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Spring 2006, Intermediate Macroeconomics, section 3

ECON 219 Mid-term exam I

Name:

General recommendations:

- Read questions thoroughly and answer each.
- Work individually.
- There are four pages.
- No documentation, cell phones, pagers, calculators and bathroom breaks.
- You have until 9:15 and can leave early, if you wish.

1. **[20%]** There is a technological improvement.

   (a) What is the consequence for labor supply?

   (b) What is the consequence for labor demand?

   (c) Thus, what happens to the equilibrium wage and employment?

2. **[25%]** The following table shows some data from two firms, a household and a government. Note that some numbers may be missing but can be concluded.

Quail hunter

Sales	100	5	Taxes
		55	Wages
		10	Loan Interest
		30	Profits

Restaurant

Sales	250	50	Taxes
		75	Wages
		65	Quails
		60	Profits

Household

Wages	210	25	Taxes
Profits	90		
Interest	10		

Goverment

Taxes	80	80	Expenses

(a) Show what GDP is according to the product approach. Show the details of your calculations.

(b) Do the same for the income approach.

(c) And again for the expenditure approach.

(d) Suppose the quail hunter gives an additional quail to the restaurant. How should this be treated in terms of the determination of GDP?

3. **[15%]** Here are some business cycle statistics for the country of Phaic Thăn. All data has been seasonally adjusted, then logarithms were taken, then cyclical components were obtained with the HP-filter.

		Correl. of GNP with		
Variable	SD%	x_{t-1}	x_t	x_{t+1}
GDP	2.03	.85	1.00	.85
Consumption	1.55	.48	.67	.43
Fixed investment	6.45	.67	.88	.75
Govt. expenses	3.45	.34	.45	.60
Employment	1.34	.45	.76	.54
GDP deflator	1.78	.34	.43	.28

(a) What stylized facts do you see in this economy?

(b) Compared to the US stylized facts, what strikes you as being different?

4. **[40%]** Circle the correct answer to each of the following questions. Remember that there can be several answers:

(a) A production function has the following property(ies):

i. all factors are essential;
ii. factors have increasing returns to scale;
iii. labor is a normal good;
iv. the marginal products of factor are decreasing.

(b) Labor demand is decreasing in the wage because:

i. the substitution effect is larger than the income effect;
ii. the income effect is larger than the substitution effect;
iii. the production function is concave;
iv. the marginal product of labor is increasing.

(c) To compute real GDP, one needs a base year because:

  i. it is essential to compute growth rates;
  ii. it gets rid of the trend;
  iii. it allows to compare troughs to peaks;
  iv. we need to use a basket of goods for a particular year.

(d) The production possibility frontier represents:

  i. for fixed output, all combination of consumption and leisure;
  ii. for a given wage, all equally affordable combinations of consumption and leisure;
  iii. all feasible combinations of consumption and leisure;
  iv. all equally liked combinations of consumption and leisure..

(e) When the wage increases, the substitution effect leads for households to:

  i. a decrease in consumption demand;
  ii. an increase in consumption demand;
  iii. a decrease in leisure demand;
  iv. an increase in leisure demand.

(f) The role of the HP-filter is to:

  i. express all deviations from trend in %.
  ii. smooth data to reveal trends;
  iii. get rid of seasonal factors;
  iv. remove fluctuations due to price changes;

5. **[Bonus: 10%]**

(a) Using the household budget contraint we used so far in class, show how the expenditure and income approaches for the determination of GDP are equivalent.

(b) Why does this work despite the fact that we only look at the household?