

Whitman College  
Econ 308  
Exam 3  
April 25, 2013

Write all answers in your blue book. Show all of your work. The exam ends at 2:20.

1. (8pts) Consider the table below of information about a hypothetical country. Fill in the table.

Public (i.e. government) Savings	-300
Private Savings	500
Investment	350
Exports	100
Imports	
Consumption	1500
Government Expenditures	600
Aggregate Output	
Taxes	

2. (10pts) One United States dollar currently buys 99.16 Japanese yen. Suppose that over the course of the next 12 months, Japan runs an inflation rate of 1.2% and the U.S. runs an inflation rate of 2.3%. Assume that Purchasing Power Parity holds. What will the exchange rate be one year from now?

3. Consider the IS-LM model.

(a) (15pts) Derive an LM curve. Explain your work.

(b) (15pts) Derive an IS curve. In your derivation, you should use a graph of the Keynesian Cross model and a graph of investment as a function of the real interest rate. Explain your work.

4. Consider the excerpts below from a speech given by Federal Reserve Board of Governor Vice Chair Janet L. Yellen at a conference sponsored by the International Monetary Fund April 16, 2013, entitled "Rethinking Macro Policy II."

Many central banks have, in the wake of the [2008 global financial] crisis, found it challenging to provide appropriate monetary stimulus after their policy interest rate hit the effective lower bound... Since December 2012, the [Federal Open Market] Committee has said it intends to hold the federal funds rate near zero at least until unemployment has declined below 6-1/2 percent, provided that inflation between one and two years ahead is projected to be no more than 1/2 percentage point above the Committee's 2 percent longer-run goal, and longer-term inflation expectations continue to be well anchored. I believe that the clarity of this commitment to accommodation will itself support spending and employment and help to strengthen the recovery...

(a) (2pts) Ms. Yellen notes that central banks face a zero lower bound on their interest rate targets. Explain why zero is the lowest nominal interest rate lenders are willing to accept.

Use the IS-LM model to answer parts (b)-(d) below.

(b) (5pts) Draw an LM diagram. On your graph, indicate the level of potential real aggregate output,  $Y_{pot}$ . Draw your LM curve horizontal at nearly zero for relevant levels of real aggregate output, i.e. for real aggregate output up to and slightly beyond  $Y_{pot}$ .

(c) (10pts) On your graph from part (b), add an IS curve that would be consistent with an economy like that of the United States, where the current unemployment rate is 7.6% and the natural rate of unemployment is at most 6.5%. On your graph, indicate the current equilibrium interest rate (label it  $r_1$ ) and current real aggregate output (label it  $Y_1$ ). Is there a recessionary or expansionary gap? If so, indicate that gap on your graph.

(d) (5pts) Ms. Yellen notes the Fed's "commitment to accommodation." On your IS-LM diagram from part (c), show the effect of the central bank further loosening monetary policy via open market purchases. What effect would the central bank's loosening policy have on the interest rate in this model? How effective would the central bank's loosening be in getting the economy back to  $Y_{pot}$ ?

5. Consider the following excerpts from the Wall Street Journal. Use the IS-LM model to answer parts (a)-(c).

## Drop in Borrowing Squeezes U.S. Banks

By DAN FITZPATRICK and SHAYNDI RAICE, April 26, 2013, p. C1

U.S. companies are pulling back on borrowing, which could put a drag on the limping U.S. economy ... Bankers and corporate executives said the reluctance is a sign of uncertainty about rising health-care costs, fear of another economic downturn and a brutal winter in the Midwest that delayed new investment... Business owners "feel very, very hesitant to invest," and the economy is "struggling to get solid footing" but "we didn't expect the wall we hit," BB&T Corp. Chairman and Chief Executive Kelly King said last week.

(a) (10pts) Consider the drop in business owners' willingness to spend on investment projects. Show and explain how this drop in willingness to invest affects the IS curve. In your work, you should use the Keynesian Cross model and a graph showing investment as a function of the real interest rate.

(b) (10pts) How does the drop in willingness to invest affect real interest rates and real aggregate output in the IS-LM model? Show the results on an IS-LM diagram.

(c) (10pts) In the IS-LM model, what government policies could be used to offset the "drag on the limping U.S. economy" caused by the drop in investment expenditures? Explain your answer.