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Fall 2002, Intermediate Macroeconomics, section 3

ECON 219 Mid-term exam I

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 12:15 and can leave early, if you wish.

1. **[40%]** Here are some business cycle statistics for Austria. All data has been deseasonalized (seasonally adjusted), then logarithms were taken, then cyclical components were obtained with the HP-filter.

Series	Standard Deviation (%)	Correlation with Output
Output	1.18	1.00
Consumption		
- nondurables and services	1.08	0.40
- durables	6.98	0.50
Fixed investment	3.64	0.74
Government expenses	0.59	−0.18
Employment	0.73	0.55
Total hours	1.75	0.41

(a) Why deseasonalize the data?

(b) Why use the HP-filter?

(c) What is fixed investment? What is the other component of investment?

(d) Characterize the business cycle stylized facts for the GDP components.

(e) Are the stylized facts for the labor market comparable to those in the US? Explain.

2. [40%] Circle the correct answer to each of the following questions:

(a) Jim's Nursery produces and sells \$1100 worth of flowers. Jim's water bill is \$100, he pays his workers \$700 in wages, pays \$100 in taxes and pays \$200 in interest on a loan. Jim's contribution to GDP is:

- i. \$900.
- ii. \$1000.
- iii. \$1100.
- iv. \$1800.

(b) The participation rate equals:

- i. $\frac{\text{Labor force}}{\text{Number unemployed}}$.
- ii. $\frac{\text{Number unemployed}}{\text{Labor force}}$.
- iii. $\frac{\text{Labor force}}{\text{Total working age population}}$.
- iv. $\frac{\text{Number unemployed}}{\text{Total working age population}}$.

- (c) A good is normal if:
- it is always consumed in a consistent quantity.
 - its consumption rises when income rises.
 - its consumption rises when the consumption of another good decreases.
 - some minimal level of the good must be consumed to assume the consumer's survival.
- (d) A barter economy:
- cannot be a market economy.
 - is an economy without monetary exchange.
 - is an economy with no business firms.
 - is not a competitive economy.
- (e) An increase in the real wage:
- represents a pure substitution effect.
 - represents a pure income effect.
 - represents a combination of income and substitution effects.
 - causes a parallel shift in the households budget constraint.
- (f) The Solow residual is a measure of:
- average labor productivity.
 - average capital productivity.
 - total factor productivity.
 - the rate of growth of real GDP.
- (g) In a representative agent, static model, the government budget constraint requires that government spending:
- = taxes + transfers.
 - = taxes + borrowing.
 - = taxes + transfers + borrowing.
 - = taxes.
- (h) A competitive equilibrium is Pareto Optimal if there is no way to rearrange or to reallocate goods so that:
- anyone can be made better off.
 - anyone can be made worse off.
 - someone can be made better off without making someone else worse off.
 - someone can be made better off without making everyone else worse off.

3. **[20%]** The island of Lotsa Avia has 100 inhabitants and one factory that exploits the local guano deposits that are transformed into phosphate. The inhabitants have preferences such that they have an upward sloping labor supply curve. The factory has the usual properties that we discussed in class.

(a) What can we say about the preferences of the inhabitants of Lotsa Avia?

(b) Suppose that foreign development aid provides Lotsa Avia with a second, identical factory. What is the impact on production (be as precise as possible)? On marginal labor productivity? What happens to wages? To employment?