



GCE A LEVEL

A520U30-1



THURSDAY, 15 OCTOBER 2020 – AFTERNOON

ECONOMICS – A level component 3
Evaluating Economic Models and Policies

2 hours 30 minutes

ADDITIONAL MATERIALS

A WJEC pink 16-page answer booklet.

INSTRUCTIONS TO CANDIDATES

Use black ink or black ball-point pen.

Answer **one** question from Section A.

Answer **one** question from Section B.

Answer **one** question from Section C.

INFORMATION FOR CANDIDATES

The number of marks is given in brackets at the end of each question or part-question.

You are reminded of the need for good English and orderly, clear presentation in your answers.

SECTION A

Answer one question from this section.

Either

1. MAJORITY OF AMERICANS THINK THAT GOVERNMENT INTERVENES TOO MUCH

- (a) Using diagrams, explain the ways in which allocative and productive efficiency are efficient. [10]
- (b) The efficiency of resource allocation in an economy would be improved by a reduction in the amount of government intervention. Discuss. [20]

Or

2. DEBENHAMS WARNS ON PROFITS, AFTER PRICE CUT FAILS TO ATTRACT MORE SHOPPERS

- (a) Explain, with the aid of a diagram, why price elasticity of demand changes along a downward sloping straight-line demand curve. [10]
- (b) Evaluate the extent to which knowledge of price elasticity of demand is important for decision making by firms and governments. Use diagrams to illustrate your answer. [20]

SECTION B

Answer one question from this section.

Either

3. CENTRAL BANKS LOOKING TO REVERSE QE

- (a) Using the quantity theory of money, explain why an increase in the money supply might cause a rise in inflation. [10]
- (b) Discuss whether a reversal of QE is likely to be economically beneficial. [20]

Or

4. TRADE TENSIONS SEE IMF CUT UK GROWTH FORECAST

- (a) With the aid of diagrams, explain the difference between actual growth and potential growth. [10]
- (b) To what extent is economic growth beneficial to an economy? [20]

SECTION C

Answer one question from this section.

Either

5. CHINA IN AFRICA – INFRASTRUCTURE INVESTMENT HELPING TO OVERCOME THE RESOURCE CURSE

- (a) Explain why dependency on a narrow range of primary products may damage an economy's economic development. [10]
- (b) Discuss whether an increase in inward foreign direct investment is a good way to improve economic development for countries that are primary product dependent. [20]

Or

6. BULGARIA FORECAST TO BE NEXT EUROZONE MEMBER

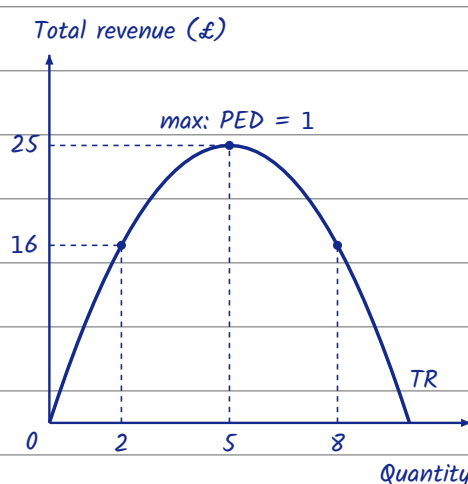
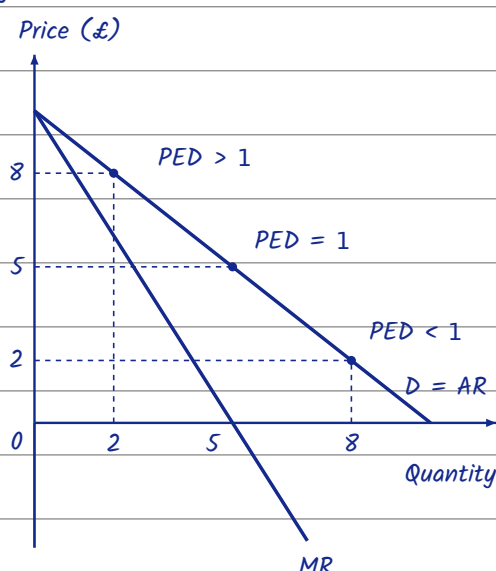
- (a) Explain, using a diagram, how an EU member could stabilise its currency against the euro prior to joining the eurozone. [10]
- (b) Discuss the possible benefits and drawbacks to EU member countries of adopting the euro. [20]

END OF PAPER

Question
number

2 (a)

Price elasticity of demand (PED) measures the responsiveness of quantity demanded to a change in the price of the good, *ceteris paribus*. It is calculated as $PED = \% \text{ change in quantity demanded} \div \% \text{ change in price}$. Demand is price elastic if the value (ignoring the minus sign) is greater than 1, unit elastic if it equals 1 and price inelastic if it is less than 1. On a downward sloping straight-line demand curve the slope is constant, but PED is not, as the diagram shows.



Using point elasticity, $PED = (\Delta Q / \Delta P) \times (P / Q)$. Along a straight line $\Delta Q / \Delta P$ is constant, so PED depends only on the ratio P / Q . At the top of the curve price is high and quantity is low, so a given change in price is a small percentage of P while the same change in quantity is a very large percentage of a small Q . P / Q is large, so demand is price elastic. As we move down the curve P falls and Q rises, so P / Q falls continuously and demand becomes less and less elastic.

In the diagram the demand curve is $P = 10 - Q$, so $\Delta Q / \Delta P = -1$. At $P = £8$

and $Q = 2$, $PED = -1 \times 8/2 = -4$ (elastic). At the mid-point $P = £5$ and $Q = 5$, $PED = -1 \times 5/5 = -1$ (unit elastic). At $P = £2$ and $Q = 8$, $PED = -1 \times 2/8 = -0.25$ (inelastic). So PED falls from infinity where the curve meets the price axis to zero where it meets the quantity axis.

The marginal revenue curve shows this clearly. For a straight-line demand curve MR has the same intercept but twice the slope ($MR = 10 - 2Q$), so it cuts the quantity axis at the mid-point of the demand curve. Above the mid-point, as price falls MR is positive, meaning total revenue rises when price is cut. This can only happen if the percentage rise in quantity is greater than the percentage fall in price, so demand must be elastic. For example, a cut from $£8$ to $£7$ raises TR from $£16$ to $£21$. At the mid-point $MR = 0$ and TR is at its maximum of $£25$, so $PED = 1$. Below the mid-point MR is negative: a price cut reduces total revenue (from $£3$ to $£2$, TR falls from $£21$ to $£16$), so the percentage rise in quantity must be smaller than the percentage fall in price and demand is inelastic.

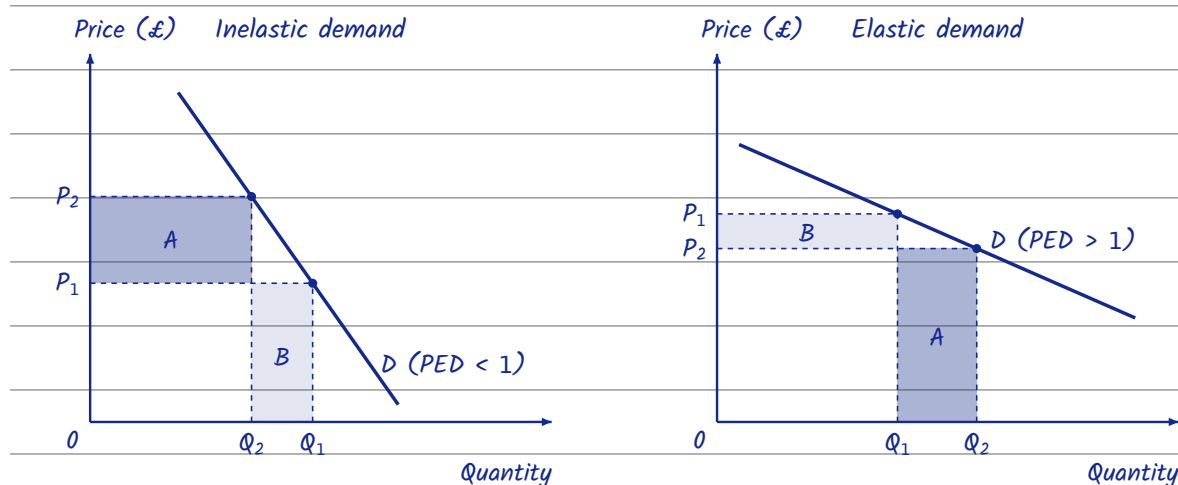
Therefore, even though the demand curve has a constant slope, PED changes along its length because the base values of P and Q used in the percentage changes change: demand is elastic above the mid-point, unit elastic at it and inelastic below it.

2 (b)

Price elasticity of demand (PED) measures the responsiveness of quantity demanded to a change in price. Knowledge of PED tells a decision maker how quantity demanded, and therefore total revenue ($P \times Q$), will respond to a change in price, which is why it can be very important for both firms and governments.

For firms, PED is central to pricing. The relationship between PED and total revenue is shown in the diagrams below. If demand is price inelastic, a rise in price from P_1 to P_2 causes a proportionately smaller fall in quantity, so the revenue gained (area A) is larger than the revenue lost (area B) and total revenue rises. If demand is price elastic, the firm should cut price: the fall from

P_1 to P_2 causes a proportionately larger rise in quantity, so area A is larger than area B and revenue rises.

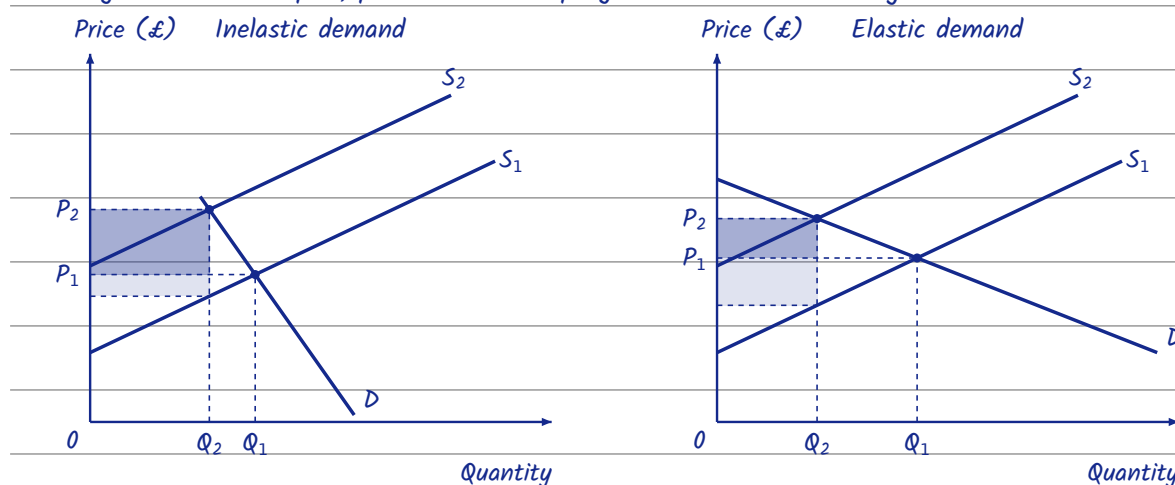


So a firm with inelastic demand, for example a rail company on commuter routes with few substitutes, can raise prices to increase revenue and, since output falls, costs fall too, so profits rise. The headline about Debenhams shows the danger of getting PED wrong: Debenhams cut prices expecting demand to be elastic, but the price cut failed to attract more shoppers, so demand was much less elastic than it believed. Quantity rose by a smaller percentage than the price fall, revenue fell and profits suffered. PED is also essential for price discrimination: a firm can only increase profit by charging different prices if the sub-markets have different PEDs, charging the higher price in the inelastic market (peak rail fares, business air travel) and the lower price in the elastic market (off-peak, students). It also helps firms predict how much of a cost increase or an indirect tax they can pass on to consumers.

For governments, PED is important when setting indirect taxes. The tax diagrams show a specific tax shifting supply from S_1 to S_2 .

As the tax diagrams show, when demand is price inelastic the price rises a lot (P_1 to P_2) and quantity falls only slightly, so tax revenue (the whole shaded rectangle) is large and most of the incidence falls on consumers (the darker area above P_1). This is why the government taxes goods such as tobacco, alcohol and petrol, which have inelastic demand: they raise large, reliable revenues to finance spending. When demand is elastic, quantity falls a lot, the

tax base shrinks and revenue is small, with most of the burden on producers, leading to lower output, profits and employment in the industry.



However, if the aim of a tax is to correct a negative consumption externality, such as smoking, inelastic demand means the tax will have a small effect on consumption, so the overconsumption and the welfare loss are only slightly reduced. A tax is more effective at changing behaviour when demand is elastic, as with the soft drinks levy, where firms reformulated products. The government also needs PED (and the Marshall-Lerner condition: the sum of the PEDs for exports and imports must be greater than 1) to judge whether a depreciation of the pound will improve the current account, and to judge the effect of subsidies or minimum prices, such as minimum unit pricing for alcohol.

On the other hand, the importance of PED is limited because knowledge of it is imperfect. PED values are estimates based on past data and, as shown in a straight-line demand curve, PED changes over the price range, so an estimate at one price may be wrong at another. It also changes over time as market conditions change: new entrants and online rivals make demand more elastic, and in a recession consumers become more price sensitive. Debenhams' problem was arguably not just PED, because its demand curve was shifting left as shoppers moved online, so no price cut could restore revenue. Demand is also usually more elastic in the long run than in the short run, so decisions based on short run PED may be misleading.

Other factors are just as important for firms. Price is only one part of the

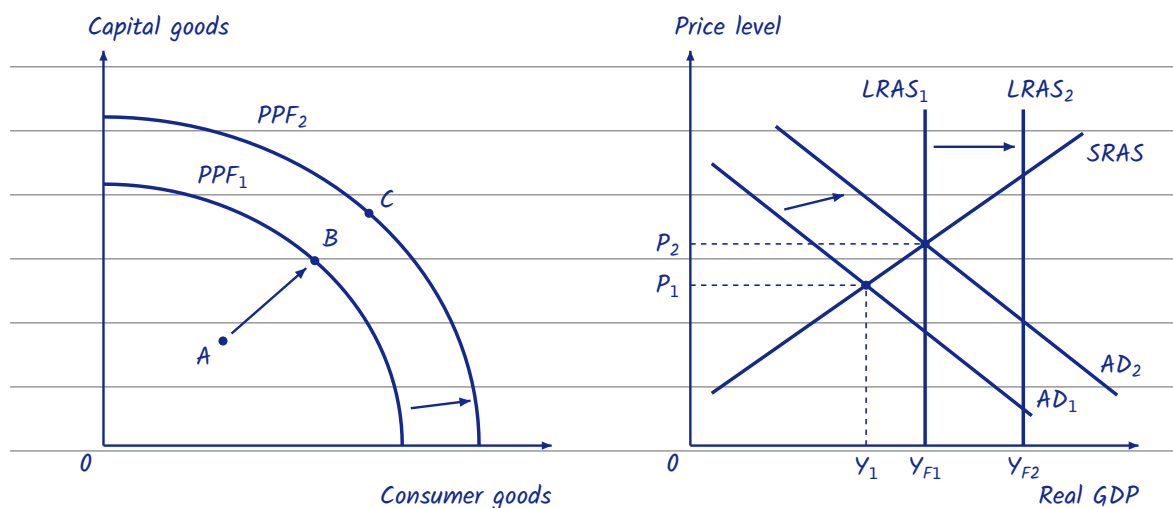
marketing mix: product, promotion and place matter too, and a firm with a weak brand may gain more from advertising or improving quality than from changing price. Income elasticity and cross elasticity also matter, as do the reactions of rivals in an oligopoly, where a price cut may simply be matched, so the firm faces a kinked demand curve. The importance of PED also depends on the firm's objective: a profit maximiser produces where $MC = MR$, a revenue maximiser where $MR = 0$ (unit elasticity), while a firm pursuing sales maximisation or growth may cut prices even if revenue falls.

Governments also have other considerations. Taxes on goods with inelastic demand are regressive, taking a larger share of the income of poorer households, so PED must be weighed against equity and the distribution of income. Taxes also affect macroeconomic objectives such as inflation, and PED is only relevant to indirect taxes on goods, not to income or corporation tax, where other elasticities such as labour supply matter.

In conclusion, knowledge of PED is very important, but it is a necessary rather than a sufficient condition for good decisions. It is most important for short term pricing and for setting indirect taxes on specific goods, where the impact on revenue depends directly on it. Its usefulness depends on how accurate and up to date the estimate is and on the time period, and it must be combined with other information: the firm's objectives, rivals' behaviour and shifting demand for firms, and equity, externalities and macro objectives for governments. Debenhams shows that misjudging PED can be costly, but also that understanding the wider market matters even more.

4 (a)

Actual growth is an increase in the real output of goods and services an economy actually produces, measured as the percentage change in real GDP over a year. Potential growth is an increase in the productive capacity of the economy, that is, the maximum output it could produce if all its factors of production were fully and efficiently employed. The difference between actual and potential output is the output gap.



In the PPF diagram, actual growth is a movement from point A, inside PPF_1 , to point B on PPF_1 . At A some resources are unemployed, so the economy can produce more of both goods simply by using spare capacity. Productive capacity has not changed. Potential growth is an outward shift of the PPF from PPF_1 to PPF_2 . This is caused by an increase in the quantity or quality of factors of production: a larger labour force (net migration, higher participation), more capital through investment, new technology, the discovery of new resources, or higher productivity from education and training. The economy can now reach point C, which was previously unattainable.

In the AD/AS diagram, the economy starts at Y_1 , below full capacity output Y_{F1} , with a negative output gap. An increase in aggregate demand from AD_1 to AD_2 , from higher consumption, investment, government spending or net exports, raises real GDP from Y_1 to Y_{F1} : this is actual growth, a movement along $SRAS$.

Potential growth is shown by a rightward shift of the long run aggregate supply curve from $LRAS_1$ to $LRAS_2$, raising full capacity output from Y_{F1} to Y_{F2} .

So actual growth is mainly demand-driven and short run, while potential (trend) growth is supply-driven and long run. Actual growth can exceed potential growth temporarily when an economy closes a negative output gap or runs a positive output gap, but this cannot last, since output cannot stay above capacity without inflation. Equally, potential growth does not raise output by itself: potential GDP is only reached if actual GDP rises through more economic

activity. The IMF cutting the UK growth forecast because of trade tensions is a fall in expected actual growth, as weaker exports and investment reduce AD, although lower investment may also slow potential growth in the long run.

4 (b)

Economic growth is an increase in real GDP. In the short run this is actual growth from rising aggregate demand; in the long run sustained growth requires potential growth, an increase in productive capacity shown by a rightward shift of LRAS. Growth is usually seen as a key macroeconomic objective, but whether it is beneficial depends on its nature and its costs.

The main benefit is higher living standards. Rising real GDP per capita means households can consume more goods and services, and in developing countries growth is the main way of reducing absolute poverty, as in China, where hundreds of millions have been lifted out of extreme poverty. Growth also creates employment. Labour is a derived demand, so as output rises firms hire more workers, reducing cyclical unemployment and the waste of resources it involves, although the pattern of jobs changes between sectors.

Growth also has a self-sustaining effect through the accelerator. Rising demand and output encourage firms to invest in new capital, and higher business confidence and profits make firms more willing to take risks. Investment is a component of AD, so it adds to actual growth, but it also increases the capital stock, shifting LRAS to the right and raising potential growth. Growth therefore improves the supply side of the economy and keeps inflation low in the long run.

There is also a fiscal dividend. As incomes and spending rise, tax revenues from income tax, VAT and corporation tax rise automatically, while spending on unemployment benefits falls. The budget deficit and the debt to GDP ratio fall, giving the government money to spend on public and merit goods such as health and education without raising tax rates. Finally, growth can bring environmental benefits: richer countries can afford cleaner technology, and as economies develop, energy intensity falls (the environmental Kuznets curve).

However, growth also has costs. If growth is driven by demand rising faster than productive capacity, a positive output gap opens. Firms compete for scarce labour and raw materials, leading to demand-pull and cost-push inflation, which reduces real incomes and international competitiveness. The central bank may then raise interest rates, which can cause a slowdown or recession, so rapid growth can create a boom and bust cycle, a conflict between macroeconomic objectives. Fast growth also tends to suck in imports, especially in the UK where the marginal propensity to import is high, worsening the current account deficit.

There are also environmental costs. Higher output creates more negative externalities such as pollution, carbon emissions and waste, and leads to the depletion of finite resources. Because these external costs are not included in GDP, measured growth may overstate the true improvement in welfare, and growth today may reduce the ability of future generations to meet their needs, so it is not sustainable. In addition, growth can increase inequality of income and wealth. The gains may go mainly to the owners of capital and highly skilled workers, while low-skilled workers or depressed regions gain little, so trickle-down may not happen and social divisions can grow. Higher GDP also ignores leisure, stress and quality of life, and evidence such as the Easterlin paradox suggests happiness does not rise much once incomes are high.

How beneficial growth is therefore depends on several factors. Firstly, the type of growth: growth from supply-side improvements in productivity and investment shifts LRAS and is non-inflationary and sustainable, whereas growth from a consumer boom financed by debt is likely to be followed by inflation and recession. Secondly, the rate of growth: steady growth close to the trend rate (around 2% a year for the UK) gives most of the benefits with few costs, while very rapid growth brings overheating and environmental damage. Thirdly, the level of development: in a low income country (LDC) the marginal benefit of extra income is very large because it pays for food, clean water, healthcare and education, so growth is clearly beneficial; in a high income country (MDC)

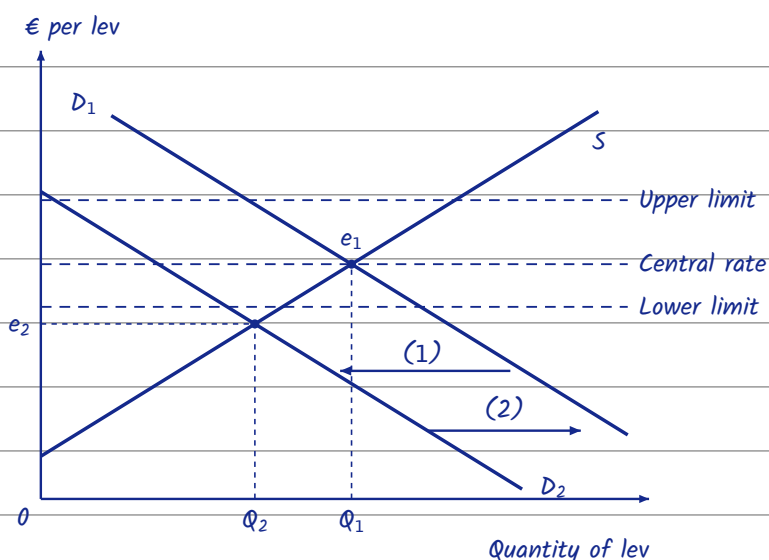
the extra benefit is smaller because of diminishing marginal utility, while the environmental costs may be larger. Finally, the role of government matters: progressive taxation, benefits and spending on education can spread the gains more evenly, and carbon taxes or regulation can reduce external costs, so many costs of growth are not inevitable.

In conclusion, economic growth is beneficial to an economy to a large extent, because it is the main way to raise living standards, reduce unemployment and poverty and finance public services. However, it is not beneficial at any cost.

The benefits are greatest when growth is sustainable, driven by the supply side, close to the trend rate and accompanied by government policies that share the gains and correct externalities. For the UK, the cut in the growth forecast is therefore a concern, because slower growth means fewer jobs and less tax revenue, but the aim should be steady, sustainable and inclusive growth rather than the fastest possible growth.

6 (a)

Before joining the eurozone, an EU member such as Bulgaria must meet the convergence criteria, which include exchange rate stability: it must take part in the Exchange Rate Mechanism (ERM II) for at least two years without severe tensions. In ERM II the currency is fixed to a central rate against the euro and may only move within a band, normally $\pm 15\%$ of the central rate, so the government and central bank must keep the currency between an upper and a lower limit. Bulgaria entered ERM II in 2020 at a central rate of 1.95583 lev per euro.



In the diagram the exchange rate is set by the demand for and supply of lev. Initially D_1 and S give an equilibrium at e_1 , the central rate. If confidence falls or Bulgaria's imports rise relative to its exports, demand for lev falls to D_2 (arrow 1). The equilibrium rate would fall to e_2 , below the lower limit, so the authorities must act to raise demand back to D_1 (arrow 2). There are two main policies.

Firstly, the central bank can use its foreign exchange reserves. It sells euros from its reserves and buys lev in the foreign exchange market. This increases the demand for lev, shifting demand to the right from D_2 back towards D_1 , so the exchange rate rises back inside the band. If the lev were instead rising towards the upper limit, the central bank would do the opposite: sell lev and buy euros, increasing the supply of lev and adding to its reserves. The limit of this policy is that reserves are finite, so it works best for short term pressure. Secondly, the central bank can change domestic interest rates. A rise in interest rates relative to those set by the ECB increases the return on lev deposits and bonds, attracting hot money inflows. Foreign investors buy lev, raising demand, while domestic savers are less likely to move funds abroad, reducing the supply of lev, so the exchange rate rises back inside the band. A cut in interest rates would reduce the exchange rate if it were too strong. Higher rates also reduce consumer spending and imports, which further reduces the supply of lev over

time.

In the long run the government can support these with deflationary fiscal policy and supply-side policies that keep inflation close to eurozone levels, so that the country stays competitive and the currency does not come under pressure. The credibility of the commitment is also important: if markets believe the authorities will defend the band, speculation is reduced and less intervention is needed.

6 (b)

Adopting the euro means joining a single currency area in which the national currency is replaced by the euro and monetary policy, including the interest rate, is set by the European Central Bank (ECB) for the whole eurozone. For an EU member this brings significant benefits but also important drawbacks.

The first benefit is lower transaction costs. Firms and tourists no longer pay commission or lose on the buy-sell spread when changing currency for trade with other eurozone members, which lowers costs, raises profit margins and makes trade cheaper. Secondly, there is price transparency: prices across the eurozone are quoted in the same currency, so consumers can compare prices easily and firms can source cheaper raw materials. This increases competition, puts downward pressure on prices and improves efficiency, helping the Single Market reach its full potential.

Thirdly, exchange rate uncertainty with other members is eliminated. A sudden appreciation can wipe out the profitability of exports, so uncertainty discourages trade and investment. With a single currency firms can plan ahead with confidence, increasing trade and investment, which raises AD and, through capital accumulation, LRAS, leading to higher economic growth. It may also attract inward investment from outside the EU, since multinationals can serve a market of over 300 million people with one currency. Finally, membership can improve inflation performance. The ECB is independent and committed to keeping inflation below but close to 2%, so countries with a history of high inflation import this credibility. Lower expected inflation and a stronger currency

can reduce bond yields and interest rates, cutting borrowing costs for firms, households and governments, and the financial sector benefits from cheaper trading in bonds, shares and banking assets.

However, there are significant drawbacks. The most important is the loss of independent monetary policy. The ECB sets one interest rate for all members, a 'one size fits all' policy. If a member's economic cycle is out of line with the rest of the eurozone, the rate will be wrong for it. In the 2000s ECB interest rates were too low for fast-growing Ireland and Spain, fuelling housing bubbles, which burst after 2008 and caused deep recessions. A member in recession cannot cut its own interest rate to boost AD.

Secondly, the country can no longer depreciate its currency to restore competitiveness or correct a current account deficit. Instead it must go through internal devaluation, reducing wages and prices relative to other members, which usually requires high unemployment. Greece in the debt crisis is the clearest example, with unemployment reaching about 27%. Thirdly, fiscal policy is also constrained, since members are expected to keep budget deficits below 3% of GDP and debt below 60% of GDP under the Stability and Growth Pact, limiting the use of fiscal policy to offset a shock, and there is no large system of fiscal transfers between members, unlike between regions of one country. There are also changeover costs, such as new tills, menu costs and the risk of prices being rounded up, and once a member it is very difficult to leave the eurozone.

The balance between benefits and drawbacks depends on the extent to which the eurozone is an optimal currency area for the country. Firstly, it depends on how much it trades with the eurozone: the larger the share of trade, the greater the gains from lower transaction costs and certainty. Secondly, it depends on how synchronised its economic cycle is with the core eurozone economies at the point of entry: if cycles are harmonised, the ECB's interest rate will usually suit it and the loss of monetary independence costs little.

Thirdly, it depends on the flexibility of its product and labour markets: if wages and prices adjust quickly and labour is mobile, the economy can adjust to shocks

without its own exchange rate or interest rate. Finally, it depends on fiscal discipline, as a country that cannot keep its budget under control is vulnerable to a debt crisis inside the euro.

The costs also depend on the country's starting point. For a country like Bulgaria, which has fixed the lev to the euro for many years through a currency board, independent monetary policy has already been given up, so the main drawback has largely been paid already, while adopting the euro adds a vote on the ECB Governing Council, lower borrowing costs and fewer transaction costs. For a large economy with its own cycle and a floating currency, such as Sweden, the loss of monetary flexibility would be a much bigger cost.

In conclusion, adopting the euro brings real microeconomic benefits through lower transaction costs, transparency and certainty, which boost trade, investment and growth over the long run. However, the macroeconomic drawbacks of losing the interest rate and the exchange rate as tools can be severe in a crisis, as Greece, Spain and Ireland showed. On balance, adoption is most likely to be beneficial for small, open economies that trade heavily with the eurozone, already peg to the euro and have flexible markets and sound public finances, and least beneficial for large economies whose cycles differ from the eurozone average.