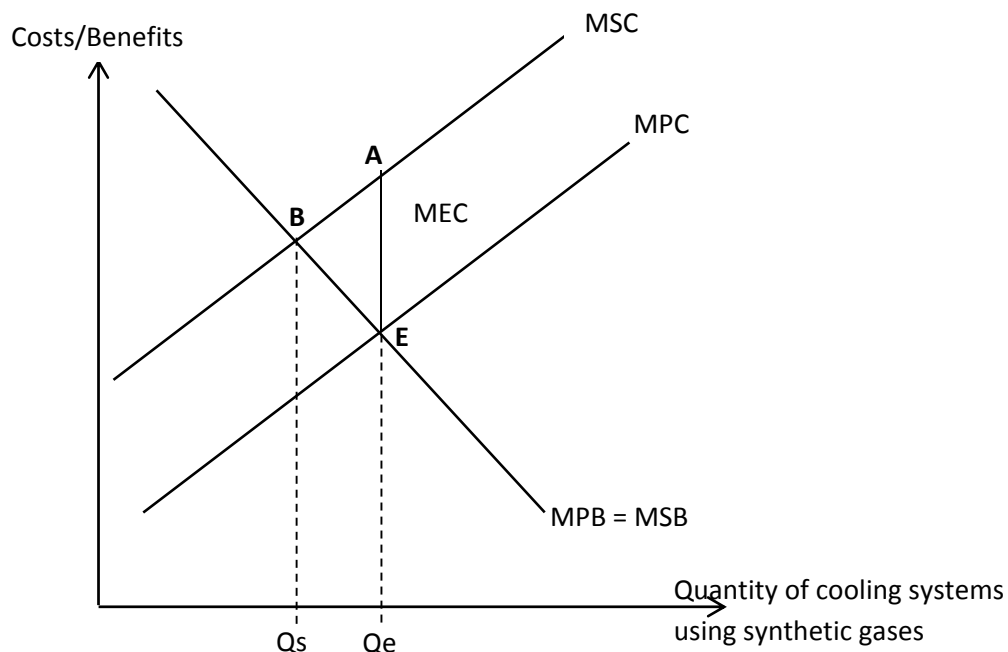


**2015 Millennia Institute H1 PU2 PE2 Answers**

**CSQ 1**

- (a) (i) **With reference to Table 1, describe the trend in farmgate milk prices in Australia from July 2011 to January 2014.** [2]  
Farmgate milk prices fell and then rose [1]  
with the minimum price in January 2013. [1]
- (ii) **Explain one possible reason for the changes in Australian milk prices observed above.** [2]  
Plausible reasons include
- $\uparrow DD$  – rising Y, lifestyle (taste/preference) or
  - $\downarrow SS$  – rising cost of production (higher input prices such as animal feeds)
- (b) **Explain why farmers “are complaining that they are being paid less’ in Extract 1.** [4]
- *Bumper crop  $\rightarrow$  oversupply*
  - *With  $\uparrow SS$ ,  $P_e \downarrow$  &  $Q_e \uparrow$ , ceteris paribus ( $DD$  remains constant)*
  - *TR received by farmers would  $\downarrow$  if  $DD$  is price inelastic (as  $Q_e \uparrow$  by less than proportionate compared to the  $P_e \downarrow$ )*
- (c) **Explain how a weaker New Zealand dollar increases demand for dairy products from New Zealand.** [2]
- *Weaker New Zealand dollar  $\rightarrow$  price of exports in terms of foreign currency is cheaper  $\rightarrow$  increase quantity demanded for dairy products from New Zealand*
- (d) (i) **With reference to Extract 4, explain why market failure occurs in the market for fresh agricultural products.** [6]
- *Define market failure: A situation in which the unregulated market is unable to attain social optimal output level where marginal social benefit (MSB) equals marginal social cost (MSC).*
  - *In the market for fresh agricultural produce, fresh produce require cooling in the refrigerators. When the companies decide to cool their fresh produce using synthetic refrigerants, they make the decision based on their marginal private benefit (MPB) and marginal private cost (MPC). Thus, the number of cooling systems using synthetic refrigerant gases is at quantity,  $Q_e$ .*
  - *However, according to extract 4, synthetic gases are heavy greenhouse polluters which will result in global warming. The increase in temperatures will affect crop yield and hence farmers who depend on the weather for their crops may not be able to earn any income due to the reduction in crop yield. Thus, negative externalities are generated as farmers who are not involved in consumption of cooling systems using synthetic gases have to bear the cost of reduction in profits.*
  - *Due to the presence of negative externalities, there is a divergence between MSC and MPC. As there is no external benefits incurred,  $MSB = MPB$ . Hence, at market equilibrium output  $Q_e$ , MSC is higher than MSB. This implies that the society values the consumption of cooling systems using synthetic gases less than the cost of consuming them.*
  - *The socially efficient output should be where  $MSC = MSB$  at output  $Q_s$ . Since  $Q_e$  is more than  $Q_s$ , there is over-consumption of the cooling systems using synthetic gases that generates negative externalities. Due to the over-allocation of resources, there is a deadweight loss to society represented by area AEB.*
  - *Thus, market failure occurs due to allocative efficiency in the market of cooling systems of fresh agricultural produce.*
  - *Diagram:*



<b>L3</b>	Developed thesis and anti-thesis on how switching to natural refrigerants will be effective in reducing greenhouse emissions and identify that there needs to be co-operation among other industries to effectively reduce greenhouse emissions.	<b>5 – 6</b>
<b>L2</b>	Undeveloped thesis and anti-thesis on how switching to natural refrigerants will be effective in reducing greenhouse emissions OR  One-sided analysis of how switching to natural refrigerants may or may not be effective in reducing greenhouse emissions.	<b>3 – 4</b>
<b>L1</b>	For an answer that has some basic correct facts without further explanation. For example, listing the source of market failure.	<b>1 – 2</b>

(ii) **Discuss the extent to which switching to natural refrigerants will help to reduce greenhouse gas emissions.** [6]

- *Thesis:*
  - *Since the fresh agricultural produce industry is responsible for more than 11 per cent of greenhouse gas emissions in Australia (Extract 4), switching to natural refrigerants which are not greenhouse polluting will reduce greenhouse emissions.*
- *Anti-thesis:*
  - *Not enforceable by law → if no companies want to switch their cooling systems to one that is running on natural refrigerants, greenhouse gases will not be reduced.*
  - *Other industries, such as the mining industries, also contribute to the emission of greenhouse pollutants. Evidence: other industries are responsible for 89% of greenhouse gas emissions in Australia.*
- *Alternative policy:*
  - *Subsidise companies to encourage the use of natural refrigerants for their cooling systems.*
- *Conclusion:*
  - *Require a mix of policies to help tackle the issue of greenhouse*

*emissions in the fresh agricultural produce market.*

- *Require the co-operation from other industries to ensure that there is greenhouse gas emissions is effectively reduced.*

<b>L3</b>	Clear explanation of how use of synthetic gases in cooling systems lead to market failure with well-labelled diagram.	<b>5 – 6</b>
<b>L2</b>	Undeveloped and theoretical explanation of how the presence of negative externalities leads to market failure.	<b>3 – 4</b>
<b>L1</b>	For an answer that has some basic correct facts without further explanation. For example, listing the source of market failure.	<b>1 – 2</b>

**(e) Discuss the impact of the removal of protectionist measures in the Australian dairy market. [8]**

- *Introduction:*
  - *Define protectionist measures and give examples*
  - *Identify that removal of protectionist measures affect both consumers and producers.*
- *Body 1: Positive impact on consumers*
  - *Removal of protectionist measures → freer trade → increase imports → increase variety of products → improve material standard of living*
  - *Removal of protectionist measures → more competitive → lower prices of dairy products → improve material standard of living*
- *Body 2: Positive impact on producers*
  - *Removal of protectionist measures → increase competition in the Australian dairy market. In order to remain competitive, dairy farms need to increase productivity and improve herd management (Extract 5)*
- *Body 3: Negative impact on producers*
  - *Farmers who do not have the ability to engage in R&D to improve productivity and herd management may have to leave the industry in the long-run. Evidence: number of dairy farms in Australia has fallen*
- *Evaluation: In the short –run, there will be structural adjustments in the market and only the firms who are able to improve productivity and management of the farms would be able to survive and continue production. Thus, there will be negative impact on the producers in the short-run. However, in the long-run, consumers will be better off due to lower prices and greater variety of goods and services. At the same time, productivity will improve.*

<b>L3</b>	Well analysed answer that discusses both positive and negative impacts of the removal of protectionist measures on both consumers and producers.	<b>5 – 6</b>
<b>L2</b>	For an answer that analyses only the positive impact of removal of protectionist measures on consumers and producers. OR  An answer that analyses the negative impacts on producers and consumers. OR  An answer that analyses the positive and negative impacts on either producers or consumers.	<b>3 – 4</b>
<b>L1</b>	For an answer that has some basic facts. E.g. listing of protectionist measures.	<b>1 – 2</b>
<b>E1</b>	For a judgment that is supported by analysis	<b>1 – 2</b>

**CSQ 2: Government Debt Crisis in Greece and Japan**

<b>(a)(i)</b>	<b>Compare the debt-to-GDP ratio from 2005 to 2012 of Japan and Greece in Figure 1. [2]</b>
	<ul style="list-style-type: none"> <li>• Similarity: The debt-to-GDP ratio of both Greece and Japan has increased from 2005-2012</li> <li>• Difference: The debt-to-GDP ratio of Japan is always larger than Greece throughout this period.</li> <li>•</li> </ul>
<i>Markers' Comment</i>	
<b>(a)(ii)</b>	<b>Explain whether the above data explain the changes in economic growth of Japan and Greece as shown in Figure 2. [4]</b>
	<ul style="list-style-type: none"> <li>• Economic growth in Japan is increasing from 2005-2012 while economic growth in Greece has stagnated, as shown in Figure 2. GDP is a measure of economic growth.</li> </ul> <p>Thesis: The data explains the changes in economic growth</p> <ul style="list-style-type: none"> <li>• Increasing debt-to-GDP ratio means that <math>G &gt; T</math>, expansionary fiscal impact on the economy.</li> <li>• This is supported by the increase in economic growth as an increase in AD causes increases in national income.</li> </ul> <p>Anti-thesis: The data does not explain the changes in economic growth</p> <ul style="list-style-type: none"> <li>• The economic growth in Greece has stagnated despite an expansionary fiscal impact due to <math>G &gt; T</math>.</li> </ul> <p><b><u>Possible reasons (any 1):</u></b></p> <ul style="list-style-type: none"> <li>• This may be due to other internal (C,I) and external shocks (X) to AD causing NY to fall. This is especially so as the government is experiencing a large and unsustainable public debt.</li> <li>• This may also be due to a small multiplier in Greece causing minimal impact on NY.</li> </ul> <p>Maximum 3m for one-sided answers.</p>
<i>Markers' Comment</i>	
<b>(b)</b>	<b>Explain two possible reasons for the increase in government debt in economies like Japan and Greece. [4]</b>
	<p><b><u>Identify and explain lower taxation or higher government spending (any 1)</u></b></p> <ul style="list-style-type: none"> <li>• Lower tax receipts [1m] due to increased unemployment [1m]</li> <li>• Higher government spending [1m] due to increased unemployment benefits, fiscal stimulus, etc [1m]</li> </ul>
<i>Markers' Comment</i>	

<b>(c)</b>	<b>With reference to Extract 4 (Japan to learn...), explain why bringing up the rate of inflation will cause ‘negative real interest rates’ and ‘drive down the value of the yen’. [4]</b>
	<p><u>Negative real interest rates [2m]</u></p> <ul style="list-style-type: none"> <li>• Real interest rates = nominal interest rates – inflation</li> <li>• Assuming that nominal interest rates are low or close to zero, an increase in rate of inflation would mean that real interest rates will become negative.</li> <li>• Interest rate is the cost of borrowing</li> <li>• Intuitively, a higher rate of inflation will reduce the value of money borrowed. If the nominal cost of borrowing is low (nominal interest rate), a high rate of inflation may cause the real value of the loan to be less than the initial value borrowed, even after the nominal interest rate has been accounted for.</li> </ul> <p><u>Reduction in the value of the yen [2m]</u></p> <ul style="list-style-type: none"> <li>• When there is inflation, the price of domestic goods and services will be higher than other countries.</li> <li>• This will lead to a fall in exports, and cause the demand for domestic currency to fall.</li> <li>• Therefore, the value of domestic currency (yen) falls.</li> <li>• At the same time, demand for imports will rise since foreign goods are relatively cheaper.</li> <li>• As a result, there will be higher supply of domestic currency as the locals will sell their currency in exchange for foreign currencies to pay for imports.</li> <li>• This causes the value of domestic currency (yen) to fall.</li> </ul>
<i>Markers’ Comment</i>	
<b>(d)</b>	<b>Examine the consequences on Greece and other economies in the Eurozone when the Greek government “sought to be generous to its people”. [8]</b>
	<p>“sought to be generous to its people”</p> <ul style="list-style-type: none"> <li>• Greek government increased government spending by creating a welfare state, offering generous pay and pensions, and lowered the retirement age in its economy.</li> <li>• The effect of a sustained budget deficit (<math>G &gt; T</math>) caused public debt to spiral out of control.</li> </ul> <p>Effect on Greek economy</p> <ul style="list-style-type: none"> <li>• Potential expansionary impact through AD increasing (from increasing C, I and G)</li> <li>• Sustained budget deficit causes public debt, this increases the interest rates government has to pay, creates uncertainty in the economy, affects government provided pensions and jobs.</li> <li>• These have contractionary effects in both AD (in reducing C, I and X) and AS (increase cost of production, lower investments resulting in lower growth of capital/labour quantity and quality)</li> </ul> <p>Effect on developed economies like Germany and France</p> <ul style="list-style-type: none"> <li>• “German and French financial institutions are thought to hold up to 70% of Greek debt and would be severely hit” (Extract 8: Greece crisis)</li> </ul>

	<ul style="list-style-type: none"><li>Investments returns are affected because the financial institutions are unable to recoup their loans.</li><li>If Greece were to default on the loans, these financial institutions may require bail out from their government.</li><li>This will limit government spending and increase taxation in their own countries, resulting in contractionary impacts on the economy</li></ul> <p>Effect on all economies in the Eurozone</p> <ul style="list-style-type: none"><li>Lower international investments in the Eurozone [Extract 8: <i>Greece crisis...</i>] due to greater uncertainty in the Eurozone and fears of debt contagion.</li><li>Also lower investment due to possibly fluctuations in the value of the Euro currency. This leads to a fall in AD and NY.</li><li>Large public debt will cause the government to pay high interest payments.</li><li>Large public debt also crowds out private investments.</li><li>Lower volume of trade overall amongst the EU countries, since there are contractionary impacts on bigger economies such as Germany and France.</li></ul> <table><tr><th colspan="3">Knowledge, Application, Understanding and Analysis</th></tr><tr><td>L3</td><td>A balanced and elaborated discussion that discusses effects on <b>both</b> Greece and other economies in the Eurozone.</td><td>5 – 6</td></tr><tr><td>L2</td><td>An elaborated discussion that discusses effects on <b>either</b> Greece or other economies in the Eurozone.  Or  A one-sided answer.</td><td>3 – 4</td></tr><tr><td>L1</td><td>Undeveloped answer and/or without economic analysis.</td><td>1 – 2</td></tr><tr><th colspan="3">Evaluation</th></tr><tr><td>E1</td><td>Evaluative comments with justifications  1m for evaluative comments without justifications</td><td>1 – 2</td></tr></table>	Knowledge, Application, Understanding and Analysis			L3	A balanced and elaborated discussion that discusses effects on <b>both</b> Greece and other economies in the Eurozone.	5 – 6	L2	An elaborated discussion that discusses effects on <b>either</b> Greece or other economies in the Eurozone.  Or  A one-sided answer.	3 – 4	L1	Undeveloped answer and/or without economic analysis.	1 – 2	Evaluation			E1	Evaluative comments with justifications  1m for evaluative comments without justifications	1 – 2
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(e)	<b>Discuss whether Greece should adopt the same approach as Japan in solving its own economic problems. [8]</b>																		
	<p>Policies adopted by Japan</p> <ol style="list-style-type: none"><li>Expansionary monetary policy</li><li>Expansionary fiscal policy with SS-side approach through increase in G</li><li>Structural reforms</li></ol> <p>Expected effects of policies in Japan</p> <ol style="list-style-type: none"><li><b>Expansionary monetary policy</b><ul style="list-style-type: none"><li>Lower interest rates should have an expansionary impact on C and I</li><li>Lower interest rates will lower the ER, resulting in greater export earnings (assuming Marshal-Lerner condition holds) [Extract (weak Japanese GDP...)]</li><li>Both should increase AD, which would cause NY to increase through the multiplier effect</li></ul></li><li><b>Expansionary fiscal policy with SS-side approach</b></li></ol>																		

- Increase in fiscal spending should have expansionary impact on G
- Improved infrastructure would cause LRAS to shift outwards as productive capacity of the country improves
- Outward shifts in AD and LRAS resulting in sustained economic growth
- 3. Structural reforms**
- Increase labour participation rates (either by delaying retirement age or encouraging women to work)
- Reduction in subsidies to agriculture would encourage farmers to be more efficient and divert precious resources towards more productive uses
- Overall increase in AS

Thesis: Yes, Greece should adopt the same approach

**1. Expansionary monetary policy**

- Theoretically, lowering interest rates to boost consumption, investment and exports should work for Greece as it does not require the government to use its limited budget, since its debt is already increasing.
- \*However, Greece is not able to lower its interest rate unilaterally as it is in a currency union with other Eurozone economies. The interest rate (and hence monetary policy) is decided by the European Central Bank for all the Eurozone countries
- \*Moreover, the effectiveness of interest rate changes depends on the interest elasticity of consumption and investment in the country.

**2. Structural reforms**

- Greece should also adopt structural reforms focusing not just on the supply-side but also its government spending and taxation policies
- Firstly, it should increase the retirement age in order to increase labour participation rates to increase AS [Extract *what is the Greek debt...*]
- Secondly, it should also cut back government spending on pay and pensions but instead divert it towards developing its capital and human resources.
- Thirdly, it could reform its taxes towards a broader base from income taxes to indirect taxes and enforce more stringent tax collection to ensure there is enough revenue to cover the existing spending.

Anti-thesis: No, Greece should not adopt the same approach

**1. Expansionary fiscal policy**

- The large public debt in Greece may mean that the government do not have enough resources to finance an increase in spending. It will result in Greece having to pay punitive interest rates to foreign creditors. Moreover, the 'troika' of the EU, ECB and IMF may not allow Greece to spend more than it already has in order to qualify for new loans to help Greece pay for its initial debt
- Increase in government debt may also crowd-out private investments, with the phenomenon known as the 'crowding-out' effect.
- Greece is also not collecting enough taxes in order to pay for additional spending

**Evaluation**

1. Structural reforms take time to take effect, so Greece would have to suffer from existing economic recession as it is unable to undertake any demand-side policies due to its membership in the single currency (restricting monetary policy) and the huge government debt (restricting fiscal policy).
  - Alternatively, it could consider abandoning the Euro and using its own currency so that it can have more leeway in implementing

	<p>expansionary monetary policy. However, this could also have dire impacts on external trade as it also loses its participation in the common EU market.</p> <p>2. Given the huge economic recession the policies implemented would bring, and the almost complete restrictions on demand-side policies, the Greek government may inadvertently have to rely on other Eurozone countries to lend them money to pay for existing spending, or to forgive their debt either partially or completely. The policy of pushing for debt forgiveness may not necessarily be met with resistance, given the fears of “debt contagion” now that the rest of Europe and large parts of the developed world is exposed to the Greek debt.</p> <p>3. As the government of Greece is democratically elected, the people of Greece would need to support these policies, or the government may not have the mandate to push through any austerity measures that the people reject.</p>																		
	<table><tr><th colspan="3">Knowledge, Application, Understanding and Analysis</th></tr><tr><td>L3</td><td>A balanced and well-elaborated discussion that evaluates the suitability of policies implemented by Japan for the Greek economy.</td><td>5 – 6</td></tr><tr><td>L2</td><td>For an undeveloped answer that may not have referred closely to policies implemented by Japan.  OR  A one-sided answer.  Max 3m if student give theoretical answer without application to context of Greece.</td><td>3 – 4</td></tr><tr><td>L1</td><td>Very undeveloped answer and/or without economic analysis.</td><td>1 – 2</td></tr><tr><th colspan="3">Evaluation</th></tr><tr><td>E1</td><td>Evaluative comments, unexplained.</td><td>1-2</td></tr></table>	Knowledge, Application, Understanding and Analysis			L3	A balanced and well-elaborated discussion that evaluates the suitability of policies implemented by Japan for the Greek economy.	5 – 6	L2	For an undeveloped answer that may not have referred closely to policies implemented by Japan.  OR  A one-sided answer.  Max 3m if student give theoretical answer without application to context of Greece.	3 – 4	L1	Very undeveloped answer and/or without economic analysis.	1 – 2	Evaluation			E1	Evaluative comments, unexplained.	1-2
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**Millennia Institute 2015 H1 Preliminary Examination 2 Answers (Section B)**

- 3 (a) Explain why government intervention is advocated in the markets both for public goods and for goods where positive externalities are present.
- (b) Public transport is free in the Central Business District of Estonia. However, a fare is charged for travelling on public transport in other areas of Estonia.

[10]

*Adapted from Eco-innovation Action Plan, 17 June 2013*

Assess whether the economic case for these two different approaches is justifiable.

[15]

3(a)

Government is an agency organized to achieve the efficiency in the society. Efficiency refers to allocative and productive efficiency. Production and consumption must be at the social optimum level where making someone better off does not make another person in the society worse off. Public goods and goods yielding positive externalities are not produced at the socially optimum level.

**Non-excludability** means it is either not economically feasible or not possible to exclude anyone from using the good, once it is provided. It is collectively consumed and it is not possible to assign property rights to only those who pay for the good. For example, when a streetlight is built, the owner cannot exercise private property rights and prevent other people who walk pass from enjoying the light as it is not economically feasible.

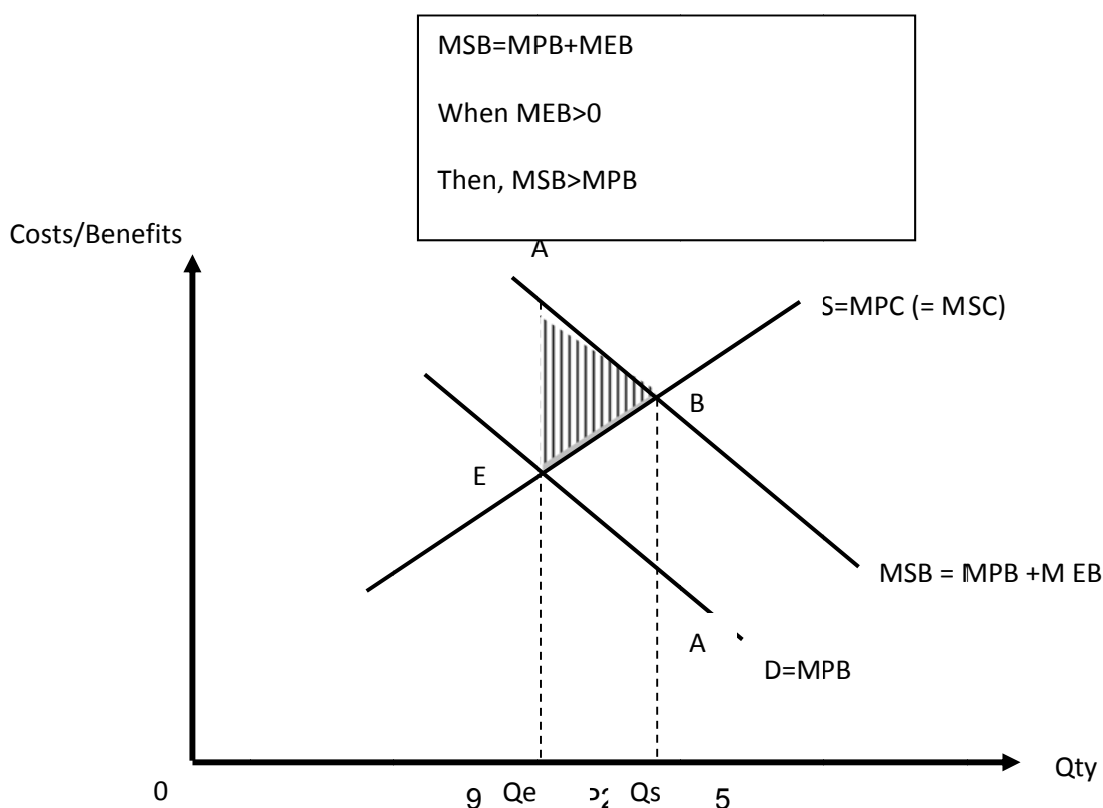
Thus, the property of non-excludability could give rise to **free rider problem** where it is possible for a person to consume a public good without having to pay for it. From the demand side of the market, the desire to be a free rider weakens the incentive for consumers to offer to pay for the public good. In the case of streetlight, the passer-by would not want to offer to pay for enjoying the light since it is impossible for the streetlight owner to charge him/her a fee. This would also mean that there is an incentive to refrain from expressing demand in the market. Hence, since there is no expression of demand, it is

**impossible to charge a market price** for the good. The missing market price would lead to **no provision** of such goods at all if left to the private enterprise.

**Non-rivalry in consumption** means the consumption of the good /service by one person does not diminish another person's ability to consume the same good/ service. This implies that once the good is produced, additional resource cost to provide for another person benefiting from consuming the good is zero. For instance, while one enjoys the streetlight, others could also enjoy the same amount of streetlight. Thus, there is no additional cost involved when another passer-by walk pass and enjoy the streetlight. This means that **marginal cost is equal to zero**. At social optimal level, MSB should be equal to MSC. Since MSC of streetlight is equal to zero, the **socially ideal price should be \$0**. However, at \$0, there will be **no supply** because producers are profit motivated.

Hence, the characteristics of non-excludability and non-rivalry in consumption explain why there is no provision of public goods in a free market economy. This results in complete market failure as **no resources are allocated to these goods** which are essential and beneficial to the society. In other words, resources are not allocated efficiently.

Let's take the example of positive externality. If an individual makes a decision to take public transport in a congested area, he will receive a private benefit of travelling to his venue. However, at the same time, **positive externality** is being generated as using public transport also benefits the entire community, by creating a cleaner living environment. Since the other consumers do not pay the public transport fare, there is an **external benefit** for them. Thus, from the standpoint of society as a whole, **MSB exceeds MPB** due to the presence of external benefit. This can be illustrated from the diagram below:



**Figure 3.1: Positive Externality from Consumption causing a Divergence between MPB and MSB**

In the figure above, the demand curve,  $D$ , reflects the MPB of the consumer and it shows the satisfaction/ benefit from each additional unit of public transport usage while the supply curve,  $S$ , reflects the MPC which is cost of production of each additional unit of public transport service. The individual consumer will only consider the private costs and benefits, ignoring the positive externalities and will consume up to the point where **MPB = MPC** (private efficiency). As such,  $Q_e$  is being consumed.

However, the external benefit generated creates a divergence between MPB and MSB, i.e. MSB is higher than MPB. On the other hand, since there is no external cost incurred,  $MSC = MPC = S$ . Hence, at the market equilibrium output,  $Q_e$ , **MSB is greater than MSC**, meaning that the society values an additional/extra unit of good more than what it would cost the society to produce it.

The **socially efficient level** of output should be where  $MSC = MSB$ , ie., at output  $Q_s$ . Therefore, the price mechanism has *under-allocated* resources to the consumption of the good since  $Q_e < Q_s$ , that is, there is an **under-consumption** of the good that generates positive externality. Area EAB represents the **welfare/deadweight loss** to society as a result of this under-allocation of resources. Therefore, the market fails to allocate resources efficiently because it does not take into account the external benefit and market failure arises.

Knowledge, Application, understanding and Analysis		
<b>L3</b>	Clear explanation of how market failure arises in the market for both public goods and for goods with positive externalities.	7-10
<b>L2</b>	Undeveloped explanation for both cases (public goods and goods with positive externalities),  OR	5-6

	Developed explanation of only one case.	
<b>L1</b>	For an answer that shows descriptive knowledge of concepts.	1-4

- (b) Public transport is free in the Central Business District of Estonia. However, a fare is charged for travelling on public transport in other areas of Estonia.

*Adapted from Eco-innovation Action Plan, 17 June 2013*

Assess whether the economic case for these two different approaches is justifiable.

[15]

*Public transport exhibits the characteristic of excludability and rivalry in consumption. It is a merit good in the central business district of Estonia. However, in other areas of Estonia, it is not provided for free because it is not considered as a merit good. Merit good is a good that is deemed socially desirable by the government. In this case, public transport in the Central Business District of Estonia is a merit good because of positive externalities. It is deemed to be under-consumed by the government. Market allocation is not allocative efficient.*

Prior to the implementation of free fare, there would be a situation of under-consumption of public transport in the central business district of Estonia. There is positive externality in the consumption of public transport in CBD area because of lower congestion and a cleaner living environment. Hence, there is an incentive for the Estonia government to provide free public transport so as to harness the huge external benefits.

By providing free public transport, there would be a huge increase in quantity demanded for public transport in CBD of Estonia. The socially efficient output level could be achieved.

One advantage of such measure is that it could be very effective at encouraging public transport usage since there is no price involved. Some may also argue that it helps to reduce income inequity issue as transport is a basic necessity that should be made available even to the poor.

However, providing free public transport may not be justifiable as it could lead to an over usage of public transport especially for unnecessary travel. As shown in figure 3.2, when public transport is free, quantity consumed is at  $Q_f$  which is more than  $Q_s$ . Over-usage beyond socially optimal output level would also lead to a deadweight loss (area AEB) on the society. The congestion created on public transport system due to a large spike in passengers may also lead to a situation of negative externalities. Moreover, it could lead to high government expenditure.

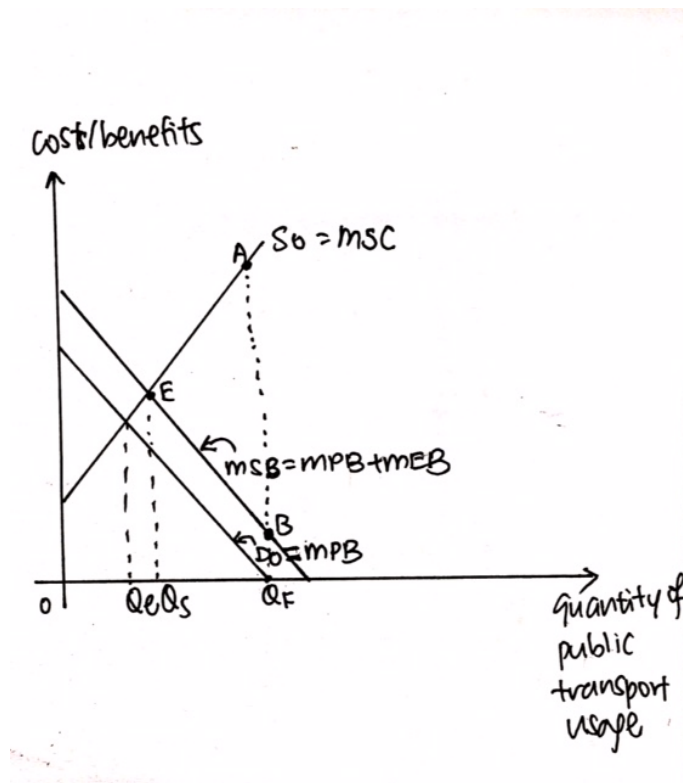


Figure 3.2 Over-Usage of public transport

Public transport is not provided for free in other areas for Estonia since it is not considered as a merit good. In other areas of Estonia, there is no congestion problem arising from the usage of private vehicles. Hence there is no need to encourage usage of public transport.

However, it may be justifiable to encourage usage of public transport if there is external benefit of a cleaner living environment. For example, the government could provide subsidy for public transport (concession rates for residents) in the non-CBD area to increase the demand for public transport. At the new market equilibrium, the usage level would be higher. This method would be more suitable for non-CBD area where there is no need to increase usage by a large amount. Moreover, it would be too costly to provide free public transport in a much large non-CBD region.

One advantage is that subsidy is less costly and could also prevent unnecessary usage of public transport since there is still a required payment by the user. However, one may argue that it is difficult to decide on the amount of subsidy to provide since it is difficult to estimate the MEB.

The different approaches can be credited by the different degree of under-usage and financial manageability found in the two areas. In CBD area, where there is high degree of under usage of public transport and smaller number of commuters, providing it for free is justifiable. However, in other areas where external benefit is lesser, only a small amount of subsidy is required to achieve allocative efficient outcome.

<b>Knowledge, Application, Understanding and Analysis</b>		
<b>L3</b>	Clear and 2-sided elaboration of the both economic cases.	<b>9- 11</b>
<b>L2</b>	Clear 2-sided explanation for 1 economic case, OR Clear 1-sided explanation for both economic cases, OR Undeveloped 2-sided explanation for both economic cases.	<b>5- 8</b>
<b>L1</b>	For an answer that shows descriptive knowledge of concepts.	<b>1- 4</b>
<b>Allow up to 4 marks for Evaluation</b>		
<b>E2</b>	For an evaluative assessment based on economic analysis.	<b>3- 4</b>
<b>E1</b>	For an unexplained assessment, or one that is not supported by analysis.	<b>1- 2</b>



4 (a) Explain the different types of unemployment. [10]

(b) Suppose a country such as Singapore were to experience a significant fall in demand for its exports. This results in a balance of trade deficit and a rise in unemployment.

Discuss the view that supply-side policy is the best policy option in reducing high unemployment in an economy.

[15]

4(a)

Definition of Unemployment: Unemployment is a situation where someone of working age is not able to get a job but would like to be in full employment.

Types of unemployment	
<b>Point:</b> One type of unemployment is Demand-deficient/cyclical unemployment	<b>Explain:</b> -rises when real GDP falls (during recession) -not producing as much good (output) due to a fall in aggregate demand - Fall in aggregate demand leads to a more than proportionate fall in national income and employment level through the multiplier process -don't need so many workers (labour is a derived demand) <b>Example/evidence:</b> - Reduction in export demand → don't need as many staff as before as firms cut down on their output <b>Link:</b> Demand-deficient unemployment



	could cause higher unemployment
<b>Point:</b> Another type of unemployment is structural unemployment	<p><b>Explain:</b></p> <ul style="list-style-type: none"> <li>-changing pattern of demand and supply in individual industry's labour market</li> <li>-workers in a particular declining industry with falling demand may find it difficult to find a new job in another industry because they lack the skills (<b>mismatch of skills to new jobs available</b>)</li> </ul> <p><b>Example/evidence:</b></p> <ul style="list-style-type: none"> <li>-Decline in manufacturing in SG → production shifts to countries with lower costs of production (such as China)-</li> <li>→workers in manufacturing sector lack skills to work in service sectors→ structural unemployment.</li> </ul> <p><b>Link:</b> Structural unemployment is another type of unemployment.</p>
<b>Point:</b> Frictional unemployment is another type of unemployment.	<p><b>Explanation:</b></p> <ul style="list-style-type: none"> <li>-could also be another possibility where imperfect information occurs in the labour market and the unemployed takes some time to find the employment opportunities in the job market.</li> <li>-short term in nature</li> <li>-1-2% of economy's unemployment rate</li> </ul> <p><b>Example/evidence:</b></p> <ul style="list-style-type: none"> <li>-fresh graduates takes time to find their job</li> </ul> <p><b>Link:</b> Frictional unemployment is another cause of unemployment</p>
<b>Points:</b> Seasonal unemployment is	<b>Explanation:</b>

<p><b>another type of unemployment.</b></p>	<p>-caused by relatively regular and anticipated decline in business activity during certain time period of the year.</p> <p>-workers are laid off temporarily because of seasonal changes.</p> <p><b>Example/evidence:</b></p> <p>-Industries like tourism are subjected to seasonal decline. During June and December, there would be increase hiring of workers. During the other months, there would be a decline in the level of hiring since there would be a fall in the number of tourists during school terms.</p> <p><b>Link:</b> Seasonal unemployment is another type of unemployment</p>
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<b>L3</b>	For an analytical answer that explains very well at least three types of unemployment.	<b>7- 10</b>
<b>L2</b>	For an answer that has only explained some of the types of unemployment OR has descriptive explanation on all the types of unemployment.	<b>5-6</b>
<b>L1</b>	For an answer that shows descriptive knowledge of the types of unemployment	<b>1- 4</b>

#### 4(b)

#### Suggested Answer:

Unemployment means that the economy is operating at a point inside the production possibility frontier. Thus, high level of unemployment would include many people being unable to get a job. This could result in higher incidence of poverty and cause social problems. To reduce unemployment, a government could use supply side policy.

Structural unemployment occurs when the structure of the economy changes because of changing consumer demand and technology. These changes result in certain

industries and skills becoming obsolete. Thus, supply-side policy of retraining and education would be a more appropriate policy as it would help to increase the ability of the workforce to easily switch from one industry to another. This policy of retraining and education is a supply-side policy. Workers pick up relevant skills and allow themselves to be reemployed in growing industries. For example in the early 1990s, Singapore had many workers employed in the manufacturing and electronics sector. In the mid-1990s, both of these sectors went on a decline and there was massive retrenchment of workers. Many of these workers had to undergo retraining in areas such as services and IT skills to enable themselves to be employed in the growing service and IT-based industries.

Moreover, supply-side policy that promotes investment in research and technology or government spending on infrastructure is also able to reduce the unit cost of production in the long-run. Better technology and infrastructure would enhance the efficiency of production. The long-run supply curve shifts to the right as shown in figure 4.1 and cost-push inflation falls. There would be a fall in general price level from  $P_0$  to  $P_1$ . If the cause of the falling export demand stems from declining of export competitiveness because of higher cost of production, such supply side policy may help Singapore regain her export competitiveness and increase export revenue in the long run. Supply-side policy could also help to reduce demand-deficient unemployment in the long run.

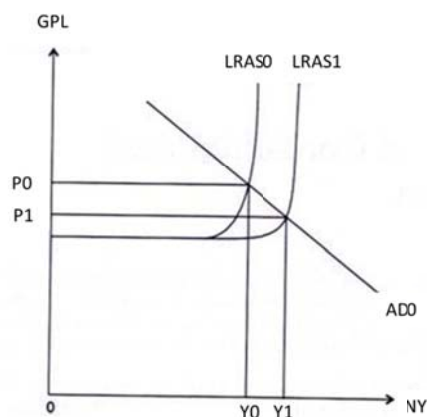


Fig. 4.1: Supply-side policy and the increase in LRAS

However, supply-side policy may not always be the best policy to reduce unemployment. Supply-side policy itself has certain limitations such as high expenditure and also it takes time for workers to learn new skills. It also takes time to develop new technology and infrastructure.

Most importantly, the government should consider the cause of unemployment in the country. If there is cyclical unemployment/demand-deficient unemployment, it would be more appropriate for the government to use fiscal and monetary policies as these would help to stimulate the aggregate demand. This is because deficient in aggregate demand is the main cause of cyclical unemployment. On the other hand, if there is structural unemployment, the more appropriate policy would be to increase labour mobility through retraining and education. In the preamble, it is suggested that Singapore has experienced a significant fall in demand in its export hence resulting in the rising unemployment. If falling aggregate

demand is the cause of unemployment, fiscal and monetary policies would be more appropriate.

An expansionary fiscal policy refers to the use of increased government spending and/or reducing taxes. By increasing government spending, it could directly increase aggregate demand, shifting the aggregate demand curve rightwards, leading to a rise in national income and employment through the multiplier process. Additionally, the government could reduce the both direct and indirect tax to increase consumption and investment in the economy. By reducing taxes, consumers and firms would have higher disposable income for consumption and investment which could result in higher aggregate supply as well. Thus, reducing the tax could also shift the aggregate demand curve rightwards from AD0 to AD1 as shown in figure 4.2 and increase national income more than proportionately from Y0 to Y1 through the multiplier process. Employment increases since labour is a derived demand. Hence demand-deficient unemployment falls.

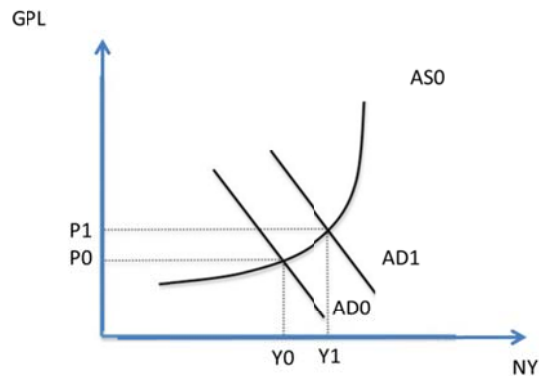


Figure 4.2: Expansionary Fiscal Policy and Increase in AD

However, the effectiveness of this fiscal policy depends on the size of the multiplier in the country. This is because the impact on employment could be constrained by the size of the multiplier. For example, in the case of Singapore's economy where the multiplier is relatively small due to its small population size, the effect of the increased government spending and/or higher disposable income on employment is limited. Additionally, an expansionary fiscal policy may lead to crowding out effects. This is because the government would need to finance its spending by borrowing. Thus, it may compete with the private sector for funds from the banks, leading to a higher interest rate. This higher interest rate in turn increases the cost of borrowing for households and firms, crowding out consumption and investment and leads to lower aggregate demand. As such, the effectiveness of the expansionary fiscal policy to increase aggregate demand and reduce unemployment will be greatly reduced. Moreover, the implementation of this policy could lead to demand pull inflation.

Furthermore, fiscal policy may not be only policy which a government could use. A government could also employ expansionary monetary policy by increasing its money supply

to lower interest rate. However, Singapore does not use conventional monetary policy because our economy is small and open and hence we have limited control over our interest rate. Instead, we use exchange-rate based monetary policy. To increase the demand for exports, we would conduct a policy of devaluation to decrease the price of our exports in terms of foreign currency. Assuming that the Marshall-Lerner condition holds, devaluation would lead to an improvement in the trade balance. Net export would increase and this would lead to an increase in aggregate demand. This would lead to an increase in the national income and employment through the multiplier process.

However, devaluation has its limitation. The price of our imports in terms of Singapore dollars would become more expensive. This would lead to a rise in our cost of production since most of our factors of production are imported.

To conclude, supply side policy may not be the best option since different types of unemployment require different policy to resolve. The best policy to use would depend on the root cause of the unemployment. For example, supply-side policy may not be suitable to use in the case of demand-deficient unemployment as it does not help to solve the problem of low aggregate demand. However, if the root cause of the falling export demand stems from declining export competitiveness arising from higher cost of production, supply side policy to enhance productivity and lower per unit costs of production may help Singapore regain her export competitiveness and increase export revenue in the long run.

L3 (9-11)	<p>For an answer that</p> <ul style="list-style-type: none"> <li>Has a <u>balanced response</u> on the effectiveness of the different policies at tackling the different types of unemployment in the context of Singapore</li> </ul>
L2 (6-8)	<ul style="list-style-type: none"> <li>Lacks either scope or depth in coverage</li> <li>Lop-sided analysis: <ul style="list-style-type: none"> <li>Consider only how supply-side policy helps to solve unemployment OR</li> <li>Lack of consideration of the different types of unemployment OR</li> <li>No refer to Singapore's context</li> </ul> </li> </ul>
L1 (1-5)	<ul style="list-style-type: none"> <li>Descriptive answers of some concepts (such as the different types of unemployment) without explaining how the policies help to reduce unemployment)</li> <li>Descriptive answers of some concepts (such as supply-side policy without explanation of how it solves unemployment)</li> <li>Smattering of points</li> <li>Conceptual errors</li> </ul>
E2 (3-4)	<ul style="list-style-type: none"> <li>For an evaluative judgement based on economic analysis</li> </ul>
E1 (1-2)	<ul style="list-style-type: none"> <li>For an unexplained judgment, or one that is not supported by analysis.</li> </ul>