



An analytical study on Depreciation of rupee against dollar & Fundamental analysis on impact of macroeconomic factors on exchange rate of rupee

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Abstract:

On August 28th 2013 when rupee closed to 68.80 against dollar, the fear of Indian economy returning to 1991 scenario was talked about. This paper tries to analyze the causes & impact of rupee depreciation against dollar on Indian economy in the recent period. This paper tries to analyze the relationship between several macro economic factors & its impact on the rupee exchange rate against dollar. The variables considered for the study are, FDI, GDP, INFLATION, Money supply as a % of GDP, Export growth rate. Correlation method is used to analyze the relationship between the above economic factors & exchange rate. The study for the period is 2000-2013 for the study of macroeconomic variables.

Key words: Exchange rate, Fundamental analysis of macroeconomic factors, Finance

Introduction:

On August 28th 2013 when rupee closed to 68.80 against dollar, the fear of Indian economy returning to 1991 scenario was talked about. There are many economic factors which affect the exchange rate. This paper tries to analyze the causes & impact of rupee depreciation against dollar in the recent period. This paper tries to analyze the relationship between several macro economic factors & its impact on the rupee exchange rate against dollar. The variables considered for the study are, FDI, GDP, INFLATION, Money supply as a % of GDP, Export growth rate. Correlation method is used to analyze the relationship between the above economic factors & exchange rate. The study for the period is 2000-2013 for the study of macroeconomic variables.

As per the basic laws of economics if the demand for USD in India exceeds its supply then it's worth will go up and that of the INR will come down in that respect. It may be that importers are the major entities who are in need of the dollar for making their payments. Likelihood here could be that the Foreign Institutional Investors are retreating their investments in the country and taking them elsewhere.

This can create a shortfall in supply of the dollar in India. This state of affairs can only be addressed by exporters who can bring in dollars in the system. If by some means the FIIs can be wooed back, then this imbalance can also be addressed to a certain extent. India need serious structural & economic policies reform in order to bring the stability in exchange rate.

Objectives:

1. To know the reason of depreciation of rupee & its impact on Indian economy.
2. To analyze the correlation between inflation & exchange rate
3. To analyze the correlation between GDP & exchange rate



4. To analyze the correlation between Money supply & exchange rate
5. To analyze the relation between export growth & exchange rate & predict the average exchange rate using excel forecast method.
6. To predict the average exchange rate for 2014 using forecast method specified in excel considering Forecasted GDP for the financial year 2014.

Review of literature:

Edwards (2000) investigated the dynamic association between exchange rate regimes, capital flows and currency crises in emerging economies. The study draws on lessons learned during the 1990s, and deals with some of the most important policy controversies that emerged after the Mexican, East Asian, Russian and Brazilian crises. He concludes that under the appropriate conditions and policies, floating exchange rates can be effective and efficient.

Taylor (2001) discusses the failure of liberalised policies in Argentina. He says that Argentina has failed in maintaining the liberalised policies about capital flows and a firm currency. Argentina had anti-inflation program based on freezing the exchange rate in the early 1990s. This means that the money supply within the country and the supply of credit to firms are tied directly to international reserves. So if the country gets capital inflows, the supply of money and credit increases, leading to a substantial increase in domestic prices.

Harberger (2003) studied the impact of economic growth on real exchange rate. He found that there is no systematic connection between economic growth and real exchange rate. Husain et al. (2004) found in their study that little access to international capital is available for the weaker and less developed countries, so low rate of inflation and higher level of durability is associated with fixed exchange rate regime in those countries. However, they found no robust relationship between economic performance and exchange rate regime in the developing economies. They also found that advanced economies may experience durable and slightly higher level of growth rate without higher level of inflation in flexible exchange rate regime.

Causes of Depreciation of rupee:

It is being talked that Depreciation of rupee has lead us to the 1991 scenario. The journey of Indian rupee (INR) against the US dollar (USD) can be traced back to the pre-Independence days when INR was at par with USD. After Independence, India chose a fixed rate currency regime with the currency pegged against GBP. However, with the passage of time and change in situation the pegs were modified. In 66 years of Independence INR has depreciated 66 times against the USD (till end-August 2013). In the past five years, the rupee has depreciated by a huge 60%. Following are the various reason for the depreciation of rupee.

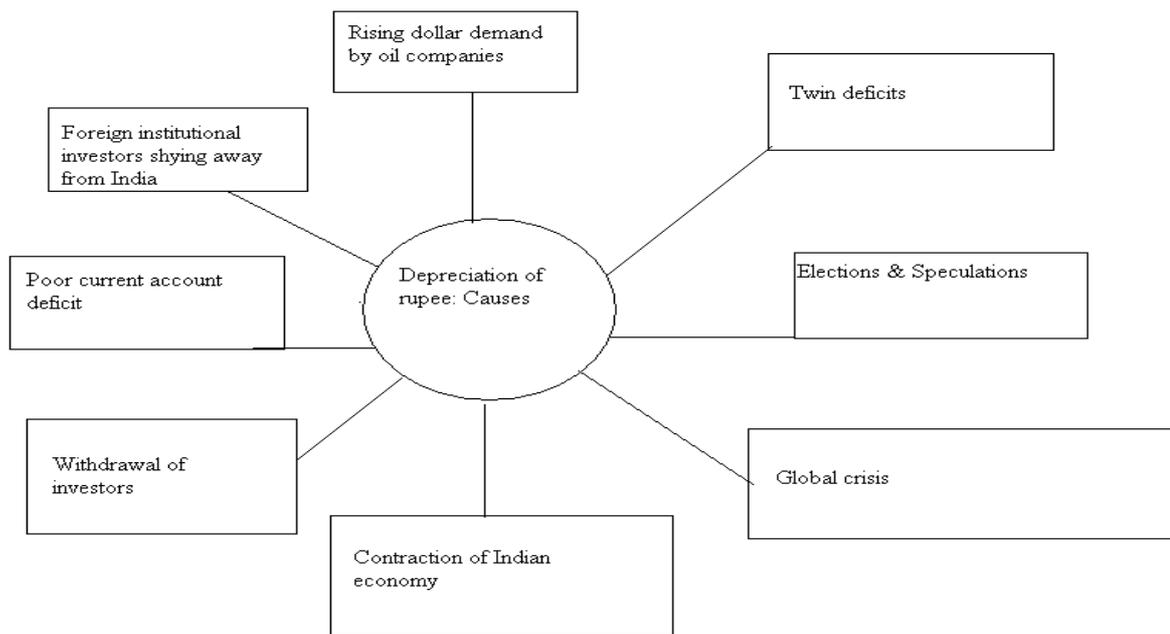


Fig1.1 Causes of depreciation of rupee

1. Rising dollar demand by oil companies:

The worth of crude oil has been a major bane for India since it has to bring in the majority of its requirement from outside the country. The demand for oil in India has been going up every year and this has led to the present situation. All over the world, the price of oil is given in dollars. This implies that as and when the demand for oil increases in India or there is an increase in oil prices in the global market, there also arises a need for more dollars to pay the suppliers. This also results in a situation where the worth of the INR decreases significantly in comparison to the dollar. Oil companies nearly need \$400 million a day

2. One of the reason for the depreciation of rupee is that FII are selling more than they are buying that's why net FII has fallen from 43533.06 in 2012 to 538.35 in 2013.

3. One of the main reasons behind the Indian government's inability to arrest the fall of the national currency is the critical current account deficit. In the 2012-13 fiscal India's CAD was measured at 4.8 per cent of the GDP. The government has been unable to come up with any new destinations for exporting its products and this has also hampered the growth in this sector. There are other crucial reasons here like the lack of one window for clearance purposes and procedural delays. Even areas where India has traditionally done well on this front have fared badly this time around.

4. Recently ArcelorMittal and Posco decided to pull out from their projects in India. Posco did not go ahead with a steel plant worth INR 30,000 crore that was supposed to be built in Karnataka and ArcelorMittal withdrew from setting up a steel plant in



Odisha that was supposed to cost around 52,000 crore. There were lot of delays and problems related to acquiring land for the project. In spite of FDI in multi brand retail only Tesco has given the commitment to invest in India.

5. The various important sectors of Indian economy such as manufacturing, mining and agriculture have seen poor growth in 2013 and this has made them less appealing propositions for the investors. During June 2013, the aggregate industrial production in India reduced by 2.2 per cent and in July 2013 the RBI predicted that in the present fiscal there would be a growth of 5.5% which was lesser than its previous prediction of 5.7%.
6. India being a developing economy with high inflation, depreciation of the currency is quite natural. Depreciation of rupee is good, so long as it is not volatile. A random depreciation that we have seen in the last few months is bad and it has hurt the economy. Right from the beginning of year 2013, the value of rupee has been depreciating. Secondly, the degree of volatility in the global economy hasn't helped. Besides the Eurozone crisis, the downgrade of the US economy has led to flight of capital in order to boost the US home economy. The US dollar has become in short supply and unlike its peers, India needs to attract sufficient foreign funds to close the fiscal and current account gap. The fact that a weakening of the Indian economy has happened at the same time as a global debt crisis has elevated the exchange problem. The appreciation in the US dollar has led to the decrease in the value of Indian rupee. The value of US dollar has been rising ever since the US Federal Reserve has announced quantitative easing.
7. One of the theories doing the rounds is that the currency typically depreciates in periods earlier to general elections. In fact, data from 1984, too, shows that the rupee has tended to weaken in periods preceding elections. Secondly, the fall in rupee can be largely attributed to the speculations prevailing in the markets. Due to a sharp increase in the dollar rates, importers suddenly started gasping for dollars in order to hedge their position, which led to an increased demand for dollars. On the other hand exporters kept on holding their dollar reserves, speculating that the rupee will fall further in future. This interplay between the two forces further fuelled the demand for dollars while sequestering its supply from the market. This further led to the fall in rupee.
8. The deficits should be run only if they can pay for themselves in the future, else they reach unsustainable levels and stalls the development process and exert downward pressure on growth and upward pressure on inflation, creating a stagflationary scenario. The increase in fiscal deficit leads to higher government borrowings that crowds out the private sector, and hence investments in the economy, weakening growth and further fuelling deficit, and the vicious cycle continues.



Impact of depreciation of rupee:

1. Depreciation of rupee will create more revenue for the exporter & will cause to make more payment for the importer.
2. Trade deficit will widen because of costlier imports, worsening the current account deficit.
3. Spending on any kind of foreign exchange denominated spending will increase.
4. Capital inflow will slow or reverse.
5. Spending on discretionary goods will increase.
6. Forex reserves could fall putting pressure on rupee.
7. In case of weak demand companies may not be able to pass on higher inputs costs.
8. The government and the RBI have issued a series of measures in recent days designed to reduce the current account deficit and bolster the rupee, including increases in the import duty on gold.
9. Exports are unable to leverage the weak rupee fast enough given the speed of its descent. In fact many exporters are caught out because of fixed price contracts in rupees wherein they cannot get the benefits of its rapid fall. The balance of payments is tilting sharply against us.
10. The Indian stock- market will take a hiding as opposed to a beating.
11. Global rating agencies will revise our rating downwards to “Junk” status, making international borrowing difficult and even more expensive.

Research Methodology:

In this paper we have used descriptive type of research. Source of data is secondary data. Economic factors such as GDP, Inflation, Money supply, Export growth has been considered to find out whether it has any impact on the exchange rate. Statistical method of correlation has been used in order to check the impact. Forecast for the year 2014 average exchange rate has been calculated using forecast technique.

Data Interpretation & Analysis:

2.1 Table showing GDP, Inflation, FDI, Export growth, money supply & exchange rate from the period 2000-2013



Year	GDP(Real at factor cost)	Inflation (WPI Average)	FDI (Inflow In us \$ million)	Export growth rate (Year on year %)	Money supply(as a % of GDP)	Exchange rate RS/US \$ AVG)	NET FII (Rs crores)
2000	7.59	3.3	NA	NA	14.6	45.9	NA
2001	4.3	7.1	2,463	21.333333	16.8	45.7	NA
2002	5.52	3.6	4,065	-1.758242	14.1	48.3	NA
2003	3.99	3.4	2,705	20.357942	14.7	45.9	255.81
2004	8.06	5.5	2,188	23.234201	16.8	45	-1196.91
2005	6.97	6.5	3,219	28.506787	12	44.3	-2033.94
2006	9.48	4.4	5,540	23.474178	21.4	45.2	1416.77
2007	9.57	6.5	12,492	22.528517	21.3	40.2	56651.15
2008	9.32	4.8	24,575	28.937161	22.1	46	15064.60
2009	6.72	8	31,396	13.718412	20.5	47.4	-8439.54
2010	8.6	3.6	25,834	-3.492063	19.2	45.6	-12973.59
2011	9.32	8.6	21,383	37.335526	16	48.1	-3112.22
2012	6.21	8.8	35121	23.672655	16	54	43533.06
2013	4.96	7.8	20,899	-6.003873	16	54.5	538.35

Source: CSO, RBI, Ministry of Finance; 15th March, 2013, Databook for DCH; 3rd May, 2013 & Money control for FII(Data)

2.2Table showing Correaltion Results on the above variables:

Sr.no	Variable X	Variable Y	Correalation
1	GDP	Exchange rate	-0.45
2	Inflation	Exchange rate	0.43
3	FDI	Exchange rate	0.50
4	Export growth	Exchange rate	-0.35
5	Money supply	Exchange rate	-0.29



6	FII	Exchange rate	-0.08
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Table 2.2 Showing Correlation Results on the above variables Forecast Method:

In these we are calculating average exchange rate using forecast method by considering last two years data of macroeconomic variables & forecasted data for the macro economic variables in the year 2014.

Table 2.3 Table showing GDP, Exchange rate

Year	2012	2013	2014(Forecastes as per RBI)
GDP	6.21	4.96	4.8
Exchange rate (Average Rs/USD)	54	54.5	?

FORECAST(x,known_y's,known_x's)

X, is the forecast GDP for the year 2014

Known, y's is the value of exchange rate for year 2012 & 2013

Known x's is GDP for the year 2012 & 2013.

The equation for FORECAST is $a+bx$,

Where

$$a = \bar{y} - b\bar{x}$$

and:

$$b = \frac{\sum(x - \bar{x})(y - \bar{y})}{\sum(x - \bar{x})^2}$$

By using the above data we get the result of average exchange rate which is 54.564.

Interpretation:

1. It can be seen that GDP & exchange rate is having negative correlation which means that as GDP increases rupee appreciates & as GDP decreases rupee depreciates against dollar
2. There is positive correlation between Inflation & exchange rate which means that as inflation increases rupee depreciates & as inflation decreases rupee appreciates.
3. There is a positive relationship between FDI & exchange rate which means that as FDI increases rupee depreciates & as FDI decreases rupee appreciates.
4. There is a negative correlation between export growth & exchange rate which means that as export growth increases rupee appreciates & as export growth decreases rupee depreciates.



5. There is a negative relationship between the exchange rate & money supply which means that as money supply increases rupee appreciates & as money supply decreases rupee depreciates.
6. There is a negative relationship between FII & exchange rate which means that as net FII Increases Rupee appreciates & as net FII decreases rupee depreciates.
7. The forecasted average exchange rate is Rs54.564 Per USD

Conclusion:

Depreciation of rupee has affected everyone in the economy including the common man. We found that rupee is positively correlated to GDP & export growth. Hence we should focus more on increasing the export by correcting economic fundamentals. Immediate economic reforms should be taken in order to gain the confidence of foreign investor. A stable currency regime required for a stable growth economy cannot be achieved unless the structural issues are addressed to advance productivity and keep a stable inflation environment, resulting in a more stable fiscal deficit and external sector which puts India on a sustainable growth path with stable Fiscal deficit, current account deficit, inflation and growth.

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