

## Problem set 10

1. You noticed that the exchange rate between the Korean won and the U.S. dollar has changed considerably. The won/dollar exchange rate has moved from 800 won per dollar to 1000 won per dollar.

- a) a) • Has the Korean won appreciated or depreciated with respect to the dollar?  
• By what percentage?

One won was worth  $1/800$  or  $0.00125$  dollars earlier  
It is worth  $1/1000$  or  $0.001$  dollars now.

Thus, the won has depreciated with respect to the dollar.

The percentage change in the dollar value of the won is

$$\frac{(0.001 - 0.00125)}{0.00125} = -20\%$$

- b) By what percentage has the value of dollar ~~unchanged~~ changed with respect to the won?

One dollar was worth 800 won earlier and it worth 1000 won now.  
Thus the dollar has appreciated relative to the won.

The percentage change in the value of the dollar is

$$\frac{(1000 - 800)}{800} = 25.0\%$$



2. Here are some quotes of the CHF:USD spot exchange rate (Swiss franc in U.S. dollars) given simultaneously on the phone by three banks:

Bank A: 1.3435 - 1.3440

Bank B: 1.3435 - 1.3445

Bank C: 1.3445 - 1.3450

- Are these quotes reasonable?
- Do you have an arbitrage opportunity?
- No, these quotes are not reasonable: An arbitrage opportunity exists.
- You can buy francs from bank A for \$1.3440 per franc and then sell these francs to bank C for \$1.3445 per franc. (Thereby make a profit of \$0.0005 per franc traded)
- This is a riskless, instantaneous operation that requires not initial investment.