Research Paper

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Management

KEYWORDS :

The Impact of Exchange Rate on Indian Stock Exchanges like BSE & NSE

Mr. Divyang Patel — Asst.Professor in Sitarambhai Naranji Patel institute of technology and research centre-(SNPIT&RC), Umrakh. Department of Management.

Ms. Nikita Kagalwala — Asst.Professor in Sitarambhai Naranji Patel institute of technology and research centre-(SNPIT&RC), Umrakh. Department of Management.

ABSTRACT

This paper analyze the relationship between exchange rate($/₹) and Indian stock exchanges like BSE,NSE etc.. it measure the impact of changes in exchange rate on Indian stock exchanges like BSE, NSE. Several statistical test have been applied in order to measure the impact of exchange rate on Indian stock exchanges LIKE CORRELATION, REGRESSION AND ANOVA. The period for the study has been taken for eight years (from January 2005 to December 2012) using daily closing price and daily price are converted in to monthly price. From the data analysis we found that the result of Correlation confirmed that there is negligible relation between Exchange Rate and Nifty and negligible relation between Exchange rate and Sensex.

INTRODUCTION:

The exchange rate is a key financial variable that affects decisions made by foreign exchange investors, exporters, importers, bankers, businesses, economic institutions, policymakers and tourists in the developed as well as developing world. Exchange rate fluctuations affect the value of international investment portfolios, competitiveness of exports and imports, value of international reserves, currency value of debt payments, and the cost to tourists in terms of the value of their currency. Movements in exchange rates thus have important implications for the economy's business cycle, trade and funds flows and are therefore crucial for understanding financial developments and changes in trade and industry policy. Therefore, to study the impact of changes in exchange rate on Indian stock markets is necessary.

LITERATURE REVIEW

Relationship between stock market and foreign exchange market in India. This paper was conducted by Deepti Gulati and Monika Kakhani (Nov, 2012). This paper attempts to examine whether or not a causal relationship exists between foreign exchange rates and stock market. By applying the techniques of Granger Causality test and correlation test, relationships between INR/$ exchange rate and Indian stock market indices (SENSEX and NIFTY 50) were determined for data between 2004 and 2012.

A research paper on "study of Exchanges Rates movement and Stock Market volatility" conducted by Dr. Gaurav Agrawal (Dec, 2010). This paper analyzes the relationship between Nifty returns and Indian rupee-US Dollar Exchange Rates. In this study, it was found that Nifty returns as well as Exchange Rates were non-normally distributed. Through unit root test, it was also established that both the time series, Exchange rate and Nifty returns, were stationary at the level form itself. Correlation between Nifty returns and Exchange Rates was found to be negative.

A research report on "The Interrelationship between the Stock Markets and the Foreign Exchange Market" conducted by Dr. Prakash G. Apte (March 2001). Apte (2001) investigated the relationship between the volatility of the stock market and the nominal exchange rate of India by using the EGARCH specifications on the daily closing USD/INR exchange rate, BSE 30 (Sensex) and NIFTY-50 over the period 1991 to 2000. The study suggests that there appears to be a spillover from the foreign exchange market to the stock market but not the reverse.

RESEARCH OBJECTIVES:

- To analyze dependency of stock market on exchange rates.
- To identify the correlation between exchange rates and Indian stock market

RESEARCH METHODOLOGY:

In this study we used secondary data and source of data is website of National Stock Exchange, Bombay stock exchange and Reserve Bank of India. For calculation of relationship and impact of changes in exchange rate on BSE & NSE, correlations/ regression and ANOVA test is applied. For calculation of impact we take daily closing price of exchange rate, BSE Sensex, And NSE Nifty for the year 2005 to 2012.

DATA ANALYSIS AND INTERPRETATIONS:
Correlation between Nifty, Sensex and Exchange Rate

Correlations

		NSE	USD/INR	BSE
NSE	Pearson Correlation	1.000	.143	.117
	N	96	96	96
USD/INR	Pearson Correlation	.143	1.000	1.000
	N	96	96	96.000

Interpretations:

- Here the correlation R = 0.143 of NSE & R = 0.117 of BSE. that means there is no or negligible relationship between Exchange rate (USD/INR) and NSE (Nifty) & BSE (Sensex). Hence we can say that there is no impact or relation of Exchange rate (USD/INR) with NSE Nifty and BSE Sensex.

REGRESSION, ANOVA, and COEFFICIENT between Nifty, Sensex and Exchange Rate

- Independent Variable (X): Exchange Rate (USD/INR)
- Dependent Variable (Y): NSE Nifty, BSE Sensex

REGRESSION:

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
NSE	.143[a]	.020	.010	1183.582
BSE	.117[a]	.014	.003	3984.28542
a. Predictors: (Constant), Exchange Rate				

In the above table, R represents simple correlation. Here R= 0.143 & 0.117 of NSE & BSE, which shows that there is negligible correlation. R Square shows the percentage of the total variation on Nifty that can be explained by Exchange Rate (USD/INR). Here as R2 is .020 & .014 that means about 2% variations in Nifty and 1.4% variation in Sensex are explained by Exchange Rate.

ANOVA:

ANOVA						
	Model	Sum of Squares	Df	Mean Square	F	Sig.
NSE	Regression	2751796.037	1	2751796.037	1.964	.164[a]
	Residual	1.317E8	94	1400867.356		
	Total	1.344E8	95			
BSE	Regression	2.063E7	1	2.063E7	1.299	.257[a]
	Residual	1.492E9	94	1.587E7		
	Total	1.513E9	95			
a. Predictors: (Constant), Exchange Rate						
b. Dependent Variable: NSE						

Interpretation of ANOVA:

H_0= Exchange Rate (USD/INR) do not have significant impact on BSE &NSE.

H_1= Exchange Rate (USD/INR) have significant impact on BSE & NSE.

COEFFICIENT:

Coefficients						
Model B		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		Std. Error	Beta			
NSE	(Constant)	2363.100	1417.499		1.667	.099
	Exchange Rate	42.973	30.661	.143	1.402	.164
BSE	(Constant)	9083.349	4771.717		1.904	.060
	Ex Rate	117.655	103.215	.117	1.140	.257
a. Dependent Variable: NSE, BSE						

Regression Equation:

(FOR BSE) $Y = 9083.349 + 117.655\ X$

(FOR NSE) $Y=2363.1 + 42.973\ X$

Where,

Y = Sensex/Nifty

X= Exchange Rate (USD/INR)

CONCLUSION:

For determining the impact of Exchange rate on Indian Stock Market, I employed monthly data and, firstly correlation test is applied which indicates that there is no or little impact of exchange rate (USD/INR) on Indian stock market (NIFTY and SENSEX).

Secondly, regression test was applied which indicates that exchange rate have very little variation in Nifty and Sensex and also ANOVA indicated that there is no relationship of exchange rate with Nifty and Sensex. Hence, I would like to conclude that there is no impact of exchange rate on Indian stock market.

REFERENCE

Relationship between stock market and foreign exchange market in India by Deepti Gulati and Monika Kakhani (Nov, 2012). | A study of Exchanges Rates movement and Stock Market volatility by Dr. Gaurav Agrawal (Dec, 2010) | Relationship between Exchange Rate and Stock Prices in India by Golaka C Nath and G P Samanta