

YISHUN JUNIOR COLLEGE

JC2 PRELIMINARY EXAMINATIONS 2018

H1 ECONOMICS

8823/01

PAPER 1

20 AUGUST 2018
0800 – 1100 hrs

TIME 3 hours

Additional materials: Answer paper
Cover page

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INSTRUCTIONS TO CANDIDATES

Write your name and CTG on all the work you hand in.

Write in dark blue or black pen.

You may use a soft pencil for any diagrams, graphs or rough working.

Do not use staples, paper clips, glue or correction fluid.

Answer **all** questions.

Start a new question on a fresh piece of paper.

At the end of the examinations, fasten all your work securely together.

Tie a cover page to the **two** questions separately:

1. Case Study Question 1
2. Case Study Question 2

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 clear presentation in your answers.

This paper consists of **8** printed pages, including this cover page, and **2** blank pages.

Answer **all** questions.

Question 1: The milk industry

Table 1: Production of dairy milk (in million tonnes)

	2012	2013	2014	2015	2016
India	133.7	138.1	141.7	148.2	160.4
US	90.9	91.4	93.5	94.5	96.3
China	44.2	40.3	42.5	42.5	40.9
New Zealand	19.7	19.2	20.6	21.9	21.6

Source: UN's Food and Agricultural Organisation, accessed on 31 May 2018

Extract 1: The dairy milk industry cowed

Since 2008, New Zealand has enjoyed an export-led dairy boom that has earned it the nickname of “the Saudi Arabia of dairy milk” and driven a rapid expansion of its farm industry. The South Pacific nation is the world’s biggest exporter of dairy milk, which account for a quarter of everything it sells overseas. But a halving of dairy milk prices since early 2014 is turning New Zealand’s farming boom to bust.

The pain is being felt across an industry that stretches from the Pacific to the European Union (EU) and North America and employs millions. Almost one-tenth of all dairy milk produced is exported across borders in a trade worth \$140 billion a year.

The crisis was triggered partly by weaker than expected demand, particularly from China, the world’s biggest buyer of dairy milk, where dairy milk imports fell by a fifth between 2014 and 2015, according to the United Nation’s Food and Agricultural Organisation.

The prolonged decline in prices is a global phenomenon which is prompting a restructuring of farming practices, milk processors and suppliers. It is also raising the pressure on governments to intervene and support farming communities.

In response, in addition to original aid committed to dairy farmers, the EU has made an additional €1 billion available in aid to farmers, by stockpiling dairy milk and related products to try and force prices up. However, such subsidies are not welcome everywhere. “We view these EU subsidies as short-sighted,” says Nathan Guy, New Zealand’s Agricultural Minister. “These subsidies lock dairy farmers into unprofitable businesses.”

To date, New Zealand’s economy has weathered the storm due mainly to construction linked to the rebuilding of Christchurch after the 2010-11 earthquakes and a housing boom. But on Thursday the central bank cut interest rates by 0.25 per cent to a new record low of 2 per cent, in a bid to weaken a strong New Zealand dollar that is hurting its dairy milk exports.

However, dairy milk producers remain optimistic that the situation will improve, as countries like China will unlikely become self-sufficient for dairy milk in the near future.

Source: Adapted from FT.com, 11 August 2016

Extract 2: Producers of dairy milk and their responses to dairy milk price changes

Farmers are like all other entrepreneurs. They seek to grow their business and export their products. And not too long ago, it seemed like a great time to do both. Dairy milk quotas, which had capped production in Europe for decades, were being dismantled, and the export market seemed to be growing.

But economic crisis struck around the world, with incomes falling along with demand. There are 23.6 million cows in European barns now, with each producing around 10,000 litres of milk per year.

Why don't the farmers just produce less? "Farmers need liquidity," explained Jutta Weiss, a spokeswoman for BDM, an association of German dairy farmers. They have to buy feed, pay rent, service credit. Fresh money only comes in when milk is sent out. So, if a farmer stops milking, he or she will immediately go bankrupt. Plus, all the excess milk will go to waste.

Farmers continue to sell their milk, trying to scrape together enough money to get by, which of course adds to the glut and presses prices down even further. Dairy farmers are trapped in "a vicious circle," as BDM calls it. And not only those in Europe.

Source: Adapted from Deutsche Welle, 27 May 2016

Extract 3: The impact of other markets on the dairy milk industry

Current dairy milk production is being stimulated by low feed prices, which were driven by record yield seasons in 2013 and 2014, similar levels in 2015 and new projected highs this year in 2016. The advent of large-scale fracking has resulted in a significant reduction in the price of oil. This will first have an impact on the biofuel market, which is a substitute for oil. Subsequently, this will affect the corn market, which is used to produce biofuel as well as feed for dairy farms.

Eighty percent of US dairy milk farm costs are feed. The reduction in feed costs from US\$29.26 in August 2012 to US\$18.04 per 100 kg of dairy milk in June 2015 has greatly increased farmers' profits.

Source: Adapted from The Conversation (Australian news source), 12 May 2016

Extract 4: Almond milk sales continue to surge, as dairy milk contracts

With plant-based diets increasingly popular in the US, milk alternatives – milk products that do not come from animals – are seeing strong sales growth and increased innovation, while sales of dairy milk are contracting. Milk alternatives such as almond milk, are especially popular, with sales having grown by 250% in the past five years. This, in spite of the fact that milk alternatives are typically more expensive than dairy milk.

Consumers' increasing interest in almond milk and disinterest in dairy milk, is likely due to general health and wellness concerns. Unlike dairy milk, almond milk does not pose a threat to consumers who are lactose intolerant, or who worry about hormones or antibiotics that could be found in dairy milk due to injections given to cows to stimulate milk production. In addition, almond milk is more delicious in taste and texture as compared to other milk alternatives and is appealing to consumers looking to switch away from dairy milk.

Sources: Adapted from Food Navigator, 14 Apr 2016 & The Guardian, 21 Oct 2015

Questions

- (a) (i) Compare the trends in the production of dairy milk for New Zealand, US, India and China over the period of 2012 to 2016. [2]
- (ii) Suggest a reason why New Zealand is the world's biggest exporter of dairy milk (Extract 1), even though the US, India and China each produce more dairy milk. [1]
- (b) (i) Explain the likely value of price elasticity of demand for dairy milk. [2]
- (ii) Explain the likely value of price elasticity of supply of dairy milk. [2]
- (iii) With reference to Extracts 1 and 2 and using a supply and demand diagram, explain how **one** demand factor and **one** supply factor have led to the halving of global dairy milk prices since early 2014. [6]
- (c) Explain the likely impact of the halving of global milk prices on **each** of the economic agents – consumers, producers, government – in New Zealand. [9]
- (d) With reference to Extract 3, explain how changes in oil prices can impact the dairy milk market, and comment on **one** factor that would determine the extent of the impact. [7]
- (e) Explain the factors affecting consumers' decision-making to switch from dairy milk to almond milk. [4]
- (f) Using evidence from the case study and your own knowledge, discuss the view that subsidies for dairy milk producers are "short-sighted" and should be discontinued. [12]

[Total: 45]

Question 2: From Obama to Trump

Extract 5: Obama's parting gift

Economic growth

With just a few weeks left before President Barack Obama leaves office, the overall economy continues to expand — slowly. As of the third quarter of this year, the U.S. economy is more than 16 percent bigger than when Obama took office in 2009, adjusted for inflation.

Lost workers

Many American workers have left the labour force for a variety of reasons. Some are boomers who have retired; others have become so discouraged looking for a job that they've given up. This erosion of participation saw the steepest losses during the Obama years.

The new President, Donald Trump, and his advisers are hoping that by bringing these "lost workers" back into the labour force, the economy will benefit from increased consumer spending, reduced crime rates and would not suffer a loss in human capital from prolonged unemployment.

Income inequality

The recent rise in wages, though, hasn't lifted incomes for all households. The gap between rich and poor Americans has been rising steadily for half a century, for reasons that economists and politicians still haven't sorted out.

Despite the Obama administration's focus on closing the income gap, it has continued to expand under his watch.

Source: Adapted from CNBC, 2 December 2016

Extract 6: Trump's economic policies

Taxes and public finances

Trump has pledged "a massive tax reduction" for working and middle-income Americans and has vowed to eliminate income taxes for individuals who earn less than \$25,000 annually, or \$50,000 for a married couple. He has also said he would "ensure the rich pay their fair share".

Trump has also supported lower corporate taxes, proposing to cut the business tax rate from 35% to 15%. He has also proposed a corporate tax repatriation plan – to encourage US companies which hoard cash overseas to avoid paying the 35% tax to bring that cash back to the US. A tax holiday – so the tax due would be only 10% for a period – could encourage corporations to bring back cash to invest or distribute to shareholders

Trump's proposed tax cuts mean less coming in to government coffers, at least in the near-term. For now, economists expect that Trump's plans for tax cuts across the board will mean the US taking on more debt as its deficit – the gap between spending and income – swells. But, there is an argument that the potential boost to businesses and to household spending power would lift the economy enough to improve government finances in the future.

Kevin Logan, the Chief US Economist at HSBC bank, says: "Reducing the budget deficits, while cutting tax rates at the same time, will be difficult without sizable cutbacks in federal spending. If the Trump administration manages to push through tax cuts, federal budget deficits, which are already trending higher, will probably increase substantially, in our view."

Interest rates

Federal Reserves (Fed) policymakers had hinted at another rate rise in December, part of the slow process of bringing monetary policy back to more normal levels after drastic measures to shore up the US economy during the global financial crisis. But analysts said the Fed needs to act soon to head off mounting pressure for prices to rise.

Trade

Tapping into economic discontent, Trump has made his anger with China over trade well known, arguing that since China joined the World Trade Organisation, Americans have witnessed the closure of more than 50,000 factories and the loss of tens of millions of jobs. He wants the US government to label China a “currency manipulator”, accusing it of devaluing its currency.

Source: Adapted from *The Guardian*, 9 November 2016

Extract 7: The North American Climate, Energy, and Environment Partnership

The above was announced by Canadian, US and Mexican leaders on June 29, 2016, at the North American Leaders Summit in Ottawa, Canada.

The deliverables to be achieved and activities to be pursued by the three countries are:

- Achieving a goal for North America of 50% clean power generation by 2025, by implementing government initiatives, such as advancing clean energy development and alternative energy sources
- Reducing the demand for oil through energy efficiency and the use of clean vehicles.
- Developing and implementing federal regulations for greenhouse gas to achieve the target of reducing methane emissions from the oil and gas sector, the world’s largest industrial methane source.

Source: Adapted from The White House, 29 June 2016

Extract 8: Pros and cons of spending \$50 Billion on infrastructure in the US

On Labour Day, President Obama rolled out a plan to stimulate growth and save jobs that included \$50 billion for infrastructure. But there's also the practical question: what effect would spending \$50 billion on infrastructure have?

- **'Scarcely Worth the Bother,'** says John Quiggin, Australian Economist. He explains, if \$50 billion was spent in Australia with "population 20 million, GDP of 1 trillion, the stimulus would be about 5 per cent of GDP." This time it's being spent in the U.S. with "population 300 million, GDP of 15 trillion, the stimulus would only be about 0.3 per cent of GDP." It's a drop in a much larger bucket.
- **Finally, the President Stops Relying on the Fed.** Marshall Auerback at The Daily Beast hasn't liked the extent to which the president has been leaning on monetary policy to solve current economic problems. He also points out that "the last few decades have seen very little investment in infrastructure in the U.S."

Obama's plan would rejuvenate 150,000 miles of roads, construct 4,000 miles of railways, enough to go coast-to-coast; and upgrade 150 miles of airport runways through the installation of a new air navigation system designed to reduce travel times and delays.

These are the kind of projects that create long-term prosperity.

- **'An Important Step,'** agrees The New York Times Bob Herbert, despite it being "a first step." Though it won't solve all the infrastructure problems overnight, it will put some people to work in jobs that pay decent wages."
- **Who Is Going to Pay for This?** Investment professional and economics blogger Mike Shedlock doubts the Obama administration's assertions that the plan is fiscally sound and will be "fully paid for."

Source: Adapted from The Atlantic, 7 September 2010

Questions

- (a) With reference to Extract 5, identify and explain two pieces of information that would be useful in assessing living standards in US. [4]
- (b) With reference to Extract 5, explain one macroeconomic consequence to arise from 'lost workers' and comment on the extent of benefits of bringing these workers 'back into the labour force'. [7]
- (c) Explain how China's currency manipulation could have led to the 'closure of more than 50,000 factories and the loss of tens of millions of jobs'. [4]
- (d) Analyse the possible impact of 'a massive tax reduction' on public finances
- (i) in the short-term. [2]
- (ii) in the long-term. [3]
- (e) Explain why the Fed's decision to increase interest rates would 'head off mounting pressure for prices to rise'. [4]
- (f) With reference to Extract 7, discuss the policy options you would present to the governments as responses to the threat on the environment. [9]
- (g) Governments often use fiscal policy to achieve their macroeconomic aims. [12]
- Discuss the appropriateness of increasing spending on infrastructure by the US government in achieving the aims of economic growth and low unemployment.

[Total: 45]

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Questions

- (a) (i) Compare the trends in the production of dairy milk for New Zealand, US, India and China over the period of 2012 to 2016. [2]

Case ref:

- Table 1. Entire table should be used, i.e. all four countries, entire time period.

Content tested:

- Data-reading question.

Skills tested:

- Comparison of data – overall trend, extent of change. Absolute change can also be accepted.

Suggested answer: [1m each]

- Production increased for all countries except China. [overall trend]
- The percentage change in production was the largest for India. [extent of change] (working – $(160.4-133.7)/133.7 \approx 19.97\%$)
OR
The percentage change in production was the smallest for US. [extent of change] (working – $(96.3-90.9)/90.9 \approx 5.94\%$)
- The absolute change in production was the largest for India. (working – $160.4-133.7 = 26.7$)
OR
The absolute change in production was the smallest for New Zealand. (working – $21.6-19.7 = 1.9$)

*Production increased for all countries except China; the percentage change in production was largest for India.
(16 words)*

Note to markers:

- Each mark can only be awarded for a valid comparison involving all 4 countries, e.g. if one valid comparison is made involving all 4 countries and another comparison only involves 2/3 of the 4 countries, then only 1 mark should be awarded.

Similar A level / specimen paper questions:

- Specimen paper CSQ1(d)(i) compares growth (rate) in air travel.

- (a) (ii) Suggest a reason why New Zealand is the world's biggest exporter of dairy milk (Extract 1), even though the US, India and China each produce more dairy milk. [1]

Case ref:

- Table 1. Students should be able to identify here that the level of production India, US and China are significantly higher than that of New Zealand's.
- There are signs that, in spite of China's higher production levels of dairy milk compared to New Zealand, that China is "the world's biggest buyer of dairy milk" (Ext 1, Para 3) and "will unlikely become self-sufficient for dairy milk in the near future" (Ext 1, Para 7). This could hint at the idea that a net exporter needs to have demand < supply and not merely high levels of supply (production).

Content tested:

- Net exporter (where there is excess supply) vs. net importer (where there is excess demand)

Skills tested:

- Demand / supply applications.

Commented [EK1]: Add in "Using Table 1..." if we want to be clearer which data students should refer to. This is consistently done in the specimen paper. We could observe how the 8823 2018 questions are phrased and adjust our internal exam question phrasing accordingly.

In this particular case, it is fairly self-explanatory, i.e. (a)(i) is the first question, and Table 1 is the first data in the case study.

Suggested answer: [1m for any plausible suggestion]

- The production of dairy milk in New Zealand is greater than the demand for dairy milk in New Zealand by the greatest amount among the countries in Table 1. (Explanation not required, but for reference: A country exports any excess of demand for a good subtracted from the production/supply of a good. So if New Zealand is the world's biggest exporter of dairy milk, then the excess of production minus demand is the greatest among all countries in the world.)
- New Zealand may be the only country in Table 1 that is self-sufficient in milk. (Explanation not required, but for reference: Self-sufficiency means the country produces more of a good than it consumes, hence allowing it to export excess amounts of the good.)

The production of dairy milk in New Zealand is greater than the demand for dairy milk in New Zealand by the greatest amount among the countries in Table 1.
(29 words)

Note to markers:

- 1 mark can be awarded for:
 - Idea of self-sufficiency.
 - Recognising that net exporters have domestic production/supply > domestic demand
- A stricter mark scheme will require the answer to suggest the extent, i.e. NZ is most self-sufficient or the supply>demand by the greatest amount.

For review:

- Do we want to include the concepts of self-sufficiency / net-importer, net-exporter in future versions of our notes? Either in demand/supply notes (as application of dd/ss), or in trade.

Similar A level / specimen paper questions:

- Specimen paper CSQ1(d)(ii) requires one possible reasons to be stated and explained.

(b) (i) Explain the likely value of price elasticity of demand for dairy milk. [2]

Case ref:

- No clear indication from data, though Extract 4 suggests that there are increasingly close substitutes to dairy milk in the form of non-dairy milk.

Content tested:

- Determinants of PED.

Skills tested:

- Making inferences from Extract 4, incorporate that into own understanding of likely PED for dairy milk.

Suggested answer:

If $PED < 1$ (preferred answer)

- PED for dairy milk is likely to be between 0 and 1 as dairy milk is a necessity food product... [1m for stating the right value matched to the right PED determinant]
- ...that is a part of the diet for majority of the population.
OR
...that is a critical ingredient for many other food products. [1m for explaining why dairy milk is likely to be a necessity good]

If PED > 1

- PED for dairy milk could be above 1 because there are close substitutes to dairy milk...[1m for stating the right value matched to the right PED determinant]
- ...such as milk alternatives including almond milk that dairy milk consumers are increasingly willing to switch to. [1m for explaining why dairy milk has close substitutes]

PED for dairy milk is likely to be between 0 and 1 as dairy milk is a necessity food product that is a part of the diet for majority of the population.
(32 words)

Note to markers:

- 1 mark awarded if the PED value does not match the explanation, but the explanation is correct.
- 0 marks awarded for the likely PED value if student gives a specific value instead of a range, i.e. PED like to be = 0.7.

Similar A level / specimen paper questions:

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- (b) (ii) Explain the likely value of price elasticity of supply of dairy milk. [2]

Case ref:

- Extract 2 suggests that it is difficult to cut down on dairy milk production even if prices fall.
- The reverse of how it is likely to be difficult to increase dairy milk production when prices rise needs to be inferred from the context, e.g. the factor inputs are largely fixed, there is a required gestation period.

Content tested:

- Determinants of PES.

Skills tested:

- Data comprehension from Extract 2, inferring from context, incorporate that into own understanding of likely PES for dairy milk.

Suggested answer:

- PES for dairy milk is likely to be between 0 and 1, as dairy milk production requires the use of fixed factor inputs (e.g. cows) that cannot be varied significantly in the short run...[1m for stating the right value matched to the right PES determinant]
- ...because each additional cow a farmer purchases will have long-term impact on the farm's production levels and costs, and farmers don't cull their cows just because demand falls in a given year. [1m for explaining why the fixed factor inputs cannot be varied significantly in the short run]

PES for dairy milk is likely to be between 0 and 1, as dairy milk production requires the use of fixed factor inputs (e.g. cows) that cannot be varied significantly in the short run because each additional cow a farmer purchases will have long-term impact on the farm's production levels and costs, and farmers don't cull their cows just because demand falls in a given year.
(66 words)

Note to markers:

- 1 mark awarded if the PES value does not match the explanation, but the explanation is correct.
- 0 marks awarded for the likely PES value if student gives a specific value instead of a range, i.e. PES like to be = 0.4.

- Other plausible PES factors can be accepted as an answer as well.

Similar A level / specimen paper questions:

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- (b) (iii) With reference to Extracts 1 and 2 and using a supply and demand diagram, [6]
explain how **one** demand factor and **one** supply factor led to the halving of global dairy milk prices since early 2014.

Case ref:

- "...a halving of milk prices since early 2014..." (Extract 1, P1)

Supply factor(s)

- New Zealand has enjoyed an export-led dairy boom that has earned it the nickname of "the Saudi Arabia of dairy milk" and driven a rapid expansion of its farm industry (Extract 1, P1)
- Removal of milk production quotas in EU (Extract 2, P1)

Demand factor(s)

- "...weaker than expected demand, particularly from China, the world's biggest buyer of dairy milk, where dairy milk imports fell by a fifth between 2014 and 2015..." (Extract 1, P3)

Content tested:

- Non-price determinants of demand / supply.
- Market equilibrium adjustments with diagram.

Skills tested:

- Data interpretation to identify one demand factor and one supply factor.
- Focus answer to address the change in prices.

Suggested answer:

- Supply factor [2m]. Supply of dairy milk increased significantly in Europe due to removal of milk quotas (E2P1). The removal of milk quotas would have allowed more milk producers to produce milk or existing milk producers to produce more milk. This would have led to an increase in supply of milk, ceteris paribus.
- Demand factor [1m]. At the same time, demand for milk decreased due to falling demand from China (E2P1).
OR
At the same time, demand for milk was increasing but at a decreasing rate due to weaker than expected demand from China (E2P1).
- Market adjustment analysis for $S_s \uparrow > D_d \uparrow$. Since supply increased to a large extent while demand increased to a much smaller extent, there is a large surplus at the original price level, leading to significant downward pressure on dairy milk prices, resulting in the "halving of global dairy milk prices since early 2014". [2m; 1m reserved for answer relating to the extent of change in prices]
- Complete (title, axes, demand/supply curve, equilibrium price and quantity) and accurate diagram. [1m]

Supply of dairy milk increased significantly in Europe due to removal of milk quotas (E2P1). The removal of milk quotas would have allowed more milk producers to produce milk or existing milk producers to produce more milk. This would have led to an increase in supply of milk, ceteris paribus. At the same time, demand for milk was increasing but at a decreasing rate due to weaker than expected demand from China (E2P1). Since supply increased to a large extent while demand increased to a much smaller extent, there is a large surplus at the original price level, leading to significant downward pressure on dairy milk prices, resulting in the "halving of global dairy milk prices since early 2014".

(119 words + diagram)

Note to markers:

- Only 1 supply and 1 demand factor required to score full 3 marks.
- PED / PES factors also accepted as demand / supply factors respectively.

Similar A level / specimen paper questions:

- Common demand / supply factor question impacting market

- (c) Explain the likely impact of the halving of global milk prices on the economic agents – consumers, producers, government – in New Zealand. [9]

Case ref:

- "...a halving of milk prices since early 2014..." (Extract 1, P1)
-

Content tested:

- Consequences of falling prices in a market, on economic agents.
 - For consumers, should link to standard of living.
 - For producers, should link to profits.
 - For government, should link to budget balance or social welfare.

Skills tested:

- Structuring the answer either by how falling dairy milk prices affect each of the three economic agents (easier), or by how falling dairy milk prices can have three different impacts.
- Inference that each explanation is worth 3m, adding up to 9m.

Suggested answer:

- Impact on consumers [3m]. With cheaper dairy milk, the extent of increase in quantity demanded for dairy milk will depend on the PED of milk. If $PED < 1$ (depends on answer to (b)(i)) then the increase in quantity demanded for dairy milk will be less than proportionate to the fall in price, leading to a decrease in consumer expenditure on milk. Assuming income and the prices of other goods and services remain unchanged, consumer's purchasing power for other goods and services will increase while enjoying a larger quantity of dairy milk consumption at the same time. Therefore material standard of living will improve.
- Impact on producers [3m]. Since producers are likely to be facing a fall in revenue (equivalent to the fall in consumer expenditure), their profits may fall if costs remain constant. If they expect the decline in prices to be prolonged (E1P4), then producers need to find ways to reduce their costs of production through restructuring farming practices, milk processors and suppliers (E1P4). This means producers need to spend resources on research and development on production processes, renegotiate contracts with suppliers. Producers that are unable to reduce costs significantly may end up leaving the industry.
- Impact on government [3m]. To provide aid to dairy producers, the New Zealand government has reduced interest rates, which will also lead to a slight depreciation of the New Zealand dollar due to the outflow of hot money should the New Zealand interest rate now become lower than that of other countries. Prices of exported goods will fall, which could encourage an increase in export demand. While the New Zealand government could then expect more tax revenue earned from firms that are more focused on exports, they could also incur higher costs for imported factors of production and higher prices for imported goods and services. Also, if the New Zealand were to consider subsidies similar to that provided by the EU government (E1P5), the

budget balance may also worsen. Therefore, the impact on the budget balance may be uncertain since both government revenues and expenditure may increase.

- Other possible answers:
 - o Consumers: less switching to milk alternatives
 - o Producers: have to find ways to increase demand for dairy milk, e.g. through advertising, research and development to make better quality / variety of products; producers of goods that use dairy milk as a factor in put will enjoy a fall in cost of production and a subsequent increase in profits
 - o Government: even if government is not going to help dairy farmers directly, they may need to spend on efforts to retrain farmers who close their farms for transition into other industries

With cheaper dairy milk, the extent of increase in quantity demanded for dairy milk will depend on the PED of milk. If $PED < 1$ then the increase in quantity demanded for dairy milk will be less than proportionate to the fall in price, leading to a decrease in consumer expenditure on milk. Assuming income and the prices of other goods and services remain unchanged, consumer's purchasing power for other goods and services will increase while enjoying a larger quantity of dairy milk consumption at the same time. Therefore material standard of living will improve.

Since producers are likely to be facing a fall in revenue (equivalent to the fall in consumer expenditure), their profits may fall if costs remain constant. If they expect the decline in prices to be prolonged (E1P4), then producers need to find ways to reduce their costs of production through restructuring farming practices, milk processors and suppliers (E1P4). This means producers need to spend resources on research and development on production processes, renegotiate contracts with suppliers. Producers that are unable to reduce costs significantly may end up leaving the industry.

To provide aid to dairy producers, the New Zealand government has reduced interest rates, which will also lead to a slight depreciation of the New Zealand dollar due to the outflow of hot money should the New Zealand interest rate now become lower than that of other countries. Prices of exported goods will fall, which could encourage an increase in export demand. While the New Zealand government could then expect more tax revenue earned from firms that are more focused on exports, they could also incur higher costs for imported factors of production and higher prices for imported goods and services. Also, if the New Zealand were to consider subsidies similar to that provided by the EU government (E1P5), the budget balance may also worsen. Therefore, the impact on the budget balance may be uncertain since both government revenues and expenditure may increase.
(328 words)

Note to markers:

- Typically,
 - o the 1st mark can be awarded if the stated consequence is reasonable
 - o the 2nd mark can be awarded as long as there is an attempt to provide economic analysis to explain the impact
 - o the 3rd mark should be reserved for explanations that suit the context, i.e. if a very good but theoretical answer is given without reference to the context, then the answer is capped at 2m
- 3m can be awarded for a full explanation on how a fall in dairy milk prices can impact consumers, e.g. fall in consumer expenditure on dairy milk. If the same explanation is used for another agent, e.g. since

- consume expenditure falls, therefore producers' revenue also falls, only 1 additional mark can be awarded.
- Should students take an approach of explaining 3 different impacts/arguments instead of splitting the answer into how falling milk prices can impact each of the three agents, then the marking can be done based on how well each of the three different impact are explained (3m each).
 - If only one economic agent is mentioned – max 4m. If only 2 economics agents are mentioned – max 7m. Both caps assume that the development of the answer is complete with few/no errors.

Similar A level / specimen paper questions:

- (d) With reference to Extract 3, explain how changes in oil prices can impact the dairy milk market, and comment on **one** factor that would determine the extent of the impact. [7]

Case ref:

Information useful to establish relationship between oil market and dairy milk market

- "...a halving of milk prices since early 2014..." (Extract 1, P1) → clue that the market price of dairy milk should fall at the end of the analysis
- "Current dairy milk production is being stimulated by low feed prices, which were driven by record yield seasons in 2013 and 2014, similar levels in 2015 and new projected highs this year in 2016." (Extract 3, P1)
- "The advent of large-scale fracking has resulted in a significant reduction in the price of oil." (Extract 3, P1)
- "This will first have an impact on the biofuel market, which is a substitute for oil." (Extract 3, P1)
- "Subsequently, this will affect the corn market, which is used to produce biofuel as well as feed for dairy farms." (Extract 3, P1)

Possible factors that would determine the extent of the impact

- "Eighty percent of US dairy milk farm costs are feed" (Extract 3, P2)

Content tested:

- Substitutes, i.e. when price falls in market A (oil), demand for B (biofuel) will fall.
- Competitive supply, i.e. when equilibrium quantity / quantity supplied falls in market A (biofuel), supply of B (feed) will increase.
- Market adjustment analyses.

Skills tested:

- Analyse the relationship between multiple markets based on information given.
- Consideration for factors that would determine impact, i.e. break down analysis into individual parts.

Suggested answer:

Explaining impact of changes in oil prices on dairy market. (up to 4m)

- Since oil and biofuel are substitutes, therefore a fall in oil prices will lead to an increase in quantity demanded for oil and result in a fall in demand for substitutes such as biofuel. This creates a surplus in the biofuel market, leading to a fall in equilibrium price as well as equilibrium quantity in the biofuel market.
- These changes in the biofuel market can then impact the dairy milk market as both use corn as a common factor input, i.e. biofuel and dairy

milk are competitive in supply. With a fall in biofuel prices, quantity supplied of biofuel will fall, leading to more corn available for use in producing feed. This increases the supply of feed, causing a surplus and downward pressure on the price of feed, which then reduces the cost of producing dairy milk. As a result, dairy milk supply increases, creating a surplus and leading to a fall in equilibrium price while equilibrium quantity increases.

Comment on factor that would determine the extent of impact. (up to 3m)

- One possible factor that would determine the extent of this impact, is the importance of feed as a factor input for producing dairy milk. Extract 3 states that feed accounts for 80% of production costs of dairy milk. This means when the price of feed falls due to the fall in oil prices, this would lead to a significant increase in supply of dairy milk. As a result, equilibrium price will fall and equilibrium quantity will increase significantly in the dairy milk market.
- Other possible factors:
 - o **PED of oil** → if PED of oil is <1 , then quantity demanded for oil will increase less than proportionately, and there is less switching away from biofuel, which then reduces the eventual impact on the dairy milk market.
 - o **Closeness of substitutability between oil and biofuel** → if oil and biofuel are weak substitutes, then the switching away from biofuel will be minimal, reducing the eventual impact on the dairy milk market.
 - o **PES of biofuel** → if PES of biofuel is <1 , then quantity supplied will fall less than proportionately to the fall in price of biofuel, reducing the eventual impact on the dairy milk market.
 - o **Importance of corn as a factor input for biofuel / feed** → if corn is not a key factor input for producing biofuel and/or feed, this would reduce the eventual impact on the dairy milk market.
 - o **PED of feed** → if PED of feed is >1 , then when supply of feed increases leading to a fall in price of feed, the increase in quantity demanded for feed will be more than proportionate. This limits the fall in price of feed, reducing the eventual impact on the dairy milk market.
 - o **PED of dairy milk** → the PED of dairy milk will determine the impact of an increase in supply of dairy milk, i.e.
 - if PED dairy milk > 1 , then equilibrium price will fall less while equilibrium quantity will increase more for dairy milk market;
 - if PED dairy milk < 1 , then equilibrium price will fall more while equilibrium quantity will increase less for dairy milk market.
 - o **Ceteris paribus assumption may not hold**, i.e. other variables may be changing at the same time oil prices are falling.

Since oil and biofuel are substitutes, therefore a fall in oil prices will lead to an increase in quantity demanded for oil and result in a fall in demand for substitutes such as biofuel. This creates a surplus in the biofuel market, leading to a fall in equilibrium price as well as equilibrium quantity in the biofuel market.

These changes in the biofuel market can then impact the dairy milk market as both use corn as a common factor input, i.e. biofuel and dairy milk are competitive in supply. With a fall in biofuel prices, quantity supplied of biofuel will fall, leading to more corn available for use in producing feed. This increases the supply of feed, causing a surplus and downward pressure on the price of feed, which then reduces the cost of producing dairy milk. As a result, dairy

milk supply increases, creating a surplus and leading to a fall in equilibrium price while equilibrium quantity increases.

One possible factor that would determine the extent of this impact, is the importance of feed as a factor input for producing dairy milk. Extract 3 states that feed accounts for 80% of production costs of dairy milk. This means when the price of feed falls due to the fall in oil prices, this would lead to a significant increase in supply of dairy milk. As a result, equilibrium price will fall and equilibrium quantity will increase significantly in the dairy milk market. (242 words)

Note to markers:

Up to 4 marks for correct relationship between oil market and dairy milk market. Answer must contain points stated as “**requirement**” to score the full 4 marks.

- Oil and biofuel are substitutes (up to 2 marks)
 - When price of oil falls → Quantity demanded for oil increases [1m]
 - Demand for biofuel falls → Market price / quantity equilibrium falls for biofuel [1m - **requirement**]
- Biofuel and dairy milk use the same factor input (corn) (up to 3 marks)
 - When price of biofuel falls (from above) → Quantity supplied of biofuel falls [1m]
 - More corn is available for producing feed → Supply of feed increases → Price of feed falls [1m]
 - Cost of producing dairy milk falls → Supply of dairy milk increases → Market price falls / quantity increases for dairy milk [1m - **requirement**]

Up to 3 further marks, to comment on any one factor that would determine the extent of impact. The 3 marks can be awarded for:

- 1m for stating a correct factor
- 2m for a good explanation on how the factor could affect the extent of impact; 1m reserved for the link to the dairy milk market (could be implied, and not stated explicitly)
- Ignore if more than one factor is raised; credit marks according to the best explained factor since question only requires comment on one factor

Similar A level / specimen paper questions:

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- (e) Explain the factors affecting consumers' decision-making to switch from dairy milk to almond milk. [4]

Case ref:

- “...in spite of the fact that milk alternatives are typically more expensive than dairy milk.” (Extract 4, P1)
- “Consumers' increasing interest in almond milk and disinterest in dairy milk, is likely due to general health and wellness concerns. Unlike dairy milk, almond milk does not pose a threat to consumers who are lactose intolerant, or who worry about hormones or antibiotics that could be found in dairy milk due to injections given to cows to stimulate milk production.” (Extract 4, P2)
- “In addition, almond milk is more delicious in taste and texture as compared to other milk alternatives and is appealing to consumers looking to transition away from dairy milk.” (Extract 4, P2)

- “However, there are also recent reports citing that almond milk production could damage the environment due to the large usage of water in an already dry California (world’s largest producer of almond), and harm honeybees.” (Extract 4, P3)

Content tested:

- Decision-making framework elements, i.e. benefits & costs as the main factors, and can include constraints, information, unintended consequences.

Skills tested:

- Recognise that the question requires an explanation of more than one factor (“Explain the factors...”).
- Inference that each explanation is worth 2m, adding up to 4m.

Suggested answer: [2m for each factor explained]

Possible benefits.

- Consumers that wish to keep milk as part of their diet may find that almond milk is more beneficial for health compared to dairy milk. Lactose intolerant consumers will prefer almond milk to dairy milk. Consumers may also prefer almond milk if they don’t want to consume milk that may contain hormones or antibiotics.
- Consumers that consume milk alternatives may prefer almond milk in particular due to its better taste and texture.

Constraints

- Consumers will have to consider that almond milk costs more than dairy milk, so switching to almond milk could mean an increase in expenditure on milk. If disposable income remains unchanged, it will become a constraint for consumers who have to cut down on milk consumption or reduce their consumption on other goods and services and/or reduce their savings. [this can also be explained as a **cost** factor]

Information

- Consumers may require more information on the impact on health from consuming dairy milk compared to almond milk. While dairy milk may contain hormones or antibiotics, consumers may want to know whether there is any negative impact on health. In addition, consumers may wish to compare the nutritional value of consuming dairy milk (e.g. calcium) compared to almond milk.

Unintended consequences

- Almond milk production is reported to be harming the environment in California, due to large water usage and possibly harming honeybees. Switching to almond milk will increase demand for almond milk, which could subsequently lead to increase in production of almond milk and harm the environment further. Consumers of milk living in California may factor this into their decision-making; however consumers not associated to California are likely to be indifferent to this unintended consequence in the short term.

Consumers that wish to keep milk as part of their diet may find that almond milk is more beneficial for health compared to dairy milk. Lactose intolerant consumers will prefer almond milk to dairy milk. Consumers may also prefer almond milk if they don’t want to consume milk that may contain hormones or antibiotics.

Consumers will have to consider that almond milk costs more than dairy milk, so switching to almond milk could mean an increase in expenditure on milk. If disposable income remains unchanged, it will become a constraint for

Commented [EK2]: Instead of restricting mark scheme to just benefits and costs, it is reasonable to just award 2m for each factor explained. It is also ok to have 2 benefits / 2 costs since the question did not require a decision to be made, i.e. the scope does not need to be complete for decision-making.

consumers who have to cut down on milk consumption or reduce their consumption on other goods and services and/or reduce their savings.
(113 words)

Note to markers:

- 2m can be awarded for each factor explained.
- The benefit arguments may be overlapping (since both could point towards tastes and preferences, so it will count as one factor, i.e. max 2m)
- The answer does not need to contain both benefit / cost factors because the question does not require a final decision to be reached.

Similar A level / specimen paper questions:

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- (f) Using evidence from the case study and your own knowledge, discuss the view that subsidies for dairy milk producers are “short-sighted” and should be discontinued. [12]

Case ref:

Arguments to support subsidies to remain

- “The pain is being felt across an industry that stretches from the Pacific to the EU and North America and employs millions.” (Extract 1, P2)

Arguments to support discontinuation of subsidies

- “We view these EU subsidies as short-sighted,” says Nathan Guy, New Zealand’s agricultural minister. “These subsidies lock dairy farmers into unprofitable businesses.” (Extract 1, P5)
- “An absurd situation ensues. Farmers continue to sell their milk, trying to scrape together enough money to get by, which of course adds to the glut and presses prices down even further. Dairy farmers are trapped in “a vicious circle,” as BDM calls it. And not only those in Europe.” (Extract 2, P4)
- “Eighty percent of US dairy milk farm costs are feed. The reduction in feed costs from US\$29.26 in August 2012 to US\$18.04 per 100 kg of dairy milk in June 2015 has greatly increased farmers’ profits.” (Extract 3, P2)
- “Consumers’ increasing interest in almond milk and disinterest in dairy milk, is likely due to general health and wellness concerns.” (Extract 4, P2)

Content tested:

- Reasons for government to implement subsidies.
- Reasons for government not to implement subsidies.

Skills tested:

- Synthesise arguments to make a judgement on whether subsidies should be discontinued, using dairy milk context as far as possible.

Suggested answer:

A discussion on the rationale / basis for government to subsidise dairy milk producers (up to 9 marks)

- Why subsidies should be discontinued (based on context quoted phrase about subsidies being short-sighted)
 - o Subsidies should be discontinued because it is not justified and will distort the market. A common reason for using subsidies is when there is under-consumption of a good due to the existence of positive externalities; it may also sometimes include a situation where there is undervaluation of private benefits of consumption due to imperfect information. In the

case of dairy milk, it is unlikely that there are positive externalities arising from consumption; there is also no known undervaluation of private benefits of consuming dairy milk. Therefore, subsidies for dairy milk producers are likely to distort the market by "lock(ing) farmers into unprofitable businesses." (Extract 1) This means, instead of respond to market forces such as stagnating or even falling demand for dairy milk, the government subsidies artificially prop up profits of dairy milk producers and cause them to continue or even increase dairy milk production. Assuming the dairy milk market was originally allocative efficient, the implementation of subsidies will lead to an over-allocation of resources to the dairy milk market, an over-production of dairy milk and allocative inefficiency.

- Why subsidies can help producers in the short-term
 - o However, subsidies can be used to help producers, even if in the short term, by reducing the cost of production, to maintain or even raise the profits of producers. This could ensure that the producers continue to earn an acceptable income for producing dairy milk, at least in the short run, while they try to reduce costs in their own ways to make their dairy milk business more sustainable. This also prevents producers from having to shut down their businesses, and possibly becoming unemployed if they do not have the necessary skills to work in another industry.

Evaluation on whether subsidies should be discontinued. (up to 3m)

Evaluation needs to be based on the arguments raised in the body of the answer. The following is a sample evaluation (two different stands) based on the arguments raised above.

- Agree with the view that subsidies should be discontinued:
 - o Stand: The distortion to markets could be significant and outweigh the benefits of subsidies...
 - o Reason: ...due to the nature of the dairy milk industry.
 - o Explanation of reason: If producers are artificially encouraged to increase production due to government subsidies, they may end up purchasing / rearing more cows than they should have. When these producers subsequently reduce production or go out of business because the subsidies are not sustainable in the long run, they are likely to have to cull cows since this factor input cannot be used for any other industry. The wastage will be more significant than the short-term respite that the producers receive in boosting their profits temporarily.
- Disagree with the view, i.e. subsidies should remain:
 - o Stand: The benefits to producers are more significant than the distortions to the market because...
 - o Reason: ...the size of the dairy milk industry is significant and many producers will benefit from the subsidies which could have positive knock-on effects on the economy.
 - o Explanation of reason: Extract 1 states that the dairy milk industry employs millions globally, so the number of dairy milk producers that benefit from subsidies is large. If the subsidies allows them to stay in business / remain employed it would prevent a potential crisis of a massive increase in unemployment which would require government spending as well, in the form of unemployment benefits and/or funds to help farmers retrain in order to switch to other industries. This also helps to maintain the consumption level of households that comprise dairy milk producers, and other industries that use

dairy milk as a factor input will also be able to continue to have access to cheap dairy milk, which could subsequently benefit consumers of all dairy milk-related products. Nonetheless, the subsidies is a short-term measure that cannot be in place indefinitely, so the government needs to make clear and reduce the amount of subsidies gradually over a time period.

Other possible arguments

- Other possible reason(s) for why subsidies should be discontinued:
 - o There is no need for subsidies because producers' profits may not necessarily be falling permanently – either because demand for dairy milk may recover soon, or the costs of producing dairy milk is falling due to the falling cost of feed.
 - o Milk alternatives may be better for health as compared to dairy milk, so discontinuing subsidies for dairy milk will stop the artificial fall in dairy milk prices. This could encourage more milk consumers to switch to healthier milk alternatives.
 - o There are problems with the use of subsidies, even if justified – e.g. burden on government finances, inability to accurately estimate the right amount of subsidies, difficult to remove subsidies in the near future and end up having to protect farmers indefinitely.

- Other possible reason(s) for why subsidies need to remain:
 - o These subsidies can indirectly lead to fall in dairy milk prices which can benefit consumers of dairy milk. This assumes that consumers will be able to reduce their expenditure on dairy milk and thereby increasing their purchasing power for other goods and services, ceteris paribus.
 - o These subsidies can make dairy milk exports more price competitive. Should foreigners increase their demand for these exports, aggregate demand could increase, leading to an unplanned reduction in stocks. Firms will increase their production, hire more factors of production and pay out more factor income, and eventually increase real national income by multiplies, leading to actual economic growth.

Subsidies should be discontinued because it is not justified and will distort the market. A common reason for using subsidies is when there is under-consumption of a good due to the existence of positive externalities; it may also sometimes include a situation where there is undervaluation of private benefits of consumption due to imperfect information. In the case of dairy milk, it is unlikely that there are positive externalities arising from consumption; there is also no known undervaluation of private benefits of consuming dairy milk. Therefore, subsidies for dairy milk producers are likely to distort the market by "lock(ing) farmers into unprofitable businesses." (Extract 1) This means, instead of respond to market forces such as stagnating or even falling demand for dairy milk, the government subsidies artificially prop up profits of dairy milk producers and cause them to continue or even increase dairy milk production. Assuming the dairy milk market was originally allocative efficient, the implementation of subsidies will lead to an over-allocation of resources to the dairy milk market, an over-production of dairy milk and allocative inefficiency.

However, subsidies can be used to help producers, even if in the short term, by reducing the cost of production, to maintain or even raise the profits of producers. This could ensure that the producers continue to earn an acceptable income for producing dairy milk, at least in the short run, while they try to reduce costs in their own ways to make their dairy milk business more sustainable. This also prevents producers from having to shut down their businesses, and

possibly becoming unemployed if they do not have the necessary skills to work in another industry.

On balance, the distortion to markets could be significant and outweigh the benefits of subsidies due to the nature of the dairy milk industry. If producers are artificially encouraged to increase production due to government subsidies, they may end up purchasing / rearing more cows than they should have. When these producers subsequently reduce production or go out of business because the subsidies are not sustainable in the long run, they are likely to have to cull cows since this factor input cannot be used for any other industry. The wastage will be more significant than the short-term respite that the producers receive in boosting their profits temporarily.
(383 words)

Note to markers:

L3: 6-9

An answer that explains:

- At least one reason to subsidise dairy milk producers
- At least one reason to discontinue the subsidies

L2: 3-5

An answer that explains:

- EITHER At least one reason to subsidise dairy milk producers OR At least one reason to discontinue the subsidies
OR
- BOTH reasons to subsidise dairy milk producers AND to discontinue the subsidies, HOWEVER both explanations are incomplete / lack economic analysis

Answers that take a primarily pros vs. cons of subsidies approach without really addressing the reasons for implementing vs. reasons for discontinuing subsidies will score maximum of L2: 5.

L1: 1-2

An answer that:

- **only states** reasons to subsidise dairy milk producers AND / OR to discontinue the subsidies
OR
- contains major errors

Up to 3 further marks, for valid evaluative comment. The 3 marks can be awarded for:

- 1m for stating a stand / judgement clearly
- 2m for a good explanation on the reason for making the stand / judgement
- Possible to award 3 full marks if there are two evaluative criteria stated with attempts to explain the criteria, even if both explanations are not done well

Similar A level / specimen paper questions:

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Overview

Part	Question	Marks	Word count for sample answer	Assessment objective(s)
(a)(i)	Compare the trends in the production of dairy milk for New Zealand, US, India and China over the period of 2012 to 2016.	2	16	<p>Content tested:</p> <ul style="list-style-type: none"> Data-reading question. <p>Skills tested:</p> <ul style="list-style-type: none"> Comparison of data – overall trend, extent of change. Absolute change can also be accepted.
(a)(ii)	Suggest a reason why New Zealand is the world's biggest exporter of dairy milk (Extract 1), even though the US, India and China each produce more dairy milk.	1	29	<p>Content tested:</p> <ul style="list-style-type: none"> Net exporter (where there is excess supply) vs. net importer (where there is excess demand) <p>Skills tested:</p> <ul style="list-style-type: none"> Demand / supply applications.
(b)(i)	Explain the likely value of price elasticity of demand for dairy milk.	2	32	<p>Content tested:</p> <ul style="list-style-type: none"> Determinants of PED. <p>Skills tested:</p> <ul style="list-style-type: none"> Making inferences from Extract 4, incorporate that into own understanding of likely PED for dairy milk.
(b)(ii)	Explain the likely value of price elasticity of supply of dairy milk.	2	66	<p>Content tested:</p> <ul style="list-style-type: none"> Determinants of PES. <p>Skills tested:</p> <ul style="list-style-type: none"> Data comprehension from Extract 2, inferring from context, incorporate that into own understanding of likely PES for dairy milk.
(b)(iii)	With reference to Extracts 1 and 2 and using a supply and demand diagram, explain how one demand factor and one supply factor led to the halving of global dairy milk prices since early 2014.	6	119 + diagram	<p>Content tested:</p> <ul style="list-style-type: none"> Non-price determinants of demand / supply. Market equilibrium adjustments with diagram. <p>Skills tested:</p> <ul style="list-style-type: none"> Data interpretation to identify one demand factor and one supply factor. Focus answer to address the change in prices.
(c)	Explain the likely impact of the halving of global milk prices on the economic agents – consumers, producers, government – in New Zealand.	9	328	<p>Content tested:</p> <ul style="list-style-type: none"> Consequences of falling prices in a market, on economic agents. <ul style="list-style-type: none"> For consumers, should link to standard of living. For producers, should link to profits. For government, should link to budget balance or social welfare.

Part	Question	Marks	Word count for sample answer	Assessment objective(s)
				Skills tested: <ul style="list-style-type: none"> Structuring the answer either by how falling dairy milk prices affect each of the three economic agents (easier), or by how falling dairy milk prices can have three different impacts. Inference that each explanation is worth 3m, adding up to 9m.
(d)	With reference to Extract 3, explain how changes in oil prices can impact the dairy milk market, and comment on one factor that would determine the extent of the impact.	7	242	Content tested: <ul style="list-style-type: none"> Substitutes, i.e. when price falls in market A (oil), demand for B (biofuel) will fall. Competitive supply, i.e. when equilibrium quantity / quantity supplied falls in market A (biofuel), supply of B (feed) will increase. Market adjustment analyses. Skills tested: <ul style="list-style-type: none"> Analyse the relationship between multiple markets based on information given. Consideration for factors that would determine impact, i.e. break down analysis into individual parts.
(e)	Explain the factors affecting consumers' decision-making to switch from dairy milk to almond milk.	4	113	Content tested: <ul style="list-style-type: none"> Decision-making framework elements, i.e. benefits & costs as the main factors, and can include constraints, information, unintended consequences. Skills tested: <ul style="list-style-type: none"> Recognise that the question requires an explanation of more than one factor ("Explain the factors..."). Inference that each explanation is worth 2m, adding up to 4m.
(f)	Using evidence from the case study and your own knowledge, discuss the view that subsidies for dairy milk producers are "short-sighted" and should be discontinued.	12	383	Content tested: <ul style="list-style-type: none"> Reasons for government to implement subsidies. Reasons for government <u>not</u> to implement subsidies. Skills tested: <ul style="list-style-type: none"> Synthesise arguments to make a judgement on whether subsidies should be discontinued, using dairy milk context as far as possible.

Extract 1: Commodities: The milk industry cowed

11 Aug 2016, FT.com

<https://www.ft.com/content/1b93f92c-5ef8-11e6-bb77-a121aa8abd95> (may have pay wall)

1	It is calving season in Waikato, New Zealand's biggest dairy region, and Nicola Kloeten, a farmer, is delivering a new generation of cattle which she hopes will satisfy Asia's growing appetite for milk, butter and cheeses.
2	Since signing a free trade deal with China in 2008, New Zealand has enjoyed an export-led dairy boom that has earned it the nickname of "the Saudi Arabia of milk" and driven a rapid expansion of its farm industry. The South Pacific nation is the world's biggest exporter of milk-based products, which account for a quarter of everything it sells overseas.
3	But a halving of milk prices since early 2014 — the result of oversupply and softening demand — is turning New Zealand's Chinese-linked farming boom to bust. For the first time in years, Ms Kloeten and her husband are reducing rather than expanding their herd of 560 Jersey and Friesian cross-breed cows.
4	"We have had to cull 60 cows because milk prices have stayed low for so long," says Ms Kloeten. "Many farmers are struggling."
5	The pain is being felt across an industry that stretches from the Pacific to the EU and North America, employs millions and wields significant political clout. Almost one-tenth of all milk produced is exported across borders in a trade worth \$140bn a year.
6	Dairy NZ, an industry body, says four out of five of its dairy farmers are losing money for a third consecutive season. KPMG forecasts that one in 10 farmers in the country will have to exit the industry and a further 28 per cent will need to restructure their business and raise fresh capital to survive. Reported suicides of dairy farmers have also increased in recent months.
7	The Kloeten family, like many dairy farmers in this tight-knit rural community about 150km south of Auckland on New Zealand's North Island, is slashing costs by selling more animals into the meat industry and limiting the use of supplementary feed and fertiliser. The national dairy herd fell by 300,000 animals to 6.4m last year, the first reduction in a decade.
8	"I know some farmers who have had to sell their herds," says Ms Kloeten. "There was no point in building up any more debt with the way prices are."
9	Powder dried The crisis was triggered by a combination of global overproduction of milk and weaker than expected demand, particularly from China, the world's biggest buyer of dairy products, where imports fell by a fifth between 2014 and 2015, according to the UN's Food and Agricultural Organisation. This is being exacerbated by events such as Russia's 2014 ban on European dairy imports linked to tensions in Ukraine and weak demand in the Middle East, where the dip in oil prices has hit incomes.
10	The price of whole milk powder, a key ingredient in food products and New Zealand's biggest dairy export, has more than halved since 2014 to more than \$2,000 per tonne, according to the most recent Global Dairy Trade Auction run by Fonterra, the Kiwi co-operative that has become the world's biggest dairy exporter.
11	Many commodities analysts do not expect dairy prices to recover to sustainable levels until 2017 at the earliest, when they hope cuts to production will make an impact. "This is the toughest period dairy farmers have seen for a generation," says Emma Higgins, Rabobank analyst. "Debt levels are higher, cost structures are higher and there has been what looks like three years in a row of low milk prices."

12	The prolonged decline in prices is a global phenomenon which is prompting a restructuring of farming practices, milk processors and suppliers. It is also raising the pressure on governments to intervene and support farming communities even as some had been seeking to liberalise their dairy industries.
13	In the EU, which last year removed a three decades-old limit on dairy production to capitalise on the boom in China, prices paid to farmers for milk have slumped to 2009 levels. It is a similar story in Canada, where farmers are struggling with weak prices and protesting against the Nafta trade pact that allows the import of US dairy products without tariffs.
14	Farm owners globally warn that the crisis will force many to leave the industry. Last month the UK's Agriculture and Horticulture Development Board said one in 10 dairy farms in England and Wales — about 1,000 businesses — have closed since January 2013.
15	In Australia the scale of the price crash caught Murray Goulburn, the country's biggest dairy processor, by surprise. In April it made retrospective cuts to the price it had offered to pay farmers for milk, from A\$5.60 to between A\$4.75 (\$3.66) and A\$5. Its opening price for the new season beginning July is A\$4.31, below estimated production costs of A\$5-A\$5.20.
16	"They were gutted by the first decision," says Adam Jenkins, president of the United Dairy Farmers of Victoria. "And now they're numb at this one."
17	The forecasting mistake cost Gary Helou, Murray Goulburn's chief executive, his job and forced Canberra to cough up A\$555m in state-backed concessional loans for struggling farmers.
18	Questions of support The EU has made €1bn available in aid to farmers and begun stockpiling milk powder and other dairy products to try and force up prices. This comes after production increased by about 5 per cent in the first five months of 2016, compared to the same period last year.
19	Further support is planned by Brussels, which has been forced to retreat — at least temporarily — from its policy of liberalising its dairy industry by removing, for instance, production quotas to enable its farmers to compete for market share.
20	"We view these [EU] subsidies as short-sighted and protectionist," says Nathan Guy, New Zealand's agricultural minister. "It locks producers into unprofitable and eventually unsustainable overproduction and causes huge distortions in world markets."
21	New Zealand, which abolished most farm subsidies in the mid-1980s, is not advocating a return to state support even though its farmers are bearing the brunt of the collapse in dairy prices. It is particularly affected due to the scale of its dairy industry, its reliance on exports to China and its greater focus than other nations on whole milk powder, rather than cheeses, butters and yoghurts. It supplies about two-thirds of global exports of whole milk powder, with China the biggest customer.
22	"We export 95 per cent of our dairy and this is dominated by powder exports, which has seen the greatest fall in prices of all dairy products during this downturn," says Keith Woodford, honorary professor of agri-food at Lincoln University in New Zealand.
23	To meet China's seemingly insatiable demand for ice cream, infant formula and other dairy products, New Zealand's farmers ramped up production. They went on a buying spree increasing their herds, buying land and converting sheep and beef farms to dairy.
24	New Zealand's milk powder exports to China increased rapidly and peaked at 744,000 tonnes in 2013-14, generating huge profits. Since then weaker demand in China, higher domestic production and a build-up in stockpiles have prompted Beijing to halve imports.

25	"China purchased more dairy product than it needed," says Ms Higgins. "When it found itself awash with product, pressure was placed on dairy exporters — and therefore, New Zealand — to bear the adjustment, rather than the Chinese domestic dairy industry."
26	Fonterra, which processes about 80 per cent of New Zealand milk, recently slashed the price it pays farmers to a nine-year low of NZ\$4.25 (\$3.08) per kilogramme of milk solid. This is almost half the peak payment and significantly below the break-even price of NZ\$5.25, according to Dairy NZ.
27	"A lot of farmers are asking how the hell did we get into this mess?" says Chris Lewis, a farm owner and president of the Federated Farmers' Waikato division. "This is the season when many people will have to decide whether to stay in dairy or get out."
28	Money worries The biggest threat to farmers is posed by the debts of NZ\$38bn amassed in the boom years, which amounts to a tenth of the country's total bank lending, according to the Reserve Bank of New Zealand. Most farmers have cut costs to the bone by reducing the size of their herds, delaying capital purchases and letting casual staff go.
29	"Debt servicing is a really big issue for farmers," says Mr Woodford. "Banks are not keen to foreclose as farm and land prices would fall and they would lose money."
30	But there are signs of financial stress, with the price of dairy farms falling by 18 per cent in the 12 months ended in June, according to the Real Estate Institute of New Zealand. The central bank warned in its financial stability report in May that farmers' debt positions are stretched and loan-to-income levels are approaching peaks last seen during the global financial crisis.
31	"Banks will have to balance the risk of overextending credit with that of exacerbating the downturn through tightening lending standards," it said. Stress tests in March warned that some banks face losses of between three and eight per cent on their dairy exposures.
32	To date, New Zealand's national economy has weathered the storm due mainly to construction linked to the rebuilding of Christchurch after the 2010-11 earthquakes and a housing boom. But on Thursday the central bank cut interest rates by 0.25 per cent to a new record low of 2 per cent, in a bid to weaken a strong New Zealand dollar that is hurting its dairy exports.
33	At the main cattle market in Hamilton on the North Island, farmers are downbeat. "Some farmers will not get any more money from their banks," says Shane Egan, who sold his farm last year and now works at the market. "A lot of them have been losing NZ\$200,000 a year so there will be a lot of pressure on farmers to sell in the next 12 months," he predicts.
34	The decline in dairy prices has caused a fall in the value of dairy cows, which means farmers struggling to make debt repayments cannot simply sell their animals to pay back loans.
35	"The only saving grace," says Brent Houghton, livestock agent and farm owner, "is that there are other farmers worse off than we are so the banks aren't selling us all up in one fail swoop because they'd lose big themselves."
36	The downturn is also having an impact on Fonterra, which has slashed 750 jobs out of its 16,000 workforce, even as it moved into its new NZ\$100m headquarters in Auckland this year — a project conceived during the boom.
37	"There has been a slower-than-expected recovery in China and the strong New Zealand dollar is making things more painful than in previous cyclical downturns," says Theo Spierings, Fonterra chief executive.

38	But he is confident that the market will recover, adding that Asia's appetite for dairy is growing at 2-3 per cent a year. He says fears that China could increase its own production and cut out New Zealand's farmers are misplaced.
39	Already the world's third-biggest dairy producer, behind the US and India, China has ramped up production by an average of 8 per cent a year over the past five years, according to research firm Ibisworld. But it has to import a fifth of its total dairy consumption and the high cost of feed and environmental challenges make it unlikely it will become self sufficient, analysts say.
40	"Farming isn't easy in China," he says. "I have not changed my mind about the positive long term prospects for the dairy market or China."
41	Ms Kloeten and the rest of the New Zealand farming community are hoping he is right — and few would want to test their bankers' patience for much longer.

Extract 2: When the milk market turned sour
27 May 2016, dw.com (Deutsche Welle, German international broadcaster)
<https://www.dw.com/en/when-the-milk-market-turned-sour/a-19286454>

1	Not long ago, European dairy farmers built out their operations with dreams of worldwide export. But demand has shrunk, and millions of cows are now producing milk that nobody wants. Farmers are paying the price.
2	To grasp how serious the situation has become, it is worth taking a look at the recent course of the EU's intervention system, meant as a safety net to keeping prices from plummeting in times of crisis. If the cost of milk drops below 20 cents, the government would step in and buy up to 109,000 tons of powdered milk off the hands of dairy producers.
3	"Until now, nobody took any interest in the program," said Eckard Heuser of MIV, an association of German dairy producers. But this year is different. The EU had bought out the limit by April.
4	It then doubled the limit - and then quickly reached it again, piling up 218,000 tons of powdered milk in its possession. That's more than 2 billion liters of milk, or 1.5 percent of Europe's yearly production. Yet prices continue to sink.
5	The problem is systemic, and it won't be easy to fix. Cows are loyal workers. They can't work part-time or go on vacation. They eat and they give milk. And in the European Union, they're more productive than anywhere else.
6	Why is there so much milk in Europe? Farmers are like all other entrepreneurs. They seek to grow their business and export their products. And not too long ago, it seemed like a great time to do both. Milk quotas, which had capped production in Europe for decades, were being dismantled, and the export market was calling. From the Middle East to China, a thirst for milk and a hunger for cheese seemed to be growing.
7	"People were consciously overproducing," said Andreas Gorn, a dairy expert with AMI, a German agricultural market research firm.
8	But economic crisis struck around the world, with incomes falling along with demand. The trade embargo with Russia chipped away at the market further. European exports still grew, though not as much as its production. There are 23.6 million cows in European barns now, with each producing around 10,000 liters of milk per year.
9	Why don't the farmers just produce less? BDM, an association of German dairy farmers, estimates that production costs amount to about 40 cents per liter of milk. In May, German farmers were getting an average of 25.8 cents per liter. And Andreas Gorn expects the prices to spiral further.
10	Since farmers are losing money with each liter of milk they produce, it would seem reasonable to expect them to simply reduce their output. But the solution isn't that simple.
11	"Farmers need liquidity," explained Jutta Weiss, a spokeswoman for BDM. They have to buy feed, pay rent, service credit. Fresh money only comes in when milk is sent out. So if a farmer stops milking, he or she will immediately go bankrupt. The others continue milking against time, hoping to scrape by until prices recover.
12	An absurd situation ensues. Because the return isn't high enough, farmers send off as much milk as possible, trying to scrape together enough money to get by, which of course adds to the glut and presses prices down even further. Dairy farmers are trapped in "a vicious circle," as BDM calls it. And not only those in Europe.
13	How is the milk price worldwide?

	"Around 80 percent of the local price is determined by the global price," estimates Holger Theile, director of IFE, a German research institute that analyses the milk market. This applies to butter, cheese and powdered milk - all methods for transporting milk without it perishing. Powdered milk is the most ideal: Packed in sacks, it can last for years and reach every corner of the world.
14	Around a third of the cheese and skim powdered milk that is traded worldwide comes from the EU. It makes no difference to a chocolate producer in the US whether its milk comes from Europe or next door. What matters is the price, which means that farmers from Bavaria are pitted in direct competition with farmers in Brazil or New Zealand. If prices tumble in one corner of the world, they tumble everywhere else, too.
15	What can be done? Only one thing seems to be agreed upon: No one in Europe wants the government to impose quotas again. But how else can the situation be brought under control?
16	"We have to do something about the volume," urges the MIV association. It argues that farmers should be compensated for producing less milk, around 30 cents per liter, so that as many farmers as possible take part as quickly as possible.
17	But Michael Lohse from another German farmer association, DBV, believes "that doesn't work - the markets are open and should stay open." He argues that if Europe produces less milk, then other regions will simply produce more. DBV calls for binding agreements between milk farmers and the dairy producers who buy from them. Until now, producers have had to buy all of the milk that the farmers deliver, even if it the demand isn't there.
18	The thought of fallow farms and abandoned villages is also haunting politicians. Last autumn, Brussels put together its first aid program, amounting to 500 million euros (\$558.7 million), which many saw as just a drop in the bucket. Smaller, family-run farms are already starting to fail, and Robert Habeck, a politician with the German Green party, warns that in five years, half of the dairy farmers in Germany could disappear.
19	The farmers associations agree. "Whoever wants there still to be farmers has to do something," Lohse said. "Otherwise the industry will go abroad, as happened with textiles."

Extract 3: Milk price cuts reflect the reality of sweeping changes in global dairy market

12 May 2016, The Conversation (independent news source based in Australia)

<https://theconversation.com/milk-price-cuts-reflect-the-reality-of-sweeping-changes-in-global-dairy-market-59251>

1	A structural change is underway in global dairy markets. A perfect storm has emerged through a coincidence of events, technology, and policy changes across the major dairy producing nations, including Australia, which will result in a long term significant reset of dairy economics across the globe.
2	Cooperatives Murray Goulburn and Fonterra have both dramatically reduced the prices they offer dairy farmers for milk, sparking a backlash from farmers, who say they will be pushed into the red and out of dairy.
3	It is only due to the strength of the two cooperatives in absorbing the costs of high milk prices in a changing market that these reductions did not occur earlier. The cooperatives have shown an inadequate understanding of global dairy economics by over-paying farmers and by seeking to claw back over-paid advances.
4	The low prices have been blamed on a short-term oversupply coinciding with a reduction in demand from China and Russia. Some of this demand is now being met by Chinese investment in both Australia and New Zealand which also contributes to the changes underway. But the debate thus far has focused on problems with demand while ignoring the bigger issue of increasing global over-supply.
5	The preoccupation with the belief that global demand will solve emerging on-farm production cost difficulties and that a "substantial improvement in prices was still expected by mid-2016" was naive and failed to recognise how quickly, and irreversibly global dairy supply can change.
6	Since the mid-2000s a strong increase in demand for milk products across Asia, largely on the back of rising middle-income wealth led to the complete depletion of surplus dairy stocks in the European Union and the US. This change to the supply-demand equilibrium resulted in a temporary sea-change in dairy markets because growth in demand simply outpaced growth in supply by between 50% and 100% in some markets on an annual basis.
7	To a large extent this imbalance had been driven by regulation of the global supply market in which only a few export nations competed – Australia and New Zealand included. It resulted in higher than historical average dairy prices in global markets, but considerably more short-term volatility due to global GDP shocks and short-term supply-demand imbalances.
8	Regrettably a critical assumption that appears to have emerged among producers during this period, as evidenced by continued investment and expansion, was that the real price for global dairy commodities was increasing, a trend they expected to continue in the long term.
9	The current dairy price scenario, which would historically have been short-lived, is in fact masking underlying structural changes to supply-side dynamics that are now underway. Only approximately 7% of globally produced milk is traded (65 billion milk-equivalent litres). Therefore, a small change in supply globally has a profound effect on the global dairy market equilibrium.
10	The EU is the world's largest milk producer, with approximately 160 billion litres produced annually. The removal of milk production quotas in March 2015 presented an opportunity for dairy expansion and, even more importantly, one that is no longer confined to the traditional dairy exporters of Ireland, France, Belgium, and the Netherlands.
11	Under quota, EU exports doubled between 2000 and 2013 to 9.5 billion litres and are anticipated to increase again this coming season. Quota removal has freed dairy farmers in central and Eastern Europe to increase in scale considerably,

	availing themselves of technologies denied during the Cold War years. Coupled with the removal of regulations concerning the transportation of liquid milk across borders, producers and processors now find themselves with opportunities for growth not experienced since the second world war.
12	Political policies in the world's third largest dairy producer, the USA, are also likely to influence global dairy supply in the future. Current dairy production is being stimulated by low feed prices, which were driven by record yield seasons in 2013 and 2014, similar levels in 2015 and new projected highs this year.
13	Eighty percent of US dairy farm costs are feed. The reduction in feed costs from US\$29.26 per 100kg milk in August 2012 to US\$18.04 per 100 kg milk in June 2015 has greatly increased the value of marginal production.
14	The advent of large-scale fracking, which has resulted in a significant reduction in the price of oil, will likely maintain lower corn prices, at least in the short-term. This comes as the reduced value of biofuels re-focus the use of corn back to a feedstuffs for farmed livestock. The net result is that 75% of every new tonne of production across the USA is expected to be sold on the global surplus market.
15	Farmers have fought for free trade and open access for decades on both sides of the Tasman. Now that it is emerging, profitable returns will be caught first by the lowest cost global producer.
16	We are fools to think that that will be either Australia or New Zealand. Therefore, possibly with the exception of the US market, a downward reset is in store for global dairy prices.

Extract 4: WWF's work in dairy industry

Accessed 31 May 2018, World Wildlife

<https://www.worldwildlife.org/industries/dairy>

Extract removed to avoid clash with Q2.

-	Millions of farmers worldwide tend approximately 270 million dairy cows to produce milk. Milk production impacts the environment in various ways, and the scale of these impacts depends on the practices of the dairy farmers and feed growers.
-	Dairy cows and their manure produce greenhouse gas emissions which contribute to climate change. Poor handling of manure and fertilizers can degrade local water resources. And unsustainable dairy farming and feed production can lead to the loss of ecologically important areas, such as prairies, wetlands, and forests.

Extract 4 replacement: Almond milk sales continue to surge, as dairy milk contracts, Nielsen data shows
14 Apr 2016, Food Navigator (leading online news source for food industry, based in US)
<https://www.foodnavigator-usa.com/Article/2016/04/15/Almond-milk-sales-continue-to-surge-as-dairy-milk-contracts-Nielsen>

<website does not allow copy / paste>

With plant-based diets all the rage in the US currently, milk alternatives - and particularly those from almonds - are seeing strong sales growth and increased innovation, while sales of dairy milk are contracting.

In the past five years, sales of almond milk have grown 250% to more than \$894.6 million in 2015, according to the Nielsen Company.

During the same period, Nielsen adds, the total milk market shrunk by more than \$1 billion.

The trajectories of almond and dairy milk are starkest when year by year sales growth are compared. Nielsen found sales of almond milk grew 7.8% in 2015 over the previous year while those of traditional milk fell 7%. This follows a pattern established in 2012 and 2013 when sales of almond milk grew 59.8% and 50% respectively, while traditional milk fell 0.7% and 1.7% in the same years.

In 2014, sales of dairy milk saw a slight rebound with growth of 3.1%, but clearly that was not sustained in 2015, according to Nielsen data.

The sharp difference between two subcategories softens slightly when the size of each is taken into account. Dairy milk still dominates, with almond milk accounting for about 5% of the total milk market.

Still, almond milk is the clear favorite among other substitutes, based on Nielsen data. It shows sales of almond milk last year were twice that of soy, which sold \$297.7 million in 2015. Coconut milk came in next at \$61.3 million, followed by rice milk at about \$18 million and other substitutes at a combined \$50.2 million.

Key drivers in consumer interest

Consumers' increasing interest in almond milk and disinterest in dairy milk likely is *"due to general health and wellness concerns and a rising awareness of the environmental and sustainability issues surrounding it,"* said Greg Steltenpohl, CEO of plant-based beverage company Califia Farms.

“And, simply, a growing number of consumers [are] seeking a plant-based diet,” he added.

Data from Nielsen’s 2015 Global Health and Wellness survey supports this theory. It found more than 30% of consumers said whether a product was made from vegetables or fruit is “*very important*” in their purchasing decisions.

In addition, 30% said no artificial flavors were very important, followed up 29% for no artificial colors, 24% for organic and 20% for sustainable and fair trade – suggesting consumers are looking for back-to-basic, low-impact products, Nielsen said.

The market research firm added dietary restrictions may also explain interest in almond milk as it does not pose a threat to people who are lactose intolerant or who worry about hormones or antibiotics.

According to Nielsen, products labeled as hormone- or antibiotic-free have grown double digits in the past four years and generated \$11.4 billion in sales last year. Likewise, sales of lactose free products grew 8.6% in the same period to \$8.7 billion.

“Almond milk is very accessible to consumers looking to transition away from dairy milk because of its delicious taste and texture (verses other alternatives, like soy) and, therefore, its drinkability,” he said.

He added: *“It’s also the first alternative dairy category with strong brand players like Califia Farms – which focuses on creating delicious, mindful nourishment that directly appeals to the huge number of people who are actively incorporating plant-based foods into their lives.”*

Almond milk is here to stay

Even though the growth of Almond milk sales is slowing with the percent change dropping to 7.8% in 2015 compared to 39.8% in 2014 and 50% in 2013, Steltenpohl disagrees with Nielsen’s suggestion that the category may be plateauing.

“We strongly believe in the entire category’s growth potential (slowing to the triple digit range is still growing ... a lot!), and we think that there are opportunities to continue innovating and challenging the status quo,” he said.

For example, he noted, Califia Farms’ Almond Milk Creamers *“have revolutionized a sleepy category, bringing new users into both the dairy-free creamer category and the alternative dairy category for the first time.”*

That said, Steltenpohl added he also sees significant potential for other nut milks.

“We have already made some significant investment in exploring [alternative nut sources] and are working with several other nut categories,” he said. “Our new CaliCoco Smoothie is a prime example of our use of coconut, but we also feel cashew, hazelnut and macadamia are important nut sources that we have already begun to explore and incorporate into some of our formulations.”

<https://www.theguardian.com/lifeandstyle/shortcuts/2015/oct/21/almond-milk-quite-good-for-you-very-bad-for-the-planet> (end of Extract 4)

(a)	<p>With reference to Extract 5, identify and explain two pieces of information that would be useful in assessing living standards in US. [4]</p> <ul style="list-style-type: none"> • ‘Economic growth’: real GDP is increasing → higher production and consumption of goods & services → higher material SOL • ‘Lost workers’: these workers who have left the labour force face a loss of income → lower material SOL • <i>Also accept: there may be a worsening of the non-material SOL due to higher crime rates, compromising the safety and well-being of the people</i> • ‘Income inequality’: rich-poor gap widens → the high-income minority experience a much higher increase in material SOL as compared to those on low income <p>2m per point</p>	[4]
(b)	<p>With reference to Extract 5, explain one macroeconomic consequence to arise from ‘lost workers’ and comment on the extent of benefits of bringing these workers ‘back into the labour force’. [7]</p> <p>Macro consequence (up to 4m):</p> <ul style="list-style-type: none"> • Rise in ‘lost workers’ → a fall in C spending → fall in AD → fall in real GDP or economic growth, rise in unemployment → material SOL decreases. • Rise in ‘lost workers’ → fall in QQT or slow-down increase in QQT → slows down the increase in Yf / potential growth → potentially bottlenecks or DD-pull inflation building up. <p>Break-down of 4m marks: Up to 2m for how ‘lost workers’ impact components of AD and/or AS Up to 2m for how AD and/or AS changes will impact the macro goals</p> <p>Comment (up to 3m):</p> <ul style="list-style-type: none"> • Bring workers back into the labour force → some workers gaining employment → these workers enjoy higher real income → C spending increase → AD increases and actual growth is achieved • Extent: <ul style="list-style-type: none"> ○ the extent of C increasing could be limited as the proportion of these ‘lost workers’ out of total labour force or out of total consumption could be small → extent of benefit could be limited. ○ The extent of income increasing for these workers could be limited as these are mostly the retirees, workers who faced prolonged unemployment and are ‘de-skilled’ → extent of benefit on economic growth could be limited. • With fewer people unemployed → the employed can contribute to the govt’s tax revenue + less unN benefits are paid out → the govt budget position can improve • Extent: 	[7]

		<ul style="list-style-type: none"> ○ The proportion of tax revenue contributed by this group could be limited and while this group have re-joined the labour force, they could still be economically unemployed and therefore still qualify for unN benefits → the extent of benefit on govt budget could be limited. <p>Break-down of 3m marks: Up to 1m for explaining the benefits of bringing these workers back into the labour force Up to 2m for analysing the extent of benefits</p>	
(c)		<p>Explain how China's currency manipulation could have led to the 'closure of more than 50,000 factories and the loss of tens of millions of jobs'.</p> <ul style="list-style-type: none"> • China devalues its currency → China's X are relatively cheaper in foreign currency while China's M are relatively more expensive in local currency → China's net X increases • In turn, US's net X decreases → US's AD decreases (up to 2m for how AD in US is impacted) • There is an unplanned increase in inventories → firms cut back production (closure of factories) • They hire less resources, including labour (loss of jobs) (up to 2m for how fall in AD impacts factories and jobs) 	[4]
(d)		Analyse the possible impact of 'a massive tax reduction' on public finances in	
	(i)	<p>The short-term</p> <ul style="list-style-type: none"> • With a tax cut (income and corporate tax), there is lower govt tax revenue earned • This worsens the govt budget position, ceteris paribus 	[2]
	(ii)	<p>The long-term</p> <ul style="list-style-type: none"> • With lower income tax, disposable income increases → C spending increases • With lower corporate tax, after-tax profits increases → I spending increases • Thus, AD increases → real NY increases → with higher taxable income, govt budget position improves 	[3]
(e)		<p>Explain why the Fed's decision to increase interest rates would 'head off mounting pressure for prices to rise'.</p> <ul style="list-style-type: none"> • With an increase in interest rates, cost of borrowing increases • Also returns on savings increases, C spending decreases • As profitability of investment decreases, I spending decreases • Thus, AD decreases → less competition for resources • Firms pass on the decrease in cost to consumers in the form of lower prices 	[4]

	Up to 2m for how increase in interest rate impacts AD and/or AS. Up to 2m for how changes in AD and/or AS impacts prices.			
(f)	<p>With reference to Extract 7, discuss the policy options you would present to the governments as responses to the threat on the environment.</p> <p><u>Explain the options</u></p> <ul style="list-style-type: none"> • Encourage the use of clean energy; buying clean vehicles → reduce the demand for oil and switch to clean energy → amount of MEC per unit of production reduced → reduction in over-production/consumption → reduction in emissions/welfare loss/market failure • Regulate emission levels → reduce the production activities associated with these emissions to near the socially optimal level of production → reduction of over-production → reduction in emissions/welfare loss/market failure. This is can achieved through emission taxes, tradeable permits or production quotas (policy mechanism must be explained). <p><u>Limitations for encouraging the use of clean energy buying clean vehicles</u></p> <ul style="list-style-type: none"> • Time period: May take time for consumers to switch their purchasing pattern to cleaner vehicles • Closeness of substitutes: while clean energy can be considered a substitute form of energy, the closeness of substitutes between clean energy and fossil fuels is also dependent on the relative price (clean energy could still be relatively more expensive) and whether consumers and producers are able to switch to clean energy (e.g. if factory is powered by coal or traditional sources of energy, there must be a total revamp of the machineries such that they can be powered by clean energy) <p><u>Limitations for regulating emissions levels</u></p> <ul style="list-style-type: none"> • Monitoring cost: Enforcing production quotas involves administrative costs e.g. monitoring and enforcement costs → fiscal cost on the govt • Price elasticity of demand: if $PED < 1$, emission taxes are not so effective as the increase in price/cost will lead to a less than proportional decrease in quantity demanded. • Measurement problem: the governments may suffer from imperfect information of the is the optimal level of production/consumption or the amount of MEC generated, this makes it difficulty for government to correctly implement the correct taxes, permits or production quotas. <p><u>E: reasoned conclusion</u></p> <ul style="list-style-type: none"> • The recommended policy should take into account the differences in the countries • E.g. as US is far larger than the other 2 countries, it would have greater feasibility issues in ensuring compliance to its stated regulations 	[9]		
	<table border="1"> <tr> <td>L2 (4 - 6m)</td> <td>A developed explanation of at least 2 policy options (how they work) as well their limitations (2-sided).</td> </tr> </table>	L2 (4 - 6m)	A developed explanation of at least 2 policy options (how they work) as well their limitations (2-sided).	
L2 (4 - 6m)	A developed explanation of at least 2 policy options (how they work) as well their limitations (2-sided).			

		<p>A developed explanation of only 1 policy option (how it works) as well as the limitations (2-sided) – cap at 4m</p> <p>A developed explanation of at least 2 policy options (how they work) without analysis of limitations (1-sided) – cap at 4m</p> <p>L1 (1-3m) An undeveloped explanation, or for an answer with many conceptual errors</p> <p>E (1-3m) A reasoned judgement on the likely or relative effectiveness of at least one policy option for the countries. Up to 1m for stating Up to 2m for substantiation</p>	
(g)		<p>Governments often use fiscal policy to achieve their macroeconomic aims. [12]</p> <p>Discuss the appropriateness of increasing spending on infrastructure by the US government in achieving the aims of economic growth and low unemployment.</p> <p><u>Explain how infrastructure spending achieves EG and low unN</u></p> <ul style="list-style-type: none"> • Increase in govt spending on construction activities → AD increases → unplanned decrease in inventories → firms step up production by hiring more resources, including labour → EG and low unN are achieved • Infrastructure projects → leads to an increase in the quantity and quality of capital → AS increases → potential and actual economic growth <p><u>Limitations</u></p> <ul style="list-style-type: none"> • ‘Small stimulus’: G spending as a proportion of GDP is small, thus leading to a reduced ability to achieve the aims • ‘Fiscally sound?’: huge fiscal cost on govt incurred/ opportunity cost of govt expenditure • ‘Leaning on MP’: the economy’s reliance on MP so far may suggest that the economy is falling into a liquidity trap → in such a situation, EFP may be more effective in achieving the aims instead <p><u>Overall</u></p> <ul style="list-style-type: none"> • ‘The last few decades have seen very little investment in infrastructure in the U.S.’: if gross investment falls below depreciation, then there may be reductions in capital stock • This would have an adverse impact on AS due to a fall in quantity and quality of FOP • Thus, the policy of rebuilding infrastructure would prevent this negative consequence from manifesting in the economy 	

E: reasoned conclusion

- Infrastructure projects ensures that the spare capacity created is converted to the production of goods and services → in so doing, the govt is able to achieve both its aims
- However, as infrastructure projects take a long time to bear fruits, in the SR, the economy may suffer from inflationary pressures instead
- In the LR, these inflationary pressures should abate as the AS curve shifts rightwards

L3 (6 – 9)	A developed explanation of how infrastructure projects help to achieve <u>BOTH</u> goals of economic growth <u>AND</u> low unemployment (how it works) <u>AND</u> the limitations/unintended consequences/constraints (2-sided).
L2 (3 – 5)	<p>A developed explanation of how infrastructure projects help to achieve <u>ONE</u> goal of economic growth <u>OR</u> low unemployment (how it works) <u>AND</u> the limitations/unintended consequences/constraints (2-sided).</p> <p>A developed explanation of how infrastructure projects help to achieve <u>BOTH</u> goals of economic growth <u>AND</u> low unemployment (how it works) but did not consider the limitations/unintended consequences/constraints (1-sided).</p> <p>An <u>under-developed</u> explanation of how infrastructure projects help to achieve <u>BOTH</u> goals of economic growth <u>AND</u> low unemployment (how it works) <u>AND</u> the limitations/unintended consequences/constraints (2-sided), i.e. with gaps or some misconceptions</p>
L1 (1 – 2)	An undeveloped explanation or answers that contains many conceptual errors
E (1-3m)	A reasoned judgement on the overall appropriateness of spending on infrastructure projects in achieving macro goals of economic growth and low unemployment. Up to 1m for stating Up to 2m for substantiation

[Total: 45 marks]