Prof. Gustavo Indart
Department of Economics
University of Toronto

ECO 209Y
MACROECONOMIC THEORY

Problem Set 8

1. Consider the Keynesian model of a closed economy where the money supply is exogenously determined. Suppose this model is characterized by the following behavioural equations:

   $C = 60 + 0.8\ YD$ $\qquad$ $L = 0.2\ Y - 10\ i$

   $I = 200 - 20\ i + 0.2\ Y$ $\qquad$ $M/P = 300$

   $G = 300$

   $TA = 0.25\ Y$

   $TR = 50$

   a) What is the equation for the IS curve?
   b) What is the equation for the LM curve?
   c) What are the equilibrium levels of income and interest rate?
   d) Suppose that government purchases increase by 120. What is the equation for the IS curve now?
   e) What are the equilibrium levels of income and interest rate after the increase in government purchases?

2. Consider the Neo-Keynesian model of a closed economy where the money supply is endogenously determined. Except for the money supply function, assume this model is characterized by the same behavioural equations as in the previous question.
   a) Suppose the central bank implements monetary policy following a money supply rule where the endogenous money supply function is $M/P = 200 + 10\ i$. What is the equation for the LM curve in this model?
   b) What are the equilibrium levels of income and interest rate?
   c) Suppose that government purchases increase by 120. What are the new equilibrium levels of income and interest rate?
   d) Suppose now that the central bank implements monetary policy following an interest rate rule and sets the interest rate at 10. What are the equilibrium levels of income and interest rate when government purchases are 300?
   e) Suppose that government purchases increase by 120. What are the new equilibrium levels of income and interest rate?

3. a) In a clearly-labelled diagram, show all the equilibriums of questions 1 and 2 above.
   b) Why are these equilibriums different? Briefly explain in economic terms.