Economics 435
Fall 2019
University of Wisconsin-Madison

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Social Sciences 7418

Problem Set 2

Due ***in lecture*** on Wednesday, October 9. Be sure to put your name on your problem set. Put "boxes" around your answers to the algebraic questions.

1. Consider an economy where money demand depends on wealth, defined as the sum of money base and government bonds and $T = t_0 + t_1 Y$. Assume b_0 and c_0 decline as business and consumer confidence decline.
1.1 Show in an IS-LM diagram what happens. Be sure to show each curve shift. You can assume the monetary authorities hold the money supply constant.
1.2 Is the impact on GDP larger or smaller (in absolute value) than in the standard IS-LM model where $(M/P)^d = \mu_0 + Y - hi$?
1.3 Returning to 1.1, can monetary policy keep output constant as business and consumer confidence decline? Assume the equilibrium interest rate starts off and ends up above zero.

2. Consider the Aggregate Demand-Aggregate Supply framework. Suppose government spending is increased when the economy is at full employment, and there is no liquidity trap. You can assume for simplicity expected inflation is always zeroType equation here..
2.1 Show what happens in an IS-LM and AD-AS graph in the period the government spending increase occurs, and output ends up above potential GDP.
2.2 Show what happens over time to output, the price level, and the interest rate.
2.3 Redo 2.2 assuming:

$$\frac{P_t - P_{t-1}}{P_{t-1}} \equiv \pi_t = f_1\left(\frac{Y_{t-1} - Y^*}{Y^*}\right) \text{ for } Y_{t-1} < Y^*$$

$$\frac{P_t - P_{t-1}}{P_{t-1}} \equiv \pi_t = f_2\left(\frac{Y_{t-1} - Y^*}{Y^*}\right) \text{ for } Y_{t-1} > Y^*$$

Where $f_1 \ll f_2 \approx \infty$.

3. Consider the following data from US Treasury http://www.treasury.gov/resource-center/data-chart-center/interest-rates/Pages/TextView.aspx?data=yield (accessed 10/1/2019):

Date	1 Mo	3 Mo	6 Mo	1 Yr	2 Yr	3 Yr	5 Yr	7 Yr	10 Yr	20 Yr	30 Yr
10/01/19	1.79	1.82	1.81	1.73	1.56	1.51	1.51	1.59	1.65	1.93	2.11

Suppose the expectations hypothesis of the term structure holds (term premium = 0).
3.1 Calculate the expected one year interest rate, one year from 10/1/2019.
3.2 Calculate the average of expected one year interest rates for periods 5 and 6 years from 10/1/2019.
3.3 Repeat 3.2 using *real* interest rates. Hint: go to http://www.treasury.gov/resource-center/data-chart-center/interest-rates/Pages/TextView.aspx?data=realyield