

National Junior College Economics Department

Preliminary Examinations 2017 Paper 1 Answer Booklet

**Senior High 2
H2 Economics
(Syllabus 9757)**

Examiners' Report for 2017 H2 Economics Preliminary Examinations- Paper 1

Case Study Question 1

- (a) Compare the price of copper relative to the price of aluminium over the period from September 2012 to November 2015. [2]

The price of copper has fallen relative to the price of aluminium. [1]

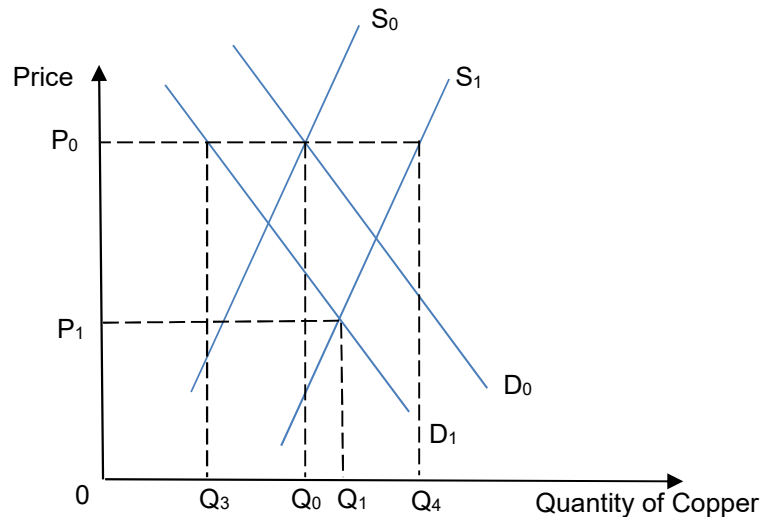
The price of copper is above that of aluminium throughout the period, [1]

- (b) Using a demand and supply diagram, explain why the price of copper “has fallen steadily in recent years” (Extract 2). [5]

Fall in Demand (2 marks)

- There is a fall in demand due to the slowdown in the Chinese economy. As mentioned in Extract 2, “sharp slowdown in industrial activity in China is disastrous for copper producers.” Copper is used in the construction of electricity infrastructure (ie. **the demand for copper is a derived demand**). As China moves from being an investment-led economy to being consumer-led, there are less investment projects requiring such infrastructure, resulting in a fall in demand for copper. As China consumes 45% of the copper output, it has a significant impact on the demand for copper in the world market.
- Other acceptable demand factors:
 - The crackdown on corruption at state-run energy companies slowed down the construction of electricity infrastructure projects (grid-laying projects) which required the use of copper. This resulted in a fall in the derived demand for copper.
 - There is increasing use of aluminium as a cheaper substitute of copper in the making of power distribution cables. As the price of aluminium is about one-quarter of that of copper, it is a more attractive option to use for making power distribution cables. This caused a fall in demand for copper.
- Increase in Supply (1 mark)
- There is an increase in supply as more mines have entered the market. As mentioned in Extract 2, it takes years to build a mine. Many firms started investing in new mines in the past during the boom years. It was only in recent years that these mines were completed, and started to come into operation. This has resulted in the increase in supply of copper in the past 1-2 years.

Figure 1



- The fall in demand and increase in supply resulted in a surplus of copper of Q_3Q_4 at the original price of P_0 in the market. This created downward pressure on the price of copper, as producers reduced price in order to sell their excess stocks. As prices fall, the quantity demanded for copper increased, resulting in a new equilibrium at a lower price of P_1 .

(c) **With reference to the data, what evidence is there to suggest that the market for copper could be oligopolistic in nature?** [3]

- There appears to be some degree of market dominance by a few large firms as the top 5 copper producers account for 35% of the market. [1 mark]

AND/OR

- There are significant entry barriers such as the natural high cost barrier of building a mine, or the legal barrier of getting approval and permits from the government. This limits the number forms that can enter the market, thus making it oligopolistic. [1 mark]
- There is some degree of interdependence, as firms' behaviour or decisions are affected by those of their rivals. This is evident from the firms' decision whether to cut output or continue production at the same output. As mentioned in Extract 2, while some firms such as Glencore are cutting output by closing some mines, other firms are expanding their output to capture market share. This means that if a firm decides to cut its output, it faces the risk that its market share could be captured by its rivals who are increasing their output. Hence, some firms decided to continue production even though they had to incur losses for a while, rather than losing their market share to their competitors. [2 marks]

(d) **Explain how the US Federal Reserve's decision to raise interest rates would affect the demand for copper in the world.** [2]

- The increase in interest rate would attract short-term capital ('hot money') inflow into the US. This increases the demand for US dollars and results in the strengthening of the US dollar. [1 mark]
- The appreciation of the US dollar makes copper, which is priced in US dollar, more expensive to other countries buying copper using their own currencies (ie the price of copper becomes higher in terms of other currencies). This would result in a fall in demand for copper (priced in US dollar). [1 mark]

- (e) Suppose you are an analyst with an investment bank, assess the factors that would affect the price of copper in the future and justify your forecast for the price of copper in the next 2 to 3 years. [8]

The key factors that could affect the price of copper in the future are the demand and supply factors, elasticities of demand and supply, as well as the degree of competition or market power in the industry

Demand factors

- One key demand factor is the **economic outlook of China and other emerging economies**. The demand for copper is a derived demand based on construction of infrastructure and buildings which require copper used in electrical wiring and cables and pipes. If the China economy recovers from its slowdown, there will be an increase in industrial activity as well as demand for consumer goods. The demand for copper for electrical wiring and cables will increase. Moreover, as mentioned in Extract 2, “Chinese demand may also be supplemented by growth in other emerging markets, such as India.” If other emerging economies such as India experience higher economic growth, they will also increase their demand for copper for various infrastructure projects.

Assessment:

- The slowdown in China is part of the normal economic cycle and is unlikely to persist in the long term. In the next 2 to 3 years, it is expected that the Chinese economy will recover and industrial activity will likely increase again. Moreover, as the global economy recovers from the 2008 financial crisis, emerging economies will likely experience higher economic growth in the next 2-3 years as well. Hence the derived demand for copper will likely increase in the future.
- Another demand factor is the **uses of copper**. (This may be linked to technology advancement and innovation). With changes in technology and new products being developed, there could be more uses for copper. For example, it is mentioned that new industries such as wind and solar power and electric cars are copper-intensive. Such new industries and products would increase the demand for copper.

Assessment:

- With the expected recovery of the global economy, incomes will rise, which will lead to increased demand for such new products as electric cars. With the world becoming more environment conscious, the demand for electric cars will likely increase in future. The “intensity” of copper use is thus likely to grow and hence demand for copper will increase.
- The availability or development of substitutes of copper is another factor. (This is also linked to technology). As mentioned in Extract 2, aluminium has increasingly been used as a cheaper substitute of copper. However, it is not a close substitute as it is a poorer conductor and is more prone to corrosion. With technological progress, there may be ways to enhance the suitability of aluminium as a substitute such as combining it with other materials to improve its conductivity or make it more resistant to corrosion. Alternatively, new substitutes may be developed from other materials as a result of technological advancement.

Assessment:

- This factor is more uncertain, as R&D and innovation are by nature uncertain it is difficult to determine whether new substitutes for copper will be developed. Whether the technology to make aluminium a closer substitute to copper will

materialise is also uncertain. As R&D tends to take time to produce results, it is unlikely that substitutes to copper will be easily available in the next 2-3 years.

- Another demand factor is government policies. For example, the US raising interest rates will cause the US dollar to strengthen against other currencies. Since copper is priced in US dollars, changes in the exchange rate of the US dollar will affect its price when converted to other currencies. This in turn will affect the other countries' quantity demanded of copper in their own currency.

Assessment:

- While the US may continue to raise their interest rates, other countries may also begin to follow suit as their economies have also recovered from the recession and are growing more healthily. The strengthening of the US dollar may be moderated or even reversed as other countries may also increase their interest rates in the next 2-3 years, thus stemming their capital outflow into the US. Hence this is unlikely to cause the demand for copper to fall significantly.

Supply factors

- A key supply factor is the cost of production. As mentioned in Extract 2, water shortages are making copper more expensive to extract, and depletion of mines have driven companies to new copper deposits laced with arsenic which require costly cleaning. In addition, workers are also demanding higher wage increases. The increase in the various costs of producing copper could lead to a fall in supply in future.

Assessment:

- The impact of the higher costs of production is likely to be more in the longer term. However, given the current oversupply of copper, there is likely to be a significant build-up of excess stocks and inventories by copper producers. Moreover, as mentioned in Extract 2, many new mines have recently entered the market, and some mines have been laid idle in view of the current oversupply. This means that the supply of copper can still be increased by drawing from the excess stocks and reopening the mines that have been temporarily closed. As such, the higher costs of production are unlikely to cause a significant fall in supply in the next 2-3 years. They are more likely to affect the building of new mines which will impact on the supply several years later
- Another factor affecting the supply of copper is the concern for the environment. As mentioned in Extract 2, people are becoming more vocal about their environmental concerns as copper production is seen to cause deteriorating environmental conditions. In Extract 3, it is also reported that villagers in Chile protested against a dam used to hold waste from a copper mine, which was said to cause pollution of their water supply. Such environmental concerns could result in more restrictions being imposed on copper production or governments withholding approval or permits for mines to be built, leading to a fall in supply.

Assessment:

- As the world becomes increasingly environment-conscious, it is likely that environmental concerns will feature more prominently in government policies. As the approval process for mines is already "laborious" as mentioned in Extract 1, the environmental concerns could make it even more difficult for mines to get the necessary approval from the government. This will have a significant impact on supply in future.
- Rising interest rates and financing costs are another supply factor for consideration. As

mentioned in Extract 3, increase in interest rate raises the financing costs of building a mine. The high cost of building a mine means that mining companies depend on obtaining loans to finance their expansion. With rising interest rates, it is more costly for them to borrow the funds needed to build new mines. Hence this could discourage mining companies from expanding their production.

Assessment:

- The extent to which the rise in interest rates would affect the firms' investment in new mines depends on the availability of alternative sources of financing and the firms' expected returns from the new mines. While higher interest rates may raise the financing cost of firms, mining companies can also raise funds through other means such as issuing share capital or selling other assets eg. mines of other commodities which are less profitable. This will mean that the marginal efficiency of investment (MEI) of the mining companies may be more interest-inelastic. Moreover, if there is positive outlook such as the recovery of China's economy, then firms may expect their profits to increase and are willing to bear the higher financing costs to build new mines.
- Increase in market concentration or market power is another possible factor affecting supply. As there is some degree of market dominance by the top 5 firms in the industry, it is possible that the existing firms may try to merge with or acquire other firms in order to gain market power. The increase in market power means that the dominant firms could decide to restrict output and raise prices. For example, Glencore, one of the five largest mining companies, decided to close its mines in Congo and Zambia, cutting its supply by 400,000 tonnes in an attempt to stem the fall in copper price. If the industry becomes more concentrated among fewer firms, then the likelihood of firms restricting output to increase prices will be greater.

Assessment:

- As firms are facing increasing cost pressures (due to rising costs of mine production), they may be more inclined to merge with or buy over other firms to gain greater economies of scale and increase their efficiency. This will help to reduce their average costs and enable them to cope with the higher costs of mine production. Moreover, the current market conditions with oversupply and falling prices could mean that some mines are incurring losses, and may force some firms to sell their mines to other companies, thus increasing the market share of the more profitable firms.

Consideration of PED/PES:

Assessment of price elasticity of demand

- The price-elasticity of demand for copper is likely to be low, as it is a raw material required in many products such as electrical wiring, cables and pipes, electric cars and wind and solar power generation, and thus has high degree of necessity. There is also a lack of close substitutes as copper has high electrical conductivity, ductility and resistance to corrosion. While aluminium is used as a substitute in some cases, it is not a close substitute and may not be preferred in certain uses.
- The low price-elasticity of demand for copper means that changes in supply will lead to larger changes in price. A fall in supply of copper could thus mean that the price of copper will increase by a larger extent.

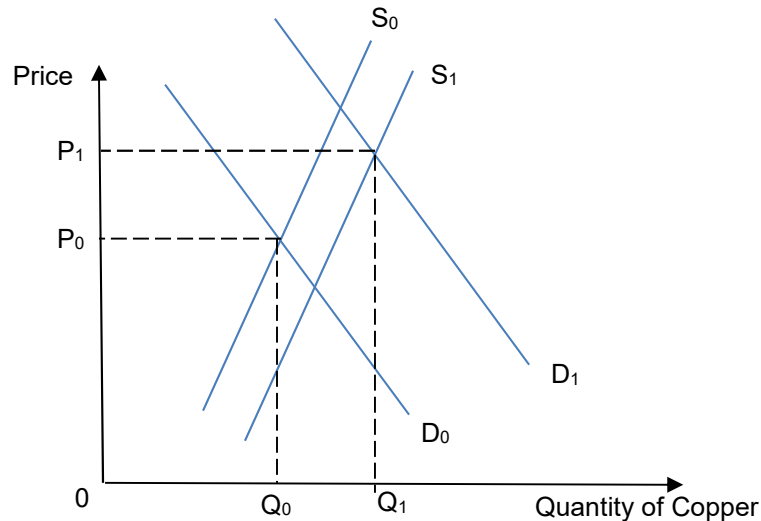
Assessment of price elasticity of supply

- The supply of copper is likely to be relative price inelastic. This is because of the fact that it takes several years to build a mine, as mentioned in Extract 2. Moreover, the laborious

approval process for new mines and the high costs of building mines are significant barriers to entry which make it more difficult for new mines to be set up to increase output. Hence, it takes a relatively long time to increase the supply of copper.

- The low price elasticity of supply means that any increase in demand eg, due to higher economic growth in China and emerging economies, will result in a sharper rise in the price of copper.

Figure 2



Forecast of copper price (Conclusion)

- As discussed above, the demand for copper can be expected to increase in the next 2-3 years as the Chinese economy recovers and emerging economies continue to grow at a faster pace. More use of copper is also likely to intensify, as new products such as electric cars requiring the use of copper are developed and gain in popularity.
- Factors that had caused demand to fall such as the economic slowdown of China and the rise in US interest rate are unlikely to persist or to have significant impact in future, as these are mainly short term changes. The lack of close substitutes also means that the demand for copper is not likely to fall further, barring any new technologies that could increase its substitutability.
- Supply, on the other hand, is expected to stabilise as cost pressures prevent firms from expanding output excessively. While the supply may not fall, as new mines that were built during the boom years have started their operations, it is likely that the growth in supply will be subdued in view of the increased cost of production, as well as environmental concerns of people and governments.
- Overall, the expected increase in demand is likely to outstrip the growth in supply, as shown in Fig 2, causing the price of copper to rise in the next 2-3 years.

Coupled with the low price elasticity of supply, the increase in demand could lead to a sharper increase in price of copper. Hence the price of copper can be expected to increase at a fairly high rate in the next 2-3 years.

Mark Scheme

Level	Descriptors
Level 2 4-6	<p>For an answer that demonstrates knowledge, understanding, application and analysis:</p> <ul style="list-style-type: none"> • EXCELLENT breadth that considers the following economic concepts in explaining multiple and balanced perspectives, viewpoints, relationships and factors. ALL points chosen should be of relevance and significance in answering the question. <ul style="list-style-type: none"> • <i>At least 3 demand and supply factors explained (2 DD + 1 SS factors OR 1 DD + 2 SS factors)</i> • EXCELLENT depth in economic analysis that reflects the following in ALL explanations. <ul style="list-style-type: none"> ✓ Accurate use of economic concepts, clear elaboration, and precise use of economic terminologies, language and phrasing. • <i>Well-reasoned assessment of at least 2 of the dd and/or supply factors AND/OR</i> • <i>Well-reasoned assessment of the likely PED/PES value</i> <p>The answer should also be supported by:</p> <ul style="list-style-type: none"> • Well-labelled and well-referred to diagram(s) drawn with precision (where appropriate). • Relevant examples and accurate use of facts. • Logical structure.
Level 1 1-3	<p>For an answer that demonstrates knowledge, understanding, application and analysis:</p> <ul style="list-style-type: none"> • GOOD breadth that considers the following economic concepts in explaining multiple and balanced perspectives, viewpoints, relationships and factors. ALL points chosen should be of relevance and significance in answering the question. <ul style="list-style-type: none"> • <i>At least 2 DD and/or SS factors considered</i> • GOOD depth in economic analysis that reflects the following in ALL explanations. <ul style="list-style-type: none"> • <i>Some attempt at assessing the DD or SS factors in the future</i> • <p>The answer should also be supported by:</p> <ul style="list-style-type: none"> • Example(s). • Logical structure.

Level	Descriptors
E2 2	<p>For an evaluation that contains</p> <ul style="list-style-type: none"> • A clear judgement on the price forecast for the next 2-3 years • Good justification of the price forecast supported by analysis
E1 1	<p>For an evaluation that contains</p> <ul style="list-style-type: none"> • Relevant judgement on the price forecast for the next 2-3 years. • Justification of the forecast may lack depth, clarity, and logic.

- (f) Using economic analysis, discuss whether the government of Chile should intervene to restrict mine production in order to achieve its economic objectives. [10]

Introduction:

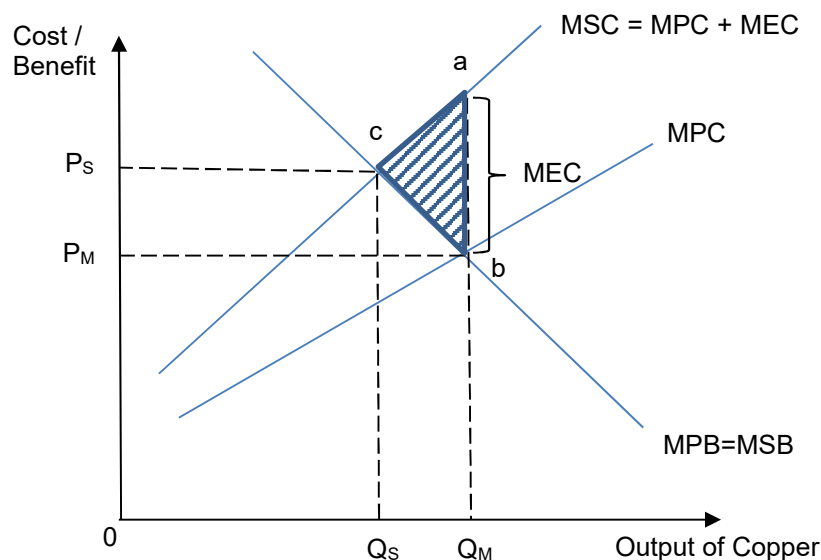
- A government's economic objectives include the 4 macroeconomic objectives of sustained economic growth, low inflation, low unemployment and healthy balance of payments, as well as the microeconomic objectives of efficiency and social welfare.

Body:

Thesis: The government of Chile should intervene to restrict mine production

1. Explain the need for government intervention to correct market failure of negative externalities and achieve the economic objectives of allocative efficiency and welfare
 - Mine production results in deterioration of environmental conditions which affect third parties such as villagers in the nearby community. For example, the building of a dam to hold the waste from a copper mine in Chile led to pollution of the water supply of a nearby village, and led to protest by the villagers. Such third party effects known as negative externalities impose an external cost to society (such as healthcare cost of villagers affected by water pollution, or cost of cleaning up the water supply), resulting in a divergence between the marginal private cost (MPC) and the marginal social cost (MSC) of producing copper.
 - Referring to Figure 3, the free market equilibrium output is Q_M where the marginal private cost is equal to marginal private benefit ($MPC=MPB$). Assuming no positive externality, the marginal private benefit is also the marginal social benefit ($MPB=MSB$). Due to the divergence between MSC and MPC, the social optimal output is Q_S where $MSB=MSC$. Hence, there is an overproduction of Q_SQ_M of copper.
 - The additional cost to society of producing Q_SQ_M is Q_ScaQ_M while the additional benefit of producing Q_SQ_M is Q_ScbQ_M . This results in a deadweight loss of abc , representing a net welfare loss to society.
 - The government should therefore intervene to restrict output to Q_S in order to **achieve allocative efficiency** and **maximise the welfare** to society.

Figure 3



2. Explain that the government should restrict mine production to prevent mine depletion, thus achieving sustainable economic growth in the long term
 - Mineral deposits are a non-renewable resource. Excessive mine production could lead to rapid depletion of the natural resource, which would cause a decline in the productive capacity of the economy. This would result in a fall in LRAS and potential growth, eventually causing a decline in the domestic economy. As mentioned in Extract 2, mine

depletion in Chile has driven companies towards new deposits laced with arsenic that require costly cleaning.

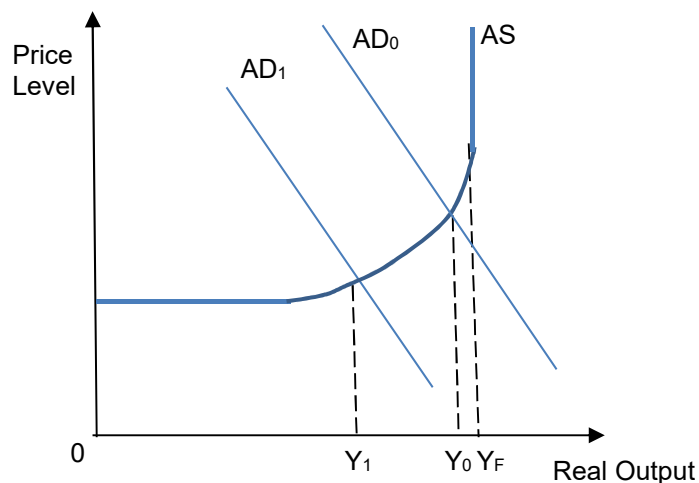
- For more sustainable growth, the government should restrict mine production to slow down the depletion of the non-renewable mineral resources, while restructuring its economy to diversify into other industries so as to reduce its reliance on mining.

Anti-thesis: The government of Chile should not intervene to restrict mine production

3. Explain that restricting mine production could conflict with the macroeconomic objectives of economic growth and low unemployment

- Chile is highly dependent on copper production, which accounts for 13% of Chile's economic output and 50% of its exports.
- Restricting mine production could mean a significant reduction of Chile's GDP as its export of its copper will be reduced. This means a fall in Chile's export revenue, which will lead to a fall in AD and a worsening of the balance of trade, *ceteris paribus*.
- The fall in AD will cause a more than proportionate fall in real output and national income via the reverse multiplier effect, thus conflicting with the macroeconomic objective of sustained economic growth. As shown in Fig 4, the fall in AD due to a decrease in (X-M) would result in a fall in real output from Y_0 to Y_1 .
- (It is also acceptable if students explain the restriction in production in terms of an indirect tax on the producers, causing a rise in cost of production and a fall in SRAS. This would then lead to a fall in real output and thus fall in employment. At the same time, there is a rise in general price level, which reduces export competitiveness and leads to a fall in exports, *ceteris paribus*.)

Figure 4



- The fall in real output means a fall in demand for labour, as labour is a derived demand. Less workers are required by the mining companies as they reduce output of the mines. This is significant as copper mining employed over 1 million people in Chile. This would result in a significant rise in unemployment, which is in conflict with the macroeconomic objective of low unemployment.
4. Explain that restricting mine production could result in a fall in tax revenue, which could reduce government transfer payments, thus conflicting with the objectives of equity and

social welfare

- Copper mining made up 20% of the country's tax revenues. Restricting mine production could thus mean a fall in the tax revenues to the government. The reduction in tax revenues means that the government would have less funds available to spend on transfer payments such as giving subsidies on health and education and welfare aid to help the poor. This would reduce the well-being of the lower income groups in the society, thus conflicting with the objectives of equity and social welfare.
- Moreover, the fall in tax revenues may result in a government budget deficit. This could mean that the government would have to raise tax rates of other taxes such as income tax or consumption taxes. This increases the tax burden of the population and may not achieve the objective of economic welfare. In addition, raising taxes have a contractionary effect on the economy, as it reduces the disposable income of households, resulting in a fall in consumption expenditure and hence AD. This would conflict with the macroeconomic objective of economic growth.

Synthesis and Conclusion:

- It can be seen from the above discussion that there is a conflict between different economic objectives if the government of Chile were to restrict mine production.
- From the microeconomic perspective of allocative efficiency, equity and welfare, the government should intervene to restrict mine production in order to correct the market failure caused by the negative externalities of environmental degradation.
- However, this would conflict with the macroeconomic objectives of low unemployment and economic growth, as jobs would be lost and workers retrenched as a result of the fall in mine production.
- In the context of Chile, the importance of mine production to the Chilean economy means that the negative consequences of unemployment and economic decline may outweigh the benefits of allocative efficiency. It could be argued that priority should first be given to the material well-being of the population by ensuring they are employed and earning an income (in view of the inequality and poverty that exists in Chile), before the government takes into consideration the non-material aspect of standard of living such as the environment.
- Moreover, the negative externalities could also be controlled by other means such as regulation or providing assistance such as subsidies or grants to the mining companies to adopt more environment-friendly methods of production. (It can also be argued that the negative externalities affect only the surrounding villages and can be tackled by relocating the villages, whereas the restriction of mine production could have more extensive impact on the economy through its linkages to other industries.)
- Hence, in view of the macroeconomic consequences, it may be better that the government does not restrict mine production, but try to manage the negative externalities through other measures such as promoting environmental-friendly practices.

Mark Scheme

Level	Descriptors
Level 2 5-7	<i>For an answer that demonstrates knowledge, understanding, application and analysis:</i>

	<ul style="list-style-type: none"> • GOOD breadth that considers the following economic concepts in explaining multiple and balanced perspectives, viewpoints, relationships and factors. ALL points chosen should be of relevance and significance in answering the question. <ul style="list-style-type: none"> • Explanation of at least 3 reasons/objectives why the government should restrict mine production AND why it should not restrict mine production (2 reasons for thesis + 1 reason for antithesis or vice versa) • Reason for government intervention includes the correction of negative externalities • GOOD depth in economic analysis that reflects the following in ALL explanations. <ul style="list-style-type: none"> ✓ Accurate use of economic concepts, clear elaboration, and precise use of economic terminologies, language and phrasing. • Includes the use of AD-AS analysis for economic growth and unemployment • Includes the use of MSC, MSB, MPC and MPB for explanation of market failure due to negative externalities <p>The answer should also be supported by:</p> <ul style="list-style-type: none"> • Well-labelled and well-referred to diagram(s) drawn with precision (where appropriate). • Relevant examples in context and accurate use of facts. • Logical structure.
Level 1 1 – 4	<p>For an answer that demonstrates some knowledge but lacks understanding, application and analysis:</p> <ul style="list-style-type: none"> • INSUFFICIENT breadth that considers the following economic concept(s). Point(s) chosen may be of relevance but may not be of significance in answering the question. <ul style="list-style-type: none"> • Explanation of at least 1 reason for why the government should restrict mine production OR why it should not restrict mine production (ie answer may be one-sided) • INSUFFICIENT depth in economic analysis that may reflect the following: <ul style="list-style-type: none"> ✓ May lack accurate use of economic concepts, clear elaboration, and precise use of economic terminologies, language and phrasing. • May lack the use of AD-AS analysis for economic growth and unemployment • May not include the use of MSC, MSB, MPB and MPC to explain market failure due to negative externalities.

Level	Descriptors
E2 2-3	<p>For an evaluation that contains</p> <ul style="list-style-type: none"> • A synthesis of earlier economic arguments to arrive at relevant judgements/decisions (i.e. answer the question). • Evaluative comments supported by accurate, logical and clear analysis • The use of context to arrive at the conclusion is evident.
E1 1	<p>For an evaluation that contains</p> <ul style="list-style-type: none"> • Relevant judgement(s)/decision(s) (i.e. answer the question) that may not follow from earlier economic arguments. • Comment (s) may lack depth, clarity, and logic.

Case Study Question 2

- (a) What was the estimated change in the value of the US dollars in terms of China Yuan from November 2014 to August 2015. [2]

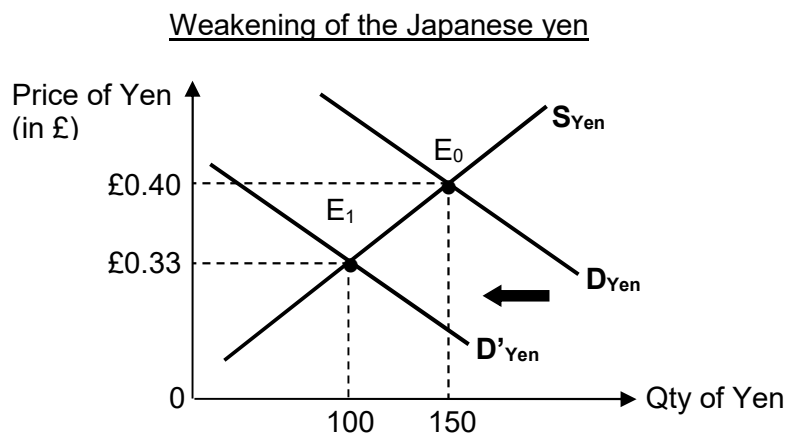
The US dollar generally appreciated against the Yuan (1m), by approximately 3.6% (1m).

- (b) (i) With the aid of a diagram, explain the reason for the 'major weakening in the Japanese yen, euro and other currencies (Extract 1)'. [3]

- Easing of Monetary policy in extract 1 implies that there is a fall in interest rates of the country (1m).
- This leads to short-term capital outflow or "hot money" outflow (1m), leading to an increase in supply for the country's currency, which will result in depreciation of the currency.

OR

- It will lead to fall in short term capital inflow (1m) → Fall in demand for the country's currency



1m for a well labelled diagram according to above analysis (either the SS increase or DD fall depending on their analysis)

- (c) Explain how major weakening of the Japanese yen could affect its net exports. [3]

- Exports: Depreciation of Japanese yen means that exports in foreign currency becomes cheaper and hence demand for exports will increase, resulting in increase in export revenue (1m).
- Imports: Imports in domestic currency will become expensive. Since Japan's $IPED_{ml} > 1$ and import expenditure falls (1m) as they are not import reliant since they do have some resources in the country
- Marshall Learner Condition: Since M-L condition of $IPED_x + PED_{ml} > 1$, net exports increases for Japan (1m) OR Any clear explanation that export revenue increases and import expenditure falls and hence net exports increase

- (c) Using AD-AS analysis, explain the impact of a 'flight of foreign capital' on Asian economies. [4]

- Capital outflows are destabilizing as 'it could lead to bad defaults in the banking sector',

hence there is less liquidity in the banking sector and hence less funds to lend out by banks → Money Supply falls and interest rates rise → Leading to fall in investments

OR

- Capital outflows are 'destabilizing as it could lead to further fall of property prices', Hence, this could lead to a fall in the wealth where consumers see the value of housing as decreasing more than their income → Fall in their net worth → Reducing consumers' confidence

(2 marks for using evidence and explaining impact on C or I)

- Hence, there will be a decrease in AD (1m).
- National income falls, hurting economic growth and decreasing employment (1m).

(d) To what extent are the Indian and Russian governments' efforts likely to improve the welfare of the residents in their countries in the long term. [8]

Introduction

- The Indian and Russian governments have certain efforts to improve the standard of living of their residents. The efforts could lead to improvements in both the material and non-material standard of living in the long term but there could be certain drawbacks of their efforts.
- Material SOL is measured by the quantity of goods and services consumed by an individual while non-material SOL is measured by factors such as happiness, crime rates, socio-economic factors i.e. life expectancy, infant mortality rates, quantity of leisure, etc.

There are several ways of presenting the answer. Below is a suggested approach.

Body

Thesis: Indian and Russian governments' efforts are likely to improve the welfare of the residents in the long term

India:

- India is facing severe air pollution to the extent that crops are affected by the lack of sunlight. Since India is likely to be dependent on agriculture to drive the economy, this is detrimental to the livelihood the farmers/producers in India which could mean a loss of income and employment opportunities for them. This will lead to a decline in both the material due to loss of income and non-material standard of living as they lose the jobs and may resort to crimes.
- Hence, the governments' efforts of raising the profile of green building technologies among Indian firms to lessen air pollution will allow crops to survive, allowing farmers/producers to earn and be employed, thus improving their material and non-material SOL in the long term. In addition, reducing air pollution allows residents to breathe in cleaner air, which reduces lung cancer or sicknesses related to air pollution, hence improving the non-material aspect of SOL in the long term.

(Students could also bring in the Clean India Mission, aimed at providing access to improved sanitation, and clean up the River Ganges and link to non-material aspect of SOL).

- In addition, the Indian government is also embarking on inclusive growth strategy of

advocating education for girls in India. The government also aims to address poverty issues in India. This allows for more girls to have access to education, giving them the opportunity to have more knowledge and secure jobs in the future. This allows them to earn an income and be employed in future, improving both their material and non-material aspect of SOL in the long run.

- Thus, having a more educated workforce will attract Investors in the long run into India. The influx of Foreign Direct Investments (FDI) will increase the Aggregate Demand (AD) and increase the national income and employment. If the national income outstrips population growth, the GDP per capita will increase, improving the material SOL of Indians. In addition, in the long run, the increase in FDI will lead to improvements in quality of resources or technology which will allow an outward shift of India's Production Possibility Frontier (PPF), improving the long term standard of living of the residents.

Russia:

- China and Russia have signed a decree on cooperation in tying the development of the Eurasian Economic Union (EAEU) with the "Silk Road Economic Belt" project. Moscow and Beijing declared a goal to coordinate the two projects in order to build a "common economic space" in Eurasia, including a Free Trade Agreement between the EAEU and China.
- With more opportunities for trade for Russia, this will allow them to export more of the Russian goods to China and EAEU. In addition, it will allow for more investments to flow into Russia through this FTA. Hence, with the increase in net exports (X-M) and investments (I), it will lead to AD increasing and national income increasing via the multiplier effect. As labour is a derived demand, cyclical unemployment falls. This will improve the SOL of Russians in the long term. Influx of technology due to the sharing of information and increase of Investments will enable Russia to consume/produce beyond what it can currently produce down, hence improving the long term SOL. (Draw AD-AS diagram)
- The Russian government also plans to expand its transport network in the east of the country allowing for better roads and infrastructure for the Russians. This will improve the non-material SOL as it allows them to have more convenience to travel from one place to another. In addition, better infrastructure attracts long term investments which are beneficial to Russia in the long run.

Anti-thesis: There could be certain drawbacks to the Indian and Russian governments' efforts to improve the welfare of the residents in the long term

- India: Government spending will have to increase for the various efforts by the government such as education, reducing poverty and improving sanitation. This could cause a strain on the government's budget and it may affect spending for future generations to come if the government has not practiced prudent fiscal spending. This may affect the SOL of Indian residents in the long term as less could be spent on them in future.
- Russia: Being open to trade and investments makes Russia more vulnerable to external conditions. For instance, if Russia's trading partners' faces recession, it will affect Russia's export. In addition, overreliance on FDI will cause Russia to be vulnerable in the event these foreign firms decide to pull out, it will cause residents to have a fall in income or become unemployed, affecting the SOL.
- Russia: It was also mentioned in the Extract that Russia's federal migration service is especially wary of an influx of Chinese migrants across the Russia-China border. It was

stated that the Chinese could become the largest ethnic group in Russia's far east by the 2020s or 2030s. This could cause overcrowding for Russia and lead to social problems, affecting the SOL of Russians in the long run.

Evaluative Conclusion

- While there are shortcomings of the governments' efforts, both Indian and Russians will benefit in the long term due to the far-reaching effects of education, technology transfers, investments and trade on the SOL of their residents.
- To address the shortcomings, the governments could come up with certain policies to mitigate the negative effects of their efforts. For instance, while the Russian government is more open to trade and investments, they could still have supply side policies to support more local industries to allow for Russia to be more self-reliant. In this way, there is a balance of relying externally as well as locally to have a long term sustainable improvement in the SOL.

Mark Scheme

Level	Descriptors
Level 2 4-6	<p>For an answer that demonstrates knowledge, understanding, application and analysis:</p> <ul style="list-style-type: none"> • EXCELLENT breadth that considers the following economic concepts in explaining multiple and balanced perspectives, viewpoints, relationships and factors. ALL points chosen should be of relevance and significance in answering the question. <ul style="list-style-type: none"> ✓ <i>Material and/or non-material long term SOL of both India and Russia must be analysed</i> ✓ <i>At least 3 points (1 Thesis and 1 Antithesis, Indian and Russia can be covered in either the thesis or antithesis)</i> • EXCELLENT depth in economic analysis that reflects the following in ALL explanations. Accurate use of economic concepts, clear elaboration, and precise use of economic terminologies, language and phrasing. <ul style="list-style-type: none"> ✓ <i>Includes the use of AD-AS analysis</i> <p>The answer should also be supported by:</p> <ul style="list-style-type: none"> • Well-labelled and well-referred to diagram(s) drawn with precision (where appropriate). • Relevant examples and accurate use of facts. • Logical structure.
Level 1 1-3	<p>For an answer that demonstrates knowledge, understanding, application and analysis:</p> <ul style="list-style-type: none"> • GOOD breadth that considers the following economic concepts in explaining multiple and balanced perspectives, viewpoints, relationships and factors. ALL points chosen should be of relevance and significance in answering the question. <ul style="list-style-type: none"> ✓ <i>Material or non-material long term SOL of India or Russia</i> • GOOD depth in economic analysis that reflects the following in ALL explanations. <ul style="list-style-type: none"> ✓ <i>May lack the use of AD-AS analysis</i> <p>The answer should also be supported by:</p> <ul style="list-style-type: none"> • Diagram(s) that may not be well-labelled, may not be well-referred to and may not be drawn with precision (where appropriate). • Example(s). • Logical structure.

Level	Descriptors
E2 2	For an evaluation that contains <ul style="list-style-type: none"> Evaluative comments supported by accurate, logical and clear analysis The use of context to arrive at the conclusion is evident.
E1 1	For an evaluation that contains <ul style="list-style-type: none"> Relevant judgement(s)/decision(s) (i.e. answer the question) that may not follow from earlier economic arguments. Comment (s) may lack depth, clarity, and logic.

- (e) **The data provides different possible strategies by China to generate economic growth. [10]**
Discuss the relative usefulness of the strategies to generate economic growth for China.

Introduction

Economic growth refers to both actual and potential economic growth. China embarked on different strategies such as weakening of the exchange rate, trade policies and supply side policies to generate economic growth. The policies have its usefulness, but some may be more useful given the context and nature of China's economy.

Body

1a) Devaluation of the Chinese Yuan

- Allowing the Yuan to weaken will make the exports cheaper in terms of foreign currency. This makes Chinese exports more competitive, hence increasing the demand for exports. Thus, export revenue in Yuan to increase.
- Imports become more expensive in home currency. Given that $IPED_{ml} > 1$, the import expenditure decreases.
- Since China fulfils the Marshall Lerner condition where sum of price elasticities of exports and imports is greater than 1 (i.e: $IPED_x + PED_{ml} > 1$), net exports increases.
- Hence a depreciation of the Yuan will lead to $(X-M)$ increasing \rightarrow AD increases \rightarrow National Income increases by more than proportionately via the multiplier effect. The multiplier effect is based on the proposition that expenditure generates income, and income generates expenditure. This allows China to experience actual economic growth. (Illustration with AD-AS diagram to show AD increasing).
 - Devaluation of Yuan makes it cheaper to invest in the country as the prices of assets in foreign currency become lower. This will encourage foreign investors into China as it could mean higher profitability for them due to the lower cost of investing in the country. This inflow of investments will cause national income to increase, resulting in actual economic growth.
 - However, devaluation of the Yuan may also deter investments due to the negative expectations or it may signal a negative outlook in the economy. A fall in investments will result in a fall in national income and hence a fall in actual economic growth and employment.

1b) Evaluation on the limitations of Devaluation of Yuan

- While devaluation of Yuan benefits China in terms of net exports increasing, it will hurt China's trading partners as most Asian countries are either selling their exports to China

or competing with the Chinese for a share of declining global demand (Extract 5). Other Asian countries may retaliate by either devaluing their currencies which may spark a currency war in the long run. China's action of devaluing their Yuan could result in other nations' central banks raising the interest rates to stem currency weakness which could hurt their own economies (Extract 5). Hence, it may not be useful for China to devalue its currency as in the long term, it causes retaliatory actions from the trading partners or hurt their partners economies and it may hurt China's economy in the long term

- However, Extract 5 mentions that there are deflationary pressures in China. Hence, devaluing the Yuan causes prices of imports to increase which could result in cost push inflation. With the threat of deflation, having some inflationary pressures may be better for the Chinese economy. Hence, with the context of the current state of China's economy, it may be useful to devalue the Yuan.

Note: Expansionary Monetary Policy is also acceptable (Extract 5, para 3)

2a) Trade and Globalisation policies

- China and Russia has declared a goal to coordinate the two projects in order to build a "common economic space" in Eurasia, including a Free Trade Agreement between the EAEU and China. Trade has increased sixfold over the past decade between China and Russia. This will allow China to specialize in goods and services that they have comparative advantage in and export such goods. The demand for China's exports increases, increasing the export revenue. In addition, FTA allows for lowered tariffs. Thus, this may result in a fall in the price of China's exports and assuming China's goods are PED_x > 1, there will be a more than proportionate increase in the quantity demanded for China's goods, leading to an increase in export revenue for China.
- Hence, assuming import expenditure is constant, China's net exports increases, leading to an increase in AD and National Income, hence actual economic growth for China
- China is also actively investing overseas. Some Chinese firms have seen the Russian economic wobble as an opportunity to make capital investments in the country. China is also a major investor in Greek infrastructure, in euro bonds and in the EU economy as a whole. Chinese deals rose from \$2 billion (£1.2bn) in 2010 to \$18 billion in 2014. This allows for diversification of markets for China as they invest overseas. As mentioned in Extract, investing abroad has 'indirectly supported growth' for China. In the long term, international investing allows for China to take advantage of potential for growth in foreign countries. Having a wider market allows for substantial economies of scale to be enjoyed and the cost savings can be passed down in terms of lowered prices of Chinese goods, boosting exports for China, ceteris paribus.

2b) Evaluation on the limitations of Trade and Globalisation policies

- However, being more open and promoting investments overseas make China vulnerable to external conditions. For instance, the investments overseas could fail and this will hurt the internationalization growth strategy that China is gearing towards. Also, if there is a recession in the trading partners, this could lead to a fall in export earnings for China.

3a) Supply side policies

- Chinese government is actively and directly intervening to development China's infrastructure with other nations. China's vision for Eurasia is its "one belt one road" strategy, a plan to wrap its own infrastructure and influence westward by land and by sea. The land route is the most ambitious project to integrate continental Asia and Europe. The sea route allows for Chinese ports and bases to facilitate trade through the Indian Ocean to the Horn of Africa and the Mediterranean.
- This will allow for greater flow of trade, increasing China's export revenue and actual economic growth.
- The cost of obtaining raw materials may also be lowered due to cheaper imports coming into China, hence reducing imported inflation and cost push inflation, leading to increase of SRAS and hence NY increases (actual economic growth) and general price level falls (Diagram to show SRAS increasing right).
- In addition, better infrastructure allows for productive capacity to increase for China as it attracts more investments in the long term. This increases the LRAS, hence allowing for potential economic growth (Diagram to show LRAS increasing right).

3b) Evaluation on the limitations of Supply side policies

- Building of such massive infrastructure such as roads and sea ports will require huge government spending from the Chinese government. If the government is not prudent with its spending, it could potentially lead to high government debt. Furthermore, these infrastructures require long term maintenance from the Chinese government which requires more fiscal spending from them in the long run.

Evaluative Conclusion

- In conclusion, the above 3 strategies has its usefulness and its shortcomings. In the short term, devaluation of the Yuan may bring about short run benefits for China but it will have long term negative reactions from the neighbouring countries which could be retaliatory and it will lead to currency war. Hence, in comparison, devaluation may not be useful for China in the long run.
- Due to the nature of China's economy being large and having an impact on the world's economies, China strategy of venturing overseas for trade and infrastructure will reap much benefits on its own economy in the long run. The increase exports earnings from trade, variety of goods and services and the inflow of profits from overseas investments will be beneficial for China's economy in the long term.

Mark Scheme

Level	Descriptors
Level 2 5-7	<p>For an answer that demonstrates knowledge, understanding, application and analysis:</p> <ul style="list-style-type: none"> • GOOD breadth that considers the following economic concepts in explaining multiple and balanced perspectives, viewpoints, relationships and factors. ALL points chosen should be of relevance and significance in answering the question. ✓ <i>Explanation of at least 2 policies</i>

	<ul style="list-style-type: none"> • GOOD depth in economic analysis that reflects the following in ALL explanations. Accurate use of economic concepts, clear elaboration, and precise use of economic terminologies, language and phrasing. <ul style="list-style-type: none"> ✓ <i>Include the use of AD-AS analysis for policies</i> ✓ <i>Include actual and potential economic growth</i> ✓ <i>Include the explanation of limitations of policies</i> <p>The answer should also be supported by:</p> <ul style="list-style-type: none"> • Well-labelled and well-referred to diagram(s) drawn with precision (where appropriate). • Relevant examples and accurate use of facts. • Logical structure.
Level 1 1-4	<p>For an answer that demonstrates knowledge, understanding, application and analysis:</p> <ul style="list-style-type: none"> • INSUFFICIENT breadth that considers the following economic concepts in explaining multiple and balanced perspectives, viewpoints, relationships and factors. ALL points chosen should be of relevance and significance in answering the question. <ul style="list-style-type: none"> ✓ <i>Explanation of at least 1 policy</i> • INSUFFICIENT depth in economic analysis that reflects the following in ALL explanations. May lack accurate use of economic concepts, clear elaboration, and precise use of economic terminologies, language and phrasing. <ul style="list-style-type: none"> ✓ <i>May include the use of AD-AS analysis for policies</i> ✓ <i>May include either actual or potential economic growth</i> ✓ <i>May include the explanation of limitations of policies</i> <p>The answer should also be supported by:</p> <ul style="list-style-type: none"> ✓ Diagram(s) that may not be well-labelled, may not be well-referred to and may not be drawn with precision (where appropriate). ✓ Example(s). ✓ Logical structure.

Level	Descriptors
E2 2-3	<p>For an evaluation that contains</p> <ul style="list-style-type: none"> • A synthesis of earlier economic arguments to arrive at relevant judgements/decisions (i.e. answer the question). • Evaluative comments supported by accurate, logical and clear analysis • The use of context to arrive at the conclusion is evident.
E1 1	<p>For an evaluation that contains</p> <ul style="list-style-type: none"> • Relevant judgement(s)/decision(s) (i.e. answer the question) that may not follow from earlier economic arguments. • Comment (s) may lack depth, clarity, and logic.