

Lecture Notes Goods Market

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1. Demand for Goods

Assuming that there are no exports and imports, the demand for goods is

$$Z = C + I + G \tag{1}$$

Since we assume that production matches output (and we have just one good in the economy), the following relationship holds.

$$Z \equiv Y \tag{2}$$

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1.1 Consumption (C)

Consumption depends upon the post-tax income. We can define the consumption function as:

$$C = c_0 + c_1(Y - T) \quad (3)$$

In equation 3, c_1 represents the marginal propensity to consume. This simply measures the change in consumption when the output goes by a unit, c_0 is the amount that people will consume even when they don't have any income.

1.2 Investment (I)

At this point, we assume that investment in the economy are fixed.

$$I = \bar{I} \quad (4)$$

1.3 Government Expenditure (G)

We will, for now, take government expenditure (G) as given.

1.4 Determination of Equilibrium Output

Using equations 1 - 4, we can derive an expression for equilibrium output.

$$Z = C + I + G$$

$$Z = c_0 + c_1(Y - T) + \bar{I} + G$$

$$Y = c_0 + c_1(Y - T) + \bar{I} + G$$

$$Y = [c_0 - c_1 \cdot T + \bar{I} + G] + c_1 \cdot Y$$

$$Y(1 - c_1) = [c_0 - c_1 \cdot T + \bar{I} + G]$$

$$Y = \frac{[c_0 - c_1 \cdot T + \bar{I} + G]}{(1 - c_1)}$$

- The numerator in the last equation represents the **autonomous spending**. It is called so, because that part of the demand for goods does not depend upon the output.
- The term $\frac{1}{(1-c_1)}$ is the multiplier.
 - When $c_1 = 0.5$, then the increase in output (Y) will be $\frac{1}{1-0.5} = 2$. So, the output doubles when $c_1 = 0.5$.
 - An increase in consumption has a “multiplier” effect on the output.

1.5 Saving & Investment

We will now turn our focus on looking at economy where investments and savings drive the equilibrium output. We divide saving into two boxes.

1 Saving by consumers = disposable income minus consumption.

$$S_{\text{private}} = (Y - T) - C \quad (5)$$

2 Saving by government = taxes raised minus amount spent by government

$$S_{\text{public}} = G - T \quad (6)$$

Recall equation 1. We will slightly modify it.

$$Y = C + I + G$$

We will rearrange a few terms by subtracting taxes on both sides of the above equation.

$$Y - T = C + I + G - T$$

$$Y - T - C = I + (G - T)$$

The LHS of the last equation is identical to equation 5, and the second part of the RHS is the same as equation 6. So, now have:

$$S_{\text{private}} = I - S_{\text{public}}$$

Rearranging terms in the above equation we get:

$$I = S_{\text{private}} + S_{\text{public}} \quad (7)$$

Equation 7 offers us another way of looking at the equilibrium. At equilibrium, investment must match saving.