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Rough Notes on Answers to Midterm, Prepared for TA

(These are intended as a guide for the TA. Actual exam answers should also makes liberal use of graphs)

1. Under efficient international capital markets and assuming traders care only about the expected returns on assets, it follows that assets all over the world should have the same expected return. If this were not so, then traders would buy up the assets with high returns, thereby bidding down their price and, hence, raising their return. Similarly, they would avoid the low return assets, whose price would therefore fall, driving their return up.

Suppose the exchange rate is E , the domestic US dollar return is R and the foreign return is R_f . If you put a dollar in a US asset, you get $(1+R)$ dollars next period. If you put a dollar into a one period foreign asset, you first have to buy the foreign currency and then after one period, you have to convert the proceeds of the asset back into dollars. With the exchange rate equal to E , one dollar buys $1/E$ units of the foreign currency. At the end of the period you have $(1 + R_f)/E$ units of the foreign currency, which translates into an expected quantity of dollars equal to $E^e(1 + R_f)/E$. Efficient capital markets and the assumption that traders care only about expected returns implies:

$$1 + R = E^e(1 + R_f)/E,$$

or, approximately,

$$R = R_f + \frac{E^e - E}{E}.$$

By assuming that international traders only focus on expected returns, UIP assumes they don't worry about differences in risk between assets, or differences in liquidity.

2. The idea behind money demand is that money is just one form in which households can hold their wealth. The other is in assets that earn interest, R . Why would people hold part of their wealth in the form

of money, which earns essentially no interest? Because it is convenient in transactions. When Y is higher, the idea is that people are making more transactions, so they would like to hold more money. But, when R is high, the cost of holding wealth in the form of money is high, so people will work to keep their transactions balances low. Finally, money demand is increasing in P because more money is needed per transactions in this case.

The Fed increases M by purchasing US government securities. Such a purchase increases the Fed's holdings of government securities and, because it is paid for by a check from the Fed, increases the public's holdings of dollars. An increase in M will drive down the rate of interest, as can be seen in the standard diagram (which should be drawn). The reason is that to get people to hold more M , you need for the return on alternative stuff to be low. One way that might work is that when the Fed buys US government securities, they have to bid up the price to get them. That reduces their rate of return.

3. The formula for the current account is:

$$CA = Y - C - I - G.$$

It is the part of output that is not consumed, either by households, business or government. This could be negative if households, business and government consume more than is produced in the economy. In this case, more goods are flowing into a country, than out. The capital account in this case is positive, as domestic residents send various kinds of certificates of indebtedness to foreigners, including equity claims, debt, currency. See pages 5-7 of Lecture 1 for a discussion of good and bad current accounts.

4. Assumptions: (i) long run effect of permanent jump in the money supply is a proportional increase in E and in P ; (ii) in short run, P is fixed. Use UIP and Money Market conditions to trace out long and short run effects.

- (a) The first part of this question is concerned with a temporary increase in the Japanese money supply. The effects of this are: no change in E^e , a temporary jump in E while R is low. No change, ever, in the price level.

- (b) This is a permanent change in M . This raises E^e right away and, since R falls, E must rise by even more because E^e/E must fall. This overshooting result is crucial to the answer to this question. The UIP and Money Market equation should be used to prove the result.
 - (c) When a foreign exchange rate operation is sterilized, it has no impact on the domestic or foreign money supply, ever. So, it has no impact on any of the endogenous variables in our model, ever.
5. They should use the model formed by PPP, UIP and the Money Market conditions. They should assume that Y does not respond, nor does the foreign interest rate. They should conclude that the inflation rate jumps down by Δ , the rate of depreciation of the exchange rate jumps down by Δ , the price level jumps, the exchange rate jumps down and the interest rate jumps down by Δ . They could reach this conclusion as follows. Conjecture that the interest rate does change. Then, use the money market condition to determine the impact on the level and rate of change of the price level. Then, use PPP to determine that the impact on the level and rate of change of E coincides with the impact on P .

To determine the magnitude of the change in the price level need to know what the money demand elasticity with respect to the interest rate is. You need to know that to determine the exchange rate too.