

The Goods Market

Chapter 3 class worksheet

Construct the model

Write the full identity for demand, Z . Then impose the three simplifying assumptions used in class and write the resulting demand equation. For each assumption, state one feature of the real economy that the model sets aside.

The consumption function is

$$C = c_0 + c_1(Y - T), \quad 0 < c_1 < 1.$$

Explain the economic meaning of c_0 , c_1 , and T . Identify which variables are endogenous and which are exogenous in this version of the model.

Numerical exercise: find the initial equilibrium

All quantities are in billions of dollars. Consider the economy

$$C = 180 + 0.75(Y - T), \quad I = 250, \quad G = 300, \quad T = 200.$$

1. Write planned demand Z as a function of income Y .
2. Solve for equilibrium output Y .
3. Calculate disposable income, consumption, private saving, and public saving.
4. Verify equilibrium in two ways:
 - production equals demand; and
 - investment equals private saving plus public saving.

Show your work and keep the units in your final answers.

In one sentence, interpret the multiplier for this economy.

Numerical exercise: fiscal policy comparisons

Continue using the economy in Exercise 3. Analyze each policy separately, always beginning from the initial equilibrium. You may use comparative statics, but show the equation you use.

Policy	Change in equilibrium output	Economic explanation
G rises by 50		
T falls by 40		
G and T both rise by 40		

Which of the first two policies has the larger effect on output? Explain why a dollar of government purchases and a dollar of taxes enter the model differently.

Numerical exercise: see the multiplier unfold

Suppose autonomous spending rises by 80 and the marginal propensity to consume is $c_1 = 0.75$.

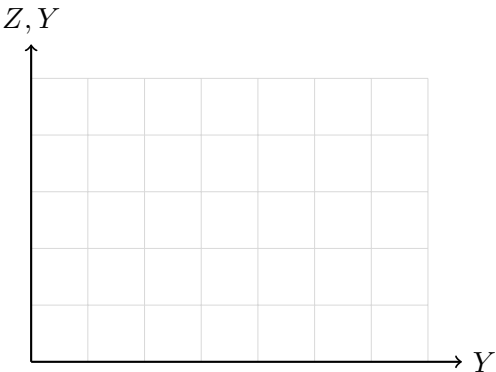
- 1. Calculate the additional demand created in each of the first four rounds.
- 2. Add those four rounds.
- 3. Calculate the total change in equilibrium output using the multiplier.
- 4. Explain why the four-round sum is smaller than the final change in output.

Round	Increase in demand/output	Running total
1		
2		
3		
4		

Graph and adjustment

Using the original economy from Exercise 3:

- 1. Draw the 45-degree line and the planned-demand line ZZ .
- 2. Mark the initial equilibrium.
- 3. Show the effect of the 50-unit increase in G from Exercise 4.
- 4. Label both equilibria and the horizontal change in output.



If planned demand exceeds current production, what happens to inventories? Describe how that inventory change can generate gradual adjustment toward equilibrium.

Final independent question

Complete this question in groups Show your reasoning with equations, a graph, or both.

An economy is described by

$$C = 120 + 0.8(Y - T), \quad I = 180, \quad G = 220, \quad T = 150.$$

The government wants to raise equilibrium output by 200 while keeping its budget balance unchanged, so it raises G and T by the same amount.

Determine the required changes in G and T , calculate the new equilibrium output and consumption, and verify the new equilibrium using both the production-equals-demand condition and the investment-equals-saving condition. Conclude with two or three sentences explaining why the balanced-budget policy changes output even though government purchases and taxes rise by equal amounts.