2.9 National Income Determination and the Multiplier

Total Marks

AQA 7136 · Calculators not allowed · about 65 minutes · Write-in edition

Name: _____ Date: ____ / ____ / _____

Answer all questions. Full sentences are required for questions worth 4 marks or more and for the 25-mark essay. No calculator is allowed. Show your working for every calculation.

1 State the condition for equilibrium in the circular flow of income in terms of injections and withdrawals, using symbols.

(Total for Question 1 is 1 mark)

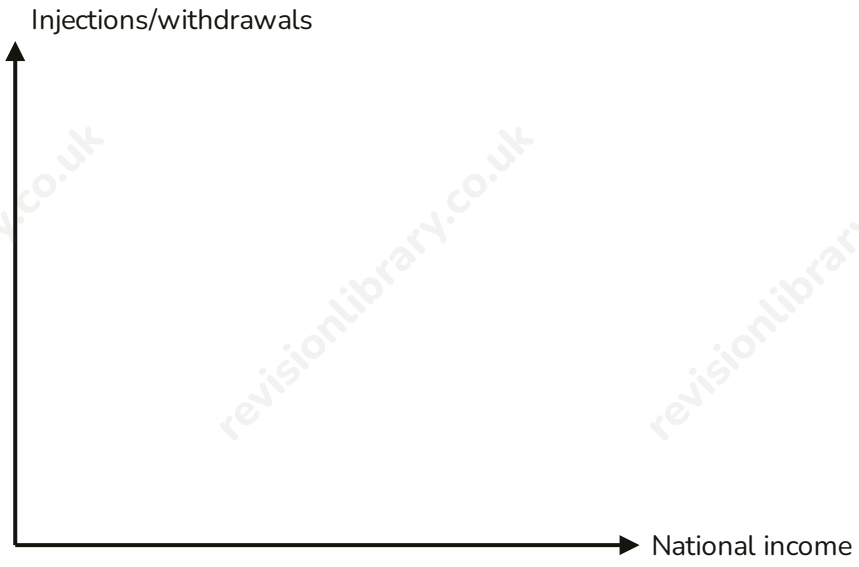
2 Briefly explain how leakages (saving, tax, imports) limit the size of the multiplier effect.

(Total for Question 2 is 2 marks)

3 Calculate the value of the Keynesian expenditure multiplier given the marginal propensities MPC = 0.55, MPT = 0.20 and MPM = 0.10. Then calculate the total eventual change in national income if government spending increases by £5 billion. Show your working.

(Total for Question 3 is 4 marks)

4 Diagram task: Draw an injections and withdrawals diagram to show the economy in equilibrium where injections equal withdrawals, then show clearly on the same diagram what happens to the equilibrium level of national income if injections rise by £8 billion. In your answer box label axes, the injections and withdrawals schedules, the original equilibrium, the new equilibrium and the direction of change in national income.



(Total for Question 4 is 4 marks)

5 Explain why, all else equal, the multiplier is smaller if the marginal propensity to import (MPM) rises.

(Total for Question 5 is 2 marks)

6 Using the alternative formula multiplier = 1 / (1 - MPC), calculate the multiplier when MPC = 0.6. Then calculate the total change in national income if investment rises by £8 billion. Show your working.

(Total for Question 6 is 4 marks)

7 Evaluate the view that the multiplier makes fiscal expansion the most effective tool for stabilising aggregate demand in a recession.

(Total for Question 7 is 25 marks)

Mark scheme · 2.9 National Income Determination and the Multiplier

Question 1

the equality written as I + G + X = S + T + M or injections = withdrawals	**B1**

Answer: Equilibrium condition: I + G + X = S + T + M (injections = withdrawals).

Question 2

states that leakages reduce the proportion of income that is respent domestically each round	**B1**
explains that because each round of respending is smaller due to leakages, cumulative additional income is limited and multiplier size falls	**B1**

Answer: Leakages remove part of each income round from domestic respending, making each subsequent round smaller so the cumulative multiplier effect is limited.

Question 3

calculate marginal propensity to withdraw, MPW = MPS + MPT + MPM = 0.15 + 0.20 + 0.10	**M1**
MPW = 0.45	**A1**
multiplier = 1 / MPW = 1 / 0.45	**M1**
multiplier = 2.222..., total change in national income = 2.222... x £5 billion = £11.11 billion, awrt £11.1 billion	**A1**

Answer: MPW = 0.45; multiplier = 1 / 0.45 = 2.22 (awrt). Total change = 2.22 x £5bn = £11.11bn, awrt £11.1bn.

Question 4

correctly labelled axes: Real national income (horizontal) and Level of injections/withdrawals (vertical)	**B1**
withdrawals schedule W(Y) drawn upward sloping and injections schedule J drawn and labelled, with initial intersection at equilibrium Y1	**B1**
a clear upward shift of the injections schedule to J2 and a clear new intersection at higher income Y2	**B1**
an arrow or annotation showing the direction of change in national income from Y1 to Y2	**B1**

Question 5

identifies that a higher MPM increases total withdrawals (MPW) because more of each extra pound spent leaks abroad	**B1**
explains that since multiplier = 1 / MPW, a larger MPW reduces 1 / MPW so the multiplier falls	**B1**

Answer: Higher MPM raises withdrawals so less of each extra pound is respent domestically; MPW rises and since multiplier = 1/MPW the multiplier becomes smaller.

Question 6

multiplier = 1 / (1 - MPC) = 1 / (1 - 0.6)	**M1**
multiplier = 1 / 0.4 = 2.5	**A1**
total change = multiplier x change in investment = 2.5 x £8bn	**M1**
total change = £20 billion	**A1**

Answer: Multiplier = 1 / (1 - 0.6) = 2.5. Total change = 2.5 x £8bn = £20bn.

Question 7

Level 1 Basic statements about the multiplier or fiscal policy with limited application. Limited or no use of examples. Little or no analysis of why the multiplier supports fiscal expansion.	**1-5**
Level 2 Clear explanation of the multiplier mechanism and how fiscal expansion can increase AD, with some application to recession context. Some analysis of limitations such as leakage, crowding out or time lags, but limited evaluation and balancing of viewpoints.	**6-10**
Level 3 Developed analysis, including quantitative illustration of the multiplier effect and exploration of practical limitations. Balanced evaluation considering alternative policy tools and the role of supply-side constraints, leading to a reasoned conclusion.	**11-15**
Level 4 Comprehensive analysis with well-developed examples and diagrams. Strong evaluation of the multiplier's impact on fiscal policy, including discussion of MPW components, crowding out, automatic stabilisers, and the state of spare capacity, recognising distributional and financing issues.	**16-20**
Level 5 Excellent and balanced judgement. Integrated use of theory, diagrams and empirical-style reasoning. Evaluates conditions under which fiscal expansion is most effective, compares monetary and supply-side alternatives, and reaches a supported, nuanced conclusion about when the multiplier makes fiscal policy the preferred stabilisation tool.	**21-25**

Indicative content:

- Explain how the multiplier works: initial injection raises income, respending via MPC, diminished by withdrawals (MPS, MPT, MPM), multiplier = 1/MPW or 1/(1-MPC).
- Argue for fiscal expansion: direct injection into AD, potentially large multiplied effect especially where MPC is high and MPW is low, useful when monetary policy is constrained by a liquidity trap or interest rates are near zero.
- Quantitative illustration: use a simple numerical example to show how a given increase in government spending might be multiplied into a larger rise in national income, noting how different MPW values change the outcome.
- Consider limitations: leakages to imports and savings reduce effectiveness; high MPT reduces disposable income and multiplier; crowding out via higher interest rates can offset private investment; financing the fiscal expansion may raise future taxes or borrowing costs.
- Discuss timing and implementation: fiscal policy can have long implementation lags and may be politically constrained; automatic stabilisers vs discretionary fiscal policy; temporary vs permanent fiscal measures and their different multiplier effects.
- Role of spare capacity: when there is significant spare capacity multipliers are larger and inflation risk is low; near full capacity fiscal expansion may cause demand-pull inflation rather than increased output.
- Compare with alternatives: monetary policy effectiveness when rates are positive and transmission channels work; supply-side policies raise LRAS and are better for long-term growth but act slowly.
- Distributional and welfare considerations: fiscal expansion may benefit some groups more than others; targeted spending (e.g. transfers to low-income households) can raise the effective MPC and hence the multiplier.
- Evaluation and judgement: weigh the size of estimated multiplier, state of the economy, financing constraints and time horizon to conclude when fiscal expansion is the most effective stabiliser and when alternative policies are preferable.