AN EMPIRICAL ANALYSIS OF VOLATILITY OF FOREIGN EXCHANGE RATES IN INDIA AND ITS RELATIONSHIP WITH FOREIGN DIRECT INVESTMENT

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ABSTRACT

When the price of a country's currency is expressed in pricing terms of another country's currency, it is known as Exchange Rate. The uncertainty or the volatility of exchange rates has turbulent effects on the international trade of any country. India, being one of the crucial emerging economies in the global environment has been encountering the problem of volatility of the foreign exchanges and its influence on the economy. Foreign Direct Investment is considered one of the crucial resources for the economic growth of a country as it is a major external source of funding. In India, the Foreign Exchange Management Act (FEMA) of 1991 brought the Foreign Investment into the picture. The Indian stock market is steadily growing and happens to be an interesting goal for foreign investors. This research paper attempts to study the foreign exchange rates of India with US Dollars and Euro and the impact of these foreign exchange rates on FDI of India. The past 15 years of data relating to the foreign exchange rates and FDI are taken into account for the study. The regression analysis has been used to find the effects of foreign exchange rates on FDI.

Keywords: Foreign Exchange Rates, Foreign Direct Investment, Volatility.

INTRODUCTION

The main aim of the Foreign Exchange market is to create an arena where the currency of a country can be traded for another. The fluctuations in the Foreign Exchange rate are frequently considered as a threat and the rise in that volatility will increase the risk-averse cost of the traders and hinders the trade (Ethier, 1973). This is because the exchange rate is conceded to, at the season of the trade contract, however, payment isn't made until the point that the future conveyance happens. On the off chance that adjustments in exchange rates wind up eccentric, this makes vulnerability about the benefits to be made and, henceforth, decreases the advantages of worldwide trade. Cote (1994) emphasises a point that the risk aversion assumption alone does not contribute to the consensus that the volatility in the exchange rates happens to be a hindrance to the trade. His notion is based on the two different effects of the exchange rate volatility which are substitution and income effect; they work in contrast to each other.

Khan et al. (2012) determined that the exchange rate is the most crucial factor which has an adequate level of effect on FDI, GDP, and other macroeconomic variables. The focus on Exchange rates helps the policymakers and investors to be more prudent in their investments and decisions. According to Javed and Farooq (2009), the major cause for the volatility in the exchange rates is the demand and supply of a currency in another country. It directly has an impact on the decision-makers regarding the imports and exports of the country. Economic integration at the global level plays an importance role in the economic growth of a country. This international economic integration is done through foreign investment

In India, the Foreign Exchange Management Act (FEMA) of 1991 brought the Foreign Investment into the picture. At the onset of FDI, many fast-developing countries like Korea, Singapore, China, etc, have experienced rapid and incredible growth. Our country needs a huge amount of foreign capital in the form of both Foreign Direct Investment and Foreign Institutional Investment for basic infrastructural development like warehouses, roadways, railways, etc. These problems can be sorted out with the help of Foreign Investment in the country. The government trade barriers and policies may affect foreign investment at a greater level and lead to a high or low contribution to the GDP of the economy. The arrival of FDI not only brings the foreign capital but also provides cutting edge technology, techniques of innovation and so on. This study explores the effects of Foreign Exchange Rates on the Foreign Direct Investment of India with the help of the past fifteen year's data. In this research paper, the hypotheses are developed based on the literature review and in the analysis part, the Regression and Correlation analyses are done using SPSS version 20. After the analysis and discussion, the conclusion of this paper is given along with the limitations and scope for further research.

REVIEW OF LITERATURE

Qian and Virangis (1994)	Found a favourable associates between export volumes and the foreign exchange volatility for the Netherlands, UK, and Sweden and a negative link between export volumes and foreign exchange volatility for Japan, Australia, and Canada
Zhang, Chau, and Zhang (2010)	In their research study included information on EMBI, a file of a request stream, CNY/USD exchange rate for a period from July 2005 to June 2009 of the Chinese economy connected VAR show. The outcomes demonstrated that there was unidirectional causality from arranging stream to exchange rate developments, and the request stream clarifies around 27 percent of the varieties in CNY/USD exchange rate.
Sharma (2011)	Conducted a study to find the associates between exchange rate and trading activity. It is found in his study that after the advent of currency futures, the foreign exchange rate's volatility has increased.
Melku (2012)	Examined the associates between Foreign Direct Investment and Exchange rates and found a negative linkage between them. The finding is that there will be a fall of 0.11% in foreign direct investment for every one percent rise in the exchange rate volatility. This study holds a similar finding of Erik Kehinde(2009).
Chen, Hua, and Jin (2006)	Conducted a study with the help of 11 years of panel data to measure the impact of exchange rate volatility on the foreign direct investment in the Taiwanese firms and found a linkage between exchange rates and FDI and it is significantly dependent on the investing firms' motives.
Demirhan and Masca (2008)	Found that the exchange rate volatility to foreign direct investment is mainly determined by the openness of the country.
Darby et al (1999)	Found a negative associates between exchange rate volatility and foreign direct investment in Pakistan and attributed the reason for the relationship to the Political and Institutional factors.
Hooper and Kohlhagen (1978)	Analysed the volatile effects of the exchange rate on the developed countries' trade volume and concluded that there is no significant effects of the exchange rate volatility on the trade volume.
Bal (2012)	Found that there is no statistically meaningful relationship exists between the volatility of exchange rates and export level of the country. But, the short-term disequilibrium of the exchange rate was negative affects the export of the country.
Dhasmana (2012)	Investigated the associates between the real exchange rate of India and its trade balance and established that the real exchange rate volatility is negatively correlated with India's trade balance in the long run.
Khandare (2016)	Found that there is a positive associate between exchange rates and FDI in India, whereas, for China, no positive relationship is established.

RESEARCH METHODOLOGY

This research study has made use of the secondary data of the past fifteen years (i.e, from 2004 to 2018). The relevant data for this study were collected from various websites and sources including, RBI, World Trade Organisations, etc. The correlation and regression analyses were done to identify the associates between exchange rate volatility and foreign direct investment.

OBJECTIVES OF THE STUDY

The main objectives of the study are as follows:

1. To study the trend of exchange rates volatility in India
2. To study the trend of FDI in India
3. To analyse the linkage between the exchange rate volatility of USD and foreign direct investment in India.
4. To examine the associates between the exchange rate volatility of Euro and foreign direct investment in India.

HYPOTHESES OF THE STUDY

H_1: There is a significant linkage between Exchange Rates of USD and Foreign Direct Investment in India

H_2: There is a significant associate between Exchange Rates of EURO and Foreign Direct Investment in India

ANALYSIS AND DISCUSSION

TREND OF EXCHANGE RATES IN INDIA - USD

Fig 1: volatility in usd

The above Figure of the past fifteen years clearly shows that the USD is volatile and the value of Indian Rupee is falling every year except in 2011. From 2004 to 2011 the exchange rate for USD was less than Rs.50, but from 2012 there is a steep increase in the value and it reached INR 70 in 2018. This volatility can be due to various reasons like irregular export and import rates, the discrepancy in GDP, low demand for indigenous products in the worldwide market, etc.

TREND OF EXCHANGE RATES IN INDIA – EURO

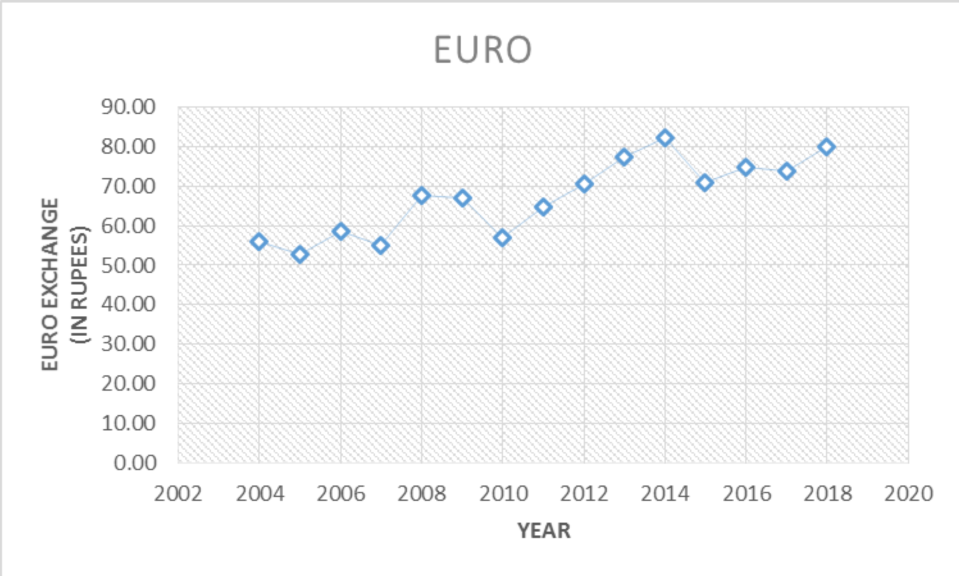

Fig 2: volatility in euro

The above figure depicts the volatility of the Euro against the Indian Rupee. It is found a rise and fall in the value continuously but the rise is higher than the fall, which makes the value of Indian Rupee go down and down continuously. The highest value of Euro reached in 2014 with INR 80.

H_1: There is a meaningful association between Exchange Rates of USD and Foreign Direct Investment in India

Table1: volatility in euro

Year 30 June	USD	Euro	FDI
2004	45.97	56	4322
2005	43.52	52.64	6051
2006	45.95	58.71	8961
2007	40.75	55.18	22826
2008	42.92	67.59	34843
2009	47.89	67.14	41873
2010	46.41	57.05	37745
2011	44.60	64.76	34847
2012	55.63	70.44	46566
2013	59.53	77.44	34298
2014	60.08	82.24	36046
2015	63.60	70.93	45148
2016	67.52	74.79	55457
2017	64.62	73.74	60000
2018	68.47	80.05	61000

Table 2: regression analysis between usd and fdi

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.754[a]	.569	.536	12371.70072
a. Predictors: (Constant), USD				

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2626649247.876	1	2626649247.876	17.161	.001[b]
	Residual	1989766722.524	13	153058978.656		
	Total	4616415970.400	14			
a. Dependent Variable: FDI						
b. Predictors: (Constant), USD						

Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-38078.671	18006.624		-2.115	.054
	USD	1380.838	333.327	.754	4.143	.001
a. Dependent Variable: FDI						

Regression analysis was conducted to find out how much the USD impacts the Foreign Direct Investment in India. The above table reveals that there are statistically significant associates between USD exchange rate and Foreign Direct Investment in India as the p-value (.001) is less than .05 with the R-square value of .569, which is a large effect and also the t-value stands at 4.143. So we can conclude that there is a meaningful linkage between USD exchange rates and Foreign Direct Investment, hence the proposed hypothesis is accepted.

H_2: There is a significant relationship between Exchange Rates of EURO and Foreign Direct Investment in India

Table 3: regression analysis between euro and fdi

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.756[a]	.572	.539	12331.37664
a. Predictors: (Constant), EURO				

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2639598921.282	1	2639598921.282	17.359	.001[b]
	Residual	1976817049.118	13	152062849.932		
	Total	4616415970.400	14			

a. Dependent Variable: FDI

b. Predictors: (Constant), EURO

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-61083.155	23359.364		-2.615	.021
	EURO	1433.757	344.126	.756	4.166	.001

a. Dependent Variable: FDI

Regression analysis was conducted to find out how much the EURO exchange rate impacts the Foreign Direct Investment in India. The above table reveals that there are statistically significant associates between the EURO exchange rate and Foreign Direct Investment in India as the p-value (.001) is less than .05 with the R-square value of .572, which is a large effect and also the t-value stands at 4.166. So we can conclude that there is a meaningful linkage between EURO exchange rates and Foreign Direct Investment, hence the proposed hypothesis is accepted.

CONCLUSION

After the Bretton Woods System has fallen in 1971, numerous countries embraced fluctuating exchange rates. The examination of the influence of exchange rate vulnerability upon macroeconomic variables, including FDI has been raised as worries in the previous couple of decades. Various scientists have been coordinated to this subject and have underscored diverse macroeconomic variables furthermore, nations. The results vary from concentrate to think about demonstrating an empowering or discouraging association between exchange rate volatility and FDI. Our study finds meaningful associates between exchange rate volatility (of USD and EURO) and FDI in India. Future studies can be carried out with other macroeconomic variables like Export rate, Import rate and so on.

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