IMPACT OF CURRENCY FLUCTUATION ON STOCK MARKET INDICES

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ABSTRACT
Macroeconomic fundamentals and stock market volatility do play an important role in determining and forecasting the future position of an economy as a whole. Currency fluctuations are a key financial variable that affect decisions made by foreign exchange investors, exporters, importers, bankers, businesses, economic institutions and policymakers in the developed as well as developing countries.The current research is focused on evaluating the impact of currency fluctuation on stock market indices in Indian context. Four major international currencies viz. US Dollar, British Pound, Euro and Japanese Yen are considered for the purpose of the study whereas S&P BSE Sensex, S&P BSE 100, S&P BSE 200 and S&P BSE 500 have been considered as representatives of stock market in India. The study considers data for the period January 2008 to December 2017. The study concludes that there is a significant impact of fluctuation in US Dollar and Japanese Yen on S&P BSE Sensex and S&P BSE 100 whereas there is no significant impact of fluctuation in Pound Sterling and Euro on S&P BSE Sensex and S&P BSE 100. Also a significant impact of fluctuation in US Dollar, Euro and Japanese Yen on S&P BSE 200 and S&P BSE 500 is observed whereas there is no significant impact of fluctuation in Pound Sterling on S&P BSE 200 and S&P BSE 500
Keywords: *exchange rate, interest rate, stock market*

I. INTRODUCTION

Globalization and financial sector reforms in India have ushered in a sea change in the financial architecture of the economy.Since the inception of the financial sector reforms in the beginning of 1990's, the implementation of various reform measures have brought in a dramatic change in the functioning of the financial sector of the economy. Macroeconomic fundamentals and stock market volatility do play an important role in determining and forecasting the future position of an economy as a whole. Many factors, such as enterprise performance, dividends, stock prices of other countries, gross domestic product, exchange rates, interest rates, current account, money supply, employment, their information etc. have an impact on daily stock prices. Currency fluctuations are a key financial variable that affect decisions made by foreign exchange investors, exporters, importers, bankers, businesses, economic institutions and policymakers in the developed as well as developing countries. The issue of inter temporal relation between stock returns and currency fluctuations has recently preoccupied the minds of economists, for theoretical and empirical reasons, since they both play important roles in influencing the development of a country's economy. In addition, the relationship between stock returns and foreign exchange rates can be utilized to predict the future trends for each other by investors.

II. LITERATURE REVIEW

Amalendu Bhunia and Sanjib Pakira (2014) made an attempt to study the affiliation between the financial variables of gold prices, exchange rates and Sensex for the period of between 1991 to 2013. Unit root test, Johansen Cointegration and Granger Causality test were used for the purpose of analysing the data. The findings of the study depict that Sensex is influenced by gold prices and exchange rates in the long run. The research also illustrates that there is a bidirectional causal connection present between gold prices and exchange rates for the period of study.

Rohit Singh Tomar and Harendra Singh (2016) attempted to analyse the impact of fluctuations in crude oil prices, gold prices and exchange rates on the stock market indices in the context of BRICS nations using time series data for the period of January 2003 to December 2013. Unit root test, Johansens co-integration test and Granger Causality test were used to examine the interrelationship between the variables.The research revealed that each of the BRICS nations has four co-integration vectors, which indicate that there exist long term stable equilibrium relationship among the national stock index, crude oil prices, gold prices and exchange rates.

Rakesh D, J.K. Raju and Basavangowda K.G. (2016) discussed the impact of currency fluctuations on the Indian stock market and the global economy. The research made an attempt to identify exchange rate sensitive factors in the Indian stock market and also tried to understand the correlation between stock prices and exchange rates.The study concluded that Dollar prices have significant impact on the Indian stock markets since the coefficient value of Dollar prices are more than the coefficients of other currencies.

III. OBJECTIVES

1. To analyse the movement in stock market indices due to currency fluctuation.
2. To examine the impact of currency fluctuation on stock market indices.

IV. RESEARCH METHODOLOGY

The present study is focused on evaluating the impact of currency fluctuation on stock market indices in Indian context.Four major international currencies viz. US Dollar, British Pound, Euro and Japanese Yen are considered for the purpose of the study whereas S&P BSE Sensex, S&P BSE 100, S&P BSE 200 and S&P BSE 500 have been considered as representatives of stock market in India. The study is based entirely on secondary data for the period commencing January 2008 to December 2017. SPSS software has been used to analyse the data for the purpose of the current study.

V. HYPOTHESIS

1. **Impact of currency fluctuation on S&P BSE Sensex**

H0: There is no significant impact of currency fluctuation on S&P BSE Sensex
H1: There is a significant impact of currency fluctuation on S&P BSE Sensex

2. **Impact of currency fluctuation on S&P BSE 100**

H0: There is no significant impact of currency fluctuation on S&P BSE 100
H1: There is a significant impact of currency fluctuation on S&P BSE 100

3. **Impact of currency fluctuation on S&P BSE 200**

H0: There is no significant impact of currency fluctuation on S&P BSE 200
H1: There is a significant impact of currency fluctuation on S&P BSE 200

4. **Impact of currency fluctuation on S&P BSE 500**

H0: There is no significant impact of currency fluctuation on S&P BSE 500
H1: There is a significant impact of currency fluctuation on S&P BSE 500

VI. DATA ANALYSIS

I. Impact of currency fluctuation on S&P BSE Sensex

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.708[a]	.501	.500	3475.31576
a. Predictors: (Constant), YEN, POUND, EURO, USDOLLAR				

Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	-3521.122	717.298		-4.909	.000
	USDOLLAR	483.760	23.359	.778	20.710	.000
	POUND	11.840	16.524	.024	.717	.474
	EURO	-18.009	18.936	-.031	-.951	.342
	YEN	-54.853	13.608	-.113	-4.031	.000
a. Dependent Variable: SPBSESENSEX						

Source: Computed Values

Adjusted R square for S&P BSE Sensex is 0.500 which implies that 50% fluctuation in S&P BSE Sensex is explained by the independent variables US Dollar, Euro, Japanese Yen and Pound Sterling.Significance values for Japanese Yen and US Dollar is less than 0.05 at 5% level of significance; hence we reject the null hypothesis implying that there is a significant impact of fluctuation in US Dollar and Japanese Yen on S&P BSE Sensex. Significance value for Pound Sterling and Euro is greater than 0.05 at 5% level of significance; hence we accept the null hypothesis which indicates that there is no significant impact of fluctuation in Pound Sterling and Euro on S&P BSE Sensex.

II. Impact of currency fluctuation on S&P BSE 100

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.689[a]	.475	.474	1106.10750

a. Predictors: (Constant), EURO, YAN, POUND, USDOLLAR

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	-805.228	228.298		-3.527	.000
	USDOLLAR	154.933	7.435	.803	20.839	.000
	POUND	-1.164	5.259	-.008	-.221	.825
	YAN	-17.551	4.331	-.116	-4.052	.000
	EURO	-8.984	6.027	-.049	-1.491	.136

a. Dependent Variable: SPBSE100

Source: Computed Values

Adjusted R square for S&P BSE 100 is 0.474 which implies that 47.4% fluctuation in S&P BSE 100 is explained by the independent variables US Dollar, Euro, Japanese Yen and Pound Sterling.Significance values for US Dollar and Japanese Yen is less than 0.05 at 5% level of significance; hence we reject the null hypothesis implying that there is a significant impact of fluctuation in US Dollar and Japanese Yen on S&P BSE 100. Significance value for Pound Sterling and Euro is more than 0.05 at 5% level of significance; hence we accept the null hypothesis which indicates that there is no significant impact of fluctuation in Pound Sterling and Euro on S&P BSE 100.

Impact of currency fluctuation on S&P BSE 200

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.682[a]	.465	.464	460.23769

a. Predictors: (Constant), EURO, YEN, POUND, USDOLLAR

`Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	-211.546	94.992		-2.227	.026
	USDOLLAR	67.097	3.093	.844	21.690	.000
	POUND	-.912	2.188	-.015	-.417	.677
	YEN	-7.481	1.802	-.120	-4.151	.000
	EURO	-7.698	2.508	-.102	-3.070	.002
a. Dependent Variable: SPBSE200						

Source: Computed Values

Adjusted R square for S&P BSE 200 is 0.464 which implies that 46.4% fluctuation in S&P BSE 200 is explained by the independent variables US Dollar, Euro, Japanese Yen and Pound Sterling.Significance values for US Dollar, Euro and Japanese Yen is less than 0.05 at 5% level of significance; hence we reject the null hypothesis implying that there is a significant impact of fluctuation in US Dollar, Euro and Japanese Yen on S&P BSE 200. Significance value for Pound Sterling is more than 0.05 at 5% level of significance; hence we accept the null hypothesis which indicates that there is no significant impact of fluctuation in Pound Sterling on S&P BSE 200.

III. Impact of currency fluctuation on S&P BSE 500

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.663[a]	.439	.438	1461.57660
a. Predictors: (Constant), YEN, POUND, EURO, USDOLLAR				

Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	-284.412	301.666		-.943	.346
	USDOLLAR	204.110	9.824	.828	20.777	.000
	POUND	1.399	6.950	.007	.201	.841
	EURO	-30.722	7.964	-.131	-3.858	.000
	YEN	-22.920	5.723	-.119	-4.005	.000
a. Dependent Variable: SPBSE500						

Source: Computed Values

Adjusted R square for S&P BSE 500 is 0.438 which implies that 43.8% fluctuation in S&P BSE 500 is explained by the independent variables US Dollar, Euro,Japanese Yen and Pound

Sterling.Significance values for US Dollar, Euro and Japanese Yen is less than 0.05 at 5% level of significance; hence we reject the null hypothesis implying that there is a significant impact of fluctuation in US Dollar, Euro and Japanese Yen on S&P BSE 500. Significance value for Pound Sterling is more than 0.05 at 5% level of significance; hence we accept the null hypothesis which indicates that there is no significant impact of fluctuation in Pound Sterling on S&P BSE 500.

VII. CONCLUSION

Stock markets play a crucial role in the economic development of countries across the globe. Undoubtedly the Indian Stock Market stands as one of the most crucial factors which has led to the development of the Indian economy. The impact of currency fluctuations on stock returns is increasingly becoming a prominent issue for investors, financers, economists and policymakers since both variables play a crucial role in portfolio decisions and consecutive economic development of nations. Currency fluctuations have increased dramatically since the introduction of the floating rate regime in the early 1970s. As a result, there is more uncertainty in the relationship between foreign currency markets and international stock markets.

The current research made an attempt to evaluate the impact of currency fluctuation on stock market indices in Indian. Four major international currencies viz. US Dollar, British Pound, Euro and Japanese Yen were considered for the purpose of the study whereas S&P BSE Sensex, S&P BSE 100, S&P BSE 200 and S&P BSE 500 were considered as representatives of stock market.

The following conclusions can be drawn from the study:

- There is a significant impact of fluctuation in US Dollar and Japanese Yen on S&P BSE Sensex and S&P BSE 100 whereas there is no significant impact of fluctuation in Pound Sterling and Euro on S&P BSE Sensex and S&P BSE 100.
- There is a significant impact of fluctuation in US Dollar, Euro and Japanese Yen on S&P BSE 200 and S&P BSE 500 whereas there is no significant impact of fluctuation in Pound Sterling on S&P BSE 200 and S&P BSE 500.

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