Name_____ Period_____

Macroeconomics AP

What Is an MPC?

The marginal propensity to consume (MPC) is *the change* in consumption divided by *the change* in disposable income. It is the fraction of any change in disposable income which is spent on consumer goods.

The marginal propensity to save (MPS) is the fraction saved of any change in disposable income. The MPS is equal to the change in saving divided by the change in disposable income.

The MPC plus MPS equals 1. Why?

Using the data below, calculate the MPC and MPS at each level of disposable income. The first one is completed as an example.

Level of output and income (NNP = DI) (1)	*Consumption (2)*	*Saving (1) – (2) (3)*	*Marginal propensity to consume (MPC) Δ(2)/Δ(1) (4)*	*Marginal propensity to save (MPS) Δ(3)/Δ(1) (5)*
12,000	12,100	– 100	.90	.1
13,000	13,000	0	____	____
14,000	13,800	200	____	____
15,000	14,500	500	____	____
16,000	15,100	900		

The Magic of the Multiplier

The good people in Econland lived on an isolated island. One year, a stranger arrived and built a $1000 house. If the marginal propensity to consume was 50%, what happened to the GNP in Econland? It increased by $2000. Let's see how.

	Income (GNP)	*Consumption*	*Savings*
Round 1	$1000	$ 500	$ 500
Round 2	500	250	250
Round 3	250	125	125
Round 4	125	62.50	62.50
All rounds	$2000	$1000	$1000

This change in GNP is due to the multiplier. It shows how a change in investment causes a multiplied effect on GNP. In this case, the multiplier is 2. See if you understand the multiplier by answering these questions.

1. Would the multiplier be larger or smaller if people saved more of their additional income? _____
2. What would happen to the multiplier if people saved all their income? _____ What would happen if people spent all their income? _____
3. Government spending has the same effect as investment spending. If the multiplier were 4, how much would the government have to spend to increase aggregate demand by $1 million? _____
4. If the government needed to cut aggregate demand by $2 million and the multiplier were 4, how much would government spending have to be reduced? _____
5. How does the multiplier explain why changes in investment spending cause large fluctuations in GNP?

The Algebra of the Multiplier

The size of the multiplier is calculated by this formula:

$$\text{Multiplier} = \frac{1}{1 - \text{MPC}}$$

In the case of Econland,

$$M = \frac{1}{1 - 1/2} = \frac{1}{1/2} = 2$$

1. What is the multiplier if the MPC is equal to 3/4? ____
2. What is the multiplier if the MPC is equal to 9/10? ____
3. What is the multiplier if the marginal propensity to save (MPS) is 1/5? ____
4. Why is the multiplier important in understanding business cycles?

Exercise developed by John Morton.