Due in lecture on Monday, December 6th. Be sure to put your name on your problem set. Put “boxes” around your answers to the algebraic questions.


2. Chapter 11, Analytical Problem #3a.,b.

3. Suppose you are given the real side of an open economy as:

\[
Y = AD
\]

\[
AD \equiv C + I + G + X
\]

\[
C = a_0 + bY_d
\]

\[
Y_d \equiv Y - T + F
\]

\[
T = TA_0
\]

\[
F = FT_0 - \psi Y
\]

\[
I = e_0 - dR
\]

\[
G = GO_0
\]

\[
X = g_0 - mY + m_w Y_{w,0} - m \left( \frac{EP}{P_w} \right)
\]

\[
\left( \frac{EP}{P_w} \right) = q_0 + vR
\]

Where \( Y_{w,0} \) is the initial exogenous level of rest-of-world output.

3.1. Solve for the open economy IS curve (\( Y \) as a function of \( R \)).

3.2. Solve for equilibrium income.

3.3 Using total differentials, show the impact on income of a decline in autonomous consumption on income. What is the economic intuition for this result?

3.4. Using the LM curve, solve for the change in interest rates.

3.4 Consider the quasi-reduced form expression for the trade balance (net exports):

\[
X = g_0 - mY + m_w Y_{w,0} - nq_0 - nvR
\]

Calculate the impact on net exports arising from the autonomous consumption decline.

4. Using the answer to 3.2,

4.1 Show, algebraically, the impact of an increase in the real money supply on the interest rate.

4.2 Show, algebraically, the impact on the real exchange rate.
4.3 Once again, consider the quasi-reduced form expression for the trade balance (net exports):
\[ X = g_0 - mY + m_w Y_{w,0} - nq_0 - nvR \]
Can you tell whether \( X \) increases or decreases?

5. Consider the overshooting model described at the end of the open economy macro handout.

5.1 Suppose the rate of reversion to purchasing power parity, \( \Theta \), becomes infinite. What happens to the price level, the exchange rate and interest rate when the money supply in the U.S. is increased by 10%. Use the time line graph to illustrate your answer.

5.2 What is this rate of reversion coefficient dependent upon?

5.3 Does purchasing power parity hold in this world?