

# Introduction to Macroeconomics: Subjects, Challenges and Data

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# Macroeconomics is about...

- Economic growth
- Economic fluctuations
- Economic policy: monetary and fiscal
- Other issues, like inflation, unemployment, inequality and poverty

# Economic Growth

Enourmous differences among countries. Why some countries are rich and some are poor? Why some countries are growing, and others are not?

Possible causes of growth:

- investment
- schooling
- institutions
- culture
- geography

# Economic Fluctuations

Business cycles: deviations from trend in the short run. Recessions (depressions) and expansions.

Sources of fluctuations:

- endogenous (coordination failure)
- technological shocks
- demand shocks
- monetary shocks, etc.

Can we mitigate them? Do we need to fight the cycles? If yes, how should we do it?

# Economic Policy

Two main kinds of government economic policy:

- monetary (money stock, interest rate, liquidity)
- fiscal (taxes and government expenditures)

Should policies be expansionary?

Consequences of monetary policy: inflation or growth?

Consequences of fiscal policy: growth or debt crisis?

# Challenges of Macroeconomics

In social sciences, experiments are limited or impossible. This is especially true for macroeconomics.

On the other hand, macroeconomics is political. Certain parties favor certain policies. Macroeconomics is always in the news and affects everyone's lives.

# How Macro Works

No real experiments - theories and models. For example, demand-supply model:

$$Q_s(P) = Q_d(P) = Q$$

$P$  and  $Q$  are endogenous.

$$Q_s(P, w) = Q_d(P, Y) = Q$$

$Y$  and  $w$  are exogenous.

# Aggregation

Previous example - only one market. Micro. Partial equilibrium.

Macro deals with many markets and their interactions.  $Y$  and  $w$  can be endogenous.

General equilibrium.

Aggregation - too complicated models - need for simplifying assumptions.



# Assumptions

- market clearing
- flexible or sticky prices
- representative agents
- competitive markets
- closed economy
- simplified government

# Macroeconomic Data

Many macroeconomic quantities can be classified as a **stock** or a **flow**. A stock is a quantity measured at a given point in time, whereas a flow is a quantity measured per unit of time. Flow of investment generates the stock of capital.

Main variables:

- GDP
- Inflation
- Unemployment

How to measure them?

# GDP definition

GDP (Gross Domestic Product)

Total income

Total expenditure

Total value added

Consider a simple one-good market.

A firm hires labor - Income

A firm produces a good - Value Added

A firm sells it - Expenditure

# Aggregation of GDP

How do we add apples and oranges?

Prices!

$$\text{GDP} = (\text{Price of Apples} \times \text{Quantity of Apples}) + (\text{Price of Oranges} \times \text{Quantity of Oranges})$$

This is *nominal* GDP. If you adjust it for the aggregate changes in the price level - *real* GDP.

# What Is Included into GDP?

- All goods and services produced on the territory of the country
- Inventories (unsold goods)
- Imputed value of some services that are not explicitly sold (rent for the house one owns).

# What Is Not Included into GDP?

- Intermediate goods
- Home production
- Shadow economy

# Real GDP

Real GDP - GDP calculated in some fixed set of prices. Often base year. F.e. base year is 2002:

Real GDP (2002) = (2002 Price of Apples X 2002 Quantity of Apples) + (2002 Price of Oranges X 2002 Quantity of Oranges).

Real GDP (2003) = (2002 Price of Apples X 2003 Quantity of Apples) + (2002 Price of Oranges X 2003 Quantity of Oranges).

Also, chain-weighted measures.



# National Income Accounts

$$Y = C + I + G + NX$$

- ① Consumption
- ② Investment
- ③ Government Purchases
- ④ Net Exports

# How To Compare GDP's:

Among periods:

- Only same periods/seasons
- In the same prices

Among countries:

- In the same measurement (same currency)
- In per capita values
- Purchasing power adjusted

# Inflation

Inflation - increase in the general level of prices.

Measured by various price indices (prices of different baskets of good and services).

CPI and PPI. GDP Deflator

# CPI

## Consumer Price Index

A basket of goods and services reflecting the average consumption.

Consists of two vectors - weights and prices. Both change every period. Weights are approximated by amounts of consumption.

Drawbacks: overstatement of some price increases (weights adjust with the lag); many prices are administratively regulated.

# GDP Deflator

Deflator = Nominal GDP / Real GDP

Unlike CPI, the weights of goods are not fixed. Deflator is Paasche index. CPI is Laspeyres index.

Reflects many prices that are not of interest to consumers.

# Unemployment

Two ways to measure:

- Registered, official unemployment
- Survey of a representative sample of people

In a survey, a person is not only asked if she is employed, but also if she is actively searching for a job.

# Main Labor Market Statistics

Labor Force = Number of Employed + Number of Unemployed

Unemployment Rate = Number of Unemployed / Labor Force

Labor Force Participation Rate = Labor Force / Adult Population

# Problems with Unemployment Measurement

- Official registered unemployment does not include everyone;
- Surveys may not be representative;
- Discouraged workers - not looking actively;
- Job creation and job destruction flows.