

## Impact of Exchange Rate Movements on Indian Firm Performance

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### **Abstract**

*Any change brought about in the exchange rate of currency can bring about substantial change in the overall economic scenario of the country; this change starts at the firm level and gradually moves to the components of macro level. There are many related variables that are responsible for the same. In this present study, researcher had tried to find out the reasons of this volatility and effect of the same on the selected Indian firms. Top 200 firms listed on BSE were selected for this present study and regression model is used to analyze the data. The time duration of data was chosen as 2018 to 2019. Spending and borrowings in respect of foreign exchange were the main focus of the study. SPSS ver. 22.0 was used to analyze the data.*

**Keywords** Exchange rate, Volatility, Fluctuation, BSE, Froex.

## **Introduction**

The Second World War has changed the face of global business forever, many of the friend countries and enemy countries had established many new ventures with their own capital and even with foreign capital. In the span of two years, overall business grew in multifold and tripled itself, this had exerted a great amount of pressure on international trade and the same had expanded to great extent. In this context, the global landscape had played an important role in terms of agriculture, manufacturing, logistics, transportation, warehousing, etc. in the process the dynamism of global economics has increased as well. This has given rise to many new markets and global centers of supply chain and mercantilism; in turn export raised at international level.

India is still a developing economy and the effect of the same can be seen on the improving image of the country on international fronts, in this regard a great impact was presented in terms of exchange rate fluctuation. The exchange rate market of India is free floating, the respective agencies had never thought of fixing the same like other similar economies i.e. China, etc. on the other hand New Industrial Policy, 1990 (Amended in 1991) had changed the face of Indian economy forever, as a result some relaxation was brought in BoP crisis. Till this time Indian rupee was dominated by US dollar (the same continued in future as well), this brought a great amount of pressure on payments and repayments to foreign countries, as a result RBI enforced some reforms for financial sector and these reforms were market oriented, this was followed by exchange rate regime in 1993. Then again in 1994 some serious measures were taken in this regard like current account convertibility and liberalization of Capital Account; major turnaround came into Indian foreign exchange market and the respective turnover increased by more than 100% i.e. it was US Dollar 73 billion in 1996 and the same raised to US dollars 1100 billion in 2012.

The fluctuation in exchange rates is liable to exert some affect on the performance of the firms in the country and this may be done via number of channels, like value of inputs from foreign countries, cost of related factors of production, timed value of external borrowings

on the other hand foreign competitors also play an important role as they affect the performance of Indian firms in the home ground. As a matter of fact the performance of the given firm is the only component that is liable to determine the level of fluctuation in exchange rates and affect of the same on overall economic growth of the country, here it is important to mention that for judging the performance of the firms, exports are one of the important indicators, most of the exporting firms use to show high level of profitability on the basis of their high end productivity. It can be stated that if the export sector of a given economy is strong then the effect of the same can also be seen on other sectors as well and this process is going to ensure the overall economic growth of the country, the proof of the same can be seen in the last 10-15 years where the exports in the country is increasing on one hand and the growth rate of the country was increasing on the other hand, this was made possible by the way of policy framework of the related government as well for example in 1999 the growth rate of the country was 16% and the same raised to about 34% in 2011, then on the other hand, overall share of India in international trade raised from 0.5% to 1.4% between 1990 and 2010 and in the same period India secured 14<sup>th</sup> position in international trade, as a matter of fact the shift was of 7 places in the span of 10 respective years. Surprisingly the growth of commercial service sector was more substantial as compared to manufacturing sector in the period of 2000–2010, in terms of exports, this can be understood in the terms of percentages i.e. the growth of service sector was about 25% and the growth of manufacturing sector was around 18%. Even in the same period, overall exchange rate was appreciated by about 1.52% so it can be said that this was the result of substantial growth of service sector.

To a certain extent the volatility of exchange rates may have subsequent effect on the productivity and profitability of the Indian industries as well, this may happen due to substantial changes in the market prices and following components are responsible for the same:

- Changes in the level of competition with firms of foreign origin and some of the importing domestic firms
- Some change in the prices of imported inputs used in the country for production or even for resale purpose exert some amount of effect on the same
- And finally the subsequent change in the prices/value held in the form of assets by the respective firms.



The above given components are liable to exert significant effect on the exchange rate appreciations in one or the other way rather the effect can be different for different industries. These fluctuations also depend on the relations of industrial nature with other countries like corporate relations of India with rest of the world or at least with the developed economies of the world. The resultant of the above can be seen in the terms of higher appreciation of home currency and in international market and increased profitability of industries in the countries as the exchange rates are positively revised and the respective cost of inputs have gone down this saving on cost will again reduce the production cost and in turn the total production cost of the industry is reduced. Also the increasing value of depreciation will increase the return currency price on the home ground in terms of input prices and production costs.

Evaluating the various sources of exchange rate fluctuations and the impact of the same on the economic development and many of the researchers had given their views on this. Impact of exchange rate movements have always remained the first choice of macro-economic researchers and they always wanted to know about the reasons of exchange rate volatility on international fronts. A number of empirical methods and strategic methods were used to deal with the same. Till the recent past it was very difficult to ascertain to know about the reasons or the causes that can bring about certain changes in the fluctuation of exchange rate and effect of the same profitability/productivity. Some of the prominent studies focused on the effects and spillovers of exchange rate volatility and effect of the same on the investment, growth, and export performance of firms, etc. but to certain extent productivity at the firm level has been neglected or overlooked in these studies. Hence it became necessary and crucial for us to know about the foreign exchange volatility at the firm level i.e. micro level and effect of the same on the macro-economic components of the economy.

Present research will try to evaluate the effect of exchange rates on the performance of the selected firms and the empirical evidences of the same will include the following:

1. Returns of the firm
2. Performance in terms of profitability,
3. Performance in terms of growth
4. Performance in terms of stocks,
5. Cash flow and other related components.

In order to make this study more viable the researcher has considered top 200 firms from BSE (*Bombay Stock Exchange*), India. The performance of the firms will be studied during the period of 2018 and 2019, study will be focused on the evaluation of exchange rate volatility and effect of the same on the selected firms. The criteria for selecting these firms was that, these firms were dealing in both the national and international kind of transactions and are having some or the other effect on the basis of currency transactions and the respective movements of the same.

### **Literature Review**

In most of the previous studies, researchers had tried to focus on the components of profitability, growth, investment and even downfall of trade to some extent but then again foreign exchange volatility was the base of all such studies. **Aizenman et al (2012); Hameed et al (2010); Nagahi et al (2018). Caglayan; Demir (2013); Miles (2002)** stated that the exchange rate fluctuations use to negatively affect the productivity and growth of the firms and even if a given firm is having direct access to domestic equity or debt market does not makes any major difference. In this scenario, even the companies that are trading with foreign companies are not able to show better performance or a significant change. They also found that the productivity of the firm is directly related to its credibility and again to its access to the credit market. In such a scenario, the export oriented firms use to face major issues in terms of currency appreciations and the volatility of the same.

Many of the previous researchers had propounded that the foreign exchange volatility is having its own effect, like **Burgess et al (1998); Gourinchas (1999); Klein et al (2003); Chang et al (2012); McAleer (2007); McAleer(2009); Chang et al (2011)** stated that if the respective costs of production changes then it can affect both ways i.e. positive or negative, then **Bernanke et al(1990); Carlton, (2005)** stated that if there are issues in getting timely credits from the banking institutions then respective performance of the firm is going to affect the level of employment in the labor market; **Nickell et al (1999); Sharpe (1994) Fazzari et al (1988)** were of the opinion that if the productivity or the aggregate growth reduces then some negative impact is exerted on the financial growth of the country. **Aghion et al (2009); Ramey et al (1995)** stated that inflation is uncertain at times and this uncertainty is also having some negative effect on the growth of the firms. **Grier (2006); (UNCTAD, 2006)** stated that if the growth effects are negative economic growth is



impacted to a substantial level. **Braun (2005); Bredin (2011);** stated that if the international trades are not encouraged then it has two way effect on one hand economy is saved from the foreign exchange volatility and on the other hand appreciations of country's own currency is lost. **Caglayan (2014).**

While assessing the effects of exchange rates on the growth of economy, a certain level of uncertainty is attached with the same; also it is affected by the some of the internal and external and internal factors like features of the firm and strength/weakness of the overall economy. **Klein et al (2013).** As per **Gupta et al., (2017)** developed economies are able to deal with the issues related currency crisis as compared to developing economies i.e. the negative effect is high on developing economies because of following components:

1. Low strength of financial market to take over the control
2. The absence of strong presence of USD in cumulative balance sheets along with other superior foreign currencies.
3. Opening up of economies and exports payments in actual currencies.
4. Exchange rate availability in terms of currency
5. Substantial growth capital flow, production/consumption and even compatibility with high or low exchange rates.

Some of the researchers, like **Dominguez et al (2006); Forbes (2010); Parsley et al & Popper (2012); Aggarwal et al (2014) and Choi et al (2012)** stated that in case of selected US firms the state of effect, in terms of foreign exchange is not much different for both the domestic and multinational firms i.e. the exposure of foreign exchange is almost similar for both the entities. Mere difference may lie in terms of asset turnover and size of the firm, also the financial leverage and ratio are going to play a substantial role in the same.

On the basis of above discussion it can be stated that an effective exchange rate can affect the performance of the firm to a substantial level, mainly the imports and liabilities related to forex are going to fix the place of the firm in a given market. Then there are few ways to deal with these issues like internal growth of the firm, increased profitability, and substantial growth in total asset value, improvement in inventory ratio, etc.

### **Hypothesis**

**H<sub>0</sub>:** There is no effect of exchange rate fluctuation on performance of selected firms.

**H<sub>0</sub>:** There is a significant effect of exchange rate fluctuation on performance of selected firms.

## **Research Methodology**

### ***Population and sample selection***

As a matter of fact this present study is based on secondary data and evaluates the volatility and fluctuation of foreign exchange on the firms listed in BSE. As far as the population of this present study is concerned, the researcher considered the database of PROWESS (as compiled by CMIE), this contained the data of more than there are around 27, 500 companies that are registered with one or the other agency out of these registered companies the researcher has considered top 500 companies (listed on BSE) on certain parameters and randomly chosen 200 companies out of them.

### ***Sources of Data***

As stated above, this present study is based on secondary data, hence to strengthen the format and authenticity of study, the researcher has collected secondary data from a number of sources and put them in various section of the study in the form of introduction, literature review, data base, etc. as it is clear from the title of the study i.e. the study is of financial nature and corporate companies (BSE listed) are in the base of the same hence the authenticity of data and data source is very important.

Some of the sources of secondary data are as follows:

#### Reports

- Annual reports of selected listed companies
- Selected research papers from national and international journal
- Article from business magazines like Business Today and Business India
- Banks Today (2017-19)
- RBI website (2017-2019)
- Reports from ministry of finance (for study period)
- [www.moneycontrol.com](http://www.moneycontrol.com)
- [www.financialexpress.com](http://www.financialexpress.com)

**Duration of Study**

- 2018 to 2019

**Tools of study**

- Correlation, Regression
- ANOVA

**Software used**

- SPSS Ver. 22.0

**Data Analysis and Interpretation****Table 1: Results on Descriptive Statistics**

	Minimum	Maximum	Mean	SD
REER (36 -Currency Trade-based weights)	83.0	100.8	89.4	2.68745
REER Changes (36 -Currency Trade-based weights)	-4.70	4.18	0.0254	2.63274
Import of raw materials	0.00	3728081	27417.51	321478.5
Import of stores and spares	0.00	41711	402.53	2643.68
Import of finished goods	0.00	301783.6	2082.124	21468.72
Import of capital goods	0.00	166183.5	2969.54	12627.12
Total Import	0.00	3982940	29751.22	3225.4.1
Total forex spending	0.00	3051682	39987.68	239010.7
Foreign currency borrowings	0.00	598181.6	504060.4	38759.24
Forex changes on raw materials Imports	-4.170	0.00	- 0.0428	0.39497
Forex changes on stores and spares Imports	-0.0687	0.00	- 0.0008 9	0.00394
Forex changes on finished goods Imports	-0.4817	0.00	- 0.0057 4	0.03847
Forex changes on capital goods Imports	-435056	0.00	- 0.0712	0.036547
Forex changes on Total Imports	-5.4704	0.00	- 0.5912	0.4278
Changes on Total forex spending	0.00	623.3860	7.81687	37.98157
Changes on Foreign currency borrowings	0.00	95.29478	3.6154	9.58745
Forex fluctuations on raw materials Imports	0.00	299090.4	1798.41	158752.21
Forex fluctuations on stores and spares Imports	0.00	3287.646	29.4562	171.614
Forex fluctuations on finished goods Imports	0.00	25234.90	198.384	1284.78



Forex fluctuations on capital goods Imports	0.00	22934.86	129.058	689.74
Forex fluctuations on Total Imports	0.00	202646.3	1997.88	14987.65
Currency fluctuations on Total forex spending	0.00	205417.6	2618.41	15937.57
Currency fluctuations on Foreign currency borrowings	0.00	41420.14	9817.51	29358.24
Import of raw materials / Gross Sales	0.00	0.768836	0.05987	0.24781
Import of stores and spares / Gross Sales	0.00	0.082846	0.00315	0.00587
Import of finished goods / Gross Sales	0.00	0.716513	0.010019	0.05062
Import of capital goods / Gross Sales	0.00	.357213	0.01481	0.051745
Total Import / Gross Sales	0.00	0.61210	0.09636	0.198741
Foreign currency borrowings/Total liabilities	0.00	0.472547	0.04987	0.089745
Total forex spending/Total liabilities	0.00	2.41578	0.11825	0.19875
Capacity Utilization	0.00	3.57	0.7918	0.9874
Total Trade / Assets	0.03	4.25	0.9874	0.59687
Inventory Turnover	0.00	23278.63	191.512	1708.195
ROA	-0.07	0.31	0.0572	0.05987
ROTA	-0.41	3.18	0.3125 4	0.20478
Profit Margin	-381.50	277.12	-0.8925	31.5874
ROS	-0.05	592.02	5.8974	48.7074
ROI	-52250.0	49368.10	89.6874	4808.548
Collateral ratio	0.00	0.89	0.4154	0.24875
Total Assets value	-443720.5	1793944.81	59874.25	174187.5
Total assets (asset size)	3078.61	294821.10	194510.2	389745.6
Net Worth	-35767.92	1913430.1	69845.26	192321.8
EBIT	-281.50	38692.12	23179.9 2	49887.48
PBDITA / Total Income	0.62	89.83	27.4157	19.874
PBT / Total Income	-74.90	89.42	108121	13.29587
PAT / Total Income	-73.20	69.97	7.987	10.5987
EPS	-59.93	159.87	21.5874	31.2435
Stock Price Per Share	0.00	3942.98	398.267	498.5471
P/E	0.00	1879.98	37.254	121.3257
P/B	0.00	51.29	4.0254	3.36574
P/S	-0.58	29597.31	1654.21 47	4215.2658 7
Total assets value per share	-797.06	30845.09	724.548	2563.10
Dividend Yield	0.00	5.09	0.51247	0.58742
Dividend Payout Ratio	-0.50	4.17	0.0714	0.26589
Internal Growth Rate	-0.05	8.21	0.0354	0.47856
Sustainable Growth Rate	-339.32	18.41	-1.2578	15.2653
Total Stock Returns	-4.78	7.08	0.5124	1.4785

Net operating cash flow	-395731.9	408796.88	7845.35 4	31895.76
Net operating cash flow / Total assets	-0.31	1.93	0.0621	0.07125
Free Cash Flow / Operation Cash Flow	-72299.71	9468.21	0478.05	3975.532
Current Ratio	0.00	698.57	15.534	79.054
Quick Ratio	0.00	368.21	13.257	41.5897
Cash Ratio	0.00	21.65	5.1304	29.2548
Debt-Equity ratio	-31.28	26.81	4.0879	2.3658
Tobin Q Ratio	-263.01	1107.51	7.1987	59.2578
Degree of Operating Leverage	-2426.82	1879.29	18.3784	189.2365
Degree of Financial Leverage	-49.51	159.59	1.9874	10.4587
Degree of Combined Leverage	-609.61	1997.89	29.3487	198.2658
Operating Leverage	-45.95	201.15	0.5017	14.08747
Financial Leverage	-31.28	30.08	2.9857	2.9874
Capital expenditures	-89161.08	20490478.1	569872. 1	15927739
Investment opportunities	-4.66	20.47	3.9875	2.19874
Capital Expenditure Coverage Ratio	-42.49	1.51	-0.1265	2.09872
Interest Coverage Ratio	-0.02	687921.51	3978.59	39859.97

Source: Calculated by researcher using Excel

### Regression Model

The specification of regression analysis is given in the following equation:

$$Y = \beta^0 + \beta^1 \Delta REER + \beta^3 (REER - Vol) + \varepsilon \dots \dots \dots \text{eq. 1}$$

Where,

Y= index of firm's (i) performance

$\Delta REER$ = Change in exchange rate, with reference to INR

$REER - Vol$ = Volatility of exchange rate found with reference to SD/month for 12 consecutive months.

$\Delta REER$  and  $(REER - Vol)$ = provide the coefficients of change and volatility of foreign currency of Indian firms.

Above given equation Equation....1, provides the details of choices made in terms of imports, Forex borrowings and spending and even fluctuations in exchange rates in terms of changes. The real issue in such studies is that one cannot appreciate all the firm related component at the same time, named as '*Classical Omitted Variables*' this means that some of the firm's characteristics were not observed in time and the importance of the same comes forward after the analysis or in the duration of analysis. In order to deal with the same the researcher has added the value of  $\varepsilon$  (epsilon) or the term related to error.

## Variable under study

### *Independent Variable*

The selections of independent variables are selected on the basis of following selection criteria:

- Making the use of exchange rates (nominal & real) and the REER given above is adjusted as per inflation rates (domestic & Foreign) as per the previous studies, these two components are highly correlated.
- The resultant of “Trade Weight Index” in terms of bilateral exchange rates. This is not the true representation of currencies but the firms can diversify the same, the researcher will examine the same further.
- Assumptions or expectations in terms of currency value might affect the exposure of the same. Devaluation of the currency may not take place if the high exposure in international market can be prevented. In this present study the researcher will try to use the real effective exchange rate as index and study the same in terms of risk. Following are some of the currency index that the researcher has considered:
  - Forex borrowings
  - Forex Spending and
  - Imports

These indexes are affected by fluctuations in exchange rate and the respective changes, the researcher has chosen the following indexes in the form of variables:

1. Forex changes on raw materials Imports,
2. Forex changes on stores and spares Imports,
3. Forex changes on finished goods Imports,
4. Forex changes on capital goods Imports,
5. Forex changes on Total Imports,
6. Changes on Total forex spending,
7. Changes on Foreign currency borrowings,
8. Forex fluctuations on raw materials Imports,
9. Forex fluctuations on stores and spares Imports,



**Dependent Variable**

As far as small firms are concerned, they are able to adjust their returns in terms of risk and this is done more easily as compared to larger firms, although the impact of the adjusted risk will be exerted in relation to the size of the firm i.e. big or small. The researcher chooses the following:

- Type of industry
- Size of the firm (In terms of assets)
- Firm's Net worth
- Turnover on inventory

**Control Variables**

In order to perform the multivariate test, the researcher has chosen the following control variables:

- Profitability
- Leverages
- Financial ratios
- Stock specifics
- Related to investment
- Firm value (Relatives)
- Foreign Currency ratios
- Firm properties (Relatives)

**Table 2: Annual Exchange Rate-Average (INR to USD)**

Year	INR/USD	% change	Year	INR/USD	% change	Year	INR/USD	% change	Year	INR/USD	% change
1980	7.66	3.86	1983	10.11	6.64	2000	31.26	11.08	2010	46.6	-4.15
1981	8.03	4.83	1984	11.36	12.36	2001	31.39	0.41	2011	45.28	-2.83
1982	8.41	4.73	1985	12.34	8.62	2002	32.43	3.31	2012	44.01	-2.80
1993	8.97	6.65	1986	12.6	2.10	2003	35.52	9.52	2013	45.17	2.63
1994	8.77	-2.22	1987	12.95	2.77	2004	36.36	2.36	2014	41.2	-8.78
1995	8.2	-6.49	1988	13.91	7.41	2005	41.33	13.66	2015	43.41	5.36
1996	8.16	-0.48	1989	16.21	16.53	2006	43.12	4.33	2016	48.32	11.31
1997	7.89	-3.30	1990	17.5	7.95	2007	45	4.36	2017	45.65	-5.52
1998	8.68	10.01	1991	22.72	29.82	2008	47.23	4.95	2018	46.61	2.10
1999	9.48	9.21	1992	28.14	23.85	2009	48.62	2.94	2019	53.34	14.43

Ave	8.42	2.54	Ave	15.78	11.81	Ave	39.23	5.69	Ave	45.9	1.17
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Source: [www.moneycontrol.com/](http://www.moneycontrol.com/)

The above given table 2 explains the annual exchange rate of INR to USD (on average basis) from 1980 to 2019. The researcher evaluated that the exchange value of Indian rupee has very much depreciated during the above said period, against US dollar. Considering the average value in the period of 1995 to 2005, the overall change was of around 5% then in the last 10 years the average change was of around 14%, where the value of US dollar remained high. Then the researcher has considered the point of financial crisis i.e. 2008, where the fluctuations in exchanges rates were very high and none of the countries were able to handle the same and since then the exchange rates never became stable.

**Table 3:** Present Some Descriptive Statistics of These Firm Level Data

Date	US Dollar	Pound Sterling	Euro	Japanese Yen	US Dollar changes	Pound Sterling changes	Euro changes	Japanese Yen changes	REER	REER changes
Dec-2018	52.67	82.11	69.31	67.66					93.9	
Jan-2019	51.34	79.61	66.21	66.79	-1.32	-2.50	-3.09	-0.87	97.0	3.3
Feb-2019	49.16	77.62	65.09	62.74	-2.18	-1.99	-1.12	-4.04	100.9	4.0
Mar-2019	50.32	79.64	66.52	61.04	1.16	2.03	1.43	-1.69	98.5	-2.4
Apr-2019	51.80	82.94	68.16	63.81	1.48	3.29	1.63	2.76	97.0	-1.5
May-2019	54.47	86.72	69.69	68.32	2.67	3.78	1.53	4.51	93.4	-3.7
Jun-2019	56.03	87.13	70.31	70.67	1.55	0.41	0.61	2.34	92.0	-1.5
Jul-2019	55.49	86.51	68.25	70.28	-0.53	-0.62	-2.06	-0.39	93.5	1.6
Aug-2019	55.56	87.24	68.87	70.68	0.06	0.73	0.63	0.40	93.5	0.0
Sep-2019	54.60	87.86	70.12	69.90	-0.95	0.61	1.25	-0.77	94.8	1.4
Oct-2019	53.02	85.21	68.75	67.23	-1.58	-2.65	-1.37	-2.67	96.9	2.2
Nov-2019	54.77	87.53	70.36	67.60	1.75	2.32	1.61	0.37	94.3	-2.7
Dec-2019	54.63	88.16	71.58	65.47	-0.14	0.62	1.21	-2.13	93.8	-0.5
Average	53.37	84.48	68.71	67.09	0.16	0.50	0.19	-0.18	95.3	0.017
Max	56.03	88.16	71.58	70.68	2.67	3.78	1.63	4.5	100.9	4
Min	49.16	77.62	65.09	61.04	-2.18	-2.65	-3.09	-4.04	92	-3.7
%Changes	13.96	13.57	9.96	15.78	4.85					

Source: [www.economicsteimes.com/](http://www.economicsteimes.com/)

The above given table 3 states the comparison of Indian rupee with the currency of other countries for the study period i.e. USD, Pound Sterling, Euro and Japanese Yen. If noted on

average basis the percentage change was common for USD and Pound Sterling i.e. 14%, whereas it was 15% for Yen and 9.5% for Euro. As a matter of fact it not possible to estimate or evaluate the effect of these exchange rates with all the sampled firms, hence the researcher had considered the changes on average basis. Then again, it is a question of further research that the firms are making use of these currencies to what extent and in what size. The researcher found in the external literature that the above said currencies are having some share in foreign and this is the only reason that the researcher has considered REER (*Real Effective Exchange Rate*).

**Base Model**

$$CAPEX = \beta_0 + \beta_1FCCGI + \beta_2CFTFS + \beta_3CFCB + \beta_4FCSSI + \beta_5FFTI + \epsilon \dots \dots 2$$

Where:

CAPEX = Capital Expenditures

FCCGI=Forex Changes on Capital Goods Imports

CFTFS=Currency Fluctuations on Total Forex Spending

CFCB=Changes on Foreign Currency

FCSSI=Forex Changes on Stores and Spares Imports

F F T I = Forex Fluctuations on Total Imports

**Table 4: Multivariate Analysis for Equation 2**

Model Summary									
Model	R	R Square	Adjusted R Square	S.E. of the Estimate	Change Statistics				
					R <sup>2</sup> Change	F Change	df 1	df2	Sig. F Change
1	.908	.893	.897	562783.32	.007	13.083	1	199	.001
ANOVA <sup>f</sup>									
Model		Sum of Squares	Df	Mean Square	F	Sig.			
1	Regression	254789635845876.0	5	109658975239784.000	394.748	.000 <sup>e</sup>			
	Residual	458795632587458.1	199	30284582395.154					
	Total	596325874589654.0	204						
Coefficients <sup>f</sup>									
Model		Un-std. Coeff.		Std. Coeff.	T	Sig.			
		B	Std. Error	Beta					
1	(Constant)	83594.672	38583.374		2.428	.016			
	Forex Changes on Capital Goods Imports	-41258746.553	2710070.1	-.519	-14.722	.000			
	Currency Fluctuations on	89.598	30.988	.933	3.118	.002			



Total Forex Spending					
Changes on Foreign Currency Borrowings	62589.568	5833.447	.323	10.981	.000
Forex Changes on Stores and Spares Imports	-1593572.41	18746517.2	-.439	-8.391	.000
Forex Fluctuations on Total Imports	-111.849	32.185	-.050	-3.475	.001

Source: SPSS Ver. 22.0 Output

### Interpretation

The researcher has applied the multivariate analysis (regression) on ‘base model’ given above in the form of Eq 2, and the results are stated in the above given table 4. The results of analysis state that for the selected set of companies, capital expenditure is having direct relationship to the foreign currency accounts; it also shows that the changes in ‘F’ value are significant enough and positive. This is an indication that for most of the selected companies there is a significant effect of currency exchange rate on the performance of the firm, researcher may also interpret that this condition stands true in the case where all other selected components are constant.

In order to elaborate the findings of the model it can be stated that if the exchange rates are increasing then the fluctuation in import index will also increase this will result in the high cost of capital and other negative changes in related economic components. Then again the increased rates of currency exchange will bring about some change in the spending of forex or may be the forex borrowing of the company is increased. These are the prediction of the researcher as because the results are negative and the respective results are based on the financial data gathered from the company financial records.

### Result

On the basis of above analysis an interpretation it can be stated that if there is a change in the exchange rate of foreign currency them some or the other changes will be brought about in the performance of the selected set of companies. Hence the null hypothesis ‘*There is no effect of exchange rate fluctuation on performance of selected firms.*’ Can be rejected and the alternate hypothesis can be accepted.

### Conclusions

As stated in the table 2 and table 3, it is clearly visible that till 1991 the value of INR was depreciating against USD and other prominent currencies of the world, then some of the

measures taken by RBI and respective Indian government came out in the form of Industrial Policy 1990 (amended in 1991), controlled the situation for few years but then again after 2005 situation became uneasy in financial terms for India and rest of the world. Financial crisis of 2008 brought substantial change in the world economy but then again situation never changed for the Indian rupee. Increase in Capital spending gave rise to forex borrowings and again the demand of payments in foreign currency put some pressure on the INR. In any of the developing economies changes are obvious but the balances are required to be maintained in monetary terms, in case of the import and export pattern of the selected firms is responsible to a certain extent i.e. firms performance in the country is considered as a parameter of success of the same in international market and related amenities/facilities are given to the firm on this basis itself.

If the fluctuations are high then the exchange rates are liable to increase and in such a case the value of the firm will decrease in terms of net worth/asset valuation. Proper balance of currency borrowings and currency spending is liable to increase the net worth of the firm in terms of the total asset and value.

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