厦门大学《经济学原理》课程试卷

王亚南经济研究院 2018 年级经济学本科国际化试点班

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试卷类型:(A 卷)

Principles of Economics

Final Examination

Multiple Choices (2 points each)

1. Information tend to be non-excludable because it can be spread easily, and non-rival in consumption because one person's "consumption" of information does not directly diminish another person's "consumption" of information. Hence, information tend to be a

   (a) private good.

   (b) **public good.**

   (c) club good.

   (d) common resource.

2. Suppose that electricity producers create a negative externality equal to $5 per unit. Further suppose that the government gives a $5 per-unit subsidy to producers. What is the relationship between the equilibrium quantity and the socially optimal quantity of electricity to be produced?

   (a) They are equal.

   (b) **The equilibrium quantity is greater than the socially optimal quantity.**

   (c) The equilibrium quantity is less than the socially optimal quantity.

   (d) There is not enough information to answer the question.

3. By driving onto a congested road for which no toll is charged, a driver

   (a) contributes to the overuse of a common resource.

   (b) contributes to a negative-externality problem.

   (c) is inflicting additional time cost on all of the other drivers.

   (d) **All of the above are correct.**

4. Ty lives in an apartment building and gets a benefit from playing his stereo. Olivia, who lives next door to Ty and often loses sleep due to the loud music coming from Ty's stereo, bears a cost from the noise. Olivia is threatening to call the police to force Ty to turn down his stereo. Under which of the following conditions would Ty be able to offer Olivia some amount of money to keep her from calling the police and to allow him to continue to play his stereo loudly?

   (a) The cost of the noise to Olivia must exceed the benefit of the music to Ty.

   (b) **The benefit of the music to Ty must exceed the cost of the noise to Olivia.**

   (c) The Coase Theorem guarantees that Olivia and Ty will always be able to come to an agreement that keeps Olivia from calling the police regardless of the individual benefits and costs.

   (d) The cost of the noise to Olivia must exceed the benefit of the music to Ty by an amount greater than the transaction costs associated with the agreement.

5. The following table shows the private value, private cost, and external cost for various quantities of output in a market.

Quantity	*Private Value*	*Private Cost*	*External Cost*
1	$14	$10	$2
2	13	11	2
3	12	12	2
4	11	13	2
5	10	14	2
6	9	15	2
7	8	16	2

   Which of the following statements is correct?

   (a) If the external benefit per unit of output were $0 instead of $2, then the socially efficient quantity of output would be 4 units.

   (b) A tax of $4 per unit would enable this market to move from the equilibrium quantity of output to the socially optimal level of output.

   (c) **Taking the external cost into account, total surplus declines when the 3rd unit of output is produced and consumed.**

   (d) The market for flu shots is a market to which the concepts in this table apply very well.

6. The Carters' oldest son attends Big State University. He and his parents pay all his fees and tuition. These payments count in GDP as

   (a) investment.

   (b) government spending.

   (c) **consumption of services.**

   (d) consumption of durable goods.

7. An American company operates a fast food restaurant in Paris, France. Which of the following statements is accurate?

   (a) The value of the goods and services produced by the restaurant is included in both French GDP and U.S. GDP.

   (b) **The value of the goods and services produced by the restaurant is included in French GDP, but not in U.S. GDP.**

   (c) The value of the goods and services produced by the restaurant is included in U.S. GDP, but not in French GDP.

   (d) None of the above is correct.

8. Which of the following items is included in GDP?

   (a) the sale of stocks and bonds

   (b) **the sale of services such as those performed by a doctor**

   (c) the sale of used goods

   (d) All of the above are included in GDP.

9. Which of the following values would be included in U.S. GDP for 2009?

   (a) The rent that Sean, an American citizen, would have paid on his home in New York in 2009 had he not owned that home.

   (b) The rent that John, an American citizen, paid on his apartment in San Francisco in 2009

   (c) The value of the legal services provided by Juan, an attorney and a Mexican citizen, who lived in Houston and practiced law there in 2009.

   (d) **All of the above would be included in U.S. GDP for 2009.**

10. A Mexican company operates a restaurant in the U.S. The value of the restaurant's output produced by Mexican citizens and the equipment they own is included in

    (a) U.S. GNP and Mexican GNP.

    (b) U.S. GNP and Mexican GDP.

    (c) **U.S. GDP and Mexican GNP.**

    (d) U.S. GDP and Mexican GDP.

11. Which of the following is correct?

    (a) The GDP deflator is better than the CPI at reflecting the goods and services bought by consumers.

    (b) **The CPI is better than the GDP deflator at reflecting the goods and services bought by consumers.**

    (c) The GDP deflator and the CPI are equally good at reflecting the goods and services bought by consumers.

    (d) The GDP deflator is more commonly used as a gauge of inflation than the CPI is.

12. The CPI was 172 in 2007, and the CPI was 46.5 in 1982. If your parents put aside $1,000 for you in 1982, then how much would you have needed in 2007 in order to buy what you could have bought with the $1,000 in 1982?

    (a) $270.35

    (b) $1,255.00

    (c) $2,698.92

    (d) **$3,698.92**

13. Suppose that in 2010, the producer price index increases by 2 percent. As a result, economists most likely will predict that

    (a) GDP will increase in 2011.

    (b) the producer price index will increase by more than 2 percent in 2011.

    (c) interest rates will decrease in the future.

    (d) **the consumer price index will increase in the future.**

14. In the calculation of the CPI, sweaters are given greater weight than jeans if

    (a) the price of sweaters is higher than the price of jeans.

    (b) it costs more to produce sweaters than it costs to produce jeans.

    (c) sweaters are more readily available than jeans are to the typical consumer.

    (d) **consumers buy more sweaters than jeans.**

15. In an imaginary economy, consumers buy only sandwiches and magazines. The fixed basket consists of 20 sandwiches and 30 magazines. In 2006, a sandwich cost $4 and a magazine cost $2. In 2007, a sandwich cost $5. The base year is 2006. If the consumer price index in 2007 was 125, then how much did a magazine cost in 2007?

    (a) $0.83.

    (b) $2.25.

    (c) **$2.50.**

    (d) $3.00.

16. In a small closed economy investment is $50 billion and private saving is $55 billion. What are public saving and national saving?

    (a) $60 billion and $5 billion

    (b) $50 billion and -$5 billion

    (c) $5 billion and $60 billion

    (d) **-$5 billion and $50 billion**

17. A closed economy has income of $1,000, government spending of $200, taxes of $150, and investment of $250. What is private saving?

    (a) $100

    (b) $200

    (c) **$300**

    (d) $400

18. If a popular TV show on personal finance convinces more Americans about the importance of saving for retirement, the _____ curve for loanable funds would shift, driving the equilibrium interest rate _____.

    (a) supply, up

    (b) **supply, down**

    (c) demand, up

    (d) demand, down

19. Suppose a country has a larger increase in debt in 2014 than it had in 2013. Then other things the same,

    (a) the supply of loanable funds shifts rightward and the interest rate falls.

    (b) **the supply of loanable funds shifts leftward and the interest rate rises.**

    (c) the demand for loanable funds shifts leftward and the interest rate falls.

    (d) the demand for loanable funds shifts rightward and the interest rate rises.

20. Suppose the government deficit increases, but the interest rate remains the same. Which of the following things might have happened simultaneously to keep interest rates the same?

    (a) The government reduces the amount that people may put into savings accounts on which the interest is tax exempt.

    (b) Because they are optimistic about the future of the economy, firms desire to borrow more to purchase physical capital.

    (c) **Consumers decide to decrease consumption and work more.**

    (d) All of the above could explain why the interest rate would be unchanged.

Problems

Problem 1 (10 points)

Consider an economy that produces only chocolate bars. In year 1, the quantity produced is 3 bars and the price is 4 dollars. In year 2, the quantity produced is 4 bars and the price is 5 dollars. In year 3, the quantity produced is 5 bars and the price is 6 dollars. Year 1 is the base year.

1. What is nominal GDP for each of these three years? (3 points)
   Answer: Year 1: $3 \times 4 = 12$ **dollars; Year 2:** $4 \times 5 = 20$ **dollars; Year 3:** $5 \times 6 = 30$ **dollars;**

2. What is real GDP for each of these years? (3 points)
   Answer: Year 1: $3 \times 4 = 12$ **dollars; Year 2:** $4 \times 4 = 16$ **dollars; Year 3:** $5 \times 4 = 20$ **dollars;**

3. What is the percentage growth rate of real GDP from year 2 to year 3? (1 point)
   Answer: The growth rate of real GDP from Year 2 to Year 3 is $(20-16)/16 \times 100\% = 25\%$

4. What is the inflation rate as measured by the GDP deflator from year 2 to year 3? (3 points)
   Answer: The GDP deflator of year 2: $20/16 \times 100 = 125$**; The GDP deflator of year 3:** $30/20 \times 100 = 150$**; The inflation rate from Year 2 to Year 3** $(150 - 125)/125 \times 100\% = 20\%$.

Problem 2 (10 points)

1. Recall that based upon the expenditure approach, GDP can be decomposed into four components. What are the four components? (4 points)
   Answer: Consumption, investment, Government spending and net export.

2. What components of Chinese GDP (if any) would each of the following transactions affect? Briefly explain. (6 points)

   (a) You buy a new house.
   Answer: Investment increases because a house is an investment good.

   (b) Xiamen City government builds a new metro.
   Answer: Government purchases increase because the government spent money to provide a good to the public.

   (c) Your parents buy a bottle of French wine.
   Answer: Consumption increases because the bottle is a good purchased by a household, but net exports decrease because the bottle was imported.

   (d) Dongfeng Motor Corporation[1] sells a car from its inventory
   Answer: Consumption increases because a car is a good purchased by a household, but investment decreases because the car in inventory had been counted as an investment good until it was sold.

Problem 3 (10 points)

Compute how much each of the following items is worth in terms of today's dollars using 300 as the price index for today.

1. In 1926, the CPI was 15 and the price of a movie ticket was \$0.25. (4 Points)
2. In 1932, the CPI was 60 and a cook earned \$15.00 a week. (3 Points)
3. In 1943, the CPI was 100 and a gallon of gas cost \$0.1. (3 Points)

Ans:

1. **The movie ticket is worth** $\$.25 * 300/15 = \$5$ **in today's dollars.**
2. **The cook's weekly wage is worth** $\$15.00 * 300/60 = \$75$ **in today's dollars.**
3. **The gallon of gas is worth** $\$.1 * 300/100 = \$0.3$ **in today's dollars.**

[1] A Chinese firm

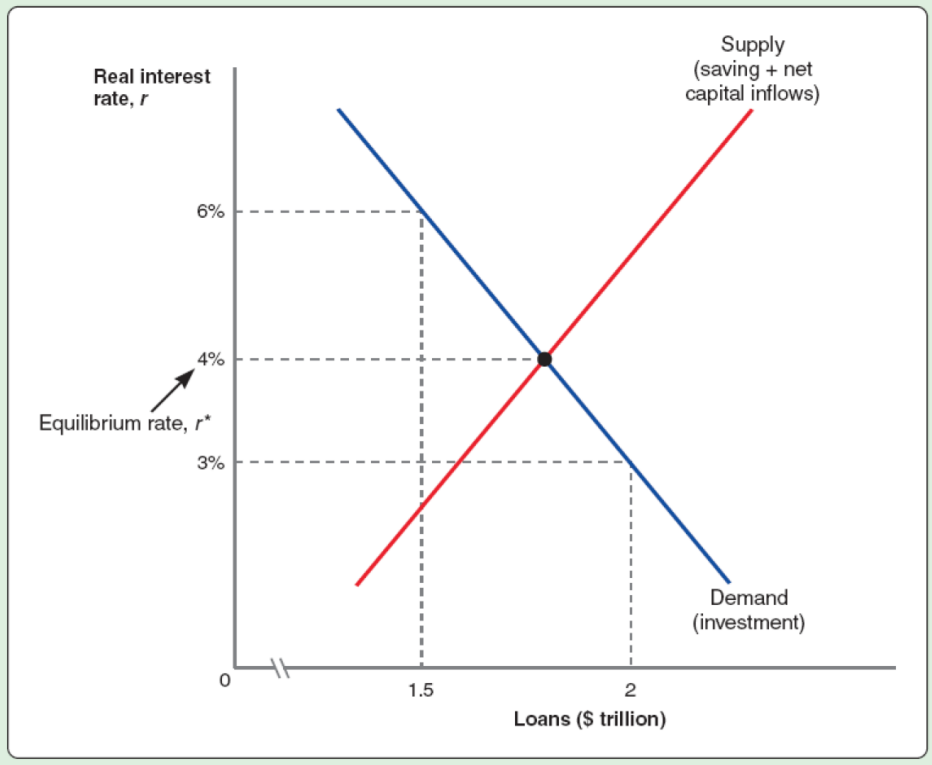
Problem 4 (10 Points)

The relationship between real interest rate r and nominal interest rate i is given by the Fisher equation:

$$i = r + \pi^e$$

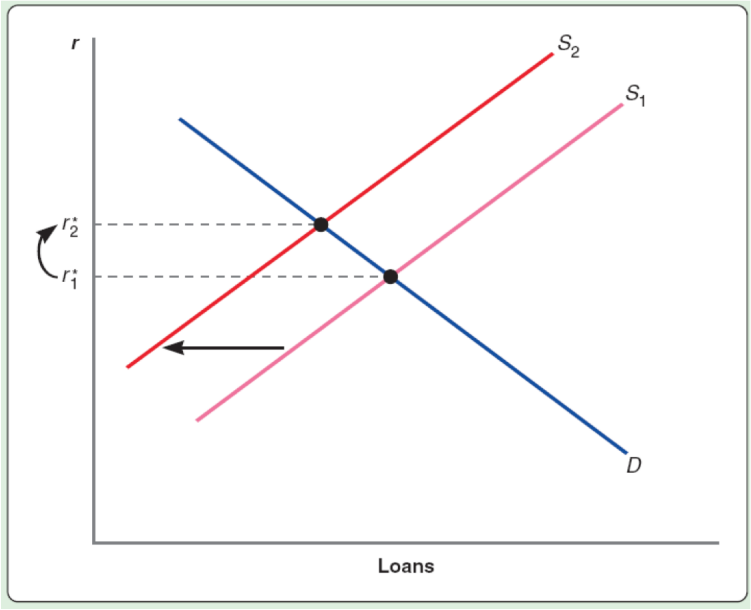
, where π^e is expected inflation.

Suppose the economy is closed and the loanable funds market is given by the following supply and demand diagram[2]:



[2]Note: ignore "net capital inflow" in the diagram: we assume the economy is closed, so there is no net capital inflow.

1. Let r^* be the equilibrium real interest rate. Suppose the government increases its spending without a corresponding increase in tax revenue. *Everything else being equal*, draw a supply and demand diagram to illustrate what happens in this loanable funds market. What happens to r^*? What happens to the investment level of this economy? (2 Points)



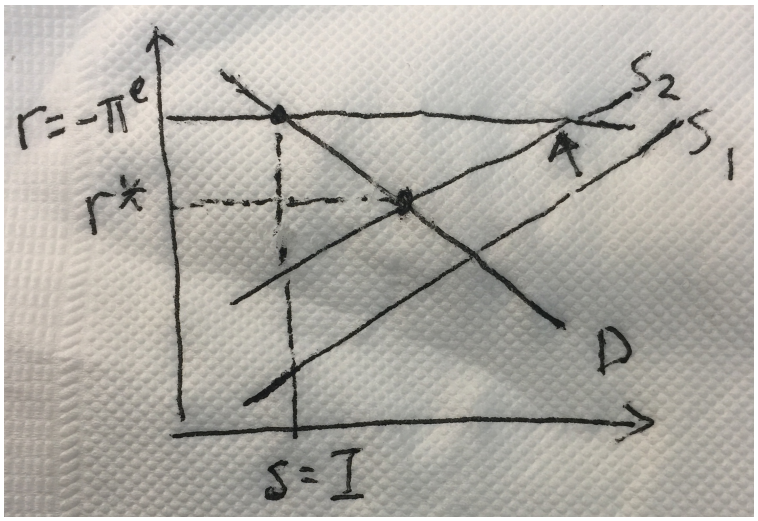
$r^* \uparrow, I \downarrow$

2. But everything else is never equal. If individuals are rational, when they see increased government budget deficit, they will expect future tax increases, and will therefore save more today to pay for higher taxes tomorrow. Discuss what this means for the effect of increased government budget deficit on the loanable funds market. (2 Points)

   `Increase in private savings will partially offset decrease in lower public savings. Rising government budget deficit therefore would not cause as much increase in real interest rate and decrease in investment as if private savings do not change.`

3. In special circumstances, the loanable funds market may not be able to reach equilibrium. One such circumstance: $i = 0$. In this case, we say the nominal interest rate is at the **zero lower bound**. Because it's impossible for the nominal interest rate to be lower than 0, it is impossible for the real interest rate to be lower than $-\pi^e$. But what if r^* – the rate required to bring the loanable funds market to equilibrium – is lower than $-\pi^e$?

   (a) Assuming everything else does not change[3]. Discuss what happens when the government increases its budget deficit when the nominal interest rate is at the zero lower bound and the equilibrium real interest rate (r^*) is *significantly* lower than $-\pi^e$. Draw a diagram to illustrate your answer. (2 Points)



When the nominal interest rate is at the zero lower bound, $r = -\pi^e$ is effectively a price floor in the loanable funds market. If $r^* < -\pi^e$, then there will be a ***surplus*** in the loanable funds market -- there will be more supply of loanable funds than demand. Investment I equals the demand at $r = -\pi^e$.

[3] π^e does not change. Private savings do not change. Investment demand does not change.

(b) In this case, does increased government spending (without increase in tax revenue) have a crowding out effect? – Answer this question by first defining what crowing out effect means. (2 Points)

When rising budget deficit due to increased government spending leads to higher real interest rate and lower investment level, it is called the crowding out effect. Here we do not have the crowding out effect: rising government budget deficit has no effect on either r or I in this case.

4. In the middle ages, the Catholic church considered it immoral to charge interest on loans. Charging interest of any type is considered *usury* and is a forbidden practice for Christians[4]. Pope Benedict XIV, for example, wrote:

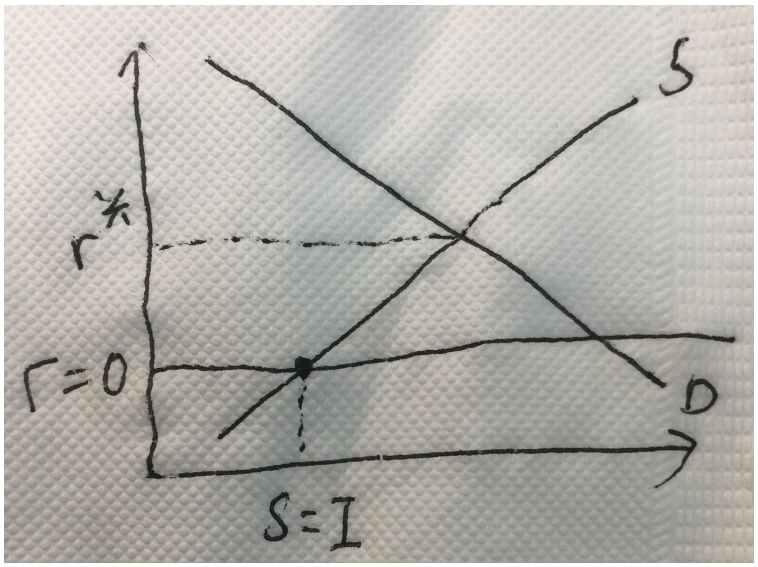
> *"The nature of the sin called usury has its proper place and origin in a loan contract… [which] demands, by its very nature, that one return to another only as much as he has received. The sin rests on the fact that sometimes the creditor desires more than he has given…, but any gain which exceeds the amount he gave is illicit and usurious."*

Now, suppose we have an economy in which $\pi^e = 0$ and the equilibrium real interest rate r^* in the loanable funds market is > 0. Discuss what happens in this market if people are not allowed to charge interest on their loans. Draw a diagram to illustrate your answer. (2 Points)

Because people are not allowed to charge interest, $i = 0$. Because $\pi^e = 0$, $r = 0$. Since $r^* > 0$, we have a ***shortage*** in the loanable funds market: there is more demand for loanable funds than supply. Investment I equals the supply at $r = 0$.

[4] In Islamic Sharia law, the practice of charging interest is called *riba* and is similarly forbidden.

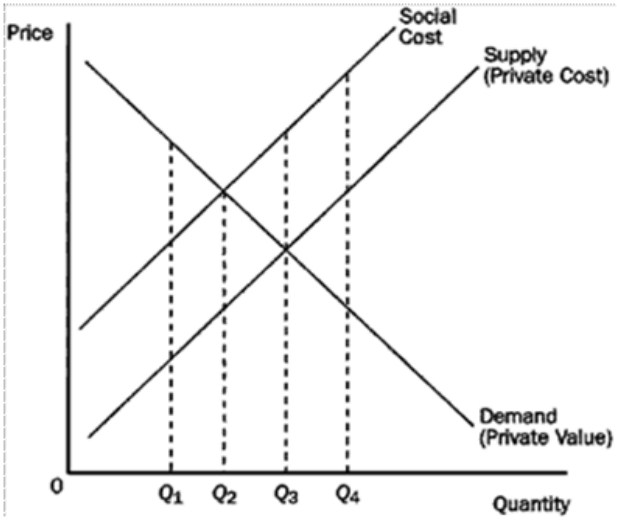
The Merchant of Venice, Act IV Scene I: Shylock and Antonio in court.
Because usury was forbidden for Christians, but not for Jews, Jews were allowed to operate the money-lending business. This contributed to their negative reputation in Europe during the middle ages.



A napkin diagram

Problem 5 (10 points)

Read the following figure.



1. If this market is currently producing at Q4, then total economic well-being would be maximized if output

   (a) decreased to Q1.

   (b) **decreased to Q2.**

   (c) decreased to Q3.

   (d) stayed at Q4.

2. Without government intervention, the equilibrium quantity would be

   (a) Q1.

   (b) Q2.

   (c) **Q3.**

   (d) Q4.

3. If all external costs were internalized, then the market's equilibrium output would be

   (a) Q1.

   (b) **Q2.**

   (c) Q3.

   (d) Q4.

4. This market

   (a) has no need for government intervention.

   (b) **would benefit from a tax on the product.**

   (c) would benefit from a subsidy for the product.

   (d) would maximize total well-being at Q3.

5. At Q3

   (a) **the marginal consumer values this product less than the social cost of producing it.**

   (b) every consumer values this product less than the social cost of producing it.

   (c) the cost to society is equal to the value to society.

   (d) the marginal consumer values this product more than the private cost.

Problem 6 (10 points)

Suppose the equation for the demand curve in a market is $P = 120 - 0.2 \times Q_d$. Also, suppose the equation for the supply curve in the same market is $P = 0.1 \times Q_s$.

1. What are the market equilibrium quantity and price? (2 points)

2. Suppose there is an external cost of \$12 associated with the production of each unit of the good. What particular tax or subsidy would move the market to the social optimum? (2 points)

3. Suppose there is an external cost of \$12 associated with the production of each unit of the good. What is the equation of the social-cost curve? (2 points)

4. Suppose there is an external cost of \$12 associated with the production of each unit of the good. What is the marginal social cost of producing 30 units of the good, i.e., the social cost for the 30th unit? (2 points)

5. Suppose there is an external cost of \$12 associated with the production of each unit of the good. What are the socially optimal quantity and price? (2 points)

c. only the owners of Stores A and B and Restaurant 2

d. All 4 business owners would be opposed to paying for any ferry trips.

2. (10 points) Suppose the equation for the demand curve in a market is P=120-0.2Qd. Also, suppose the equation for the supply curve in the same market is P=0.1Qs.

a. What are the market equilibrium quantity and price?

ANSWER: 400，40

b. Suppose there is an external cost of $12 associated with the production of each unit of the good. What particular tax or subsidy would move the market to the social optimum?

ANSWER: A tax of $12 per unit would move the market to the social optimum.

c. Suppose there is an external cost of $12 associated with the production of each unit of the good. What is the equation of the social-cost curve?

ANSWER: The equation of the social-cost curve is .

$$P' = 12 + \frac{1}{10} Q^S$$

d. Suppose there is an external cost of $12 associated with the production of each unit of the good. What is the marginal social cost of producing 30 units of the good, i.e., the social cost for the 30^{th} unit?

ANSWER: The marginal social cost of producing 30 units of the good is $15.

e. Suppose there is an external cost of $12 associated with the production of each unit of the good. What are the socially optimal quantity and price?

ANSWER: The socially optimal quantity is 360 and the socially optimal price is 48.