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Fall 2007, Intermediate Macroeconomics, section 2

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%]** 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 from the others.

	Brick maker		
Sales	250	35	Taxes
		170	Wages
		15	Loan Interest
		30	Profits

	House builder		
Sales	500	120	Taxes
		100	Wages
		240	Bricks
		40	Profits

	Household		
Wages		25	Taxes
Profits			
Interest			

	Government		
Taxes	180	180	Expenses

(a) Fill the missing numbers in the table above.

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

(c) Do the same for the expenditure approach.

2. **[30%]** Say the government is strengthening pollution regulation.

   (a) What exogenous variable of our static model of the business cycle is affected? How? Why?

   (b) What is the consequence for labor supply?

   (c) What is the consequence for labor demand?

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

   (e) What does this imply in terms of output and consumption?

   (f) Would changes in pollution regulation be a good explanation for the business cycles we observe in the United States?

3. **[15%]** Here are some business cycle statistics for the country of Peru. All data is quarterly. Logarithms were taken, then cyclical components were obtained with the HP-filter. Standard deviations are relative to that of GDP

Variable x_t	SD%	Correl. of GDP$_t$ with x_{t-1}	x_t	x_{t+1}
GDP	1.00	0.89	1.00	0.89
Consumption	0.99	0.80	0.95	0.88
Fixed investment	2.82	0.71	0.85	0.83
Govt. expenses	1.91	0.64	0.60	0.49
CPI	0.71	0.23	0.23	0.29
GDP deflator	0.97	0.14	0.27	0.38

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

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

4. **[35%]** Circle the correct answer to each of the following questions. Remember that there can be several answers:

   (a) Household preferences have the following property(ies):

      i. all factors are essential;
      ii. income is increasing in the wage;
      iii. labor is a normal good;
      iv. consumption is a normal good.

   (b) The supply of goods is decreasing in the wage because:

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

(c) To maximize profits, the representative firm:

   i. increases the price of its good;
   ii. reduces wages;
   iii. reduces the labor input;
   iv. discriminates across consumers.

(d) The social planner:

   i. maximizes output given the cost of factors;
   ii. maximizes separately profits and household preferences;
   iii. maximizes jointly profits and household preferences;
   iv. maximizes household preferences given what can be produced.

(e) When the wage decreases, 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 logarithms 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;

(g) To study typical business cycles, which of these dates is most appropriate for the start of the data sample?

   i. 1919;
   ii. 1939;
   iii. 1947;
   iv. 1960.

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

   Discuss, for each of the three ways to compute GDP, how a bribe to government officials should be treated. Be explicit about which agent gets or gives what.