



3

The National and International Economy

Theme 3 provides candidates with an overview of the workings and linkages of the national and international economy. The key focus is on governments as economic agents, while recognising that the extent of government intervention differs among economies. Candidates will examine macroeconomic aims, issues and policies relating to growth, inflation, unemployment, exchange rates, balance of trade and income distribution, with particular reference to the Singapore context. Candidates will examine Singapore's position in the global economy and the impact of globalisation on the Singapore economy. In particular, candidates will examine the impact of external trends and developments on the national, regional and international economies, and their implications for policy choices and decisions of governments.

In Theme 3, candidates will use concepts, theories and principles from Themes 1 and 2 to examine the problem of scarcity of resources and the concept of trade-offs at the broader level of the national and international economy.

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3.1 Introduction to Macroeconomics

Content

- 3.1.1 Circular flow of income as an interactive model involving households, firms, government and the foreign sector
- 3.1.2 Aggregate demand (AD) and aggregate supply (AS)
 - Factors affecting aggregate demand and aggregate supply
 - Equilibrium level of national output and general price level
 - Multiplier effect of changes in aggregate demand

fundamental questions

Example 1

The table shows an individual's consumption at different levels of weekly income.

Income (\$)	100	200	300	400	500
Consumption (\$)	80	160	240	320	400

What can be concluded about his marginal and average propensities to consume?

	MPC	APC
A:	Constant	Falls with income
B:	Constant	Constant
C:	Constant	Rises with income
D:	Rises with income	Constant

Solution:

B (ans)

MPC equals to change in Consumption over the change in Income. Hence, it can

be shown that MPC is constant. $MPC = \frac{80}{100}$.

APC equals to Consumption over Income.

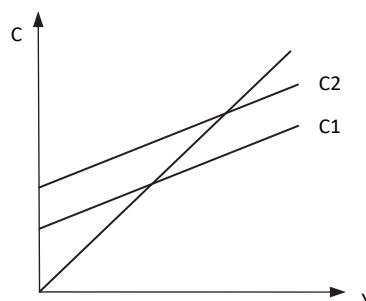
Hence, it can be shown that APC is constant at each level.



Example 2

The diagram shows the consumption function of a country. What could cause an upward shift of the consumption curve from C1 to C2?

- A: Increase in income taxes
- B: Fall in interest rates
- C: Pessimistic future expectations
- D: Decrease in household wealth





Solution:

B (ans)

When interest rates fall, cost of borrowing decreases and consumer will be more willing to borrow to consume goods. Hence consumption rises.



Example 3

The savings function of a closed economy with no government is given by the equation: $S = -1000 + 0.3Y$

If national income is \$5000, what is the MPS?

A: 0.3

B: 0.5

C: 0.7

D: 0.9

Solution:

A (ans)

MPS is given by the formula $\frac{\text{change in savings}}{\text{change in income}}$

It can be derived from the gradient of the saving function which is 0.3.



Example 4

In a closed economy with no government, the marginal propensity to consume out of GDP is 0.6. What is the marginal propensity to save?

A: 0.2

B: 0.3

C: 0.4

D: 0.7

Solution:

C (ans)

In a closed economy with no government sector, $MPS + MPC = 1$.

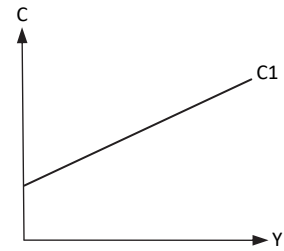
$MPS = 1 - 0.6 = 0.4$.



Example 5

The diagram shows the relationship between consumption expenditure and income. Which of the statements is correct?

- A: The average propensity to consume is constant.
- B: The average propensity to consume is rising.
- C: The marginal propensity to consume is rising.
- D: The marginal propensity to consume is constant.



Solution:

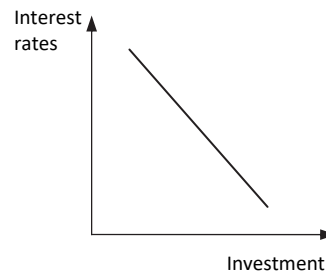
D (ans)



Example 6

What does this curve represent?

- A: Consumption function
- B: Average propensity to save
- C: Accelerator function
- D: Marginal efficiency of investment



Solution:

D (ans)



Example 7

In a 2 sector economy, an increase in income causes an increase in consumption of 75% of the increase in income. What is the value of multiplier?

- A: 4
- B: 3
- C: 2
- D: 1

Solution:

A (ans)

Given MPC is 0.75; MPS will be $1 - 0.75 = 0.25$.

Multiplier is $\frac{1}{\text{MPS}} = \frac{1}{0.25} = 4$.



**Example 8**

In a closed economy with no government, Income (Y) = Consumption (C) + Investment (I). What is the value of the investment multiplier?

- A: $\frac{I}{Y}$
- B: $\frac{C}{Y}$
- C: $\frac{\Delta Y}{\Delta I}$
- D: $\frac{\Delta I}{\Delta Y}$

Solution:

C (ans)

**Example 9**

In a closed economy with no government, the relationship between the equilibrium level of income Y and the level of C is given by the equation $Y = 4C$. Which of the statement is correct?

- A: The value of consumption multiplier is 4.
- B: The marginal propensity to invest is 4.
- C: The average propensity to consume is 4.
- D: The average propensity to save is $\frac{3}{4}$.

Solution:

A (ans)

$$Y = 4C \Rightarrow \frac{C}{Y} = \frac{1}{4}$$

**Example 10**

Given that the marginal propensity to consume is less than 1, an increase in investment expenditure will lead to

- A: a change in the value of multiplier.
- B: a multiple increase in national income.
- C: a fall in savings.
- D: a fall in the average propensity to save.

Solution:

B (ans)

Increase in autonomous investment will lead to an increase in national income due to the multiplier effect.



Example 11

In a closed economy with no government, the value of the investment multiplier increases. Which of the below is true?

- A: Planned investment has increased.
- B: Savings has increased.
- C: Marginal propensity to save has increased
- D: Marginal propensity has fallen.

Solution:

C (ans)

Multiplier is given by $\frac{1}{MPS}$, when MPS decrease, multiplier increases.



Example 12

Which of the following increases the value of the multiplier?

- A: A decrease in consumption.
- B: A decrease in savings.
- C: An increase in taxation.
- D: An increase in imports.

Solution:

B (ans)

A decrease in leakages such as savings, taxes and imports will increase the value of the multiplier.



Example 13

Which of the following explains how an increase in government expenditure can lead to increase in national income?

- A: the marginal efficiency of capital.
- B: the multiplier effect.
- C: the acceleration principle.
- D: the consumption function.

Solution:

B (ans)





Example 14

The following information is given.

Aggregate Demand	=	$C + I + G$
Consumption (C)	=	$0.75Y + 1$ million
Investment (I)	=	2 million
Government Expenditure	=	15 million

What is the value of the multiplier?

- A: 4
- B: 3
- C: 2
- D: 1

Solution:

A (ans)

$$MPS = 1 - MPC = 1 - 0.75 = 0.25$$

$$\text{Multiplier} = \frac{1}{0.25} = 4$$



Example 15

In a closed economy with no government, the value of the investment multiplier is 4. By how much will consumption increase, if investment increases by \$400?

- A: 400
- B: 800
- C: 1200
- D: 1600

Solution:

C (ans)

When investment increase by 400, national income will increase by $4(400) = 1600$. Hence, consumption will rise by $1600 - 400 = 1200$.



Example 16

In a two-sector economy, the marginal propensity to consume is 0.8 and the average propensity to consume is 0.7. What is the value of the multiplier?

- A: 5
- B: 4
- C: 3
- D: 2

Solution:

A (ans)

Multiplier is given by the formula $\frac{1}{MPS} = \frac{1}{0.2} = 5$



Example 17

As proposed by Keynes, why will an increase in 1 million of government expenditure have a greater impact on income rather than a reduction of 1 million in taxation?

- A: Government expenditure does not create any increase in income.
- B: Consumer only spends part of the disposable income.
- C: Consumer will save the amount of taxes that are cut.
- D: Consumption will not affect the multiplier.

Solution:

B (ans)



Example 18

If the multiplier is 4 and the national income is 10 million below its full employment level, what is the deflationary gap?

- A: 2.5 Million
- B: 4 Million
- C: 5 Million
- D: 10 million

Solution:

A (ans)

The deflationary gap is equals to $\frac{10}{4} = 2.5$ million.



Example 19

In a 2 sector economy, national income is 5 million. Planned savings and planned investments are both 2 million. Which of the following statement is correct?

- A: There is full employment.
- B: The economy is in equilibrium.
- C: The economy is not in equilibrium.
- D: Additional 1 million of savings is required to bring the economy into equilibrium.



Solution:

B (ans)

Using the Withdrawals/ Injections approach, when the economy is in equilibrium, the total withdrawals = total injections.



Example 20

In a 2 sector economy, Income (Y) is equal to Consumption (C) plus Investment (I). Consumption is $\frac{3}{4}$ of income. The present level of income is 100 million. By how much must investment be increased to raise equilibrium income to 200 million?

- A: 25 million
- B: 50 million
- C: 100 million
- D: 200 million

Solution:

A (ans)

Given MPC = $\frac{3}{4}$. MPS = $1 - \frac{3}{4} = \frac{1}{4}$. Multiplier = 4.

To increase income by 100 Million, an injection of $\frac{100}{4} = 25$ million is necessary.



Example 21

What would be the effect on national income and the balance of trade if there is an increase in the marginal propensity to import?

- | | National income | Balance of trade |
|----|-----------------|------------------|
| A: | increase | worsen |
| B: | increase | improve |
| C: | decrease | worsen |
| D: | decrease | improve |

Solution:

C (ans)

Imports are leakages that will reduce the size of the multiplier. When MPM rises, national income will fall. As the amount of imports rises, assuming constant level of exports, the balance of trade will worsen.



Example 22

Which of the following is not an injection into the circular flow of national income?

- A: Government spending
- B: Consumption of goods
- C: Purchase of capital formation
- D: Taxation

Solution:

D (ans)



Example 23

Which of the following is likely to intensify a recession?

- A: Increase in taxation.
- B: Decrease in imports.
- C: Decrease in savings.
- D: Increase in consumption.

Solution:

A (ans)

Increased taxation will deter investors from investing in the country. An increase in taxation which is a form of leakage to the economy also causes national income to decrease.



Example 24

An inflationary gap exists in an economy when

- A: aggregate demand is greater than full employment income.
- B: aggregate demand is less than full employment income.
- C: leakages exceed injections
- D: aggregate demand is zero

Solution:

A (ans)





Example 25

The consumption function of an economy with no government sector and no foreign trade is $C = 100 + 0.8Y$, whereby C stands for consumption and Y stands for national income. If investment expenditure is autonomous and equal to \$300, what is equilibrium income?

- A: 300
- B: 600
- C: 1000
- D: 2000

Solution:

D (ans)

$$\begin{aligned} Y &= C + I \\ &= 100 + 0.8Y + 300 \\ &= 2000 \end{aligned}$$



Example 26

The national income is initially in equilibrium. If there were an increase in exports, which change would restore national income to its initial equilibrium level?

- A: an equivalent reduction in saving
- B: an equivalent reduction in government expenditure
- C: an equivalent increase in investment
- D: an equivalent increase in tax revenue

Solution:

B (ans)



Example 27

What is used to measure deflationary gap?

- A: rate of deflation
- B: rate of unemployment
- C: increase in injections to reach full employment
- D: increase in withdrawals to reach full employment

Solution:

C (ans)



Example 28

The table below gives the information about an open economy with no government sector. Which is the equilibrium income?

INCOME (\$ MILLION)	INVESTMENT (\$ MILLION)	EXPORTS (\$ MILLION)	IMPORTS (\$ MILLION)	SAVINGS (\$ MILLION)
100	30	10	10	15
120	30	10	20	30
140	30	10	25	15
160	30	10	10	40
180	30	10	25	15

- A: 100 million
- B: 120 million
- C: 140 million
- D: 180 million

Solution:

D (ans)

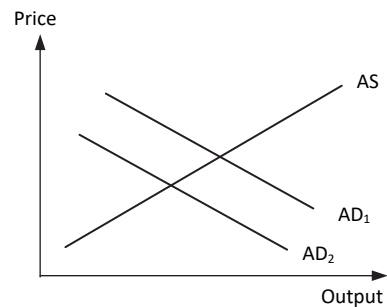
Using the injection = withdrawal approach, Investment + exports must be equal to imports + savings which is true at 180 Million of income.



Example 29

In the diagram, AD_1 and AS are an economy's initial aggregate demand and supply curves. What will cause the aggregate demand curve to shift to AD_2 ?

- A: a decrease in price level
- B: a decrease in interest rates
- C: a decrease in government spending
- D: a depreciation of the currency



Solution:

C (ans)

A decrease in government spending means a reduction in aggregate demand and will shift the AD curve left.

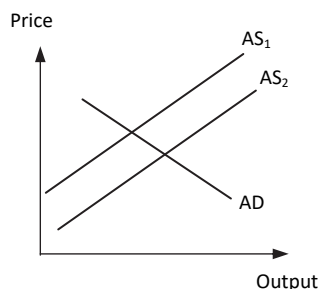




Example 30

The diagram shows an economy's short run aggregate demand and supply curves. What could cause the aggregate supply curve to shift from AS_1 to AS_2 ?

- A: a decrease in price level
- B: a decrease in interest rates
- C: an increase in money supply
- D: an increase in the labour force



Solution:

D (ans)

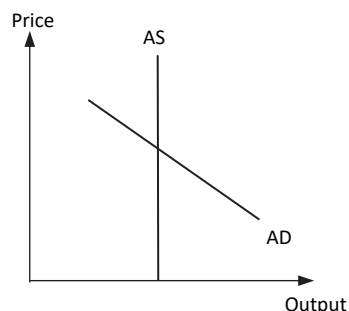
An increase in labour supply increases the human capital of the economy and shifts the AS curve right.



Example 31

The diagram shows an economy's aggregate demand and supply curves. What will be the effect on the price level and output of an increase in government expenditure?

- | | <u>Price level</u> | <u>Output</u> |
|----|--------------------|---------------|
| A: | increase | increase |
| B: | increase | constant |
| C: | increase | decrease |
| D: | decrease | decrease |



Solution:

B (ans)

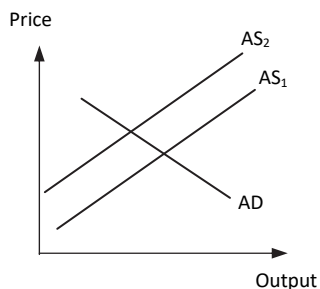
An increase in government expenditure shifts the AD curve to the right. This will cause price level to rise with output constant.



Example 32

The diagram shows the aggregate demand and supply curves of an economy. What will cause the aggregate supply curve to shift left?

- A: a decrease in consumption
- B: a decrease in interest rates
- C: a decrease in labour mobility
- D: a decrease in investment



Solution:

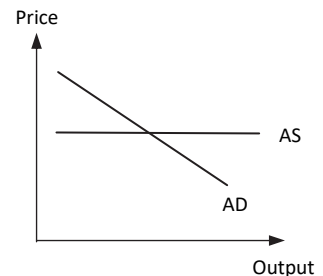
C (ans)

A decrease in labour mobility decreases the human capital and productivity of the economy and shifts the AS curve left.



Example 33

The diagram shows the aggregate demand and supply curves of an economy. What will be the effect on price level and output when there is an increase in government expenditure?



- | | Price level | Output |
|----|-------------|----------|
| A: | increase | increase |
| B: | constant | increase |
| C: | constant | decrease |
| D: | decrease | decrease |

Solution:

B (ans)

An increase in government expenditure will cause AD curve to shift right, thus increasing output and holding price constant.



Example 34

An aggregate demand curve slopes downwards from left to right. One reason for this is that a reduction in price level will result in

- A: a decrease in output
- B: a decrease in interest rates
- C: a decrease in government spending
- D: a worsening of the country balance of trade

Solution:

B (ans)

