## Lecture: 15 Exchange Rate Arithmetic: Forward Rates

## Short Questions:

1. Suppose USDJPY Spot rate is USD110.25/USD. How much is one pip for 100,000 JPY and how much one pip worth 100,000 USD?
2. The spot USDINR bid and ask rate is given as 47.6730-47.6754. If the $\mathbf{3}$ month-bid-ask in points are 55-65, then what would be INRUSD 3-month rate in outright quotations. If the bid-ask points reverses i.e, $65-55$, then would be INRUSD 3 month rate in outright quotations.
3. A Canadian Exporter exporting goods to USA will receive USD100,000 after 3 months. A bank quotes 3-month USDCAD forward bid -ask rate as ( 1.2302 1.2315). How much the Canadian exporter will receive if he enters the forward contract?
4. Spot rate USDINR is as follows: If the 3 month forward bid-ask point is 105-123, then what will be the 3-month outright forward quotations? If the $\mathbf{3}$ month forward bid-ask point is $123-105$, what would be the outright forward quotations.
5. Suppose spot USD/INR is 46.75 and 1 year forward rate 47.66 . Find out the $\%$ appreciation/depreciation of USD as well as INR. Can you conclude that \% appreciation and depreciation will be same for both INR and USD?
6. The following rates are given. If a bank wants to quote a forward rate to a company wanting to take a forward cover on October $27^{\text {th }}$, what would be the bid-ask rate in outright form?

| Cash/Swap rates in points |  |  |  |
| :--- | :--- | :--- | :--- |
| USDINR | Maturity Date | Bid Rate | Ask Rate |
| Spot | July $14^{\text {th }}$ | 47.0725 | 47.0745 |
| 3 month | October 14 |  |  |
|  |  | 90 | 97 |
| 4 months | November 14 $^{\text {th }}$ | 100 | 109 |

7. Suppose spot USD/INR is 46.75 and 1 year US interest rate is $5 \%$ while it is $11 \%$ in India. A bank is quoting 1 year forward rate as 43.35. Does this give rise arbitrage opportunity? If so how a trader can benefit from this opportunity ?
8. A bank is quoting spot rate USD INR as $\mathbf{4 5 . 1 5 6 0}$ Interest rate prevailing in USA is $3.5 \%$ and in India is $9 \%$. Calculate what would be the 1 year USDINR forward swap points and what would be the 1 year USDINR outright forward quotations?
9. Bank $A$ is quoting USDINR rate is 45.1725 and JPYUSD 0.0089. Bank $B$ is quoting JPYINR rate of $\mathbf{0 . 4 0 5 0}$. Find out the cross rate from Bank A's point of view and check whether any arbitrage opportunity exist or not? If exists, show how the arbitrage profit can be made.
