HE2002 Macroeconomic II - Quiz 1 Reflections

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Quiz 1 Scores and Statistics

- You can view your scores in the Grade Center Sidebar on NTULearn.
- Mean = 19.53; SD = 3.35; Max. mark = 25.
- Feel free to reach out if you need help.
- You can contact me via email, and you can also schedule office hours using the Calendly link provided.

Q1.

Which of the following is an exogenous variable in the basic IS-LM model we learned in class?

A) disposable income (Y_D)

B) saving (S)

C) taxes (T)

D) consumption (C)

E) none of these

11 Endogenous vs. Exogenous Variables

- **Endogenous variables**: variables depend on other variables in the model
- **Exogenous variables**: variables not explained within the model but are instead taken as given

12 Fiscal Policy

- T and G describe **fiscal policy** - the choice of taxes and spending by the government.

- G and T are **exogenous** because:
  - We treat G and T as variables chosen by the government and will not try to explain them within the model introduced here.

Q8.

Which of the following is a liability for the central bank?

A) checkable deposits

B) bonds

C) savings accounts

D) loans

E) currency

25 The Balance Sheet of the Central Banks Revisited

Central Bank

Assets	Liabilities
Bonds	Central Bank Money = Reserves + Currency

Note: Since we introduce banks to the economy under consideration, we also need to introduce reserves to the balance sheet of the central bank. This complication is used to illustrate the idea of creation of money.

9) Consider a monetary system that includes simple commercial banks. The public holds no currency. The ratio of reserves to deposits is 0.2. The demand for money is given by $M^d = \$Y(0.6 - 2i)$. The supply of central bank money H is \$400 billion, and nominal income is \$ 4 trillion. What is the equilibrium interest rate by setting the demand for central bank money equal to the supply of central bank money?

A) 15%
B) 25%
C) 5%
D) 2.5%
E) 10%

(a) What is the demand for central bank money?

The public holds no currency, so all money is in the checking accounts. The demand for central bank money equals the demand for reserves:

$$H^d = \theta M^d = 0.1(\$Y)(0.8 - 4i).$$

(b) Find the equilibrium interest rate by setting the demand for central bank money equal to the supply of central bank money.

Set $0.1(\$Y)(0.8 - 4i) = 0.1(\$5000)(0.8 - 4i) = \$100$ (in billion), and we can solve for the equilibrium interest rate $i = 15\%$.

Q14.

From 1982 to 2004, the nominal interest rate has declined considerably, but the real rate has declined much less than the nominal rate. This is because

A) the nominal interest rate is set by the central bank

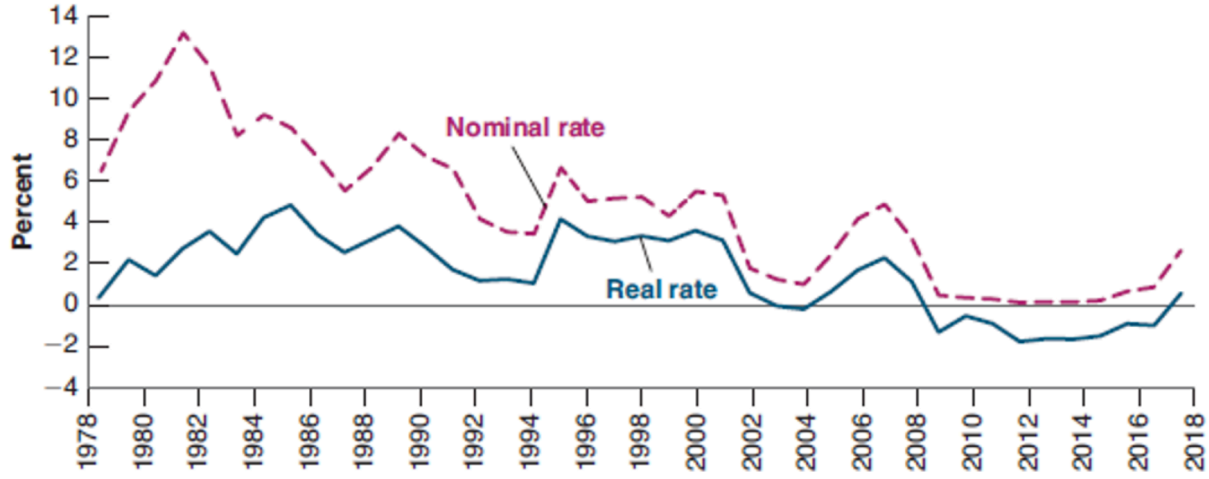
B) the real interest rate is close to zero

C) expected inflation has declined

D) expected inflation has increased

E) the real interest rate is set by the central bank

13 Nominal and Real One-Year T-Bill Rates in the US



- The nominal interest rate has declined considerably, but because expected inflation has declined as well, the real rate has declined much less than the nominal rate.

Q15.

Suppose a bank has chosen its preferred leverage ratio and suppose that the value of its assets declines, which of the following is wrong?

A) To maintain the leverage ratio, it can ask investors to provide more funds.

B) Its leverage ratio decreases.

C) To maintain the leverage ratio, it can call back loans.

D) The bank is more at risk than it was before.

E) none of these

30 Leverage and Lending I

- Suppose a bank has chosen its preferred leverage ratio and suppose that the value of its assets declines.
- Its leverage ratio increases.
- The bank is still solvent but it is more at risk than it was before.

Fire Sale

Bank Run

2022 Nobel Memorial Prize in Economics

Collapse of Silicon Valley Bank

4 Lecture 4

Q1: For today's lecture on financial markets, you mentioned that when a bank is "still solvent but it is more at risk than it was before," the bank can either 1) ask investors to provide more funds or 2) call back their loans. Can I clarify if they can solve this issue with option one so that they have more funds to increase their asset value (by buying bonds etc.) so they are still solvent? And with Option two, is it because they increase their capital and decrease the leverage ratio?

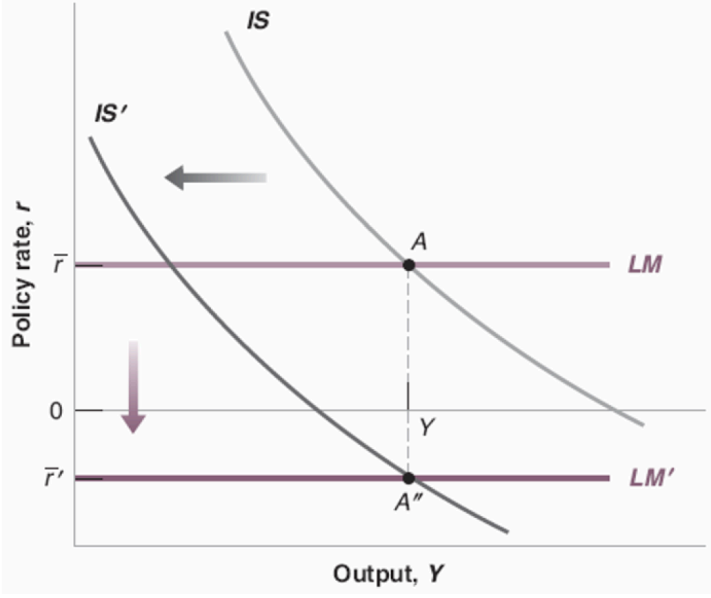
Ans:

When the asset value decreases, the liabilities of the bank are fixed, so the value of capital decreases with the same amount, leading to a higher value of leverage ratio. The bank is still solvent as long as the capital value is positive. This risk is higher because an additional decrease in the asset value will more likely draw the value of capital down to zero. When the capital value is negative, the bank is insolvent. If the owners of the bank do not want to suffer more loss, they will choose to default.

17) Suppose that in the initial equilibrium, the real interest rate $r = 2\%$, risk premium $x = 2\%$ and $\pi^e = 1\%$. The financial shocks hit the economy, and the risk premium x increases by 4% to 6%. Problems in the financial system lead to a recession. Which of the following macroeconomic policy is ***impossible*** to return output to its previous level and avoid recession?

A) an increase in G
B) a financial policy that improves the solvency of the financial system
C) a decrease in T
D) a decrease in the policy rate
E) none of these

41 Financial Shocks, Monetary Policy, and Output III



- This may lead to the issue of zero lower bound on the nominal interest rate.
- Given the zero lower bound on the nominal interest rate, the lowest real rate the central bank can achieve is given by $r = i - \pi^e = 0 - \pi^e = -\pi^e$.
- The lowest real policy rate the central bank can achieve is the negative inflation. It may not be enough to prevent a recession.

18) (Think about the extended IS-LM model with financial markets) In an economy with the rate at which firms can borrow is much higher than the federal funds rate, equivalently that the risk premium, x is high, and the nominal interest rate is at the zero lower bound, which of the following statement is ***correct***?

A) The policy that improve the solvency of the financial system and make banks become more willing to lend implemented by the government is called quantitative easing and it is a kind of macroeconomic policy.
B) Suppose quantitative easing increases the expected inflation, LM curve shifts down.
C) Fed has no policy options to stimulate the economy when the federal funds rate is zero.
D) The risk premium x increases when quantitative easing successfully facilitates the flow of credit in the financial markets.
E) none of these

2. **Chapter 6, Q9. Unconventional monetary policy: financial policy and quantitative easing**

We have written the IS-LM model in the following terms:
IS relation:

$$Y = C(Y - T) + I(Y, r + x) + G$$

LM relation:

$$r = \bar{r}$$

Interpret the real policy rate as the federal funds rate adjusted for expected inflation. Assume that the rate at which firms can borrow is much higher than the federal funds rate, equivalently that the premium, x, in the IS equation is high.

(a) The risk premium is likely to fall. The IS curve will shift to the right. This will increase output and can be thought of as a sort of macroeconomic policy.

(b) The risk premium is likely to fall. The IS curve would shift right and output would increase. Quantitative easing becomes a policy option when the nominal policy interest rate (the federal funds rate) is zero.

(c) Strictly speaking, the increase in expected inflation does not directly affect the level of the real policy rate except when the nominal policy rate remains constant. In Figure 6-9, this is the exact situation. The nominal policy rate of interest is zero and the real policy rate of interest is the negative of the expected inflation rate. Thus, if an action by the Fed increases expected inflation, this would decrease the real policy interest rate and shift the LM curve down. You would move ALONG the IS curve and output would rise.