



## **AP Macroeconomics**

### **Unit 2 - Study Guide**

# **Topic 1: Circular Flow Model of GDP**

**Circular Flow Model**: a model that explains the flow of goods, services, and money in an economy

## **Components of the Circular Flow Model:**

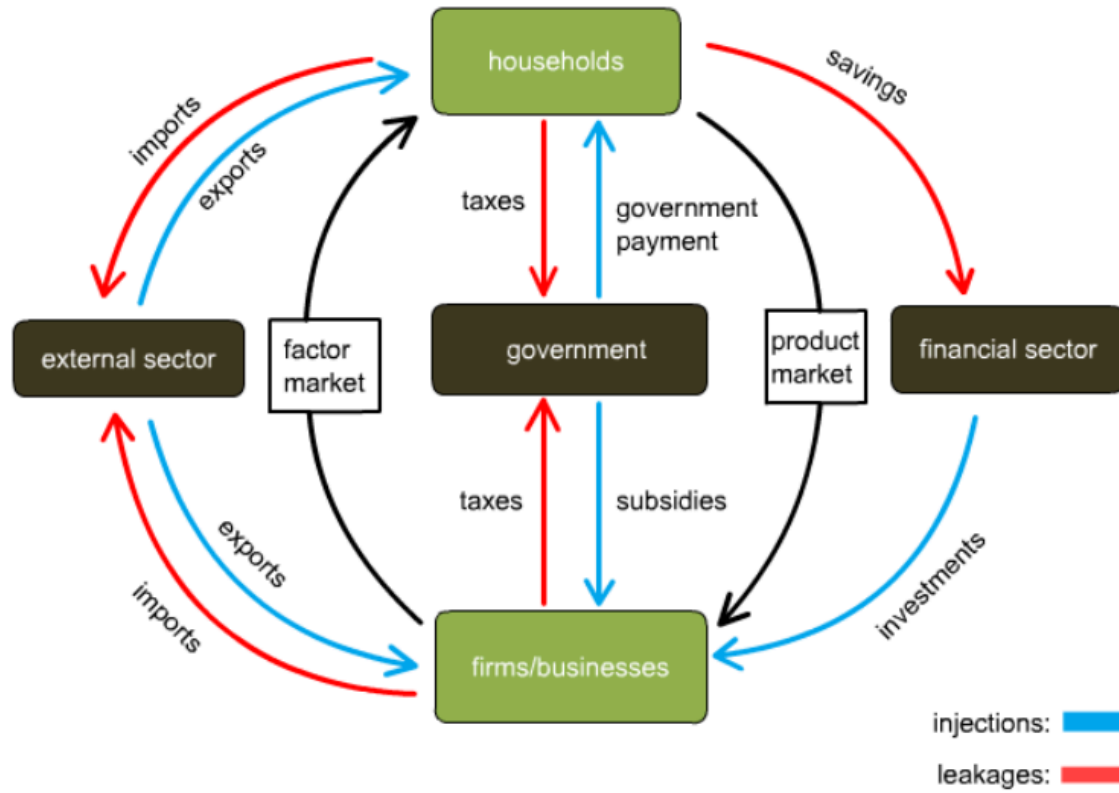
**Households**: individuals or families

**Firms**: businesses

**Government**

**Financial Sector**: banks or other financial intermediaries

**External Sector**: other countries



**Injections:** when money that was previously not flowing through the economy ENTERS into the flow of the economy

**Leakages:** when money that was previously flowing through the economy EXITS the flow of the economy

Injections	Leakages
Investments / Loans Government spending Exports	Personal savings Taxes Imports

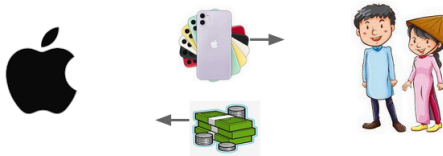
**Factor Market:** a market between households and firms, where the factors of production (land, labor, capital) are exchanged for money

- Households give factors of production and receive money
- Firms give money and receive factors of production

**Product Market:** a market between households and firms, where the finished goods and services are exchanged for money

- Households give money and receive finished goods and services
- Firms give finished goods and services and receive money

### Product Market



### Factor (Resource) Market



## Topic 2: GDP and Limitations of GDP

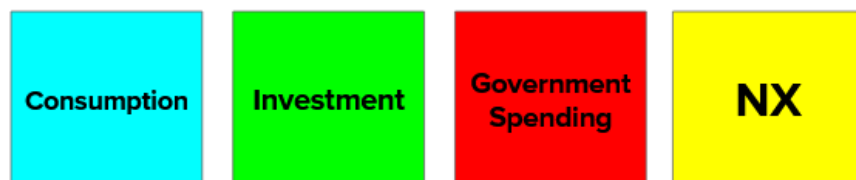
**GDP (Gross Domestic Product):** the dollar value of all of the goods and services produced *within a country's borders* during a given year

There are two different ways to measure GDP - the expenditure approach and the income approach. Both methods tend to yield the same results.

**Expenditure Approach to GDP:** measures GDP by taking the sum of all spending on final goods and services within a country's border in a given year

$$\text{GDP} = C + I + G + NX$$

### Five Types of Spending:



**Consumption:** The amount of money households spend on new goods and services

**Investment:** the amount **businesses** spend on **capital goods**, like machinery and factories

**Government Spending:** Expenditures the government makes in return for a good or service (doesn't include transfer payments)  
--> government pays for a new road to be built (counts towards GDP)  
--> government gives unemployment benefits to people (transfer payment) (doesn't count)

**Net Exports:** the difference between the amount a country earned from exports and the amount they spent on imports ( $X - M$ )

- Exports:  $X$
- Imports:  $M$

**Income Approach to GDP:** the sum of all income within a country in a given year

$$\text{GDP} = W + I + R + P$$

$W$  - Wages (the largest portion of a country's total income)

I - Interest  
R - Rent  
P - Profits

### **Why do the expenditure approach and income approach yield similar results?**

Every time you buy something (an expenditure), someone will earn that money either in the form of profits, wages, rent, etc. Thus, every dollar expended is to someone else income! For example, let's say you go to a diner and order a \$10 hamburger. While to you you spent \$10, to the diner they EARNED \$10! This concept is one and the same across economics

## **Topic 3: Limitations of GDP**

Economists use gross domestic product (GDP) in a variety of ways as an economic indicator and comparative tool.

- One use of GDP is to measure the overall economic performance of a country.
- Often used to measure economic growth

**Limitations of GDP:** GDP is an imperfect measure for four main reasons (ACRONYM: P.I.E.S)

**Population:** GDP does not consider differences in population. Norway and Argentina have similar GDP, so you might assume they have similar standard of living. But Argentina's population is MUCH larger than Norway.

- Solution: Per Capita GDP

**Inequality:** GDP shows the money earned from goods and services produced, but does not show how that money is distributed in society

**Environment:** Factories that pollution help add to GDP, but negatively impact the environment. A high GDP tells us nothing about the quality of the environment in a given country.

**Shadow Economy:** GDP does not account for production that happens on the black market, or things that are sold “under the table” without the government being aware

## **Topic 3: Unemployment**

### **Key Things to Know:**

- Unemployment Rate
- Labor Force Participation Rate
- Who counts as unemployed?
- Different types of unemployment

**Unemployment Rate:** the percentage of a country’s workforce that is currently unemployed and *actively looking for work*

- Does not include ***discouraged workers*** (and this makes the unemployment rate less accurate)

Unemployment Rate = Number of Unemployed / Labor Force

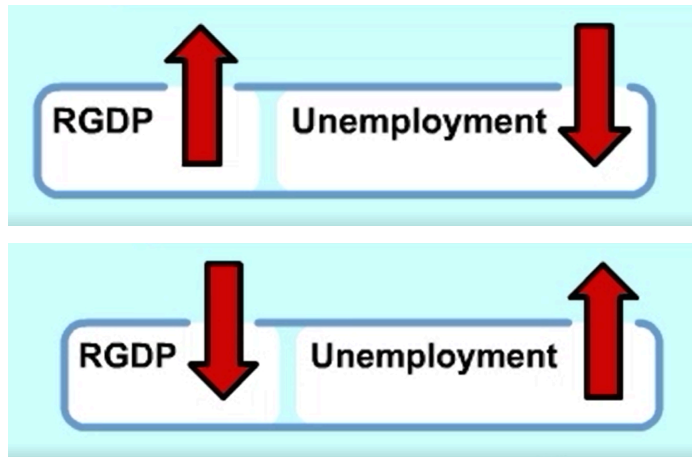
**Labor Force:** the number of people in an economy that are either working or actively seeking employment (employed + unemployed)

**Labor Force Participation Rate:** the percentage of a country’s eligible population that is currently participating in the labor force

Labor Force Participation Rate = Labor Force / Total Working Age Population

**IMPORTANT:** There is an inverse relationship between GDP and unemployment

- When there are few unemployed people, production increases, and GDP increases
- When there are lots of unemployed people, production decreases, and GDP decreases



## **Four Types of Unemployment:**

**Cyclical Unemployment:** occurs when people lose their jobs because of fluctuation in the economy related to the business cycle

--> Think of economic cycles of growth and recession

**Structural Unemployment:** occurs when people lose their jobs because their skills are no longer in demand

--> For example: If self-driving cars replace regular taxis, taxi driver will be structurally unemployed

**Frictional Unemployment:** people who are unemployed as they move around, change jobs, or enter the workforce

--> Example: you graduate college and spend 6 months looking for a job



**Seasonal Unemployment:** caused by fluctuations in production caused by changes in the time of year

**Full Employment:** when the economy is experiencing no cyclical unemployment

- this refers to a state of the economy - “the economy is operating at full employment”

**Natural Rate of Unemployment:** occurs when an economy is experiencing zero cyclical unemployment (there may still be some structural and frictional unemployment)

- this is an actual number - “the US’s natural rate of unemployment is 4.4%”

**Unemployment has both macroeconomic and social costs**

- When a large portion of the economy is unemployed, it means society is not using its resources effectively
- There is a **negative output gap**, meaning that our actual GDP is less than the potential GDP

**Limitations of the Unemployment Rate:**

- The unemployment rate does not consider discouraged workers to be unemployed, since they have exited the labor market. This leads to a potentially inaccurate unemployment rate (lower than the real unemployment rate)

**Discouraged Workers:** are a group of individuals in an economy who have been actively looking for work but have given up due to feeling discouraged from consistent unemployment and failed efforts of looking for work opportunities

- not a part of the labor force
- therefore do not count towards the unemployment rate, even though they are jobless

The following table shows labor-market data for Country X.

Employed	180,000
Frictionally unemployed	10,000
Structurally unemployed	5,000
Cyclically unemployed	5,000
Not in the labor force	100,000

- b. Calculate the unemployment rate in Country X. Show your work.
- c. Calculate the labor force participation rate in Country X. Show your work.
- d. Draw a correctly labeled graph of the production possibilities curve for Country X, with consumer goods on the horizontal axis and capital goods on the vertical axis. Indicate a point on your graph, labeled Z, that reflects the current level of unemployment.

The text box should be used for notes only and not your final response.

## **Price Indices and Inflation**

### **Things You Must Know How to Do:**

- Calculate CPI using market basket of goods
- Identify the “winners” and “losers” of unexpected inflation
- Calculate nominal and real GDP using a table of goods
- Calculate real GDP using the GDP deflator

**Nominal Variables:** calculated using current prices (unchanged)

**Real Variables:** calculated using base year prices  
(changed)

- Real variables try to remove the impact of inflation, to give a more accurate representation of data

**Nominal GDP:** the total value of goods produced using current prices

**Real GDP:** the value of the goods and services produced by an economy in a specific period, adjusted for price changes

- removes the impact of changes in price, to show ONLY changes in production

**Inflation:** the general increase in prices over a period of time

**Deflation:** the general decrease in prices over a period of time

**Disinflation:** a decrease in the rate that prices are increasing

**Consumer Price Index (CPI):** an index that measures the prices paid for “typical goods” bought by consumers

- The CPI is based on market basket of goods services, that is representative of purchases made by a typical urban household

**Formula to Calculate CPI:**

$$\frac{\text{Current year cost}}{\text{Base year cost}} \times 100 = \text{CPI}$$

- \* CPI can track changes in price over long spans of time
- \* Inflation rate tracks the year-to-year change in prices

**Finding Inflation Rate Using Market Baskets:**

## Inflation Rate

$$\text{I.R.} = \frac{\text{MB Now} - \text{MB Y1}}{\text{MB (Market Basket) Y1}} \times 100$$

### Calculating Real GDP Using Market Baskets:

- Use current level production and base year prices

Year 2015

Item	Quantity	Price
Goods	120	\$50
Services	100	\$65

**Nominal GDP 2015: \$12,500**

**Nominal GDP 2016: \$14,850**

**Real GDP 2016: \$13,650**

Year 2016

Item	Quantity	Price
Goods	130	\$55
Services	110	\$70

**GDP Deflator = (Nominal GDP / Real GDP) \* 100**

**GDP Deflator = (14,850 / 13,650) \* 100 = 108.79**

**Based on the market baskets from the given years, what was the inflation rate from 2015 to 2016?**

## **GDP Deflator Formula:**

**GDP Deflator = (Nominal GDP / Real GDP) \* 100**

$$GDP\ Deflator = \frac{Nominal\ GDP}{Real\ GDP} \times 100$$

Year	Nominal GDP	Real GDP	GDP Deflator
2015 Base yr.	\$75,000	\$75,000	$= \frac{75,000}{75,000} \times 100 = 100$
2016	\$88,700	\$85,000	$= \frac{88,700}{85,000} \times 100 = 104$
2017	\$101,600	\$88,000	$= \frac{101,600}{88,000} \times 100 = 115$