Principles of Macroeconomics

Name __Key__

Suppose an economy produce only two goods: educational credit and book. The price and quantity of the two goods are listed in the following table. Compute the following measures.

Year	Price of educational credits	Quantity of educational credits	Price of books	Quantity of books
2000	$100	1500	$70	120
2001	$125	1800	$80	150
2002	$150	2000	$100	160

a) Nominal GDP for 2000, 2001, and 2002.

Nominal GDP for 2000 = ($100)(1500) + ($70)(120) = $158,400

Nominal GDP for 2001 = ($125)(1800) + ($80)(150) = $237,000

Nominal GDP for 2002 = ($150)(2000) + ($100)(160) = $316,000

b) Let the base year be 2000. Compute real GDP for 2000, 2001, and 2002.

Real GDP for 2000 = ($100)(1500) + ($70)(120) = $158,400

Real GDP for 2001 = ($100)(1800) + ($70)(150) = $190,500

Real GDP for 2002 = ($100)(2000) + ($70)(160) = $211,200

c) Economic growth rate for 2001 and 2002.

Economic growth rate for 2001 = $\frac{\$190,500 - \$158,400}{\$158,400} \times 100\% = 20.3\%$

Economic growth rate for 2002 = $\frac{\$211,200 - \$190,500}{\$190,500} \times 100\% = 10.9\%$

d) GDP deflator for 2000, 2001, and 2002.

GDP deflator for 2000 = $\frac{\$158,400}{\$158,400} \times 100 = 100$

GDP deflator for 2001 = $\frac{\$237,000}{\$190,500} \times 100 = 124$

GDP deflator for 2002 = $\frac{\$316,000}{\$211,200} \times 100 = 150$

1. The table below uses data for the year 2000 provided by the Bureau of Labor Statistics and adjusted to be comparable to U.S. data. All values are in thousands.

Country	Adult Population	Labor Force	Employed	Unemployed	Unemployment rate (%)	Labor-Force Participation Rate (%)
Germany	69,170	39,750			8.08	

a. What is the labor-force participation rate for Germany?

$$\text{Labor-force Participation Rate} = \frac{39,750}{69,170} \times 100\% = 57.5\%$$

b. What is the number of unemployed for Germany?

$$U\% = \frac{\#U}{LF} \times 100\%$$

Rearrange: $\#U = (U\%)(LF)/100\% = (8.08\%)(39,750)/100\% = 3,212$

c. What is the number of employed for Germany?

$$\#E = 39750 - 3212$$

$$= 36,538$$

2. Suppose Andrew is offered a job in Douglas, where the CPI is 80, and a job in New York, where the CPI is 125. Andrew's job offer in Douglas is for $38,000. How much does the New York job have to pay in order for the two salaries to represent about the same purchasing power?

$$\frac{125}{80} \times \$38000 = \$59,375$$

Classroom exercise (Chapter 6)   Name ___Key___

There are three problems that make the consumer price index an imperfect measure of the cost of living. Which of the problems in the construction of the CPI might be illustrated by each of the following situations?

a. New invention of smart phone.

   Excluding new products

b. After increase in the price of orange, consumers buy more tangerines instead of oranges.

   Substitution bias

c. More functions were built in calculators but sold at the same price.

   Unmeasured quality improvement

d. As gasoline price falls, people travel more in the holidays.

   Substitution bias

The table below shows the prices and the quantities consumed in a hypothetical region Tigerland. Suppose the survey year is 2001 and the base year is 2000.

Year	Price of beef	Quantity of beef	Price of pork	Quantity of pork
2000	$2.00		$1.00	
2001	2.50	90	0.90	120
2002	2.75		1.00	

___B___ 3.1. What is the cost of the basket for Year 2000, 2001, and 2002?

a. $300, $340, and $375.   Year 2000 : $(\$2)(90) + (\$1)(120) = \$300$
b. $300, $333, and $367.5.   Year 2001 : $(\$2.50)(90) + (.9)(120) = \$333$
c. $300, $333 and $ 418.75.   Year 2002 : $(\$2.75)(90) + (1)(120) = \$367.50$
d. None of the above. The correct answer should be _____.

___B___ 3.2. What are the CPI's For Year 2000, 2001 and 2002?

a. 100, 113.3 and 140.   Year 2000 = 100 (b/c it's the base year)
b. 100, 111 and 122.5.   Year 2001 = $(\$333/\$300)(100) = 111$
c. 100, 140 and 153.   Year 2002 = $(\$367.5/\$300)(100) = 122.5$
d. None of the above. The correct answer should be _____.

___B___ 3.3. What are the inflation rates for 2001 and 2002?

a. 0% and 11%   For 2001, $(111 - 100)/100 \times 100\% = 11\%$
b. 11% and 10.4%
c. 40%. And 13.3%   For 2002 : $\frac{(122.5 - 111)}{111} \times 100\% = 10.4\%$
d. None of the above. The correct answer should be _____.