Question 1

Debt Time Bomb

(a) Compare the fiscal balance of Greece and Spain in 2010. [2]

For comparison question, answers need to be presented in a horizontal format, showing one similarity (where relevant) and one difference.

Similarity [1m]	both in deficit
Difference [1m]	size of deficit as a % of GDP larger in Greece than in Spain

(b) Explain what determines the effectiveness of the tax increases outlined in Extract 3 in raising tax revenues. [2]

The taxes outlined in Extract 3 are indirect taxes, i.e. taxes on goods and services as opposed to taxes on incomes and wealth. Indirect taxes are levied on producers but may be passed on to the consumers. To calculate indirect tax revenue,

tax revenue = tax per unit × number of units

Identify the determinant [1m] (any one)	price elasticity of demand (or supply)
Explain the determinant [1m]	The more price inelastic the demand, the lesser responsive the consumers to price changes → smaller fall in quantity transacted → greater the revenue with larger number of units taxed The more price inelastic the supply, the lesser the producers are able to respond to the indirect tax → smaller the fall in quantity transacted → greater the revenue with larger number of units taxed

Accept other relevant factors

(c) With reference to Extract 3, using a supply and demand diagram, explain the effect of the austerity drive on the market for alcohol in Greece. [5]

This is a question that tests candidates on the determination of market outcome – equilibrium price and quantity transacted. Using demand-supply analysis, candidates are to identify and explain how the austerity drive could have impacted the demand and/or supply of alcohol in Greece and from there, analyse the effect on market equilibrium. Where demand and supply change simultaneously, it is important to consider the direction and relative magnitude of the shifts to determine the overall effect on market outcome.

Max of 3m	Explain the effect of an increase in excise tax on supply [2m]	An increase in excise tax will reduce the market supply Reasoning: increase marginal cost of production → increase in minimum price that firms are willing and able to accept to supply the given quantity of output → upward shift of the supply curve
	Explain the effect of scrapping bonus payments for public sector workers on demand [2m]	Scrapping bonus payments for public sector workers will reduce the market demand Reasoning: reduce disposable income, reduce purchasing power → reduce willingness and ability of consumers to buy alcohol (assume normal good) → reduce Qd at each and every price level, shifting the entire demand curve to the left
	Effect of market outcome by combining the demand and supply changes [2m]	Diagram to show decrease in dd + decrease in ss • fall in equilibrium quantity, • effect on price indeterminate, depends on relative extent of the shift. Explain the more likely case with justification

(d) With reference to Extracts 3 and 4, discuss whether indirect taxes and subsidies hinder the effective working of the market mechanism. [8]

The "indirect taxes" in Extract 3 refers to the VAT and excise taxes while the "subsidies" in Extract 4 refers to the US government subsidies to its cotton producers.

When the market mechanism is said to be working effectively, it means that resource allocation by the free market delivers an outcome that will maximise economic welfare. If this were indeed the case, then any form of government intervention will only serve to distort price signals and "hinder the effective working of the market mechanism".

Conversely, if prices do not reflect the true benefits and costs of an economic activity, the market outcome may be sub-optimal, i.e. economic welfare is not maximised and market failure is said to have occurred. Indirect taxes and subsidises can actually help to 'get the prices right', raising / lowering prices so that they reflect the full benefit / cost of the market transaction helping to align the market outcome with the socially optimum level.

Thesis: indirect taxes and subsidies can improve working of the market mechanism by helping to reduce allocative inefficiency

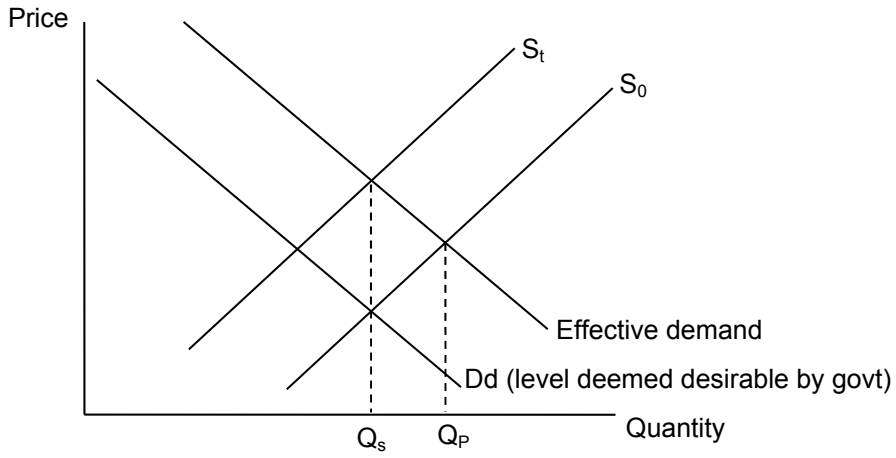
Extract 3: excise tax on fuel, alcohol and tobacco
- Alcohol and tobacco: demerit goods which also produce negative externalities
- Fuel, especially fossil fuel: produce negative externalities

Demerit goods are goods that the government deems to be undesirable and whose consumption should not be determined by the free market. Reasons include:
- o Imperfect information – consumers are not aware of the full extent of the costs e.g. detriment to their own health of consuming tobacco / alcohol
- o Bounded rationality – even with all the public education campaign, consumers may not be in the position to make the best decision for themselves as government deems that they might not be able to rationally weigh the cost and benefit
- o Negative externalities – external cost e.g. adverse effect of passive smoking, damage to public property by binge drinkers are ignored by consumers who only

weigh their MPC and MPB when deciding on the quantity to consume, hence consuming more than the socially optimum amount

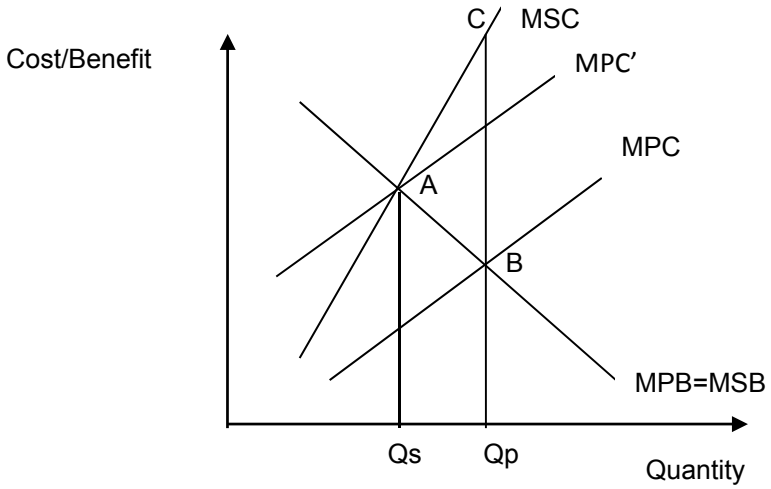
Combining the above 3 factors, effective dd > level of dd as deemed desirable by government → consume at Qp instead of Qs

Excise tax → increase the marginal cost of production → shifts ss curve upwards from S_0 to S_t → reduce quantity consumed at equilibrium to Qs



Or

For the case of negative externalities, explain excise tax as a pigouvian tax where tax per unit = MEC at Q_s = AD → internalise the external cost, shifting MPC upwards to MPC' → consumers face the full social cost of their consumption → reduce Q_p to Q_s



By the same line of reasoning, providing subsidies to encourage the consumption of ***merit goods / goods that generate positive externalities*** can help to reduce allocative inefficiency.

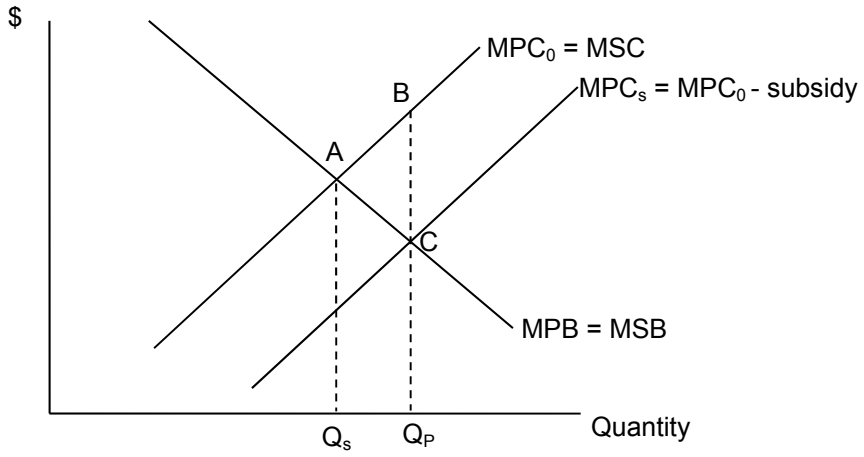
Antithesis: the use of indirect taxes and subsidies may introduce allocative inefficiency and hinder the effective working of the market mechanism

Extract 4: cotton subsidies to farmers in US

It is the developing countries such as those in Africa, with their relatively abundant supply of labour and land, that enjoy comparative advantage in the production of cotton. However, USA, with its subsidies to farmers, reduce the unit cost of production, allowing them to expand production and even export cotton despite their not enjoying the comparative advantage. More resources are expended on producing cotton in the USA given its higher opportunity cost than would be the case if they had chosen to import cotton from African countries at a lower opportunity cost. The outcome is allocative inefficiency, lower world output and lower economic welfare all round.

OR

Subsidies → reduce marginal cost of production, shifting MPC down to MPC_S. Farmers produce up to the point where MPB = MPC_S → output increase to Q_P, beyond Q_S the socially optimum level where MSB = MSB. The cost to society of producing the additional units Q_SQ_P = Q_SABQ_P but the additional output only brings a benefit of Q_SACQ_P to society → welfare loss or DWL = area ABC



Conditional evaluation

Depends on

- the start state: If there initially exists some form of market failure, use of indirect taxes and subsidies can help to bring consumption / production in line with the socially optimum level. If however the market works efficiently on its own, indirect taxes and subsidies only serve to distort price signals and introduces inefficiency in the working of the price mechanism.

Even if there initially exists some form of market failure, use of indirect taxes and subsidies might not necessarily improve the working of the price mechanism. Depends on

- the availability of information on the part of the government: Government might not have perfect information to know just how much to tax or subsidise.
- the cost of implementing the policies: the cost of implementing these policies must also be weighed against the benefits of correcting the market failure.

For the two reasons above, it may well be that indirect taxes and subsidies result in a deepening of the inefficiency. In such an instance, government failure is said to have occurred.

Mark Scheme

Level	Descriptors	Marks
L1	Answer that is largely descriptive	1 – 2
L2	Answer that is • lacking in either scope (only thesis or antithesis) or depth • largely theoretical with limited reference to data	3 – 4
L3	Answer that has • both scope and depth • well-applied economic framework • well-applied to context, i.e. draws on data	5 – 6
E	Reasoned conclusion	1 – 2

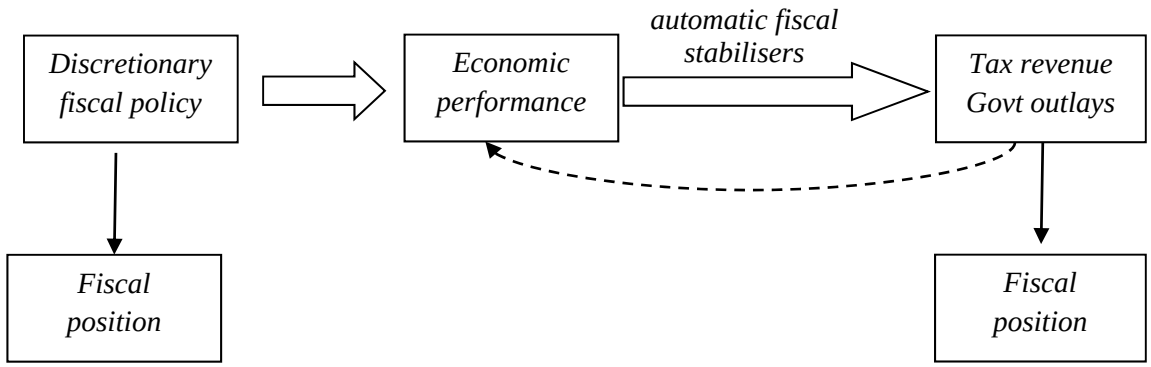
(e) Explain how, according to Extract 4, the austerity measures intended to trim governments' budget deficit may prove counter-effective while the spending on high-return public investment could reduce the national debt in the long run. [5]

Budget deficit arises when the government outlays exceed government revenue. To finance the budget deficit, the government can either (i) draw on fiscal reserves or (ii) borrow. Where budget deficit rises year after year, the size of the government debt accumulates.

This question requires students to explain what appears to be an irony:

- *austerity measures (cutting government spending and raising taxes) may do little to reduce the size of the budget deficit*
- *government spending in the form of high-return public investment may actually do more to reduce the national debt*

Candidates need to appreciate that government's discretionary fiscal policy sets off a feedback loop – government spending and taxes impact the macroeconomy (economic growth, unemployment, etc) which in turn affects the public finances via the stream of tax revenue and government spending.



austerity measures intended to trim governments' budget deficit may prove counter-effective [2m]	Austerity measures e.g. cut in public sector workers pay, reduce public sector jobs → reduce G → c.p. reduce AD → working through the k, reduce NY and, with demand for fops including L as derived dd falling, unemployment increase → reduce tax revenue and increase payout of unemployment benefits → limited reduction in size of budget deficit
spending on high-return public investment could reduce the national debt in the long run [2m]	Public investment → increase AD in the SR (G being a component) and increase AS in the LR (expansion of productive capacity with increase in factor Q&Q) → sustained EG → increase in tax revenue → may generate budget surplus to repay part of national debt → reduce overall size of national debt (or at least to increase NY faster than the increase in size of debt so that debt as a % of GDP falls)
Graphs [1m]	Relevant AD-AS diagram

(f) Discuss the effects of EU austerity drive on the Asian economies. [8]

With globalisation, the economies around the world are integrated through trade, capital flows, international movement of labour, etc. This question requires candidates to analyse how the EU austerity drive affects the performance (the key performance objectives of the government) of the Asian economies via such links. The central economic framework to be employed here is the AD-AS analysis. As an evaluation, candidates need to consider (i) how strongly integrated the two groups of economies are and (ii) how, given the differences in the economic characteristics and the prevailing economic conditions between the Asian economies,

<u>EU economies</u>

Austerity measures → contractionary effect on their economies (reduce G, reduce AD) → reduce NY → reduce their willingness and ability to buy imports, extent of fall in M depends on the size of MPM

<u>Implication on Asian economies</u>

Effect on domestic economy:

- Reduce X to the EU → reduce AD, c.p. → unplanned investment as firms add unsold goods to their inventories → reduce output in the next production cycle to restore inventories to optimal level → demand for fops (including L) as derived dd fall → reduce factor income paid out to households → income-induced consumption falls, together with fall in withdrawals (S, T, M) → further fall in AD. Process known as the multiplier effect continues until sum of fall in W = initial fall in J → magnify the initial fall in AD, real national income contracts and cyclical unemployment rises. Additionally, as dd for fops fall, holding ss constant → factor prices fall, reducing firms' unit cop → passed on as lower prices of final goods and services.

  *Candidates may also analyse the effect of the EU austerity measures on investors' confidence and its impact on FDI into Asia. For many Asian economies that are manufacturing bases to produce goods and services headed to EU as export destination, the contraction in EU economies reduces the expected rate of returns on investment → reduce FDI inflows → its effect on AD in the SR, on AS in the LR

Effect on external balance:

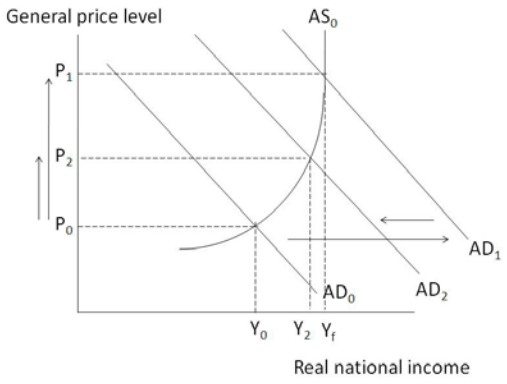
- Reduce X to the EU, cp → worsening of C/A balance
- Reduce FDI inflows → worsening K&F/A balance

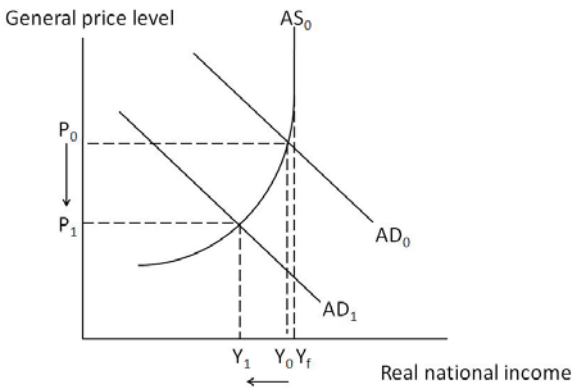
Conditional Evaluation:

Outcome: depending on the
- extent of fall in X
- strength of the other AD components
- relative share of the various AD components,

the economy might experience a slowdown with falling (though still positive) inflation rate or an outright recession with real NY falling, unemployment rising and deflationary pressures.

extent of fall in X	From Extract 5, the extent of fall in X unlikely to be significant given the relatively small exposure (reliance) on Asian economies on the export markets in the affected EU countries. As long as X to the other regions continue to hold up, X may experience little or no fall
strength of the other AD components	Economic uncertainty (esp fear of contagion effect on other larger economies) → Cd and I may fall, or at least experience slowdown → left with G to cushion the fall in X
relative share of the various AD components,	The more open the economy, the more vulnerable it is to fall in external demand since X takes up a large % of its AD. Domestic expenditure items like Cd, I and G (even with deliberate attempt by the government to introduce policies for macroeconomic stabilisation) might not be sufficient to support the AD given falling X → economies like Singapore and HK more likely than others to go into a recession whereas the less open economies in Asia likely to be more resilient





Large economies like China, India and Indonesia: Fall in X dd dampens growth in AD, causing AD to shift from AD_0 to AD_2 instead of AD_1. This causes a slowdown in the rate of actual EG with real NY rising only to Y_2. The slowdown will, at the same time, moderate inflationary pressure, causing GPL to rise to P_2 instead of P_1.

Small open economies like Sg and HK: The other components unable to support the AD as X dd falls. Ceteris paribus, AD falls from AD_0 to AD_1. Real NY falls from Y_0 to Y_1, away from the full employment level of national income Y_f. GPL falls from P_0 to P_1.

Mark Scheme

Level	Descriptors	Marks
L1	Answer that is largely descriptive	1 – 2
L2	Answer that is • lacking in either scope (e.g. considers only one or two of the key performance indicators) or depth	3 – 4
L3	Answer that has • both scope and depth • well-applied economic framework	5 – 6
E	Reasoned conclusion	1 – 2

Question 2

The Chinese Economy

Suggested Answers

(a) Describe the trend in the real effective exchange rate (REER) of China between 2007 and 2010. [2]

Overall, China's REER has appreciated [1m], but there was a slight depreciation from 2009 to 2010 [1m]. OR
Overall, the REER has appreciated [1m] by 12.4% [1m] between 2007 and 2010.

(b) (i) With reference to Table 2, identify the relationship between China's current account balance and her fiscal balance from 2007 to 2010. [1]

Generally, there is a direct relationship between the current account balance and fiscal balance over the period.

(ii) Account for this relationship. [4]

1. Current account affecting the fiscal balance
   - Improvement in current account balance would lead to an improvement in (X-M) → AD rises → NY rises → income is pushed to a higher tax bracket and so tax revenue collected increase → improvement in fiscal balance.

2. Fiscal balance affecting the current account
   - Improvement in fiscal balance through an increase in taxation → fall in disposable income of people → fall in demand for imports since demand for imports is a function of income→ ceteris paribus, lead to an improvement in CA balance

   - Improvement in fiscal balance through a fall in G spending → fall in AD → fall in national income → fall in import expenditure since imports is a function of income → ceteris paribus, lead to an improvement in CA balance

Any 2 reasons, at least one reason from (1) and (2).

(c) Explain the factors that influence speculative inflows into China. [4]

The term speculative inflows refer to hot money inflows.

The 2 factors that influence hot money flows are: the relative interest rates in China and the United States and expectations of the future appreciation in the value of China's currency, the yuan.

From Table 4, there has been an increase in nominal interest rates between 2008 and 2009. Assuming no change in the interest rates of other countries, the differences in relative interest rates of the other countries and China will create an incentive for investors to move their deposits from one country to China, in order to earn a higher rate of return. Thus, there will be hot money inflows into China.

In addition to the attraction of the interest rate difference, speculators are moving "hot money" into China because of the general expectation that the yuan will continue to appreciate in value against the U.S. dollar and other currencies. From Table 4, China's yuan has generally been appreciating, and coupled with the acknowledgment from China that there is a need to appreciate gradually over time in Extract 1, it is likely that most speculators would expect that the Chinese government to continue the yuan's appreciation, albeit gradually. With a higher expected appreciation in future, the speculators' returns from short term investments would be greater when converted back to their home currency. This would thus attract speculators to invest in China, thereby encouraging hot money inflows into China.

The combined effects of the interest rate differences and the expected appreciation of the yuan provide a strong incentive for "hot money" flows into China.

Another potential factor: In theory, despite its recent capital market liberalisations, China still maintains some restrictions over foreign exchange and international capital flows, providing it with various instruments to prevent the inflow of the unwanted "hot money."

Identification of factors (max 2m) with explanation (additional 2m)
Cap at 3m for 2 theoretical answers

(d) To what extent would the near doubling of wages in China hurt its balance of payments? [8]

The term "to what extent" means that students need to give a 2-sided approach.

The two main accounts of the balance of payments (BOP) are the current account as well as the capital and financial account.

<u>Thesis – Large extent</u>

From Extract 8, it is mentioned that Foxconn has been forced to promise a near doubling of wages, which translates into an increase in cost of production (COP) for the firm, thereby leading to a fall in profits. This is supported by the evidence in Extract 8 that there is a predicted "30% hike in wages alone [which] will reduce company earnings by a fifth". Furthermore, Table 2 shows that the average hourly wages in China have been rising rapidly from US$1.06 to US$1.84 between 2007 and 2010, which is an increase of 73.6% in wages within a short span of 3 years. In order to protect profit margins, firms are likely to partially cut back production as well as pass on part of the higher costs of production to consumers in the form of higher prices.

If most firms in various industries experience such wage increases, as seen from Diagram 1 below, this leads to an upward shift of the aggregate supply (AS) curve from AS_1 to AS_2, resulting in an upward pressure on general price level (GPL) from P_1 to P_2. This leads to a rise in price of goods, causing exports to be less price competitive. This is supported by the evidence in Extract 8 "growing pressure for wages in China's factories to rise and they are creeping up, which may, slowly, feed into higher prices for products in the West".

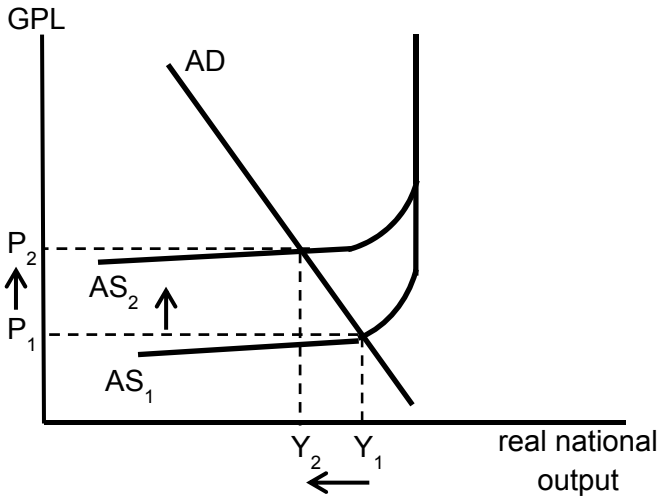


Diagram 1: Effect of rising wages on general price level (GPL)

Assume that the price of Chinese exports rise faster than the price of exports manufactured by other countries. By law of demand, as the price of exports rise, quantity demanded for exports falls. Since the demand for Chinese exports is likely to be price elastic due to the wide availability of substitutes from other exporting countries, total revenue of Chinese exports (TR_X) falls. Moreover, since Chinese goods are now more expensive, local citizens may switch to consume imported substitutes instead of domestically produced products. Also, as stated in Extract 8, higher wages should encourage people here to save a little less and to spend a little more, which may lead to a rise in the consumption of imports. The demand for imports thus increases, leading to a rise in total expenditure of imports (TE_M). Coupled with a fall in export revenue, the balance of trade (BOT) worsens. Ceteris paribus, the balance of payments (BOP) worsens as well.

Particularly in the textile industry, where labour can make up as much as a third of overall production expenses as stated in Extract 8, the price of exported textiles / garments could rise very substantially, causing the TR of exported textiles to fall significantly. If garment production in China takes up a large percentage of the entire manufacturing industry, China's BOT worsens considerably.

In addition, due to the rise in COP for firms, this reduces incentive for firms to be attracted into China. Hence, this may deter new firms from entering China, and existing firms in China (especially textile / garment firms) may relocate to other lower cost emerging economies like Vietnam. Thus, the former hinders foreign direct investment (FDI) inflows and the latter causes FDI outflow respectively, resulting in the financial account of BOP to fall by a large extent.

Hence, due to a near doubling of wages in China, the current account as well as the capital and financial account worsen by a large extent, leading to a significant deterioration of China's BOP.

<u>Anti-thesis – Small extent</u>
Nonetheless, despite the rise in COP, workers' productivity is also rising. As long as the rise in productivity is faster than the rise in COP, firms' unit COP may actually fall. Even if the rise in productivity is slower than the rise in COP, firms'

unit COP still increases, but by a smaller extent This is supported by the evidence in Extract 8 which states that “worker productivity is also rising, which will help offset higher wages”. Thus, the loss in price competitiveness of Chinese exports may not be that much.

Furthermore, according to Extract 8, “while the largely youthful workforce at big companies like Foxconn has attained double-digit wage increases, the wages of millions of other workers have not caught up as rapidly”. This means that the near doubling of wages is not representative of all companies in China. In addition, “the streets of Shenzhen are still packed with migrant workers”. Even if the current workers are unhappy about the wages that they receive, firms can easily fire workers who demand for higher wages, since they can turn to the influx of migrant workers from inland provinces seeking for better work opportunities in cities. Thus wage rates in China may not rise by much and thus, firms’ COP is unlikely to rise significantly.

Despite the rapid increase in China’s wage rates, according to Extract 8, “wages [in China still] have a long way to increase before they reach the levels of those in other emerging economies. China's pay packets are on average still just a quarter of the size of those in Brazil”. This means that the absolute wage rates in China compared to many other emerging countries are still relatively lower. Moreover, Figure 1 also provides the evidence that the absolute wage rates in China is still relatively lower and the growth in wage rates is rising slower as compared to India. Although Vietnam experiences a much lower wage rate, there are limited garment construction and embellishment capabilities as well as lower quality sewing, which may potentially deter FDI into Vietnam. Hence, coupled with highly skilled labour in garment production and the ability to export Chinese textiles to U.S. with relative ease due to familiarity with American retailers, it is unlikely that the near doubling of wages in China will deter significant inflows of FDI into China and cause significant outflows of FDI from China.

Synthesis / Conclusion

In the short run, the near doubling of wage rates in China is likely to raise COP of firms substantially in certain industries, such as the textile industries. However, China still enjoys comparative advantage (CA) in the production of low end manufactured products relative to many other countries due to the abundance of cheap labour. Moreover, the rise in wages could reduce labour strikes since workers receive a higher compensation for similar work efforts as compared to the past, where “industrial unrest has been spreading through China's factories, with strikes breaking out from factory to factory” according to Extract 8. Hence, production is less likely to be disrupted. Therefore, it is unlikely for firms in China to lose export competitiveness substantially and to offshore their production to other low cost countries, since it is difficult to find a low cost country that could match or be on par with China in terms of skills of workforce and connectedness to retailers of trading partners. Therefore, the near doubling of wage rates in China is unlikely to hurt her BOP significantly.

In the long run, if this upward trend in wages were to persist and to far exceed beyond other low cost emerging countries, this could cause China to slowly lose her CA in the production of low end manufactured products, especially since she is slowly moving up the value chain by offering better quality products as stated in Extract 5. Hence, it is possible that firms producing low end manufactured products may reconsider as to whether they should continue their production in China or to relocate their factories to other lower cost emerging countries. As such, China’s BOP could be adversely affected in the future.

Mark Scheme

Level	Descriptors	Marks
L1	For an answer without reference to data that is largely descriptive and/or contains substantial conceptual flaws.	1 – 2
L2	For an answer with limited reference to data that is • lacking in either scope (thesis or anti-thesis OR focuses on one aspect of BOP only) or depth • largely theoretical	3 – 4
L3	For an answer well supported with data that • covers both scope and depth • is well applied to economic framework	5 – 6
E	For a reasoned judgement on whether the near doubling of wages in China would hurt her BOP.	1 – 2

(d) (i) Identify and explain any evidence contained in the data that would help you estimate the likely size of China's multiplier. [3]

The multiplier, k = 1 / 1-MPC = 1 / MPW = 1 / MPT + MPS + MPM
Evidence required: (1) gross domestic savings as a % of GDP; (2) private consumption as a % of GDP to help infer on the value of MPS, MPC and MPM respectively. Only ONE evidence is required.

China's multiplier is likely to be small due to (1) high leakage in terms of high gross domestic savings as a % of GDP, and (2) an estimated small MPC due to a small C as a % of GDP. This means that for every additional dollar earned, the amount saved is large and the amount spent on domestic consumption is small respectively. Via the circular flow of income, since one person's spending is another person's income, this means that the income generated for every additional round of spending (income-induced consumption) is much smaller, and the income leaked out from the circular flow is much greater.

Students should refrain from choosing import of goods and services as a % of GDP because it is even smaller than private consumption as a % of GDP – contradicts with the other 2 data

Identification of ONE evidence (1m) with explanation of evidence (additional 2m)

(ii) With reference to the data and your own knowledge, discuss whether the policy to promote research and development would be appropriate to raise "households' consumption and wellbeing". [8]
The term "household's wellbeing" refers to material and non-material standard of living (SOL).

<u>Appropriate</u>
According to Extract 5, the promotion of research and development (R&D) may help to improve on the quality and design of products via product innovation. This helps China to produce higher-value goods, thereby increasing the competitiveness of domestically produced products. If local citizens purchase these local products, they derive higher utility due to the consumption of better quality and designed products, boosting their non-material SOL.

Overtime, as income generally rises, the production of higher value goods via R&D leads to a more than proportionate increase in demand for such goods that have a high income elasticity of demand (YED) value. This implies a more significant rise in the consumption of goods and services. Hence a greater utility is derived, in turn boosting material SOL.

At the same time, due to the increased competitiveness of local products, Chinese citizens may switch from consuming imports (M) to domestically produced goods, raising domestic consumption (C_D). Foreigners may also switch from consuming exports of other countries to Chinese exports, raising exports (X) of China.

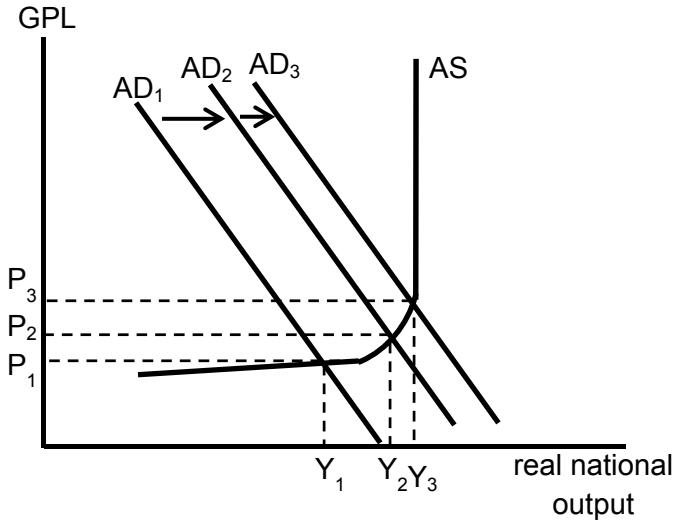


Diagram 2: Impact of increased competitiveness of Chinese-made products

As seen from Diagram 2, the increase in C_D and X causes a rise in aggregate demand (AD) from AD_1 to AD_2. Firms draw down on their inventories and in order to restore inventories back to the optimal level, in the next production cycle, firms step up production and in the process employ more factors of production, including labour. These workers would then receive factor incomes, and in the process spend on goods and services. This increase in income-induced consumption is known as the multiplier effect. Thus, workers in China who purchase more goods and services are able to enjoy a higher material SOL. Nonetheless, as explained in (d)(i), the multiplier effect in China is likely to be small, thus the subsequent increases in induced consumption from AD_2 to AD_3 may be small. [does this sound very indirect?]

From Extract 7, there have been significant expenses on R&D spending by China over the years and sustained R&D efforts even during economic recessions, where R&D is in areas such as alternative energy and life sciences. If R&D in alternative energy were to be successful, China is more likely to depend on alternative energy, and thus reduce the burning of fuel. This could in turn lead to lesser air pollution issues, which is a prominent problem in China. As a result, Chinese citizens are able to live in a less polluted environment, and in the process have a better health, thereby increasing their non-material SOL.

<u>Inappropriate</u>

Nevertheless, the promotion of R&D could result in technological improvements via process innovation, where firms switch to the employment of capital machinery. In the process, redundant workers may be displaced, resulting in unemployment. As such, these unemployed workers experience a loss in

incomes, and hence their purchasing power falls, causing them to reduce their consumption of goods and services. Material SOL for this group of workers declines.
Evaluation: However, the output produced for any given factor input may increase when firms employ the use of machinery, thereby raising productivity, and thus alleviates rising costs due to rising labour costs as explained in (c)(ii). As a result, AS shifts upwards by a smaller extent, and GPL is likely to rise slower. Despite the rise in living costs, for any given income earned, workers' ability to maintain their material SOL is higher.

The current SOL could be compromised if resources are allocated to the importing of capital machinery into China to help enhance the R&D process. However, future SOL could increase since there are more capital goods to raise the capability of the country to produce more consumer goods.

Nonetheless, Extract 6 mentions that inherent weaknesses within the Chinese society still persist. Also, the Chinese would rather work for others rather than for themselves, which means that the entrepreneurial spirit in China is lacking, and thus the willingness to propel innovation on their own could be low. Moreover, state owned enterprises (SOEs) that dominate the Chinese economy are largely monopolies, which means that there is a lack of contestability within the industry, causing existing firms to lack the drive to innovate. All these pitfalls could potentially act as significant barriers to innovation, and thus may not boost innovation by a large extent.

Synthesis / Conclusion
The policy to promote R&D seems to be appropriate as it helps to enhance both the material and non-material SOL. According to Extract 7, despite China almost overtaking Japan as the second biggest spender on R&D after the U.S., and that China is expected to increase spending on R&D, this huge R&D spending may be government's efforts rather than firms' efforts to innovate, since the Institute does scientific research for both the government and industry. Also, the overall R&D spending is still far behind that of the U.S., which remains by far the biggest R&D spender, making up one-third of the global total. As such, China should take a more proactive stance in promoting R&D via the provision of incentives. Hence this policy could in fact be timely, and thus appropriate. Nonetheless, it must be noted that R&D must be successful in order to achieve the benefits of boosting households' wellbeing; if not it could just be a wastage of resources.

Mark Scheme

Level	Descriptors	Marks
L1	For an answer without reference to data that is largely descriptive and/or contains substantial conceptual flaws.	1 – 2
L2	For an answer with limited reference to data that is • lacking in either scope (thesis or anti-thesis OR focuses on only one policy OR addresses only one aspect of well-being) or depth • largely theoretical	3 – 4
L3	For an answer well supported with data that • covers both scope (thesis and anti-thesis for both policies as well as addresses both aspects of well-being) and depth • is well applied to economic framework	5 – 6
E	For a reasoned judgement that policy is appropriate or	1 – 2

	otherwise.	

H1 Prelim Essay (Micro)

(a) Explain, with the use of examples, whether all goods and services that are provided by the government are necessarily public goods. [10]

(b) To control the emissions generated by motor vehicles, Singapore's National Environment Agency (NEA) regulates the type and quality of fuel that can be used in Singapore. It also sets minimum exhaust emission standards for all vehicles, taking stringent enforcement actions against smoky vehicles on the roads.

Discuss the view that rules and regulations is the best way to tackle the market failure described above. [15]

Part (a)

We know that in the real world, governments in different countries provide a whole range of goods and services to their citizens. These include: public transport, utilities, army and police to provide security, law and order. This question requires students to analyse whether all the goods and services provided by the government must be public goods. Candidates must first identify the two characteristics of public goods – non-rivalry and non-excludability – and apply them to categorise the goods and services provided by governments.

<P> Only some goods and services provided by the government are public goods. They bear the characteristics of (i) non-rivalry in consumption and (ii) non-excludability. Examples include national defence, street lighting and flood control systems.

Other goods and services provided by the government are not public goods. They may bear one or both characteristics of (i) rivalry in consumption and/or (ii) excludability. Examples include health care and education.

<EE> Non-rivalry in consumption means that consumption of the good by a consumer results in less of the good remaining for other consumers. For example, when the flood control system protects the lives and property of one household, it does not reduce the protection it affords to another household. In other words, the marginal cost of extending the service to one more consumer is zero. In contrast, the health care services that the government provides are rivalrous in consumption. Allocating resources (e.g doctors, medical equipment and drugs) to treat one patient means that the same resources are not available for the treatment of another. To extend the service to one more consumer, a positive marginal cost has to be incurred.

Goods that are non-excludable are goods that producers are either unable to, or find that it is prohibitively costly to exclude non-payers. Again using the same example of flood control system, once the system is put in place, it is not possible for the government to restrict protection to only certain households or firms. Once the system is in place, all households and firms within the same area are protected from the floods whether they pay for it or not. In contrast, health care is a service that is excludable. The government can easily restrict treatment (e.g. doctors' consultation time, medical examination, dispensing of drugs) to certain groups of consumers and deny others (e.g. those who do not make payment) access to the treatment.

<L> Hence, not all goods and services that are provided by the government are public goods.

Part (b)

Candidates are to first identify the market failure as one of negative externality and explain how negative externality gives rise to resource misallocation and deadweight loss. A number of methods exist to address the problem vehicle exhaust, one of which is rules and regulations. Candidates are to compare a minimum of three types of policy to determine whether rules and regulations is indeed the best way to correct/reduce the allocative inefficiency based on some chosen criteria.

1. Identify and explain the market failure that arises from the use of motor vehicles

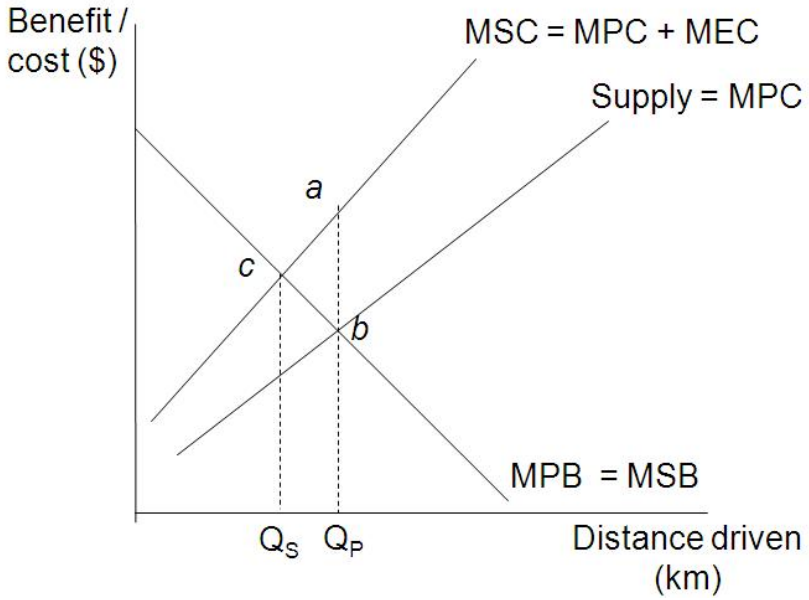
<P> Emissions generated by motor vehicles is a form of negative externality. In the absence of government intervention, this results in allocative inefficiency.

<EE> The private benefit of driving include convenience (the value of the time saved from taking alternative mode of transport), the utility or enjoyment of driving as an activity, etc. In the absence of any external benefit, MPB = MSB.

The private cost of driving include the fuel cost, charges such as ERP and parking, and the maintenance cost required as the vehicle undergoes wear and tear with increased driving.

But over and above the private cost to the driver, car usage imposes a negative externality or an external cost to third parties. Negative externality occurs when the production or consumption of a particular good adversely impact a third party, who is otherwise in no way involved in the relevant market transaction. In the case of driving, the external cost include the loss of productivity of workers whose health are affected the by the exhaust of the motor vehicles.

Rational consumers will consume up to output Q_0 where MPB = MPC, ignoring the cost that their driving imposes on third parties. They therefore consume in excess of the socially optimum amount Q_S where MSB = MSC.



<L> There are several ways in which the government can intervene to correct the market failure and increase economic welfare, one of which is rules and regulations.

2. Explain the alternative policies that the Singapore government can adopt to correct the problems of emissions generated by motor vehicles.

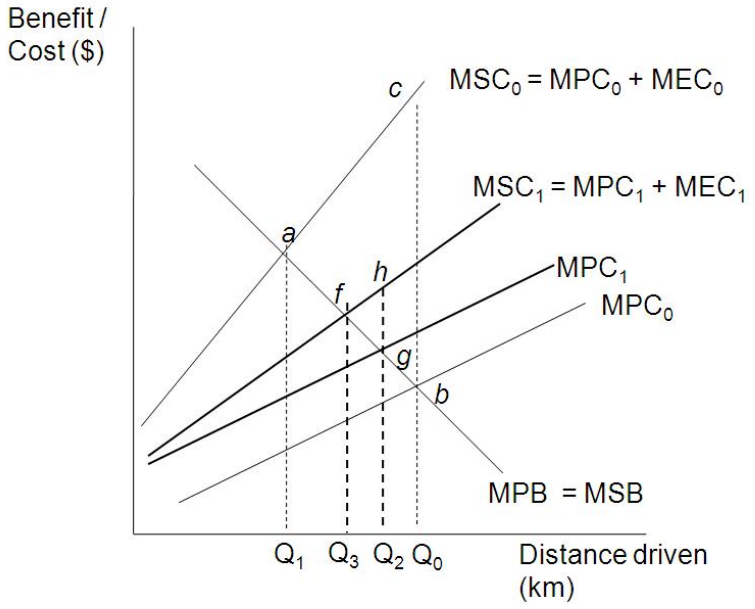
a. Rules and Regulations

Explain how they work

<P> Rules and regulations such as stipulating the type and quality of fuel that can be used, setting minimum exhaust emission standards for all vehicles and taking stringent enforcement actions against smoky vehicles on the roads are policies currently adopted by the Singapore government to correct the negative externality problem.

<EE> For the drivers, adhering to the requirement to use specific type and quality of fuel may mean having to switch to more costly fuels. Ensuring that their vehicles meet the minimum exhaust emission standards may mean having to send their vehicles for maintenance more frequently. All these serve to raise the marginal private cost of car journeys. At the same time, meeting all standards helps reduce the marginal external cost of car journeys.

Referring to the graph below, in the absence of any government intervention, private equilibrium level occurs at Q_0 where MPB = MPC_0 while socially optimum level occurs at Q_1 where MSB = MSC_0, giving rise to Q_1Q_0 amount of over-consumption. For the society, consuming this additional amount of driving imposes a cost of Q_1acQ_0 but yields a benefit of only Q_1abQ_0, creating a deadweight loss denoted by area *abc*. The rules and regulations outlined above raise the marginal cost of driving from MPC_0 to MPC_1 while at the same time reduce the marginal external cost of driving from MEC_0 to MEC_1. Assuming the fall in MEC exceeds the increase in MPC, MSC falls from MSC_0 to MSC_1. The higher MPC discourages driving and brings the private equilibrium level of driving from Q_0 to Q_2 where MPB = MPC_1. The new socially optimum level is at Q3 where MSB = MSC_1. Compared to before, the over-consumption of Q_1Q_0 amount is now reduced to Q_3Q_2 and the deadweight loss is also reduced to a smaller area *fgh*.



<L> The above analysis illustrates how rules and regulations can help to reduce the allocative inefficiency that arises from the negative externality.

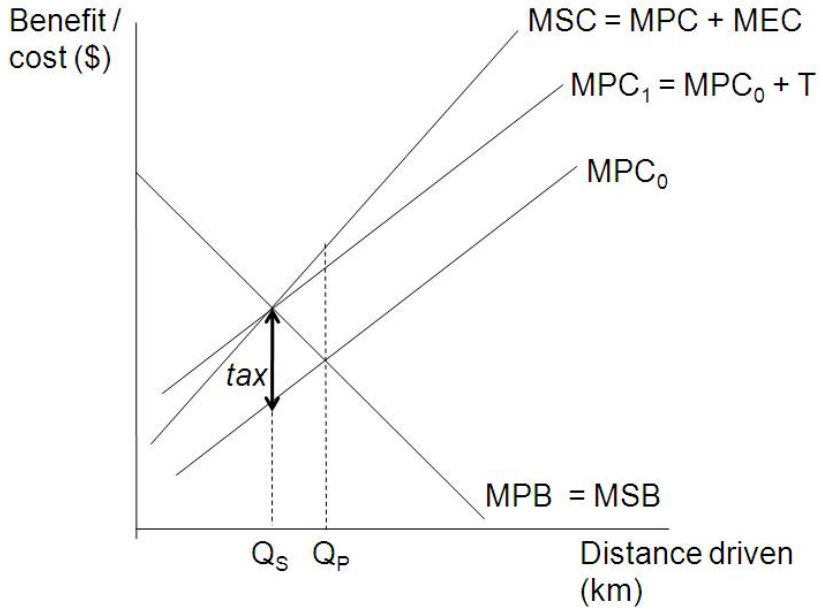
b. Pigouvian tax

Explain how the policy works

<P> An alternative policy to correct the market failure that is caused by vehicular exhaust is pigouvian tax.

<EE> In Singapore, the government imposes fuel taxes. (find out …) Imposing a tax equivalent of the MEC at the socially optimum level Q_S gets drivers to internalise the external cost, aligning their marginal private cost to the marginal social cost so as to reduce their driving to the socially optimum level.

Referring to the graph below, the imposition of the tax raises MPC from MPC_0 to MPC_1. The new private equilibrium occurs at the point where MPB = MPC_1, coinciding with the socially optimum level where MSB = MSC.



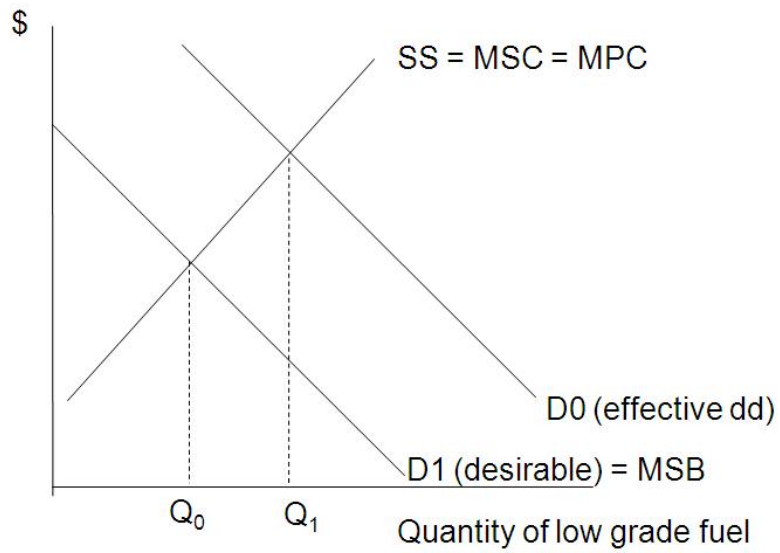
<L> The above analysis illustrates how a pigouvian tax can help to correct the allocative inefficiency that arises from the negative externality.

c. Closing the information gap through public education

Explain how the policy works

<P> To the extent that the over-consumption is partly due to imperfect information on the part of consumers, education can help to correct the market failure.

<EE> The government can launch public education campaigns to inform drivers of the harmful effects of exhaust particularly of smoky vehicles and particulate matter from certain grades of fuel. Set against the backdrop of the local and global movement to promote sustainable development and environmental conservation, campaigns can act as moral suasion to get people to choose cleaner fuels and send their vehicles for regular checks. These help to alter their perceived benefit of driving or of using certain types of fuel, reducing their effective demand (D_0) towards the level that the government deems to be socially desirable level (D_1).



<L> The above analysis illustrates how campaign can help to correct the allocative inefficiency that arises from imperfect information.

Evaluate the alternative policies to arrive at a stand.

Stand	agree that rules and regulations is the best method to address the problem of vehicular emissions
Justification	**F**r**E**sh: compared to the other two methods, rules and regulations is the one policy that offers certainty in outcome
Rules and regulations	• Outcome is certain, effect is most immediate • Even if we make the conservative assumption that the amount of driving is not considerably discouraged, the setting of minimum standards and strengthening enforcement at least ensures that there is less emissions for each car journey taken. • Just like the pigouvian tax, the requirement to use certain types of fuel and adhere to minimum emission standards also add to business cost and cost of living. However, because the government does not 'profit' from these additional cost unlike the case of a tax, political support may be more favourable
Pigouvian tax	• May not be effective particularly when considering the economic conditions of the country – strong economic growth over the long run → rising income, rising purchasing power → demand for cars and car journeys continue to increase despite higher tax • So unless the government is able to keep adjusting the taxes upwards, which it may not, given that taxes are politically unpopular, taxes may not be sufficient to bring consumption to the socially optimum level • Also, imperfect information on the part of the government may cause it to incorrectly estimate the MEC and hence the correct amount to tax. Difficulties arise because of problems such as the long gestation period before prolonged exposure to vehicular exhaust has impact on health and the variability of the impact across locales. Such mistakes in estimating the MEC may result in the policy not being able to fully correct the problem at best and creating an even larger deadweight loss in the worst case scenario
Campaigns	• The key benefit of such a policy is that because it works by effecting a mindset change, the effect of such a policy is more enduring. • However, in practice, the outcome of campaigns is highly uncertain. Even when worked through the local mass media, with so many options available for

	entertainment and news, the reach of the campaign may be limited. In addition, individuals might not be convinced by the government's message. One such example is the no-smoking campaign which has been ongoing for many years already.

OR

Stand	DO NOT agree that rules and regulations is the best method to address the problem of vehicular emissions
Justification	fre**S**h
Rules and regulations Campaigns	• Opportunity cost has to be incurred in monitoring and enforcing the rules and regulations and running campaigns. • This could be the government having to forgo spending on certain merit goods / public goods. • Alternatively, this could mean higher taxes which reduce households' disposable incomes and hence their ability to satisfy wants and needs, leading to a lower level of economic welfare.
Pigouvian tax	• The key benefit of such a policy is its revenue raising effect. The revenue raised could be directed towards spending on merit goods such as health care, education and infrastructure for economic development, enhance competitiveness of the economy.

Mark Scheme

Part (a)

Knowledge, Application, Understanding and Analysis	
L3 8 – 10	For an answer which • has sufficient scope and depth of economic analysis • provides evidence of exemplification • contains minor conceptual errors
L2 5 – 7	For an answer which • explains the required concepts using some economic analysis though not consistently applied • provides some evidence of exemplification • is largely theoretical and contains some conceptual errors OR • applies sound economic analysis but lacks scope, i.e. one-sided answer (cap at 5m)
L1 1 – 4	For an answer which • is largely irrelevant with no indication that the meaning of the question has been properly grasped • is largely descriptive or lacking in the use of economic analysis • contains major conceptual errors

Part (b)

Knowledge, Application, Understanding and Analysis	
L3 9 – 11	For an answer which • analyses a range of policies – good spread of market based solutions and command and control policies • displays depth of economic analysis for most part of the essay • makes effective use of diagrams • applies accurately to the given context • may contain minor conceptual errors
L2 6 – 8	For an answer which • provides scope, i.e. rules and regulations plus one other policy • contains some economic analysis though not consistently applied • is largely theoretical with limited application to the given context • contains some conceptual errors
L1 1 – 5	For an answer which • is largely irrelevant with no indication that the meaning of the question has been properly grasped e.g. focused narrowly on explaining the market failure • is largely descriptive or lacking in the use of economic analysis • contains major conceptual errors
E2 3 – 4	For a reasoned judgement
E1 1 – 2	For an unexplained judgement

H1 Prelim Essay

4(a) Explain why countries deploy protectionist measures. [10]

4(b) Discuss whether monetary policy is the best policy for a government to bring its economy out of a recession [15]

Suggested Answers

a) Explain why countries deploy protectionist measures [10]

Introduction

<Unpacking key terms>
Trade protection is the deliberate attempt to limit imports or promote exports by putting up barriers to trade. In the real world, many countries adopt a wide range of protectionist measures that includes Tariffs, Quotas, Exchange controls, Import licensing, Subsidies, Administrative barriers and Procurement policies.

Motives for protectionism:

I. Solve current macroeconomic problems (e.g. persistent current a/c deficit, structural unemployment)

II. Protects domestic firms from foreign competition e.g. infant industry argument; sunset industry argument

III. Prevents foreign countries 'dumping' cheap imports into the country

IV. Prevent imports of harmful goods

Body

- **Solve current macroeconomic problems (e.g. persistent current a/c deficit, structural unemployment)**

Avoiding/Reducing a current a/c deficit

When faced with a persistent current a/c deficit, countries may deploy protectionist measures such as the imposition of a tariff. A tariff is a tax that raises the price of imported products and causes a contraction in domestic demand and an expansion in domestic supply. The net effect is that the volume of imports is reduced. <Exemplification> One such example is the imposition of tariffs by the US government on Chinese tires in 2009. In retaliation, China imposed steep tariffs on poultry imports from the US in 2010.

<Explanation> Referring to Figure 1 below, assuming a small open economy that is a price-taker, it faces a horizontal world supply curve, i.e. the country can import as many units as it wishes at the world price. Tariff raises the prices consumers have to

pay for imports, shifting the supply of the good from the rest of the world (imports) up from S_W to S_W + tariff. The higher import price supports higher levels of domestic production while discouraging consumption. The resultant effect is to reduce imports from AD to BC which, ceteris paribus, reduces the size of the current account deficit and may even cause the current account position to move into a surplus.

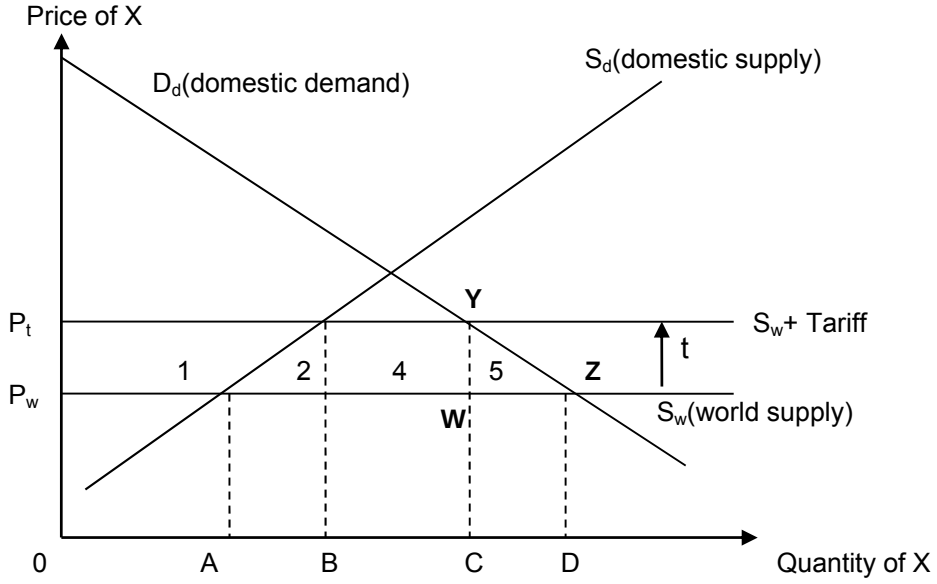


Figure 1: Effect of a tariff

Simultaneously, tariffs, as an expenditure switching policy, induces consumers to cut down on imports and turn to domestically produced substitutes, C_d rises. This raises the level of AD, cp. As firms experience unplanned disinvestment, they will increase output in the next production cycle. Demand for fops as derived demand rises. Firms employ more fops (including L) and pay out more factor Y, increasing NY and decreasing unemployment. But process does not stop here. As NY increases, income-induced consumption will also increase. Through the multiplier process where higher spending leads to higher income which in turn creates further spending, NY increases by a multiple of the initial injection and unemployment falls. Referring to Figure 2 below, as aggregate demand curve shifts rightwards from AD_0 to AD_1, given available spare capacity, national income rises from Y_0 to Y_1, moving it closer to the full employment level Y_f.

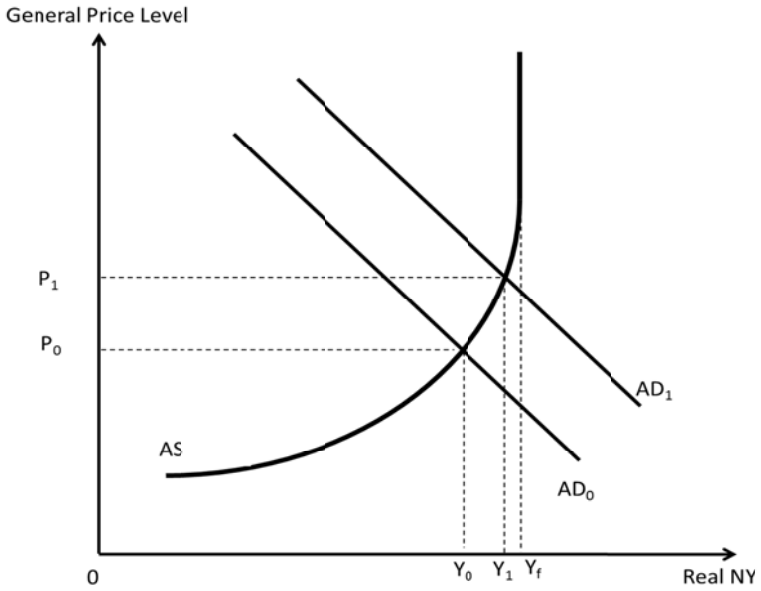


Figure 2: AD-AS diagram

Protects jobs in the export-oriented industries

With globalization, export-oriented manufacturing industries in developed countries (DCs) face competition from cheap imports from developing countries. Workers working in the low value-added export-oriented industries in DCs may be displaced leading to a rise in unemployment. Protectionist measures such as tariffs induce consumers to cut down on imports and turn to domestically produced substitutes, C_d rises (i.e. expenditure switching policy).

- **Protects domestic industries (e.g. infant industries, sunset industries, strategic industries)**

Develop Infant industries

Certain industries may possess a potential (latent) comparative advantage but have not yet exploited the potential economies of scale. Short-term protection from established foreign competition in the form of trade barriers allows the 'infant industry' to develop its comparative advantage and gain EOS. This gives new firms the chance to develop their potential comparative advantage, reap IEOS and become globally competitive. Governments can deploy protectionist methods if the long term benefits of developing the infant industries outweigh the short term deadweight losses to society.

Sunset industries

Governments may resort to protectionist measures to help sunset industries restore its competitiveness or to cushion its exit from the economy. <Exemplification> For the UK, sunset industries includes ship building in the 1950s, car production in the 1970s, and steel production in the 1990s.

Strategic industries

Trade barriers may be erected to protect *strategic industries*, such as energy, water, steel, armaments, and food. <Exemplification> The implicit aim of the EUs Common

Agricultural Policy (CAP) is to create *food security* for Europe by protecting its agricultural sector.

- **Protection against unfair trading practices (e.g. import dumping)**

<Explanation> Protectionist measures may be deployed to deter unfair competition, such as dumping by foreign firms. Dumping is a type of predatory pricing behaviour where exporters sell their products below marginal cost. This is often made possible with government subsidies. In the short term, consumers benefit from the low prices of the foreign goods, but in the longer term, persistent undercutting of domestic prices will force the domestic industry out of business and allow the foreign firm to establish itself as a monopoly. Once this is achieved the foreign owned monopoly is free to increase its prices and exploit the consumer. Due to the closure of domestic firms, there would be a loss of domestic output and employment. To counter this, governments may use punitive tariffs as an anti-dumping measure. <Link> Therefore protection, via tariffs on 'dumped' goods can be justified to prevent the long-term exploitation of the consumer.

<Exemplification> In 2006, European shoemakers alleged that China and Vietnam shoe producers illegally dumped leather shoes on the European market. The EU announced anti-dumping duties for imports of leather shoes from China and Vietnam.

- **Market Failure and Import Controls**

Protectionism can also be used to deal with demerit goods that generate negative externalities. Goods such as alcohol, tobacco and narcotic drugs have adverse social effects and are subjected to high tariff barriers to minimise their consumption. Protectionism can safeguard society from the importation of these goods by banning or implementing quotas on the importation of the good altogether.

b) Discuss whether monetary policy is the best policy for a government to bring its economy out of a recession [15]

<Unpacking the "best" criterion>

- The issue at hand is to assess if monetary policy is the "best" vis-à-vis other policies as a means to bring an economy out of a recession. "Best" should be judged on the ability of the policy to tackle the root causes of the recession.

- The question requires a comparison of a minimum of 3 policies

Introduction

<Unpacking Key Terms>

Monetary policy refers to the deliberate management of a country's money supply or interest rates with the intention of influencing the level of economic activity, through the aggregate demand. During a recession, central banks utilise expansionary monetary policies to raise the level of AD in the economy as protracted recessions can lower the productive capacity of the economy, thus strengthening the case for a vigorous policy response to cushion steep downturns.

Thesis: The government can bring its economy out of a recession through conventional monetary policy

Expansionary Monetary Policy

<P> Conventional Monetary stimuli introduced in times of recession can help to raise AD, increase real national output (actual growth) and reduce cyclical unemployment.

<E> During a recession, the central bank, through its various monetary tools, can adopt an expansionary monetary policy, increasing the money supply in the domestic economy. With a larger money supply, households find that their holdings of money are greater than what is needed for meeting transactionary (regular spending) and precautionary (unexpected spending) needs. What households would do with these excess holdings of money is to put them into financial assets such as bonds. This increased demand for bonds, holding the supply of bonds constant, results in higher bond prices and lower market interest rates (given the inverse relationship between these two variables[1]). A lower real i/r reduces the cost of borrowing relative to the net expected rate of return on investment, incentivising firms to increase their level of investment. At the same time, the fall in interest rate reduces the reward for saving and lowers the opportunity cost of using savings for consumption. This reduces the cost of borrowing for purchases on credit. This stimulates consumption (C_d).Overall, the increase in C_d and I will cause AD to increase.

Referring to the graph below, during a recession, AD falls from AD_0 to AD_1. Expansionary MP, through increasing C and I, pushes AD rightwards to AD_2, raising the national income from Y_0 to Y_1, bringing it closer to the full employment income at Y_f.

[1] Mathematical derivation of the inverse relationship is not required.

As AD increase, ceteris paribus, firms will have to draw down on inventories to meet the unanticipated increase in demand. The unplanned disinvestment signals to firms to increase output in the next production cycle so as to restore their inventories to the optimal level and in so doing, demand for more factor inputs (including labour as a derived demand) and paying out more factor income. Based on the circular flow of income, spending creates income which in turn induces further spending. The initial injection from the expansionary monetary policy sets off the multiplier process, creating many rounds of additional income and induced consumption. Due to the existence of leakages, the induced consumption gets smaller at each successive round. Eventually, equilibrium is restored when the sum of additional withdrawals equals the initial injection. The combined effect of the rounds of additional spending is to raise national income by several times the initial injection, the extent to which is given by the income multiplier (1/MPW). Accompanying that is a reduction in cyclical unemployment.

<E> *The US Fed Reserve engaged in quantitative easing in 2010 to prop up the ailing US economy to accelerate growth and cut unemployment.*

Limitations

a) Effectiveness depends on size of multiplier

b) Effectiveness depends on the relative share of the various AD components

c) Time lag (recognition/implementation/impact lag)

   - Because of the time lag involved, the problem persists and may even deepen as the policy works its way through the economy. By the time the full effect of the policy kicks it, it might not be sufficient to correct the problem entirely.
   - Alternatively, during the time the policy works its way through the economy, the problem could have been self-corrected and the policies could end up destabilising the economy, i.e. exacerbating the business cycle trends.

Anti-Thesis: A government can also use other macroeconomic polices to bring its economy out of a recession

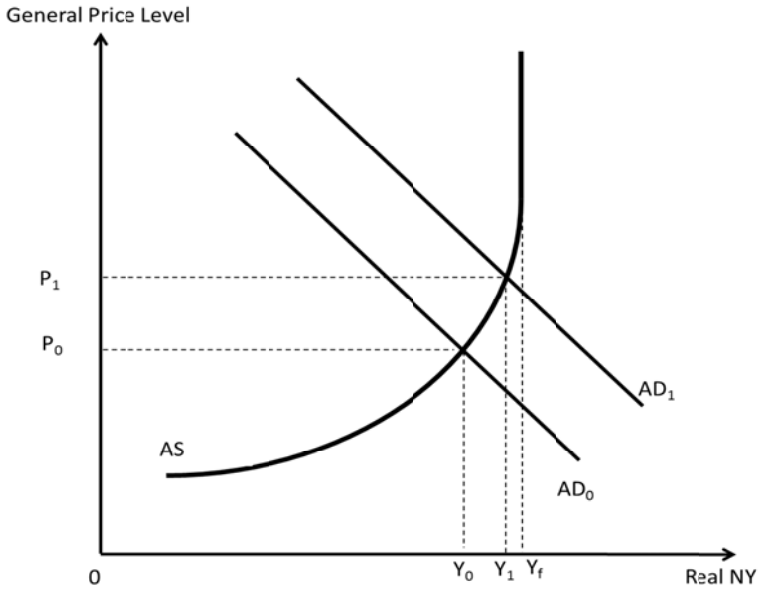
In addition to the interest rate centred MP, alternative policies like fiscal policy and supply-side policies will be analysed and their relative merits as policies to bring an economy out of recession evaluated to arrive at the judgement on whether monetary policy is indeed the most appropriate policy.

Explanation of policy mechanism 1: Expansionary fiscal policy

<P> The government can also deploy expansionary fiscal policy in an attempt to bring its economy out of recession.

<E> Expansionary fiscal policy involves the government increasing its spending (↑G) and/or decreasing taxes (↓T) to pump-prime the economy:

- Increase in government spending on final goods and services e.g. infrastructure project raises AD directly (G being a component of AD).
- Increase in government transfer payments (e.g. unemployment benefits) and giving out personal income tax rebates add to households' disposable incomes, stimulating income-induced consumption (C_d)
- Cut in corporate tax rate increases the expected net returns on investment. As MEI shifts upwards holding i/r constant, previously viable investments now see the expected rate of return rise above the cost of borrowing, increasing firms' willingness to invest.
- Overall, the increase in G_d / C_d / I_d will cause AD to rise from AD_0 to AD_1 through the multiplier process.



<E> This was observed in the US fiscal stimulus package in 2008 aimed at spurring economic recovery from the US subprime mortgage crisis <L> This analysis illustrates how expansionary FP can and has been used to manage recession.

Limitations

- Effectiveness depends on the size of k
- Effectiveness depends on relative share of the different AD components

    - G is often one of the smaller, if not the smallest component of AD. An increase in government spending to close the output gap may not be feasible.
- Time lag
- Tradeoff with other macroeconomic goals
- Effect on government's budget position
    - With the government increasing its expenditure and decreasing taxes, an expansionary fiscal policy will lead to a worsening of the government's budget position. In severe cases, the government's budget balance could go into a deficit which in turn gives rise to other problems.
- Crowding out effect:
    - When the government increases its levels of spending to boost the economy, it may have to borrow money to finance the increased expenditure. This puts the government (public sector) in direct competition with the private sector for the limited pool of funds available in the economy. The increase in demand for loanable funds, holding the supply of loanable funds constant, drives up interest rate. This raises the cost of borrowing relative to the expected rate of returns from investment. Many previously viable investments are now expected to yield negative net returns.
    - If we further assume an open capital market, the increase in the domestic interest rate relative to interest rates in other countries attracts inflow of hot money, creating an excess demand for the country's currency in the foreign exchange market. In a freely floating exchange rate system, this will bring about an appreciation of the country's currency, eroding export competitiveness.
    - In other words, as G increases, the resultant increase in interest rate and subsequent appreciation of the exchange rate cause investment and net exports to fall. Government spending is said to crowd out private investment and external demand. In the extreme case of complete crowding out, the expansionary fiscal policy is rendered totally ineffective.

Explanation of policy mechanism 2: Exchange Rate Policy

<P> During a recession, exchange rate depreciation provides a boost to net export demand and therefore stimulates growth

<Explain> Devaluation of a country's currency (in the context of a fixed exchange rate system) or allowing the currency to depreciate (in the context of a managed float system) will make exports cheaper (in foreign currency) and imports dearer (in home currency). Such price changes cause the quantity demanded for the country's exports to rise and the quantity demanded for imports to fall. Assuming the Marshall-Lerner condition holds, i.e. $PED_X + PED_M > 1$, the price changes in X and M will induce large enough changes in Qd to cause an improvement in the C/A balance. As import prices rise, consumers may switch towards domestically produced goods and services from imports (Cd ↑). The rise in C_d and X together increases AD, shifting the AD rightwards from AD_0 to AD_1ceteris paribus. This leaves firms with unplanned disinvestment, signalling to them to increase output in the next production cycle. As they do so, the demand for FOPs as derived demand rises, increasing factor prices, leading to an upward pressure on prices of final goods and services. Overall, real NY rises and unemployment falls.

Limitations

(i) Effectiveness depends on the PED (FRESH)

The Marshall-Lerner Condition states that devaluation will improve current account balance only if the sum of price elasticities of domestic demand for imports and foreign demand for exports is greater than one, i.e. if Marshall-Lerner condition holds.

Tastes and preferences take time to adapt, consumers need time to source for substitution and it takes time for the price changes to pass through the supply chain. As such, demand is likely to be inelastic in the short run and Marshall-Lerner condition might not hold. Devaluation could lead to a worsening of the current account balance before any eventual improvement as demand becomes more price elastic over time. This is known as the J-curve effect.

(ii) Effectiveness depends on PES (FRESH)

The supply of exports has to be elastic (resources can be diverted from the production of home goods to the export industries) to ensure that the increase in demand for exports caused by devaluation will be matched by the increase in quantity supplied leading increase in export revenue. In reality, it takes time raise the country's productive capacity in order to increase production. In the short run, there is likely to be domestic supply bottlenecks and attempts by firms to increase output to meet rising foreign demand will lead to sharply rising prices, offsetting the advantage to export competitiveness that devaluation brings.

Similarly, the supply of import should be elastic to ensure that the fall in demand for imports caused by devaluation will be matched by the fall in quantity supplied leading to fall in import expenditure.

(iii) Effectiveness could be undermined by imported inflation (FRESH)

Devaluation may cause imported factors of production to be more expensive which may raise the costs of production in certain sectors within the economy and hence cause a spill-over effect on the rest of the economy. It may also trigger a wage-spiral s a result of higher cost of living due to dearer imports. Once inflation sets in, exports will once again be made dearer and imports relatively cheaper, us defeating the original aim of devaluation.

(iv) Effectiveness could be undermined by retaliation from trading partners (FRESH)

Devaluation tends to have retaliatory action from international competitors.

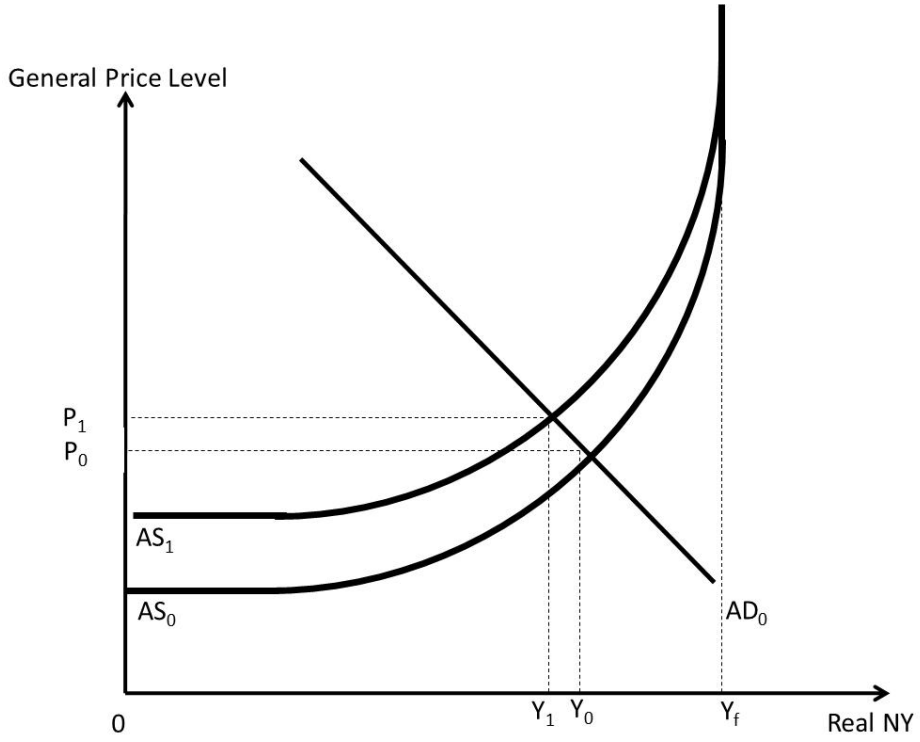
(v) Loss of investors' confidence (FRESH)

Devaluation may trigger off a chain of reactions: it reduces the value of home-based investment held by foreigners, destroys their confidence in the country's currency and may lead to capital fight, worsening the capital account position.

Explanation of policy mechanism 3: Supply-Side Policies

<P> Supply-side policies can also help to bring a country out of a recession. <Explain> Supply-side policies take many forms e.g. providing the infrastructure and the expertise for skills training, incentives like subsidies and rebates to encourage firms to send their workers for training and engage in R&D and even deregulation to introduce greater market competition. With better skills and technology, productivity improves. Similarly, increased market competition forces firms to cut X-inefficiency and stimulate dynamic efficiency so as to offer competitive prices and products. The improvement in productivity reduces firms' unit cost of production and expands the productive capacity of the economy.

Referring to the graph below, supply-side policies shift AS rightwards from AS1 to AS0 resulting in an increase in real NY from Y_1 to Y_0. The expansion of the productive capacity allows for more rapid increase in AD while avoiding supply-bottlenecks, providing the conditions for non-inflationary growth in the LR



Limitations

- Supply side policies (e.g.retraining) involves large amounts of government expenditure, something which not all countries can afford. For many countries, such spending may have to be financed by borrowing from internal and external sources. Unlike recurrent spending, development expenditure, by creating sustained growth into the long-run, should help to generate higher levels of tax revenue (even without increasing tax rate) and avoid structural budget deficit, i.e. such spending is self-financing.

- Higher spending on training and innovation does not necessarily translate into better outcomes. The effectiveness of training depends very much on workers' attitude and aptitude towards training. Similarly, achieving breakthrough in research is also uncertain.
- For such spending to generate the expected productivity growth usually involve long gestation period. Supply-side policies are therefore not intended to be short-run policies.

Evaluation: Choose any 2

The "best" choice of policy depends on the underlying cause of the recession. MP is not therefore always the most appropriate. Whether or not monetary policy is the best policy for a government to bring its economy out of a recession depends on the following:

- **Prevailing economic condition**
  - Monetary policy may not be effective during a recession due to the low business and consumer confidence prevailing in the economy. The demand for investment would be interest inelastic and levels of investment would be low no matter how low interest rates are.

- **Characteristics of the economy**
  - In countries with open capital markets, central banks need to choose between interest rate and exchange rate as alternative tools to conduct their monetary policy. The choice of monetary policy instrument (whether interest rate or exchange rate) depends on the characteristics of its economy. For countries with large domestic market (where C is a large % of GDP), central banks tend to opt for interest rate as the preferred monetary instrument tool (e.g. USA). In contrast, small open economies tend to opt for exchange rate (e.g. Singapore)

  - In a small open economy, i/r working through C & I are not likely to be as effective as ER which works through X to influence the level of AD since X is the largest component → only need a small % rise in X to bring about the desired change in AD but would need C & I to rise by a much larger %.

Marking Scheme

Marking Scheme for part (a)

Level	Descriptor	Mark Range
L3	• Demonstrates both scope and depth • Contains well-explained diagrams where applicable • Contains minor misconceptions • Shows the meaning of the question has been grasped • Selects **at least 2** relevant/significant factors • Well-exemplified	7 - 10
L2	• Incomplete explanation of the motives for protectionism. • No graphical illustration(where applicable)	5 - 6
L1	• Does not demonstrate understanding of the question. • Mere listing of types of protectionist measures. • Brief/poor explanation.	1 - 4

Marking Scheme for part (b)

Knowledge, Application, Understanding and Analysis.		
Level	**Descriptor**	**Mark Range**
L3	• Demonstrates both scope and depth • Contains well-explained diagrams where applicable • Contains very few minor misconceptions • Shows the meaning of the question has been grasped • Well-exemplified	9 – 11
L2	• Applies relevant economic framework, though not consistently • Lacks either the scope or depth of explanation • One-sided argument	6 - 8
L1	• Contains unexplained diagrams • Contains unexplained statements i.e. largely descriptive rather than analytical • Contains poor exemplification • Contains major conceptual errors • Does not answer the question	1 - 5
Evaluation		
Level	**Descriptor**	**Mark Range**
E2	Judgement based on analysis. For an evaluative discussion that is based on economic analysis.	3-4
E1	Mainly unexplained judgement.	1-2