

Fiscal & Financial System in Japan A / International Finance

Fall 2013

Answers for Midterm

Nov 10, 2013

Multiple-Choice Questions

1. (c) The yen's appreciation against the dollar is equivalent to the dollar's depreciation against the yen.
2. (a)
3. (c)
4. (d)
5. (b)
6. (d)
7. (b) A rise in transaction raises our demand for money and motivates us to sell bonds for money, thus lowering the price of bond.
8. (d)
9. (e) A change in the dollar interest rate does not affect money demand or supply in Japan. It is absorbed by a change in the yen/dollar exchange rate.

Arithmetic/Essay Questions

1. Exchange rates

$$\begin{aligned}0.015 &= 0.03 + \frac{E_1^e - 97}{97} \\ E_1^e &= 95.545 \rightarrow 95.5 \text{ yens per dollar}\end{aligned}$$

2. Interest rates

(a) $\frac{C}{1+0.03} + \frac{C}{(1+0.03)^2} + \frac{C}{(1+0.03)^3} = 100,000$

- (b) This is the case where the interest rate is known but the yearly payment is unknown. Therefore, the equation is linear in the unknown variable, and thus can be solved in an algebraic manner.

$$\begin{aligned}\frac{C}{1+0.03} + \frac{C}{(1+0.03)^2} + \frac{C}{(1+0.03)^3} &= 100,000 \\ \left[\frac{1}{1+0.03} + \frac{1}{(1+0.03)^2} + \frac{1}{(1+0.03)^3} \right] C &= 100,000 \\ C &= 100,000 \times \frac{1}{\frac{1}{1+0.03} + \frac{1}{(1+0.03)^2} + \frac{1}{(1+0.03)^3}}\end{aligned}$$

To find the value of C , we have to calculate the denominator.

$$(1+0.03)^2 = 1.0609$$

$$(1+0.03)^3 = 1.092727$$

$$\frac{1}{1+0.03} = 0.97(\text{rounded})$$

$$\frac{1}{(1+0.03)^2} = \frac{1}{1.0609} = 0.94(\text{rounded})$$

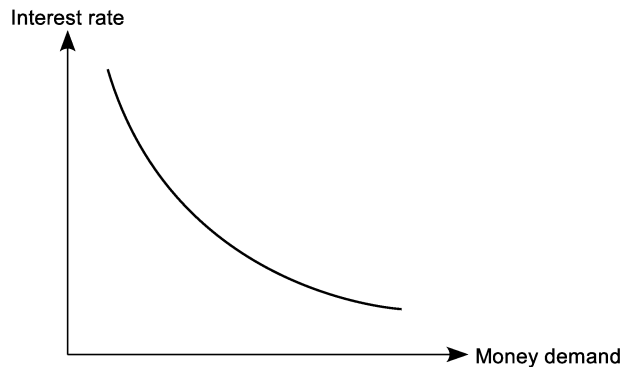
$$\frac{1}{(1+0.03)^3} = \frac{1}{1.092727} = 0.92(\text{rounded})$$

$$C = \frac{100,000}{0.97 + 0.94 + 0.92} = 35,461(\text{rounded})$$

3. Money, interest rates, and exchange rates

- (a) The liquidity of an asset is the speed and ease with which the asset can be used to purchase goods or services. Cash currency is the most liquid asset of all.
- (b) The demand for money is negatively related with the interest rate of bond. Higher interest rate lowers the demand for money.

Given that we hold part of our wealth in the form of money, and the rest in the form of bond. In order to hold more money, we have to sell the equal value of bonds that we hold, which means that we have to give up the interest which we would earn if we continued to hold those bonds. Therefore, as the interest rate is higher, we have to give up larger interest by holding money and we are less willing to hold money.



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- (c) For an increasing probability of government's default on its bond, the Japanese people have become less willing to hold bonds. They try to sell part of their bonds for money, decreasing the demand for bond. Then, the price of bond falls, and its interest rate rises. As the interest rate rises, the demand for money falls and the demand for bond rises. The interest rate rises until at last they are again willing to hold all the outstanding stock of bonds.
- (d) On the rise in the yen interest rate, people would like to replace all the dollar assets with the yen assets. As they try to sell their dollar assets for yen assets, the dollar depreciates against the yen. The dollar depreciates until the expected yen return on the dollar asset is equal to the yen interest rate, when people are willing to hold both the dollar and yen assets.

4. GDP

A country's gross domestic product, GDP, is total value of final goods and services produced within the country in a given time period.

In a closed economy, all the final goods and services produced are consumed, invested, or purchased by its government. Then, the country's total domestic spending, $C + I + G$, is identical with its GDP. In an open economy, some of the goods and services domestically produced are bought by foreign residents, then the export must be added to total domestic spending. On the other hand, some of the domestic spending is devoted to goods produced abroad. Therefore the import must be subtracted from total domestic spending. Finally, adding the export to and subtracting the import from total domestic spending yields the GDP.

$$C + I + G + EX - IM = GDP$$