

Exercise walk-through

Multipliers ■ 3.2

eXercise

You must be able to

- define the **marginal propensity to consume (MPC)** 边际消费倾向 and **to save (MPS)** 边际储蓄倾向, with $MPC + MPS = 1$
- calculate the **spending multiplier** $\frac{1}{1 - MPC} = \frac{1}{MPS}$
- explain why the **tax multiplier** is smaller in magnitude
- find the change in equilibrium real GDP from an initial change in spending or taxes

Method — MPC and MPS

MPC is the fraction of extra income **spent**; MPS is the fraction **saved**;
 $MPC + MPS = 1$.

Method — The spending multiplier

$$\text{multiplier} = \frac{1}{1 - MPC} = \frac{1}{MPS}.$$

A higher MPC gives a larger multiplier.

Method — Change in GDP

$\Delta GDP = \text{multiplier} \times (\text{initial change in spending})$. With $MPC = 0.8$, the multiplier is $\frac{1}{0.2} = 5$.

Practice 2.1 ■ 1 mark

If $MPC = 0.75$, find the MPS.

Solution 2.1

Worked steps

$$MPS = 1 - 0.75 = 0.25 \text{ (B1)}.$$

Practice 2.2 ■ 2 marks

Find the spending multiplier when $MPC = 0.8$.

Solution 2.2

Worked steps

$$\frac{1}{1 - 0.8} = \frac{1}{0.2} = 5 \quad \text{M1} \quad \text{A1}.$$

Practice 2.3 ■ 2 marks

Using that multiplier, find the change in GDP from \$10 billion of new spending.

Solution 2.3

Method: Change in GDP

Worked steps

$$\Delta GDP = 5 \times 10 = \$50 \text{ billion } \text{M1} \text{ A1}.$$

Exam-style 3.1 ■ 1 mark

The spending multiplier is

A $\frac{1}{1 - MPC}$

B $1 - MPC$

C MPC

D $\frac{MPC}{MPS}$

Solution 3.1

A $\frac{1}{1 - MPC}$



B $1 - MPC$

C MPC

D $\frac{MPC}{MPS}$

Worked steps

A.

Exam-style 3.2 ■ 1 mark

The tax multiplier is _____ the spending multiplier.

- A** larger than
- B** smaller in magnitude than
- C** exactly equal to
- D** unrelated to

Solution 3.2

- A larger than
- B smaller in magnitude than 
- C exactly equal to
- D unrelated to

Worked steps

B.

Exam-style 3.3 ■ 2 marks

An economy has $MPC = 0.9$.

- (a) Find the spending multiplier.
- (b) Find the change in GDP from a \$5 billion rise in government spending.

Solution 3.3

Method: Change in GDP

Worked steps

$$(a) \frac{1}{1 - 0.9} = \frac{1}{0.1} = 10 \quad \text{M1 A1}. \quad (b) \Delta GDP = 10 \times 5 = \$50 \text{ billion} \quad \text{M1 A1}.$$