Homework 8

1. Consider the usual IS-LM model:

$$Y = C(Y - T) + I(r) + G,$$
$$\frac{M}{P} = L(r, Y).$$

   a) If the government increases spending by ΔG and the central bank attempts to keep the interest rate unchanged, then how should the central bank do? (Do a quantitative analysis.)
   b) If the central bank manages to do this, what would be the government spending multiplier in this case?

2. Consider a small open economy, and assume that the net export depends on not only the exchange rate but also the total income,

$$X = X(e, Y).$$

Note that X is decreasing in Y. More income leads to more consumption of imported goods. Analyze the effect of a fiscal stimulus on the economy when the foreign exchange rate regime is

   a) Floating
   b) Fixed.

3. Consider the small-open-economy model with a floating exchange rate, and assume that the price level is specified as follows,

$$P(e, w) = wP_d + (1 - w)P_f/e,$$

   where P_d is the price level for domestically-produced goods, P_f is the price level for the imported goods, and $w \in (0,1)$ is the share of the domestic-product consumption.
   a) Draw the IS-LM curves for this model.
   b) Analyze the effect of a negative foreign-demand shock on the economy, that is, the net export declines for every e.
   c) Suppose that there is a one-time shock (for example, the outbreak of African Swine Fever raises the pork price) to the domestic price, say P_d rises by ΔP_d and stay at $P_d + \Delta P_d$. Analyze the effect on the economy.