1. Consider the sticky price model seen in class. Consider a one time, unexpected shock to $i_0^*$ as in Section 3.5.

   (a) Argue that if the only policy tool is the interest rate $i_0$, the continuation equilibrium is independent of $i_0$. Setup the optimization problem of the central bank to choose $i_0$. (Hint: use the properties of $p_0^*C_0$ and $p_0Y_0$ derived in class as constraints.)

   (b) Show that at the optimal policy the labor supply is constant at its steady state level.

   (c) Show that the optimal response entails an appreciation of the currency and an expansion in domestic consumption.

2. Consider the same model of problem 1 and consider a one time, unexpected shock to $i_0^*$ as in Section 3.5.

   (a) Allow the government to impose a tax on capital inflows at date 0. Argue that with these two tools available the continuation equilibrium now depends on policy at date 0. Setup the optimization problem of the policy maker in choosing optimally the tax on capital inflows and the interest rate.

   (b) Characterize as much as possible the equilibrium response of the economy to the capital inflow shock.