

*** FOREX ***

Hello Friends,

First I would like to thank to all for appreciating me and I am so much thankful for your Wonderful response to my articles on CAClubindia. On request of many people I am sharing all articles here in a single file.

Many of us afraid of forex topic, I don't know why, but believe me it is one of the simple topic. Entire forex (at Final level) topic can be solved without using formula i.e. by simple logics. You guys might be thinking that what rubbish I am talking but it is true.

First, let us start with basics of forex then we will proceed with advance level.

*** FOREX - means Foreign Exchange.**

*** Currency:**

What is currency?

Currency is a legal tender of any country within its national frontiers.

*** Currency may be quoted in market in 2 ways.**

1. Direct Quote and

2. Indirect Quote

Now, what does exactly means Direct and Indirect Quote?

1. Direct Quote: - Direct quotes means where foreign currency kept constant and home currency varied.

Example: $1\$ = \text{Rs } 60$

In this case, there is trading of \$ and \$ is foreign currency and Rs is home currency. Foreign currency i.e. \$ is kept constant and home currency i.e. Rs is varied, hence it is Direct Quote for India.

2. Indirect Quote: - Indirect Quote means where, Home currency kept constant and Foreign currency varied.

Example: $1\text{Re} = \$ 0.0167$

In this case, there is trading of Rs and Rs is home currency and \$ is foreign currency. Home currency i.e. Rs is kept constant and foreign currency i.e. \$ is varied, hence it is Indirect Quote from Indian point of view.

*** Base Currency and Incidental Currency:**

What is Base Currency and what is Incidental Currency?

-> To understand base and incidental currency lets have some look up for understanding purpose.

In commodity market we buy or sell commodity in exchange of currency, but in case of currency market 2 currencies are involved then it becomes very important to know which currency is bought and sold.

Currency which is BOUGHT and SOLD is called as Base Currency and other currency is called as Incidental Currency.

For Example: 1\$ = Rs 60

In this case, there is trading of \$, \$ is being bought and sold in exchange of Rs hence, \$ is base currency and Rs is incidental currency.

Here, we will try to solve our queries mostly by Base and Incidental currency. It is because if we solve problems by Direct and Indirect quotes, it will create confusion. and by using base and incidental currency problems will be solved in easier way. Now you guys only tell me following situation by using Direct and Indirect quote method,

1\$ = DEM 10, in the given case tell me home currency and foreign currency?

→ Dear, we are now in India and being in India we can trade in any currency. Indian currency is Rs and in the given problem there is no RS currency involved. Hence, we cannot say that either \$ is home currency or DEM is home currency in fact our home currency is RS.

Now, the same question can be easily solved by using Base and Incidental currency. Though I am in India, I can say that \$ is Base currency and DEM is incidental currency. See, there is no confusion while solving problem. (I hope you guys are getting what I am trying to clarify you).

*** TWO WAY QUOTES:**

In case of commodity market, there is production and consumption but in case of currency market there is no production and consumption. Therefore, the person who is selling currency needs to buy currency also. It is customary in currency market to give in TWO WAY QUOTE i.e. one quote for and other one is for selling.

Friends, think from businessman's point of view, every businessman will try to purchase a commodity at lower price and the same commodity he will try to sell at higher price.

Exactly same situation happens over here, two way quote is given by market and market wants to buy at cheaper rate whereas market wants to sell at higher rate. In these two way quotes one currency whose value is less, market will buy at that rate and other currency whose value is more, market will sell at that rate.

For Example: 1\$ = Rs 60 - 62

This is a two way quote. This quote is given by market. Think from market's point of view. Market will buy currency (i.e. \$) at Rs 60 whereas the same currency (\$) will be sold at Rs 62 by market. (It is a same concept of trading i.e. business).

Now, in this tell me which is base currency and which is incidental currency?

---> Guys, here \$ is base currency and Rs is Incidental currency.

In the given quote, Rs 60 will known as BID (buy) rate and Rs 62 is known as ASK (sell) rate.

Friends, always remember while solving forex problem, general rule of the market:

Rule: Market Gives Less, and Takes More.

*** Cross Rates:**

What does it mean by?

-→ There are many currencies in the world like RS, Dollar, Euro, Dem, Pound etc but it is not necessary that all the currencies are quoted with each other. But there are some common currencies which are quoted with both the currencies. Therefore to compute the rate between the currencies which are not quoted against each other but are quoted against some common currencies, we will have to eliminate common currency to compute rate and the same is called as cross rate.

For Example: Assume that Rs is not quoted against \$ (Dollar) in currency market, but DEM is quoted against Rs as well as against \$. Then by eliminating common currency we can find out rate between those currencies which are not quoted against each other.

If,

1 Re = DEM 2 and

1 \$ = DEM 0.005

Then find out rate between Rs and \$?

Ans →

1 Re = DEM 2, we can say it like this: 2 DEM/Rs (2 DEM per Rupee)

1 \$ = DEM 0.005, we can say it like this : DEM 0.005/\$ (0.005 DEM per \$)

In the given case DEM is common currency and we have to eliminate this to find out rate between Rs and \$ (Dollar). But next question arose is how to eliminate this common currency, right?

Now, write above given quotes in such a way that I can eliminate common currency i.e. DEM

$$\frac{\text{RS}}{\text{DEM}} * \frac{\text{DEM}}{\$} \text{ (RS divided by DEM into (*) DEM divided by \$)}$$

Now I have to find out 2 quotes, 1) RS per DEM and 2) DEM per \$

From above I have DEM per \$ (0.005 DEM / \$)

But I don't have Rs per DEM, earlier we saw that **Direct Quote = $\frac{1}{\text{Indirect Quote}}$**

Hence, we can write like this,

$$\frac{1}{2} * 0.005 = 0.5 * 0.005 = 0.0025 \text{ RS/DEM (0.0025 Rs per DEM)}$$

(It becomes difficult to clear concept only by writing, it will be more effective by talk, I hope you guys are getting)

*** Value Date:**

What do you mean by Value Date?

→ Friends tell me, many of you may be doing trading in share market, whether your transaction is settled on same day?

No na, in share market T+2 system is followed i.e. 2 days after transaction your account will be settled.

Same concept is also here, it is the date on which actual exchange of currency will be taking place irrespective of date of transaction.

Sr No	TYPE OF QUOTE	SETTLEMENT
1	Cash / Ready	Same working day
2	TOM	Next working Day
3	Spot	2 working Days
4	Forward	Any day after Spot

Sr No	TYPE OF QUOTE	Example : Date of Transaction	Value Date
1	Cash / Ready	07.02.2014 (Friday)	07.02.2014 (same day)
2	TOM	07.02.2014 (Friday)	10.02.2014 (Monday)***
3	Spot	07.02.2014 (Friday)	11.02.2014 (Tuesday)
4	Forward	07.02.2014 (Friday)	any day after 11.02.2014

*** Saturday and Sunday holiday.

* Quotation of Forward rate:

Forward rates are quoted in market as spot rate and forward differentials (Forward point).

If forward differentials are in ASCENDING ORDER then BASE CURRENCY WILL BE AT PREMIUM and forward differentials will be added to spot rate and

If forward differentials are in DESCENDING ORDER then BASE CURRENCY WILL BE AT DISCOUNT and forward differentials will be DEDUCTED from spot rate.

Now, you may be angry on me that what I am talking, what is forward differentials, what is forward point, what to add and what to deduct and when.... many questions in your mind may be arose, now calm down read further.

Friends, there are many experts in market and who predicts correctly, many time we hear someone by talking

that yaar aaj yeh company ka share itne points se kam hua ya fir jada hua...

Here also we predict future market's rate and by what point currency will gain or currency will lose, by whatever amount currency gains or lose, such points can be called as forward differentials.

If these differentials are given in ascending order then we have to add those differentials in spot rate and vice versa.

Example:

Spot Rate = 1\$ = Rs 60.0000 - 62.0000

Forward Rate

1 month 17/18

3 months 35/37

6 months 53/56

And → Above forward rates are in ascending order hence shall be added to spot rate.

Spot Rate = 1\$ = Rs 60.0000 - 62.0000

Add: 1 month 0.0017 - 0.0018

Differential .

1 month forward 1\$ = Rs 60.0017 - 62.0018

Now how to calculate by what percentage base currency is at premium or Discount:

Formula to calculate PREMIUM / DISCOUNT of BASE CURRENCY

$$\frac{F - S}{S} \times 100 \times \frac{12}{N} \quad (F-S \text{ divided by } S \times 100 \text{ into } 12 \text{ divided by } N)$$

Where,

F = Forward rate

S = Spot Rate

12 = months***

N = number of months

*** In problem days / weeks can be given instead of months then use 365 / 52, whatever it may be

Formula to calculate PREMIUM / DISCOUNT of INCIDENTAL CURRENCY

$$\frac{S - F}{F} \times 100 \times \frac{12}{N} \quad (\text{S-F divided by F} \times 100 \text{ into } 12 \text{ divided by } N)$$

Where,

F = Forward rate

S = Spot Rate

12 = months***

N = number of months

*** In problem days / weeks can be given instead of months then use 365 / 52, whatever it may be

Guys, it is difficult to understand concept without questions so I request you please solve the problems from your book. It will surely help you.

*** Factors affecting Forward Rate:-**

Guys many time many questions are arise in your mind that why forex rates change, how they changes and what factors cause to change these rates.. Now read carefully you will understand.

There are various factors which are affecting the forward rates of exchange between currencies of two countries. Important of them are as follows:

- * **Balance of Payment situation**
- * **Parity Relationships**

Now we will understand both situations one by one:

A) Balance of payment situation:

Many of you may be aware of this. It is a systematic record of transaction of residence with non-residence over a period of time.

Here is the explanation:

If balance of payment situation is favourable, it means that we are exporting more and importing less due to which foreign currency tends to be cheaper as compared to domestic currency.

If balance of payment situation is adverse, then we can say that we are importing more and exporting less due to which foreign currency tends to be costlier as compared to home currency.

B) Parity Relationships:

Following are the 4 parity relationships which will be affecting forward rate of exchange:

- a> Interest Rate Parity
- b> Inflation Rate Parity (Purchasing power Parity)
- c> Expectation Parity (Expectation Theory)
- d> International Fisher's effect

Now, we will have to look above parities one by one:

a> Interest Rate Parity:

As per this theory forward rates of exchange between currencies of countries will be affected by their Interest Rate differentials.

Now you might be thinking that how is it possible?

→ Dear, first we will have formula of it then I will try to solve your query by Logic with an example.

Formula:

$$\frac{1+R(d)}{1+R(f)} = \frac{F(d)/F}{S(d)/F} \quad \text{(this formula is for Direct quote)}$$

or

$$\frac{1+R(d)}{1+R(f)} = \frac{S(f)/D}{F(f)/D} \quad \text{(this formula is for Indirect quote)}$$

(by using any of the formula we can solve the problem)

Where,

$F(d) / F$ = Forward Domestic per Foreign

$S(d) / F$ = Spot domestic per foreign

$S(f) / D$ = Spot foreign per Domestic

$F(f) / D$ = Forward foreign per Domestic

$R(d)$ = Domestic rate of interest

$R(f)$ = Rate of Interest of foreign country

I know there is mess up in your mind, now go through example as given below then read again

Example:

Assume that, US borrowing rate is 6%, Indian deposit rate is 10%, and spot rate is 1\$=Rs 60.

Now, what I will do, Suppose I will borrow \$ 100 from US @ 6% p.a. and will deposit in Indian bank account @ 10% p.a. basis.

It means, I will deposit Rs 6000 (\$ 100 * Rs 60) and will earn Interest Rs 600 after 1 year. Now I have Rs 6600 in my hand in Indian currency and I have to pay \$ 100 + \$6 (Interest @ 6% on \$100) = \$ 106 in US.

Now in next step, amount which I received in India along with interest i.e. Rs 6600 I will convert in \$ for payment of dues. It will be \$ 110 (Rs 6600/60).

Now look overall scenario, I have \$ 110 in my hand after conversion but I have to pay \$ 106 in US, now it means I am in profit of \$ 4 (\$ 110 - \$ 106)...?

ANSWER comes NO, NOT AT ALL. (*Dear agar aisa hota tha to koi bhi country poor nahi hoti thi*), then I know next question in your mind is whats the correct answer is ?

→ Now in this case Rate of Dollar would increase... but how?

I have Rs 6600 (6000+600) in my hand and I have to pay \$ 106(100+6).

New rate will be Rs 62.2642/\$ (Rs 6600/106).

Rs 62.2642 will be new rate and outstanding dues i.e. \$ 106 will be paid at this rate.

Hence, we can say that interest rate parity affects the forward rates of currency. (*See the difference, earlier rate was 60 and now it is 62.2642.*)

Now, above rate can come by using formula:

$$\frac{1+R(d)}{1+R(f)} = \frac{F(d)/F}{S(d)/F} \quad (\text{this formula is for Direct quote})$$

$$1 + 0.10 = \frac{F(d)}{F}$$

$1 + 0.06$

60

Answer: Rs 62.2642 / \$

Assumption:

1. Spot rate is same throughout the year
2. There is no restrictions of FEMA

Hence we can say that, The country where interest rates are lower, currency of that country will be at premium and vice versa.

I hope you guys are getting

b> Inflation Rate Parity (Purchasing Power Parity):

As per this theory forward rates of exchange between the currencies of two countries will adjust according to their inflation rate differentials.

(Logic which we have seen earlier, same applies here)

Formula:

$$\frac{1+I(d)}{1+I(f)} = \frac{F(d)/F}{S(d)/F} \quad \text{(this formula is for Direct quote)}$$

or

$$\frac{1+I(d)}{1+I(f)} = \frac{S(f)/D}{F(f)/D} \quad \text{(this formula is for Indirect quote)}$$

(by using any of the formula we can solve the problem)

where,

$F(d) / F$ = Forward Domestic per Foreign

$S(d) / F$ = Spot domestic per foreign

$S(f) / D$ = Spot foreign per Domestic

$F(f) / D$ = Forward foreign per Domestic

$I(d)$ = Domestic rate of inflation

$I(f)$ = Rate of Inflation of foreign country.

c> Expectation Theory :

As per this theory, forward rates of exchange will move according to expectations of forward market participants. If forward contracts are selling cheaper than expectations of forward market participants then they tend to buy currency in forward market due to which forward rates of currency starts rising and reaches to expectation level of forward market participants. If forward market is selling costlier than expectations of forward market participants then they need to sell the currency in forward market due to which forward rates of currency declines and reaches to expectation level of forward market participants.

Further, entire market of currency or share market is move mostly by expectations of participants.

As market moves by expectation of participants formula becomes like this:

$$F(d)/F = E[S(d)/F]$$

$E[S(d)/F]$ = Expected spot rate at future.

d> International Fisher's Effect:

It is the combination of both Interest rate parity and Inflation rate parity. As per this theory, forward rate can be affected by both interest as well as inflation too. But the concept remains the same just like interest rate parity and inflation rate parity.

Formula:

$$\frac{1+R(d)}{1+R(f)} = \frac{1+I(d)}{1+I(f)}$$

- **Hedging :**

Before go to hedging first we have to understand meaning of HEDGE.

TO HEDGE MEANS REDUCE THE RISK.

In currency market there are many risks, some of them we saw in earlier part. Interest rate fluctuation, Inflation, Expectations of Currency participants etc etc. are the risks in currency market and because of these currency rate fluctuates.

Now, how to avoid these risks or how to reduce these risks?

→ There are various methods which can help us to reduce the risks in currency market.

Now, next question arises, what are the methods to reduce the risks?

→ There are various methods, we will see some of them.

- * Forward Contract
- * Options contract
- * Money Market Hedge
- * Leading and Lagging
- * Matching and Netting
- * Future Contract
- * Home Currency Invoicing

By using above method / methods we can reduce the risks. We will discuss some of them in this discussion and rest in next discussion.

Today we will discuss on Forward contract and Money market hedging

(While reading please note that don't think that hedging is difficult, be positive you will get solution automatically)

a. FORWARD CONTRACT:

There is no need to think what is the meaning of forward contract, its name itself gives us meaning of it.

It is a contract which is entered into today for the settlement on some future date i.e. on forward date.

Now you might be thinking that settlement on future date means whether its time of settlement is fixed or something else?

I have solution of your query,

Such forward contract can be classified in 2 categories:

- a. Fixed date forward contract and
- b. Option forward contract (it is not option which is covered in derivative)

i) Fixed date forward contract:

It means, **CURRENCY WILL BE EXCHANGED ON PREDECIDED DATE AT PREDECIDED RATE.**

ii) Option Forward Contract:

In this case, **OPTION IS NOT FOR GIVING OR TAKING DELIVERY OF FOREIGN CURRENCY RATHER OPTION IS FOR DATE OF SETTLEMENT WHICH CAN BE AT ANY TIME DURING PREDECIDED FIXED PERIOD.**

(it is not like derivative that I have right to buy or not, here I have only choice of settlement i.e. date of settlement but finally I have to settle)

In forward contract there are **4 possibilities:**

- 1. Settlement on Due date**
- 2. Early delivery of forward contract**
- 3. Rollover of forward contract**
- 4. Cancellation of forward contract**

b. MONEY MARKET HEDGING:

It is one of the most important method of hedging, I will try to discuss this method in easy way with the help of an example.

Example: A Ltd purchased a machine from US for \$ 3000 and I have to make payment after 90 days. Interest rate in US is 4% (deposit rate) and 6% (borrowing rate), whereas in India interest rate is 9% (deposit rate) and 13% (borrowing rate). Spot rate is \$1 = Rs 60.

Ans → Now, here I purchased a machine for \$ 3000 and I have to pay such amount after 90 days but I have risk of currency rate fluctuation after 90 days. Such rate can be increased or decreased. Now, I want to reduce such currency rate fluctuation risk, but how?

Now, I have to go by 2 types of steps

1. Transaction steps (means how transaction will take place) and
2. Calculation Step (how to do calculation)

1. Transaction Steps :

1. Borrow the amount (which is payable) in domestic country,
2. Convert domestic currency into foreign currency and invest in foreign country
3. with the interest we will be having desired amount in investment account after 90 days and withdraw the amount from the investment account and make the payment
4. and then repay the borrowings in domestic country with interest.

2. Calculation Steps:

Now guys, we saw in transaction step that first we have to borrow the amount (which is payable) in domestic country but did you observe that how it will come to know me that how much amount I should borrow? Hence in calculation steps first we will calculate the amount which I need to borrow in domestic country.

Step 1: Amount to be deposited in foreign country

Amount payable in US after 90 days \$ 3000

Applicable interest rate 4% p.a.

(deposit rate of foreign country)

Amount to be deposited in US *\$ 2970.30

*

\$ 3000

$[1 + (0.04 * 90 / 360)]$

Note: From Step 1 we got the amount which should be deposited in US in \$, now step 2 is, I want to calculate amount that I should borrow in domestic currency TODAY (highlighted "today" word because rate will be spot rate that I will borrow)

Step 2 : Amount to be borrowed in Domestic Country

Amount to be deposited in foreign country \$ 2970.30

(from step 1)

Applicable spot rate \$1 = Rs 60

Amount to be borrowed in home country in
Rs Rs 178218

$(\$ 2970.30 * \text{Rs } 60)$

Note : From step 2 we got the amount which should be borrowed from domestic country in domestic currency. Now step 3, interest payable on repayment of borrowings.

Step 3 : Amount repayable on borrowings

Amount borrowed in domestic country	Rs 178218
(as per step 2)	
Applicable interest rate	13% p.a.
(borrowing rate of domestic country)	
Amount repayable after 90days	*Rs 184010 (approx)
$*Rs\ 178218 * [1+(0.13*90/360)]$	

c. LEADING AND LAGGING

This concept is easy to understand.

In this, Company will see **TODAY** whether they should Lead in payment **TODAY** or they should Lag the payment as on today.

It means, if company is gaining after making payment TODAY then company will make the payment and if company is suffering loss if they make payment TODAY then company should make payment as on due date.

Now, suddenly question may arise in your mind that how I will come to know whether I am gaining or suffering loss?

---> Company knows that how much they want to make payment to the party. then they will simply calculate amount payable on current spot rate and amount payable on forward rate as on due date. Beneficial will be chosen.

* In case of Leading and Lagging, we may have **2 situations**,

a) Company is running into Cash Deficit and

b) Company is having Cash Surplus

In case of cash deficit, company will have to borrow to make payment if company is leading in payment TODAY,

and in case of cash surplus, company will have to loose opportunity of investment. *(agar company payment nahi karegi aaj toh kahi na kahi invest karegi toh automatically they will loose surplus on investment as on TODAY)*

Leading means company is ready to make payment today

Lag means company is not ready to make payment today.

I hope you guys are getting. It is very easy method. **(Just calculate whether your company is getting benefit after making payment as on today, if answer is yes then LEAD in payment otherwise LAG it)**

Now we will move to next method i.e. Netting and Matching

d. NETTING AND MATCHING :

Hey, it is even easier than Leading and Lagging. Don't think about this method, I know you are aware about this method, earlier this type method is used by you. Now, you may be thinking that may be I am getting mad or something else.

No, I am not getting mad. You applied same type of method in Advanced Accounting in IPCC syllabus in branch accounting. Hey you remember example of inter branch transaction. Example of Mumbai, Kolkata, Delhi and Chennai's inter branch transaction's problem. It is the same one. In branch accounting what you used to do is that add the amount receivable and less the amount payable and net amount is in your hand may be negative or positive.

In this, just calculate net amount after addition and deduction of amount receivable and payable. Just add the amount receivable and deduct the amount payable and answer will be NET amount (may be negative or positive).

As per Foreign Exchange Management Act, only netting of bilateral transaction is allowed, multilateral netting is not allowed.

That is the end of the method. Easy na...???

e. OPTIONS CONTRACT and f. FUTURES CONTRACT

Guys these methods will help you if you know about Derivatives. If you know futures and Options in derivative then only you can solve this.

Here, I would like to tell some tricks or clue that may help you in solving problems. and these two methods will become more difficult if you don't know derivatives and you are solving in forex. So first do derivatives then only move to these two methods. 80%-90% these methods are on the based on derivative.

a) If their is Call Option = then we have RIGHT TO BUY BASE CURRENCY

b) If their is Put Option = then we have RIGHT TO SELL BASE CURRENCY

If we are buying base currency, we will purchase CALL OPTION, and if we are selling base currency, we will purchase PUT OPTION.

I am sorry guys but it is very difficult to clear your concepts without solving problem here. I will suggest you to first clear your concept in derivatives and then move to forex.

- **Nostro, Vostro and Loro Account :**

An interbank transactions, foreign exchange is transferred from one account to another account and from one centre to another centre. Therefore banks maintains 3 types of current account in order to facilitate quick transfer of funds in different currencies. These accounts are NOSTRO, VOSTRO & LORO account.

1. **Nostro Account:-**

A bank's foreign currency account maintained by the bank in a foreign country and in the home currency of that country is known as Nostro Account or "OUR" account with you.

Example: ICICI Bank opens a current account with Citi bank New York in \$.

2. **Vostro Account:-**

A local currency account maintained by foreign bank/branch. It is also called as "YOUR" account with us.

Example: Indian Rupee account maintained by Swiss bank

3. **Loro Account:-**

Loro account is an account wherein a bank remits funds in foreign currency to another bank for credit to an account of a third bank.

Example: SBI transferring funds to Citi bank in US \$ for transfer to Bank of America.

Some Important Points and summary :

1. Forex rate is always given in like commodity to currency E.G. 1\$ = Rs 60
2. Don't change the currency because it is given by market. E.G. if 1\$=Rs 60.0000 s given then don't write 1\$=60 or 60.0, write as it is given
3. E.G. If base currency is appreciating by 1% then it is not necessary that incidental currency will depreciate by 1%.
4. If nothing is given about interest rate then by default it is for per annum.
5. If 2 interest rates are given only of same country then lower rate will be of deposit rate and higher rate will be of borrowing rate.
6. Buy Base currency = Call option and vice versa
7. Money market hedging is not interest arbitrage, we are doing just to avoid currency rate fluctuation and not buying or selling interest rate at higher or lower rate.
8. In leading and Lagging : If Cash Deficit then borrow and if cash surplus then you will be losing opportunity of investment.

Friends, I tried my best to avoid errors but if you find any error then please let me know at siddharthbumb@gmail.com

Just give me your feedback at siddharthbumb@gmail.com , will surely try to sort out your problem if any.

Thank you so much.



Special thank to MY PARENTS, my teacher who taught me this topic very nicely Mr CA Akshai Deep Srivastava and all my colleagues.

This entire article/topic is written by me, there is no illegal way to publish this file.

Regards,

Siddharth Bumb (CA CS Final)

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