1. For each of the following, choose the potential explanations that are consistent with the given observed facts (more than one explanation might be correct). Explain, noting any relevant assumptions that you make and using a carefully labeled graph if helpful.

   a) Observation: the real interest rate has risen and the share of spending on investment has fallen. Potential explanations: i) government spending has increased; ii) foreign income has increased; iii) tax revenues have increased.

   i) Consistent
   ii) Consistent
   iii) Inconsistent (regardless of what you of deficits you hold).

   b) Observation: the real interest rate has fallen and the share of spending on consumption has risen. Potential explanations: i) taxes have increased; ii) government spending has decreased; iii) foreign income has decreased; iv) marginal profit rates have increased.

   i) Inconsistent – under the Ricardian view, nothing will happen to interest rates or consumption; under the conventional view, interest rates will fall, but C/Y will fall, not rise.
   ii) Consistent
   iii) Consistent
   iv) Inconsistent – increase in investment demand will raise the real interest rate and reduce C/Y.

   c) Observation: the real interest rate has risen, and the share of spending on consumption and net exports has fallen. Potential explanations: i) a decrease in tax revenues; ii) an increase in marginal profit rates; iii) an increase in government spending; iv) an increase in foreign income.

   i) Inconsistent under the Ricardian view, since interest rates won’t change; inconsistent under the conventional view, since the share of consumption will rise.
   ii) Consistent.
   iii) Consistent.
   iv) Inconsistent, since the net export share will rise.
2. Read Chapter 32 in Miller, Benjamin and North. What view of government deficits do these authors espouse? Justify your answer.

They give a very clear description of the Ricardian view (p. 212): “In the extreme case, there is no difference at all between higher taxes and deficit spending. If taxpayers are not fooled by the accounting numbers, they know that when the government runs a deficit and issues more debt, they will be forced to cough up more tax dollars in the future to pay for the interest payments on that increased debt. When taxpayers have complete foresight, they alter their behavior accordingly by saving more than they would otherwise when there are large increases in the government deficit.”

3. One common argument against the Ricardian view of deficits is that foreign citizens, rather than US households, purchase much of the government’s debt. Does this fact affect the Ricardian view that deficits per se (holding government spending constant) have no effect on real interest rates and consumption? Explain.

The argument typically goes like this: the Ricardian view cannot hold because the interest on the government’s debt held by foreigners is paid to them, but is financed by taxes on US citizens. This argument is false, and does not affect the Ricardian view. Suppose the US government lowers taxes, thereby raising the deficit and increasing its debt. Suppose also that the government debt is purchased by households in the rest of the world. Under the Ricardian view, US households still have an incentive to increase saving by the amount of the increase in the deficit because higher taxes will need to be collected in the future to pay back the debt to the foreign households. Therefore, national saving will remain unchanged, as will interest rates and consumption. (How will the US households increase saving if the foreign households lend to the US government? By lending to the foreign households. Thus, there need not be any effect on net exports).

4. If the US goes to war with Iraq, the amount of federal government spending will undoubtedly rise. Assuming that other government spending stays more or less the same, what effect will more military purchases likely have on real interest rates and private household spending? Does your answer depend on how the government finances these additional expenditures (that is, either by increasing taxes or by increasing its budget deficit)? Why or why not?

As G rises, national saving will fall, causing real interest rates to rise and private spending (consumption, investment and net exports) to fall. This is the crowding out effect of government spending. Under the Ricardian view of deficits, the effect of this increase in government spending does not depend on whether taxes are raised now or in the future. Under the conventional view, interest rates will rise more if the spending is financed by a deficit than by an increase in current taxes. Here’s why. Recall that national saving = S + T – G. If the increase in G is financed by an increase in T, then S will fall by a fraction of the rise in T (and G), and national saving will fall by this same amount. However, if T does not change (the deficit
increases), then $S$ won’t change initially, so that the national saving falls by the total amount of the increase in $G$. Thus, $r$ will rise more in the latter case than in the former.

5. Suppose that firms expect marginal profit rates to increase, so the investment demand curve shifts to the right. Explain how this shift will change the exchange rate (i.e. the number of dollars it takes to buy one euro).

If the investment demand shifts to the right, then the real interest rate in the US will rise. This will make US securities (i.e. bonds denominated in $\$) look more attractive to European lenders, ceteris paribus (compared to bonds denominated in euros). As these lenders attempt to use their euros to buy dollars with which to buy US bonds, the euro will fall in value/depreciate (the dollar will rise in value/appreciate) – the exchange rate will fall.