

NATIONAL UNIVERSITY OF SINGAPORE

**EC2102 MACROECONOMIC ANALYSIS I**

(SEMESTER 2 : AY2008-2009)

Time Allowed : 2 Hours

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**INSTRUCTIONS TO CANDIDATES**

1. This examination paper contains 3 questions, and comprises 4 printed pages, including one figure, Figure 1. This front page counts as page 1.
2. ALL questions are compulsory. The total number of points is 100.
3. This is a CLOSED BOOK examination.
4. Write your answers in the exam booklets provided only.
5. Write your matriculation number on each exam booklet used. Number all the exam booklets used.
6. On the front page of the first exam booklet, write down how many exam booklets you used, and write down the order in which the questions were answered.
7. If you have used more than one exam booklet, tie them all up.

**Question 1 (35 points)**

Consider the real intertemporal model. An infinitely-lived representative consumer values consumption and leisure, and has  $h$  units of time each period. An infinitely lived representative firm is entirely owned by the representative consumer; its production function is  $Y_t = z_t F(K_t, N_t)$ . The government plans to spend  $G_t = G > 0$  every period, and its tax revenues at time period  $t$  of  $T_t$  levied on the representative consumer in a lump-sum fashion is such that its lifetime budget constraint holds.

**PART A**

- (i) Write down the representative consumer's maximization problem at time  $t$ . (5 points)
- (ii) Write down the representative firm's maximization problem at time  $t$ . (5 points)
- (iii) Define carefully a competitive equilibrium for this economy. (10 points)

**PART B**

Let equilibrium in this economy for  $t = 1$  be represented by figure 1.

- (iv) Suppose the government announces at the beginning of time period 1 that it will increase expenditure at time period 2 from  $G_2$  to  $G_2 + \Delta$ , where  $\Delta > 0$ , and it will increase the tax levied on the representative consumer at time period 2 from  $T_2$  to  $T_2 + \Delta$ . Explain carefully the impact of these changes on equilibria in the labour and goods markets in time period 1 as illustrated in figure 1, taking care to explain clearly the impact on the decisions made in time period 1 by the representative consumer and the representative firm. (15 points)

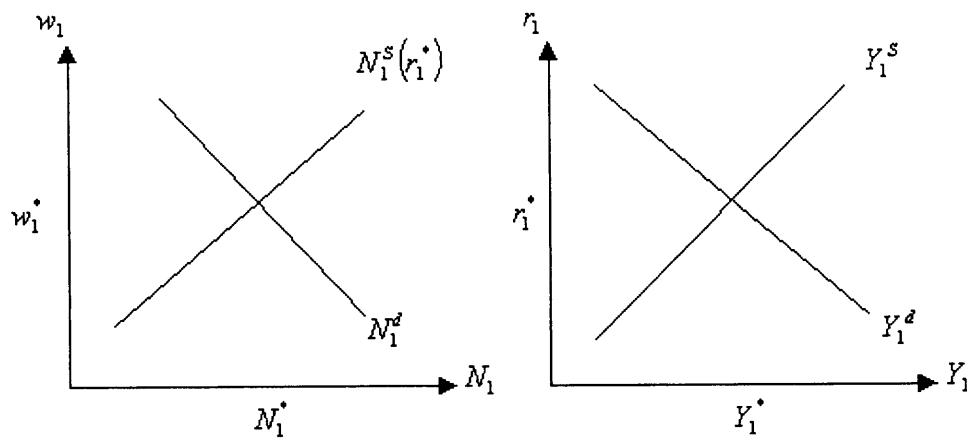


Figure 1

**Question 2 (15 points)**

You are eating your breakfast and reading the newspaper one morning when you came across this sentence which made you thoughtful:

"For a fully-funded social security system, either it does not bind and does not make any difference, or it binds and people are worse off."

Explain what this sentence means with the aid of a graph.

(Hint: First explain what a fully-funded social security system is, and then explain how people's consumption decisions are affected.)

**Question 3 (50 points)**

Due to the ongoing recession in Country  $S$  you have been hired as an Economic Advisor to the Government due to your familiarity with the Keynesian IS/LM-AS/AD framework where nominal wage rate is sticky.

**PART A**

Since no one else you are working with is familiar with this framework, you have to:

- (i) explain how to derive the AS curve; (10 points) and
- (ii) explain how to derive the AD curve. (10 points)

(Note: For part (ii) you do not have to separately derive the LM curve.)

**PART B**

You have thought of two proposals to get the economy out of the recession, and you have to explain them in detail to the people you are working with.

(iii) The first proposal involves asking the government to increase its expenditures temporarily. (15 points)

(iv) The second proposal involves doing nothing and letting market forces do the adjustments necessary. (15 points)

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