

NATIONAL CONFERENCE ON MANAGEMENT IN THE AGE OF INNOVATION

25th January 2011

Editor in Chief
Dr. M. Sheik Mohamed

Editors
Prof. G. Sivanesan
Prof. U. Syed Aktharsha
Prof. S. A. Lourthuraj
Dr. A. Selvarani



**JAMAL INSTITUTE OF MANAGEMENT
JAMAL MOHAMED COLLEGE**

(Autonomous)

(Accredited at 'A' Grade by
NAAC - CGPA 3.6 out of 4.0)
Tiruchirappalli, Tamil Nadu, India



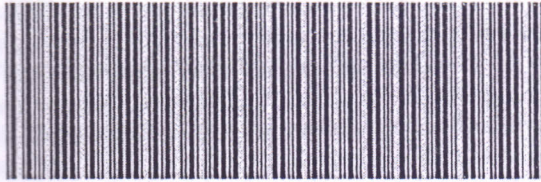
NCM 2011

**PROCEEDINGS OF THE
NATIONAL CONFERENCE ON
MANAGEMENT – IN THE AGE OF INNOVATION**

January 25th, 2011

Organized by,
JAMAL INSTITUTE OF MANAGEMENT
JAMAL MOHAMED COLLEGE (Autonomous)
(Accredited at 'A' Grade by NAAC – CGPA 3.6 out of 4.0)
Tiruchirappalli – 620 020
Tamilnadu, India
Phone : 0431 – 2331935 Fax : 0431 – 2331435
Email : ncmjim@gmail.com / jim_edu1@yahoo.com
Website : www.jmc.edu/mba

ISBN No. : 978-81-909104-0-8



978-81-909104-0-8

Published by :
Arun Vasam Publishers,
C-32, Reliance Apartments,
V.O.C. Road, Cantonment,
Trichy – 620 001.

Printed at :
Hues
3/C-16, 4th Cross, Thillai Nagar West,
Trichy – 620 018.

AN EMPIRICAL ANALYSIS OF SEMI MONTHLY EFFECTS:
EVIDENCE FROM THE INDIAN STOCK MARKET

P. Nageswari,

Research Scholar, Dept. of Commerce and Financial Studies, Bharathidasan University, Tiruchy.

Dr. M. Selvam,

Head, Dept. of Commerce and Financial Studies, Bharathidasan University, Tiruchy.

V. Karpagam

Dept. of Commerce and Financial Studies, Bharathidasan University, Tiruchy.

Introduction

Efficient Market Hypothesis (EMH) is one of the grossly researched areas of financial economics. One of the significant anomalies of EMH is seasonal effect. It is worth nothing that testing for a seasonal effect in monthly returns has been given considerable attention in the financial literature. The existence of seasonal effect negates the weak form of the EMH and it implies market inefficiency. Several research studies and tests investigated the seasonal behavior of monthly stock market returns on all forms of EMH. Some cross sectional differences among stock returns were found to occur with regularity. These regularities in the stock returns have been termed as Anomalies.

Calendar anomalies in stock prices have been of great significance to financial scholars and practitioners. Supports in favour of these anomalies have been considered as well-built evidence against efficient market hypothesis. Indeed, there are abundant literature of this field in support of such calendar anomalies as day of the week, month of the year, turn of the month, holiday, and intraday effects. This study focuses on semi-monthly effects which have been less explored relative to the other anomalies in the literature.

Review of literature

A brief review of select studies has been presented here to identify research gap and understand methodologies employed in the research area of Calendar Anomalies. **Harvinder Kaur (2004)** analyzed the nature and characteristics of stock market volatility in India and the US. The study found that the response to news arrival was asymmetrical, meaning that the impact of good and bad news was not the same. The return and volatility on various weekdays have somewhat changed after the introduction of Rolling Settlement. There was mixed evidence of return and volatility spillover between the US and Indian Markets. **B. S Badla & Kiran Jindal (2006)** investigated one of the anomalies by segmenting pre and post rolling settlement. The result of this study found that the returns of the month effect and semi monthly effect were prevalent in the Indian Stock Market. **Guneratne B Wickremasinghe (2007)** using the sample of 75 companies from Colombo Stock Exchange (CSE), found that there were no statistically significant differences among the returns for different days of the week. The analysis of this study indicates that the returns for the Month of January were not different from that of other months of the year. The study found that daily and monthly patterns of returns cannot be used to devise any method to profit from trading in shares in the Colombo Stock Exchange (CSE) **Harcsh Kumar.V and Malabika Deo(2007)** analyzed the efficiency of Indian Stock Market by using S&P CNX 500 Index. They discovered the presence of Day of the Week Effect in the Indian Stock Market, which affected both the stock returns and volatility, thereby proving the Indian Stock Market to be inefficient. **Khokan Bepari and Abu Taher Mollik (2009)** investigated the existence of seasonality in return series of DSE of Bangladesh. The study confirmed the existence of seasonality in stock returns in DSE but did not support the tax loss selling hypothesis. The study found that there was an April Effect in DSE and invalidated the paradigm of the efficient market hypothesis in DSE. **Anoldi Parikh (2009)** examined the monthly returns of the Nifty Index for the period 1999-2008. This study used the GARCH (Generalized Autoregressive Conditional Heteroskedasticity) Model & Exponential GARCH Model to capture the non normality of the return series such as skewness Clustering. **Selvarani.M and Leena Jenefa (2009)** analyzed the trends in annual returns and daily returns. A set of parametric and non-parametric tests were employed to test the equality of mean returns and standard deviations of the returns. It was found that in the NSE, there was strong evidence of April and January Effect. After the introduction of the Rolling Settlement, Friday had become significant. As far as the Day Effect was concerned, Tuesday Effect was more prevalent than Monday Effect. **Nageswari.P and Selvam.M (2010)** examined the Day-of-the Week Effect on the Indian Stock Market after the introduction of the Compulsory Rolling Settlement. It was found that the Mean Returns were positive for all days of the week, highest being on Friday for all the indices and the Day of the Week Pattern did not appear to exist in the Indian Stock Market. **Ushad Subadar Agathe (2010)** examine the presence of semi-monthly effects on the Mauritian official stock market. The results showed that the mean returns in the second half of the calendar month is significantly lower than the mean returns in the first half of the calendar month for the whole sample period and when individual years are investigated separately, the paper reports an insignificant semi-monthly effect across all years.

The above literature provides an overview of valuation of Monthly Effects in various Stock Markets. An attempt has been made in this study to analyze "An Empirical Analysis of Semi Monthly Effects: Evidence from the Indian Stock Market" by taking the model from the above study.

|

Statement of the Problem

The corporate, firms and Governments generally release good and bad news between First half month and last half Month respectively. As a result, the bad news is reflected in lower the stock prices and good news is reflected in higher the stock prices. When new positive information reaches the market, the prices become bullish due to buying pressure. The active trading strategies, based on the knowledge of market anomalies, would provide benefits to the investors; but the countervailing arbitrage will also exploit the excess return over time. In the process, observed anomalies will eventually disappear and pave the way to make the market more efficient In general, there has been little published work on the Indian Stock Market. The previous on the Indian Stock Market relates to anomalies related to day of the week or month of the year. To the author's knowledge, there has not been any published article on the semi-monthly effect. In this environment, it is necessary to study the Semi- Monthly Effects in Indian Stock Market is significant.

Objectives of the Study

The present study intends to accomplish the following objectives

- > To measure the Semi-Month Effect prevalent in the Indian stock market.
- > To summarize the findings of the Study.

Hypothesis of the Study

The following two hypotheses were tested in this study.

NH01: There is no significant difference between the returns of the first half month and rest of the month.

Methodology of the Study

a) Sample Selection

For the purpose of this study, BSE 500 Index considered as the sample index, it consisting of 500 scrips in its basket. BSE-500 index represents nearly 93% of the total market capitalization on Bombay Stock Exchange Limited. Besides, this index considered to be the best indicators of the performance of the whole economy.

b) Sources of Data

The required information for the present study were the daily closing prices of BSE 500 index were collected from the Prowess, which is a corporate database maintained by CMIE.

c) Period of the Study

The present study covered a period of five-years from 1st April 2005 to 31st March 2010.

Semi-Month Effect

In the case of the semi-monthly effect, the mean return of the first half month has been compared with the average return of the rest of the days. For the purpose of this study, the return of first 15 days (1-14 days of the current month and 30th & 31st days of the preceding month) have been compared with rest of the month.

Tools Used for Analysis

In this study, independence of return series was investigated for Nifty and Sensex Index. The following were calculated,

i) Returns:

$$R_t = \ln(P_t / P_{t-1}) * 100$$

Where,

R_t Return at the time t.

P_t The closing price of the day.

P_{t-1} The closing price of the day t-1.

ii) Mean

$$Mean = \frac{1}{n} \sum_{i=1}^n X_i$$

iii) T -Test

The t-test compares the actual difference between two means in relation to the variation in the data (expressed as the standard deviation of the difference between the means).

$$t = (\bar{X} - \bar{Y}) \sqrt{\frac{n(n-1)}{\sum_{i=1}^n (\hat{X}_i - \hat{Y}_i)^2}}$$

2. Analysis of Semi monthly Effect in BSE 500 index Returns for separate study period.

The year wise analysis of Semi-Month effect in BSE 500 index returns shows in Table-2. The Table clearly indicates that there was low and negative returns recorded for the first half month for all the years except 2005-06. The year 2005-06 mean returns of first half (0.3023) was higher than that of the second half month (1.008). But, the standard deviations of return series were 0.9152 for the first half and 2.12 for the second half month. That is high return associated with low risk. The t statistics clearly indicate that there was significant difference between the returns of the first and the second half month during the year 2005-06. The other years the second half month returns were recorded high return and negative return recorded for the year 2008-09. The standard deviation of the returns of the first half month was recorded lower than the second half. There was no significant difference between the returns of first half of the month and second half month for all years except 2005-06. Hence, the null hypothesis (NHo1), namely, "There is no significant difference between the semi monthly returns," is accepted. This shows that the Semi-Month Effect did not occur in the Indian Stock Market whole and separate study period.

Table -2

Analysis of Semi monthly Effect in BSE 500 index returns separate study period

Year	Mean		Standard Deviation		Observation		T.Statistic	P.Value
	1 st Half	2 nd Half	1 st Half	2 nd Half	1 st Half	2 nd Half		
2005-06	0.3023	0.0991	0.915217	1.008097	138	112	1.6629*	0.0487
2006-07	-0.0218	0.1516	1.658063	1.828543	137	110	-0.7787	0.2184
2007-08	0.0228	0.2288	1.571617	2.393607	138	111	-0.81408	0.208191
2008-09	-0.1142	-0.3271	2.618374	2.465751	133	108	0.644696	0.259871
2009-10	0.2743	0.3333	1.645729	2.056748	133	109	-0.2318	0.408445

Source: Computed from PROWESS

3. Analysis of OLS Regression for BSE 500 index Returns.

The regression results for each year as well as the whole study period are given in Table - 3. For each given year, the coefficients of the First half of the calendar months are low and also negative for the year 2008-10. However, these coefficients are statistically insignificant across all the years. The second half months mean returns are significant for the year 2007-08 and 2009-10 at 5% level. The other years of the second half month mean returns are insignificant and negative mean returns recorded for the year 2008-09. The coefficients of whole study period mean returns for first and second halves are very low and insignificant. Based on the F value it clearly indicate that there was no significant difference between the returns of first and second half for whole study period as well as separate study period.

Table -3

Analysis of OLS Regression for BSE 500 index returns for separate study period

$$R_t = B_1 + B_2 D_{1t} + ut$$

year	B1	B2	F.Statistics
2005-06	0.0222	0.0659	0.3448
p-value	0.5573	0.3880	0.5573
2006-07	-0.0197	0.0306	0.0530
p-value	0.8184	0.8453	0.8184
2007-08	0.0337	0.2351*	0.4643
p-value	0.4971	0.0499	0.4971
2008-09	-0.0966	-0.1648	0.7914
p-value	0.3757	0.5409	0.3757
2009-10	-0.1161	0.3342*	2.0463
p-value	0.1555	0.0496	0.1555
2005-10	0.0223	0.0649	0.3482
p-value	0.5554	0.3965	0.5554

Findings and Suggestions of the Study

The following are the major findings of the study

- ✦ The analysis of the BSE 500 index returns for the whole study period found that the returns of first half of the month was lower than that of the second half. It is suggested to the investors should invest for second half of the calendar month.
- ✦ The standard deviation of the first half month was lower than that of second half calendar month. This shows that there was direct relationship between risk and return in Semi-Monthly Effect.
- ✦ The study found that the difference between return for the first half and the second half of the semi monthly returns were not statistically significant.
- ✦ The return on first half month was lower than the return on rest of the days. Hence, Semi Monthly Effect did not exist in the Indian Stock Market.
- ✦ In the year wise analysis also found out the returns of first half of the month was lower than that of the second half except for the year 2005-06.

- ✦ There were negative returns recorded during the year 2008-09 for both First and second half calendar month.
- ✦ The t statistics clearly indicate that there was significant difference between the returns of the first and the second half month during the year 2005-06.
- ✦ The coefficients of whole study period mean returns for first and second halves are very low and insignificant.
- ✦ The second half months mean returns are significant for the year 2007-08 and 2009-10 at 5% level.
- ✦ Based on the F value it clearly indicate that there was no significant difference between the returns of first and second half for whole study period as well as separate study period.

Conclusion

The empirical results of this paper verify whether or not there exists semi-monthly on the BSE 500 Index returns data for the period April 2005 to March 2010. When individual years are considered separately, the paper reports a significant semi-monthly effect for 2005-06. The other years recorded insignificant semi-monthly effect. The findings of the Study show that the Semi Month Effect does not exist in the Indian Stock Market during the study period. By analyzing these anomalies in Indian Stock Market, it is concluded that most of the cash flows come in to the Bombay Stock Market in the third weeks of the calendar month, which induces stock prices to move upward. Hence, the Indian Stock Market cannot be treated as fully efficient till now. The existence of these anomalies may provide opportunities to formulate profitable trading strategies so as to earn the abnormal return.

Further research must be considered to investigate the effect of the days of the month across individual securities. In this respect, other factors such as risk and size can be added to the model to see the individual effect of the semi-month effect. Also, the research can be extended to other different time periods to support this anomaly.

REFERENCES

- Anokhi Parikh, (2009) 'The December Phenomenon: Month of the year effect in the Indian Stock Market', <http://www.nseindia.com>
- Ariel, R.A., (1987) 'A Monthly Effect in Stock Returns', *Journal of Financial Economic*, Vol. 18, pp. 161-74.
- Ash Narayan Sah (2009) 'Stock Market Seasonality: A study of the Indian Stock market', *Electronic copy available at: <http://ssrn.com/abstract>*
- Bodla.BS and Kiran jindal (2006) 'Monthly Effects in Stock Returns: New Evidence from the Indian Stock Market' *The ICFAI Journal of Applied Finance*, Vol. 12, No.7, pp.5-13.
- Goloka C Nath and Manoj Dalvi (2005) 'Day of the Week Effect and Market Efficiency Evidence from Indian Equity Market using High Frequency Data of NSE' *The ICFAI Journal of Applied Finance*, Vol. 11, No.2, pp.5-25.
- Guneratne B Wickremasinghe (2007) 'Seasonality of Emerging Stock Markets: Evidence from the Colombo Stock Exchange' *The ICFAI Journal of Applied Finance*, Vol. 13, No.6, pp.43-65.
- Hareesh kumar V. and Malabica Deo (2007) 'Efficiency of Indian Stock Market- A case of Day of the Week Effect' *SMART Journal of Business Management Studies*, Vol.3, No.2, July – December 2007, pp.28-35.
- Harvinder kaur (2004) 'Time Varying Volatility in the Indian Stock Market' *Vikalpa*, Vol.29, No.4, October - December
- Nageswar.P and Selvam.M (2010), 'Day-of-the-Week Effect on the Indian Stock Market : An Empirical Analysis(Ed.)2010, Ed. By Sundarapandiyam.P 'Research Methods in Social Sciences' VHNSN College, pp.99-103.
- Ravi Anshuman.V and Ranadev Goswami, (2000) 'Day of the Week Effects on the Bombay Stock Exchange', *The ICFAI Journal of Applied Finance*, Vol. 6, No. 4, pp. 31-46.
- Selvarani.M and Leena Jeneffa (2009) 'Calendar Anomalies in the National Stock Exchange (NSE) indices', *The ICFAI Journal of Applied Finance*, Vol. 15, No.1, pp. 56-67.