



ANGLO-CHINESE JUNIOR COLLEGE

JC1 Economics

H2

MARKET FAILURE AND GOVERNMENT INTERVENTION Tutorial Worksheet 3

Section A: Discussion Questions

Question 1: Public goods and private goods

In each of the following cases, consider whether the good/service is a private or a public good. Explain your answers.

- a. Parking spaces
- b. Police services
- c. National museum
- d. Public housing
- e. Explain why the markets for (b) and (c) above would fail.

Question 2: Salmon Farming Costing Environment

Salmon farming is wreaking ruin on marine ecosystems, through pollution, parasites and high fish mortality rates which are causing billions of pounds a year in damage, a new assessment of the global salmon farming industry has found. Taken together, these costs amounted to about \$50bn globally from 2013 to 2019, according to a report published on Thursday.

The report examined the salmon farming industry in Canada, Norway and Chile. It found that of the costs associated with fish farming, about 60% were borne by the producers, especially in the form of fish mortality and the cost of treating sea lice, but about 40% of the costs were borne by wider society, for instance in pollution, loss of fish populations from overfishing and the impacts on the climate crisis. Chemicals and excess nutrients from food and feces associated with salmon farms can have unintended consequences for marine organisms and human health.

“Aquaculture activities are an interconnected part of the ecosystem in which they exist, and salmon farms make use of ‘free’ coastal ecosystem services such as clean water, appropriate temperatures, nutrient levels and so on. They also contribute to their deterioration, however, due to local pollution impacts from uneaten feed and feces, which are directly discharged into the marine environment.” the report reads.



*Scan this QR code
to learn more about
the environmental
impact of fishing.*

Salmon farming is an industry that has grown dramatically in recent years, as the world's appetite for fish is also growing. Not only it's already the fastest-growing food production sector in the world, but continued global growth in demand is expected.

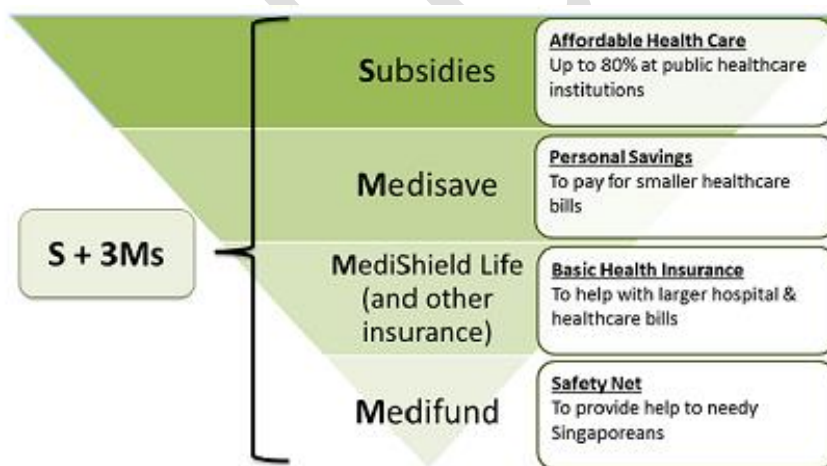
Adapted from: ZME Science and The Guardian, 11 Feb 2021

- From the above extract, identify examples of private and external costs of salmon farming.
- Using a diagram, explain how the production of salmon results in an inefficient allocation of resources when left to market forces.
- Explain how a taxation policy might achieve allocative efficiency.
- What are the limitations of using taxation to achieve efficient allocation of resources?

Question 3: Healthcare in Singapore

Singapore offers universal healthcare coverage to our citizens, with a financing system anchored on the twin philosophies of individual responsibility and affordable healthcare for all. Through a mixed financing system, use of market-based mechanisms to promote competition and transparency and the adoption of technology to improve the delivery of healthcare services, we have secured good healthcare outcomes for our population. We have done so with a national healthcare expenditure of about 4% of our GDP, which is low among developed countries (although this is expected to grow with an ageing population).

The mixed financing system involves multiple tiers of protection to ensure that no Singaporean is denied access to basic healthcare because of affordability issues. This is illustrated in the following diagram.



Source: Ministry of Health Singapore

- Identify the private benefits which consumers would gain from consuming healthcare services.
- Explain how third parties would benefit when individuals consume healthcare services.
- Using a diagram(s), explain why there is market failure in the market for healthcare.
- Explain how any one of the approaches used by the Singapore government could encourage the consumption of healthcare and correct the market failure.
- Explain two factors that might determine the success of the approach you chose in (d).

Section B: Case Studies Questions

Question 4: Policies for health improvement (Adapted from H2 A Level 2018)

Extract 1: World Health Organisation (WHO) Report – fiscal policies for health improvement

Over the last few years there has been a continuous rise in the consumption of sugar-sweetened beverages (SSBs). This has resulted in increased obesity amongst populations and a consequent rise in diseases such as diabetes and heart disease. Now many countries are adopting policies to improve diet. Fiscal policies are key policy interventions to achieve this. They form part of the menu of policy options that are being considered by an increasing number of countries to promote healthy diets. There is increasingly clear evidence that taxes and subsidies can be used to influence purchasing behaviour, notably when applied to SSBs.

There are strong reasons for using fiscal tools. Fiscal interventions play a key role in correcting market failure; they can create incentives to help to reduce certain diseases such as diabetes and also generate revenue for the government. Estimates from recent economic research show that the prices of foods and beverages affect purchase and consumption significantly.

By incentivising consumers to purchase healthier foods (or dis-incentivising the purchase of less healthy foods), fiscal interventions aim to change consumption of these foods at the individual and household level. Fiscal policy interventions can also work through changing incentives for the production and manufacture of healthy foods relative to less healthy foods. As taxes increase, the purchase price of certain foods increases and consumers thus reduce their purchases. As a consequence, industry may produce less of the food in question. Similarly, a subsidy decreases the price for consumers and can lead to increased consumption, thus triggering increases in supply to meet the rising demand.

Taxes and subsidies can also incentivise the food industry to reformulate foods to improve the nutritional quality of their products. An additional benefit of fiscal policy interventions is revenue generation and the potential to specifically allocate these funds for health promoting purposes. As such, the use of fiscal policies should be considered a key component of a comprehensive strategy for the promotion of healthy diet and the prevention and control of certain diseases.

The main fiscal policy interventions that have been proposed are: taxes on SSBs and subsidies on fruits, vegetables and other healthy foods. This is helped by the fact that demand for SSBs is generally price elastic. In addition, research has shown that price elasticity of demand is higher among low-income consumers and in younger people. A study showed that imposing a tax that would increase the price of SSBs by 20%, would reduce overall consumption by 24%. Similarly strong evidence shows that subsidies for fresh fruits and vegetables, that reduce prices by 10–30%, are effective in increasing fruit and vegetable consumption.

Source: World Health Organisation, *Fiscal Policies for Diet*, 6 May 2015

Extract 2: Mexico – the decision to introduce a sugar tax

In Mexico bottled or canned SSBs are part of the culture. Cola drinks have been bottled and sold in the country since 1926. These drinks are a major source of energy for adults and children especially in the many communities that do not have safe tap water. More than two years after the Mexican government passed legislation levying an excise tax (charged on the manufacture of a specific good) on SSBs, there is increasing evidence to suggest that pricing policies can influence consumers' purchasing patterns and have an impact on dietary behaviour.

A study shows that sales of the taxed SSBs in Mexico fell by an average of 6% in 2014. In addition, purchases of water and non-taxed beverages increased by about 4% on average. The money raised by Mexico's tax on soda drinks is being re-invested in obesity prevention, for example, in providing drinking water fountains in schools with students from low-income families.

Fiscal policies focused on price are designed to influence consumers to make healthier choices when buying drinks, for example, by making sodas more expensive than bottled water. Some believe that such taxes are needed because consumer choice is not as free as consumers may think. Marketing and advertising products are very powerful influences on consumer demand. Individual choice is very much dependent on marketing. Producers put millions of dollars into food marketing to strengthen brands and differentiate their products.

Source: *World Health Organisation Bulletin*, April 2016

Extract 3: Sugar tax – UK businesses claim levy will result in job losses and higher prices

A group of UK businesses, from convenience stores to vending machine operators and pubs, have joined forces to call for a rethink of the government's proposed sugar tax on the SSB industry. A sugar tax was proposed as part of the 2016 Budget with the goal to raise an estimated £520 million a year. The money raised is to be spent on funding sports in primary schools. The coalition of UK businesses, which between them employ more than 400,000 people across the UK, has launched a "Face the Fact, Can the Tax" campaign, arguing the tax will not reduce obesity and would result in job losses and higher prices.

Businesses taking part in the campaign all agreed that obesity levels are too high, but argued that the sugar tax was not the answer. "We know from the evidence around the world where they've tried a tax that it will not make a difference to obesity. What it will do, as this report shows, is damage thousands of businesses across the entire SSB supply chain, from farmers, to manufacturers, to convenience stores and the pub and restaurant trade," the director-general of the United Kingdom (UK) Soft Drinks Association which partially funds the campaign, said. "At a time of economic uncertainty, the Government needs to be supporting these businesses and working with industry to support actions that are already making a difference, such as reformulating drinks to include a lower sugar content and advertising the many no-sugar options now available," he added.

The launch of the campaign comes as a new report from Oxford Economics has highlighted the worrying economic damage the proposed soft drinks tax will have on British industry. The report predicts a loss of more than 4,000 jobs across the UK and a decline of £132 million in output.

Companies will be given two years to reformulate their products with reduced sugar levels, after which drinks with over 5g of sugar per 100ml and over 8g per 100ml will be hit with greater taxes in the two bands.

In February 2016, Cancer Research UK and the UK Health Forum calculated that a 20% tax on SSBs could reduce the obesity rate in the UK by 5% by 2025. This is equal to 3.7 million fewer obese people. The co-ordinator of the Children's Food Campaign called the sugar tax an "important victory" for children's health that will encourage people to choose healthier drinks, and send a wider message about cutting down on sugar for consumers and businesses.

Source: *The Independent*, 16 August 2016

Questions

- (a) (i) Using the information in Extract 1, calculate the value of the price elasticity of demand for sugar-sweetened beverages (SSBs). [2]
- (ii) Explain one possible factor that could lead to this value. [2]
- (b) (i) State the economic concept you would use to measure the relationship between the change in the price of SSBs as sales taxes are imposed and the resulting change in the demand for bottled water. [1]
- (ii) Explain the value you would expect to get from this measurement. [3]
- (c) Discuss whether consumers could ever make rational decisions regarding their consumption of SSBs. [8]
- (d) Discuss whether fiscal intervention is the best government policy to deal with the problems caused by over-consumption of SSBs. [10]

Section C: Essay Questions

5. The Singapore government uses the Certificate of Entitlement (COE) system, the electronic road pricing (ERP) system, and the improvement of the public transport system to address the problem of traffic congestion.

(a) Explain why traffic congestion leads to market failure. [10]

(b) Evaluate the various policies the Singapore government can use to reduce traffic congestion. [15]

(ACJC Mid-Year Assessment 2015)

6. There is considerable agreement over the need for governments to provide public goods. There is less agreement over the extent to which markets fail because of imperfect information.

(a) Explain the case for government intervention in markets for public goods and where information is imperfect. [10]

(b) Evaluate the alternative policies that are adopted by the Singapore government to correct for both these types of market failure. [15]

(adapted from: A-Level 2014)

7. All residents in the United Kingdom (UK) are automatically entitled to free public healthcare through the National Health Service. On the other hand, Singapore adopts a universal healthcare coverage through a mixed financing system with individual payments and subsidies from the government.

(a) Explain why a government intervenes in the market for healthcare. [10]

(b) Assess the economic case for the different approaches between the UK and Singapore governments in their healthcare markets. [15]

(NJC Prelim 2021)

Optional Essay Question:

Note: 8a was covered in the Central Economic Problem tutorial. 8b is a Market Failure question.

8. Prospective students and governments each make decisions that affect the scarce resources that are devoted to university education.

(a) Explain the determinants of a rational prospective student's decision on whether to participate in university education. [10]



(b) Discuss the factors that governments should consider in allocating resources to university education. [15]

(A-level 2015)

Section D: Independent Learning

Part 1: Case Studies on SLS:

Access the following case studies on SLS for further practice on this topic. You will need to login to your SLS account to access the resources.

<p>Case Study 1: Vaccination in Singapore</p>  <p>https://tinyurl.com/MFVaccinationCase2022</p>	<p>Case Study 2: Examining Public Transport in Singapore</p>  <p>https://tinyurl.com/MFTransport2022</p>
---	---

Part 2: Information failure in the healthcare and health insurance market

Article: Why Health Care Policy Is So Hard

“Nobody knew that health care could be so complicated.” President Trump said in February, yielding more than a few chuckles from analysts and late-night comedians.

But Mr. Trump’s statement raises some questions: Why is healthcare so complicated? How does it differ from most of the other goods and services that the economy produces? What makes health policy so vexing?

Health care spending can be unexpected and expensive. Spending on most things people buy — housing, food, and transportation — is easy to predict and budget for. But health care expenses can come randomly and take a big toll on a person’s finances.

Health insurance solves this problem by averaging risks among the population. But it also means that consumers no longer pay for most of their healthcare out of pocket. The large role of insurance companies reduces financial uncertainty but creates another problem:

Problem 1:

Insured consumers tend to overconsume. When insurance is covering healthcare expenses, people have less incentive to be cost-conscious. For example, if patients do not have to pay for each doctor visit, they are more likely to go to the doctor when they experience minor symptoms. Physicians may be more likely to order tests of dubious value when an insurance company is paying the bill. This is inefficiency at its worst: from money spent on costly procedures, to tests and medicines that provide little medical benefit, some actions are undertaken only because someone else is bearing the cost.

To discourage this waste, insurance plans charge co-payments. The logic is simple: if patients incur costs, they will think more carefully about the benefits. Are there downsides

to co-payments? Co-payments should dissuade over-consumption, prevent burdening of the state and reduce waiting times for everyone else. However, it should not discourage necessary medical care and definitely should not cause patients to fall into the crevice of medical bankruptcy.

Problem 2:

Insurance markets suffer from adverse selection. Another problem that arises is called adverse selection: If customers differ in relevant ways (such as when they have a chronic disease) and those differences are known to them but not to insurers, the mix of people who buy insurance may be especially expensive to insure.



Scan this QR code to learn more about adverse selection in insurance markets.

Adverse selection can lead to a phenomenon called the death spiral. Suppose that insurance companies must charge everyone the same price. It might seem to make sense to base the price of insurance on the health characteristics of the average person. But if it does so, the healthiest people may decide that insurance is not worth the cost and drop out of the insured pool. With sicker customers, the company has higher costs and must raise the price of insurance. The higher price now induces the next healthiest group of people to drop insurance, driving up the cost and price again. As this process continues, and more people drop their coverage, the insured pool is less healthy and the price keeps rising. Only the unhealthy is left in the market, and healthier consumers are not insured. In extreme situations, the insurance market may disappear.

The Affordable Care Act (a.k.a. Obamacare) tried to reduce adverse selection by requiring all Americans to buy health insurance or pay a penalty. This policy is controversial and has been a mixed success. More people now have health insurance, but about 12 percent of adults aged 18 to 64 remain uninsured. One thing, however, is certain: The existence of a federal law mandating that people buy something shows how unusual the market for health care is.

Problem 3:

Many significantly underestimate healthcare costs, life insurance needs and longevity. Nearly half of Americans feel more financially secure today compared to five years ago, but this security can mask blind spots that could undermine their long-term financial health.

More than half (51.4 percent) of people significantly underestimated how much life insurance they should have. This discrepancy could lead to many Americans being significantly underinsured, which could have serious implications for their loved ones.

Often, people don't have a realistic idea of their cost of living or how expensive things will be in retirement. Many people underestimate their likelihood of needing need long-term care and how much that care will cost.

The best way to navigate the problems of the healthcare marketplace is hotly debated. The political left wants a stronger government role, and the political right wants regulation to be less heavy-handed. But policy wonks of all stripes can agree that health policy is, and will always be, complicated.

Sources: The New York Times, Business Wire, Today Online

Problem 1: Moral Hazard

Read the article and focus on Problem 1 to answer the following questions:

- a. How does asymmetric information and moral hazard in the health insurance market lead to market failure in the healthcare market?

Some guiding questions:

- Which party has more information than the other? What information does this party have that the other does not have?
- Who bears the cost of risk-taking in this case?
- What undesirable behaviour may arise because of this?
- How might this result in a misallocation of resources in the market for healthcare?

Problem 2: Adverse Selection

Read the article and focus on Problem 2 to answer the following questions:

- b. How does asymmetric information lead to adverse selection and market failure in the health insurance market?

Some guiding questions:

- Which party has more information than the other? What information does this party have that the other does not have?
- Why might the transaction be unfair to the party that has less information?
- Why may high quality consumers be squeezed out of the market?
- How may this lead to a misallocation of resources in the healthcare insurance market?

Problem 3: Insufficient information

Read the article above and focus on Problem 3 to answer the following questions:

- c. How does insufficient information lead to an inefficient allocation of resources in the health insurance market?

Government intervention

- d. What can firms or governments do to mitigate adverse selection or moral hazard issues in the health insurance market?