capital spending and negative free cash flow across many firms expose cash-management and sustainability risks.

Balance Sheet & Growth Analysis: Debt is rising faster than assets for many companies, asset growth is inconsistent, and high leverage in key firms signals increasing balance-sheet risk.

Conclusion:

- Overall, companies show strong revenue generation, but profitability varies significantly across stocks and years.
- Cash flow analysis indicates that while major firms generate healthy operating cash flows, many smaller stocks face negative free cash flow due to high capital expenditure.
- Balance sheet trends show rising assets alongside increasing liabilities, highlighting moderate financial leverage across companies.
- Growth and debt metrics suggest that most companies remain financially stable, but a few exhibit higher debt-to-equity ratios, signaling potential long-term risk if growth slows.

Recommendations:

- Companies should focus on **improving profit margins**, not just increasing revenue.
- Firms with low cash should **control expenses and improve operating efficiency**.
- High-debt companies should **reduce liabilities and manage borrowing carefully**.
- Reinvest retained earnings into **high-return projects** to support sustainable growth.
- Regular monitoring of **cash flow and debt levels** is important for long-term stability.



 INNOMATICS
RESEARCH LABS

THANK
YOU

