3.5 - 3.7 Demand-side and Supply-side Policies

3.5 - 3.7 Demand-side and Supply-side Policies

Macroeconomic Policies

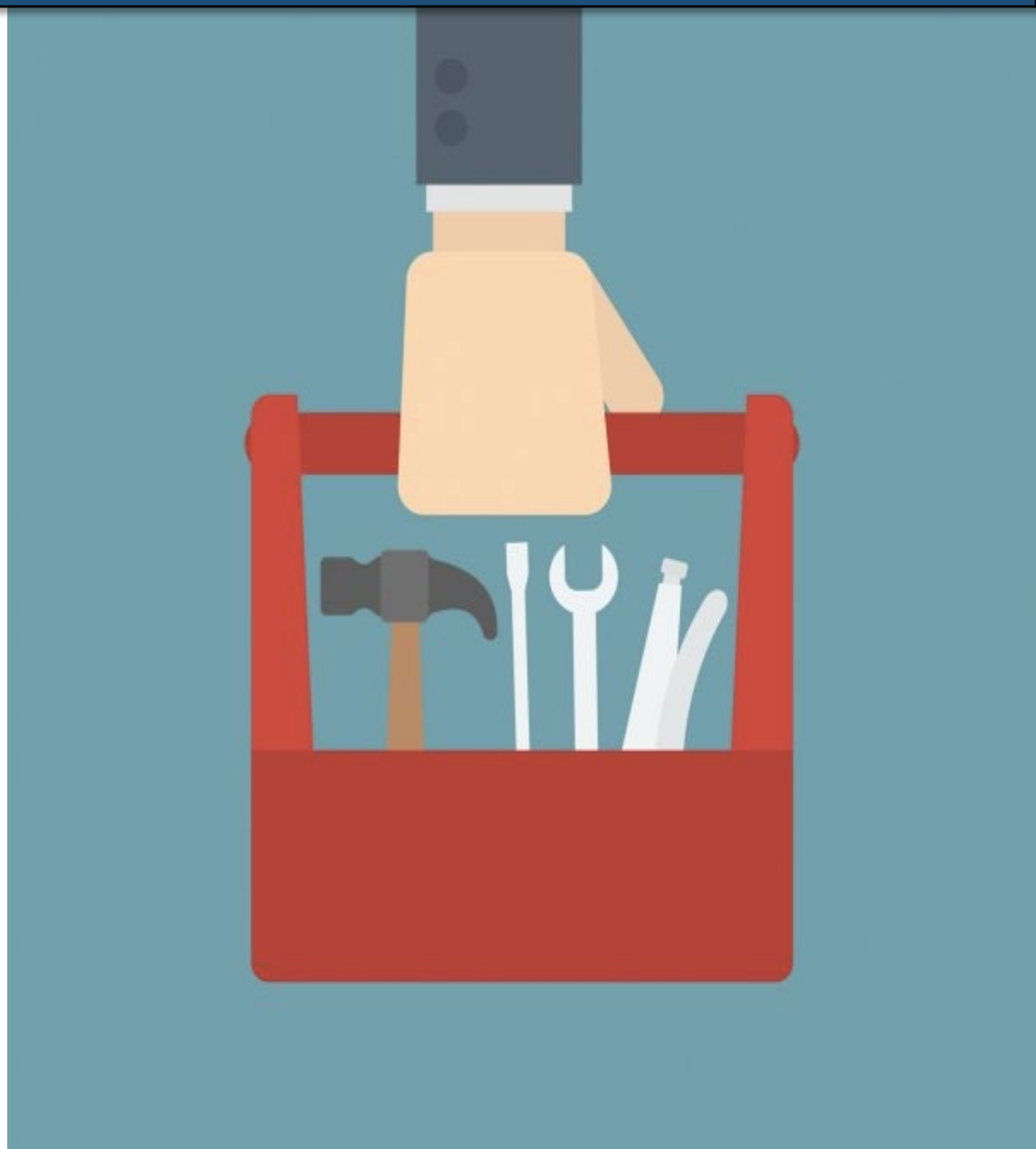
Demand-side policies

Demand-side policies focus on changing aggregate demand to achieve the goals of price stability, full employment and economic growth.

Also known as **demand management**

Based on the idea that **inflationary** and **recessionary gaps** are due to actions of firms and consumers affecting **aggregate demand**.

Aim for AD to reach **potential GDP**.



3.5 - 3.7 Demand-side and Supply-side Policies

Macroeconomic Policies

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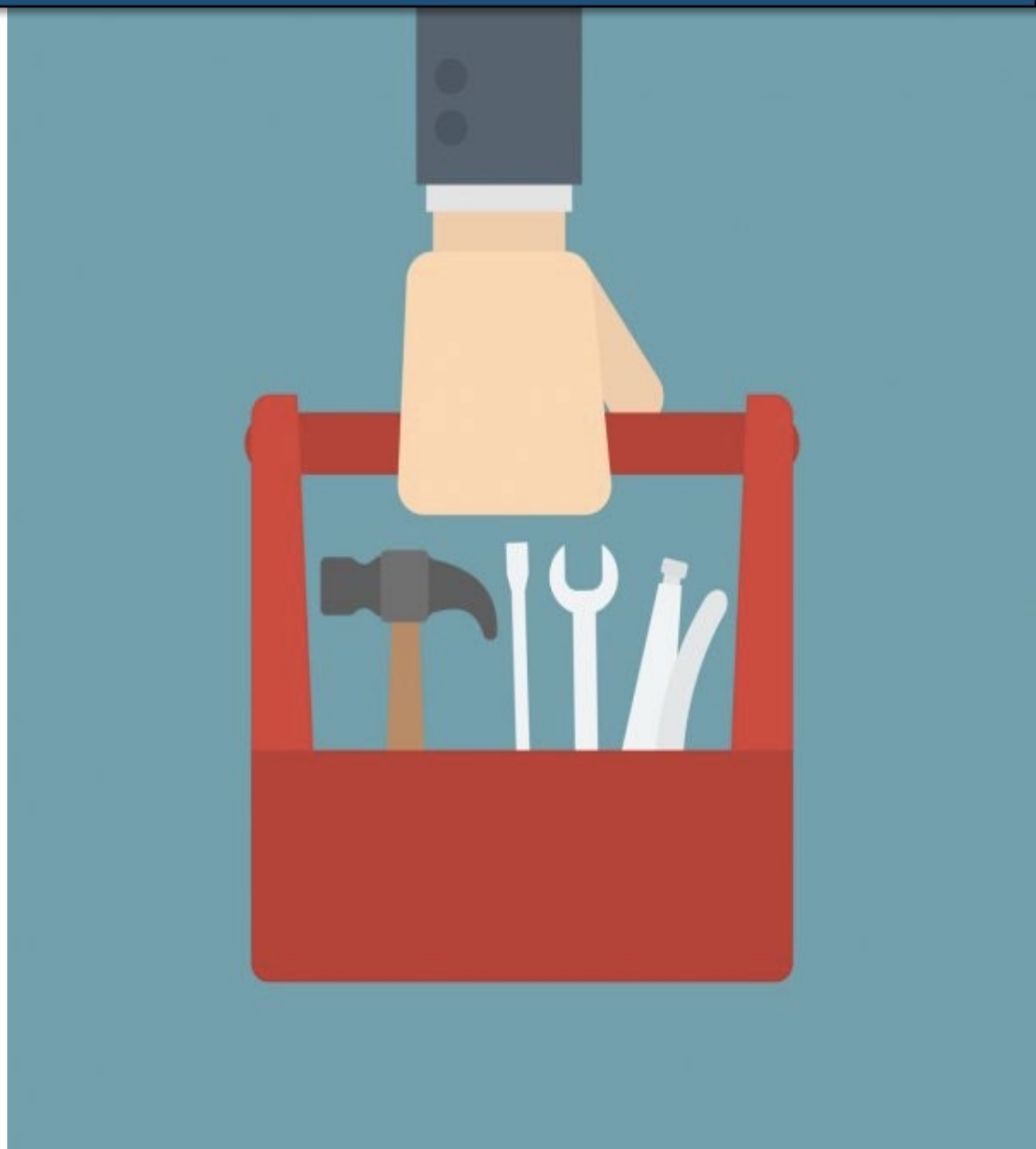
Types of demand-side policies:

- Monetary policy
- Fiscal policy



3.5 - 3.7 Demand-side and Supply-side Policies

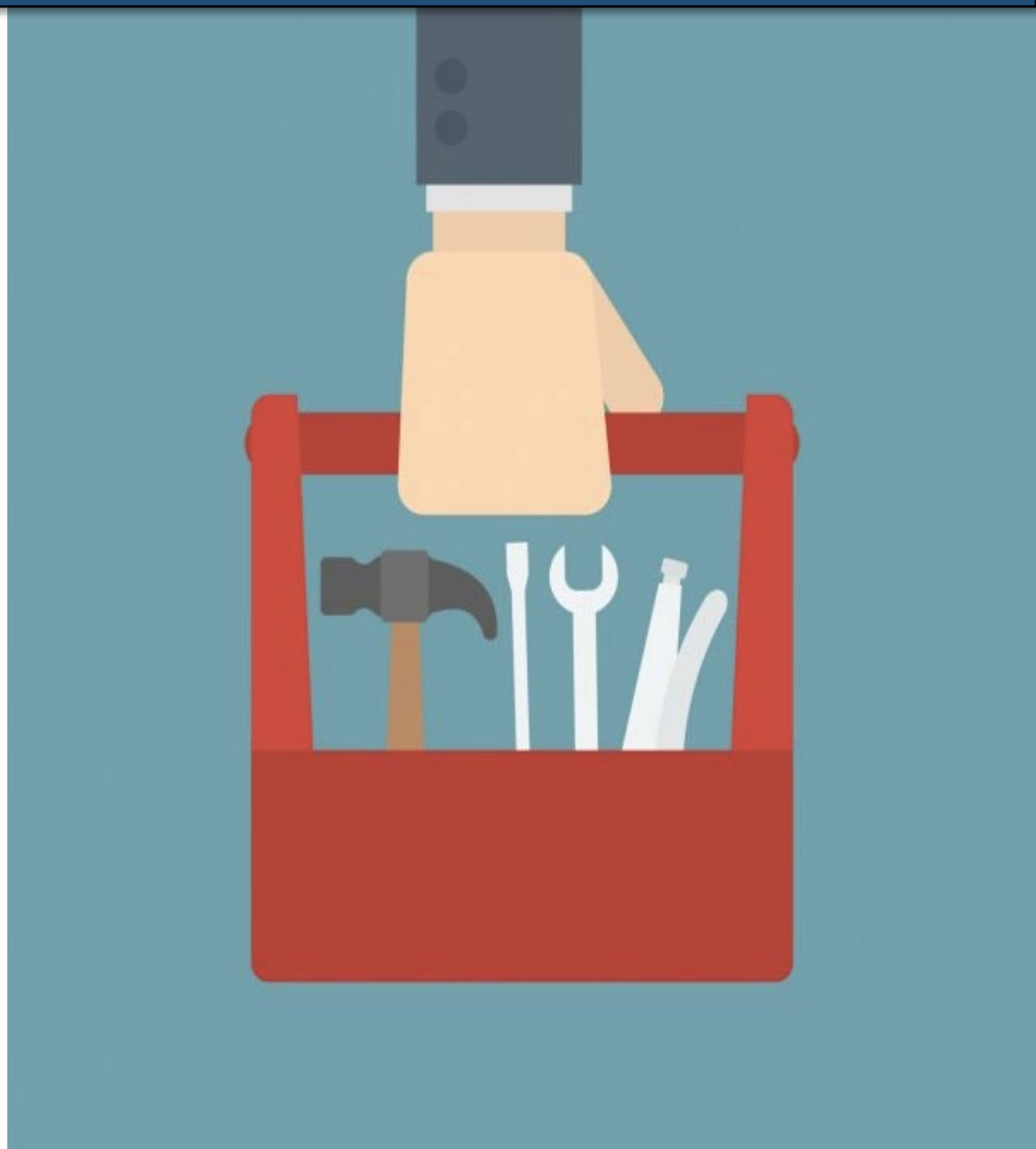
Macroeconomic Policies

Demand-side policies

Demand-side policies focus on changing aggregate demand to achieve the goals of price stability, full employment and economic growth.

Also known as **stablisation policies** as it tries to eliminate short-run instabilities caused by changes in **aggregate demand**.

How do you think…
the business cycle would be affected?



3.5 - 3.7 Demand-side and Supply-side Policies

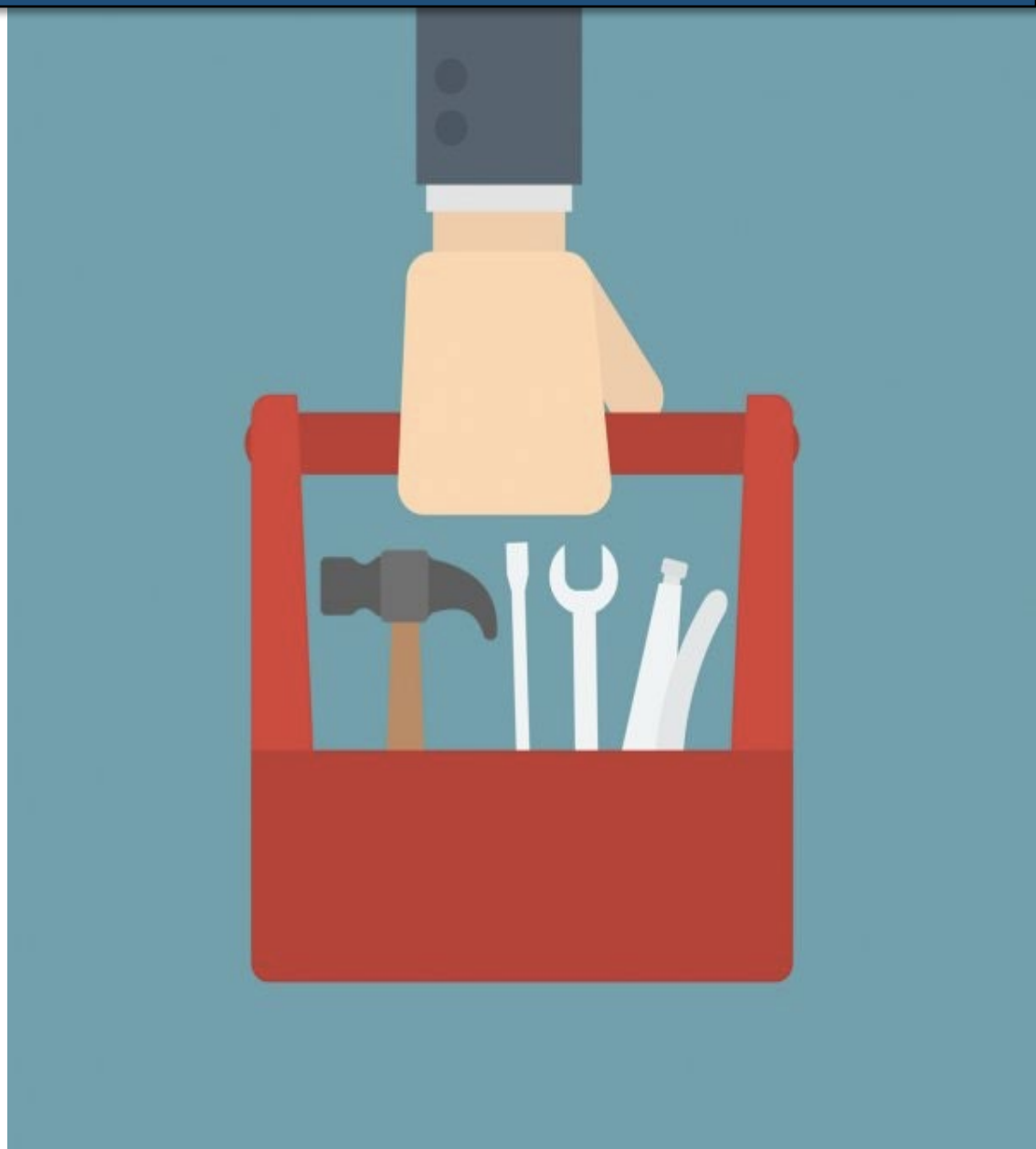
Macroeconomic Policies

Supply-side policies

Supply-side policies focus on the production and supply-side of the economy.

Specifically focused on shifting the LRAS or Keynesian AS curves to the right to:

- Increase potential output
- Achieve long-term economic growth



3.5 - 3.7 Demand-side and Supply-side Policies

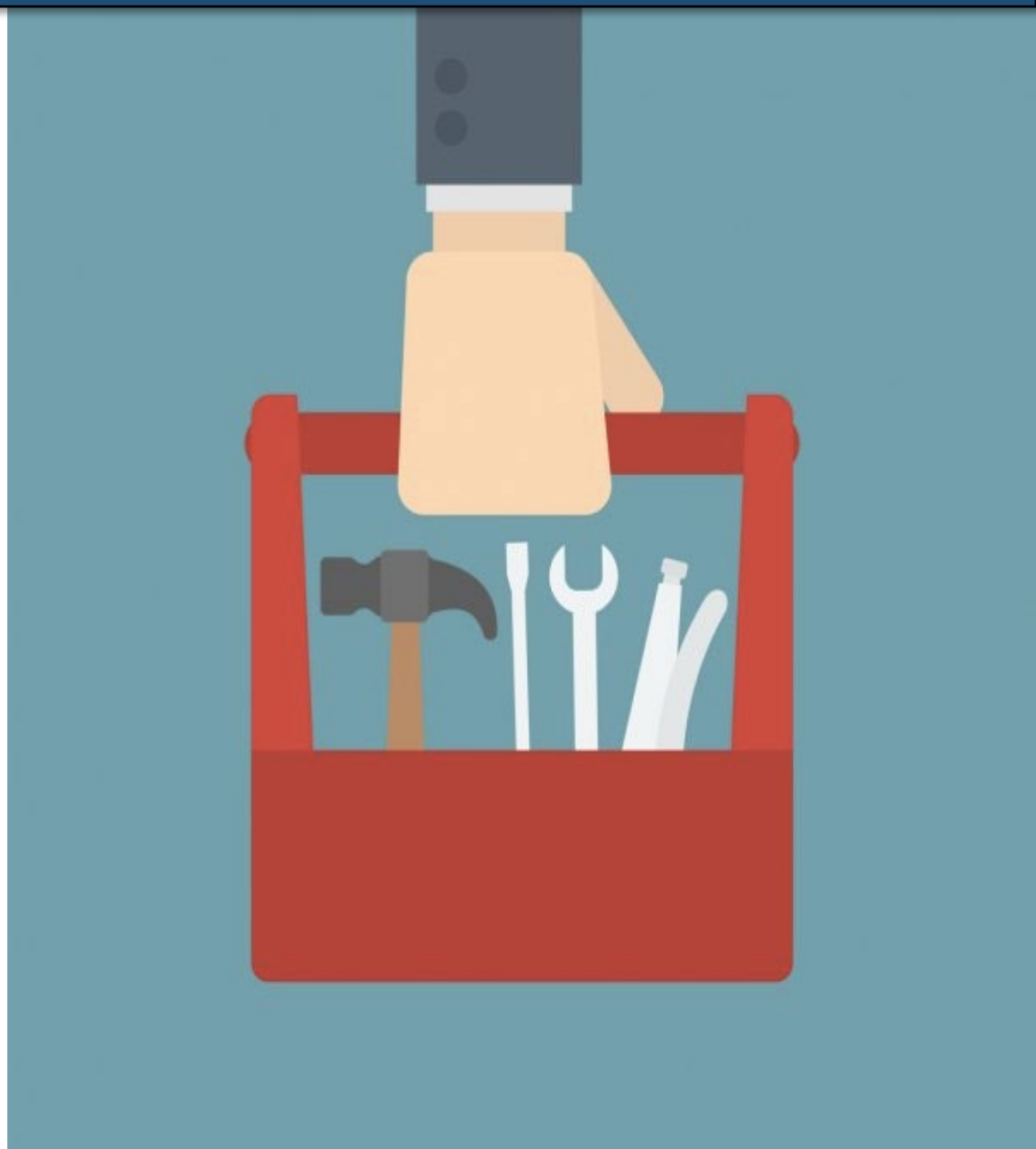
Macroeconomic Policies

Supply-side policies

Supply-side policies focus on the production and supply-side of the economy.

These policies focus on:

- Increasing the quantity and quality of factors of production and
- Improving the economy's productive capacity



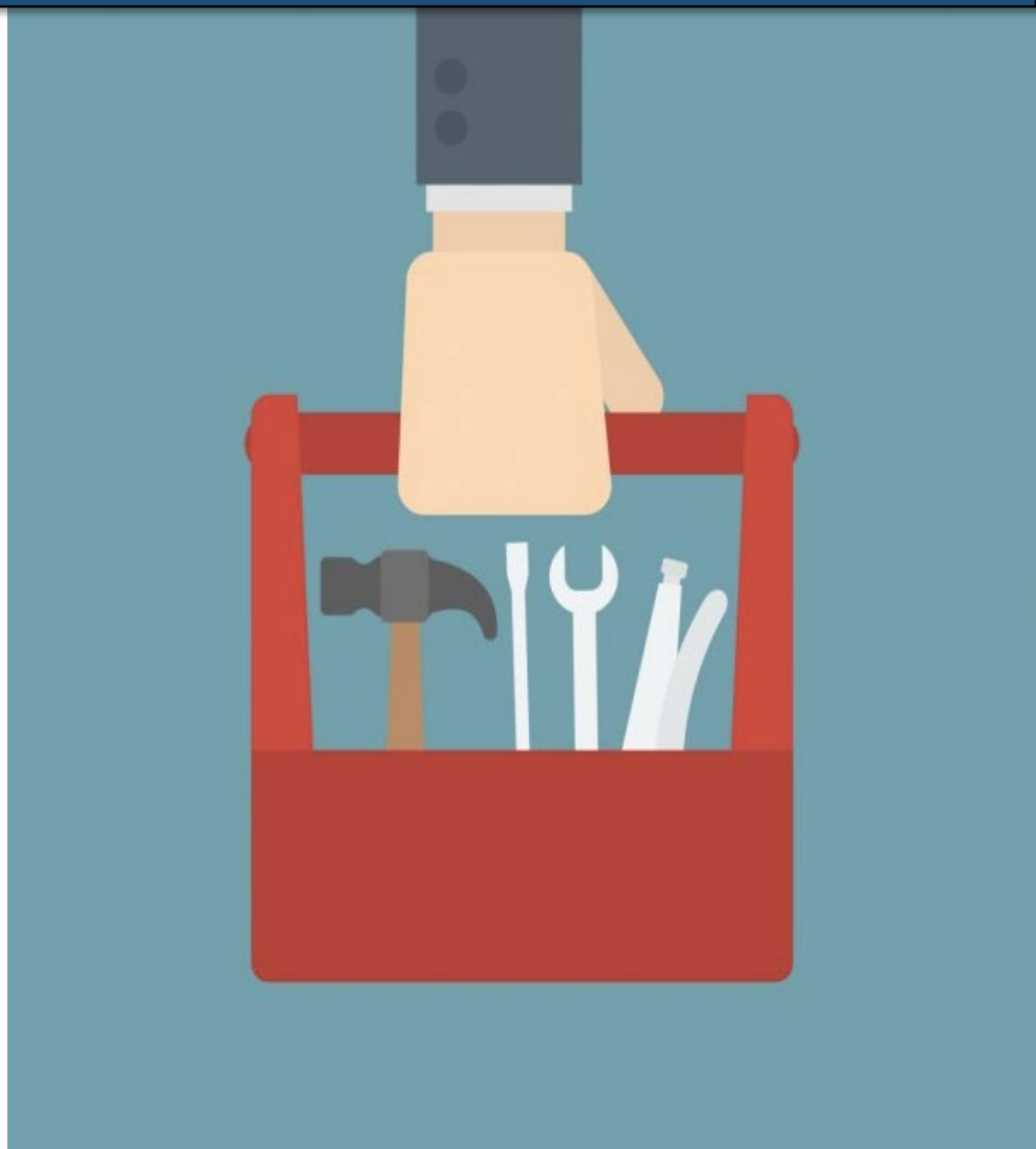
Macroeconomic Policies

Supply-side policies

Supply-side policies focus on the production and supply-side of the economy.

Two major categories of supply-side policies:

- Market-based
- Interventionist



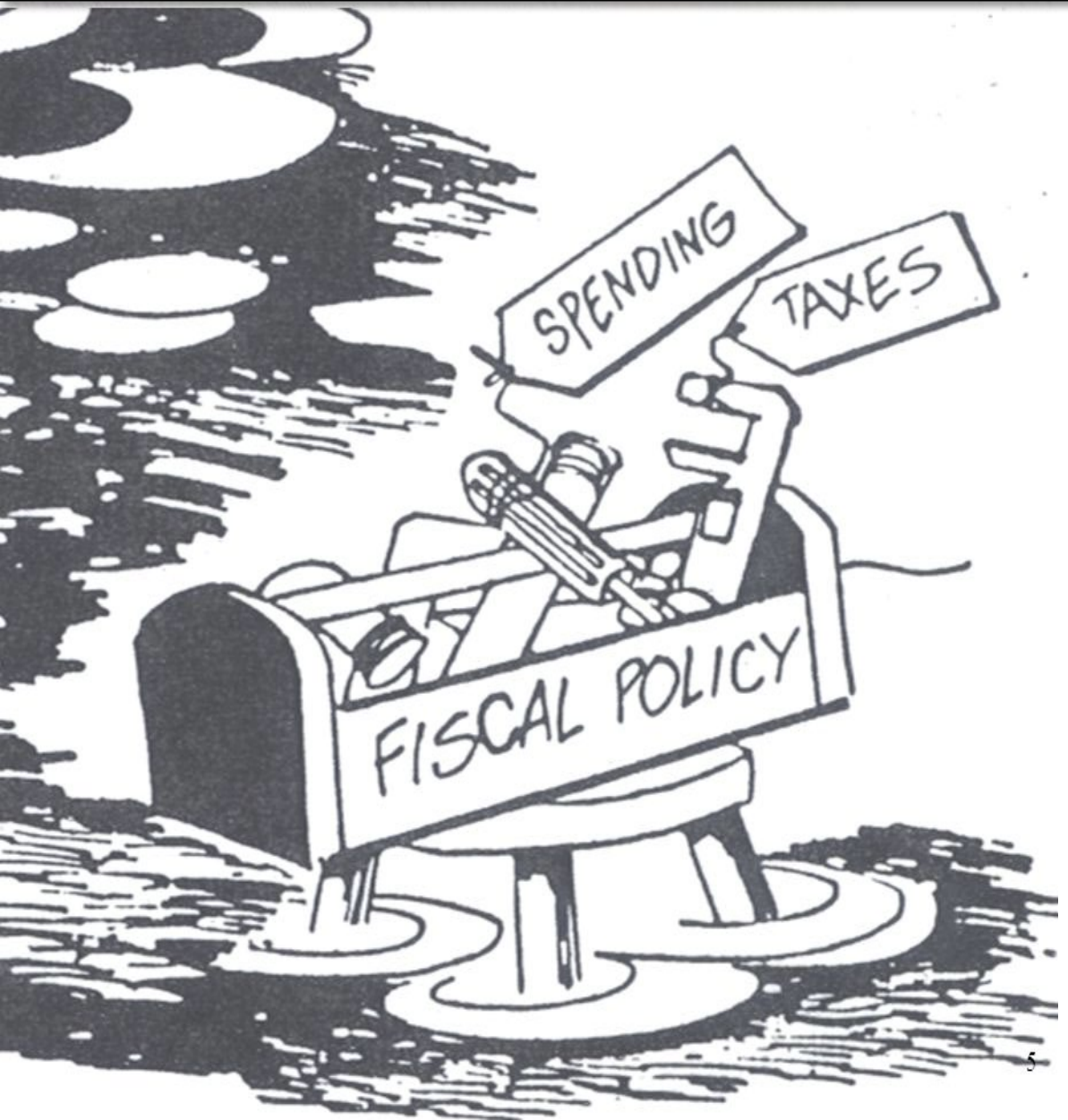
3.5 - 3.7 Demand-side and Supply-side Policies

Fiscal Policy

The goals of the policy include:

- Low and stable inflation
- Low unemployment
- Reduce business cycle fluctuations
- Promote a stable economic environment for long-term growth
- External balance
- Equitable distribution of income

3.5 - 3.7 Demand-side and Supply-side Policies



Fiscal Policy

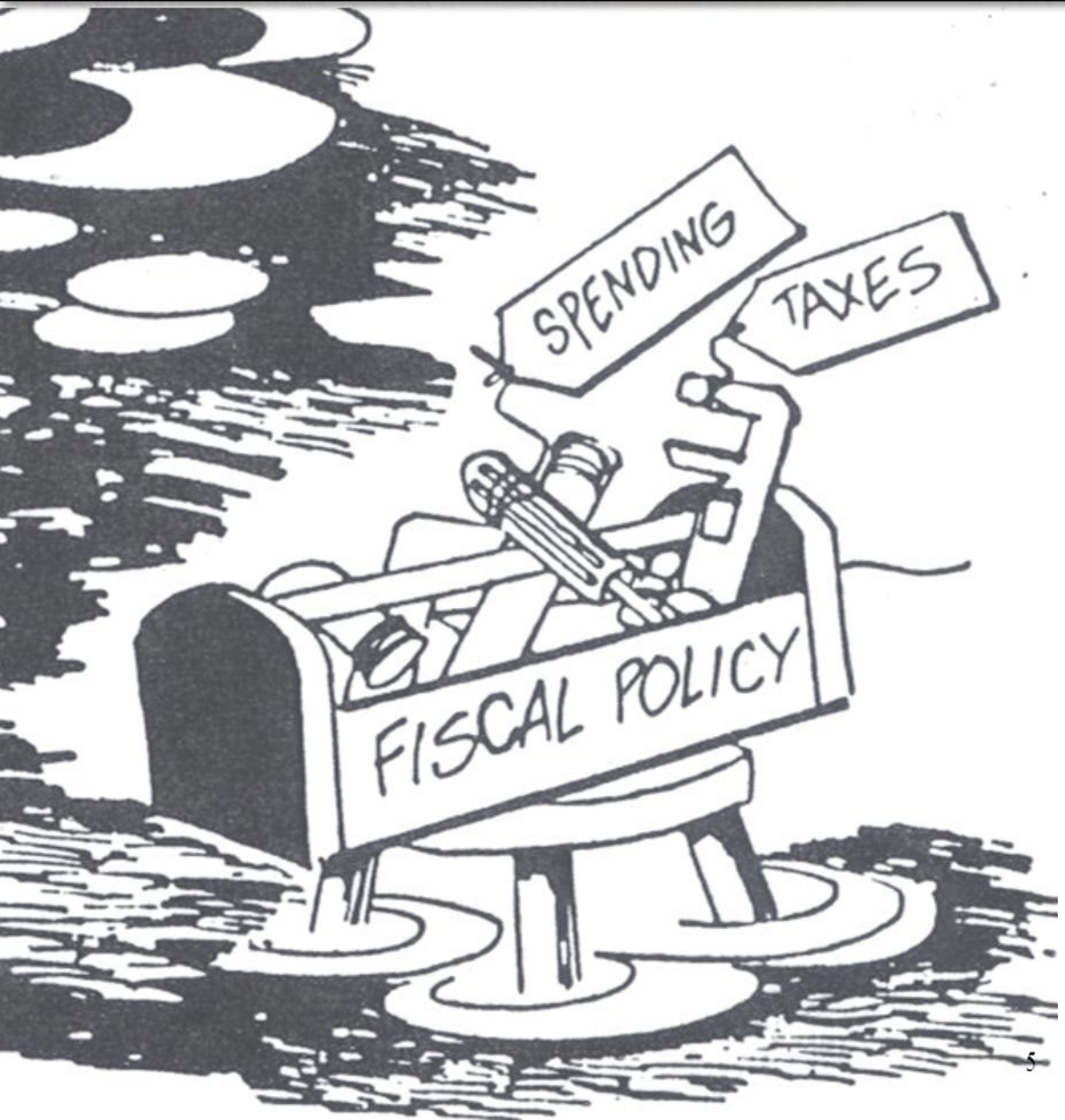
Fiscal policy refer to manipulation by the government of its own expenditure and taxes to influence the level of aggregate demand.

This will affect the **government budget** which consists of **revenue** and **expenditures**.

Sources of government revenue includes:

- Taxes of all types (direct and indirect)
- Sale of goods and services
- Sale of government-owned enterprises

3.5 - 3.7 Demand-side and Supply-side Policies



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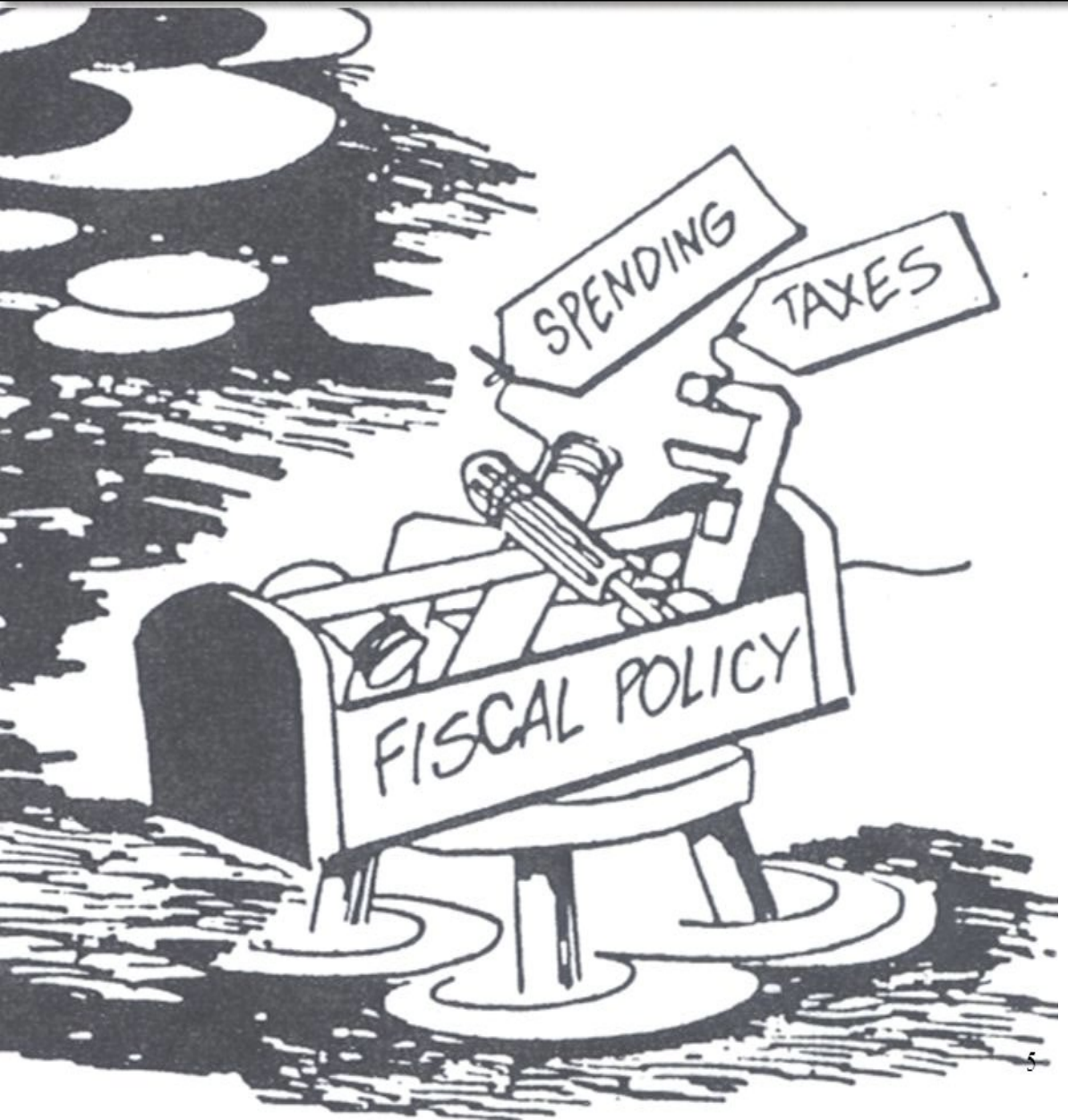
Government expenditures include:

- Current expenditures (day-to-day items)
- Capital expenditures (public investments)
- **Transfer payments (various allowances)**

3.5 - 3.7 Demand-side and Supply-side Policies



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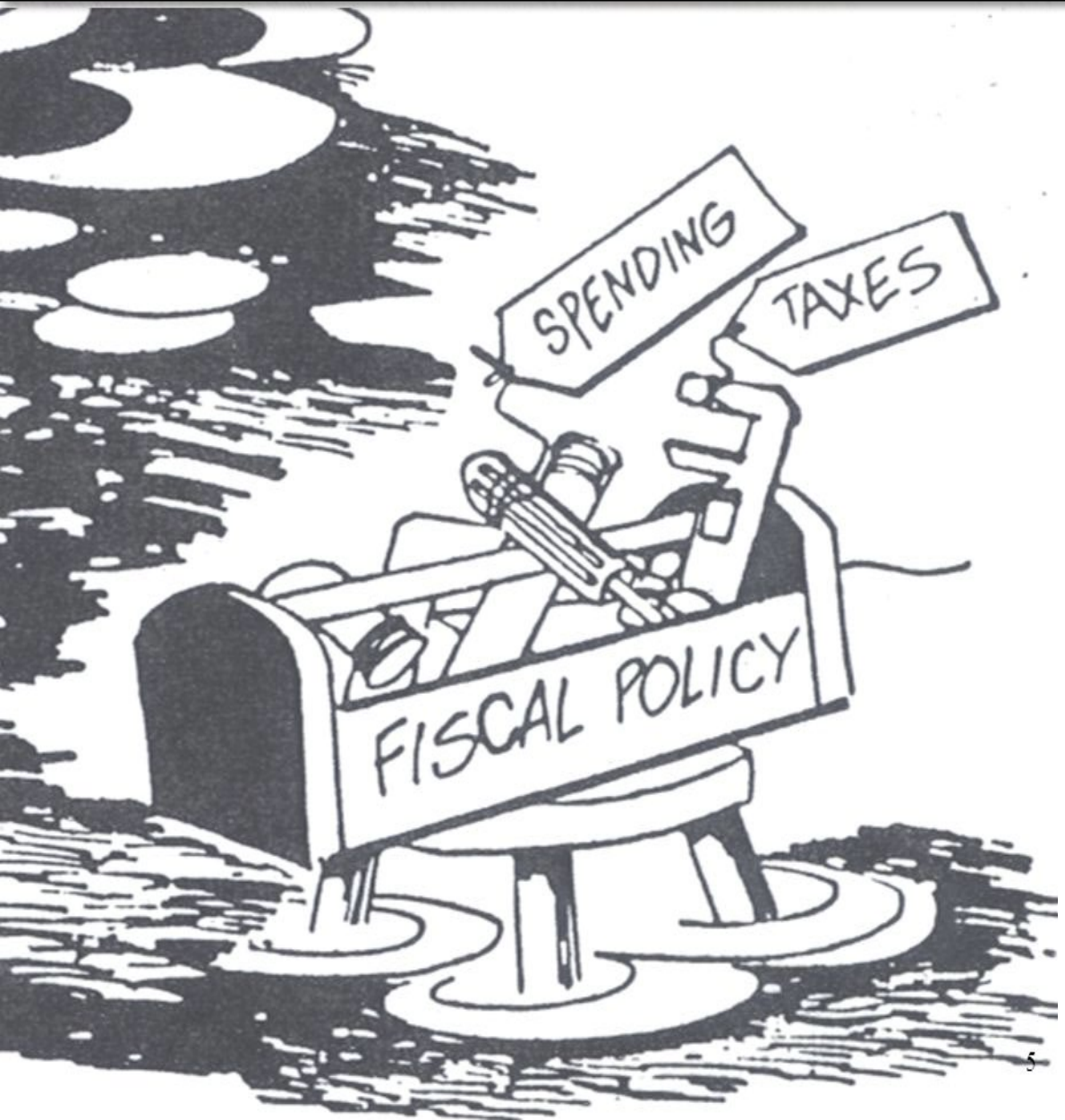
Budget Deficit	Balanced Budget	Budget Surplus
Expenditures *greater than* Tax Revenues	Expenditures *equal to* Tax Revenues	Expenditures *less than* Tax Revenues

Requires borrowings that becomes **government debt**

3.5 - 3.7 Demand-side and Supply-side Policies



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

Fiscal policy can directly affect three components of **aggregate demand**.

3.5 - 3.7 Demand-side and Supply-side Policies

Fiscal Policy

Expansionary Fiscal Policy

Recessionary gap can be reduced through the use of expansionary fiscal policy where it

- Increases government spending
- Decreases personal income taxes
- Decreases business taxes
- Or a combination of all the above

Expansionary policy (in recession)

Type of policy	Measures	Effects
Fiscal policy	increase government spending	increase *AD*
	lower personal income taxes → increase consumption spending	increase *AD*
	lower business taxes → increase investment spending	increase *AD*
Monetary policy	increase supply of money → lower interest rate →	
	(i) increase consumption spending	increase *AD*
	(ii) increase investment spending	increase *AD*

3.5 - 3.7 Demand-side and Supply-side Policies

Fiscal Policy

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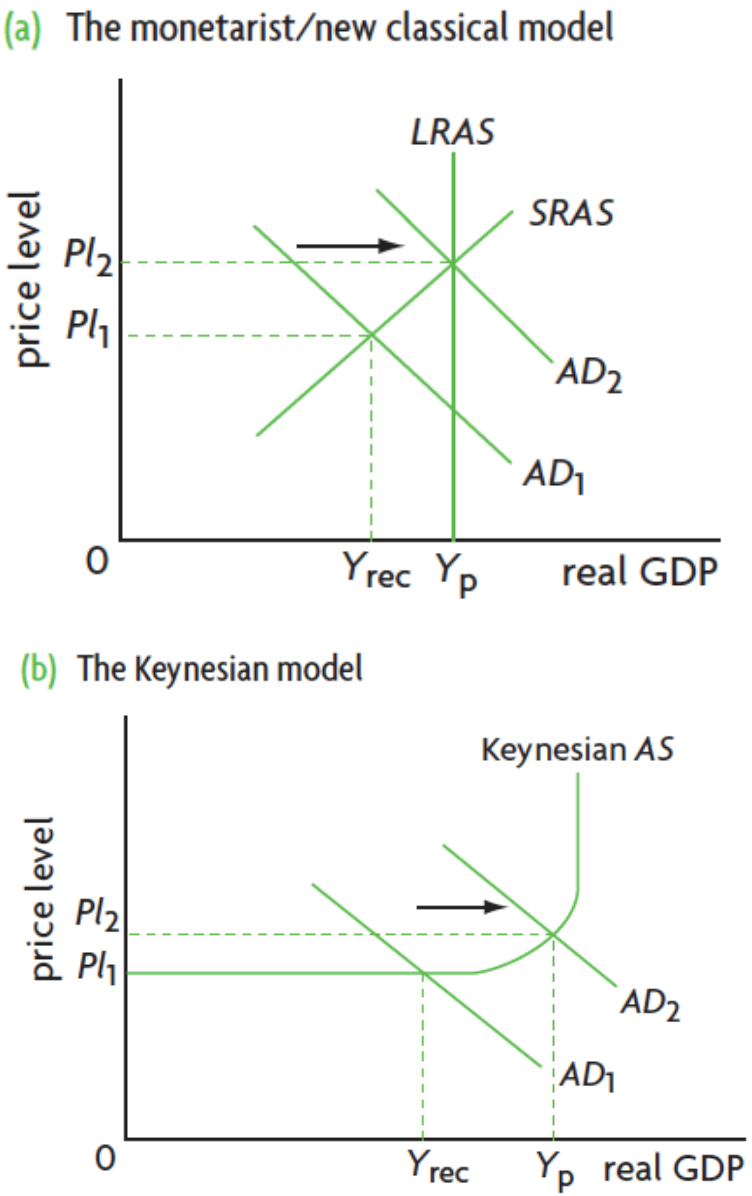


3.5 - 3.7 Demand-side and Supply-side Policies

Fiscal Policy

Expansionary Fiscal Policy

Real World Example:
American Recovery and Reinvestment Act of 2009

- Direct spending in infrastructure, education, health and energy
- Expansion of unemployment benefits and other social welfare provisions
- Lowering tax through the expansion of tax credits

3.5 - 3.7 Demand-side and Supply-side Policies

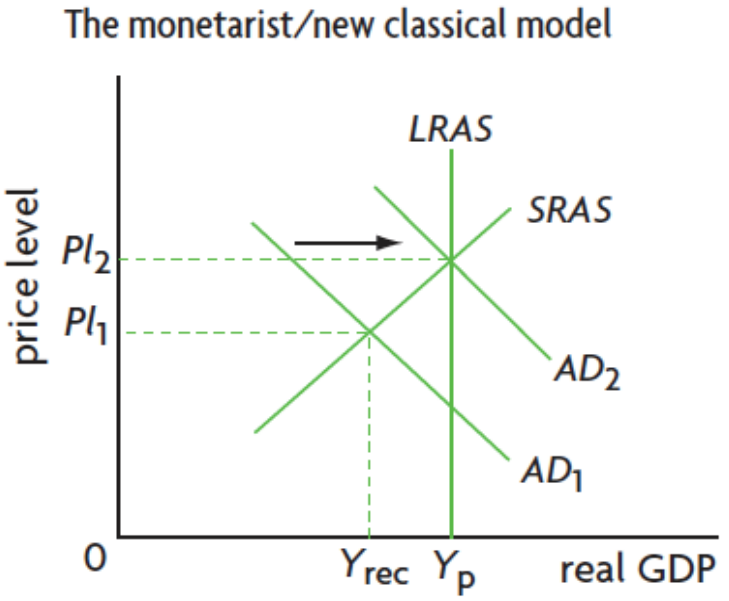
Fiscal Policy

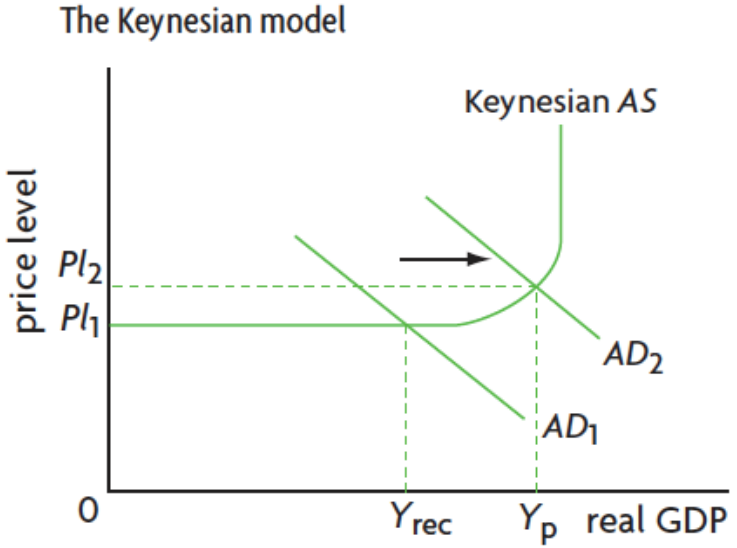
Expansionary Fiscal Policy

The effect of an increase in aggregate demand will slightly differ between the two models:

- Size of the increase in real GDP

- **Size of the increase in price levels**
  Price levels may not change in the Keynesian model if AD shifts entirely within the horizontal section of the AS curve.





3.5 - 3.7 Demand-side and Supply-side Policies

Fiscal Policy

Contractionary Fiscal Policy

Inflationary gap can be reduced through the use of contractionary fiscal policy where it

- Decreases government spending
- Increases personal income taxes
- Increases business taxes
- Or a combination of all the above

Contractionary policy (in inflation)

Type of policy	Measures	Effects
Fiscal policy	decrease government spending	decrease *AD*
	raise personal income taxes → decrease consumption spending	decrease *AD*
	raise business taxes → decrease investment spending	decrease *AD*
Monetary policy	decrease supply of money → raise interest rate →	
	(i) decrease consumption spending	decrease *AD*
	(ii) decrease investment spending	decrease *AD*

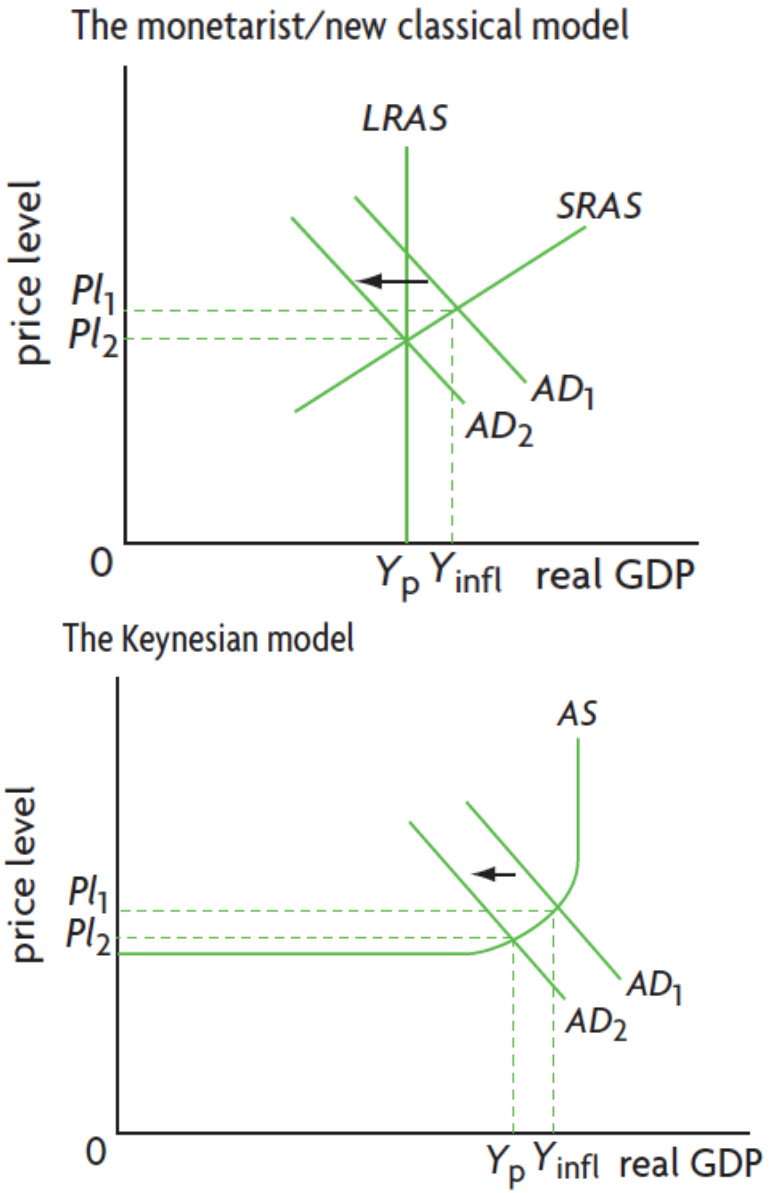
3.5 - 3.7 Demand-side and Supply-side Policies

Fiscal Policy

Contractionary Fiscal Policy

Inflationary gap can be reduced through the use of contractionary fiscal policy where it

- Decreases government spending
- Increases personal income taxes
- Increases business taxes
- Or a combination of all the above



3.5 - 3.7 Demand-side and Supply-side Policies

Fiscal Policy

Contractionary Fiscal Policy

Real World Example:

Greece Austerity Packages introduced in 2010

The first austerity package was the first in a row of countermeasures to counter the Greek government-debt crisis. The purpose was to reduce the budget deficit.

3.5 - 3.7 Demand-side and Supply-side Policies

Fiscal Policy

Contractionary Fiscal Policy

Real World Example:

Greece Austerity Packages introduced in 2010

- Pay freeze for all public sector workers
- Legal maximum number of people private firms can lay off doubled from 2% to 4%
- Prevent early retirement
- Increase in indirect taxes

3.5 - 3.7 Demand-side and Supply-side Policies

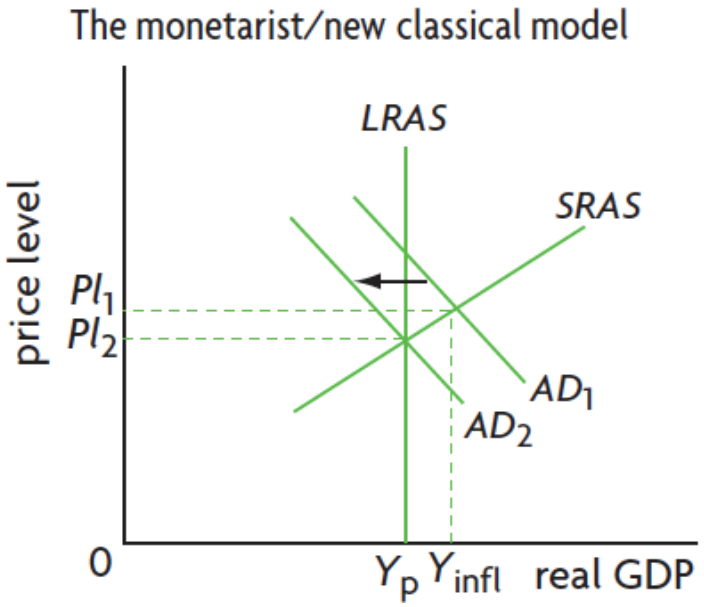
Fiscal Policy

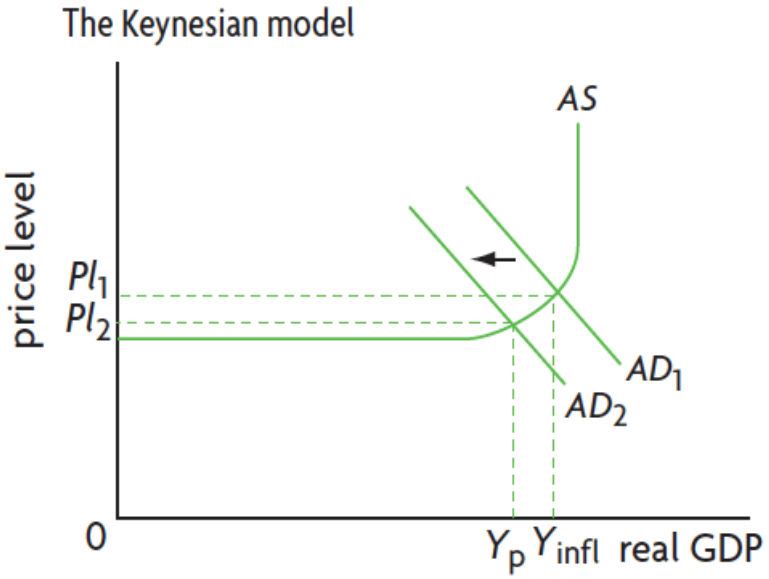
Contractionary Fiscal Policy

The effect of a decrease in aggregate demand is similar in the two models in terms of

- Size of the decrease in real GDP
- Size of the decrease in price levels

If AD were to decrease into the horizontal part of the Keynesian AS curve, the fall in real GDP will be larger with a smaller drop in price level.





3.5 - 3.7 Demand-side and Supply-side Policies

Fiscal Policy

Automatic Stabilisers

Automatic stabilisers are factors that automatically work toward stabilizing the economy by reducing the short-term fluctuations of the business cycle.

Non-discretionary policies include:

- Progressive income taxes
- Unemployment benefits

Fiscal Policy

Automatic Stabilisers

Automatic stabilisers are factors that automatically work toward stabilizing the economy by reducing the short-term fluctuations of the business cycle.

Non-discretionary policies include:

- **Progressive income taxes**
- Unemployment benefits

A **progressive tax** is where the higher the taxpayer's income, the higher the tax rate

Net Chargeable Income (in HKD currency)	Rate
0 – 50,000 HKD	2%
50,001 – 100,000 HKD	6%
100,001 – 150,000 HKD	10%
150,001 – 200,000 HKD	14%
Above 200,001 HKD	17%

Fiscal Policy

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Non-discretionary policies include:

- **Progressive income taxes**
- Unemployment benefits

During times of **expansion**:

- When GDP is growing, incomes will be rising
- Higher proportion of those incomes paid to government
- AD is dampened and counteracts the economic expansion

3.5 - 3.7 Demand-side and Supply-side Policies

HL Content only

Fiscal Policy

Automatic Stabilisers

Automatic stabilisers are factors that automatically work toward stabilizing the economy by reducing the short-term fluctuations of the business cycle.

Non-discretionary policies include:

- **Progressive income taxes**
- Unemployment benefits

During times of **recession**:

- When GDP is falling, incomes will be decreasing
- Lower proportion of those incomes paid to government
- Reduces pressure on falling AD and counteracts the economic contraction

Fiscal Policy

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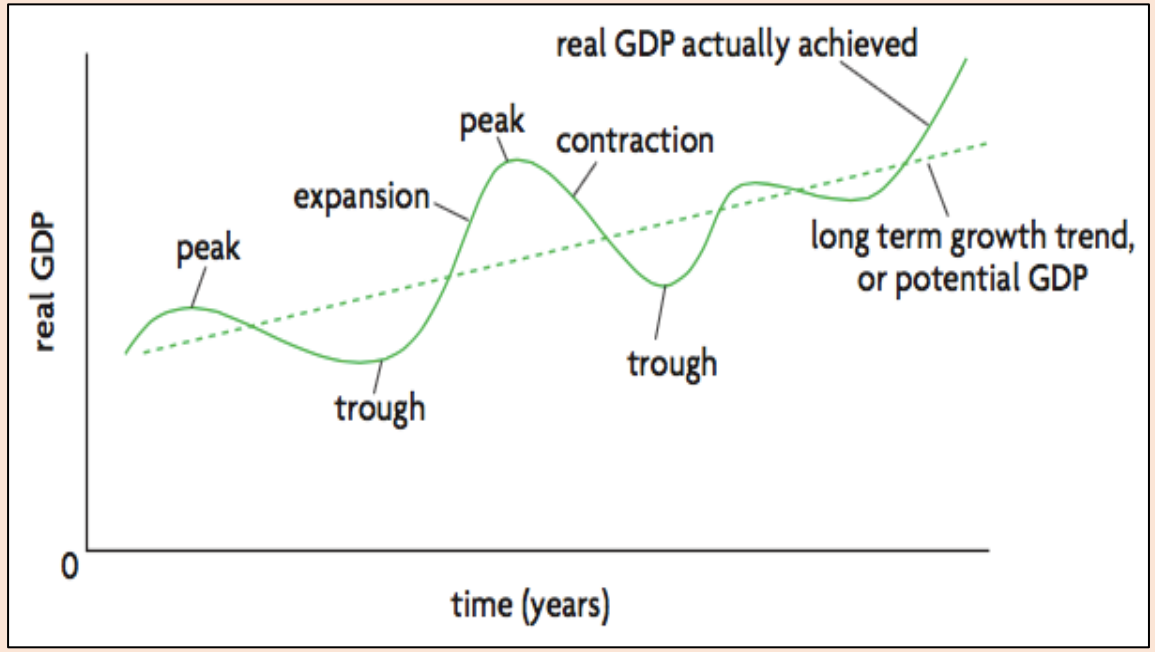
- Unemployment benefits



The more progressive an income tax system, the greater the stabilising effect on economic activity

Fiscal Policy

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Non-discretionary policies include:

- Progressive income taxes
- **Unemployment benefits**

Transfer payments refer to payments by the government to private persons or institutions that are not payments for current productive activity.

These include:

- Unemployment payments
- Welfare benefits
- Pensions

Not included in the measurement of GDP

Fiscal Policy

Automatic Stabilisers

Automatic stabilisers are factors that automatically work toward stabilizing the economy by reducing the short-term fluctuations of the business cycle.

Non-discretionary policies include:

- Progressive income taxes
- **Unemployment benefits**

During times of **recession**:

- Unemployment benefits rise as they are offered to more unemployed workers
- Workers' consumption will be somewhat maintained – lessening the downward pressure on AD

During times of **expansion**:

- Some workers may be inclined to stay jobless to claim unemployment benefits

Fiscal Policy

Automatic Stabilisers

Automatic stabilisers are factors that automatically work toward stabilizing the economy by reducing the short-term fluctuations of the business cycle.

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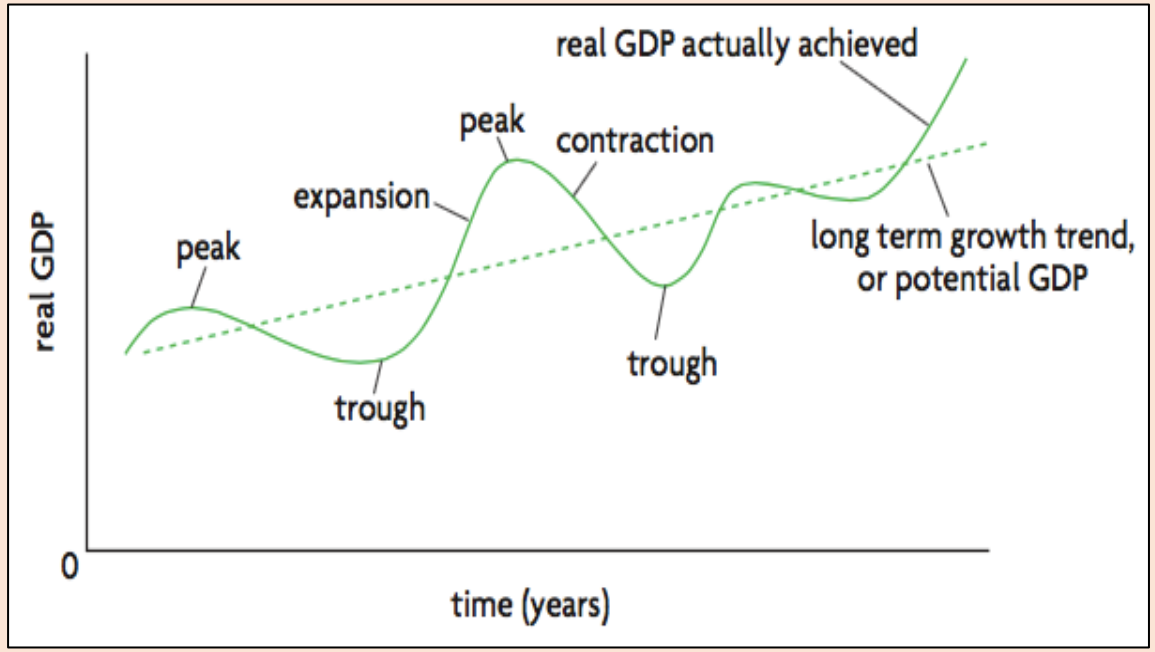
Automatic stabilisers reduces the magnitude of the fluctuations of AD.



Discretionary fiscal policy is needed if there are substantial fluctuations in AD.

3.5 - 3.7 Demand-side and Supply-side Policies

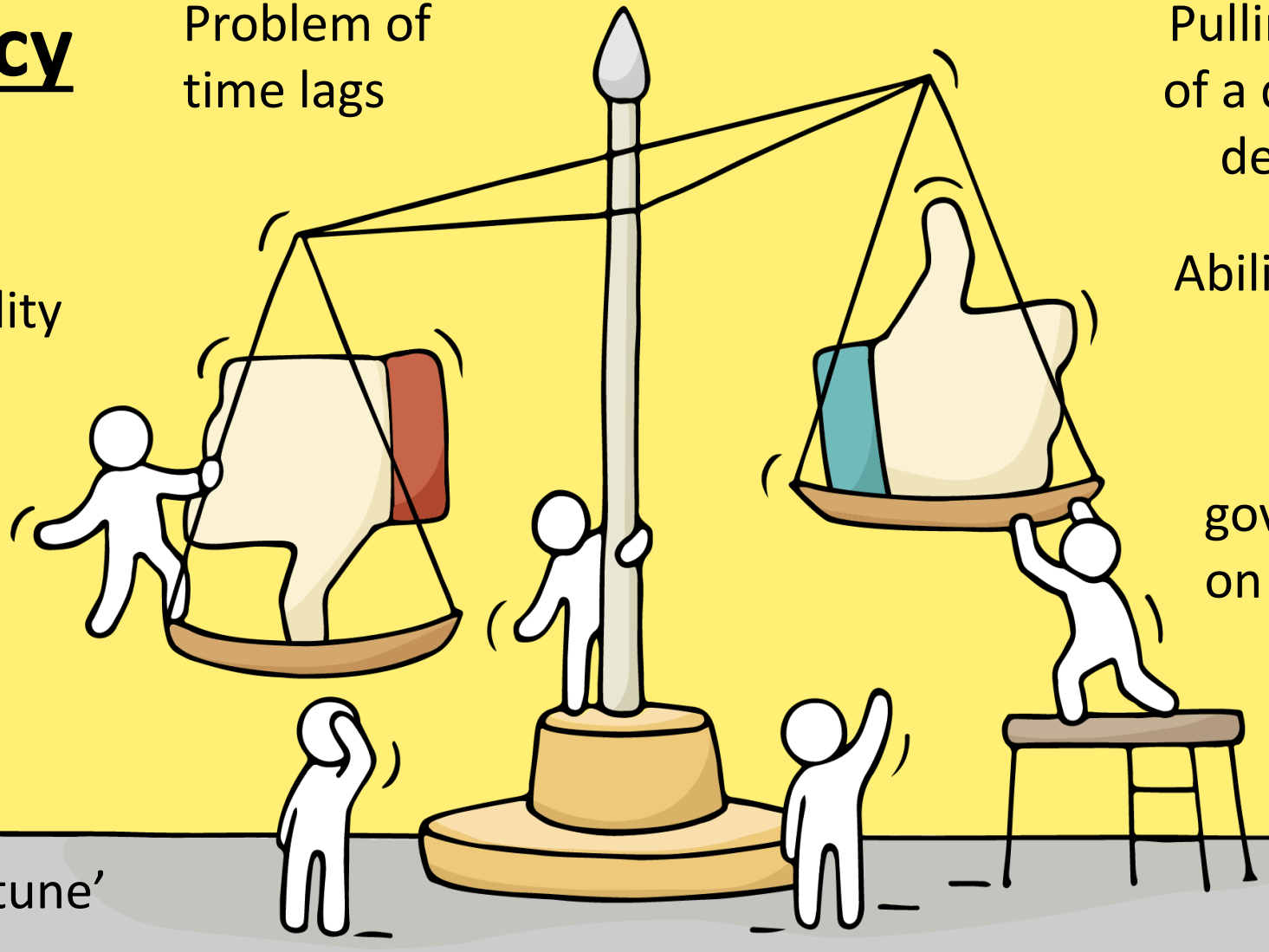
Fiscal Policy

Problem of time lags

Inability to deal with supply-side causes of instability (stagflation)

Tax cuts may not be very effective during recession

Crowding out



Pulling an economy out of a deep recession and dealing with inflation

Ability to target sectors of the economy

Direct impact of government spending on aggregate demand

Ability to affect potential output

Inability to 'fine tune' the economy

Dealing with rapid inflation

Fiscal Policy

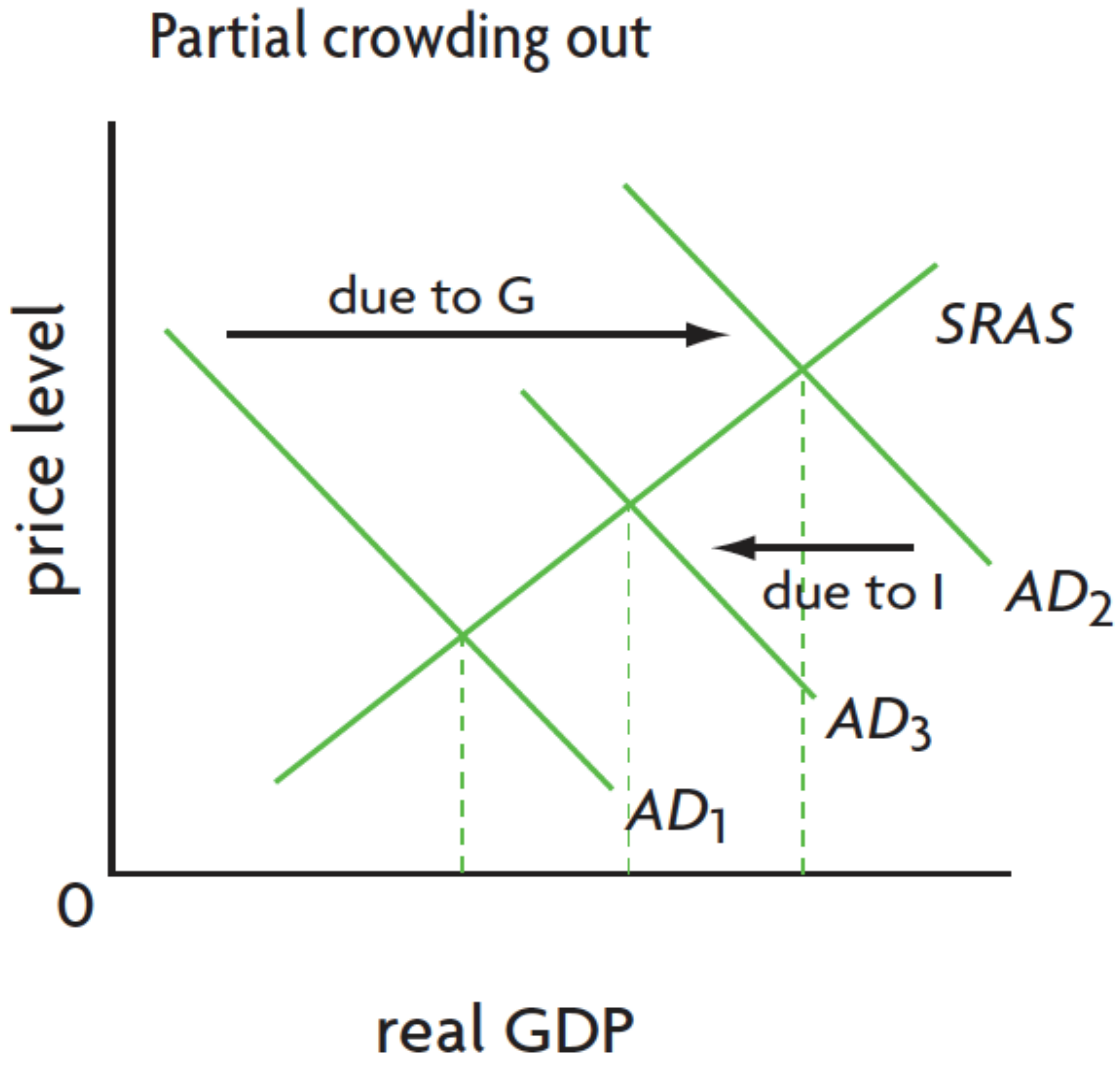
Crowding out

Expansionary fiscal policy may involve deficit spending by the government.

The increase in demand for money raises the rate of **interest**.

Investments by private firms are lowered.

Fiscal policy is weakened by partial or complete **crowding out**.



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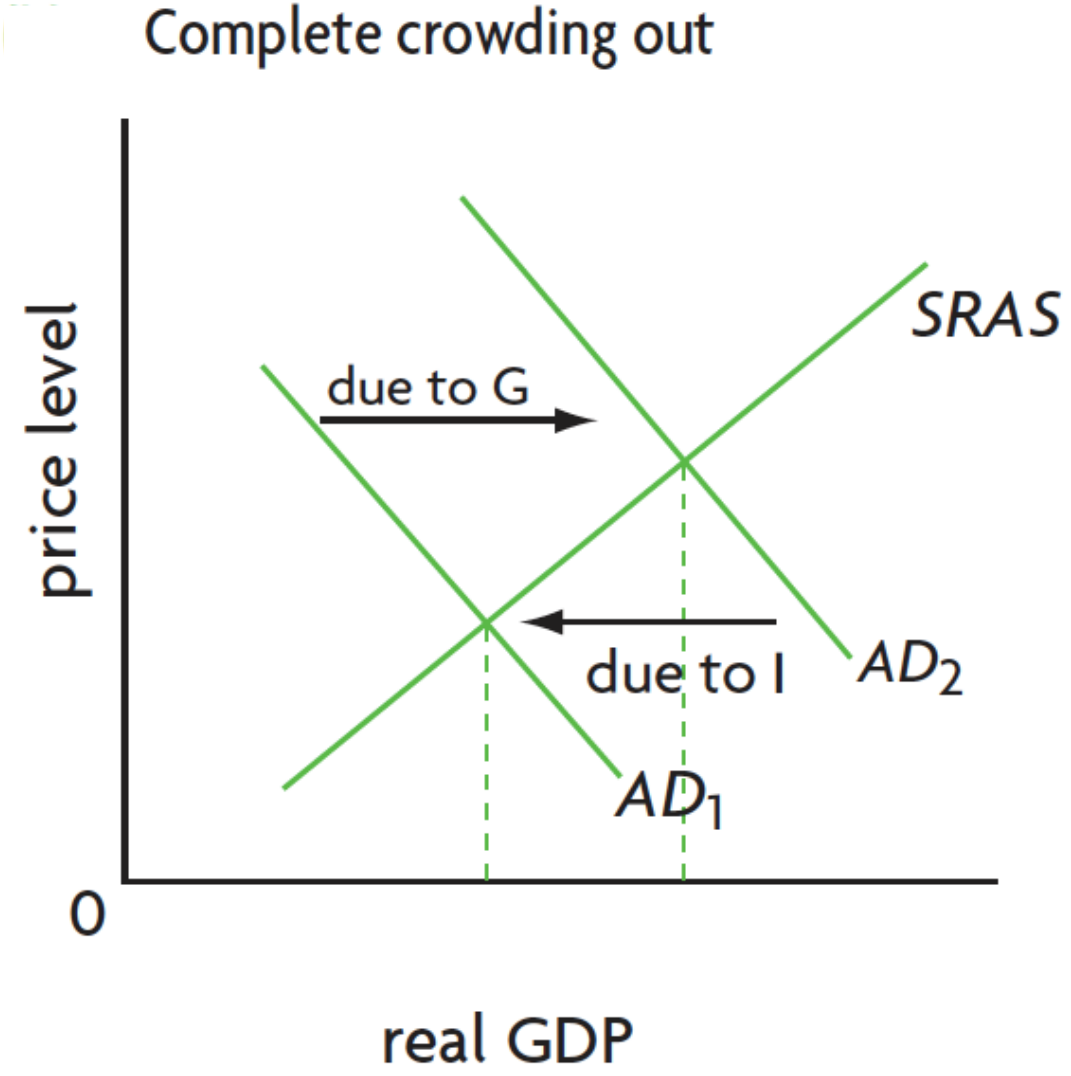

3.5 - 3.7 Demand-side and Supply-side Policies

Fiscal Policy

Long-term Economic Growth

Fiscal policy focuses mainly on short-term stabilization

It can also contribute to long-term growth of **potential GDP** by

- Providing a stable macroeconomic environment (indirectly)
- Allocating government spending in areas that increases aggregate demand

3.5 - 3.7 Demand-side and Supply-side Policies

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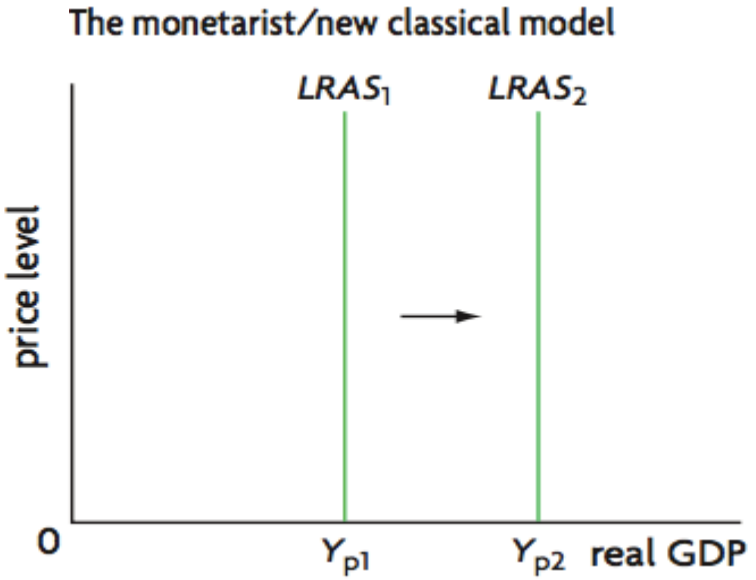

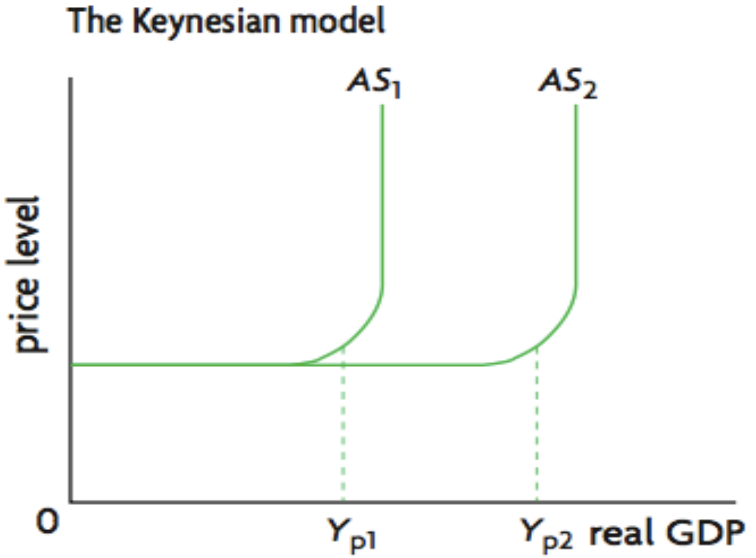

3.5 - 3.7 Demand-side and Supply-side Policies

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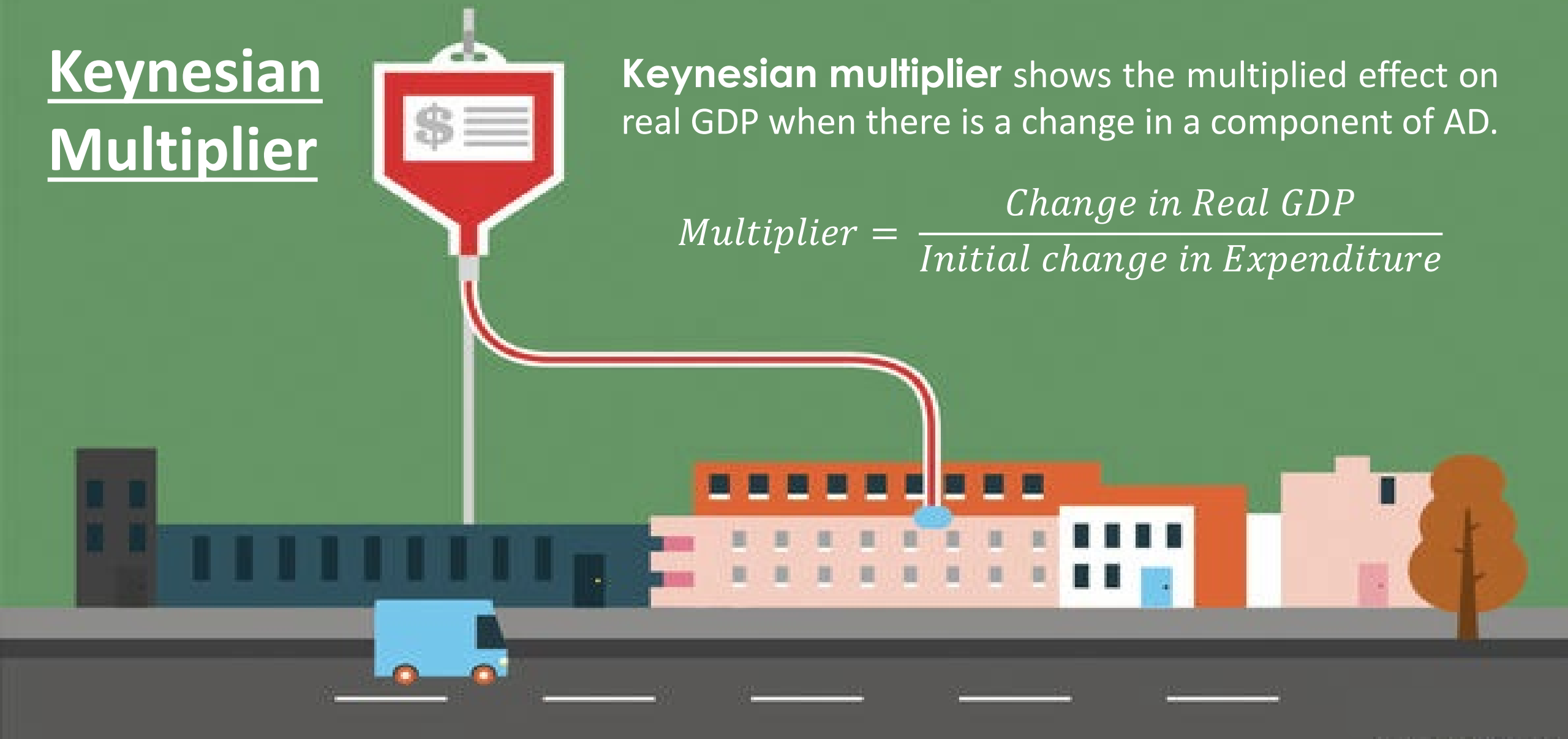
3.5 - 3.7 Demand-side and Supply-side Policies

HL Content only

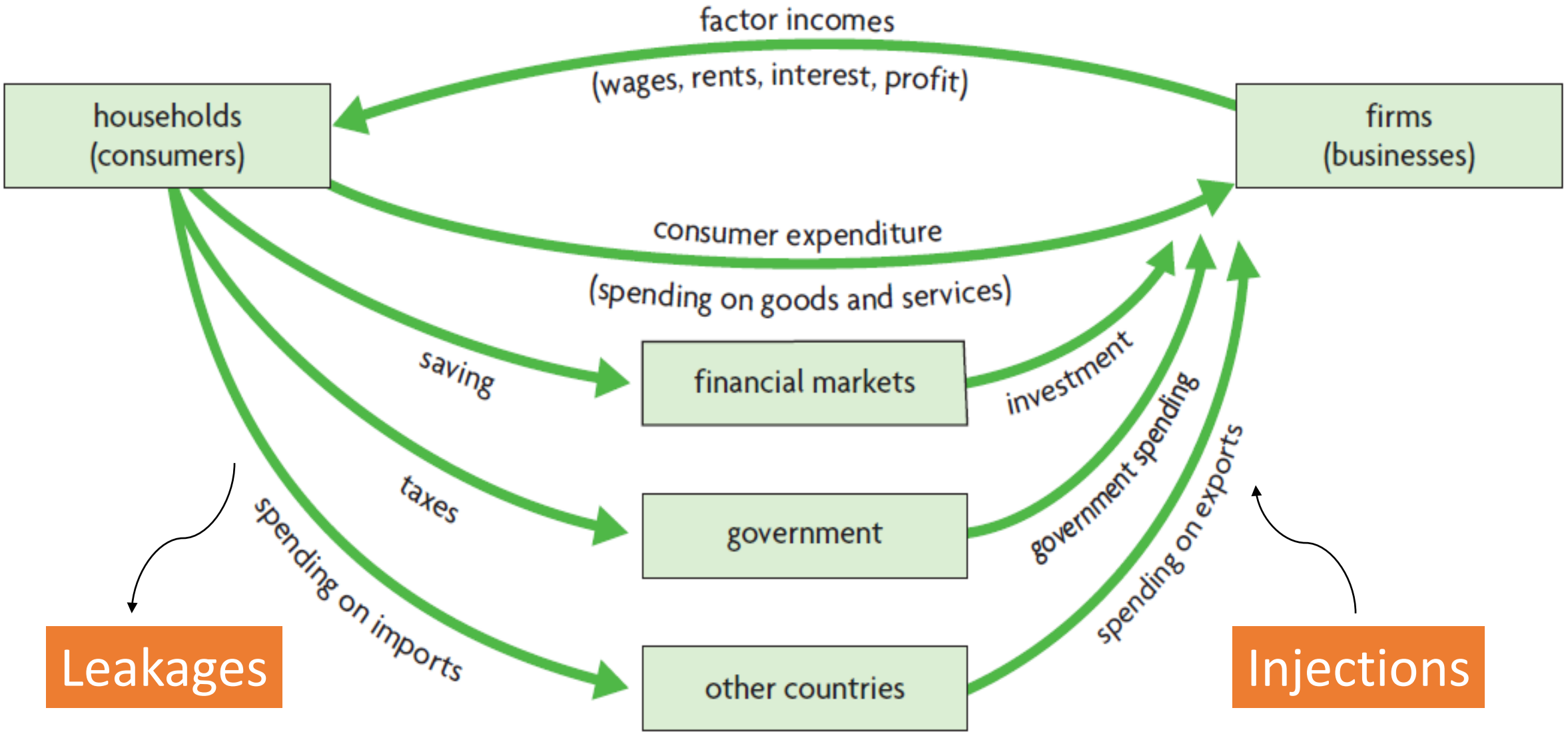
Keynesian Multiplier



Keynesian multiplier shows the multiplied effect on real GDP when there is a change in a component of AD.

$$Multiplier = \frac{Change\ in\ Real\ GDP}{Initial\ change\ in\ Expenditure}$$

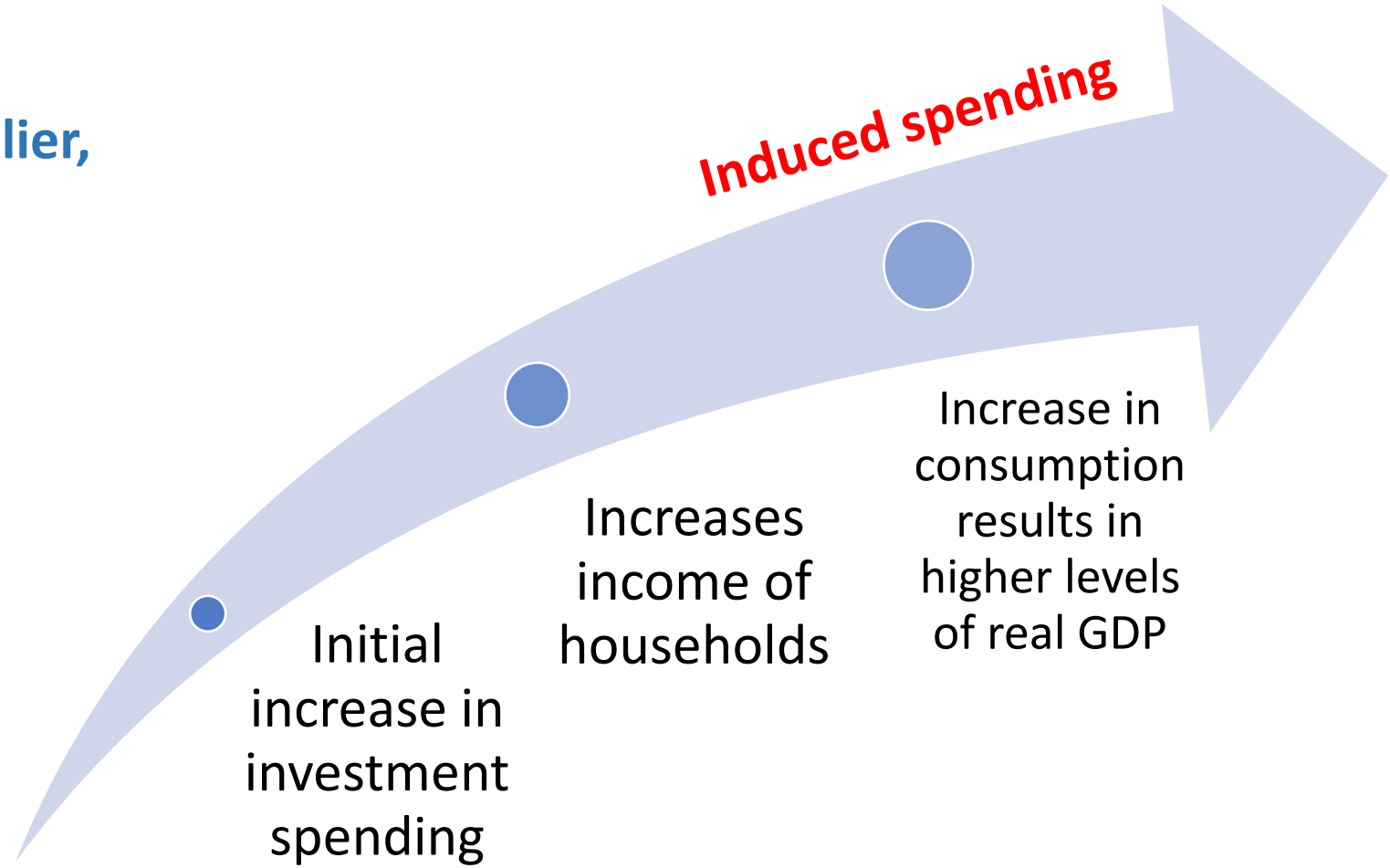
3.5 - 3.7 Demand-side and Supply-side Policies



Keynesian Multiplier

To calculate the value of the multiplier, we must consider the following:

- Marginal propensity to consume
- Marginal propensity to save
- Marginal propensity to tax
- Marginal propensity to import



Keynesian Multiplier

Initial increase in investment expenditure of $8 million:	Change in income (real GDP) ($ million)	Induced change in consumption expenditure ($ million)
1st round	8	$\frac{3}{4} \times 8 = 6$
2nd round	6	$\frac{3}{4} \times 6 = 4.5$
3rd round	4.5	$\frac{3}{4} \times 4.5 = 3.38$
4th round	3.38	$\frac{3}{4} \times 3.38 = 2.5$
(process continues an infinite number of times)		
Total	32	$\frac{3}{4} \times 32 = 24$

Marginal propensity to consume (MPC) is the fraction of additional income that households spend on consumption of domestically produced goods and services.

MPC + MPS + MPT + MPM = 1

$$Multiplier = \frac{Change\ in\ Real\ GDP}{Initial\ change\ in\ Expenditure}$$

$$= \frac{32\ million}{8\ million}$$

$$= 4$$

Keynesian Multiplier

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The value of the multiplier depends on the induced changes in consumption.

Therefore, the relationship between the multiplier and the MPC is:

$$multiplier = \frac{1}{1 - MPC}$$

Keynesian Multiplier

The larger the **MPC** *(the smaller the leakages from spending stream)*, the greater the multiplier

The same result would be obtained given an initial increase in any injection into the income flow (i.e. any component of AD).

The multiplier applies equally to **decreases in expenditures**.

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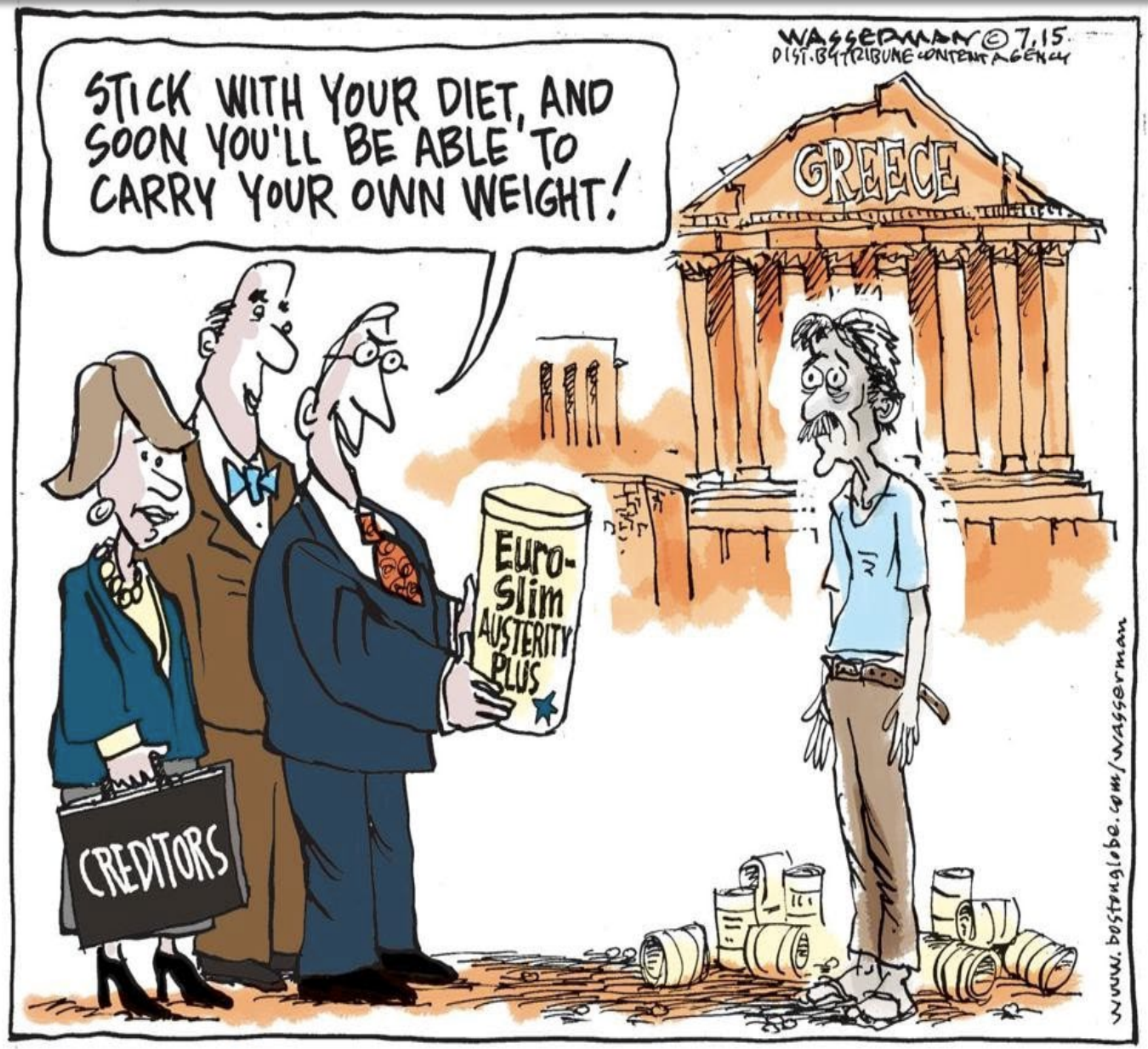

Keynesian Multiplier

Multiplier and Real GDP

Suppose a country with a real GDP of $135 billion and an MPC of $\frac{4}{5}$ experiences an increase in exports of $2 billion.

What is the change and the final value of real GDP?

Step 1: Calculate the multiplier

$$multiplier = \frac{1}{1 - MPC}$$

$$= \frac{1}{1 - \frac{4}{5}}$$

$$= 5$$

Step 2 : Find the total change in expenditure

Total change = Initial change x multiplier
= 2 billion x 5
= $10 billion

Keynesian Multiplier

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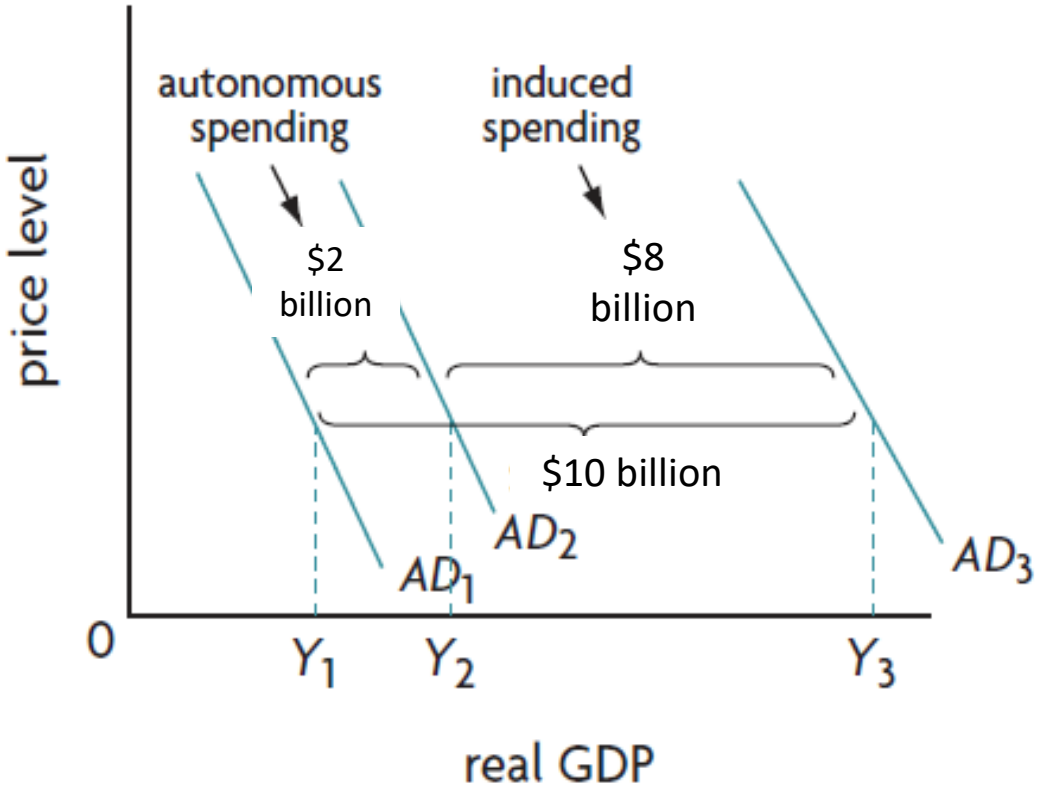
Total change = Initial change x multiplier
= 2 billion x 5
= \$10 billion

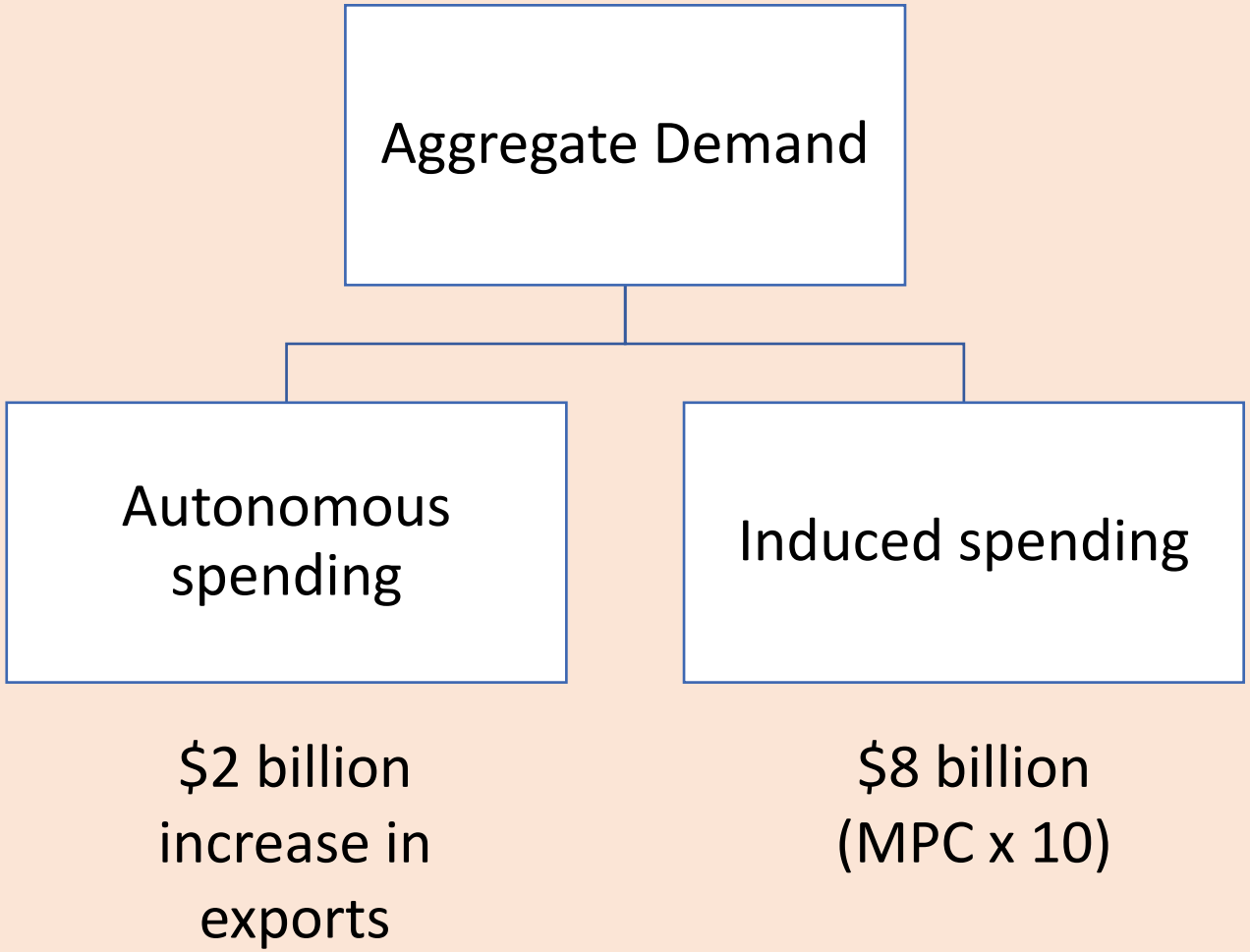
Step 3: Calculate the total value of real GDP

Total value of real GDP = 135 billion + 10 billion
= \$145 billion

Keynesian Multiplier

Multiplier, Real GDP and AD





Keynesian Multiplier

Multiplier, Real GDP and AD

All these factors involve changes in **autonomous spending**.

The *multiplier effect* can only be initiated by a change in spending that is not caused by a change in income.

Shifts in the aggregate demand curve are caused by:
Changes in consumer spending, arising from: • changes in consumer confidence • changes in interest rates (monetary policy) • changes in wealth • changes in personal income taxes (fiscal policy) • changes in the level of household indebtedness • expectations of future price levels
Changes in investment spending, arising from: • changes in business confidence • changes in interest rates (monetary policy) • changes (improvement) in technology • changes in business taxes (fiscal policy) • changes in the level of corporate indebtedness • legal/institutional changes
Changes in government spending, arising from: • changes in political priorities • changes in economic priorities: deliberate efforts to influence aggregate demand (fiscal policy)
Changes in foreigners' spending, arising from: • changes in national income abroad • changes in exchange rates • changes in the level of trade protection

3.5 - 3.7 Demand-side and Supply-side Policies

TEST YOUR UNDERSTANDING 13.8 (HL ONLY)

1 a Define the multiplier.

b Outline why changes in real GDP are likely to be larger than the initial change in spending by a component of aggregate demand.

c Using a hypothetical numerical example explain why the multiplier is important.

2 a Define the marginal propensity to consume (*MPC*).

b Outline why the *MPC* is important in determining the size of the multiplier.

c Outline the role of leakages in determining the size of the multiplier.

3 Calculate the multiplier when the MPC is

a $\frac{4}{5}$

b $\frac{3}{4}$

c $\frac{2}{3}$

d $\frac{1}{2}$

4 Based on your answers to question 3, outline what we can conclude about the relationship between the size of the *MPC* and the size of the multiplier.

5 Calculate the value of the multiplier when

a the *MPS* = *MPT* = *MPM* = 0.1, and

b the *MPS* = 0.13, *MPT* = 0.12, and the *MPM* = 0.15.

3.5 - 3.7 Demand-side and Supply-side Policies

6 Based on your answers to question 5, outline what we can conclude about the relationship between the size of *MPS* + *MPT* + *MPM* and the size of the multiplier. Explain the reasoning behind this relationship.

7 In a country with a real GDP of \$50 billion and an *MPC* = $\frac{2}{3}$, find the change in real GDP and the final value of real GDP (assuming a constant price level) for each of the following:

- **a** an increase in net exports (exports minus imports) of \$2 billion,
- **b** a fall in investment spending of \$3 billion,
- **c** an increase in government spending of \$7 billion, and
- **d** a decrease in consumption spending of \$1.5 billion.

8 Answer all the parts of question 7 assuming that the *MPS* + *MPT* + *MPM* = $\frac{1}{4}$

9 **Optional** Using a diagram showing the Keynesian *AD-AS* model, show the effects of the multiplier when

- **a** the price level is constant, and
- **b** the price level is increasing.

3.5 - 3.7 Demand-side and Supply-side Policies

Test your understanding 13.8

3 $\text{multiplier} = \dfrac{1}{1 - MPC}$

a $MPC = \dfrac{4}{5}$: $\text{multiplier} = \dfrac{1}{1 - \frac{4}{5}} = \dfrac{1}{\frac{1}{5}} = 5$

b $MPC = \dfrac{3}{4}$: $\text{multiplier} = \dfrac{1}{1 - \frac{3}{4}} = \dfrac{1}{\frac{1}{4}} = 4$

c $MPC = \dfrac{2}{3}$: $\text{multiplier} = \dfrac{1}{1 - \frac{2}{3}} = \dfrac{1}{\frac{1}{3}} = 3$

d $MPC = \dfrac{1}{2}$: $\text{multiplier} = \dfrac{1}{1 - \frac{1}{2}} = \dfrac{1}{\frac{1}{2}} = 2$

3.5 - 3.7 Demand-side and Supply-side Policies

4 The larger the MPC, the larger the multiplier; the smaller the MPC, the smaller the multiplier. The reason is that if the MPC is large, there are small leakages (withdrawals) from the spending stream; therefore the consumption spending that feeds back into the spending stream is larger, making the multiplier larger.

5 a $MPS + MPT + MPM = 0.1 + 0.1 + 0.1 = 0.3$

$$\text{therefore the multiplier} = \frac{1}{0.3} = 3.33$$

b $MPS + MPT + MPM = 0.13 + 0.12 + 0.15 = 0.4$

$$\text{therefore the multiplier} = \frac{1}{0.4} = 2.5$$

3.5 - 3.7 Demand-side and Supply-side Policies

6 The larger the leakages the smaller the multiplier because the *MPC* is smaller. Therefore the consumption spending that feeds back into the spending stream is smaller, making the multiplier smaller.

7 If the $MPC = \frac{2}{3}$ the multiplier = 3.

a $2 billion × 3 = $6 billion increase in real GDP, so the final value of real GDP = $50 billion + $6 billion = $56 billion

b –$3 billion × 3 = $9 billion or a fall in real GDP of $9 billion, so the final value of real GDP = $50 billion
– $9 billion = $41 billion

c $7 billion × 3 = $21 billion increase in real GDP, so the final value of real GDP = $50 billion + $21 billion = $71 billion

d –1.52 billion × 3 = $4.5 billion or a fall in real GDP of $4.5 billion, so the final value of real GDP = $50 billion – $4.5 billion = $45.5 billion (This presupposes that the change in consumption is autonomous, or independent of income.)

3.5 - 3.7 Demand-side and Supply-side Policies

8 If the $MPS + MPT + MPM = \frac{1}{4}$, then the multiplier = 4.

a $2 billion × 4 = $8 billion increase in real GDP, so the final value of real GDP = $50 billion + $8 billion = $58 billion

b –$3 billion × 4 = $12 billion or a fall in real GDP of $12 billion, so the final value of real GDP = $50 billion – $12 billion = $38 billion

c $7 billion × 4 = $28 billion increase in real GDP, so the final value of real GDP = $50 billion + $28 billion = $78 billion

d –$1.5 billion × 4 = $6 billion or a fall in real GDP of $6 billion, so the final value of real GDP =$50 billion × $6 billion = $44 billion (This presupposes that the change in consumption is autonomous, or independent of income.)

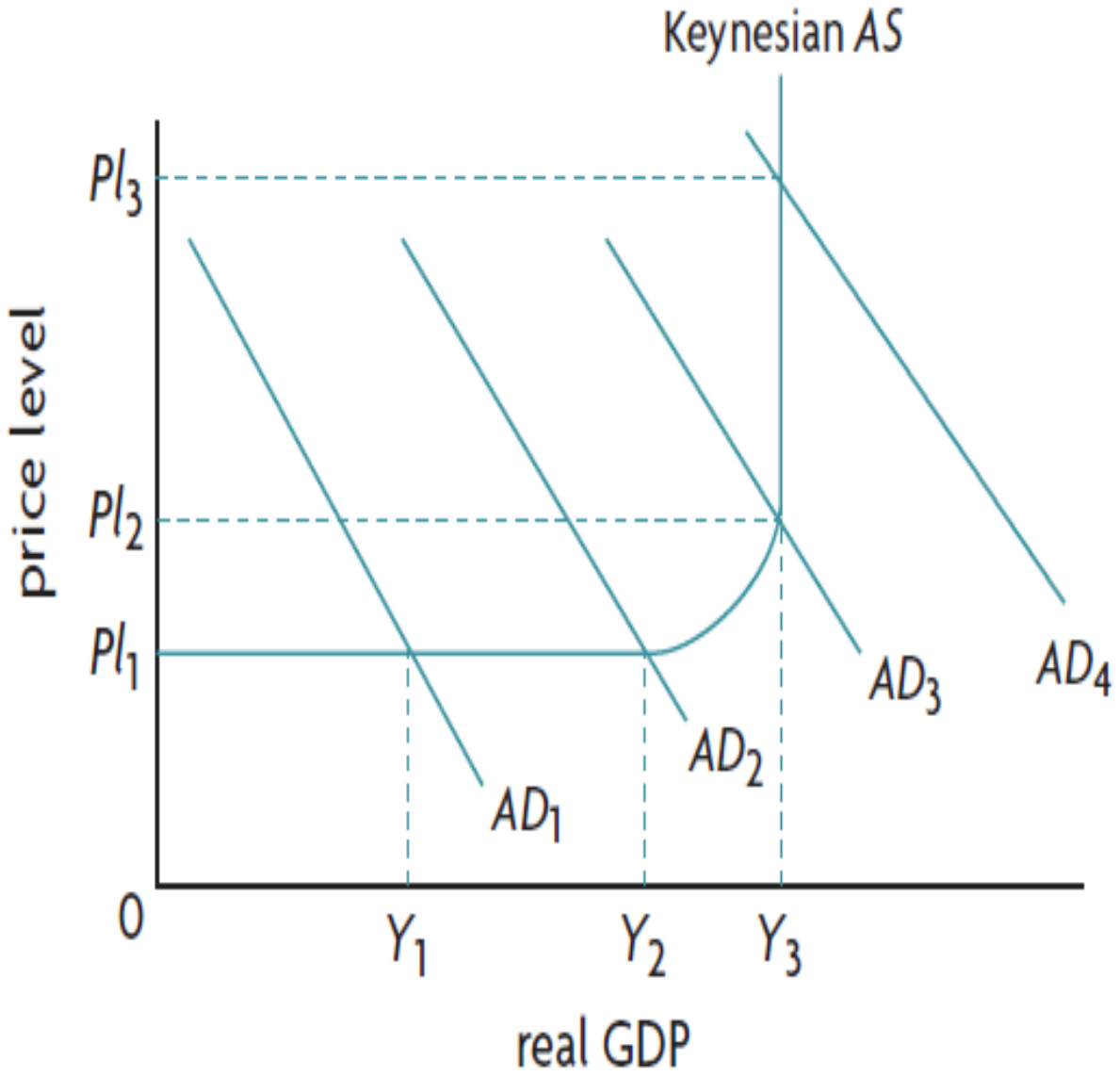
Keynesian Multiplier

Multiplier and Price Level

The horizontal distance between the AD curves are identical.

Depending which section along AS curve the AD shift occurs, this will have a different change in real GDP.

The increasing price level **absorbs the multiplier effect** as AD shifts in section II and III of the AS curve.



Keynesian Multiplier

Multiplier and Price Level

The multiplier will have the greatest possible effect on real GDP when price level is constant.

This theory cannot be depicted by the monetarist/new classical model.

We assume there is constant price level when calculating the multiplier's effect on real GDP in the economy.