

## Principles of Economics II (Spring 2012)

### Homework #3

(Lecture 5-6, due on Apr. 18, 2012, submitted in class)

**Note:** All textbook problem numbers refer to “Problems and Application” part in corresponding chapter, the 5<sup>th</sup> international student edition of the textbook.

#### For Chapter 25

1. Textbook, Chapter 25, #2
2. Textbook, Chapter 25, #3
3. Textbook, Chapter 25, # 6
4. True or False? Other things the same, a country with low income per person can have a higher growth rate than a country with a high income per person even if the countries have identical saving rates. Try to use equations to explain your answers.
5. Suppose there are constant returns to scale. Now suppose that over time a country doubles its workers, its natural resources, its physical capital, and its human capital, but its technology is unchanged. Which of the following would double?
  - a. both output and productivity
  - b. output, but not productivity
  - c. productivity, but not output
  - d. neither productivity nor output

#### For Chapter 26

6. Textbook, Chapter 26, #5
7. Textbook, Chapter 26, #7
8. According to the definitions of national saving and private saving, if  $Y$ ,  $C$ , and  $G$  remained the same, an increase in taxes would
  - a. raise national saving and private saving.
  - b. raise national saving and reduce private saving.
  - c. leave national saving and private saving unchanged.
  - d. leave national saving unchanged and reduce private saving.
9. 政府政策与投资 Government policy and investment  
一国政府考虑通过公共政策以鼓励投资。有两种可以选择的方法：一是对私人储蓄减税；二是通过减少政府支出来减少政府预算赤字。  
A country considers encouraging its investments through public policies. There are two

alternatives: to reduce tax on private saving, or to reduce the government budget deficit by reducing government expenditures.

(1) 画出该国的可贷资金供求曲线，标出均衡的利率和投资数量。

Draw a supply-demand diagram of the country's market for loanable funds. Label the equilibrium interest rate and investment.

(2) 分别画图表示对私人储蓄减税和减少预算赤字的影响。各自的利率如何变动？各自的投资数量如何变动？两种政策都能鼓励投资吗？

Draw separate graphs to show the effects on this market of reducing tax on private saving and of reducing the government budget deficit. In each case, how does the interest rate change? How does the investment change? Can each policy encourage investment?

(3) 虽然图形上不易看出，但你能说出两种政策是否都鼓励了私人储蓄吗？解释你的理由。

Although it's not easy to see in the graphs, can you tell how the private saving changes in each case? Explain.

(4) 如果投资对利率的弹性比预想的更大，上述两种政策各自对于投资的影响是更大还是更小？用图形明确表示你的答案。

If the interest rate elasticity of investment is larger than expected, will the effect of each policy on investment be larger or smaller? Show your answers clearly by graphs.

(5) 如果私人储蓄对利率的弹性比预想的更大，上述两种政策各自对于投资的影响是更大还是更小？画出图形以明确表示你的答案。

If the interest rate elasticity of private saving is larger than expected, will the effect of each policy on investment be larger or smaller? Show your answers clearly by graphs.

(6) 政府同时实施这两项政策是困难的。为什么？

Why is it difficult to implement both of these policies at the same time?

(7) 给定这一困难，当投资对利率弹性较大时，你倾向于推荐哪一项政策，还是不能判断？当私人储蓄利率弹性较大时，你倾向于推荐哪一项政策，还是不能判断？说出你的理由。

Given this difficulty, when the interest rate elasticity of investment becomes larger, which policy do you tend to rely on? Or cannot judge? When the interest rate elasticity of private saving becomes larger, which policy do you tend to rely on? Or cannot judge? Explain your answers.

## For Chapter 28

10. Textbook, Chapter 28, #2

11. Textbook, Chapter 28, #5

12. Textbook, Chapter 28, #9

13. 效率工资与自然失业率

考虑一个保姆的市场，保姆的供给和需求者为数众多。假定供给曲线完全没有弹性：

$L = \bar{L}$ 。保姆的需求曲线表现出典型的向下倾斜的性质——不过，这一需求曲线是在保姆不偷懒的情况下得到的。

(1) 假定雇佣保姆的家庭能够完全地监督保姆的工作，可以防止保姆偷懒。作图表示保姆市场的均衡工资 ( $w^*$ ) 和就业水平 ( $L^*$ )？保姆市场是否存在失业？

现在假定雇佣保姆的家庭不能完全监督保姆的工作。此时保姆需要在偷懒和不偷懒之间做出选择。我们来求给定的失业率下  $u$ ，使得他（她）不会选择偷懒的最低工资水平（即效率工资） $w(u)$ 。

(2) 如果他（她）选择不偷懒，可以确定地得到雇主支付的工资  $w$ ，但由此付出的努力消耗他（她）额外的成本  $c$ 。她不偷懒的净收益是多少？

(3) 如果他（她）选择偷懒，额外成本  $c$  完全不用支付。此时可能发生由好至坏的三种情况：情况 1：不被雇主抓住，仍然获得工资  $w$ 。情况 2 和 3 下，都会被雇主抓住，然后立即被解雇，重新回到保姆市场寻找新的就业机会。不同的是，情况 2 下，他（她）重新找到了工作，此后他（她）选择不偷懒，净收益同第(2)问。情况 3，他（她）无法找到工作，净收益为 0。他（她）在偷懒情况下的净收益是这三种情况下收益的加权平均。

已知：如果他选择偷懒，被抓住的可能性为  $p$ ， $0 < p < 1$ 。保姆市场上的失业率为  $u$ ， $0 < u < 1$ 。

根据数学原理，情况 1、2、3 的权重各自为  $(1-p)$ 、 $p(1-u)$  和  $pu$ 。

请问：他（她）选择偷懒的平均收益是多少？

(4) 求出使得他（她）选择偷懒和不偷懒时净收益相等的工资水平，这也就是给定失业率下的效率工资水平： $w(u)$ 。失业率增加，效率工资水平如何变化？

(5) 根据上面的回答。在第（1）问的图形中，画出效率工资  $w$  和就业量  $L$  的关系曲线（不必写出公式）。将这条曲线称为“不偷懒约束”（No-Shirking Constraint, NSC）。

(6) NSC 曲线和需求曲线的交点，表示了在不偷懒的情况下，保姆市场的均衡工资水平和就业量水平，记为  $(w_e, L_e)$ 。此时劳动力市场是否存在失业？工资水平比较信息对称情形（第（1）问）是高还是低？