

EC6012 Problem Set 2

Stephen Kinsella*

April 1, 2009

Introduction

This is the second problem set, worth 15% of your final grade. There are 5 questions. Questions 1-3 are compulsory. Question 4 is 'extra credit', where any marks you receive on the problem set will be added to your final score for the module. Please hand this assignment in at the start of class on Monday, 20th of April.

Question 1

The Bernanke-Blinder 1988 model has the following equilibrium conditions:

$$L(\rho, \underset{-}{i}, \underset{+}{y}) = \lambda(\rho, \underset{+}{i})D(1 - \tau) \quad (1)$$

$$D(\underset{+}{i}, \underset{+}{y}) = m(\underset{+}{i})R \quad (2)$$

$$y = Y(\underset{-}{i}, \underset{-}{\rho}) \quad (3)$$

Equation (1) gives us the market clearing condition in the loan market. $L()$ is the demand for loans, and the right hand side is the supply of loans. D is the deposits held by banks, τ is the fraction of deposits required to be held in reserves by banks to back up their deposits, $\lambda()$ is the fraction of non-required reserves that are supplied as loans, i_s the interest rate on bonds, and ρ is the interest rate on bank loans. The

plus and minus symbols below each variable indicate the sign of their partial derivative. Equation (2) is our money market clearance condition (LM curve), where is the demand for deposits (money), is the money multiplier, and is the reserves of the banking system. Finally, equation (3) is our goods market clearance condition where $Y()$ represents planned expenditures.

1. Explain in words why the derivatives in equations 1-3 have the signs we've assumed.
2. Assume a permanent increase in the money supply. Show graphically the effects on the CC and LM curves, and describe the effects on the economy.

Question 2

A version of the Nell 1992 IS-LM model in linear form is given below:

$$S = a + bY + ci, \quad (4)$$

$$I = d + eY + fi, \quad (5)$$

$$L = \alpha + \beta Y + \gamma i, \quad (6)$$

Call i_T be the minimum or liquidity trap level of the interest rate, let i_e be the equilibrium level of the interest rate. Let Y_F be the full employment level of income, and Y_e the equilibrium level of income.

The equilibrium conditions are $I = S$, and $L = M$, where M is fixed. The interpretation

*Department of Economics, Kemmy Business School, University of Limerick, Ireland. Email: stephen.kinsella@ul.ie, www.stephenkinsella.net

of the coefficients are: a is dissaving at zero income; d is autonomous investment; b and e are marginal propensities to save and invest; c and f show the influence of interest rates on saving and investment. α is autonomous demand for money; β is the transactions demand for money; and γ is the speculative demand for money.

1. Show graphically the equilibrium for this model without withdrawals and injections.
2. Including the JW curve in your analysis, show graphically the effects of an exogenous disturbance (say, the subprime crisis) which causes the LM curve to shift out and down.

Question 3

(Related to the Helpman/Drazen model of Money Demand)

Compute and graphically display a 6-month annualized growth rate of a broad measure of real money in the U.S., the U.K., Japan, and the Eurozone. What does it tell you about the difference between the growth rate of high powered money (High-powered money is bank reserves plus currency) and the money stock in these countries?

Question 4

The Drazen-Helpman model [1988](#) we studied in lectures admits a series of solutions for inflationary economies. We don't have one of those right now. Redraw the model assuming a *deflation*. (This is an extra credit question).

References

B. Bernanke and A. Blinder. Credit money and aggregate demand. *American Economic Review*, 78(2):435–439, May 1988.

Allan Drazen and Elhanan Helpman. The effect of policy anticipations on stabilization programs. *European Economic*

Review, 32(2-3):680–686, March 1988. URL <http://ideas.repec.org/a/eee/eecrev/v32y1988i2-3p680-686.html>.

Edward J. Nell. *Transformational Growth and Effective Demand*. New York University Press, New York, 1992.