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Valuation of Currency and Its Impact on Investment: A Study in the Context of Many Confounding Factors

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Abstract: **This paper gives an idea to explore various factors affecting valuation of currency after increasing interest rates by Federal Reserve, USA after almost a decade post economic recession.**

These economic reforms are seen as essential master steps to strengthen its economy and increase valuation of currency and enhanced global investment.

This paper makes an attempt to explore mathematical theorem to reflect how many factors such as interest rates, inflation rates and political stability play significant role to enhance appreciation of its domestic currency in respect of other currencies in the world. Concept of exchange rate behavior has been explained through the formula.

To understand role and significance of various factors illustrations have been given in this paper as size of economy of any nation is measured by valuation of currency and investment pattern of foreign countries.

Keywords: **Interest Rate, Inflation Rate, Valuation, Investment, Exchange Rate, Demand, GDP, Bank Rate, Repo Rate Etc.**

1. FACTORS AFFECTING VALUATION OF CURRENCY

To know the concept of valuation of currency, it is required to know exchange rate which is relative and expressed as a comparison of different currencies of different countries.

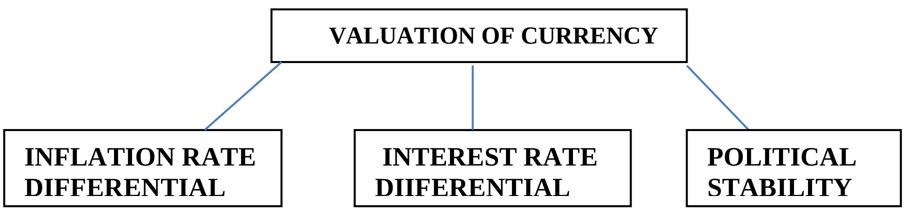
Here are some confounding factors that usually affect exchange rates of two or many countries.

For an example see the illustration as on Feb 2016 ,the exchange rate of USA vs. INR

1 USD = 67.63 INR

1 INR = 0.0148 USD

In this paper apart from many factors inflation rate differential has been explored and other factors like interest rate differential, political stability, current account deficit have been just defined and partially explained in order to make relationship with exchange rate to determine appreciation and depreciation of different currencies.



2. INTEREST RATE DIFFERENTIAL

Interest rate is directly related with the valuation of currency of any country. It is analyzed that due to higher interest prevailing in an economy will generate higher deposits from investors and thus higher return to lenders as well.

Therefore higher interest rates attract foreign investors to invest their capital in the concerned country and yield higher return.

For an example if USA interest rates tend to rise, it will attract investors to deposit money in USA banks and financial institutions in order to obtain higher assured returns out of their investment. Therefore demand for dollars will increase leads to an appreciation in the currency.

Let's see an illustration how appreciation and depreciation takes place with the variation of interest rates.

	India	**U.S.A.**
Interest Rate	5%	9%
Value of Currency	**Lower**	**Higher**
Investment	**Lower**	**Higher**

In keeping this level of appreciation in tact USA keep trying to stabilize its inflation rate by maintaining and revising interest rates, Cash Reserves Ratio, Statuary Liquidity Ratio, Bank Rates, Reverse Repo as well as Repo Rate etc.

3. INFLATION RATE DIFFERENTIAL

As we see aforesaid illustration explaining the effects of interest rates we will now examine impact of inflation rate that plays one the most significant roles in determining valuation of currency. If there is low inflation rate in any country having potential for investment, its demand for products and services will increase and consumers will buy products from it.

In this paper detailed and comparative studies have been shown.

For an example take a look at the following:

1 USD = INR 67.63 AS ON; January 25, 2016

It means '$' can be converted in forex market at 67.63 INR . Exchange rate is determined globally by some factors like inflation rate , interest rate , income level , govt control & some other expected factors. In short there are many confounding factor that can affect or determine exchange rate of any currency world wide. In this regard many theories have been given as purchasing power parity (PPP) where it is considered that only inflation is the major factor that affects the exchange rate. PPP is based on law of one price which states that in any country prices of identical products should be same and there should not be any market imperfection. In PPP, inflation rate differential is the major factor that affects exchange rate which will be shown by this example as given below-

4. AFFECTS OF INFLATION RATE

Consider there are two countries U.S. and India involved in producing some identical products. As per PPP, the prices should be same in both the countries but due to differential inflation rate there will be shifting of demand from lower inflation rate to higher inflation rate. In order to reach equilibrium between two nations

Particulars	**India**	**U.S.A.**
Inflation rate	**6%**	**4%**
Demand for Identical goods	⇩	⇧

From the above example it is clear that in India there is higher inflation rate whereas in U.S. there is lower inflation rate. As a result, Indian consumers will prefer U.S. goods rather than Indian goods because demand for U.S. goods will increase due to lower inflation rate i.e. 4% and the demand for U.S. goods will increase and hence attract consumers from Indian market. Even it will attract U.S. buyers and they will still be taking goods from their own country. PPP theory states that this process will continue until both markets equate themselves. Further some results will emerge due to inflation mentioned as follows-

	India	U.S.
Inflation	6%	4%
Value of Currency	**Lower**	**Higher**

As mentioned in this table, the value of U.S. currency will increase and as per PPP theory this value should increase by at least 2%. If it happens then Indian consumers will have to pay more for U.S. goods which will appear costly and no longer cheaper due to lower inflation rate in the U.S. hence re-shifting of demand would take place in both the countries and their nationals would start purchasing products from their own country which is the objective of 'Law of One Price' i.e. PPP theory.

THEOREM DETERMING THE VALUATION OF CURRENCY AND ITS IMPACT ON DEMAND AND INVESTMENT:

We will see further that due to inflation how much appreciation or depreciation in the value of currency should take place. This will be shown with the help of price index theory of home country (India) and the foreign country (U.S.) as given below-

Consider following-

Price of identical product in home country is (Ph) and price of identical product in foreign country is (Pf), as per PPP the prices should be same but practically not true due to inflation rate differential of both the countries.

Now consider (Ih) and (If) are inflation rates in the home country and foreign country respectively.

Therefore price index in home country would be

$(Ph)(1+Ih)$

And price index in foreign country would be

$(Pf)\ (1+If)$ -----(1)

If exchange rate in the foreign country is (Ef), then price index in the foreign country would be as follows-

$Pf(1+If)\ (1+Ef)$ -----(2)

Hence to reach equilibrium;

$Ph(1+Ih) = Pf(1+If)\ (1+Ef)$

If $Ph = Pf$ as PPP says;

$(1+Ih) = (1+If)\ (1+Ef)$

$(1+Ef) = 1+Ih\ /1+If$

$Ef = (\ 1+Ih/1+Ef\ )-1$

By this formula we can find and determine actual exchange rate appreciation & depreciation in the global market.

Now consider this,

Particulars	**U.K.**	**U.S.**
Inflation Rate	9%	10%
Demand	↑	↓
Value	**Appreciation**	**Depreciation**

$Ef\ \% = (1+Ih1/1+If)-1 *100$

= [(1+0.09 /(1+0.10) -1]* 100

= [(1.09/1.10)-1]*100

= [-0.9091]* 100

= -0.91 % i e -1% approximately

Depreciation must take place in the value of foreign currency then only reshifting of demand from U.S. to U.K. shall take place.

Now consider a situation where inflation rate in U.S. & U.K. is as follows:-

Particulars	**U.K.**	**U.S.**
Inflation Rate	9%	10%
	↑	↓
Value of currency	+1%	-1%

If the situation remains as mentioned above U.S. buyers will purchase from U.K. because still its goods will seem cheaper for U.S. investor and they will purchase goods from U.K. because of low inflation rate. And as per the PPP(Purchasing Power Parity) to be in the equilibrium position the value of currency must come down to at least by 1% then it will seem that purchasing power in both the countries appear same and there will be no affect on the demand of the product and services in both the countries.

5. CONCLUSION

On the basis aforesaid explained theorem it's now clear that there is direct impact on valuation of currency due to many confounding factors like interest rate and inflation rate. In determining the valuation of currency here only two major apart from other factors have been explained in detail that shows different aspects of appreciation of currency as well as depreciation of currency.

Although political stability is also one of factors but in this paper only financial factors such as Interest and Inflation Rates have been taken into account.

We saw from our study that how USA revised its financial determinants and enhanced its interest rate in order to attract foreign investors and thus appreciated its currency value in exchange of currencies of different countries of the world.

We also noticed that Inflation also plays vital role in determining the currency valuation.

Although there are many other confounding factors to reflect appreciation and depreciation of currencies but ignored in this paper and only two Interest Rates and Inflation Rates have been explained in depth by using many facts based on statistics and theorem to determine valuation of currency and its impact of investment pattern of other foreign countries.

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