

Practice Midterm Questions

Note: The actual midterm will have only 4 questions, one in each of the following parts. These questions will help you to prepare for the exam. Each part of the exam is equally important and these questions do not reflect any preference on one topic over another. Anything discussed in lecture is fair game. In the exam each section will be worth 25 points.

Part I (Measuring Output, Unemployment and Inflation)

- 1) Consider an economy that produces and consumes bread and automobiles. In the table below are data for two different years.

	Year 2000	Year 2010
Price of an automobile	\$50,000	\$60,000
Price of a loaf of bread	\$10	\$20
Number of automobiles produced	100	120
number of loaves of bread produced	500,000	400,000

- Using the year 2000 as the base year, compute the following statistics for each year, nominal GDP, real GDP, the implicit price deflator for the GDP, and a price index such as the CPI.
 - Using the two price indexes that you constructed, how much have prices risen between 2000 and 2010?
 - More generally, suppose you are a senator writing a bill to index Social Security and federal pensions. That is, your bill will adjust these benefits to offset changes in the cost of living. Will you use the GDP deflator or the CPI? Why?
- 2) Suppose that a woman marries her butler. After they are married, her husband continues to wait her as before, and she continues to support him as before (but as a husband rather than an employee). How does the marriage affect GDP? How should it affect GDP? Explain.
- 3) Imagine that a bakery hires workers to produce more bread, pays their wages and then fails to sell the additional bread.
- How does this transaction affect GDP if the bread spoils?
 - How does this transaction affect GDP if the bread is put into inventory to be sold later? (assume then that the bread here is not perishable anymore and it can be kept in inventory for at most a year).
 - What happens to GDP later when the firm sells the bread out of inventory? Describe here what happens to C, I and G.

Part II (IS-LM: the Short Run)

- 4) Suppose that the demand for real money balances depend on disposable income. That is the money demand function is

$$(M/P)^d = L(i, Y-T)$$

where i is the interest rate, Y is income and T is the tax level. L is a decreasing function of i , as discussed in the textbook, and an increasing function of disposable income. Using the IS-LM model, discuss whether this change in the money demand affects the following (Be sure to consider in your analysis what happens to all components of GDP, i.e., G , C and I):

- a) The analysis of changes in government spending.
 - b) The analysis of changes in taxes.
- 5) To increase tax revenue, the U.S. government in 1932 imposed a 2-cent tax on checks written in deposits in bank accounts. (In today's dollars, this tax was about 25 cents per check).
- a) Using our discussion about the money multiplier, how do you think the check tax affected the currency-deposit ratio? Explain.
 - b) Use the model of the money multiplier, discussed in lecture, to discuss how this tax affected the money supply.
 - c) Now use the IS-LM model to discuss the impact of this tax on the economy. Was the check tax a good policy to implement in the middle of the Great Depression?

Part III (The AS-AD model: the Medium Run)

- 6) Suppose that Congress decides to reduce transfer payments (such as welfare) but to increase government purchases of goods and services by an equal amount. That is, it undertakes a change in fiscal policy such that $\Delta G = -\Delta TR$, where TR are transfers and Δ means "an increase in". Assuming that the economy is initially at a medium run equilibrium, use the AS-AD model to predict what will happen to Y , P , i , C and I in the short and medium runs. Be sure to show the proper graphs. Also, include in your analysis what happens to the equilibrium in the labor market.

Part III (The Solow Model: the Long Run)

- 7) Suppose that a civil war in Brazil does not directly affect the capital stock (i.e., machines, plants, factories etc.), but the huge casualties reduce the labor force. Use the Solow model to answer the following questions:
- a) What is the immediate impact of the war on total output and output per worker (person)?
 - b) Assuming that the saving rate is unchanged and that the economy was in a steady state before the war, what happens subsequently to output per worker in the postwar economy? Is the growth rate of output per worker after the war smaller or greater than normal? Explain using the appropriate graphs.