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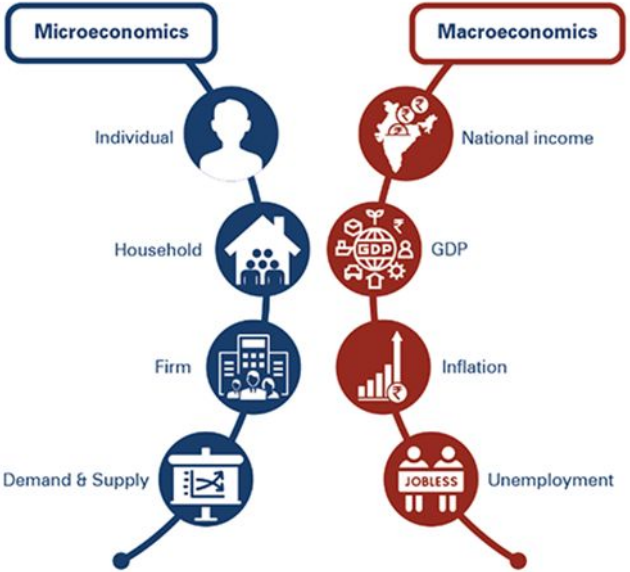
Macroeconomics 101

Microeconomics vs. Macroeconomics



pc: icicidirect

Introduction to Macroeconomics

- **Definition:** Macroeconomics is the branch of economics that studies the behavior and performance of an **economy as a whole**.
- It focuses on **aggregate changes** rather than individual markets, analyzing **large-scale economic factors that influence national and global economies.**

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Introduction to Macroeconomics

- **Key Components:**
  - **Economic Growth:** Measurement of the increase in an economy’s output over time, typically represented by GDP growth.
  - **Unemployment:** Evaluation of the workforce, focusing on individuals actively seeking employment versus those who are not.

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Introduction to Macroeconomics

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- **Key Components:**
  - **Inflation:** Study of price levels and how they change over time, affecting purchasing power.
  - **Fiscal and Monetary Policies:** Government and central bank actions to regulate economic stability, impacting inflation, employment, and economic growth.

Relevance of Macroeconomics to Technology

- Macroeconomic conditions affect tech companies' **business strategies, investment opportunities, and consumer demand** for technology products and services.
- During periods of economic growth, governments and private companies are more likely to **invest in R&D and innovation** like cloud computing and AI.
- During periods of recession companies **cut costs** by outsourcing IT and software development to countries like India, where labor costs are lower.

Relevance of Macroeconomics to Technology

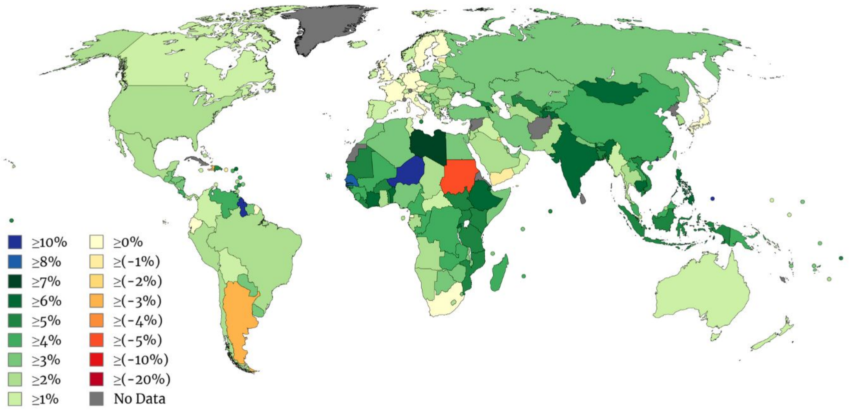
- **Central banks control interest rates**, and when rates are low, it's cheaper for tech companies and startups to borrow money.
- **Government fiscal policies** that prioritize spending on infrastructure, including digital infrastructure can boost the tech industry (e.g. 5G).

Key Macroeconomics Indicators

- **GDP (Gross Domestic Product):**
  - **Definition:** The **total market value** of all final goods and services produced within a country in a specific time period.
  - **Importance:** GDP growth is a primary indicator of economic health, reflecting the overall productivity of an economy.

Real GDP Growth Rate (Annual %)

Source: IMF World Economic Outlook Database, April 2024



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Components of GDP (Y)

- **Consumption (C):** Total spending by households on goods and services; accounts for the largest portion of GDP.
- **Investment (I):** Business investments in capital goods, including technology and infrastructure.
- **Government Spending (G):** Expenditure on public goods and services, such as education and defense, including technology-related initiatives.
- **Net Exports (NX):** Exports minus imports, indicating a country's trade balance.

Types of GDP

Real vs. Nominal GDP:

- **Nominal GDP: Measured at current market prices** without adjusting for inflation; can be misleading during periods of high inflation.
- **Real GDP: Adjusted for inflation**, reflects the true value of goods and services produced; provides a more accurate measure of economic growth.

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Types of GDP

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Importance of Real GDP:

- Real GDP helps policymakers and economists assess the actual growth of an economy, unaffected by price changes.

Example: A tech company may report increased revenues due to inflation; analyzing real GDP reveals whether actual economic growth occurred.

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Key Macroeconomics Indicators

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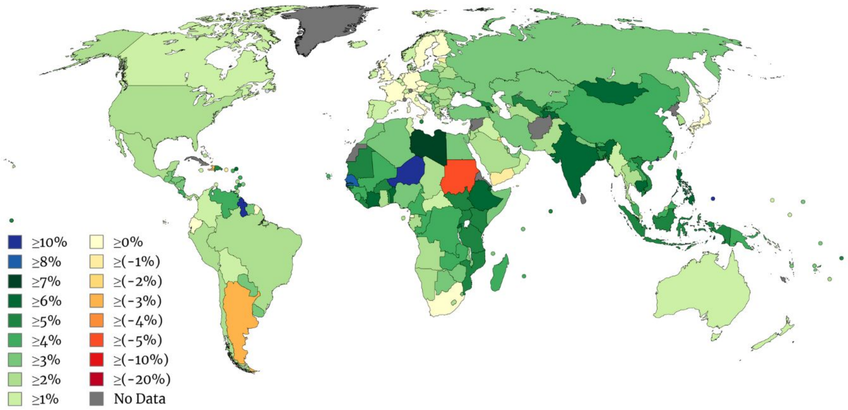
- **Unemployment Rate:**
    - **Definition:** The **percentage of the labor force that is jobless** and actively looking for employment, a key indicator of economic performance.
    - **Importance:** High unemployment rates can indicate economic distress, while low rates suggest a thriving economy.

Real GDP Growth Rate (Annual %)

Source: IMF World Economic Outlook Database, April 2024

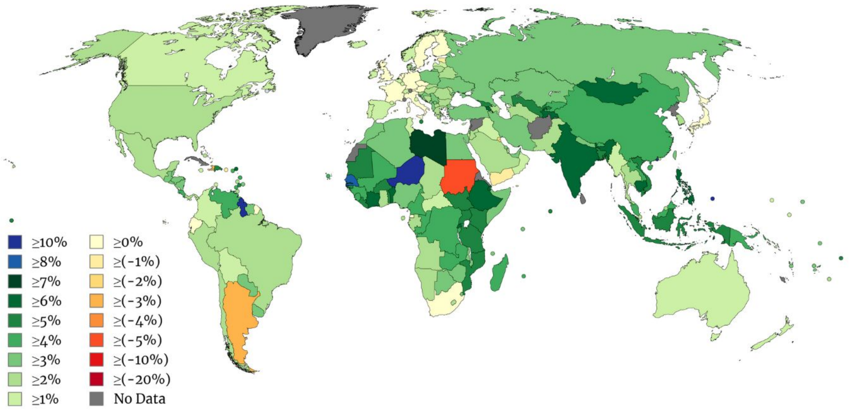


Key Macroeconomics Indicators

- **Inflation Rate:**
  - **Definition:** The percentage change in the price level of a basket of goods and services over time, affecting purchasing power.
  - **Importance:** Moderate inflation is often a sign of a growing economy, while hyperinflation can destabilize it.

Real GDP Growth Rate (Annual %)

Source: IMF World Economic Outlook Database, April 2024



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Aggregate Demand and Supply

Definitions:

- **Aggregate Demand (AD):** The total amount of spending on goods and services in an economy, including consumer spending, government spending, investments, and net exports. Impacted by factors like consumer confidence, disposable income and interest rates.
- **Aggregate Supply (AS):** The total amount of goods and services that producers are willing and able to sell at a given price. Impacted by factors like production costs and technological advancements.

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Aggregate Demand and Supply

Definitions:

- **Equilibrium:** Occurs when AD equals AS, determining the overall price level and output in the economy.

Examples:

- The Covid pandemic had a negative impact with aggregate supply declining more than aggregate demand.

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Unemployment

Definition: The percentage of the **labor force that is jobless** and actively seeking employment.

Types of Unemployment:

- **Frictional Unemployment:** Short-term unemployment that occurs when people are between jobs or entering the workforce. e.g. A software engineer seeking a new job after moving to a new city.

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Unemployment

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Types of Unemployment:

- **Structural Unemployment:** Results from a mismatch between workers' skills and job requirements or due to technological changes. e.g. Workers displaced by automation in manufacturing or AI.
- **Cyclical Unemployment:** Occurs during economic downturns when demand for goods and services decreases, leading to job losses. e.g. Layoffs in the tech industry during a recession.

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Inflation

Definition: Inflation refers to the rate at which the general level of prices for goods and services is rising, resulting in a decrease in purchasing power.

Measurement:

- **CPI (Consumer Price Index):** Measures changes in the price level of a basket of consumer goods and services, reflecting the price consumers pay for goods and services.
- **PPI (Producer Price Index):** Measures average changes in price producers pay for raw goods and services.

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Inflation

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Example:

- Increased consumer spending on tech products during economic expansion leads to higher prices because demand exceeds supply.
- Supply chain disruptions in the tech industry (like the COVID-19 pandemic) increase production costs, resulting in higher consumer prices.

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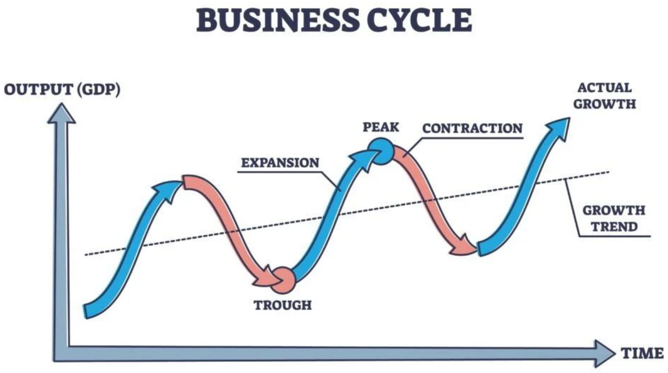
Business Cycles

Phases of Business Cycles:

- **Expansion:** Period of economic growth, characterized by rising GDP, increasing employment, and consumer spending.
- **Peak:** The highest point of economic activity before a downturn; characterized by inflationary pressures and capacity constraints.



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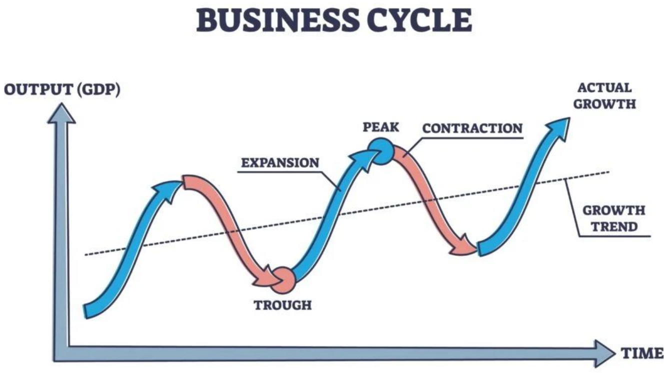
Business Cycles

Phases of Business Cycles:

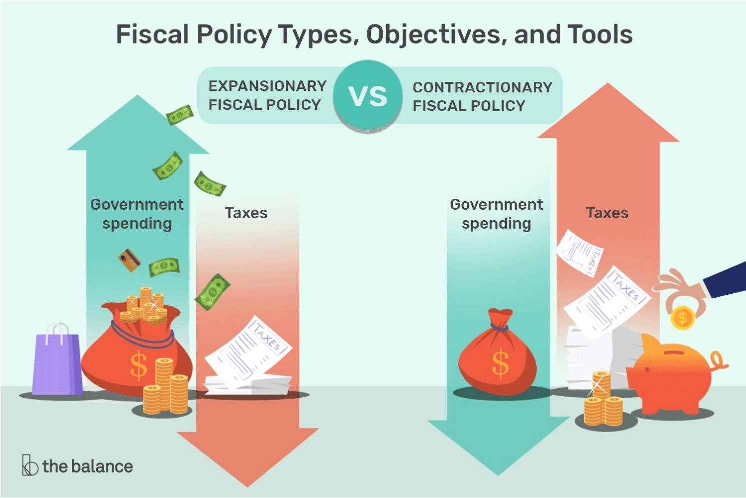
- **Contraction:** A decline in GDP, often leading to recession; typically marked by rising unemployment and decreasing consumer spending.
- **Trough:** The lowest point of economic activity before recovery begins; often leads to economic stimulus measures.

Example: During a contraction, tech companies may implement hiring freezes, while expansion leads to increased recruitment efforts in technology fields.



Fiscal Policy

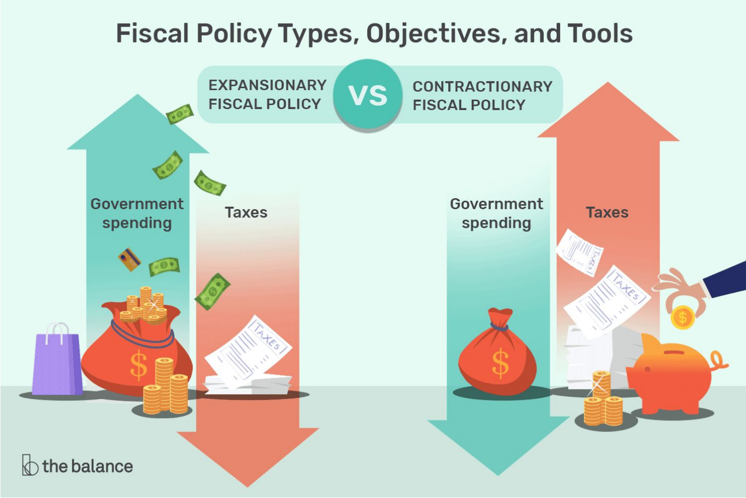
- **Definition:** Fiscal policy involves the **government's use of spending and taxation** to influence the economy.
- **Government Spending:** Involves **public sector investments** in infrastructure, education, and technology to stimulate economic growth.
    - e.g. During a recession, increased government investment in technology can create jobs and spur economic recovery.



pc: thebalance

Fiscal Policy

- **Taxation Levels:** Adjustments in tax rates to either stimulate spending or cool down an overheated economy.
    - *e.g.:* Government grants for tech startups can stimulate innovation and economic growth.



Monetary Policy

Definition: Central bank actions that shape the economy by controlling the money supply and interest rates; crucial for maintaining price stability and achieving economic goals.

Key Components

- **Interest Rates**:
  - Influence borrowing costs for tech companies.
  - Affects investment decisions in research and development (R&D).
- **Money Supply**:
  - Affects availability of funds for startups and tech ventures.
  - Impacts consumer spending on technology products.

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Monetary Policy

Examples:

- Lowering interest rates can encourage tech startups to borrow more for expansion, leading to increased innovation and job creation.
- The Federal Reserve's response to the 2008 financial crisis involved aggressive monetary policy measures to stabilize the economy.

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Exchange Rates

Definition:

- The value of one currency expressed in terms of another currency, affecting international trade and investment.

Factors Influencing Exchange Rates:

- **Interest Rates:** Higher rates offer lenders in an economy a higher return relative to other countries.
- **Inflation Rates:** Low inflation rates increase a currency's value as purchasing power increases relative to other currencies.
- **Political Stability:** Countries with less risk for political turmoil attract more foreign investment, leading to a stronger currency.
- **Trade Balance**: Countries with high exports and low imports may see currency appreciation.

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Exchange Rates

Why It Matters

- **Impacts Imports and Exports**: A strong currency makes imports cheaper but exports more expensive.
- **Influences Foreign Investment**: Exchange rates affect the return on investments made in other currencies.
- **Affects Inflation**: Changes in exchange rates can influence the cost of imported goods and services.

Example

- **USD to INR**: If the exchange rate is **1 USD = 86 INR**, then **100 USD = 8,600 INR**.

International Trade

Definition:

- The exchange of goods and services between countries, allowing access to a wider range of products and markets.

Trade Balance:

- **Exports:** Goods and services sold to other countries.
- **Imports:** Goods and services purchased from other countries.
- A positive trade balance (exports > imports) can boost GDP.

pc: econlib

International Trade

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Benefits:

- Access to a variety of goods, economies of scale, and increased competition lead to better prices and quality for consumers.

Challenges:

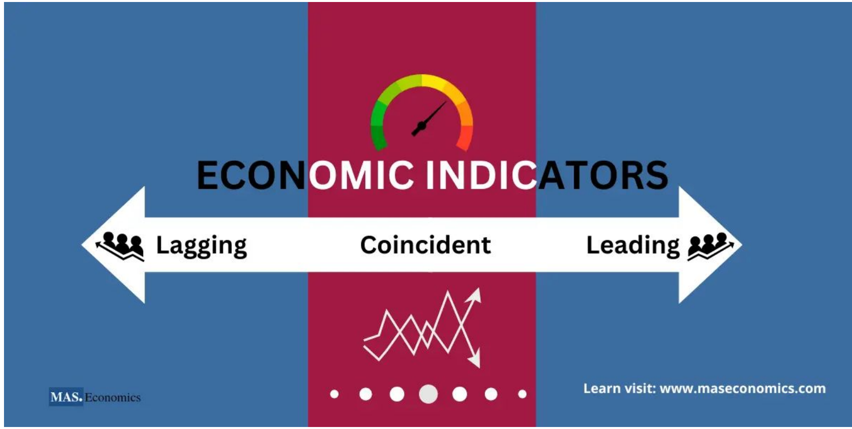
- Trade imbalances can lead to economic instability; reliance on global supply chains may expose economies to external shocks.

pc: econlib

Economic Indicators

Leading Indicators:

- Predict future economic activity (e.g., stock market performance, manufacturing orders, and consumer sentiment).
- **Importance for Tech:** Understanding leading indicators helps tech companies forecast demand for their products and adjust production accordingly.



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Economic Indicators

Lagging Indicators:

- Reflect past economic performance (e.g., unemployment rates, GDP growth); useful for confirming trends.
- **Example:** A tech company may analyze lagging indicators to evaluate the effectiveness of past strategic decisions.

Coincident Indicators:

- Occur simultaneously with the business cycle (e.g., retail sales, industrial production).