Economics 442
Fall 2020
University of Wisconsin-Madison

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Problem Set 4 [revised]

Due ***in lecture*** on Monday, December 7th. Be sure to put your name on your problem set. Put "boxes" around your answers to the algebraic questions.

1. Consider an economy on a flexible exchange rate, and described by the IS-LM-IRP framework in the open economy handout.

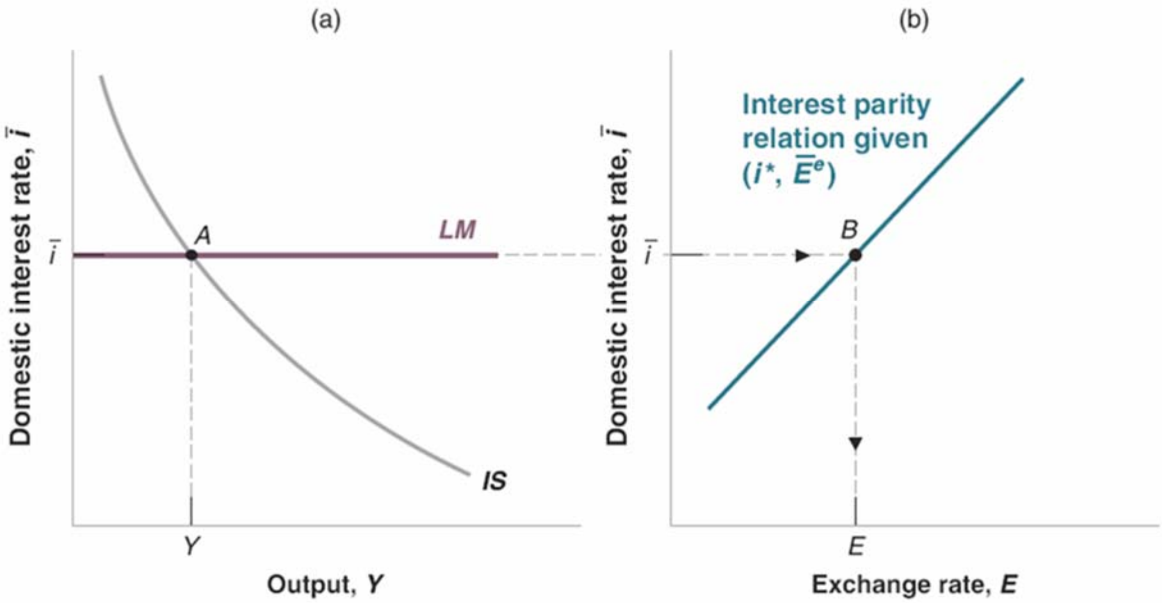


Figure 1

Note that the slope of the IS curve is flatter, the larger the (1) sensitivity of investment to the interest rate, and (2) the larger the sensitivity of net exports to the real exchange rate ε and the sensitivity of the real exchange rate to the interest rate (which is one when the foreign interest rate is held constant).

1.1 Suppose taxes are cut and government spending is increased. Using the IS-LM-IRP diagrams, show what happens to interest rates, output, and the exchange rate, assuming the Fed targets the interest rate, and the foreign interest rate is constant.

1.2 Suppose the Fed, fearing an overheating economy, tightens monetary policy. Show what happens to output and interest rates and the exchange rate.

1.3 Suppose in 1.1 the rest-of-world is so small so that the foreign interest rate rises one percentage point when the US interest rate rises by one percentage point (so that the interest differential remains constant). Draw the IS-LM-IRP graphs before the tax cut/spending increase takes place. Do the curves look the same as in Figure 1? [You can answer it in the context of 1.2 instead if you wish; be sure to indicate you are answering it thusly.]

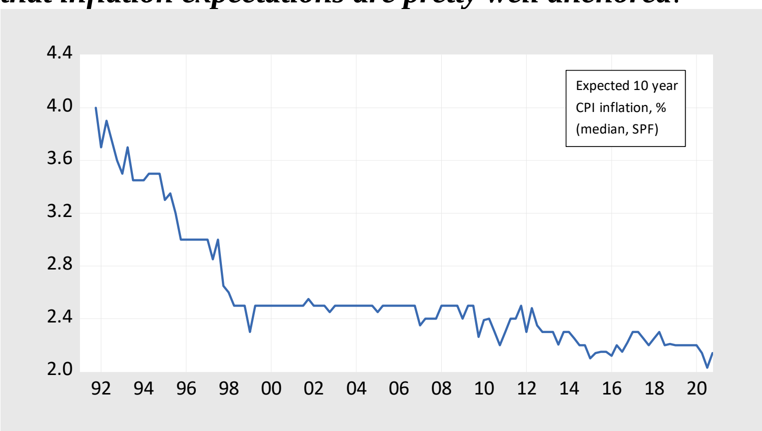
1.4 Following 1.3, show what happens when the tax cut/spending increase occurs. What component(s) of aggregate demand is crowded out?

2. Consider the expectations-augmented Phillips curve

$$\pi_t = \theta(u_t - u_t^*) + \lambda \pi_t^e + (1-\lambda)\pi_{t-1}^* + \varepsilon_t$$

Where u is the unemployment rate, u* is the natural rate of unemployment, π is the quarter-on-quarter inflation rate, and π* is the four-quarter average of inflation rates.

In recent years inflation has appeared to be lower than anticipated by policymakers. ***Yet we know that inflation expectations are pretty well anchored***:



Provide at least two theoretical explanations for why it might be the case (noting that expected ~~income~~ inflation is known). It would probably be helpful to use a graph.

3. In our standard AD-AS framework, Y_n moves independently of aggregate demand.

3.1 In reality, is it possible that the path of potential output affects the path of aggregate demand? If so, how?

3.2 Is the timing of recessions consistent with your answer in 3.1?

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