Problem Set 4

Due in lecture on Wednesday, December 6. Be sure to put your name on your problem set. Put “boxes” around your answers to the algebraic questions.

1. Consider a Taylor rule of the following form:

\[ i_t^{\text{Fed Funds}} = \pi_t + 0.5 \times (y_t - y_t^*) + 0.5 \times (\pi_t - \pi_t^*) + r_t^* \]

Calculate the implied Fed funds rate for 2017Q3, assuming the equilibrium real rate is 2.0%, and target inflation rate is 2%. You will need to obtain information on the output gap and inflation rate (calculated using quarterly data). Show your work.

You can obtain information St. Louis Fed FRED system (https://fred.stlouisfed.org/) on potential GDP and actual GDP, to calculate the output gap. You can also obtain data for personal consumption expenditure deflator inflation from there as well.

2. Consider a CC-LM model as laid out in the Bernanke-Blinder article.

2.1 Show what happens, graphically, if the Fed undertakes open market operations, by buying Treasury bonds.

2.2 Explain the economics behind why the curve(s) shift(s).

3. Consider the implications of the Bernanke-Gertler-Gilchrist model. Using whatever equation(s) is relevant, show the implications for firm borrowing of the following developments:

3.1 The interest rate rises.

3.2 The relative price of capital falls.

3.3 Technology improves.

4. If the Bernanke-Gertler-Gilchrist model is correct, after a monetary tightening and decrease in corporate earnings,

4.1 What should happen on average to borrowing by small firms relative to large firms? Why?

4.2 What happens to commercial paper issuance relative to bank borrowing? Why?