An Introduction to Macroeconomics

Topics Covered

- What is Macroeconomics
- Macro Economic Goals
- GPD
- Modern Economic Growth
- The Business Cycle
- Employment
- Inflation

Macroeconomics

- Macroeconomics is the branch of economics that studies the behavior of the economy as a whole, including national income, employment, inflation, and government policies.

- Contrasts with Microeconomics: Focuses on individual markets, consumer behavior, and firm behavior.

Macroeconomic Goals

1. Economic Growth

- Economic growth refers to the sustained increase in the production of goods and services in an economy over time.
- Economic growth leads to higher standards of living, increased employment opportunities, and improved living conditions for the population.
- Factors Contributing to Growth: Investment in physical capital (such as machinery and infrastructure), technological progress, and development of human capital through education and training.

Macroeconomic Goals

2. Price Stability (Low Inflation)

- Price stability refers to a low and stable rate of inflation, where prices of goods and services do not experience rapid or unpredictable changes.
- Price stability is crucial for maintaining the purchasing power of individuals and businesses, promoting confidence in the economy, and facilitating long-term planning and investment decisions.
- Effects of Inflation: Inflation erodes the purchasing power of money, distorts price signals, and can lead to income redistribution and uncertainty in economic transactions.

Macroeconomic Goals

3. Full Employment

- Occurs when all available resources, particularly labor, are utilized efficiently in the economy, leading to minimal involuntary unemployment.
- Types of Unemployment:
  - Frictional Unemployment: Temporary unemployment due to transitions between jobs or entering the workforce.
  - Structural Unemployment: Unemployment caused by a mismatch between the skills demanded by employers and the skills possessed by workers.
  - Cyclical Unemployment: Unemployment resulting from fluctuations in economic activity, such as during recessions.
- Promotes economic stability, reduces social and economic disparities, and contributes to overall economic prosperity by maximizing productive capacity.

Purpose of Macroeconomic Measures

- **Economic Monitoring:** Macroeconomic indicators like GDP and the unemployment rate are used to monitor economic performance, trends, and fluctuations over time.

- **Policy Formulation:** Governments, central banks, and policymakers rely on macroeconomic data to formulate and assess the effectiveness of economic policies, such as fiscal stimulus, monetary interventions, and labor market regulations.

- **Business Decision-Making:** Businesses and investors use macroeconomic measures to evaluate market conditions, assess risks, and make strategic decisions related to production, investment, hiring, and pricing.

Gross Domestic Product

- Measure of aggregate output
- Monetary measure
- Avoid multiple counting
  - Market value final goods
  - Ignore intermediate goods
  - Count value added

Gross Domestic Product

- Exclude financial transactions
  - Public transfer payments
  - Private transfer payments
  - Stock (and bond) market transactions
- Exclude second hand sales
  - Sell used car to a friend

Two Approaches to GDP

Expenditures, or output, approach

Consumption expenditures by households
plus
Investment expenditures by businesses
plus
Government purchases of goods and services
plus
Expenditures by foreigners

= GDP =

Income, or allocations, approach

Wages
plus
Rents
plus
Interest
plus
Profits
plus
Statistical adjustments

Two Approaches to GDP

- Income approach
  - Count income derived from production
  - Wages, rental income, interest income, profit
- Expenditure approach
  - Count sum of money spent buying the final goods
  - Who buys the goods?

Expenditure VS Income Approach

In Billions

Receipts Expenditures Approach		Allocations Income Approach	
Personal Consumption (C)	$10,089	Compensation	$ 7792
Gross Private Domestic Investment (I_g)	1628	Rents	268
Government Purchases (G)	2931	Interest	788
Net Exports (X_n)	-392	Proprietor's Income	1041
		Corporate Profits	1309
		Taxes on Production and Imports	1090
		National Income	*$12,288*
		Net Foreign Factor Income (-)	105
		Statistical Discrepancy (+)	209
		Consumption of Fixed Capital (+)	1864
Gross Domestic Product	*$ 14,256*	*Gross Domestic Product*	*$ 14,256*

Nominal vs. Real GDP

- GDP is a dollar measure of production
- Using dollar values creates problems
- Nominal GDP (*Unadjusted)*
  - Use prevailing price
- Real GDP *(Adjusted)*
  - Reflect changes in price
  - Use base year price

GDP Price Index

- Use price index to determine real GDP

$$\text{Price Index in Given Year} = \frac{\text{Price of Market Basket in Specific Year}}{\text{Price of Same Basket in Base Year}} \times 100$$

$$\text{Real GDP} = \frac{\text{Nominal GDP}}{\text{Price Index (in hundredths)}}$$

Calculating Real GDP

TABLE 27.6 Calculating Real GDP (Base Year = Year 1)

Year	(1) Units of Output	(2) Price of Pizza per Unit	(3) Price Index (Year 1 = 100)	(4) Unadjusted, or Nominal, GDP, (1) × (2)	(5) Adjusted, or Real, GDP
1	5	$10	100	$ 50	$50
2	7	20	200	140	70
3	8	25	250	200	80
4	10	30	___	___	___
5	11	28	___	___	___

Modern Economic Growth

- Standard of living measured by output per person
- No growth in living standards prior to Industrial Revolution
- Modern economic growth
  - Output per person rises
  - Not experienced by all countries

- Per capita income stood at US$1,568 as compared to US$ 1,765 last year (Pak)

Some Stats

- Output growth
  - 3.4% global growth in 2022
  - real GDP posted a growth of 0.29% in FY2023 (Pak)
- Unemployment rate
  - unemployment rate 6.3% (Pak)
- Inflation rate
  - Global inflation 8.7% in 2022
  - 29.2% during Jul-May, FY 2023 (Pak)

Determinants of Growth

Supply factors

- Increases in quantity and quality of natural resources
- Increases in quality and quantity of human resources
- Increases in the supply (or stock) of capital goods
- Improvements in technology

Demand factor

- Households, businesses, and government must purchase the economy's expanding output

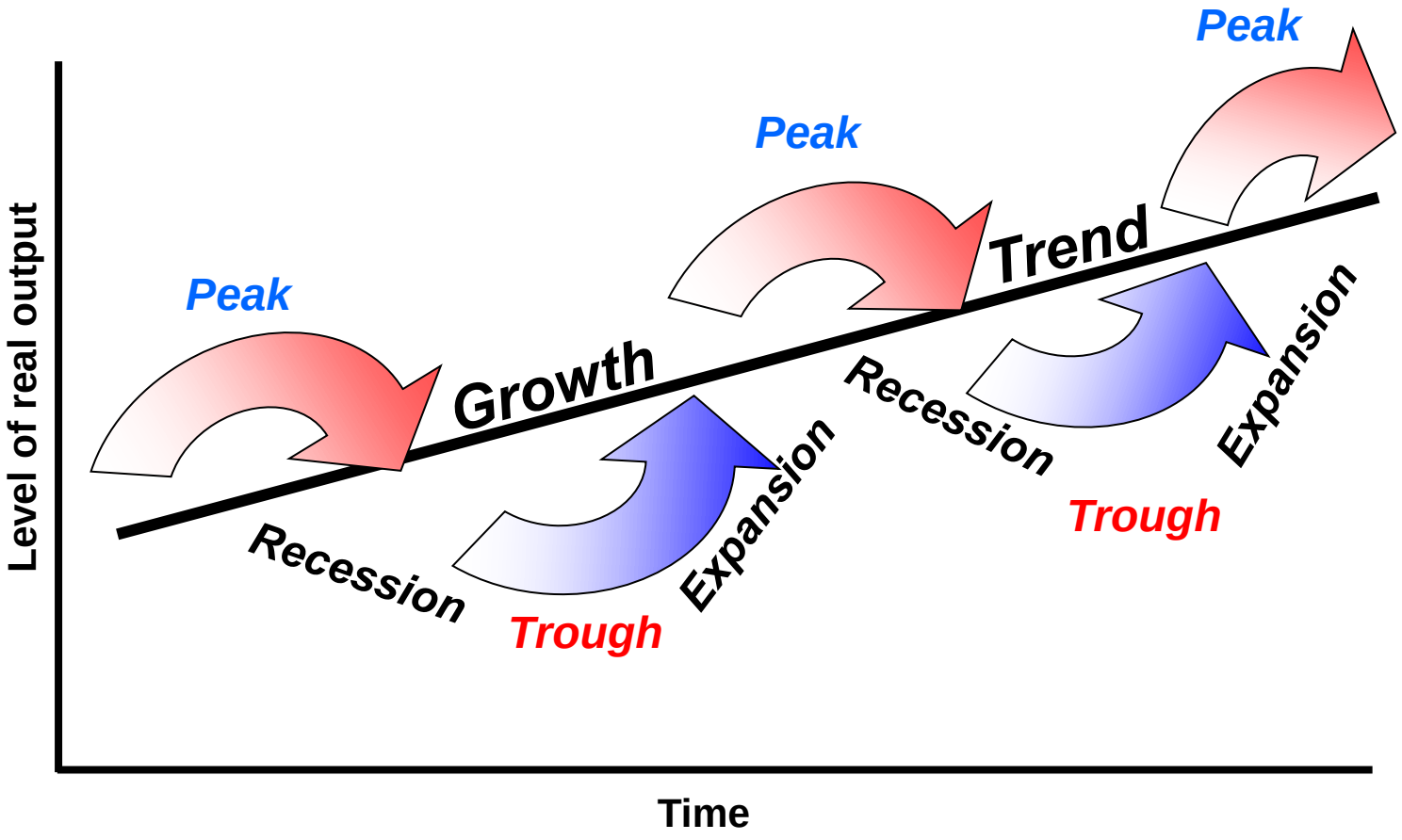
Efficiency factor

- Must achieve economic efficiency and full employment

The supply, demand, and efficiency factors in economic growth are related. Change in one impacts on others.

The Business Cycle

Alternating increases and decreases in economic activity over time.



Causation: A First Glance

- Business cycle fluctuations
  - Economic shocks
    - unexpected events that individuals and firms may have trouble adjusting to.
  - Short-run price stickiness
    - prevents the economy from rapidly adjusting to shocks
  - Sources of shocks:
    - *Irregular innovation*
    - *Productivity changes*
    - *Monetary factors*
    - *Political events*
    - *Financial instability*

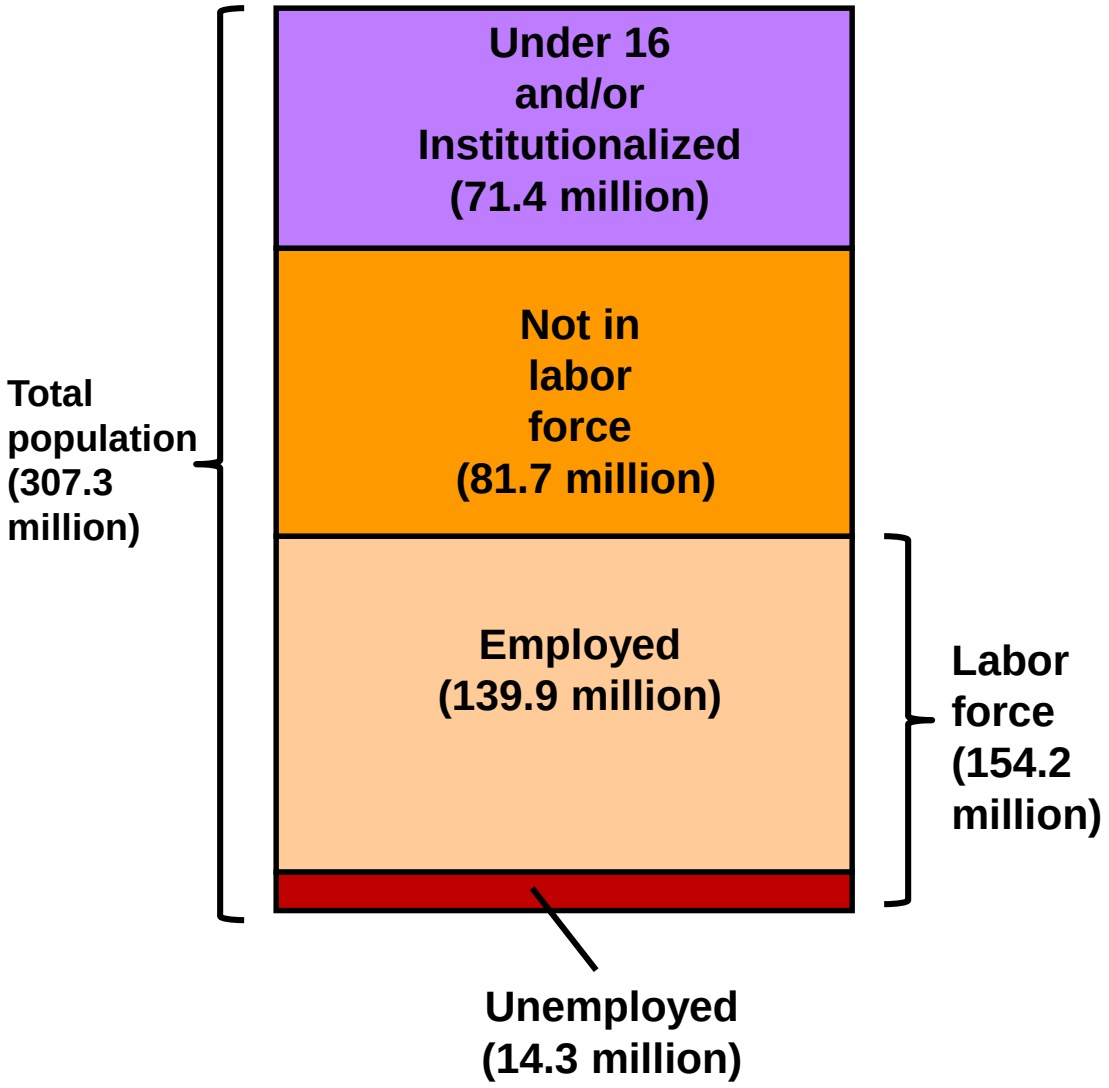
Measurement of Unemployment

- The U.S. Bureau of Labor Statistics (BLS) divided the population into three groups:

  1. People under 16 years of age and people who are institutionalized
  2. “Not in labor force,”: potential workers but are not employed and are not seeking work
  3. Labor force

$$\text{Unemployment rate} = \frac{\#\text{ of unemployed}}{\text{labor force}} \textbf{ X 100}$$

Measurement of Unemployment



Unemployment rate =

$$\frac{\text{\# of unemployed}}{\text{labor force}} \times 100$$

Unemployment rate =

$$\frac{14{,}265{,}000}{154{,}142{,}000} \times 100 = 9.3\%$$

Economic Cost of Unemployment

- Economy is “fully employed” when it is experiencing only frictional and structural unemployment.
  - Full employment occurs when there is no cyclical unemployment.
- GDP Gap
  - GDP gap = actual GDP – potential GDP
  - Can be negative or positive
- Okun’s Law
  - Every 1% of cyclical unemployment creates a 2% GDP gap

Noneconomic Costs

- Loss of skills and loss of self-respect
- Plummeting morale
- Family disintegration
- Poverty and reduced hope
- Heightened racial and ethnic tensions
- Suicide, homicide, fatal heart attacks, mental illness
- Can lead to violent social and political change

Inflation

- General rise in the price level
- Inflation reduces the “purchasing power” of money
- Consumer Price Index (CPI)

$$\text{CPI} = \frac{\text{Price of the Most Recent Market Basket in the Particular Year}}{\text{Price estimate of the Market Basket in Base Year}} \times 100$$

$$\text{CPI} = \frac{207.3 - 201.6}{201.6} \times 100 = 2.8\%$$

Types of Inflation

- Demand-Pull inflation
  - When total spending exceeds the economy's ability to provide goods and services at the existing price level;
  - Total spending pulls the price level upward.
  - Central bank issues too much money

- Cost-Push inflation
  - When factors such as rapid increases in the prices of imported raw materials drive up per-unit production costs at each level of output;
  - higher costs *push* the price level upward.

Redistribution Effects of Inflation

- Nominal income
  - Unadjusted for inflation
- Real income
  - Nominal income adjusted for inflation

$$\text{Real income} = \frac{\text{nominal income}}{\text{price index (in hundredths)}}$$

If nominal income rises by 10 percent from $100 to $110 and the price level (index) rises by 6 percent from 100 to 106, then calculate the real income.

Who is Hurt by Inflation?

- Fixed-income receivers
  - Real incomes fall
- Savers
  - Value of accumulated savings deteriorates
- Creditors
  - Lenders get paid back in “cheaper dollars”

Who is Unaffected by Inflation?

- Flexible-income receivers
  - Cost-of-living adjustments **(**COLAs)
  - Social Security recipients
  - Union members
- Debtors
  - Pay back the loan with “cheaper dollars”