FALL 2003

ECO 214: INTERMEDIATE MACROECONOMICS. EXAM 1.

- **Credit will not be given unless <u>you show your work/calculations.</u>**
- All answers should be in the blue book. One answer per page (a,b,c etc. should be on same page, if possible).
- Make sure you label all curves and axis in your graphs.

Total points: 64

1. (4 pts, 2 pts each). Consider the following data:

	2000	2001
Consumption (billions of $)	7,900	8,200
Real GDP (1996 $, billions)	8,500	8,800
CPI (base year=1980)	240	250
Nominal GDP (billions of $)	9,500	10,100

a) Compute the rate of economic growth in 2001.
b) Compute the 2001 inflation rate using the GDP deflator.

2. (3 pts). If nominal GDP for the 3rd quarter of last year was 1000 and nominal GDP for the 4th quarter was 1100, what is the annualized percentage change in nominal GDP?

3. (15 pts, 5 pts each). Consider the following statements and carefully explain whether they are true, false or if the answer depends:
a) "Consumption decreases when the real interest rate rises".
b) "If the so called "supply-side" economics is taken into account, then it is possible for the real interest rate to decrease when the government reduces income taxes".
c) "If budget deficits do not increase the real interest rate, we can then conclude that budget deficits do not reduce investment".

4. (9 pts). Given the production function $Y=AL^{0.5}K^{0.7}$, where Y is GDP, A is technology, L is labor and K is capital,
b) what would the effects be on real wages and the real rental price of capital if labor supply increases due to increased number of immigrants from Mexico? Show this graphically and mathematically for the labor and the capital market. (6 pts).
b) how would total production be affected if the labor supply increases (because of immigration) and the amount of capital also increases? Show this graphically using the production function with capital on the horizontal axis. Explain your graph (3 pts).
c) if the equilibrium real wage is $5, the level of technology is 20 and the amount of capital is 400, what is equilibrium employment?

5. (15 pts) Consider the following long-run model:
Real GDP (Y) = 100 Consumption (C) = 10 + 0.6(Y-T)
Investment (I) = 40 -10r where r is the real interest rate.
Taxes (T) are 13 and government spending (G) is 128
a) Compute the equilibrium values for consumption, national savings and the real interest rate. (6 pts)
b) Compute the effects on the real interest rate when taxes are reduced from 13 to 10. (3 pts).
c) Compute the effects on the real interest rate when government expenditure increases from 12 to 15 (and T=13). (3 pts).
d) Is the change in the real interest rate smaller/same/greater in (c) compared to (b)? Carefully explain why. (3 pts).

6. (12 points, 4 pts. each). Consider the long-run model in the previous question but now assume the consumption function is: C= 17 + 0.6(Y-T) - 5r.
a) Derive a function for national savings (show how national savings depend on disposable income and the real interest rate).
b) Compute the equilibrium real interest rate given this consumption function. Also, show graphically the equilibrium (using the market for loanable funds).
c) If government expenditure increases from 12 to 15, would the change in the real interest rate be greater/less/same in this case compared to the case when consumption does not depend on the real interest rate (as in 5 c)? Carefully Explain.

7. (6 pts.) Consider the following quote from the Wall Street Journal (Sept. 12, 2002).

> *"Mr. Greenspan praised the Budget Enforcement Act of 1990, in particular its "Paygo" provision that requires new tax cuts or spending increases to be paid for elsewhere in the budget, and said it would be a "grave mistake" to let Paygo expire."*

Why do you think Mr. Greenspan says it is a "grave mistake" to let Paygo expire? Analyze the implication of the Paygo provision with respect to changes in fiscal policy and the impact on the real interest rate.