EE312 Macroeconomics, 2/2015 (Sec. 046402)
Problem Sets 5 :Chapter 6

Please submit at the BE office, 5th floor department of Economics building.
Deadline of submission : Tuesday 19, April 2016, before 15.00 hrs.
Late submission will not be accepted.
*** Exam will consist of essay-type questions only.**

Chapter 6. Real Intertemporal Model with Investment

PART 1. True or False. Short Answer. If the statement is False, comment.

1. ....(T/F) A firm will invest more the higher its expected future total factor productivity, the lower its current capital stock, and the lower the real interest rate.

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2. ....(T/F) The price of current leisure relative to future leisure is represented by $\frac{w(1+r)}{w'}$.

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3. ....(T/F) If w and w´ are held constant, a decrease in the real interest rate results in an increase in the price of current leisure relative to future leisure.

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4. ....(T/F) Assume the real interest rate increases. If the income effect dominates the substitution effect, current consumption for lenders will fall.

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5. ....(T/F) Current leisure will increase when the real interest rate decreases if the income effect dominates the substitution effect.

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6. ....(T/F) An increase in the present value of taxes results in an increase in current labor supply.

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7. ....(T/F) AThe slope of the demand curve, $C^d(r)$ (plot against Y), is the marginal propensity to save.

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8. ....(T/F) The labor demand curve is downward sloping because hiring more labor increases total productivity.

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9. ....(T/F) As N increases, both total and marginal productivity rise.

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10. ....(T/F) Shifts in the labor demand curve are caused by changes in total factor productivity and the current capital stock..

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11. ....(T/F) Movements along the labor demand curve are caused by changes in real wages.

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12. ....(T/F) If capital fully depreciates every period (depreciation = 100%), the marginal benefit from investment will be $\frac{MPK'}{1+r}$.

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13. ....(T/F) An increase in wealth increases labor demand because laborers demand less money.

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14. ....(T/F) A decrease in productivity causes a change in N^S because workers must supply more labor to produce any given Y.

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Part 2. Short Answer.

1. Name three factors that determine the representative consumer's current supply of labor and how each factor affects supply.

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2. How do the three factors listed above affect the representative consumer's supply of labor?

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3. Explain what is meant by diminishing marginal productivity of labor.

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4. Explain the following true statement: A change in preferences affects labor supply while a change in technology affects labor demand.

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5. An increase in the real interest rate, holding current and future wages constant, results in an increase in the price of current leisure relative to future leisure. Is this statement true or false? Explain.

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6. What is the slope of the private demands for investment goods and government purchases in the current goods market diagram?

7. What is the flaw in the following statement? "If the real interest rate rises, lifetime wealth declines, causing leisure to decline, labor supply to rise thereby causing a leftward shift in output supply."

8. Show changes in optimal investment schedule for decrease in z' and r. Graphically Illustrate.

9. Assume Bill consumes his endowments and therefore neither lends nor borrows. Will an increase in the interest rate cause Bill to increase first and second period consumption? Prove it graphically.

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10. Assume that $\Delta t = -2$ and $\Delta t' = 2$. Under what conditions will Ricardian Equivalence hold?

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11. Assume an economy with 100 identical consumers. In the current period, each receives income of 8 units and pays taxes of 3 units, while in the future period, each receives income of 10 units and pays taxes of 4.75 units. The government purchases 400 units in the current period and 370 in the future period and borrows B = 100 in the current period. The real interest rate is 5 percent.

    (a) What is the life time wealth for each consumer?
    (b) Derive the government's present-value budget constraint and show that it holds.
    (c) What is aggregate private saving, government saving, and aggregate consumption?
    (d) How does aggregate private saving and government saving change if current period taxes are increased to 4 units in the current period and decreased to 3.7 units in the future?

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12. Prove graphically that the interest rate must fall with increases in G when MPC = 1. Graphically Illustrate.