

## Econ 108: Principles of Macroeconomics \_ Spring 2023

## Review Questions - Chapter 20

## Unemployment and Inflation

## MULTIPLE CHOICE QUESTIONS

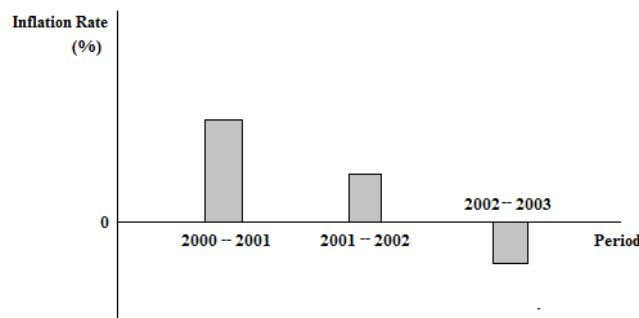
## 1. Inflation &amp; Deflation Effects

If deflation occurs and your (nominal) income is fixed, your real income:

- a) will fall.
- b) will go up.
- c) will still be equal to your nominal income.
- d) is constant.

## 2. Inflation Rate and Price Levels

The following graph gives the inflation rates observed over the years. Which one of the following claims is **wrong**?



- a) Price level during the 2001-2002 period is higher than that of 2000-2001 period.
- b) Price level during the 2002-2003 period is lower than that of 2001-2002.
- c) There is deflation during the 2002-2003 period.
- d) There is deflation during the 2001-2002 period.

## 3. Real and Nominal Variables

If CPI systematically overstates inflation, then indexing rent to CPI (adjusting according to CPI) during an inflationary period

- a) makes landlord unhappy
- b) increases real rent.
- c) decreases nominal rent.
- d) keeps nominal rent the same.

## 4. Real and Nominal Interest Rates

You agree to lend 100 for one year at a nominal interest rate of 10%. You anticipate that inflation will be 4% over that year.

If inflation is instead 3% over that year, which of the following is true?

- a) The real interest rate you earn on your money is lower than you expected.
- b) The purchasing power of the money that will be repaid to you will be lower than you expected.
- c) The person who borrowed the 100 will be worse off as a result of the unanticipated decrease in inflation.
- d) The real interest rate you earn on your money will be negative.

## 5. Biases in Employment Statistics

The official unemployment rate reported by the government may tend to **understate** the true rate of unemployment by excluding:

- a) population under the age of 15 from the calculations.
- b) part time workers who seek full time employment.
- c) persons who are not seeking for employment due to the low wage.
- d) students, retirees, and stay-at-home parents from the labor force.

**6. Natural Rate of Unemployment**

Which of the following would increase the natural rate of unemployment?

- a) The increased labor force participation of women
- b) Expansion of unemployment compensation
- c) Having more young workers in the labor force.
- d) all of the above

**SHORT ANSWER QUESTIONS****7. Price indexes**

Explain what a price index is.

**8. Consumer Price Index (CPI)**

CPI is also called a cost of living index. Explain why, and then discuss if it is a good indicator for measuring the cost of living as experienced by a typical individual.

**9. Costs of Inflation**

What are the costs of inflation?

**10. Types of Unemployment**

There are three types of unemployment: frictional, structural and cyclical. Explain each. What is the natural rate of unemployment?

**11. Full Employment & Natural Rate of Unemployment**

**True or False / Explain:** When the economy is at the full employment level, unemployment rate in the economy is zero.

**12. Unemployed & Employed Definitions**

Explain what it means to be employed and unemployed.

**13. Labor Force Definition**

Explain why students, retirees, and stay-at-home parents are not counted as part of the labor force? Explain what happens to labor force and unemployment when an effective minimum wage is set.

**PROBLEMS****14. Price Index Calculation**

During the busy exam periods a typical student in Bilkent, spends his money only on coffee and cookies; she drinks 10 cups of coffee and buys 5 cookies.

- a. Calculate a Student Price Index (SPI) to reflect the inflation as experienced by a typical student during midterm periods given the price information:

First midterm period : Coffee 3 TL each and Cookies 2 TL each

Second midterm period: Coffee 5 TL each and Cookies 2 TL each

Use first midterm period as the base period.

- b. What is the rate of inflation as experienced by a typical student between the two exam periods?
- c. Suppose that typical student's pocket money is 50 TL during the first midterm period. What kind of a raise should she ask from his parents so that she can keep her purchasing power the same during the second midterm period?

### 15. Using a Price Index

Below is the consumer price index for the years 2000 to 2002.

<u>Year</u>	<u>CPI</u>
2000	100
2001	110
2002	120
2003	_____

- What is the rate of inflation experienced during year 2002?
- If the inflation experienced during year 2003 is 10%, what is the value of CPI in year 2003?
- Gross investment figures expressed in nominal terms are 300 TL for year 2001, and 350 TL for year 2003. In real terms did the gross investment increased or decreased from year 2001 to 2003? [**Hint:** Comparison of nominal variables is misleading since each is represented in different years' prices. For healthy comparison, variables need to be expressed in same year's TLs. Choice is yours; you can convert them to base year prices (requires more steps) or convert one of the two to the other year's TLs and then compare.]

### 16. Measuring Total Output and Price Levels - GDP Deflator and CPI Difference

Below is some information about the production that is taking place in the small economy of DreamLand, and the spending habits of the DreamLanders:

Within the borders of the small economy of DreamLand three goods are produced: Milk, Ice-Cream and Cotton Candy.

When it comes to consumption habits of the consumers, they **never** consume milk, but only Ice-cream, Candy and a third good M&Ms which they **import** from the neighboring country.

Milk is only used in the production of ice cream.

Cotton Candy production does not require any manufactured intermediate good [you just need ripe clouds which is free in nature]

	Milk		Ice Cream		Cotton Candy		M&Ms (imports)	
<i>Year</i>	<i>Price</i>	<i>Quantity</i>	<i>Price</i>	<i>Quantity</i>	<i>Price</i>	<i>Quantity</i>	<i>Price</i>	<i>Quantity</i>
2010	1 TL	100	1.50 TL	200	2 TL	300	6 TL	100
2011	1.5	50	2 TL	100	2 TL	300	4 TL	200

**Calculating nominal GDP:** Assume that both in 2010 and 2011, all milk that is produced was bought by the domestic ice-cream producer and used fully in the production of ice-cream during the year.

- Calculate nominal GDP for years 2010 and 2011 using the final goods approach. Explain your work.

**Nominal versus Real GDP and Growth:**

- Calculate real GDP (base year = 2010) for years 2010 and 2011.
- Calculate the annual growth in production between these two years.

**Price Indexes:**

- According to a survey done in DreamLand in 2010, a typical household consumes 2 Ice-creams, 3 Cotton Candies, and 1 M&Ms during the year. Using this information about the habits of the typical household as the choice of CPI (consumer price index) basket and setting 2010 as the base year calculate CPI in 2011.
- Calculate the GDP deflator for 2011 using 2010 as the base year.

**Using Price Indexes to Calculate Inflation Rate:**

- f. Calculate the rate of inflation between 2010 and 2011 using the CPI as the price index.
- g. Calculate the rate of inflation between 2010 and 2011 using the GDP deflator as the price index.
- h. Explain why the CPI inflation rate is lower than the GDP deflator inflation rate in this example. [**Hint:** Check what the CPI basket and GDP deflator basket includes]

**Using Price Indexes to Calculate Real Variables:**

- i. Consider a DreamLand resident who has a salary of 20 TL in year 2010. What kind of a salary change will be necessary for him in 2011 to have the same purchasing power as he has in year 2010? [Of the two price indexes we have found; GDP deflator and CPI which one do you think would be most suitable for the purpose of adjusting 'salary'?]
- j. In part (b) we have calculated real GDP by keeping prices constant. This time use GDP deflator to deflate nominal GDP of 2011 (in part a) and verify that your answers are in accordance with the real GDP you have found in part (b).

**17. Nominal and Real Variables**

Suppose an economy only produces two final goods during the years 2005, 2006 and 2007. The table below gives the production levels and the prices of these goods for these three years.

	Good X		Good Y	
Year	Price	Production	Price	Production
2005	10	200	5	500
2006	15	300	4	400
2007	20	400	2	200

- a. Calculate nominal GDP and real GDP for all three years taking year 2007 as the base year.
- b. Calculate GDP deflator for each year and the annual inflation rate during year 2006 and year 2007.
- c. On an annual basis how fast did the price level grow? [What is the annual inflation rate during the years 2006 and 2007?]
- d. On an annual basis, how fast has the real economy grown?

**18. Nominal and Real Variables & Inflation [Ch 20]**

Fill in the blanks on the table below using the given information. In the space provided show your work.

	Nominal	Real	GDP	Inflation	Real GDP
Year	GDP	GDP	deflator	Rate	growth rate
2000	125,000	i) _____	125	NA	NA
2001	300,000	200,000	150	iii) _____	100%
2002	600,000	300,000	ii) _____	33 %	iv) _____

	Nominal GDP (TL)	Growth Rate (%)	Price Index
2010	80		_____
2011	105	5	_____

In 1924, the famous novelist F. Scott Fitzgerald wrote an article for the Saturday Evening Post titled “How to live on \$36,000 a year,” in which he wondered how he and his wife had managed to spend all of that very high income without saving any of it. The CPI in 1924 was 17, and the CPI in 2014 is 218. What income would you have needed in 2014 to have had the same purchasing power that Fitzgerald’s \$36,000 had in **1924**?

If you were lending your savings, which would you prefer: a nominal interest rate of 20% and an inflation rate of 18%, or a nominal interest rate of 10% and an inflation rate of 5%? If you were a borrower, would your answer change?

- Solve for the official unemployment rate. Make sure to show your work clearly.
- Suppose that at the time of the next household survey a few months later, of the individuals who were looking for work previously become discouraged and stopped looking for work (everything else like population, employment being the same). What would be the new official unemployment rate? Is this necessarily good news?
- Check how the labor participation rate and employment to population rate has changed from the first HH survey to the next. Conclude.

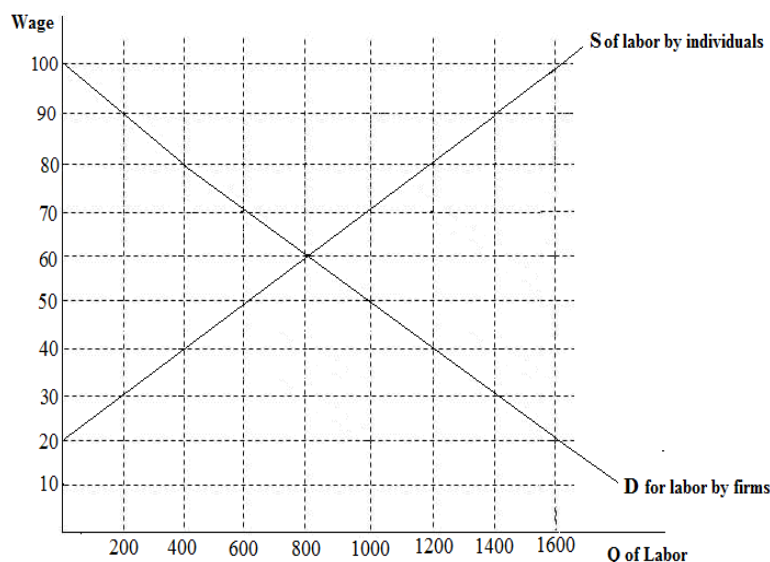
### 23. Various Labor Market Ratios and the Case of Discouraged Workers

In a very populated country, the population over age 15 is 150 million, the labor force participation rate is 60 percent, and the unemployment rate is 10 percent. Solve for the **number** of people that are in the labor force, employed and unemployed. Show your work.

### 24. Labor Market with Flexible and Sticky Wages\_ Microfoundations

*Classical economists start their analysis with the assumption that markets do clear. So, unemployment other than the unavoidable frictional and structural unemployment (natural rate of unemployment) should never be a problem. Keynesians believe that wages and prices are slow to adjust, so periods of persistent cyclical unemployment is possible.*

Consider a small country where working age population is 1800. Figure below depicts the labor market for this hypothetical country at its initial equilibrium with a wage rate of 60 TL and an employment level of 800. Unfortunately, an economic downturn decreases the demand for labor by 400 units at each wage rate [shift left by 400 units].



#### Initial situation

- Work on the initial situation. What are the unemployment and employment rates initially before the demand decrease?

#### Assume flexible wages

- Calculate and explain the effects of the demand decrease on the employment and unemployment rate if wages can adjust quickly. What was the effect of the decrease in wage rate in labor force and amount of jobs available?

#### Assume sticky wages

- Suppose that a **minimum wage** of 60 TL was in place at the time of the demand decrease. Now wage cannot adjust and hence remains in its initial level. Calculate and explain the effects of the demand decrease on the employment and unemployment rate.
- Give one possible reason; other than minimum wage policy, why wages might be sticky and explain.

**25. Natural Rate of Unemployment**

Other than the cyclical unemployment, structural and frictional unemployment remains to be a problem. A summary from a newspaper article:

*“During the last year a total of 6000 commercial bank employees lost their jobs. Some part of this is due to the widening use of internet and mobile banking as opposed to the conventional banking. Consumer’s due prefer the use of digital banking services to save time and money. And yet some part of this job lost is due to the economic slowdown which comes with the political and economic uncertainty.”*

Cumhuriyet, 22.10.2016

- a. According to the article which types of unemployment is taking effect in the banking sector?
- b. Explain why some frictional and structural unemployment is desirable for efficiency purposes.
- c. Explain one policy among the many that might decrease the natural rate of unemployment in the economy.