

93402



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SCHOLARSHIP EXEMPLAR



NEW ZEALAND QUALIFICATIONS AUTHORITY
MANA TOHU MĀTAURANGA O AOTEAROA

QUALIFY FOR THE FUTURE WORLD
KIA NOHO TAKATŪ KI TŌ ĀMUA AO!

Scholarship 2015 Economics

9.30 a.m. Thursday 26 November 2015

Time allowed: Three hours

Total marks: 24

Check that the National Student Number (NSN) on your admission slip is the same as the number at the top of this page.

You should answer ALL the questions in this booklet.

Pull out Resource Booklet 93402R from the centre of this booklet.

If you need more room for any answer, use the extra space provided at the back of this booklet.

Check that this booklet has pages 2–27 in the correct order and that none of these pages is blank.

YOU MUST HAND THIS BOOKLET TO THE SUPERVISOR AT THE END OF THE EXAMINATION.

This examination consists of three structured essay questions. For each question, use appropriate economic models to illustrate key points, and integrate information from the resource material to support your argument/evaluation.

QUESTION ONE: THE UPS AND DOWNS OF NEW ZEALAND DAIRY FARMING

Before 2014, many dairy farmers had been earning supernormal profits, with some borrowing heavily in order to expand production. However, rapidly changing prices and costs are impacting on the profitability and future of dairy farms.

Use information from Resources A to G, and your knowledge of micro-economic theory, to answer this question.

Analyse the impact of changes in farm costs and dairy prices on the profitability and production levels of individual dairy farms in the short and long run. Evaluate how these impacts may differ depending on the level of debt of a farm in the short and long run. Use appropriate economic models to support your answer.

In your answer:

1. explain why individual dairy farms are considered to be examples of perfect competitors ✓
2. discuss how increases in dairy farming production could lead to diminishing returns and rising marginal costs *adding fixed VR to fixed production*
3. analyse and explain the impact of the changes in costs and dairy prices on an individual dairy farm's profitability and profit-maximizing production level in the short and long run *Market graph*
4. analyse and evaluate how these changes could affect farms with differing levels of debt in the short and long run.

Use this space for planning your essay. This plan will NOT be marked.

PLANNING

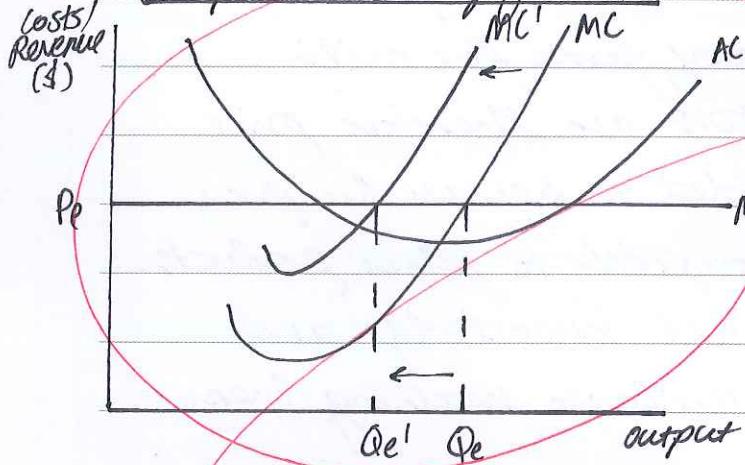
1. Discuss characteristics
2. Increase in production leads to DR as short run at least one factor is fixed Marginal costs rise due to costs for environmental regulations
3. Supernormal profits lead to JS normal profits. Shutdown point if $P < AVC$.

Dairy farmers are considered perfect competitors. In a perfectly competitive market, there are many small firms, too small to influence the market price which is reflected in the dairy industry. Perfect competitors have identical products "we don't know or care whose dairy farm the milk came from." Perfect competitors are therefore price takers because if they decided to increase the price of dairy/milk, consumers switch to other products. Dairy farmers also have perfect knowledge and perfect mobility of resources therefore making them perfectly competitive.

In the short run, at least one factor of production is fixed therefore meaning that dairy farmers cannot increase production by a large amount as they don't have the fixed resources (e.g. land) to do so. As a dairy farmer adds variable resources to fixed resources, at some point marginal output (the level of output from the next unit produced) will fall. This is the law of diminishing returns therefore meaning that if dairy production continues to increase at some point it will no longer be efficient. As stated in resource B, "environmental protection legislation will add to farmer compliance costs." Marginal costs refers to a firm's cost of producing an additional unit. As dairy farmers increase production, they

may have to pay more for environmental protection resulting in an increase in marginal costs as shown on the graph below (graph one).

Graph one: dairy farmer



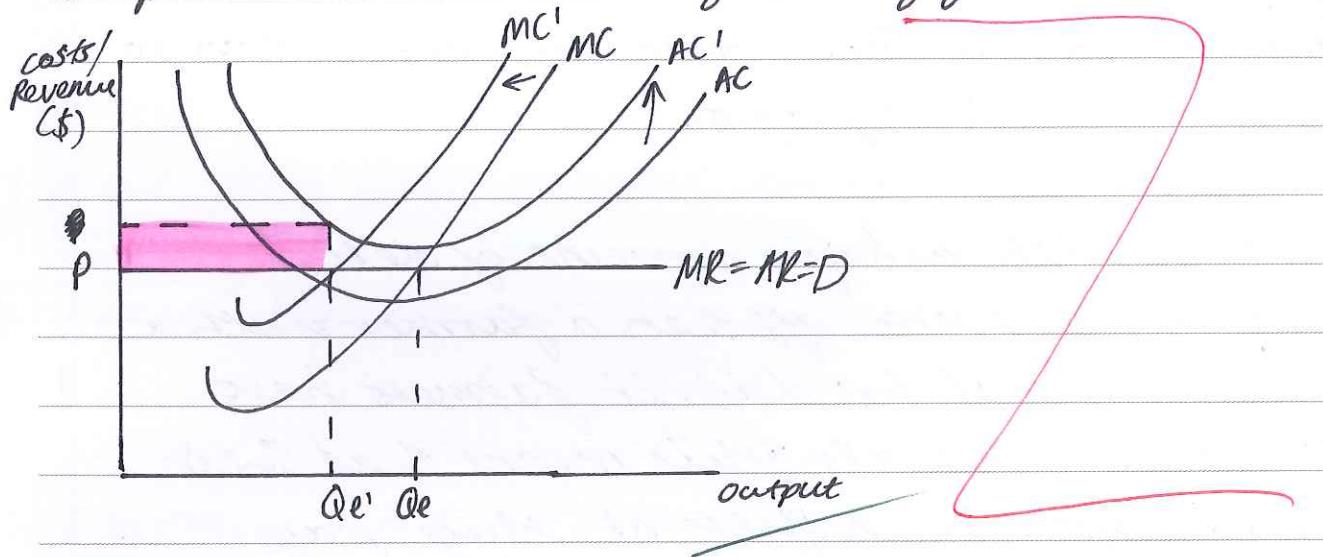
The increase in marginal costs from MC to MC' may result in less output in the long run, as if the firm continued to produce at Qe , MC

would be greater than MR resulting in the firm making a marginal loss on each unit produced above Qe' . The firm was originally making a supernormal profit and depending on how large the increase in marginal costs are, will cause its profits to fall. Therefore an increase in production will likely to end up where "extension is not physically possible".

The changes in costs are negative for dairy farmers. The dairy farmers increased costs are a result of "increasing calls for farmers to take more action to reduce pollution and also the ~~rise~~ in the OCR resulting in higher interest rates for farmers. These aspects are likely to increase marginal costs and average costs as interest rates are

typically a fixed cost for firms. This is negative for farmers in terms of profits, as shown on graph two.

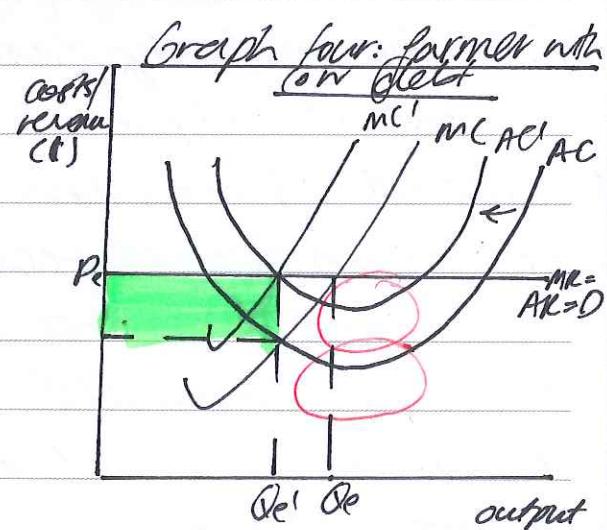
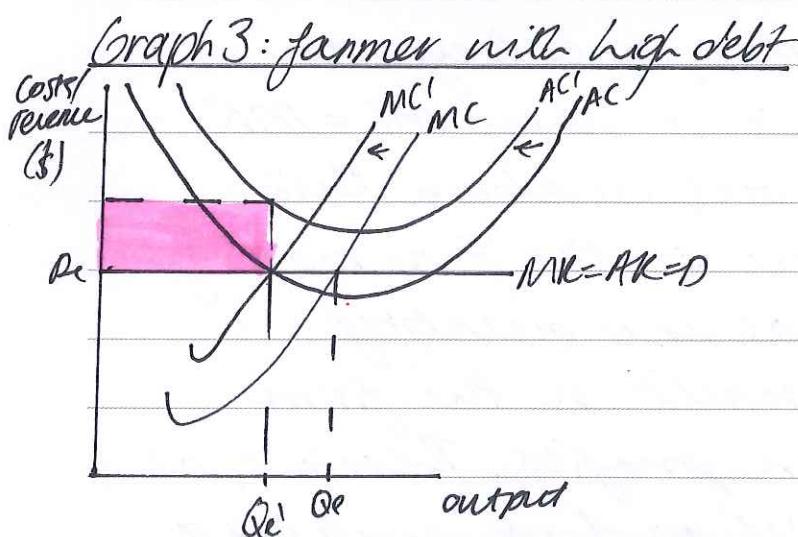
Graph two: increase in costs for dairy farmers



As MC increases to MC' and AC increases to AC' , output falls for farmers as if it were to remain at Qe , the firm would be making a marginal loss. Every firm aims to maximise profits. For a dairy farmer, since they can only control output, this is where $MC = MR$. As stated above, any output above this equilibrium would result in the firm making a marginal loss and at any quantity below $MC = MR$ would result in the firm making missing out on profits. Therefore, as costs rise the firm will go from making a supernormal profit, to a subnormal profit of ■. Not all firms will be making a subnormal profit as it depends on the level of debt they were in before. In the short run at least one factor of production is fixed so firms cannot leave the market,

or change output by a large amount, restrained by the law of diminishing returns. In the long run, these increases in costs will cause firms to reduce their quantity / production so they can maximise profits. 2

A farmer with a high amount of debt, is likely to be worse off than a farmer with a low amount of ~~to~~ debt. If farmers have high ~~is~~ debt levels this means that their average costs are higher as they pay more interest back to banks ~~will be~~ than farmers with low debt. This is shown on the following 2 graphs.



In the short run, at least one factor of production is fixed so neither farmer will leave the market. There are no barriers to entry in a perfectly competitive market so in the long run, the dairy farmer with high debt will leave the market.

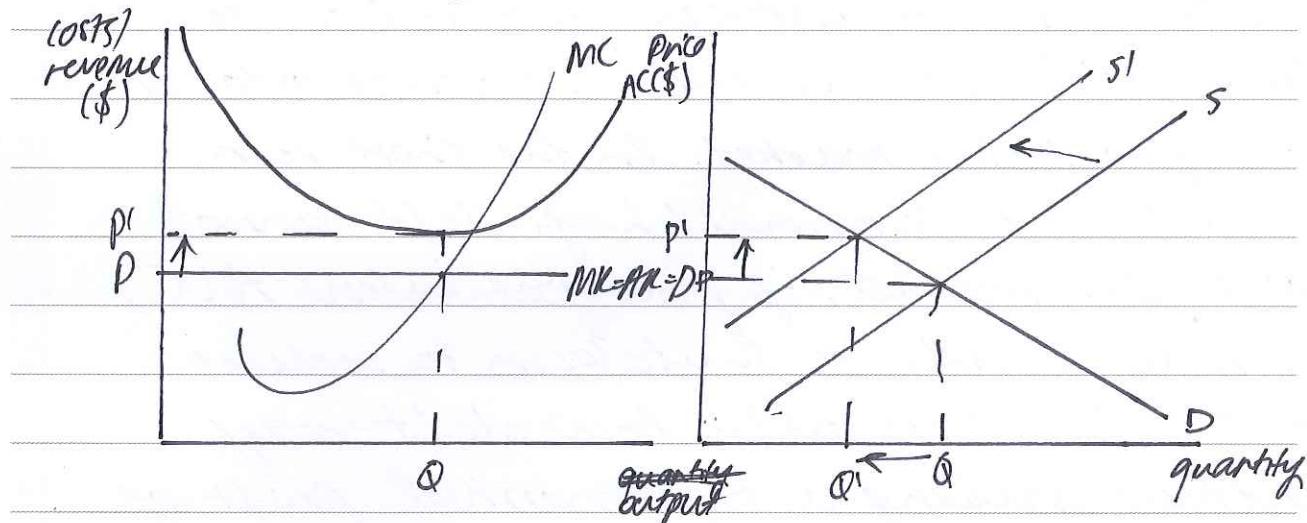
This is because as costs increase, AC becomes higher than AR so the firm is making a abnormal profit of . A subnormal profit is not enough for the firm to continue production so.

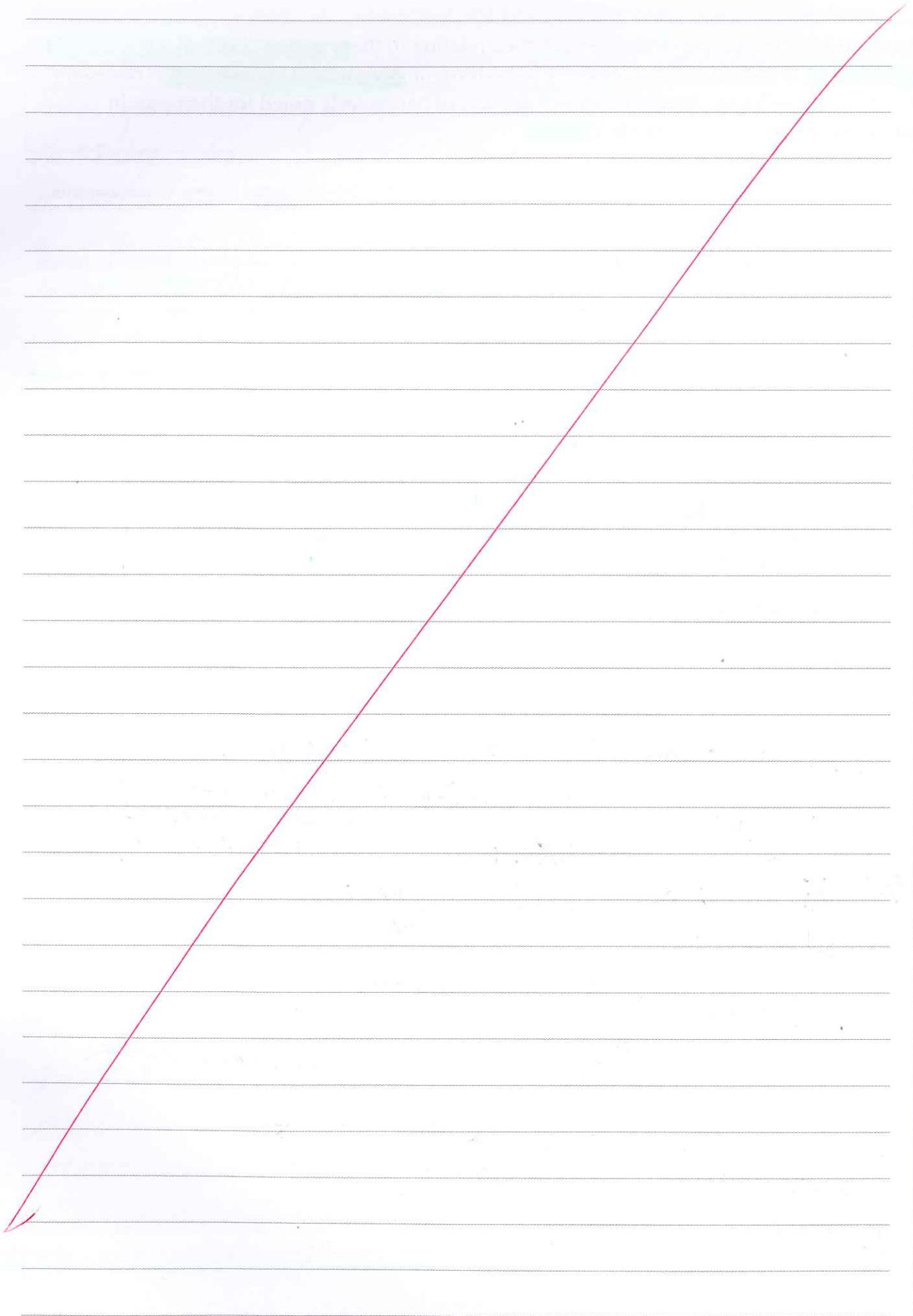
They will transfer their resources into a more profitable market. In the short run, although the firm with high debt cannot leave the market, if price goes below AVC, they may decide to shutdown to reduce losses. The firm with low debt may continue making a supernormal profit of  so it will continue producing.

This has negative flow on effect for the NZ economy as we heavily rely on dairy farmers doing well. As costs increase some farmers are forced out of production so some workers will lose jobs. Farmers also may decide to cut costs by reducing wages and ~~the~~ also investments may fall. ~~As farmers~~ Government spending may have to increase to fix this loss in production and increase transfer payments to the unemployed resulting in ~~the~~ lower prices (dissipation or deflation). The farmers who leave the market will cause a decrease in supply of milk and will continue to do so until farmers make a normal profit as shown in

graph five below.

Graph 5: dairy farmers with high debt long run





5. ✓

QUESTION TWO: EXTERNALITIES AND SUGAR-SWEETENED DRINKS

There has been increasing evidence published relating to the negative effects of sugar on the human body, and discussion of whether some form of government intervention is necessary to address these issues. Sugar-sweetened drinks are particularly noted for their part in raising the sugar intake in people's diets.

Use information from Resources H to K, and your knowledge of micro-economic theory, to answer this question.

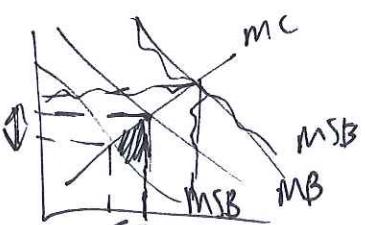
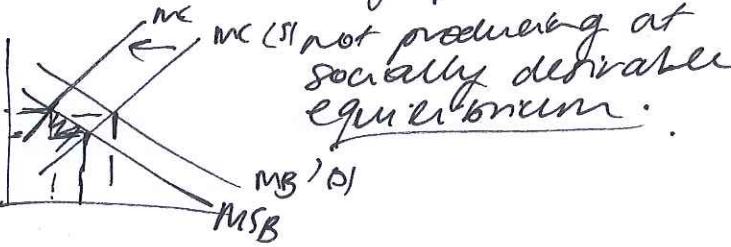
Analyse the externalities associated with the consumption of sugar in sugar-sweetened drinks. Evaluate the case for government intervention in this market, and possible options for intervention as a means of addressing these externalities. Use appropriate economic models to support your answer.

In your answer:

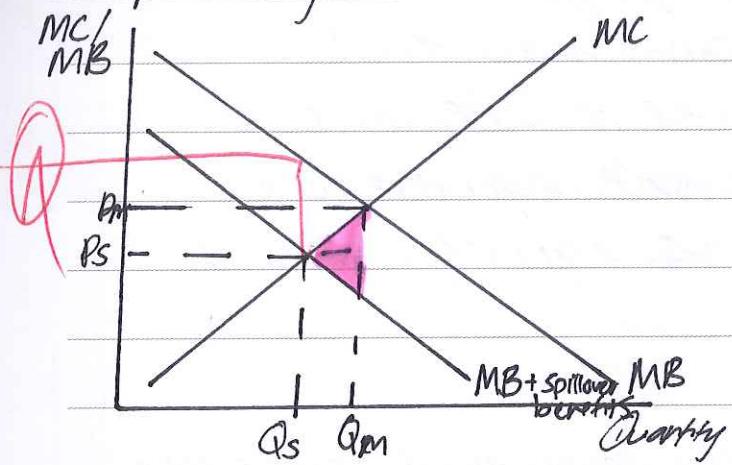
1. • explain the externalities associated with excess dietary sugar consumption, and how market failure occurs in the market for sugar-sweetened drinks
2. • evaluate the case for government intervention in the market for sugar-sweetened drinks, including the place of consumer sovereignty
3. • explain and analyse different types of government intervention possible in the market for sugar-sweetened drinks to reduce sugar consumption
4. • evaluate the effectiveness of these government interventions in achieving efficiency in the market for sugar-sweetened drinks, and make a justified recommendation.

Use this space for planning your essay. This plan will NOT be marked.

PLANNING

1. ~~list externalities, reinforce with graph.~~


2. Arguments for vs against G.I.
 benefits health
 consumer rights.
3. Reduce consumption → tax MC ↑
 least possible i. n explanation
4. Pick best one.

Sugary drinks have a negative externality of consumption. This means that the spillover ~~benefits~~^{benefits} for consumption of these goods are negative. These externalities include: obesity, type 2 diabetes and cardiovascular disease. As shown on graph one, below, there is a market failure in the market for sugar-sweetened drinks. As the market is producing at P_m graph ~~one~~ sugar sweetened drinks. and Q_m , the firm



is overproducing which is seen as negative for our society due to the negative externalities of consumption. DWL occurs from producing at ~~at~~ Q_m and P_m

as shown in the graph by area \square . This is because the firm is not producing at the socially desirable equilibrium which is P_s and Q_s . Therefore consumer and producer surplus isn't maximized and as a result, market failure occurs.]

The positives for government intervention are ~~greater than~~ also met with negatives. The positives include reduced health issues and improvements in life expectancy. This ends up meaning that the government may spend less on the health sector in the future as children are healthier. However, as

stated in resources 1, ~~the~~ some argue that government intervention through things such as taxes, isn't equitable (fair). Some feel that providing ~~the~~ positive encouragement on healthy eating and ~~the~~ exercise may provide more choice for individuals, rather than force everyone, including those who do eat healthy and exercise, to pay additional costs. Therefore ~~the~~ ~~get~~ some may feel intervention through taxes is efficient, whilst others believe it isn't equitable. This is an efficiency vs. equity stand off.

There are many interventions the government could use to lower the consumption of soft drinks and therefore improve the efficiency in the market. A tax would ~~decrease~~ increase the marginal cost of soft drinks due to the higher costs of production for firms. This would reduce the consumption of soft drinks and increase prices which would directly improve the markets' efficiency. However, this is not seen as equitable (as stated above) because some individuals may be eating healthy and exercise regularly but are forced to ~~consume~~ pay the higher price.

Reducing sales and advertising will reduce the demand for soft drinks, therefore decreasing marginal benefit. This is because the intervention may eliminate some initiatives that make soft drinks appealing to consumers. Depending on how much the decrease in demand is will impact the amount of deadweight loss, therefore correcting market failure. This would be seen as inequitable for soft drink firms as they ~~may~~ will have less sales and therefore less revenue. This may have some very negative effects on the entire NZ economy as some individuals may lose jobs / lower wages and investments by these sugar drinks firms will fall.)

Drink free policies in the workplace and public institutions (such as school) will improve efficiency. This is because some individuals may not be peer pressured or encouraged to drink these soft drinks reducing marginal benefit and therefore correcting market failure. However, consumption in households are likely to increase and the government may find it hard to regulate and control this consumption in public spaces. It may also be seen as inequitable to

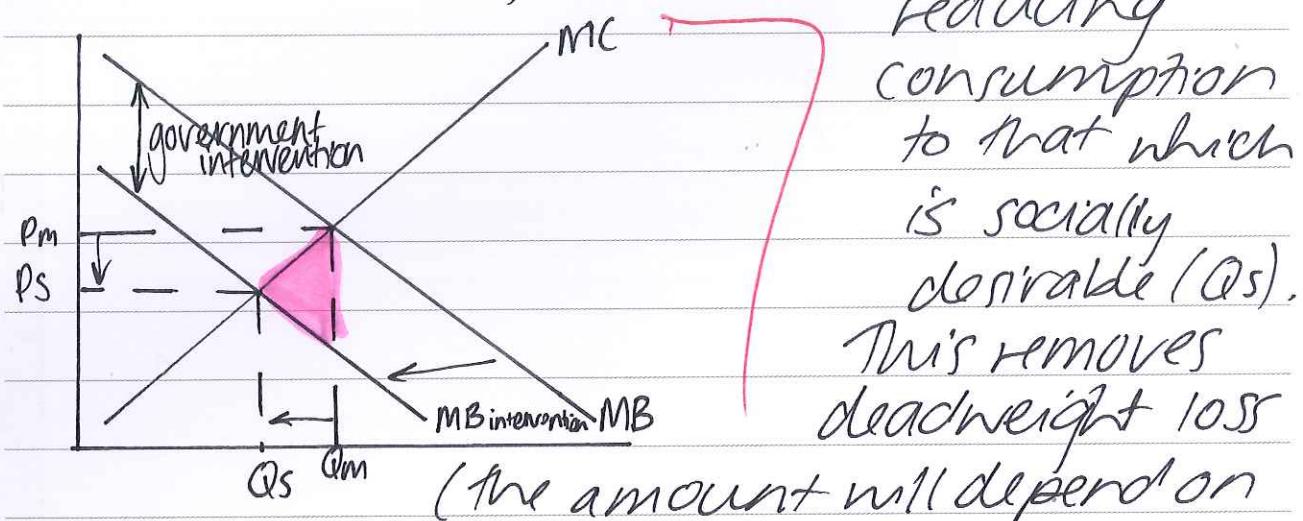
firms who produce the good and those who consume it. Also places such as café's may reduce profits slightly if they cannot sell the good in public spaces or are not allowed people to consume it inside public spaces.

Legislating graphic warnings on products will decrease marginal benefit and demand. This is because most consumers ignore warnings by instil health institutions, as they cannot see the ~~benefit of~~ negative impacts sugary drinks have on their health. Therefore, if there are graphic warnings on products, ~~they~~ some will be put off by the drinks and will reduce consumption and demand. This policy has worked for cigarettes but consumption will still exist, therefore the policy may not completely ~~remove~~ correct market failure.

~~Also~~ Although the government and health institutions seem to ~~discourage~~ encourage healthy eating and exercise, obesity and health issues still exist which is why the government needs to implement a policy that will significantly

reduce consumption of soft drinks. By legislating graphic warnings on labels of products, this gives the best balance of efficiency vs. equity whilst reducing consumption. This is shown on graph two below. As the warnings are implemented, marginal benefit and demand

Graph two: implement graphic warnings. falls,

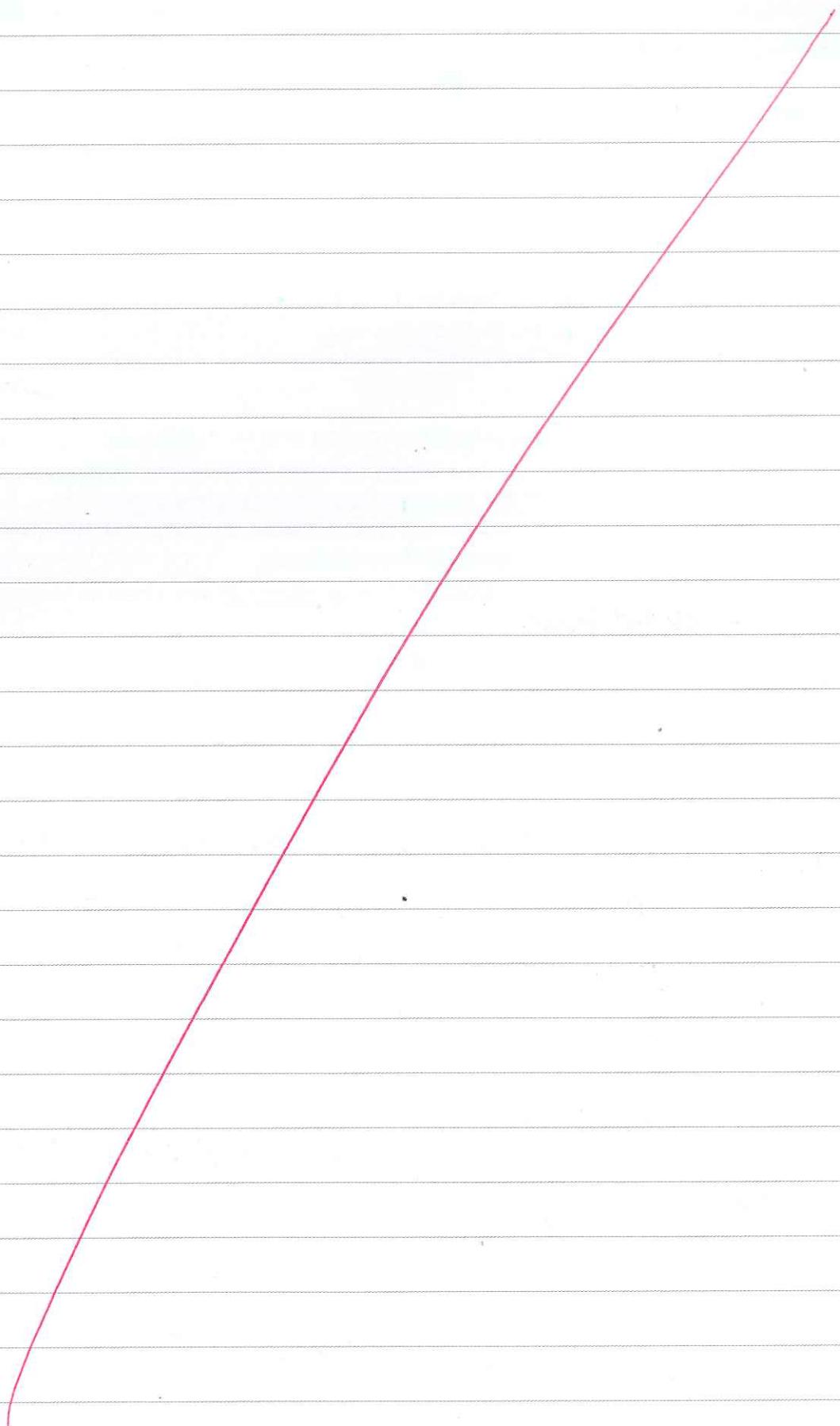


reducing consumption to that which is socially desirable (Q_s). This removes deadweight loss

(the amount will depend on how much demand falls). This is only slightly inequitable for firms who may see a slight fall in sales. However, soft drink companies ~~that~~ are seen as an oligopoly as a few large companies dominate the industry. This means they are still likely to produce reasonable profits at the lower price. This would not be seen as inequitable for consumers as they still have a choice ~~otherwise~~ if they want to consume the good or not. Therefore this policy is likely to be allocatively efficient as the deadweight loss of █

is removed and consumer and producer surplus is maximised.





5

QUESTION THREE: MIGRATION AND THE NEW ZEALAND ECONOMY

Economists are unsure about the effect on the New Zealand economy of the record level of positive net migration. An important question is the likely impact that positive net migration might have on the economy's level of potential output, and therefore the extent of and the type of output gap. This will challenge policymakers in determining the most appropriate monetary policy settings in order to control inflation in the near future.

Use information from Resources L to S, and your knowledge of macro-economic theory, to answer this question.

Analyse and evaluate the impact that a high level of positive net migration might have on New Zealand's output gap and inflationary pressures, and how this might impact on the Reserve Bank's monetary policy decisions in 2016. Use appropriate economic models to support your answer.

In your answer:

1. describe an economy's potential output, and outline why this is not easy to determine
2. use the aggregate demand/aggregate supply model to illustrate the connection between output gaps and inflationary and recessionary gaps
3. explain why New Zealand has experienced a record level of positive net migration, and discuss how this might affect the economy's potential output
4. analyse why the effect of positive net migration on inflation is described as 'ambiguous' or uncertain — skilled labour
5. evaluate how positive net migration and other current economic factors might influence the Reserve Bank's monetary policy settings for 2016 and beyond.

↗ how much potential
isn't easy

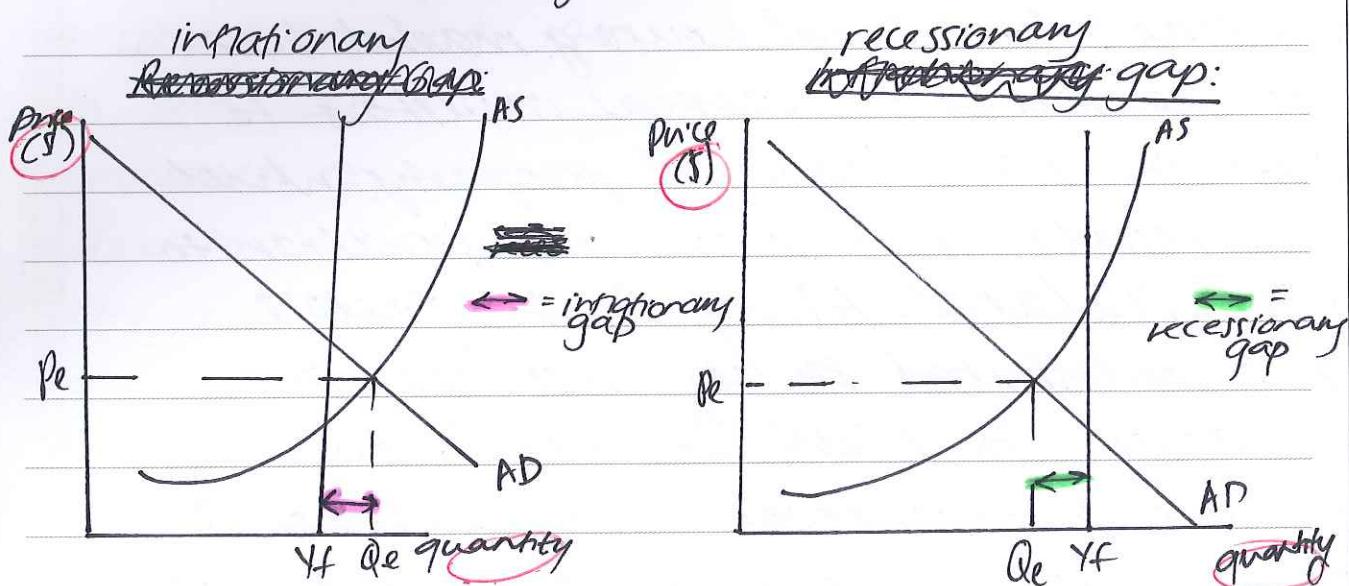
Use this space for planning your essay. This plan will NOT be marked.

PLANNING

1. not easy to determine how much capital
- 2.
3. Poor Aussie eco.
- Christchurch rebuild
- Auckland

4. skilled labour
another economic factors such as
↑ AS ↑ AD
5. Benefits inflation vs. negative.

An economy's potential output is calculated through the number of participants in the work force (and how many are employed) as well as the economic conditions surrounding firms such as business confidence which leads to greater investments. It is not easy to determine how much GDP could potentially be made in the economy as economic factors such as business confidence ~~etc.~~ is temporary (short term). Therefore output gaps can change fast as ~~etc.~~ economic conditions change.

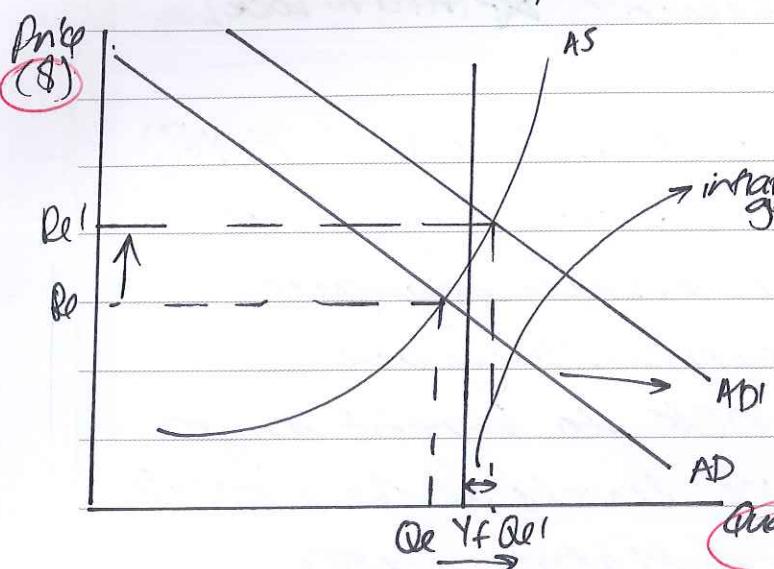


~~as~~ Y_F is equal to the potential output the economy is producing whilst the Q_e stands for the output we are actually producing. Therefore as Q_e is greater than Y_F this results in an inflationary gap as the actual output is greater than the full-capacity output. when Q_e is less than Y_F this results in a

recessionary gap as the economy's actual output is less than full capacity.

The current NZ economy is healthy as business confidence has increased along with investments in productive capital and high export prices. Currently, the Australian economy outlook is 'weak' which encourages individuals to migrate ~~from~~ New Zealand from Australia. Also, the Christchurch rebuild has hit a recent spike, subsequently increasing the number of jobs available in the construction industry. Auckland housing market has also encouraged overseas investors to invest in New Zealand property which may result in higher immigration to New Zealand. All of these factors have contributed to an increase in migration to New Zealand. An increase in migration will increase the supply of labour which should increase productivity in the long run as employers face higher competition when going for jobs, increasing skilled labour. This is likely to result in an inflationary gap as current output is greater than full capacity as shown in graph one below.

Graph one: inflationary gap due to net migration



en the short run, aggregate demand will increase due to a sudden increase in consumer spending due to the rise in net migration. This pushes up inflation and results in an inflationary gap.

in the short run.

However, the impact on of increase in net migration is uncertain due to other economic conditions.

An increase in labour results in increases in consumer spending, investment by firms (due to increased production), potentially an increase in government spending (due to high tax revenue from GST, company and income tax), and an increase in net exports (due to higher sales). This would increase demand aggregate demand and therefore ~~labour~~ inflation.

However, depending on product aggregate supply, inflation may not increase if AS increased. AS may increase due to higher productivity as well as lower costs for firms due to oil prices and migrants that are willing to work for

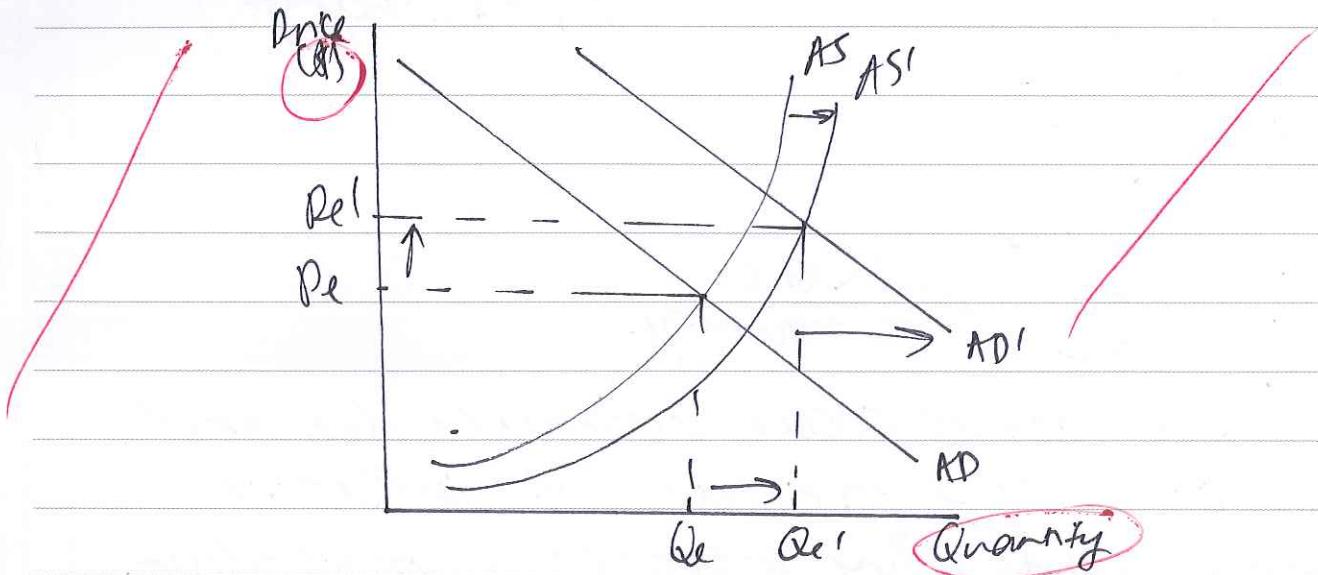
less, therefore AS ~~will~~ increases, also causing inflation rates to be ~~booyant~~. ~~Star~~ (refer to back)

Before the Reserve Bank of New Zealand (RBNZ) decides its ~~the~~ monetary policy, they must look at all factors that can increase aggregate demand and aggregate supply. They are unlikely to change the OCR to benefit anything other than price levels as the RBNZ's main goal is to keep inflation rates between 1-3%. (with a focus on two percent).

^(in the NZ economy)
^{charge}
 The factors that effect aggregate demand currently are: increase in business confidence, increase in investment spending on capital, increased in the demand for goods and services, high construction spending and low interest rates. Government spending should also increase due to more tax revenue. Since $AD = C + G + I + (X - M)$, AD will significantly increase because of these factors.

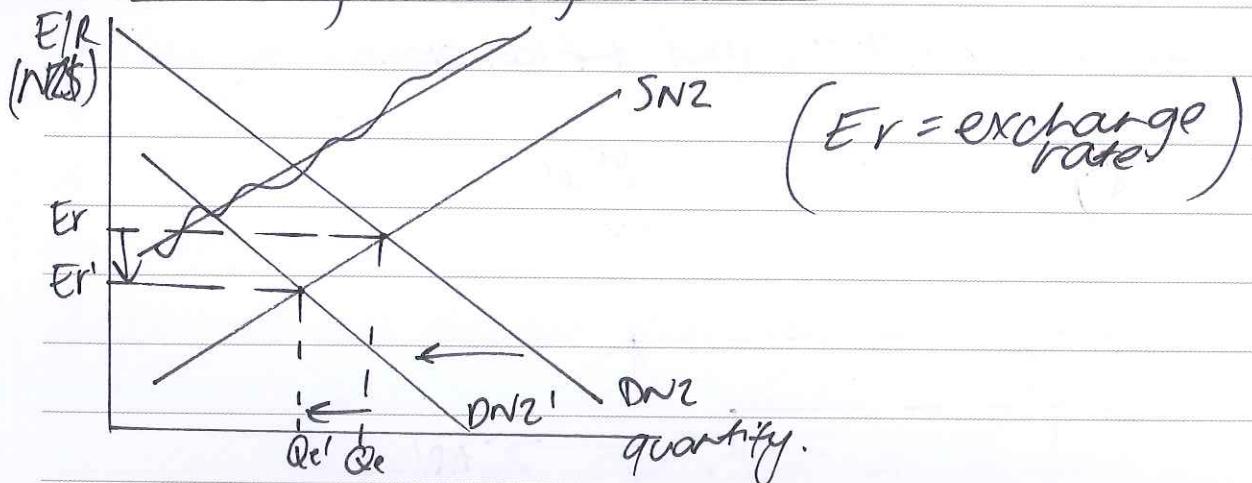
Aggregate supply will slightly increase due to a fall in oil prices and increased productivity.

The combination of these two graphs are shown below causing slight inflation.

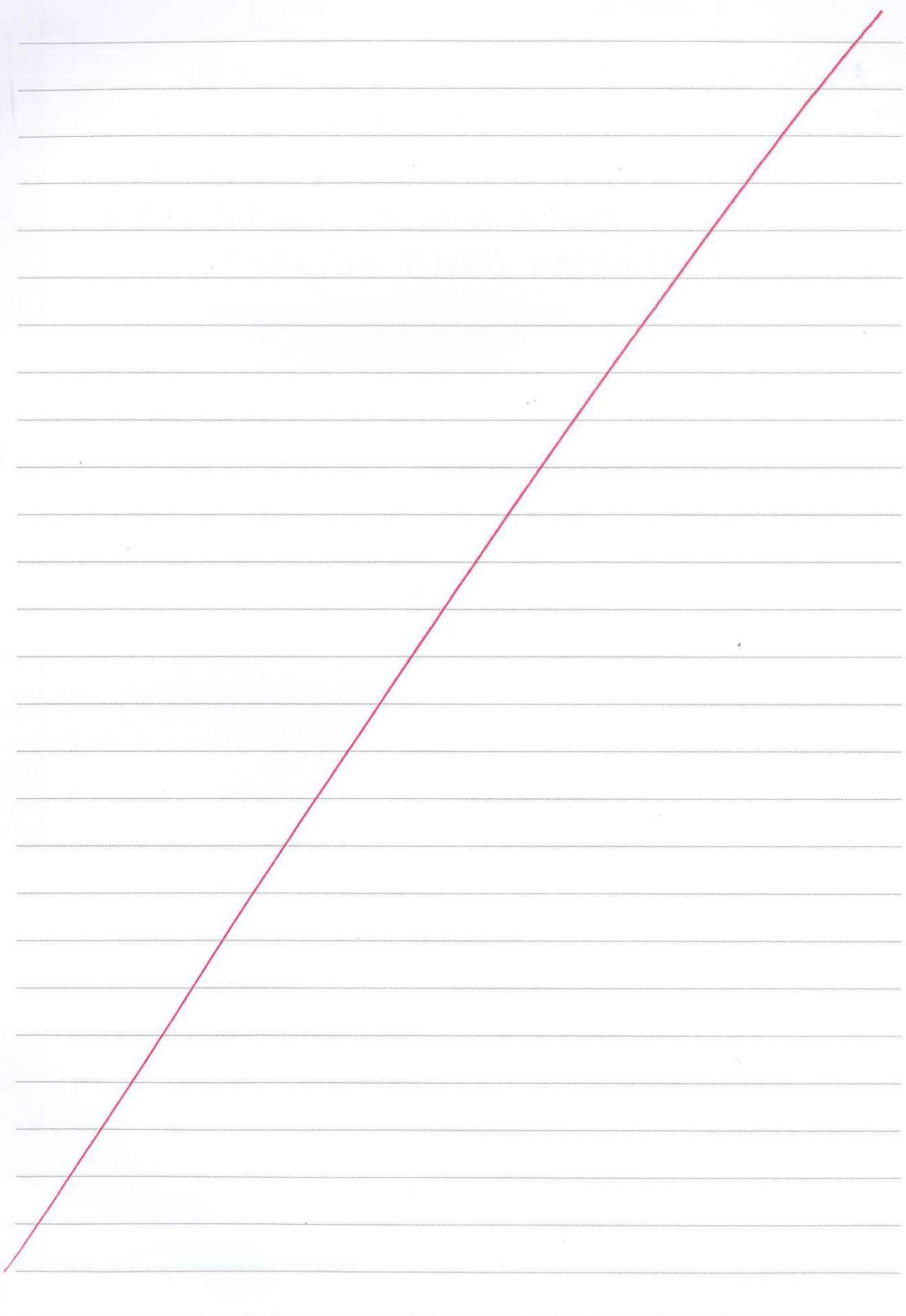
ASSESSOR'S
USE ONLY

It is because of this increase in inflation, that the RBNZ is likely to implement tight monetary policy by lowering the OCR. However, it must be wary of lowering dairy prices. The OCR is a type of interest rate paid by domestic banks to the RBNZ due to their settlement cost. Therefore as the OCR decreases, domestic banks will increase their interest rates to increase profits. This decreases consumer spending as savings increase, along with investment. The demand for the NZ\$ will fall as overseas investors will seek investment elsewhere, lowering the exchange rate therefore increasing net exports as shown on the following graph.

Floating exchange rate



As these factors occur, aggregate demand falls releasing pressure off inflation rates. Overall, the increase in migration rates will increase long term productivity, but are likely to put further pressure on ~~the~~ inflation rates.

5.
/

QUESTION
NUMBERASSESSOR'S
USE ONLY

Extra space if required.
Write the question number(s) if applicable.

3

* This is also because the demand for housing in Auckland has increased, resulting in ~~higher prices~~ a further increase in price levels, which also makes inflation levels buoyant ↗

Scholarship

Total mark: 15/24

Question 1

Overall, this answer meets the criteria of Scholarship, providing relatively good coverage of most of the key points in the question, effectively used economic models to illustrate their analysis and showing a competent level of economic analysis as well as integration of the resource material in places. To gain a higher grade, this candidate needed to cover all aspects of the question (e.g. the fall in milk prices is not addressed), provide greater depth (e.g. in explaining why dairy farms are examples of perfect competitors), and omit errors of economic theory.

The candidate briefly outlines the characteristics of a perfectly competitive industry, though only vaguely connects these characteristics to dairy farming – page 3.

The candidate correctly outlines the basis on the law of diminishing returns – page 3 – and relates it generally to dairy farming. However, the candidate then incorrectly connects diminishing returns to a shift of the MC curve rather than to the shape of the marginal cost curve – page 4.

The candidate correctly illustrates the effect of rising costs on the perfect competitor, including a starting point of supernormal profit, and correctly identifies the decrease in profit-maximising output and the subsequent subnormal profit – page 5. They accurately explain why the profit-maximising output falls and that the level of profit may depend on the level of debt of each dairy farm, showing a competent level of economic analysis and integration of the resource material.

The candidate accurately illustrates the difference in cost structures that might apply to farms with differing levels of debt and to explain the likely difference on effect dairy farms in the long run – page 6.

Note that the candidate then goes on to explain the negative flow-on effect of a poorly performing dairy industry for the wider NZ economy. As this topic is outside the scope of the question, little credit can be given.

Question Two

Overall, the essay is judged to have reached Scholarship standard, being awarded a mark of 5, because the analysis was clear and logical, and the resource material was integrated competently. A more thorough evaluation of the impacts of a tax on sugar-sweetened drinks, including a detailed explanation of the impacts of differences in Price Elasticity of Demand, would have led to a higher grade.

On page 11, the candidate explains the externalities associated with excess dietary sugar consumption, and how market failure occurs in the market for sugar-sweetened drinks.

The candidate then evaluates the case for government intervention on Page 12 and 13, including a recognising of the efficiency and equity trade-off that may exist when an intervention takes place. The candidate explains advantages and disadvantages of government intervention.

Explanation and analysis of different types of government intervention and their effectiveness in achieving efficiency in the market included:

- a tax on sugar
- sales and advertising strategies that influence demand – page 13
- controls on sales, including within schools and public spaces
- graphic warnings on labels – page 14.

The candidate produces and effectively communicates a sophisticated economic analysis of externalities associated with sugar-sweetened drinks and of possible government interventions to address these. This demonstrates a high level of analysis and critical thinking.

Question Three

The candidate produces and effectively communicates a competent economic analysis of the impact that a high level of positive net migration might have on the output gap and inflationary pressures, and the reasoning the Reserve Bank will use in determining the most appropriate monetary policy settings in the near future. This demonstrates a sound level of analysis and critical thinking. However, the evaluation in the essay is inadequate.

The description of the economy's potential output is partially incorrect in that it identifies labour as the only resource. A brief description is provided covering why an economy's potential output would be difficult to measure – page 19.

Inflationary and recessionary gaps are illustrated on an aggregate demand and aggregate supply model. The models contain minor errors in the labelling. A brief description of the inflationary and recessionary gaps is also provided. – page 19/20

An explanation of why New Zealand has experienced positive net migration is provided on page 20. The candidate has integrated the resource material into the explanation, but this could have been done more thoroughly.

The aggregate demand/aggregate supply model on the top of page 21, illustrates an increase in aggregate demand. The candidate should have shown the full employment line (Y_f) shifting outwards due to more labour resources. An explanation is given providing reasons why aggregate demand would increase if there were an increase in net migration.

An explanation is provided covering reasons why an increase in positive net migration could lead to an increase in aggregate supply. This change to aggregate supply due to positive net migration could have been illustrated on an aggregate demand/aggregate supply model to show how it would lead to a decrease in the price level.

The explanation of why an increase in positive net migration would have an uncertain impact

on inflation is not communicated effectively, and the evaluation is inadequate. The evaluation of what type of monetary policy the Reserve Bank should introduce includes some of the factors described in the resource material. These factors were integrated in the evaluation.

An explanation of how contractionary monetary policy would lead to a decrease in inflation is provided. This explanation did not add any benefit to the candidate because it was not part of the essay requirements.