International Academic Institute for Science and Technology

International Academic Journal of Accounting and Financial Management
Vol. 1, No. 1, 2014, pp. 109-119.

ISSN 2454-2350

International Academic Journal of Accounting and Financial Management

www.iaiest.com

Study on Currency Derivatives and Their Impact on Value of Currency

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Abstract

Graph of Currency trading has increased dramatically in last few years in India, so the need for more effective ways for better analysis of movements in currency has been arise. Currency is highly uncertain and unpredictable instrument. There are number of factors affecting movement of currency future. People have started using Currency futures as an investment option and they can trade various currencies as per the current economic condition of the country. Before investment it is important to identify effect of various factors on index value of currency. The purpose of this paper is to indicate the impact currency future, to check rules of the currency and useful predictionmodels for currency futures closing prices.

Keywords: Nifty, Contract, Futures, Forwards.

Introduction of Currency Derivatives:

Executive Summary

The currency derivatives market is the largest asset market in the world, even larger than equity and the commodity markets. However the Indian scenario is quite different .currency derivatives market happens to be smaller than the other two in India. The daily trading volumes in this market are but a trifle when compared to that of equity market.

In this research paper we aim at finding the reasons as to why this market has not been able to pick up momentum in India. We find people's perspective, thoughts and the reason they invest in different asset markets. We try to explore what restrains them from investing in these markets, specifically the currency

derivatives market. We also mean to suggest steps that can be taken to boost its growth in India. So we ask respondents to rate these steps to know how effective each one will be.

Currency futures were first created at the Chicago mercantile exchange (CME) in 1972. Today, CME offers 41 individuals FX futures and 31 options contracts on 19 currencies, all of which trade electronically on the exchange's CME Global exchange platform. It is the largest regulated marketplace for FX trading.

The various currency derivatives are:

Hedging: Hedgers are those who want to reduce price risk using futures contracts. Producers of commodities and the users of these commodities use commodity futures contracts so that the price risk of the commodities can be eliminated.

Speculation: if a trader has a view on the direction of the market, that is he expects the value of rupee to appreciate or depreciate, he can sell or buy a USD/INR contract and earn a profit if the market moves in the direction that he expects it to move.

Arbitrage: It means making a riskless profit by entering into transaction in two or more markets simultaneously. The purpose of an arbitrage is to even out the price of assets in the markets in which they are traded.

Currency future

- **Currency Futures:**

Currency futures also called forex futures or foreign exchange futures are exchange-traded futures contracts to buy or sell a specified amount of a particular currency at a set price and date in the future. Similar to other futures products, they are traded in terms of contract months with standard maturity dates typically falling on the third Wednesday of March, June, September and December.

- **Currency future trading:**

The forex spot market is the largest market in the world. Currency futures trade at a fraction of the volume, with many currency futures contracts trading under high volume and good liquidity. Currency futures are exchange-traded and are regulated like other futures markets.

Typically one of the currencies is the US dollar. The price of a future is then in terms of US dollars per unit of other currency. This can be different from the standard way of quoting in the spot foreign exchange markets. The trade unit of each contract is then a certain amount of other currency, for instance €125,000.

Indian currency derivative market

How Currencies Traded:

In most markets US dollar is the vehicle currency Viz. the currency used to denominate international transactions. This is despite the fact that with currencies like Euro, US dollar and Yen gaining larger share, the share of US dollar in the total turnover is shrinking.

- **Physical Market:**

At these physical markets;

The banks meet and in the presence of the representative of the central bank and on the basis of bargains, fix rates for a number of major currencies. This practice is called fixing. The rates thus fixed are used to

execute customer orders previously placed with the banks. An advantage claimed for this procedure is that exchange rate for commercial transactions will be market determined not influenced by the any one bank. However, it is observed that the large banks attending such meetings with large commercial orders backing up tend to influence the rates.

Research Background

Adrangi and Chatrath (1998) studied the impact of currency futures commitments and found that the overall growth in currency futures commitments has not caused exchange rates to be more volatile They concluded that margin requirements that penalize speculators and small traders may serve to promote stability in the market.The overall growth in currency futures commitments has not caused exchange rates to be a more volatile. They check the data is stationary or non-stationary.

Brooks, Rew and Ritson (2001) investigated the lead-lag relation for FTSE 100 index for 1996-1997 by incorporating error correction model, error correction model with cost of carry, ARIMA and VAR. They compared the forecasting ability of models, and different trading strategies under error correction model with cost of carry models. They found the leading power of futures market and underline the higher predictive ability of error correction model.

Chris (2001) based on the results obtained; they develop a trading strategy based on the predictive abilities of the futures market. The study is conducted using Co-integration and Error Correction model, ARMA model and vector auto-regressive model. The results indicate that futures lead the spot market attributable to faster flow of information into futures market mainly due to lower transaction costs.

Kavussanos and Nomikos (2003) investigated the causal relationship between futures and spot prices in the freight futures market. They found that price discovery first takes position in the futures market and then it is transmitted to underlying cash market. Their findings indicate that futures prices tend to discover new information more rapidly than spot prices**.** They also reported that the information incorporated in futures prices, when formulated as a vecm, produces more accurate forecasts of spot prices than the var, ARIMA and random-walk models.

Pradhan and Bhat (2009) investigated the causal relationship between spot and futures prices in Nifty futures markets, using Vector Error Correction Model (VECM). Their study is compared the forecasting ability of futures prices on spot prices with three major forecasting techniques namely ARIMA, VAR and VECM model. The findings indicated the importance of taking into account the long-run relationship between the futures and the spot prices in forecasting future spot prices.

Problem statement: Lot of fluctuation takes place in foreign exchange so an attempt has been made to understand the use of currency futures and to reduce risk.

Objective of the study: To study the Currency futures trading in Indian market.
To study the impact of currency futures on the Indian stock market.

Hypothesis of Arima Model:

H0- There is no significant impact of past currency future and value of currency Indian market in present.
H1- There is significant impact of past currency future and value of currency Indian market in present.

Research methodology

Research design: Descriptive Analytical Research.

Source of Data: The data is collected mainly from websites as corporate announcement data is not published directly in business dailies, to find out effective announcement date of the event, data available on nseindia.com and investing.com.

Data collection and Data sample: The analysis will be done with the help of secondary data. And To achieve the above stated objectives, from 2011 to 2015 were taken from sample frame of current constitute of currency future.

Tools and techniques: Appropriate statistical tool like ARIMA will be used.

Data Analysis and Interpretation

In our study we have considered the Closing Price, Nifty 50 and Contract closing price as base index. The time frame which I have selected is 5 years, i.e.2011 to 2015 for which the information regarding the currency's data are collected.

Arima Model:

H0 - There is no significant impact of past currency future and value of currency Indian market in present.

H1 - There is significant impact of past currency future and value of currency Indian market in present.

- ❖ USDINR:
  - ➢ Currency_cp& nifty_50_cp:

Model Description: Table 1

			Model Type
Model ID	V2	Model_1	ARIMA(1,0,1)

Model Statistics Table 2

Model	Number of Predictors	Model Fit statistics	Ljung-Box Q(18)			Number of Outliers
		Stationary R-squared	Statistics	DF	Sig.	
V2-Model_1	1	.990	39.364	16	.001	0



Graph 1: Source: SPSS 23

Interpretation: ***The relationship between currency_cp and Nifty_50_cp that gives the coefficient of correlation at 0.990 which is a high degree of correlation. The significant value is 0.001 which is not more than the critical value of 0.05 which shows that currency_cp have a significant impact on Nifty_50_cp.***

- Contract_cp& nifty_50_cp:

Model Description: Table 3

			Model Type
Model ID	V4	Model_1	ARIMA(1,0,1)

Model Statistics: Table 4

Model	Number of Predictors	Model Fit statistics	Ljung-Box Q(18)			Number of Outliers
		Stationary R-squared	Statistics	DF	Sig.	
V4-Model_1	1	.990	35.807	16	.003	0



Graph 2 Source: SPSS 23

Interpretation: ***The relationship between contract_cp and Nifty_50_cp that gives the coefficient of correlation at 0.990 which is a high degree of correlation. The significant value is 0.003 which is not more than the critical value of 0.05 which shows that contract_cp have a significant impact on Nifty_50_cp.***

❖ EUROINR:

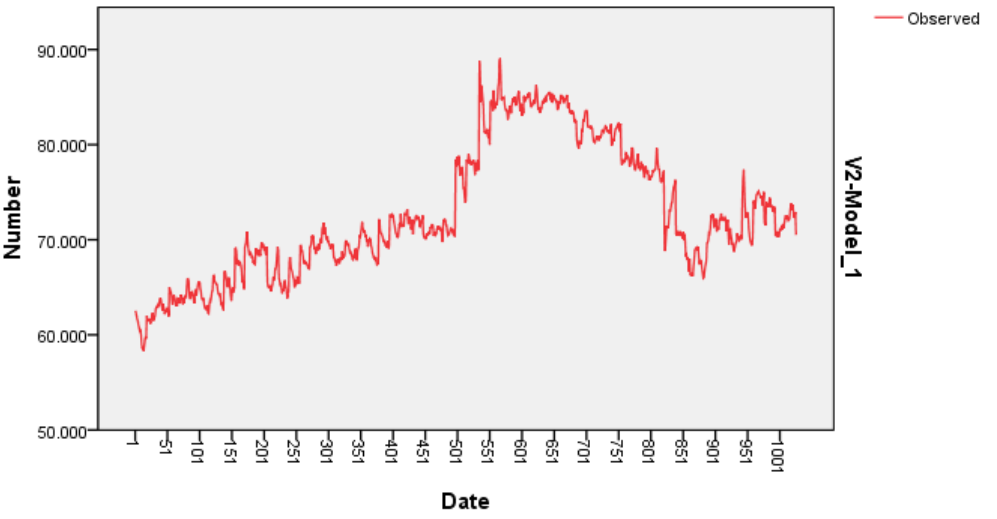
➢ Currency_cp& nifty_50_cp:

Model Description: Table 5

			Model Type
Model ID	V2	Model_1	ARIMA(1,0,1)

Model Statistics: Table 6

Model	Number of Predictors	Model Fit statistics	Ljung-Box Q(18)			Number of Outliers
		Stationary R-squared	Statistics	DF	Sig.	
V2-Model_1	1	.983	68.953	16	.000	0



Graph 3 Source: SPSS 23

Interpretation: ***The relationship between currency_cp and Nifty_50_cp that gives the coefficient of correlation at 0.983 which is a high degree of correlation. The significant value is 0.00 which is not more than the critical value of 0.05 which shows that currency_cp have a significant impact on Nifty_50_cp.***

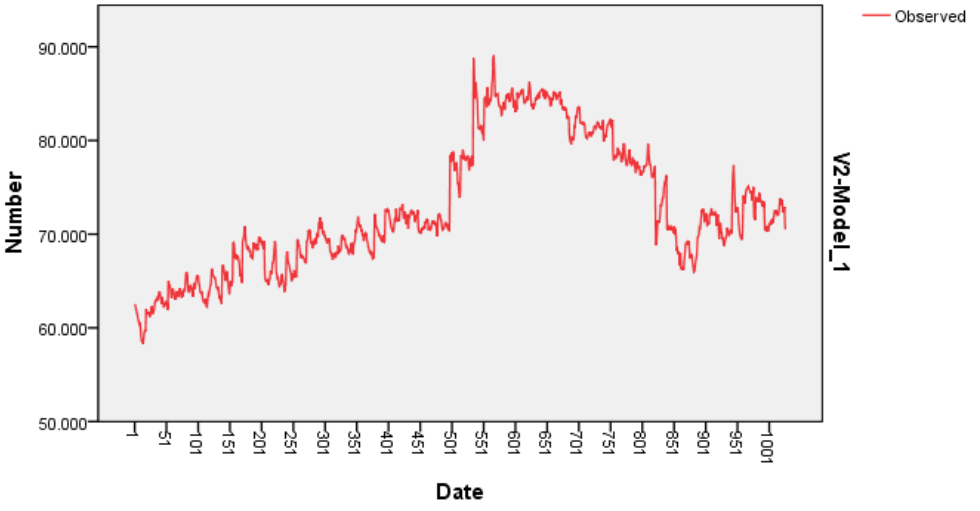
- Contract_cp&nifty_50_cp:

Model Description: Table 7

			Model Type
Model ID	V2	Model_1	ARIMA(1,0,1)

Model Statistics: Table 8

Model	Number of Predictors	Model Fit statistics	Ljung-Box Q(18)			Number of Outliers
		Stationary R-squared	Statistics	DF	Sig.	
V2-Model_1	1	.983	68.953	16	.000	0



Graph 4 Source: SPSS 23

Interpretation:*The relationship between contract_cp and Nifty_50_cp that gives the coefficient of correlation at 0.983 which is a high degree of correlation. The significant value is 0.00 which is not more than the critical value of 0.05 which shows that contract_cp have a significant impact on Nifty_50_cp.*

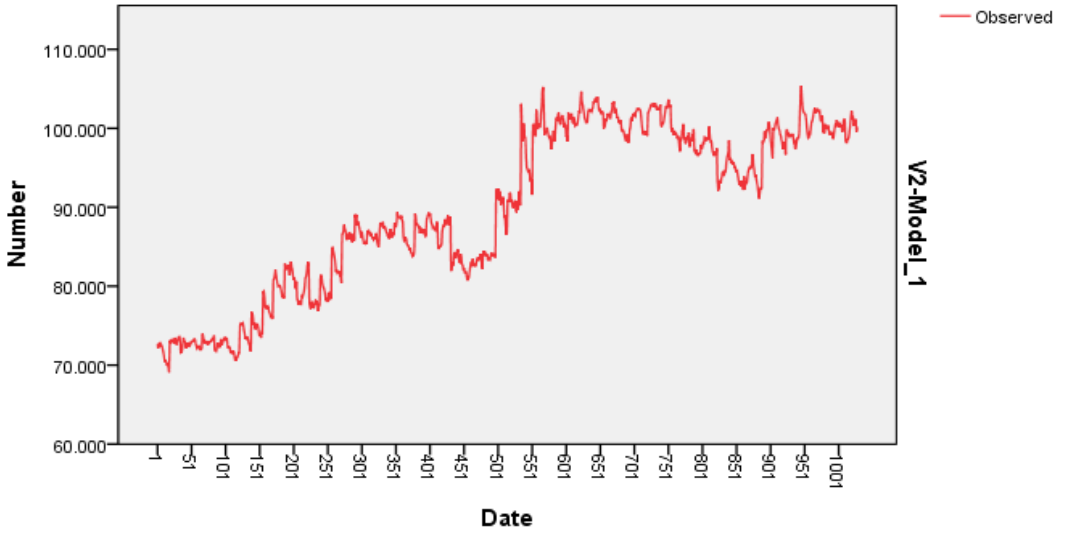
- ❖ GBPINR:
- ➢ Currency_cp& Nifty_50_cp

Model Description: Table 9

			Model Type
Model ID	V2	Model_1	ARIMA(1,0,1)

Model Statistics: Table10

Model	Number of Predictors	Model Fit statistics	Ljung-Box Q(18)			Number of Outliers
		Stationary R-squared	Statistics	DF	Sig.	
V2-Model_1	1	.988	47.781	16	.000	0



Graph 5 Source: SPSS 23

Interpretation:*The relationship between currency_cp and Nifty_50_cp that gives the coefficient of correlation at 0.988 which is a high degree of correlation. The significant value is 0.00 which is not more than the critical value of 0.05 which shows that currency_cp have a significant impact on Nifty_50_cp.*

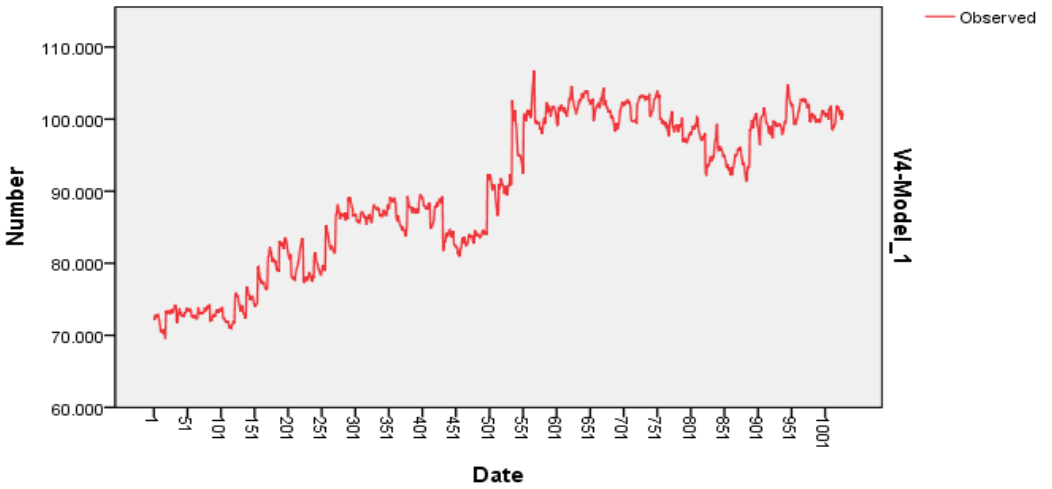
- Contract_cp& nifty_50_cp:

Model Description: Table 11

			Model Type
Model ID	V4	Model_1	ARIMA(1,0,1)

Model Statistics: Table 12

Model	Number of Predictors	Model Fit statistics	Ljung-Box Q(18)			Number of Outliers
		Stationary R-squared	Statistics	DF	Sig.	
V4-Model_1	1	.989	35.267	16	.004	0



Graph 6 Source: SPSS 23

Interpretation:*The relationship between contract_cp and Nifty_50_cp that gives the coefficient of correlation at 0.989 which is a high degree of correlation. The significant value is 0.004 which is not more than the critical value of 0.05 which shows that contract_cp have a significant impact on Nifty_50_cp.*

Findings:

As per result of ARIMA:
There is impact on USDINR of ***currency_cp& Nifty_50_cp and contract_cp& Nifty_50_cp.***
There is impact on ***EUROINR of currency_cp& Nifty_50_cp and contract_cp& Nifty_50_cp.***
There is impact on ***GBPINR of currency_cp& Nifty_50_cp &contract_cp& Nifty_50_cp.***
The impact of currency depends on the Indian stock market which can be seen in the research using various statistical tools.

Suggestion:

The investor make an investment in Currency futures they take all information related to the currency and make sure that they follow all rules and obligation of it.

Conclusion

Indian markets are predictable because of its liveliness and it attains a leading position in the global financial system. In the current scenario of the financial condition, the inconsistencies in the currencies, the rate of interest, the stocks and bonds is something very new.
The study on impact of currency derivative trading is important because increased spot market instability resulting from futures trading may suggest a need for regulations.

The results of this study are crucial to investors, stock exchange officials and regulators. An important role played by the currency derivatives in the discovery of price and completing the market. In risk management, its role for institutional investors and mutual fund managers hardly need any attention.

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