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Indian Pharma Corporations Researching the Right Vaccination against Foreign Exchange Risk

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Abstract:
This paper examines the exposure of Indian Pharma Multinationals to foreign exchange risk. The study draws relationship between value of the firm and hedged foreign exchange exposure.
The increased volatility in the global market arising to array of events from civil wars to BREXIT has increased the exchange rate risk faced by the companies. Foreign exchange risk management has become a crucial constituent of companies operations.
The objective of this paper is to enquire in to foreign exchange exposure of pharmaceutical Sector in India; its measurement and the steps taken to manage it. In particular the paper would focus on measurement of Foreign Exchange exposure of Indian of pharmaceutical Sector, External Control techniques to manage Foreign Exchange Risk & Impact of the Internal Control techniques to manage Foreign Exchange Risk.
The paper will be based on study of six listed Pharma companies two each from Large Cap, Mid Cap & Small Cap will selected from stock exchange (BSE). Hedged foreign exchange exposure was compared with stock returns for the period of ten years and no major impact of hedging practices was found on stock returns. The beta of these stocks were found positively correlated with BSE ltd.

Keywords: *Foreign Exchange Risk Management, Pharmaceutical Sector, BSE.*
JEL Classification :*F31, G32,*

I. INTRODUCTION

Recently two of the biggest business magazine Forbes & Fortune came out with 'The World's most Innovative Companies' & 'Change the world list' respectively. Pharmaceutical companies grabbed quite a number of spots along with technology based companies. Whereas Sun Pharma Industries featured at 73rd in Forbes List, Cipla was listed by Fortune at 46th spot. The major market for both these companies being outside India it is interesting to investigate how these companies are managing foreign exchange risk.

Its a broad view that foreign exchange rate variations impact value of the firm, standard economic analysis suggests that value of the Indian pharmaceutical companies dealing in foreign markets, i.e. which are exposed to foreign exchange, should appreciate with fall in value of rupee with corresponding currency and should depreciate with increase in the value of the domestic currency.

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The constant foreign exchange risk hovering over the companies operating in the foreign pastures made the regulatory bodies all over the world and in India too incorporate tighter disclosure norms. It was understood that the investor has the right to information regarding the firms foreign exchange risk exposure as different firms used different styles of reporting in their financial disclosure according to their comfort. This was removed with new disclosure guidelines to create greater comparability amongst similar firms.

The previous researches held different view regarding effect of foreign exchange on the value of the firm. Dumas (1978), Alder & Dumas (1980), &Hodder (1982) defined economic exposure to exchange rate movement as the regression coefficient of the real value of the firm on the exchange rate across states of nature.

Blanchard &Summus (1984) established how different changes impact asset value, thus simultaneous impact of monetary variables on the exchange rate & stock price even for firms not exposed to foreign exchange.

Dumas (1978) emphasised that multinationals responsiveness to change in exchange rate fluctuations has operational element. Many firms exposed firms exposed to foreign exchange move their country of production to lesson exchange rate exposure.
Aggrawal(1981) concluded in his finding that when exposed to huge exchange rate risk expose it reflects in their firms stock prices.

An insubstantial U.S. evidence demands a further study in to different economies, therefore researcher is motivated to take up study in the hustling Indian economy. The Indian case is puts up a several strong reasons. First the major studies are based on U.S. economy or in developed economies where exchange is very stable. India is a developing nation though it has a huge significance considering it's at the forefront of rapidly growing economies in the world. BSE stock exchange now features in top 10 stock exchanges of the world. Secondly the researcher is studying Indian Healthcare sector, in specific the pharmaceutical companies whose major operations are in foreign countries. These firms are extremely vulnerable to foreign exchange risks. Finally few studies has been done on Indian firms exposure to foreign exchange. Thus India makes a suitable choice for our study. We try to find out whether Indian Pharmaceutical companies exposed to foreign exchange are affected by it and whether it has impact on the current stock returns.
Dumas(1978), Hodder (1982), & Alder & Dumas (1984) found no causal relationship between exchange rate fluctuations & change in value firm.
The study is in line with Amihud's (1994) and Bartov and Bodnar's (1994) findings that variations in currency can can decipher firms' current stock returns.

II. OBJECTIVES

1. To identify the foreign exchange risk of Indian Pharma Multinational Corporations.
2. To study the impact analysis of tools and techniques used to manage foreign exchange risk Pharma Automobile Multinational Corporations.

III. HYPOTHESIS

1. $H_o\alpha_0$,The intercept term in the regression of returns on hedged forex exposure is statistically insignificant.

Where α (intercept) is the minimum when hedged exposure is Nil.

2. $H_o\beta_0$, The Slope term in the regression of returns on hedged forex exposure is statistically insignificant.

Where β (slope) is the rate of return per unit hedged exposure.

Large Cap

CIPLA
$H_o\alpha_{cip}$is statistically not significant.
$H_o\beta_{cip}$= 0 is statistically not significant.

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SUNPHARMA
$H_o\alpha_{sun}$ = 0 is statistically not significant.
$H_o\beta_{sun}$ = 0 is statistically not significant.

MIDCAP

BIOCON
$H_o\alpha_{bio}$ = 0 is statistically not significant.
$H_o\beta_{sun}$ = 0 is statistically not significant.

WOCKHARDT
$H_o\alpha_{woc}$= 0 is statistically not significant.
$H_o\beta_{woc}$= 0 is statistically not significant.

SMALL CAP

SUVEN
$H_o\alpha_{suv}$= 0 is statistically not significant.
$H_o\beta_{suv}$= 0 is statistically not significant.

NOVARTIS INDIA
$H_o\alpha_{nov}$= 0 is statistically not significant.
$H_o\beta_{nov}$= 0 is statistically not significant.

IV. RESEARCH METHODOLOGY

Researcher has used longitudinal study spanning over 10 years from April 2006 to March 2016 of pharmaceutical stocks on the Bombay Stock Exchange and compare them with extent of foreign exchange exposure over the time span of study. The study also undertakes the extent of exposure hedged and if there is significant impact on the firms performance on the stock exchange. To ensure a firm wide study in pharmaceutical sector two companies each from Small Cap, Mid Cap & Large Cap segment were picked. This will also help identifying firm wide cross sectional hedging practices. The study includes only external hedging practices followed by the firms as internal hedging practices like netting etc. don't find mention the Annual report. The external hedging practices have become part of mandatory financial disclosure guideline. The period of the study is ten years, 2007-2017, thus encompassing major economic cyclings in to the results.
The study takes Jurion(1990) model, evaluates the impact of foreign exchange of the firm value, the study uses regression impact analysis.
$Y = \alpha + \beta x$
Y representing the value of the firm and independent variable being hedged foreign exposure,

FINDINGS

Output Summary

Large Cap

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	35125.459	13848.365		2.536	0.035
	Cipla_HCE	0.259	0.968	0.094	0.267	0.796

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a. Dependent Variable: Cipla_TFE

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	10432.448	8130.021		1.283	.235
	Sun_Pharma_HCE	0.956	0.759	0.407	1.259	.244

a. Dependent Variable: Sun_Pharma_TFE

MID CAP

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	5521.912	591.989		9.328	.000
	Biocon_HCE	1.133	.208	0.887	5.440	.001

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a. Dependent Variable: Biocon_TFE

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1913.066	965.642		1.981	.083
	Wockhardt_HCE	1.359	0.179	0.937	7.609	.000

a. Dependent Variable: Wockhardt_TFE

SMALL CAP

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	23.509	12.446		1.889	.096
	Novartis_HCE	4.198	0.621	0.922	6.759	.000

a. Dependent Variable: Novartis_TFE

SUVEN

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2692.199	696.084		3.868	.005
	VAR00004	-2.777	2.723	-.339	-1.020	.338

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a. Dependent Variable: VAR00003

ANALYSIS

Sector/Companies		Intercept (α)		Slope (β)	
Pharma		0.001	0.005	0.001	0.005
Large Cap	CIPLA	Not Significant	Not Significant	Not Significant	Not Significant
	SUNPHARMA	Not Significant	Not Significant	Not Significant	Not Significant
Mid Cap	BIOCON	Significant	Significant	Significant	Significant
	WOCKHARDT	Not Significant	Not Significant	Significant	Significant
Small Cap	SUVEN	Not Significant	Significant	Not Significant	Not Significant
	NOVARTIS INDIA	Not Significant	Not Significant	Significant	Significant

Large Cap

CIPLA

(Intercept) $\alpha_{cip}$is statistically not significant at both .001 and .005 significance level with P value coming to .035

(Slope) $\beta_{cip}$is statistically not significant at both .001 and .005 significance level with P value coming to .796

SUNPHARMA

(Intercept) $\alpha_{cip}$is statistically not significant at both .001 and .005 significance level with P value coming to .235

(Slope) $\beta_{cip}$is statistically not significant at both .001 and .005 significance level with P value coming to .244

MIDCAP

BIOCON

(Intercept) $\alpha_{cip}$is statistically significant at both .001 and .005 significance level with P value coming to .000

(Slope) $\beta_{cip}$is statistically significant at both .001 and .005 significance level with P value coming to .001

WOCKHARDT

(Intercept) $\alpha_{cip}$is statistically not significant at both .001 and .005 significance level with P value coming to .083

(Slope) β_{cip}isstatistically significant at both .001 and .005 significance level with P value coming to .000

SMALL CAP

SUVEN

(Intercept) $\alpha_{cip}$is statistically not significant at both .001 and .005 significance level with P value coming to .005

(Slope) $\beta_{cip}$is statistically not significant at both .001 and .005 significance level with P value coming to .338

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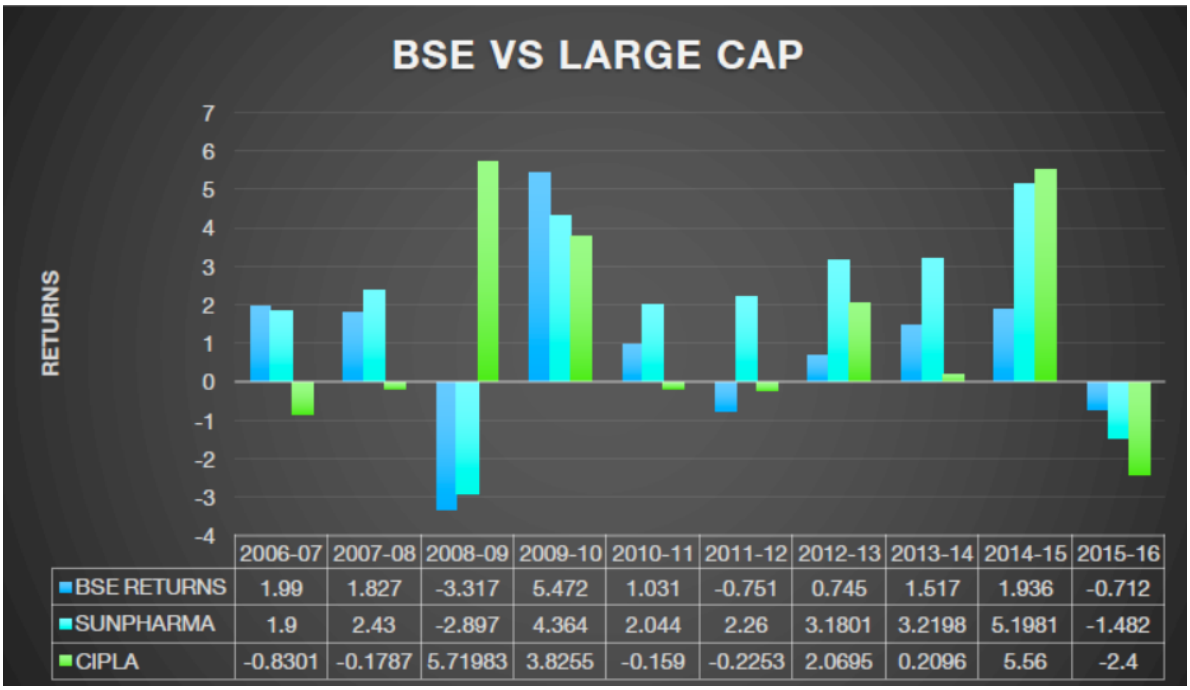
NOVARTIS INDIA CIPLA

(Intercept) $\alpha_{cip\ is}$ statistically not significant at both .001 and .005 significance level with P value coming to .096

(Slope) $\beta_{cip}$is statistically significant at both .001 and .005 significance level with P value coming to .000

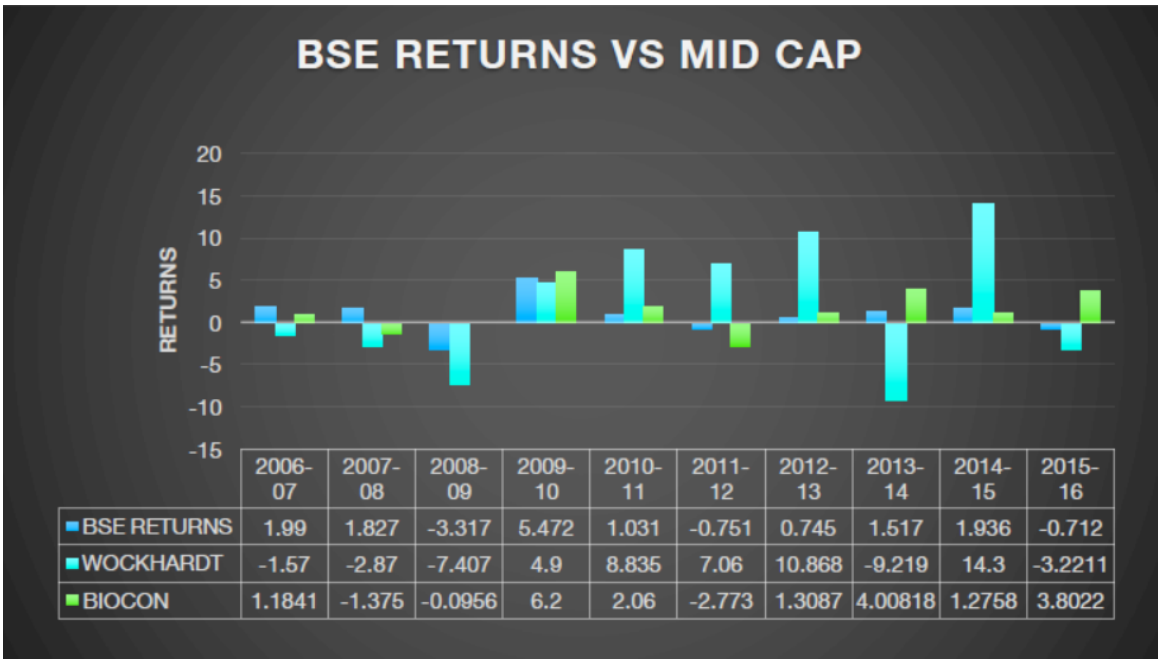
Stock Performance over the past 10 years

Graph 1.



	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
BSE RETURNS	1.99	1.827	-3.317	5.472	1.031	-0.751	0.745	1.517	1.936	-0.712
SUNPHARMA	1.9	2.43	-2.897	4.364	2.044	2.26	3.1801	3.2198	5.1981	-1.482
CIPLA	-0.8301	-0.1787	5.71983	3.8255	-0.159	-0.2253	2.0695	0.2096	5.56	-2.4

Graph 2.



	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
BSE RETURNS	1.99	1.827	-3.317	5.472	1.031	-0.751	0.745	1.517	1.936	-0.712
WOCKHARDT	-1.57	-2.87	-7.407	4.9	8.835	7.06	10.868	-9.219	14.3	-3.2211
BIOCON	1.1841	-1.375	-0.0956	6.2	2.06	-2.773	1.3087	4.00818	1.2758	3.8022

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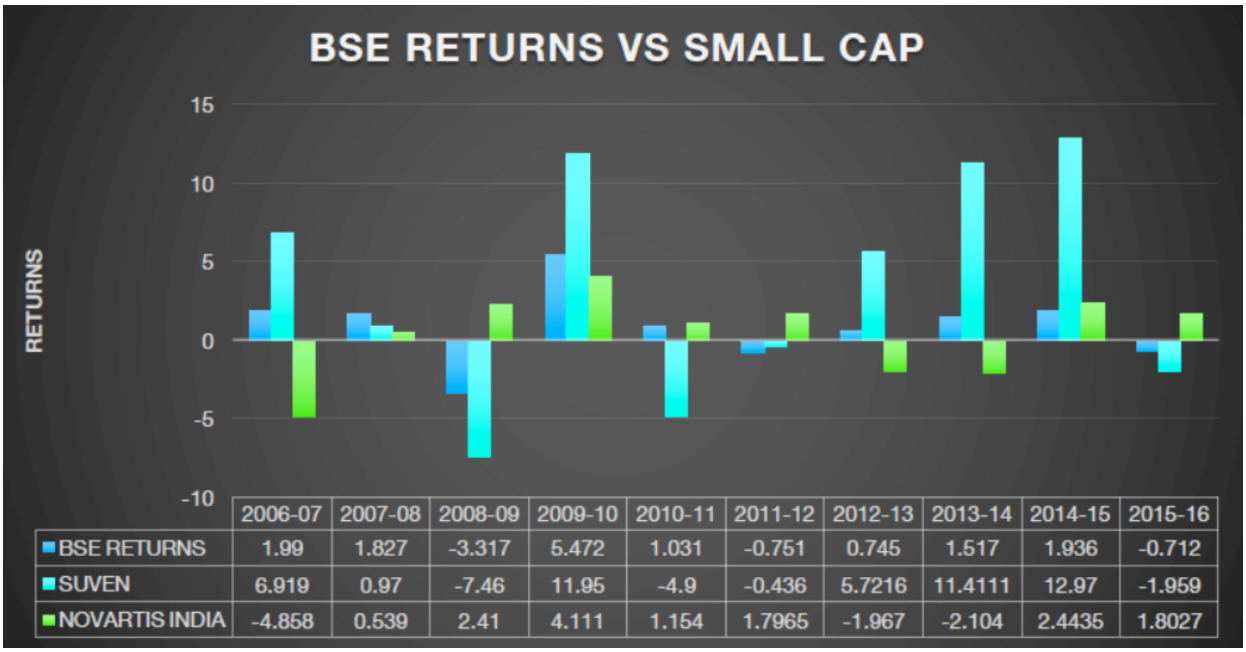
Graph 3.



	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
BSE RETURNS	1.99	1.827	-3.317	5.472	1.031	-0.751	0.745	1.517	1.936	-0.712
SUVEN	6.919	0.97	-7.46	11.95	-4.9	-0.436	5.7216	11.4111	12.97	-1.959
NOVARTIS INDIA	-4.858	0.539	2.41	4.111	1.154	1.7965	-1.967	-2.104	2.4435	1.8027

Table. 1

SNo	Name of the Firm	Beta (Between firm stock and BSE)
1	Wockhardt	0.838
2	Novartis	0.677
3	Suven	0.726
4	Biocon	0.522
5	Cipla	0.362
6	Sunpharma	0.38

CONCLUSION

Over the years firms have hedged greater portion of their foreign exchange exposure and since study is only looking at external hedging practices, as internal hedging practices are not disclosed in financial statement of the firms. Indian pharmaceutical firms in study have steadily increased their offshore business leading to greater foreign exchange exposure and the exchange volatility called for management of this exchange exposure. However the study concludes foreign exchange management seems to have no causal relationship with firms stock performance on BSE.

The present study findings about Pharmaceutical sector shows a clear trend that (Slope) β i.e. i.e. rate of return per unit hedged funds, of the MID cap firms are significant.

The Large Cap stocks returns are not effected by the Hedging foreign exchange exposure however this should view in totality as the present study is considering external hedging techniques only these large conglomerates with their global branches could be managing their exchange risk exposure through internal hedging techniques.

The present study show that the beta is positively correlated i.e. pharma stocks has been moving in tandem with BSE in past 10 years. The pharma stocks are sensitive to economy even though over the years their substantial business transactions has been oversees.

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