Supervision 7
Monetary Transmission

Short questions (max 1.5 page handwritten)

1. How does contractionary monetary policy affect equity prices according to the Gordon growth model?

2. When financial markets are (informationally) efficient, anticipated monetary policy decisions have no effect on asset prices, so monetary transmission through asset price channels is ineffective. True or false? Explain.

3. Describe four ways in which monetary policy could affect aggregate demand through consumption.

Problem

4 Consider the Bernanke-Blinder (1988) extension to the standard ISLM model. Banks are assumed to hold bonds $B$, loans $L$ and reserves $R$ as assets, and have deposits $D$ as liabilities, so that the representative bank’s balance sheet is:

$$B + L + R = D$$

The supply of deposits is determined by the legal minimum reserve requirement $R = \tau D$, where $0 < \tau < 1$, so

$$D^s = \frac{1}{\tau} R$$

The demand for deposits is given by the traditional money demand equation

$$D^d = Y - \kappa_M i_B + d_M$$

where $Y$ is real aggregate output, $i_B$ the bond interest rate, and $d_M$ a money demand shock. The supply of loans is described by

$$L^s = \lambda (D - R) + s_L$$

where $s_L$ is a loan supply shock and $0 < \lambda < 1$. The demand for loans is given by

$$L^d = \mu Y - \kappa_L (i_L - i_B) + d_L$$

where $i_L$ is the loan interest rate, and $d_L$ a loan demand shock. Goods market equilibrium is described by the IS equation

$$Y = -\gamma_L i_L - \gamma_B i_B + d_Y$$

where $d_Y$ is an aggregate demand shock. The parameters $\kappa_M$, $\kappa_L$, $\mu$, $\gamma_L$ and $\gamma_B$ are all positive.
(a) Derive the relationship between output $Y$ and the bond interest rate $i_B$ such that there is equilibrium in the money market, and denote it by LM. Explain how monetary policy affects the LM curve.

(b) Derive the equilibrium loan interest rate $i_L$ as a function of $i_B$, $Y$ and $R$. Give an intuitive explanation for the effect on $i_L$ of a change in $i_B$, $Y$, $R$, $d_L$ and $s_L$.

(c) Derive the relationship between output $Y$ and the bond interest rate $i_B$ such that there is equilibrium in both the goods market and the loan market, and denote it by CC. Explain how monetary policy affects the CC curve.

(d) Suppose the central bank engages in open market operations and increases the level of bank reserves $R$. Show graphically how this affects output $Y$. Give an intuitive explanation, distinguishing between the interest rate channel and the bank lending channel.

(e) For what parameter value(s) would the lending channel be inoperative while the interest rate channel still works? Give a brief economic interpretation.

**Essay** (1000 words max)

5 “The credit channel is an enhancement mechanism for traditional monetary policy transmission, not a truly independent or parallel channel.” Discuss.

**Main readings**


**Supplementary references**

- Session on “Is It Money or Credit, or Both, or Neither?”, *American Economic Review* 78(2), May (Papers and Proceedings), 1988.