

Exercise walk-through

3.2

Multipliers

AP Macroeconomics

Potential output, and the curve that shows it

Full-employment output

Full-employment (potential) output is what the economy produces when unemployment sits at its natural rate.

LRAS

Vertical at that output: in the long run the price level does not change what the economy can produce.

The PPC

The **production possibilities curve (PPC)** shows the same limit in goods-against-goods form – and both shift out for the same reasons.

What shifts it

More or better resources, more capital, better technology, higher productivity.

An AD shift moves output only until wages adjust. Only an LRAS shift raises output permanently.

The two multipliers, and how fast the economy self-corrects

the idea

a change in spending sets off further rounds, so the final change in GDP is **larger** than the initial one

MPC

the fraction of extra income that is spent

MPS

the fraction saved – and $MPC + MPS = 1$

the spending multiplier

$$\frac{1}{1 - MPC} = \frac{1}{MPS}$$

the tax multiplier

$-\frac{MPC}{MPS}$ – **smaller in size** and opposite in sign, because part of a tax cut is saved

potential output

the full-employment level the economy self-adjusts toward

Computing both multipliers from the MPC and finding the resulting change in real GDP is **almost a guaranteed question**. The debate over how *fast* self-adjustment happens is the case for or against active policy.

Exam tips

- Aggregate demand slopes down for the wealth, interest-rate, and net-export effects; it **shifts** when C , I , G , or X_n changes.
- Compute the **spending multiplier** $\frac{1}{1-MPC}$ and the smaller, negative **tax multiplier** $-\frac{MPC}{1-MPC}$.
- Draw a correctly labeled AD–AS graph, identify a recessionary or inflationary gap, and prescribe the right fiscal action.
- Short-run AS slopes up (sticky wages); long-run AS is **vertical** at full-employment output.
- Size a policy with the multipliers: required spending = gap $\div$ spending multiplier.

Exercises 2.1-2.3

2.1 If $MPC = 0.75$, find the MPS. [1]

2.2 Find the spending multiplier when $MPC = 0.8$. [2]

2.3 Using that multiplier, find the change in GDP from \$10 billion of new spending. [2]

Exercises 2.1-2.3

2.1 If $MPC = 0.75$, find the MPS. [1]

2.1

- $MPS = 1 - 0.75 = 0.25$
-

2.2 Find the spending multiplier when $MPC = 0.8$. [2]

2.2

- $\frac{1}{1 - 0.8} = \frac{1}{0.2} = 5$
-

2.3 Using that multiplier, find the change in GDP from \$10 billion of new spending. [2]

2.3

- $\Delta GDP = 5 \times 10 = \$50 \text{ billion}$

Exercise 3.1

3.1 The spending multiplier is

[1]

- ☐ **A** $\frac{1}{1 - MPC}$
- B** $1 - MPC$
- C** MPC
- D** $\frac{MPC}{MPS}$

Exercise 3.1

3.1 The spending multiplier is

[1]

- ☐ **A** $\frac{1}{1 - MPC}$
- B** $1 - MPC$
- C** MPC
- D** $\frac{MPC}{MPS}$

3.1 A

• $\frac{1}{1 - MPC}$.

Exercise 3.2

3.2 The tax multiplier is _____ the spending multiplier.

[1]

☐

A larger than

B smaller in magnitude than

C exactly equal to

D unrelated to

Exercise 3.2

3.2 The tax multiplier is _____ the spending multiplier.

[1]

☐

A larger than

B smaller in magnitude than

C exactly equal to

D unrelated to

3.2 B

- smaller in magnitude than.

Exercise 3.3 (a)

3.3 An economy has $MPC = 0.9$.

(a) Find the spending multiplier.

[2]

Exercise 3.3 (a)

3.3 An economy has $MPC = 0.9$.

(a) Find the spending multiplier.

[2]

(a)

- $\frac{1}{1 - 0.9} = \frac{1}{0.1} = 10$

Exercise 3.3 (b)

3.3 An economy has $MPC = 0.9$.

(b) Find the change in GDP from a \$5 billion rise in government spending. [2]

Exercise 3.3 (b)

3.3 An economy has $MPC = 0.9$.

(b) Find the change in GDP from a \$5 billion rise in government spending. [2]

(b)

- $\Delta GDP = 10 \times 5 = \$50$ billion