Intermediate Macroeconomics
Instructed by: Ming Yi
Midterm Exam II (Closed-Book)
Undergraduate Economics Program, HUST
2:00-3:35 p.m., Tuesday December/15/2015

Name: _____ **Student ID:**_____

1. (5'×6 =30 points) Consider a closed economy with production function $Y = K^{\alpha}(LE)^{1-\alpha}$. Let $k = \frac{K}{LE}$ and $y = \frac{Y}{LE}$ as in Chapter 9 of your textbook. Efficiency E grows at rate g, labor force L grows at n, capital depreciation rate is δ. The saving rate is s.

(a) What is $f(k)$ for this economy?

(b) What is the equation solving for the steady-state k^* of this economy? Explain it.

(c) Show that the steady-state is also an absorbing state, i.e., any given initial status of the economy converges to the steady state automatically.

(d) What is the Golden Rule steady state? Use either figures or equations to illustrate it.

(e) What should the government do to achieve the Golden Rule steady state?

(f) In the steady state, what are the growth rates for $\frac{Y}{L}$, $\frac{K}{L}$, $\frac{Y}{LE}$, Y, and K, respectively?

2. (5'+5'+10'+10'+5'+5'=40 points) The questions below are based on Chapters 9-13 of your textbook.

(a) Among consumption, investment, and net export, which of them is usually the most volatile（波动最大）during business cycles? Is this result predicted by the Solow growth model?

(b) Consider a close economy, write out the equations for its IS and LM curves, respectively. Explain the intuitions of the equations.

(c) Based on your answers in (b), draw the IS-LM diagram for this closed economy. Given that the current status of the economy is depicted by a point below both the IS and LM curves, how will the economy converge to the short-run equilibrium predicted by the IS-LM model? Explain your answers.

(d) It is said that the trade protectionism, e.g., a higher tax rate for imports, is good for countries adopting fixed-exchange-rate systems but bad for countries adopting floating-exchange-rate systems. Yes or no? Explain your answers using the Mundell-Fleming model.

(e) What is the most important difference between long-run and short-run Macroeconomics? How does it invalidate the monetary neutrality in the short-run? Give your intuitions.

(f) According to the Impossible Trinity, if an economy wants to allow for free capital flows as well as to fix the exchange rate of its currency, what macroeconomic power should it give up?

3. (6'× 5=30 points) Consider the equation below:

$$\pi = E\pi - \beta(\mu - \mu^n) + \nu. \tag{1}$$

(a) What is the famous name for equation (1)?

(b) Consider a special version of (1):

$$\pi = \pi_{-1} - \beta(\mu - \mu^n) + \nu, \tag{2}$$

where π_{-1} stands for last year's inflation. What expectation rule is used here?

(c) It is said that the expectation rule used in (b) is irrational. Comment on this statement by explaining rational expectations and the Lucas Critique.

(d) Which law introduced in the previous chapters of your textbook is combined with equation (1) to calculate the sacrifice ratio? Given that the ratio is 4, to reduce inflation from 3% to 2%, what must the economy sacrifice?

(e) Chapter 14 introduces supply-side short-run Macroeconomics, whereas Chapters 11-13 emphasizes the demand-side. Consider a closed economy, a sudden and unexpected monetary expansion improves output and employment in both Chapter 12 and Chapter 14, but their underlying economic stories are totally different. Explain and Compare them.