EC 313, Summer 2019 **Name:** _____
Xiang LI (GE)
Chapter 9 - PART 2 - Practice **UO ID:** _____

QUESTION 1: TRUE, FALSE

(1) The central bank can always act to keep output equal to potential output.

(2) It is easier for the central bank to keep output at potential output if expectations of inflation are anchored.

(3) A large increase in the price of oil increases the natural rate of unemployment.

QUESTION 2

When people have adaptive inflation expectations and the natural rate of interest is below the lower bound on the real interest rate, the economy can fall into a deflationary spiral. Briefly explain how the above situation can lead to a severe recession that the central bank is powerless to stop.

QUESTION 3

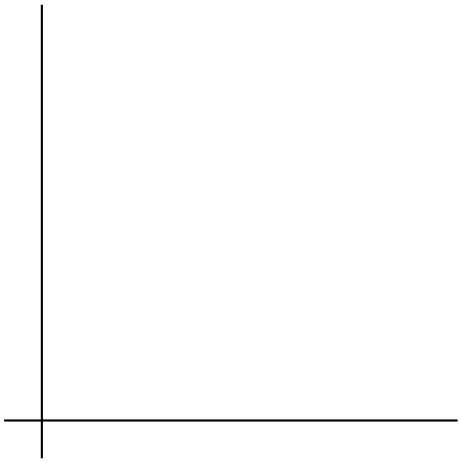
Consider the IS-LM-PC model with adaptive inflation expectations. If the output has been above potential for some time, so that inflation is above its target level, how does the central bank bring inflation back down to its target level?

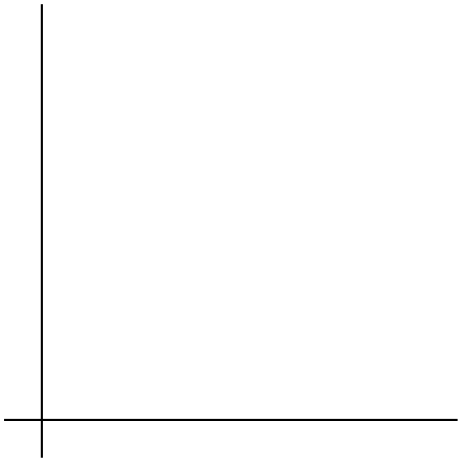
QUESTION 4

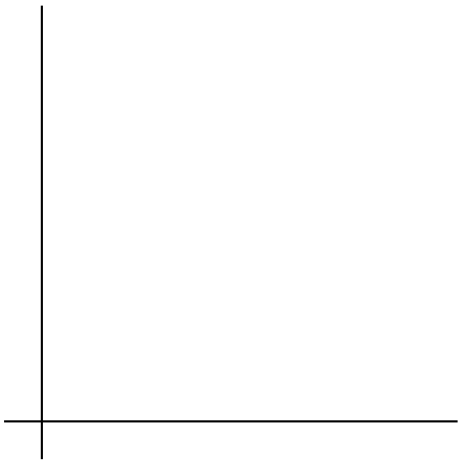
A shock to aggregate supply will also have different outcomes when there are different assumptions about the formation of the level of expected inflation. One path assumes that the level of expected inflation equals lagged inflation. The level of expected inflation changes over time. The second path assumes the level of

expected inflation is anchored to a specific value and never changes. Begin in medium-run equilibrium where actual and expected inflation equal 2% in period t.

(1) Suppose there is a permanent increase in the price of oil in period t + 1. How does the PC curve shift? Assume that the central bank does not change the real policy rate. How will the short-run equilibrium in period t + 1 compare to the equilibrium in period t? What happens to output? What happens to inflation?



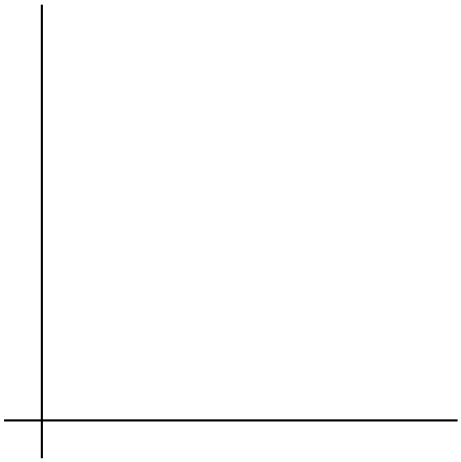


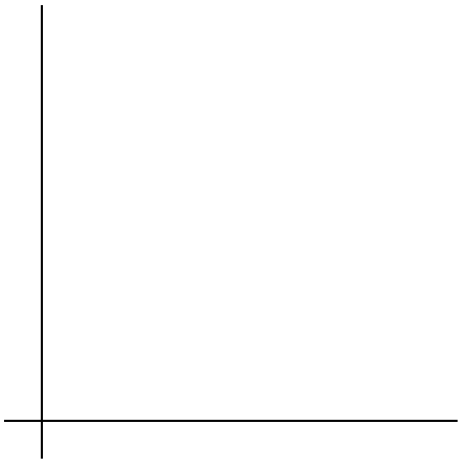


(2) Consider the period t + 2 equilibrium under the assumption that $\pi^e_{t+2} = \pi_{t+1}$. If the central bank

leaves the real policy rate unchanged, how does actual inflation in period t + 2 compare to inflation in period t + 1? Continue to period t + 3. Making the same assumption about the level of expected inflation and the real policy rate, how does actual inflation in period t + 3 compare to inflation in period t + 2?

(3) Consider the period t+2 equilibrium under the assumption that $\pi^e_{t+2} = \bar{\pi}$. If the central bank leaves the real policy rate unchanged, how does actual inflation in period t+2 compare to inflation in period t+1? Continue to period t+3. Making the same assumption about the level of expected inflation and the real policy rate, how does actual inflation in period t+3 compare to inflation in period t+2.





(4) Compare the inflation and output outcomes in part 2 to that in part 3.

(5) In period t + 4, the central bank decides to change the real policy rate to return the economy as quickly as possible to potential output and to the inflation rate of period t. Under which path for the formation of expected inflation is the nominal policy rate of interest higher in period t + 4, the path from 2 or the path from 3. Explain why, when inflation expectations are anchored as in part 3, the central bank can change the policy rate to immediately reach the new level of potential output and the period t level of inflation in period t + 4. Make the argument that is not possible for the central bank to immediately hit both the new level of potential output and the period t level of inflation in period t + 4 when expected inflation is equal to its lagged value.

QUESTION 5

The table shwos the Nominal Interest Rate, Inflation, and the Real Interest Rate in the United Kingdom, 1929–1933. Answer the following questions based on information found in the table.

Year	Unemployment rate (%)	Output growth rate (%)	1-year nominal interest rate (%)	inflation rate (%)	1-year real interest rate (%)
1929	10.4	3.0	5.0	-0.90	5.9
1930	21.3	-1.0	3.0	-2.8	5.8
1931	22.1	-5.0	6.0	-4.3	10.3
1932	19.9	0.4	2.0	-2.6	4.6
1933	16.7	3.3	2.0	-2.1	4.1

(1) Is there evidence of the deflation spiral from 1929 to 1933 in the United Kingdom?

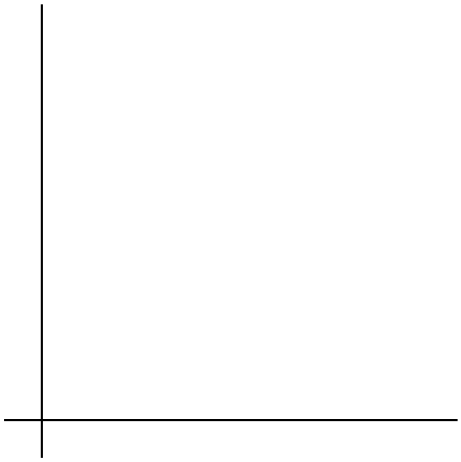
(2) Is there evidence of the effect of high real interest rates on output?

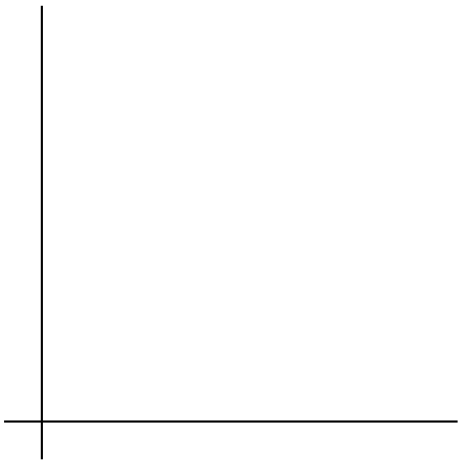
(3) Is there evidence of a poor choice of the real policy interest rate by the central bank?

QUESTION 6

Suppose the economy is operating at the zero lower bound for the nominal policy rate; there is a large government deficit and the economy is operating at potential output in period t. A newly elected government vows to cut spending and reduces the deficit in period t + 1, period t + 2 and subsequent periods. Suppose expected inflation depends on past inflation.

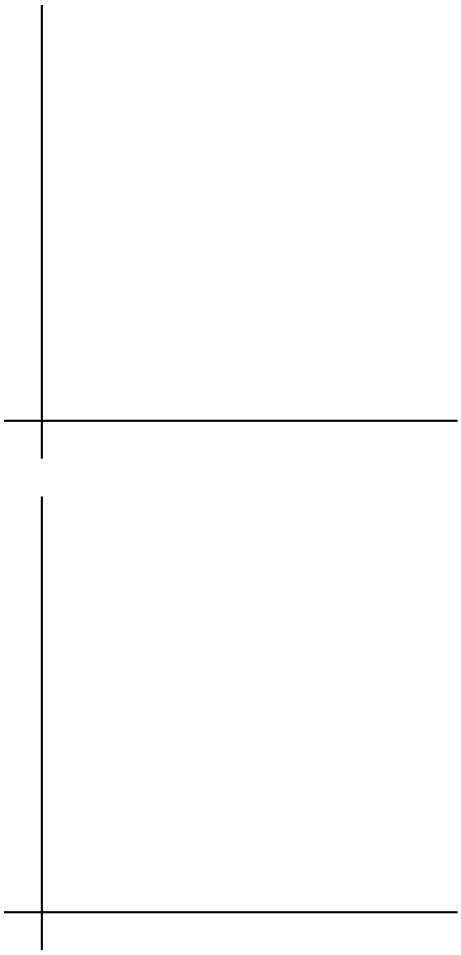
(1) Show the effects of the policy on output in period t + 1.





(2) Show the effects of the policy on the change in inflation in period t + 1.

(3) What happens to the real policy rate in period t + 2? How will this affect output in period t + 2?



(4) How does the zero lower bound on nominal interest rates make a fiscal consolidation more difficult?

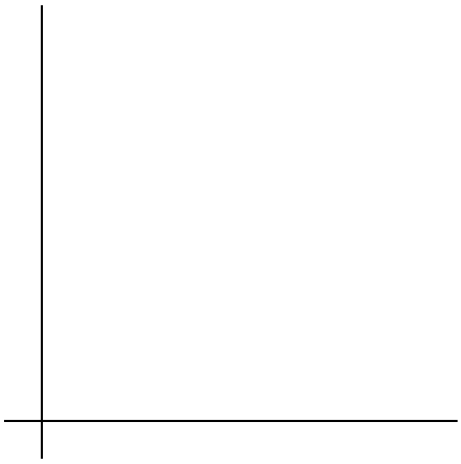
QUESTION 7

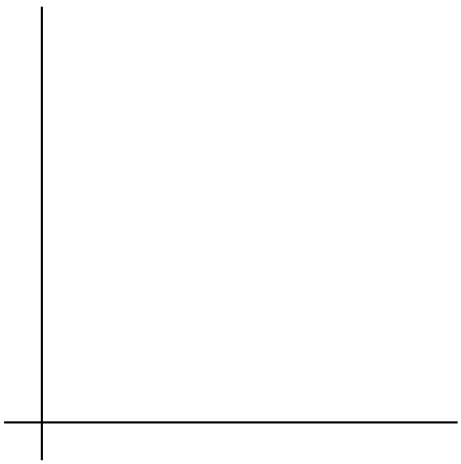
This question is about fiscal consolidation in the IS-LM-PC Model. Consider the typical IS-LM-PC set-up from Chapter 9:

$$\begin{aligned} Y_t &= C(Y-T) + I(Y, r_t + x_t) + G_t \\ r_t &= \bar{r} \\ \pi - \pi^e &= \frac{\alpha}{L_t}(Y - Y_n) \end{aligned}$$

Consider the case of static inflation expectations, where $\pi^e = \bar{\pi}$.

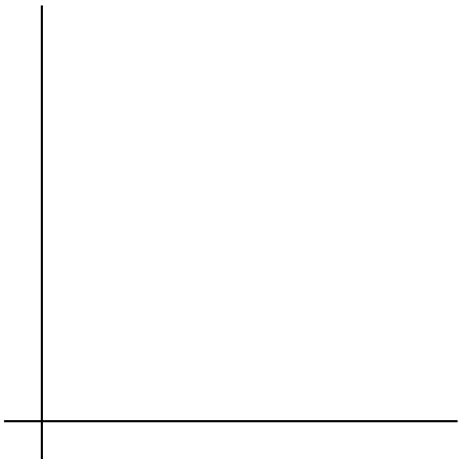
(1) Suppose that the economy starts out in medium run equilibrium, with output equal to potential and the target interest rate equal to the natural real interest rate. Then congress decides that reducing the budget deficit is important, and performs a fiscal consolidation. They do this by decreasing spending and increasing taxes. Represent this policy change on the IS-LM-PC graphs below.

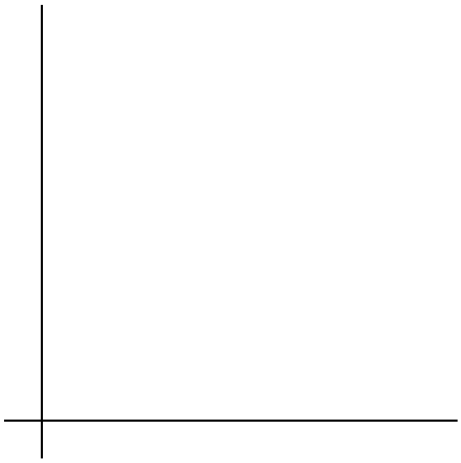




(2) What is the short run impact on output, the unemployment rate, and inflation?

(3) What does the central bank do in response to the changes you mentioned in part (2)? Why does it act in this way?





(4) When the economy returns to medium run equilibrium, what can we say about the level of inflation relative to before fiscal consolidation? How do you know?

(5) When the economy is back in medium run equilibrium, what can we say about the levels of consumption and investment spending relative to what they were before the fiscal consolidation?