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Research Paper

A STUDY ON IMPACT OF CROSS-BORDER FACTORS ON INDIAN STOCK MARKET – WITH SPECIAL REFERENCE TO SILVER PRICE

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ABSTRACT

The study has been undertaken to analyse the impact of silver price on the movement of Indian stock market in terms of return on BSE500 and NSE500 for the study period of 14 years from 2002 to 2016. The researchers used descriptive statistics, correlation and regression analysis as statistical tools. The study found that silver price and Indian stock market have positive relationship each other, but the quantum of relationship is low. It is also found that silver price has significant and positive impact on the movement of Indian stock market during the study period, but the quantum of impact is low, As one of the independent variables among hundreds of variables causing the movement of Indian stock market, silver price has very low explanatory power on Indian stock market.

KEY WORDS: *Silver, stock market, impact, index and return.*

INTRODUCTION

Stock market is one of the essential components of financial system in India. Investors in stock market make money using its fluctuations. Stock market is fluctuating on account of various factors.These factors include macro-economic factors, industry related factors and company related factors. Among them macro-economic variables are playing a pivotal role in affecting stock market in India. After globalisation, international macro-economic variables are playing an important role on the movements of Indian stock market. Commodity market is becoming alternative investment avenues for investors to share market. When the investors feel that condition of stock market is not favourable, they move for commodity market. In commodity market investors like to invest in gold, silver and crude oil and so on. Research in impact of silver price on the movement of Indian stock market is very less compared to the other factors. Fluctuations in stock market can be understood using indices. The big stock exchanges in India Bombay Stock Exchange (BSE) and National Stock Exchange (NSE) are maintaining broad based indices, among them BSE500 by BSE and NSE500 by NSE are very popular. Hence the researchers have selected silver price and its impact on the movement of Indian stock market in terms of return on BSE500 and NSE500.

STATEMENT OF THE PROBLEM

Fluctuation is the primary feature for stock market. Stock market fluctuations are determined by various factors. Macro-economic variables are playing an important role in the fluctuation.Commodity market is an alternative investment avenue for investors. In commodity market, silver is one of the popular commodities considered for making investment by investors. Frequent fluctuations in silver price help the investors to get fair returns. Hence the researchers have studied the impact of silver price on the movement of Indian stock market in terms of return on Indian stock market.

OBJECTIVE

- To study the impact of silver price on the movement of Indian stock market.

METHODOLOGY

The study has taken world silver price as independent variable and Indian stock market in terms of broad based indices BSE500 and NSE500 have been taken as dependent variables. Silver price and indices data were collected for a period of 14 years on daily basis from 1.1.2002 to 31.12.2016. It comes 3740 observations for each index and silver price. The data of BSE500 was collected from official website of BSE (www.bseindia.com) and the data of NSE500 was collected from official website of NSE (www.nseindia.com). The data of silver price was collected

from the financial website of www.in.investment.com. The study has employed descriptive statistics, Kurtosis and Skewness test and Jarque-Bera to test normality. The study also used correlation analysis and regression analysis to know the relationship and impact of silver price on the movement of Indian stock market.

The correlation model used for the study is,

$$r = \frac{1}{N}\sum\left[\frac{(x_i-\bar{x})}{SD_x} \cdot \frac{(y_i-\bar{y})}{SD_y}\right] \quad \ldots\ldots\ldots\ldots (1)$$

Where, N indicates number of observations, x indicates return on silver price and y indicates return on Indian stock market (BSE500/NSE500).

The regression model used for analysing the impact of silver price on the movement of Indian stock market is,

$$IM_i = \alpha + \beta SP_i + \varepsilon_t \quad \ldots\ldots\ldots (2)$$

Where, IM indicates Indian stock market, α represents intercept, SP represents return on silver price and ε_t indicates error term.

Returns on Indian stock market indices are calculated as follows.

$$MR_c = \frac{IM_{ct}-IM_{ct-1}}{IM_{ct}} \times 100 \quad \ldots\ldots\ldots\ldots (3)$$

Where, MR indicates market return, IM indicates Indian stock market, c indicates index (BSE500/NSE500), t represents current year and t-1 represents previous year.

Return on silver price was calculated as follows,

$$SPR_c = \frac{SP_t-SP_{t-1}}{SP_t} \times 100 \quad \ldots\ldots\ldots\ldots (4)$$

Where, SPR indicates return on silver price, SP indicates silver price, t represents current year and t-1 represents previous year.

RESULTS AND DISCUSSION

This part of the paper presents the results and discussion of impact of silver price on the movement of Indian stock market. Table 1 present descriptive statistics of silver price, the indices of BSE 500 and NSE 500.

Table 1: Descriptive Statistics

Statistics	BSE500	NSE500	Sliver Price
Mean	5889.91	3712.44	15.99
Median	6386.89	3970.55	15.07
Maximum	12074.35	9436.95	48.70
Minimum	1002.93	671.55	4.24
Std. Dev.	3069.01	1919.75	9.03
Skewness	0.09	0.13	0.80
Kurtosis	2.08	2.14	3.14
Jarque-Bera	137.54	126.36	401.28
Probability	0.00	0.00	0.00
Observations	3740	3740	3740

Source: Computed from Secondary Data

Table 1 shows that mean value of BSE500, NSE500 and silver price are 5889.91, 3712.44 and $15.99 respectively. The results of standard deviation show that there are moderate level of deviation in the both indices and silver from their respective mean values. The calculated values of skewness of Indian stock market in terms of BSE 500 and NSE 500 are near zero, hence both the indices are normally distributed. Whereas, the calculated value of silver price is 0.80, so they are more possibilities to have positive return on silver price, BSE500 and NSE500 than negative returns. According the results of kurtosis, Silver price is normally distributed, Sincethe calculated kurtosis value is more than 3(3.14). In case of BSE 500 and NSE500, they are Jarque-Bera of silver price, BSE500 and NSE 500 are 137.54, 126.36 and 401.28, they are statistically significant as shown by the results of P-values, so the null hypothesis is rejected and therefore all the variables are normally distributed during the study period. The results of the descriptive statistics show that the selected indices and silver price are normally distributed and moderate level of deviation has been identified from the mean values.

Correlation analysis tests the nature of relationship between silver price and Indian stock market. These results are presented in table 2.

Total 2: Correlation between Silver Price and Indian Stock Market

		BSE500	NSE500	Silver Price
BSE500	Pearson Correlation	1	.851	.136
	Sig. (2-tailed)		.00	.00
	N	3739	3739	3739
NSE500	Pearson Correlation	.851	1	.120
	Sig. (2-tailed)	.00		.00
	N	3739	3739	3739
Silver Price	Pearson Correlation	.136	.120	1
	Sig. (2-tailed)	.00	.00	
	N	3739	3739	3739

Source: Computed from Secondary Data

It is noted from table 2 that BSE 500 and NSE 500 had very high positive and significant correlation with 0.851, it indicates similar movement of both the indices during the study period. The correlation co-efficient between silver and BSE 500 is 0.136 and it is significant at 1 percent level. The correlation co-efficient between silver price and NSE 500 is 0.120, it is also significant at 1 percent level. These results shown that silver price and Indian stock market have significant positive relationship each other, but the quantum of results is low.

In the view of knowing the impact of silver price on the movement of Indian stock market in terms of return on BSE500 and NSE500, regression analysis has been used and the results are given below, Table 3 gives the results of ANOVA between silver price and BSE500 and NSE500.

Table 3: ANOVA of Silver Price and Indian Stock Market

BSE500						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	141.89	1	141.89	70.73	0.00
	Residual	7496.94	3738	2.01		
	Total	7638.83	3739			
NSE500						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	148.19	1	148.19	54.37	0.00
	Residual	10184.91	3738	2.73		
	Total	10333.10	3739			

Source: Computed from Secondary Data Collected.

Table 3 shows that F value of ANOVA under regression analysis stood at 70.73, it is statistically significant at 1 percent level as shown by the result of P value. So, the regression model framed for the study to test the impact of silver price on BSE 500 is fit for the study. The calculated value of F-statistics for the regression model to study the impact of silver price on the movement of NSE 500 it is also statistically significant at 1 percent level. Hence regression model is fit for the study. Table 4 presents the results of regression co-efficient and adjusted R^2 of silver price and BSE500 and NSE500.

Table 4: Regression Results of Silver Price and Indian Stock Market

BSE500						
Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	0.07	0.02		2.99	0.00
	Silver Price	0.09	0.01	0.14	8.41	0.00
	Adj. R^2	0.02				
NSE500						
Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
2	(Constant)	0.07	0.03		2.59	0.01
	Silver Price	0.09	0.01	0.12	7.37	0.00
	Adj. R^2	0.01				

Source: Computed from Secondary Data Collected.

The calculated value of regression co-efficient of silver price and BSE500 is 0.14, it is significant as shown by the results of t-value and P-value at 8.41 and zero respectively, hence the result is statistically significant. So, silver price has significant and positive impact on the movement of Indian stock market in terms of return on BSE500. But the quantum of impact is considered low. Fluctuations in silver price explained the variation in Indian stock market in terms of BSE500 to the extent of 2 percent. So, explanatory capacity of silver price on BSE500 is low. It is also known from table 4 that the calculated value of regression co-efficient of the impact of silver price on NSE500 is 0.12, it is statistically significant at 1 percent level as per the results of t-value and p-value at 8.41 and zero respectively. Hence silver price has significant and positive impact on the movement of Indian stock market in terms of return on NSE500. In other words, change of one point in silver price changes 0.12 point in the index NSE500 positively. It is also know from the table that silver price explains the variation in NSE500 to the extent of 1 percent.

CONCLUSION

The study has been undertaken to analyse the impact of silver price on the movement of Indian stock market in terms of return on BSE500 and NSE500. The study foundthat silver price and Indian stock market both in terms of BSE500 and NSE500 have positive relationship each other, but the quantum of relationship is low. Silver price has significant and positive impact on the movement of Indian stock market during the study period, but the quantum of impact is low, As one of the independent variables among hundreds of variables causing the movement of Indian stock market, silver price has very low explanatory power on Indian stock market both in terms of return on BSE500 and NSE500.

REFERENCE

1. *Amalendu Bhunia & Sanjib Pakira. (2014). Investigating the Impact of Gold Price and Exchange Rates on SENSEX: An Evidence of Indian. European journal of Accounting, finance and business, 2(1), 1-9.*
2. *Banumathy K & Azhagaiah R. (2014). Causal Relationship between Stock Price and Gold Price in India: A Granger Causality Test Approach. International Journal of Research in Management Science and Technology, 2(2), 22-27.*
3. *Mukhopadhyaya. (2011). An Analytical Study of Indian Stock Market Volatility and its Linkages with Crude Oil Price and Gold Price. International Journal of Business Management, Economics and Information Technology, 3 (1), 91-106.*
4. *Srinivasan. (2014). Gold Price, Stock Price and Exchange Rate Nexus: The Case Study of India. The Romanian Economic Journal, 17(52), 77-91.*
5. *www.bseindia.com*
6. *www.nseindia.com*
7. *www.in.investment.com*