Economics 21 Spring 2014

Final Exam

This is a **2 hour** exam. The exam has **150 points**, use the point totals next to each Part to allocate your time.

Part 1: (20 points) For each of the events below, you should **explain** what **MUST** have been true about the economy for the statement to be correct. **MUST** means that given the condition you specify, the event had to happen:

a) Japan during the 1990's ran large government deficits; and yet, it still had a trade surplus. What **must** have been true about Japan in the 1990's to enable this to happen?

b) In the boom years of the 2000's, the United States had a level of domestic Investment that was greater than its private Savings, and at the same time it was running government deficits. What **must** have been true about U.S. in the 2000's to enable this to happen?

c) From 1948 to 2010, U.S. per capita GDP grew by 1.6% (on average) while the rate of technology change only grew by 1.2%. What **must** have been true about the U.S. economy over this period to enable this to happen?

d) During the 35 years from the end of WWII to the beginning of the Reagan administration, the U.S. government on average ran Primary Budget Deficits and yet the Debt/GDP ratio fell dramatically? What **must** have been true about the U.S. economy over this period to enable this to happen?

Part 2: (20 points) For **each** of the following, indicate what kind of shock could have caused the effects described. You only have to give one possible shock, but you have to name a shock, not just shift a curve. Be sure to **briefly explain** your answer.

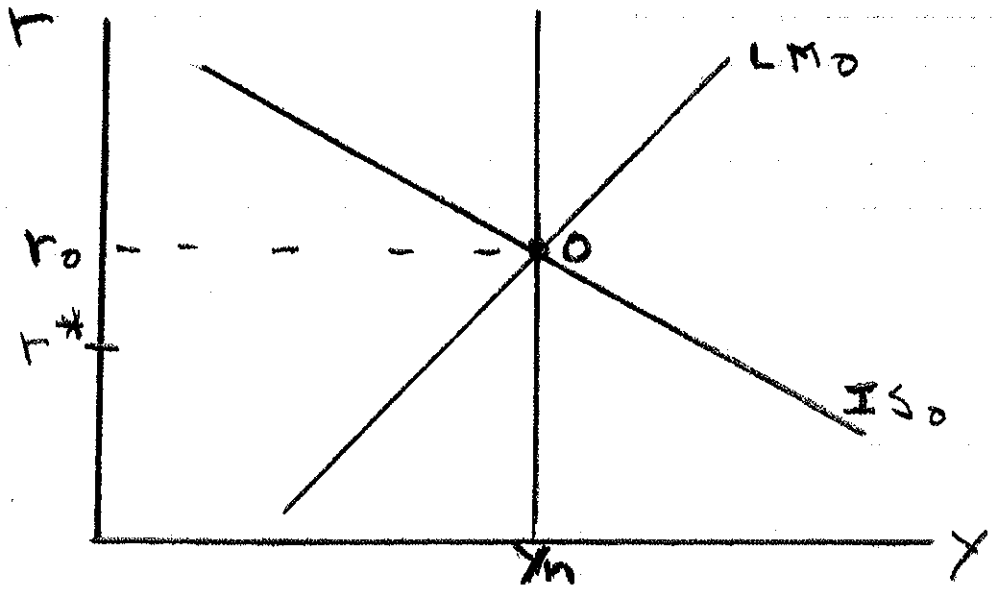
a) The real wage increases and the unemployment rate decreases.

b) GDP rises, but the full employment level of GDP rises further.

c) Both the inflation rate and the unemployment rate increase.

d) Nominal and real interest rates decrease in the short run, but return to their original levels in the medium run.

Part 3: (24 points) Consider the graph below of an economy that is at full employment. Assume that the government budget is balanced (which means, of course, that the full employment budget is also balanced). Looks like Miller Time except for the fact that people believe the level of national investment is too low. Economists have estimated that if the real interest rate fell to r*, national investment would be optimal.



a) What policies would you recommend to get the economy to r* without causing a recession or a boom? What will your policies do to the full employment government budget?

b) Imagine that once you get to r* and are relaxing in your chaise lounge with a Miller, consumption spending (c_0) rises. How would you respond to this shock so as to keep national investment the same as it was prior to the shock and avoid a recession or boom? What will your policies do to the full employment government budget in comparison to what it was before the shock?

c) Now imagine that once you are to r*, **instead of** a consumption shock, foreigners develop a craving for Miller beer and U.S. exports (nx_0) increase. How would you respond to this shock so as to keep national investment the same as it was prior to the shock and avoid a recession or boom? What will your policies do to the full employment government budget in comparison to what it was before the shock?

10 points Extra Credit: Under the assumption that the economy is at full employment and at its optimal level of national investment, can you generalize your answers in b) and c) into a Rule as to what policies the government should use to respond to consumption shocks vs. national investment shocks.

Part 4: (16 points) Macroeconomic Puzzles: For **TWO** of the following, explain why it is a puzzle and then provide a possible explanation:

a) In the latter half of the 1990's, unemployment was very low and yet inflation rose, but not that much.

b) In the Great Recession, unemployment has been very high and yet inflation has fallen, but not that much.

c) In the last 3 recessions, GDP has returned to its pre-recession level much faster than employment has returned to its pre-recession level in comparison to prior recessions.

Part 5: (54 points) This question asks you to analyze the possible causes and effects of a decline in the long run growth rate of GDP, $\bar{g}_y$. This is a very long question, but many of the subparts are independent of one another, so if you cannot answer a subpart, **do not panic**, you will still be able to answer questions further down. Be sure to **briefly explain** your answers.

a) What would have to happen to the savings rate, s, in the Solow (neoclassical) growth model for the growth rate of GDP, g_y, to fall in the transition from one steady state to another?

b) What would have to happen to technological growth, g_A, in the Solow (neoclassical) growth model for g_y to fall in the transition from one steady state to another?

c) If the economy approaches its new steady state at 7% a year, how many years will it take before the economy is 75% of the way to its new steady state?

d) Does the change in "s" lower the steady state growth rate of GDP? Does the change in g_A lower the steady state growth rate of GDP?

For the remaining questions in this Part **only** consider the change in g_A:

e) For the change in g_A, what will be the relationship between the growth rate of GDP, g_y, and the long run growth rate, $\bar{g}_y$ during the transition to the steady state (ie. which is larger)?

f) Given your answer in e), what does Okun's Law say will be happening to the unemployment rate?

g) Assuming $\bar{g}_y$ falls, what will happen to inflation and unemployment in the short run in the Inflation Model if the growth rate of nominal aggregate demand remains constant?

h) Assuming $\bar{g}_y$ falls, trace the path of inflation and unemployment in a graph from the short run to the medium run if the growth rate of nominal aggregate demand remains constant?

i) If before the fall in $\bar{g}_y$, the Federal Reserve had an Inflation Target and does not wish to change it, qualitatively what will the Fed have to do to the growth rate of nominal aggregate demand to stay at its inflation target?

j) If the Fed does what you suggested in part i), what will happen to inflation and unemployment in the short run?

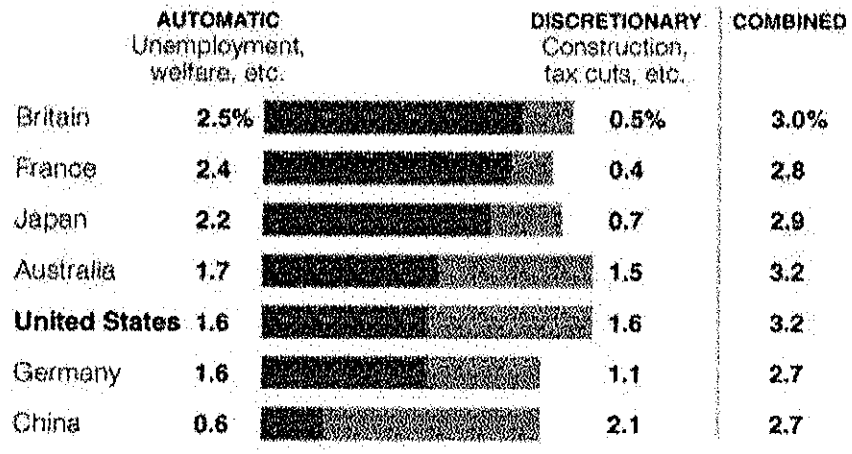
k) If the Fed does what you suggested in part i), what will happen to inflation and unemployment in the medium run?

Part 6: (16 points) The graph below compares the fiscal response to the Great Recession in Europe vs. the U.S. What the figure shows is that while the U.S. implemented a more expansionary discretionary fiscal policy (the Obama stimulus package was bigger than anything in Europe), European fiscal policy (prior to instituting austerity) was more expansionary than many people think because automatic stabilizers play a much bigger role in Europe.

Different Priorities

Countries that devote a significant share of their annual budgets to the social safety net — unemployment benefits, welfare, health care, etc. — are spending less on directly stimulating their ailing economies.

Spending as share of gross domestic product, 2008-10



Source: International Monetary Fund

THE NEW YORK TIMES

In a coherent essay, discuss the pros and cons of discretionary stabilization policy vs. automatic stabilizers. Your essay should include:

a) A discussion of the relative timing of the two types of policies, and
b) A discussion of the possible magnitudes of the two types of policies (ie. the degree to which they could in principle be relied upon to fully stabilize the economy).