

**Tutorial 3 (Macroeconomics) : Long-Run and Short-Run Concerns: Growth, Productivity, Unemployment, and Inflation**

1) Refer to Scenario 1:

SCENARIO 1: The population of the nation of Skovania is 4,000,000, of which 2,000,000 are age 16 or older. Of this 2,000,000, 1,450,000 have jobs and 550,000 do not. There are 450,000 unemployed but actively seeking jobs, and there are 100,000 who have given up the job search in frustration.

Answer parts (a) through (e) using the information in Scenario 1.

- (a) Calculate the number of unemployed workers.
- (b) Calculate the number of discouraged workers.
- (c) Calculate the number of workers in the labor force.
- (d) Calculate the unemployment rate.
- (e) Calculate the labor-force participation rate.

2) Refer to Scenario 2. Answer parts (a) through (e) using the information in Scenario 2.

SCENARIO 2: The nation of Arbez has a population of 3 million citizens. The labor-force participation rate is 75%. The number of Arbezanis with jobs is 1,500,000.

- (a) Calculate the number in the labor force.
- (b) Calculate the number of unemployed workers.
- (c) Calculate the unemployment rate.
- (d) Arbez has determined that the natural rate of unemployment is 6%. How many cyclically unemployed workers are there?
- (e) The Arbezani economy moves out of a long recession, job openings increase, and 100,000 discouraged workers become "encouraged" and begin searching for a job. Calculate the new unemployment rate.

3) Classify the following people as either employed, unemployed, discouraged worker or not in the labor force:

- a) A retired person
- b) A full-time student who is not working
- c) An individual who looked for work for six months and stopped looking five weeks ago
- d) A law student who finishes law school, quits his job as a law clerk and has been actively seeking work as a lawyer.

4) Answer parts (a) through (e) using the following information. Arboc has a population of 2,000,000. The labor-force participation rate is 90%. Assume that the citizens of Arboc, when trying to determine the inflation rate for the next 12 months, base their calculations solely on the current inflation rate. The following table provides information on the consumer price index (CPI) and unemployment rate for Arboc over a five-year period.

<b>Year</b>	<b>CPI</b>	<b>Unemployment Rate (%)</b>
1999	100.00	4.2
2000	100.00	4.2
2001	110.00	6.7
2002	115.50	9.8
2003	117.81	12.3

- (a) Based on the information, calculate the number of workers in the labor force.  
 (b) Based on the information, calculate the number of workers unemployed in 2000.  
 (c) Based on the information, calculate the number of workers employed in 2002.  
 (d) Based on the information, calculate the inflation rate for 2000, 2001, 2002, and 2003.  
 (e) In 2001 the market interest rate was 12%. Based on the information, calculate the real interest rate.
- 5) Lenders and borrowers expect the inflation rate to equal the actual inflation rate. The consumer price index is 110 in year 1 and 126.5 in year 2. If the interest rate charged by Richie Rich in year 2 is 40%, what is Rich's real interest rate?
- 6) Answer the following set of questions, given the production schedules for the computer chip industry and the clothing industry.

### Computer Chips

Year	L	K	Y	Output Growth	Labour Productivity
1	100	300	450		
2	105	330	475		
3	109	365	502		
4	113	410	532		

### Clothing

Year	L	K	Y	Output Growth	Labour Productivity
1	100	50	200		
2	110	52	210		
3	125	55	220		
4	143	58.5	230		

- (a) Calculate the labor productivity in the computer chip industry for years 1-4.  
 (b) Calculate the labor productivity in the clothing industry for years 1-4.  
 (c) Compute the growth rate for both industries for years 1-4.  
 (d) Compare the productivity and growth of the computer chip industry and the clothing industry. Explain the differences.