

2020 International Economics Olympiad

China Finals

Economics Senior Level

(Multiple-choice Questions)

Answer version

Directions:

1. There are twenty questions.
2. Please write your answers on the answer sheet.
3. All of the 20 multiple choice questions will be graded (4 raw points for the correct answers, minus 1 raw point for the incorrect answers, and zero point for no answers).

Multiple-choice Questions

Answer Sheet

Contestant Name: _____

Contestant No.: _____

| Question Number | Answer |
|-----------------|--------|
| 1 | C |
| 2 | A |
| 3 | B |
| 4 | D |
| 5 | B |
| 6 | A |
| 7 | B |
| 8 | B |
| 9 | B |
| 10 | D |
| 11 | C |
| 12 | B |
| 13 | D |
| 14 | B |
| 15 | A |
| 16 | C |
| 17 | A |
| 18 | B |
| 19 | C |
| 20 | B |

1. The following table showing Steven's total benefit from purchasing apple and orange from grocery store.

| | Total benefit of apple (\$) | Total benefit of orange (\$) |
|---|------------------------------------|-------------------------------------|
| 1 | 24 | 24 |
| 2 | 42 | 42 |
| 3 | 54 | 54 |
| 4 | 60 | 60 |
| 5 | 63 | 63 |

Assume that price of an apple is \$3, and the price of an orange is \$6. Steven has a budget of \$30 to maximize her total benefit. Then a promotion campaign is made to drop the price of orange to \$3, and Steven still wants to spend all her money to maximize his total benefit.

The cross-price elasticity of demand for apple with respect to the change of the price of orange from \$6 to \$3 is ____

- A. -1
- B. 1
- C. -0.5
- D. 0.5

2. The table below shows the output a firm produces using different amounts of labor and capital. The market for labor and capital are perfectly competitive. The rental price is \$100 per unit, and the wage rate is \$250 per unit.

| labor | Output with one capital | Output with two capital |
|--------------|--------------------------------|--------------------------------|
| 0 | 0 | 0 |
| 1 | 8 | 18 |
| 2 | 18 | 55 |
| 3 | 25 | 80 |

Assume now that the firm currently has two units of capital and is using three units of labor. If the firm's output is sold in a competitive market, what is the lowest output price at which the third unit of labor would be hired?

- A.10
- B.15
- C.25
- D.35

3. Tom's bakery and Mary's bakery dominate the market in Jack's town. Tom is deciding whether to open at 8:00 a.m. or to open at 8:30 a.m., and Mary is deciding whether to provide individual cake design service or not. The payoff matrix below shows the annual profits for each combination of actions that the firms might be able to choose.

| | | Mary's bakery | |
|---------------------|-----------|-------------------------------|----------------------------------|
| | | Individual Cake Service | No individual Cake Service |
| Tom's bakery | 8:00 a.m. | \$26, \$20 | \$51, \$19 |
| | 8:30 a.m. | \$15, \$45 | \$40, \$39 |

Assume initially, both firms know all the information in the matrix and act simultaneously and independently. Then, Tom proposes a plan to cooperate with Mary. Tom would agree to 'open at 8:30 a.m.' and Mary would agree to 'no individual case service'. If either firm breaks the agreement, it must deduct \$10 from its profit, add to the other firm's profit. Mary is a profit-maximizing firm, and there are no antitrust concerns. If Mary accepts Tom's proposal, what will be Mary's new profit?

- A.19
- B.29
- C.39

D.49

4. A monopolist is in the market for space tourism. The demand for its service is discrete: consumers are eager to pay 12M USD for the first trip, 11M USD for the second trip, etc., up to 1M USD for the 12th trip. To organize a trip, the firm must spend 4M USD. What is the difference between the maximum profit that the monopolist can obtain with the perfect price discrimination compared to linear pricing?

- A. 4M
- B. 8M
- C. 12M
- D. 16M

5. Which of the following is correct?

- A. The Keynesian view argues that the economy cannot be below full capacity in the long term.
- B. The classical view suggests that real GDP is determined by supply-side factors: the level of investment, the level of capital and the productivity of labour.
- C. The new classical model shows the full employment level of output, which cannot exceed full employment level of output.
- D. When we need to show an inflationary gap, we should use the Keynesian model.

6. Which of the following is correct?

- A. An economic model's power stems from the elimination of irrelevant detail, which allows the economist to focus on the essential features of the economic reality he or she is attempting to understand.
- B. The optimization principle means prices adjust until the amount that people's demand of something is equal to the amount that is supplied.

- C. It is at least conceivable that at any given time peoples' demands and supplies are compatible, and hence something might not be changing.
- D. The reservation price is the lowest price that a given person will accept and still purchase the good.

7. The table shows average total cost and marginal cost for a firm in perfect competition for a range of output.

| Output | 1 | 2 | 3 | 4 | 5 |
|--------------------------------|----|-----|---|------|-----|
| Average total cost (\$) | 12 | 7.5 | 6 | 5.25 | 4.8 |
| Marginal cost (\$) | 3 | 3 | 3 | 3 | 3 |

What can be concluded from the above information?

- A. The firm is operating with diseconomies of scale.
- B. The firm's average variable cost is constant.
- C. The firm's fixed cost is \$12.
- D. The firm's revenue will not cover cost for this output if AVC is constant.

8. Which of the following is true?

- A. The indifference curve exhibits a diminishing marginal rate of substitution, which means that the amount of the good A that a person is willing to give up for an additional amount of good B as the amount of good A increases.
- B. The shape of indifference curves implies that they usually have negative slope.
- C. Perfect complements are goods that are always consumed together in fixed proportions, and they always show a slope of negative one.
- D. It is clear that transitivity of preferences is necessarily a property that preferences would have to have.

9. The firms in a perfectly competitive industry agree to form a monopoly. What would prevent a deadweight loss resulting?

- A. the government imposes a tax on the monopolist's product.
- B. the government requires the monopolist to charge price which equal to marginal cost.
- C. the government requires the monopolist to charge a breakeven price.
- D. the monopolist charges from first-degree price discrimination to the second-degree price discrimination.

10. Which of the following is correct?

- A. A premium reimburses you for hospital stays, doctors' visits, and medications.
- B. A premium is the amount your employer will pay for your health insurance coverage.
- C. Disability income insurance pays actual medical costs.
- D. Health insurance plans may reimburse an individual for hospital stays, doctors' visits, and medications.

11. A psychologist is making an experiment and tells the subjects of the following situation: a dreadful potential disease might cause 600 people to die. There are two treatment plans available. The result of plan A is expected that 200 people might be cured. The result of plan B is expected that 1/3 chances of all 600 people might be cured, and 2/3 chances of all 600 people will die. When facing such choices, the majority of the subjects choose plan A.

At the same time, the psychologist tells the subjects another two potential plans that might help to cure the 600 people. The result of plan C is expected that 400 people will die. The result of plan D is expected that 1/3 chances of all 600 people might be cured and 2/3 chances of all 600 people might die. When facing such choices, the majority of the subjects choose plan D.

The subjects' reaction to the above experiment shows which of the following economic theory?

- A. Survivorship bias
- B. Confirmation bias
- C. Framing effect
- D. Endowment effect.

12. Which of the following statement is right?

- A. Suppose the country's marginal tax by the country's taxpayers is as follows: for the first \$5000, the tax rate is zero; from \$5001 to \$10000, the tax rate is 10%; above 10000, the tax rate is 20%. Therefore, it is proportional over the range of income above 10000.
- B. If increased advertising by a firm in an imperfectly competitive industry leads to an increase in demand for the industry's product, but there is a fall in the firm's profit, this happens might because this firm's rival firms respond by increasing their advertising outlays.
- C. In an open economy, when autonomous investment increases by 100, equilibrium national income increases by 300, the marginal propensity to save plus marginal tax rate is $\frac{1}{3}$.
- D. Real output in an economy grows by 2.5%, but at the same time the level of employment decrease, and population of working age has fallen.

13. Real GDP grows by 2.5% in an economy, but at the same time, the level of unemployment increases. What can be deduced from the information?

- A. Productivity by the factors of production has decreased.
- B. Labor force has fallen.
- C. An increase of the rate of inflation.
- D. Actual output has grown more slowly than potential output.

14. Which of the following is correct?

- A. Tightening reserve asset requirements for financial institutions is classified as a U.S. government's policy measure.
- B. The fact that a government decreases the tax rate on goods and services is likely to make more equal distribution of income.
- C. Between 2002 and 2004, a country experienced economic growth but there was a fall in its Human Development Index. This phenomenon might indicate that the country's people's life expectancy increases.
- D. In the less developed economies, saving ratios might be high and population growth might be also high.

15. Which of the following statement is correct?

- A. By academic definition, the real exchange rate is high when goods abroad are relatively expensive, and the domestic currency has a relative low value.
- B. A traded weighted exchange rate is an exchange of the value of a currency against a basket of currencies. These are weighted according to the relative importance of this country's trade with that of other countries.
- C. A country uses managed float exchange rate. If the demand for the country's currency rises about the given band, the central bank would buy the domestic currency to increase the currency's supply.
- D. A reduction in the value of a fixed exchange rate to a lower level is known as depreciation, and an appreciation occurs when the government raises the exchange rate to a new and higher fixed rate.

16. Which of following statement is correct?

- A. If exports are inelastic, inflation might not cause current account deficit because foreign customers will still buy the exports even if the price of exports is high.
- B. A country's current account position is heavily influenced by its relative export and import prices. Multinational exchange rate is a measure of the ratio of export prices and import prices.

C. The Marshall-Leaner condition and J-curve work in reverse if a high exchange rate might increase current account deficit. A rise in exchange rate might reduce current account deficit in the short run before increasing the current account deficit in the long run.

D. The Prebisch-Singer hypothesis suggests that terms of trade tend to move towards primary producing countries.

17. Which of the following statement is correct?

A. A persistent rise in foreign currency reserves would identify a country with a fundamental balance of payments disequilibrium.

B. A corporation borrows money from a commercial bank in foreign countries in order to pay a lower interest rate than from banks from its local countries, capital account and primary income account in the balance of payment will be affected.

C. If a country has a surplus in its balance of payments, its money supply is likely to fall because more of its goods were purchased by foreign consumers than by consumers at home.

D. Reserve assets in balance of payment are kept to settle international debts and influence the value of the foreign exchange rate. Addition to the reserves are shown as credit items, while reductions to the reserves are shown as debit items.

18. Which of the following statement is correct?

A. Keynesians argue that holding money balance for speculative motive is interest inelastic.

B. Monetarists argue that attempts to reduce unemployment by increasing government spending will only succeed in raising inflation in the long run.

C. Milton Friedman believed that the role of government is to control money supply, so the government might help economy go out of unstable situation.

D. John Maynard Keynes firstly developed the intersection of the "investment–saving" (IS) and "liquidity preference–money supply" (LM) curves model.

19. When might destroy the results of fiscal expansion in increasing the level of GDP?

- A. when it leads the price of government bonds to increase.
- B. when there is a simultaneously increase in the money supply.
- C. when it results in the international value of its currency.
- D. when there is no inflation after the above action.

20. Which of the following is correct?

- A. An open market purchase of security by the central bank would result in a reduction in the volume of bank deposit.
- B. If a 7% increase in money supply results in a 5% increase in the level of money income, there might be a decrease in the velocity of circulation.
- C. A fall in the price of bonds would cause an increase in the transactions demand for money.
- D. Broad money consists of a range of items that are concerned with money's functions as a store of value.

(The end)

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(Open Questions)

Answer version

Directions:

1. Solve no more than 4 problems out of 5. Indicate your choice of problems on your paper.
2. If you provide solutions for all 5 problems, all of them will be commented by the Jury, but only 4 will be added to your score. In this case, if you do not specify which to grade, the maximum grade of 5 will be excluded.
3. Every problem is worth 30 points.
4. Please write your answers below each question.

Contestant Name: _____

Contestant No.: _____

Problem 1 Economic recession (30points)

In 2009 a recession occurred in America and Europe, and people's incomes fall as employers cut wages and jobs. While the sales of luxuries declined, consumers looked for something such as lipsticks. The recession has made consumers more likely to demand value for money.

In 2020, a pneumonia called COVID-19 spread across China and the world. As many people in America and Europe are compelled to stay at home, many industries have been hit hard. Meanwhile, it has been reported that the customers of online game, online education, online shopping have soared. Meanwhile, the government and central banks in American and European countries have initiated many plans to stimulate the economy.

Based on the above information, answer the questions:

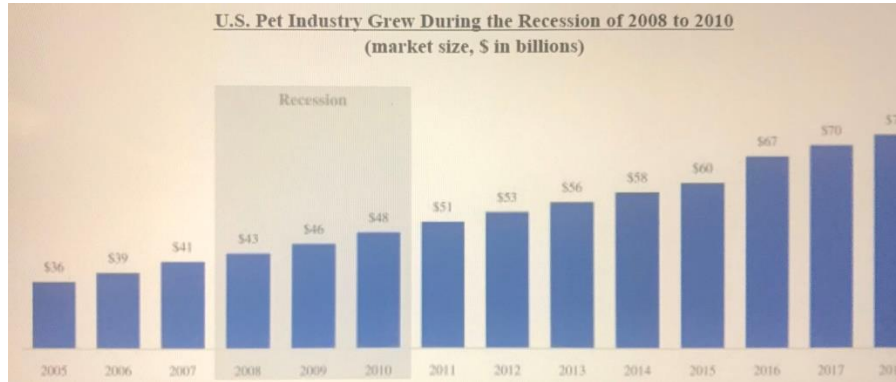
1. Explain with examples of the lipstick effect. In addition, explain with example how might the counter-cyclical industry work during the recession period? (10 points)

Key points: the lipstick effect is the theory that when facing an economic crisis consumer will be more willing to buy less costly luxury goods. Instead of buying expensive fur coats, women will buy expensive lipstick. The underlying assumption is that consumers will buy luxury goods even if there is a crisis. When consumer trust in the economy is dwindling, consumers will buy goods that have less impact on their available funds. Obviously, men will not be buying lipstick, but could be tempted by expensive beer or smaller, less costly gadgets. Many companies and factories have been closed down when the sports industry does not "decrease" but "increase" , sports goods production continue to benefit called "lipstick effect."

Best answers should explain clearly with examples about lipstick effect and how counter-cycle industry works. The answers should be logical with a conclusion.

Reference:

宠物经济就呈现非常鲜明的抗周期性，在 2008-2010 美国经济衰退期，总体消费都在缩减，而在宠物身上的消费去逆市上涨 12%，有兴趣具体了解一下吗？



2. Compare how the U.S or European government and central banks respond similarly and differently with these two economic recessions. (10 points)

Key points: the last one is subprime crisis and this one is because of the spread of COVID-19. Both U.S. and European central banks and government use expansionary fiscal policy (cut taxes and increase government debt) and monetary policy (lower the interest rate and QE) the difference might be that this time make a lot of transfer payment and lower the interest rate immediately and even larger QE etc.

Best answers should talk about the similarity and difference of the policies by either U.S.A or European countries. The answer should be able to use the economic terms and explain logically with a conclusion.

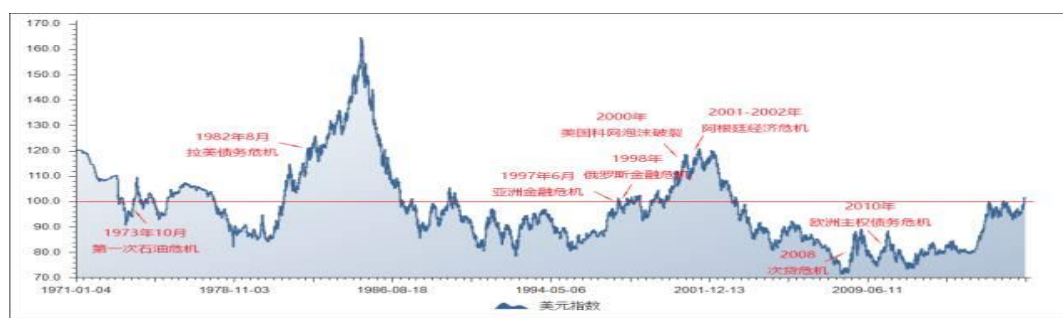
3. Discuss how the COVID-19 recession might affect the external debt and external value of the currency of emerging economy such as Brazil. (10 points)

Key point: the external debt will not be paid on time, and debt crisis and the substantial depreciation of local money.

Best answer should talk deeply with the influence of their external debt and value of their local currency. Short-term will be offset with the zero interest U.S dollar but long run depreciation of local currency and asset outflow and give a conclusion.

Reference:

近 45 年，世界范围内共发生了 8 次大的经济危机，其中 5 次发生在美元指数突破 100 的时间段内，1973 年第一次石油危机、2008 年次贷危机、2010 年的欧洲债务危机、拉美债务危机，亚洲金融危机，均为美元指数在 100 时发生。



| 国家 | 一季度汇率变化 (%) | 短期外债/GDP (%) | 短期外债/外储 (倍) | 经常账户余额/GDP (%) (过去3年均值) | 私人部门杠杆率 (%) | 外贸总额/GDP (%) |
|------|-------------|--------------|-------------|-------------------------|-------------|--------------|
| 阿根廷 | -7.1 | 19.5 | 2.23 | -3.57 | 21.10 | 31.89 |
| 巴西 | -22.5 | 4.3 | 0.23 | -1.87 | 72.60 | 28.63 |
| 波兰 | -8.4 | 9.4 | 0.49 | -0.16 | 79.50 | 109.30 |
| 俄罗斯 | -20.4 | 3.2 | 0.14 | 4.23 | 64.80 | 51.42 |
| 菲律宾 | -0.6 | 4.8 | 0.22 | -1.15 | N/A | 74.77 |
| 韩国 | -5.2 | 8.2 | 0.34 | 4.26 | 195.00 | 84.47 |
| 马来西亚 | -5.1 | 25.9 | 0.95 | 2.73 | 135.50 | 153.26 |
| 墨西哥 | -19.6 | 5.2 | 0.39 | -1.28 | 42.30 | 80.45 |
| 南非 | -21.4 | 10.0 | 0.75 | -3.04 | 74.80 | 65.27 |
| 泰国 | -9.0 | 11.0 | 0.28 | 7.39 | 115.80 | 126.39 |
| 土耳其 | -8.8 | 16.4 | 1.60 | -2.12 | 80.20 | 60.01 |
| 乌克兰 | -15.6 | 10.6 | 0.67 | -2.12 | N/A | 102.91 |
| 印度 | -5.3 | 4.0 | 0.25 | -1.52 | 56.00 | 42.86 |
| 印尼 | -15.1 | 4.2 | 0.38 | -2.42 | 40.50 | 41.45 |
| 越南 | -0.3 | N/A | N/A | 2.21 | N/A | 208.31 |
| 智利 | -10.9 | 7.8 | 0.56 | -3.25 | 153.10 | 58.42 |

阿根廷目前有违约风险的外债达 660 亿美元，除了阿根廷之外，巴西受疫情影响严重，经济几近崩溃。巴西货币雷亚尔，今年已经下挫了 40%。

据 2018 年的统计，新兴市场的债务规模已经达到 400 亿之巨，是其 GDP 总和的 170%，过去十年，新兴市场债务增长了 54%，未来三年迎来还债的高峰期，偏偏在这时，疫情发生了，美元飙升了。

新兴市场的经济比较单一（例如：泰国 12% 的 GDP、牙买加 34% 的 GDP 来自旅游业，尼日利亚政府预算 65% 来自于卖石油），借美元外债是新兴市场发展经济的重要手段。因为美元汇率比较稳定，汇率风险比较小；大家都喜欢借美元。这几年新兴市场国家债务一直上升，与 2008 年全球金融危机期间，许多发展中国家的情况甚至还倒退。尽管整体新兴市场外债规模 400 万亿，但好在美元处于零利率，而且美联储从 2 月以来印了大量钞票，美元泛滥，这二方面对冲了美元指数上升带来的风险。但如果巴西、南非等相继违约，可能引发市场恐慌。

新兴市场危机对中国的影响相对较小一些，因为我们外债较少，同时外汇管制，资本的流动基本上是体内循环。但是，如果新兴市场持续暴雷，可能导致部分外资回流美国。美元上升，人民币汇率承受压力。近期，因为疫情导致海外对中国情绪发生变化，德意志银行调查显示：41% 的美国人表示不再买中国货。中美贸易关系最近又有些恶化，美国对中国科技的封锁，从华为开始，目前逐步升级，这对许多依赖海外技术的上市公司，可能构成威胁，特别是高估值的伪科技公司，面临价值重估。但是，美国的技术封锁，可能加速国产软硬件替代化进程。

Problem 2 Starbuck Coffee (30 points)

The costs of most of Starbucks coffee, such as Americano, Café latte, and Mocha vary by only a few cents. However, the prices are dramatically different, as the largest Vanilla iron can be nearly RMB38, with the smallest Americano being around RMB25 in Beijing. In the meantime, the average prices of Starbucks coffee are charged significantly around the world.

Answer the following questions:

1. Starbucks is trying to separate the market between price conscious customers and those who are 'price blind.' By using the economic theory, explain why Starbuck is using different prices and different strategies to increase the sales of their coffee. (10 points)

Key points:

(1) Second-degree price discrimination:

Second-degree price discrimination acknowledges the observation that consumers may choose to buy additional amounts of a good if the price decreases. Thus, firms may offer lower prices with the purchase of successively larger quantities: the first batch sold will be at the highest price, the second at a lower price, and so on.

Instances of this kind of price discrimination by quantity include:

- a. 'buy two, get one free' offers in retail markets of food and consumer items (here, buying items in threes reduces the average price, while technically preserving the higher price of the first two units).*
- b. frequent-flyer programmes that award free or reduced rate flights to good customers.*
- c. season tickets for concerts or sports team events*
- d. public utility companies charging less for extra units of power or water.*
- d. bulk buying on behalf of a company (a manufacturer of large family cars probably pays less per unit for auto-quality steel than does a much smaller sports car company).*
- e. rewards programmes of all kinds, offered by many retail stores, which offer special deals and discounts to loyal buyers.*

In the case of Starbucks, loyalty customers are offered free drink etc.

(2) Third-degree price discrimination acknowledges and takes advantage of the fact that different consumer groups have differing price elasticities. It moves to separate the groups and charge them the highest price possible. This type of price discrimination is quite prevalent, and can be seen in

- a. bars offering 'happy hours' when drink prices are lower to draw customers in at an unusual or off-peak times;*
- b. women being charged more for dry cleaning than men;*
- c. phone companies offering lower prices at off-peak times (weekends and evenings);*
- d. airlines charging more to customers who book closer to flight date;*
- e. restaurants and cinemas charging less to children, elderly people and students.*

In the case of Starbucks, customers of different groups are charged differently.

Best answers should use the second and third price discrimination and other economic theory to explain how Starbucks treat different customers to increase their revenue and profit.

2. Even though Starbucks has a world supply chain of Coffee, the average prices sold around the world are significantly different. Using economic theory, discuss the possible reasons why the average price of Starbucks coffee is sold significantly different around the world. (10 points)

Key points:

The problem is getting these materials from point A to point B. "Transporting coffee beans from, say, Colombia to the port of Tianjin is about the same as transporting them from Colombia to the port of Los Angeles," says David Wolf, a public relations professional and expert in Chinese business.

For example, "It's getting them from the port in Tianjin to the store in Beijing that's expensive." China has invested billions of dollars over the years to improve its port and transportation infrastructure, but the combination of taxes, fees, and middle-men add to logistics costs—which are then passed on to customers in the form of marked-up frappuccinos and lattes

Financial analysts attribute these exorbitant prices to the fact that in these countries Starbucks is positioning itself as a luxury brand, designing elaborate, high-end coffee houses, tapping into the culture of how Starbucks represents American affluence. Whereas in the US Starbucks customers range from corporate executives to teenagers, in these countries the coffee chain is seen as exotic, and a sign of elevated status.

Reference:

在温哥华，一杯星巴克只要 3.38 美元，25 元人民币都不到。而在圣地亚哥、布宜诺斯艾利斯、伊斯坦布尔、马尼拉、开罗、利马等城市，星巴克相当便宜，只要 3 美元左右就能喝到。一杯星巴克在里还不到 1.5 美元，10 块人民币还不到。连锁品牌，星巴克在全球售价差这么多呢。主要原因：(1) 人工成本：星巴克在全球的价格差异，大致是符合市场经济规律的。售价排名前十的国家里，大部分都是发达国家。因此，在这些国家，星巴克员工的工资水平也要比其他国家高很多。比如在瑞士、挪威、德国等国家，服务业员工待遇相当高，无形中，这就推高了星巴克用人成本。而这些人工成本最终会算到消费者 (passed on to customers) 头上，因此价格高 (marked-up price) 自然就不奇怪了。(2) 物流费用差异大。上乘的咖啡豆，才能烘焙出上等的咖啡。但是，因为气候原因，咖啡豆只在地球特定地区才能种植起来。这些地方位于中低纬度，气温比较高，被称为咖啡种植地带 (The Bean Belt)。



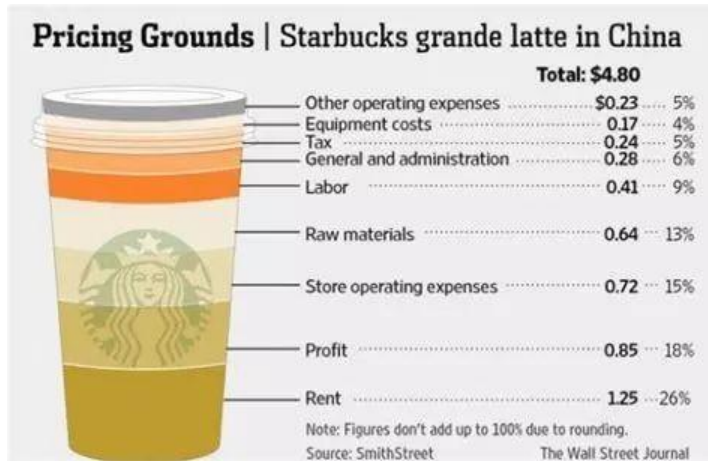
因此，对于很多北半球国家来说，比如所有欧洲国家、北美、中国等在内的亚洲国家的星巴克门店来说，把咖啡豆从原产地运输到这些门店，物流费是一笔非常大的开支。而对于处在咖啡种植地带的国家，比如巴西、印度、菲律宾来说，当地就产有咖啡豆，星巴克根本不需要出运输费，所以咖啡价格自然就低啦。

此外，各国的基础建设、物流运输成本，也会直接影响各地星巴克咖啡价格。把咖啡豆从原产地哥伦比亚运输到天津港的价格，和咖啡从哥伦比亚运到洛杉矶费用差不多。

但将这些豆子再从天津港送到北京的开销就大了。近年来，虽然中国加强了港口建设、运输设备性能提高，但是税费等其他开支都算到物流费里，最终这些开支都转嫁到了消费者买咖啡的账单上。（3）星巴克的体验溢价：抛去这些经济因素，星巴克还贵在它的“体验溢价”。正如《逻辑思维》的罗振宇，曾说过：

过去的消费者花钱买东西，是为了满足衣食住行的基本需求；而现在，消费者追逐的是体验，以及体验给自己带来的人生意义。星巴克带来的是一种中产、小资的体验，是商务人士和办公室白领的身份象征。这种体验感，就如同买 Gucci 包包、迪奥香水、圣罗兰美妆一样，带来的一种高端感和成就感。这就是为什么：即使中国普通民众的人均年收入约 7200 美元/年，而美国普通民众的收入是中国的 6.5 倍。但在中国，星巴克依旧生意红火。毕竟，在中国，星巴克已经不再是咖啡饮品这么简单了，更是一种高端的身份体验。

这些国家（中国和俄罗斯），星巴克被定位为奢侈品牌，咖啡屋设计高端，标榜的是该品牌所代表富足美国的文化形象。然而，在美国，星巴克消费者层次不等，既有公司高管，也有普通青少年。但在中美，星巴克代表的是带有外国情调的高端产品。在中国门店售卖的一杯中杯拿铁(Grande latte)，这里的利润到底有多少？一杯咖啡，又分别有哪些成本费用吧。价格剖析——中国星巴克中杯拿铁价格包括哪些？



（图表来自《华尔街日报》）

在中国星巴克，门店租金是最烧钱的。我们买的一杯星巴克咖啡，26%的钱都是星巴克用来付房租的。此外，门店运营费、原材料费也是大头，分别占到了15%和13%。当然啦，刨去所有的成本，一杯星巴克咖啡大概有18%的利润呢。

3. You have heard the scandal of another coffee brand: Luckin. Explain the market failure of Luckin coffee. Be specific and discuss how, and to what extent, they harm the society. (10 points)

Key point: information failure, moral hazard and adverse selection etc.

Best answer should explain clearly and specifically how each market failure will harm the society.

Problem 3 ETC and the gasoline charge (30 points)

As the electronic toll collection (ETC) system has been widely used in the Expressway throughout China, the passing efficiency has been greatly increased. However, a lot of people prefer not use ETC because the charges paid by ETC tends to be high than that of staff services.

1. Discuss the advantages and disadvantages of using ETC service in Express way. List some suggestions to improve the service of ETC. (10 points)

Key points:

Advantages: There has been a new change in the highway toll standard, that is, the system of abolishing toll stations at the provincial boundary has been implemented, and the manual toll is accurate to "yuan". However, ETC charges are accurate to "cents". In addition, trucks are also adjusted to charge according to vehicle models, but the total fee does not increase .It stands to reason that the use of ETC can improve driving efficiency and reduce traffic congestion, allowing car owners to quickly charge at high speeds.

(中文参考：)

优势：高速公路收费标准有了新变化，那就是实行了取消省界收费站制度，人工收费精确到“元”。而ETC收费精确到“分”，此外，货车也调整为按车型来收费，但总费额不上涨，按道理说，使用ETC后可以提高行驶效率，和缓解交通拥堵，让车主可以快速办理高速收费。



Disadvantages:

The highway billing accuracy is higher, so the highway fee is a bit more expensive than before. The same situation occurs in all toll stations, that is, the ETC channel is more blocked than the manual channel, because once the ETC charge fails, the manual channel will be more efficient to handle the charges. Many ETC car owners have discovered many charges of unknown origin. In addition to the cost of taking the highway, there are also a lot of a few dollars and a few cents. The date is even more messy, and some ETC owners have discovered that their cards have been stolen.

(中文参考：)

劣势：高速公路的计费精确度更高了，所以高速费就比之前贵了点。收费站都出现同一种情况，那就是 ETC 通道比人工通道还要堵，因为一旦 ETC 收费出现故障时，反而走人工通道办理收费效率会更高。不少 ETC 车主发现很多来历不明的收费，除了走高速公路的费用，还有很多几块几毛的费用，日期更是一塌糊涂，而且还有个别 ETC 车主发现自己的卡被盗刷。

*Suggestions: 1. Update the equipment to ensure the proper operation of ETC equipment
2. Update the equipment to make it to calculate correctly 3. Lower the cost of charge by ETC etc.*

Best answer needs to explain logically both sides with a conclusion.

2. Similar to pay entrance fee on expressway, drivers need to pay for gasoline. As a lot of countries' governments continue to increase the tax for gasoline, the gasoline prices might continue to increase. Discuss the consequences of the introduction of an indirect tax on gasoline (petrol) for consumers, producers, and the government. (10 points)

Key points:

When the government imposes taxes on gasoline, consumers will be the biggest victim because they have to use it even when the price increases. They will share more burden than producers do.

For gasoline producers, their total revenue will decrease, but not as much as their counterparts in other markets with more elastic demand will do. After the tax is imposed, producers will increase the price while quantity demanded will not decrease a lot since the demand for gasoline is inelastic. However, they will still suffer because they cannot transfer all the taxes to consumers since it will cause surplus in the market. Producers have to share some of the tax burden, although the burden might be smaller than consumers. Their total revenue will decrease.

Government will be the biggest winner. Their revenue will increase, especially for goods with inelastic demand since the quantity demanded will not be influenced too much by taxes and thus the government is able to collect as much revenue as possible without worrying about serious unemployment problems. However, in the long run things might be different. People might create new energy as substitutes to gasoline. Therefore, the demand for gasoline will become more elastic, which will cause producers to share more tax burden because sales will drop significantly if producers transfer too much tax burden on consumers. If producers share too much taxes, their total revenue will decrease which might cause unemployment. Then the government will have to deal with the problem. That is why government always prefers to impose taxes on goods with inelastic demand.

答题提示:

答案最好从不同利益相关者角度分析汽油税的影响，并且考虑了从短期到长期市场发生的变化以及可能的造成的结果。

征收的高额汽油税收，是好环境和免费高速公路必要的成本。而公众之所以抱怨油价高，是因为他们根本没有从成品油征税中获得任何好处，相反是付出了更大的成本。

每隔一段时间，中石化的官方微博就会转发世界各国油价排行，根据微博中的数据显示，中国的油价比美国高但比英德低，居世界中游位置。同时微博还指出，中国汽油价格中税收占比约 50%，美国约 15%、英国 59%、德国 56%。

这几年来，油价太高一直为公众所诟病。中石化这一微博可谓石油公司回应公众的质疑和批评的经典案例。国际比较来看，油价的差异主要体现在两个方面：第一，针对汽油征收的税费，第二，汽油品质和开采炼油效率等。中石化的微博正好是从这两方面来回应的。

据全球汽油价格网的数据对比各国汽油价格中的税收占比可见，附加在汽油上的税收是各国油价差异的最大因素。

其实，高税负本身并没有问题。欧洲汽油的税负高，但欧洲英德挪威等国家环境之好也是全球共知，其在履行碳排放的减排义务，德国等国家也通过提高汽油税来限制汽油消费，同时这些国家的高速公路大多也是免费通行。所征收的高额汽油税收，是好环境和免费高速公路必要的成本。相比之下，美国降低碳排放的动力不如欧洲强，燃油税也只用于支付高速公路的修建和养护，税率就要低得多。这也是美国油价仅为德国一半的原因。

对比之下，中国油价中的税收包括增值税、消费税和附加费。根据商务部石油行业经济运行的数据，2013 年全国消费成品油为 2.51 亿吨，据国家统计局的数据，其中交运邮政行业的汽油和柴油的消费量分别为 0.38 亿吨和 1.07 亿吨。成品油消费税从量，价内征收，按 2013 年的税率计算，每年至少征收 1500 亿。而成品油的增值税从价，价外征收，由于 2012-2013 年油价较高，成品油的增值税总额预计要超过消费税，税额也将超过 1500 亿。两者合计税额就高达 3000 亿。这个规模的税收是什么概念？2012 年全国收费公路的通行费收入也不过 3281 亿元。

为什么公众会抱怨油价高？因为他们根本没有体会到从成品油征税的好处。2008 年，中国进行成品油税费改革，取消征收公路水路的养路费、附加费等六费以及其他收费，捆绑在油价上提高成品油消费税，当年每升汽油的消费税一下子从 0.2 元调整为 1 元。这么多年下来，公众没有感受到消费税提高带来的好处，虽然政府还贷的二级及以下等级公路可以免费通行，但高等级公路大多都是收费公路，通行费收入甚至是新增消费税的 200% 以上。而且，去年 11 月以来的连续三次提高成品油消费税，按 2013 年成品油消费量进行估算，三次提税为 2015 年税收增长的贡献将超过 1600 亿，相当于消费税率翻倍，是 2014 年全国总税收的 1.54%。

回过头来再看中美两国的税收。中国高速公路里程全球第一，为 11.2 万公里，美国也不少，近 9 万公里，美国的公路总里程是 651 万公里，比中国多出 200 万公里。但美国多数公路（包括高速）是免费通行，道路修建养护资金从公共财政和燃油税中提取。相比之下，中国的高速公路既是收费的，又有公共财政的投入，征收税率又远超过美国的成品油税收。这样的油价又怎么能不被吐槽呢？

征收的高额汽油税收，是好环境和免费高速公路必要的成本。而公众之所以抱怨油价高，是因为他们根本没有从成品油征税中获得任何好处，相反是付出了更大的成本。

3. Using examples, discuss whether the indirect tax is better than direct tax in regulating the economy. (10points)

Key point: direct tax on income, indirect tax on consumption and can be transferred to others. Direct tax might be better because it taxes directly to the party which should pay.

Best answer should explain whether direct tax is better in allocating resources with a conclusion.

Problem 4 Economic Growth and garbage sorting (30 points)

The new classical growth model with technological innovation is $Y = F(AN, K)$, where AN means effective working (the level of technology A times the working N), and K means capital. The new classical growth model assumes that the output is the function of effective working and capital. As time goes on, the working efficiency has been improved significantly. The example that has most influence on improving the efficiency during the 20th century is the mass production of assembly line by Ford and owing to this technological innovation, the time for assembling the main components of an automobile has been shortened from 12.5 hours per automobile to 1.5 hours per automobile.

1. Using the economic theory that you have learned in your class and the above new classical growth model, discuss the possible factors of economic growth. (15 points)

Key point: economics growth is from effective working: level of technology and the effect of working. How the technology will lead to economic growth? How hard working will lead to economic growth? How the accumulation of capital will lead to economic growth? How to combine them to make economic growth? Which factors are most important depends on time and depends on different countries?

Best answer should explain the theory of economic growth and discuss the different factors with some application and deep analysis. The essay need to evaluation which factors are most important and with a conclusion.

2. Using the economic theory that you have learned about economic growth and economic development in your economic class, discuss whether the garbage sorting will be helpful with the economic growth and economic development? (15 points)



Key points: garbage might create environmental problem(some of the pollutants cannot be easily dissolved) and healthy problem (people eat the elements of garbage from their food) . In addition, the recycle some of the garbage will create some economic welfare. The theory can be HDI, real GDP per capitaetc. garbage sorting might create new job opportunities.

Best answer should give clear and logical explanations about two reasons why garbage sorting will create economic growth and economic development. The essay should use economic theory such as GDP, GNP, real GDP per capita, HDI, single indicator of economic development and with a conclusion.

Problem 5 Cake Consumption (30 points)

Tom, Mary, Jack and William are siblings in a family.

Situation 1: Tom likes the cake of orange flavor, and Mary likes the cake of lemon flavor; Jack likes the apple flavor, and William likes the cake of cheese flavor. Their mother bought a cake which has the orange flavor, lemon flavor, cheese flavor and apple flavor, and the cake is split into 4 equal pieces randomly.

Question: Is there Pareto equilibrium and (or) Pareto improvement? Why? (15 points)

Key points: if the pieces that all of 4 kids get are exactly the flavor that they like, then it is Pareto equilibrium. If there is condition that the exchange between the four kids will make them to have more of the pieces of cake of their favorite flavor, then there is Pareto improvement.

Best answer should make a clear and logical analysis of the Pareto equilibrium and Pareto improvement with a conclusion

Situation 2: Their mother wants to split one cake into four pieces and distribute each piece to her kids. Every kid wants to eat as much cake as possible. If at first their mother asks William to cut the cake into four pieces by the way he likes, then each of his siblings takes their pieces orderly and William will take his piece at the end.

Question: How will William cut the cake to make each one of her siblings and himself all happy? (5 points)

Key points: divide them into 4 equal pieces.

Best answer should explain this answer and explain the reason.

Situation 3: Their mother wants to split one cake into four pieces and distribute each piece to her kids. Every kid wants to eat as much cake as possible. Neither child is happy if he or she gets less than a certain share of a cake. In particular, Tom will be happy if he gets at least a piece of size x , Mary needs at least y , Jack needs at least z , and William needs at least p . For every kid, getting a piece of the minimum required size is better than getting no cake, which is, in turn; better than getting a piece of less than the minimum required size. If one kid is already happy, he or she nevertheless prefers getting more cake to less cake. Their mother knows that the total piece of the cake is one, but she does not know how big the least a piece that each of her four kids wants, and her four kids know all the four numbers.

Question: Under which mechanism of x , y , z and p ensures each of the four kids to be happy? (10 points)

Key points:

(1) $x+y+z+p \leq 1$.

(2) *The following mechanism can be applied:*

William (or any one of the kids) offers some distribution of the cake to her siblings.

Each of the siblings then votes in or against this distribution. All the other three siblings have incentives to accept such distribution because they will get nothing otherwise. Otherwise, no one gets anything. (0 is better than not satisfied piece)

Best answers should mention clearly about the arrangement logics.

(Notes: This question is from IEO open question 2019 and I have made some changes to this questions)

(The end)