Victoria Junior College

Answers to 2017 H2 Economics Paper 1 Prelim Exam

Question 1

(a) i) What is the opportunity cost of buying a phone mobile phone to a Chinese consumer? [1]

The next best alternative purchase with the money spent on the mobile phone (1m) which *could be* a subscription to home broadband internet access (1m).

(Max 1 m)

ii) Explain how consumers are rational even when they spend 40 percent of their annual income on mobile technology. [2]

Rational consumers who aim to maximise net total benefit from spending their limited budget apply the marginalist principle when they make buying decisions and will purchase an extra unit of mobile technology when the additional satisfaction derived from an extra unit exceeds or is at least equal to the additional cost. [1m]

According to extract 1, the average consumer is willing to pay more than 40 percent of their income for mobile technology. This reflects the MB to the consumer from consuming it [1m]. If they pay 40 percent of their income for it in actual, they are rational in buying it since the MB > MC and there will be a net gain in total satisfaction from buying it [1m].

2m if applies marginalist principle to the context of the decision making and highlights that MB (more than 40% of income) exceeds the MC (40% of income).

- 1m for explaining that MB is worth > 40% of income
- 1m for explaining why should buy when MB≥MC

(b) i) Describe the trend in the number of smart phones sold in the China market. [1]

Rising (1m)

ii) Using demand and supply analysis and the data, account for this trend. [4]

In extract 2, it is reported that ".. as demand exploded in China, local companies sprang up to meet it.".
The **rise in demand** could be due to **increased availability of complements**. For example, growth of social network platforms, E-commerce sites, and E-financial tools (extract 3) which are accessible via smart phones.
Or
The rise in in demand could be due **to change in taste/preference** in favour of smartphones as evident by 'High-tech mobile phones becoming objects of desire for many of the 1.36 billion people in China. This increased Chinese consumers willingness to buy the good.
or
The rise in demand could be due to **rising household income*** due to continued economic growth of the Chinese economy. This increased households' purchasing power and hence their ability to afford smart phones. (1m)
[*NOTE - If candidate cited the line with the 'demand exploded' but used a non-data factor like rise in income, award 1m.]

Supply also increased as evident by the **entry of local Chinese firms** into the China smart phone market (extract 2). Entry was made possible with develop of Android OS which made it easy for new firms to join the industry. This means at each price, there is a higher quantity supplied.

Rise in both market demand and supply would have led to a higher quantity being sold in the market.

- Max 3 m for identify relevant DD/SS factors and linking to how DD/SS will change.
- 1 m for linking rise in DD and SS to account for rise in Qe.
- Diagram is not needed.

- Max 3 m only if only considered either rise in DD or rise in SS with explanation of why either rise will lead to rise in Qe.

(c) i) Explain how pricing strategy differs when a firm switches its aim from profit maximisation to market share expansion. [4]

A firm that aims to maximise total profits will produce the output where MR=MC and charge the highest price possible for that output, as determined by the demand curve.

A firm that aims to increase market share will lower his price to increase sales, given the law of demand where price and quantity demanded are inversely related. This entails moving away from where MR=MC, i.e. giving up profit-maximisation, and producing an output level either 1) where price at least covers AC such that at least normal profits are earned or 2) price lower than AC and incur losses so as to drive out rival firms and earn more profits over time when market share rises.
Or
If the firm is very ambitious and aims to dominate the market entirely, it would engage in predatory pricing which entails pricing its product more cheaply than the rival's AC, such that the rival is forced to exit the market in the long run.

2m for explaining profit maximisation
2m for explaining market share expansion

ii) Discuss the factors that determine a Chinese phone maker's ability to dominate the global smart phone market. [8]

The firm must be able to compete successfully on the basis of price and non-price competitiveness.

- Price competitiveness
  Being able to price the phone more cheaply than phones produced by current dominant firms (Samsung and Apple, figure 2) will be one way to win market share. If the price is cheaper, Chinese consumers will switch towards this alternative since the phones are substitutes (i.e. the XED of a Chinese phone wrt change in price of either Samsung or Apple phone >0).

  Moreover, households who can't afford the foreign made phones are able to afford the cheaper China-made phone. The demand for the phone produced by the Chinese firm would thus increase.

  To be able to price the phone cheaply and still be profitable, the firm **needs sufficient internal economies of scale** which refers to decreases in unit cost that arise from increasing the scale of production. The manufacture of smart phone allows for a capital-intensive method of production which create opportunities for technical economies of scale. Having substantial EOS would enable the firm to ride out a price war should one break out as a result of the attempt to gain market share by lowering price. Price competition is likely to lead to price war in the smart phone market because it is an oligopoly where 10 firms have 83.3% market share (figure 2) there is a high degree of rival consciousness.

[Alternatively, candidate could consider the need for **successful process innovation** to discover a cheaper method of production so as to lower MC and price the phone more cheaply. The point on how this will increase the likelihood of winning a price war as explained above applies here too.]

- <u>Non-price competitiveness</u>
  Being able to produce a better quality phone with real product differentiation is another way to win market share.The firm needs to provide a true alternative rather than a copy of a successful firm's product. The latter would result in law suits like how Meizu has to pull back its M8 (extract 2) as the firm who invented the successful product has a patent that grants the inventor the exclusive right to produce the product. To be able to stay ahead in terms of non-price competitiveness, the firm would need to have the **human and financial resources to continuously engage in R&D** so as to regularly come up with a successful innovative product that can keep the customers' patronage and win new customers.

- <u>Extent of awareness by consumers about the Chinese maker's smart phone</u>
  To increase market share, firms need to inform consumers about their product. According to extract 2, the problem faced by Meizu is that although their phones are great. "no one knows about" them. This is because consumers do not have perfect information and hence may not be aware of prices and features of the smart phones produced by different firms. The firms would thus need to engage in advertising that has both informative and persuasive elements.

- <u>Extent of protectionism imposed by governments in foreign markets</u>
  The imposition of protectionism can prevent Chinese phone makers from successfully penetrating overseas markets. For example, if the Indian government is seeking to develop its own consumer electronic industries, it may impose tariffs on smart phones imported from China so as to create a price disadvantage for Chinese phone makers. The tariff will make the imported China phone more expensive relative to domestically produced ones, causing local firms to switch away from China-made phones to local ones. This makes it hard for China phone makers to expand in overseas markets.

<u>Evaluation</u>
As the Chinese market is a big share of the global market (as suggested by 2nd para of extract 2), success in dominating the Chinese market would greatly determine the extent of success in dominating the world market. Success in dominating the Chinese market in turn hinges very much on the price competitiveness factor because of the relatively lower per capita income level in China. According to extract 2, per capita income in China is only 25% of that in USA. As such, the consumers in China are more price conscious than those in DCs Low priced smart phones are considered as a prized possession in China (extract 2).
Moreover, while advertising is important to enable consumers to know about the smart phone, by pricing the phones more cheaply, it creates the incentive for customers who could afford Samsung / Apples phone to give the 'unknown' China phone a try, enabling them to discover the attributes of the China phone, thereby winning over customers

and switching their brand loyalty which is a significant source of market power for the incumbent firms.

Marks Scheme

L1	1-3	Descriptive / superficial explanation of factors that determine a firm's ability to win market share or contains errors in attempt to use theoretical models
L2	4-6	Analytical explanation of at least 2 factors - Provides clear accurate explanation of using relevant theoretical models and relevant economic concepts
E	1-2	Judgment of the relative importance of the factors by considering the context (using relevant evidence to substantiate).

(d) **Assess whether China's shift towards a digital economy will have a positive impact on the living standards of China's residents.** [10]

- It results in **actual growth** which boosts material SOL.
  The shift towards a digital economy encouraged increased spending by Chinese households all over China (extract 3) due to the increased ease of spending. Moreover, the shift towards digital economy involves increased investment by private firms ("Private-sector companies have also embraced the digital age" Extract 3)) and the government ("China spent 430bn yuan in 2015 to beef up the nationwide internet system. Extract 3). The rise in Cd, I, G will result in rise in AD and multiplied rise in actual GDP. When real GDP rises faster than population, real GDP per capita rises, resulting in higher material SOL. A higher per capita income enables more wants/ needs to be met.
  Moreover, the resultant increase in productivity will result in decreases in unit cost of production (downward shift of horizontal segment AS with rightward shift of vertical segment) which is also a source of actual growth, resulting in higher material SOL. (Draw the relevant diagram)

- It will result in **lowered prices for consumers** and increase material SOL. The rise of the internet economy has reduced entry barriers (Extract 4). For example, with e-commerce, retailers don't need a shop to engage in the retail business. Start-up cost is thus lowered. As a result, markets become more competitive resulting in cheaper prices for consumers.

- It results in **increase in non-material** welfare. Extract 4 suggests that there will be improvement in the quality of life due to the new technologies. The rise in productivity created by the digital revolution could mean more output with less man hours. The increase in leisure time allows for more social interaction which leads to rise in non-material SOL.

EVALUATION

- However, the extent of the rise in non-material SOL depends on whether the government is willing to change institutions – shorten working hours or shorten the work week.

- Moreover, some residents will suffer a decrease in material SOL. This is because the embracement of new technology will result in structural unemployment since some jobs become redundant and the retrenched workers are not perfectly occupationally mobile. Although "The digital revolution is also creating new markets for new products and services" (extract 4), those who lose their jobs are unlikely to have relevant skills preventing them from finding new employment. Without jobs, material SOL of those affected by disruptive technology drops.

<u>Conclusion</u>
On the whole, the net effect on SOL should be positive especially over the long term.
Structural unemployment in the face of technological improvement is inevitable. However, the extent of such unemployment can be reduced if the government implemented appropriate policies to mitigate this adverse effect on SOL. There is a need for retraining of workers to equip them with relevant skills needed in the digital age. However, re-skilling takes time and the structurally unemployed are likely to suffer a drop in their material SOL in the meantime.
Moreover, the digital revolution supports inclusive growth since the beneficial impact of the internet, e.g. financial services, reaches the remote rural areas of China as well (extract 4), thereby enabling these parts to develop and prosper as well. Thus, it could be argued that the positive impact is more widespread than the negative effects such that the average Chinese would be better off.

<u>Marks scheme</u>

L1	1-4	Descriptive / superficial explanation of the effect of the digital revolution on SOL.
L2	5-7	Analytical [i.e. use relevant economic model (e.g. AD/AS) and concepts relevant to measurement of material SOL] and accurate explanation of the effect of the digital revolution on SOL, with use of evidence.
E	1-3	Up to 3m only if there is a conclusion that provides judgment on whether the effect is more beneficial or harmful to SOL by considering the importance of the arguments and substantiation that is based on the particular context [China] and relevant evidence is used in the substantiation.

Question 2

a) **Describe USA's trade balance with China between 2010 and 2015. [2]** [2]

Trade deficit throughout (1)
Worsening from 2010 until 2015 (1)

b) **Explain whether the information provided in Figure 3 is sufficient to conclude that the US dollar strengthened against the yuan between 2015 and 2016.** [4]

US dollar strengthened against the yuan
Drop in export value to China could have been due to a stronger USD. When the USD strengthens, US-produced goods become relatively more expensive (in yuan) than local goods in China so the consumers in China will buy less imported goods from the USA. (2)
Or
Import spending fell by more than export earnings suggesting that supply of USD fell by more than demand for USD against the yuan. This created shortage of USD against yuan and hence appreciation of USD.

US dollar did not strengthen against the yuan
But stronger USD will also mean that imported Chinese goods becomes relatively cheaper for the USA consumers and they should switch from local goods to buy more imports that should lead to a larger import value. Since the import value has dropped, it means that it is unlikely that the USD has strengthened. (2)
Or
Trade balance changes could have led to the changes in the US dollar value. E.g. - the drop in export value to China could have been due to higher prices which will then result in a weaker USD instead. (2)
Or
Information provided in figure 3 alone is definitely not sufficient to conclude that USD has strengthened against the yuan between 2015 and 2016 because forex rate of USD vis-a-vis the yuan is affected not just by trade in goods, but also trade in services and capital flows between US and China. (2)

c) **Explain how price elasticity of demand for imports affects the success of a devaluation in improving a country's trade balance.** [2]

Devaluation leads to rise in price of imported goods in domestic currency.
As it is now relatively more expensive to buy imports, people will switch to buying local goods and this could improve the trade balance as the amount spent on imports will drop. If the PED for imports >1, the % decrease in Q imported will be > than the % increase in price that will lead to lower import expenditure and hence improve trade balance. (2)

But if the demand for imports is price inelastic, even with the higher price, most consumers will still continue importing = %Q drop < % rise in price paid = higher import expenditure = worsening TB.

d) **With the aid of a diagram, explain why economists worry about "periods of persistently falling prices" (Extract 5).** [4]

When there are "periods of persistently falling prices" consumers will cut back on spending now as they expect that prices of goods and services will fall even more in future. (Expectations)

Businesses seeing that consumers are not spending will also delay investments as inventories will build up.
C and I drops leads to a drop in AD. (2)

The drop in AD (leftward shift) will cause a rise in inventories and lead to firms cutting back on output which leads to drop in national income which will induce cuts in consumption and lead to further decreases in national income via the downward multiplier effect. (1)

Diagram. (1)

e) **Discuss how different Chinese producers might be affected by the devaluation of the yuan.** [8]

Gainers
Export producers
(Extract 6) "A weaker currency is generally beneficial for China's exporters because it makes their goods more affordable for overseas buyers". Foreign consumers will find China exports relatively cheaper than the domestic goods and buy more from Chinese firms. Firms who export goods and services will see an increase in sales that will lead to higher profits.
EV: the extent of gains will depend on PED of the exports sold by the firm in foreign currency. If PED > 1, Q exports sold by China has a lot of substitutes in the world market) sold increases significantly and this leads to larger profits. If the goods sold are unique with no substitutes, PED < 1, Q sold will increase by a smaller percentage and hence they will enjoy smaller increase in profits.

Local producers of goods and services that are import substitutes
(Extract 6) "With the devaluation of the yuan, they have to pay more for every dollar that they buy and chances are some importers will reduce their purchases of bananas". As foreign goods become relatively more expensive, Chinese consumers might switch to buying local alternatives (substitutes) so local producers of these goods will face a higher demand and this will lead to higher revenues and profits.
(Extract 6) "rising numbers of Chinese tourists, who may now find it costlier to travel overseas." As travelling overseas now become relatively more expensive due to the weaker yuan, Chinese consumers might switch to travelling more within China for their holidays and this will benefit local hotels and other related local tourism industries. Higher demand for local hotels and local tourist attractions will boost their revenue and profits.
EV The extent of benefits depends on XED for imported goods and services. The closer the substitutes the greater the increase in gains for the producers.

Losers
Producers who use imported raw materials
(Extract 6) Producers who "uses a lot of imported raw materials, which it has to pay for in dollars or other foreign currency" will lose out from a weaker currency. The higher cost of imported raw materials means that the unit cost of production rises for these producers leading to lower profits.
EV This loss will be more significant if the producer caters only to the domestic market for the good or service as unlike export producers, they are unable to pass on this higher cost to local consumers without affecting their sales.

Conclusion
How producers are affected by the devaluation will depend on the type of goods and services that they sell, who they sell it to and the level of imported raw materials required. The producer who exports goods and services where PED > 1 and uses no imported raw material content will be the biggest gainers. Even if the production of a good requires substantial imported raw materials, the producer might still be better off if the export demand

increase because of the devaluation outweighs the higher production cost. This is likely because imported raw materials do not constitute 100% of the inputs used.
However, the export producers' gain could also be affected if there was a retaliation or feedback effect. This is because devaluation lowers the export earnings of China's trade partners. The latter might counter-devalue. Even it they don't, the contraction of their export earnings would lead to contraction of their GDP (ceteris paribus) which in turn induce them to cut back on imports from China. Thus, exporters may not benefit in the long term.

Marks scheme

L1	1-3	Descriptive / superficial explanation of impact on 2 different types of producers who are affected
L2	4-6	Analytical explanation of how different producers will gain or loss. Max 4 if there is explicit link to the type of producer being affected.
E	1-2	Substantiated judgement on how producers will be affected by the devaluation.

d) **"Most highly developed economies except the US and possibly Britain, will continue to need loose monetary policy" (Extract 7).** [10]

To what extent should central banks of different countries adopt similar changes to their interest rates?

Intro
Central banks in different countries either increase or decrease their interest rates to help achieve their macroeconomic objectives. Central banks in US, UK are choosing to increase their interest rates (Contractionary MP) while the central banks in the rest of Europe and Japan are either maintaining a low interest or reducing their interest rates (Expansionary MP).

Thesis
Central Banks in UK and US are choosing to increase their interest rates as the economic growth in both countries are strengthening (same problem seen in table 1 and extract 8) and higher EG might lead to inflationary pressures if there is a lack of sufficient spare capacity.
A higher interest rate will mean that the opportunity cost of spending is now higher as consumers will either have to forgo relatively higher interest earned from savings or pay higher borrowing cost. This will lead to a fall in consumption spending (C). Given this higher borrowing cost, firms will also cut back on investments as the net returns from investment falls (I). The fall in C and I will result in a drop in AD that will cause a down multiplier effect. With the subsequent decreases in AD, this will help to reduce the General Price Level and resolve any possible demand-pull inflation,

Anti-thesis

Other countries like the Euro Zone and Japan will need to either decrease or maintain low interest rates as their economies are still suffering from low economic growth (Table 1) or have significant spare capacity in the economy (different problems faced)
Lower interest rates or increase Money Supply will leads to increase in C and I and stimulate EG through the multiplier effect.

Even if they are currently facing the same issue, a country would also need to consider how other factors might affect their economy.
As mentioned in the extract 5, the devaluation of the Chinese currency as well as the weaker global economy might lead to deflation occurring for UK. Thus, if the central bank in UK increases the interest rates to deal with possible inflation, it might instead result in prices falling too much and lead to a deflationary spiral instead.

Possible spillover effects from higher interest rates need to be considered. (Extract 7) Many companies and even countries around the world borrow funds in USD and a higher interest rate adopted by the US central bank will lead to higher borrowing costs for others. This could result in lower investment or consumption levels in these countries and negatively affect their economic growth. The possible global economic slowdown would end up affecting the ability of these countries in importing US goods and services. Thus, the central bank in US need to think about the extent of increase in interest rates required to solve its economic problems.

Conclusion
Although there are some countries that will change their interest rates in the same direction, many other countries might change their interest in the opposite direction or not change it at all due to the difference in problems faced or nature of the economy.
A country suffering from recession should not increase interest rates as it will end up worsening the economy. Countries like Japan and EU countries should lower interest rates because their growth rates are projected to remain weak (table 1). For UK, while its economy is growing and the deflation it faced is good deflation (Extract 8) it might wish to delay the decision to increase interest rate so as to avoid the unintended consequence of exacerbating deflation that it is facing.
In addition, even if different countries increase or decrease the interest rates together, the level of i/r rate changes might still differ because the severity of the problem might be different. A country suffering from significant inflation will likely increase their interest rates by a larger percentage compared to another facing less severe inflation.

<u>Marks scheme</u>

L1	1-4	Descriptive / superficial explanation of how interest rate changes achieve economic objectives.
L2	5-7	Analytical explanation of the mechanics of interest rate changes and the desired impact on the economy.
E	1-3	Judgment on the extent different countries should make similar changes to their interest rates.