4.5 Macroeconomic policy

Name: _____ Class: _____ Date: _____ **Total: 15 marks**

KEY WORDS multiplier • crowding out

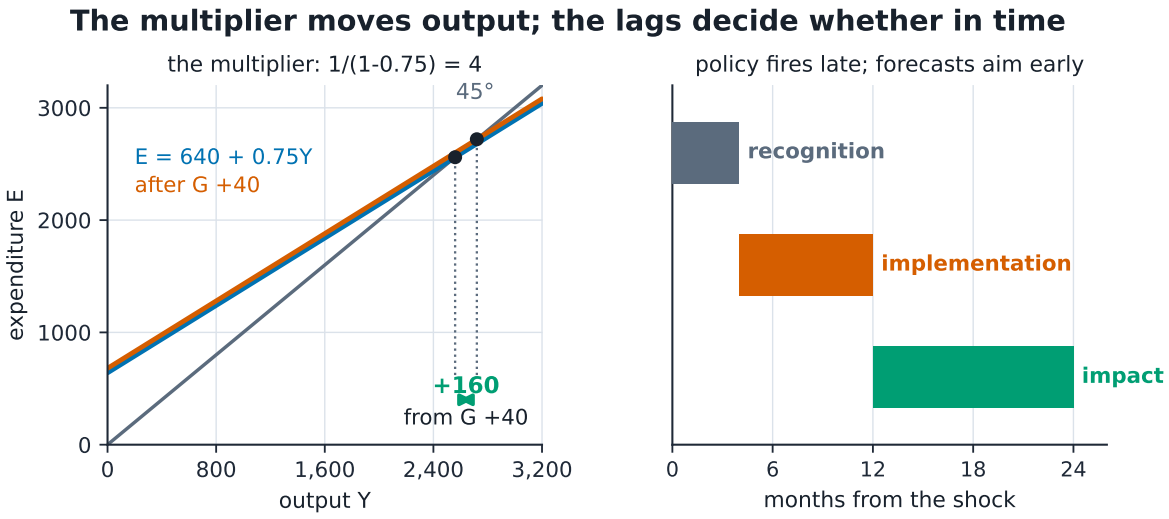
Objective

Compute spending, tax and balanced-budget multipliers; choose packages that close a stated gap; grade policy by arrival time, not announcement; apply the framework to the 2021–23 episode.

1 Key knowledge and worked examples

■ The fractions and the clocks

Spending multiplier $1/(1-MPC)$; tax multiplier $-MPC/(1-MPC)$; balanced-budget multiplier exactly 1. **Crowding out** and leakages make real multipliers smaller. Recognition, implementation and impact lags decide whether help arrives on time.



The multiplier moves output; the lags decide whether it moves in time

■ Worked example. Aurora's −60 gap

MPC 0.75: $G+15 \to +60$; $T-20 \to +60$; both $\times 4$ and $\times 3$ ✓. Equal G and T rises net exactly their own size ✓. Each closes the gap; debt, composition and speed are the judgement.

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2 Practice

2.1 MPC is 0.8. Compute the spending multiplier and the tax multiplier. [2]

2.2 With those multipliers: G rises 30; T falls 50. Compute each effect on output and the combined change. [3]

2.3 G and T both rise by 30 (MPC 0.8). What happens to output, and what is this result called? [2]

2.4 The output gap is −100. Two parties propose G +25 and T −40. Show what each delivers, and name one reason each might overshoot in reality. [4]

2.5 For the 2021–23 episode (UK CPI peak 11.1% in Oct 2022; policy rates near zero to 4–5% by 2023): in three lines, apply (a) the supply shock's effect on the Phillips trade-off, (b) the lags, (c) one limit of the whole reading. [4]

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Solutions

2.1

- Spending multiplier $= 1/(1 - 0.8) =$ **5**.
- Tax multiplier $= -0.8/0.2 =$ **−4**.

2.2

- $G + 30$: $\Delta Y = 30 \times 5 =$ **+150**.
- $T - 50$: $\Delta Y = -50 \times (-4) =$ **+200**.
- Combined: +350.

2.3

- $\Delta Y = 30 \times 5 - 30 \times 4 =$ **+30**.
- The **balanced-budget multiplier** – exactly 1.

2.4

- $G + 25$: $25 \times 5 = +125$ – overshoots by 25.
- $T - 40$: $40 \times 4 = +160$ – overshoots by 60.
- Overshoot reasons: imports and taxes leak rounds; borrowing raises rates and crowds out investment – the simple 5 is a ceiling.
- Also supply constraints: near capacity, extra demand becomes prices, not output.

2.5

- (a) A negative supply shock raises inflation while output falls – both move the wrong way for the trade-off, so 2022's combination (11.1% inflation, low unemployment) broke the simple curve.
- (b) The 2021–23 tightening was decided in 2021–22 and landed through 2023 – recognition, implementation and impact lags, exactly as the timeline shows.
- (c) One limit: the multipliers and the curve are models – CPI is one index (housing-weighted), and supply shocks vs demand cannot be separated cleanly in real time.
- State the model with its limits – the episode supports a reading, not a verdict.

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