Soochow University, Summer Session I, 2022

ECON202: Macroeconomics

Discussion Session II Solution

Question 1. Which of the following are considered money in the U.S. economy? Which are not? Explain your answers by discussing each of the three functions of money.

(a) a U.S. penny

Solution: A U.S. penny is money in the U.S. economy because it is used as a medium of exchange to buy goods or services, it serves as a unit of account because prices in stores are listed in terms of dollars and cents, and it serves as a store of value for anyone who holds it over time.

(b) a Picasso painting

Solution: A Picasso painting is not money, because you cannot change it for goods or services, and prices are not given in terms of Picasso paintings. It does, however, serve as a store of value.

(c) a plastic credit card

Solution: A plastic credit card is similar to money, but represents deferred payment rather than immediate payment. So credit cards do not fully represent the medium of exchange function of money, nor are they really stores of value, because they represent short-term loans rather than being an asset like currency.

Question 2. The Fed conducts a $10 million open-market purchase of government bonds. If the required reserve ratio is 10 percent, what are the largest and smallest possible increases in the money supply that could result? Explain.

Solution: With a required reserve ratio of 10%, the money multiplier could be as high as $1/0.1 = 10$, if bank holds no excess reserves and people do not keep additional currency. So the maximum increase in the money supply from a $10 million open-market purchase is $100 million. The smallest possible increase is $10 million if all of the money is held by banks as excess reserves.

Question 3. Suppose that a country's inflation rate increases sharply. What happens to the inflation tax on the holders of money? Why is wealth that is held in savings account not subject to a change in the inflation tax? Can you think of any way holders of savings accounts are hurt by the increase in the inflation rate?

Solution: If a country's inflation rate increases sharply, the inflation tax on holders of money increases significantly. Wealth in savings account is not subject to a change in the inflation tax because the nominal interest rate will increase with the rise in inflation. But holders of saving accounts are hurt by the increase in the inflation rate because they are taxed on their nominal interest income, so their real returns are lower.

Question 4. Explain whether the following statements are true, false or uncertain.

(a) "Inflation hurts borrowers and helps lenders, because borrowers must pay a higher rate of interest."

Solution: False. Higher expected inflation means borrowers pay a higher nominal rate of interest, but it is the same real interest rate, so borrowers are not worse off. Higher unexpected inflation, on the other hand, makes borrowers better off and lenders worse off.

(b) "Inflation does not reduce the purchasing power of most workers."

Solution: True. Most workers' incomes keep up with inflation reasonably well.

Question 5. If a Japanese car costs 1,500,000 yen, a similar American car costs $30,000 and a dollar can buy 100 yen, what are the nominal and real exchange rates?

Solution: If a dollar can buy 100 yen, the nominal exchange rate is 100 yen per dollar. The real exchange rate equals the nominal exchange rate times the domestic price divided by the foreign price, which equals 100 yen per dollar times $30,000 per American car divided by 1,500,000 yen per Japanese car, which equals two Japanese cars per American car.

Question 6. Would each of the following groups be happy or unhappy if the U.S. dollar appreciated? Explain.

(a) Dutch pension funds holding U.S. government bonds

Solution: Dutch pension funds holding U.S. government bonds would be happy if the U.S. dollar appreciated. They would then get more euros for each dollar they earned on their U.S. investment. In general, if you have an investment in a foreign currency, you are better off if that country's currency appreciates.

(b) U.S. manufacturing industries

Solution: U.S. manufacturing industries would be unhappy if the U.S. dollar appreciated because their prices would be higher in terms of foreign currencies, which will reduce their sales.

(c) Australian tourists planning a trip to the United States

Solution: Australian tourists planning a trip to the United States would be unhappy if the dollar appreciated because they would get fewer U.S. dollars for each Australian dollar, so their vacation will be more expensive.

(d) an American firm trying to purchase property overseas

Solution: An American firm trying to purchase property overseas would be happy if the U.S. dollar appreciated because it would get more units of the foreign currency and could thus buy more property.

Question 7. Suppose that a textile worker's union encourages people to buy only American-made clothes. What would this policy do to the trade balance and the real exchange rate? What is the impact on the textile industry? What is the impact on the auto industry?

Solution: If a union of textile workers encourages people to buy only American-made clothes, imports would be reduced, so net exports would increase for any given real exchange rate. This would cause the demand curve in the market for foreign exchange to shift to the right, as shown in the figure below. The result is a rise in the real exchange rate, but no effect on the trade balance. The textile industry would import less, but other industries, such as the auto industry, would import more because of the higher real exchange rate.

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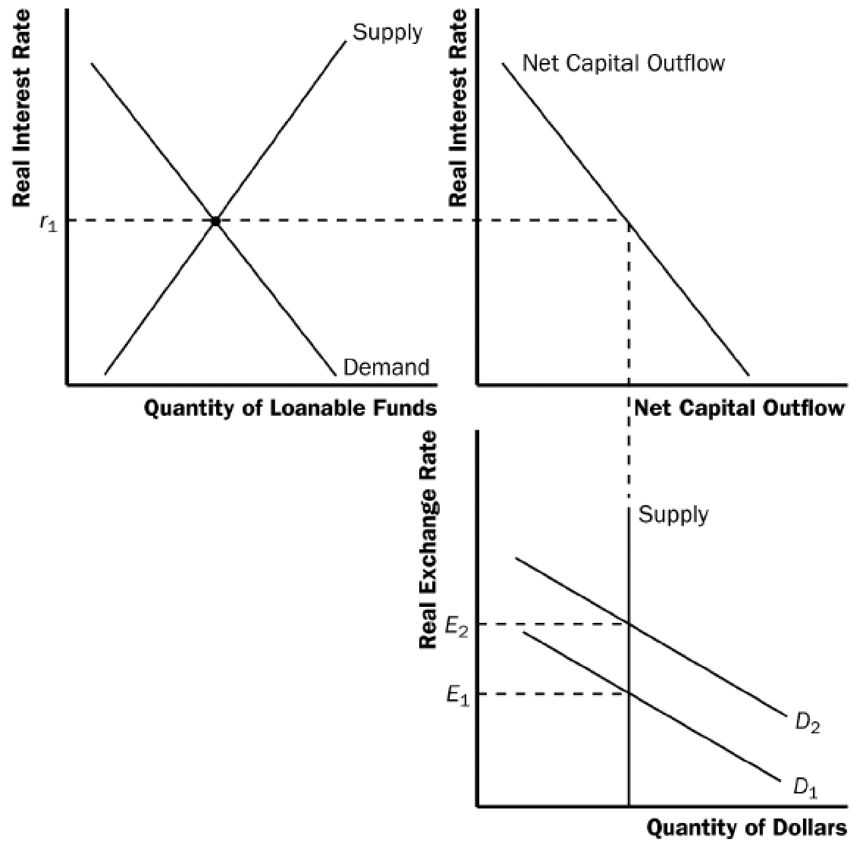
Real Interest Rate
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Quantity of Dollars