NBA5420 ProblemSet7

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a. Suppose C0 = 20 and G = 22. What are GDP, r, and i?

Answer:

0.6 * GDP = Co + (20 - 100 r) + G

r = (2 + GDP - 100)/100

So GDP = 100

r = 0.02

b. Suppose that C0 drops due to a cutback in consumer spending during the financial crisis. How big a fall in C0 would you need to drive the economy to the zero lower bound (i.e. to make r = -0.02)?

Answer:

Co = 13.6

c. What is the effect on GDP and r if government spending G falls from 22 to 20 if the economy is not at the zero lower bound (ZLB)? What if it is at the ZLB?

Answer: when the economy is not on ZLB, the GDP will decrease less

When the economy is on ZLB, the GDP will decrease more.

This is because when the economy is not on ZLB, when G falls, the effect on GDP can be offset by decrease the r, however when economy has already been in ZLB. Then the effect of fall of G will all be in the expense of fall of GDP.

d. The IMF did a study of the effects of pre-2008 austerity programs (when countries were not at the zero lower bound), and used these results to predict the effects of more recent programs (when many developed countries are at the zero lower bound). Why was this problematic?

Answer: when countries are at ZLB, the decrease of government spending will cause less fall of GDP compared with at not at ZLB. So when the IMF use the pre-2008 data which is not at ZLB, it will get less severe effect of austerity programs on GDP. But in reality, cause the economy is at ZLB, the decrease of government spending will cause more fall of GDP than IMF's expectation.

e. Suppose that expected inflation falls from π = 0.02 to π = 0.01; what effects does this have? How does it depend on the initial state of the economy (meaning, not at the ZLB versus at the ZLB)?

Answer:

1 no effect if the current real interest rate is above -0.1

2 the real interest rate will become -0.1 and GPD will all fall when the current real interest rate is between -0.1 and -0.2

3 the real interest rate will become -0.1 and GPD will all fall a lot if the real interest rate is at -0.2

True or False? Explain your reasoning

a. Raising inflation is a proven successful strategy that central bankers can use to lower unemployment in both the short- and long-term.

Answer: False: Inflation is good strategy for short-term unemployment which is also called cycle unemployment. But inflation can not solve the long-term employment which is also called structural unemployment

b. Standard models like IS-LM couldn't have predicted the failure of massive monetary expansion (e.g., "quantitative easing" in the U.S. and Japan) to cause inflation.

Answer: Yes, when the interest rate decrease, the inflation should increase, and the IM line should change it position, the IS-LM can not reflect the effect of interest rate on inflation

c. Quantitative easing involves the central bank selling long-term securities in order to increase the money supply.

Quantitative easing Wiki https://en.wikipedia.org/wiki/Quantitative_easing

Answer: False. Quantitative easing is central bank buy securities of government

d. Assuming all else constant, a sudden fall in short-term interest rates that will persist indefinitely is good for bond investors who are investing for the long-run because it causes bond prices to rise.

Answer: false, cause the yield to return is also effected by the inflation and interest rate. When interest rate decrease, in the short term the yield decrease and the prices of bond increase. But in the long run, the decreased interest will cause inflation, so the yield may increase, so we can not tell whether the prices of bound will increase or decrease in the long run.

e. Central bankers know how to stop inflation, but have a harder time ending deflation (especially when at the zero lower bound).

Answer: True, for central bank, it can increase the interest rate to fight the inflation but it sometimes can not decrease the interest rate when economy is at ZLB, so it will have hard time in fighting deflation when the economy is at ZLB

f. Structural changes to the labor market have no effect on the NAIRU.

note: **NAIRU** is an acronym for **non-accelerating inflation rate of unemployment**

Answer: true. NAIRU is the rate that minimum unemployment that does not cause inflation, so when structural changes will lower GPD, but it will not change the NAIRU.

g. The main reason we have high unemployment is because, after the end of the housing bubble, the economy needs to shift workers from some sectors (like home construction) into other sectors.

Answer:True