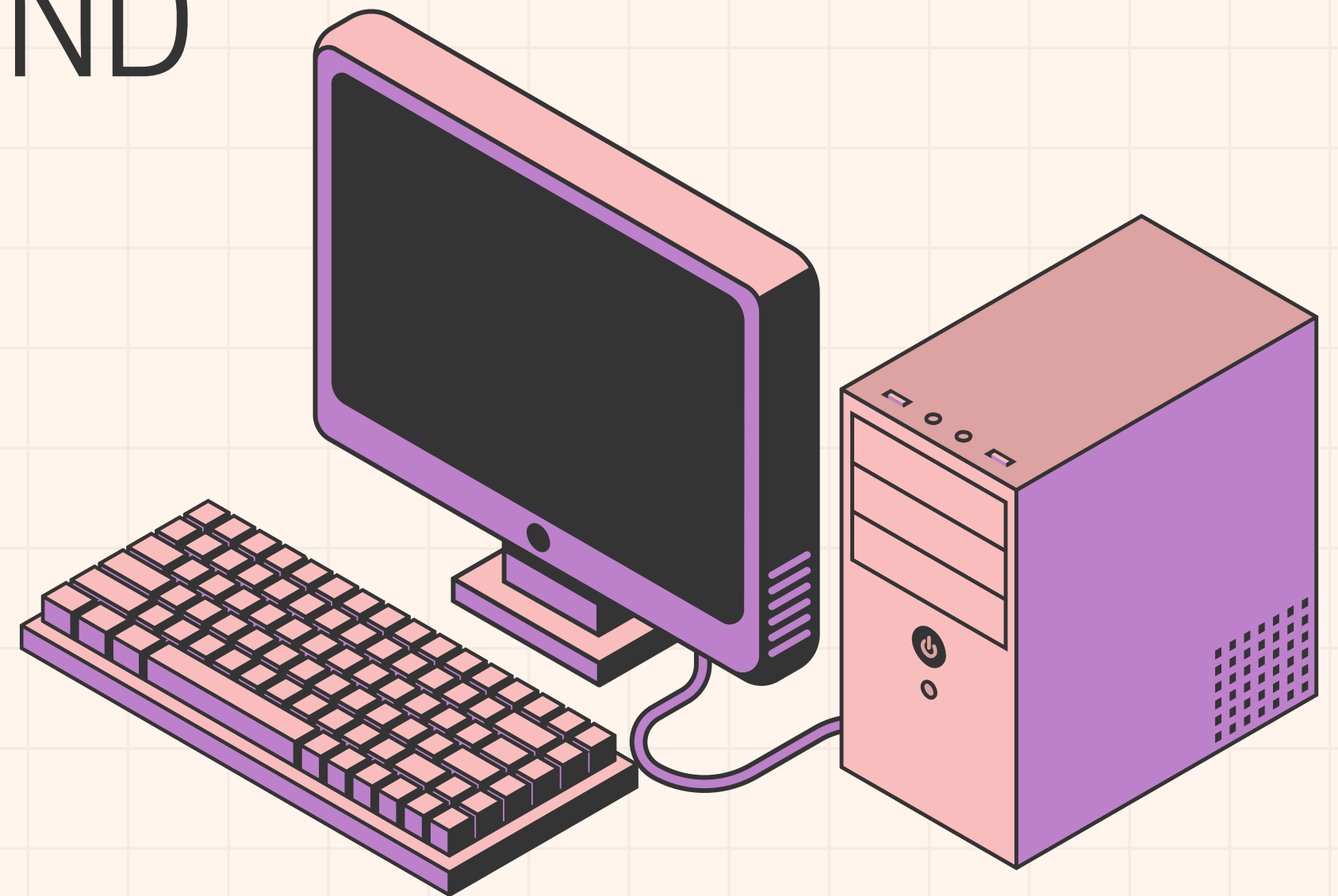# DATA VISUALIZATION AND EXPLORATION GROUP PRESENTATION

BY
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資訊16 何維展
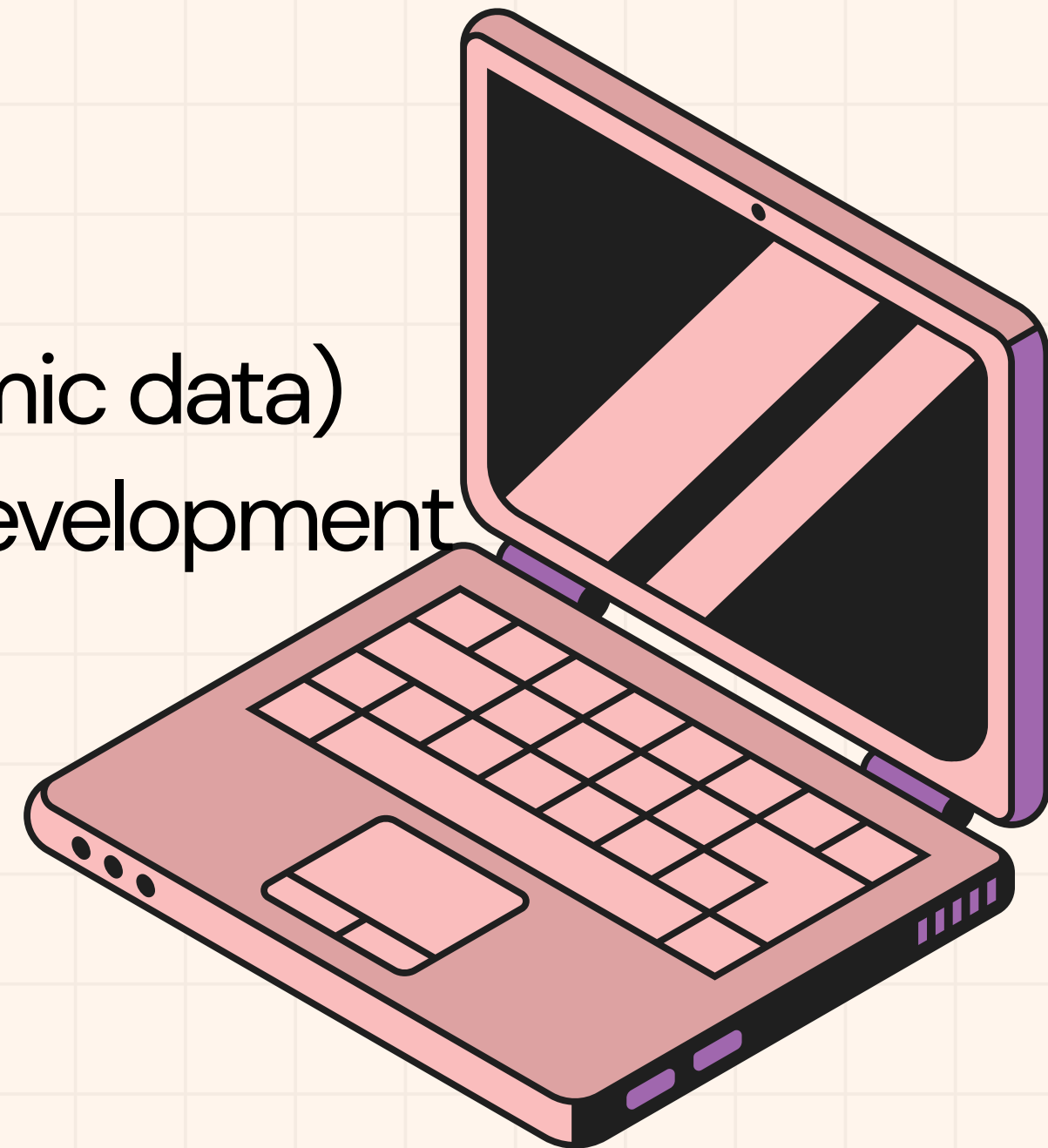
TITLE

Unpacking Global Fiscal Dynamics: How Debt, Inflation, and Revenue Interact Across Economic Tiers

REGION AND DOMAIN

Region: **Global** (countries with available **2023** economic data)
Domain: Macroeconomics / Public Finance/Global Development

RESEACHQUESTION

How do government debt, inflation, tax revenue, and economic capacity (GDP & GNI per capita) interact across countries of different income levels—and what patterns emerge when these fiscal variables are viewed together?

This project investigates:
- How countries with varying income levels manage debt burdens
- The role of tax revenue in maintaining inflation stability
- Whether strong GDP/GNI helps nations withstand high debt
- How public finance indicators vary within and across income categories
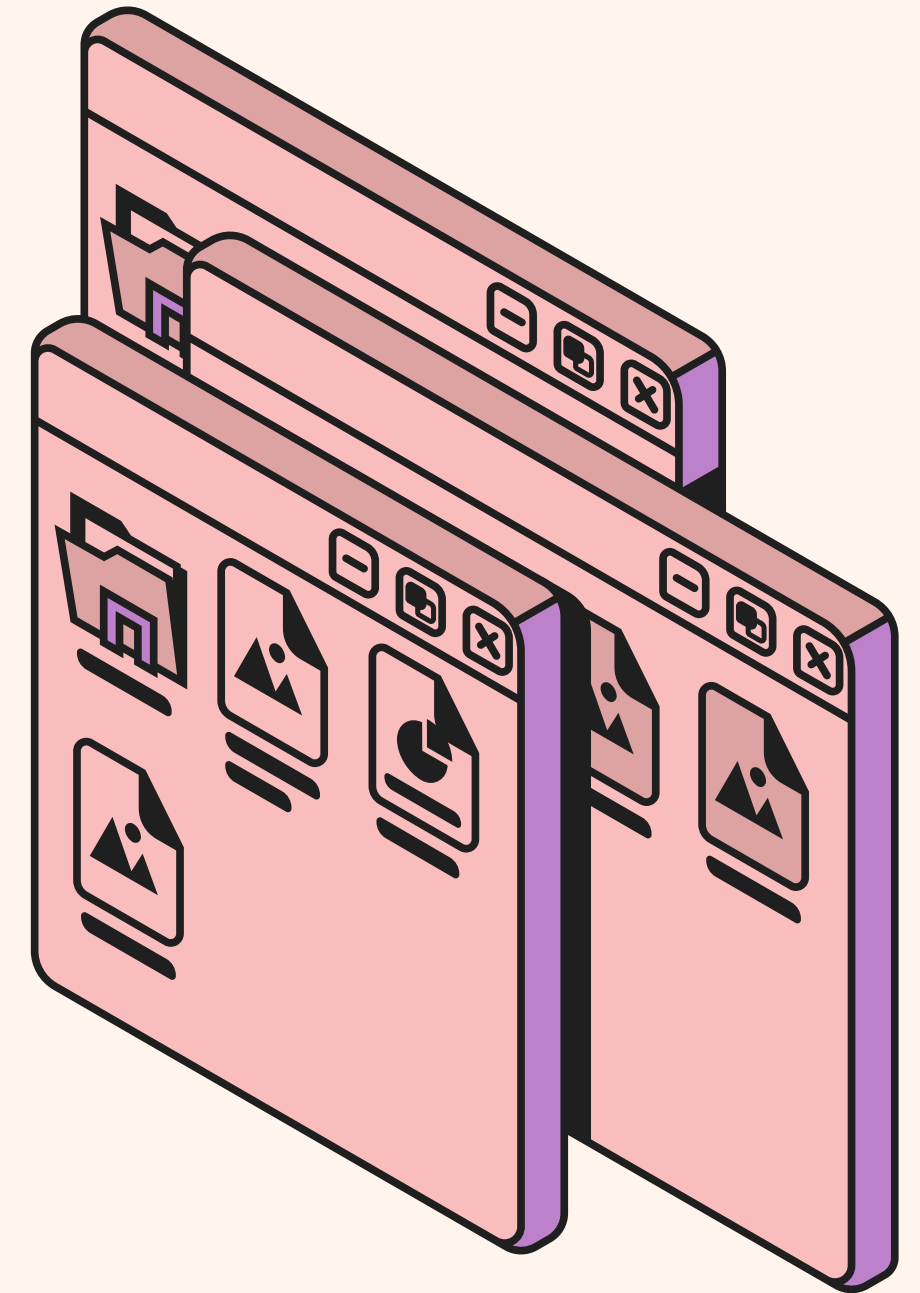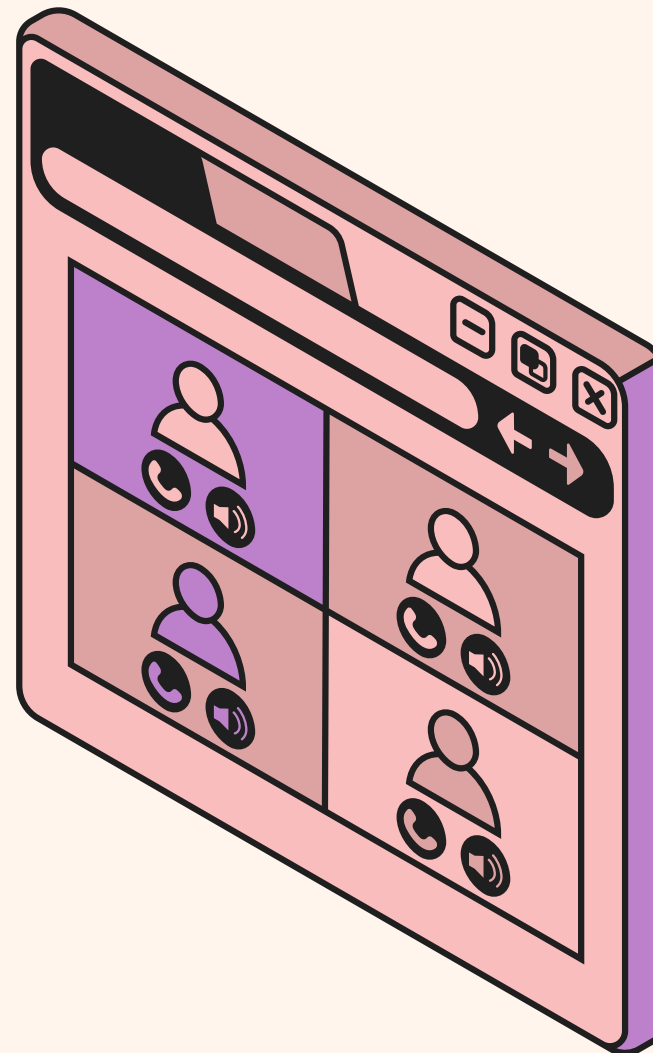
What are the relationships among key economic variables—debt, inflation, taxes, GDP, and unemployment—across countries, and how do these vary by income level?
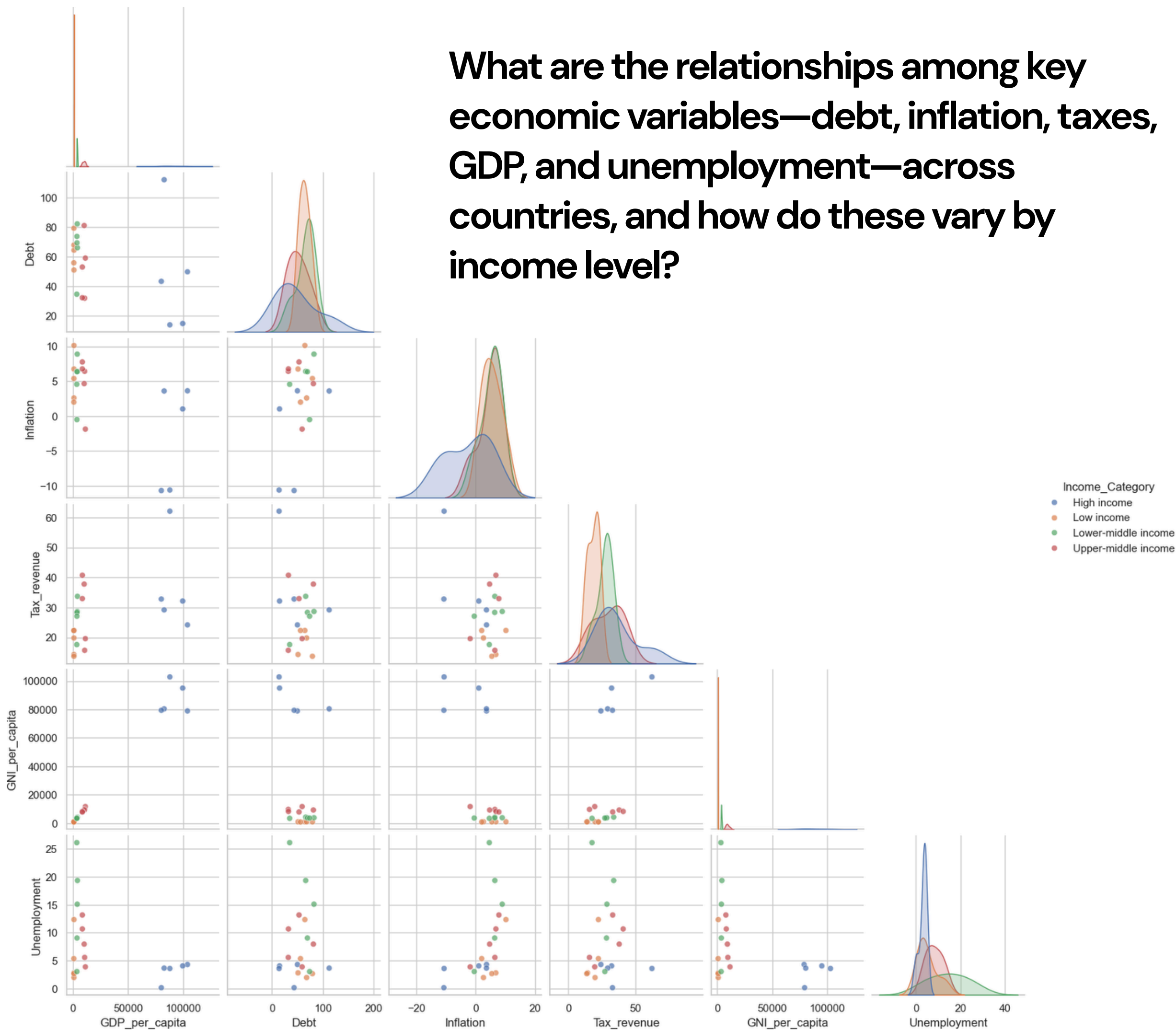
1. GDP_per_capita
2. Debt (Government debt as % of GDP)
3. Inflation (Inflation rate %)
4. Tax_revenue (% of GDP)
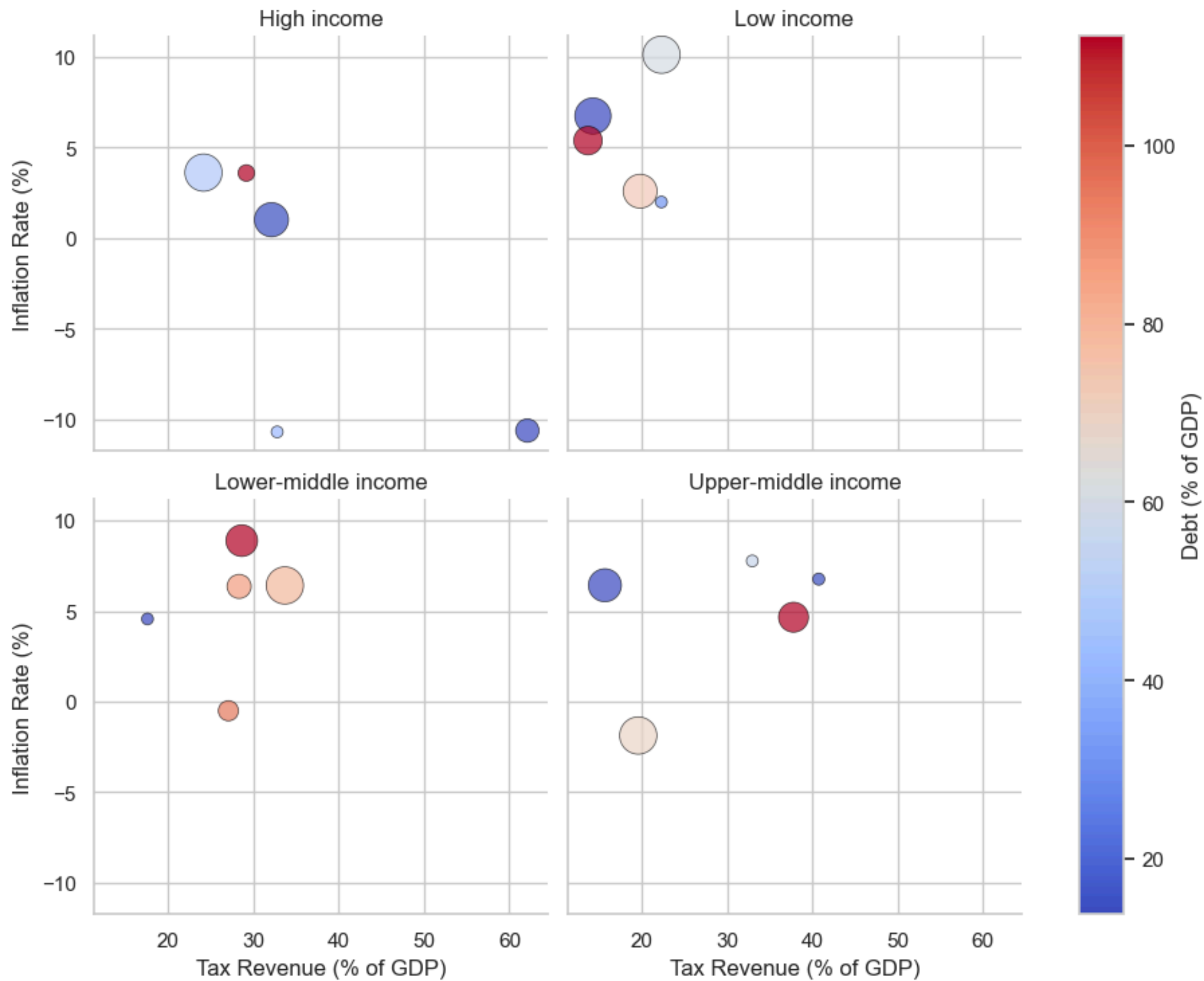5. GNI_per_capita
6. Unemployment (Unemployment rate %)

- scatter off-diagonal,
- distribution on the diagonal
- color-coded groups

Debt vs GDP per Capita (2023)
Color = GNI per Capita, Outline = Income Group
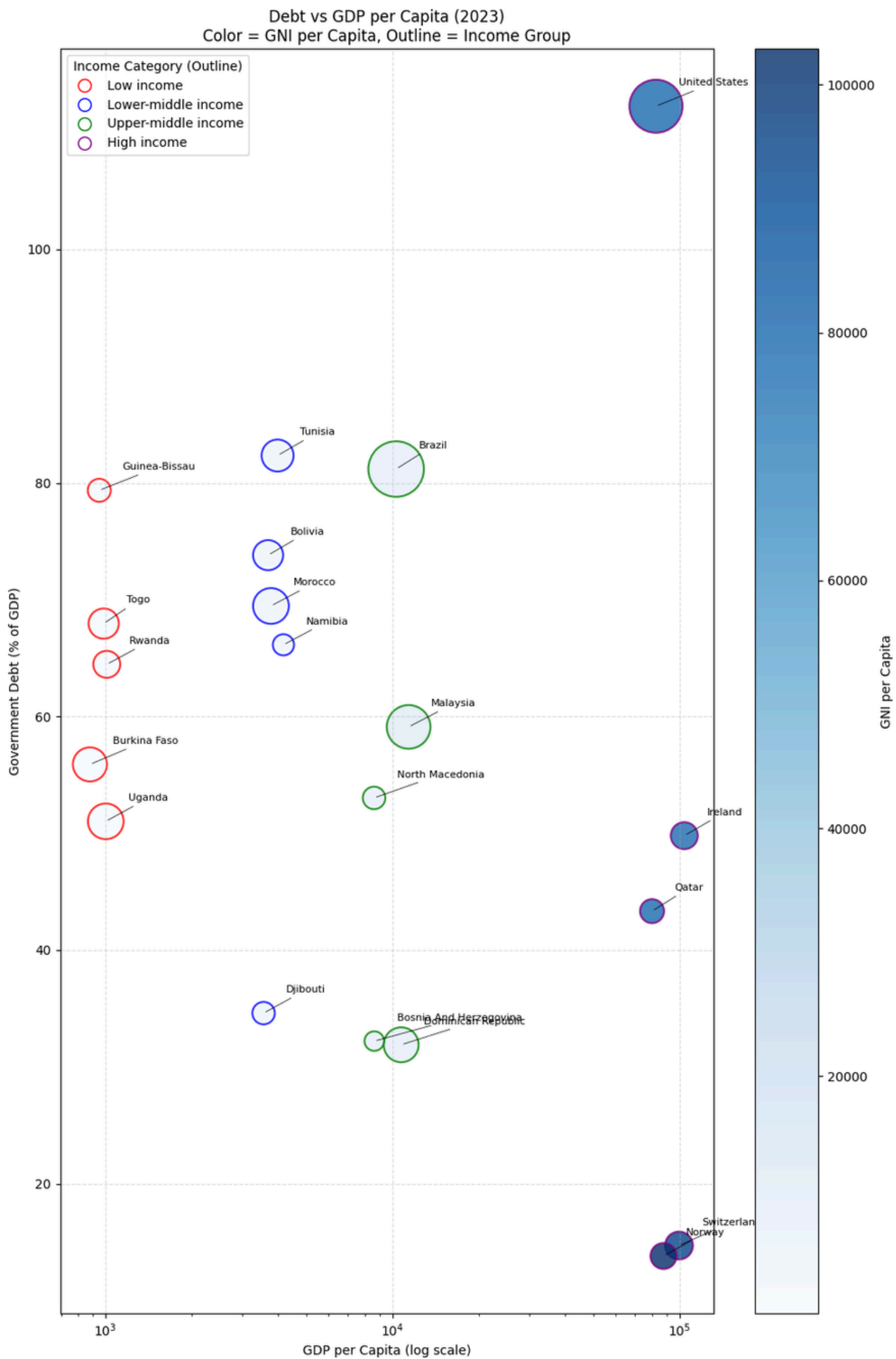
How does government debt relate to a country's economic output (GDP per capita), and how do income levels and GNI per capita influence this relationship across different nations?

- X-axis: GDP per Capita (log scale)
- Y-axis: Government Debt (% of GDP)
- Bubble Color: GNI per Capita
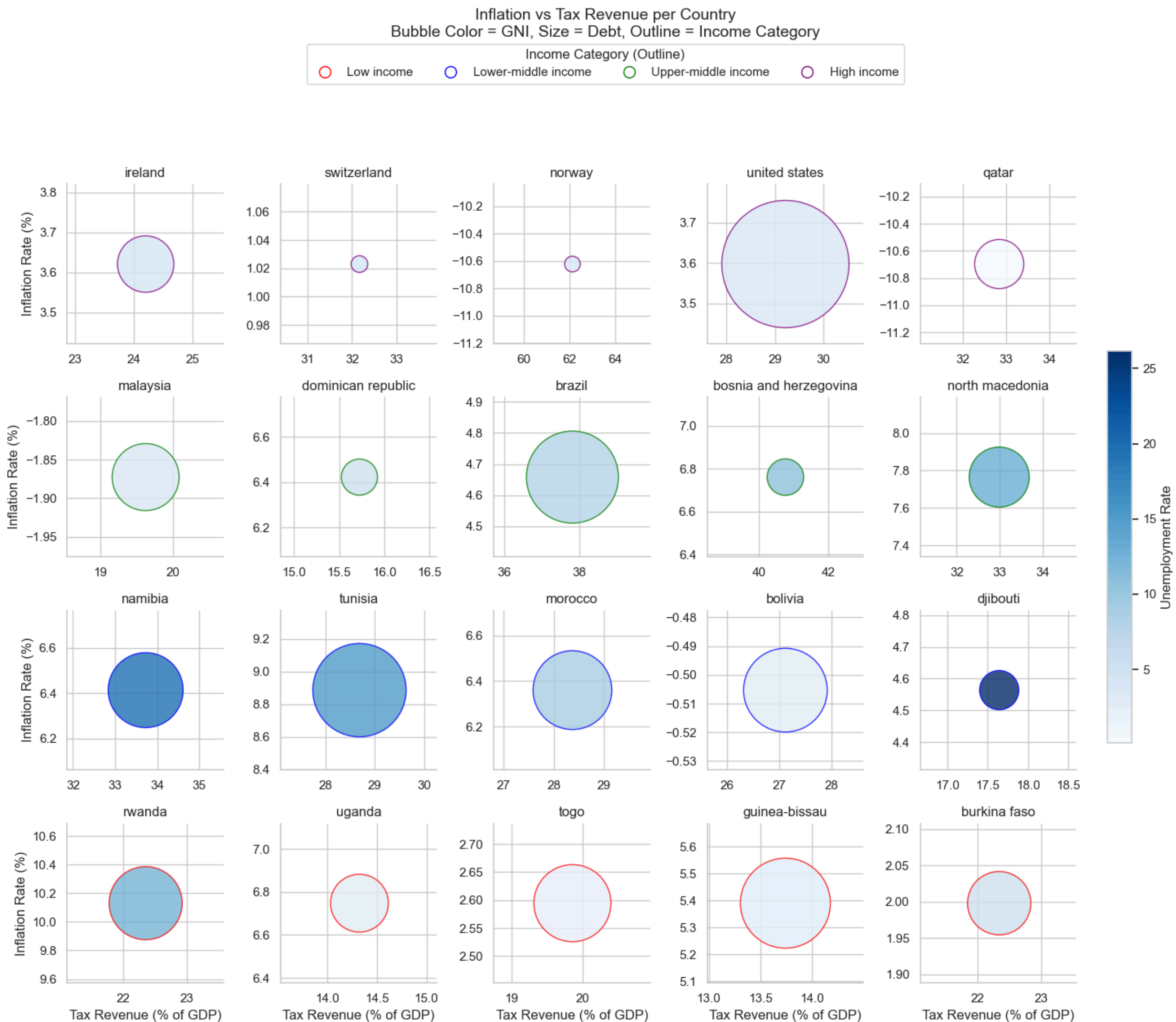- Outline: World Bank Income Group

Faceted Bubble Plots by Income Category

How does inflation relate to tax revenue across different income groups?

Do richer countries collect more taxes and maintain better inflation control?

- X-axis: Tax Revenue (% of GDP)
- Y-axis: Inflation Rate (%)
- Bubble Size: GDP per Capita
- Bubble Color: Government Debt (% of GDP)

Inflation vs Tax Revenue per Country
Bubble Color = GNI, Size = Debt, Outline = Income Category

Income Category (Outline)
○ Low income   ○ Lower-middle income   ○ Upper-middle income   ○ High income

How do individual countries manage the balance between tax revenue and inflation, and how are debt levels, income categories, and national income (GNI) reflected in that balance?

- X-axis: Tax Revenue (% of GDP)
- Y-axis: Inflation Rate (%)
- Bubble Size: Government Debt (% of GDP)
- Bubble Color: GNI per Capita
- Outline Color: Income Group

Discussion

◆ **Global Fiscal Patterns (From 4 Figures)**

1. No universal link between debt & inflation — depends on income & revenue stability.
2. High-income countries (like the U.S.) manage high debt better due to stronger economies.
3. Tax revenue stability helps control inflation — seen in high-income vs low-income contrast.
4. Country panels reveal outliers — some nations carry high debt and face inflation risks.
5. GDP & GNI buffers fiscal pressure — but only if growth stays strong.
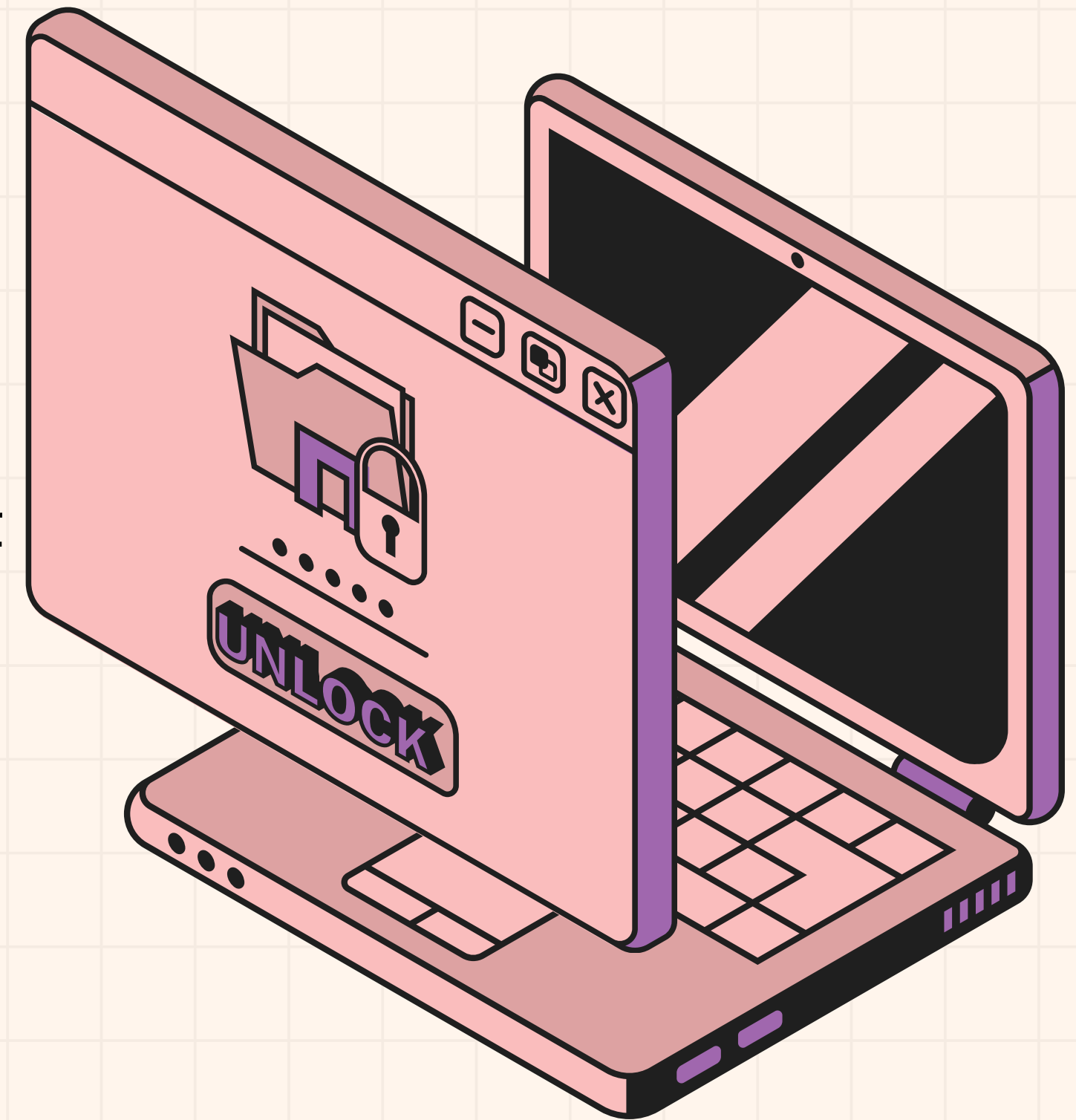
Discussion

◆ **U.S. & Trump's 2025 Tariff Policy**

- Trump's 10% universal import tax + up to 125% on China sparks trade tensions.
- Tariffs act like indirect taxes, but don't fix deficits or reduce debt.
- U.S. still holds strong position (high GNI, stable inflation), but at risk if:
  - Trade partners retaliate (e.g., China, EU)
  - Growth slows or inflation rises
- Markets already reacted — S&P 500 dropped >12%, showing investor concern.
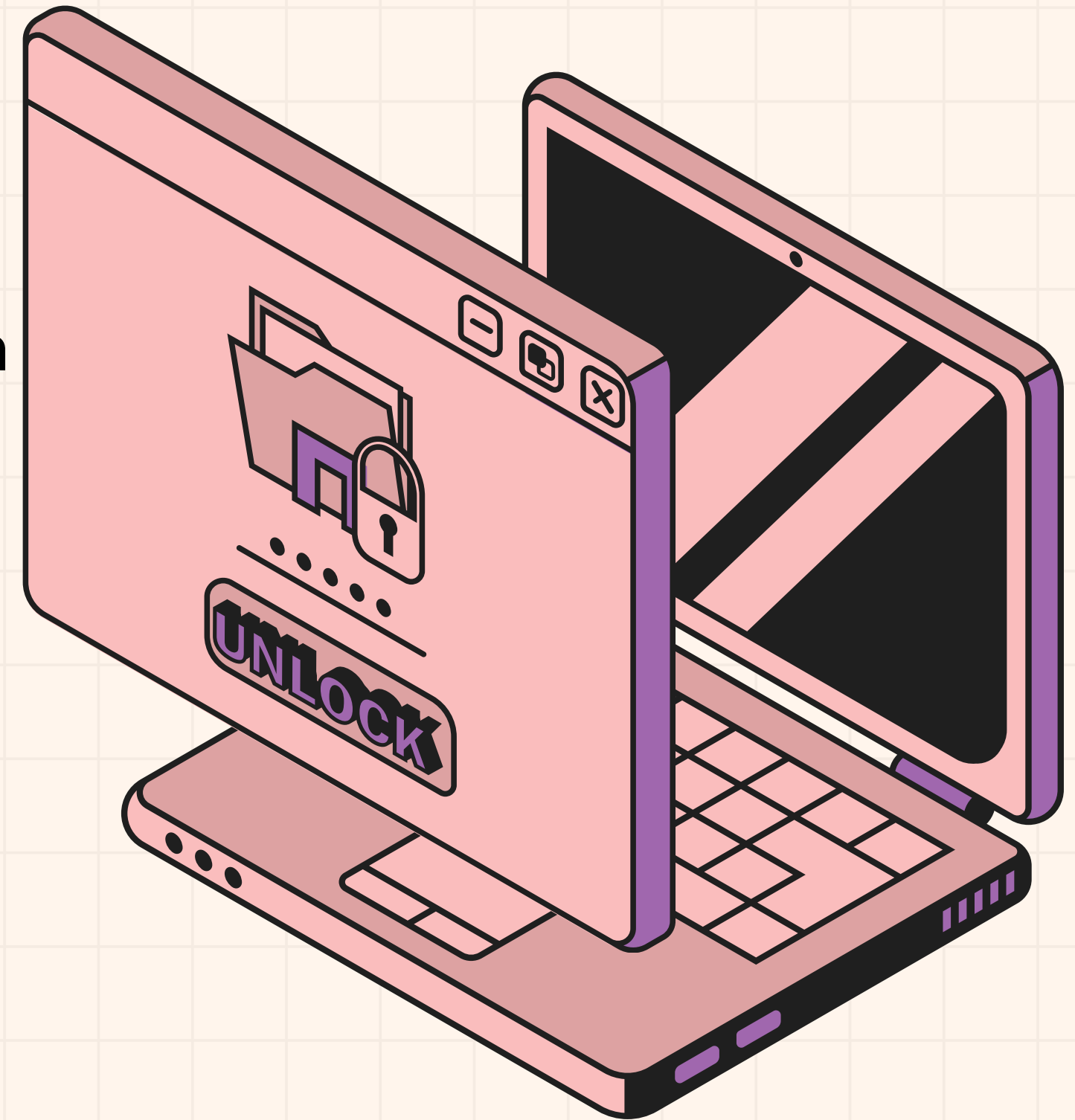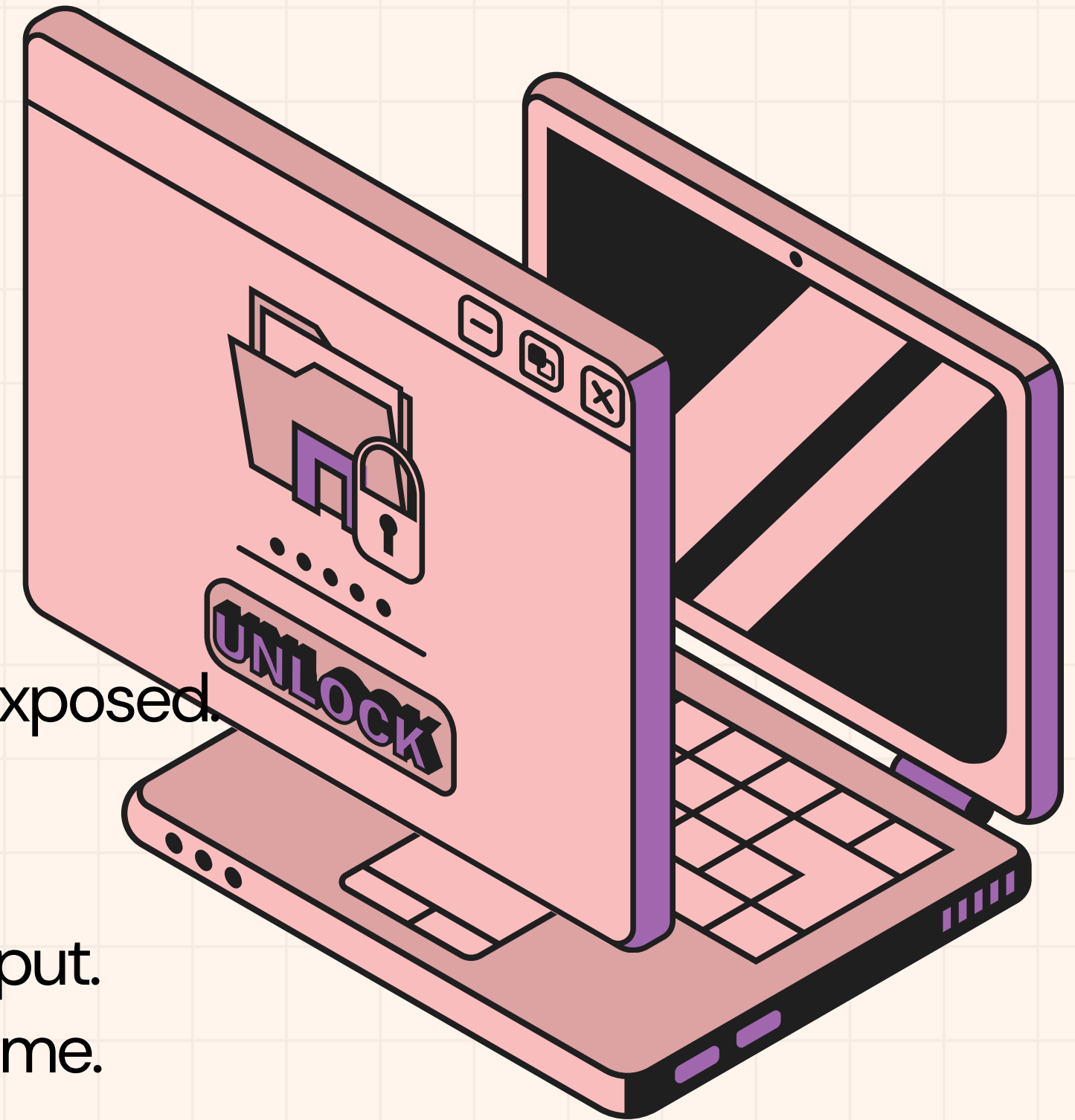
Discussion

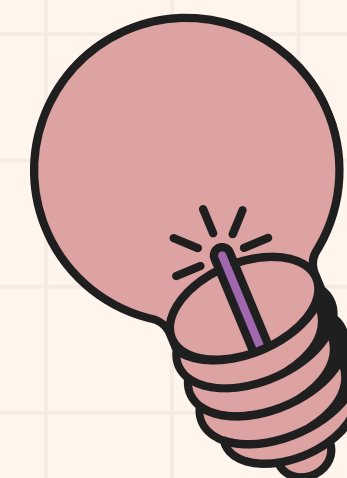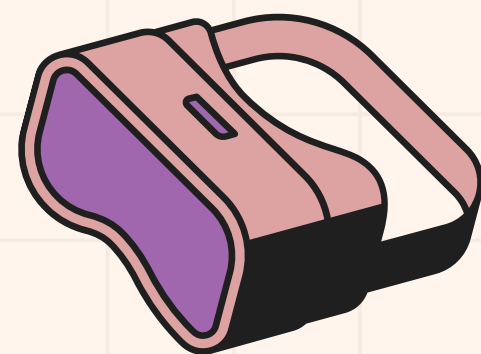🌍 **Global Market Implications**

- Tariffs may lead to:
    - Higher consumer prices
    - Supply chain disruption
    - Inflation pressure in vulnerable economies
- Countries with weak tax systems or low GNI are more exposed.

✅ **Key Takeaway**

Debt is only sustainable with stable revenue and strong output.
Trump's policies challenge that balance—globally and at home.

THANK YOU