

Exercise walk-through

3.3

National income and the multiplier (2.3.4)

Pearson Edexcel · International A-Level · Economics

1. Topic 3 at a glance

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WEC12 macro first half: spec sections 2.3.1 to 2.3.5 in full - measures of economic performance (four rows), aggregate demand (five rows), aggregate supply (three rows), national income (four rows) and economic growth (four rows), 66 objectives.

Must-know: real GDP = nominal divided by deflator times 100; per capita divides by population; CPI = weighted sum of price relatives; $AD = C + I + G + (X - M)$; multiplier $k = 1/(1-MPC) = 1/MPW$ with $MPW = MPS + MPT + MPM$; SAM anchor $k = 2$ turning a 30 billion injection into 60.

2. Measures of economic performance

Measures of economic performance

Real versus nominal, total versus per capita, value versus volume; GNI adds net income from abroad; PPP rates equalise basket prices for fair comparisons; recession = two consecutive negative quarters; GDP misses distribution, the shadow economy and the environment, so wellbeing indicators complement it. Nominal 112 with deflator 108 gives real 103.7; over population 102, per capita 101.7.

Inflation: $CPI = 0.5 \times 110 + 0.3 \times 100 + 0.2 \times 120 = 109$, so 9 percent; disinflation means a slower RISE (the SAM India chart: 12 to 9, 11 to 6 - never negative); causes are demand-pull, cost-push and money-supply growth. Unemployment by the ILO definition with five causes; underemployment is distinct; the current account trades goods, services and income.

5. National income and the multiplier

National income and the multiplier

The circular flow: households supply factors, firms pay incomes, incomes buy output. Injections (I, G, X) add spending; withdrawals (S, T, M) drain it; equilibrium when $I + G + X = S + T + M$. In the model AD $P = 90 - Y/2$ meets SRAS $P = 20 + Y/2$ at (70, 55); an injection of 15 moves the economy to (85, 62.5).

The multiplier: $k = 1/(1-MPC) = 1/MPW$. The SAM anchor: MPC 0.5 gives $k = 2$, so 30 billion becomes 60 billion. With MPW 0.5 the same $k = 2$; with MPC 0.8, $k = 5$ and an injection of 20 accumulates 20, 16, 12.8... to 100. High import propensities drain the process abroad.

Exercises 2.1·2.3

2.1 Name the three injections and the three withdrawals. [2]

2.2 Write the circular-flow equilibrium condition. [2]

2.3 With $MPC = 0.8$, calculate the multiplier. [3]

Exercises 2.1·2.3

2.1 Name the three injections and the three withdrawals. [2]

2.1 Injections: investment, government expenditure, exports. Withdrawals: saving, taxation, imports.

2.2 Write the circular-flow equilibrium condition. [2]

2.2 $I + G + X = S + T + M$ – total injections equal total withdrawals.

2.3 With $MPC = 0.8$, calculate the multiplier. [3]

2.3 $k = \frac{1}{1-0.8} = \frac{1}{0.2} = 5.$

Exercises 2.4·3.1

2.4 With $MPS = 0.1$, $MPT = 0.15$ and $MPM = 0.25$, calculate MPW and the multiplier.[3]

2.5 Distinguish income from wealth. [2]

3.1 (*SAM WEC12/01 Q9, adapted.*) A government invests £30 billion in infrastructure and households have an MPC of 0.5. Calculate the multiplier and the total change in national income, showing the formula. [4]

Exercises 2.4·3.1

2.4 With $MPS = 0.1$, $MPT = 0.15$ and $MPM = 0.25$, calculate MPW and the multiplier.[3]

2.4 $MPW = 0.1 + 0.15 + 0.25 = 0.5$, so $k = \frac{1}{0.5} = 2$.

2.5 Distinguish income from wealth. [2]

2.5 Income is a FLOW of earnings per period; wealth is a STOCK of assets held at a point in time.

3.1 (*SAM WEC12/01 Q9, adapted.*) A government invests £30 billion in infrastructure and households have an MPC of 0.5. Calculate the multiplier and the total change in national income, showing the formula. [4]

3.1 Multiplier $= \frac{1}{1-MPC} = \frac{1}{1-0.5} = \frac{1}{0.5} = 2$. Total change $= 2 \times \text{£}30 \text{ billion} = \text{£}60 \text{ billion}$.

Exercises 3.2·3.3

3.2 (*Original.*) An injection of 20 is made into an economy with $MPC = 0.8$. Explain the multiplier process and the total change in income. [4]

3.3 (*Original.*) Explain why an economy with a high marginal propensity to import has a small multiplier. [4]

Exercises 3.2-3.3

3.2 (*Original.*) An injection of 20 is made into an economy with $MPC = 0.8$. Explain the multiplier process and the total change in income. [4]

3.2 The 20 becomes income; 80% is re-spent (16), which becomes someone else's income; 80% of that (12.8) is spent again – rounds 20, 16, 12.8, 10.24 ... Each round shrinks by the 0.2 withdrawn. The sum is $20 \times \frac{1}{1-0.8} = 20 \times 5 = 100$: income rises by 100 in total.

3.3 (*Original.*) Explain why an economy with a high marginal propensity to import has a small multiplier. [4]

3.3 A high MPM means each round of re-spending leaks abroad quickly: of every extra unit of income, more is spent on IMPORTS, which are withdrawals from the domestic circular flow. That raises MPW, so $k = 1/MPW$ falls – the same injection raises domestic income by less (an open economy imports its stimulus).

Local review guidance: the formula stated before substitution with MPC or MPW identified; at least three rounds shown or the geometric sum justified; (R1 3.3) the leakage mechanism named as a withdrawal from the circular flow, not just “money leaves”. This is authored classroom guidance.