# Management of Exchange Rate in India : A Look at Recent Depreciation of Rupee

*Arati Basu\**

### Abstract

*India has recently gone through the crisis of sharp depreciation of rupee and depletion of foreign exchange reserve resulting into inflation, demand recession and slow down of economic activities. The paper examines issues related to management of both domestic and external sectors of Indian Economy in a Globalized world. The paper first examines the operation of open economy- the interconnectivity developed through exports and imports and capital flows. Then, an analysis is carried out on long period movements of the exchange rate in the regime of full Current Account and Partial Capital Account convertibility of rupee. The statistical analysis on the association of exchange rate movements with various components of capital inflows and Current Account deficit has been done. The last section analyses, the crisis period until Sept. 2013, measures to manage the crisis and turnaround of the external environment of Indian economy in the framework developed in the paper.*

**Keywords** : *Depreciation, demand recession, Convertibility of Rupee, Current Account, Capital Account*

## Introduction

In a globalized world, the management of domestic economy is a big challenge especially when world experiences recession. In the period of boom, the domestic economy finds it more advantageous to integrate with the world and hence reforms are introduced to open up business, exports/ imports and capital flows to get the benefits of growth impulses created around the world . During the period of recession, external economic factors are unfavorable; world recession is transmitted through slow down both of exports and capital inflows. Economies with high ratio of openness suffer more volatility and macroeconomic management is more challenging during recession.

Recent depreciation of rupee by almost 27 percent since April, 2013 uptil the first week of September created an alarming situation for Indian economy. RBI has intervened several times through revising repo rate and selling dollar through depletion of foreign exchange reserves as its drive to management of the exchange rate and liquidity adjustments. Due to depreciation of rupee, imports for Indian economy turned costlier. Even though exports in dollar were

**\* Prof. (Dr.) Arati Basu**
*Professor*
*New Delhi Institute of Management*
*50 (B&C) Tughlakabad Institutional Area*
*New Delhi-110062*

cheaper but total exports earrings in dollar term decreased by 1.8 per cent compared to previous year while import value in dollar terms increased by 0.4 per cent thus deteriorating trade balance. This was the cause of increase in the balance of trade deficit. Added to this, there has been steady deterioration in Capital Account Balance due to reduction of inflows of foreign investment into the economy. Any attempt to stabilize rupee value in terms of dollar and improve our Balance of Payments situation is creating adverse repercussions on domestic economic activities.

## Management of Exchange Rate in an Open Economy

The complexity of the exchange rate management in an open economy needs to be understood how both domestic and international factors interact with each other to influence Exchange Rate Current Account, Capital Account Balance and in turn affect Domestic Economic Activities such as employment generation, investment, consumption, business activities, asset values, stock market activates as well as operations of financial services such as Banking and Insurance etc. The management of the exchange rate stability is an important macroeconomic issue.

In an open economy, a lot of cross boarder economic decisions are taken and hence, the external value of money is one of the important factors in global decision making process while the exchange rate is in turn, influenced by both domestic and international factors such as:

● Indian's exports which are basically depended on global market demand for India's exportable

● India's imports which are dependent on India's requirements/demand for imports

● Net Capital Inflows into the country which is the net of inflows of capital from various sources and out flows due to Indian investments abroad plus capital route transactions such as NRI accounts with Indian Banks , External Commercial Borrowings by Indian Corporate, repayments of external debts such as Govt., Non Govt. and corporate debts.

Inflows/outflows depends upon attractiveness of Indian economy for Foreign Direct investment(FDI) and Foreign Institutional Investments (FII). Exports earnings in the steeply competitive environment depends upon India's ability of improving comparative advantages vis-à-vis other countries as well as international demand for India's exportable. Though depreciation of rupee decreases the price of India's exportable in the foreign markets, there are two other variables influencing the prices of exportable such as domestic inflation and prices of imported inputs. While Indian economy is experiencing a high rate of inflation along with depreciation of rupee, there is the rise of the cost of production of exportable. Consequently in India, total import value has been increasing with rupee depreciation as it is not feasible to restrict volume of imports. For Example, the repercussion of restricting oil imports is very costly and cannot be done until domestic oil exploration has reached a stage to be able to supply petroleum domestically. Now- a- days, countries under WTO have liberalized imports and unilateral import restrictions mean violation of the World Organization's norms. All technology sector such as IT, electronic goods, automobile spare part sectors and other exportable good of India depend on imported inputs. As devaluation of rupee takes places these inputs become costly and less competitive in the world market. As a result, exporting companies lose earrings in terms of dollar due to devaluation of rupee as well as reduction in the volume of exports due to the cost escalation for imported inputs.

In an open economy like India, the adjustments in the Balance of Payments may take place through automatic mechanism comprising of corrections in Balance of Trade and Capital Balance. The equation and relational variables stated below explain how this mechanism operates.

Balance of Payments (BOP) Equation:

BOP = Exports – Import + (Capital Inflows – Capital Outflows)

Surplus in BOP creates foreign exchange reserves for the economy and demonstrates the strength of the economy while deficit in BOP is the sign of weakness and depletes foreign exchange reserves for the country. In the situation of increase in the surplus

over time, the rate of exchange appreciates while in the alternate situation, the external value of currency depreciates.

Explaining variables in the equation:

- Exports depend on income /employment levels of countries importing our products, competitiveness of Indian product prices and quality. Product prices of our exportable depend on the cost of production, the domestic rate of inflation and the exchange rate.

- Imports by our economy depend on import demands for industrial inputs as well as consumption demands for imports, the exchange rate and world prices of importable.

- Short term Capital inflows and out flows in the economy depend on interest differentials of domestic economy and the foreign economy while long term capital movements depends upon prospects of long term returns on investments in our economy compared to other economy. There are some political and non economic factors as well as reform policies for foreign investment climates which are important determinants of long term capital flows.

**Rupee Convertibility and Long term Exchange Rate Movement**

Following severe Balance of Payments deficits in 1990-91, India started moving towards more liberalized foreign Exchange System from highly regulated one.

**Table 1:**

**Transition of Foreign Exchange Market from Regulated System to Market System in India**

| Year | The Foreign Exchange Market and Exchange Rate |
|---|---|
| 1990-1991 | Fixed exchange rate system operating through FERA & FEMA; Balance of Payments crisis |
| July 1991 | To stabilize the foreign exchange market, a two step adjustments systems in the foreign exchange market was introduced at 9% lower and 11% higher margins. This was a decisive end to the pegged exchange rate regime. |
| March 1992 | To ease the transition to a market determined exchange rate system, (LERMS) was put in place, which used a dual exchange rate system. This was mostly a transitional system. |
| March 1993 | The dual rates converged and the market determined liberalized exchange rate regime was introduced. All foreign exchange receipts could now be convereted at market determined exchange rates. |

**Source :** Reserve Bank of India, Chronology of the Indian Exchange Rate.

Table 2: Movements of Indian Rupee 1993-94 to 2008-09

| Year | 1993-94 | 1994-95 | 1995-96 | 1996-97 | 1997-98 | 1998-99 | 1999-00 | 2000-01 | 2001-02 | 2002-03 |
|---|---|---|---|---|---|---|---|---|---|---|
| Range (Rs. per US $) | 31.21-31.49 | 31.37-31.97 | 31.37 37.95 | 34.14 35.96 | 35.70 40.36 | 39.48 43.42 | 42.44 43.64 | 43.67 46.89 | 46.56 48.85 | 47.51 49.06 |
| Average Exchange Rate (Rs per US $) | 31.37 | 31.40 | 33.46 | 35.52 | 37.18 | 42.13 | 43.34 | 45.71 | 47.69 | 48.40 |
| Year | 2003-04 | 2004-05 | 2005-06 | 2006-07 | 2007-08 | 2008-09 | 2009-10 | 2010-11 | 2011-12 | 2012-13 |
| Range (Rs. per US $) | 43.45-47.46 | 43.36 46.46 | 43.30 46.33 | 43.14 46.97 | 39.26 43.15 | 39.89-52.09 | 45.04-50.44 | 44.3 47.28 | 44.2-54.24 | 50.6 57.23 |

Source: Authors Calculation on the basis of RBI data, Hand book of Statistics on India-2013

As foreign exchange market is liberalized , there has been secular rise in foreign exchange rate with periodic fluctuations

**Why Partial Convertibility of Rupee in Capital account Transactions in the Liberalized regime**

There are two types of international capital flows in the economy, Foreign Direct Investment (FDI) which flows cautiously between economy depending on the type of reforms economies are able to undertake and create congenial economic atmosphere for long term investment. Political certainty, ease of doing international business, the process of corporatization and global competitiveness of the economy help better flow of FDI. International capital flows through Portfolio Investment by Foreign Institutional Investors (FII). FII fluctuates in response to short term global and domestic economic factors and creates volatility in the foreign exchange market. In order to protect our economy from violent fluctuation of the external value of rupee , the Government of India has not opted for full convertibility of rupee. While rupee is fully convertible for trade purposes in India , for capital account transaction, the convertibility of rupee is restricted. Through economic reforms implemented time to time, India has opened up FDI to a large number of industries from electronic, IT, food processing industry, automobile industry, Pharmaceutical industry to name some. The entry of foreign financial capital through Acquisition of Assets is highly restricted for preventing extreme volatility and flows of unaccounted black money. Dua and Sen (2009) in studying trends of capital movements , develop a model which examines the relationship between the real exchange rate, level of capital flows, volatility of the flows, fiscal and monetary policy indicators and the current account surplus. They find that an increase in capital inflows and their volatility lead to the volatility of the exchange rate.

Indian rupee has only been made fully convertible in Current Account while there is limited Capital account convertibility. India is still a developing country. It can be too risky if full capital account convertibility is allowed. Following are risks of full convertibility of rupee.

- Unrestricted capital flows limit a country's ability to manage the exchange rate. For example, the instability in the international markets due to phenomenon like the sub prime crisis and fears of a recession, oil crisis, will lead to flight of capital at a large scale.

- At times, induced by favourable external /internal economic conditions, full convertibility may lead to massive inflows causing excessive liquidity problem in the economy. This will cause inflation in the economy unless RBI intervenes to mop up extra liquidity through various monetary policies. For example, to suck the excess liquidity RBI will have to issue debt papers, bonds, etc. along with increasing repo and CRR rates. These measures put heavy burden on RBI because it has to pay huge amounts of interest rates for debt instruments.

- Excessive capital inflows lead to currency appreciation. This has a negative effect on exports.

- Full capital account convertibility increases short term FIIs more than long term FDIs, thus leading to volatility in the system.

**Movements of Current Account and Components of Capital Accounts from 2000-01 on wads in India:**

As a result of partial convertibility of rupee in the capital account, there has been inflows of capital through sources such as FDI, FII, External Commercial borrowing as well as deposits by NRI through commercial banks operating in India have been increasing. Table 3 shows these variables as the % of GDP.

Table 3: Comparing Changes in some ratios over 2000-02-20012-13

|  | *C A/GDP* * | *Curr.A/GDP** * | *Forex R/GDP*** * |
|---|---|---|---|
| **2000-01** | 0.019 | 0.54 | 0.09 |
| **2001-02** | 0.018 | 0.7 | 0.11 |
| **2002-03** | 0.021 | 1.22 | 0.14 |
| **2003-04** | 0.027 | 2.27 | 0.17 |
| **2004-05** | 0.039 | -0.38 | 0.19 |
| **2005-06** | 0.031 | -1.19 | 0.19 |
| **2006-07** | 0.048 | -1.04 | 0.2 |
| **2007-08** | 0.086 | -1.28 | 0.24 |
| **2008-09** | 0.005 | -2.28 | 0.23 |
| **2009-10** | 0.038 | -2.79 | 0.2 |
| **2010-11** | 0.038 | -2.85 | 0.18 |
| **2011-12** | 0.036 | -4.23 | 0.17 |
| **2012-13** | 0.05 | -4.83 | 0.16 |

*capital Account Balance ,-GDP; Curr. A ** Current Account ,/ GDP ; ***Foreign Exchange Reserve /GDP

Source: Authors Calculation on the basis of RBI data, Hand book of Statistics on India-2013

**Table 4 : Current Account and components of Capital Account as Percent age of GDP**

|  | CA/GDP*% | (FDI/GDP)% | FII/GDP% | Cborr/GDP% (MT &LT) | CC/GDP % (ST) | FCNR /GDP% |
|---|---|---|---|---|---|---|
| **2000-01** | 0.54 | 0.69 | 0.59 | 0.94 | 0.11 | 0.49 |
| **2001-02** | 0.7 | 0.97 | 0.41 | 0.32 | 0.16 | 0.56 |
| **2002-03** | 1.22 | 0.62 | 0.19 | 0.33 | 0.19 | 0.57 |
| **2003-04** | 2.27 | 0.39 | 1.84 | 0.47 | 0.24 | 0.59 |
| **2004-05** | -0.38 | 0.52 | 1.89 | 0.72 | 0.53 | 0.13 |
| **2005-06** | -1.19 | 0.37 | 1.51 | 0.29 | 0.45 | 0.34 |
| **2006-07** | -1.04 | 0.82 | 0.74 | 1.67 | 0.71 | 0.46 |
| **2007-08** | -1.28 | 1.28 | 2.21 | 1.83 | 1.29 | 0.01 |
| **2008-09** | -2.28 | 1.78 | 1.15 | 0.65 | 0.24 | 0.37 |
| **2009-10** | -2.79 | 1.33 | 2.39 | 0.15 | 0.54 | 0.22 |
| **2010-11** | -2.85 | 0.7 | 1.18 | 0.72 | 0.71 | 0.19 |
| **2011-12** | -4.23 | 1.16 | 0.94 | 0.54 | 0.34 | 0.64 |
| **2012-13** | -4.83 | 1.1 | 1.53 | 0.45 | 1.19 | 0.81 |

CA=Current Account, FDI=Foreign Direct Investment, FII=Foreign Institutional Investment, Cborr=External Commercial Borrowing Medium and Long Terms, CC=External Credit, FCNR=Foreign Currency NRI Deposits with Banks,

Source of data: authors own calculations RBI, Hand book of Statistics on India-2013.

As evident from the tables , Deficit in Current Account as the percentage of GDP has been increasing over 2000-1 to 2012-13 while on the other hand there have been net inflows of capital as the percentage of GDP through channels viz. FDI,FII, Commercial borrowing and NRI Deposits and net short term credit to India . In order to find trends of the variables , mean values have been deduced with standard deviations . Data show that five / three yrs average of Current Account deficits has been rising while in the channels of inflows of short term capital flows and NRI deposits are increasing .

**Table 5 : Five / Three years average of various Components of Current and Capital Account**

| Years (Average over) | (Current Account % of GDP) | | FDI % of GDP | | FII % of GDP | | Medium & long term Commercial Borrowing % of GDP | | Short term Credit % of GDP | | NRI Deposits with Banks % of GDP | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Mean | St.d | Mean | St.d | Mean | St.d | Mean | St.d | Mean | St.d | Mean | St.d |
| 2000-1 ro 2004-05 | 0.87 | 0.973 | 0.638 | 0.2172 | 0.984 | 0.8168 | 0.556 | 0.2686 | 0.246 | 0.1656 | 0.47 | 0.1927 |
| 2004-05 to 2009-10 | -1.72 | 0.7740 | 1.12 | 0.5381 | 1.6 | 0.6976 | 0.918 | 0.7832 | 0.646 | 0.3979 | 0.28 | 0.1736 |
| 2009-10 to 20012-113 | -3.97 | 1.0152 | 0.987 | 0.2501 | 1.22 | 0.2967 | 0.57 | 0.1375 | 0.747 | 0.4262 | 0.55 | 0.3204 |

Source: Author's calculation, Source of data: RBI, Hand book of Statistics on India-2013.

Information in these tables (4&5) are significant as these are showing that with globalization, Indian economy is able to attract capital inflows even though rupee is partially convertible in Capital account . Earlier to liberalization, the adequacy of foreign exchange reserve was determined in terms of import cover for three to four months. This has been broadened to include a number of parameters which take into account the size, composition and risk profiles of various types of capital flows as well as the types of external shocks to which the economy is vulnerable. In 2011, IMF has developed a new reserve adequacy metrix for emerging market economies (EMs) and low income countries (LICs) that builds on various possible drains on reserves. Sources of such risks include external liabilities as well as current account variables and some measure of potential capital flight.

**Table 6 : Correlations and Interpretation**

**Independent Variables**

| Dependent Variable | Current Acco GDP)% | (FDI/GDP) % | FII/GDP | Cborr/ GDP (MT&LT) | Cborr/ GDP ST | FCNR/GDP |
|---|---|---|---|---|---|---|
| Exhange Rate | -0.54 | 0.1155 | -0.2853 | -0.5122 | -0.05075 | 0.73078 |
| | Relation -ship is negative as | Increase in in- flow of | increase in in- flow of | | | |

**Independent Variables**

| Interpre-tation of Results | deteriora-tion in Current Account deficit deprecia-tes the rupee value | FDI is again depreciates Rupee value; it could be that FDI increases imports | Capital through FII channel appreciates the currency value | External commercial borrowing apprecia-tes curren-cy value | | Higher inflow of Short term credit again apprecia-tes currency value | Higher foreign currency NRI deposits with bank depreciates currency value |
|---|---|---|---|---|---|---|---|

Author's calculation on the basis data from Hand book of Statistics in Indian Economy, RBI, 2013

## Policies for Macroeconomic Management in an open economy option for Indian Economy

In an open globalized economy, monetary policies for macroeconomic management need expanding the scope to ensure both internal and the external stability of the economy. Monetary policies for the internal economic stability are aimed to contain inflation as well as stimulate investment and employment while objective of external stability is to stabilized the exchange rate and maintain the growth of foreign exchange reserves. In present economic environment where economies are dependent on capital inflows, monetary policies for the internal stability may contradict with the objective of the external sector management. For steady inflows of capital into the country, it is necessary to keep interest rate differential with other counties. This , on the other hand, dampen domestic investment and employment in the economy. Also, inflows of foreign capital creates excess liquidity and hence inflation in the economy. Therefore, it is always necessary to combine both monetary with fiscal policies as well as some new avenues to manage the economy in the situation of external crisis. Following section gives policy options that are available for Indian economy in the situation of crisis due to depreciation of rupee and depleting foreign exchange reserves that prevailed in the second quarter of 2013 in India.

RBI has introduced Liquidity Adjustment Facilities(LAF) in 2000 to manage liquidity flows in the economy. In this scheme, RBI operates through buying and selling of Repo and Reverse Repo at the specified rate of

interest to supply or to mop up liquidity from the banking system in the short term. In 2011 , RBI has introduce another scheme called Marginal Standing Facility (MSF) through which very short term liquidity adjustment is managed.

### Table 7 : Macro Economic Policy Options and Consequences

| Policy | Instrument | Effect | Repercussion |
|---|---|---|---|
| Liquidity Adjustment Facilities (LAF) | Revising Pepo & Reserve Repo Rate | Changes Bank rate and other interest rates | Influences borrowing by the customer & Investors |
| Direct Intervention in Foreign Exchange Market by RBI | Buying and Selling of Dollars as situation requires | Change in the foreign Exchange Reserves | Projection of Eco-nomic strength and weakness |
| Import Restriction | Import tariff, quantitative restrictions on selective commodities | Rise or fall in the price of commodities | May not reduce demand for the product / may increase inflation |
| Export Liberalization | Subsidies or other measures | Fall in the price of exportable | May not increase export demand due world economics environment |
| Capital Control | Restricting out flows of capital | Ceiling on capital out flows by Domestic MNC's | May have long term adverse repercussion |
| | New Measures | | |
| Swap Arrang ement | RBI allowing a US Dollar-Rupee swap window for fresh FCNR(B) dollar funds, mobilised for a minimum tenor of three years | Increased foreign Exchange Reserves to $ 281 billion by October 2013 | A medium term measure to manage foreign exchange reserves |
| Rupee Payment system | Arrangements with major oil exporting countries | Success of the policy will depend on the power of negotiation and volume of imports from those countries | Reduce burden on foreign Exchange Reserves |

## Recent Crisis Scenario in India and Management of Exchange rate & Foreign Exchange Reserves

Recent crisis in the external sector has been occurring for both domestic as well as international demand recession induced by the declaration of Fed Chairman Ben Bernanke in May that the US would be pulling back its bond-purchase programme. This created exodus of FII from emerging economy. During this time, Current Account Deficit (CAD) was increasing alarmingly and could not be compensated with laggard inflows of capital. Since depreciation of rupee, costs of importing oil which is an essential imports for India, has been increasing. Attempts have been made by RBI through LAF schemes to attract inflows of Foreign capital which led to increase in the repo rate and hence discouraged both domestic consumption as well as investment demands. As a result of increase in the prices of importable, the domestic economy has been experiencing high inflation.

RBI intervened in the foreign exchange market by selling dollars which temporarily halted the fall of rupee, but could not be sustained . India's foreign exchange reserves fell to the critical level and was unable to cover adequate risks of foreign exchange reserves as per IMF adequacy norms. According to end March 2013 RBI's half yearly report on Management of Foreign Exchange Reserves, the ratio of volatile capital inflows defined as cumulative portfolio inflows and short term debt to reserves increased to 96.1 in March 2013 from 83.9 percent at end September 2012.

Measures such as restriction on gold imports and capital outflows by Indian residents and the corporate did not have any favourable impact on the exchange rate and foreign Exchange reserves. Among other measures, the Govt. of India opened dialogue to have rupee payments with major oil exporting countries.

### Turn around in foreign Exchange rate and Foreign Exchange Reserve situation

Turn around in the exchange rate of rupee started only with the announcement by US Fed to put off tapering "easy money" by selling Govt. bonds. Overseas investors started investing in India thus

improving inflows of capital in India. Another measure that has improved Foreign Exchange Reserves and rupee value is the Swap Arrangement announced by RBI allowing a US Dollar-Rupee swap window for fresh FCNR (B) dollar funds for a minimum tenor of three years. Total reserves, including gold and balances with IMF, are currently at $281 billion in Oct. 2013 up from $275 billion at the end of August. Recently as a result of optimistic outlook for easy money policy by US Govt., exports rose 11.2% in September while imports fell 18.1%, which compressed trade deficit to $6.8 billion.

### Conclusion

Though rupee at present is fully convertible only at Current Account and partially convertible at Capital Account, Indian economy is still vulnerable to external economic environment. Worldwide demand recession induced due to fear of tapering of US Fed's bond purchase and flight of capital through FII route caused serious depreciation of rupee and depletion of foreign exchange reserves for Indian economy. This calls for new instruments to build up foreign exchange reserves and strengthen rupee on long term basis. Recent measure of swap arrangement for NRI deposits with banks is proving to be successful. The measure to control gold import has also been useful to control import bills. The Govt.'s attempt to enter into the rupee payment system with those countries exporting oil to India also will improve India's reserve position. Thus, RBI has an active role to find measures to be executed for management of the external value of rupee and foreign exchange reserves with both short term and long term goals. Though monetary policies have a signficant role to play in the management of volatality of capital inflows and foreign exchange reserves the long term stability for the economy calls for fiscal policies.

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