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Discussion Session 2 (Chapter 2)

PART A: LONG QUESTIONS

- 1) An economy produces three goods: cars, computers and oranges. Quantities and prices per unit for years 2005 and 2006 are as follows:

	2005		2006	
	Quantity	Price	Quantity	Price
Cars	10	\$2000	12	\$3000
Computers	4	\$1000	6	\$500
Oranges	1000	\$1	1000	\$1

- What is nominal GDP in 2005 and in 2006?
 - Using the prices for 2005 as the set of common prices, what is real GDP in 2005 and in 2006?
 - What is the GDP Deflator in 2005 and 2006?
- 2) Consider an economy with three companies A, B, C. Company A grows oranges. Half of the oranges are used by Company B to produce orange juice. Company B exports part of its products and sells the rest to Company C. Company C is a retail store that distributes the juice manufactured by B in the domestic market and the rest of the oranges harvested by A. Below are balance sheets for all three companies for year 2005 and 2006.

COMPANY A		
	2005	2006
Revenues from sales	\$100	\$200
Expenses		
Wages	\$50	\$50
Profits	\$50	\$150
COMPANY B		

	<u>2005</u>	<u>2006</u>
Revenues from sales	\$200	\$200
<u>Expenses</u>		
Wages	\$50	\$50
Orange purchases	\$50	\$100
Profits	\$100	\$50
<u>COMPANY C</u>		
	<u>2005</u>	<u>2006</u>
Revenues from sales	\$500	\$600
<u>Expenses</u>		
Juice purchases	\$100	\$100
Orange purchases	\$50	\$100
Profits	\$350	\$400

- a. Show three different ways to compute this economy's GDP in both 2005 and 2006.

$$\text{GDP} = \text{Value of final goods produced} = (200-100) + 500 = 600$$

$$\text{GDP} = \text{Value added} = 100 + (200-50) + (500-100-50) = 600$$

$$\text{GDP} = \text{Sum of incomes} = \text{Incomes from labor} + \text{Incomes from profits} = (50+50) + (50+100) + 350 = 600$$

Similarly, it can be shown that the GDP in 2006 equals to 700.

- b. Suppose the number of the oranges and the amount of the orange juice produced are exactly the same for both years. Compute the rate of inflation from 2005 to 2006 based on the GDP deflator.

$$\text{GDP deflator for 2005} = (\text{Nominal GDP in 2005})/(\text{Real GDP in 2005}) = 600/(\text{Real GDP in 2005})$$

$$\text{GDP deflator for 2006} = (\text{Nominal GDP in 2006})/(\text{Real GDP in 2006}) = 700/(\text{Real GDP in 2006})$$

Since the real outputs are exactly the same for year 2005 and 2006, Real GDP 2005 = Real GDP 2006, regardless of the choice of base year price set.

$$\text{Therefore, inflation from 2005 to 2006} = (700-600)/600 = 16.7\%$$

- c. In addition to (b), suppose all individuals in this economy consume only oranges and juices bought from Company C, and Company C sells to consumers only. Compute the rate of inflation from 2005 to 2006 based on the Consumer Price Index.

Since the aggregate bundle of consumption goods remains the same from 2005 to 2006, the change in aggregate expenditures on consumption should reflect the change in CPI. The revenues of Company C equals to the total expenditures on consumption, therefore, inflation from 2005 to 2006 = $(600-500)/500 = 20\%$

- 3) Consider the following labor force statistics for an economy.

Total population (000s)	1500
Number of adults employed (000s)	750
Number of adults unemployed and looking for work (000s)	50
Number of adults unemployed and not looking for work (000s)	100
Number of elderly and children (none of whom work or look for work) (000s)	250

- i) Calculate the unemployment rate for this economy.

$$\text{Unemployment rate} = U/(U+L)$$

Where U is the number of unemployed and looking for work, and L is the number of employed. So unemployment rate = $50/(50+750)=6.25\%$

- ii) Assume that there is an economic boom, and 20.000 new jobs are created, all of which are filled by adults who were previously unemployed but looking for work. Calculate the new unemployment rate.

There is no change in the labor force since recently employed people are chosen from unemployed population. Thus, denominator is the same. Number of unemployed people declined to 30 (000) and labor force is still 800 (770 +30)

$$\text{New unemployment rate} = 30/(770+30)=3.75\%$$

- 4) Beside GDP deflator what other price indices are used in measuring inflation rate? Compare different price indices.

Answer:

GDP Deflator = gives the average price of output (the final goods produced in the economy)

CPI = Consumer Price Index Average price of consumption (goods people consume)

PPI = Producer Price Index Prices of domestically produced goods in manufacturing, mining, agriculture, fishing, forestry, and electric utility industries.

Each index gives us different information. One may choose one of the price indices depending mostly on what they are interested in knowing. If one wants to know how the price level of goods produced in the country is changing, then the GDP deflator would give

the most accurate picture. On the other hand, if one was interested in knowing how the price level of consumer goods was changing over time, then CPI would be the best.

- 5) Using the article below as a reference, could you evaluate the key takeaways from the US September Producer Price Index (PPI) report and discuss its potential effects on inflation trends, consumer prices, and future monetary policy? Additionally, consider how external factors like natural disasters and geopolitical tensions could influence inflationary pressures and economic conditions moving forward.

<https://edition.cnn.com/2024/10/11/economy/us-producer-price-index-inflation-september/index.html>

PART B: TRUE/FALSE/UNCERTAIN (Explain it.)

1. Inflation is bad for the economy because goods and services are more expensive.

UNCERTAIN. Inflation usually leads to distortions because all prices and wages do not rise proportionately during inflationary periods. So, inflation affects income distribution and may lead to uncertainties about the future which is considered not good. (If all prices rise proportionally it is called pure inflation and it would just be a minor inconvenience.)

2. The rate of inflation computed using the CPI is a better index of inflation than the rate of inflation computed using the GDP deflator.

UNCERTAIN. Which index is better depends on what we are trying to measure –inflation faced by consumers or by the economy as a whole.

3. GDP is the value of all goods and services produced in the economy.

FALSE. Gross Domestic Product is defined as the total value of the FINAL GOODS AND SERVICES produced in the economy. (Not all goods and services)

PART C: MULTIPLE CHOICE

1. Suppose an individual wishes to provide a definition of GDP for a given period. Which of the following phrases would be used when defining GDP?

A) final and intermediate goods and services
B) final and intermediate goods and services produced by the private sector only
C) final and intermediate goods and services, plus raw materials
D) all of the above
E) none of the above

2. When nominal GDP falls for a given period, we know with certainty that:

A) real output and the price level (GDP deflator) have both decreased.
B) real output has increased and the price level has decreased.
C) the price level (GDP deflator) has decreased.
D) real output has decreased.
E) either real output or the price level (GDP deflator) have decreased.

3. Use the following information to answer this question. If nominal GDP rises from \$40 trillion to \$48 trillion, while the GDP deflator rises from 2.0 to 2.4, the percentage change in real GDP is:

A) 10% B) 9.1% C) **0%** D) -10% E) 20%.

4. In a given year, suppose a company spends \$200 million on intermediate goods and \$300 million on wages, with no other expenses. Also assume that its total sales are \$600 million. The value added by this company equals:

A) \$100 million B) \$200 million C) \$300 million D) **\$400 million** E) \$500 million.

5. Use the following information to answer this question: 100 million people are working, 10 million are not working but are looking for work, and 20 million are not working and have given up looking for work. The official unemployment rate for that month is:

A) 7.7% B) **9.1%** C) 10% D) 23% E) 30%.

6. The GDP deflator provides a measure of which of the following?

- A) the ratio of GDP to the size of the population
- B) the ratio of GDP to the number of workers employed
- C) the price of a typical consumer's basket of goods
- D) real GDP divided by the aggregate price level
- E) **the ratio of nominal GDP to real GDP**

7. The prices for which of the following goods are included in both the GDP deflator and the consumer price index?

- A) good bought by governments
- B) goods bought by firms
- C) goods bought by foreign households (i.e., exports)
- D) **goods bought by households**
- E) all of the above

8. One of the reasons macroeconomists have concerns about inflation is that inflation causes:

- A) nominal GDP to fall.
- B) real GDP to rise.
- C) wages to rise as fast as prices.
- D) real GDP to exceed nominal GDP.
- E) **none of the above**

9. Deflation generally occurs when which of the following occurs?

- A) the rate of inflation falls, for example, from 4% to 2%
- B) nominal GDP does not change
- C) **the consumer price index decreases**
- D) the consumer price index is greater than the GDP deflator

10. Real GDP is also known as

- A) Nominal national income

- B) Current-Dollar national income
- C) Constant-Dollar national income**
- D) Net national income
- E) None of the above

11. A worker is considered unemployed if that worker

- A) Does not have a job
- B) Does not have a job, but is actively searching for one**
- C) Is collecting unemployment insurance
- D) Is not working but previously held a job

12. is a type of unemployment that arises when workers are searching for new jobs or are transitioning from one job to another.

- A) Structural Unemployment
- B) Frictional Unemployment**
- C) Natural Rate of unemployment
- D) Historical Unemployment
- E) Cyclical Unemployment