



GCE A LEVEL

A520U30-1



S19-A520U30-1



ECONOMICS – A level component 3
Evaluating Economic Models and Policies

TUESDAY, 4 JUNE 2019 – MORNING

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.

1. MANY UK MARKETS NOW MORE CONTESTABLE

- (a) Distinguish, using examples, between structural and behavioural barriers to entry. [10]
- (b) Evaluate the extent to which competition and contestability are desirable in product markets. [20]

2. \$92BN PER YEAR NEEDED TO IMPROVE SUB-SAHARAN AFRICA'S ROAD AND BRIDGE INFRASTRUCTURE

- (a) Explain why public goods are an example of market failure. [10]
- (b) Discuss whether government attempts to correct market failure do more harm than good. [20]

SECTION B

Answer one question from this section.

3. NEW REGULATORY FRAMEWORK FOR FINANCIAL SECTOR

- (a) Explain why economies such as the UK need a legal framework of regulation for the financial sector. [10]
- (b) Evaluate the extent to which the UK's financial sector is beneficial to the UK economy. [20]

4. 10 YEARS ON FROM THE CRISIS; GREEK UNEMPLOYMENT STILL OVER 20%

- (a) Explain the process by which neo-classical economists argue that the economy can adjust to long-run equilibrium following a negative demand side shock. Use a diagram to support your answer. [10]
- (b) Discuss the extent to which economies are likely to recover quickly from negative demand side shocks in reality. [20]

SECTION C

Answer one question from this section.

5. POSITIVE SIGNS OF INCREASED ECONOMIC DEVELOPMENT IN SOUTH ASIA

(a) Explain some of the possible measures/indicators of economic development in an LEDC. [10]

(b) Evaluate the possible approaches to raising the level of economic development in LEDCs. [20]

6. NIGERIAN CENTRAL BANK SELLS \$4BN ON FOREIGN EXCHANGE MARKETS TO SUPPORT EXCHANGE RATE

(a) Using a diagram(s), explain how the exchange rate will be determined in a free-floating exchange rate system. [10]

(b) Discuss the extent to which it is desirable for a central bank to use foreign currency reserves to support its exchange rate. [20]

END OF PAPER

Surname	<i>StemUp Model Solution</i>
Answer booklet	Write the question number in the left-hand margin at the start of each answer.

Question
number

2 (a)

Market failure occurs when the free market, left to the price mechanism, fails to allocate resources efficiently, so the equilibrium output does not maximise social welfare (community surplus). Public goods are an example of complete (or total) market failure, sometimes called a 'missing market', because the free market will not provide them at all, even though society values them.

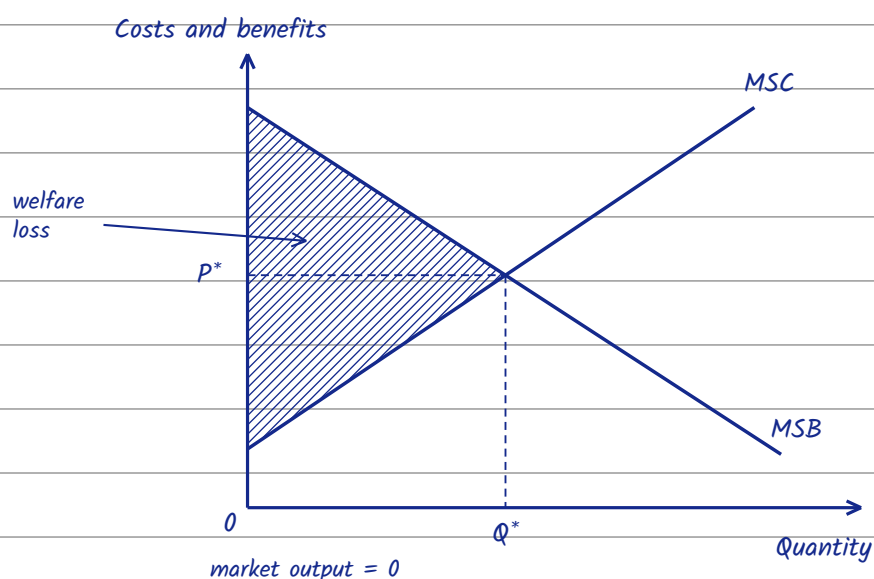
A public good has two key characteristics. First, it is non-excludable: once it is provided, it is impossible (or prohibitively expensive) to prevent people who have not paid from benefiting from it. Second, it is non-rival

(non-diminishable): one more person consuming the good does not reduce the amount available to everyone else, so the marginal cost of an extra user is zero. A pure public good, such as national defence, is also non-rejectable, as people cannot choose to opt out of consuming it. Other examples include street lighting, flood defences, lighthouses and, to a large extent, un-tolled local roads and bridges like those in Sub-Saharan Africa, where an estimated \$92bn per year is needed to improve infrastructure.

Non-excludability creates the free-rider problem. Because people can enjoy the good whether or not they pay, each rational consumer has an incentive to hide their true valuation and wait for someone else to pay. Effective (revealed) demand in the market is therefore close to zero, even though the marginal social benefit (MSB) is high. A private firm cannot charge a price and so cannot cover its costs or make a profit, so it will not supply the good. A rural road in Africa could benefit thousands of farmers by cutting transport costs, but no private firm could collect enough revenue from road users to build it.

Non-rivalry adds to the problem: even if a firm could exclude non-payers, the marginal cost of an extra user is zero, so charging a price above zero would

exclude people who would benefit at no extra cost to society, which is allocatively inefficient.



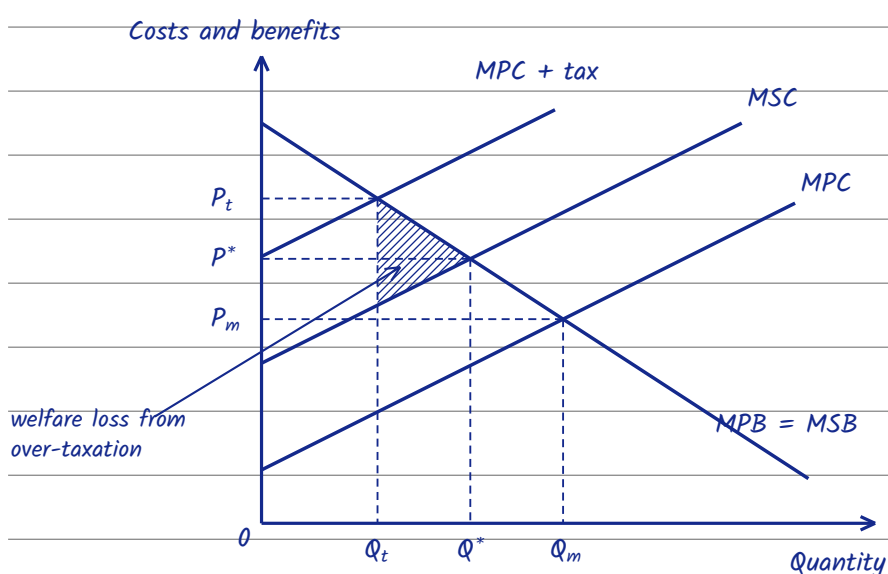
The diagram shows the result. The socially optimal output is Q^* , where $MSB = MSC$, but because of free-riding the market output is zero. Every unit between 0 and Q^* has an MSB greater than its MSC , so the shaded area is the welfare loss, the community surplus that society fails to gain. Resources are misallocated: they are not used to produce goods that society values more highly than their cost and are used instead in other, less valuable sectors. Since the free market fails to maximise welfare, this justifies the state providing public goods, financed through taxation, which overcomes the free-rider problem.

2 (b)

Market failure is where the free market misallocates resources, for example through externalities, public goods, merit and demerit goods, information gaps or monopoly power. Government failure occurs when government intervention to correct a market failure leads to a further misallocation of resources and a net welfare loss, so society is worse off than before. A related idea is the law of unintended consequences, where a policy creates unexpected negative outcomes. Governments intervene in three main ways: financial interventions (indirect taxes, subsidies and direct state provision), legislative interventions (regulations,

quotas, bans and minimum prices) and information interventions (labelling, advertising campaigns and nudges).

Why intervention may do more harm than good. The main problem is imperfect information. To set a Pigouvian tax equal to the marginal external cost, the government must value the externality in money terms, which is very difficult. If the tax is set too high, as the diagram shows, the private cost ($MPC + \text{tax}$) rises above MSC , output falls to Q_t , below the social optimum Q^* , and the shaded triangle is a new welfare loss from over-taxation. High taxes also create unintended consequences: very high duties on tobacco and alcohol in the UK encourage smuggling, counterfeit goods and black markets, so tax revenue is lost, consumption is not reduced as much as planned and criminal activity is funded.



Similarly, the state may over-provide or under-provide public goods because it is hard to calculate the true social benefit: there is no price signal, so a government could spend too much of the \$92bn on prestige bridges that are little used, while rural roads that would add more to welfare are neglected, an opportunity cost of resources that could have been used for health or education.

Regulations can create perverse incentives. EU fishing quotas, intended to prevent the over-fishing of a common resource, led to millions of tonnes of

dead fish being thrown back into the sea (discards) because boats had exceeded their quota for one species. Subsidies can also go wrong: in the late 1990s and early 2000s the UK government encouraged diesel cars through lower vehicle excise duty because they emit less CO_2 , but diesel emits more nitrogen oxides and particulates, worsening urban air pollution and health. The EU ban on traditional light bulbs was similarly criticised, as early energy-efficient bulbs were expensive and contained mercury. Public choice theory adds that politicians may choose policies that win votes in the short term rather than those that maximise welfare, and regulators may suffer regulatory capture. Finally, intervention has administrative and compliance costs which may exceed the benefits.

Why intervention often does more good than harm. Many interventions clearly correct market failure. Without the state, public goods such as defence, street lighting and roads would not be provided at all, so even an imperfect level of provision is better than zero output and a complete welfare loss. Regulation such as the smoking ban in public places, compulsory seatbelts and the UK sugar tax (which led many producers to cut the sugar content of drinks) have reduced negative externalities with relatively few side effects. The landfill tax has cut the amount of waste sent to landfill. Taxes on demerit goods also raise revenue that can fund the NHS, which treats the external costs.

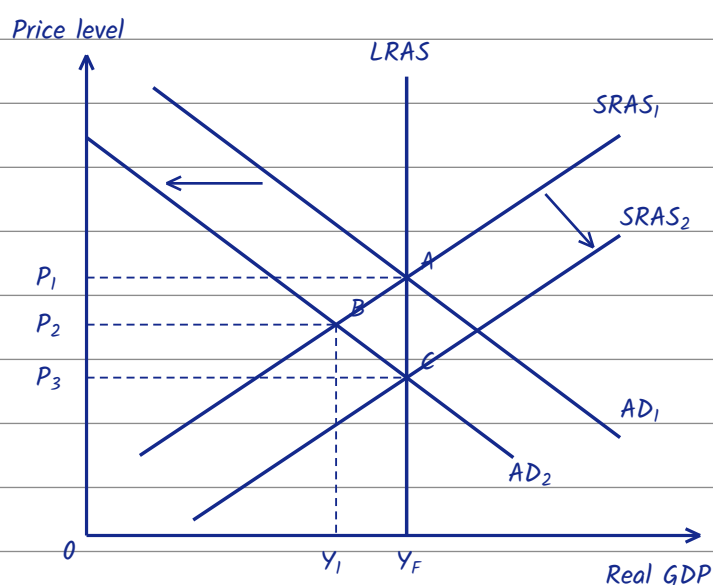
Evaluation. Whether intervention does more harm than good depends, first, on the comparison being made. The right test is not whether the intervention is perfect but whether the outcome is better than the free market: even a tax that is set slightly wrong may move output much closer to Q^* than the market output Q_m , so the welfare gain outweighs the new, smaller welfare loss. Second, it depends on the type of intervention. Information campaigns and well-designed regulations tend to have small side effects, whereas very high taxes, price controls and complex subsidies are more likely to cause black markets, shortages and distortions. Third, it depends on the quality of information and of institutions: interventions in countries with good data,

independent regulators and low corruption are much more likely to succeed than in countries with weak governance, which is a real risk for some infrastructure projects in Sub-Saharan Africa. Fourth, it depends on the time scale, because policies can be reviewed and corrected: the UK has since reversed its diesel incentives, and the EU introduced a discard ban in 2015.

Overall, government attempts to correct market failure do not usually do more harm than good. Where the market failure is large, as with public goods and serious externalities, intervention is essential and generally improves welfare even if it is imperfect. Intervention is most likely to do more harm than good when the market failure is small, information about external costs and benefits is poor, the policy is a blunt instrument such as a very high tax or a ban, and the government is not willing to monitor and adjust the policy over time.

4 (a)

A negative demand side shock is a sudden fall in aggregate demand ($AD = C + I + G + (X - M)$) at every price level, for example a collapse in confidence and bank lending after a financial crisis, or the large cuts in government spending in Greece after 2010. Neo-classical (free market) economists believe that, if markets are flexible, the economy will automatically adjust back to its long run equilibrium at full employment, without government intervention.



Short run. The economy starts at A, where $AD_1 = SRAS_1$, on the vertical LRAS

at full employment output Y_F and price level P_1 . The shock shifts AD left to AD_2 . In the short run, money wages and other factor prices are fixed, so firms move down $SRAS_1$ to the new short run equilibrium B: real GDP falls to Y_1 and the price level falls to P_2 . There is now a negative output gap and unemployment rises above its natural rate (NAIRU).

Long run adjustment. With output below Y_F , there is excess supply in the labour market (and other factor markets): more people want to work at the current real wage than firms wish to employ. Because neo-classical economists assume wages and prices are flexible, unemployed workers accept lower money wages and the cost of other inputs falls. This reduces firms' costs of production at every level of output, so SRAS shifts down (right) from $SRAS_1$ to $SRAS_2$.

As the price level falls, there is an extension (movement down) along AD_2 . Lower prices increase the real value of people's money and savings (the real balance or wealth effect), so consumption rises; they make domestic goods more competitive against foreign goods, so exports rise and imports fall (the trade effect); and they reduce the demand for money, lowering interest rates and boosting investment and consumer spending (the real interest rate effect). Real GDP therefore rises from Y_1 back towards Y_F .

The process continues until the excess supply in factor markets is eliminated, and the economy reaches the new long run equilibrium C, back on LRAS at full employment output Y_F but at a lower price level P_3 . Unemployment has returned to its natural rate. Neo-classical economists therefore argue that the LRAS is vertical, a demand shock only affects real output in the short run, and in the long run it only changes the price level, so demand management by the government is unnecessary.

4 (b)

In neo-classical theory, flexible wages and prices mean that the economy returns to full employment after a negative demand shock. In reality, recovery is often slow. Ten years after the 2008 financial crisis, Greek unemployment

was still around 20%, having peaked at about 27% in 2013, and real GDP was still about a quarter below its pre-crisis level. Keynes argued that 'in the long run we are all dead': the key question is how quickly the self-correcting process works.

Reasons why recovery may be slow. First, labour markets are imperfect, so money wages are sticky downwards. Employment protection legislation, minimum wage laws, trade union power and long-term wage contracts prevent wages from falling, and workers resist pay cuts because of money illusion and fairness. Firms also pay efficiency wages to keep morale and productivity high. If wages cannot fall, firms' costs do not fall, SRAS does not shift right and the economy can stay at a below full employment equilibrium such as Y_1 on my diagram in part (a) for many years, with persistently high unemployment. Second, product markets are imperfect, so prices are sticky even when costs fall. Firms with monopoly or oligopoly power, for example in energy, rail fares or mobile phone contracts, may keep prices high to protect profit margins, and menu costs discourage frequent price changes. If the price level does not fall, the real balance, trade and interest rate effects do not occur and AD does not extend.

Third, falling prices can make the problem worse. Deflation increases the real value of debt, so indebted households and firms cut spending further (debt deflation), and consumers may delay purchases expecting lower prices, shifting AD further left. Japan has suffered weak growth and deflation for much of the period since its asset bubble burst in 1990. Fourth, the interest rate effect may not work in a liquidity trap: when interest rates are already near zero, lower prices cannot reduce interest rates further, and in any case, if confidence is very low, firms will not invest however low rates are.

Finally, hysteresis means a long recession can damage the supply side.

Long-term unemployed workers lose skills and motivation, firms close and investment is cut, so LRAS shifts left and the natural rate of unemployment rises. In Greece, as a member of the eurozone, there was no option to devalue

the currency or cut interest rates to speed up recovery, and austerity imposed as part of the bail-out reduced AD further.

Reasons why recovery may be quicker. Some economies do recover relatively quickly. By 2019 the UK, the US and Germany had unemployment rates close to or below their pre-crisis levels, around 4% in the UK and US. This suggests that where labour and product markets are more flexible, for example the UK with zero-hours contracts, low union membership and real wage falls of around 10% after 2008, workers price themselves back into jobs and the adjustment works. Also, governments rarely wait for self-correction. Automatic stabilisers, such as falling tax revenue and rising benefit payments in a recession, cushion the fall in AD. Discretionary fiscal stimulus, interest rate cuts to 0.5% and quantitative easing in the UK and US boosted AD and probably shortened the recession, and supply side policies that make labour and product markets more flexible can speed up the neo-classical adjustment.

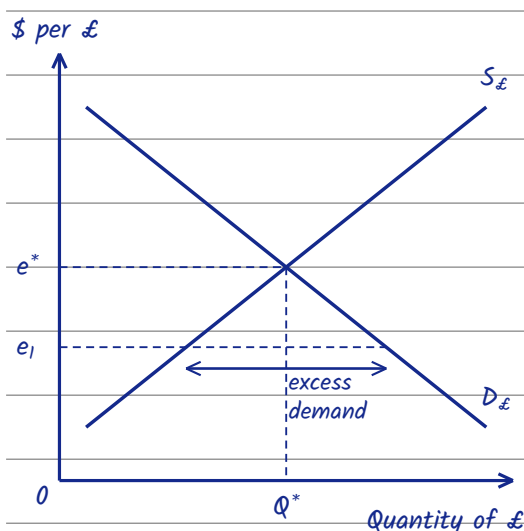
Evaluation. How quickly an economy recovers depends on several factors. It depends on the size and cause of the shock: a mild fall in AD is corrected more quickly than a deep financial crisis in which banks are damaged and households and governments must reduce debt for years. It depends on the flexibility of labour and product markets, which varies greatly between countries. It depends on the policy response: economies with their own currency and central bank can use monetary policy and depreciation, whereas eurozone members like Greece and Spain could not. It also depends on whether the 'recovery' is genuine, since some argue that very low interest rates and QE have produced asset price bubbles and high debt rather than a sustainable recovery.

Overall, I do not think economies are likely to recover quickly from negative demand side shocks in reality. All economies do recover eventually, but because wages and prices are sticky downwards and confidence can stay low, the self-correcting mechanism is usually slow, as the experiences of Greece and Japan show. Quick recovery is most likely in economies with flexible markets, a

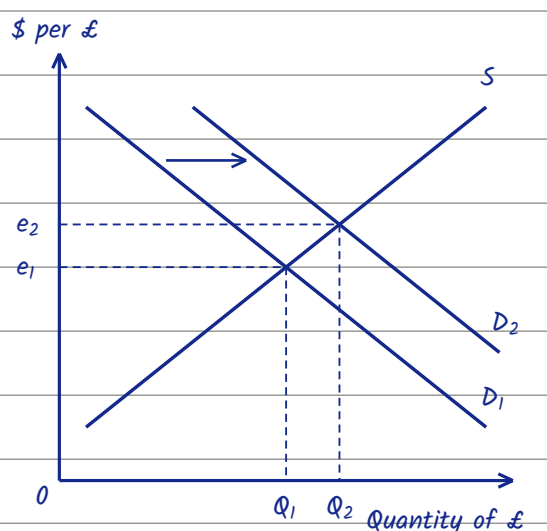
modest shock and the ability to use active fiscal and monetary policy, which suggests the Keynesian view that intervention is needed is more realistic than relying on the market alone.

6 (a)

An exchange rate is the price of one currency in terms of another, for example \$1.30 per £1. In a free-floating exchange rate system, the exchange rate is determined purely by market forces, the demand for and supply of the currency on the foreign exchange market, with no intervention by the government or central bank to target a particular rate. The equilibrium exchange rate is where the demand for the currency equals its supply.



(a) equilibrium at e^*



(b) rise in demand: appreciation

The demand for pounds comes from foreigners who need sterling to buy UK exports of goods and services (for example US tourists visiting London or buyers of UK cars), from overseas investors buying UK assets (foreign direct investment and portfolio investment, often attracted by higher UK interest rates) and from speculators who expect the pound to rise. The demand curve slopes downward: when the pound is cheaper, UK exports and assets are cheaper in dollar terms, so more pounds are demanded.

The supply of pounds comes from UK residents who sell pounds to buy foreign currency in order to pay for imports of goods and services, to invest overseas, or to speculate. The supply curve slopes upward: when the pound is worth more

dollars, imports and overseas assets are cheaper in sterling terms, so UK residents buy more of them and supply more pounds.

In diagram (a) above, the equilibrium exchange rate is e^* , where $D_{\pounds} = S_{\pounds}$ at Q^* . If the exchange rate were below equilibrium at e_1 , there would be excess demand for pounds: UK exports and assets would look cheap to foreigners, while imports and overseas assets would look expensive to UK residents. The excess demand bids up the price of sterling, which chokes off some demand for UK goods and assets (a contraction of demand) and encourages more imports and capital outflows (an extension of supply), until the market clears at e^* . If the rate were above e^* , excess supply would push the pound down in the same way.

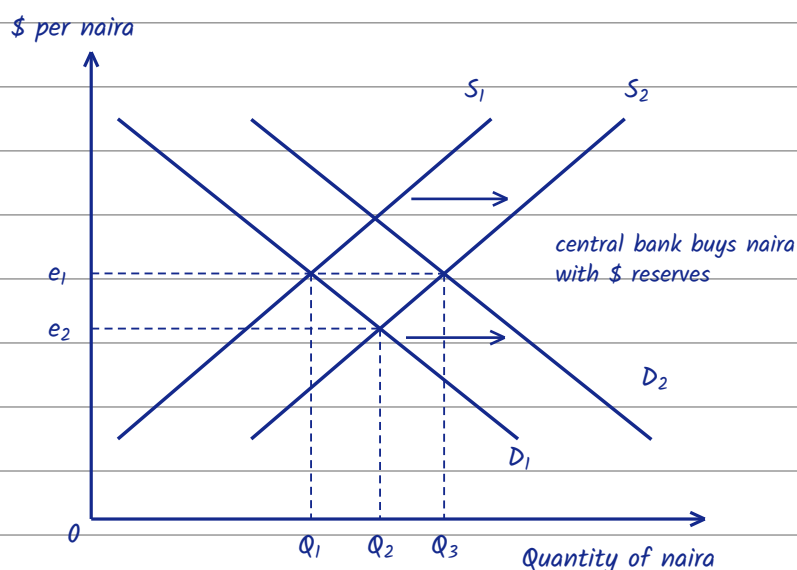
The exchange rate changes whenever the demand or supply curve shifts. In diagram (b), an increase in UK interest rates relative to other countries, higher UK incomes abroad or improved UK competitiveness raises the demand for pounds from D_1 to D_2 , so the pound appreciates from e_1 to e_2 . Conversely, higher UK inflation would raise imports (supply of pounds shifts right) and reduce exports (demand shifts left), causing the pound to depreciate. In a free float these movements happen automatically and continuously, so the exchange rate can help correct a current account imbalance.

6 (b)

A central bank can intervene in the foreign exchange market to support (prevent a fall in) its exchange rate by using its foreign currency reserves. For example, the Central Bank of Nigeria sold \$4bn to support the naira. Selling dollars and buying naira increases the demand for the naira, which is then removed from circulation. This is a managed float or a fixed (pegged) exchange rate system rather than a free float.

The diagram shows how it works. Nigeria earns about 90% of its export revenue from oil, so a fall in oil prices reduces the demand for naira, and capital flight by investors increases the supply of naira from S_1 to S_2 . Without intervention the naira would depreciate from e_1 to e_2 . By selling dollars from

its reserves and buying naira, the central bank shifts demand from D_1 to D_2 , so the exchange rate stays at e_1 , but the quantity of naira traded rises to Q_3 .



Why it may be desirable. First, it prevents a sudden, large depreciation. A falling naira raises the price of imports, and since Nigeria imports much of its fuel, food and machinery, this would cause cost-push inflation, a fall in real incomes and higher living costs, especially for the poor. Price elasticity matters here: if Nigeria's oil exports are price inelastic, a depreciation would not raise export volumes much, so it would worsen rather than improve the current account in the short run, as the J-curve and Marshall-Lerner condition suggest. Second, supporting the currency is an anti-inflation policy, helping to keep inflation expectations under control. Third, smoothing short-term fluctuations reduces uncertainty, which builds business and investor confidence, encouraging trade and FDI. Fourth, if the fall is due to a speculative attack rather than weak fundamentals, a show of strength using reserves can deter speculators and the rate may be sustainable in the long run. Finally, many LEDCs keep their currency strong to allow cheaper imports of capital equipment and technology, and to reduce the burden of foreign currency debt.

Why it may not be desirable. Reserves are finite. Nigeria's reserves were only around \$40bn to \$45bn, so repeated sales of \$4bn cannot continue for long, and once they run low the central bank will be forced to let the currency fall

anyway. Reserves used in this way have an opportunity cost: they could have been used to pay for essential imports or to provide a buffer in a future crisis, and they are hard to rebuild. Speculators often have more funds than central banks: in 1992 the UK spent billions of pounds trying to keep sterling in the ERM, but on Black Wednesday it was forced to leave, at an estimated cost of £3.3bn. If the exchange rate is overvalued because of fundamental problems, such as dependence on oil, supporting it only delays the necessary adjustment. An overvalued currency makes exports less price competitive and imports cheaper, which can harm domestic producers, cause a current account deficit and slow growth. A depreciation, by contrast, could help Nigeria diversify its economy away from oil. Intervention may also cut the domestic money supply, putting deflationary pressure on the economy.

Evaluation. How desirable intervention is depends on several factors. It depends on why the currency is falling: if it is a short-term blip or a speculative attack, intervention is sensible, but if there are structural problems, such as a permanent fall in oil prices, it is a waste of reserves. It depends on the level of reserves relative to the amount that must be committed: a country with large reserves, like China, can sustain intervention far longer than Nigeria. It depends on what the central bank wants to achieve and over what timeframe: temporary smoothing is much easier than holding a fixed rate. It depends on whether other policies are used as well: higher interest rates, capital controls or fiscal reforms make intervention much more credible. It depends on the needs of the domestic economy, for example whether it is a net importer of essential goods such as food and fuel. Finally, support from organisations like the IMF or other central banks can make intervention more effective.

Overall, using reserves to support the exchange rate is desirable in the short run to smooth temporary volatility, prevent a disorderly collapse and limit imported inflation, particularly for an import-dependent LEDC like Nigeria. However, it is not desirable as a long-term policy to hold an exchange rate that does not reflect economic fundamentals, because reserves will eventually

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run out, as the UK found in 1992. The best approach is limited intervention combined with interest rate policy and supply side reforms, allowing the currency to move gradually towards its equilibrium level.