1. (10%) Consider a country in which a banking crisis led to a collapse in both investment and consumption, and short-term interest rates (not including the high risk premium) have fallen to the zero lower bound. With a floating exchange rate, what alternatives does the government have to stimulate the economy? Show this using both the ISLM-FX and the AS-AD diagrams.

2. (30%) Consider a country like Greece, which has been accumulating (and disguising) a large international debt that investors now fear it cannot repay. Assume that a common currency, which Greece shares with the European Union, works the same as a fixed exchange rate.

   a) Assume the international recession decreases the income $Y^*$ of Greece’s trading partners. How would this affect the current account balance $CA$ and Gross National Disposable Income $Y$ in Greece? How would this affect tax revenues in Greece, and its international borrowing?

   b) With a differential risk premium $\sigma$, the uncovered interest rate parity condition can be written as $i = i^* + \sigma + (E_e/E - 1)$. Show the effect of an increase in $\sigma$ on Greece’s supply and demand for Foreign Exchange.

   c) If Greece is forced to implement an austerity policy, to reduce its government expenditures, how will this affect money demand and interest rates?

   d) Use the ISLM-FX diagram to show how (a), (b), and (c) together would affect the Greek economy. Explain and show how Greece’s central bank would have to respond to maintain a fixed exchange rate.

   e) Use the AD-AS model to show how (a), (b), and (c) together affect the Greek price level.

   f) Suppose that international investors begin to expect Greece will withdraw from the Euro zone, effectively devaluing its currency. How would this affect $E^*$, and what would the Greek central bank have to do if it wanted to defend its currency? Show this on the ISLM-FX diagram.

   g) If Greece does withdraw from the Euro area, how would that affect its net international liabilities if its debt is denominated in Euros?

   h) Assume instead that Greece’s Drachma (like the Turkish Lira) floated against the Euro. Show how (a) the decrease in $Y^*$, (b) the increase in $\sigma$, and (c) the decrease in $G$ would together affect the ISLM-FX diagram and Greece’s current account?

3. (15%) What are the conditions for an optimal currency area? Does the EU fit these conditions? Why must monetary policy for the Euro area be conducted by a single European Central Bank, rather than allowing the individual central banks in each member country the right to issue Euros in place of their own currency? What are the dilemmas created by fiscal federalism, i.e., allowing each member country the right to maintain an independent fiscal policy? If the Euro is not able to weather the current crisis, what effect would this have on the willingness of international investors to hold U.S. Dollars, and the seignorage earned by the United States?

4. (15%) Consider a two-economy model, in which both countries are experiencing a recession.

   a) Suppose the Home country uses fiscal policy to stimulate its economy, the Foreign country uses monetary policy, and the currency between the two floats. Use the Home-Foreign diagram to show how this affects $Y$ and $Y^*$.

   b) How would your answer differ if the exchange rate is fixed, and both central banks have equal responsibility to intervene?

   c) Explain why both countries might prefer to coordinate macroeconomic policy, and whether or not the exchange rate regime affects this preference.
5. (10%) Consider a two-economy model, in which both countries are experiencing a recession. Suppose the Home country attempts to use tariffs to stimulate its economy as well as to generate tax revenue, and markets expect this to be permanent. Would this policy be more successful if exchange rates float, or if the foreign central bank is committed to a pegged exchange rate? Could the tariff be welfare-enhancing for the Home country, or overall?

6. (10%) Consider a small economy with a fixed exchange rate, with a monetary base divided equally between domestic bonds and foreign exchange reserves.
   a) Show this on a diagram with bonds on the vertical axis and the monetary base on the horizontal axis, and assume there is currently equilibrium in the balance of payments.
   b) Now assume that other events cause an increase in the demand for foreign exchange. Assuming the central bank intervenes in the foreign exchange market to keep the exchange rate fixed, show how this affects the composition of central bank reserve assets on your diagram.
   c) Assume the central bank is told by the government to sterilize its intervention in the foreign exchange markets with open bond market operations. How would this affect the composition of central bank reserve assets, and how might this push the central bank closer to the “cliff”?

7. (10%) Consider a small economy that has unilaterally pegged its currency against one of its major trading partners, using a currency board approach.
   a) Using the ISLM-FX model, explain how a sudden increase in the demand for foreign exchange would affect its balance of payments, its money supply, output, and interest rates. Explain why this country could not be forced to devalue its currency, but might nonetheless wish to do so.
   b) Suppose that this country unexpectedly devalued its currency. Using the ISLM-FX model, explain how the devaluation the current account balance, output, interest rates, and the money supply. Why is this devaluation not likely to work more than once, and why might it make things worse in the long-run?

BONUS: Consider a simple two-period intertemporal PPF for Greece. Assume that Greece has similar growth prospects as other countries in the EU, but a stronger preference for current consumption. Assume membership in the EU opened Greece up to foreign capital markets. Show the equilibria with and without membership, compare current savings with investment after membership, and compare future GDP against GNE.