Exercise walk-through

3.3
National income and the multiplier (2.3.4)

Pearson Edexcel · International A-Level · Economics

Aggregate demand

- **Consumption** (C) depends on disposable income, interest rates, confidence, **wealth** and credit. The **savings ratio** is saving as a share of disposable income; Chinese households save about a third.
- **Investment** (I) is spending on capital goods; **net investment** is gross investment minus depreciation. It depends on growth, interest rates, business confidence, credit and corporation tax.
- **Government spending** (G) depends on fiscal policy, the state of the economy and political priorities.
- **Net exports** (X − M) depend on income at home, the exchange rate, growth abroad, protectionism and quality.

$$AD = C + I + G + (X - M)$$

National income and the multiplier (2)

- A £30 billion rise in **investment** raises national income by $2 \times 30 = £60$ billion.
- If MPC were 0.8, $k = \frac{1}{0.2} = 5$. An injection of 20 then gives rounds of spending of 20, 16, 12.8, 10.24, … which add up to 100.
- The same stimulus works less well in a very open economy, where much of each round leaks into imports. That is one reason the ¥4 trillion stimulus had such a strong effect in 2009: most of it went on Chinese steel, cement and labour.

Economic growth

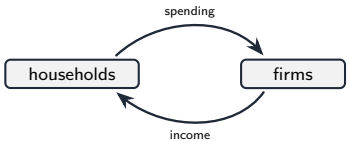
- **Actual growth** in the short run comes from any part of AD: **consumption**, **investment**, government spending or net exports. **Export-led growth** adds demand from abroad; China's exports grew from about 4% of world exports in 2001, when it joined the WTO, to about 13% by 2015.
- Potential growth comes from investment (domestic and **foreign direct investment**), innovation, a growing labour force and stronger competition. In the long run, **productivity** — output per worker — matters most. South Korea's GDP per head rose from about the same as Ghana's in 1960 to a high-income level by the 1990s, largely through investment in education and machinery.
- opportunity cost: investing more means consuming less today;

Exercises 2.1·2.3

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

injections withdrawals

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



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

MPC = 0.8

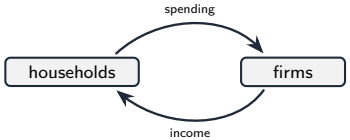
Exercises 2.1·2.3

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

injections withdrawals

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]

MPC = 0.8

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

Exercises 2.4·2.5

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

MPS = 0.1
MPT = 0.15
MPM = 0.25

2.5 Distinguish income from wealth. [2]

income wealth

Exercises 2.4·2.5

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MPS = 0.1

MPT = 0.15

MPM = 0.25

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]

income

wealth

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

Exercises 3.1·3.2

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]

investment: £30 billion

MPC = 0.5

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]

injection: 20

MPC = 0.8

Exercises 3.1·3.2

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investment: £30 billion

MPC = 0.5

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

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]

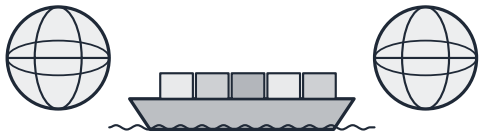
injection: 20

MPC = 0.8

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.

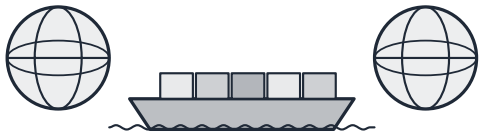
Exercise 3.3

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



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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.

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