Principles of Economics I (Fall 2012)
Homework #1
(Lecture 1-3, Due on Oct 10th, 2012, submitted IN class)

Note: All textbook problem numbers refer to "Problems and Application" part in corresponding chapter, the 6th Chinese/US edition of the textbook.

For Chapter 1

1. 教材中的一则新闻"公共汽车何时准点"提到在美国的芝加哥，由于公交线路常常要经过交通拥挤地区，导致"公交车本来是十分钟一趟，往往变成半个小时后同时来三辆。这可是最没效率的公共交通系统。"为什么说这一公交系统是无效率的？

A. 是因为他延长了乘客的等待时间，以节约公交公司的成本
B. 是因为他虽然没有延长乘客的等待时间，但增加了公交公司的成本
C. 是因为他延长了乘客的等待时间，但没有节约公交公司的成本
D. 是因为他延长了乘客的等待时间，无论是否节约公交公司的成本

注：此案例中文版第 6 版缺失，请参见第 6 版英文版或中文第 5 版。

1. Textbook, Chapter 1, #5.

The fact that you have already sunk $5 million is not relevant to your decision anymore, because that money is gone. What matters now is the chance to earn profits at the margin. If you spend another $1 million and can generate sales of $3 million, you'll earn $2 million in marginal profit, so you should do so. You are right to think that the project has lost a total of $3 million ($6 million in costs and only $3 million in revenue) and you should not have started it. However, if you do not spend the additional $1 million, you will not have any sales and your losses will be $5 million. So what matters here is trying to minimize your loss. In fact, you would pay up to $3 million to complete development; any more than that, and you will not be increasing profit at the margin.

2. Textbook, Chatper1, #6

a. The provision of Social Security benefits lowers an individual's incentive to save for retirement. The benefits provide some level of income to the individual when she retires. This means that the individual is not entirely dependent on savings to support consumption through the years in retirement.

b. Since a person gets fewer after-tax Social Security benefits the greater her earnings are, there is an incentive not to work (or not work as much) after age 65. The more you work, the lower your after-tax Social Security benefits will be. Thus, the taxation of Social Security benefits discourages work effort after age 65.

提示：请使用边际分析的方法。

3. 1838 年，美国陆军被指派将印第安人从美国东部转移到俄克拉荷马州（位于美国中部）。这一任务的承包人事先得到了每个印第安人 65 美元的付款（相当于今天的 1270 美元），以便在 1000 英里的漫长旅途中为印第安人提供食物和药品。许多承包人提供的粮食分量不足，肉类腐烂变质，药品则根本没有。结果，大约四分之一的印第安人死于途中。

（1） 政府向承包人提供每个印第安人 65 美元的付款目的是什么？这一目的是否很好地

达到了？

目的是使得印第安人能够得到安全地转移。这一目的没有很好地达到。

（2） 经济学家认为，65 美元的付款应该按照达到目的地之后的印第安人的数量来给付。这一新的政策是否会使情况有所不同？

是。这会减少印第安人的死亡率。

（3） 利用人对激励做出反应的基本原理，分析从事先给付到事后给付的激励变化，由此说明（2）的结论。

承包人在决定提供多少食物与药品的决策时，面临节省资金还是减少死亡的权衡取舍（原理 1）。新的政策使得承包人提供食物和药品的边际成本不变，而边际收益提高——减少 1 个死亡人数就能多得 65 美元的付款（原来的边际收益近乎零）。（原理 2、3）因此，承包人在新政策下会提供更多的食物和药品，使得印第安人的死亡率下降。（极端的，如果保持每个印第安人足够健康的成本低于 65 美元，所有的印第安人都能活下来。）（原理 4）

4. Textbook, Chapter 1, #13

a . Both of these goals are intended to improve equality. However, reducing the cost of healthcare will lead to greater consumption of healthcare and less consumption of other goods. This reduces efficiency.

b. It is possible that some reforms will alter the production of healthcare, making more efficient use of the resources in that sector.

c. Providing some individuals with subsidized health insurance (by taxing households with higher incomes) reduces the incentive to work. This will lower productivity.

5. Textbook, Chapter 1, # 14

When governments print money, they impose a “tax” on anyone who is holding money, because the value of money is decreased.

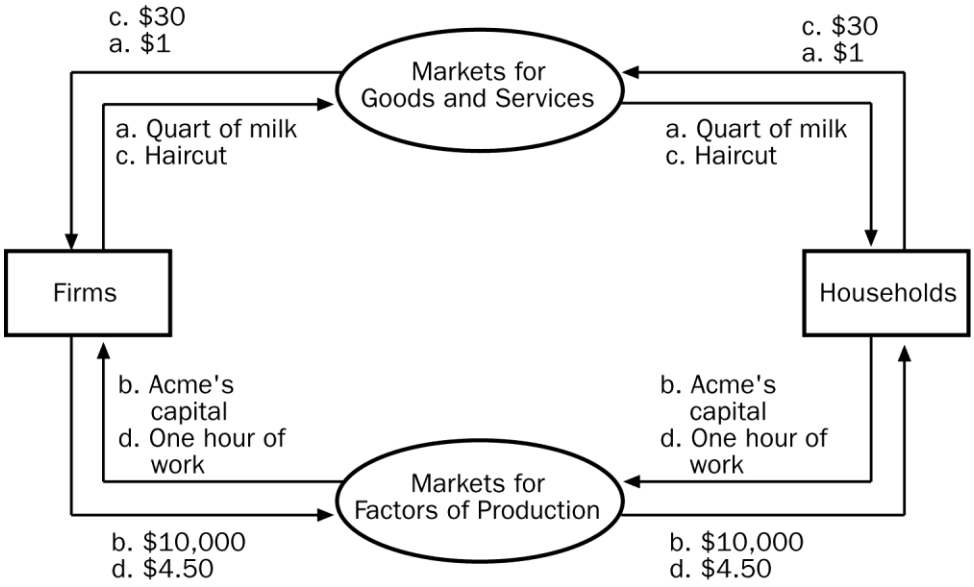
6. Textbook, Chapter 1, # 16

Raising taxes will lead to reduced spending in the economy. This will cause a short-run increase in unemployment and a drop in prices. However, printing more money will cause a long-run rise in inflation because the value of money will be lowered.

For Chapter 2

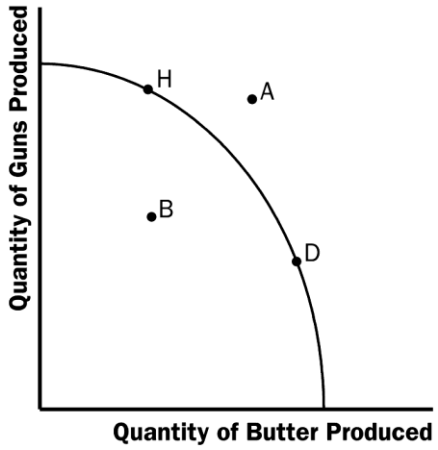
7. Textbook, Chapter 2, #1

The four transactions are shown：



8. Textbook, Chapter 2, # 2

a. Figure 6 shows a production possibilities frontier between guns and butter. It is bowed out because the opportunity cost of butter depends on how much butter and how many guns the economy is producing. When the economy is producing a lot of butter, workers and machines best suited to making guns are being used to make butter, so each unit of guns given up yields a small increase in the production of butter. Thus, the frontier is steep and the opportunity cost of producing butter is high. When the economy is producing a lot of guns, workers and machines best suited to making butter are being used to make guns, so each unit of guns given up yields a large increase in the production of butter. Thus, the frontier is very flat and the opportunity cost of producing butter is low.



b. Point A is impossible for the economy to achieve; it is outside the production possibilities frontier. Point B is feasible but inefficient because it is inside the production possibilities frontier.

c. The Hawks might choose a point like H, with many guns and not much butter. The Doves might choose a point like D, with a lot of butter and few guns.

d. If both Hawks and Doves reduced their desired quantity of guns by the same amount, the Hawks would get a bigger peace dividend because the production possibilities frontier is much

flatter at point H than at point D. As a result, the reduction of a given number of guns, starting at point H, leads to a much larger increase in the quantity of butter produced than when starting at point D.

9. Textbook, Chapter 2, # 3

See Figure 7. The shape and position of the frontier depend on how costly it is to maintain a clean environment—the productivity of the environmental industry. Gains in environmental productivity, such as the development of new way to produce electricity that emits fewer pollutants, lead to shifts of the production-possibilities frontier, like the shift from PPF_1 to PPF_2 shown in the figure.

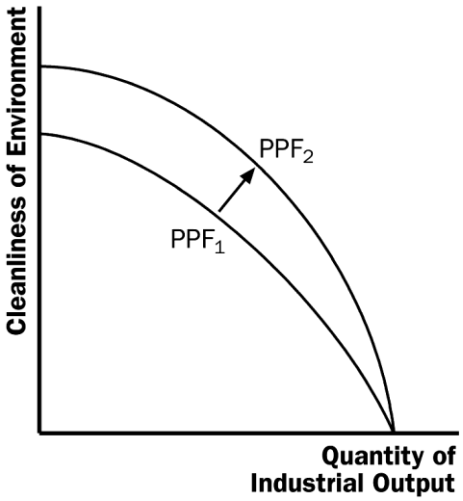


Figure 7

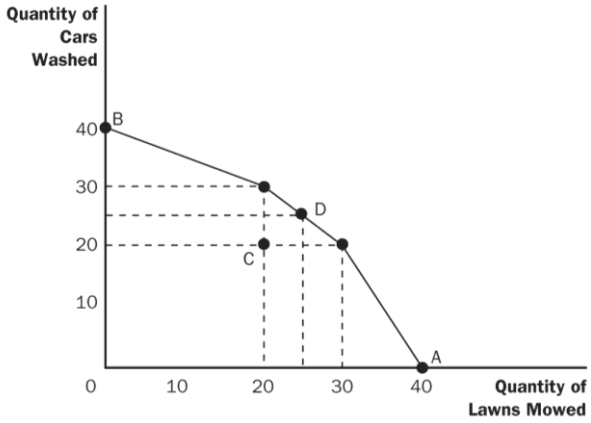


Figure 8

10. Textbook, Chapter 2, # 4

a. A: 40 lawns mowed; 0 washed cars
B: 0 lawns mowed, 40 washed cars
C: 20 lawns mowed; 20 washed cars
D: 25 lawns mowed; 25 washed cars

b. The production possibilities frontier is shown in Figure 8. Points A, B, and D are on the frontier, while point C is inside the frontier.

c. Larry is equally productive at both tasks. Moe is more productive at washing cars, while Curly is more productive at mowing lawns.

d. Allocation C is inefficient. More washed cars and mowed lawns can be produced by simply reallocating the time of the three individuals.

(Hint: The PPF may not be smooth curve.)

b. In the early 19th century, the Russian government sent doctors to southern Russian villages to provide assistance during a cholera epidemic. The villagers noticed that wherever doctors appeared, people died. Therefore, many doctors were chased away from villages, and some were even killed. This reaction to the correlation between doctors and deaths is most likely a problem of

A. omitted variables.
B. reverse causality.
C. government propaganda.

D. medical incompetence.

For Chapter 3

1. Which of the following statement is true?

A. If a certain trade is good for one person, it can also be good for the other one.

B. If a certain trade is good for one person, it can't be good for the other one.

C. If a certain trade is good for one person, it is always good for the other one.

D. None of the above statements is true.

2. Textbook, Chapter 3, #7

a. The production possibilities frontiers for the two countries are shown in Figure 5. If, without trade, a U.S. worker spends half of his time producing each good, the United States will have 50 shirts and 10 computers. If, without trade, a worker in China spends half of his time producing each good, China will have 50 shirts and 5 computers.

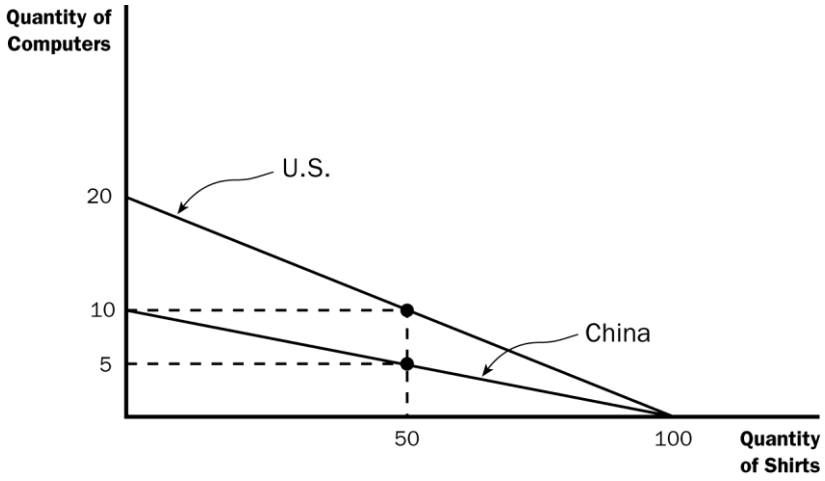


Figure 5

b. For the United States, the opportunity cost of 1 computer is 5 shirts, while the opportunity cost of a shirt is 1/5 computer. For China, the opportunity cost of 1 computer is 10 shirts, while the opportunity cost of 1 shirt is 1/10 computer. Therefore, the United States has a comparative advantage in the production of computers and China has a comparative advantage in the production of shirts.

China would export shirts. The price of a shirt will fall between 1/5 and 1/10 of a computer. An example would be a price of 1/8 computer. In other words, China could export 8 shirts and receive 1 computer in return. Both countries would benefit from trade. China would specialize in shirts (producing 100) and export 8. This would leave them with 92 shirts. In return, they would get 1 computer. The combination of 92 shirts and 1 computer was not available to China before trade. The United States could specialize in computers (producing 20) and export 1 computer to China in exchange for 8 shirts. The United States would end up with 19 computers and 8 shirts, a combination that was impossible without trade.

c. The price of a computer would fall between 5 and 10 shirts. If the price was below 5, the United States would not be willing to export computers because the opportunity cost of a shirt for the United States is 1/5 computer. If the price was greater than 10 shirts, China

would not be willing to import computers because (for China) the opportunity cost of a computer is 10 shirts.

d. Once the productivity is the same in the two countries, the benefits of trade disappear. Trade is beneficial because it allows countries to exploit their comparative advantage. If China and the United States have exactly the same opportunity cost of producing shirts and computers, there will be no more gains from trade available.

3. Textbook, Chapter 3, # 10

This pattern of trade is consistent with the principle of comparative advantage. If the United States exports corn and aircraft, it must have a comparative advantage in the production of these goods. Because it imports oil and clothing, the United States must have a comparative disadvantage in the production of these items.

4. Textbook, Chapter 3, # 11

a. Hillary has an absolute advantage in the production of both goods because she is able to produce more in the same amount of time.

b. Bill has a comparative advantage in the production of food because he has a lower opportunity cost (1 unit of clothing per unit of food) than Hillary (1.5 units of clothing per unit of food).

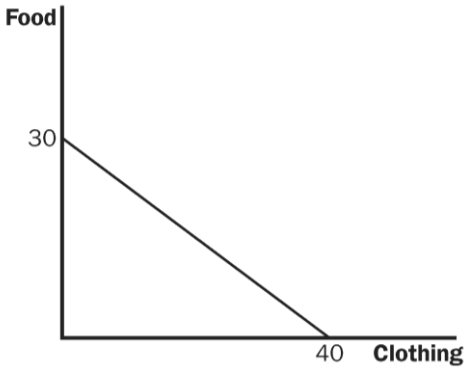


Figure 6

c. See Figure 6. If Bill and Hillary spend all of their time producing food, they can produce 30 units [(10 × 1) + (10 × 2)] per day. If they spend all of their time producing clothing, they can produce 40 units per day [(10 × 1) + (10 × 3)].

d. If no clothing is produced, Bill and Hillary can still produce only 30 units of food. If Hillary switches to clothing production, the household gives up 2/3 unit of food for every unit of clothing produced. When Hillary's 10 hours are devoted to producing clothing, she would be producing 30 units of clothing while Bill is producing 10 units of food. Of course, if Bill then begins to produce clothing, the household gives up 1 unit of food for each unit of clothing produced. Bill and Hillary could devote all their time to producing clothes. If they choose to do so, they can produce 40 units. Their production possibilities frontier is shown in Figure 7.

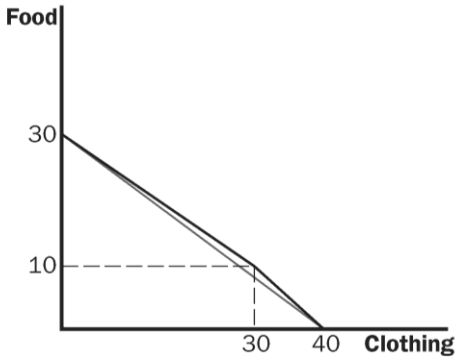


Figure 7

e. Again, Hillary and Bill can chose to produce no clothing and produce all food (30 units). To gain some clothing, Bill would produce clothing, sacrificing 1 unit of food for each unit of clothing produced. If Bill spends all of his time producing food, he would produce 10 units, while Hillary produced 20 units of food. To gain additional clothing, the household would need Hillary to reallocate her time away from food production toward clothing production (at a cost of 1/2 unit of food for each unit of clothing produced). If they choose to produce only clothing, they can produce 40 units of clothing. See Figure 8.

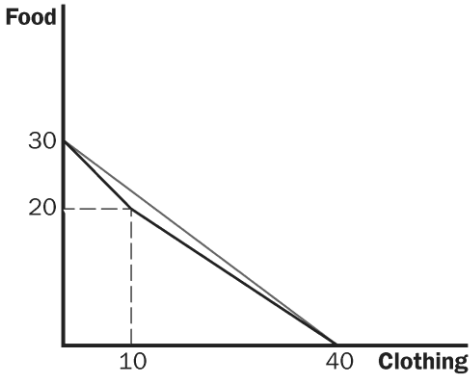


Figure 8

f. It is clear that the production possibilities expand when Hillary specializes in the production of clothing. This makes sense because she has a comparative advantage in the production of clothing.