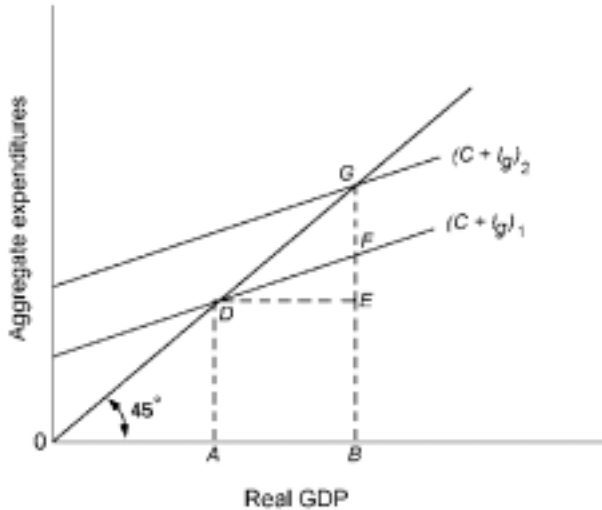


Economics 152
Solution to Problem Set 4

PART 1 (3 POINTS)

Use the following to answer questions 1-3:



1. Refer to the above diagram for a private closed economy. The marginal propensity to consume is:
A) GF/DE . B) GE/DE . C) FE/DE . D) DE/FE .

2. Refer to the above diagram for a private closed economy. The shift of the aggregate expenditures schedule from $(C + I_g)_1$ to $(C + I_g)_2$ reflects:
A) an increase in investment expenditures. C) an increase in the MPC.
B) a decrease in consumption expenditures. D) an increase in the APS.

3. Refer to the above diagram for a private closed economy. The multiplier is:
A) DE/GF . B) GE/DE . C) FE/DE . D) DE/FE .

PART 2 (2 POINTS)

Use the following to answer questions 4-5:

Complete the following table and answer the next question(s) on the basis of the resulting data. All figures are in billions of dollars.

	Aggregate				Aggregate	
	Domestic expenditures, output	closed		Net	expenditures, open	
	(GDP = PI)	economy	<u>Exports</u>	<u>Imports</u>	<u>exports</u>	<u>economy</u>
	\$200	\$230	\$30	\$20	<u>\$ 10</u>	<u>\$ 240</u>
	250	270	30	20	<u>10</u>	<u>280</u>
	300	310	30	20	<u>10</u>	<u>320</u>
	350	350	30	20	<u>10</u>	<u>360</u>
	400	390	30	20	<u>10</u>	<u>400</u>
	450	430	30	20	<u>10</u>	<u>440</u>
	500	470	30	20	<u>10</u>	<u>480</u>

4. If the above economy was closed to international trade, the equilibrium GDP would be:

- A) \$300 B) \$400 C) \$450 D) \$350

5. Refer to the above table. For the open economy the equilibrium GDP will be:

- A) \$300 B) \$400 C) \$450 D) \$350

PART 3 (5 POINTS): Answer the following questions. Each question is worth **1** point.

1. Suppose you have a closed economy with no government. This economy is characterized by the following equations. (C, I and Y are all in billions of dollars).

$$C = 135 + 0.8Y$$

$$I = 75$$

$$Y = C + I$$

Answer the following questions on the basis of the above information.

- a) Compute the equilibrium level of income or GDP (Y).

Answer: \$ 1050 bn

- b) Calculate the multiplier for this economy.

Answer: 5

- c) Suppose that private domestic investment increases to 100. Recompute the new equilibrium GDP.

Answer: \$ 1175 bn

- d) Represent the initial and new equilibrium using the “Keynesian Cross” diagram.

- e) Represent the initial and new equilibrium using the “Saving-Investment” diagram.

PART 4 (10 POINTS) Answer the following questions.

2. Suppose you now have a government sector in the economy so that the economy is described by the following set of equations. (C, I, Y_D , and G are all in billions of dollars). (Y_D is disposable income).

$$C = 135 + 0.8 Y_D$$

$$Y_D = Y + 50 - 0.25Y$$

$$I = 75$$

$$G = 40$$

$$Y = C + I + G$$

- a) Compute the equilibrium level of income or GDP (Y). (**1 Point**)

Answer: \$ 725 bn

- b) Calculate the multiplier for this economy. (**1 Point**)

Answer: 2.5

- c) Compare this multiplier with the multiplier obtained in the closed economy with no government. Which of the two multipliers are larger? Why? (**2 Points**)

Answer: The multiplier with the government is smaller than that obtained in the closed economy with no government. With the government and a proportional income tax, every dollar of income is taxed at a rate of 25%, so that after tax income (disposable income) is less. A fraction of disposable income is spent. So, the multiplier is lower with the government and a proportional income tax.

- c) Suppose that private domestic investment increases to 100. Recompute the new equilibrium GDP. **(2 Points)**

Answer: \$ 787.5 bn

- d) Represent the initial and new equilibrium using the “Keynesian Cross” diagram. **(2 Points)**

- d) Suppose the tax rate is cut from 25% to 15%. Show the new equilibrium using the “Keynesian Cross” diagram. **(2 Points)**

Answer: At a tax rate of 25%, $GDP = \$ 725 \text{ bn}$
At a tax rate of 15%, $GDP = \$ 906.25 \text{ bn}$

Answer Key -- ProblemSet4

1. C
2. A
3. A
4. D
5. B