A2 MACROECONOMICS

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CHAPTER 1

NATIONAL INCOME INTRODUCTION

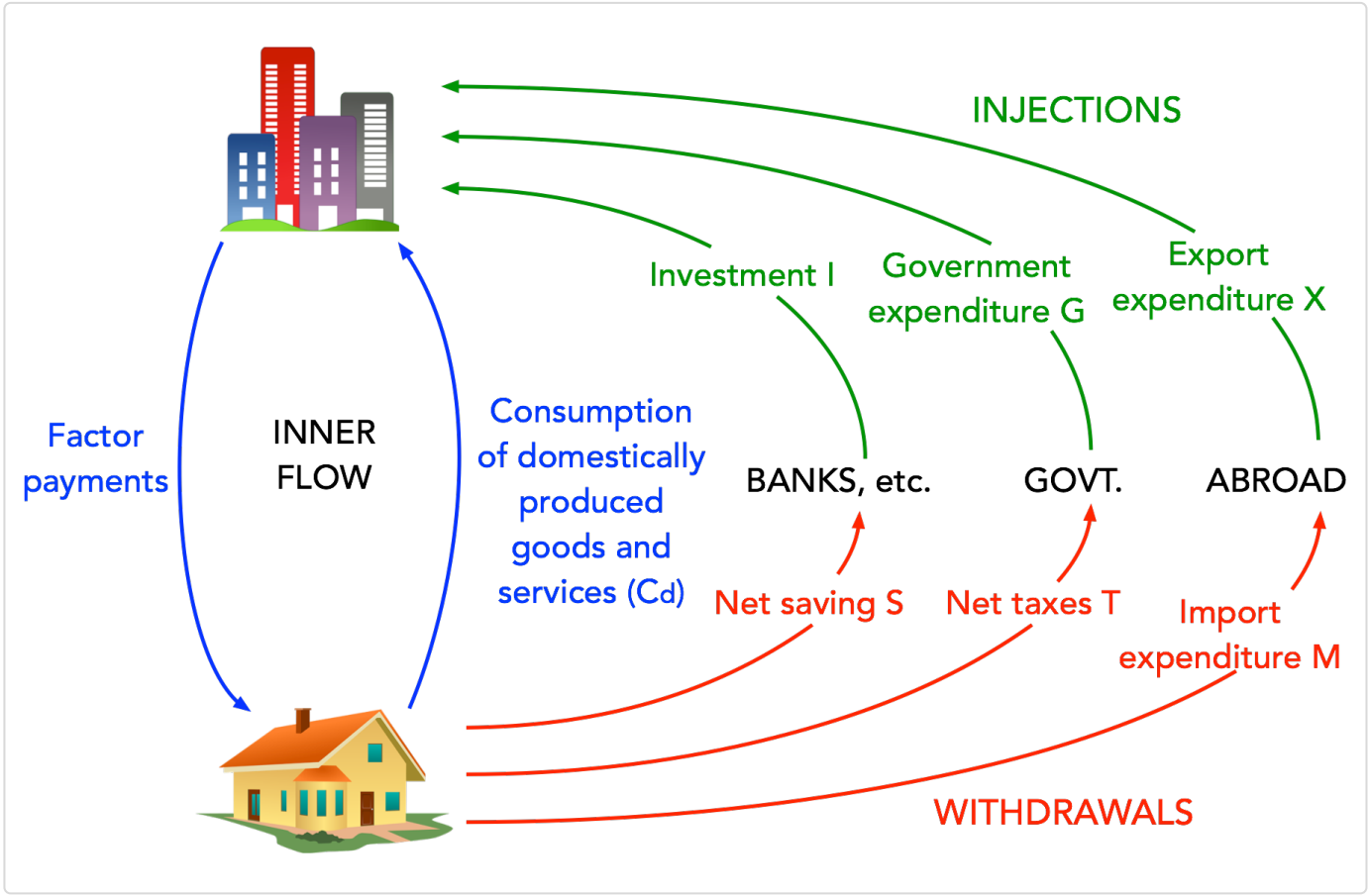
MICRO VS. MACRO

Macroeconomics examines issues relating to an economy as a whole, such as unemployment, inflation, growth and the balance of payments. This means that the focus of macroeconomics is on aggregate economic variables. Whereas microeconomics may be interested in explaining why the price of corn is rising, macroeconomics investigates why the average price level may be rising. In microeconomics, the focus may be on how many workers a firm will employ but macroeconomics examines the total level of employment and unemployment in a country. In other words, in macroeconomics we zoom out of individual markets and firms and look at what is going on in the country.

CIRCULAR FLOW OF INCOME

The circular flow model is a simplified representation of how the basic decision-making units of an economy (households, firms, the government and in an 'open' economy the foreign sector) interact. It describes the flows between these units. These flows can be real (flows of factors of production, flows of goods and services) or monetary (flows of expenditures on goods and services, flows of incomes generated in the production process).

FIGURE 1.1 **Circular flow of Income**



Leakage or Withdrawal refer to those parts of national income that are not used for consumption. A withdrawal from the circular flow is therefore spending which does not flow back from household to firms. Injections are supplementary expenditure not originating from the domestic households.

Withdrawals	Injections
Saving Taxes Imports	Investment Government Spending Exports

$$W = S + T + M$$

$$J = I + G + X$$

There are indirect links between saving and investment, taxation and government expenditure, and imports and exports, via financial institutions, the government (central and local) and foreign countries respectively. If more money is saved, there will be more available for banks and other financial institutions to lend out. If tax receipts are higher, the government may be keener to increase its expenditure. Finally, if imports increase, incomes of people abroad will increase, which will enable them to purchase more of our exports.

Equilibrium in the circular flow: In equilibrium, injections are equal to withdrawals. If for example, injections exceed withdrawals, this will lead to a rise in national income. But as national income rises, so households will not only spend more on domestic goods (Cd), but also save more (S), pay more taxes (T) and buy more imports (M). In other words, withdrawals will rise. This will continue until they have risen to equal injections. At that point, national income will stop rising, and so will withdrawals. Equilibrium has been reached.

CHAPTER 2

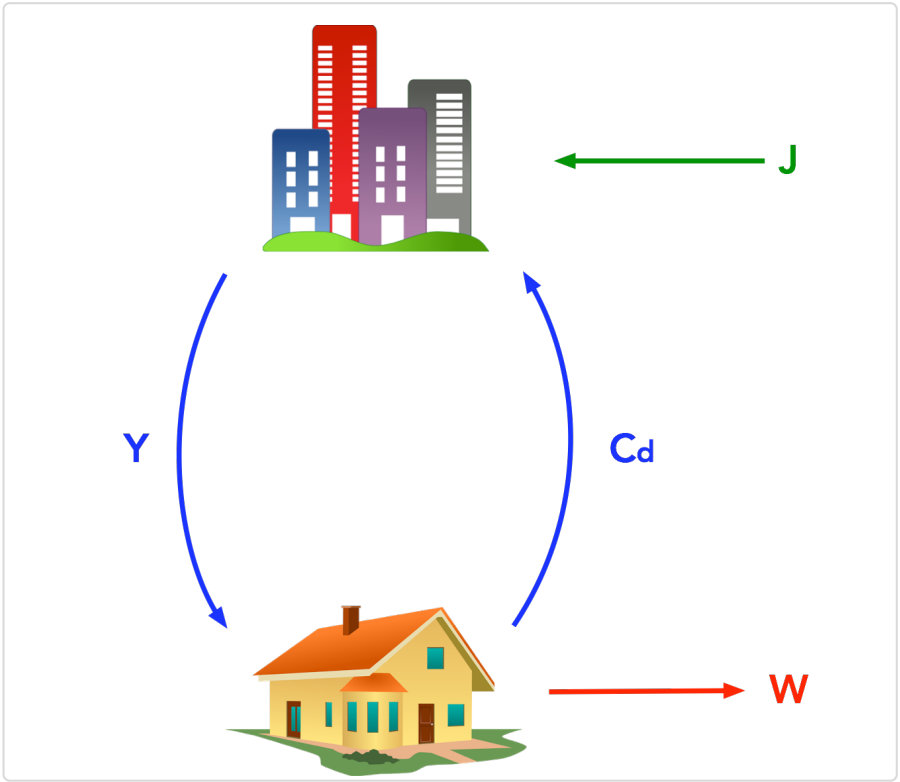
NATIONAL INCOME DETERMINATION

In national income determination, we will start off by building a macroeconomic model. The analysis is based on the model developed by Keynesians, a macroeconomic school of thought of the 20th century British economist John Maynard Keynes.

The level of production in the economy depends on the level of aggregate demand. If people buy more, firms will produce more in response to this, given that they have spare capacity. If people buy less, firms will cut down their production and lay off workers. But just how much will national income rise or fall as aggregate demand changes? We will answer this as the chapter progresses.

AGGREGATE EXPENDITURE (AE):

FIGURE 2.1 **Aggregate Expenditure**



Looking at the diagram, the consumption of domestically produced goods (C_d) and the three withdrawals (W) – net saving (S), net taxes (T) and spending on imports (M) – all depend on the level of national income (Y). In fact, in the model, national income must always equal consumption of domestic goods plus withdrawals: there is nothing else people can do with their incomes!

$$Y \equiv C_d + W$$

Total spending in the economy on the goods and services of domestic firms is defined as aggregate demand (AD) or Aggregate Expenditure. Aggregate expenditure consists of C_d plus the three injections (J): investment in the domestic economy (I), government expenditure in the domestic economy (G) and expenditure from abroad on the country's exports (X).

$$AD \equiv AE \equiv C_d + J$$

In equilibrium, withdrawals equal injections. Since national income (Y) is simply withdrawals plus C_d, and aggregate expenditure (E) is simply injections plus C_d, it follows that in equilibrium national income must equal aggregate expenditure. To summarize:

$$W = J$$

Therefore, $C_d + W = C_d + J$

$$Y = E (= AD)$$

In this model, it is assumed that the levels of consumption and withdrawals are determined by the level of national income. Since national income is part of the model, we say that consumption and withdrawals are endogenous. This means that they vary with income. Injections, however, are assumed to be exogenous: they are determined independently of what is going on in the model; they do not depend on the level of national income.

2 SECTOR MODEL

$$AE = C + I$$

In a simple model, we will examine the determinants of each component – consumption and investment – of desired aggregate expenditure.

Consumption

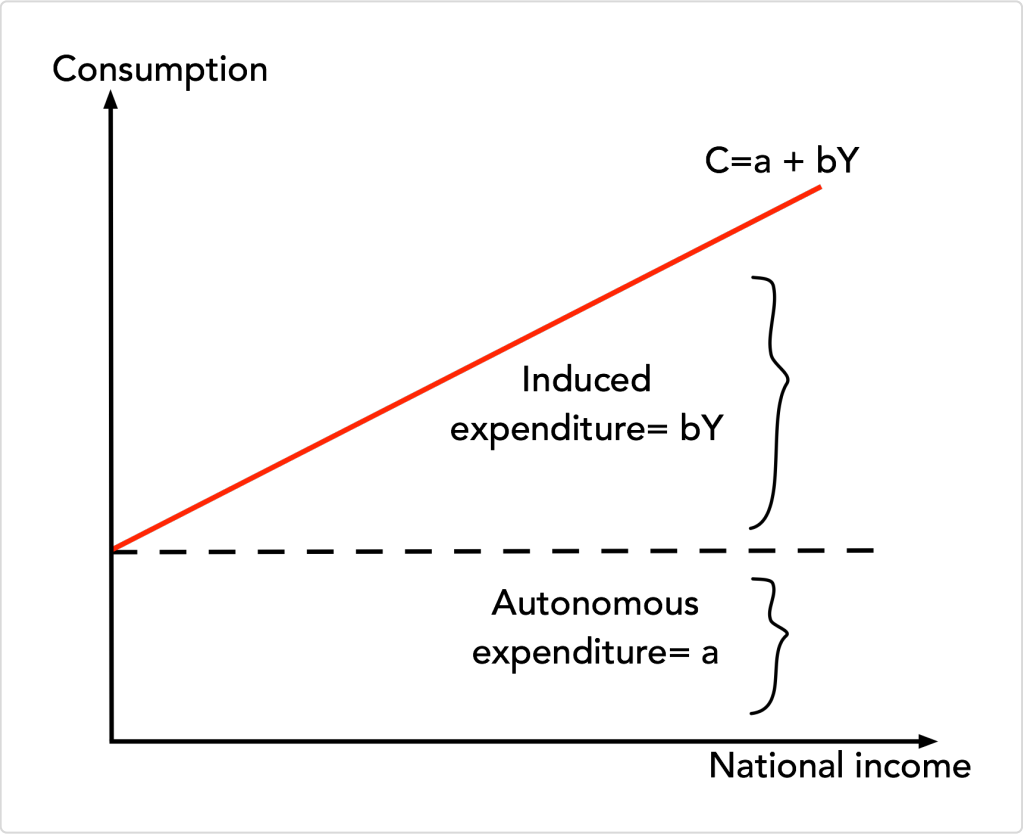
Consumer spending is spending by households on goods and services to satisfy current wants, e.g. spending on food, clothes etc. Keynesians believe that consumption is dependent on the level of current income where they define consumption as:

$$C = a + bY$$

(Keynesian Consumption Function)

When income rises, total spending also rises ($Y\uparrow \rightarrow C\uparrow$).

FIGURE 2.2 **Consumption function**



As can be seen in figure 2.2, the consumption function doesn't start from the origin. This implies that even when the income level is zero, there will still be spending. This spending is called autonomous spending or consumption. How could households consume if they have no income? This spending is not driven by income. This spending is necessary consumption for which households have to borrow money or draw their past savings.

Induced Spending: 'bY' is the income induced spending or endogenous spending and suggests that as more and more income increases, more and more consumption will also increase. The extent to which consumption increases due to increases in income is measured by the slope or gradient

'b' which is called the marginal propensity to consume (MPC).

MPC = Δ C / Δ Y = Amount of every dollar earned that is spent.

For the economy as a whole, the marginal propensity to consume is likely to be positive and less than one. Any rise in income will lead to more spending but also some saving too.

While total spending rises with income, the proportion of disposable income that is spent tends to fall. Economists refer to this proportion as the average propensity to consume (APC).

APC = Consumption / Income = C / Y

Graphical Representation of Consumption Function

We can define consumption function as:

$$AE = C = 100 + 0.8Y \text{ (Equation 1)}$$

Where a = 100 and b = mpc = 0.8

FIGURE 2.3 **Consumption function**

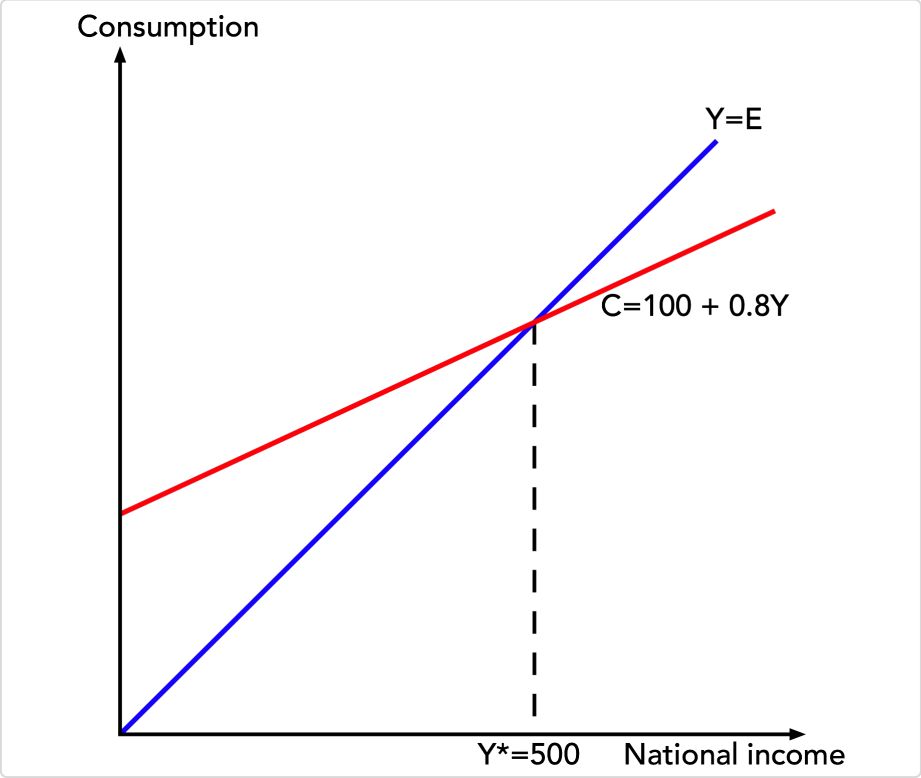


Figure 2.3 contains the Y = AE line, where the desired consumption expenditure is equal to the income. The line is called 45° line or the income line as the line has a positive slope of unity and forms an angle of 45° with the axes.

The point at which consumption function meets the 45° line can be found by equating the two lines:

$$Y = E = C$$

And C = 100 + 0.8 Y (Equation 2)

Therefore Y = C at the point where the two lines meet.

Putting Equation 1 in Equation 2: Y = 100 + 0.8 Y

0.2 Y = 100 or Y* = 500

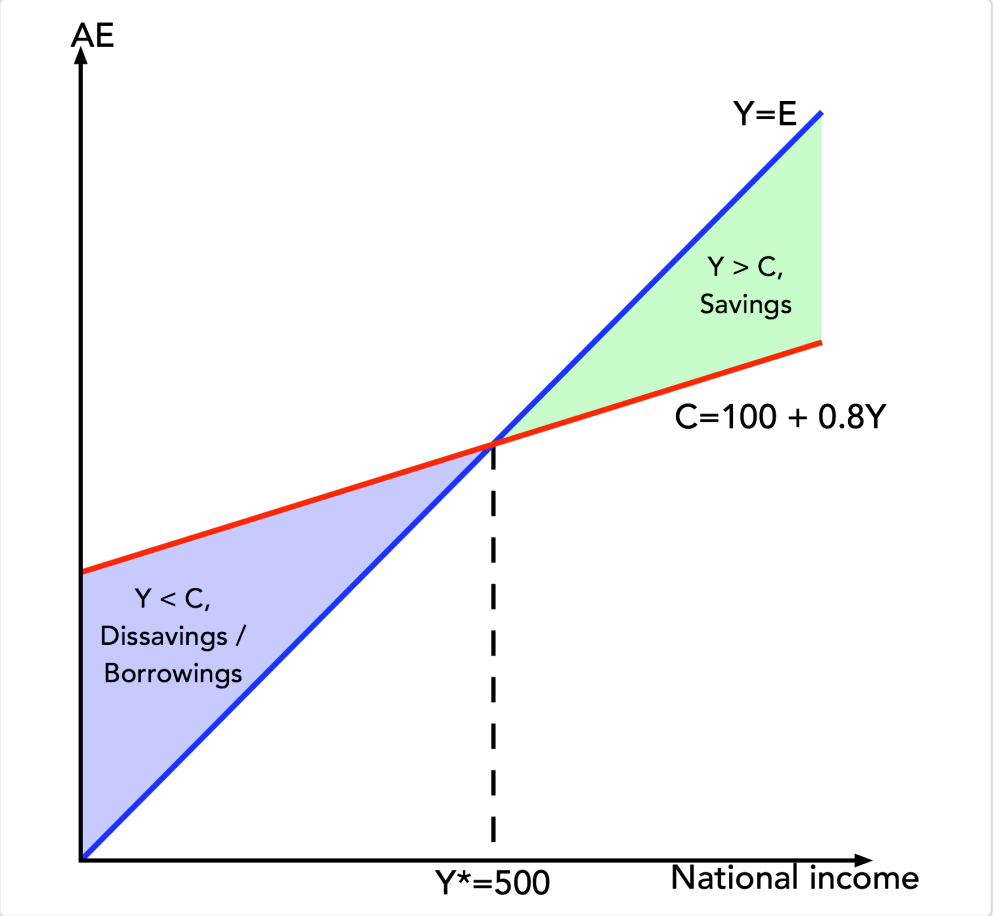
Therefore when Y = 500, C = 100 + 0.8 Y

=100 + 0.8 (500)

=500

In other words, it is the breakeven point, where consumption = income and APC = C / Y = 500/ 500 = 1

FIGURE 2.4 **Savings and Borrowings**



To the left of Y = 500, C > Y and clearly individuals will be borrowing or drawing on their past savings. This situation is called 'dissavings.'

To the right of Y = 500, C < Y , clearly 'savings' are taking place and are positive. We define savings as disposable income minus consumption.

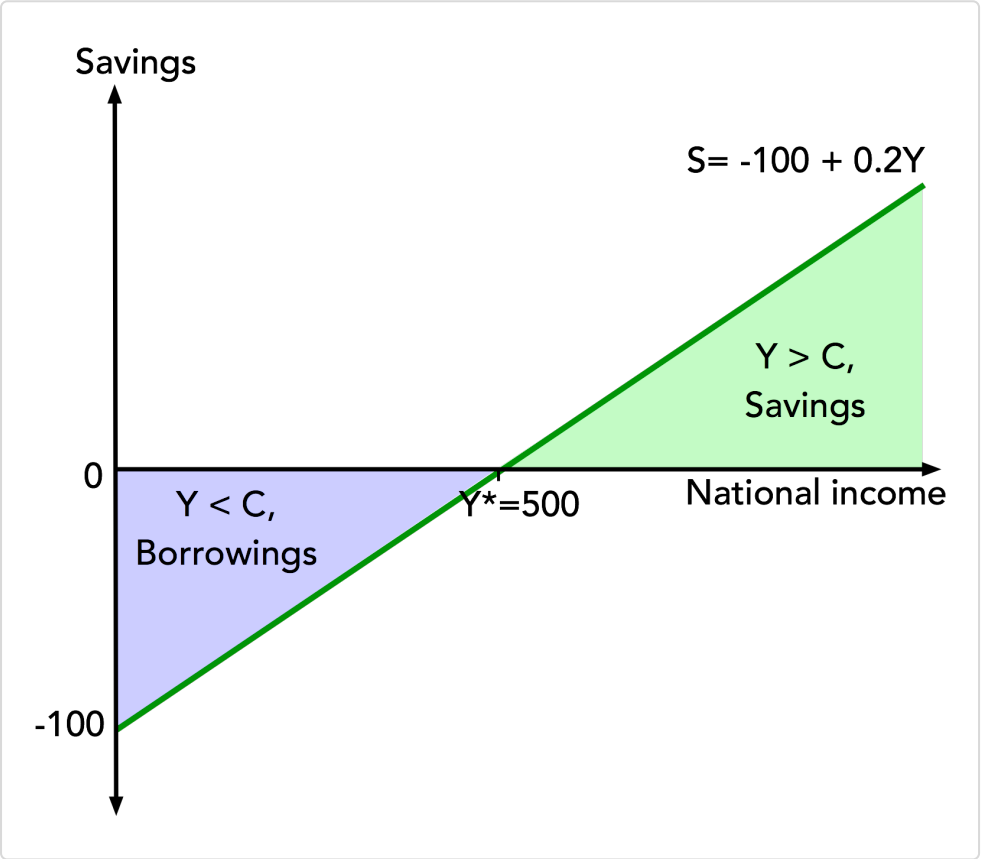
$$Y_d = C + S$$

Therefore, $S = Y_d - C$, and we can make the following schedule:

Disposable Income (Y_d)	Consumption (C)	Savings (S)
0	100	-100
100	180	-80
200	260	-60
300	340	-40
400	420	-20
500	500	0
600	580	20
700	660	40
800	740	60
900	820	80
1000	900	100

From this information, we can also make saving function diagram.

FIGURE 2.5 **Saving Function**



The Saving function is the reverse of the consumption function C = a + bY. It is:

$$S = - a + (1 – b) Y$$

Therefore S = -100 + (1 – 0.8) Y

$$S = - 100 + 0.2 Y$$

The gradient '1 – b' is called the marginal propensity to save (mps) and shows the proportion of extra income that is saved.

MPS = Δ S / Δ Y = Amount of every dollar earned that is saved.

MPC + MPS = 1, which clearly suggests that any incremental income can either be saved or consumed.

Also, average propensity to save (APS) = savings / income = S / Y

$$APS + APC = 1$$

Suggesting that income is either saved or spent.

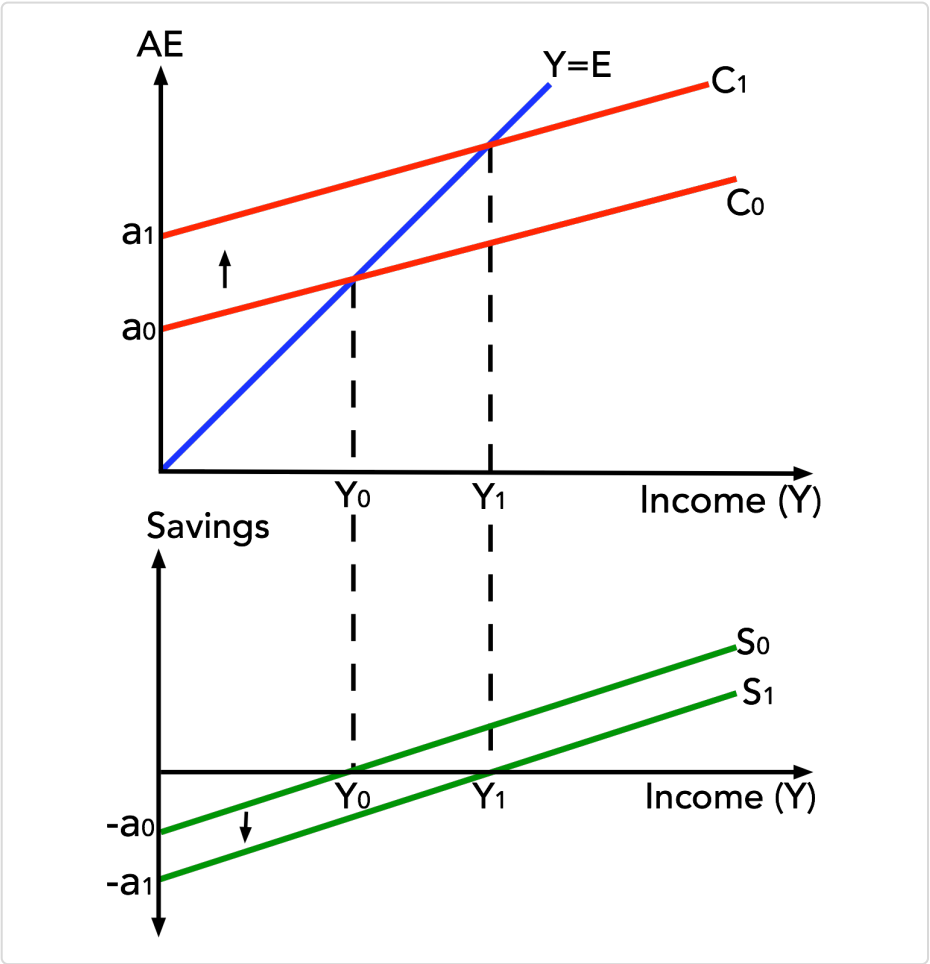
When a person or country is poor, most of the disposable income is spent to meet current needs. Such individuals and countries will have a higher mpc as well as APC.

Factors affecting Consumption / Saving

1. **Income**: According to the Keynesian theory, income is the most important determinant of planned current consumption. Any changes in income will result in a movement along the consumption function.

2. **Wealth**: Changes in wealth change consumption and saving plans of household. Economists argue that households save in order to accumulate wealth that they can use during their retirement or pass on to their heir. An increase in wealth results in more of current disposable income to be spent on consumption and a smaller fraction to be saved. Thus, it will shift the consumption function upward and saving function downwards.
   An increase in the level of wealth raises desired consumption at each level of disposable income, thus shifting the consumption function line up from C_0 to C_1. As a result, the breakeven level of income also rises. Similarly, a fall in the wealth increases the incentive to save in order to restore wealth. This shifts the consumption function downward and the saving function upward.

FIGURE 2.6 **Shift of the consumption and saving function**



3. **Interest Rates**: Increase in interest rates results in lower consumer spending due to two reasons. First, higher interest rates discourage borrowings, as the cost of credit rises. This results in a reduction in consumption of durables like cars etc. Second, higher interest rates encourage savings, as the reward for savings are increased. Taking both these effects into account, higher interest rate discourages borrowing and encourages savings resulting in lower consumption.

4. **Distribution of income**: If income becomes more evenly distributed, due to, for instance, an increase in direct taxes and state benefits, consumption is likely to rise.

This is mainly because rich have lower MPC than the poor. When rich lose income, they are unlikely to cut back in their spending significantly, while the poor who gain more income will spend most of the extra income. Hence, the more even the distribution of income, the higher will be the consumption.

5. **Expectations**: Expectation of better future economic prospect, where people expect an increase in real incomes will also tend to encourage households to increase consumption now by borrowing more. Similarly, pessimism about future results in people to reduce their consumption now. Pessimism could be because of increase in unemployment rates, rise in taxes or a fall in real wages.

6. **Inflation**: Inflation is a rise in the general level of prices and has two effects. First, if households expect prices to be higher in the future, they will be tempted to bring forward their purchases. Hence, expectation of inflation increases current consumption and reduces savings. However, inflation also affects wealth. Rising inflation tends to erode real value of money wealth. Households react to this by attempting to restore the real value of their wealth (i.e. they save more). This reduces consumption. Both effects work in opposite directions. The final effect is determined by primarily knowing which effect outweighs the other.

CHAPTER 3

INVESTMENT

Investment to an economist is a precise term, which involves the acquisitions of capital goods designed to provide us with consumer goods and services in the future. It is the second major component of aggregate expenditure.

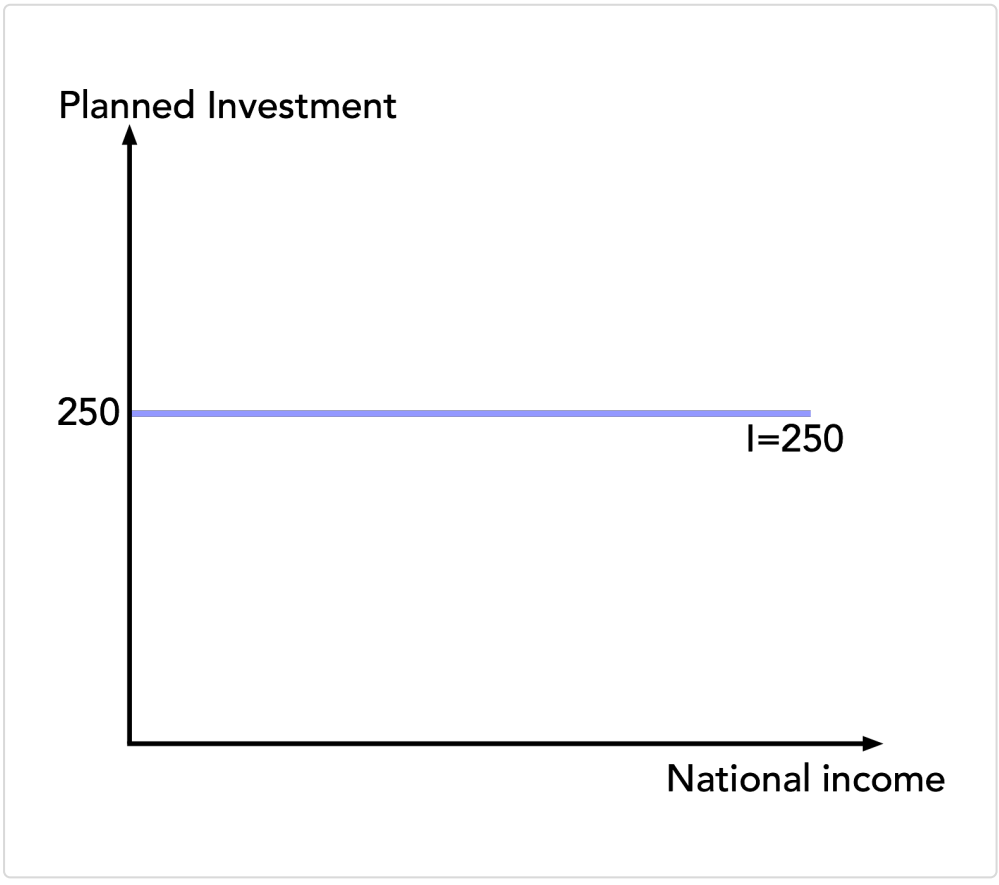
2-SECTOR NATIONAL INCOME EQUILIBRIUM

In a simple model of closed economy with no government:

$$AE = C + I,$$

where in a Keynesian model, investment is regarded as autonomous – that is capital expenditure on produced goods is independent of the level of national income.

FIGURE 3.1 **Investment Function**



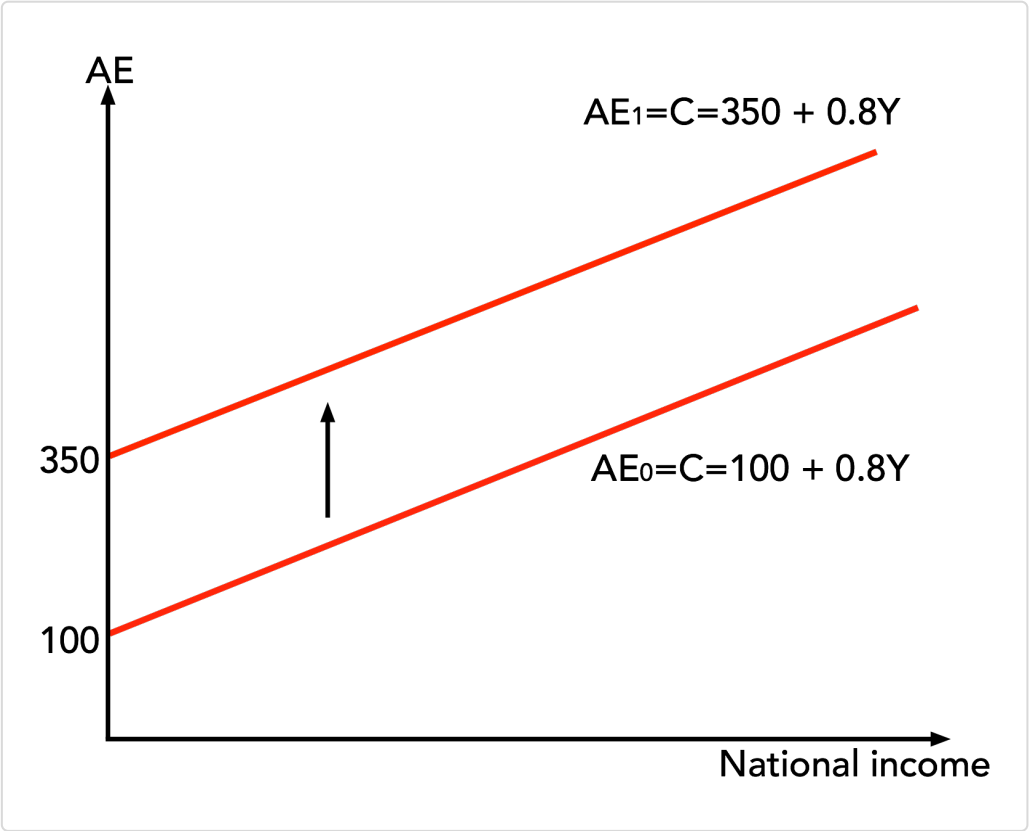
In our previous example: C=100+0.8Y

Now if I=250, AE=C+I

$$AE=100+0.8Y+250$$

$$AE=350+0.8Y$$

FIGURE 3.2 **Aggregate Expenditure with Investment**



EQUILIBRIUM GDP

In equilibrium, AE=Y, where the 45° line intersects the desired or planned aggregate expenditure

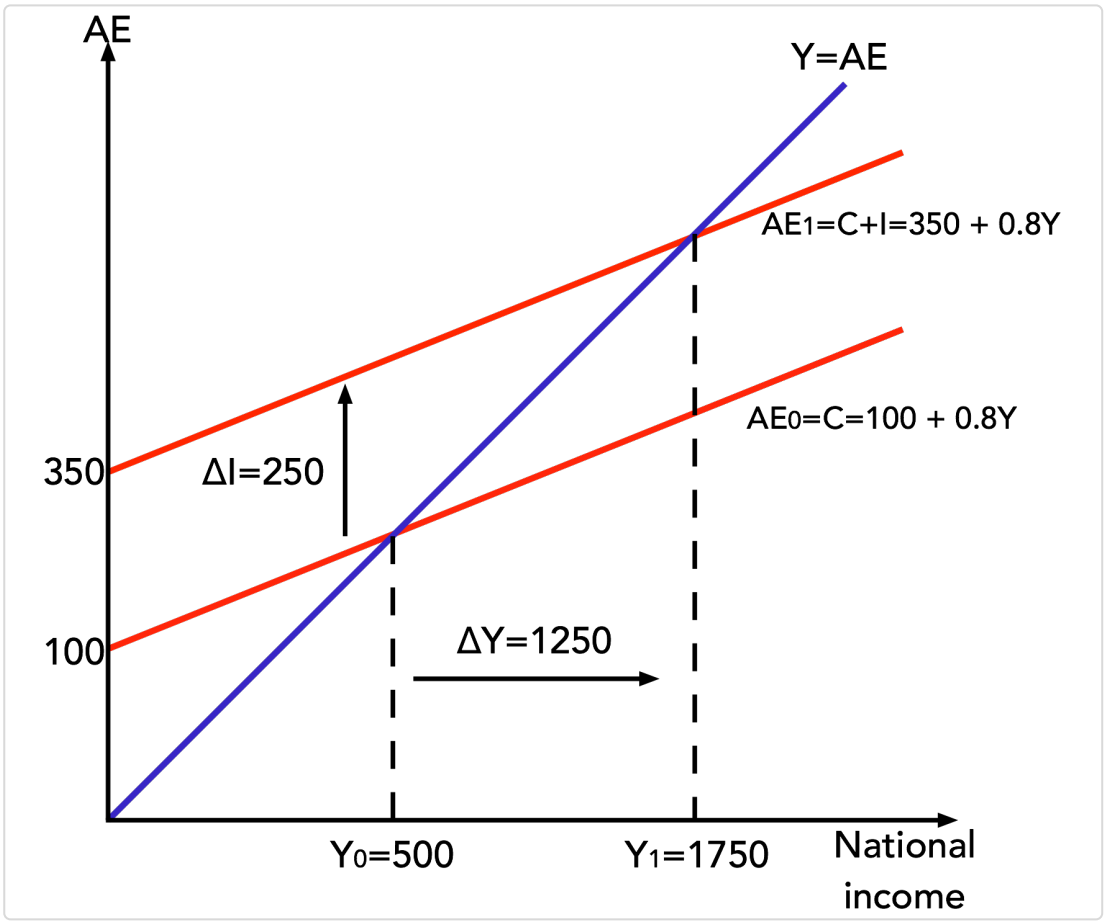
$$AE=350+0.8Y,$$

$$Y=350+0.8Y$$

$$0.2Y=350$$

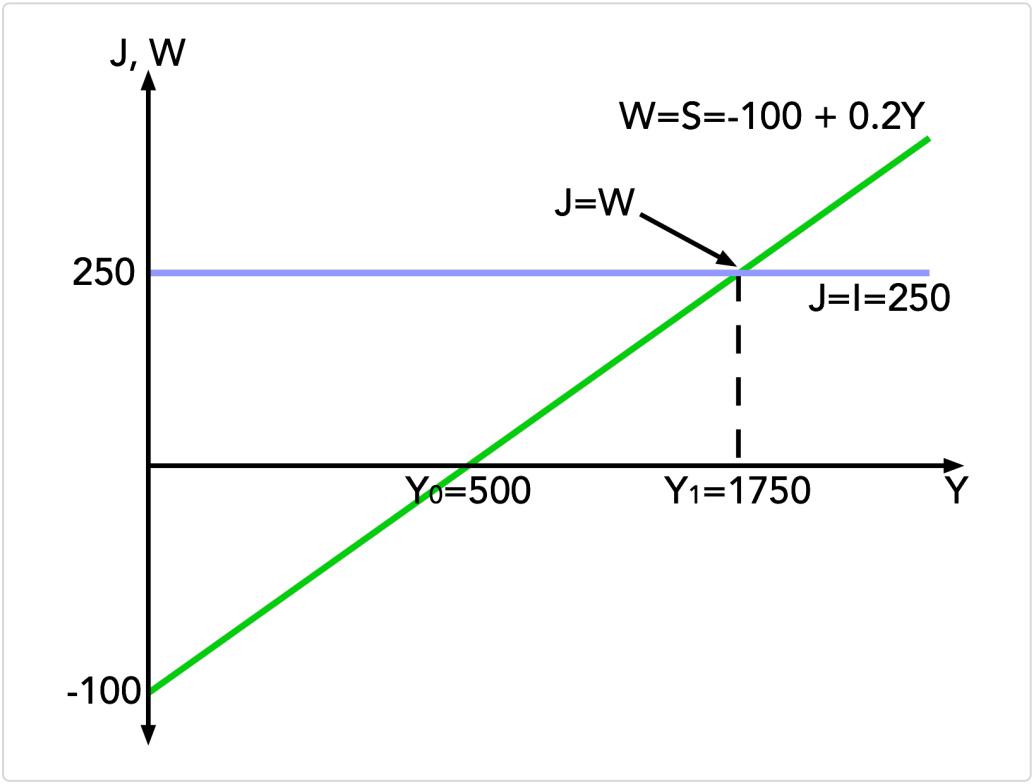
$$Y=1,750$$

FIGURE 3.3 **Increase in National Income with Investment**



WITHDRAWAL AND INJECTIONS APPROACH

FIGURE 3.4 **Withdrawals and Injections**



When savings are the only withdrawal and investments are the only injections, the equilibrium Y_1 is also the equilibrium level of GDP at which:

$$S = I$$

$$-100 + 0.2Y = 250$$

$$Y = 1{,}750$$

Multiplier

An increase in investment results in a change in GDP of greater magnitude due to the multiplier effect.

For example, AE_0=350+0.8Y. If investment increases by $100. Then AE_1 = 350 + 0.8Y + 100

$$AE_1 = 450 + 0.8Y$$

$$Y = AE_1$$

$$Y = 450 + 0.8Y$$

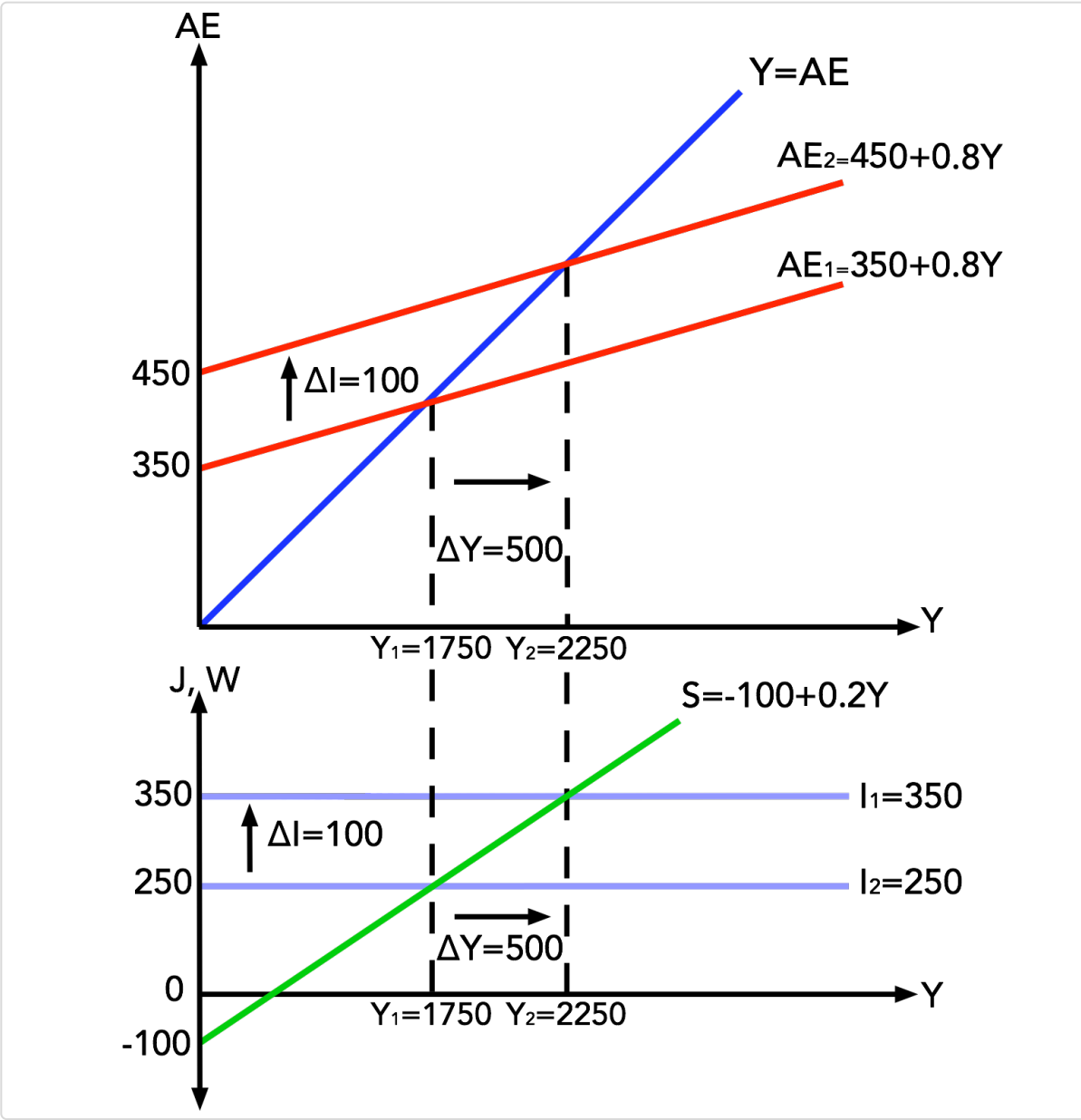
$$Y = 2250$$

An increase in investment by $100 resulted in GDP to increase by 5 times, to 500, due to the multiplier effect.

Assume an initial $100 million of autonomous investment. The money will return to the households in terms of income earned from the factors of production. It is assumed that the mpc= 0.8, and so the mps=0.2.

Hence, households save 20% of the income. $20 million is saved and the rest is spent on the goods and services produced by the firms. The $80 million again returns to the households in terms of factor incomes. 20% of this is saved ($16 million) leaving $64 million to be spent on goods and services. This process keeps going on.

FIGURE 3.5 **Multiplier Effect**



The initial $100mln will multiply to give a final increase in total income of much more than $100mln.

In a 2-Sector economy, the value of the multiplier is:

$$\text{Multiplier} = \frac{1}{1-mpc} = \frac{1}{mps}$$

$$\text{Multiplier} = \frac{1}{1-mpc} = \frac{1}{mps}$$

Therefore, total increase in national income = Initial Injection * Multiplier

=100 * 5

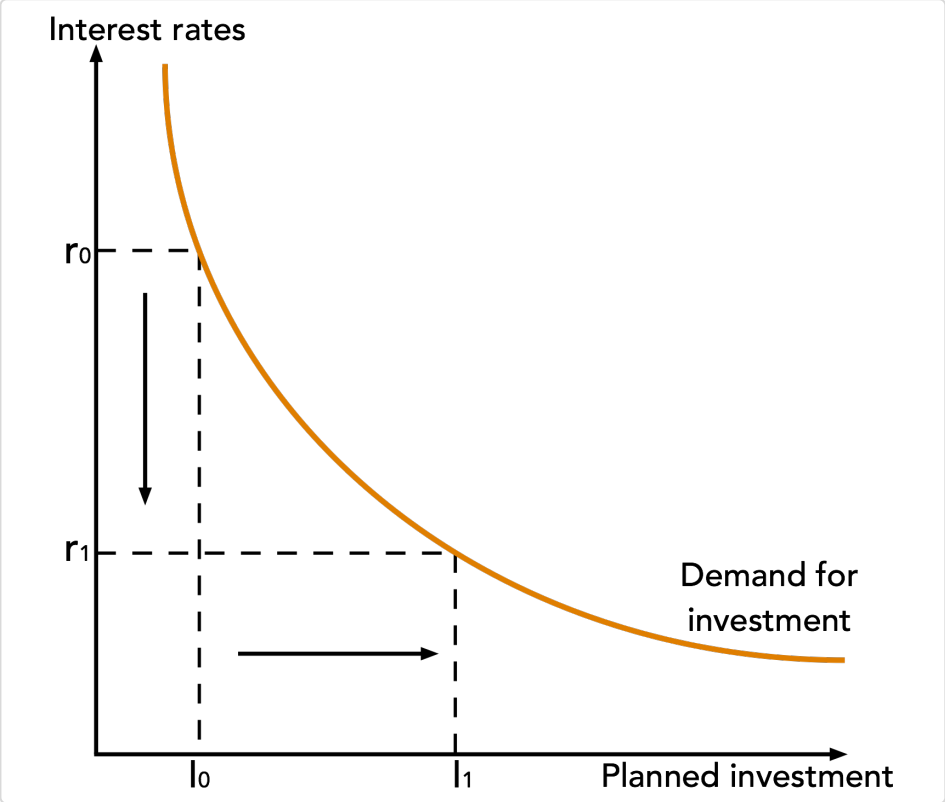
=$500mln

DETERMINANTS OF INVESTMENT

1. **Interest Rates**: Marginal efficiency of capital (MEC) theory explains the relationship between level of interest rates and investment in the economy. The rate of return on an investment project is MEC. A profit maximizing firm will invest in a project if the rate of return is greater than or equal to the interest rate, which is the cost of borrowing or the opportunity cost of investment.

Project	Investment	Return	Rate of return
1	100	120	20%
2	100	115	15%
3	100	110	10%
4	100	105	5%

FIGURE 3.6 **Demand for Investment**



At lower rates of interest (i.e. r_1 rather than r_0) more capital projects appear financially viable because the cost of borrowing to finance projects is lower.
Example: Four investment opportunities each involving spending $100 now and obtaining a single sum one year later.

If the interest rate is 25%, none of the projects will be undertaken. However, when interest rate reduces to 10%, projects 1, 2 and 3 will be undertaken implying, a lower the interest rate leads to a higher the level of investment. The MEC Curve is therefore the demand for investment, where the interest rate is the price of investment.

2. **Cost of capital goods:** A fall in the cost of capital goods results in an increase of investment at all levels of interest rates as it becomes cheaper to invest. The investment schedule will shift to the right.

3. **Technological Change**: Advances in technology will raise the productivity of capital goods and will stimulate more investment. Planned investment will shift to the right at all levels of interest rates.

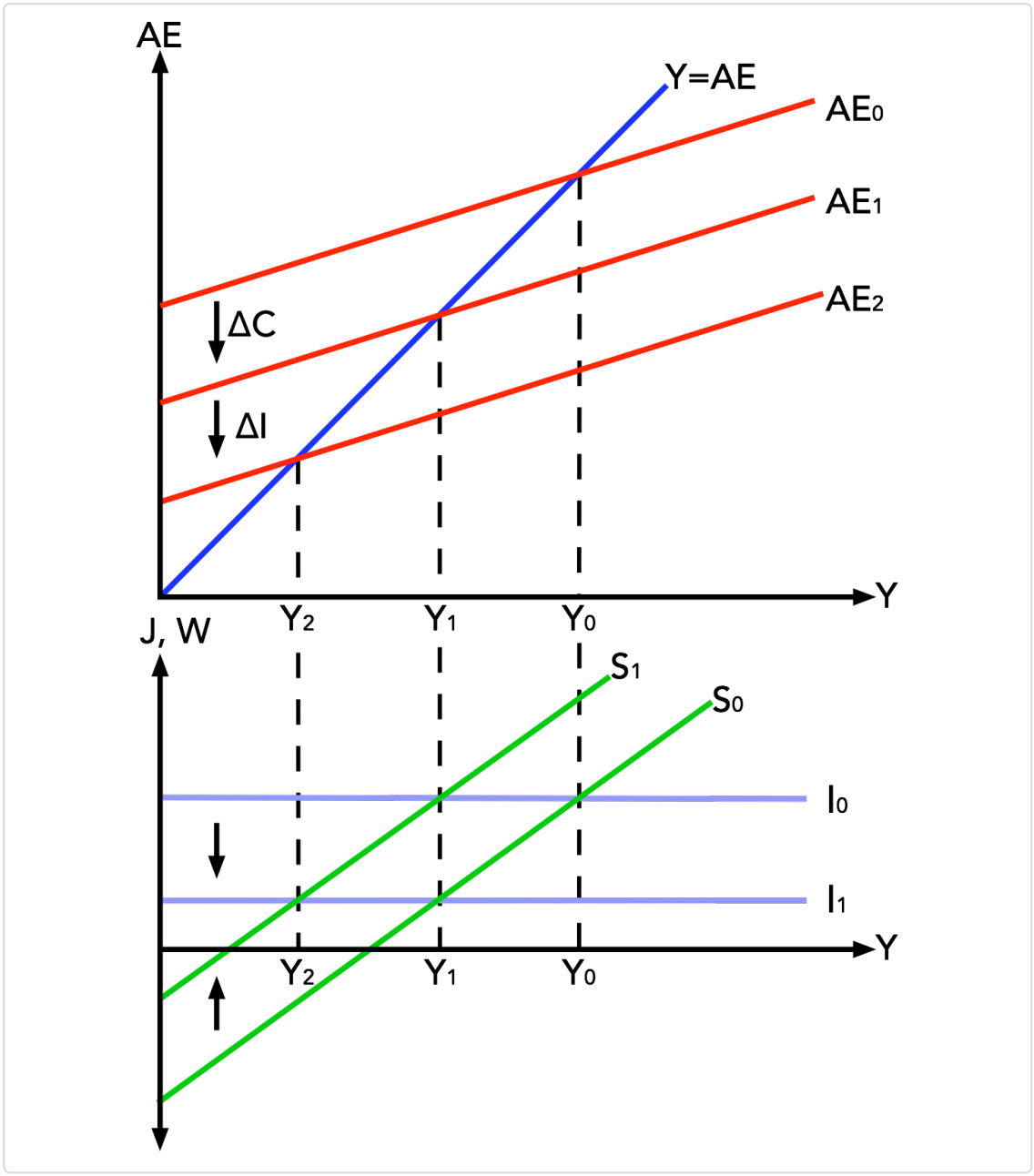
4. **Expectations**: If firms are optimistic about the future in terms of economic conditions, they will undertake more projects as they expect higher returns in the future. This will shift the planned investment curve outward.

PARADOX OF THRIFT

If people save more, they will increase their consumption possibilities in the future. But if all the members in the society decide to save, this may not be good. An increase in savings by the society results in a simultaneous decrease in consumption and aggregate expenditure, which via the multiplier effect, leads to a more than proportionate decrease in national income (S_0↓from S_0 to S_1 leading Y ↓ from Y_0 to Y_1). However, lower consumption can also discourage firms to invest. A reduction in investment (I↓ from I_0 to I_1) results in income to decrease further (Y↓ from Y_1 to Y_2).

As can be seen in diagram 3.7, a rise in national savings results in a fall in consumption, which can cause the economy to fall into a recession, incomes will fall, and so will savings, other things being equal. The phenomenon of higher saving leading to lower national income is known as 'the paradox of thrift'.

FIGURE 3.7 **Paradox of Thrift**



INVESTMENT AND THE ACCELERATOR THEORY

The accelerator theory of investment suggests that the level of planned investment varies with the rate of change of income or output rather than with the rate of interest. In the Keynesian model, investment is taken as autonomous, while the accelerator theory focuses on induced investment – where investment depends on the rate of change in income. The amount by which induced investment depends on changes in national income is called the accelerator co-efficient or the capital-output ratio i.e.

$$I = \alpha\Delta Y, \text{ where } \alpha = \text{accelerator coefficient}$$

For example, if a $1 million increase in GDP causes induced investment to be $3 million. The accelerator co-efficient or α is equal to 3. If GDP is rising but at a constant rate, induced investment will not change. This is because firms can continue to buy the same number of machines each year to expand capacity. However, a change in the rate of growth of income can have an influence on investment.

If the accelerator co-efficient = 3, and an industry is producing at full-capacity, an increase in rate of change of output will result in an increase in investment or capital stock.

As can be seen from the table, rising output induces investment expenditure. In years where the change in Y is zero, there is no change in investment or capital stock.

Year	Annual Output (S)	Change in output (S)	Required capital stock	New Investment
1	10	0	30	0
2	10	0	30	0
3	11	1	33	3
4	13	2	39	6
5	16	3	48	9
6	16	0	48	0

Limitations of the accelerator theory:

The accelerator theory is very simple. There are a number of factors which limit the predictive power of the model.

1. An increase in income does not always result in a greater percentage change in demand for capital goods, for example, firms will not buy more capital goods if they have spare capacity or if they do not expect a rise in income to sustain.

2. The model assumes that the capital-output ratio is constant over time. However, it can change over time as, for example, new technology can make capital more productive.

3. The model also ignores time lags, where changes in investment are likely to respond to changes in income over several time periods not just one.

CHAPTER 4

GOVERNMENT AND TRADE

CLOSED ECONOMY WITH GOVERNMENT

Government Expenditure on goods and services like education, hospitals etc. is financed through tax revenue. In the Keynesian model, we treat government expenditure as autonomous, that is, not dependent upon the level of income. We also do not include transfer payments in 'G' – the government expenditure.

Tax revenue: We define net taxes (tax revenue) to be total tax revenue received by the government minus total transfer payments made by the government. We denote it by 'T'.

Tax rate is taken as autonomous – the govt. sets its tax rate and doesn't vary it as GDP varies. This makes tax revenues to be endogenous – as GDP rises with a given tax rate, the tax revenue will also rise.

From here, we can find Budget Balance, which is T-G, that is the difference between govt. revenue and govt. expenditure where:

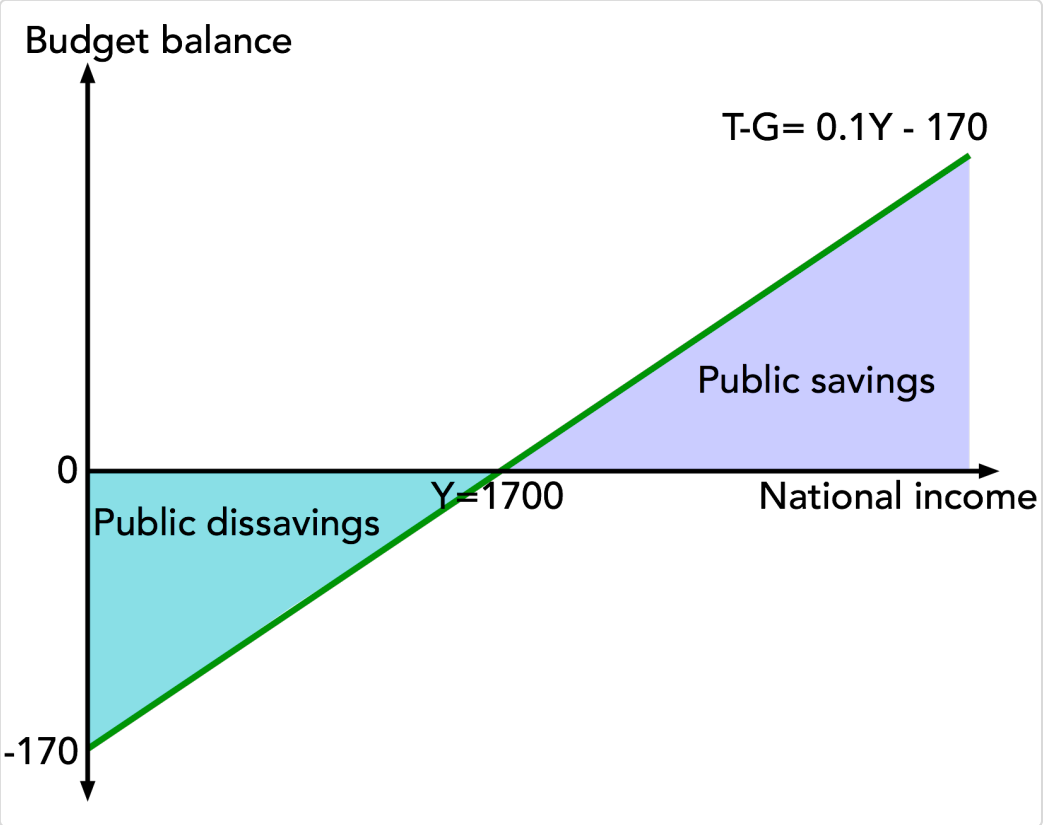
T - G > 0 Budget Surplus, where savings by the govt., public savings, are positive

T - G = 0 Balance Budget

T - G < 0 Budget Deficit, where public savings are negative

Example: tax rate = 10%, Govt. expenditure = 170, then T - G = 0.1Y - 170

FIGURE 4.1 **Government budget balance**



The diagram also suggests that as tax revenue increases due to an increase in national income, the govt. budget surplus or public savings increases.

Changes in Tax rates on Consumption and Saving

Disposable income available to consumers falls at each level of national income as tax rates increase. The higher the proportion of national income taken in taxes, the lower the income available to consume and save and therefore, the lower will be the mpc and mps.

Tax rate (%)	mpc after tax = mpc (1-t)	mps after tax = mps(1-t)
0	0.8(1-0) = 0.8	0.2(1-0) = 0.2
10	0.8(1-0.1) = 0.72	0.2(1-0.1) = 0.18
25	0.8(1-0.25) = 0.6	0.2 (1-0.25) = 0.15

FIGURE 4.2 **2 sector**

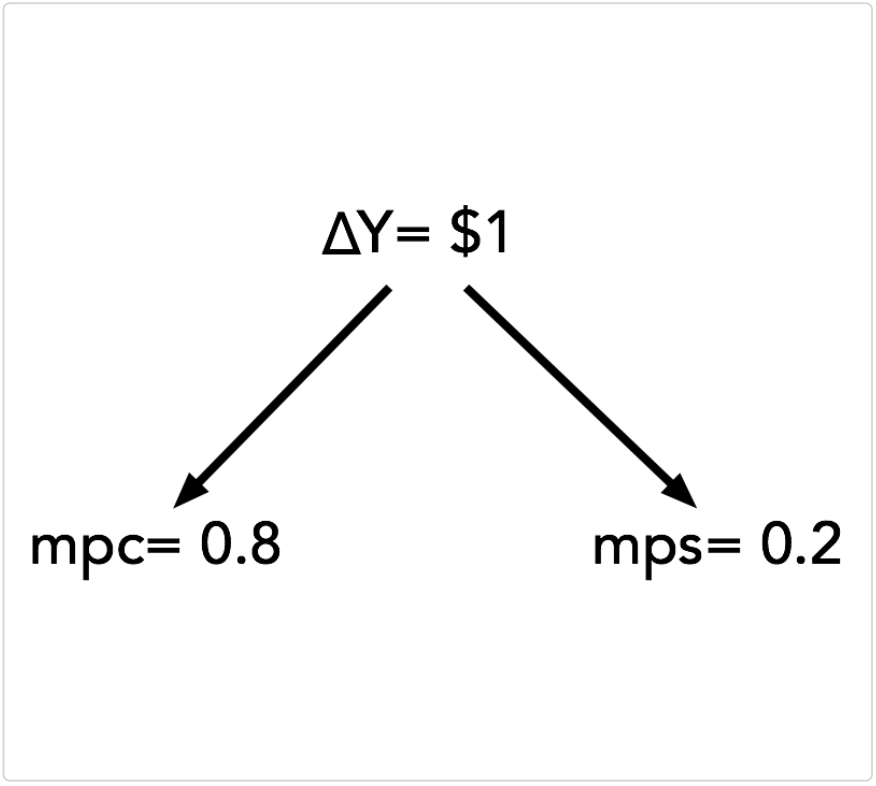
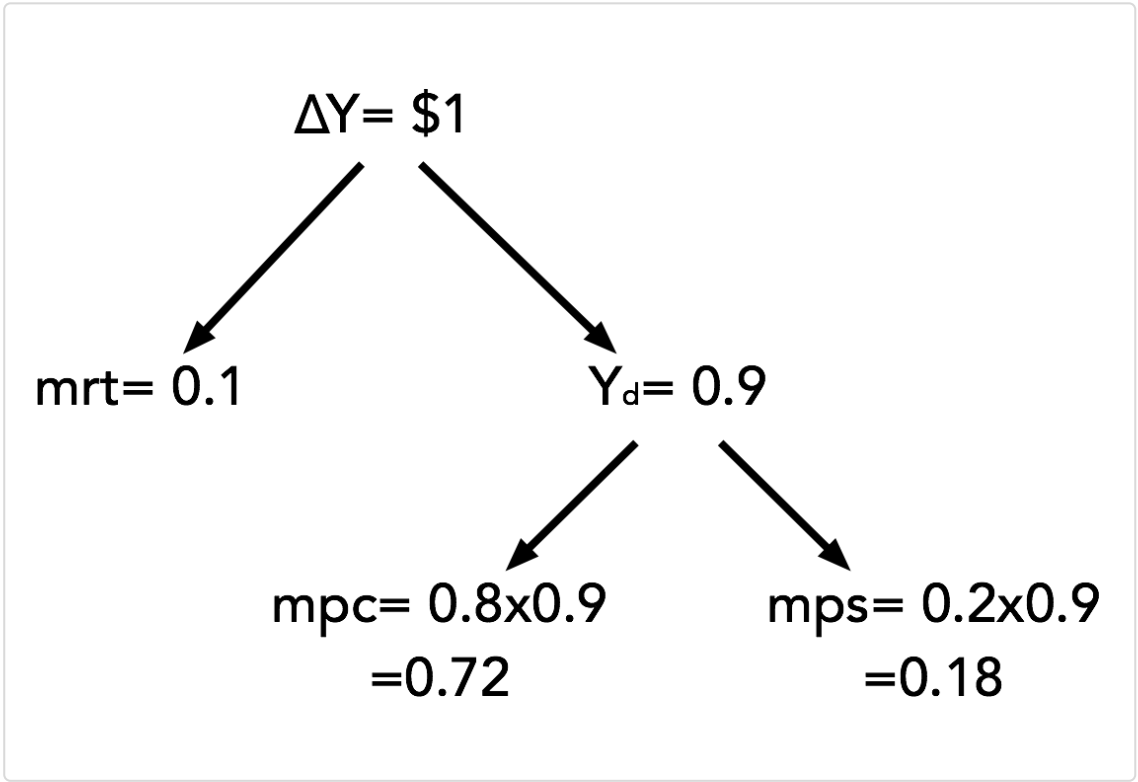


Figure 4.2 and 4.3 show tree diagrams that explain how an extra $1 change in income, is spent in the 2 and in the 3 sector. In the 2 sector, mpc +mps =1, while in the three sector mpc + mps + mpt =1.

FIGURE 4.3 **3 sector**



After tax, the disposable income (Y_d) is 0.9, i.e. $0.9 of $1 extra income is left to be saved and consumed. As a result, mpc and mps are now reduced to 0.72 and 0.18.

Equilibrium in the 3 Sector Model

AE = C+I+G

Where previously,

AE_0 = C+I

C = 100+0.8Y

I = 250

AE_0 = 350 + 0.8Y

However with the govt. and tax rate of 10%, mpc changes and becomes 0.8(1-0.10) = 0.72

AE_1 = C+I+G

C = 100 +0.72Y

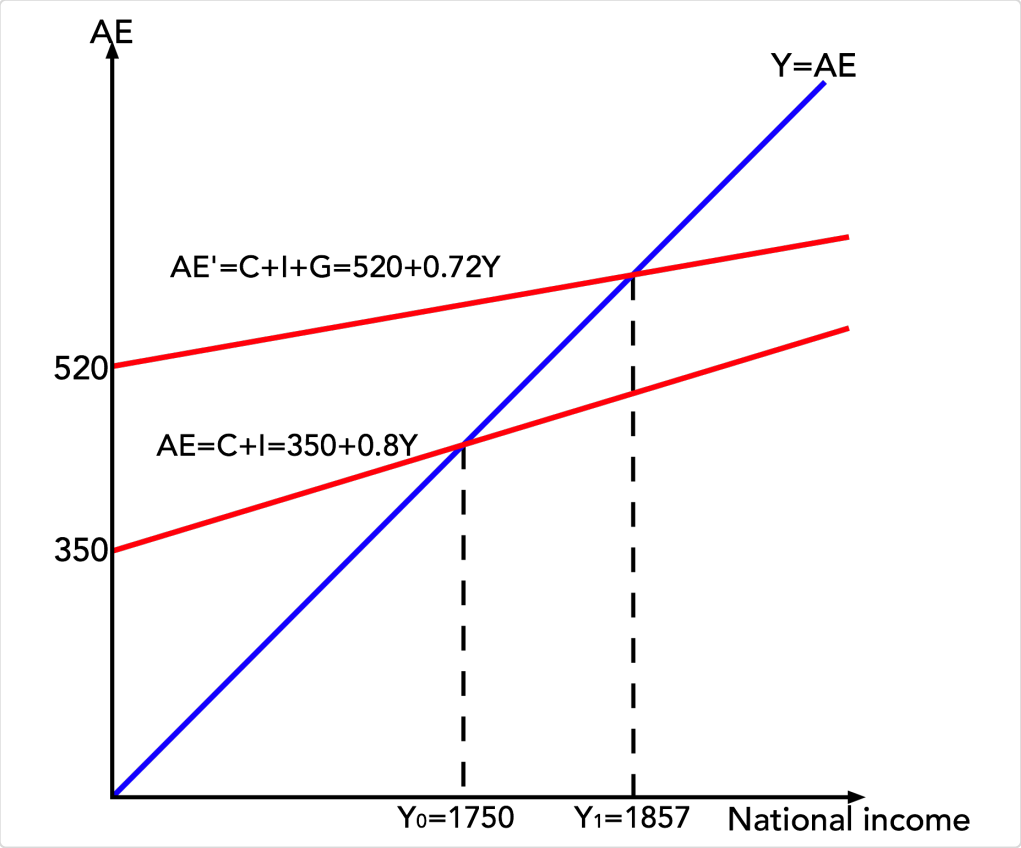
I = 250

G= 170

AE_1 = 100+ 0.72Y+250+170

AE_1 = 520 + 0.72Y and equilibrium income where AE = Y is at Y* = 1857

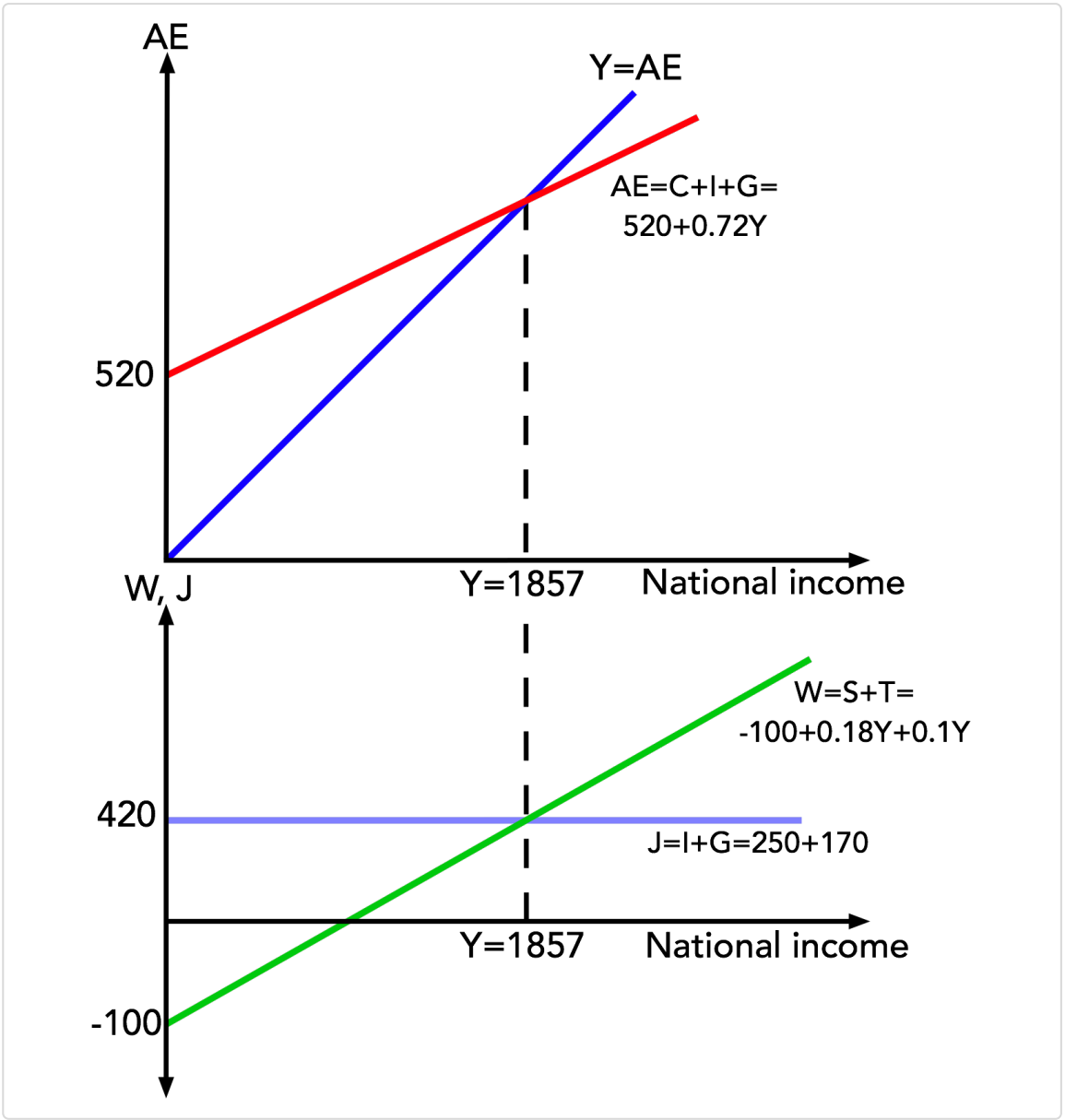
FIGURE 4.4 **AE and NI in the 3 sector model**



Because the slope changes due to the tax rate, there is a non-parallel shift after the introduction of government expenditure.

Also, S = -100 + 0.18Y, T = 0.1Y, making the withdrawal function W = S+T = -100 + 0.28Y and injections are I + G = 250 + 170 = 420.

FIGURE 4.5 **3 sector model**



Multiplier in a 3-sector Model

In a 3-sector model, the multiplier becomes:

$$\text{Multiplier} = \frac{1}{w} = \frac{1}{mps+mrt}$$

Where mps = marginal propensity to save and mrt = marginal rate of taxation or tax rate and these are the two withdrawals (W).

In our example, mpc before tax = 0.8, t = 10%,

With tax,

mpc after tax = 0.72, mrt = 0.1, mps after tax = 0.18

as now, mpc + mps + mrt =1,

Therefore:

$$\text{Multiplier} = \frac{1}{mps+mrt} = \frac{1}{0.18+0.1} = \frac{1}{0.28} = 3.57$$

For example, an increase in autonomous expenditure by $100mln results in Y to increase by 3.57 X100 = $357mln.

With the injections and withdrawals approach, in a 3 sector model, S+T = I+G

Where, S = -100 +0.18Y, T = 0.1Y, I = 250 and G=170

Therefore, -100+0.18Y+0.1Y = 250+170

0.28Y = 520, Y* = 1857

4-SECTOR MODEL – OPEN ECONOMY WITH GOVERNMENT

In an open economy, we bring in the foreign sector, i.e. imports and exports. Exports depend on spending decisions made by foreign consumers or overseas firms that purchase domestic goods and services. We therefore assume exports to be autonomous spending.

Imports, however, depend on the spending decisions of domestic residents. Clearly, the increase in income (Y) will also result in imports (M) of foreign produced consumption goods to rise.

Let's assume X = 540, M = 0.25Y

Factors which affect Net Exports:

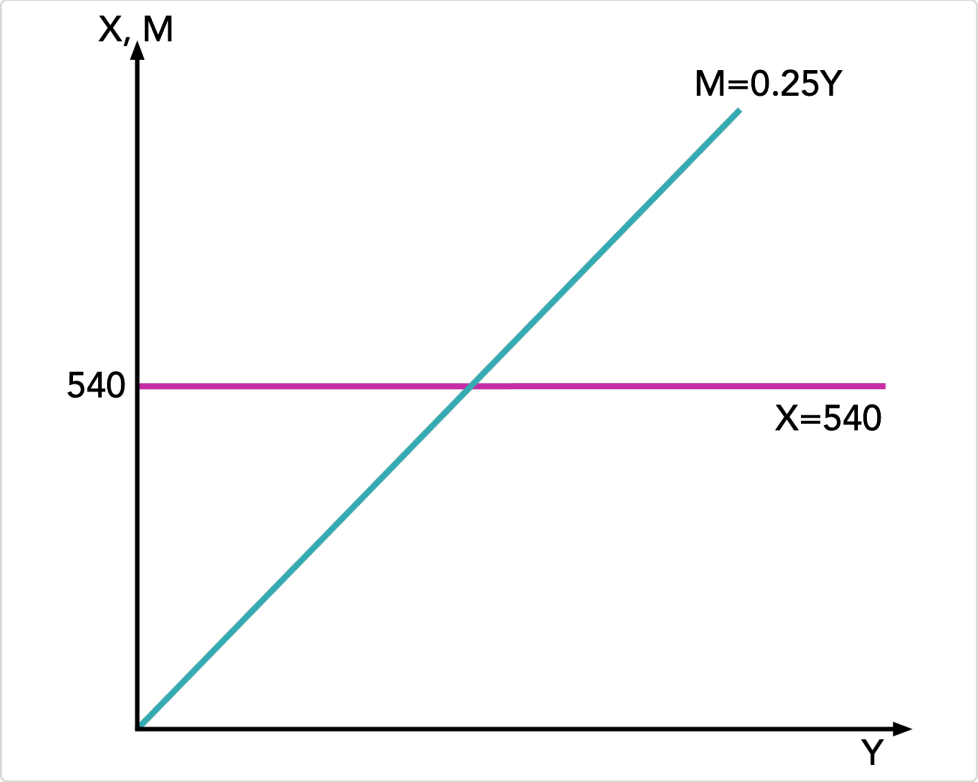
1. **Foreign GDP**: An increase in foreign GDP results in an increase in the quantity of domestic-produced goods by foreign countries. Therefore, as X increases, (X-M) function shifts upward. However, same amount is sold at each level of domestic GDP as X is treated as autonomous.

2. **Relative International Prices**: Any changes in the prices of home produced goods relative to those of foreign goods will cause both imports and exports to change. Two factors that cause relative international prices to change are:

a) International differences in inflation rates: If domestic economy's inflation rate is lower than inflation overseas,

exports will appear cheaper. Therefore, X increases. Also, M becomes expensive for domestic consumers and X – M ↑.

FIGURE 4.6 **Imports and Exports**



b) Changes in the exchange rate: Depreciation of currency results in X to become cheaper for foreigners. Therefore, X increases. Also, M becomes expensive for domestic consumers and X – M ↑.

Equilibrium in the 4-sector model

In an open economy with government:

$AE = C + I + G + X – M$

With t = 10%,

$C = 100 + 0.8(1-t)Y = 100 + 0.72Y$

$I = 250$

$G = 170$

$X – M = 540 – 0.25Y$

At Equilibrium $AE = Y$ and $AE = C + I + G + X – M$

$AE = 100 + 0.72Y + 250 + 170 + 540 – 0.25Y$

$=> AE = 1060 + 0.47Y$ or

Replacing $AE = Y$, $Y = 1060 + 0.47Y$

$0.53Y = 1060 => Y^* = 2000$

Also,

$S+T+M = I+G+X$

$-100+0.28Y+0.25Y = 250+170+540$

$-100 + 0.53Y = 960$

$Y^* = 1060/0.53 = 2000$

FIGURE 4.7 **4 sector**

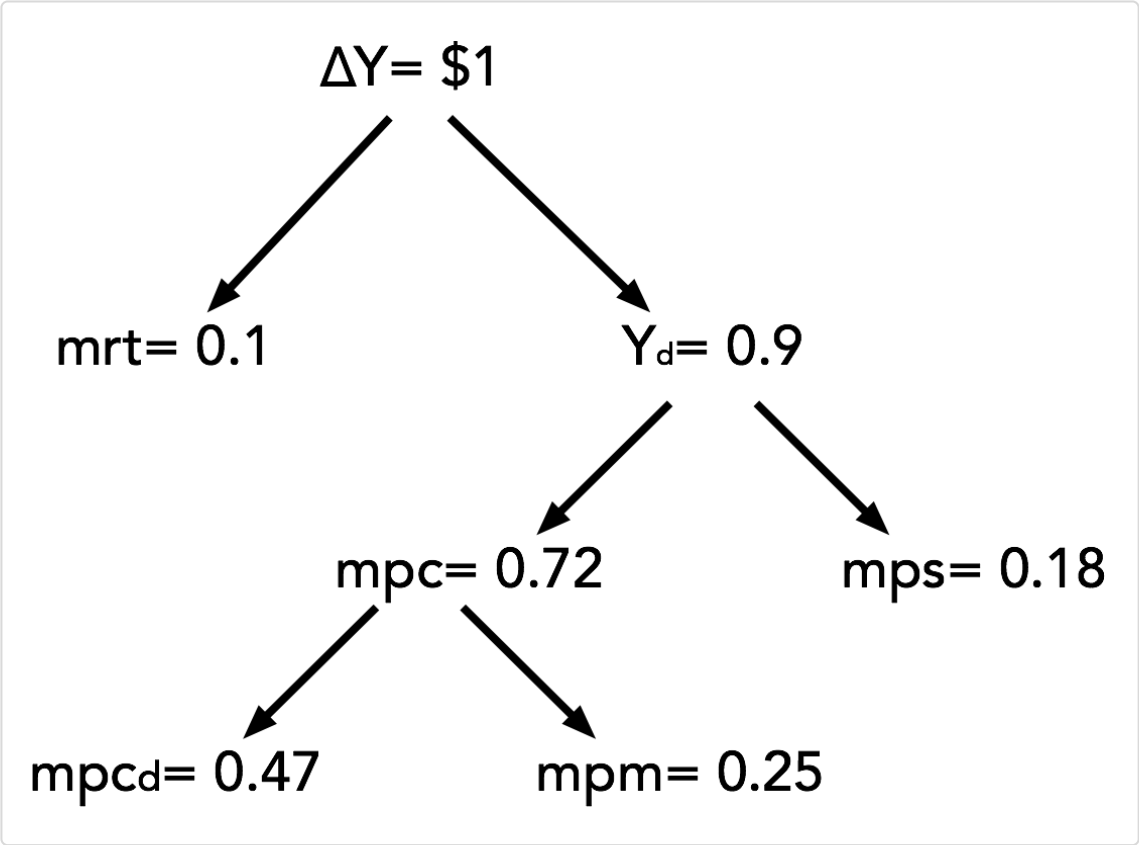
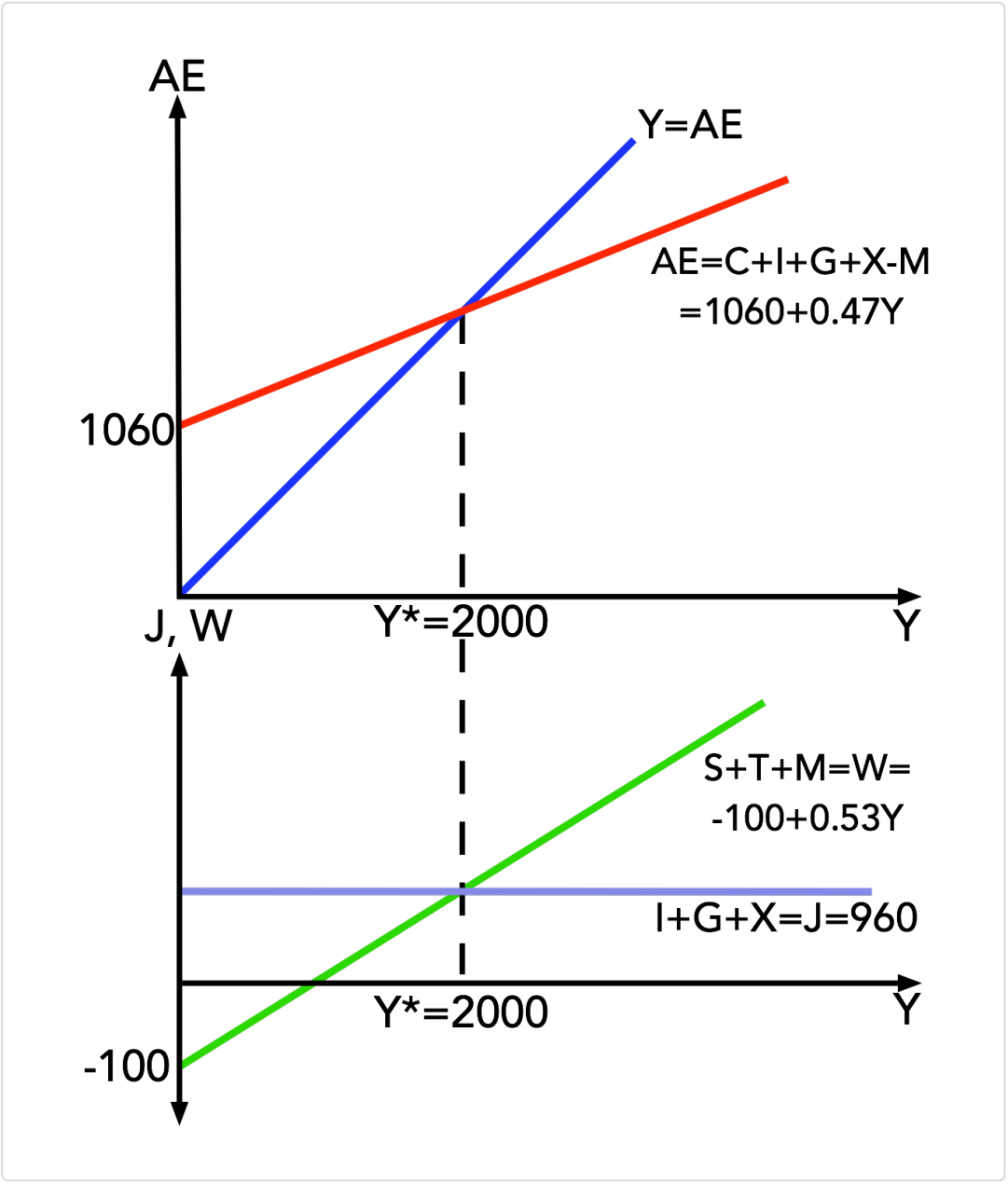


FIGURE 4.8 **4 sector model**



Multiplier in a 4-sector Model

With the govt and imports, the multiplier is now:

$$\text{Multiplier} = \frac{1}{mps+mpm+mrt}$$

Where mpm = marginal propensity to import = the proportion of extra income which is spent on imports

mpm = 0.25, mrt = 0.1, mps = 0.18

$$\text{Multiplier} = \frac{1}{0.25+0.18+0.1} = \frac{1}{0.53} = 1.82$$

Hence, an increase of $100 in autonomous expenditure will lead to a $182 increase in national income (Y).

Determination of the size of the Multiplier

The effect on national income of a change in an autonomous expenditure depends on the size of the multiplier, which in turn, depends on a number of factors:

1. **Openness of the economy**: The more open the economy, the higher the marginal propensity to import, the lower the mpc as consumers buy imports rather than domestically produced goods and therefore the lower the multiplier.
2. **Interest Rates**: Higher interest rates encourage savings. Higher mps can in turn dilute the value of the multiplier.

3. **Tax rates**: Higher tax rates result in lower disposable income to be available for consumption, thereby reducing the size of the multiplier.

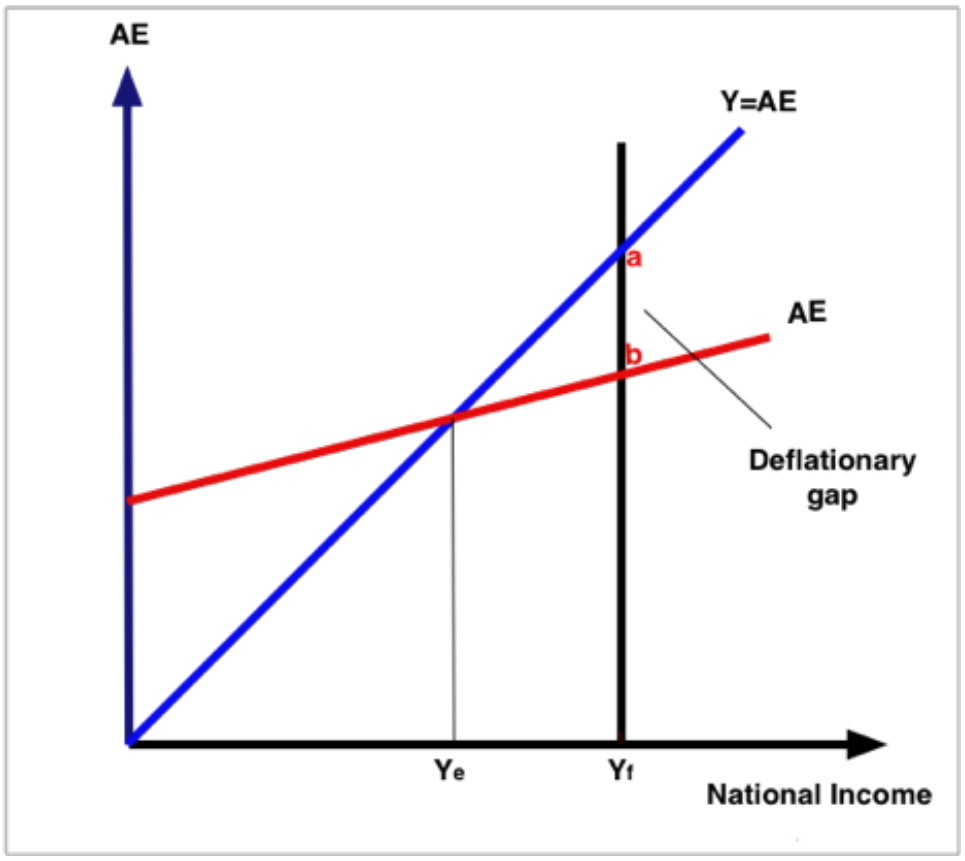
FULL EMPLOYMENT AND NATIONAL INCOME

Keynesian theory assumes that there is a maximum level of national output, and hence real income, which can be obtained at any one time. If the equilibrium is at this level, there will be no deficiency of aggregate expenditure and hence no disequilibrium unemployment. This level of income is referred to as **full employment level** of national income.

Deflationary gap

The full-employment level of national income (Y_f) is represented by the vertical line. The equilibrium level of national income is Y_e, where Y=AE. The deflationary gap is a - b: namely the amount that the E line is below the 45 degree line at the full-employment level of income (Y_f).

FIGURE 4.9: **Deflationary Gap**

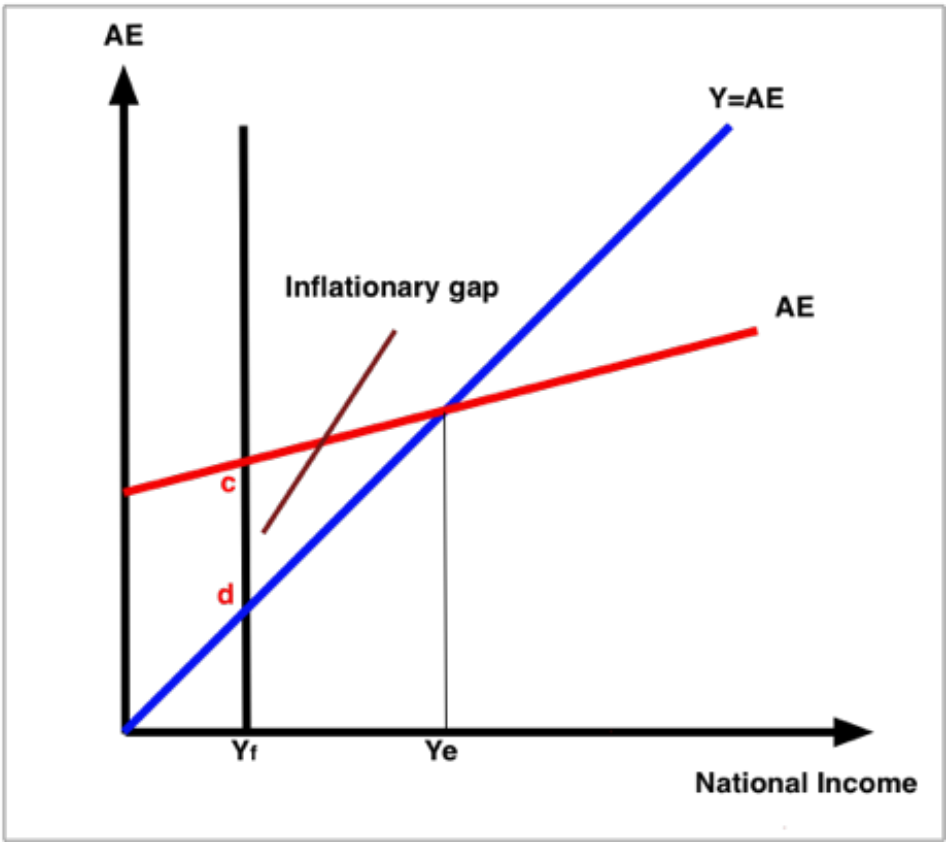


Inflationary Gap

If, at the full-employment level of income, aggregate expenditure exceeds national income, there will be a problem of excess demand. Y_e will be above Y_f. The problem is that Y_f represents a real ceiling to the output. In the short run, real national income cannot expand beyond

this point. Y_e cannot be reached. The result will be therefore, demand pull inflation. The situation involves an **inflationary gap**. This is the amount by which aggregate expenditure exceeds national income or injections exceed withdrawals at the full employment level of national income. This is illustrated by the gap c - d in the diagram below.

FIGURE 4.10: **Inflationary Gap**

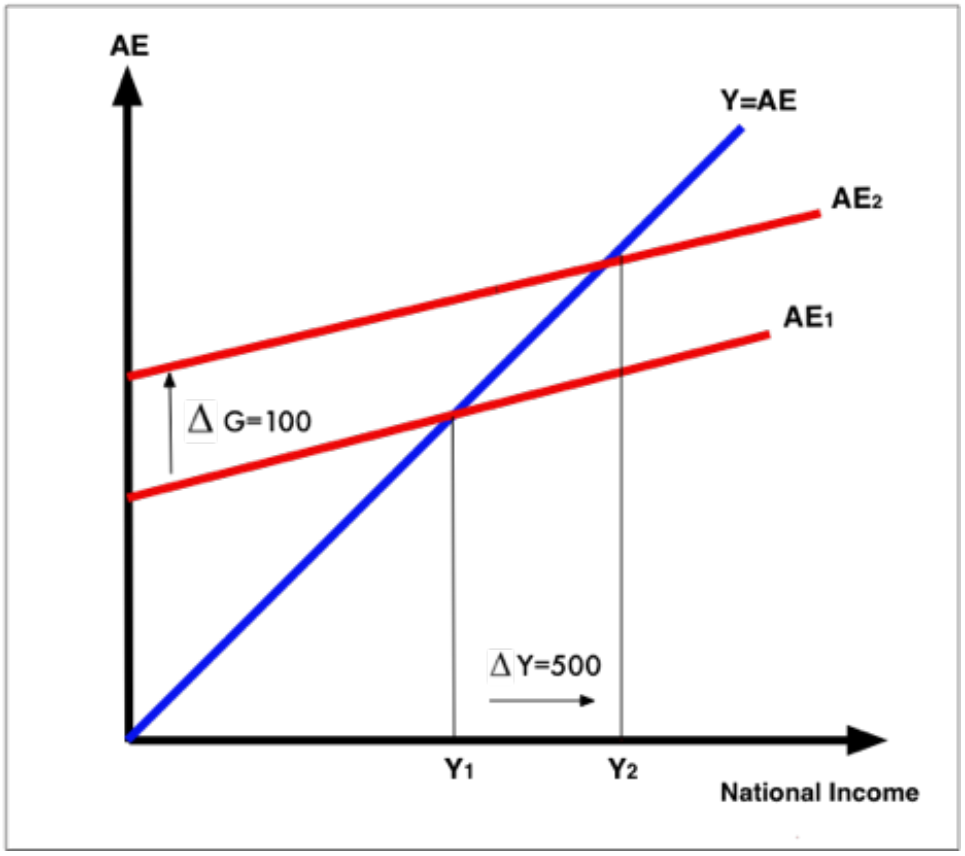


BALANCED BUDGET MULTIPLIER

Balanced Budget multiplier shows the effect on national income of equal changes in government spending and taxation. For example, if taxation increases by $100 million and government injects $100 million as government expenditure, the net effect of this equal increase in taxation and government spending will not be zero but in fact equal to the amount of the government injection.

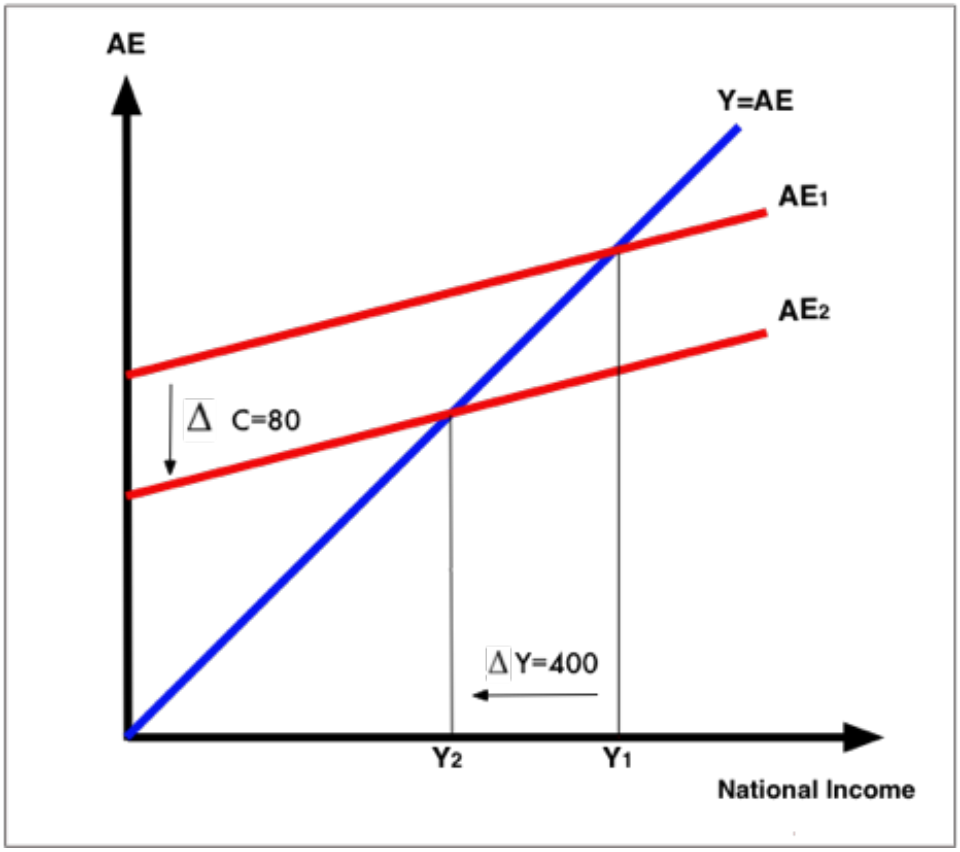
1. An increase in government spending of $100 million leading to a $500 million increase in national income. (multiplier = 5)

FIGURE 4.11: **Increase in Government Spending**



2. An increase of Taxes of $100 million, leads to a fall in disposable income by $100 million, and therefore a fall in consumption by $80 million (mpc = 0.8) and a fall in savings by $20 million (mps = 0.2). As a result, AE falls by $80 million leading to a fall in Y by $400 million.

FIGURE 4.12: **Increase in Tax**



When autonomous taxes increase by $100 million, the AE will decline by less than full $100 million because mpc is less than one. For example, a fall in national income of $100 million will result in consumption to fall by $80 million and savings to fall by $20 million. As a result, AE falls by $80 million. At the same time, a simultaneous increase in G will result in AE to rise by full $100 million. Therefore, the combination of increasing the autonomous level of G and T

by the same amount will actually lead to a net increase in desired spending of $20 million, and an increase in equilibrium level of GDP by $100 million, as the value of multiplier is 5. A balanced budget increase in government expenditure leads to a mild expansionary effect on GDP equal to the size of the increase in G, suggesting the **balanced budget multiplier =1**.

ACCELERATOR - MULTIPLIER INTERACTION

If there is an initial change in injections or withdrawals, then theoretically this will set off a chain reaction between the multiplier and the accelerator. For example, if there is a rise in government spending, this will lead to a multiplied increase in national income. But this rise in national income will set off an accelerator effect: firms will respond to the rise in income and the resulting rise in consumer demand by investing more. But this rise in investment constitutes a further rise in injections and therefore, will lead to a second multiplied rise in in income. If this increase in income is larger than the first, then there will be a second increase in investment (the accelerator), which in turn will cause a third rise in income (the multiplier). And so the process continues indefinitely.

But does this lead to an exploding rise in national income? Will a single rise in injections cause national income to go on rising forever? The answer is no. In real terms, national income cannot go on rising faster than the growth in

potential output. It will bump against the ceiling of full employment, whether of labor or of other resources.

CHAPTER 5

MONEY AND BANKING

DEFINITION, FUNCTIONS AND CHARACTERISTICS OF MONEY

Money can be defined as anything which is generally acceptable as a means of payment. Before the development of money, barter was used. This involves the direct exchange of goods and services without the use of any monetary mechanism.

Barter had a number of distinct disadvantages:

1. It required a double coincidence of wants, i.e. one person offering a good or service needs to find someone who wants that good or service and that person also needs to be offering something in exchange that the seller wants.
2. It was often difficult to compare the value of different goods and services.
3. The products may be indivisible, e.g. in the case of animals.
4. The products may be difficult to store while a seller is looking for an appropriate buyer.

These various disadvantages of barter meant that economies moved towards the development of money which would avoid the direct exchange of goods and services.

Although money has largely replaced barter, it is still necessary to establish what is, and what is not, money:

1. Cash: the most obvious form of money is cash, whether in the form of notes or coins.

2. Legal tender: some money may only be acceptable in transactions up to a certain amount and this is referred to as legal tender; this means that it must be accepted legally as a means of payment.

3. Bank deposits: much money is in the form of money deposited in banks, building societies, credit unions and other financial institutions; these monetary deposits can be in current accounts or various forms of savings account.

4. Near money: near money, or quasi money as it is sometimes called, refers to an asset that is immediately transferable into money and so can be used to settle some, but not all, debts. Near money, therefore, is able to fulfil some of the functions of money, but not all of them. For example, it cannot be used as a medium of exchange.

5. Liquidity: the ability to turn an asset into cash refers to its liquidity. Cash is the most liquid form of asset. The more liquid an asset, the easier it is to convert it into money.

6. Cheque: it is important to know not only what money is, but also what it is not. For example, a cheque is sometimes believed to be a form of money, but this is incorrect as a cheque is simply a means of payment and is not actually a form of money.

FUNCTIONS OF MONEY

Money is said to perform four essential functions in an economy:

1. A medium of exchange. A very important function of money is that it operates effectively as a means of exchange. Money is generally accepted as a means of payment for goods and services. This is the great advantage of money over barter, i.e. it overcomes the problems associated with the need to have a double coincidence of wants between two people.

2. A measure of value or unit of account. This function of money can either be described as a measure of value or as a unit of account. This is the idea that money enables the value of different goods and services to be compared. The direct exchange of goods and services in a barter system made it very difficult to give a valuation of the different products being traded. This function of money makes it possible to compare the value of different goods and services.

3. A standard for deferred payment. Money enables people to borrow money and pay it back at a later date. This encourages the provision of credit and so acts as an incentive to trade. Buyers are able to consume goods and services immediately, but the payment can be spread over a period of time. This was a major limitation of the barter system.

4. A store of value or wealth. A final function of money is that it enables wealth to be stored in the form of money. Compared to the barter system, money does not physically deteriorate and it is usually not expensive to store it, although this function of money does face the problem of a possible deterioration in its value if there is a situation of inflation in an economy as inflation erodes the value or purchasing power of a given sum of money over a period of time.

CHARACTERISTICS OF MONEY

Money has a number of distinctive characteristics and these are outlined in Table below

Characteristic	Explanation
Acceptability	Money needs to be generally acceptable in an economy if it is going to be used to facilitate the exchange of goods and services.
Divisibility	Money in an economy needs to be divided into smaller units, especially so that cheaper items can be bought and sold. This division into smaller units is explained by the term "denominations". For example, in Mauritius, the Mauritian rupee is divided into 100 cents.
Portability	Any money needs to be portable if it is going to be convenient for the users of it.
Durability	Money needs to be relatively durable if it is going to be acceptable although, of course, bank notes will eventually need to be replaced by newly printed ones.
Scarcity	Money needs to be relatively scarce; if it literally did "grow on trees", it would soon become worthless.
Stability of supply	As well as being relatively scarce, there also needs to be a stability of supply over a long period of time.
Recognisability	Money needs to be easily recognisable in an economy and this contributes to confidence in it.
Uniformity	It is necessary that each particular coin or note being used in an economy is uniform, i.e. has exactly the same value.
Stability of value	It is important that money has a reasonable degree of stability of value over a period of time, although inflation will erode the value or purchasing power of money over time.

DEFINITION OF MONEY SUPPLY

The money supply is the total amount of money in an economy at any one time. It includes notes and coins and also any deposits, such as current accounts in banks, which can be quickly converted into cash.

Today more and more transactions are done using cheques, debit cards, credit cards and electronic bank transfers. It is

usual, therefore, to distinguish between narrow money and broad money although there is no completely agreed definition of either between countries or economists. Narrow money is sometimes referred to as M0 or M1 and broad money as M3 or M4.

Narrow definitions of money include only items that can be spent directly, such as cash and current accounts in banks (since they can be spent directly by using cheques or debit cards). **Broad** definitions of money also include various items such as deposit and savings accounts in banks that cannot be spent directly, but which can nevertheless be readily converted into cash. Hence, broad measures may include items that are not liquid. Liquidity refers to the ease with which an asset can be spent. Cash is the most liquid asset, as it can be used for transactions. However, if you are holding funds in a savings account whereby you must either give notice of withdrawal or forfeit some return to withdraw it instantly, then such funds are regarded as being less liquid, as they cannot costlessly or instantly be used for transactions.

Narrow measures focus on items which are used primarily as means of exchange while broad measures include items which are used not only as a means of exchange but also as a store of value.

SOURCES OF MONEY SUPPLY

1. **An increase in commercial bank lending – credit creation**: Commercial banks, by lending to customers, create money. Whenever a bank receives deposits, it keeps a fraction of it as a reserve and loans out the rest. By lending out, the bank creates more deposits and increases money supply in the economy.
   Example: If the bank receives $100, and the liquidity reserve ratio is 10%, the bank will keep $10 and loan out $90. The borrower can then use the $90 to buy something from someone who then deposits the currency. This process goes on and on. Each time money is deposited and a bank loan is made, more money is created.
   How much money is created in the economy from $100?
   Original deposit = $100
   Bank 1 lending = $90 which is (0.9*100)
   Bank 2 lending = $81
   …
   Total money supply = 1000
   The amount of money the banking system generates with each dollar of reserves is called the money multiplier (Credit Multiplier).
   Money Multiplier =1/Liquidity Ratio
   With 10% liquidity or reserve ratio, for example, the money multiplier becomes 100/10 = 10. Hence $100 of initial deposit will result in money supply to grow to $1000.

Change in Money Supply = Initial Deposit x Money Multiplier.

The lower the reserve ratio, the higher the amounts the bank can lend, the higher will be the money supply. Reserve ratios provided by the central bank are one of the ways the government controls the money supply in the economy.

2. **Open Market Operations**: Money supply can also be changed through open market operations – which is buying and selling of government securities. When the government sells securities in the open market, it takes in cash from the financial institutions purchasing the government securities, thus reducing the cash in the system. Vice versa, when government buys securities in the open market, it gives in cash to the financial institution selling the government securities, thus increasing cash in the system.

   The government uses government securities to borrow money to finance a deficit. If the bonds are sold to the central bank or the commercial banks, there will be a multiplied effect on money stock. This is because when the government undertakes its expenditure, this releases new money into the system that then acts as an increase in the base on which credit creation takes place. Selling to the non-bank private sector does not have this effect, because the public draw down their bank deposits in order to pay for the bonds in the first place. Deficit

financing by the government can thus have an impact on the size of money stock.

3. **Total Currency Flow:** The total currency flow of the balance of payments refers to the total outflow or inflow of money resulting from international transactions. If there is net inflow of money into a country, the excess surplus currency will be converted into local currency, thereby increasing the money supply of the country.

4. **Quantitative easing:**Since 2009, central banks have purchased financial assets from banks and businesses resulting in an increase in the money supply to expand economic activity. It works by the central bank buying large amounts of government bonds which then lowers the interest rates on those bonds. This, in turn, pushes down the interest rates offered on loans because rates on government bonds tend to affect other interest rates in the economy. This makes it cheaper for individuals and businesses to borrow money, encouraging spending. In addition, it can boost a wide range of financial asset prices. By purchasing the government bonds, other financial institutions have more money which they can invest in other financial assets such as shares increasing their price. This makes businesses and individuals holding shares wealthier, making them more likely to increase spending leading to more economic activity.

FUNCTIONS OF COMMERCIAL BANKS

Commercial banks are financial institutions which take deposits from, and loan out money to individuals and firms.

Providing deposit accounts (demand deposit account, savings account)

The most significant and traditional function of commercial banks is accepting deposits from the public. Demand deposit, or current, accounts usually do not have interest paid on the money as it can be withdrawn at any time either through taking notes and coins out or by using cheques or through the use of bank cards. Saving accounts do attract interest because although money can normally be withdrawn from them at any time, the bank can require notice of withdrawal. This is most likely if a very large sum is required.

Lending money (overdrafts, loans)

Banks having accepted deposits, and paid interest on some, need to lend money at higher interest rates in order to pay their depositors. They can lend money in the form of overdrafts or loans. Overdrafts are an arrangement by which a person can borrow money they do not have through their current account. Loans, however, are a sum of money given by a bank to a borrower for a set period of time where interest is paid on the whole of the loan.

Holding or providing cash, securities, loans, deposits, equity

1. Cash is held by banks to provide depositors with the money in their account. Banks in India hold about 4 per cent of their deposits as cash.

2. Most loans are secured loans, in that the borrower has to offer some way in which the bank could regain its money if the loan was not repaid. If you borrow $20,000 to buy a house, the bank may require you to give them the deeds, or legal ownership, of the house. If you fail to repay the loan the bank could then sell the house and repay itself.

3. Making loans and taking deposits are the two major functions of as commercial bank (see below).

4. Equity is the ownership of assets. In the case of banks, other than the banks' buildings, the main equity is the money that a bank has obtained from its shareholders and other investors and any profit that it has made and not paid out.

Reserve ratio and capital ratio

The reserve ratio is the percentage of deposits which commercial banks are required, by the country's central bank, to keep as cash. In the UK it is 12.5 per cent. The reserve ratio is an important tool of monetary policy and plays an essential role in regulating the money supply.

When the central bank wants to increase money supply in the economy, it lowers the reserve ratio. As a result, commercial banks have higher funds to disburse as loans, thereby increasing the money supply in an economy. The opposite is true when money supply needs to be reduced.

The capital ratio is the funds that a commercial bank has in reserve measured against the total value of assets which are a risk, that is might not be able to be repaid. This is an attempt to prevent banks from not being able to meet their liabilities. Since the financial crises of 2008, many central banks now run "stress tests" to check whether banks have enough capital to cope with a crisis.

Objectives of commercial banks: liquidity, security, profitability

In order to survive and to be able to pay its liabilities, mainly deposits, banks must ensure that they have sufficient liquidity. Its most liquid asset is cash, but it also involves how easily it can turn other assets into cash. It is an important objective as the "stress test" will be testing it.

Security is another objective. Clearly banks need to ensure that their customers' money is kept safe. This has become increasingly important with the use of online and similar technological innovations. Cyber security is now essential as otherwise criminals can gain access to large sums of deposited money as well as private information.

The major objective, however, is probably profitability. Not only will a bank go out of business if it is not profitable, but both shareholders and depositors are likely to withdraw their money if there is any sign of problems. The objective is to make a profit by earning more from the interest charged on loans than the interest paid to depositors. Profit can also be made by providing services such as deposit security, currency trading, business advice, cheque and credit-card processing.

DEMAND FOR MONEY – LIQUIDITY PREFERENCE THEORY

Keynesians argue that rate of interest is determined by demand and supply of money. It is assumed that the supply of money is determined by the monetary authorities and is fixed in the short-run.

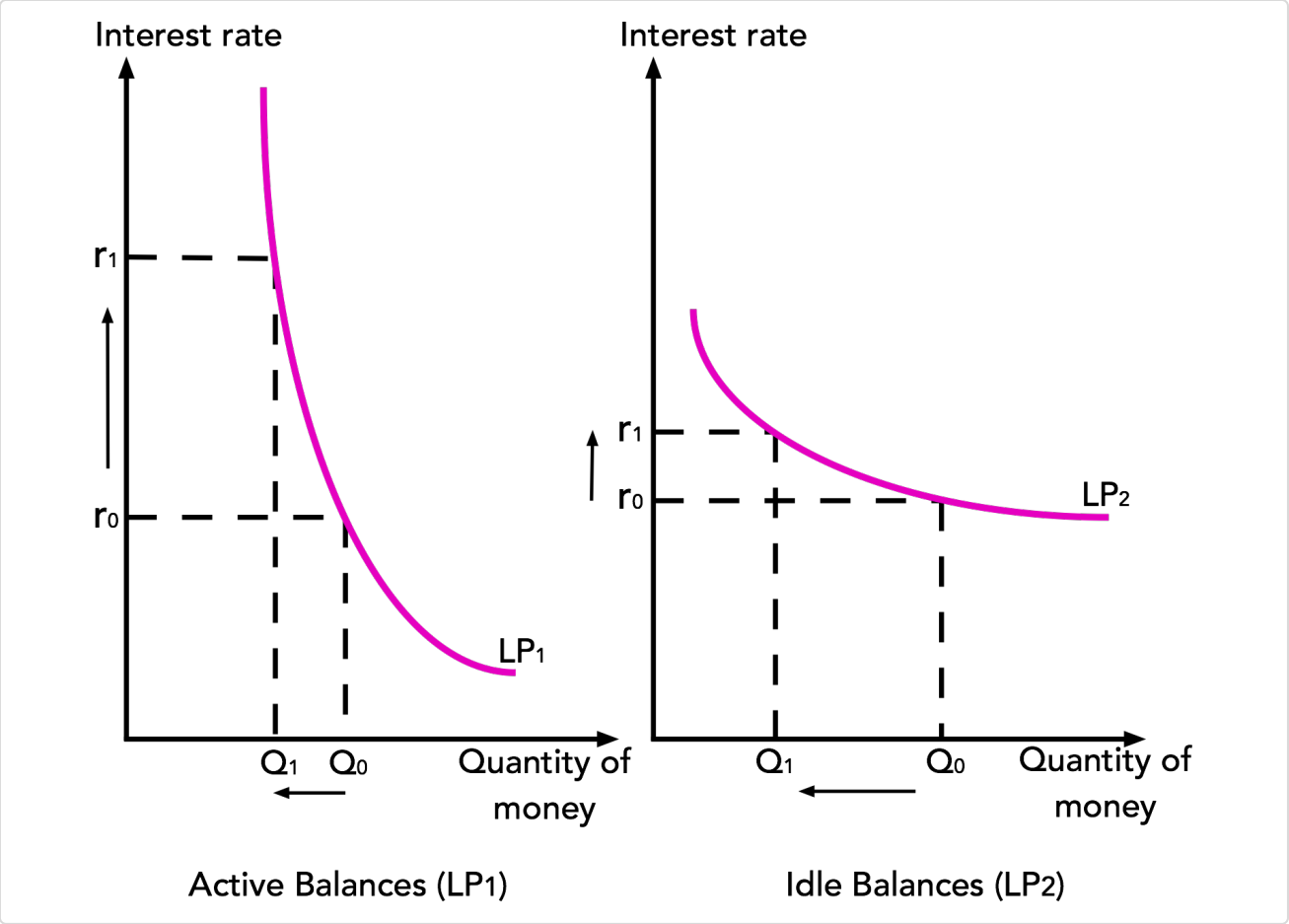
The demand for money refers to the desire to hold money: to keep your wealth in the form of money, rather than spending it on goods and services or using it to purchase financial assets such as bonds or shares. The opportunity cost of holding any money balance is the extra interest that could have been earned if the money had been used instead to purchase bonds. It is usual to distinguish three reasons why people want to hold their assets in the form of money.

1. **Transaction Motive:** Since money is a medium of exchange, it is required for conducting transactions. However, people receive money only at intervals (e.g. weekly or monthly) and not continuously, they need to hold balances of money in cash or in current accounts. The transaction demand for money relates directly with real GDP. The higher the GDP, the higher will be the money demand for transaction purposes.

2. **Precautionary Motive**: Firms and households also demand money to meet any unexpected expenses and take advantage of any unforeseen bargains.
   Money held for transaction and precautionary motives

are called active balances (LP_1)– as they are likely to be spent. Active balances are relatively interest inelastic, which means a rise in interest rates will not result in households and firms to significantly alter or cut back on their holdings of money for transaction and precautionary purposes.

FIGURE 5.1 **Active and Idle Balances LP curve**

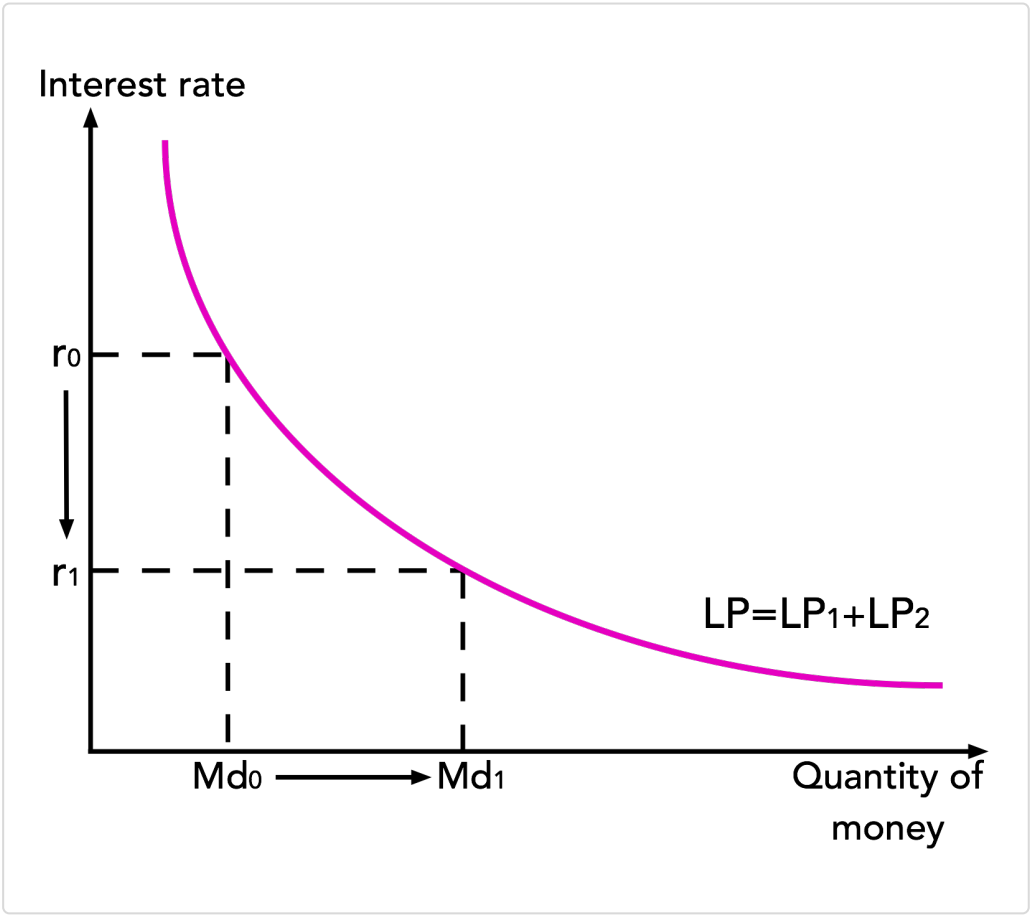


3. **Speculative Motive**: Certain firms and individuals who wish to purchase financial assets such as bonds, shares or other securities, may prefer to wait if they feel that their price is likely to fall. In the meantime, they will hold

money balances instead. This speculative demand can be quite high when the price of securities is considered certain to fall. Money when used for this purpose is a means of temporarily storing wealth.

Therefore, firms and households will hold money, which are sometimes called idle balances (LP_2), when they believe that the returns from holding financial assets are low. When interest rates are high, the opportunity cost of holding money is high and idle balances will be low. Vice versa, when interest rates are low, opportunity cost of holding money is low, idle balances will be high. The idle balances are therefore interest elastic – very responsive to changes in interest rates.

FIGURE 5.2 **Liquidity Preference Curve**

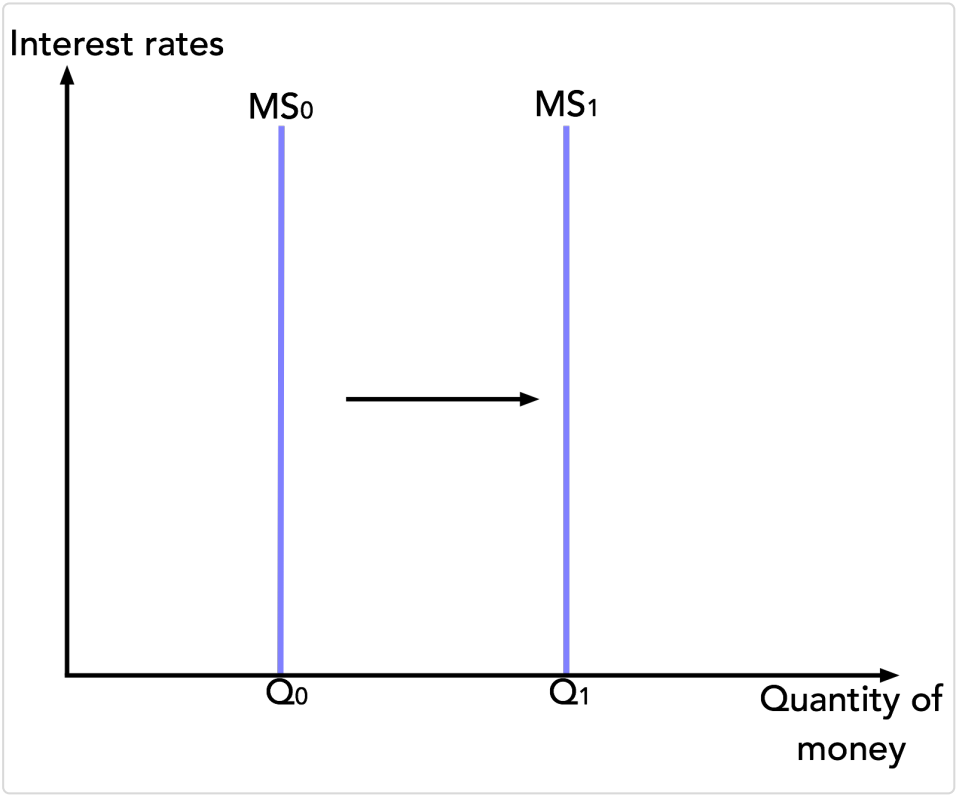


Liquidity Preference (LP) = Active Balances (LP_1) + Idle Balances (LP_2)

Supply of Money

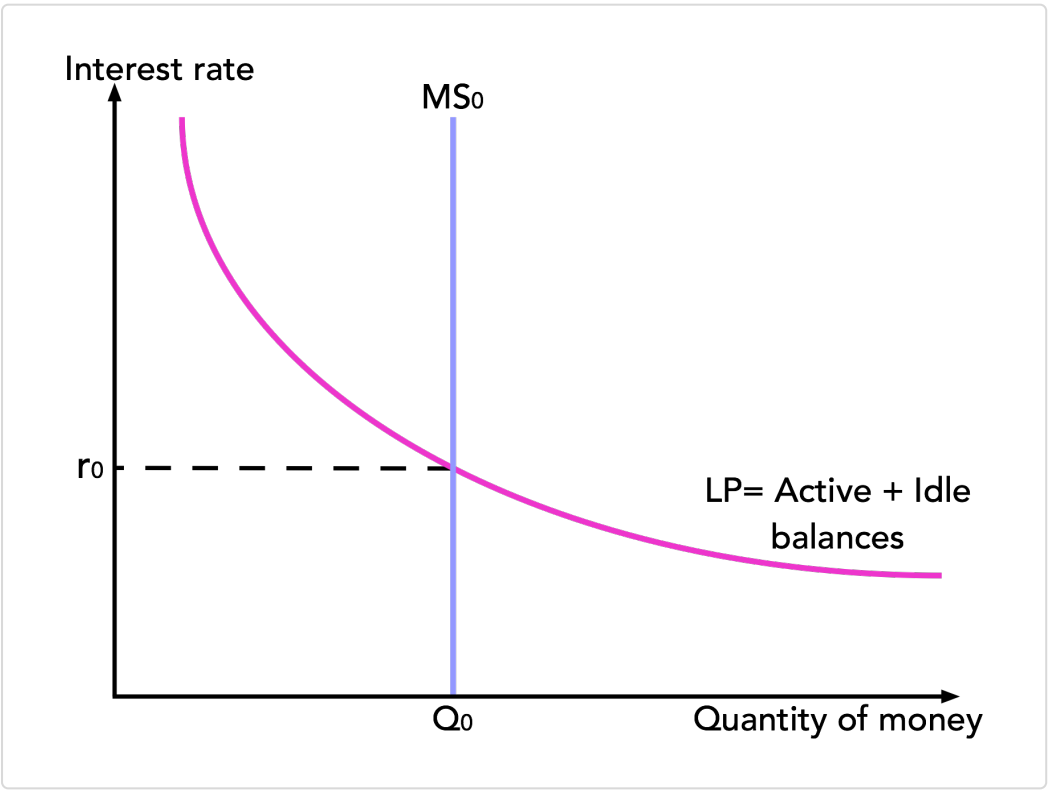
According to Keynesians, supply of money in the short-run is fixed by the central bank and is vertical, which the government can change through many methods described earlier like changing the reserve ratio.

FIGURE 5.3 **Money supply**



Equilibrium in the money market therefore occurs where the demand for money (LP curve) equals the supply of money (MS_0). Any changes in the demand and supply of money can change the equilibrium quantity of money and the rate of interest.

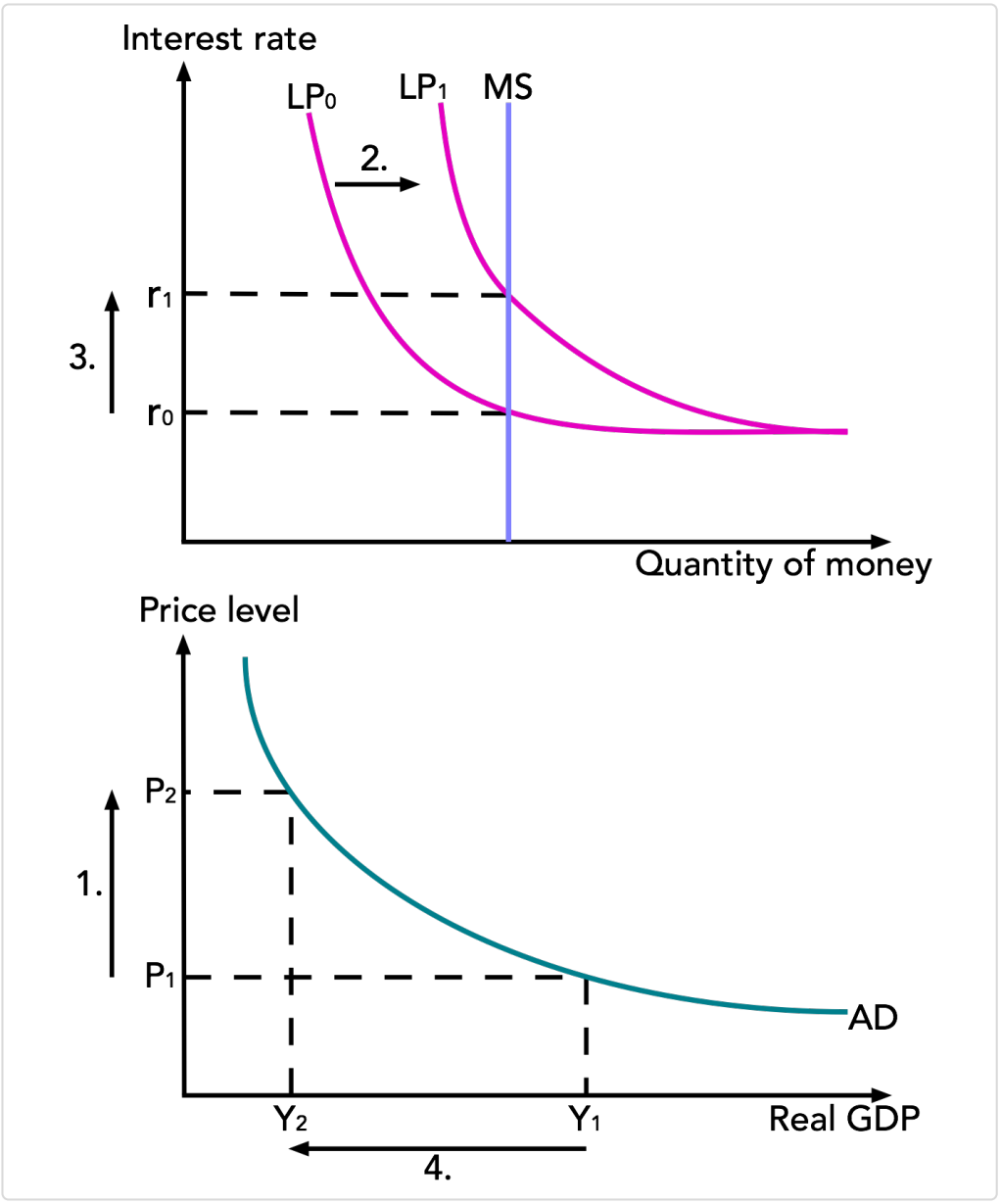
FIGURE 5.4 **Money market equilibrium**



Downward slope of Aggregate Demand and Interest Rates

1. An increase in the price level results in
2. An increase in the demand for money
3. Which in turn results in interest rates to rise and
4. Consumption and investment to fall and ultimately results in national income (Y) to fall

FIGURE 5.5 **Interest rates and aggregate demand**



Interest rates and the price of bonds

There exists an inverse relationship between interest rates and the price of bonds or the government securities.

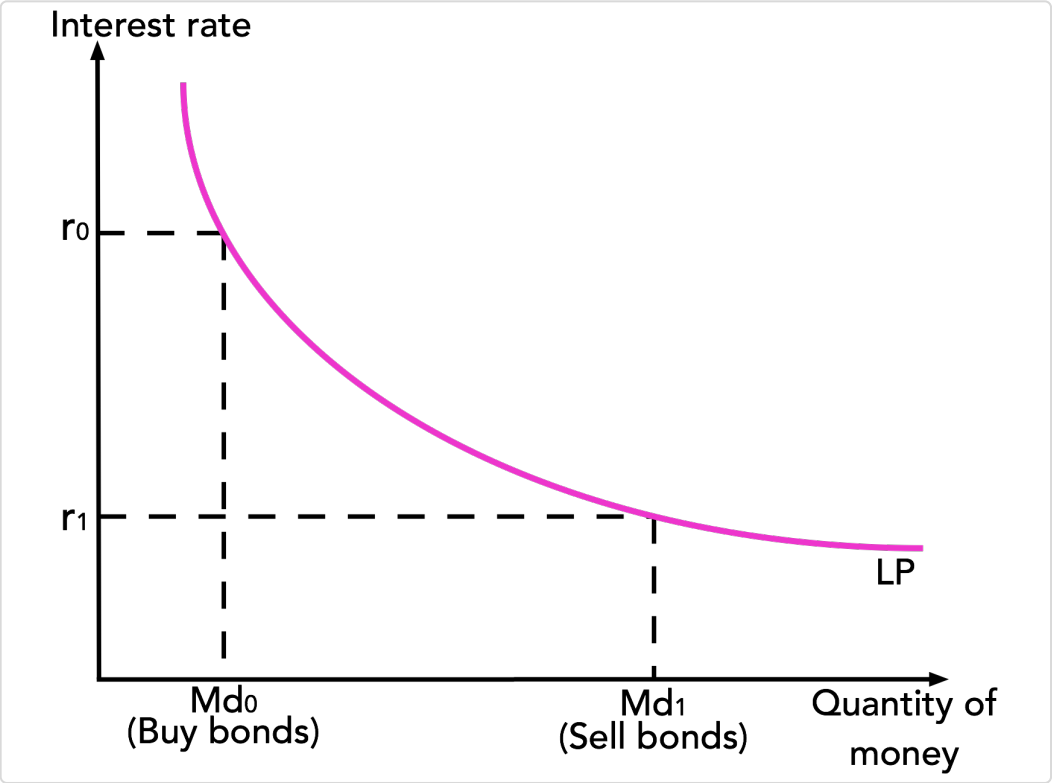
When a government issues a security it has a fixed dividend rate, a face value and a tenor or duration for the bond. For example, govt. can issue a bond for a tenor of 10 years with the face value of $100 and fixed per annum return rate of 10%. The market value or price of the bond, however, depends upon the interest rates determined by the market.

If the market interest rate rises to, for example 15%, the value or price of the bond will fall, that yields a fixed return of 10%. Similarly, when the market interest rate falls to, for example 5%, the value of the bond and its price will be higher and that yields a 10% return.

Money demand

From a speculator's perspective, who buys low and sells high, holding money is for speculative purposes. When the interest rates are high, the price of the bonds are low, he would buy bonds and hold less money balances. Similarly, when the interest rates are low, the prices of bonds are high and a speculator will hold more money balances and will be selling bonds.

FIGURE 5.6 **Money Demand**

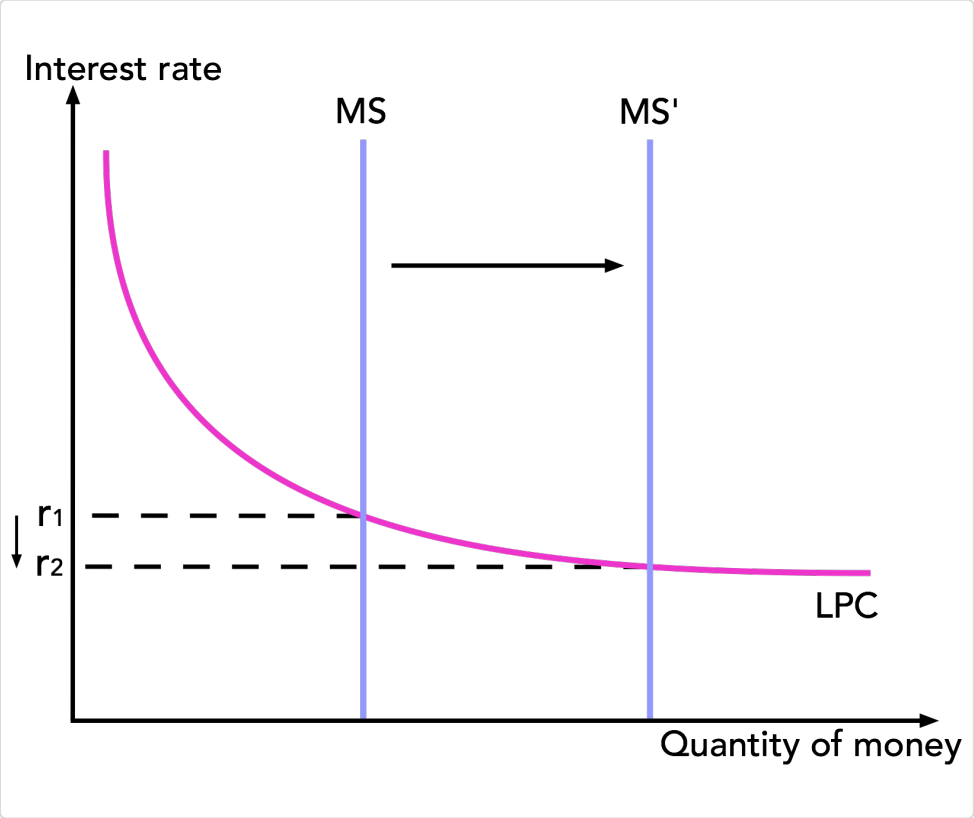


Liquidity Trap

According to Keynesians, the speculative demand for money is highly responsive to changes in interest rates. If people believe the rate of interest will rise, and thus the price of bonds and other securities will fall, few people will want to buy them. Instead there will be a very high demand for liquid assets (money and near money). The demand for money will therefore be very elastic in response to changes in interest rates. The demand for money curve (the liquidity preference curve, LP curve) will be shallow and may even be infinitely elastic at some minimum interest rate. This is the point where everyone believes interest rates will rise,

and therefore no one wants to buy bonds. Everyone wants to hold their assets in liquid form.

FIGURE 5.7 **Liquidity Trap**



With a very shallow LP curve, a rise in money supply from MS to MS' will lead to only a small fall in the rate of interest from r_1 to r_2. Once people believe that the rate of interest will not go any lower, any further rise in money supply will have no effect on interest rates. The additional money will be lost in what Keynes called the liquidity trap. People simply hold the additional money as idle balances.

Keynes himself saw the liquidity trap as merely a special case: the case where the economy is in deep recession. In such a case, an expansion of money supply would have no effect on the economy. In more normal times, an expansion of money supply would be likely to have some effect on interest rates. Nevertheless, the problem could be severe in times of recession.

The Japanese economy suffered from a prolonged recession (from the early 1990s to the early 2000s). The government and central bank expanded the money supply, but people seemed unwilling to spend. They preferred to hold idle balances. What is more, with interest rates already being virtually zero, there was little incentive to buy bonds or other assets. Thus any extra money was simply kept in idle balances – lost in the liquidity trap.

MONEY SUPPLY AND MONETARY TRANSMISSION MECHANISM

Direct Transmission Mechanism

The direct transmission mechanism relates to an increase in the money supply resulting in an increase in the AD directly. This happens when money supply increases in an economy, there is more money available than the amount people require holding and the surplus will be spent thereby increasing the AD.

MS↑→MS> MD → AD↑

Indirect Monetary Transmission

An increase in money supply results in changes in AD via the interest rates and exchange rates indirectly.

1. Increase in Money Supply from MS_0 to MS_1
2. Results in Interest Rates to fall from r_0 to r_1
3. Hot money flows out and the demand for currency falls while supply rises and ER depreciates from e_0 to e_1
4. AD rises as X-M rises (due to weaker ER) and even C and I rise due to lower interest rates.

FIGURE 5.9 **Fall in interest Rates**

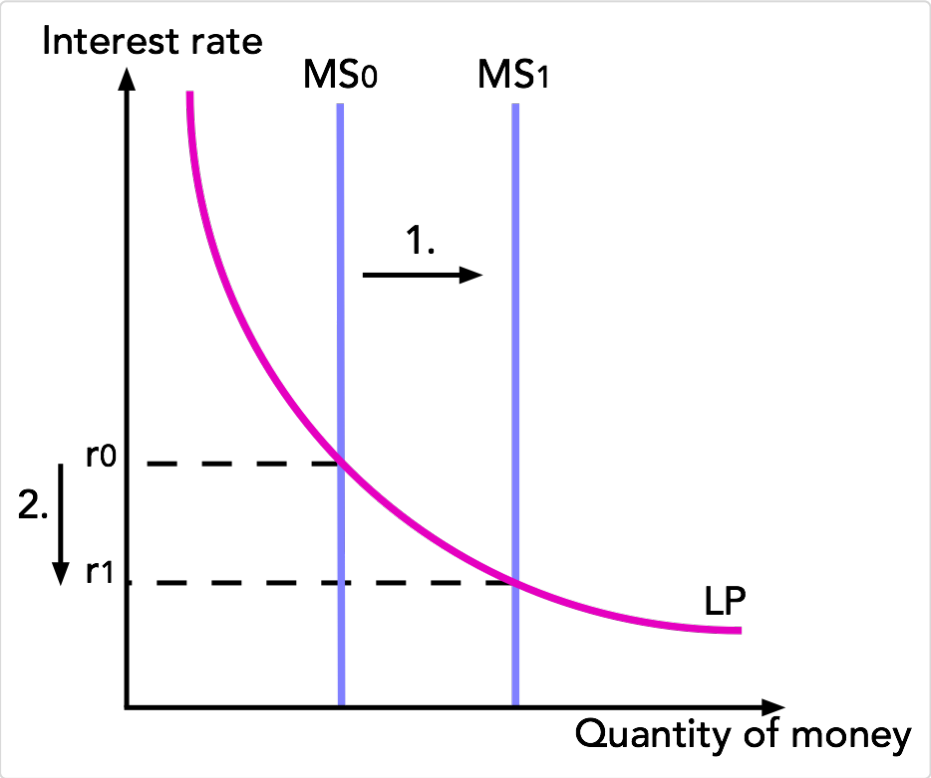


FIGURE 5.8 **Exchange rate depreciates**

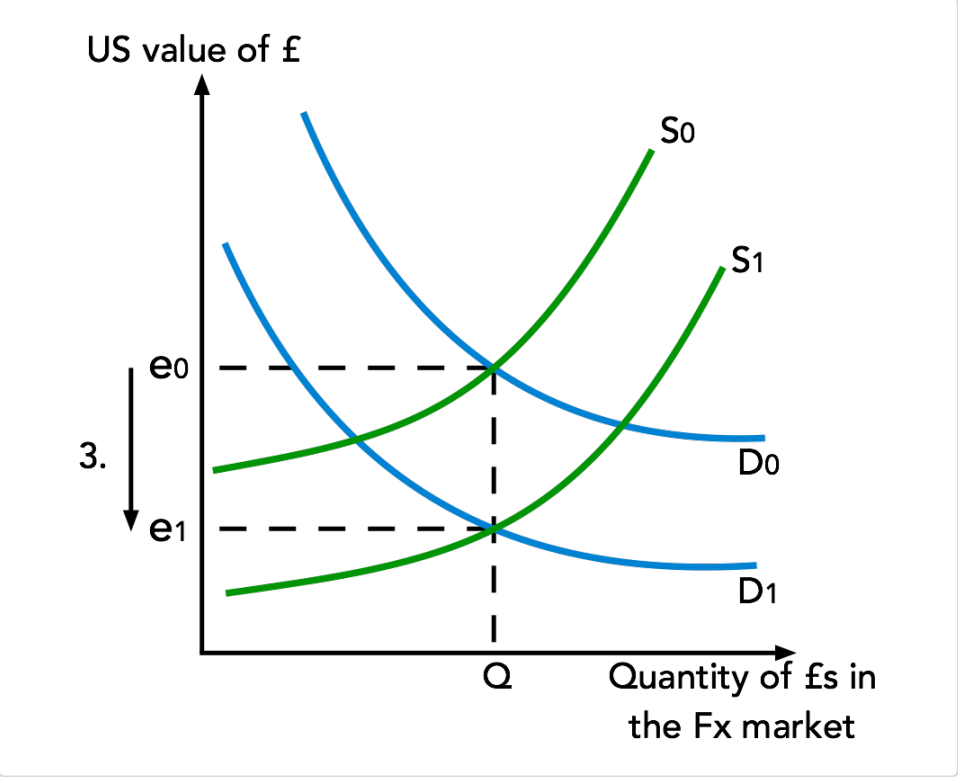
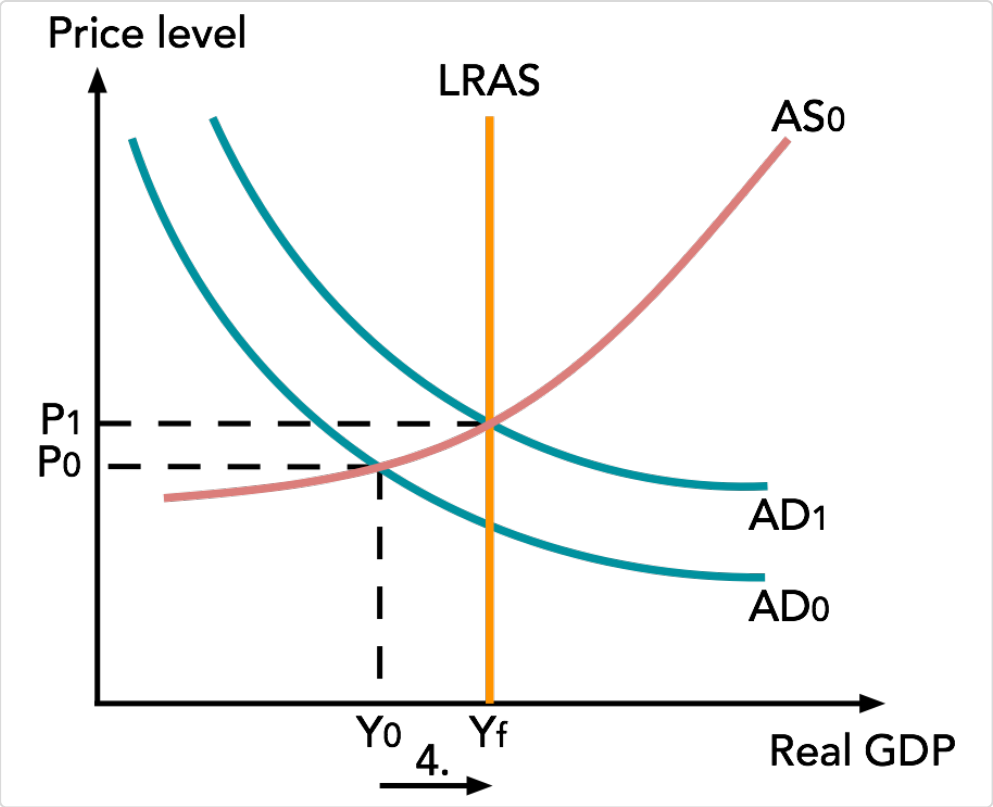


FIGURE 5.10 **AD rises**



EFFECTS OF MONEY SUPPLY ON THE ECONOMY

According to the Fisher equation

$$MV = PT$$

M= money supply

V= velocity of circulation (no. Of times money changes hands)

P= Price level

T= Total output

Simple example: An economy produces pizzas only. If it makes 100 pizzas and the price is for $10 and money supply is $50.

T = 100 pizzas, P=$10, MS=$50

Velocity = 10*100/50 = 20

Money has to change hands 20 times in order for the 100 pizzas to be sold. The quantity theory of money states that the value of total expenditure (MV) must equal to the value of the output sold (PT). Changes in money supply and its impact on the economy is a matter of dispute between the Classical Economists and the Keynesians.

Monetarist View

Monetarists are of the view that changes in the money supply can have a significant impact on the price level of the economy.

Monetarist economists believe that in the short term velocity (V) is fixed as it depends on the spending pattern, which does not change over time. They also believe that Output T is fixed by supply side factors, as the economy operates under full-employment in the long run. Hence V and T are constant and are determined independently of the money supply. If there is a change in the money supply then price level will rise, as T will quickly return to its long run (natural) equilibrium. Note LRAS is inelastic in the Classical economists model. Therefore an increase in the money supply (M) faster than the growth of national income will lead to an increase in (P) inflation.

Keynesian View

Keynesians dispute the validity of the theory. They argue that a change in the money supply can affect any or all of the other three variables so it is not possible to predict what will happen when money supply changes. For example, the Velocity of Circulation V is not stable, but can change due to factors such as increase in the use of credit cards. Keynesians also argue that the LRAS is not necessarily inelastic; they argue that the economy can be below full capacity for a long time.

Keynes also rejected the simple quantity theory of money. Increases in money supply will not necessarily lead merely to rises in prices. If there is a lot of slack in the economy, with high unemployment, idle machines and idle resources, an increased spending of money may lead to substantial

increases in real income (Y) and leave prices (P) relatively unaffected.

Interest rate determination: loanable funds theory

An alternative approach to liquidity preference is that of demand and supply of loanable funds.

The **demand for loanable funds** comes from two sources – domestic investment and net foreign investments (NFI). Net foreign investments are net of capital assets owned by foreigners.

NFI = Foreign capital assets owned by domestic individuals - domestic capital assets owned by foreigners.

Demand for loanable funds = I +NFI

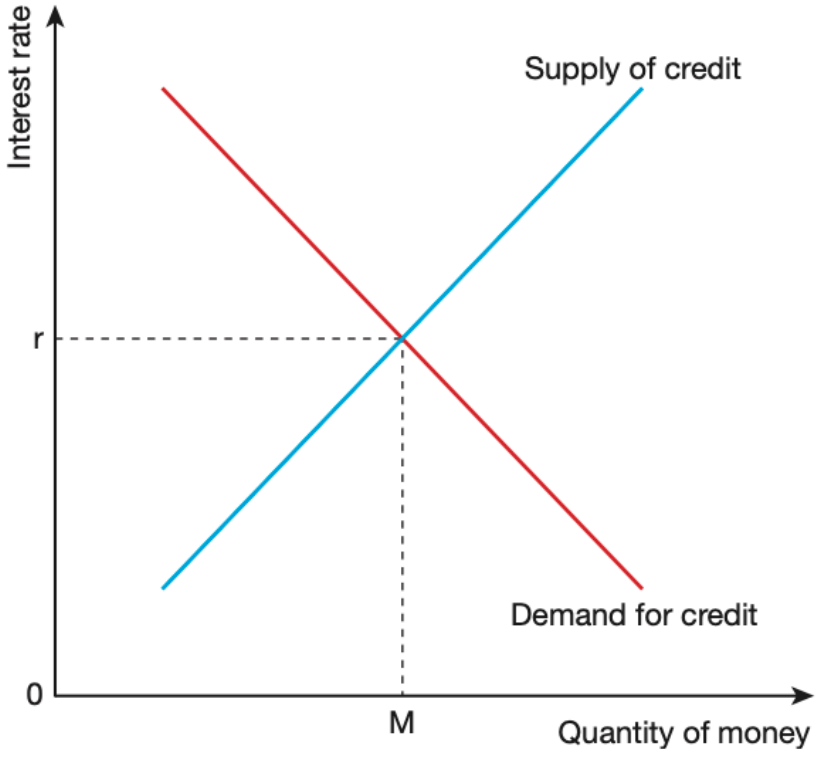
Demand for loanable funds is downward sloping as an increase in interest rates results in the cost of borrowing to increase and discourages investment. In addition to this, when interest rates increases, domestic residents will reduce investments in foreign investments abroad and foreigners will increase their investments in domestic assets (hot money or short term investment), resulting in NFI to decline.

The **supply of loanable funds** comes from the national savings of an economy. National savings has two components – private and public savings.

National savings= Private Savings + Public Savings

Private savings are the savings by the private sector, while public savings are the savings by the govt.The supply of loanable fund is upward sloping as higher interest rates encourage people to save more and therefore raises the quantity of loanable funds supplied.

Loanable funds bring together savers who are supplying the funds and borrowers who are demanding funds. In this case the rate of interest is determined by where the supply of funds equals the demand for funds as shown in the figure below.



When the government runs into a surplus, there will be an increase in public savings and, as a result, the supply of loanable funds increases. Similarly, when the government runs into a deficit, there will be public borrowings and the supply of loanable funds decrease. Bank lending can also shift the supply of loanable funds. Higher the bank lending, the more the supply of loanable funds at all levels of interest rates.

POLICIES TO REDUCE INFLATION AND THEIR EFFECTIVENESS

For an economy that is in macroeconomic equilibrium, there are two ways in which prices can begin to increase. First, there could be a leftward shift in the aggregate supply curve. Second, there could be a rightward shift in aggregate demand.

Anti-inflationary policy

The appropriate policies to reduce inflation depend on the type of inflation. Given that demand-pull inflation is due to excess aggregate demand, then an appropriate policy would be to reduce aggregate demand. Thus the government could use deflationary fiscal policy (increase taxes and lower government spending) and/or deflationary monetary policy (raise interest rates and reduce the money supply).

Evaluation of Anti-inflationary policies

1. From a political standpoint, such policies are highly unpopular. Looking first at fiscal policy, a voting population is unlikely to be happy to accept higher taxes as it reduces disposable income and the level of consumption. A reduction in government spending will inevitably impact upon a variety of groups in the economy and this may result in less support for the government.

2. It takes a long time for a government to bring about a change in its fiscal policy. Budgets are developed over a long period and changes need to go through lengthy legislative procedures where there may be great opposition to any budget cuts. Therefore, there would be a long time lag involved in using contractionary policy to bring about a decrease in aggregate demand.

3. As far as monetary policy is concerned, higher interest rates will also harm some people in the economy, most obviously anybody who has taken a loan or mortgage. Higher interest rates mean higher loan and mortgage repayments and will therefore be unpopular. A government that is concerned about being re-elected will be reluctant to use these methods to fight inflation.

4. Nowadays, monetary policy is considered to be the most effective way of managing aggregate demand in the economy and changes in interest rates are considered the best weapon in the fight against inflation. Fiscal policy is not seen to be as effective as monetary policy in battling inflation. It would be very difficult for governments to reduce their spending because of their commitments to the public. Moreover, even if governments could reduce their spending, it would take a long time for the cuts to have any effect on the price level.

5. If inflation is of a cost-push nature, then deflationary demand-side policies may bring down the price level,

but they will result in lower national output and are likely to cause unemployment to rise. Thus, demand-side policies are ineffective and supply-side policies are the appropriate policies to deal with cost-push inflation. However, when inflation does occur, it is difficult to distinguish the demand-pull from the cost-push factors and so policy-makers are likely to use a mix of solutions.

6. A significant problem facing governments is the possible trade-off between their different policy objectives. They may want to fight inflation by bringing about a decrease in aggregate demand, but this might result in a higher level of unemployment. If they try to fight unemployment and increase economic output (achieve economic growth) by increasing aggregate demand, it might create inflationary pressure.

CHAPTER 6

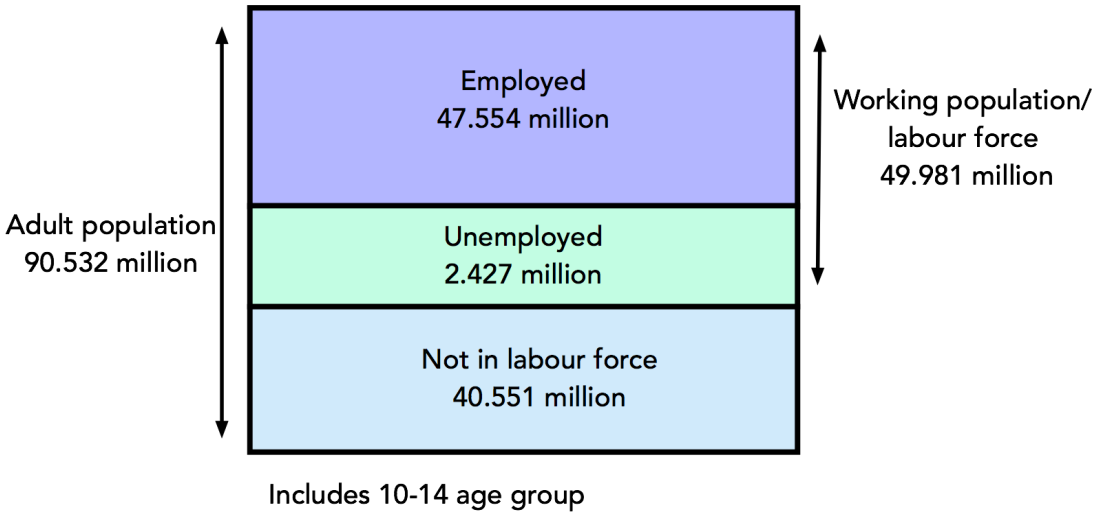
UNEMPLOYMENT AND ECONOMIC GROWTH

The unemployed are those who are of working age, who are without work, but who are available for work at current wage rates.

The labour force is defined as: those in employment plus those unemployed.

The most usual definition that economists use for the number unemployed is: those of working age who are without work, but who are available for work at current wage rates. If the figure is to be expressed as a percentage, then it is a percentage of the total labour force. The labour force are those in employment plus those unemployed.

FIGURE 6.1 **Labour Force of Pakistan 2010**



Unemployment Rate = (Unemployed/ Total Labour Force) x100= 2.42/49.98 x100 = 4.84

AGGREGATE DEMAND AND SUPPLY OF LABOUR

FIGURE 6.2 **Equilibrium**

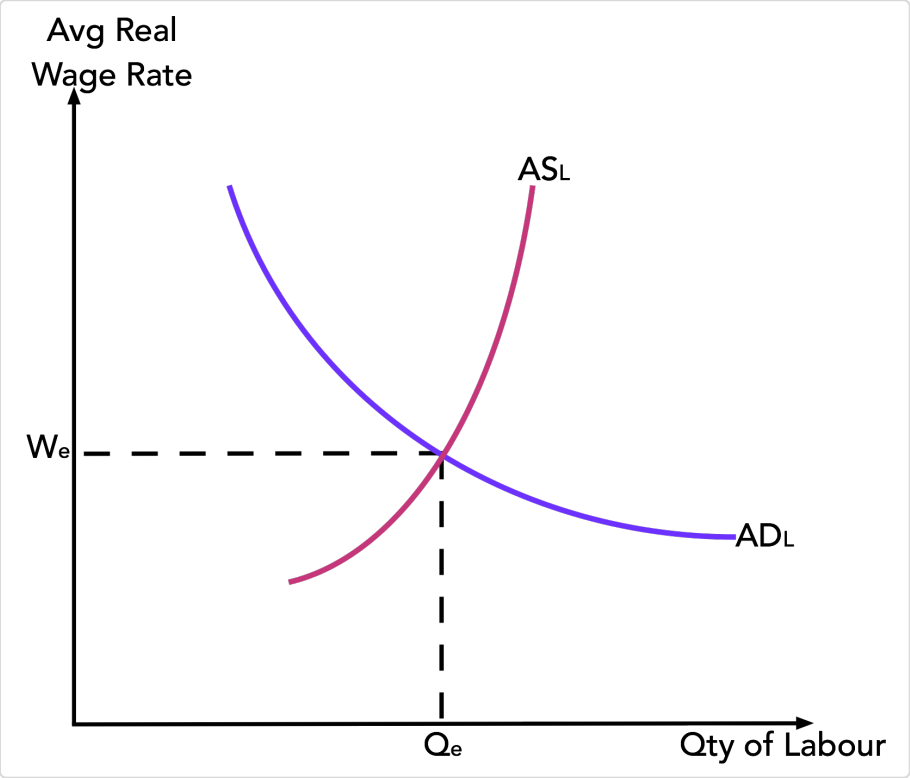
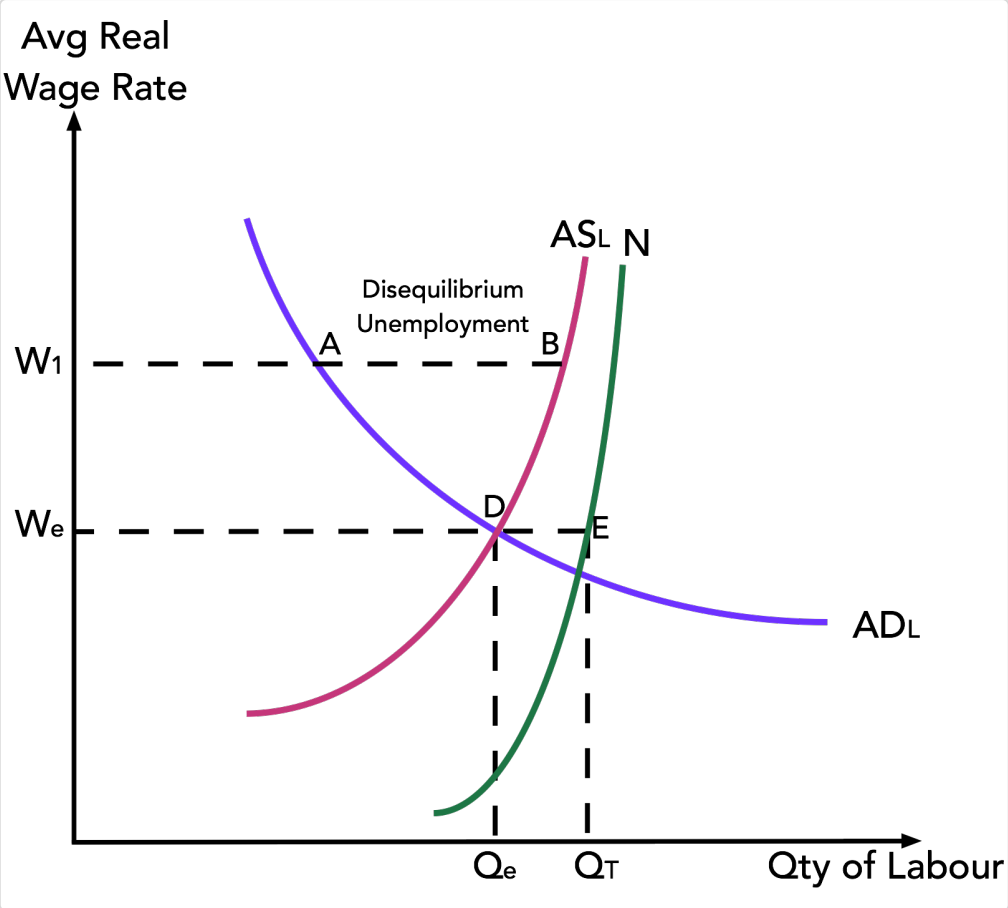


Figure 7.2 shows the aggregate demand and supply of labor: that is, the total demand and supply of labor curve (AS_L) shows the number of workers willing to accept jobs at each wage rate. The supply curve is inelastic, since the size of labor force at any one time cannot change significantly. It is not totally inelastic because (a) a higher wage rate will encourage some people to enter the labor market and (b) the unemployed will be more willing to accept job offers rather than continuing to search for a better-paid job.

The aggregate demand for labor curve (AD_L) slopes downward. The higher the wage rate, the more will firms attempt to economize on labour. The labor market will be at equilibrium where the demand for labor equals the supply.

FIGURE 6.3 **Natural Unemployment**



Even when the labor market is in equilibrium, not everyone looking for work will be employed. Some people will be unemployed. For example, some people will hold out, hoping to find a better job. The curve N shows the total number in the labor force. The horizontal difference

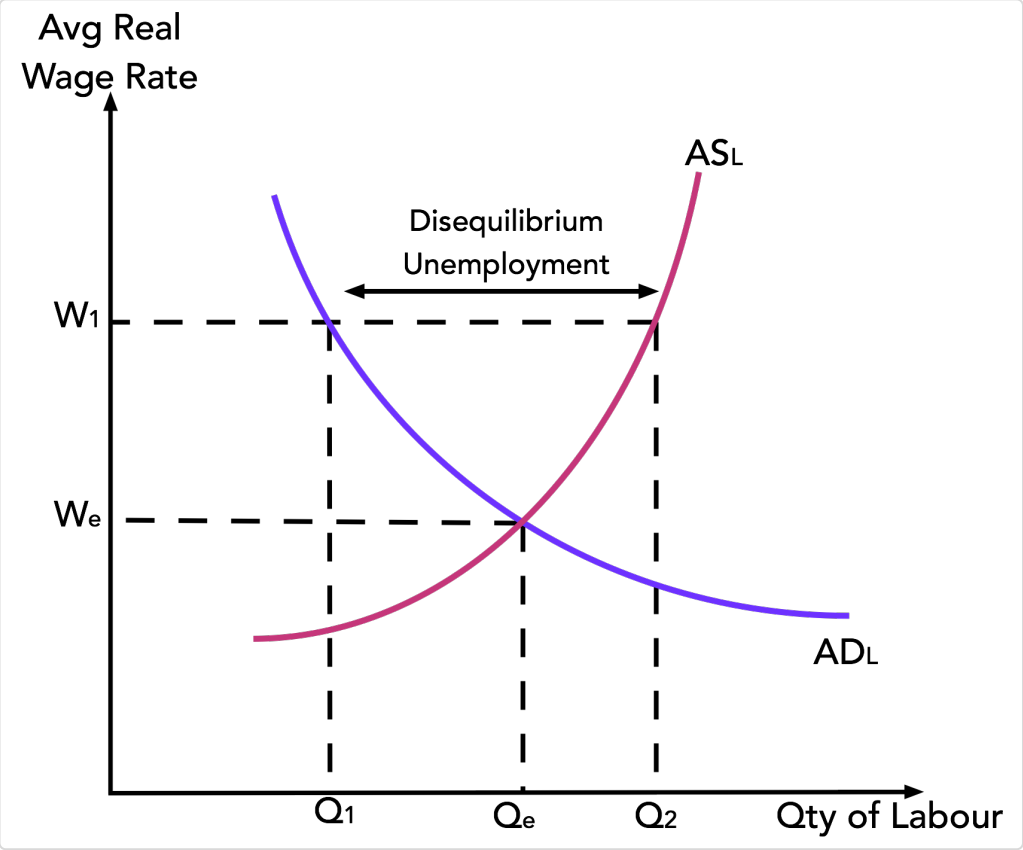
between it and the aggregate supply of labor curve (AS_L) represents the excess of people looking for work over those actually willing to accept jobs. Q_E represents the equilibrium level of employment and the horizontal distance D – E represents the equilibrium level of unemployment. This is sometimes known as the natural level of unemployment.

Note that the AS_L curve gets closer to the N curve at higher wages. The reason for this is that the unemployed will be more willing to accept jobs, the higher the wages they are offered. If the wage rate were above W_e, the labor market would be in a state of disequilibrium. For example, at a wage rate of W_1, there is an excess supply of labor of A – B. This is called disequilibrium unemployment.

DISEQUILIBRIUM UNEMPLOYMENT

1. **Real wage or classical unemployment:** This is the unemployment that is caused because the real wage rate is higher than the equilibrium real wage rate.

FIGURE 6.4 **Classical unemployment**



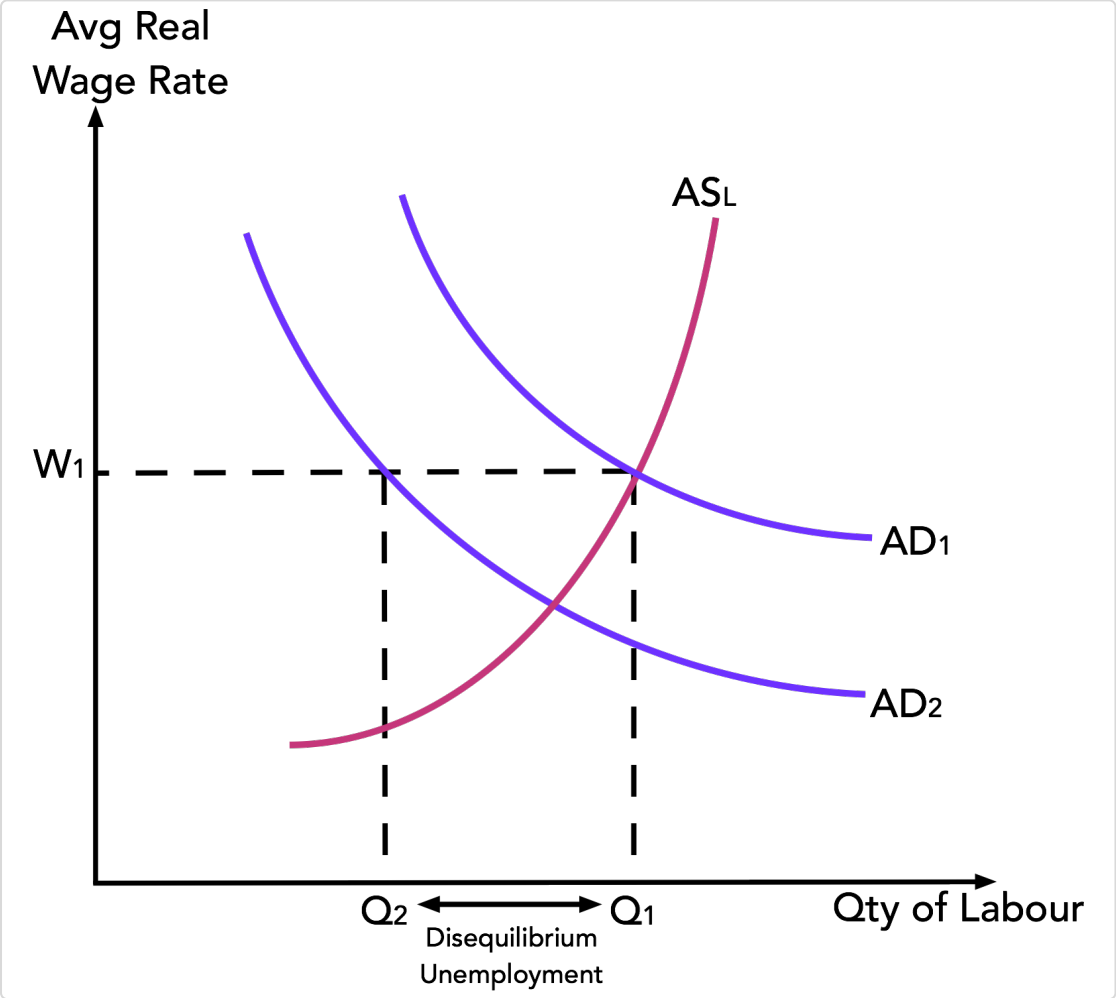
Classical economists believe that the real wage and quantity of labor is determined by the interaction of the demand and supply curve of labor (W_E and Q_e). Market imperfections like trade unions and government intervention in terms of minimum wage can disrupt the equilibrium and creates unemployment equal to $Q_2 - Q_1$. Real wage is likely to be forced up above the equilibrium real wage to W_1 if the minimum wage is established

above W_E. The real wage unemployment will therefore result in involuntary unemployment.

2. **Demand deficient or cyclical unemployment**: Keynesians believe that unemployment was not a result of the labor market equilibrium. Labor is derived demand, derived from the demand for the good that is produced. If there is a big fall in the demand for products in the goods market then the demand for labor will fall causing unemployment. Keynesians argue that in times of recession, the aggregate demand curve for the economy as a whole will shift to the left. This will cause the demand for labor to shift to the left as well (from AD_1 to AD_2). However, if the real wage stays at W_1, there will be involuntary unemployment equal to $Q_1 – Q_2$. Keynesians believe that this will happen because wages are 'sticky' downward. The downward stickiness in real wage may be the result of unions seeking to protect the living standards of their members or of firms worried about the demotivating effects of cutting the real wages of their workers.

Labor is derived demand, derived from the demand for the good that is produced.

FIGURE 6.5 **Disequilibrium Unemployment**



EQUILIBRIUM UNEMPLOYMENT (OR NATURAL UNEMPLOYMENT)

The natural rate of unemployment is defined as the equilibrium rate of unemployment i.e. the rate of unemployment where real wages have found their free market level and where the aggregate supply of labour is in balance with the aggregate demand for labour. At the natural rate, all those wanting to work at the prevailing real wage rate have found employment and thus there is assumed to be no involuntary unemployment. There remains some voluntary unemployment as some people remain out of a job searching for work offering higher real wages or better conditions.

1. **Frictional Unemployment**: Frictional unemployment is a voluntary form of unemployment for workers who are looking for better jobs. Many qualified workers seeking work are not able to find new jobs right away, usually because of a lack of complete information about new job openings. While it is likely that qualified workers will soon be matched with new jobs, these workers are considered frictionally unemployed during the time that they spend searching for their new jobs. The bigger the imperfections in the labor market, the longer will be this period of 'unemployment' for each worker and the higher will be the search costs for individuals.

2. **Structural Unemployment**: It is caused by changes in the structure of the economy. A huge shift away from

manufacturing to service sector in the recent times is one reason of structural unemployment. Another example is when demand switches away from domestic industries to more competitive foreign industries. Structurally unemployed workers are not qualified for the new job openings that are available, mainly because they lack the education or training needed for the new jobs. Consequently, the structurally unemployed tend to be out of work for long periods of time, usually until they learn the skills needed for the new jobs or until they decide to relocate.

3. **Seasonal Unemployment**: is when demand for workers fluctuate according to the time of the year.

Full Employment is considered to be achieved when unemployment falls to 2-3%. At any period of time, there will be some people who may be experiencing a period of unemployment as they move from one job to another (frictional unemployment or voluntary unemployment).

Voluntary and involuntary unemployment

Voluntary unemployment occurs when someone who is able to work is not willing to do so, even though suitable work is available. Most frictional unemployment is considered voluntary because one is looking for work rather than taking any job available. Some economists claim that structural unemployment can often be voluntary as those

with specific skills may not be willing to take lower-skilled work.

Involuntary unemployment occurs when those who are able and willing to work at the going wage rate cannot find work. The main form of this is demand deficient or cyclical unemployment which is linked to the trade cycle and the lack of aggregate demand causing the supply of workers wanting to work exceeding the demand for them. Some structural, especially technological, unemployment may also be involuntary.

Natural rate of unemployment

Definition

The natural rate of unemployment is the rate of unemployment where real wages have found their free market level and where the aggregate supply of labour is equal to the aggregate demand for labour. At the natural rate, all those wanting to work at the current real wage rate are employed and there is no involuntary unemployment. Some voluntary unemployment still exists due to frictional and some structural unemployment.

Determinants

As the natural rate of unemployment is mainly composed of frictional and structural unemployment, factors that affect these types of unemployment will alter the natural rate.

Determinant	Explanation
Geographical immobility – frictional unemployment	Parts of a country may be too expensive to live in so workers cannot afford to take jobs in the area. This may also result from poor or too expensive transport links. If new industries are established in areas of old industries then this can be avoided.
Lack of relevant skills – structural unemployment versus retraining	Workers trained to work in one industry may have skills that are no longer required as new industries develop. If retraining is available then this may be avoided.
Level of unemployment, and other, benefits versus wages	If unemployment benefits are too generous compared to the wage from working then the trade-off from income and leisure is diminished. If the minimum wage is high enough, it has the opposite effect
Labour market flexibility	If the labour market becomes more flexible due to reducing trade union powers or less restrictive limits on working hours and other practices or making it easier to hire and fire workers or not setting the minimum wage too high then the natural rate may fall
Hysteresis	This is the idea that if unemployment increases (e.g. during a recession) then it is likely to remain high for some time because workers become de-motivated and deskilled whilst remaining unemployed and therefore find it difficult to get a job in the future.

Policy Implications

Demand-side policies have problems as there is a need to measure aspects such as the output gap, but this has proved difficult to do. There are also issues with the Phillips curve.

The result is that supply-side policies have usually been used to try to reduce or stabilise the natural rate. These include:

1. Improved education and training to reduce occupational immobility through new skills
2. greater availability of different kinds of housing to make it easier for workers and firms to be relocated

3. making labour markets more flexible

MOBILITY OF LABOUR

Forms of labour mobility: geographical and occupational

1. Geographical mobility of labour is the ease or otherwise with which individuals can move between geographical areas, whether these are within a country or between countries. It is affected by factors such as family ties, transport networks, transferable qualifications, common language and international relations and situations.

2. Occupational mobility of labour is the ease or otherwise with which individuals can move between occupations. The occupational mobility of labour depends on such factors as the level of education, training and skills required by the job, together with the length of training. It is possible to distinguish between horizontal and vertical labour mobility.

3. Horizontal mobility is a worker's ability to move to another job at a similar wage such as being a shop assistant in one store to being a shop assistant in another store. Vertical mobility is, however, the worker's ability to move up, and down, the employment hierarchy. A teacher, for example, could move from a being a new young recruit to being a headteacher.

Factors affecting labour mobility

Factors affecting geographical mobility include:

1. The cost and availability of suitable housing
2. Transportation
3. Immigration policies can both facilitate and hinder mobility.
4. Migration, where unrest in one country encourages people to move to another one both for better job prospects, but also for greater safety.
5. Family ties often restrict geographical mobility. Many people are reluctant to move far away from their family.

Increasingly, the most important factor affecting occupational mobility is education and training. The ability to gain relevant qualifications and skills not only at the start of a career, but also throughout and the types of jobs available, determine mobility. This means both vertical mobility, but, also, moving to different types of occupation.

Both geographical and occupational mobility are affected by factors such as: labour market regulations; types of work contract – long term, short term, zero hours; the power of trade unions; etc.

POLICIES TO CORRECT UNEMPLOYMENT

Unemployment has both demand and supply side causes. Demand side causes are disequilibrium unemployment leading to involuntary unemployment. While unemployment equilibrium is associated with supply side causes, which cause voluntary unemployment (natural rate of unemployment).

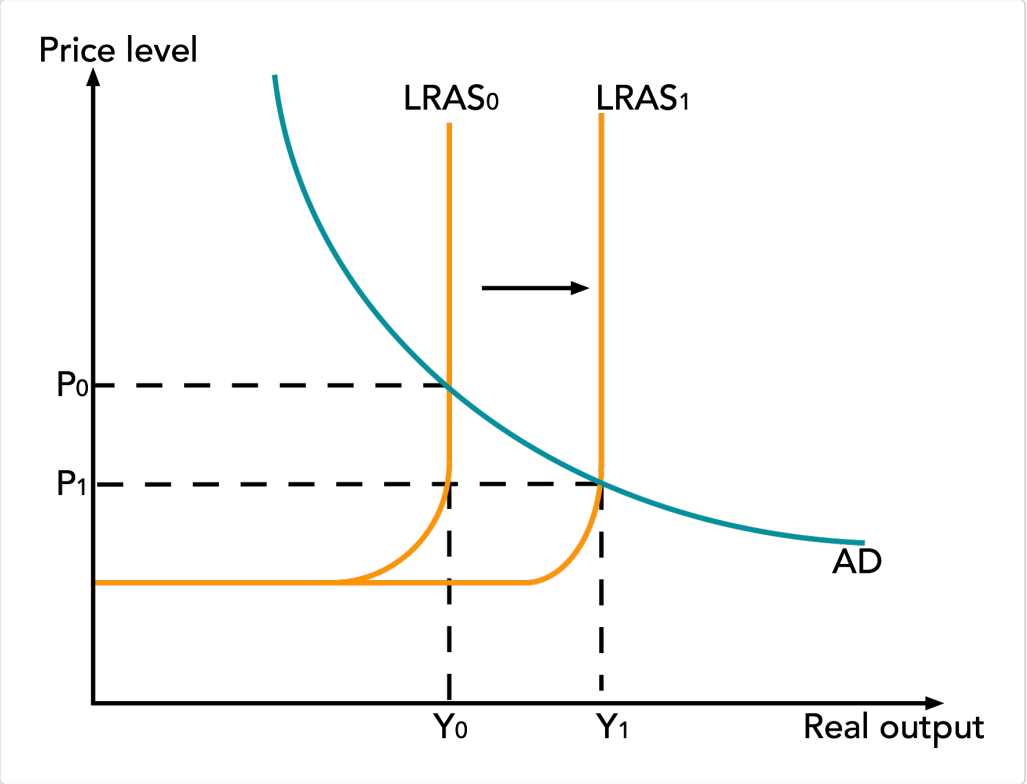
1. **Disequilibrium Unemployment:** Fiscal and monetary policies can be employed to increase the aggregate demand in the economy, which in turn can increase the demand for labour which is a derived demand.

2. **Equilibrium unemployment**: Supply side policies are employed to tackle the voluntary or natural unemployment.

Supply Side Policies

Supply side policies are government policies designed to increase the rate of economic growth. Effective supply side policies push the Long Run Aggregate Supply curve to the right. This increases economic growth and reduces inflationary pressure. It may also bring about a reduction in unemployment and lead to higher exports and lower imports.

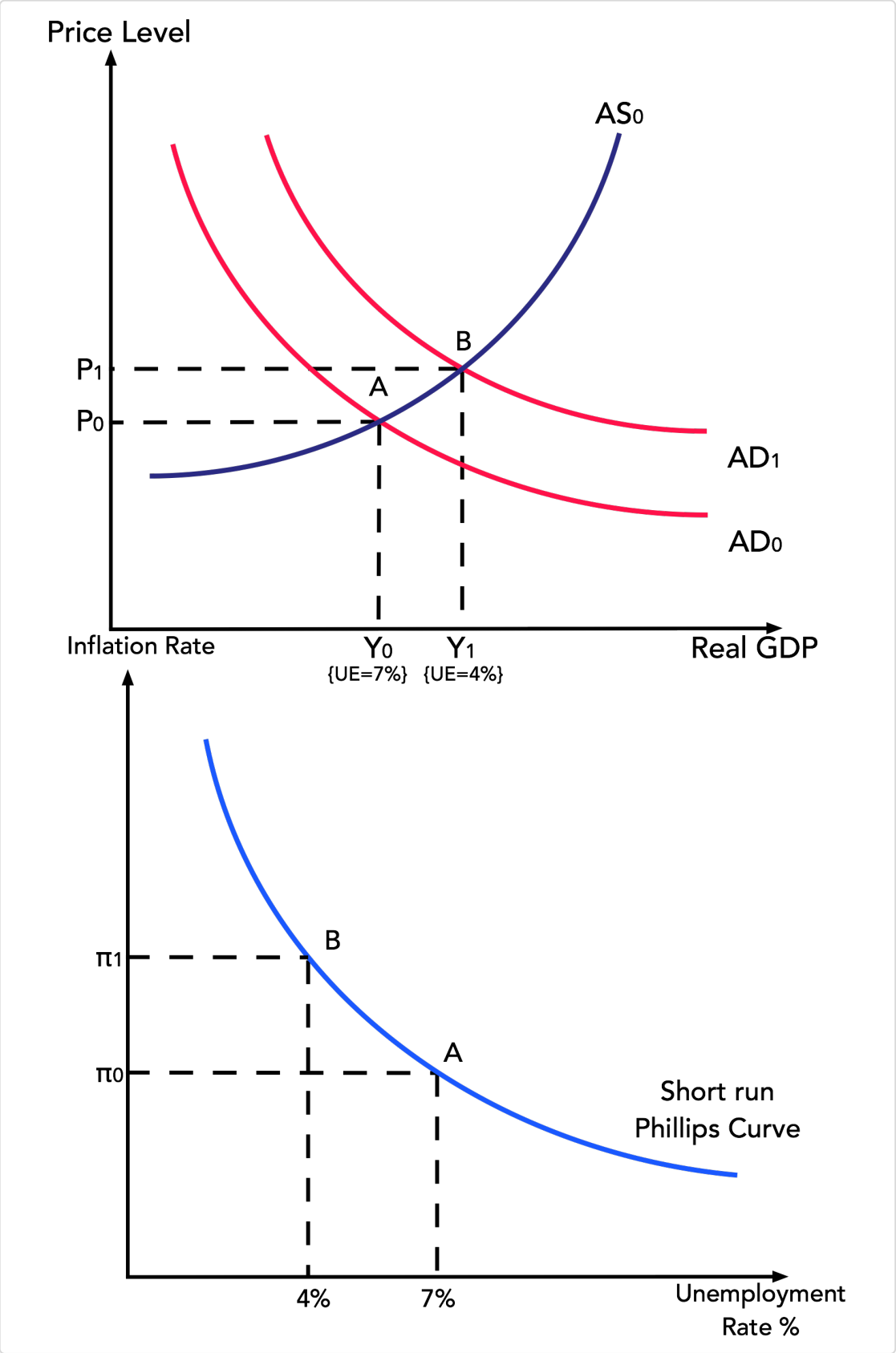
FIGURE 6.6 **LRAS shifts outwards due to supply side policies**



Supply-side policies include encouraging education and training, improving the flexibility with which markets operate, trade union reforms and promoting competition through privatization and deregulation.

Notice that it is quite difficult to quantify the effects of these supply-side policies. In the case of education and training, the idea is that by increasing education and training, the human capital of the labour force is increased, thus resulting in improvements in productivity, which enable an increase in the overall productive capacity of the economy – in other words, this will lead to a rightward shift of the aggregate supply curve. However, some of the effects of increased spending become evident only after very long time lags.

FIGURE 6.7 **Relation between unemployment and Inflation**



In the case of competition policy, again, it is not easy to identify the effects on productive capacity, although it is argued that the use of competition policy will provide incentives for firms to be more productively efficient, and will reduce the loss of allocative inefficiency through the abuse of market power.

It is particularly difficult to isolate the impact of these policies when so much else in the economy is changing through time. Nonetheless, these policies do have the effect of stimulating economic growth without inflationary pressure.

Another example that is important to examine is the effect of changing the rate of income tax. When people face high marginal rates of income tax, there is a disincentive to offer additional labour hours, or even to participate in the labour force at all. A reduction in income tax rates would therefore provide an incentive for people to work more hours or to participate in the labour force. This would then lead to higher employment, and a higher potential capacity output for the economy as a whole.

Such high marginal tax rates are normally found at the high end of the income distribution, but there may also be disincentive effects to consider at low incomes. These effects may arise where unemployment benefits are set at such a level that individuals would be little better off if they accepted a low- paid job – a situation sometimes known as the 'unemployment trap'. This effect may be reinforced if

the search costs for jobs are relatively high – for example, if the jobs available are not in areas where unemployment is high. There may then be people who do not find it worth their while undertaking a costly search for jobs, especially if the wage they could command would be only marginally better than the benefits that they can receive.

THE PHILLIPS CURVE – RELATIONSHIP BETWEEN INFLATION AND UNEMPLOYMENT

In 1958, an economist Bill Phillips showed a negative correlation b/w the rate of unemployment and the rate of inflation by using historical data on these two variables.

AD/AS And the Phillips Curve

If the government, for example, decides to cut unemployment through an expansionary fiscal or monetary policy, the resulting shift in the AD curve would increase output (AD_0 to AD_1 and Y_0 to Y_1) and result in more employment. Money wages have to be raised to attract new workers (who were voluntarily unemployed at the lower wage rate). This, in turn would cause an inflationary rise in the price level. So, unemployment will fall, but inflation will rise.

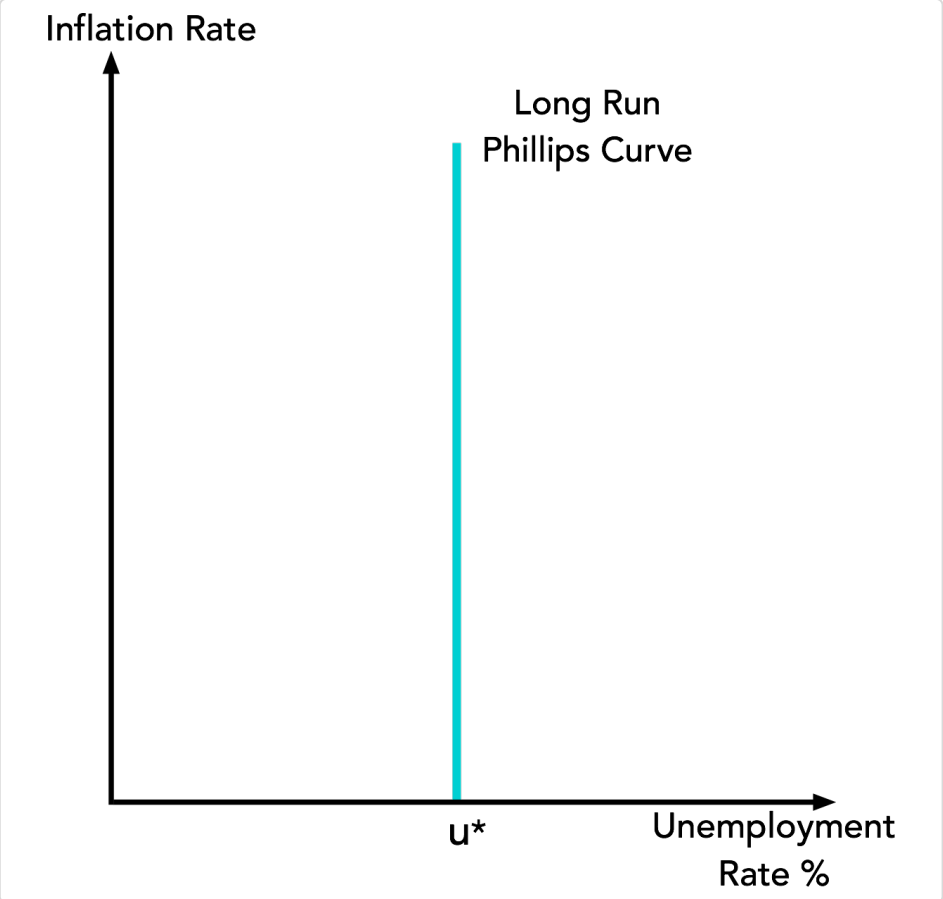
At AD_0, the economy is at point A, which corresponds to output level of Y_0, where the price level is P_0 and unemployment rate is 7%.

At AD_1, the economy is at point B, which corresponds to the output level of Y_1, the price level of P_1 and unemployment rate of 4%. The Phillips curve therefore suggests that there exists a tradeoff between inflation and unemployment at any point in time for the economy.

Monetarist view

Monetarists are of the view that this tradeoff may be there in short-run but not in the long-run. In other words, expansionary fiscal and monetary policy will have no impact on unemployment but it may end up in raising the inflation rate. Monetarists come up with long-run Phillips curve (expectation-augmented Phillips curve) – which is a vertical line.

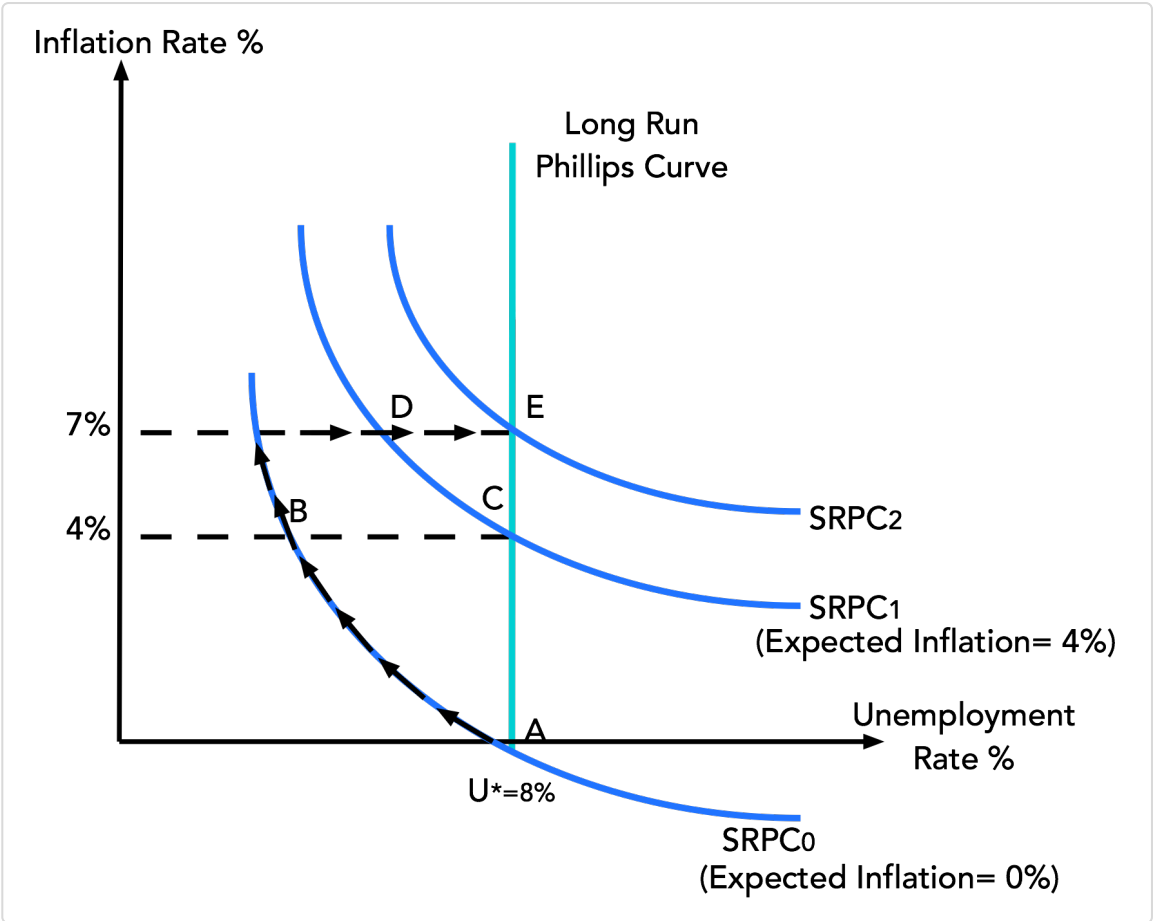
FIGURE 6.8 **Long Run Phillips Curve**



Expectation-Augmented Phillips curve

Assume that the economy begins at A in figure 8.9, with 0% inflation at the rate of unemployment to be 8%. Now assume that the government expands aggregate demand in order to reduce unemployment. Unemployment falls to 6%. The economy moves to point B along curve $SRPC_0$. Inflation has risen to 4 per cent, but people, basing their expectations of inflation on year 1, still expect a zero inflation. Therefore, there is no shift as yet in the Phillips curve. $SRPC_0$ corresponds to an expected rate of inflation of zero.

FIGURE 6.9 **Expectation augmented Phillips Curve**



The increased money wages forces the inflation rate up to 4%. The new workers did not realize this straight away. They initially suffer from "money illusion" as they thought that their real wages have increased. At lower real wages and augmented expectation of inflation, the workers will withdraw their labor services and become unemployed again. The economy moves from point B to point C, unemployment is back at 8%, but inflation stays where it is because money wages have not fallen back to their original level. The economy is now on a different short-run Phillips curve ($SRPC_1$) with expected inflation equal to 4%.

If the government tries to reduce unemployment again, the same thing will happen. The economy will move from point C to D and then to E. In other words, every time the government tries to reduce unemployment below 8%, it manages to do it in the short-run, but as the workers come out of the money illusion, the economy goes back to the level of unemployment 8% but at a higher and permanent level of inflation. Hence the long-run Phillips curve is vertical.

To conclude, in the short run, higher aggregate demand will reduce unemployment below the natural level, but in the long run, once expectations have adjusted, all the extra demand is absorbed in higher inflation. Unemployment thus rises back to the natural rate.

If unemployment is to be reduced in the long run, therefore, this vertical Phillips curve must be shifted to the

left. This will be achieved by a reduction in the natural (equilibrium) rate of unemployment, not by an increase in demand. To reduce the natural rate, argued the monetarists, supply-side policies would be needed.

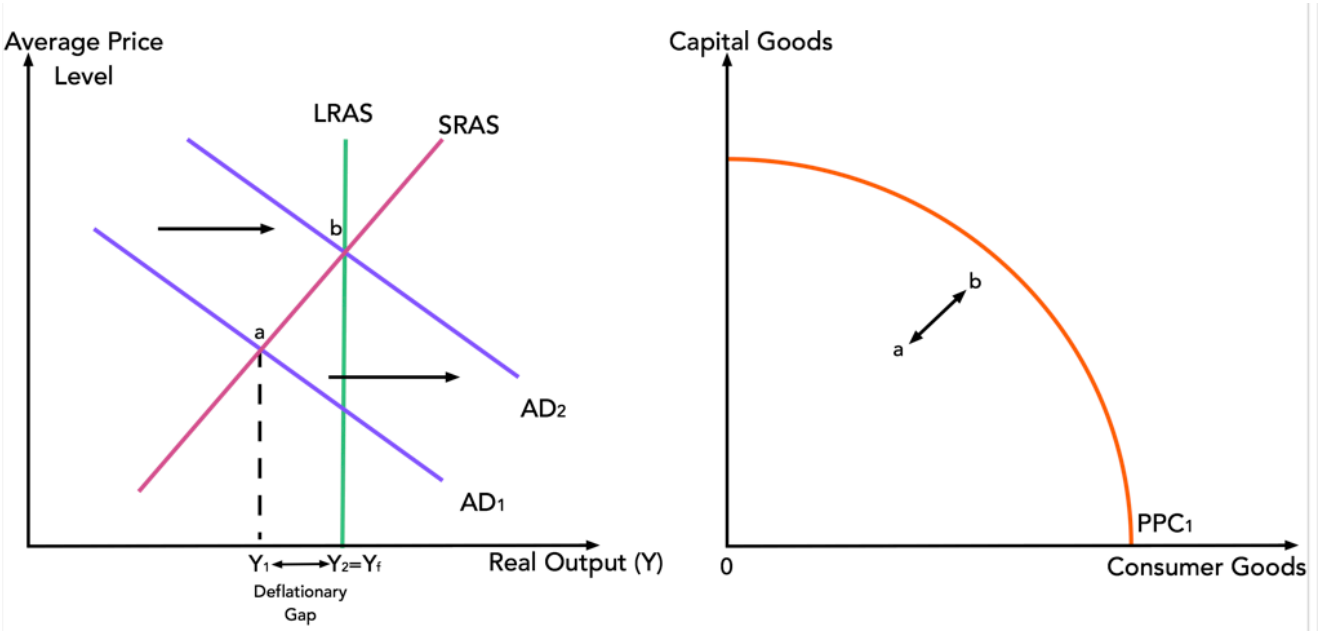
NAIRU

The level of unemployment U* is often called the non-accelerating inflation rate of unemployment (NAIRU) because at U*, inflation is non-accelerating. If unemployment is below U*, then inflation accelerates.

ECONOMIC GROWTH

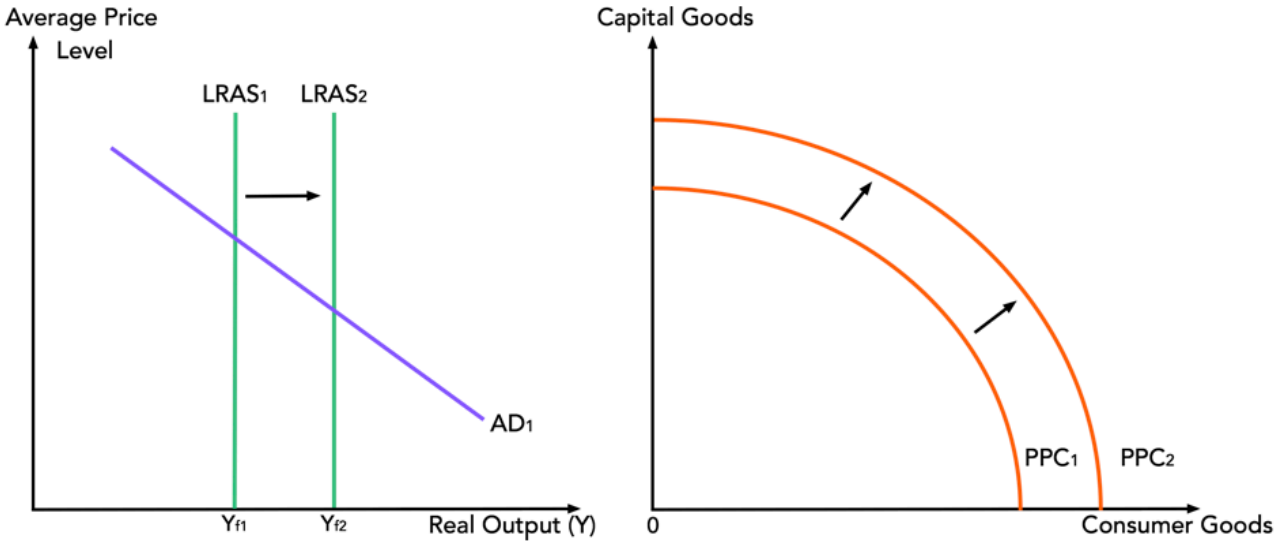
Actual versus Potential Growth in National Output

Potential GDP is the level of real GDP that the economy would produce if it were at full employment. When real GDP falls short of potential GDP, the economy is not at full employment. When the economy is at full employment real GDP equals potential GDP. Real GDP can exceed potential GDP only temporarily as it approaches and then recedes from a business cycle peak.



An increase in the annual percentage increase in real GDP is called actual growth. This would result in the economy to reach towards its full employment level or potential output. Any shift of the AD curve to the right towards the full employment level results in an economy to achieve actual growth as the economy would be utilizing its resources fully and efficiently.

Potential growth is the growth in the productive potential of the country. It is associated with the shift of the LRAS to the right or the PPC curve to the right. An improvement in the quantity and quality of factors of production is potential growth of the economy.



BUSINESS (TRADE) CYCLE

The business cycle is the way in which economic growth fluctuates over a period of time.

Phases of the cycle

The process of actual economic growth is not always smooth, as real GDP tends to be subject to fluctuations over time. The fluctuation of real GDP around an underlying trend is usually known as the business cycle, and

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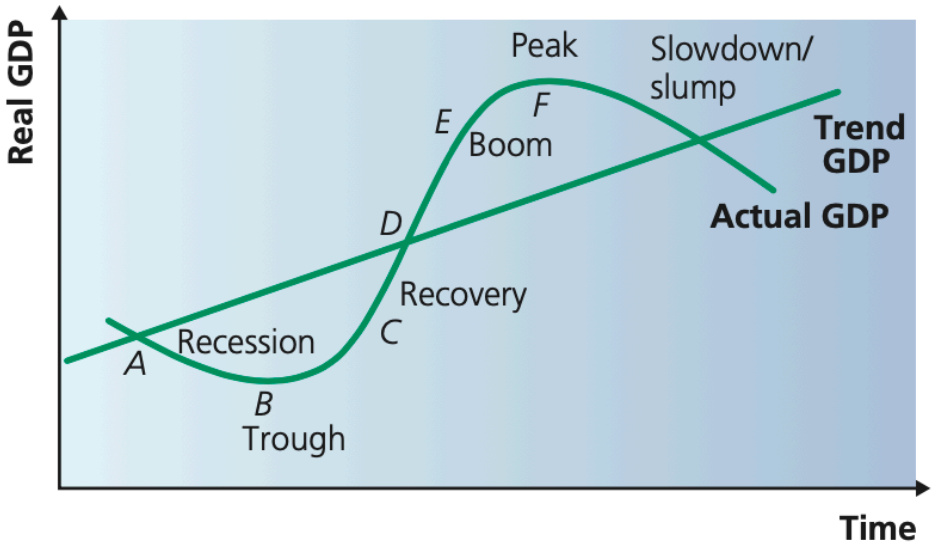
sometimes known as the trade cycle. At any point in time, GDP may be below or above its trend value.

Fluctuations in economic activity can arise for a variety of reasons. For example, suppose that there is a technological break-through that leads to investment by firms and a surge in demand from consumers. This could initiate an expansion in the economy (a 'boom'). As time goes by, demand may begin to tail off and the economy may move closer to its capacity, at which point the economy is likely to slow down. If expectations of firms and consumers become pessimistic at this point, GDP could begin to fall (a recession sets in). Governments may intervene at this point to initiate a recovery, and firms may begin to increase investment, reinforced by multiplier effects. The cycle begins again.

Consider an economy at point A in the figure below. At this stage in the cycle, the economy is entering a period of recession, in which GDP is falling. This continues until point B, the trough of the cycle, at which point GDP stops falling and begins to grow again. At point C, the economy is showing growth in actual GDP – it is still below its trend value, but recovery has set in; only at point D does the economy hit the trend. In other words, between points A and D, the output gap is negative. Beyond point D the economy moves into a boom period (as at point E), where GDP grows more rapidly than its trend value, and the level of GDP is above its trend value. At point F, the cycle

reaches its peak and stops increasing; beyond this point actual GDP again begins to fall in the slowdown phase, and then the story repeats.



From a policy perspective, it is important to know at what stage of the business cycle the economy is. When the output gap is negative, and the level of output is below trend, it may be tempting for policy-makers to try to 'fill the gap' by stimulating aggregate demand. However, this would be dangerous when the output gap is positive, as the effect would be to put upward pressure on the price level.

Automatic stabilizers

Some items of government expenditure and receipts vary automatically with the business cycle. They are known as automatic stabilizers. For example, if the economy enters a period of recession with a negative output gap,

government expenditure will rise because of the increased payments of unemployment and other social security benefits, and revenues will fall because fewer people are paying income tax, and because receipts from sales taxes are falling. This helps to offset the recession without any active intervention from the government.

Similarly, if there is a positive output gap, government expenditure will tend to fall and tax revenues will increase. This will result in a fall in aggregate demand, which will help to speed the adjustment back to equilibrium.

An advantage of these automatic stabilizers is that they need no conscious intervention by the government, so they come into play at minimal administrative cost. Furthermore, they come into effect more rapidly than any policy introduced by government, which can only happen after delays, caused by the time it takes to realize that action is needed, and further time for a policy change to take effect.

Policies to promote economic growth and their effectiveness

These policies can be grouped under demand-side, fiscal and monetary, and supply-side.

Demand-side

1. Expansionary fiscal policy involves cutting tax and increasing government spending. Lower income tax will increase disposable income and encourage consumer spending. Higher government spending will create jobs

and provide a boost demand. It works well if consumption is falling and savings rising as it can increase demand without causing crowding out.

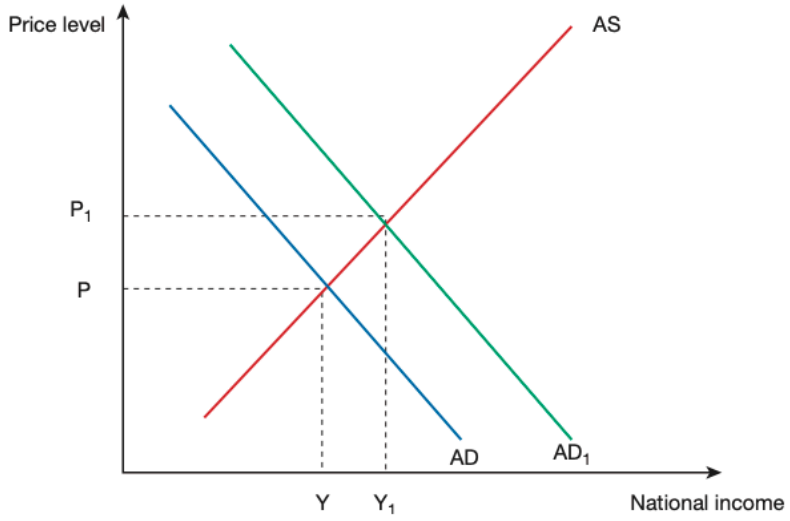
The problem is that it leads to an increase in government borrowing. To finance this extra spending, governments borrow from the private sector. If the economy is already growing, then this can result in crowding out.

2. Lower interest rates reduce the cost of borrowing, encouraging investment and consumer spending. Lower interest rates also reduce the incentive to save, making spending more attractive instead. Lower interest rates will also reduce mortgage interest payments, increasing disposable income for consumers.

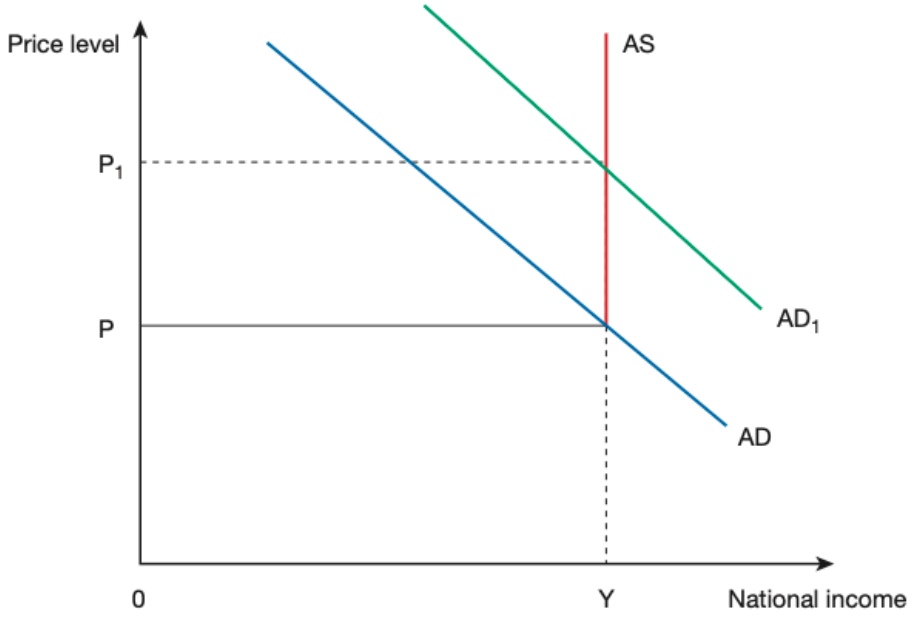
Lower interest rates may not always boost spending as consumers may lack confidence and/or banks have liquidity shortages. In addition, cutting interest rates very low could distort future economic activity by, for example, leading to future overheating in terms of housing and other assets.

3. Quantitative easing (QE) has been introduced to try to overcome the failure of low interest rates to boost demand. This increases the money supply. The problem is that this could possibly cause inflation. Evidence from when it has been used shows that the inflationary impact was minimal and did not itself stimulate a recovery. Probably, however, without QE a recession would be deeper.

If there is spare capacity (negative output gap) then demand-side policies can help, see the figure below, to increase the rate of economic growth.



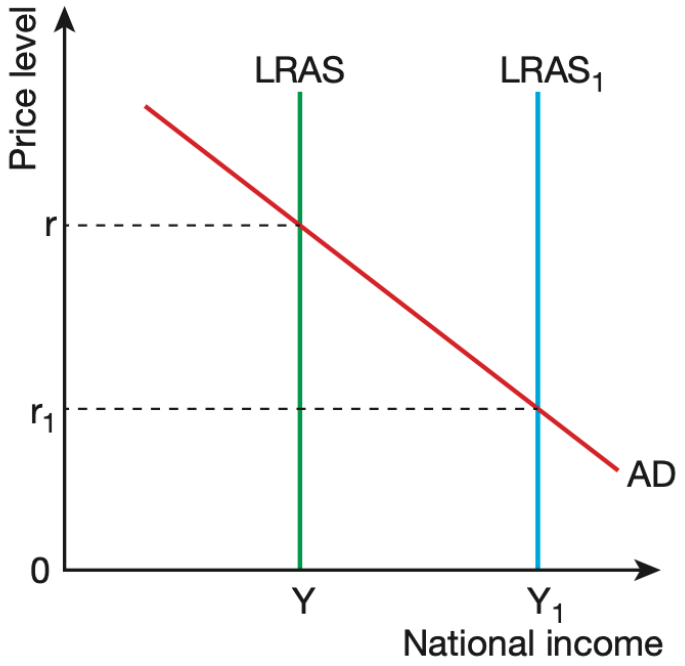
If, however, the economy is already close to full capacity, a further increase in AD will mainly cause inflation. Nevertheless, managing AD to avoid boom and bust cycles can help provide longer periods of economic expansion.



Supply-side

Supply-side policies attempt to increase productivity and efficiency of the economy. They include: privatization, deregulation, tax cuts, education and training, and better infrastructure. These are all long-run policies. Their effect can be seen in the figure below where real output/national income increases and the price level is reduced.

Supply-side policies can take a considerable time to act in terms of AD growth. Investing in better education and training would take many years to give higher labour productivity. In a recession, supply-side policies are not going to solve the lack of sufficient aggregate demand. Without demand, firms will be unwilling to expand their output.



INCLUSIVE ECONOMIC GROWTH

Definition of inclusive economic growth

Inclusive economic growth is economic growth that is distributed fairly across society and creates opportunities for all.

Impact of economic growth on equity and equality

There is no certain impact of economic growth on equity and equality. Some countries in the latter half of the twentieth century, for example, Indonesia, Malaysia and Singapore managed to achieve rapid growth and relatively low inequality. On the other hand, the majority of the members of the OECD saw inequality increase with economic growth.

The case for economic growth reducing inequality and boosting equity can be seen in the Kuznets curve, which shows that as an economy develops, initially inequality increases, but then decreases.

Policies to promote inclusive growth

Some policies have contributed to narrower inequality by delivering stronger income gains for households at the bottom of the distribution compared with the average household. Such is the case, for instance,
of reducing regulatory barriers to domestic competition, trade and inward foreign direct investment, as well as

improving job-search support and programs to increase economic activity including improved skills training.

In addition, some policies have had a positive effect on all income groups. Investment in information and communications technology, raising the average level of education in the working age population and reductions in marginal income taxes for wage earners have had this effect.

SUSTAINABLE ECONOMIC GROWTH

Sustainable economic growth means a rate of growth which can be maintained over the long run without creating significant costs on future generations.

Sustainable growth involves both environmentally sustainable growth, by not exhausting scarce resources, and, also, growth in terms of low inflation and a balanced economy.

Impact of economic growth on the environment and climate change

There is a trade-off between rapid economic growth today, and growth in the future. Rapid growth today may exhaust resources and create environmental problems for future generations, including the depletion of raw materials and global warming.

Economic growth today must not, therefore, use up raw materials and destroy the environment so as to reduce the

quality of life available in the future. This means that there is pressure on countries to ensure that growth does not needlessly waste resources and that it improves not only living standards, but also the quality of life. There are many ways that can be tried to do this including recycling of used materials and reduction of pollution.

The International Resource Panel has stated that there is a need to break the link between economic growth and ever greater use of resources and environmental degradation. While economic growth has resulted in hundreds of millions of people being no longer in poverty, unsustainable production and consumption patterns have resulted, among other problems, in a quarter of the earth's land area being highly degraded, millions of hectares of forests lost every year, rivers and lakes drying up and widespread overfishing.

Climate change with warmer temperatures, rising sea levels and more extreme weather patterns has already affected many countries. In the future it will lead to: greater damage to property and infrastructure, decline in agriculture, forestry, fisheries and tourism; decline in productivity; negatively affecting sectors such as agriculture, forestry, fisheries and tourism; and increasing demand for energy as power generation becomes less reliable. In addition it may disrupt global trade and supply chains. It has been estimated that without major changes the GDP per capita

of countries will fall, for example, the US by 10.5 per cent and China by 4.3 per cent by 2100.

Policies to mitigate the impact of economic growth on the environment and climate change

Policies roughly divide into market-based ones and regulations. The market based ones include pollution permits and emission taxes.

There are a wide range of regulatory policies that have been proposed or have started to be implemented.

1. Use of renewable energy sources. The adoption of these energy sources also reduces the environmental damage from coal, gas and oil extraction.
2. Use of sustainable transport including bus rapid transit, electric vehicles, and hydrogen-powered vehicles. These would reduce climate pollution and also use of oil.
3. Using natural barriers especially in coastal areas where land has been drained causing environmental damage.

CHAPTER 7

MACROECONOMIC POLICY

GOVERNMENT MACROECONOMIC POLICY OBJECTIVES

Inflation

Although inflation is seen as inevitable, and normal, all governments are concerned to try to achieve stable prices, or at least ones which only rise at a slow rate. If prices are continually rising at high rates then investors are reluctant to invest in new machinery, factories and products because they cannot calculate the outcome of their investments. Rising inflation leads to menu costs such as revising price lists. Similarly, those who are on fixed incomes, usually the economically inactive, such as those relying on state benefits, suffer as any increases lag well behind price rises.

In addition, inflation is likely to lead to other macroeconomic problems.

Balance of Payment

The ideal situation is for the balance of payments to be in equilibrium i.e. the inflows of money equal the outflows across the whole account. Countries are usually concerned about their current accounts. If there is a persistent deficit then a country could face severe economic and financial problems such as depreciating exchange rate, inability to pay its debts and in extreme circumstances bankruptcy.

Unemployment

Governments aim to achieve full employment. It is difficult to know what this means as not only are there different

definitions of full employment, but there is no agreement on what percentage of unemployment would indicate that full employment had been reached. All governments, however, aim for this objective.

Economic growth

Governments aim to achieve sustainable economic growth. High growth rates may be very good for developing countries, but if they are achieved by depletion and exhaustion of scarce natural resources or by too much pollution, leading to climate change, then the high rates will not be sustainable.

Development

The need for development is to raise the standard of living of the country as a whole and of the poorest groups in particular. This includes: higher incomes; more jobs to reduce unemployment; better, and more, food, housing, etc; greater availability of, and higher quality, education and health facilities.

Sustainability

The idea is to develop growth which is lasting and makes a real difference to individuals. It recognizes that everybody has the right to a healthy, clean and safe environment. In 2015 the United Nations passed a resolution called Agenda 2030. This set out 17 Sustainable Development Goals

(SDGs), sometimes called Global Goals as a "blueprint to achieve a better and more sustainable future for all".

Redistribution of income and wealth

Governments aim to reduce inequalities of income and wealth through taxation and expenditure. This is done by imposing taxes on the rich and spending more on the welfare of the poor. It will reduce income of the rich and raise standard of living of the poor, thus reducing inequalities in the distribution of income. Wealth can be redistributed through taxes such as capital gains, inheritance and wealth.

Inequality is much higher in developing than in advanced economies. This is often because many developing nations lack the resources and fiscal policy structures to make much difference.

LINKS BETWEEN MACROECONOMIC PROBLEMS AND THEIR INTERRELATEDNESS

Economic problems such as how to achieve low inflation and full employment do not exist in isolation, but are interconnected. Any action to try to achieve one economic aim, see above, may well result in adverse effects on other aims. Below a number of the main ones are considered.

Relationship between the internal value of money and the external value of money

The internal value of money is how much a unit of money can buy i.e. its internal purchasing power or the real value of money, while the external value is the value of a currency as measured in foreign currency. A direct comparison is with purchasing power parity.

A fall in the internal value of money is a result of inflation. A country with an inflation rate higher than that of other countries will find that people lose confidence in holding its currency so its foreign exchange rate depreciates. This means that less can be bought in terms of purchasing power parity. If, however, a country has a lower rate of inflation than its main trading partners then, although the internal value of money is falling, the external value will rise. This is partly because the country's goods will appear cheaper on world markets than its competitors and partly because foreign holders of money would prefer to hold that country's currency.

MONETARY POLICY

Monetary policy is the attempt by the government or its central bank to manipulate monetary variables such as the rate of interest or the money supply to achieve policy goals. The four main macro-economic goals are price stability, low unemployment, high economic growth and balance of payment equilibrium.

Instruments of Monetary Policy

Government can increase or decrease money supply by some of the following instruments:

1. **Monetary Base Control**: The monetary base includes cash in circulation outside the central bank. By changing the reserve ratio, the government can change the money supply in the economy.
   Reserve Ratio ↑ → MS ↓
   Reserve Ratio ↓ → MS ↑

2. **Open Market Operations**: The sale and purchase of government securities in the open market can influence the money supply.
   Buy Gov. Securities → MS↑
   Sell Gov. Securities → MS↓
   The government public-sector borrowing financed by borrowing from the banking sector can result in money supply to rise.

3. **Discount Rate**: The discount rate is the interest rate the Central Bank charges banks that need to borrow reserves

in order to meet reserve requirements. From time to time, unanticipated withdrawals leave banks with insufficient reserves. Banks can make up for deficiencies in their required reserves by borrowing from the Central Bank at the discount rate. If the Central Bank sets the discount rate high relative to market interest rates, it becomes more costly for banks to fall below reserve requirements. Accordingly, banks will hold more excess reserves, which tend to reduce the multiple expansion of deposits and the supply of money. Similarly, when the discount rate is low relative to market interest rates, banks tend to hold fewer excess reserves, allowing for greater deposit expansion and an increase in the supply of money.

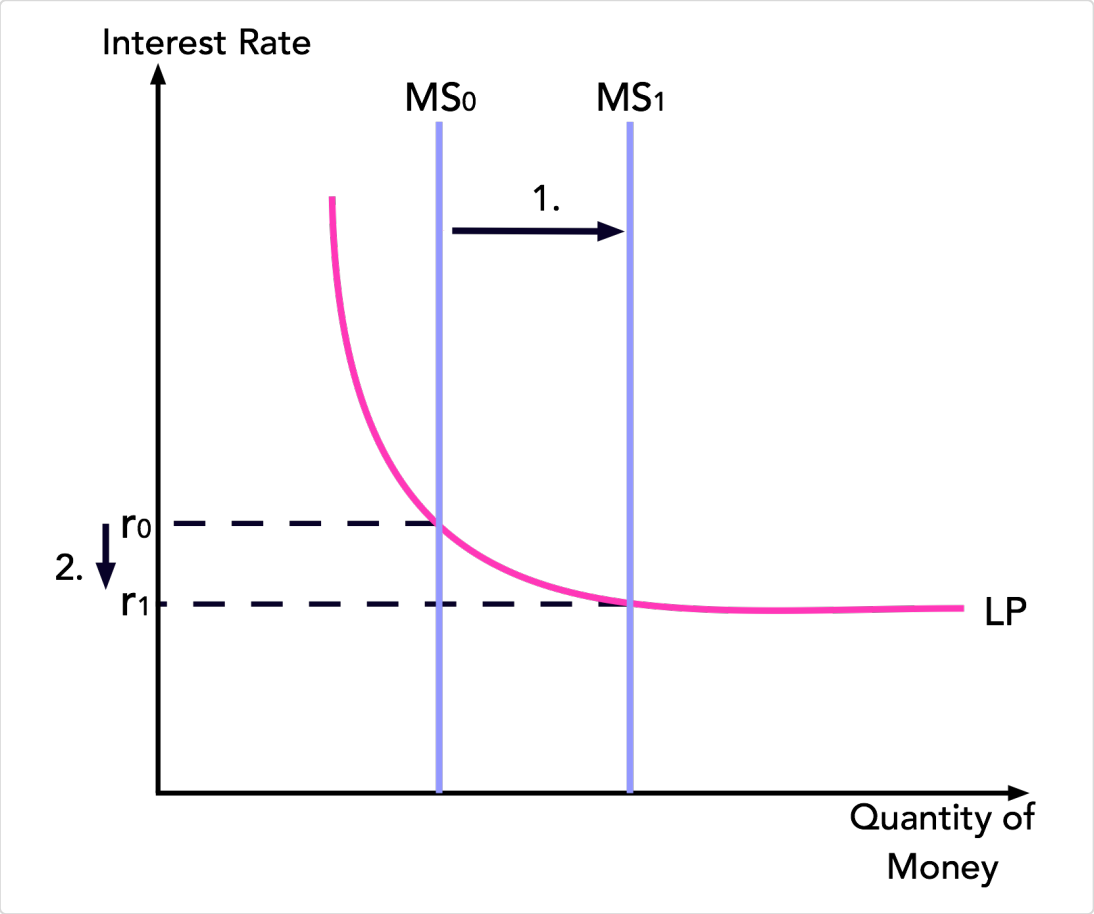
4. **Rules and Regulations**: The central bank may impose rules and regulations on banks whose deposits make up most of broad money. For instance, a central bank may impose financial penalties on banks, which increase their deposits (and therefore lending) by more than a certain percentage over a period.

MONETARY POLICY AT WORK

1) Increase in Money Supply (MS_0 to MS_1)

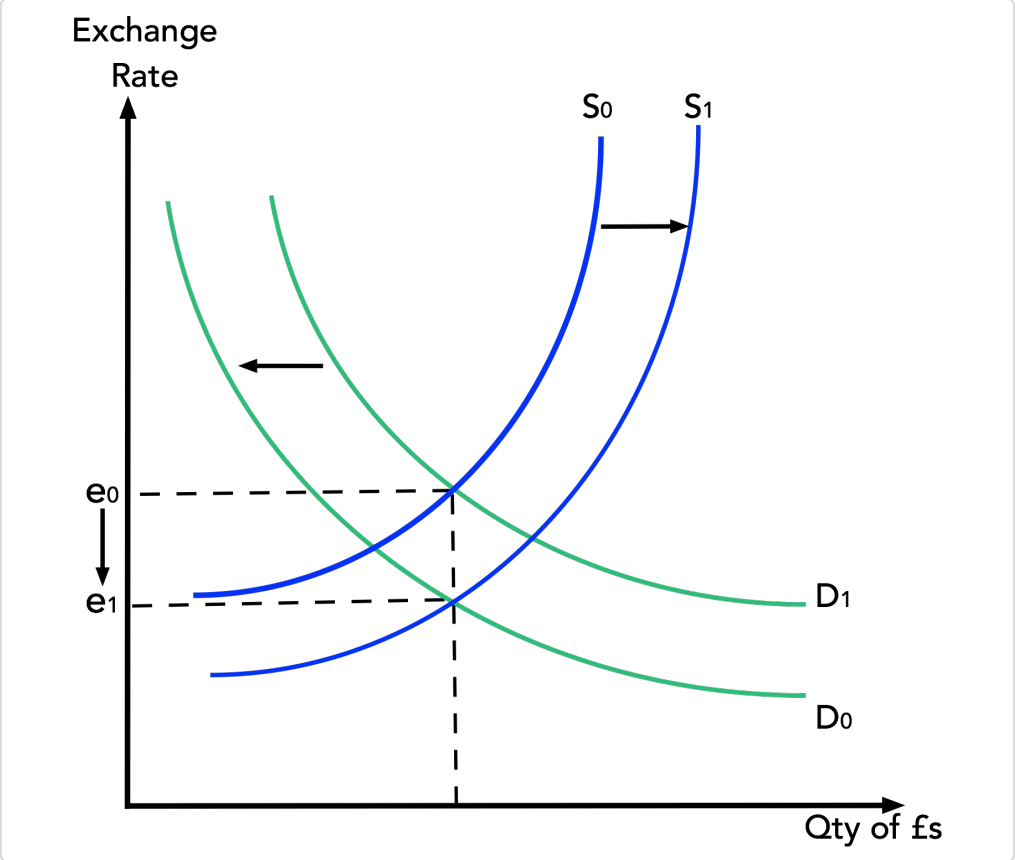
2) Interest rates to fall (r_0 to r_1)

FIGURE 7.1 **Increase in money supply**



3) ER to depreciate as hot money flows out (e_0 to e_1)

FIGURE 7.2 **Hot money flows out**

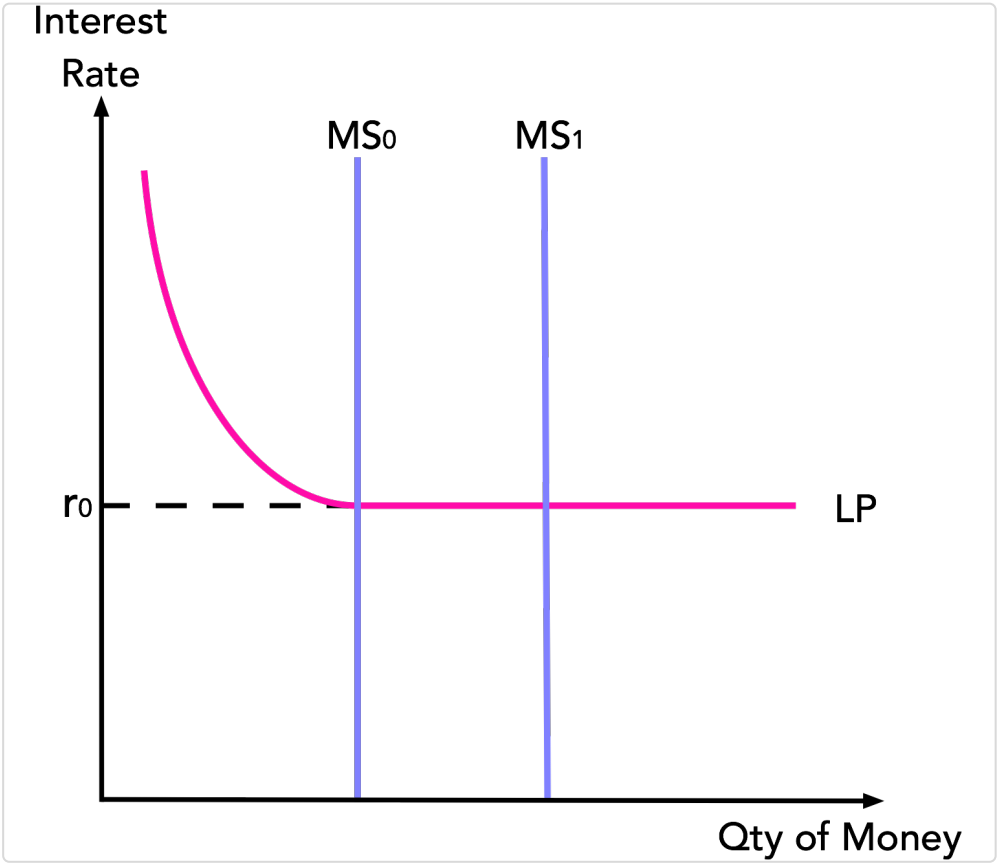


4) C↑, I↑, X-M↑ (as ER↓) →AD shifts to the right

Limitations of Monetary Policy

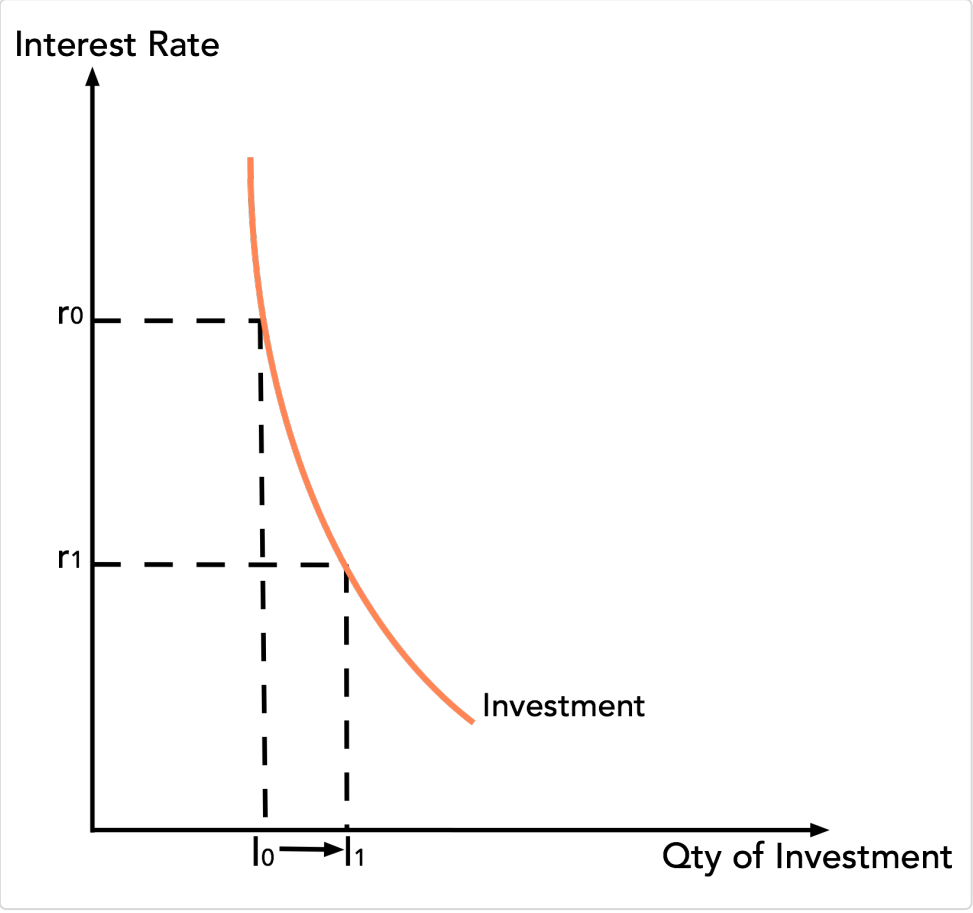
1. **Demand for money**: The effectiveness of monetary policy is also dependent upon how elastic the demand for money is to a change in the interest rates. According to the Keynesians, the demand for money is very elastic. If this is the case, then any rise in money supply will not change interest rates by that much. Once people believe that the rate of interest will not go any lower, any further rise in money supply will have no effect on interest rates. The additional money will be lost in what Keynes called the liquidity trap. People simply hold the additional money as idle balances.

FIGURE 7.3 **Liquidity Trap**



2. **Interest rates and Investment**: Keynesians argue that investment is relatively unresponsive to changes in interest rates (interest inelastic demand for investment). Business people are much more likely to be affected by the state of the market for their product rather than by interest rates. Hence, the lower interest rates that result from an expansionary monetary policy need not induce an increase in aggregate investment and consumption expenditures because firms' and households' demands for investment and consumption goods may not be sensitive to the lower interest rates.

FIGURE 7.4 **Interest Inelastic Demand for Investment**



3. **Time lags**: Economists argue that there is a time lag with monetary policy. When interest rates fall, people do not immediately cut their savings. Only after households adjust their consumption patterns, do firms react by changing output. This may take a long time for changes in interest rates to change AD of the economy.

4. **Mobility of financial capital**: With increasing mobility of financial capital, it can be difficult for a country to have an interest rate that is significantly different from other countries. A rise in interest rates, for example, can lead hot money to flow into the country and exchange rate to appreciate and a country's trade position to get affected.

FISCAL POLICY

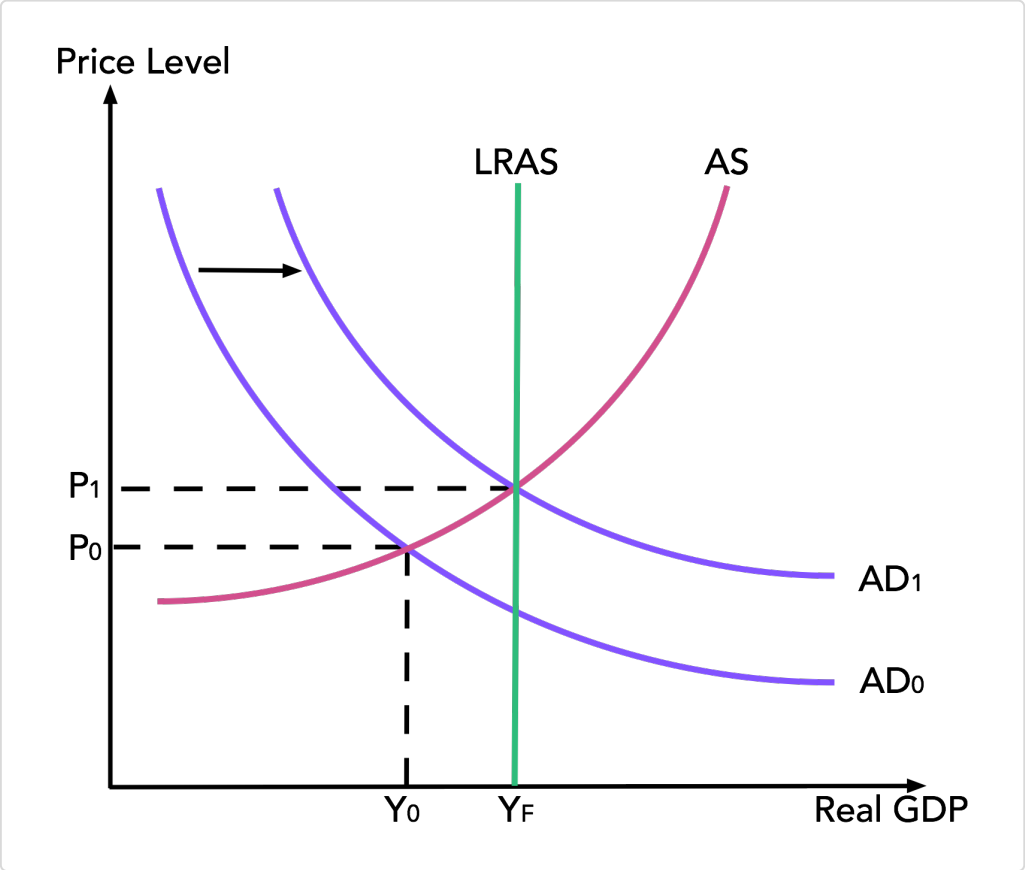
Keynesians argue that AD fluctuates largely because of irrational waves of pessimism and optimism. They use the term 'animal spirit' to refer to these arbitrary changes in attitude. When pessimism reigns, households reduce consumption spending, and firms reduce investment spending. The result is reduced AD, lower production, and higher unemployment.

Conversely, when optimism reigns, households and firms increase spending. The result is higher AD, higher production and inflationary pressure.

Keynesians therefore claim that government should actively stabilize AD to remove any severe deflationary or inflationary gaps. Expansionary fiscal policy could be used to prevent an economy experiencing a severe or prolonged recession, such as that experienced in the Great Depression of the 1930s. Likewise, deflationary fiscal policy could be used to prevent rampant inflation.

Increase in government spending or decrease in taxation can result in AD to shift from AD_0 to AD_1 and make the economy come back to the full employment level.

FIGURE 7.5 **Expansionary fiscal policy**



Between changing taxation and government spending, Keynesians favor raising government spending because they believe this will have a bigger multiplier effect. Increase in government expenditure, especially if it is on benefits given to the poor, who have high propensity to consume, can raise national income by much more than tax cuts.

Fiscal Policy can take the form of either discretionary fiscal policy or automatic stabilizer. Discretionary fiscal policy is a deliberate government policy with regards to taxation and spending that aims to alter the level of AD and real national income.

Automatic stabilizers are forms of government spending and taxation, which change without any deliberate government action to offset fluctuations in GDP. When the economy goes into recession there is a reduction in the amount of taxes collected by the government automatically as all taxes are tied to economic activity. Also, tax rates fall if the taxation system is progressive. As recession would lead to falling earnings, incomes and profits there would be a reduction in taxes. This automatic tax cut stimulates AD and thereby reduces the magnitude of economic fluctuations.

Government spending on unemployment benefits also act as automatic stabilizers. As the economy goes into recession workers are laid off, more employment benefits and income support is given resulting in AD to rise and economy to recover.

In short, as Y falls, G rises and T falls resulting in AD to rise and economy to recover itself from a recession. Similarly, as Y rises, G falls and T rises resulting in AD to fall and economy to recover from inflation.

Limitations of fiscal policy

1. **The problem of 'fiscal drag**': Automatic stabilizers have the obvious advantage that they act instantly as soon as AD fluctuates. However, they also reduce the size of the multiplier, reducing both upward and downward movements of national income. Thus, in theory, the

business cycle should be dampened by such built-in stabilizers. In times of recession, however, if the economy began to recover, the automatic stabilizers will reduce the size of the multiplier and reduce the magnitude of the recovery, as they act as a 'drag' on discretionary policy. The more powerful the automatic stabilizers are, the bigger the change in G or T that would be necessary to achieve a change in national income.

2. **Time lags**: If the government plans to increase spending this can take a long time to filter into the economy and it may be too late to have the desired effect. Any changes in government spending have political process and implications to it. Alterations in government spending and direct taxes take longer to implement (negotiations, passing and implementing of policy) and work their way through the economy. Such lags suggest that the economy's condition might have changed already and the policy may result in undesirable effects.

3. **Poor Information**: To predict future inflation and growth is not easy, therefore it may be difficult to know how much to increase or decrease AD. For example, for fiscal policy to be effective it is important that the government can estimate accurately the impact that changes in government spending and taxation will have on the economy. To do this, they have to have a good idea of the value of the multiplier and awareness of the possible side effects of policy measures. If the government

underestimates the value of the multiplier, it may inject too much extra spending and thereby generate inflation and balance of payment problems.

4. **Adverse supply side effects**: Fiscal policy of increasing taxation may have disincentive effects on efforts and initiatives. The higher the tax rates, the more likely taxes create disincentive to work and to invest. If this occurs there will be a fall in productivity and aggregate supply in the economy, causing unemployment and fall in output.

5. **Crowding out effect**: Crowding out can take place in the form of financial and resource crowding out.

a. Resource crowding out: When the government uses resources such as labour and raw materials that would otherwise be used by the private sector, it results in the price of these resources to rise. Also, less of it will be available for the private sector to now use.

b. Financial crowding out: An increase in government expenditure results in an increase in AD, which in turn results in a rise in interest rates. A rise in interest rates can cause AD to shift to the left, thereby reducing the effect on initial rise in AD due to expansionary fiscal policy.

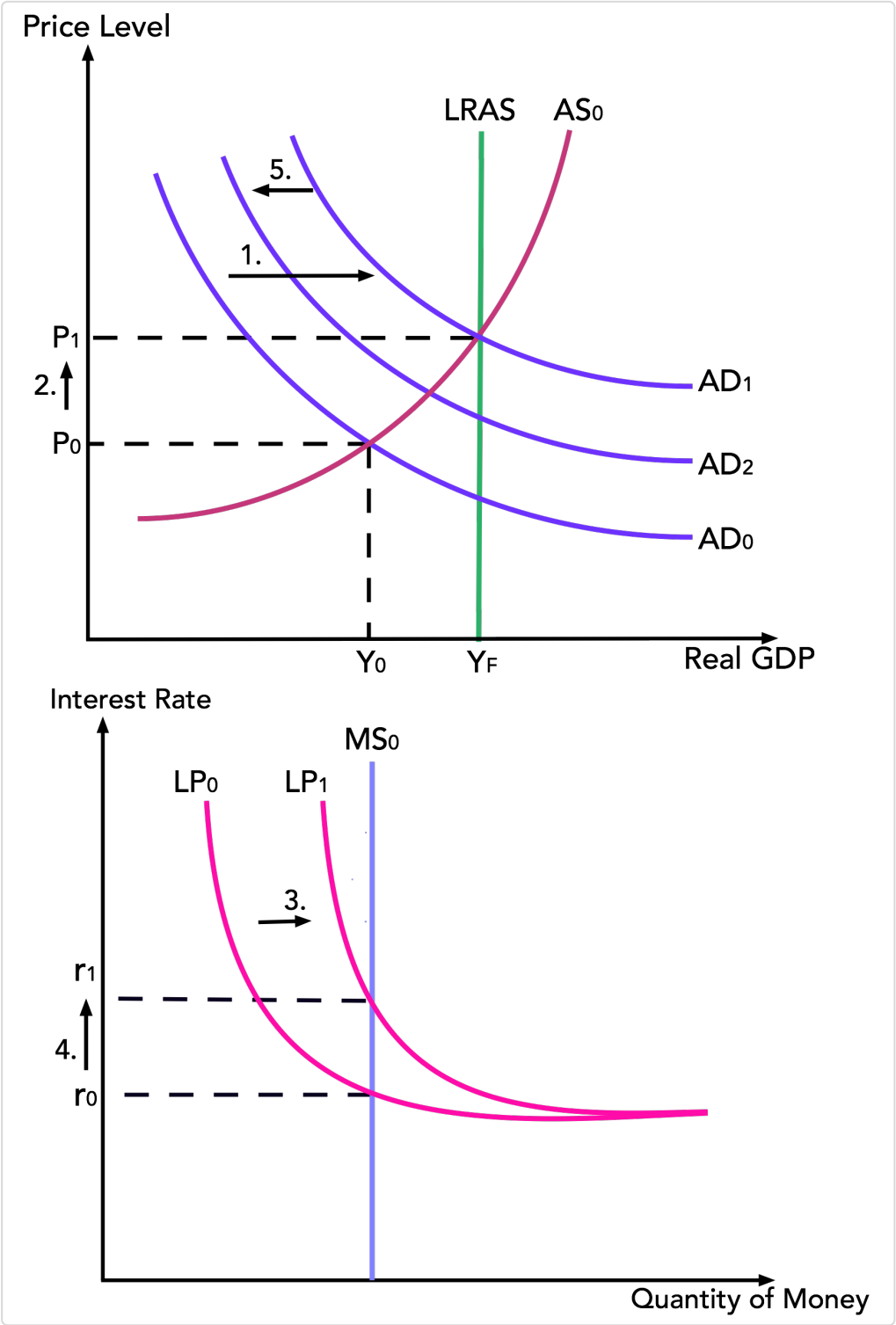
Keynesian view: Keynesians reject this and they argue the economy can be below full capacity for a long time, therefore there will not be any crowding out because the government will be using unused resources. Therefore in a

recession, expansionary fiscal policy can play an important role in increasing real GDP.

Crowding out

1. G↑ →AD↑
2. This results in P↑
3. LP to shift out as transaction demand for money ↑
4. Interest rates to rise and
5. C, I and X-M to fall causing AD to fall and outweigh or reduce the multiplier effect

FIGURE 7.6 **Crowding Out**



CHAPTER 8

INTERNATIONAL ECONOMIC ISSUES

POLICIES TO CORRECT DISEQUILIBRIUM IN THE BALANCE OF PAYMENTS

Components of the balance of payments accounts

The International Monetary Fund (IMF) has a recommended method for the presentation of a nations' balance of payments accounts to enable international comparisons to be made.

In order to explain the main components of a country's balance of payments accounts, reference will be made to the UK accounts for 2019. These are summarised in Table below:

Category	Credits	Debits	Balance
Current account			
Trade in goods	373,149	5 040,29	–129,729
Trade in services	317,674	217,296	103,824
Total trade	690,823	721,325	–25,895
Primary income	161,980	164,234	–30,342
Secondary income	18,040	45,535	–27,526
Current balance	870,843	931,094	–83,763
Capital balance	916,360	1,011,670	–801
Net financial transactions	57,798	165,274	–102,683
Net errors and omissions	–	–	–18,119

The balance of payments account is a systematic record of all economic transactions between a particular country and the rest of the world.

The balance of payments accounts are divided into three sections:

1. current account

2. capital account

3. financial account

In all cases, credit items bringing money into the UK are represented by a plus (+) sign and debit items taking money out of the country by a negative (–) sign.

In addition, because the balance of payments is an account it must balance i.e. the inflows of money must equal the outflows. As the figures are collected by many different government departments the account often does not balance. To correct the problem a net errors and omissions figure is included.

The capital account is the part of the balance of payments which shows the changes in a country's asset ownership as a result of both public and private investment inflows and outflows. Capital transfers are those involving transfers of ownership of fixed assets, except land, and transfers of funds linked to the acquisition or disposal of fixed assets or cancellation of liabilities by creditors.

The financial account records an economy's transaction in external financial assets and liabilities, e.g. investment-owned assets such as foreign reserves, gold, etc. Assets owned by foreigners, those private and official, are also

recorded in the financial account. These assets are both fixed (e.g. the opening of mines or pharmaceutical production plants in Indonesia), often referred to as foreign direct investment, and portfolio investments such as shares as well as non-financial (e.g. the buying or selling of land). It also includes short-term monetary flows, so-called "hot money", where investors move their money to where they can get the best return often because of a change in interest rates.

Effect of fiscal, monetary, supply-side, protectionist and exchange rate policies on the balance of payments

Fiscal and monetary policies

Demand-side policies will directly affect the trade in goods and services. Reductions in government spending, and higher taxes, fiscal, or higher interest rates and reducing the availability of credit, monetary, could all have the effect of dampening consumer demand and reducing the demand for imports. This is an example of expenditure reduction, see next section. This process can also lead to an increase in spare productive capacity which can then be used to increase exports. It is difficult, however, to predict the precise effect of a fall in spending on imports, which requires an accurate calculation of the marginal propensity to import.

Supply-side policies

Supply-side policies focus on improving the supply-side performance of the economy in order to increase competitiveness. As seen before when looking at these policies, this is inevitably a long-run solution, unlike demand-side policies. Some of these policies are set out in below.

Policy	Effect on the balance of payments
Increasing productivity	These focus on increasing innovation and investment in industries with potential to increase exports and compete with imports. This would improve the trade balance.
Education and health	Improving and increasing education and health facilities and standards would boost human capital and see more people employed in modern high-value industries such as bio-technology. This would again increase exports and possibly decrease imports of goods and services.
Infrastructure	Improving the roads, rail, airports, sea-ports, etc, of the country would allow goods to flow more freely abroad. It could also increase tourism, a service export.
New businesses	Supporting the start-up of new businesses could increase exports and/or decrease imports.

Protectionist policies

Protectionist policies are all designed to reduce imports of goods and services. This initially has a positive effect on the current account, assuming that domestic industries can provide acceptable substitutes. Other countries, however, may retaliate by imposing their own protectionist measures on the country's exports. A more subtle policy is that of "red tape". In the case of Brexit, UK exporters have complained that, although there is a free trade agreement

between the UK and the European Union (EU), they find the amount of paperwork required for goods to enter the EU a real barrier.

Exchange rate policies

The exchange rate may fall either because of a current account deficit or because of other policies such as lowering interest rates, see above. Allowing it to fall should improve the balance of payments especially the trade in goods and services part of the current account. Export prices fall while import prices rise. Given a favorable Marshall– Lerner effect, the value of exports increase, while the value of imports fall.

A fall in the exchange rate has the effect of increasing the value of profits and income for a country's businesses with investments overseas and thus improving the financial account. All of this works so long as capital is not free to move from one economy to another. If an economy is growing and there is a rise in consumer expenditure then investors and speculators may buy the currency even if the current account deficit is increasing as they think that the economy is improving.

Difference between expenditure-switching and expenditure-reducing policies

Expenditure-switching policies try to shift expenditure from imported to domestically produced goods. This can be done in three ways, as explained above.

Expenditure-reducing policies are aimed at trying to reduce excess demand which has led to high levels of imports (see fiscal and monetary policies above).

EXCHANGE RATES

Measurement of exchange rates

Distinction between nominal and real exchange rates

Exchange rates can be measured in terms of nominal value, real value and trade-weighted value.

The nominal exchange rate is the one which is usually quoted e.g. if you go to a bank or look at the rate on the internet then you will see this rate. The real exchange rate is what the currency will buy in terms of other currencies. This is often referred to as purchasing power parity.

Trade-weighted exchange rates

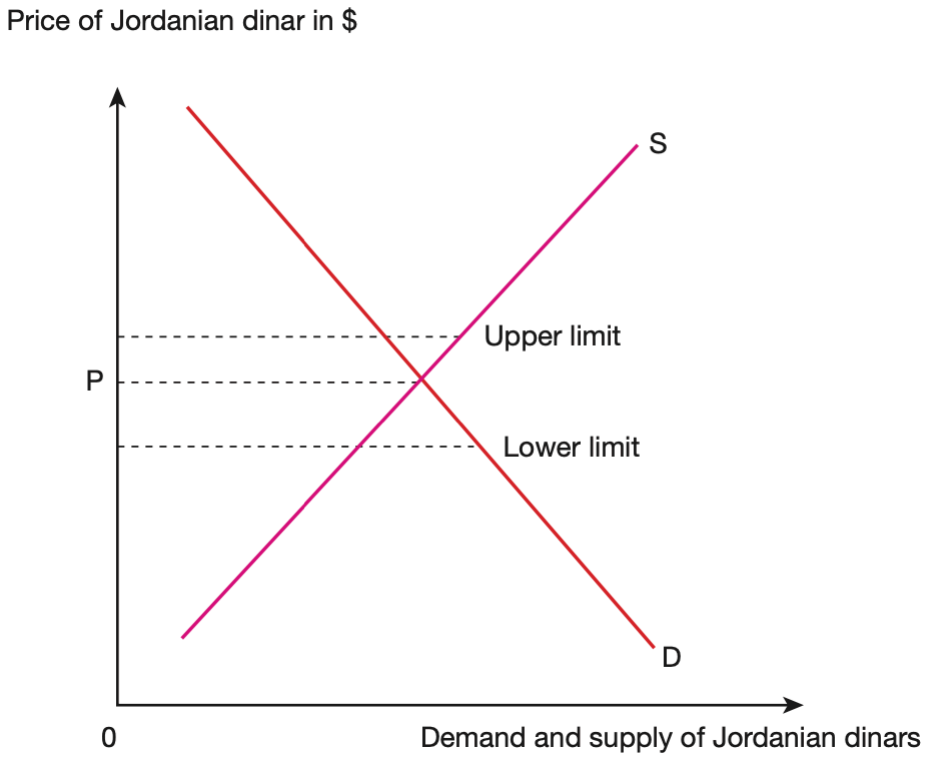
The trade-weighted exchange rate is the measurement, in terms of an index, of changes in a country's currency against a basket of other currencies. These are weighted to reflect the relative importance of trade for the country of the currencies in the basket. If, for example, the UK does five times more trade with the EU as it does with Japan then the euro will b e given five times the weight of the yen.

Determination of exchange rates under fixed and managed systems

A fixed exchange rate is one where little or no change is possible from the agreed rate. In practice, a small variation of around two per cent is usually allowed, but the central

bank of the country is committed to maintain the value by buying its own currency, to prevent the price falling, or to sell its currency to stop it rising. In practice, countries often have to either revalue or devalue (see next section) their rates from time to time to allow for differences in economic growth.

Many developing countries use fixed or pegged exchange rates for their currencies (Figure below). A pegged exchange rate is where a country sets a specific fixed exchange rate for its currency with a specific foreign currency, or basket of currencies. This provides these countries with more stability.



Where governments deliberately set their currency at a lower rate than the market would under a floating system in order to gain a trading advantage, this is called a "dirty float"

Governments can try to manage their currency by intervening in the market to influence its price. This is called a managed float. The purpose is to try to prevent wild fluctuations in the value of the currency, one cause of which is speculation. Where governments use this idea to deliberately set their currency at a lower rate than the market would under a floating system in order to gain a trading advantage, this is called a "dirty float". Japan was accused of this in the 1960s and 1970s while China has more recently faced similar accusations.

Distinction between revaluation and devaluation of a fixed exchange rate

Unlike floating exchange rates, fixed exchange rates can only change their value if the government decides that this is necessary. A lowering of the exchange rate, i.e. a fall in the value, is a devaluation, while a raising of the exchange rate, i.e. it goes up in value, is a revaluation.

Changes in the exchange rate under different exchange rate systems

Floating exchange rates can either depreciate, i.e. fall in value, or appreciate, i.e. rise in value. As can be seen in the figure below an increase in demand for the currency, from DD to D_1D_1, leads to a rise in the currency's value, an appreciation, whereas a fall in demand leads to the opposite effect, a devaluation.

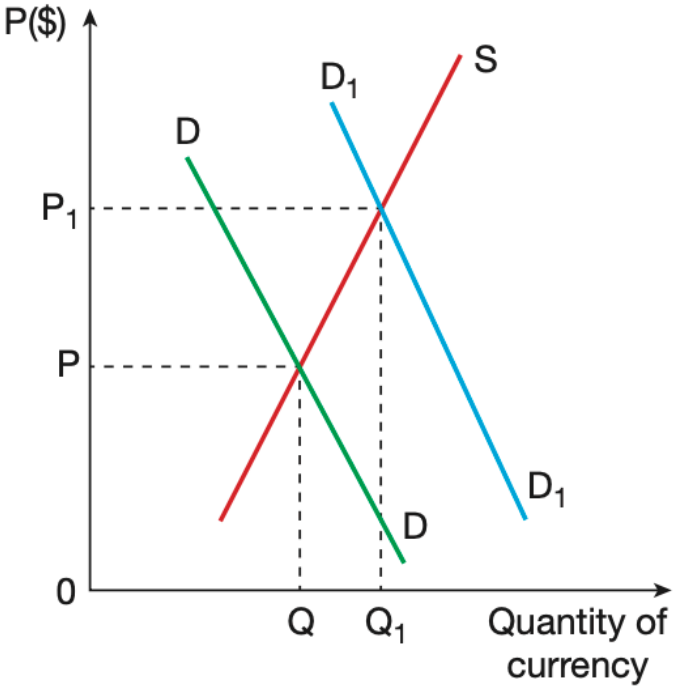
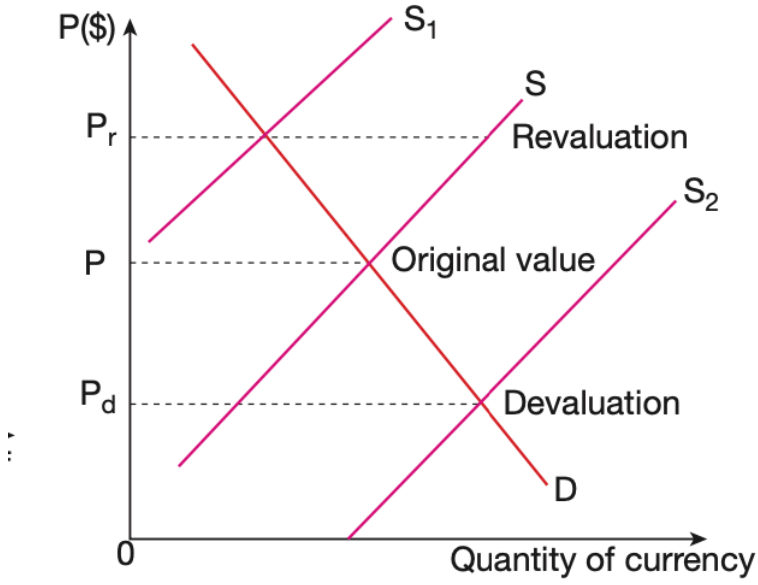


Figure below shows the effects of revaluation and devaluation. If the original fixed value was'P', then a



revaluation will move it to 'Pr'. Equally, a devaluation will lower the price to 'Pd'. A government can achieve this by

either buying their currency, thus reducing supply from S to S_1, or by selling the currency, thus increasing supply from S to S_2.

The effects of changing exchange rates on the external economy using Marshall–Lerner and J-curve analysis

Any change in the exchange rate will affect the price and thus the quantity of exports and imports. This will in turn affect both the current account and also AD as AD = C + I + G + X − M. Marshall–Lerner shows the conditions under which a change in the exchange rate of a country's currency leads to an improvement or worsening of a country's balance of payments. If a country's exchange rate rises so that exports are more expensive and imports are cheaper then, if Marshall–Lerner holds, the volume and value of exports will fall while the volume and value of imports will rise. This results in a deterioration in the current account.

Equally, a fall in the value of a country's exchange rate will, assuming Marshall–Lerner holds, lead to an improvement in the current account, as exports rise and imports fall. This, however, may not happen immediately. Contracts have been signed at the old value and cannot be changed. It also takes time for exporters and importers to react to the change. This gives rise to the J-curve effect. The diagram shows that devaluation/depreciation leads to an immediate worsening of the current account with this only benefiting from the devaluation/ depreciation in the longer run.

CHAPTER 9

ECONOMIC DEVELOPMENT AND GLOBALIZATION

ECONOMIC DEVELOPMENT

Economic growth and development are linked. While growth is possible without development because growth is just an increase in real GDP, development cannot take place if there is no growth.

Economic development is a far more comprehensive idea than economic growth. In addition to a rise in real output, it involves changes in the composition of this output and a consequent shift in the allocation of resources as well as the reduction of poverty, inequalities and unemployment. In addition, development can refer to the availability of education and literacy rates as well as health and life expectancy.

Amartya Sen stated that development is about creating freedom for people and removing obstacles to greater freedom. Greater freedom enables people to choose their own destiny. Obstacles to freedom, and hence to development, include poverty, lack of economic opportunities, corruption, poor governance, lack of education and lack of health.

Classification of economies in terms of their level of development

Criteria for evaluating a country's level of development are GDP per capita, the level of industrialization, the general standard of living, and the amount of technological infrastructure.

The United Nations classifies countries into three groups:

1. Developed countries are those which have a high level of economic growth and security.
2. Transitional countries are those which are in a process of moving from a centrally planned economy to a mixed or free market economy.
3. Developing countries are those that have a low GDP per capita and, normally, rely heavily on agriculture as the primary industry.

Classification of economies in terms of their level of national income

The World Bank assigns the world's economies to four income groups – low, lower-middle, upper-middle, and high-income countries. Examples of these groups for 2021 are shown in Table below. This information is revised every year.

High income >12535	Upper-middle income 4046–12535	Lower-middle income 1036–4045	Low income <1036
Austria	Argentina	Angola	Afghanistan
Bermuda	Belize	Bangladesh	Burundi
Chile	Botswana	Ghana	Ethiopia
Norway	Montenegro	Morocco	Haiti
Qatar	Peru	Pakistan	Malawi
Seychelles	Russia	Philippines	Sierra Leone
South Korea	South Africa	Ukraine	Syria
United Kingdom	Thailand	Vietnam	Yemen

Indicators of living standards and economic development

Living standards refers to the amount and quality of material goods and services available to the population of a country. It includes many aspects such as: income; housing; employment; hours of work required to purchase necessities; education; environmental quality.

Monetary indicators

GDP per capita is the most widely used monetary measure of living standards. IT, together with GNI and NNI, are easy to obtain and give an 'at a glance' comparison without needing further understanding. Real and per capita allow for different inflation rates and different levels of population. GDP is a production concept, but the way that it is constructed makes it equal to the total income earned in the production process. Some of this income is paid to non-residents, while residents receive some income from production in other countries. GDP can be adjusted for "net income from abroad" to arrive at the concept of gross national income, GNI, which is more relevant for the well-being of residents of a country. In turn, by deduction, capital consumption NNI can be achieved. Unfortunately, there are a number of difficulties involved in using the figures:

1. **Work v leisure time:** a higher per capita income ignores that one country may have shorter working hours and/or offer longer holidays to its workers.

2. **Shadow economy:** GDP includes production that is exchanged in the market, but it does not include black market activities nor ones you may do yourself. Cleaning your own house is not counted, but hiring a cleaner to do the work is. Activities such as self-employment may not be (fully) reported or taxation figures used to calculate NI may be subject to tax evasion.

3. **What expenditure does or does not show:** this is a question of quantity, or money spent, which is measurable, against quality. It shows what is spent on environmental protection, but not whether the air and water are cleaner. Equally, it shows how much is spent on education, but not the proportion of the population who are literate.

4. **Income distribution** is ignored because these measurements are only averages.

Using these measures to compare standard of living between countries has the further difficulty of currency conversion, as the exchange rate may not reflect accurately what money can buy in each country. One way round this is to use purchasing power parity (PPP). This takes into account the local purchasing power of the currency, using a

basket of goods, and is a better guide to actual living standards.

An example would be: if a pair of trousers cost $40 in the US and an identical pair cost €32 in Italy and the exchange rate meant that this was equivalent to $60 then the PPP would be 60/40 = 1.5. This means that for every dollar spent in US it takes £1.50 dollars to buy the same trousers in Italy using the euro.

Although there are problems with these monetary measures, they do indicate when a country is materially better or worse off in terms of jobs and incomes. In most countries, a significantly higher GDP per capita is an indicator of improvements in everyday life along with aspects such as education and health.

Non-monetary indicators

A non-monetary indicator is anything which contributes to the standard of living or development of a country, but does have directly a value in terms of money. While there is no agreement as to which factors to include, the following are often referred to:

1. Unemployment rate: people may be unemployed with low, or no, incomes and unable to access goods available to the majority of society.
2. Social cohesion: if society does not have the same basic goals and cultural norms then there may be lack of

support for those with disadvantages. The ability of economies to work efficiently and develop effectively depends on the establishment of an environment in which legal rights, especially property and contractual rights, are enforced and protected. There is evidence which shows that countries where the law applies equally to all and have developed strong institutional and legal frameworks have performed better in terms of sustained growth and human development.

3. Level of corruption: corruption is present in every country, but its effects are especially damaging in those which are still developing. The amount of corruption is negatively linked to the level of investment and economic growth, that is to say, the more corruption, the less investment and the less economic growth. And the lower the standard of living for many citizens.

4. Degree of equality and equity: there are many countries where groups of people based on gender, sexual orientation, ethnicity, etc. are disadvantaged and often excluded from well-paid jobs or from taking a wider role in society.

Composite indicators

Human Development Index (HDI)

The problems of using GDP/GNP to compare living standards and economic development between countries over time has led to the development of other measures,

the best known being the Human Development Index (HDI). This measures changes in development levels over time and compares development levels in different countries. The 2019 report includes:

1. a long and healthy life: life expectancy at birth
2. education index: mean years of schooling and expected years of schooling
3. a decent standard of living: GNP per capita (PPP US$)

Measure of Economic Welfare (MEW)

The Measure of Economic Welfare (MEW) was the work of Nordhaus and Tobin as an alternative to just using GDP. MEW took national output as a starting point, but adjusted it to include an assessment of the value of leisure time and the amount of unpaid work in an economy. This increased the welfare value of GDP. On the other hand, the value of the environment damage caused by industrial production and consumption was also included which reduced the welfare value of GDP.

Multidimensional Poverty Index (MPI)

The Multidimensional Poverty Index (MPI) identifies multiple deprivations at the household and individual level in health, education and standard of living (Table below).

MPI uses three dimensions and ten indicators which are:

1. education: years of schooling and child enrollment (1/6 weight each, total 2/6)
2. health: child mortality and nutrition (1/6 weight each, total 2/6)
3. standard of living: electricity, flooring, drinking water, sanitation, cooking fuel and assets (1/18 weight each, total 2/6).

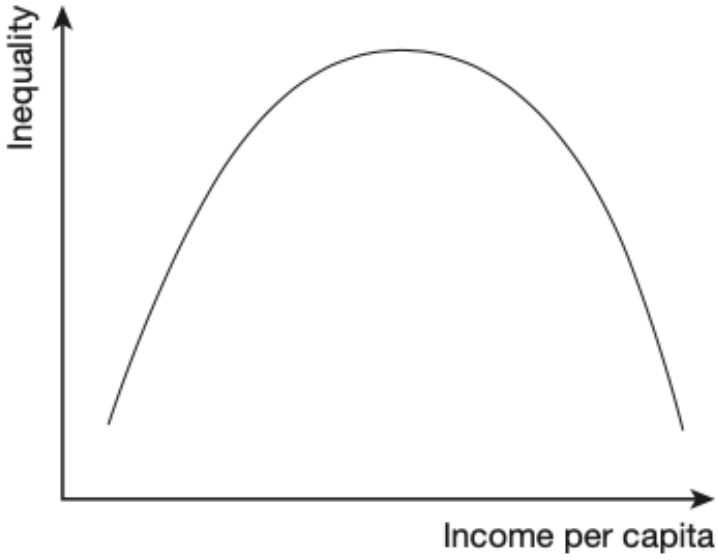
Dimensions of Poverty	Indicator	Deprived if living in the household where…	Weight
Health	Nutrition	Any adult under 70 years of age or any child for whom there is nutritional information is undernourished.	1/6
	Child mortality	Any child under the age of 18 years has died in the family in the five-year period preceding the survey.	1/6
Education	Years of schooling	No household member aged school entrance age + six years or older has completed six years of schooling.	1/6
	School attendance	Any school-aged child is not attending school up to the age at which he/she would complete class eight.	1/6
Standard of living	Cooking Fuel	The household cooks with dung, wood, charcoal or coal.	1/18
	Sanitation	The household's sanitation facility is not improved (according to SDG guidelines) or it is improved but shared with other households.	1/18
	Drinking Water	The household does not have access to improved drinking water (according to SDG guidelines) or improved drinking water is at least a 30-minute walk from home, round trip.	1/18
	Electricity	The household has no electricity.	1/18
	Housing	At least one of the three housing materials for roof, walls and floor are inadequate: the floor is of natural materials and/or the roof and/or walls are of natural or rudimentary materials.	1/18
	Assets	The household does not own more than one of these assets: radio, television, telephone, computer, animal cart, bicycle, motorbike or refrigerator, and does not own a car or truck.	1/18

A person is multidimensionally poor if they are deprived in one-third or more (means 33% or more) of the weighted indicators (out of the ten indicators). Those who are deprived in one half or more of the weighted indicators are considered living in extreme multidimensional poverty.

MPI is significant as it recognizes poverty from different dimensions compared to the conventional methodology that measures poverty only from the income or monetary terms.

Kuznets curve

The Kuznets curve is an inverted U curve, although variables along the axes are often mixed and matched, with inequality or the Gini coefficient on the y-axis and economic development, time or per-capita incomes on the x-axis.



The curve claims to show that as an economy develops, initially inequality increases, but that after a certain average income is reached, inequality then decreases. This assumes that a country which is industrializing (and mechanizing agricultural production) will draw people into urban areas improving their standards of living, but causing greater inequality with those still in rural areas. Only at a later stage

will the benefits of growth reach these people and start to close the gap. Although this was based on historical evidence, the "East Asian miracle" showed low inequality and high output, while in some more autocratic countries there has been high inequality and low output.

Comparison of economic growth rates and living standards over time

Assuming that the cost of living has not changed by more than the growth in income, then an increase in real GDI per capita should indicate not only economic growth, but also a rise in the standard of living. Table below shows how economic growth of New Zealand has changed over the period 2015–2019 using real GDP.

Between countries

In any comparison of living standards between countries, it is important to remember that GDP/GNP/NNI per capita is an average figure. It ignores the fact that income may be very unequally distributed so that only some people have a higher standard of living than those in the other country.

Comparing growth rates can be equally problematical. Many of the problems mentioned above apply again, e.g. the black economy leading to understating of real GDP. In addition, in countries where literacy levels are low, for example Niger has one of the lowest literacy rates in the world where just over 19 per cent of adults can read and write, information provided by individuals may not exist or

be unreliable. Another issue is how countries value government services which are provided free. These methods not only vary between countries, but individual countries sometimes change how they are estimated.

Characteristics of countries at different levels of development

1. Population growth and structure

Measurement and causes of changes in birth rate, death rate, infant mortality and net migration

Birth and death rates are two key factors in population growth. They are both measured per thousand of the population per year. As countries develop, health and education services improve leading to lower birth and death rates. Also important is the infant mortality rate which is again improved health care will lead to a decline. The two developed countries in Table below have much lower rates than the other countries. The greater the difference between the birth and death rates, the higher is the population growth. This difference is called the natural increase. This can be seen in Table below.

Status	Country	Birth rate	Death rate	Difference
Developed	Canada	10	8	2
Developed	New Zealand	12	7	5
BRIC	Brazil	14	6	8
BRIC	India	18	7	11
MINT	Mexico	18	6	12
MINT	Turkey	16	5	11
Developing	Iraq	29	5	24
Developing	Zambia	36	6	30

Source: World Bank

In addition, migration plays a part in determining population growth. In many developing countries there is,

Status	Country	Infant mortality rate
Developed	Canada	4
Developed	New Zealand	4
BRIC	Brazil	12
BRIC	India	28
MINT	Mexico	12
MINT	Turkey	9
Developing	Iraq	22
Developing	Zambia	42

Source: World Bank

often, a net outflow, emigration, of people seeking employment and higher standards of living in other countries, whereas in countries, such as the UK, there is a net inflow, or immigration. The difference between emigration and immigration is net migration.

It is often assumed that migration is increasing, but the number of people living outside their country of birth has been a relatively stable percentage of the world's population for a long time, although with substantial fluctuations. Equally, although ten countries, United States, Germany, Russia, Saudi Arabia, United Kingdom, United Arab Emirates, Canada, France, Australia, and Spain dominate global migration, the majority of people from

developing countries in fact go to another such country. Among the factors causing migration are:

1. lack of safety, including war and crime
2. crop failure, including drought and flooding
3. lack of opportunities, including employment and education
4. poverty.

Optimum population

The optimum population is the population size that results in the maximum income per head. Given the stock of natural resources, production methods and the capital stock of a country, there will be a definite population size corresponding to the highest per capita income.

If the population of a country is less than the optimum, there will not be enough people to fully use all of the resources. If an increase in population results in an increase in per capita income then the country is under-populated. If, however, the population is above the optimum there will be too many people to work efficiently and produce the maximum goods so the per capita income falls.

Level of urbanization

Urbanization is the increase in the proportion of people living in towns and cities. This has become very important in developing countries.

Urbanization is about a concentration of people. The majority of the world's population live in urban areas, but most people do not live in cities. The majority of global urbanization is currently happening in small towns. This is even the case in Asia and Africa where urbanization is increasing fastest, although the pace is slower than has been predicted.

While the growth of cities and towns can lead to economic growth and increased prosperity, it is also true that these large urban areas can result in poverty and crime.

2. Income distribution

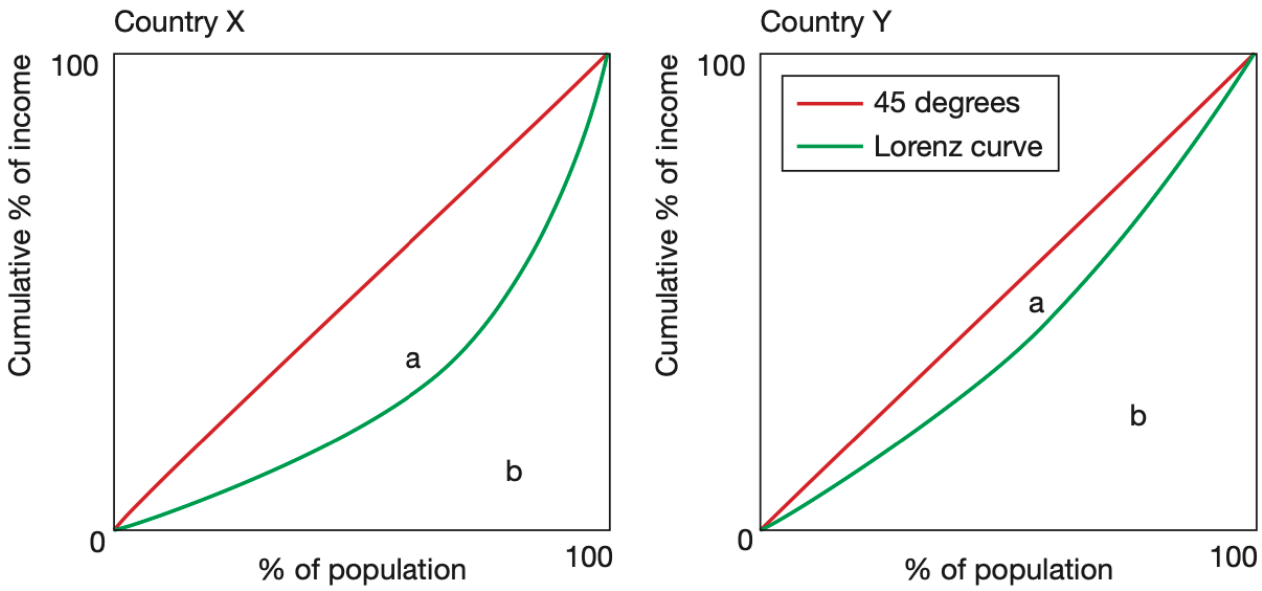
The Lorenz curve is a graphical representation showing the extent of inequality in the distribution of income in an economy. The more unequal the distribution of income in an economy, the more divergent the Lorenz curve will be from the diagonal line of absolute equality.

Calculation of Gini coefficient and Lorenz curve analysis

Figure below shows how Lorenz curves can demonstrate the distribution of income in, and between, countries, in this case countries X and Y. The 45 degree line represents a totally even distribution of income. The greater the degree

of inequality, the further the Lorenz curve will be below the 45 degree line. The difference between the 45 degree line and the Lorenz curve is called the inequality gap. It is clear that this is the case with Country X, indicating that income is more unevenly distributed in Country X than in Country Y.

The Gini coefficient can be calculated using the formula: Gini Coefficient = a/ (a+b) , where 'a' is the area above the Lorenz curve and 'b' is the area below the Lorenz curve (see Figure below). The higher is the value of the Gini



coefficient, the more unequal is income distributed so 0 is perfect equality and 1 is perfect inequality. Values for different countries for 2021 are shown in Table below.

Country	Gini coefficient
Thailand	0.846
Saudi Arabia	0.834
Lesotho	0.805
Brunei	0.787
Jamaica	0.775
Costa Rica	0.750
Austria	0.739
Nepal	0.710
Portugal	0.692
Slovakia	0.498

Source: World Population Review

3. Economic structure

The economic structure relates to the fact that any economy can be divided into a number of different sectors. There are three such sectors although one of them (the secondary sector) is often divided into two parts.

Employment composition: primary, secondary and tertiary sectors

1. Primary: The primary sector is concerned with extractive activities and examples would include forestry, fishing, agriculture, mining, quarrying and oil extraction.
2. Secondary: The secondary sector can be divided into two parts. Firstly, it is concerned with manufacturing

activities and examples would include car production, computers and textiles. Secondly, it is concerned with construction activities and examples would include the building of roads, houses and factories.

3. Tertiary: The tertiary sector is concerned with the various services that are provided in an economy, such as financial services, education and health.

Countries vary enormously in the division of their economy into these three distinct sectors. Table below shows the division of a range of countries into these three sectors on the basis of the proportion of the workforce that work in the different sectors.

Country	Primary sector	Secondary sector	Tertiary sector
Afghanistan	42	19	39
Algeria	10	30	60
Barbados	3	18	79
Denmark	2	18	80
India	41	27	32
Mozambique	70	9	21
Peru	27	15	58
Somalia	83	4	13

The figures for the size of the primary, secondary and tertiary sectors in any particular country will not be static, but will change over a period of time as a country becomes

more developed. It would be expected that the size of the primary sector would fall, the size of the secondary sector would first grow and then shrink and the size of the tertiary sector would continually grow.

Pattern of trade at different levels of development

The global economy has grown continuously since the Second World War. Global growth has been accompanied by a change in the pattern of trade, which reflects changes in the structure of the global economy. These changes include: the rise of regional trading blocs; deindustrialisation in many advanced economies; the increased participation of former communist countries; and the emergence of China and India.

Demographic change affects trade through its impact on countries' comparative advantage and on import demand. An ageing population, migration, educational improvements and women's participation in the labour force have and will continue to be important in changing trade patterns.

Traditionally the pattern of trade has been reflected by:

1. developed countries having a greater share of global trade than developing countries
2. developed countries usually export valuable manufactured goods such as electronics and cars and

import cheaper primary products such as tea and coffee from developing countries

3. the greatest volume of trade occurring between the developed, rich countries, especially between countries such as Germany, Japan, the United Kingdom and the United States.

Changing patterns are as follows:

1. Developed countries have seen the comparative advantage they once had in manufacturing shift to developing countries especially to those in Asia such as China and South Korea. The developed countries are importing far more manufactured goods, but are exporting services.

2. The greatest shift has been in the exporting of goods, both traditional manufactured ones and hi-tech, by China and India.

3. Some countries have resources which are now in high demand for electric bar batteries, mobile phones, etc. As these are essential for modern technological equipment, countries producing them will see exports and trade increase.

4. Trading agreements, especially bilateral ones, such as that between Canada and the EU, and trading blocs, such as the EU and MERCOSUR, result in trade diversion towards trade creation with its members.

Relationship between countries at different levels of development

International aid

International aid is the giving of money and/or goods by one country to another or by an organization to another country.

Forms of aid

Aid comes in a variety of forms and classifications. One way is shown in Table below:

Form of aid	Explanation
Economic aid	This is intended to support the economies of recipient countries. Generally this aid is provided by one country to one or more other countries. Aid of this type can be in the form of loans, grants or credits. It is sometimes tied to the recipient country spending the money in a given way.
Bilateral aid	This is a form of economic aid. It is when a single country gives aid to another.
Multilateral aid	Again this is a form of economic aid. It is when international organizations such as the World Bank, the United Nations, etc. receive funding from multiple countries and then disburse that money to countries so they can use it for improvements in many ways.
Humanitarian aid	Although governments do give humanitarian aid to other countries, it is often provided by Non-Governmental Organisations (NGOs). The primary purpose of humanitarian aid is to improve the social wellbeing and the living situations for people in the recipient country. This can take place in response to a natural disaster, in which emergency supplies like first aid, water, food and clothing go to a country in need.
Military aid	This is aid given to strengthen the security of a country. This aid may be in the form of weapons, training of military personnel; or the provision of military personnel to work with the country's own forces. This type of aid is often controversial.

Reasons for giving aid

Countries provide aid for a wide variety of reasons. Aid programs often serve several purposes simultaneously. It is difficult, therefore, to state which might be the most important. The reasons include:

1. to promote economic development, sometimes through international organizations
2. to help in the reduction of poverty
3. to promote a country's exports by requiring the recipient country to
4. use the aid to purchase the donor country's products
5. to relieve suffering caused by natural or man-made disasters such as earthquakes or diseases
6. to try to prevent the destruction of the environment
7. to help improve their own security by preventing friendly governments from falling under the influence of unfriendly ones or as payment for the right to establish or use military bases in the aid receiving country or to combat international terrorism, and other crimes
8. to achieve a country's political goals including getting support for its positions in international organisations, or to increase its diplomats' access to foreign officials
9. to increase the influence of its language, culture or religion.

Effects of aid

There is no agreement on whether international aid is good, bad or somewhere between. This is because the effect of aid often depends on the political situation in the country. Table below sets out some of the positive and some of the negative effects.

Positive	Negative
It promotes economic growth especially in countries with good governance.	Increases aid dependency, harming domestic producers, and supports poor economic management. This can be because aid donors fail to coordinate activities or because of corruption.
It reduces poverty through the provision of jobs and by direct action such as clean drinking water supplies.	Aid tied to buying from the donor may lead to the purchase of poorer quality and/or higher priced products.
Aid is often most effective when directed at areas such as enhancing education, building rural and urban infrastructure, protecting private property, and reducing trade risks.	Government approach: in some countries aid has generally benefited the ruling elite so that instead of creating prosperity and economic development it has reduced the living standards of most of the inhabitants of the country.

Importance of aid

Importance of foreign aid clearly overlaps with many of the points given in the previous sections. Table below list some of the areas of importance with a brief explanation.

Importance	Explanation
Humanitarian help in crises	Provides quick and large-scale help in times of e.g. natural disasters until the country can take over the disaster relief effort.
Improving health	Helps to eliminate diseases in developing countries such as smallpox in 1980 and the UN project for HIV/AIDS by 2030. Includes, also, vaccinations, safe drinking water, hygiene education and basic sanitation.
Provision of infrastructure	Provides not only roads and bridges, but also communication systems, electricity, schools and health clinics, etc.
Promotes economic growth and development Better agriculture	Increasing industry results in more goods and services produced which can attract new investors leading to further development. Farmers can be taught how to utilise their land and resources, including machinery, more efficiently to produce more crops to feed more people.
Poverty relief	In 2019, just under 600 million people were in extreme poverty. By 2030, this figure is expected to fall to some 436 million. Many of the poor live in rural areas where they do not have access to adequate medical treatment and education.
World security	Aid reduces the threat of terrorism by reducing poverty and can help strengthen good governance, transparency and the economy.

Trade and investment

Foreign direct investment (FDI) has become a key element of trade between different countries. Traditionally a firm in one country would invest in either the natural resources of another country by, for example, opening a mine or would set up a factory in another country, often to get round trade barriers. Today, however, rather than businesses in one country simply trading with international partners, more and more companies are buying controlling stakes in foreign enterprises.

Global value chains (GVCs) have increased the interdependency between trade and FDI as companies combine trade with investment to organise the supply of inputs, to expand in new markets, to access knowledge, and to provide services to consumers.

In addition, whereas thirty years ago FDI was mainly from the developed countries to the developing ones, nowadays many developing countries such as China, India and the UAE have invested in other countries. This has created a more global world and a great expansion of trade.

The World Bank has said that FDI is not only about capital, but increasingly about sharing technology and intangible assets such as know-how or brands in conjunction with local capital or tangible assets of domestic investors.

Role of multinational companies (MNCs)

Definition of MNC

Multinational corporations (MNCs) – sometimes called transnational corporations – are firms that operate in a number of different countries. They have their head offices in one country, but have operations in a number of other countries.

Activities of MNCs

MNCs indulge in a range of activities including:

1. factories to manufacture the whole product
2. factories to manufacture parts which are then sent to factories in other countries
3. factories to assemble parts from other factories in different countries u expanding their size through mergers and takeovers
4. sponsoring relevant university courses and employing the best graduates
5. FDI (see above and below)
6. supporting cultural, sporting, etc. activities.

Consequences of MNCs

Among the top twenty firms are Royal Dutch Shell, Sinopec Group, Toyota and Glencore International. Royal Dutch Shell's revenue in 2019 at $344.9 billion is greater than the majority of countries.

Over a number of years the total FDI received can amount to many times a country's GDP. While FDI increases growth and employment in a country and, therefore, has a multiplier effect, it may not be entirely beneficial as profits are sent back to the home country of the MNC while they may bring with them their own skilled workforce rather than training people in the developing country. In some cases this can lead to economic dependency where one country exploits the resources of another for the former's benefit. In Nigeria the oil industry is totally dependent on the FDI received from a number of foreign firms. In addition, domestic businesses may not be able to compete with MNCs and go out of business allowing the MNC to gain a larger market share. MNCs have been accused, also, of: avoiding paying the correct amount of tax due to tax avoidance schemes; imposing their culture on the country; and not acting in socially-responsible ways.

MNCs do, however, bring considerable benefits including:

1. employment and training for the labour force, together with transfer of skills

2. significant tax revenues enabling the country to spend more on, for example, education and health
3. greater investment with often this providing extra income for local suppliers
4. incentives to domestic firms to improve their competitiveness through the competition they provide
5. greater consumer and business choice
6. greater GDP through their spending and investment.

Foreign Direct Investment (FDI)

Definition of FDI

UNCTAD defines FDI as "investment made to acquire lasting interest in enterprises operating outside of the economy of the investor". It is investment in the form of a controlling ownership in a business in one country by an individual or organisation based in another country. It involves the idea of direct control as against just an investment.

Consequences of FDI

Some of the main consequences, both positive and negative, are set out in Table below:

Positive	Negative
Economic growth – allows countries to obtain higher economic growth by opening the economy up to new markets, as seen in many developing countries.	Long-term capital movement – in some cases once the investment becomes profitable, capital begins to flow out of the host country and to the investor's country.
Job creation and employment – often creates new businesses in the country leading to both job creation and, also, higher wages.	Local industry – in some circumstances it may cause problems for local firms by taking away some of their market and by attracting the best workers.
Technology transfer – FDI brings with it new modern technology and technical expertise.	Foreign exchange rate – the inflow of capital will increase exchange rate and could make exports less competitive.
Terms of trade – an increase in the exchange rate due to the inflow of capital will lead to an improvement in the terms of trade.	

External debt

External debt consists of the part of the total debt of a country that is owed to people, firms, banks, international financial organisations which are external to the country together with foreign governments.

Causes of debt

The main causes of external debt in recent years have been:

1. persistent trade deficits leading to borrowing money to pay for the goods and services and to support the exchange rate
2. high internal debts caused by consistently spending more than revenue
3. high inflation leading to having to borrow with high interest rates which make repayment ever more difficult; Argentina has defaulted on its debts on a number of occasions, the last being in 2020
4. misuse of funds: funds are often used to boost consumption rather than for capital investment; in other cases corruption plays a part over lending by foreign banks.

Consequences of debt

External debt in itself is not a problem. Indeed, economic theory suggests that a reasonable level of debt should help

both developing and developed countries enhance their economic growth. This is true especially if the debt is a result of investment in areas such as infrastructure, new production methods, etc.

The negative consequences come about because the debt is too large. Among these consequences are:

1. Decline in economic growth as the servicing of the debt of the country causes large outflows of money
2. Decline in economic development as repaying the debt will mean less money for education, infrastructure, health care, etc.
3. Loss of confidence as lenders worry about whether they will lose their money and are hesitant to lend more. This often leads to high interest rates on future loans
4. Fall in the external and internal values of the currency to the point where the currency may become unusable in terms of buying imports or even buying these imports in shops.

Role of the International Monetary Fund (IMF) and World Bank

The International Monetary Fund (IMF) is one of the agencies that keep track of the country's external debt.

It aims to offer:

1. policy advice to governments and central banks based on analysis of economic trends and cross-country experiences
2. research, statistics, forecasts, and analysis based on tracking of global, regional, and individual economies and markets
3. loans to help countries overcome economic difficulties
4. concessional loans to help fight poverty in developing countries
5. technical assistance and training to help countries improve the management of their economies.

The **World Bank group** consists of five agencies:

1. The International Bank for Reconstruction and Development (IBRD) lends to governments of middle-income and creditworthy low-income countries.
2. The International Development Association (IDA) provides interest-free loans, called credits, and grants to governments of the poorest countries.

3. The International Finance Corporation (IFC) provides loans, equity and technical assistance to stimulate private sector investment in developing countries.

4. The Multilateral Investment Guarantee Agency (MIGA) provides guarantees against losses caused by non-commercial risks to investors in developing countries.

5. The International Centre for Settlement of Investment Disputes (ICSID) provides international facilities for conciliation and arbitration of investment disputes.

Both the IMF and the World Bank aim to try to help countries with debt problems to overcome them through a mixture of advice and aid.

GLOBALIZATION

Globalization is the spread of products, technology, information and jobs across national borders and cultures. In economic terms, it describes an interdependence of nations around the globe fostered through free trade.

There are lots of possible causes of globalization, but the main ones are shown in Table below.

Cause	Explanation
Improved transport	Allows for greater movement of people and goods across the globe.
Containerisation	The lower unit cost of shipping products helps to bring prices in the country of manufacture closer to those in export markets, and it makes markets more contestable globally.
Communications	The growth of the internet makes it easier to communicate and share information. Where a business is and where its products are being made are much closer together. This may overcome managerial diseconomies of scale. Equally, consumers are able to order online.
Reduction in trade barriers	There has, in general, been a decline in trade barriers.
MNCs	Prepared to move wherever they can gain the greatest advantages. This has also increased the mobility of capital and labour.
Economies of scale	If the minimum efficient scale associated with an industry is rising, a domestic market may be regarded as too small to satisfy the selling needs of these industries.

The consequences of globalization include:

1. Economic growth: adopting a more open trade policy allows a country to profit from international trade and FDI leading to the introduction of new technologies and a higher competitiveness. MNCs provide new jobs and skills

2. Consumers enjoy a greater choice of goods and services at lower prices

3. Global trade cycle: as countries are increasingly interconnected, a crises in one country may cause problems in other countries. This can be true for changes in the business cycle and financial crashes

4. Tax competition: to attract MNCs, many countries have engaged in tax competition both in terms of taxes on profits, thus gaining more FDI, and to attract foreign workers

5. MNCs may drive local companies out of business u deindustrialisation in developed countries.

Distinction between a free trade area, a customs union, a monetary union and full economic union

Free trade area: A free trade area consists of countries which have removed barriers to trade between themselves, but maintain their own individual barriers against non-member countries. Free trade areas include: European Free Trade Area - EFTA (EEA), NAFTA and South Asian Free Trade Area –SAFTA.

Customs union: In contrast, a customs union has free trade between its members, but common external tariff barriers against all non-members. An example of a common market is the Caribbean Community (CARICOM).

Monetary union: In the case of a monetary union, the members adopt the same currency. This implies a common central bank which controls the quantity of money and the

rate of interest and by so doing seeks to influence the rate of inflation in the member countries.

18 members of the EU have formed a monetary union with the euro (€) as its currency. It is called the Eurozone. Although each member has kept its own central bank, the Eurozone is managed by the European Central Bank which sets monetary policy.

Full economic union

Economic Union is the highest form of integration encompassing the features of a common market, but going further to develop some harmonization of economic policies. The EU, for example, has developed a range of policies in such areas as competition, agriculture and social policies.

The Common Agricultural Policy (CAP) is one such example. CARICOM has also moved in this direction by creating the CARICOM Single Market and Economy (CMSE).

CMSE members have adopted measures to converge and coordinate their macroeconomic policies, harmonize foreign investment decisions and facilitate technology transfer. In monetary and fiscal policy there are measures to coordinate exchange rate and interest rate policy as well as coordinate indirect taxes and national budget deficits.

In some ways economic integration into regional trading blocs can be regarded as a "second best solution" in that it enables members to enjoy the benefits of comparative advantage, but involves protectionist policies against non members and consequently stops short of allowing all nations in the world to benefit from free trade.

Trade Creation and Trade Diversion

A feature of customs unions and higher forms of economic integration is that member nations experience both trade creation and trade diversion.

Trade Creation

As a result of trade barriers being removed when a country enters a customs union, it can now buy goods at a lower price. For example, before joining the EU, if Malta wished to buy pasta from Italy it would have to pay a tariff thereby raising the price in Malta. Now Malta is a member of the EU, the tariff has been abolished and consumers can now purchase the pasta at a lower price, increasing their welfare. This shifting of consumption from high to low cost producer is known as trade creation.

Trade creation occurs when the removal of tariff barriers results in an increase in consumer welfare. In Figure below, D_H and S_H represent the domestic demand for and supply of tomatoes in Ireland. Assuming that:

1. Ireland imports tomatoes from Spain

2. The supply of tomatoes from Spain is perfectly elastic, so that the supply curve is Sw

3. Ireland imposes a tariff on Spanish tomatoes equal to P_2P_1.

The effective supply curve for tomatoes from Spain is, therefore, Sw + Tariff.

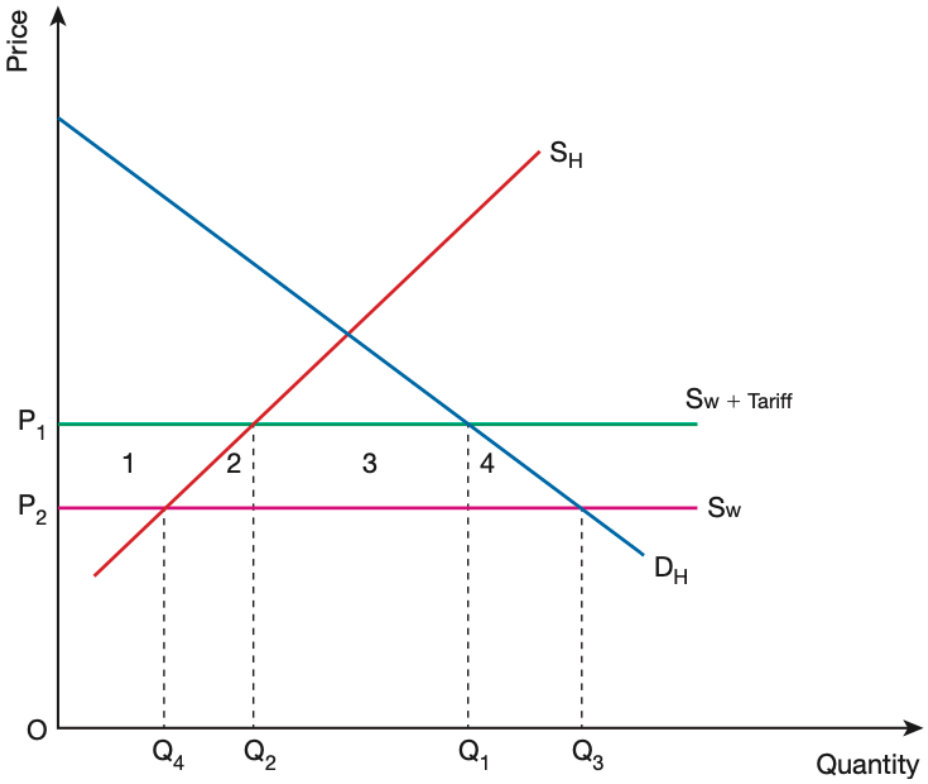
Originally, the quantity of tomatoes in Ireland will be Q1 of which OQ_2 is produced in the UK and Q_2Q_1 is imported. The price will be P_1. At this price Irish citizens' consumer surplus is given by the areas 1 + 2.

If Ireland and Spain enter into a customs union the tariff will be removed and the price of Spanish tomatoes falls to P_2. Consumption of tomatoes in Ireland increases to OQ_3 of which OQ_4 is supplied by Irish producers and Q_4Q_3 imported. Trade creation has resulted as there has been a movement away from high cost production to low cost production. Irish consumer surplus has now been increased by:

1 + 2 + 3+ 4

The overall welfare gain is, however, only areas 2 + 4 since area 1 represents a redistribution of producer surplus to consumers and area 3 a redistribution from the government to consumers (lost tariff revenue).

In this case there has been a net gain in welfare for Ireland.



Trade diversion

Trade diversion is when a tariff is imposed so that consumers can no longer benefit from low cost supply. Assume that before the creation of the customs union the UK is importing tomatoes from the cheapest world producers. In the Figure below, D_H and S_H again represent the UK domestic demand for and supply of tomatoes and Sw represents the world supply curve. Before the customs union, there were no tariffs on tomatoes. OQ_3 tomatoes would be consumed with OQ_4 produced in the UK and Q_2Q_3 imported.

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If now the UK and Spain become part of a customs union, then a tariff is imposed on imported tomatoes from outside the customs union meaning it is cheaper for the UK to purchase tomatoes from less efficient producers such as Spain. The price rises to Sw + tariff. The demand falls to Q_1, but UK production increases to Q_2 with Q_2Q_1 being imported from Spain. The results will be:

1. consumer welfare falls by 1 + 2 + 3 + 4
2. government revenue rises shown by 3
3. producer surplus rises by 1
4. deadweight loss (lost by consumers, but not gained by government/ producer) 2 + 4