

1. "A country's balance of payments tracks the supply and demand for its currency. Since the balance of payments on capital plus current account is always zero, supply must always be equal to demand and therefore the exchange rate never changes."

Where is the flaw in this logic?

2. Many countries have black markets for foreign exchange. What conditions do you think explain why some countries have a black market in foreign currency, while others have none?

3. Considering that a balance of payment crisis is a currency crisis answer the following questions

Why is nobody interested in the balance of payments of California?

Should Americans worry about the size of the deficit in the current account of the US balance of payments?

Should we be interested in the balance of payments of the Eurozone member countries?

Should we be interested in the balance of payments of the Eurozone as a whole?

4. Would you expect the Law of One Price to apply in the case of the following products and, if not, why not?

a barrel of crude oil

a litre of petrol

a Real Madrid football club shirt

a share of Microsoft stock

a coronary bypass operation

4. A UK power station relies on imported coal as an input. A Chinese coal mine can supply coal for RMB266 per ton from the docks at Tianjin, while a Polish supplier is offering the same grade of coal from the docks at Gdansk (Poland) for €30.00 per ton. The power station reckons that transporting a ton of coal from Tianjin to the UK will cost it \$5.00, but from Gdansk only \$3.00.

If the exchange rates are currently $£1.00 = \$1.88 = €1.47$ (floating), while the Chinese exchange rate is fixed at $\$1.00 = \text{RMB}8.3$, should the UK power station buy coal from China or Poland? If it buys from wherever is cheapest, how much does it pay in sterling?

(a) How would your answer change if the dollar appreciated to $£1.00 = \$1.60$, while everything else remained unchanged?

(b) With the situation as in Part (a) above, suppose the UK buyer is worrying how its costs would be affected by a possible Chinese revaluation of the RMB, which is rumoured to be currently under consideration in Beijing. By how much would the RMB need to be revalued against the dollar to make the UK buyer indifferent between the two sources?

- (c) With the situation as in Part (a) above, if the UK company calculates it can shift a ton of coal from the Chinese to the Polish port at a shipping cost of \$00, is there an opportunity for it to engage in a little profitable arbitrage? If so, how much profit could it make?
- (d) Repeat the previous question with the dollar at an exchange rate of $\pounds 1.00 = \$1.60$? Can you explain your answer?

5. A trader finds that a particular generic (i.e unbranded) antibiotic is available in Germany at a price of €0.50 per unit, compared to a minimum price of \$0.80 per unit in the USA. The current exchange rate is $\pounds 1.00 = \$1.30$, and he reckons that transport and marketing costs will amount to no more than \$0.05 per unit.

- (a) How much profit per unit can the trader make by buying in Germany and importing the drug into the USA?
- (b) Suppose the trader reckons it will take a month to handle the formalities of actually importing the goods into USA and delivering them to the US hospitals who are his customers. Assuming drug prices in local currency remain unchanged, how much of a fall in the value of the dollar over the coming month would it take to wipe out his profits and saddle him with a 10% loss on the deal? Give your answer in terms of the percentage depreciation.

6. Suppose a car in the Mercedes Benz range costs €28,000 to produce and is currently selling for €40,000 in Germany, when the exchange rate is $\pounds 1.00 = \text{TL}2.31$.

- a) If the car is on sale for TL150,000 in the Turkey, and if you know that the pass-through rate for this product is 75% (the percentage change of exchange rate movements that is reflected on domestic prices), what would you expect to happen to the model's Turkish price after a fall in the value of the Lira to $\pounds 1.00 = \$2.40$?
- b) Other things being equal, what will have happened to the profit margin on sales in Turkey (in € and %) after the change in the exchange rate?
- c) How would you expect the manufacturer to respond to the new situation?

7. If the current exchange rate is $\pounds 1.00 = \$1.75$, the one-year forward rate is $\pounds 1.00 = \$1.85$, and the interest rate on UK \pounds deposits is 8% p.a., what is the riskless dollar-denominated return which can be locked in by an American depositing in the UK?

8. If a major international bank is offering Japanese Yen deposits yielding 1% per annum (p.a.) when at the same time dollar deposits are yielding 7% p.a., and the spot exchange rate is $\$1.00 = \text{Yen } 110$

- a) what can you deduce about market expectations regarding the likely future exchange rate one year from now?

- b) If you are convinced that the spot exchange rate 12 months from now will be $\$1.00 = \text{Yen } 120$, what should you do (invest in Yen or Dollar) ? Give your answer from the point of view, first, of an American, then of a Japanese trader.
- c) In the previous part, what will happen if, in the event, the exchange rate turns out to be $\$1.00 = \text{Yen } 102$ at the end of the year?
- d) If the forward exchange rate is currently $\$1.00 = \text{Yen } 108$, what should a currency trader do?
- e) Compare the riskiness of the strategies in b) and d) above.
- f) Suppose the interest rate differential between dollar and yen deposits drops to 2%. Explain what will happen to expected exchange rate and spot rate.

9. Given the following information:

Spot rate of Swiss Franc	1 Frank=\$ 0.80
Forward rate of Swiss Franc	1 Frank=\$ 0.79
Spot rate of Swiss Franc	1 Frank=TL 1.89
Forward rate of Swiss Franc	1 Frank=TL 1.95
Interest rate on Swiss Franc deposits.....	4 %
Interest rate on US dollar deposits.....	2.5 %
Interest rate on Turkish Lira deposits.....	5 %

what rate of return can be earned on \$1m from covered interest arbitrage i) by a US investor and ii) by a Turkish investor? Is it worthwhile undertaking?

10. Given the following data:

Current US 1-year interest rate: 6%

Current exchange rate $\$1.00 = \text{€}0.90$

Expected exchange rate one year from now: $\$1.00 = \text{€}0.85$

- a) What is the equilibrium Eurozone interest rate using the approximated UIRP formula equation?
- b) What is the equilibrium Eurozone interest rate using the full UIRP formula equation?
- c) Compute the cross-product term (the term that drops when we calculate approximated version) and show that it accounts for the difference between your answer to (a) and (b)
- d) In the context of UIRP, could one or both countries have negative interest rates? In the example here, are any of the three variables given above likely to be bounded so as to prevent the interest rate on Euros becoming negative?