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RESEARCH ARTICLE

A SURVEY OF DAY OF THE MONTH EFFECTS IN WORLD STOCK MARKETS

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ABSTRACT

A curious seasonal anomaly found in finance is the turn of the month effect, where the daily mean return of stock market at the end of a month and beginning of a month is significantly higher than the average daily return of all the days of a month. There have been evidences that certain months in a year deliver significantly higher returns. Similar anomalies are found for week days also, where some days in a week deliver above average returns. Seasonal anomalies for researchers have been a subject of great interest and lot of literature is available worldwide. This paper examines presence of day of the month effect on ten stock markets, geographically located in different corners of the world. This paper is not intended to study only the anomalies and inefficiencies present in various world markets, it is intended to highlight the profit potential available to individual investors and professional fund managers. The date wise daily returns are calculated in percentage terms to make the phenomena easy to understand. The statistical significance of daily returns is tested with Z-Statistics, in total 310 hypotheses are tested in the research. We found day of the month effect present in all the stock markets tested across the world, some days in a month historically are found to have delivered significantly higher returns.

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INTRODUCTION

Seasonal fluctuations in production and sales are a well-known fact in business. Seasonality refers to usual and recurring variation in a time series which occurs occasionally over a span of less than a year. The main origin of seasonal fluctuations in time series data is the alteration in climate for businesses. The example is here can be the sale of refrigerators during hot summer and the demand for umbrellas during monsoons. Even traditions can have economic impact as the example here can be gold sales during marriage season. Similarly, stock markets exhibit methodical patterns at certain times of a month, week and day. The existence of seasonality in stock returns, however violates the very basics of efficient market hypotheses. The efficient market hypotheses relate to how swiftly and precisely the market reacts to new information. New data are continuously entering the market place via economic reports, company announcements, political statements, or public surveys. If the market is information efficient then security prices adjust rapidly and accurately to new information. According to this hypothesis, security prices reflect fully all the information that is available in the market.

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Since all the information is already incorporated in prices, a trader is not able to make any excess returns. Thus, EMH proposes that it is not possible to outperform the market through market timing or stock selection.

A curious anomaly in the monthly pattern of stock market returns was first documented by Ariel (1987). He examined the US stock returns and found that the mean return for stock is positive only for days immediately before and during the first half of calendar months, and indistinguishable from zero for days during the second half of the month. Ariel calls this empirical finding the 'monthly effect,' which implies that returns at the beginning of the month are greater than the returns after the midpoint of the month. Following Ariel's study, Jaffe and Westerfield (1989) examined the stock market returns in the UK, Japan, Canada, and Australia and found a significant US type of monthly effect only in Australia. They, however, observed a weak evidence of the anomaly consistent with Ariel's work in the UK and Canada and, in fact, a reverse monthly effect for Japan. The reverse monthly effect is also reported by Barone's (1990) study, who investigated the Italian market and found that stock prices fall in the first part of the calendar month and then rise in the second. Another seasonality related to this monthly pattern is 'the turn-of-the-month effect' which implies that average daily return at the turn of the month

is significantly positive and higher than the daily return during the remaining days of the month. Lakonishok and Smidt (1988) showed that stock returns in the US are significantly higher on turn-of-the-month trading days than on other days. Extending the analysis to nine other countries, Cadsby and Ratner (1992) documented the same findings for Australia, Canada, Switzerland, UK, and West Germany but not for France, Hong Kong, Italy, and Japan. In a recent study, Hensel and Ziemba (1996) investigated the daily return patterns in US stock market by taking a very long series from 1928 to 1993 and found that the mean returns in the stock market were significantly positive at the turn and in the first half of the month and significantly negative in the rest of the month. In the studies mentioned above, the day of the month anomaly has been reported only for developed capital markets mostly in the west. One's belief regarding this empirical regularity would be strengthened if it is known to also occur in yet another capital market separated from the West by distance, institutional arrangements, and culture. Hence, it is of interest to search whether such anomalies exist for a developing market such as the one in India which belongs to the east. In this paper, we investigate the daily return patterns in a month in the Indian stock market. Aggarwal and Tandon (1994) and Mills and Coutts (1995) pointed out that mean stock returns were unusually high on Fridays and low on Mondays.

LITERATURE REVIEW

Watchel (1942) reported seasonality in stock returns for the first time. Rozeff and Kinney (1976) documented the January effect in New York Exchange stocks for the period 1904 to 1974. They found that average return for the month of January was higher than other months implying pattern in stock returns. Keim (1983) along with seasonality also studied size effects in stock returns. He found that returns of small firms were significantly higher than large firms in January month and attributed this finding to tax-loss-selling and information hypothesis. A similar conclusion was found by Reinganum (1983), however, he was of the view that the entire seasonality in stock returns cannot be explained by tax-loss-selling hypothesis. Gultekin and Gultekin (1983) examined the presence of stock market seasonality in sixteen industrial countries. Their evidence shows strong seasonality in the stock market due to January returns, which is exceptionally large in fifteen of sixteen countries. Brown *et al*. (1983) studied the Australian stock market seasonality and found the evidence of December-January and July-August seasonal effects, with the latter due to a June-July tax year. However, Raj and Thurston (1994) found that the January and April effects are not statistically significant in the NZ stock market. Mill and Coutts (1995) studied calendar effect in FTSE 100, Mid 250 and 350 indices for the period 1986 and 1992. They found calendar effect in FTSE 100. Ramcharan (1997), however, didn't find seasonal effect in stock returns of Jamaica. Choudhary (2001) reported January effect on the UK and US returns but not in German returns. Fountas and Segredakis (2002) studied 18 markets and reported seasonal patterns in returns. The reasons for the January effect in stock returns in most of the developed countries such as US, and UK attributed to the tax loss selling hypothesis, settlement procedures, and insider trading information. Another effect is window dressing which is related to institutional trading. To avoid reporting to many losers in their portfolios at the end of year, institutional investors tend to sell losers in Decembers. They buy these stocks after the reporting date in January to hold their desired portfolio structure again.

Researchers have also reported half- month effect in literature. Various studies have reported that daily stock returns in first half of month are relatively higher than last half of the month. Ariel (1987) conducted a study using US market indices from 1963 to 1981 to show this effect. Aggarwal and Tandon (1994) found in their study such effect in other international markets. Ziemba (1991) found that returns were consistently higher on first and last four days of the month. The holiday effect refers to higher returns around holidays, mainly in the pre-holiday period as compared to returns of the normal trading days. Lakonishok and Smidt (1988) studied Dow Jones Industrial Average and reported that half of the positive returns occur during the 10 preholiday trading days in each year. Ariel (1990) showed using US stock market that more than one-third positive returns each year registered in the 8 trading days prior to a market-closed holiday. Similar conclusion were brought by Cadsby and Ratner (1992) which documented significant pre-holiday effects for a number of stock markets. However, he didn't find such effect in the European stock markets. Husain (1998) studied Ramadhan effect in Pakistan stock market.

He found significant decline in stock returns volatility in this month although the mean return indicates no significant change. There are also evidences of day of the week effect in stock market returns. The Monday effect was identified as early as the 1920s. Kelly (1930) based on three years data of the US market found Monday to be the worse day to buy stocks. Hirsch (1968) reported negative returns in his study. Cross (1973) found the mean returns of the S&P 500 for the period 1953 and 1970 on Friday was higher than mean return on Monday. Gibbons and Hess (1981) also studied the day of the week effect in US stock returns of S&P 500 and CRSP indices using a sample from 1962 to 1978. Gibbons and Hess reported negative returns on Monday and higher returns on Friday. Smirlock and Starks (1986) reported similar results. Jaffe and Westerfield (1989) studied day of the week effect on four international stock markets viz. U.K., Japan, Canada and Australia. They found that lowest returns occurred on Monday in the UK and Canada. However, in Japanese and Australian market, they found lowest return occurred on Tuesday. Brooks and Persand (2001) studied the five southeast Asian stock markets namely Taiwan, South Korea, The Philippines, Malaysia and Thailand. The sample period was from 1989 to 1996. They found that neither South Korea nor the Philippines has significant calendar effects. However, Malaysia and Thailand showed significant positive return on Monday and significant negative return on Tuesday. Ajayi & all (2004) examined eleven major stock market indices on Eastern Europe using data from 1990 to 2002. They found negative return on Monday in six stock markets and positive return on Monday in rest of them. Karmakar & Chakraborty (2000) found presence of turn of the month effect in Indian Markets. Pandey (2002) reported the existence of seasonal effect in monthly stock returns of BSE Sensex in India and confirmed the January

effect. Bodla and Jindal (2006) studied Indian and US market and found evidence of seasonality. Kumari and Mahendra (2006) studied the day of the week effect using data from 1979 to 1998 on BSE and NSE. They reported negative returns on Tuesday in the Indian stock market. Moreover, they found returns on Monday were higher compared to the returns of other days in BSE and NSE. Choudhary and Choudhary (2008) studied 20 stock markets of the world using parametric as well as non-parametric tests. He reported that out of twenty, eighteen markets showed significant positive return on various day other than Monday. Sah (2009) found the presence of weekly and monthly seasonality in Nifty and Nifty Junior returns. Desai *et al.* (2011) found that there has been statically significant high returns during certain days of a month in Nifty.

This study aims to understand

1. Weather seasonal anomalies in form of abnormal day of the month return are present in world Stock markets and is it statistically significant OR NOT?
2. The exact pattern of such anomalies if found to be present.
3. How it can be beneficial to individual and institutional investors worldwide.

MATERIALS AND METHODS

A. Sample Data & Time Period

The data used in this study consist of the daily closing prices of eleven stock market indices summarized in Table I.

Table 1. Sample Data & Time Period

S.No.	Indices(Country)	Data Period
1	Sensex(India)	1st July, 1997 – 8th October, 2012
2	S&P500(United States)	3rd January, 1950 – 8th October, 2012
3	Merval(Argentina)	8th October, 1996 – 5th October, 2012
4	Bovespa(Brazil)	27th April 1993 – 8th October, 2012
5	SCI(China)	4th January, 2000 – 28th September, 2012
6	Nikkei(Japan)	4th January, 1984 – 5th October, 2012
7	Straits Times(Singapore)	28th December, 1987 – 8th October, 2012
8	CAC(France)	1st March, 1990 – 8th October, 2012
9	DAX(Germany)	26th November, 1990 – 8th October, 2012
10	FTSE(England)	2nd April, 1994 – 8th October, 2012

B.Research Methodology

The daily returns or change in the closing value of market indices is calculated as follows.

If, the closing value of a day is denoted as C_t and the previous trading session closing value is denoted as C_{t-1} then….

$$\text{Change } C = (C_t - C_{t-1})100/C_{t-1} \quad \ldots\ldots\ldots\ldots\ldots\ldots [1]$$

The date wise average return is calculated as follows,

If the change for every date of the month is denoted as C_1, C_2, C_3,……C_{31} and average return for each date is denoted as A_1, A_2, A_3,.....A_{31} then the average return for the date for the test period……

$$\text{Average date return } A_1 = \sum A_1/N \quad \ldots\ldots\ldots\ldots\ldots\ldots [2]$$

Where, N = number of observations for each date

The average return A of indices listed for the study is calculated for the period mentioned in Table.

The statistical significance of the returns is tested with Z Test as follows

$$z = \frac{\bar{X} - \mu}{\sigma/\sqrt{n}} \quad \ldots\ldots\ldots\ldots\ldots\ldots [3]$$

The Z score for various days of the month are tested at 80%, 90%, 95% and 99% level of confidence.

The Hypothesis is tested on 10 indices and for 31 the days of a month. For all the hypothesis tested in this study the Average date return or sample mean $\bar{X}$ is compared with population mean μ, which is average daily return of the indices for the entire study period. In total 310 hypotheses are tested. For each date the hypothesis assumed are as follows.

$$H_0\ \bar{X} = \mu \quad \ldots\ldots\ldots\ldots\ldots\ldots [4]$$

$$H_1\ \bar{X} \neq \mu \quad \ldots\ldots\ldots\ldots\ldots\ldots [5]$$

The descriptive statistics of World Markets returns are reported in Table 1 which shows the mean return of World Markets on daily basis for the test period. As World Markets returns are not normally distributed indicative from coefficient of skewness and kurtosis, we will use formal tests of normality to find weather World Markets returns are normally distributed or not? To test the date wise equality of returns we will be using Kruskal-Wallis test.

Table 1. Descriptive Statistics of Stock Market Indices (%)

Summery Statistics	Bovepsa	CAC	DAX	FTSE	Merval
Mean	0.1922	0.0212	0.04	0.029	0.06
Median	0.1599	0.0293	0.0757	0.0549	0.0969
Standard Deviation	2.48	1.44	1.47	1.13	2.19
Maximum	33.419	11.1761	11.4019	9.83866	17.4879
Minimum	-15.809	-9.0368	-9.3993	-12.215	-13.726
Skewness	0.9298	0.11799	0.05067	-0.2078	-0.0361
Kurtosis	13.022	4.66199	4.8074	7.85258	5.5098
Variance	6.1305	2.0674	2.1637	1.2678	4.7801

Summery Statistics	NIKKEI	S & P 500	Sensex	Shanghai	Straits Times
Mean	0.009	0.033	0.05	0.025	0.03
Median	0.033	0.046	0.107	0	0.022
Standard Deviation	1.45	0.98	1.69	1.60	1.29
Maximum	14.15	11.58	17.33	9.856	13.73
Minimum	-14.9	-20.4	-11.1	-8.84	-10.0
Skewness	-0.05	-0.65	0.100	0.059	0.073
Kurtosis	8.239	21.27	5.901	4.601	8.632
Variance	2.113105	0.952847	2.854972	2.56108	1.655297

C. Results Table – II

Symbol	Confidence Interval	Z – Table Value
*	80%	1.282
#	90%	1.645
$	95%	1.96
@	99%	2.58

D. Findings Table – II

S.No.	Market	Statistically Significant Days
1	Sensex	10
2	S&P 500	12
3	Mervel	9
4	Bovespa	5
5	Shanghai Composite	11
6	NIKKEI	10
7	Straits Times	8
8	CAC	12
9	DAX	8
10	FTSE	8

All the indices studied in the survey have abnormal returns on certain days of a month which are statistically significant. Even mature stock market like the United States has abnormal returns which are significant. The summery of observed significant returns for days of a month is given in Table II.

Table 2. Results of Kruskal-Wallis Test of Stock Market Indices

Series	Kruskal-Wallis Test Statistics	P Value
Bovepsa Return Series	14219.1	0
CAC Return Series	13230.1	0
DAX Return Series	13639.3	0
FTSE Return Series	10852.2	0
Merval Return Series	11627	0
NIKKEI Return Series	10852.4	0
S & P 500 Return Series	5068.51	0
Sensex Return Series	11107.9	0
Shanghai Return Series	9443.83	0
Straits Times Return Series	12452.9	0

Table 3. Z Statistics of Average Date Wise Return

Date	Market Indices					
	Sensex		S & P 500		Merval	
	% Return	Z Score	% Return	Z Score	% Return	Z Score
1	*0.3513*	1.82#	*0.1818*	3.33@	*0.473*	1.98$
2	*0.4225*	2.33$	*0.1472*	2.64@	*0.556*	2.57$
3	0.2155	1.09	*0.11*	1.78#	0.2208	0.86
4	*0.3868*	2.24$	-0.0046	-0.84	0.0656	0.03
5	-0.1147	-1.13	*0.1212*	2.04$	0.1062	0.24
6	0.1814	0.84	0.066	0.77	0.0942	0.17
7	0.1422	0.59	*-0.0446*	-1.81#	*-0.3144*	-1.98$
8	-0.039	-0.62	0.000057	-0.78	-0.0322	-0.46
9	0.1953	0.95	*-0.0768*	-2.59@	-0.1738	-1.17
10	0.0174	-0.24	0.0102	-0.54	*-0.5987*	-3.46@
11	*-0.2814*	-2.22$	0.054	0.49	*-0.1973*	-1.35*
12	*-0.2938*	-2.31$	0.0408	0.18	*-0.4787*	-2.83@
13	0.0409	-0.08	0.0508	0.42	0.2984	1.25
14	0.1745	0.78	0.0125	-0.49	-0.058	-0.63
15	*-0.1991*	-1.61*	0.041	0.19	0.216	0.82
16	0.1704	0.79	*0.1103*	1.81#	0.2096	0.77
17	*-0.2407*	-1.96$	0.0498	0.39	-0.0719	-0.70
18	-0.0337	-0.57	0.0462	0.31	*0.4463*	2.01$
19	-0.0745	-0.84	*-0.136*	-3.96@	*0.3037*	1.28*
20	-0.0652	-0.78	*-0.027*	-1.41*	0.0621	0.01
21	0.0038	-0.33	0.0238	-0.22	0.1291	0.35
22	*-0.3181*	-2.48$	*-0.0729*	-2.45$	-0.0148	-0.39
23	-0.0652	-0.80	-0.0086	-0.97	0.1347	0.40
24	0.1007	0.32	0.0136	-0.45	0.0257	-0.18
25	*-0.2218*	-1.74#	*-0.0249*	-1.29*	*0.3326*	1.31*
26	0.1496	0.60	0.0333	0.00	0.2025	0.75
27	-0.0016	-0.37	0.0194	-0.32	-0.1442	-1.08
28	0.0947	0.27	0.0773	1.03	0.0228	-0.20
29	0.2052	0.98	0.0814	1.09	0.0279	-0.17
30	0.1239	0.45	0.0467	0.30	0.141	0.41
31	*0.4599*	2.06$	*0.1443*	1.97$	-0.0676	-0.49

Date	Market Indices					
	Bovespa		Shanghai Composite		NIKKEI	
	% Return	Z Score	% Return	Z Score	% Return	Z Score
1	*0.9274*	3.47@	0.1462	0.76	0.1278	1.23
2	0.4194	1.12	0.1775	0.96	*0.1613*	1.58*
3	0.3341	0.73	*0.3664*	2.14$	-0.0812	-0.85
4	0.1254	-0.34	0.2216	1.23	0.0788	0.72
5	0.21	0.09	-0.1609	-1.18	0.0113	0.02
6	0.2874	0.49	0.1314	0.68	0.0343	0.27
7	*-0.0913*	-1.39*	0.0511	0.17	-0.0349	-0.47
8	0.2676	0.39	0.0981	0.47	-0.1071	-1.24
9	0.2969	0.52	0.1569	0.86	-0.0999	-1.17
10	0.1958	0.02	0.1192	0.61	-0.1119	-1.27
11	0.1367	-0.28	-0.1569	-1.19	*-0.1391*	-1.52*
12	0.1166	-0.37	0.1071	0.53	-0.0463	-0.59
13	0.2252	0.17	0.0019	-0.15	-0.1012	-1.19
14	*-0.0724*	-1.37*	0.1796	1.01	*0.2158*	2.22$
15	0.0916	-0.49	0.0811	0.36	*0.135*	1.29*
16	*0.5004*	1.59*	*-0.1872*	-1.37*	-0.0902	-1.06
17	*0.4568*	1.38*	*-0.3196*	-2.24$	0.0109	0.02
18	-0.0133	-1.06	*-0.2156*	-1.56*	-0.0441	-0.57
19	0.0507	-0.73	*0.3227*	1.93#	-0.0374	-0.50
20	0.0074	-0.94	*0.2661*	1.58*	*-0.1206*	-1.36*
21	0.0329	-0.79	0.0757	0.33	*0.1342*	1.30*
22	0.1764	-0.08	*-0.2583*	-1.82#	*-0.1536*	-1.74#
23	0.1271	-0.34	0.0981	0.47	-0.1082	-1.12
24	0.0879	-0.52	*0.261*	1.52*	-0.063	-0.76
25	0.3993	0.98	*-0.2481*	-1.77#	*0.1317*	1.31*
26	0.2683	0.39	-0.0358	-0.39	*0.1311*	1.31*
27	0.0202	-0.89	*-0.2074*	-1.51*	0.081	0.78
28	0.3458	0.80	0.0541	0.19	0.1142	1.13
29	0.1917	0.00	0.062	0.23	*0.1485*	1.38*
30	0.252	0.29	-0.0127	-0.23	0.077	0.69
31	0.2999	0.40	*-0.2869*	-1.57*	0.0274	0.14

Date	Market Indices					
	Straits Times		CAC		DAX	
	% Return	Z Score	% Return	Z Score	% Return	Z Score
1	0.0826	0.55	0.0822	0.52	0.174	1.13
2	*0.2524*	2.43$	*0.2157*	1.87#	*0.2206*	1.67#
3	0.0852	0.62	0.1252	1.01	0.0844	0.41
4	*0.176*	1.62*	-0.0147	-0.34	0.1559	1.08
5	0.1141	0.95	-0.07	-0.87	0.0219	-0.17
6	-0.0221	-0.57	0.0231	0.02	0.0403	0.00
7	0.0135	-0.18	-0.0112	-0.31	-0.0245	-0.60
8	*-0.1016*	-1.46*	-0.1117	-1.26	-0.0179	-0.54
9	-0.0551	-0.91	-0.0021	-0.22	0.014	-0.24
10	-0.0646	-1.03	*-0.1948*	-2.07$	*-0.0997*	-1.29*
11	0.0028	-0.30	-0.0665	-0.83	0.0491	0.08
12	*-0.1026*	-1.48*	*-0.1153*	-1.30*	*-0.1243*	-1.51*
13	-0.0117	-0.46	*0.1558*	1.28*	0.1435	0.95
14	0.1433	1.27	0.0711	0.47	0.0728	0.30
15	-0.0561	-0.95	-0.0281	-0.47	0.0297	-0.10
16	0.0272	-0.03	0.0906	0.66	*0.2342*	1.79#
17	-0.0568	-0.95	0.044	0.22	0.0319	-0.08
18	-0.0439	-0.81	-0.1055	-1.22	0.0025	-0.35
19	0.0965	0.74	-0.0745	-0.92	-0.0925	-1.23
20	0.002	-0.31	*-0.1932*	-2.06$	*-0.1196*	-1.47*
21	0.0007	-0.32	-0.0534	-0.71	-0.0491	-0.82
22	*-0.144*	-1.94#	*-0.2055*	-2.18$	*-0.2107*	-2.33$
23	0.0146	-0.17	*-0.1191*	-1.35*	*-0.1145*	-1.43*
24	*-0.1111*	-1.55*	*0.1814*	1.53*	0.0189	-0.19
25	0.0116	-0.19	*0.2745*	2.33$	0.1235	0.74
26	0.0832	0.59	0.1486	1.20	0.17	1.16
27	*0.1734*	1.60*	*0.17*	1.44*	0.1767	1.27

28	0.0363	0.08	0.061	0.38	0.0913	0.47
29	0.1273	1.06	*0.2241*	1.89[#]	0.1715	1.18
30	*0.1914*	1.73[#]	0.0467	0.24	-0.0421	-0.73
31	0.1113	0.69	*0.2744*	1.81[#]	*0.2595*	1.43[*]

Date	Market Indices	
	FTSE	
	% Return	Z Score
1	*0.2388*	2.73[@]
2	*0.2151*	2.51[$]
3	0.0842	0.75
4	0.057	0.38
5	0.0185	-0.15
6	0.0825	0.73
7	0.0118	-0.24
8	-0.0107	-0.55
9	-0.02	-0.68
10	*-0.1199*	-2.06[$]
11	-0.0177	-0.65
12	-0.0569	-1.19
13	0.1214	1.26
14	0.014	-0.21
15	0.0338	0.06
16	0.0444	0.21
17	0.1037	1.02
18	0.012	-0.24
19	*-0.0994*	-1.78[#]
20	*-0.1294*	-2.19$
21	-0.0065	-0.49
22	*-0.1452*	-2.40[$]
23	-0.0624	-1.27
24	0.0102	-0.26
25	0.0205	-0.12
26	0.0844	0.72
27	0.12	1.21
28	0.0334	0.05
29	*0.1629*	1.74[#]
30	0.0518	0.29
31	*0.1994*	1.72[#]

It is observed in the study that days at the beginning of a month and end of a month have positive bias. This confirms presence of turn of the month effect observed by previous researchers on the topic. Only Shanghai Composite index has negative bias during end of a month. Also the middle of a month is observed to have negative bias or neutral bias in the study. The S&P 500 and CAC have the highest number of anomaly if number of days with statistically abnormal returns is considered in a month.

Conclusion

From the survey we confirm the presence of day of the month anomaly in all the indices tested for the research. Some days of a month have statistically significant positive bias where some days have negative bias. This papers confirms that all the markets tested in the research are not efficient and there exists opportunities for superior returns. For all the markets except Japan, the first week of the new month is found to be highly positive, Positive bias at the end and beginning of the month confirms presence of "Turn of the Month" effect.

REFERENCES

Agrawal, Anup, and Kishore Tandon 1994. "Anomalies or Illusions? Evidence from Stock Markets in Eighteen Countries," *Journal of International Money and Finance*, Vol. 13 pp. 83 – 106.

Ajayi, R. A. – Mehdian, S. – Perry, M. J.: "The Day-of-the-Week Effect in Stock Returns". *Emerging Markets Finance and Trade*, 2004, vol. 40, no. 4, 53-62.

Ariel, Robert A. 1987. "A Monthly Effect in Stock Returns," *Journal of FinancialAnalysts Journal*, November–December, pp. 67–69.

Ariel, Robert. A. 1990. "High Stock Returns before Holidays: Existence and Evidence on Possible Causes," *Journal of Finance*, Vol. 45, pp. 1611–25.

Barone, E. 1990. "The Italian Stock Market -Efficiency and Calendar Anomalies," *Journal ofBanking and Finance*, Vol 14, pp 483-510.

Bodla, B.S. and Kiran Jindal 2006. "Seasonal Anomalies in Stock Returns: Evidencefrom India and the US, Decision, Vol. 33. No.1 pp. 46-55.

Brooks, Chris, and Gita Persand 2001. "Seasonality in Southeast Asian Stock Markets:Some New Evidence on Day-of-the-Week Effects," Applied Economic Letters, Vol. 8, pp. 155–58.

Brown, P., D.B. Keim, A.W. Keleidon, and T.A. Marsh 1983. "Stock Return Seasonalities and the Tax-Loss-Selling-Hypothesis: Analysis of the Arguments and Australian Evidence," *Journal of Financial Economics*, Vol. 12, pp.105-127.

Cadsby, C B and Ratner, M. 1992. "Turn-of-Month and Pre-holiday Effects on Stock Returns: Some International Evidence," *Journal of Banking andFinance*, Vol 16, pp 497-509.

Case of Stock Market Returns, "*Journal of Financial Economics*, Vol. 3, pp. 376-402.

Choudhary, K and Sakshi Choudhary 2008. "Day-of-the-Week Effect: Further Empirical Evidence", *Asia-Pacific Business Review*, Vol. 4, no.3, pp.67-74.

Choudhary, T. 2001. "Month of the Year Effect and Januray Effect in pre-WWI stock returns: Evidence from a non-linear GARCH", *International Journal of Finance & Economics*, 6, pp.1-11.

Cross, Frank 1973. "The Behavior of Stock Prices on Fridays and Mondays," *FinancialEconomics,* Vol. 18, pp. 161–74.

Desai J., Joshi N., Choksi A., Dave A., "A Study of Seasonality Based Trading Strategy for Indian Stocks and Indices", Capital Markets: *Market Efficiency eJournal*, Vol. 3, No. 36, March 24, 2011

Fountas, Stilianos and Konstantinos N. Segredakis 2002. "Emerging stock markets return seasonalities: the January effect and the tax-loss selling hypothesis", *Applied Financial Economics*, Vol. 12, pp. 291-299.

Gibbons, Michael R., and Patrick Hess 1981. "Day-of-the-Week Effects and Asset Returns," *Journal of Business*, Vol. 54, pp. 579–96.

Gultekin, M.N., and N.B. Gultekin 1983. "Stock Market Seasonality: International Evidence," *Journal of Financial Economics,* Vol.12, pp. 469-481.

Hensel, Chris R and Ziemba, William T. 1996. "Investment Results from Exploiting Turn-of-the-Month Effects," *The Journal of Portfolio Management*, Spring-1996, pp 17-23.

Hirsch, Y. 1968. "The Stockholder's Almanac", The Hirsch Organization, Old Tappan N. J.

Husain, Fazal 1998. "A Seasonality in the Pakistani Equity Market: The Ramdhan Effect", *The Pakistan Development Review*, Vol. 37 no.1, pp. 77-81.

Jaffe, Jeffrey F., and Randolph Westerfield and M. Christopher 1989. "A Twist on TheMonday Effect in Stock Prices: Evidence from the U.S. and Foreign Stock Markets," Journal of Banking and Finance, Vol. 13, pp. 641-650.

Karmakar M., Chakraborty M., Stock Market Anomalies: The Indian Evidences, PRAJNAN, Vol. XXXII No. 1, April – June 2003.

Keim, D.B. 1983. "Size-Related Anomalies and Stock Return Seasonality: Further Empirical Evidence," *Journal of Financial Economics*, Vol.12, pp.13-32.

Kelly, F. 1930. "Why You Win or Lose: The Psychology of Speculation", Boston: Houghton Mifflin.

Kumari, D. and Mahendra, R. 2006. "Day-of-the-week and other market anomalies in the Indian stock market". *International Journal of Emerging Markets*, Vol.1, no.3, pp.235-246

Lakonishok Josef and Seymour Smidt 1988. "Are seasonal Anomalies real? A ninety years perspective, *The Review of Financial Studies*, Vol. 1, No. 4. pp. 403-425.

Mills, T.C., Coutts, J.A. 1995. "Calendar Effects in the London Stock Exchange FTSE Indices", *European Journal of Finance*, no.1, pp.79-93.

Monday Effect in Stock Prices: Evidence from the U.S. and Foreign Stock Markets," *Journal of Banking and Finance*, Vol. 13, pp. 641-650.

Month and Year, Holiday and Golden Week Effects" *Japan and World Economy*, no.3, pp. 119-146.

Pandey I M. 2002. "Is There Seasonality in the Sensex Monthly Returns," IIMA pp. 155–58.

Raj, M., Thurston, D. 1994. "January or April? Tests of the turn-of-the-year effect in the New Zealand stock market", Applied Economic Letters, Vol. 1, pp.81-93.

Reinganum, M.R. 1983. "The Anomalous Stock Market Behavior of Small Firms in January Empirical Test for Year-End Tax Effect," *Journal of Financial Economics*, Vol. 12, pp.89-104.

Rozeff, Michael S., and William R. Kinney, 1976. "Capital Market Seasonality: The Case of Stock Market Returns, "*Journal of Financial Economics*, Vol. 3, pp. 376-402.

Sah, A. 2009. "Stock Market Seasonality: A Study of Indian Stock Market", NSE India – Research Papers.

Smirlock, Michael, and Laura Starks, 1986. "Day of the Week and Intraday Effects in Some New Evidence on Day-of-the-Week Effects," *Applied Economic Letters*, Vol. 8, Stock Returns," *Journal of Financial Economics*, Vol. 17, pp. 197-210.

Wachtel, S.B. 1942. "Certain Observation on Seasonal Movement in Stock Prices Journal of Business, Vol. 15, pp.184-193. Working Paper, IIM Ahmedabad.

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