# Chapter 6 Assignment

A 1. In the consumer price index, goods and services are weighted according to which of the following?
   a. how much a typical consumer buys of each item
   b. whether the items are necessities or luxuries
   c. how much of each item is produced in the domestic economy
   d. how much is spent on them in the national income accounts

A 2. What purpose does the Consumer Price Index serve?
   a. monitors changes in the cost of living over time
   b. adjusts the cost of living over time
   c. understates the standard of living
   d. overstates the cost of living

D 3. If the prices of Brazilian-made shoes imported into Canada increase, then which of the following will occur?
   a. Both Canada's GDP deflator and its consumer price index will increase.
   b. Both Canada's GDP deflator and its consumer price index will decrease.
   c. Canada's GDP deflator will increase, but its consumer price index remains constant.
   d. Canada's consumer price index will increase, but its GDP deflator remains constant

C 4. If increases in the prices of Canadian car insurance cause the consumer price index to increase by 3 percent, the GDP deflator will likely increase by how much?
   a. 0 percent
   b. 3 percent
   c. less than 3 percent
   d. more than 3 percent

B 5. What information does the real interest rate tell you?
   a. how quickly your savings account will grow
   b. how quickly the purchasing power of your savings account will grow
   c. the size of your savings account
   d. the purchasing power of your savings account

C 6. Inflation refers to which of the following?
   a. a temporary increase in the price level due to higher tax rates
   b. a large increase in food and gasoline prices
   c. a situation in which the economy's overall price level is rising
   d. an increase in the purchasing power of the dollar

A 7. Suppose nominal interest rates increase from 8 percent to 10 percent while inflation increases from 3 percent to 12 percent. What then happens to the real interest rate?
   a. It falls from 5 percent to –2 percent.
   b. It rises from –2 percent to 5 percent.
   c. It falls from 12 percent to 8 percent.
   d. It rises from 8 percent to 12 percent

C 8. If the nominal rate of interest is 10 percent and the rate of inflation is 3 percent, what is the real rate of interest?
   a. –7 percent
   b. 3 percent
   c. 7 percent
   d. 13 percent

C 9. The consumer price index does which of the following?
   a. measures price changes of raw materials.
   b. adjusts all prices of goods and services for five-year periods.
   c. measures the cost of goods and services bought by a typical consumer.
   d. measures price changes of intangible production such as services.

B 10. Suppose the consumer price index (CPI) at the end of 1996 was 125 and the CPI at the end of 1997 was 131. Then what was the rate of inflation during 1997?
   a. zero percent—prices were stable during 1997
   b. 4.8 percent
   c. 6.0 percent
   d. 125 percent

D 11. Frank's nominal income in 1998 is $45 000. Suppose the consumer price index in 1998 is 150. What is Frank's real income?
   a. $51 750
   b. $45 000
   c. $38 250
   d. $30 000

C 12. A change in the price of imports bought by consumers will be reflected in which of the following?
   a. the GDP deflator
   b. the GDP
   c. the CPI
   d. net national income

D 13. Which of the following statements is correct?
   a. The GDP deflator is based on a fixed basket of goods and services.
   b. The GDP deflator reflects the prices of all domestically produced goods and services.
   c. The CPI reflects the prices of all domestically produced goods and services.
   d. The GDP deflator is subject to substitution bias.

C 14. The inflation rate is best described by which of the following?
   a. a measure of the cost of a basket of goods and services bought by firms
   b. the absolute change in prices between years
   c. the percentage change in the price index from the preceding period
   d. a measure of changes in incomes from one year to the next

## True or False?

F 15. The GDP deflator reflects the prices of goods and services bought by consumers, and the consumer price index reflects the price of all final goods and services produced domestically.

T 16. The consumer price index compares the price of a fixed basket of goods and services to the price of the basket in the base year. On the other hand, the GDP deflator compares the price of currently produced goods and services to the price of the same goods and services in the base year.

T 17. Indexation refers to the automatic correction of a dollar amount for the effects of inflation by law or contract.

T 18. Long-term contracts between firms and unions will sometimes include partial or complete indexation of the wage to the consumer price index. This is called a cost-of-living allowance clause.

19. Answer the following questions about Sportsland:

The typical consumption basket is: 3 footballs and 4 basketballs.

| Year | Price of Footballs | Price of Basketballs |
|---|---|---|
| Year 1 | $10 | $12 |
| Year 2 | 12 | 15 |
| Year 3 | 14 | 18 |

a) Compute the cost of the basket:

Cost in Year 1 = $\$10 \times 3 + \$12 \times 4 = \$78$

Cost in Year 2 = $\$12 \times 3 + \$15 \times 4 = \$96$

Cost in Year 3 = $\$14 \times 3 + \$18 \times 4 = \$114$

b) Using Year 1 as the base year, compute the index:

CPI in Year 1 = $\$78 / \$78 \times 100 = 100$

CPI in Year 2 = $\$96 / \$78 \times 100 \doteq 123.08$

CPI in Year 3 = $\$114 / \$78 \times 100 = 146.15$

c) Compute the inflation rate:

Inflation rate for Year 2 = $\frac{P_2 - P_1}{P_1} \times 100\% = \frac{123.08 - 100}{100} \times 100\% \doteq 23.08\%$

Inflation rate for Year 3 = $\frac{P_3 - P_2}{P_2} \times 100\% = \frac{146.15 - 123.08}{123.08} \times 100\% \doteq 18.74\%$

20. If Statistics Canada failed to measure the increase in memory, power, and speed of newer model computers, in which direction would the CPI be biased? What do we call this type of bias?

CPI would overstate the ↑ in cost of living. This type of bias is called "unmeasured quality changes".

21. In a simple economy people consume only 2 goods, food and clothing. The consumer basket of goods used to compute the CPI has 50 units of food and 10 units of clothing.

| | food (50) | clothing (10) |
|---|---|---|
| 2002 price | $4 | $10 |
| 2003 price | $6 | $20 |

a) What are the % increases in the price of food and in the price of clothing?

Food: $\frac{\$6-\$4}{\$4} \times 100\% = 50\%$ Cloth: $\frac{\$20-\$10}{\$10} \times 100\% = 100\%$

b) What is the % increase in the CPI? Use 2002 as the base year.

cost of the basket in 2002 = $\$4 \times 50 + \$10 \times 10 = \$300$

cost of the basket in 2003 = $\$6 \times 50 + \$20 \times 10 = \$500$

$CPI_{2002} = 100$ $CPI_{2003} = 500/300 \times 100 \doteq 166.67$

$\Delta CPI\% = \frac{166.67-100}{100} \times 100\% = 66.67\%$

c) Do these price changes affect all consumers to the same extent? Explain.

NO.

Food consumers are better off b/c price of food ↑ more slowly compared to CPI, which makes food relatively cheaper.

Cloth consumers are worse off b/c price of clothes ↑ faster compared to CPI, which makes clothes relatively more expensive.

22. Which is likely to have the larger effect on the CPI, a 2 percent increase in food or a 3 percent increase in diamond rings? Explain.

A 2% ↑ in food price will have a larger effect on CPI b/c food takes a heavier weight in the CPI basket compared to diamond.

23. Compute how much each of the following is worth in terms of today's dollars using 177 as the price index for today.

a) In 1926 the CPI was 17.7 and the price of a movie ticket was $0.25

$$\frac{\$0.25 \times 177}{17.7} = \$2.5$$

b) In 1932 the CPI was 13.1 and a cook earned $15.00 a week

$$\frac{\$15 \times 177}{13.1} = \$202.67$$

c) In 1943 the CPI was 17.4 and a gallon of gas cost $0.19

$$\frac{\$0.19 \times 177}{17.4} = \$1.93$$

24. Jay and Joyce meet George, the banker, to work out the details of a mortgage. They all expect that inflation will be 2 percent over the term of the loan, and they agree on a nominal interest rate of 6 percent. As it turns out, the inflation rate is 5 percent over the term of the loan.

a) What was the expected real interest rate?

$$r^e = i - \pi^e = 6\% - 2\% = 4\%$$

b) What was the actual real interest rate?

$$r^a = i - \pi^a = 6\% - 5\% = 1\%$$

c) Who benefited and who lost because of the unexpected inflation?

Jay & Joyce benefit b/c the actual inflation is higher which ↓ their true cost of borrowing by 3%. George, the banker lost b/c the real return for lending is 3% less compared to what he expected.