

Please check the examination details below before entering your candidate information

Candidate surname <i>StemUp Model Solution</i>		Other names											
Pearson Edexcel Level 3 GCE		Centre Number <table border="1"><tr><td></td><td></td><td></td><td></td><td></td></tr></table>						Candidate Number <table border="1"><tr><td></td><td></td><td></td><td></td><td></td></tr></table>					
Thursday 14 May 2020													
Morning (Time: 1 hour 30 minutes)		Paper Reference 8EB0/02											
Economics B Advanced Subsidiary Paper 2: The wider economic environment													
You do not need any other materials.			Total Marks										

Instructions

- Use **black** ink or ball-point pen.
- **Fill in the boxes** at the top of this page with your name, centre number and candidate number.
- Answer **all** questions.
- Answer the questions in the spaces provided
– *there may be more space than you need.*

Information

- The total mark for this paper is 80.
- The marks for **each** question are shown in brackets
– *use this as a guide as to how much time to spend on each question.*
- Calculators may be used.

Advice

- Read each question carefully before you start to answer it.
- Try to answer every question.
- Check your answers if you have time at the end.

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Answer ALL questions.

SECTION A

Read the following extracts (A and B) before answering Question 1.

Write your answers in the spaces provided.

Extract A

E-commerce not the reason for UK high street woes

A report by *CBRE*, a global property firm, indicates that while the growth of e-commerce is often cited as a key factor in the demise of high street retail outlets, it cannot be considered as the sole or even as a major cause of store closures.

The report said structural changes in the form of consumers' spending preferences and the growth of e-commerce have partly contributed to retailers' performance. However, economic factors have also challenged the retail sector. The retail sector had increased wage costs due to a decrease in unemployment and wage growth above inflation, combined with European Union (EU) workforce shortages. All of which have had major implications for the retail sector.

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The growth in real disposable income for the whole economy has also been extremely weak over the last decade. Brexit-related uncertainty has also added extra pressure on consumer prices through imported inflation. Inflation in November 2018 was 2.2%, unchanged from October. The annual percentage change in average nominal earnings was 3.29% in October.

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Government policies aimed at raising wages for low-paid workers have also had a large effect on the retail sector. The increase of the National Minimum Wage has added to these effects, forcing retailers to make tough decisions to manage the increased costs.

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Rhodri Davies from *CBRE* said, "In many cases, retailers seem simply to have taken their eye off their customer. The evidence is clear that retailers with a good business model, that proactively close and open stores to follow consumer trends, have survived this 'perfect storm'. Until aggregate demand picks up, failure to adapt to structural change could be fatal."

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(Source: adapted from <https://www.retailgazette.co.uk/blog/2018/12/cbre-ecommerce-not-reason-uk-high-street-woes>)

Extract B

UK labour market: December 2018

Labour force	33,856,000
Employed	32,476,000

(Source: adapted from <https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/employmentandemployeetypes/bulletins/uklabourmarket/december2018#unemployment>)



- 1 (a) What is meant by the term 'aggregate demand'?

(2)

Aggregate demand is the total demand for goods and services from all sources in the economy (consumers, firms, government and overseas buyers) at a given price level over a period of time.

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

- (b) Using Extract B, calculate, to 2 decimal places, the rate of unemployment for the UK in December 2018. You are advised to show your working.

(4)

$$\text{Unemployment rate} = (\text{number unemployed} \div \text{labour force}) \times 100$$

$$\begin{aligned} \text{Number unemployed} &= \text{labour force} - \text{employed} = 33,856,000 - 32,476,000 = \\ &1,380,000 \end{aligned}$$

$$\text{Unemployment rate} = (1,380,000 \div 33,856,000) \times 100 = 4.0761\ldots\%$$

$$\text{Rate of unemployment in December 2018} = 4.08\%$$



- (c) Using Extract A, calculate, to 2 decimal places, the change in real earnings for October 2018. You are advised to show your working.

(4)

Change in real earnings = % change in nominal earnings – rate of inflation

Nominal earnings growth (October 2018) = 3.29%

Inflation (CPI, October 2018) = 2.2%

Change in real earnings = 3.29% – 2.2% = 1.09%

So real earnings rose by 1.09% in October 2018.



(d) Discuss the possible benefits of e-commerce for consumers.

(8)

E-commerce is the buying and selling of goods and services over the internet, creating a virtual marketplace for buyers and sellers. Extract A shows that its growth is one of the structural changes affecting the UK high street.

The first benefit is better consumer knowledge. Consumers can use price comparison websites to compare the prices and features of many sellers in seconds. This reduces search costs and makes the market more competitive, because sellers who charge more lose sales, so prices are pushed down and consumers gain more value for money.

Secondly, e-commerce gives consumers far more choice. Online firms can sell from and to much wider geographical areas, so a shopper is not limited to the few stores on their local high street. Because online sellers do not need shelf space, marketplaces such as Amazon or eBay can offer niche products (the long tail) that would never be stocked in a physical store. Shopping is also convenient, open 24 hours a day with home delivery, which saves travel time and costs.

However, the benefits are not the same for everyone. Many consumers still prefer to shop in physical stores where they can see, touch and try products, and receive advice, before buying. Many services, such as hairdressers or barbers, cannot be provided through e-commerce at all. Some consumers are worried about online fraud and the security of their payment details, and older consumers or those without reliable internet access may be excluded.

Overall, e-commerce brings significant benefits to consumers through lower prices and wider choice, especially for standardised goods that are easy to compare. The size of the benefit depends on the product and the consumer: for services and products that need to be experienced, physical stores remain important, so e-commerce complements rather than fully replaces the high street.



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(e) Assess the likely impact on retailers of a fall in UK unemployment.

(12)

Unemployment is the number of people who are willing and able to work and actively seeking work but who do not have a job. It can be measured using the ILO Labour Force Survey or the claimant count. Using Extract B, UK unemployment was 4.08% in December 2018, which is low by historical standards.

A fall in unemployment can benefit retailers. More people in work means more households have earned income and higher disposable income to spend on goods and services, so consumer spending, a major part of aggregate demand, rises. Retailers selling income elastic goods, such as clothing, electronics and eating out, are likely to see the largest increase in turnover and profit. Lower unemployment also tends to come with economic growth and higher consumer confidence, so households are more willing to borrow and spend. This could encourage retailers to invest in new outlets and stock, and Extract A suggests that this extra aggregate demand is exactly what the sector needs. However, a fall in unemployment also creates problems for retailers on the supply side.

As the pool of unemployed labour shrinks, it becomes harder to recruit and retain suitable staff, particularly for skilled roles such as managers. Extract A states that wage costs have increased due to the decrease in unemployment and wage growth above inflation, combined with EU workforce shortages. To attract workers, retailers may have to offer higher wages, which, together with rises in the National Minimum Wage, increases their labour costs. Since retail is labour intensive and margins are often thin, higher costs can reduce profitability and may force some retailers to cut staff hours or close stores.

Furthermore, the benefit to demand may be weak. Extract A shows that growth in real disposable income has been extremely weak over the last decade, and in October 2018 real earnings rose by only 1.09% (3.29% – 2.2%). Imported inflation linked to Brexit uncertainty erodes purchasing power, so lower unemployment does not necessarily mean



much more spending in shops.

The overall impact depends on the size and type of retailer. Large retailers with economies of scale and a strong e-commerce presence are better able to absorb higher wage costs and capture extra spending, while traditional high street stores that are labour intensive face higher costs without a matching rise in sales. It also depends on whether the extra spending goes online rather than to physical stores.

On balance, a fall in unemployment is likely to be positive for retailers in the short run because it raises incomes and spending, but its benefit is limited when the labour market is already tight, as in the UK in 2018. In that case rising wage costs may outweigh the extra revenue for many high street retailers, especially those that, as Rhodri Davies says, fail to adapt to structural change.

(Total for Question 1 = 30 marks)

TOTAL FOR SECTION A = 30 MARKS



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SECTION B

Read the following extracts (C, D and E) before answering Question 2.

Write your answers in the spaces provided.

Extract C

The irresistible rise of alternative milks has dairy farmers worried

It is milk, but not as we know it. So-called 'alternative milks' made from plants, nuts and other ingredients are occupying our supermarket shelves and displacing traditional dairy products. Sales of UK plant-based milk increased by a third to £376m in 2017 while traditional milk sales rose by just over 5%. Almond milk has the largest market share of alternative milks and it keeps growing.

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Many younger consumers are shifting away to alternative milks because of environmental concerns. In a study of the environmental impact of alternative milks in comparison to dairy, cow's milk came out as most harmful in terms of water usage and CO₂ emissions. Milk alternatives are big business, marketed as a more environmentally-conscious option for breakfast cereals and in coffee.

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Swedish firm *Oatly* is one of the newcomers in the alternative milk world – even though it has been around for 25 years. *Oatly*, whose alternative milk is manufactured from oats, has increased sales from £15m in 2012 to £102.5m in 2018. Growth this year will be around 80%, thanks to distribution across 27 European countries and the US.

15

"Everyone's interested in health and sustainability," says *Oatly*'s CEO Toni Peterson. *Oatly*'s most popular product is the Barista Oat Drink, which typically retails for £1.80 for 1 litre compared to just 65p for a litre of cow's milk.

However, people are not quite willing to change their lifestyle completely and it is not the end of milk's product life cycle. According to recent research, two-thirds of people who use plant-based milks also keep dairy milk alongside them.

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(Source: adapted from <https://www.wired.co.uk/article/non-dairy-milk-alternatives-oatly-soy-oat-rice-vegan>)

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Extract D**Vegans rocked by oat milk shortage**

Coffee shops across the UK are in the grip of an oat milk shortage. Swedish oat milk brand *Oatly* is reported to have told coffee shops stock of the product is limited, with many coffee shops already running dry. James Penn, owner of the *Hackney Coffee Company*, said: "We have contacted all our suppliers and none of them have any stock."

5

Oatly is struggling to meet current demand for oat milk used in coffee shops, even though its production facilities for this product are working at 100% capacity. Ishen Paran, General Manager at *Oatly*, said: "We have recently produced and sold more oat drink than ever before. Unfortunately, there is not enough *Oatly* in supply to meet this extraordinary demand. We are looking for ways to increase production to keep up with the incredible response we have had in 2018."

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Other lines of *Oatly* drinks that are not targeted at coffee shops are still available.

(Source: adapted from <https://www.plymouthherald.co.uk/news/plymouth-news/vegans-rocked-oat-milk-shortage-2252247>)

Extract E**Londoners, *Oatly* will pay for 80% of your coffee**

In many of London's craft coffee shops, *Oatly* is paying for (most) of the price of your cup of coffee. For one week only, *Oatly* will pay 80% of the price of an oat milk latte or an oat milk Americano. Why 80%? According to the niche brand, if we change from dairy to oats in our morning coffee, we can reduce CO₂ emissions by 80%.

Oatly are also launching a new range of alternative oat milk products into UK supermarkets with discounted prices. These include Skinny, Semi and Whole oat options.

5

(Source: adapted from <https://pebblemag.com/news/londoners-oatly-will-pay-for-80-of-your-coffee>)



2 (a) What is meant by the term 'product life cycle'?

(2)

The product life cycle shows the stages that a product goes through over time, from its introduction, through growth and maturity, to its eventual decline, in terms of its sales.

Oatly has decreased the price of its oat drinks by 10%. This led to an 8% increase in sales.

(b) Calculate the price elasticity of demand (PED) for Oatly's oat drinks. You are advised to show your working.

(4)

$PED = \% \text{ change in quantity demanded} \div \% \text{ change in price}$

$\% \text{ change in quantity demanded} = +8\%$

$\% \text{ change in price} = -10\%$

$PED = +8\% \div -10\% = -0.8$

$PED = -0.8$, so demand for Oatly's oat drinks is price inelastic.



(c) Explain **one** possible benefit for Oatly of operating in a niche market.

(4)

One benefit of operating in a niche market is that Oatly can charge a premium price.

Oatly is a specialist that only makes alternative milk from oats, aimed at consumers who care about health and sustainability. There are few close substitutes for its product, so demand is less price sensitive. This is shown by its Barista Oat Drink retailing at £1.80 a litre compared with just 65p for cow's milk, almost three times more expensive.

By charging a premium price, Oatly earns a higher profit margin on each unit and higher sales revenue, which helps it survive and grow in the alternative milk market without competing on price with large dairy producers.

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(d) Discuss the implications of an over-utilisation of capacity for Oatly.

(8)

Over-utilisation of capacity is when a firm is trying to produce more output than its capacity allows, so capacity utilisation is at or near 100%. Extract D states that Oatly's production facilities for its coffee shop product are working at 100% capacity, yet it still cannot meet demand.

One implication is bottlenecks in production, because there are not enough machines, staff or raw materials to cope with demand. Production may be rushed and there is less time for quality control and maintenance, so the quality of the oat drink may fall. Machinery used continuously for a long period is more likely to break down and need repair, which would cut output even further.

Employees may be pressurised to work longer shifts and overtime to cope with the excess demand. This raises costs and can cause stress and poor employee relations, lowering motivation and productivity.

The most serious implication is lost sales and damage to Oatly's reputation. Coffee shops such as the Hackney Coffee Company are already running dry, so they may switch to alternative milks made by other firms, such as almond milk, and may not return.

However, Extract D states that the problem only affects the oat drink targeted at coffee shops, and other Oatly lines are still available, so the impact on the whole business is limited. High utilisation also spreads fixed costs over more units, lowering unit costs. The over-utilisation may be a short-term issue: Oatly could outsource some production in the short term and, in the long term, build extra production facilities to raise capacity. Overall, the implications are serious only if the shortage lasts long enough for customers to switch permanently.



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- (e) Assess the likely benefits for Oatly of using penetration pricing for the launch of its new products in the UK.

(12)

Penetration pricing is when a firm sets a low introductory price for a new product to entice consumers to try it and to gain market share quickly, with the opportunity to raise the price once this objective has been achieved. Extract E states that Oatly is launching Skinny, Semi and Whole oat options into UK supermarkets at discounted prices.

The main benefit is that the discounted price encourages consumers to try the new oat drinks. At £1.80 a litre the Barista Oat Drink is almost three times the price of cow's milk (65p), so price is a key barrier to switching from dairy. A lower price reduces this barrier and, since two-thirds of plant-based milk users still buy dairy milk alongside it (Extract C), it gives these consumers a reason to swap. Higher sales volume increases Oatly's market share in a fast growing market, where UK plant-based milk sales rose by a third to £376m in 2017.

If consumers like the new varieties, they may become brand loyal and continue to buy them even when the price is increased in the future. Oatly's unique selling point of being more environmentally friendly than cow's milk, which it promotes with its claim that switching can cut CO₂ emissions by 80%, helps to build this loyalty. Greater volume could also bring economies of scale, lowering unit costs over time.

However, there are risks. A low price can create an image of poor quality for a brand that has built a premium image, and it may simply attract bargain hunters looking for a cheaper alternative rather than loyal customers, who switch away when the price rises. Customers may come to expect permanently low prices, and it is always harder to raise prices than to lower them. Lower prices also generate less profit per unit sold. With a PED of -0.8 , demand for Oatly's oat drinks is price inelastic, so a 10% price cut raised sales by only 8% and total revenue fell, which questions whether low prices are needed



at all.

Rivals, such as almond milk brands that hold the largest market share, may also cut their prices to protect their market share, starting a price war that removes Oatly's advantage. Most importantly, penetration pricing only works if there is sufficient production and distribution capacity to meet the extra demand. Extract D shows that Oatly is already working at 100% capacity and struggling to meet current demand for one of its products in the UK, so a surge in demand could lead to empty supermarket shelves and disappointed customers.

In conclusion, penetration pricing is likely to benefit Oatly by encouraging trial and building market share and brand loyalty for its new range, especially among price sensitive dairy drinkers. However, the benefits depend on Oatly having enough capacity to meet demand and on the low price not damaging its premium, environmentally conscious brand image. A short, time-limited discount, as in its 80% coffee promotion, is probably the best approach.

(Total for Question 2 = 30 marks)

TOTAL FOR SECTION B = 30 MARKS



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SECTION C

Read the following extract (F) before answering Question 3.

Write your answer in the space provided.

Extract F**Relaxed air quality targets are plaguing northern China with air pollution**

Northern China is now suffering with increased air pollution after the authorities relaxed air quality targets to encourage economic growth. Air pollution made a reappearance after Chinese authorities announced that they were not going to renew cuts to steel production and coal use. The lower environmental standards, particularly the relaxed air quality targets, are part of a number of measures designed to support and increase the country's deteriorating economy.

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According to the environmental pressure group Greenpeace, in the last quarter of 2017, levels of air pollution fell by 33% in many cities across China, while Beijing levels fell even more – by 54%. However, the pollution restrictions affected several small companies and state-owned enterprises, as authorities banned construction and the use of coal. The previous pollution restrictions also affected local residents after authorities seized coal heaters, leaving hundreds of thousands of households in the cold and without adequate heating supplies.

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According to the US embassy in Beijing, recent levels of pollution went above 12 times the World Health Organization guidelines for outdoor air quality. The exposure to air pollution increases many adverse health risks and diseases, including cardiovascular, respiratory, pulmonary, and other health-related problems.

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The economic and social harms of air pollution arising from its negative effects on public health have been widely discussed. However, the unprecedented growth and development in China has had a substantial cost on the environment. With the relaxed air quality targets, it is vital to weigh whether the risk of having an increased level of air pollution is worth the potential for a boost in economic growth.

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(Source: adapted from <https://www.healtheuropa.eu/relaxed-air-targets-smog-air-pollution/89023/>)



- 3 Evaluate the extent to which there is a trade-off between economic growth and negative externalities for a country such as China.

(20)

Economic growth is an increase in the capacity of an economy to produce goods and services, compared with one period of time to another, usually measured by the change in real GDP. Negative externalities occur when production or consumption imposes external costs on third parties outside the market, for which no appropriate compensation is paid, so social costs exceed private costs.

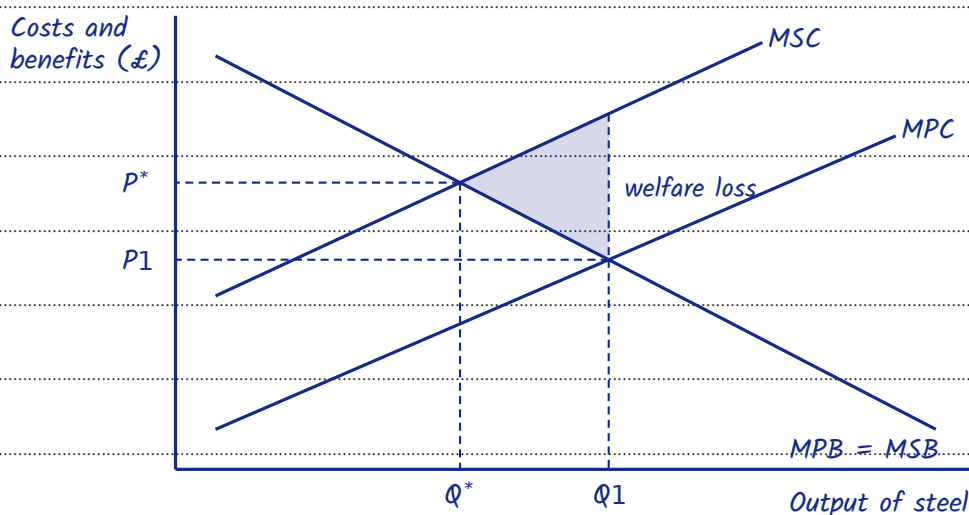
There is a clear argument that a trade-off exists for a country such as China. To produce more goods and services, China must use more scarce resources, especially energy. China relies heavily on coal in its manufacturing and power generation, and steel production is very energy intensive. Burning fossil fuels releases particulates and CO_2 , creating air pollution that harms third parties who are not part of the transaction. Rapid growth of production and consumption also creates waste, noise and road congestion.

Extract F shows this trade-off directly. When the authorities restricted coal use and steel production, air pollution fell by 33% in many cities in the last quarter of 2017, and by 54% in Beijing. However, the restrictions hit output, as several small companies and state-owned enterprises were affected by bans on construction and coal use, and households had coal heaters seized, leaving hundreds of thousands without adequate heating. When the targets were relaxed to boost the deteriorating economy, pollution returned, rising above 12 times the WHO guidelines. This suggests that, in the short run, China can only have more growth by accepting more pollution, and less pollution by sacrificing growth.

The diagram shows the negative production externality from steel. Firms produce where $\text{MPC} = \text{MPB}$ at Q_1 , but the socially optimal output is Q^* , where $\text{MSC} = \text{MSB}$.

Overproduction of Q^* to Q_1 causes a welfare loss (shaded). Higher growth in steel output increases this welfare loss.





Furthermore, poor environmental quality can itself reduce growth. Exposure to air pollution increases cardiovascular, respiratory and pulmonary diseases, lowering the quantity and productivity of the labour force, raising healthcare costs and damaging land and water resources. So the trade-off may not hold in the long run: pollution today can reduce China's productive potential in the future.

However, the extent of the trade-off can be questioned. Economic growth can be used to reduce negative externalities. As countries grow richer, they have more resources available to invest in cleaner technologies, such as renewable energy and low-carbon production, and governments receive more tax revenue to fund this. As countries such as China develop, energy intensity levels fall, so each unit of GDP creates less pollution. Richer citizens also demand a cleaner environment.

In addition, not all growth is polluting. As China's economy shifts from manufacturing towards services growth can come from sectors that create few external costs.

Environmental policies such as taxes on pollution, regulation, tradable permits, recycling and reuse schemes can curb negative externalities while allowing growth to continue, by forcing firms to internalise the external cost and invest in cleaner methods.

The extent of the trade-off therefore depends on several factors. It depends on the time period: in the short run the trade-off is strong because China's capital stock is

built around coal and steel, but in the long run new technology can weaken it. It depends on the priorities of the Chinese government, which, as Extract F shows, chose growth over air quality when the economy weakened. It also depends on how the costs are valued: the health costs to residents may outweigh the extra output, so measured GDP growth may overstate the true gain in living standards.

In conclusion, there is a significant trade-off between economic growth and negative externalities for China in the short run, because its growth is still heavily dependent on coal and heavy industry, as shown by pollution returning once targets were relaxed.

However, the trade-off is not inevitable. Growth can provide the resources and technology to reduce externalities, so with effective environmental policy and a shift to cleaner industries, China can reduce the trade-off over time. The key question is whether the government is willing to accept slower growth now to achieve sustainable growth in the future.

(Total for Question 3 = 20 marks)

TOTAL FOR SECTION C = 20 MARKS
TOTAL FOR PAPER = 80 MARKS



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