GCE A LEVEL

1520U40-1

S23-1520U40-1

TUESDAY, 13 JUNE 2023 – MORNING

ECONOMICS – A2 unit 4
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. Do not use gel pen or correction fluid.

You may use a pencil for graphs and diagrams only.

Answer **one** question from Section A.

Answer **one** question from Section B.

Answer **one** question from Section C.

Write your answers in the separate answer booklet provided following the instructions on the front of the answer booklet.

Use both sides of the paper. Write only within the white areas of the booklet.

Write the question number in the two boxes in the left-hand margin at the start of each answer, for example **0 1** .

Leave at least two line spaces between each answer.

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 necessity for good English and orderly, clear presentation in your answers.

You are reminded that this paper is synoptic and so will test understanding of the connections between the different elements of the subject.

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SECTION A

Answer **one** question from this section.

Either,

0 1 **a)** Using examples, explain the role of barriers to entry in determining market structure. [10]

b) With reference to game theory and your own examples, evaluate the likely costs of oligopolistic market structures. [20]

Or,

0 2 **a)** Explain, using a relevant diagram(s), the differences between the objectives of profit maximisation and revenue maximisation. [10]

b) Evaluate the economic impact of firms choosing to grow. [20]

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SECTION B

Answer **one** question from this section.

Either,

0 3 **a)** Explain how the position of an economy's long-run Phillips curve could shift. Use a diagram in your answer. [10]

b) Assess the likely impact of UK economic growth on the Welsh economy. [20]

Or,

0 4 **a)** Explain the problems that might arise when measuring the rate of unemployment in an economy. [10]

b) Discuss the possible causes of unemployment in Wales. [20]

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SECTION C

Answer **one** question from this section.

Either,

0 5

a) Explain the difference between GDP and GNP, and the significance of purchasing power parity adjustments for measuring living standards. [10]

b) Evaluate the extent to which changes in the Human Development Index (HDI) are a good indicator of changes in the level of development in an economy. [20]

Or,

0 6

a) Explain why a currency devaluation may not improve an economy's trade balance. [10]

b) Discuss the view that free international trade is more beneficial for MEDCs than LEDCs. [20]

END OF PAPER

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

Question number

0 1 (a) Barriers to entry are obstacles that make it difficult or expensive for new firms to join a market and compete with incumbent firms. Market structure is the way an industry is organised, classified by the number and size of firms, the degree of product differentiation, the level of barriers to entry and exit, and the short-run and long-run outcomes. The spectrum runs from perfect competition (many firms, no barriers) through monopolistic competition and oligopoly to monopoly (one firm, very high or total barriers).

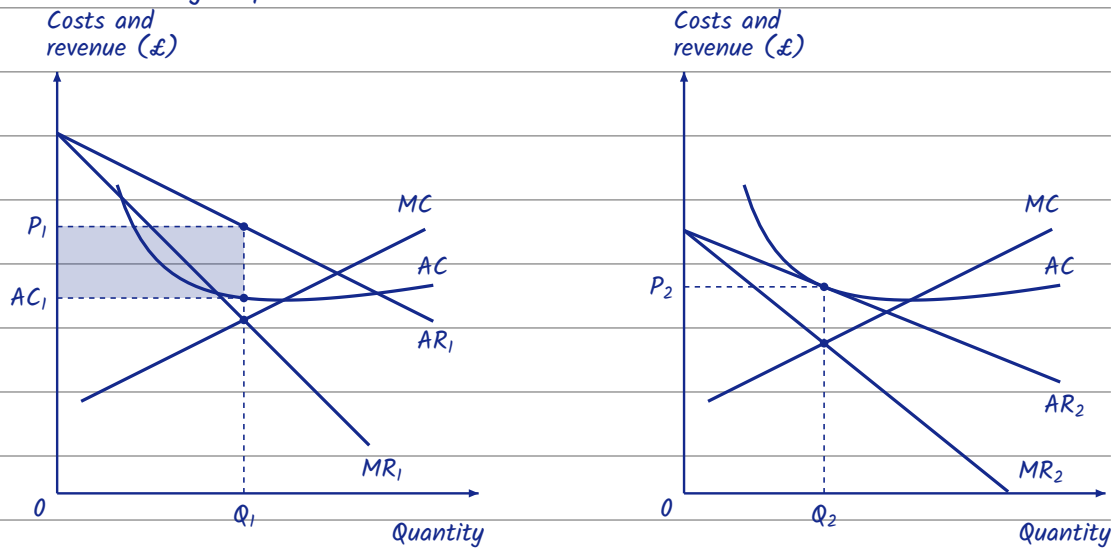
Barriers can be innocent (natural), strategic (deliberate) or legal. Innocent barriers arise from the nature of the industry: where economies of scale are so large that the minimum efficient scale is close to total market demand, one firm can supply at a lower average cost than two, so a natural monopoly forms, for example the National Grid or Network Rail track. Strategic barriers are created by incumbents, such as heavy advertising and brand loyalty (Heinz, Coca-Cola), limit pricing or control of distribution. These are sunk costs for an entrant, which raises the risk of entry. Legal barriers come from the government, such as patents on new medicines, licences to sell alcohol or the single licence to run the National Lottery, and safety certification for toy and food producers.

The higher the barriers, the fewer firms there will be and the more market power incumbents keep. With very high barriers, supernormal profit can persist in the long run because no firm can enter to compete it away, giving monopoly or tight oligopoly (UK mobile networks, supermarkets). With low barriers, as in monopolistic competition (cafes, hairdressers), supernormal profit attracts entry.

As the diagram shows, in the short run a firm earns supernormal profit ($P_1 > AC_1$ at Q_1, where $MC = MR$). New firms enter, each firm's demand falls and

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becomes more elastic (AR_1 to AR_2) until AR is tangent to AC at Q_2, where only normal profit is made. So the long-run outcome differs from the short run only because entry is possible.



Short run: supernormal profit (shaded)

Long run: AR = AC, normal profit only

Barriers also determine contestability. If entry and exit are free and sunk costs are low, even a market with few firms behaves competitively, because the threat of hit-and-run entry forces incumbents to price close to average cost. For example, budget airlines can switch aircraft between routes, so a route served by one airline may still have low fares. Therefore it is the height of barriers to entry, rather than simply the number of firms, that determines how competitive a market structure really is.

0 1 (b) An oligopoly is a market dominated by a few large, interdependent firms, often measured by a high concentration ratio (the four largest UK supermarkets have about two-thirds of grocery sales). Barriers to entry are high, products may be homogeneous (petrol) or differentiated (cereals), and prices tend to be stable, with periods of collusion or price wars. Because each firm's profit depends on its rivals' choices, firms must act strategically.

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Game theory analyses these strategic interactions by looking at each firm's possible strategies and the payoffs that follow. The payoff matrix below shows a duopoly prisoners' dilemma between Tesco and Sainsbury's.

		Sainsbury's: High price	Sainsbury's: Low price
Tesco	High price	£10m, £10m	£2m, £14m
	Low price	£14m, £2m	£5m, £5m (Nash equilibrium)

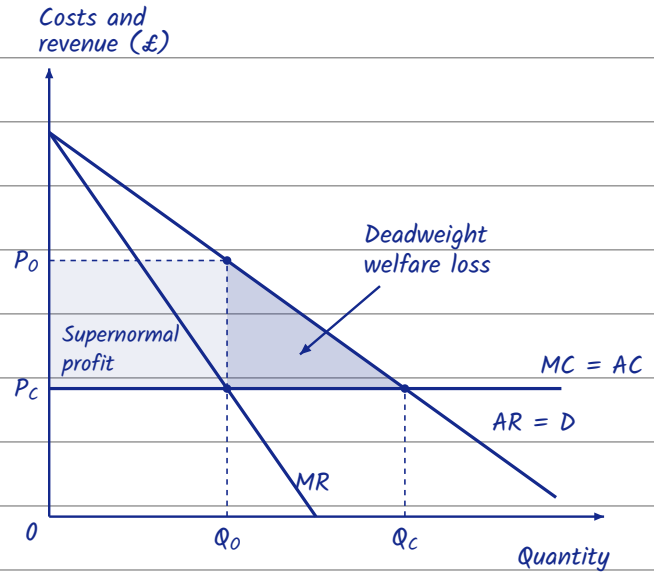
Payoffs: (Tesco profit, Sainsbury's profit)

If both keep a high price each earns £10m. However, whatever Sainsbury's does, Tesco earns more by charging a low price (£14m rather than £10m, or £5m rather than £2m), so a low price is its dominant strategy, and the same holds for Sainsbury's. The Nash equilibrium is (low, low) with £5m each. This shows the first cost of oligopoly: firms have a strong incentive to collude, openly or tacitly through price leadership, to reach the joint profit-maximising (high, high) outcome, especially in a repeated game where they can punish cheating.

Collusion raises prices and transfers consumer surplus to producers. Examples include the EU lift cartel (Otis, Kone, Schindler and ThyssenKrupp, fined about €990m in 2007) and banks rigging LIBOR.

Secondly, where firms collude or act as a dominant group they behave like a monopoly. As the diagram shows, they produce where MC = MR at Q_O and charge P_O, above MC, rather than the competitive Q_C and P_C.

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Output is restricted and there is allocative inefficiency, with a deadweight welfare loss shown by the shaded triangle, while supernormal profit persists because barriers stop entry. Protected from competition, firms may also become X-inefficient and not produce at the minimum of AC, so there is productive inefficiency. Thirdly, consumers can be exploited when switching is difficult, for example loyal bank customers receiving poor interest on savings, or high energy bills as that market became more concentrated. Fourthly, oligopolists often avoid price competition and instead spend heavily on advertising and branding, which raises costs and builds further barriers. Game theory can show this too: if both Kellogg's and Nestlé launch many brands, each spends more but neither gains share, and consumers face limited real choice and higher prices.

However, the size of these costs depends on several factors. First, contestability: if barriers are actually low, a few dominant firms still behave competitively. Aldi and Lidl entered UK grocery and forced the big four to cut prices. Secondly, collusion is often unstable: the prisoners' dilemma shows each firm has an incentive to cheat, so with many firms, homogeneous goods or low trust, price wars break out and consumers gain, as in petrol and supermarket price wars. Thirdly, government intervention limits the costs: the CMA can fine cartels and block mergers, and Ofgem's energy price cap restricts abuse of power. Fourthly, oligopoly can bring benefits that offset the costs. Large firms gain economies of

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scale, so even P_0 may be below the price small competitive firms could charge, and supernormal profit can fund research, giving dynamic efficiency, for example Apple and Samsung competing through innovation in smartphones. A small number of well-known brands may also reduce the 'paradox of choice', making it easier for consumers to choose.

In conclusion, oligopoly can impose significant costs through collusion, allocative and productive inefficiency and restricted choice, and game theory shows why the incentive to collude is strong. However, the costs are greatest in markets with high sunk costs, homogeneous products and weak regulation, and smallest where markets are contestable and firms compete through innovation. On balance, in the UK the costs are usually modest in the long run because effective competition authorities and the instability of collusion keep most oligopolies competitive, although they remain high in markets such as energy where switching is difficult.

0 4 (a) Unemployment is when people of working age are without a job but are willing and able to work and actively seeking work. The unemployment rate is the number unemployed as a percentage of the labour force (the economically active), so problems can arise with both the numerator and the denominator. The UK uses two measures.

The Labour Force Survey (LFS) uses the ILO definition: a person is unemployed if they are without a job, have actively looked for work in the last four weeks and are available to start within the next two weeks. Because it is a sample survey of roughly 40,000 households per quarter, the results must be scaled up to the whole population, so there is sampling error, especially for small groups such as regions or young people. Respondents may not answer honestly or accurately, particularly in a long survey, and response rates have fallen sharply in recent years, so the sample may not be representative. The survey is also costly to run, which is an opportunity cost, and how results are presented can create

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a framing effect on how they are understood.

The claimant count measures people claiming unemployment-related benefits (Jobseeker's Allowance and the searching-for-work part of Universal Credit). It is cheap and up to date, but it depends on eligibility rules. When the rules change, for example with the introduction of Universal Credit, the figure changes even if the true number out of work has not, and some low-paid workers on Universal Credit are counted. Many unemployed people are not eligible, such as those with a partner in work or with savings, and others do not claim because of the social stigma or complexity of benefits, so the claimant count is usually below the LFS figure.

There are also general problems. Hidden unemployment is not captured: discouraged workers who give up looking are classed as economically inactive rather than unemployed, which lowers the measured rate. Underemployment is ignored, as someone on a zero-hours contract working one hour a week counts as employed even if they want full-time work. Unemployment is often transient, so short spells of frictional unemployment between jobs may be missed or overstated depending on timing, and people working in the shadow economy while claiming benefits are wrongly counted. Therefore the measured rate may not reflect the true amount of spare capacity in the labour market, so economists also look at inactivity and underemployment figures.

0 4 (b)

Unemployment exists when people who are willing and able to work at the going wage cannot find a job. Wales has historically had a slightly higher unemployment rate than the UK average, and a higher rate of economic inactivity, with strong differences between regions such as Cardiff and the M4 corridor compared with the South Wales Valleys and rural west and north Wales. There are several possible causes.

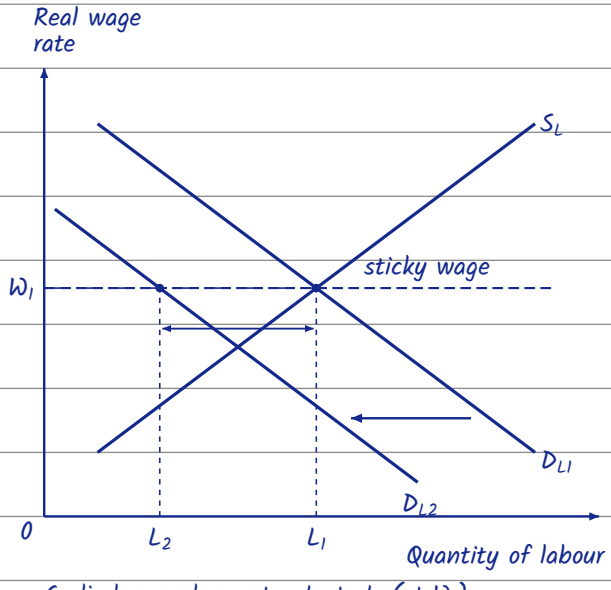
Firstly, structural unemployment, caused by a long-term change in the pattern of demand and production that leaves workers with skills or locations that no

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longer match the jobs available. Wales was built on coal, steel and heavy manufacturing. The closure of the coal mines and job losses in steel, and more recently the closure of the Ford engine plant in Bridgend in 2020, left many workers with industry-specific skills, causing occupational immobility. The new jobs created are often in services, finance and the digital sector in Cardiff, so former industrial areas suffer persistent unemployment and inactivity. Structural change in farming, with more mechanisation and uncertainty over subsidies after Brexit, has a similar effect in rural Wales.

Secondly, geographical immobility. Even where vacancies exist, for example in Cardiff, Bristol or across the border in England, workers in the Valleys or north-west Wales may not be able to reach them. The mountainous landscape, poor north-south transport links, underinvestment in railways and rolling stock and the high cost of travel all raise the cost of commuting, while house prices and family ties stop people moving. Poor broadband in rural areas also limits remote working, so local labour demand matters more.

Thirdly, cyclical (demand-deficient) unemployment. When aggregate demand falls, for example in the pandemic or a cost-of-living squeeze, firms cut output and so reduce their derived demand for labour.



Cyclical unemployment = L_2 to L_1 (at W_1)

As the diagram shows, demand for labour falls from D_{L1} to D_{L2}. If wages are sticky downwards, because of contracts or the National Living Wage, the real

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wage stays at W_1, employment falls from L_1 to L_2, and L_1 to L_2 workers are cyclically unemployed. Wales may be hit harder because it has a larger share of public sector and lower value-added jobs and of small firms with little financial cushion, and the negative multiplier spreads job losses through local supply chains.

Fourthly, seasonal unemployment. Tourism and agriculture are important in areas such as Pembrokeshire, Gwynedd and Snowdonia, so many jobs end in the winter. Fifthly, youth unemployment is high and varies strongly by region, for example higher in Swansea than in Cardiff. This may be due to frictional and information problems, with firms still advertising in traditional ways that do not reach young people, gaps between the quality of education and the skills employers need, and possible discrimination against certain groups. Finally, external shocks such as Brexit, which ended EU structural funds for West Wales and the Valleys and raised trade costs for Welsh exporters, and the COVID-19 pandemic, which hit hospitality hard, have added to unemployment.

However, the importance of each cause varies. Measured unemployment in Wales has recently been close to the UK average, and the bigger problem may be economic inactivity, including long-term sickness, which reflects structural causes rather than cyclical ones. Cyclical unemployment is short term and should fall as the economy recovers, whereas structural and geographical problems persist because retraining takes years and is only effective if new jobs are created locally and workers are willing to retrain. The causes also differ by area: in Cardiff, unemployment is mainly frictional, while in the Valleys it is mainly structural. Government action, such as Welsh Government training schemes, the South Wales Metro and investment in digital infrastructure, may reduce structural and geographical causes over time, so their importance depends on the success of these policies.

In conclusion, unemployment in Wales has several causes, but the most significant is structural unemployment from the decline of heavy industry, made worse by geographical immobility caused by poor transport and infrastructure.

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Cyclical, seasonal and external shocks add to it in the short term, but these are temporary. Therefore long-term supply-side policies on skills and transport are more important for Wales than demand management, although their success depends on the time scale and the level of investment.

0 5 (a) Gross Domestic Product (GDP) is the total value of goods and services produced within a country's borders in a year, regardless of who owns the factors of production. Gross National Product (GNP), or gross national income, is the value of output produced by a country's own citizens and firms, wherever in the world they are located. So GNP = GDP + net property income from abroad (income earned by UK residents from assets abroad minus income paid to foreign owners of assets in the UK).

The difference matters when there is a lot of foreign ownership. For example, in Ireland many multinationals record large profits there, which are then sent back to foreign shareholders, so Ireland's GDP is far higher than its GNP, and GDP overstates the income available to Irish residents. In contrast, an economy with large overseas investments, or one receiving large income from workers abroad, may have GNP above GDP. Both are proxies for living standards, but GNP per capita is often a better measure of the income actually available to a country's citizens to spend on goods and services.

To compare living standards between countries, GNP per capita has to be converted into one currency, usually US dollars. Using market exchange rates is misleading because exchange rates are affected by speculation and hot money flows and only reflect traded goods. Non-traded goods and services, such as haircuts, food and rent, are usually much cheaper in low income countries. Purchasing power parity (PPP) adjustments solve this by using the exchange rate at which the same standard basket of goods would cost the same in both countries, measured in international dollars. For example, someone in Nigeria earning the same nominal dollar income as someone in the USA can buy far

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more, because the cost of living is lower, so Nigeria's GNP per capita is adjusted upwards. India's GDP per capita is around $2,400 at market exchange rates, but over $8,000 at PPP.

This is significant because living standards depend on the quantity of goods and services people can actually buy, not on their nominal income. Without PPP adjustment, the gap in living standards between MEDCs and LEDCs is overstated. However, PPP is still imperfect, because the standard basket may not reflect what people consume in different countries, and quality differences are hard to measure.

0 5 (b) Economic development is a broad improvement in living standards and quality of life, including income, health, education and freedom of choice, rather than just economic growth. The Human Development Index (HDI) is a composite measure published by the UNDP that combines three dimensions: a long and healthy life (life expectancy at birth), knowledge (mean years of schooling for adults aged 25+ and expected years of schooling for children) and a decent standard of living (GNI per capita at PPP in US dollars). Each is converted to an index between 0 and 1 and the HDI is their geometric mean. Norway scores about 0.96 while Niger is below 0.4.

A rise in each component is linked to development. A rise in GNI per capita means citizens can buy more goods and services, so they can meet basic needs and have income left over to save. GNI is used rather than GDP because it includes income from abroad, such as remittances, which are important in many LEDCs. Higher savings allow households to smooth consumption and act as insurance against illness or old age, and savings deposited in banks can be lent out for investment, which closes the savings gap in the Harrod-Domar model and raises future growth. Rising incomes also raise tax revenue, which governments can spend on roads, healthcare and education. A rise in life expectancy reflects better access to clean water, sanitation, nutrition and

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doctors, while more years of schooling give access to skilled jobs, greater occupational mobility and the ability to read health and financial information.

So, because the HDI includes health and education as well as income, a rise in HDI is a better indicator of development than a rise in GDP alone. For example, HDI fell globally in 2020 and 2021 for the first time, as the pandemic reduced life expectancy and schooling, which correctly showed a setback in development.

However, changes in HDI may not show changes in development accurately.

Firstly, HDI is an average, so it hides inequality. If the rise in GNI per capita goes mainly to a rich elite or to one region, the HDI rises while most people see little improvement. The inequality-adjusted HDI and the Gender Development Index show that many countries lose a large share of their score once inequality is accounted for. Secondly, the reason for the rise matters. If GNI rises because of exports of oil or minerals, the country may suffer primary product dependency and Dutch disease, with the benefits going to foreign owners and little spent on health or education. Equatorial Guinea has had high GNI per capita from oil but low life expectancy. Thirdly, extra tax revenue may not improve living standards: amounts may be small, collection is difficult with a large informal economy, a heavily indebted government may spend it on debt interest, and corruption or poor governance may waste it. Similarly, higher savings only lead to investment if people have access to banks and the financial understanding to use them.

Fourthly, HDI leaves out important parts of development, such as environmental damage, political freedom, freedom of speech, gender equality and access to housing. Rapid industrialisation can raise HDI while causing pollution that harms future living standards, so it may not be sustainable. Fifthly, HDI changes slowly: life expectancy and mean years of schooling take years to respond, and the income index uses a logarithm, so a rise in GNI in a rich country barely changes the score. In addition, the data are hard to collect accurately in many LEDCs, and the equal weighting of the three dimensions is a value judgement.

Other measures such as the Multidimensional Poverty Index, which looks at

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deprivation in households, may therefore be more useful alongside it.

In conclusion, changes in HDI are a better indicator of changes in development than GDP, because they capture health and education as well as income. However, they are only a good indicator if the increase is broad-based and caused by sustainable growth rather than resource exports, and if extra income is spent well by households and governments. Overall, a change in HDI is a useful starting point, but it should be judged alongside inequality-adjusted and environmental measures, especially in LEDCs where inequality and data problems are greatest.