

Course in Macroeconomics and Global Economics  
University of Rome 'Tor Vergata'  
Academic year 2016/2017

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09/29/2016

## Practice 1

### Exercise 1

During a given year the following activities occur:

- A silver-mining company pays its workers €200,000 to mine 50 kilograms of silver. The silver is then sold to a jewellery manufacturer for €300,000.
- The jewellery manufacturer pays its workers €250,000 to make silver necklaces, which the manufacturer sells directly to consumers for €1,000,000.

We can summarize this information in a table:

<b>Silver mining company</b>		
Revenues from sales		€300,000
Expenses		€200,000
Wages	€200,000	
Profit		€100,000
<b>Jewellery manufacturer</b>		
Revenues from sales		€1,000,000
Expenses		€550,000
Silver purchases	€300,000	
Wages	€250,000	
Profit		€450,000

1. Using the 'production-of-final-goods' approach, what is GDP in this economy?
2. What is the value added at each stage of production? Using the 'value-added' approach, what is GDP?
3. What are the total wages and profits earned? Using the 'income' approach, what is GDP?

## Exercise 2

An economy produces three goods: cars, computers and oranges. Quantities and prices for years 2006 and 2007 are as follows:

	2006		2007	
	Quantity	Price	Quantity	Price
Cars	10	€2,000	12	€3,000
Computers	4	€1,000	6	€500
Oranges	1,000	€1	1,000	€1

1. What is nominal GDP in 2006 and in 2007? By what percentage does nominal GDP change from 2006 to 2007?
2. Using prices for 2006 as the set of common prices, what is real GDP in 2006 and in 2007? By what percentage does real GDP change from 2006 to 2007?
3. Using prices for 2007 as the set of common prices, what is real GDP in 2006 and in 2007? By what percentage does real GDP change from 2006 to 2007?
4. Why are the two output growth rates constructed in 2. and 3. different? Which one is correct? Explain.

## Exercise 3

Suppose that the economy is characterized by the following set of equations:

$$C = 180 + 0.8Y_D$$

$$I = 160$$

$$G = 160$$

$$T = 120$$

1. Solve the system for the equilibrium values of GDP ( $Y$ ), disposable income ( $Y_D$ ) and consumption spending ( $C$ ).
2. Compute the multiplier of autonomous spending. Give an economic interpretation of its sign.
3. Compute the equilibrium values of private saving and public saving. Compare their sum with the value of investment. Are they equal? Explain.

### Exercise 4\*

Consider the economy of the previous exercise (3).

1. Assume that the level of public spending  $G$  increases by  $\Delta G = 40$ . Compute the new level of public spending and the new level of output. What is the level of the fiscal multiplier in this case?
2. In addition to public spending variation  $\Delta G = 40$ , now assume that also taxes  $T$  increase, by the same amount,  $\Delta T = 40$ . Compute the new level of output. What is the level of the fiscal multiplier in this case?

\*Before solving this exercise students should have a look at the class notes "Balanced budget multiplier" available online.