Changing Dynamics in the National Stock Exchange: An Empirical Analysis of the week-days effect in Indian Stock Returns

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Abstract: **The Indian stock market is volatile and sensitive to various effects like holiday effect, month effect and day-of-the-week effect. The paper aims at analyzing the day-of-the-week effect in the stock returns of the National Stock Exchange. The paper exhibits descriptive research based on secondary data. The average stock returns of 50 securities at the S&P CNX Nifty are analyzed for each day of the week individually and overall day effect taking the financial year 2013-14. Z-test is used to study the difference between the individual mean day returns on all the trading days making associations as Monday & Tuesday, Monday & Wednesday, Monday & Thursday and so on. The null hypothesis that the mean returns are equal for all trading days was true at 5% level of significance as well as 1% level of significance. The hypothesis was tested making 10 combinations of different pairs across the trading days. The null hypothesis was accepted in all the 10 cases at 5% and 1% significance level. The research offers significant implication for investors and analysts by stating the updated risk and return analysis of the securities listed at the National Stock Exchange. The specific findings are related to S&P CNX Nifty Index securities return. The research may be carried forward for diverse indices and stock exchanges across the country and analytical comparisons may be done.**

Keywords: **Day-of-the-week effect, S&P CNX Nifty Index, Stock Exchange, Stock Returns**

1. INTRODUCTION

There are diverse types of information which may have a direct or indirect impact on the capital market. Various events like dividend announcement, merger and acquisition information, expansion plans, stock split announcement can influence the stock prices. In seventies, specific theories were propounded which envisage on the point that the stock prices represent the relevant information of the market. Fama [1] developed a theory popularly known as Efficient Market Hypothesis which proposes that the financial asset prices behavior is affected by the diverse but associated pieces of information.

There is a specific anomaly that the stock market returns are affected by 'Week-day effect'. According to Fama, along the days of the week the returns of the risky stocks will differ. A market in which week-day effect can be observed in the stock returns may not be considered as efficient. Varied studies relating to week-day effect has been conducted worldwide which includes Dicle & Hassan [2]; Das & Arora [3] and Al-Khazali [4].

In the present scenario, study of the stock market returns is imperative in order to further analyze the stock behaviors of various international stock markets to test their interdependency [5].

The objectives of the study are:

a) To analyse the stock returns along the days of the week specifically at National Stock Exchange.

b) To evaluate whether there is any association between means stock returns and the days of the week.

2. LITERATURE REVIEW

A number of studies have been conducted across the globe to test the efficiency of the capital market and to analyze the impact of various factors on the stock returns including the day of the week effect. According to French [6], different stock returns were observed along the days of the week. The study was conducted in U.S.A. and negative returns exist on Mondays. Optimistic attitude of investors was reflected on Fridays in the study conducted by Dicle & Hassan [2], and Tuesday effect has been noticed in the related markets by Nath & Dalvi [7].

Fajardo & Pereira[8] studied the week day effect along with the Holiday effect on the returns of the financial assets. To test the presence of the effect, they applied regression with dummy variables, multiple regression and ANOVA. Abnormal returns were observed on Mondays, Wednesdays and Fridays whereas no holiday effect was noticed in the study.

3. METHODOLOGY

The paper possesses a descriptive study of the security returns on the National Stock Exchange. The average stock returns of 50 securities at the S&P CNX Nifty were analyzed for each day of the week individually and overall day effect taking the financial year 2013-14. Z-test is used to study the difference between the individual mean day returns on all the trading days making associations as Monday & Tuesday, Monday & Wednesday, Monday & Thursday and so on. The following hypothesis was tested:

H_0: The daily mean returns are equal

H_1: There is a difference in daily mean returns in at least a weekday

The following table represents the descriptive statistics for the stock returns on different week days:

Table 1: Descriptive Statistics

Week Days	Returns	
	Mean	S.D.
Monday	0.005134	0.01224389
Tuesday	0.001105	0.011528774
Wednesday	0.001991	0.011180594
Thursday	0.0013	0.012025
Friday	0.001944	0.012086908

Various permutations were made among the week days from Monday to Friday and combined standard error along with the value of t-statistic was calculated (z-value).

I. Monday:

(A) Monday – Tuesday:

Combined S.E. = .002332156   Z = 1.727586

(B) Monday – Wednesday:

Combined S.E. = .002299325   Z = 1.366923

(C) Monday – Thursday:

Combined S.E. = .002379857   Z = 1.611021

(D) Monday – Friday:

Combined S.E. = .002385881   Z = 1.337033

II. Tuesday:

(A) Tuesday – Wednesday:

Combined S.E. = .002227098   Z = (-) 0.39783

(B) Tuesday – Thursday:

Combined S.E. = .00231015   Z = (-) 0.08441

(C) Tuesday – Friday:

Combined S.E. = .002316355   Z = (-) .36221

III. Wednesday:

(A) Wednesday – Thursday:

Combined S.E. = .002277002   Z = 0.303469

(B) Wednesday – Friday:

Combined S.E. = .002283296   Z = 0.020584

IV. Thursday:

(A) Thursday – Friday:

Combined S.E. = .002364375   Z = (-) .27238

Table 2: Computed z-values

	Monday	Tuesday	Wednesday	Thursday	Friday
Monday	-	-	-	-	-
Tuesday	1.72759	-	-	-	-
Wednesday	1.36692	(-).39783	-	-	-
Thursday	1.61102	(-).08441	0.303469	-	-
Friday	1.33703	(-).36221	0.020584	(-).27238	-

The computed z-values for the above combinations of week-days are less than the table value 1.96 at 5% level of significance. Thus, leading to the acceptance of the null hypothesis that the mean returns are equal along the days of the week.

4. FINDINGS & CONCLUSION

Many of the previous studies reveal association in week-days and mean stock returns specifically Monday and Friday. The results of the study undertaken are not in line with the previous studies. This indicates that there is a change in the behavior of the Indian stock market returns. The days of the week are less likely to have an impact over the mean stock returns. The other events vis a vis dividend announcement, merger and acquisition news and stock split are more likely to have an impact on the investor's psychology which is reflected in the stock market returns. The null hypothesis that the mean returns are equal for all trading days was true at 5% level of significance as well as 1% level of significance. The results may be verified through analysis of variance in the mean returns for the trading days.

This study will help the investors to understand the behavior of the stock returns and invest in right stocks which will contribute towards the growth of the Indian Stock Market.

REFERENCES

[1]   Fama E. F. (1970). Efficient capital markets: a review of theory and empirical work. The Journal of Finance, vol. 25, n. 2, p. 28-30

[2]   Dicle, M. F.; Hassan M. K.(2007). Day of the week effect in Istanbul Stock Exchange. Scientific Journal of Administrative Development, vol. 5, p. 53-83.

[3]   Das, S.; Arora V. (2007). Day of the week effect in NSE Stock Returns: an empirical study. International Management Institute. SSRN Working Papers Series. Available at: http://ssrn.com/abstract=1113332.

[4]   Al-Khazali, Osamah M, (2008). The impact of thin trading on day of the week effect: evidence from the United Arab Emirates. Review of Accounting and Finance, vol. 7, n. 3.

[5]   Carlucci Fabio Vogelaar; Junior Tabajara Pimenta; Lima Fabiano Guas Ti; Gaio Luiz Eduar do. (2014). The Week-Day Effect Anomaly in the Behavior of Stock Index Returns of Brazil, Mexico and the U.S.A. Business and Management Review, vol. 3(09), p. 31-38.

[6]   French, K. R. (1980). Stock returns and the weekend effect. Journal of Financial Economics, vol. 8, p. 55-69.

[7]   Nath G.; Dalvi M. (2004). Day of the week effect and market efficiency: evidence from Indian equity market using high frequency data of National Stock Exchange. SSRN Working Papers Series. Available at: http://ssrn.com/abstract=1092765.

[8]   Fajado, J.; Pereira, R.(2008). Efeitos sazonais no índice Ibovespa. Brazilian Business Review, vol. 5, n. 3, p. 244-254.

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