Stock market Anomalies: A study of Combined Effect of Seasonality and Size Effect in Indian Stock Market

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Abstract:

With the continuous release and rapid dissemination of new information, maintaining efficient markets are hard to achieve. There are many market anomalies, which occur once and disappear, while others are continuously observed. These anomalies usually relate to either macroeconomic factors, such as competition, lack of market transparency, regulatory actions or behavioral biases committed by economic agents. Anomalies could be fundamental, technical, or calendar related. Anomalies which are associated to a particular time are called seasonal effects. And the anomalies which are related to size of the stocks are called size effects. The present study investigates the seasonality and size effect in Indian stock Market. Along with this, the combined effect of seasonality and size has also studied. The results indicate that when these two anomalies combine, the returns are extremely abnormal.

Key words: Market efficiency; efficient market hypothesis; tax-loss selling hypothesis; information hypothesis; size effect; seasonality.

JEL Classification: G12; G15; G31

Introduction:

In financial world, there are some unusual or strange occurrences happens which denies the existence of present theories. These occurrences are known as anomalies. These anomalies refer to situations where a stock or group of stocks perform contrary to the notions of efficient markets where stock prices fully reflect all available information at any given point in time .and there is no chance to beat the market on the basis of any information. With the continuous release and rapid dissemination of volatile information, maintaining efficient markets are very hard to achieve. There are many market anomalies, which occur once and disappear, while others are continuously observed. These anomalies usually relate to either structural factors, such as unfair competition, lack of market transparency, regulatory actions or behavioral biases by economic agents. Anomalies could be fundamental, technical, or calendar related. Anomalies which are associated to a particular time are called seasonal effects. Popular seasonal effects include the day of the week effect, month of the year effect, the festive effect,and the January effect. Many calendar effects have disappeared or reversed since they were discovered. The main characteristics of the month of the year effect is an increase in buying securities before the month at a lower price and selling the same in the following month to generate abnormal profit from the price differences. One of the anomaly which is associated with fundamentals of the stocksis size effect. The main characteristic of size effect is an abnormal return in investing in the small cap companies. The investors, who use to buy small cap stock and hold, earn higher return with time compare to the investors who invest in mid cap and large cap.

The present study investigates the seasonality and size effect in Indian stock Market. Along with this, the combined effect of seasonality and size has also studied. The seasonal effect is easily detectable in the market indices or large portfolios of shares rather than in individual shares (Officer, 1975; Boudreaux, 1995). This study analyses returns of the Top 100 large cap stock(Large cap PortfolioTop 100 mid cap stocks(Mid Cap Portfolio) and Top 100 small cap stocks (Small Cap Portfolio) from the period starting from Jan'1996 to Dec'2013. The study confirms the abnormal returns in the month of April except than large cap portfolio. These results confine the tax-loss selling Hypothesis. In number of countries, December is the year end month that is why they have abnormal profits in January. But in India, our financial year ends in March, hence abnormal returns in April.

Review of the Prior Research:

There are number of studies which are available on seasonality and size.

Seasonality:

Many researchers have reported the calendar effect in developed as well as developing capital markets. The investors plan their investments according to seasonal effects as they are expecting higher returns on their investments. Indian Stock Market is believed to be dominated by FIIs [Tripathi, (2008)] and the net investment by FIIs in India had been positive every year except for 1998-99, 2007-08 and 2008-09. This class of investor is expected to exhibit some seasonal effects in their investment strategies. Past studies have mainly focused on the nature, cause, determinants, and impact of Foreign Institutional Investment (FII) flow in India [(Chakrabarti, (2001); Mukherjee, et al (2002); Gordon and Gupta (2003); Bose and Coondoo (2004); Badhani (2006)]. In these studies the capital market return are the main stimulating force for the FIIs along with a few macroeconomic variables. During the recent world economic crisis and recovery period, the Indian stock market return is the only driving force for FIIs into India [(Anuradha and Rajendran(2012)]. There are studies on the calendar anomaly in the stock market price movements, especially the week end effect and day of the week effect [(Chaudhary(1991); Poshakwale (1996); Goswami and Angshman (2000); Choudhry (2000); Bhattacharya et al. (2003), Nath and Dalvi (2004); Badhani and Kavidayal (2005)] on monthly effect which claim unusual returns in a particular month in stock returns [Moosa (2007); Mihir Dash etal (2011)], and a few calendar effect in retail investment, wherein there is an unusual investment flow in certain months [Lilian Ng and Qinghai Wang (2004); Julia Henker and Debapriya J. Paul (2011)]. The day-of-the-week effect had been widely researched across the countries and asset-markets. The month of the year effect which was researched globally but to a lesser extent also provided evidences for unusual significant return in a particular month of a year. January effect was found in many developed and developing stock markets in earlier years which were later replaced by one another month effect for some reason (Moosa (2007); Ling T. He and Shao C. He (2011)] and these effects were both positive as well as negative in some markets [Mihir Dash et al (2011); Rima Turk Ariss etal (2012) and Mishra & Sisira Kanti (2012)]. According to January effect or Tax selling hypothesis contends that investorsell their loss making stock in the last week of December and repurchase them in the first week of January to show the losses and this act consequently reduce their taxable income. January effect in emerging stock markets viz. China, Brazil, Shanghai, India, Argentina and Turkey was examined by Sevinc Guler (2013) and results of the study conclude that January effect was present in the Chinese stock market, Argentina stock market and in the stock market of Turkey. The another type of effect is "day of the week effect" on stock returns. Day of the week effect on Indian stock market was examined by P. Nageswari et.al.(2011) and results are in favors of Efficient Market Hypothesis indicating that week effect pattern was absent in the Indian Stock market. Whereas, sectoral analysis of "day of the week effect" can provide an insight into the

differences in seasonality effect across different sectors. The very first attempt to study the same was made in the Indian context by P. Srilath et.al.(2012) and results of the study provides that different sectors have experienced "day of the week effect" in different ways. Banking stocks were influenced by Monday and Friday effect; FMCG sector stocks were influenced by only Fridayeffect; IT sector stocks are influenced by Thursday effect and Pharma Sector stocks were influenced by Monday effect, Wednesday effect and Friday effect. Impact of weekend effect was also analyzed by Potharla Srikanth and Raghu Ram(2013) and results of the study discloses the fact that stocks of Banking sector, FMCG sector and Pharmaceutical sector experienced weekend effect but the same was not true in the case of IT sector for the studied period.

Size Effect:

The Size effect is first reported by Banz(1981). He concluded that there exists a negative relation between the firm size and stock return. Later, in 1981, Reinganum(1981) confirmed the results of Banz (1981).Ross (1981) suggested that the small firm's stock are less than the large firm stock, therefore the variability of return is less causing more actual returns than the estimated. Cook and Rozeff (1984) find size effect in 9 countries. Keim (1983) reported that 50% of total size effect over the period of 1963-79 was due to abnormally large returns on the small stock in January. Chan, Chen and Hsieh (1985) concluded that small firms are more sensitive to changes in economic conditions than large firms and therefore carry higher risk. Berk (1995) suggested that market value of firm and common stock return both are negatively related, as suggested by Banz (1981), Berk (1996) reported that when some non - market based measured such as book value of total assets, book value of un-depreciated property, plant and equipment (PPE), annual sales value (sales) and number of employees are used for size, than size effect disappear. Using risk adjusted Treynor and Sharpe Ratios, Rathinasamy and Mantripragda (1996) examined size effect and January effect and concluded that the reward for extra risk is more in small firm. Patel (2000) reported the presence of a strong size effect in 22 emerging markets including India over the period 1988 to 1998. Xu (2002) reported a strong size effect in China using market capitalization as the size measure. Mohanty (2001) reported the presence of a strong size effect in Indian stock market over the period 1991- 2000 using market capitalization as the measure of firm size. In a survey of mutual fund managers, investment analysts and stock brokers, Sehgal (2002) reported that in India, 60% of the respondents believed that stocks of small companies provide higher returns than stocks of bigger companies. Sehgal et al (2003) used three different measures of size viz. enterprise value, total assets and market capitalization and documented the presence of a strong size effect and a weak and conditional value effect for the Indian stock market over the period July 1989 to March 1999. Contrary to the findings of Berk (1996) and Muneesh and Sehgal (2003) reported the presence of a strong size effect in India even with the use of some non - market based size measures i.e. total assets and net sales.

The present study follows the study done by Keim (1983) and determines the combined effect of size and seasonality in Indian stock market. This study is unique in itself as this kind of study is not previously done in Indian stock market.

Methodology and Data:

In prior studies, most of the researcher follows the methodology similar to Keim (1983); Kato and Schallheim (1985) Jaffe and Westerfield(1989). But these methodologies are criticized as they fail to handle the issue of normality and autocorrelation. In this study the following methodology as suggested by Pandey(2002):

The seasonal effect is easily detectable in the market indices or large portfolios of shares rather than in individual shares (Officer, 1975; Boudreaux, 1995). This study analyses returns of the Top 100 large cap stock(Large cap Portfolio), Top 100 mid cap stocks(Mid Cap Portfolio) and Top 100 small cap stocks (Small Cap Portfolio) from the period starting from Jan'1996 to Dec'2013.We measure stock return as the continuously compounded dailypercentage change in the share price is as shown below:

r_t= (ln P_t - lnP_{t-1})X100 …….(1)

where rt is the return in the period t, Pt is the monthly closing share price for the period t and ln natural logarithm.

Thenafter, the average return of the portfolio is calculated with the help of following formula:

$$R_{Lt} = \frac{\sum_{i=1}^{100} r_i}{100} \quad R_{Mt} = \frac{\sum_{i=1}^{100} r_i}{100} \quad R_{St} = \frac{\sum_{i=1}^{100} r_i}{100} \quad \text{.....(2)}$$

Where, R_{Lt}, R_{Mt} and R_{St} are the return of large cap, mid cap and small cap portfolios in the period t respectively.

The results of the OLS regressions will be spurious if the dependent variable is non-stationary. We first determine whether the Sensex return series is stationary. One simple way of determining whether a series is stationary is to examine the sample autocorrelation function (ACF) and the partial autocorrelation function (PACF). We also use a formal test of stationarity, that is, the Augmented Dickey-Fuller (ADF) test. The ADF test is a common method for determining unit roots. It consists of regressing the first difference of the series against a constant, the series lagged one period, the differenced series at n lag lengths and a time trend (Pindyck and Rubinfeld, 1998, p. 509):

$$\Delta r_t = \alpha + \sum_{i=1}^{n} \beta_i \Delta r_{t-i} + \lambda t + \rho r_{t-1} + \varepsilon_t \qquad \text{…….. (3)}$$

If the coefficient of ρ is significantly different from zero, then the hypothesis that r is non-stationary is rejected. The ADF test can be carried out with and without the constant and/or trend. One has also to choose the appropriate lag length. If a series is found to be non-stationary in level, one should difference the series until the stationarity is established.

We will next conduct a test for seasonality in stock returns. We use a month-of-the-year dummy variable for testing monthly seasonality. The dummy variable takes a value of unity for a given month and a value of zero for all other months. We specify an intercept term along with dummy variables for all months except one. The omitted month, that is January, is our benchmark month. Thus, the coefficient of each dummy variable measures the incremental effect of that month relative to the benchmark month of January. The existence of seasonal effect will be confirmed when the coefficient of at least one dummy variable is statistically significant. Thus, similar to earlier studies, our initial model to test the monthly seasonality is as follows:

$$y_t = \alpha_1 + \alpha_2 D_{Feb} + \alpha_3 D_{Mar} + \alpha_4 D_{Apr} + \alpha_5 D_{May} + \alpha_6 D_{Jun} + \alpha_7 D_{Jul} + \alpha_8 D_{Aug} + \alpha_9 D_{Sep} + \alpha_{10} D_{Oct} + \alpha_{11} D_{Nov} + \alpha_{12} D_{Dec} + \varepsilon_t \quad \ldots\ldots\ldots\ldots\ldots\ldots (4)$$

The intercept term α_1 indicates mean return for the month of January and coefficients $\alpha_2 \ldots \alpha_{12}$ represent the average differences in return between January and each month. These coefficients should be equal to zero if the return for each month is the same and if there is no seasonal effect. εt is the white noise error term.

Our data include the closing share prices of Top 100 Large cap (as large cap portfolio), mid cap(mid cap portfolio) and small cap (portfolio) companies traded in National Stock Exchange. In our analysis, we use monthly returns, calculated by Equation (1), for the period from Jan 1996 to Dec 2013. Then after average return of the portfolios is calculated for different months with the help of equation 2.

Findings and Analysis:

We first present descriptive statistics for the entire period and each month in Table 1, 2 and 3 for large cap portfolio, mid cap portfolio and small cap portfolios respectively.

Large Cap Portfolio Returns:

There are wide variations of returns across months. Returns for the months of April, July, September and October are higher than returns of other months. Highest average return occurs in the month of September. Returns in the months of January, February May, June and October are negative. Stock returns show negative skewness for all the months except May and December. They also show leptokurtic (kurtosis >3) distribution for four months. That means flatter tails than the normal distribution.

Table 1.1: Descriptive Statistics, the Large Cap Portfolio Returns: Jan 1996-Dec 2013

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Minimum	-9.11	-5.28	-5.32	-5.04	-13.1	-4.88	-6.02	-4.48	-4.2	-13	-6.89	-4.58
Maximum	6.72	5.38	5.64	4.81	16.33	6.11	5.43	3.56	5	6.76	5.73	5.05
Mean	-0.11	-0.06	0.1	0.15	-0.06	-0.01	0.13	-0.01	0.26	-0.05	0.07	0.15
S.D.	1.81	1.45	1.62	1.38	2.28	1.64	1.56	1.35	1.36	2.09	1.6	1.33
Variance	3.29	2.09	2.63	1.91	5.21	2.69	2.44	1.82	1.86	4.38	2.56	1.77
Skewness	-0.5	-0.28	-0.45	-0.27	0.7	-0.01	-0.21	-0.48	-0.2	-1.11	-0.1	0.15
Kurtosis	4.45	1.61	1.89	1.49	17.83	1.19	2.01	1.12	1.92	8.6	3.2	1.97
Obs.	205	196	208	190	213	215	219	213	206	201	201	206

Midcap Portfolio Returns:

There are wide variations of returns across the months. Returns for the months of April and December are higher than returns of other months.Highest average return occurs in the month of April.Returns in the months of January, February May, June and October are negative.Stock returns show negative skewness for all the months.They also show leptokurtic (kurtosis >3) distribution for five months. That means flatter tails than the normal distribution.

Table 1.2: Descriptive Statistics, the Mid Cap Portfolio Returns: Jan 1996-Dec 2013

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Minimum	-12.7	-5.71	-7.91	-5.14	-12.9	-8.47	-4.92	-4.2	-4.8	-8.46	-4.72	-4.49
Maximum	7.24	5.17	5.97	4.14	11.46	6.63	5.93	3.34	3.04	5.61	4.49	4.47
Mean	-0.19	-0.11	0.05	0.26	-0.04	-0.11	0.13	0.06	0.22	-0.12	0.13	0.24
S.D.	2.01	1.48	1.61	1.24	2.18	1.77	1.37	1.27	1.15	1.75	1.36	1.26
Variance	4.05	2.2	2.59	1.54	4.73	3.14	1.87	1.6	1.33	3.06	1.84	1.59
Skewness	-1.43	-0.49	-0.72	-0.69	-0.73	-0.67	-0.25	-0.61	-1.2	-1.04	-0.21	-0.51
Kurtosis	9.08	2.09	4.06	2.46	11.34	4.37	2.58	0.97	3.55	4.75	0.92	1.77
Obs.	205	196	208	190	213	215	219	213	206	201	201	206

Small Cap Portfolio Returns:

There are wide variations of returns across the months. Returns for the months of April and December are higher than returns of other months. Highest average return occurs in the month of April. Returns in the months of January, February March, April, June and October are negative. Stock returns show negative skewness for all the months. They also show leptokurtic (kurtosis >3) distribution for five months. That means flatter tails than the normal distribution.

Table 1.3: Descriptive Statistics, the Small Cap Portfolio Returns: Jan 1996-Dec 2013

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Minimum	-12.9	-5.05	-6.89	-5.07	-11.8	-9.28	-4.9	-4.05	-6.5	-9.95	-4.26	-4.65
Maximum	7.59	4.88	5.81	3.78	8.89	5.14	4.32	3.2	3.52	7.74	4.65	3.73
Mean	-0.17	-0.1	-0.01	0.35	0.05	-0.12	0.11	0.17	0.12	-0.16	0.03	0.26
S.D.	2.1	1.36	1.65	1.33	2.07	1.77	1.34	1.33	1.22	1.96	1.4	1.27
Variance	4.43	1.85	2.71	1.76	4.3	3.13	1.81	1.77	1.49	3.84	1.96	1.61
Skewness	-1.57	-0.29	-0.85	-0.76	-0.72	-1.16	-0.45	-0.53	-1.6	-1.5	-0.48	-0.65
Kurtosis	9.19	1.84	3.35	2.37	8.6	4.55	1.69	0.29	6.18	7.13	1.17	1.54
Obs	205	195	208	191	213	215	219	213	206	201	200	207

In figure 2.1-2.3 and 3.1-3.3 we show the ACF and PACF of the series of large cap, mid cap and small cap returns. These figures show that the auto correlation function falls off quickly as the number of lags increase. This is a typical behavior of a stationary series. The PACF in Fig. 3.1-3.3 does not show any large spikes. In Tables 2.1-2.3 we present result of the ADF tests. Each of the test scores is well below the critical value at 5 percent level. The results show consistency with different lag structures and to the presence of the intercept or intercept and trend. Thus, the ADF tests also prove that the return series of Large cap, Mid cap and small cap is stationary.

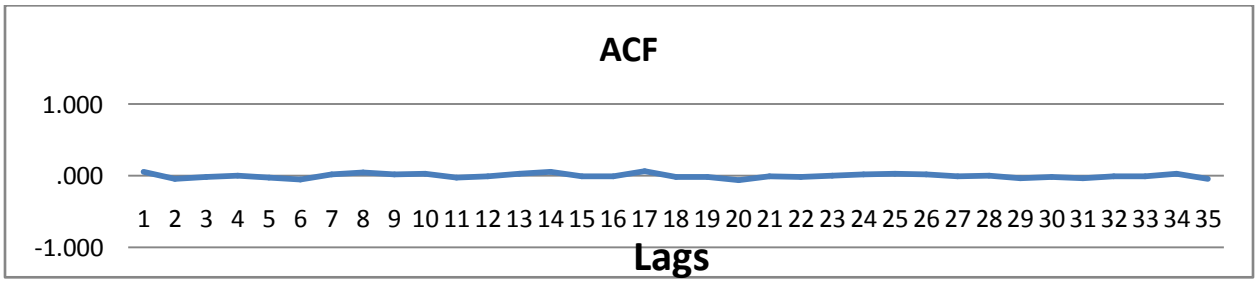

Figure:2.1 Autocorrelation Function of Large Cap Portfolio Return

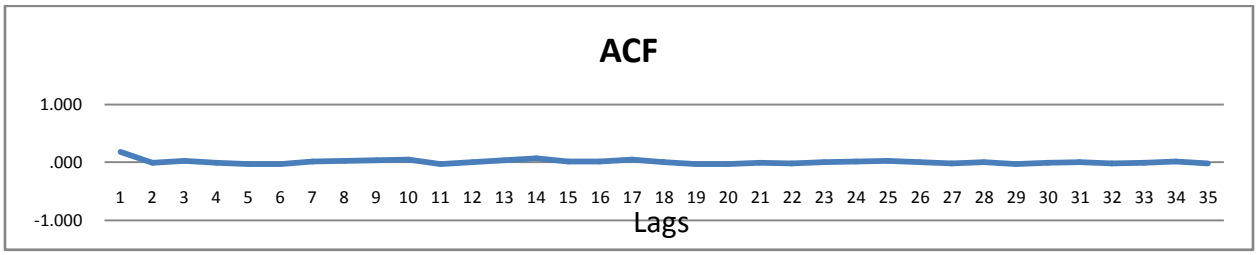

Figure:2.2 Autocorrelation Function of Mid Cap Portfolio Return

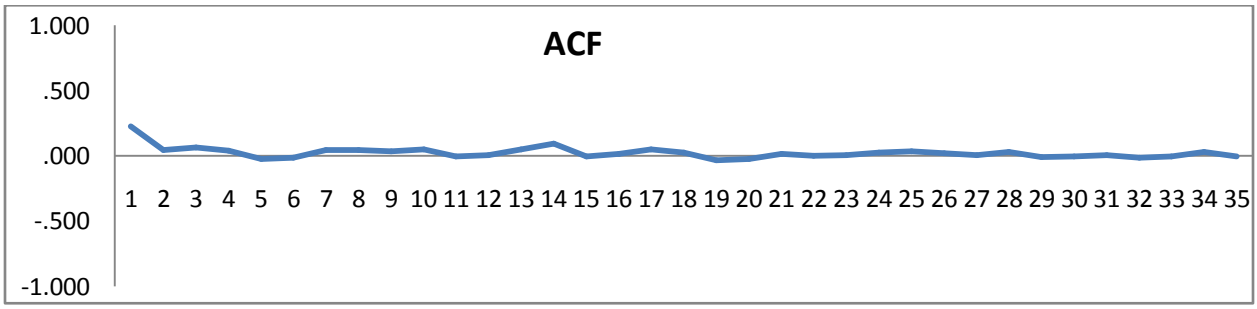

Figure:2.3 Autocorrelation Function of Small Cap Portfolio Return

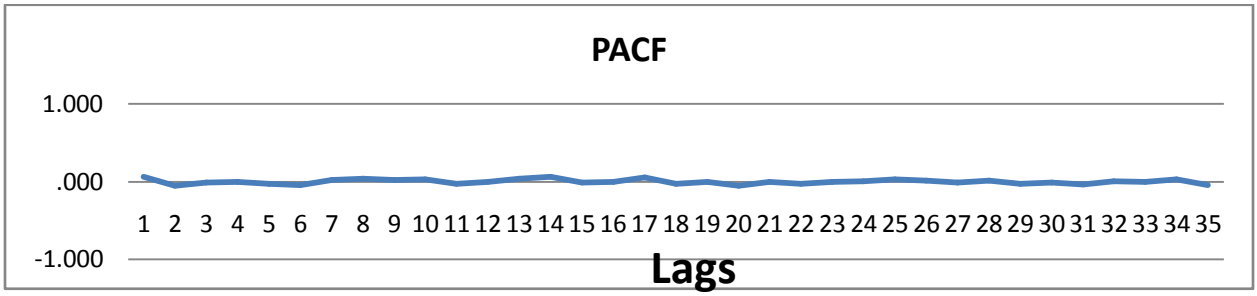

Figure:3.1 Partial Autocorrelation Function of Large Cap Portfolio Return

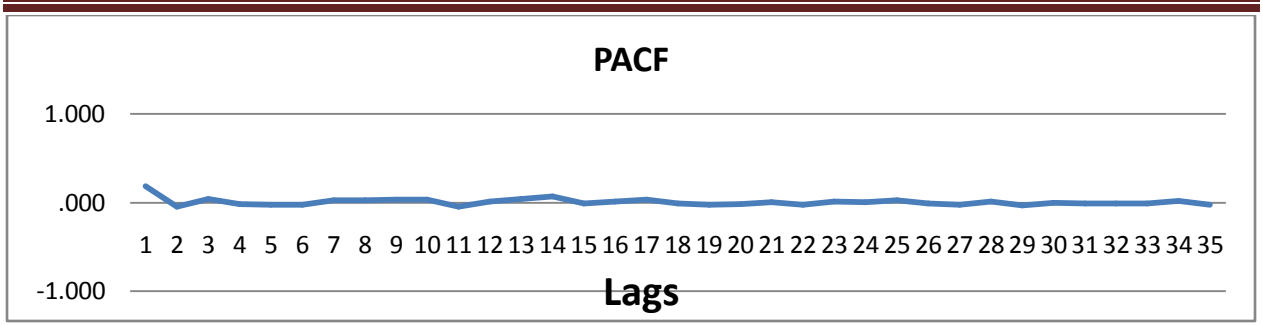

Figure:3.2 Partial Autocorrelation Function of Mid Cap Portfolio Return

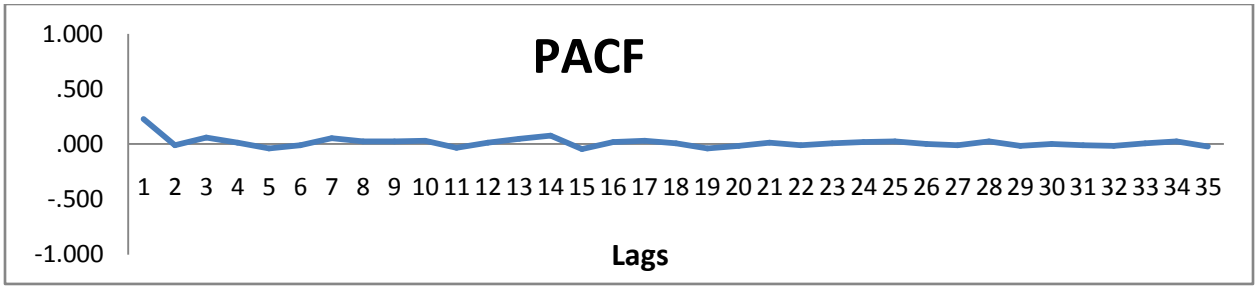

Figure:3.3 Partial Autocorrelation Function of Small Cap Portfolio Return

ADF: With Constant			ADF: With Constant and Trend		
5 Lags	-2.9862		5 Lags	-3.7503	
	(-2.8844)*			(-3.4458)*	
10 Lags	-3.8885		10 Lags	-3.9132	
	(-3.8853)*			(-3.4472)*	

Table:2.1 Augmented Dicky Fuller (ADF) Test for Large Cap Portfolio Return

ADF: With Constant			ADF: With Constant and Trend		
5 Lags	-3.261		5 Lags	-3.5401	
	(-2.8844)*			(-3.4458)*	
10 Lags	-3.9605		10 Lags	-3.5241	
	(-3.8853)*			(-3.4472)*	

Table:2.2 Augmented Dicky Fuller (ADF) Test for Mid Cap Portfolio Return

ADF: With Constant			ADF: With Constant and Trend		
5 Lags	-3.5842		5 Lags	-3.5703	
	(-2.8844)*			(-3.4458)*	
10 Lags	-3.9805		10 Lags	-3.7352	
	(-3.8853)*			(-3.4472)*	

Table:2.3 Augmented Dicky Fuller (ADF) Test for Small Cap Portfolio Return

* indicates the critical value of t-statistics. A value greater than t-statistics indicates non stationarity.

We estimate Equation (4), which includes the month-of-the-year dummy variables on the right-hand side of the equation for all the three portfolios. . The results are presented in Table 3.1, 3.2 and 3.3. All the coefficients are significant as the p-value is greater than 0.05. R^2 of 0.334, 0.469 and 0.398 for large cap, mid cap and small cap portfolio and the significant F-statisticsuggestgood model fit. Durbin-Watson statistic is near to 2 which indicatethat there is no serial correlation in the residuals.

	Coefficient	**Std. Error**	**t-Statistic**	**Sig.**
(Constant)	-0.107	0.115	-0.925	0.355
D Feb	0.044	0.165	0.266	0.79
D March	0.202	0.163	1.245	0.213
D April	0.261	0.166	1.567	0.117
D May	0.044	0.162	0.27	0.787
D June	0.097	0.161	0.604	0.546
D July	0.232	0.161	1.446	0.148
D August	0.098	0.162	0.609	0.543
D Sept	0.362	0.163	2.221	0.026
D Oct	0.058	0.164	0.357	0.721
D Nov	0.18	0.164	1.1	0.272
D Dec	0.261	0.163	1.604	0.109
R Square	0.334		F- Statistics	0.947
Durbin-Watson	1.889		Probability	0.049

Table:3.1 The Regression Model to Test the Stationarity: Large cap

	Coefficient	Std. Error	t-Statistic	Sig.
(Constant)	-0.192	0.11	-1.745	0.081
D Feb	0.081	0.157	0.513	0.608
D March	0.244	0.155	1.58	0.114
D April	0.448	0.158	2.831	0.005
D May	0.153	0.154	0.997	0.319
D June	0.083	0.153	0.539	0.59
D July	0.325	0.153	2.125	0.034
D August	0.256	0.154	1.666	0.096
D Sept	0.408	0.155	2.633	0.009
D Oct	0.073	0.156	0.468	0.64
D Nov	0.326	0.156	2.091	0.037
D Dec	0.43	0.155	2.775	0.006
R- Square	0.469		F Statistics	1.983
Durbin-Watson	1.941		Probability	0.026

Table:3.2 The Regression Model to Test the Stationarity: Mid cap

	Coefficient	Std. Error	t- Statistics	Sig.
(Constant)	-0.169	0.112	-1.508	0.132
D Feb	0.064	0.16	0.401	0.688
D March	0.155	0.157	0.986	0.324
D April	0.516	0.161	3.206	0.001
D May	0.214	0.157	1.367	0.172
D June	0.05	0.156	0.318	0.75
D July	0.276	0.156	1.775	0.076
D August	0.334	0.157	2.131	0.033
D Sept	0.291	0.158	1.841	0.066
D Oct	0.011	0.159	0.067	0.946
D Nov	0.202	0.159	1.267	0.205
D Dec	0.427	0.158	2.709	0.007
R- Square	0.398		F Statistics	2.148
Durbin-Watson	1.865		Probability	0.015

Table:3.3 The Regression Model to Test the Stationarity: Small cap

Like the prior studies, since there are few months in which the coefficient is significant, this study also proves the seasonality effect. But, it denies the existence of January Effect in the Indian Stock Market.The study concludes that the higher returns are obtained mostly either in the month of April (Small cap and mid cap index) or in the month of September.This could result from the fact that the

Indian tax year ends in March in contrast with the US tax system where the tax year ends in December, so the individual investors, who are income tax sensitive and who disproportionately hold stocks, sell stocks for tax reasons at year end and reinvest in the first month of the year.

Size Effect and Seasonality:

Further the combined effect of size and seasonality can be obtained from examination of the **month-to-month magnitude of the size effect** measured by the **difference in average returns** between the smallest market value portfolio and the largest market value portfolio. To test the impact of seasonality and size we compare the incremental returns of large cap and small cap portfolio with the help of t-test. Table 4 shows that size effect is significant in the month of April and August. However, in the month of April it is more significant and is i.e. the return for large cap is significantly lower than the return of small cap portfolio in the month of April. Figure 4 also shows the abnormalities are higherin the month of April for all the three portfolios. The incremental returns are higher for small portfolio in all the month. But in the month of April, it is highest.

	t- Statistics	**Sig.**
January	0.0691	0.06
February	0.1078	0.218
March	-0.0738	0.067
April	0.1977	0.045*
May	0.109	0.172
June	-0.1002	0.75
July	-0.0178	0.076
August	0.173387	0.033*
September	-0.13039	0.066
October	-0.09248	0.946
November	-0.02866	0.745
December	0.104	0.9

*significant at 5%

Table:4 Difference in average returns between the small cap portfolio and the large Cap market portfolio

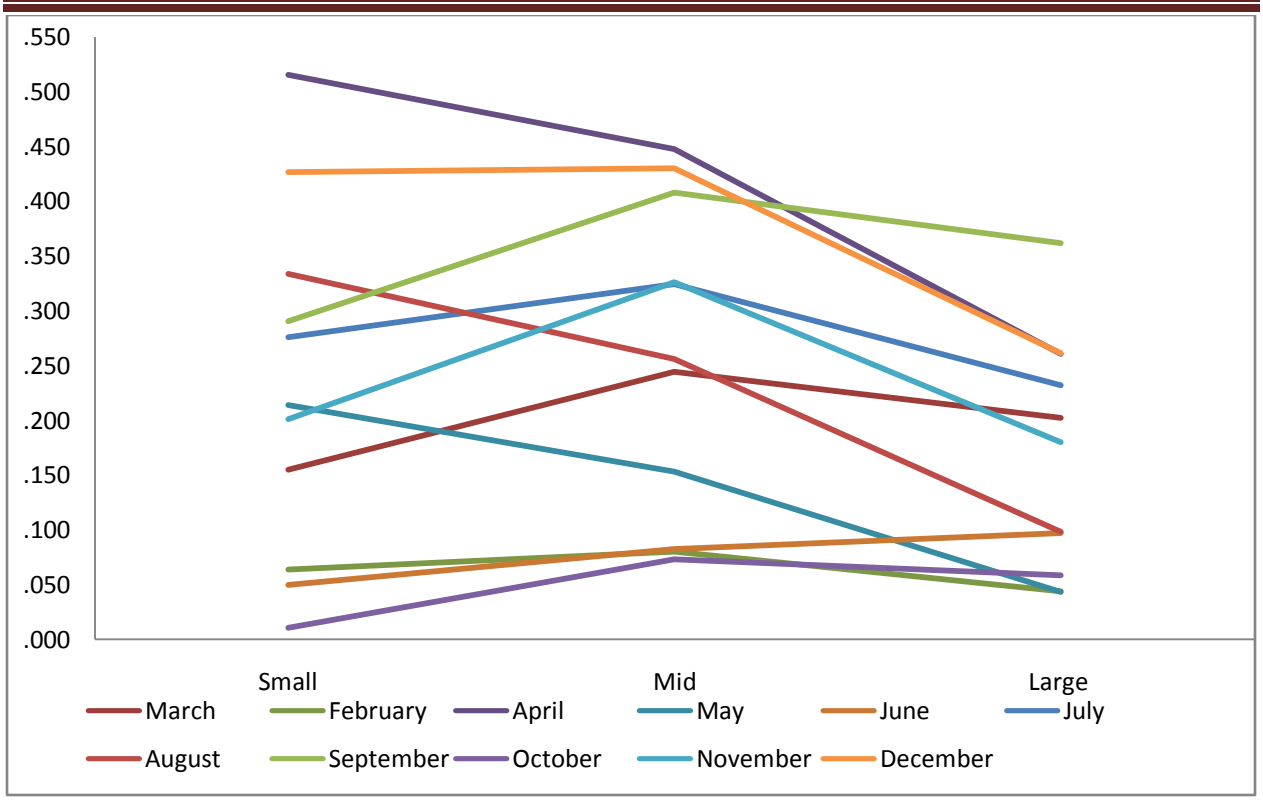

Figure:4 Difference in average returns between the small cap portfolio and the large Cap market portfolio

Conclusion:

Like the prior studies, since there are few months in which the coefficient is significant, this study also proves the seasonality effect. But, it denies the existence of January Effect in the Indian Stock Market.The study concludes that the higher returns are obtained mostly either in the month of April (Small cap and mid cap index) or in the month of September. This could result from the fact that the Indian tax year ends in March in contrast with the US tax system where the tax year ends in December, so the individual investors, who are income tax sensitive and who disproportionately hold stocks, sell stocks for tax reasons at year end and reinvest in the first month of the year. Hence, seasonality exists in Indian stock market but January effect do not exist. We can call it "April Effect".And when this seasonal anomaly and size anomaly combines, stocks earn a significantly abnormal return for the same i.e. in the month of April, small stocks earn significantly greater returns than the large stocks.

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