Economics 435
Fall 2021
University of Wisconsin-Madison

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Social Sciences 7418

Problem Set 4

Due ***on Canvas*** on Tuesday, November 16th, 11pm. 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:

$$i_t^{FedFunds} = \pi_t + 0.5 \times (y_t - y_t^*) + 0.5 \times (\pi_t - \pi_t^*) + r_t^*$$

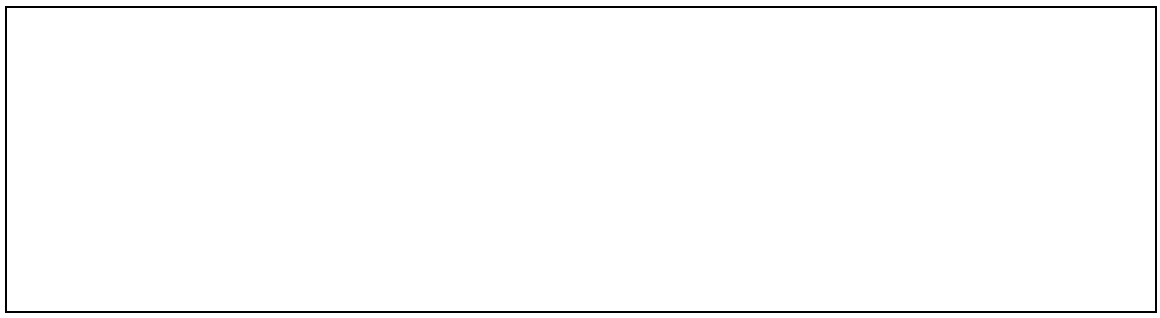
1.1 Calculate the implied Fed funds rate for 2021Q3, assuming the equilibrium real rate is 2.0%, and target inflation rate is 2%. You will need to obtain information on the output gap and inflation rate. Show your work.

You can obtain information St. Louis Fed FRED system on potential GDP (expressed in 2012$) and actual GDP, to calculate the output gap. You can also obtain data for *core* personal consumption expenditure deflator inflation from there as well (use four quarter inflation in your calculations).

1.2 Show what happens to the implied Fed Funds rate if the target inflation rate is raised to 4%.

2. Suppose the demand for reserves is stable. Use a graph of the market for Bank Reserves to show how the Open Market Trading Desk would implement a decision by the FOMC to raise the target federal funds rate. You should assume that the discount and deposit rates are

adjusted so that the spreads between them and the target federal funds rate are maintained.



3. Suppose, one morning, the Open Market Trading Desk drastically under-estimates the demand for reserves when deciding the quantity of reserves to supply to the market. Use the graph of the Market for Bank Reserves to show why the market federal funds rate will not exceed the discount rate regardless of how large the gap between estimated and actual reserve demand.