St Andrew's Junior College

JC2 Preliminary Examinations

H1 Economics (8843/01)

Suggested Answers

Question 1: E-books - a tale of digital disruption, and the expansion of Integrated Resorts

Suggested Answers

(a) With reference to Extract 1, Figure 1 and using a supply and demand diagram, account for the change in pricing of e-books in Germany from 2010 – 2019. [5]

Changes in tastes and preferences following the rise in popularity of mobile devices and e-readers have led to an increase in demand, from D_1 to D_2.
Tech advancement, fall in COP resulting in an increase in supply, resulting in a rightward shift from S_1 to S_2.
Assuming that the increase in supply outweighs the increase in demand given the leap in technological advancement,
At the original equilibrium price, there is a surplus which exerts a downward pressure on the prices of e-books. There was a fall in prices of e-books from P_1 to P_2.
[DDSS Diagram]

(b) "According to the German industry association for booksellers, the average price level for e-books increased by 4.9 percent to 6.63 Euros in 2020, attributed to 'gross profiteering' from e-book publishers. These publishers trawled through university reading lists, identified the commonly used textbooks, classified them as essential and raised the price of these e-books."

Explain how the above strategy led to 'gross profiteering' and comment on whether the strategy is the only reason for the increase in e-book publishers' profits. [6]

- By classifying commonly used textbooks as essential, this raises its degree of necessity.
- Demand for e-textbooks is price inelastic (|PED|<1). A rise in price will result in a less than proportionate decrease in quantity demanded.
- Producers will thus adopt the strategy of increasing prices. The increase in TR from increase in price > decrease in TR from less than proportionate decrease in quantity demanded.
- Since profits = TR – TC, assuming that total costs remain constant, there will be an increase in profits earned by e-textbook publishers.
- Given that there was an increase in demand following consumers' raised perception of benefits and willingness to pay for e-books, this resulted in an increase in equilibrium price and quantity, and thus an increase in revenue.
- Additionally, this is not the impact on all e-books, only those identified as essential textbooks.
- The increase in e-book publishers' profits can also be due to a fall in TC arising from technological improvements.

(c) Using the information in Extract 2, explain whether knowledge possesses the characteristics of a public good. [4]

- Non-excludability occurs when there is no effective way to restrict the benefits of public goods to only those who pay for them.
- It would be difficult to restrict the sharing of knowledge, or gaining of information, among individuals (e.g. peers, teachers) who have access to them.
- Non-rivalry in consumption means that the consumption of the good by one party does not reduce the amount available to others.
- The knowledge gleamed from e-books does not diminish from one reader to another. One reader's knowledge of a fact does not diminish another's.

(d) 'Though often underappreciated, libraries remain valuable to individuals and the communities they serve ….' (Extract 3)

Identify and briefly explain two sources of market failure with regards to library services. [5]

- Imperfect information/ Information failure is present in the consumption of library services.
- Individuals often underestimate the true marginal private benefit of going to the libraries to themselves, such as the long-term benefits of acquiring knowledge which can result in higher levels of income and better job opportunities.
- Positive externalities in the consumption of library services
- By increasing their level of knowledge via visiting the libraries, library users generate positive spillovers to non-users of library services, e.g. third parties such as their employers or families. This can come in the form of higher productivity of library users generating increased output and profits for their employers (third party).
- This results in under-consumption of library services (Qp < Qs) and there is deadweight loss to society, i.e. allocative inefficiency as society's welfare is not maximised.

(e) Extract 3 mentions that with a 'strong commitment to human capital investment – for the broad majority of the population – skills and wages improve, along with living standards.'

Evaluate the impact of government investments in libraries aimed at improving the standard of living of residents. [8]

[First Requirement] Government investments in libraries improves material and non-material SOL.

Through an increase in AD and AS from government investments in libraries, there will be an improvement in the material SOL of residents.

- An increase in government expenditure will result in an increase in AD, from AD1 to AD2. The initial increase in AD (due to the increase in C/I/G/(X-M)) will lead to a rise in output and NY. The rise in output leads to a further rise in factor incomes as more factors of production are employed. This will cause households to increase their consumption. This subsequent rise in induced C will lead to a further rise in AD and hence NY, which leads to further rounds of increases in induced C. Therefore, there is a more than proportionate rise in NY via the multiplier effect.
- At the same time, an increase in knowledge acquisition improves the productivity of labour. As labour productivity improves, each worker is assumed to be able to produce a larger quantity of output per hour, thus lowering the unit cost of production.
- This is represented by the rightward shift of the LRAS curve. Furthermore, by investing in human capital via the building of libraries, this will increase the skill and thus quality of labour, increasing productive capacity and LRAS.
- Assuming population size increases at a lower rate than real GDP, there is an increase in real GDP per capita. This results in an improvement in material SOL since there would be more goods and services available for consumption per person in the country.

Furthermore, there will also be an improvement in the non-material SOL of residents.

- With greater employment opportunities brought about by the investment in human capital through libraries, this could lower the levels of anxiety associated with high unemployment, reduce crime rates and improve the safety of residents.

- Greater knowledge acquisition can improve one's knowledge against scam and crime prevention, improving non-material SOL especially for the growing size of greying population.

[Second Requirement] Government investments in libraries may not improve material and non-material SOL.

- **Financial crowding out effect** could limit the extent of increase in RNY. In countries like the United States which has high levels of debt (Extract 3), the government may borrow money to finance the increase in government expenditure. In doing so, the government will compete with the private investors for the limited amount of the loanable funds. As demand for the loanable funds increases, interest rate and thus cost of borrowing, will increase. As a result of the higher interest rate, which causes an increase in costs of borrowing, firms may cancel or scale down their plans to expand or buy new capital equipment, ceteris paribus. In short, the higher interest rate will crowd out private investment i.e., reduce the level of investment. Hence the impact of the increase in government expenditure on real national income may be smaller (if any) because it can be partially or entirely offset by a fall in investment. Real GDP per capita may not increase, and thus material SOL does not improve either.
- There is also a possibility of the improvements in SOL being for the 'broad majority of the population'. An increase in the GDP does not necessarily result in a higher standard of living for the average citizen if the increase in the GDP does not benefit everyone in the country. There could be inequity present within the economy which might mean that material SOL does not improve for a small proportion of the country.

Additionally, there may not be an improvement in the non-material SOL of residents.

- If unemployment rates fall but consequently working hours increase, the fall in leisure hours may result in a worsening of non-material SOL.

[Conclusion]

- All in all, it is likely that there will be an improvement in the standard of living of residents, in both advanced and developing countries.

(f) (i) Describe Singapore's fiscal balance from 2018 to 2023. **[2]**

- Singapore generally recorded a fiscal surplus 2018 to 2023 except for 2020 and 2023 where there was a fiscal deficit
- Singapore's fiscal balance generally worsened, going from a fiscal surplus to a fiscal deficit with the greatest fall/deficit of 51 million in 2020 OR greatest increase in 2021

(ii) Discuss the view that investing in integrated resorts rather than developing human capital is more beneficial to the Singapore economy. **[10]**

[First Requirement] Investing in integrated resorts rather than developing human capital is more beneficial to the Singapore economy

- Integrated resorts boost tourism in Singapore, allowing for an increase in (X-M). At the same time, foreign direct investment rises. Both leads to an increase in AD. The initial increase in AD will lead to a rise in output and NY. There is a more than proportionate rise in NY via the multiplier effect. A rise in investment leads to an increase in capital accumulation, thus leading to an increase in quantity of FOP and productive capacity, LRAS rise. This will allow Singapore to achieve potential growth and cushion the impact of a rise in GPL from an increase in AD, leading to sustained growth.
- "The resorts directly employ about 20,000 people, with more than 65 percent of these employees being locals" (Extract 4). As real national income increases, firms produce

more and hire more factors of production, including labour. Derived demand for labour rises hence demand-deficient unemployment rises. Through the investment in IRs, there will thus be a fall in demand-deficient unemployment, especially among locals.

[Second Requirement] Investing in integrated resorts rather than developing human capital is not more beneficial to the Singapore economy

- Investing in human capital increases AS. By developing human capital, this can result in an improvement in labour productivity, allowing for a fall in the average cost of production, leading to a rise in SRAS, which is represented by a downward shift of the AS curve. Furthermore, by investing in human capital, this will increase the skills and thus quality of labour, increasing productive capacity and LRAS. This will allow for Singapore to achieve **potential growth, and also reduce any inflationary pressure**.
- Structural unemployment remains prevalent in Singapore. By investing in human capital, this would increase the workers' productivity and employability as there would be a reduction of mismatch between labour and skills. Investment in human capital thus decreases structural unemployment.

[Conclusion]

- In conclusion, investing in IRs is not more beneficial to the Singapore economy, as compared to developing human capital.

Question 2: Europe's Economic Woes

(a) With reference to Tables 2 and 3, compare the changes in real GDP of the European Union to that of Singapore over the period 2019 to 2022. [2]

- [Similarity] Both EU and SG saw a general increase in GDP from 2019 to 2022.
- [Difference] SG GDP generally increased at a faster rate than EU.

(b) With the aid of a production possibilities curve, explain how the invasion by Russia would affect Ukraine's growth. [4]

- The invasion by Russia has caused "destruction of productive capacity, damage to agricultural land, and reduced labor supply as more than 14 million people are estimated to have been displaced." → fall in quantity of labour and land → fall in quantity of FOP
- This means that there is a fall in productive capacity, which is illustrated by an inward shift of PPC from PPC_1 to PPC_2. This implies that there is negative potential growth.
- Assuming Ukraine was producing goods and services at a point on the PPC initially, the invasion by Russia will cause an increase in the unemployment of resources such as labour and land. This means that the economy is not productively efficient and is producing at a point within the PPC instead. This is illustrated by movement of the point inward from B to C. This implies that there is negative actual growth.
- The changes to the PPC reflect negative actual and potential economic growth.
- Diagram [1m]

(c) With reference to Extract 5 and the use of a diagram, explain the causes for the increasing inflation in the European Union. [4]

- Extract 5 mentions that there was "reopening of borders and the prudent extension of pandemic-era stimulus programs". The reopening borders would allow for an increase in export revenue due to an increase in tourist spending and the pandemic-era stimulus programs would be an increase in government expenditure (*We accept stimulus causing a rise in C and I if it is correctly explained*). These factors would lead to an increase in AD and higher competition for limited resources, pushing up factor prices. (demand-pull inflation factors)
  Extract 5 also mentions that "fuel price shocks amid large reductions in Russian energy supply". The increase in price of fuel would lead to an increase in the cost of production for economies. This would lead to a fall in the SRAS as producers are less willing and able to produce goods and services. (cost-push inflation)
- From the diagram, the increase in AD and fall in SRAS would lead to a shortage of goods and services at the original general price level leading to upward pressure in prices until the higher general price level.
- 1m – diagram

(d) With the use of a diagram, explain how the EU gas price cap could benefit households and comment on the appropriateness of this measure. [6]

- The EU gas price cap works like a price ceiling, set below the market equilibrium price of gas.
- This is beneficial for some households as the price is maintained at the price ceiling, and not allowed to increase due to changes in the market. Since gas is an essential good, the price cap will help to prevent inequity between low-income households and high-income households since gas is artificially made more affordable with the price cap.

- However, the price ceiling creates a shortage because at the price ceiling, the quantity supplied is lesser than the quantity demanded, i.e. Qs<Qd. This means that there is lesser quantity of gas overall in the market and does not benefit all households in general since only a smaller number of households would be able to purchase the limited quantity of gas supplied.
- Diagram [1m]

Comment:
- Furthermore, as the extract mentions, the price ceiling may push gas producers to sell gas to foreign countries where there is no price cap so that the producers can earn higher profits. This will further worsen the shortage of gas in the EU.
- Finally, a price ceiling is a temporary (short-term) solution to combat the increasing price of gas. The EU can look to diversifying its energy mix to include renewable energy to increase the overall supply of energy in the market to decrease energy prices and make it accessible to lower income households.

(e) Extract 7 states that the EU could experience 'somewhat higher unemployment in the future.'

Explain one possible consequence of high unemployment in the EU. [2]

- High unemployment rates might cause a pessimistic economic outlook for households and firms, discouraging consumption and investment. This would lead to a fall in AD which in turn could lead to a fall in real GDP, causing negative growth.

(f) Discuss whether ECB's decision to 'do what we have to do' (Extract 7) is justified. [8]

- **[Intro]**
  To discuss if the ECB's decision is justified, we will have to look at the positive and negative impacts of their decision on the economy in terms of attaining the economic goals.

- **[First Requirement]** ECB's decision is justified
  The increase in interest rate will lead to an increase in the cost of borrowing which will reduce the returns on investment for firms and decrease the willingness and ability of households to borrow to consume big ticket items. This will lead to a fall in consumption and investment expenditure, leading to a fall in AD. This fall in AD will lead to further fall in AD due to the reverse multiplier effect, leading to a fall in the GPL. This would help to reduce the level of inflation and thus attain price stability in the EU.

- **[Second Requirement]** ECB's decision is not justified
  As mentioned in Extract 7, the increase in interest rates has led to economic activity slowing down in the EU, and more weakening is expected. This would suggest that the GDP is falling or increasing at a slow rate. This is undesirable for EU economies since the policy could lead to a conflict of macro objectives if economies are not able to achieve their goal of economic growth.

  Furthermore, for economies such as Italy and France, the increase in interest rates would increase the interest payments on government debt, leading to a higher overall debt. As such, this would reduce the respective government's ability to counter the slow growth with fiscal policy. The increase in public debt would also reduce confidence in these economies, leading for further fall in consumption and investment expenditure, leading to further fall in AD and thus GDP.

- **[Conclusion]**

Overall, the ECB's decision is justified. While economic activity is slowing down, this has not led to increase in unemployment, suggesting that the real GDP is not falling, but increasing at a slow rate. However, while the policy is able to address the demand-pull inflation, it is unable to address the cost-push inflation and thus would be limited in its effectiveness in addressing the inflation issue in the EU.

(g) Explain why Singapore chooses the control of its exchange rates instead of interest rates as its tool of monetary policy. [4]

- In Singapore, external demand accounts for about 2/3 of total AD, i.e. (X-M) is a significant component of AD. Consumption and investment expenditure takes up a relatively smaller proportion of the AD. As such, control of exchange rates, which in turn will affect (X-M) will have a bigger impact on Singapore's economy. For instance, assuming that the Marshall Lerner condition holds, an appreciation of the SGD would lead to a fall in (X-M) thus reducing the AD.
- As an international financial centre with free capital flows, it is impossible for Singapore to independently determine the domestic interest rate. Singapore is an interest-rate taker in the world market, heavily influenced by the interest rate of leading countries like USA. Being open to capital flows, if Singapore raises its interest rate, there will be short term capital inflows and increase in money supply. This will in turn bring the interest rate down, and thus it will be ineffective.
- Singapore is a very small and resource-scarce economy, thus it is very reliant on imported factors of production and finished goods and services. SG is vulnerable to imported inflation. The gradual and modest appreciation of the SGD can help to fend off imported inflation, by making imports relatively cheaper in domestic currency. [2m]
- As a small economy, a large proportion of the Investment expenditure in the AD is reliant on foreign direct investment (FDI). FDI typically have alternative sources of funding (e.g. loans from banking sector in their home country) and are less likely to take loans from the local banks. Thus, adjusting our local interest rate will have limited impact on I and hence AD.

(h) Discuss whether the Singapore government should rely solely on monetary policy to address its economic challenges. [10]

- **[Intro]**
  From Extract 8, the key economic challenge that Singapore was facing in 2022 was inflation.

- **[First Requirement]** Singapore should rely on monetary policy to address the economic challenges
  From Extract 8, it is mentioned that there is a hike in global energy and agricultural costs which leads to imported cost-push inflation for Singapore. As such, an appreciation of the SGD will make the price of imported factors cheaper and thus reduce the cost of production, leading to an increase in the SRAS and thus bringing about price stability.

  In addition, appreciation would cause the price of exports to be relatively more expensive in terms of foreign currency. This causes the demand for exports to decrease, and the export revenue (measured in domestic currency) will decrease. On the other hand, since the imports is cheaper in terms of the domestic currency, quantity demanded for imports by the domestic country would increase as consumers switch to buy more imported goods and less domestically produced goods, ceteris paribus. Since (X – M) is a component of Aggregate Demand, AD would decrease and the increase in general price level would be reduced as well, achieving price stability. This would help to address the inflation due to the robust demand conditions which suggests that there is demand-pull inflation.

- **[Second Requirement]** Singapore should not rely on monetary policy to address the economic challenges
  While the monetary policy is able to address the demand-pull inflation, it does not address the root cause of it as the demand-pull inflation is caused by inflation in private transport and accommodation. As such, the use of monetary policy is ineffective in dealing with the demand-pull inflation and could better deal with it using other policies such as increasing the COE supply and putting in place property cooling measures.
  In addition, given Singapore's heavy reliance on trade, appreciation of SGD would have a significant impact on Singapore's AD and thus growth of the Singapore economy.

  As such, Singapore should incorporate supply-side policies such as education and training to increase labour productivity so that there is an increase in the maximum that the economy can produce, leading to an increase in the LRAS. In addition, the increase in productivity can also lead to a fall in the cost of production and thus increase the SRAS. The increase in SRAS and LRAS can help to address both the demand-pull and cost-push inflation without the potential downsides of slower growth.

- **[Conclusion]**
  Given that the issue of inflation is both demand-pull and cost-push, as well as both from domestic and external sources, Singapore cannot just rely on monetary policy.