Econ 252 - International Finance

Problem Set 3

Due Date: Wednesday Oct 31, at the beginning of class. 100 points

Note: Please include a full explanation of the economic intuition behind all your answers for full credit (include any relevant charts and/or mathematical expressions).

1. (10 pts) Assume a small open economy with a nominal exchange rate of 3. Suddenly the central bank finds a gold mine and from one period to the next the gold reserves increase from $10 to $20. Assume the nominal exchange rate did not change and the central bank's holdings of government securities and loans to commercial banks stayed at the same level. Answer the following questions.
a. How much did the monetary base increase?
b. If the currency in circulation increased by 50, how much did the reserve deposits from commercial banks changed?

2. (10 pts) Assume that a small open economy with complete capital controls is running a current account surplus of $800 million a year. Answer the following questions.
a. What is the effect of the current account surplus on the money supply and the price level if the exchange rate is fixed?
b. What is the effect of the current account surplus on the money supply and the price level if the exchange rate is flexible?

3. (10 pts) Between the 2008 crisis and today, the U.S. monetary base has grown by a factor of 4.2 yet M1 and M2 have not changed much. Explain how was this possible, and what the role the decisions made by households, firms and banks played in this outcome.

4. (10 pts) Assume that the government is unable to change the amount of public debt that the private sector holds. Consider both fixed and flexible exchange rate regimes. Explain how would the nominal and real exchange rate, the price level, and the quantity of nominal and real money balances respond to:
a. An open-market operation aiming to increase the supply of money.
b. An increase in the government deficit.

5. (15 pts) Consider a small open economy with a fixed-exchange-rate system and complete capital controls. Analyze the effects of a rise in foreign prices on the domestic exchange rate, the current account, the money supply, and the foreign-exchange reserves of the central bank.

6. (15 pts) How would the following alter the timing and magnitude of a speculative attack?
a. An inflow of foreign currency into the central bank's reserves.
b. A reduction in the foreign nominal interest rate.

7. (30 pts) Balance of payments crisis model. A small open economy has constant consumption C=5, nominal international interest rate of 10 percent and inflation of 10 percent. The velocity of

circulation of money is given by: $v(i) = \left(\frac{i}{1+i}\left(\frac{1}{\gamma b}\right)\right)^{\frac{1}{1+\gamma}}$ where b = 0.5 and $\gamma = 2$. Initial international reserves are equal to 6 and the minimum amount of reserves required by the central bank is 2.

a. In how many years (each period is a year) will there be a speculative attack?

b. Imagine that the current government's term ends in 4 years. If the government does not want a crisis to happen under their administration which is the max number of required reserves that would guarantee no crisis to happen?

c. Now imagine that the government thinks they will be reelected in 4 years. To guarantee no crisis in the next 8 years they lower the minimum reserves to zero and lower consumption. What is the maximum amount of consumption that would guarantee no crisis to happen?