MACROECONOMICS A

FINAL EXAM

31.08.2009

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The exam consists of 5 (five) questions. Answer all questions. The exam is worth 100 points. Use graphs. Good luck!

Question 1 (20 points)

a) Use the saving-and-investment model of the closed economy to discuss the effect of a tax increase on saving, investment and the interest real rate.

b) Consider the saving-and-investment model of a small open economy. Suppose the US government wants to protect its domestic industry and therefore introduces tariffs. Which effect does this policy have on the real exchange rate?

c) Taking the real exchange rate as a measure of competitiveness, what can we say about the competitiveness of the US industry after the introduction of tariffs?

Question 2 (20 points)

Consider the standard Solow growth model.

a) What is the main assumption on the household's consumption/savings decision? If the savings rate increases, what are the effects on the steady state level of capital and the steady state consumption?

b) Discuss how the steady state that maximizes consumption is determined. Support your answer with a graph and explain the corresponding mathematical condition.

c) Compare the consumption function of the Solow model to the Keynesian consumption function. Which one explains better the long-run data and which one explains better the short-run data?

Question 3 (20 points)

a) Which assumptions transform the quantity equation into the quantity theory?

b) Suppose the central bank increases the money supply, and prices adjust according to the quantity theory. Use the neoclassical model of the labor market to discuss the effect of this policy on nominal and real wages. What is the effect on real output? (**Hint**: Labor supply and labor demand are functions of real wages = W/P)

c) According to your result in b) should central banks try to keep inflation low? Are there (other) reasons for central banks to keep inflation low?

Question 4 (20 points)

Consider the standard search model of unemployment.

a) Write down the steady state condition and derive the steady state unemployment rate (U/L).

b) Name three government policies that affect the equilibrium unemployment rate and state whether they increase or decrease it. Also state whether they act on the job finding rate, the job separation rate, or both, and in what direction.

c) Assume that the actual unemployment rate (U/L) lies above its steady state level (as determined by the job separation rate s and the job finding rate f). Show mathematically that the unemployment rate will move towards its steady state level (**Hint**: it suffices to show that in this initial situation we have $\Delta U<0$). Draw a diagram depicting the evolution of U/L over time.

Question 5 (20 points)

Consider a two period Fisher-Model of intertemporal consumption. Labor income in the first period is Y_1. Second-period labor income is zero (retirement), but the government provides the household with a retirement benefit, $B < Y_1$, in the second period. The utility function is given by $U(c_1,c_2) = u(c_1) + \beta u(c_2)$. There are no interest payments and the time preference rate is one.

a) What is the optimal consumption policy?

b) Suppose the government raises the retirement benefit to B'. What is the effect on consumption and saving if

- households can freely borrow between periods
- households are borrowing constrained

Support your answer with appropriate graphs.

c) Draw the time path of consumption and income. Compare the utility of constrained and unconstrained agents.