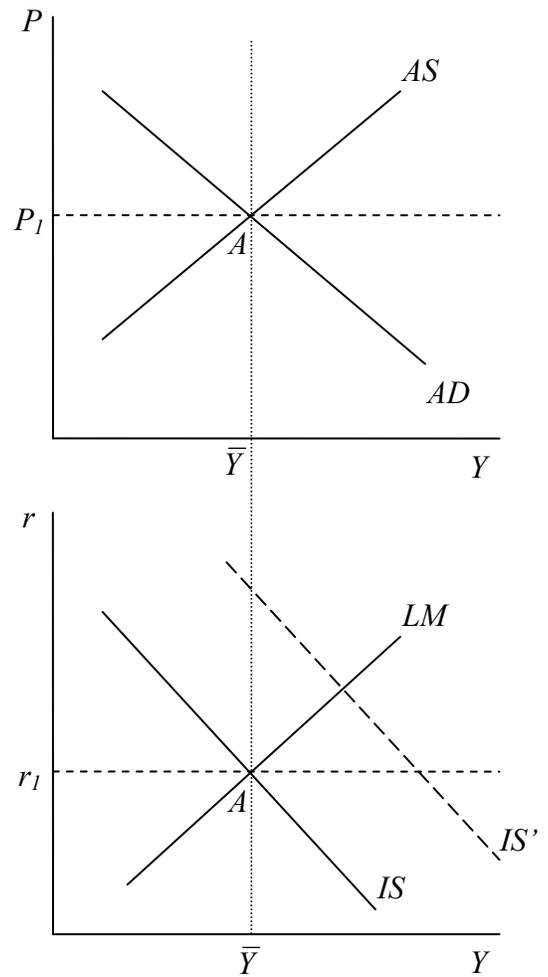


Final Exam
April 26, 2004

Answer all questions, on these sheets in the spaces provided (use the blank space on page 9 if you need more). In questions where it is appropriate, **show your work**, if you want a chance of partial credit for an incorrect answer. And when asked to **explain**, do so, if you want any credit at all. Point values for the questions are shown; there are a total of 78 points possible.

1. (12 points) Suppose that an economy starts in a long-run equilibrium at points *A* in the AD-AS and IS-LM diagrams shown below. The government then cuts taxes, shifting the IS curve to the new position *IS'* shown.

- a. Show how this policy change shifts the *AD* and/or *AS* curves in the top figure (being sure to make the sizes of any shifts correct for the change shown in the bottom figure). Identify the new short-run equilibrium in the AD-AS diagram and label it *B*. Then add whatever is necessary to the IS-LM diagram to identify the corresponding short-run equilibrium there as well, labeling it also *B*.
- b. Identify the long-run equilibrium in both the top and bottom figures, and label it *C*.
- c. During the transition from the short-run equilibrium at *B* to the long-run equilibrium at *C*, how do the following variables change over time? (Write in the blank: “rises,” “falls,” “constant,” or “ambiguous”.)



From *B* to *C*...

- Real GDP _____
- Real investment _____
- Real national savings _____
- Real liquidity preference _____

2. (18 points) Start from a very long-run equilibrium with constant prices in a closed economy that has a fixed population and no government. Suppose that households initially have been spending 80% of their disposable incomes on consumption, independently of the interest rate. Suddenly, they decide to start spending 84% instead (thus a 5% increase), both now and indefinitely into the future. Use appropriate models to determine, **explain**, and compare how this change of behavior will affect

- real GDP,
- the interest rate, and
- the real level of consumption,

in each of a) the short run of the AD/AS model, b) the long run of the loanable funds model, and c) the very long run of the Solow growth model. In each case, be sure to say how the variable compares both to what it was originally and to what it becomes in the other two runs. Also, in the case of consumption, compare the change both to zero and to +5%. (I suggest recording these comparisons using ΔY_A , Δr_A , and ΔC_A for changes in the short run, ΔY_B , etc. for the long run, and ΔY_C , etc. for the very long run.) In each part, be sure to indicate clearly the directions of any changes, and also to **explain in words** the reasons for your results.

- a. (4 pts) The short run of the AD/AS model.

- b. (4 pts) The long run of the loanable funds model.
- c. (5 pts) The very long run of the Solow growth model.
- d. (5 pts) Comparisons:

3. (24 points) Suppose that the rest of the world were suddenly to have doubts about the desirability of holding U.S. debt. In this question you will explore the effects of such a change by answering specific questions about the effects of changes in various models that we have studied. In each case, in order to make the question compatible with the small-country models that we have mostly studied, suppose that instead of perfect capital mobility equating the domestic interest rate to the foreign one ($r=r^*$ as we have before), we now have instead that the domestic interest rate equals the foreign one plus an exogenous risk premium, ρ : $r = r^* + \rho$. The assumed loss of confidence in U.S.-issued financial assets therefore takes the form of an increase in the required risk premium, ρ . (Formally, therefore, the effects on the economy are the same as would have resulted in the old model from a rise in r^* .)

a. First determine and explain the long-run effects of the rise in ρ using the long-run model of a small open economy that appeared in Chapter 5 and that is reproduced here. (The equations are just to remind you and to make sure that we are all talking about the same model. I assume you know what the symbols represent.)

$$\begin{array}{ll} Y = \bar{Y} = F(\bar{K}, \bar{L}) & NX = NX(\varepsilon) \\ C = C(Y - \bar{T}) & S = Y - C - \bar{G} \\ I = I(r) & Y = C + I + \bar{G} + NX \end{array}$$

Use whatever tools you deem appropriate to find and explain how the rise in ρ will affect the following variables: Output (Y), investment (I), net exports (NX), and the real exchange rate (ε).

- b. Now do the analysis for the short run, using the Mundell-Fleming model with a fixed price level, first with a floating exchange rate and then with a pegged exchange rate. The equations of the model are again shown below, except that I leave it to you to know which variables are exogenous and which endogenous.

$$Y = C(Y - T(Y)) + I(r) + G + NX(\varepsilon)$$

$$M/P = L(r, Y)$$

$$r = r^* + \rho$$

As in part (a), find and explain how the rise in ρ will affect the following variables: Output (Y), investment (I), net exports (NX), and the real exchange rate (ε), first for the case of a floating exchange rate and then for the case of a pegged exchange rate. (Space for the pegged-rate case is on the next page.)

Floating Exchange Rate:

Pegged Exchange Rate:

5. (6 points) True-False. Circle T or F for each of the following statements relating to news articles assigned during the course:
- a. T F Jan 27: The Congressional Budget Office issued its forecast that the U.S. budget deficit would become larger over the next few years, but that it would then disappear entirely about ten years from now.
 - b. T F Feb 11: Tax collections by the U.S. federal government, as a percent of GDP, are today at their lowest level in more than half a century.
 - c. T F Mar 4: OPEC was prompted by the appreciating U.S. dollar to raise its oil prices in order to keep up.
 - d. T F Mar 18: At the meeting of the open market committee of the Fed, it announced an increase in its target for the federal funds rate from 1.00% to 1.25%.
 - e. T F Mar 26: Corporate profits posted their biggest increase in almost 20 years.
 - f. T F Apr 15: The International Monetary Fund predicted that the United States budget deficit would disappear over time as a result of the increased growth in GDP spurred by the Bush tax cuts.

This extra page is to use in case you run out of room on one of the questions. Label clearly which question(s) you are writing about here.