“Macro-Financial Index (MFI): A Global Assessment of Economic Fragility” – VIKRAM RATHORE

This project introduces a Macro-Financial Index (MFI) – a composite measure to assess how economically resilient or fragile nations are

Objective of MFI

- To develop a Macro-Financial Index (MFI) that measures and compares the economic fragility of countries using key macroeconomic and financial indicators.
- Capture multi-dimensional economic risk beyond GDP
- Enable cross-country comparison of structural stability and vulnerability

Methodology

1. Indicator Selection

Selected key macro-financial indicators such as:

Balance of Trade

Inflation

GDP-related metrics like gdp growth rate,debt to gdp,current account to gdp

External sector indicators like forex reserves

2. Data Normalization

Adjusted all country data to a common scale for fair comparison

👉 (If you used Min-Max, say this:)

Min-Max normalization was applied to scale values between 0 and 1.

3. Weighting

Higher weights assigned to **structural indicators** *(Debt, External Sector)* Equal weights for **cyclical indicators** *(Inflation, Growth, Employment)*

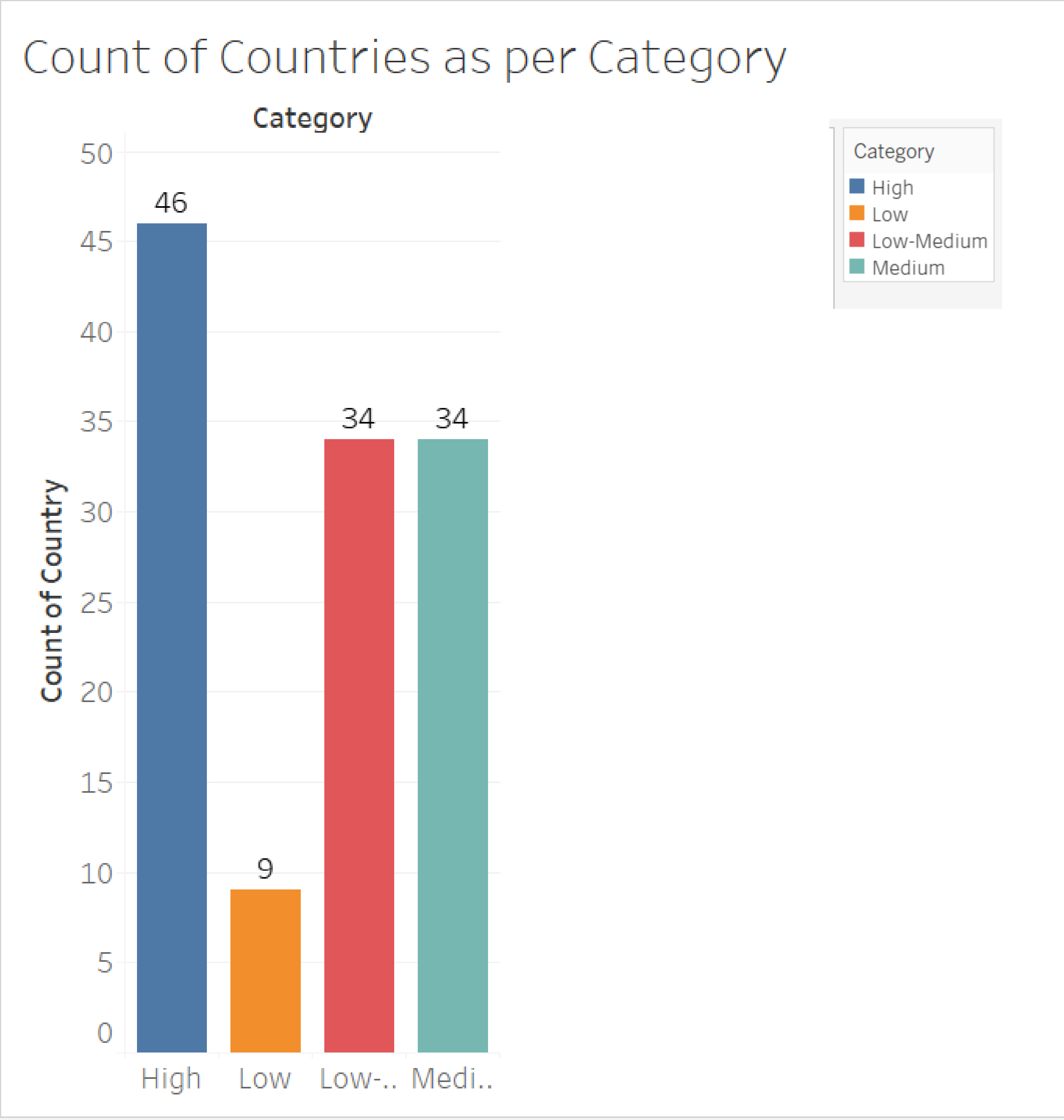
WEIGHTAGE & INDEX CONSTRUCTION

- **Indicator Weights**
- Debt (% GDP) → **20%**
- Current Account (% GDP) → **15%**
- Forex Reserves → **15%**
- Inflation → 10%
- Interest Rate → 10%
- GDP Growth → 10%
- Unemployment → 10%
- Balance of Trade → 10%
- Debt given highest weight → long-term sustainability risk
- External sector (CAD + reserves) → shock absorption
- Others → cyclical indicators

MFI Classification

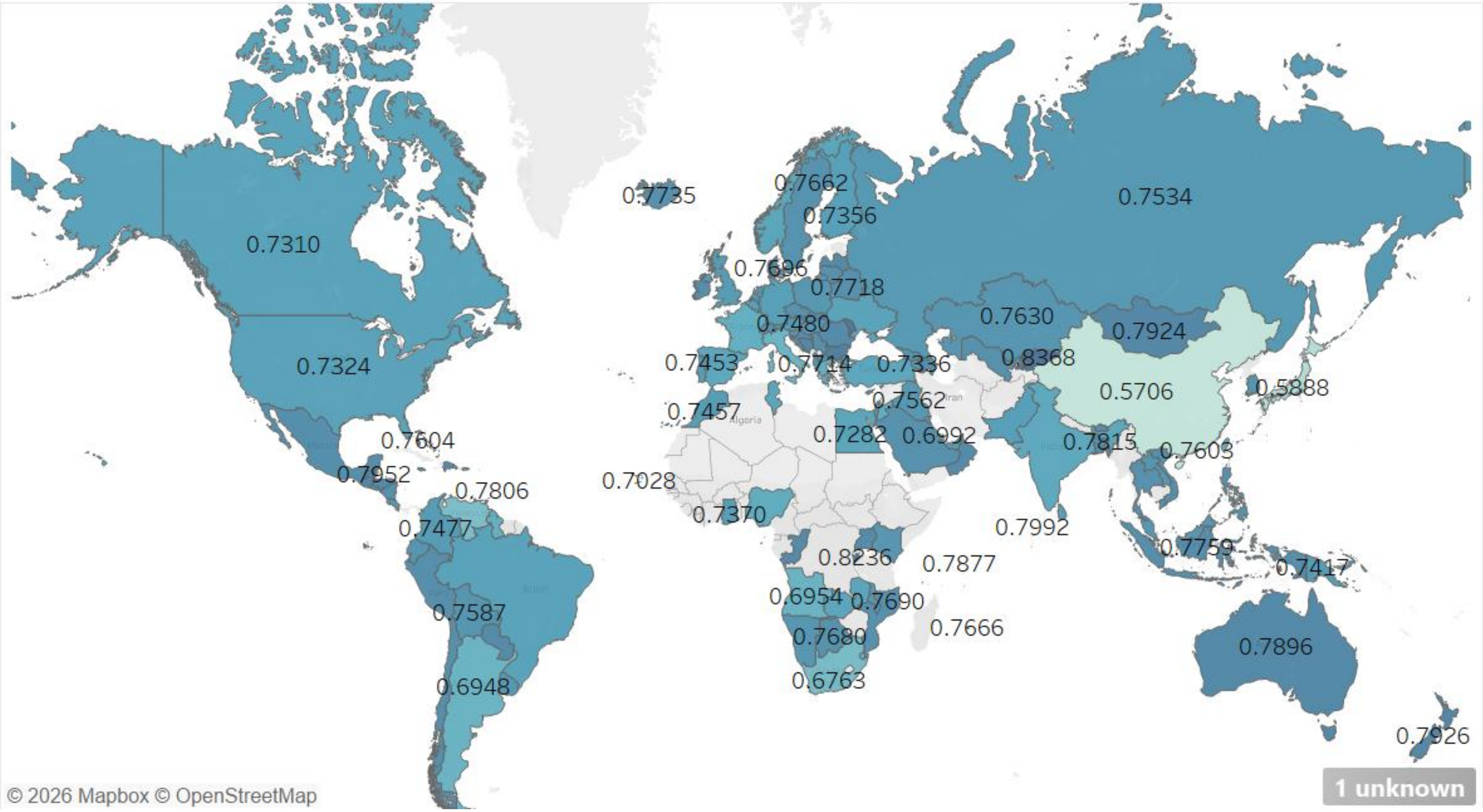
- Assigned category to Countries as per MFI Fragility score

- MFI > 0.77 :- High ,Countries with economic stress
- MFI is greater than 0.75 and less than equal to 0.77 :- Medium
- MFI is greater than 0.70 and less than equal to 0.75 :- Low to Medium
- MFI is less than or equal to 0.70 :- Low ,Least Economic Vulnerability



KEY OBSERVATIONS

Map showing MFI score countrywise



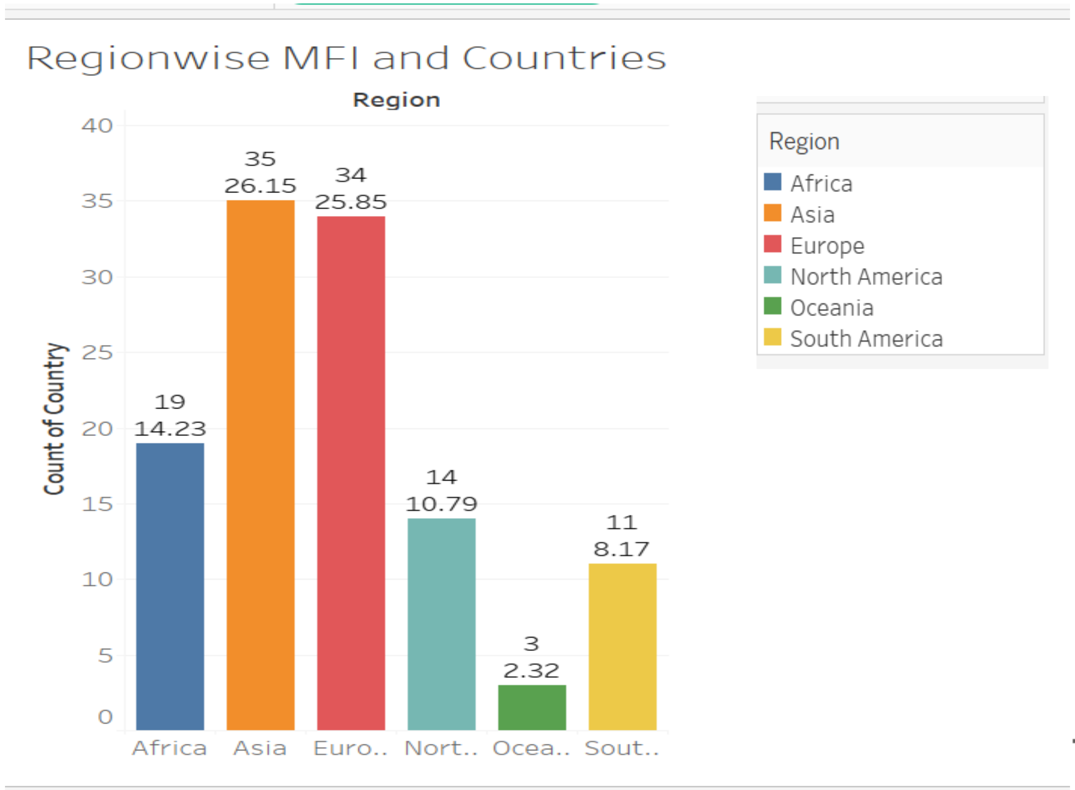
- High fragility concentrated in smaller and developing economies
- Developed economies exhibit **medium fragility**, primarily driven by elevated debt levels
- India falls in the **medium fragility category**, indicating a balanced risk profile
- Low fragility economies (China, Singapore, Japan) benefit from strong external buffers

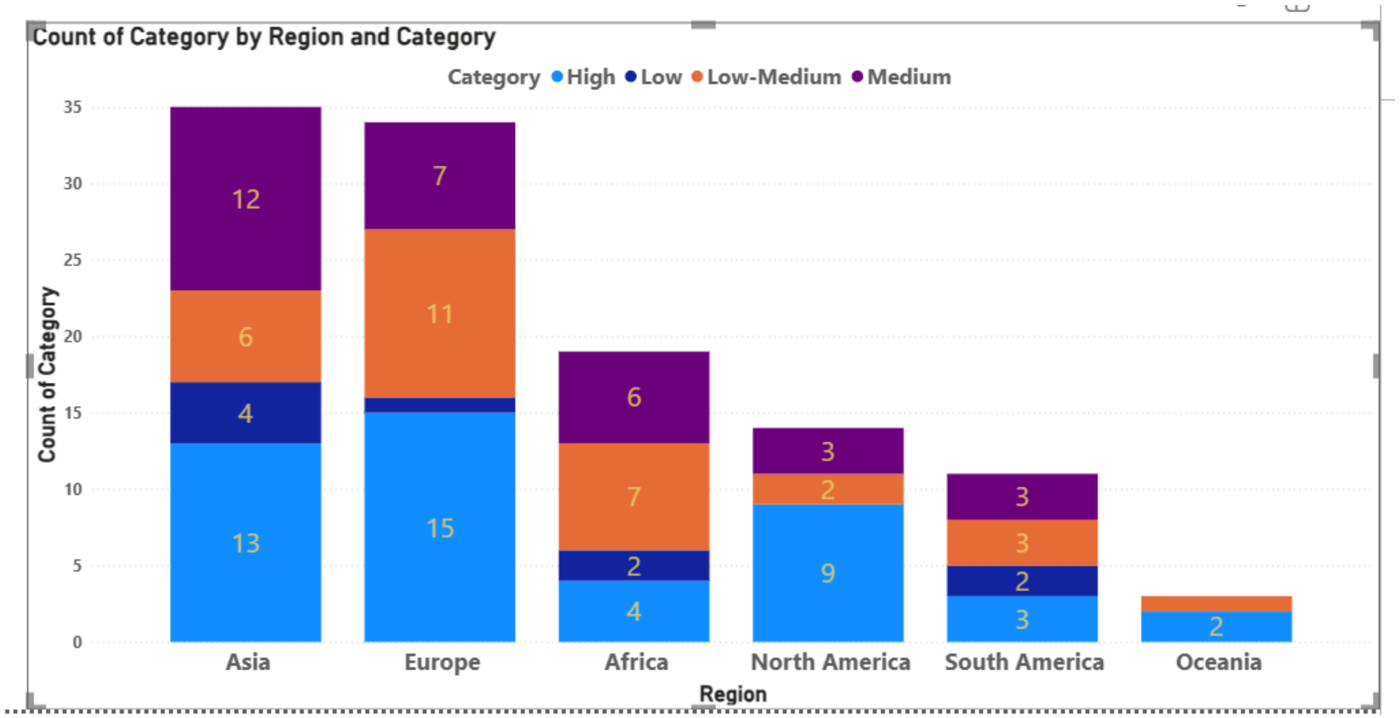
Note :- Darker the colour of the country more economically fragile and vice versa.

Correlation Pattern

VARIABLE	VARIABLE 2	CORRELATION COEFFICIENT	INTERPRETATION
MFI	Debt to GDP	0.67	**Strong positive correlation with fragility** Higher debt = higher vulnerability measures fiscal sustainability
	Inflation	0.065	**Moderate impact** Indicates macro instability
	Balance of Trade	0.273	Moderate positive correlation Show vulnerability to **global shocks**
	Unemployment Rate	0.279	**Structural weakness indicator** Reflects internal economic stress

REGION BIFURCATION





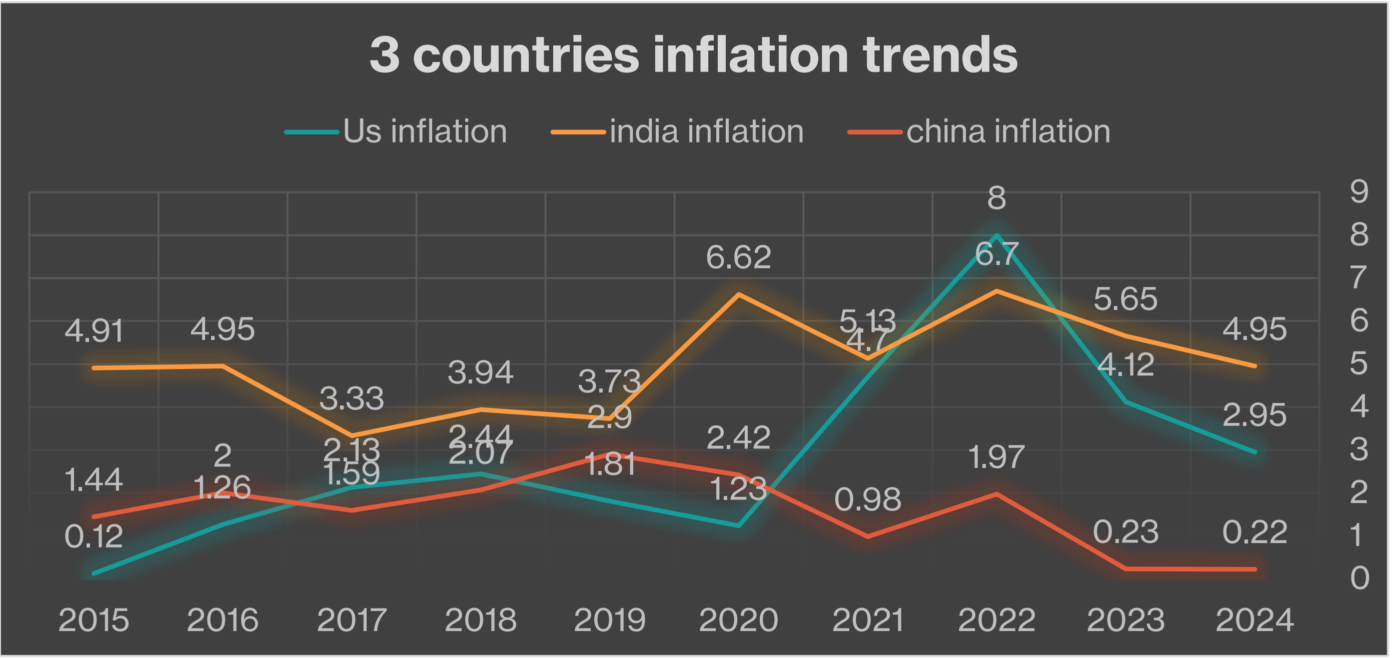
First chart indicates total. mfi for countries regionwise.Asia tops with 35 nations and max MFI followed by Europe. Second chart displays number of countries as per category regionwise.

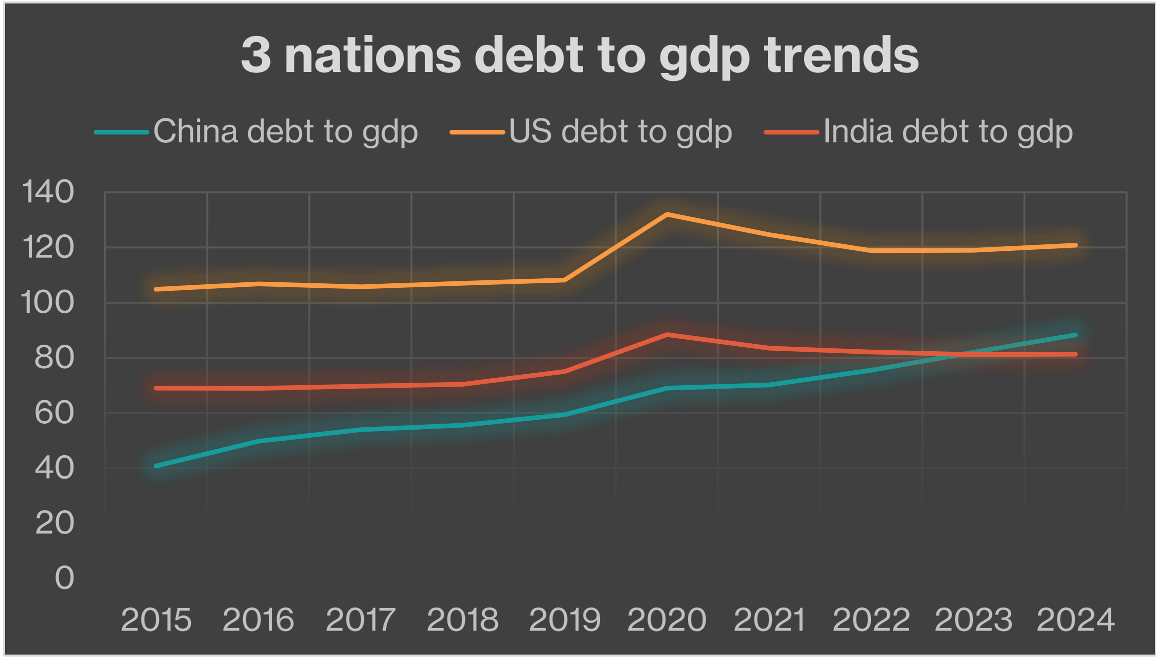
Interpretation

- **A. Structural Insights**
- Economic size does not guarantee stability
- Structural fundamentals drive fragility
- **B. Drivers of Fragility**
- Developing economies → external vulnerability
- Developed economies → debt-driven risk

Regional Insights

- **Europe**
  - Mix of High + Low-Medium
  - Indicates **divergence within developed economies**
- **Asia**
  - Wide spread (High → Low)
  - Reflects **heterogeneous economic structures**
- **Africa**
  - Skewed towards Low-Medium / Medium
  - Structural constraints + external dependency
- **North America**
  - Mostly Medium





•India: Inflation spiked during COVID; stabilized below 5% due to RBI intervention
•US: Historically low inflation, recent rise due to global headwinds
•China: Persistently low inflation may indicate weak domestic demand
•**Conclusion:** Inflation shows limited correlation with overall economic fragility

•**US:** High debt (>100% GDP), major contributor to medium fragility
•**China:** Rising debt post-2019, reflects credit-driven growth risks
•**India:** Moderate debt with post-COVID stabilization

Conclusion

- Economic size ≠ stability
- Developed economies: debt-driven fragility
- Developing economies: external vulnerability
- India: balanced but improvable
- Policy focus: debt management + external buffers

Trivia: Macro stability is not a function of growth and economic size alone, but of resilience across cycles

SOURCES

- Trading Economics
- Macrotrends
- Ministry of Trade and Commerce
- Bloomberg