**JC Economics Revision – Q1**

**Suggested Answers**

**(a) Figure 1 shows that the average price of college education is increasing at a decreasing rate. However, the Consumer Price Index does not follow the same pattern. Suggest why this is possible. [2]**

The Consumer Price Index (CPI) is a measure of the weighted average of prices of a basket of consumer goods and services that includes more than just the average price of college education.

The CPI may not have followed the same pattern as the trend in average price of college education as the prices of some of the other goods in the basket would have changed at a different rate.

**(b) Extract 1 states “Those who are less well-off have to make tough decisions: move to a cheaper area or cut back on cellphone services, restaurant outings and other basic necessities.”**

**Explain the above statement using the concepts of scarcity, choice and opportunity cost. [3]**

Scarcity arises due to unlimited wants and limited resources. Those who are less well-off have more limited resources in the form of a smaller budget constraint. They have multiple wants including continuing to live in the same area, cellphone services, restaurant outings and other more necessary items.

Given the rise in rent mentioned in Extract 2, those who are less well-off will have to choose between continuing to live in the same area and maintaining their spending on other goods and services. Thus, their opportunity cost of choosing to continue living in the same area after rents have gone up is the spending on other goods that is foregone.

**(c) Discuss whether the imposition of rent control is ultimately beneficial to society. [8]**

Introduction

Rent control refer to a price ceiling on rents, which is the highest permissible rent that landlords can legally charge. In order for rent control to be effective, they must be set below the equilibrium price of rented accommodation. The imposition of rent control seeks to ensure affordable accommodation for those belonging to the lower income group.

Main Body

**1) Explain how rent control (price ceiling) works**

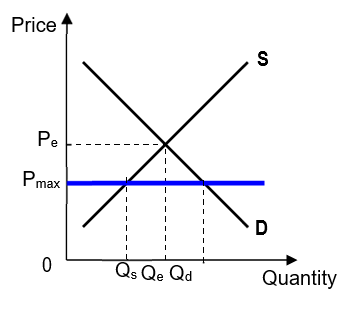


Figure 1: Imposition of rent controls

Figure 1 illustrates the effects of the imposition of rent control. Without government intervention, the equilibrium price of rented accommodation would be at 0Pe and the equilibrium quantity at 0Qe. When the government imposes rent control by fixing the price below the equilibrium level, say at 0Pmax, producers produce at a lower quantity, 0Qs, while consumers are willing and able to purchase a much larger quantity, 0Qd. Due to the excess demand at 0Pmax, a shortage of QsQd results.

**2) Thesis: Rent controls are beneficial to those who benefit from lower rents**

Consumers (0Qs) who are able to enjoy the good at the lower price of 0Pmax are better off. Consumers may be beneficial for equity reasons, to allow low-income households to have access to a basic necessity such as shelter

**3) Anti-Thesis: Rent controls are harmful to the following agents:**

(a) Landlords

Producers are also worse off, because they now sell less of the good, and at a lower per unit price of 0Pmax, resulting in a fall in revenue from OPeEQe to OPmaxAQs. Assuming ceteris paribus condition (i.e. no change in costs), this results in lower profits.

(b) Consumers

In addition, some consumers (QsQe) are worse off because they are not able to consume the good even if they were both willing and able to pay a higher price of Pe.

(bi) Unintended consequence which poses a cost to consumers

Furthermore, given the shortage, landlords also lose the incentive to maintain their properties knowing that demand will outstrip supply due to the artificial ceiling on rent. As a result, consumers who rent are ultimately harmed as the houses they rent will be of lower quality, having fallen into disrepair.

(bii) Unintended consequence

With lower rental revenue, landlords are incentivised to convert rental units into housing units for sale as this would generate more revenue for them. This would further reduce the supply of rental units and worsen the shortage further. This reduces the availability of rental units, forcing consumers to move elsewhere.

(c) Government

Furthermore, governments may face a rise in administrative costs due to the need to mediate an increase in conflicts between landlords and tenants arising from rent control disputes. They may also incur costs should they need to manage riots and social problems stemming from high rents.

Conclusion

Ultimately, rent controls distort the market and cause are deadweight loss to society. Overall, they are harmful to most agents in society. Rent controls do not solve root cause of the high rents, which is due to demand for accommodation outstripping supply. In order to solve the problem in the long term, the government may need to subsidise the construction of more public housing in order to increase the supply of accommodation. This would eliminate the shortage and reduce rents accordingly.

**(d) With reference to Extract 3, explain why “some profit-driven colleges have started offering discounts on college tuition fees”. [2]**

Demand for college education is price elastic (PED > 1) as college tuition constitutes a large proportion of an individual’s income. This causes potential students to be very sensitive to price changes. Thus, some colleges have lowered the price of college education by offering discounts, knowing that there would be a more than proportionate increase in quantity demanded for college education, leading to a rise in revenue. Assuming costs remain constant, the rise in total revenue would increase profits for the profit-driven colleges.

**(e) Assess whether demand or supply factors account more for why the average price of college education only increased marginally in 2017. [8]**

Introduction

Overall, college tuition between 2010 and 2017 increased at a decreasing rate. This is due to the rise in demand being greater than the rise in supply of college education.

Main Body

**1) Explain the demand factors**

Overall, there would be an increase in demand for college education.

(a) Changes in population demographics

Due to changing population demographics, the number of new high-school graduates in the US (i.e. potential college students) has only increased by 2% from 2010 to 2017 as compared to an increase of 18% in the early 2000s (Extract 3). Given the slight increase in potential college students domestically, there would be a slight rise in demand for college education.

(b) Influx of foreign students

In addition, as China’s economy continues to grow, income levels rise, thereby increasing the affordability of US college education, which is a normal good, for Chinese families. Thus, there is a rise in demand of Chinese students seeking a US college education (Extract 3). Given that the number of Chinese college students increased by more than 5 times since 2006, it could be argued that there is a significant rise in demand for college education.

**2) Explain the supply factors**

Overall, there would be an increase in supply of college education.

(a) Rise in number of colleges

With more colleges being established, there would naturally be a rise in supply of college education as more courses are offered.

(b) Rise in number of online degree courses being offered

Furthermore, there has been a rise in the number of online degree courses that are being offered by universities (Extract 4). This is because the Internet has lowered the cost of production and provided a new medium for universities seeking to offer cheaper options for potential students.

**3) Weigh the overall effects on market equilibrium of college education**

As college tuition continued to increase, albeit at a decreasing rate, we can expect that the rise in demand outweighed the rise in supply. At present, the rise in demand for US college education by Chinese students is significant as China’s economic boom in the past few years has significantly increased the purchasing power of Chinese families. Given the competitiveness of China’s national examinations and the immense difficulty in entering one of China’s few prestigious universities, more students are likely to seek greener pastures in the US. Furthermore, as the world becomes more globalised and English becomes the world’s preferred lingua franca for business dealings, Chinese demand for US college education may rise due to the English-speaking opportunities such a college education would present.

In contrast, the rise in number of universities may be insignificant due to the market already becoming too saturated to the point that some colleges facing steep competition have offered discounts on college tuition in a bid to attract potential students. Furthermore, it would take time before employers and potential students start to accept online degree courses as a viable alternative to a traditional degree since the reputation of these online courses would take some time before becoming established.

Over time, changing US population demographics could mean that the fall in domestic demand for US college education would eventually outweigh the rise in foreign demand. Once that happens, there would be an overall fall in demand for college education, which, together with the rise in number of universities and growing popularity of online courses as students become more used to learning in a non-traditional setting, would mean falling college tuition prices in the long term.

**(f) Comment on whether the online courses offered by higher education providers should be considered as public goods. [4]**

Identification of good

Public goods are goods that are both non-rival and non-excludable in nature. Online courses offered by higher education providers should not be considered public goods. Even though they are non-rival, they are also excludable in nature.

(a) Non-rival

Online courses are non-rival in nature as one student’s participation in the online course (e.g. viewing of lecture materials / attempting of tutorial questions online) does not diminish the amount available for consumption to another student.

(b) Excludable

However, it is possible for higher education providers to exclude others from having access to the online courses if they do not pay for the course. This is because the providers could password-protect their materials to restrict access to paying consumers. Furthermore, they would only generate an original diploma for paying consumers as recognition for the qualifications they have attained.

**(g) Using evidence from the data, explain the determinants of a rational prospective student’s decision on whether to participate in college education. [6]**

Introduction

A rational prospective student would consider the constraints, benefits, costs, and information available when deciding on whether to participate in college education. After considering the constraints that would hinder her from participating in college education, the prospective student who is rational would maximise her utility by weighing the benefits against the costs. In order to do so, she would have to consider what information she has and whether that information is accurate and reliable.

Main Body

**1) Explain the constraints of a prospective student**

(a) Budget constraint

Prospective students would have to consider whether they and/or their family have sufficient income/savings to pay for college education in the first place. Given the “sharp rise in tuition” in the past few decades (Extract 3), prospective students, especially those from “lower and middle income groups” (Extract 3) may not be able to participate in college education given their budget constraints unless they are able to obtain some form of financial aid such as scholarships. Alternatively, prospective students would have to consider whether they are able to overcome her budget constraint by taking out student loans. This would in turn depend on the ease of borrowing.

(b) Ability constraint

Prospective students would have to consider if they would be constrained by their high school grades. If their high school grades and SAT scores do not meet the requirements of certain colleges, they may choose to avoid applying to those colleges since they do not qualify.

**2) Explain the benefits for a prospective student**

(a) Tangible benefits

Prospective students would consider the economic benefits of participating in a college education, which include the present value of higher future earnings as well as higher chances of employability (Extract 5).

(b) Intangible benefits

Furthermore, they would consider the more intangible benefits of participating in a college education such as gaining curiosity, adaptability and a rise in their ability to respond to challenges. They would also gain from having a larger social network of friends.

**3) Explain the costs for a prospective student**

(a) Tangible costs

Prospective students would have to consider how much the college education would cost them in actual monetary terms. Aside from college tuition, this amount would include other costs such as the costs of renting accommodation, textbook costs, etc. If prospective students fund their college education by taking out student loans, they would need to include the interest on the loan as part of the costs as well.

(b) Intangible costs

Prospective students would have to consider intangible costs such as long-distance separation from their family and loved ones (if they pursue a college education in a different state) as well as higher anxiety that would stem from looming debt repayments if they were to take out student loans to fund their college education.

(c) Opportunity costs

They would also have to consider their opportunity cost, which is the next best alternative foregone. This could include the job experience and extra income they would have earned had they chosen to start working instead of participating in a college education.

**4) Explain the information that a prospective student requires**

(a) Accuracy of information on costs and benefits of college education

Prospective students will need to consider if they have accurate information on the benefits and costs of participating in college education. If there is great uncertainty as to future earnings as well as future employability, rational prospective students would reconsider if the value they have assigned to the benefits are too high. They may assign a lower value if they believe there is a high probability that future earnings and employability may not be as high as initially believed.

(b) Accuracy of information on the suitability of courses

Prospective students would also need accurate information on the courses that various colleges are able to offer and whether these courses suit their needs. Furthermore, they would need information on the entry requirements of these colleges so that they can anticipate if they would be constrained by their grades.

If the rational prospective student is not held back by constraints, and the sum of the benefits outweighs the sum of the costs, and assuming this student has accurate information, she will proceed to participate in college education.

**(h) “Supporters of larger government subsidies to higher education often argue that higher education would be under-provided in the absence of government intervention. But higher education subsidies may not be necessary and should in fact be reduced.”**

**Using evidence from the case study and/or your own knowledge, discuss whether the US government should increase or decrease subsidies to higher education. [12]**

Thesis: US government should raise subsidies for higher education

**1a) The US government should increase subsidies to higher education if it finds that the MEB or extent of imperfect knowledge is larger than initially estimated (i.e. higher education is still under-consumed)**

Higher education is a merit good. This is because it generates positive externalities for society in the form of higher work productivity as well as job creation for others (Extract 5). In addition, individuals often underestimate the private benefits of higher education, thinking that future job earnings are lower than they actually are or failing to consider the intangible benefits that would accrue to them. (Extract 5)

If the marginal external benefit (MEB) or the extent of imperfect knowledge is larger than was initially estimated, then the US government’s subsidies (MPC0 to MPC1 to higher education would have reduced market failure to some extent, but not completely. In order to eliminate the deadweight loss and achieve allocative efficiency, the US government would have to increase subsidies to MPC2. Consumption of higher education would thus be at the quantity where MPC2 = MPB, i.e. at the socially-optimal level of Qs. Thus, market failure is corrected.

**1b) The US government should increase subsidies to higher education for equity reasons**

Higher education could be viewed by many as a key driver of social and economic mobility. With a college degree, those in the lower and middle income groups could earn higher wages and face better employment prospects (Extract 4), thus allowing them to break out of the poverty cycle. However, Extract 3 mentions that many in the lower to middle income groups have found higher education unaffordable due to rising college tuition in recent decades. As a result, they have been priced out of the market for college education. Thus, the government should increase subsidies to higher education in order to lower the price of higher education and make it more affordable for lower to middle income groups.

**The US government should increase subsidies to higher education in order to promote economic growth**

With subsidies to higher education, the US government would promote the consumption of higher education, thus increasing the quality of the labour force. This would attract investment (Extract 5), leading to a rise in AD, thus achieving actual growth. Furthermore, the rise in quality of the labour force would increase the country’s productive capacity, thus increasing AS in the long run, and achieving potential growth.

Anti-thesis: US government should not raise subsidies for higher education

**2a) The US government should reduce subsidies to higher education since the MPB of consuming college education is already high. The MPB is also close to the MSB due to the small MEB.**

According to Extract 6, most individuals already have a strong incentive to spend on higher education as it leads to significant economic benefits for themselves (Extract 5). This suggests that the MPB of consuming higher education is high.

Furthermore, it could be argued that the extent of MEB is small. Although there are large external benefits for primary and secondary school education, because people who are literate and numerate are able to learn new skills a lot quicker and be more productive for the economy, the extent of external benefits for university education are smaller. For example, the consumption of university courses in which one learns vectors in the 4th dimension does not contribute in a concrete way to the economy; most of the benefits of consuming higher education are thus accrued to the one consuming higher education rather than to third parties.

Thus, the US government should thus avoid over-subsidising higher education by reducing subsidies to higher education since the external benefits associated with consuming higher education are small, with current levels of consumption already close to the socially optimal level.

**2b) The US government’s subsidies to higher education may in fact worsen income inequity**

Those who undergo university education and who graduate with a college education ultimately benefit from higher wages and greater employability. However, the subsidies to higher education are funded by taxes on the entire working population, including blue collar workers who may not have attended university. As a result, subsidies to higher education redistribute the already lower income from blue collar workers to white collar workers who already earn significantly more.

**2c) The US government’s subsidies to higher education breed complacency and inefficiency amongst higher education providers**

The US government should reduce subsidies to higher education in order to reduce the extent of certain unintended consequences. With subsidies, the profit margins of higher education providers are protected by the higher education subsidies, leading them to become complacent and inefficient instead of finding ways and means to reduce costs (Extract 6: “bloated costs”)

Providing subsidies to higher education providers would not necessarily have resulted in lower prices for students if universities chose to line the purses of their faculty members instead of passing down the cost savings to their students. This led to many in lower and middle income groups to view university education as too costly (Extract 5).

Conclusion

**3a) Falling college tuition in subsequent years**

Based on data from Figure 1, if the trend in average prices of college education continues, we could expect college tuition to fall in the coming years. In the long term, as online courses and distance learning proliferate the higher education landscape, the price of college education will fall further. This would mean that there is less reason for the US government to increase higher education subsidies on equity grounds.

**3b) Selective provision of subsidies to higher education may be necessary if the US intends to undergo restructuring of economy**

However, if the US government intends to spearhead economic restructuring and develop industries that are high value-added and knowledge-intensive, it may choose to selectively subsidise universities that offer courses that would equip future workers with the knowledge and skills needed for the digital revolution. This would increase the supply of such courses, thus allowing future workers to gain the skills for industries on the rise.

**3c) Constraints faced by the government**

The above arguments in favour of increasing subsidies would be meaningless if the US government is currently in significant debt. As a result, it may be constrained by its lack of fiscal reserves, which would hinder it from increasing subsidies in the first place. According to Figure 2, the US’ debt to GDP ratio is on the rise, which could severely curtail its ability to provide more subsidies to college education.