

Impact Of Forex Market On Import, Export & FPIs In India

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ABSTRACT

Exchange rate plays a key role in any country's trade levels. A country's economy is also highly dependent on the Foreign Portfolio Investment (FPI) of that particular country. This research paper seeks to analyze the impact of forex market on import, export and FPIs of India during the period January, 2009 to December, 2018. The tools used for this study are ANNOVA, correlation and regression. ANNOVA is run between the four currencies used for this research, that is United States Dollar (USD), European Union Euro (EUR), Great Britain Pound (GBP) and Japanese YEN (YEN). The ANNOVA test shows the Year on Year (YoY) change in percentages of exchange rates of the four currencies and the results show that the fluctuations among the four currencies are similar and hence for further tests only the exchange rates of USD is taken into consideration. Correlation has been used to understand the relationship between the four currencies and it has been found that all the currencies show strong positive correlation. The USD exchange rates during the period have been compared with the import, export and FPI figures of India with the help of regression to understand the effect of the currency fluctuations on the import, export and FPIs of India. The test results have shown that the exchange rate fluctuations have a significant impact on the import and export of India but it doesn't have any significant impact on the FPI of India during the period taken into consideration for this particular research.

Keywords: Currency market, FPI, Over the counter

INTRODUCTION

A currency market or foreign exchange market or forex market (as it is commonly called), is where currencies of various nations can be bought or sold. It is very different from a financial market where currencies are borrowed or lent. It is an Over-The-Counter (OTC) market as there is no physical or definite place for the participants to meet up and execute their deals. It is an informal set up between banks and brokers, who operate in a financing center and purchase and sell currencies. It is one of the largest markets having a turnover of more than USD 2 trillion on a daily basis with the biggest markets in London (UK), New York (USA), Tokyo (Japan), Zurich (Switzerland) and Frankfurt (Germany). The currency markets all around the world are located in a way that the market opens 24 hours a day when one country's market is closing its operations, another market starts working. Any one of the country's markets are open all throughout the day. One specific market will however function in only specific hours of the day. The forex market is a 24*5 running market. Though the forex market has no single physical place for the participants, efficient communication systems make it look like the entire market is operating under one roof. The participants have access to technologically advanced services like Dow Jones Telerate and Teunter, which allow them to always stay updated with the current market activities all throughout the world. Anything that happened in any of the economies of the world has a global impact as the market reacts to news which might affect the global economy.

REVIEW OF LITERATURE

Neeti Khullar & Upasna Joshi Sethi, (2011) Measuring the Volatility of Foreign Exchange Market in India. The volatility of all the three currencies increases when the volatility is compared along the different time span taken into consideration such as daily, weekly and monthly. The correlation suggests that there is a strong correlation between the Japanese Yen and the US Dollar. **(Dr. G. Jayachandran, 2013)** Impact of exchange rate on trade and GDP for India a study of last four decades. The exchange rate fluctuations don't have a direct impact on the GDP of the country. The GDP of the country is more affected by the fiscal and monetary factors, rather than the exchange rate. **Vandana Kotai, (2013)** An Empirical Study on Currency Volatility in Foreign Exchange Market. In the period of research (July, 2013 to September, 2013), the Indian currency was the most volatile currency among all the other currencies. **Nassimi, Asfaranjan, Keshvarsima**

& Baradari, (2014) Trading in the Foreign Exchange Market (Forex): A Study on the Purchase Intention. The primary factors that affect the investment decisions of traders in the forex market are trust, content and context of forex websites. **Genc & Artar, (2014)** The Effect of Exchange Rates on Exports and Imports of Emerging Countries. This research study concludes that the exchange rates of 5 out of 22 countries (Bolivia, Cameroon, Dominica, Gabon and Mexico) have co-integration with the import-export of the countries. **Gondaliya & Dave, (2015)** The Impact of Exports and Imports on Exchange Rates in India. The change in export levels results in positive impact on rupee against Dollar, Euro, Pound and Yen and the import levels don't have a positive impact on the rupee value against the same currencies. **Fanniband, (2015)** Does Correlation Exist Between India's Import and Foreign Exchange Rates? This study shows that though different products are differently correlated with the exchange rate, there is no definite correlation of the imports of these commodities and the exchange rate. **Alotaibi, (2016)** How Exchange Rate Influence a Country's Import and Export. As supply and demand for currencies change, the values of these currencies change. Exchange rates influence other income factors like interest rates, inflation and even capital gains from domestic securities. **Woo & Dagli, (2018)** International Trade and Exchange Rates. This paper's theoretical framework is based on a pricing-to-market mechanism. The test results show a positive relationship between the real exchange rate and the export volume, before the Global Financial Crisis period. The analysis confirms that increased participation in the Global and Regional Value Chains lowers the impact of the exchange rate on exports and could contribute to the weakening links between exchange rates and trade. **Nishu Gard & Dr. Shakti Singh, (2018)** Rupee-Dollar fluctuation and its impact on the Indian economy. The rupee value decline has been a warning signal for the Indian economy and it can stop India's hopes of being one of the largest economies by the year 2020. The Rupee value fluctuation impacts all the sectors of the economy and the decline in the rupee value results in hidden inflation in the economy.

OBJECTIVE OF THE STUDY

- To examine the forex market operation in India.
- To analyze the effect of exchange rate fluctuations on the import, export and Foreign Portfolio Investments (FPIs) of India.

RESEARCH METHODOLOGY

For the purpose of research study, the monthly data of exchange rates of four currencies (US Dollar, Britain Pound Sterling, European Union Euro and Japanese YEN) has been collected from the Reserve Bank of India (RBI) bulletins and the data of import and export and the FPI have been collected from the monthly economic reports published by the Ministry of Economic Affairs. The data has been collected within the period between January, 2009 to December, 2018. The statistical tools ANOVA, correlation and regression. ANOVA are applied to compare the variation of exchange rates during this period. Correlation is used to understand the relation between the fluctuating exchange rates and import and export levels and the FPI of the country. Regression analysis is done to understand the effect of the fluctuating exchange rates on the import, export and FPI of the India.

DATA ANALYSIS

Null hypothesis (H_0): There is no similarity between the fluctuations of the exchange rate of the four currencies- USD, EUR, GBP, YEN.

Alternative hypothesis (H_1): There is similarity between the fluctuation of the exchange rate of the four currencies- USD, EUR, GBP, YEN.

Table-1: Yearly exchange rates of USD-INR, EUR-INR, GBP-INR, YEN-INR during 2009-2018 and ANOVA test.

Year	Yearly exchange	Yearly exchange	Yearly exchange	Yearly exchange
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	rate USD	rate EUR	rate GBP	rate YEN		
2009	48.36	67.36	75.64	0.51		
2010	45.65	60.57	70.56	0.52		
2011	46.45	64.65	74.51	0.58		
2012	53.42	68.59	84.66	0.66		
2013	58.51	77.82	91.65	0.59		
2014	61.08	81.05	100.48	0.57		
2015	64.12	71.14	98.01	0.52		
2016	67.17	74.32	91.06	0.61		
2017	65.11	73.53	83.86	0.58		
2018	68.41	80.69	91.18	0.61		
Year	YoY Percentage change in USD rates	YoY Percentage change in EUR Rates	YoY Percentage change in GBP rates	YoY Percentage change in YEN rates		
2009	-	-	-	-		
2010	-5.60%	-10.08%	-6.72%	1.96%		
2011	1.75%	6.74%	5.60%	11.54%		
2012	15.01%	6.09%	13.62%	13.79%		
2013	9.53%	13.46%	8.26%	-10.61%		
2014	4.39%	4.15%	9.63%	-3.39%		
2015	4.98%	-12.23%	-2.46%	-8.77%		
2016	4.76%	4.47%	-7.09%	17.31%		
2017	-3.07%	-1.06%	-7.91%	-4.92%		
2018	5.07%	9.74%	8.73%	5.17%		
Anova: Two-Factor Without Replication						
ANOVA						
Source of Variation	SS	df	MS	F	P-value	F crit
Rows	0.090424012	7	0.012917716	2.681955867	0.037656416	2.487577704
Columns	0.003184397	3	0.001061466	0.220379835	0.881146146	3.072466986
Error	0.101147092	21	0.004816528			
Total	0.194755502	31				

Source: Yearly exchange rates of all four currencies collected from RBI bulletin and investing.com

INTERPRETATION

The above table shows the Year on Year (YoY) change in percentages of exchange rates of the four currencies- US Dollar, European Union Euro, Great Britain Pound and Japanese Yen for the period 2009 to 2018. Analysis of Variance (ANOVA) is used to compare the variance of the exchange rates during this period. The columns show the YoY percentage of each individual currency and the rows show the YoY percentage change of all the currencies in a particular year. To show any significant variance, the P-value must be lesser than 0.05. The P-value of rows is 0.0376 which is lower than 0.05 and this shows that the currency fluctuations are similar across all the four currencies.

Note: Since the currency fluctuations across all the four currencies are similar according to the ANOVA test results, the further tests will consider only the US Dollar exchange rate as the independent variable as it is a dominant global currency and United States is a major trading partner of India.

IMPACT OF USD-INR EXCHANGE RATE ON IMPORTS

Null hypothesis (H_0): There is no significant impact of USD-INR foreign exchange rates on the import figures of India during the period January, 2009 to December, 2018.

Alternate hypothesis (H_1): There is significant impact of USD-INR exchange rates on the import figures of India during the period January, 2009 to December, 2018.

Table-2: Regression test result of USD-INR exchange rate and import of India during the period January, 2009 to December, 2018

Significance value	0.00
Adjusted R- Square	0.55492
Standard Error	3851968.261
Observations	120

INTERPRETATION

The above table shows the import figures of India in INR lacs and the US Dollar-Indian Rupee exchange rate for the period January, 2009 to December, 2018. To examine the relation of the exchange rate fluctuations and the varying import figures of India during this period, correlation test was run on this time series data. The correlation result has come out as 0.7474 which shows that the two variables have a strong positive correlation. To understand the effect of the independent variable (USD-INR exchange rate fluctuations) on the dependent variable (Import figures), regression analysis has been done and the significance value has been considered. To show any significant effect, the significance value should be lesser than 0.05 and in this case the significance value has come as 0.00. This shows a significant impact of the exchange rate fluctuation on the import figures of India. The R-square of this test has come out as 0.5586, which means that the independent variable is able to explain 55% of the variations in the dependent variable.

Impact of USD-INR exchange rate on exports

Null hypothesis (H_0): There is no significant impact of USD-INR exchange rates on the import figures of India during the period of January, 2009 to December, 2018.

Alternate hypothesis (H_1): There is significant impact of USD-INR exchange rates on the import figures of India during the period of January, 2009 to December, 2018.

Table-3: Regression test result of USD-INR exchange rate and export of India during the period January, 2009 to December, 2018

Significance value	0.00
Adjusted R- Square	0.668496203
Standard Error	2098447.063
Observations	120

INTERPRETATION

The above table shows the export figures of India in INR lacs and the US Dollar-Indian Rupee exchange rate for the period of January, 2009 to December, 2018. To examine the relation of the exchange rate fluctuations and the varying export figures of India during this period, correlation test was run on this time series data. The correlation result has come out as 0.8193 which shows that the two variables have a strong positive correlation. To understand the effect of the independent variable (USD-INR exchange rate fluctuations) on the dependent variable (Export figures), regression analysis has been done and the significance value has been considered. To show any significant effect, the significance value should be lesser than 0.05 and in this case the significance value has come as 0.00. This shows a significant impact of the exchange rate fluctuation on the import figures of India. The R-square of this test has come out as 0.6684, which means that the independent variable is able to explain 66% of the variations in the dependent variable.

Correlation of USD-INR exchange rates and FPIs:

Table-4: Correlation test result of USD-INR exchange rate and FPI of India during the period January, 2009 to December, 2018

	FPI data (in INR Crores)	Exchange Rate
FPI data (in INR Crores)	1	
Exchange Rate	-0.157362069	1

INTERPRETATION

The above table shows the Foreign Portfolio Investments (FPIs) in INR crores of India and the US Dollar-Indian Rupee exchange rate for the period of January, 2009 to December, 2018. To examine the relation of the exchange rate fluctuations and the varying FPI figures of India during this period, correlation test was run on this time series data. The correlation result has come out as -0.1573 which shows that the two variables have a weak negative correlation. This is logically a correct result because as the value of the domestic currency (INR) decreases, the foreign investors would withdraw money from the domestic market and put it in the foreign markets and vice versa. But the magnitude of the correlation is too low to show any kind of impact of the independent variable (USD-INR exchange rate) on the dependent variable (FPI figures).

FINDINGS

- The currency market all over the world has grown in leaps and has developed into a market which has a daily turnover of almost \$3 trillion.
- The qualitative study about the forex market operation in India has revealed that the Indian forex market is still in the early stages of development with trading in the market taking place only through the exchanges and authorized dealers.
- The ANOVA test results show that the currency rate fluctuations of all four currencies are significant and similar and hence the further studies were carried out on the basis of the USD-INR exchange rate and the three factors of economy- import, export and FPIs, only.
- Correlation results showed that the USD-INR exchange rate is strongly related to the import and export of the country and it has a weak negative relation with the FPI of the country.
- The significant values from the regression test run on the USD-INR exchange rate and import and export of the country showed that the exchange rate fluctuations had a significant effect on the import and export of the country, individually, during the period of January, 2009 to December, 2018.

CONCLUSION

The Indian economy is a growing economy and the forex market of India is still in its early stages of development. The forex market in India is not very prominent like in the other countries of the world as trading in currency pairs which do not have the Indian Rupee as the base currency is considered illegal in India. Amendments can be brought to this law and the investors should be allowed to trade in currency pairs which do not have the Indian Rupee as the base currency. This research study has shown that the Indian forex market does not have the huge turnover like in the other countries. More and more investors should be encouraged to enter the currency market and trade in currencies. This will increase the turnover of the currency market of India. Currency market gains should be made taxable like the stock market, so that transparency is maintained in forex trading. Foreign trade policies can be amended to encourage more exports and discourage imports. This will help India to keep in check its trade deficits which will in turn have an effect on the growth of the country's economy. The analysis results have shown that the exchange rate fluctuations of the four currencies have had a significant impact on the import and export of the country but the fluctuations have failed to affect the FPI of India. In recent times, the Indian markets have witnessed a large percentage of foreign investors withdrawing their money from the markets and move to other thriving economies and this shows the falling value of the Indian Rupee against the other foreign currencies.

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