ECON2113 Macroeconomics

Chapter 2 Exercises

Solutions

1.

a. If the firm buys a car for an executive's use, the purchase counts as investment (I). However, if the firm pays the executive a higher salary and she then buys a car, the purchase of her car is counted as consumption (C). In either case, GDP will increase.

b. The services that a homemaker provides are not counted in GDP (regardless of their value). However, if an individual officially hires his or her spouse to perform household duties at a certain wage rate, the wages earned will be counted in GDP and GDP will increase.

c. If you buy a German car, consumption (C) will increase but net exports (NX = X - Q) will decrease. Overall GDP will increase by the value added at the foreign car dealership, since the import price is likely to be less than the sales price. If you buy a new American car, consumption and thus GDP will increase by the full value of the car. (Note: If the car you buy comes out of last year's inventory at the car dealership, then the increase in C will also be partially offset by a decline in I due to a change in inventory, and GDP will only increase by the value added.)

2.

a. The relationship between private domestic saving, private domestic investment, the budget deficit, and net exports is shown by the following identity:

$$S - I \equiv (G + TR - TA) + NX.$$

Therefore, if we assume that transfer payments (TR) remain constant, an increase in taxes (TA) has to be offset either by an increase in government purchases (G), an increase in net exports (NX), or a decrease in the difference between private domestic saving (S) and private domestic investment (I).

b. From the equation

$YD \equiv C + S$

it follows that an increase in disposable income (YD) will be reflected in an increase in consumption (C), saving (S), or both.

c. From the equation $YD \equiv C + S$ it follows that when both consumption (C) and saving (S) increase, disposable income (YD) must increase as well.

3.

a. Since depreciation is defined as $D = I_g - I_n = 800 - 200 = 600$ ==>

$NDP = GDP - D = 6{,}000 - 600 =$ **5,400.**

b. From $GDP = C + I_g + G + NX$ ==> $NX = GDP - C - I_g - G$ ==>

$NX = 6{,}000 - 4{,}000 - 800 - 1{,}100 =$ **100.**

c. $BS = TA - G - TR$ ==> $(TA - TR) = BS + G$

⇨ $(TA - TR) = 30 + 1{,}100 =$ **1,130**

d. $YD = Y - (TA - TR) = 6{,}000 - 1{,}130 =$ **4,870**

e. $S = YD - C = 4{,}870 - 4{,}000 =$ **870**

4.

a. Since nominal GDP is defined as the market value of all final goods and services currently produced in this country, we can only measure the value of the final product (bread), and therefore we get $2 million (since 1 million loaves are sold at $2 each).

b. An alternative way of measuring GDP is to calculate all the value added at each step of production. The total value of the ingredients used by the bakeries can be calculated as:

1,200,000 pounds of flour ($1 per pound)	=	1,200,000
100,000 pounds of yeast ($1 per pound)	=	100,000
100,000 pounds of sugar ($1 per pound)	=	100,000
100,000 pounds of salt ($1 per pound)	=	100,000

= 1,500,000

Since $2,000,000 worth of bread is sold, the total value added at the bakeries is **$500,000**.

5. If the CPI increases from 2.1 to 2.3 in the course of one year, the rate of inflation can be calculated in the following way:

   rate of inflation = (2.3 - 2.1)/2.1 = 0.095 = **9.5%.**

   The CPI often overstates inflation, since it is calculated by using a fixed market basket of goods and services. But the fixed weights in the CPI's market basket cannot capture the tendency of consumers to substitute away from goods whose relative prices have increased. Therefore, the CPI will overstate the increase in consumers' expenditures.