Economics 442
Spring 2019
University of Wisconsin-Madison

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Social Sciences 7418

Midterm Exam 2

You have 65 minutes to complete this 60 minute exam. Be sure to "box in" your answers. Show your work (so that partial credit can be granted if the final answer is incorrect).

1. [20 minutes] Consider an economy on a flexible exchange rate, and described by the IS-LM-UIP framework in Chapter 19 of the textbook (this model assumes *perfect capital mobility*).

1.1 (10 minutes) Suppose the home government cuts taxes. Using the IS-LM-Interest Rate Parity diagrams, show what happens to interest rates, output and the exchange rate.

The IS curve is given by:

$$Y = C(Y-T) + I(Y,i) + G + NX\left(Y, Y^*, \left(\frac{1+i}{1+i^*}\right)\overline{E}^e\right)$$

And interest parity relation:

$$E_t = \frac{(1+i)}{(1+i^*)}\overline{E}^e$$

Where the foreign interest rate is assumed fixed.

1.2 (5 minutes) What happens to the trade balance? The trade balance (or "net exports) is given:

$$NX(Y,Y^*,\varepsilon) = X(Y^*,\varepsilon) - IM(Y,\varepsilon)/\varepsilon$$

Make specific reference to the variables in the above equation.

1.3 (5 minutes) Suppose the US government wanted foreign governments to help reduce the US trade deficit. *If it wants to maximize the shrinkage of the US trade deficit*, what should it encourage foreign governments to do with respect to their fiscal or monetary policy? Explain with reference to the model.

2. [15 minutes] Multipliers.

2.1 (5 minutes) Suppose the price level is fixed, and the IS curve is given by:

$$Y = \left(\frac{1}{1-c_1(1-t_1)-b_1}\right)[\Lambda_0 - b_2 i] \qquad \text{<IS curve>}$$

where $\Lambda_0 \equiv c_0 - c_1(t_0) + b_0 + GO_o$.

What is the government spending multiplier when the Fed targets the interest rate? Use a graph and/or the equation to explain your answer.

2.2 (5 minutes) Keeping the same assumptions as in 2.1. Suppose the Fed follows a kind of Taylor rule, which only focuses on the output gap:

$$i = i_n + \theta(Y - Y_n)$$

Where i_n is the natural interest rate, and Y_n is the natural level of output. The parameter θ measures the reaction of the Fed funds interest rate to the output gap.

What is the multiplier? Is it smaller or bigger than that in 2.1?

2.3 (5 minutes) Why, intuitively, is the multiplier taking on the value(s) it does? You can assume that the price level remains fixed.

3. [15 minutes] Multipliers

Consider time varying estimates of the government spending multiplier:

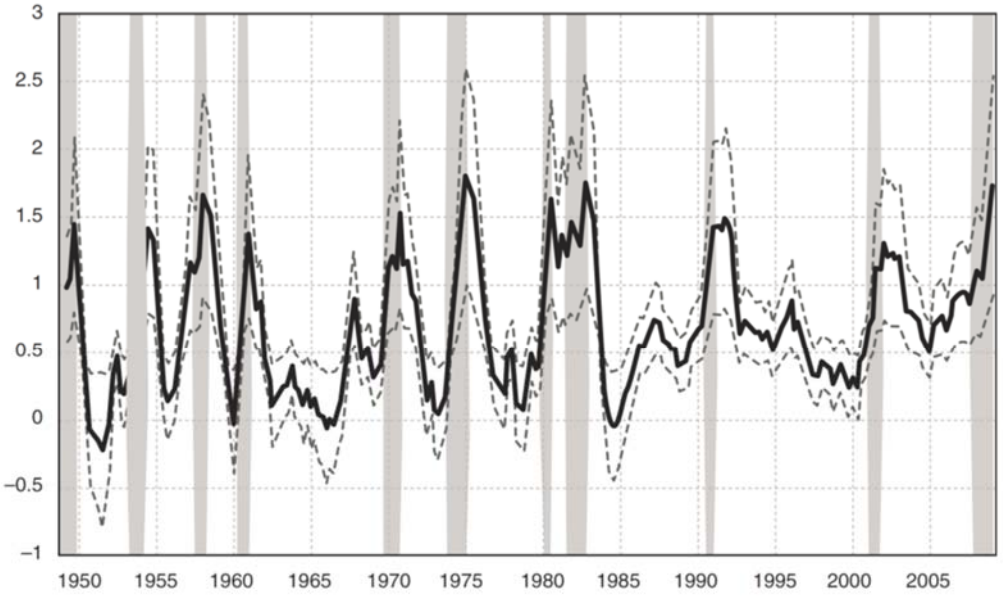


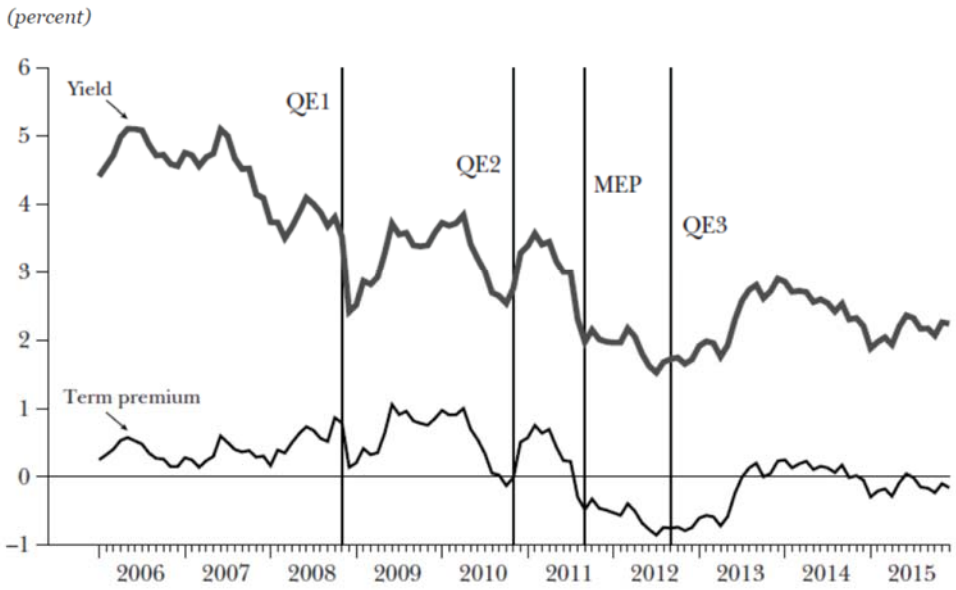
Figure 1 Historical multiplier for total government spending (Source: Auerbach and Gorodnichenko (2012b)).

3.1 Suppose the gray bars, which denote recessions, also denote periods when output is below Y_n. Can you draw an AD-AS graph that is consistent with this pattern?

3.2 Suppose the AS curve is linear. What kind of central bank reaction function will yield the pattern above? Explain using an IS-LM graph.

4. [10 minutes] Consider this graph of ten year Treasury yields, and estimated term premiums.

Figure 2. Kim–Wright estimated 10-year term premium and 10-year Treasury yield



If this graph is correct, then is forward guidance or is quantitative easing (actually credit easing) the biggest explanation for declining Treasury yields? Explain, using equations.

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