

## Answer on Question #37742 - Economics - Macroeconomics

### Assignment

Assume that an economy is characterized by the following:

$$C=5+0.8Y_d$$

$$G=20$$

$$I=10$$

$$T=10+0.1Y$$

- a) Calculate the equilibrium income in this economy?
- b) What is the level of taxation?
- c) Calculate the budget deficit/surplus.
- d) What is the level of consumption?
- e) What is the level of national savings?

### Solution

Equilibrium income refers to the state at which aggregate quantity supplied is equal to aggregate quantity demanded. It is usually stable provided that the various factors involved do not change. It is calculated using the formula:

$$Y = C + I + G,$$

where C is consumption,

I is investments,

G is government spending

So, we can rewrite the equation:

$$Y = 5 + 0,8Y_d + G + I,$$

where  $Y_d$  - disposable income (income after government intervention -  $(Y - T)$ )

$$Y = 5 + 0,8(Y - T) + G + I = 5 + 0,8(Y - (10 + 0,1Y)) + G + I = 5 + 0,8(Y - (10 + 0,1Y)) + 20 + 10 = 5 + 0,8(Y - 10 - 0,1Y) + 30 = 0,8(0,9Y - 10) + 35 = 0,72Y - 8 + 35 = 0,72Y + 27$$

So, we can write the equation:

$$Y - 0,72Y = 27$$

$$0,28Y = 27$$

$$Y = 96,4$$

Now we can calculate the *level of taxation*

$$T = 10 + 0,1Y = 10 + 9,6 = 19,6$$

*Budget deficit/surplus can be calculated using the following formula:*

$$SG = T - G = 19,6 - 20,0 = -0,4$$

*Whereas the  $SG < 0$  - there is the budget deficit*

We can also calculate the *level of consumption:*

$$C = 5 + 0,8Y_d = 5 + 0,8(Y - T) = 5 + 0,8(96,4 - 19,6) = 66,4$$

*National savings should be split into private savings and public savings:*

$$NS = SP + SG = (Y - T - C) + (T - G) = (96,4 - 19,6 - 66,4) + (19,6 - 20,0) = 10$$