

SEASONAL ANOMALIES OF STOCKS IN EMERGING AND DEVELOPED EQUITY MARKETS: PERIOD FROM 1985 TO 2012

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ABSTRACT

This research aimed to study the monthly seasonal ties on the developed and emerging stock markets and the efficient market hypothesis. This research attempted to examine the monthly effect on stock returns in the selected stock markets. To achieve the objectives two hypotheses were developed for testing. The sample included both developed and emerging stock markets from twelve countries. The sample period covers from 1985 to 2012. Adjusted closed stock market indices are collected through online data stream. Analysis was done for the entire sample period and two sub samples are formed to test the monthly effect.

Parametric and non-parametric statistics are used for testing the hypotheses. The one way ANOVA procedure was used and Kruskal Wallis test was employed to substantiate the results of the existence of the monthly effect. The results of the analysis revealed that the null hypothesis of equality in mean return is rejected and shows there is a day of the week effect in all stock markets in all countries. The reasons for volatility in mean returns is felt that the impact of different settlement procedures.

In summary a negative mean return is reported on Monday in Japan, UK, Hong Kong, India, Korea, Sri Lanka, Malaysia and Singapore. However, the positive mean return is reported on Mondays in Australia, China, USA and India. But a significant effect is observed on Monday is only in Japan and Malaysia. A positive monthly mean return is reported in January in Japan, Australia, UK, China, Hong Kong, Korea, USA, Sri Lanka, Malaysia, India and Singapore. But the monthly mean return is significantly reported in April in the countries such as Australia, UK, China and Indonesia. The same effect is observed in December for Japan, Australia, UK, Indonesia, USA, India and Singapore. The reason for the irregularities with stock may be due to Asian crisis and the global stock market crash, collapse of the blue chips stocks in US recently, also turn of the tax year effect.

It has important implementations for the investors, management of companies and the stock market regulating agencies. The monthly effects give prediction for immediate return from the investment because every month market situation is subject to changes due to direct and indirect environmental impacts. This will provides the investors with necessary information about the certainty of the return for their investment. This kind of research can motivate the development of share market activities through an effect of findings way and means to earn better return to the investors of the world stock markets and the development of stock exchange and to the development of the national economy.

Key words: Day of the week effect, January effect, Anomalies

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INTRODUCTION

Since the Industrial Revolution, all economic activities have undergone rapid changes due to the application of science and technology. In the light of modern globalization, the application of information technology has further speeded up business transactions in every sector of the economy. Naturally business is about predicting the future. Stock market activities and behaviors are often predicted with an aim to multiply gains and stay in the market. From past experiences, it has been learnt that there are exist seasonal behavior of stock return. It is important that the knowledge on dynamics of the stock market is understood by the investors and other stakeholders, so that risk could be avoided or mitigated.

Seasonal behavior patterns in stock markets have attracted many investors who aim at abnormal return. Seasonality is an important factor of predictable behavior in stock return. In recent times, a number of researchers have established the existence of certain empirical regulation in common stock with cross sectional differences among stock return with some regularities. The special features are that the regularities do not appear to be predicted by any of the assets-pricing model. As these behavior patterns were sometime referred as anomalies, investors' were not much interested when taking investment decision. It is because of this special aspect, researchers are induced to analyse causes and identify weaker areas in assets-pricing model, especially the CAPM model.

However, not much attention has been paid to investigate in equity markets. Further, the existence of seasonal pattern challenged a well-known concept in financial economics, known as the Efficient Market Hypothesis (EMH) originally attributed to Fama (1965), which says that all the information in respect of a security is bound in stock prices and, therefore, no investor is able to beat the market consistently.

EMPIRICAL EVIDENCE

One of the most notable international financial developments of the 1980s was the evolvement of the four “Asian Tigers” – South Korea, Hong Kong, Taiwan and Singapore. Their astonishing economic growth prompted Chan et al. (1992) to examine their linkages to developed markets like US. Wong et al. (1992) extended the day – of – the – week effect to the stock markets of Hong Kong, Taiwan, Thailand, Singapore and Malaysia during the period of January 1975 – May 1988. It was found that the day – of – the – week effect is present in all the market except Taiwan and that the US stock market has little influence on the Asian markets.

Wong, Hui and Chan(1992) did an extension of the research on the day – of – the – week effect to the stock markets of Singapore, Malaysia, Hong Kong, Thailand and Taiwan. These small sized markets are still much neglected. They found that there was a day – of – the – week effect in all these markets except Taiwan. These four markets have negative mean returns on Monday and Tuesday and high positive returns of Friday. Further analysis with four sub periods of data revealed that the weekly seasonal patterns appear to be period specific. The US stock market has little contribution to the day – of – the – week effect in these four markets. Thin trading does not seem to have a significant impact on the day – of – the – week effect in the Singapore market.

Tang and Kwok (1997) had a research to examine the day – of – the – week effect in international portfolio diversification and compares the results between January and non – January months. Using daily data of six stock indices, empirical results supported that a day – of – the – week effect exists, not only in the mean return and variance, but also in correlations between stock markets. On Monday, the average correlation was largest with a negative mean return and the largest volatility. Rogalski’s effect exists on mean return and on volatility, respectively, in two and four markets. However, the effect disappears in diversified portfolios suggesting that the effect was market – specific and diversifiable. The seasonal pattern on correlations between stock markets differs across January and non – January months with the average correlation largest on Thursday and Monday, respectively. Their results provided new empirical evidence on the day – of – the – week effect on international stock returns.

Balaban (1995) studied to investigate day of the week effects in an emerging stock market of a developing country, namely Turkey. Empirical results verify that although day of the week effects were present in Istanbul Securities Exchange Composite Index (ISECI) return data for the period January 1988 to August 1994, these effects change in direction and magnitude through time.

Hiraki.et.al (1998) investigated in their research that the impact of index futures on daily returns seasonality in Japan. The introduction of index futures was hypothesized to increase the flow of information into spot prices, which in turn causes a shift in daily return seasonality. The introduction of index futures coincides with a significant impact on the return structure in Japan, both in terms of the daily seasonals and the lag effects of past returns on current return. Of particular interest, the Japanese Tuesday effect disappears after the introduction of index futures, and in the post futures period, Monday returns are found to be anomalous.

Guneratne Bandara (2001) had a study and examined two well – known phenomena in financial economics known as the January effect and monthly seasonality using All Share Price Index returns of the Colombo Stock Exchange. Results of both parametric and non-parametric tests confirmed the non – existence of a January effect or a monthly seasonality on the Colombo Stock Exchange. These results were consistent with the Efficient Market Hypothesis and have important implications for investors in planning their investment strategies. This study was done with the objective of to test whether average share index returns differ significantly among the months of the year, and to test whether the returns of January differ significantly from those of each other month of the year, Data for this study consist of All Share Price Indices (ASPI) of the CSE for the period January 1985 to December 1998.

Coutts and Sheikh (2001) investigated the existence of the Weekend, January and Pre – Holiday effects in the All Gold Index on the Johannesburg Stock Exchange over an 11 – year period; 5 January 1987 through 15 May 1997, and for three sub – samples of equal length. These results were in severe contrast to the overwhelming international evidence documented for the stock markets of many other countries, be they developed or emerging markets; there appears to be no Weekend, January or Pre – Holiday effects, present in the All Gold Index. This is somewhat surprising as some financial economists have suggested that the above seasonalities are now accepted ‘stylized facts’! This paper suggested that the lack of any detectable calendar effects, may, in part, be due to the particular market microstructure of the Johannesburg Stock Exchange or the composition of the All Gold Index. Consequently this paper concluded that further research was required in this area. This was a somewhat ironic conclusion as to why a particular seasonality has occurred; here this study was suggesting that further research was required as to why anomalies have not occurred.

Coutts and Sheikh (2000) investigated the existence of the January effect and monthly seasonality in the All Gold Index on the Johannesburg Stock Exchange over an 11 year period, 5 January 1987 through 15 May 1997, and for three sub – samples of equal length. The results were in severe contrast to the international evidence documented for the stock markets of many other countries, be they developed or emerging markets; there appeared to be no January effect or monthly seasonality present in the All Gold Index over the sample period. Although this was perfectly consistent with the notion of market efficiency, it was suggested that the lack of any detectable monthly seasonality, may, in part, be due to the particular market microstructure or

operational procedures of the Johannes – burg Stock Exchange, consequently it was suggested that further research is required in this area.

Study done by Mehdian and Perry (2002) investigated the January effect in US equity markets using three market indexes from 1964 – 1998: Dow Jones Composite, NYSE Composite and the SP 500. Chow tests for structural stability indicate that the estimated parameters in an equation testing for monthly seasonal effects in the stock market were not stable over time. In the 1964 – 1987 sample period it was found that January returns were positive and significant in all three stock market indexes. After 1987, January returns were positive but not statistically different from zero. The results therefore provided no statistical support for the January effect in US equity markets in the post 1987 market crash period.

Lian and Chen (2004) this study examines the daily anomalies in the five ASEAN equity markets of Malaysia, Singapore, Thailand, Indonesia and the Philippines before, during and after the Asian financial crisis. The regression results reveal different patterns among these markets for each of the three periods. The Monday and Friday effects are most predominant during the pre-crisis period. Only the Tuesday effect in Thailand and the Philippines is observed during the crisis period. While the pattern of daily anomalies in Thailand during the post – crisis period reverts to that of the pre – crisis period, the other four markets exhibit different patterns of daily anomalies compared to the pre – crisis period. When the time varying return volatility is taken into account through the use of GARCH-M model, the Monday effect remains significant while some of the other daily anomalies have become insignificant during the pre – crisis period. The Tuesday effect in Thailand and the Philippines disappears altogether during the crisis period. Only the Monday and Friday effects in Thailand persist in the post – crisis period.

METHODOLOGY

This research focuses on seasonal anomalies of stocks in emerging and developed equity markets, period from 1985 onwards, Month of January effect. To examine these facts the following hypotheses are developed.

HYPOTHESIS

The following hypotheses also developed to test the monthly seasonalities in the stock returns,

Hypothesis H₀: There is an equal monthly return exist at the stock markets. There is no any significant effect on any of the months in the year in the stock markets.

Hypothesis H₁: There is an effect on return on a particular month. Every January has significant effect on return in the stock markets.

The monthly seasonality effect of the returns is estimated by using following regression model.

$$R_i = \alpha_0 + \sum_{i=1}^{11} \alpha_i D_i + \epsilon_i$$

From January to November.

$$\alpha_i = \alpha_1, \alpha_2, \dots, \alpha_{11}$$

The return is high on the month of January. This is estimated by using following regression model.

$$R_t = \alpha_0 + \alpha_1 Jan + \epsilon_t$$

Where January = Dummy variable for the month of January.

α_0 = Mean returns for the other month.

't' test is employed to test the individual coefficient of the model.

$$t = \frac{\bar{\alpha}}{Se(\bar{\alpha})}$$

$$\rightarrow t = \frac{\text{Estimator}}{\text{Standard error of estimator}}$$

F test is employed test the returns difference among the days and month.

$$F = \frac{ESS/k-1}{RSS/n-k} = \frac{\text{Sum of Square Regression}}{\text{Sum of Square Error}}$$

Kruskal –

Wallis nonparametric test were employed to test the returns difference among the day and month.

$$K = \frac{12}{n(n+1)} \frac{\Sigma R^2}{n} - 3(n+1)$$

Bowman – Shelton Statistics were used to test whether the data follows normal distribution or not. The Statistics is define as

$$BS = n \left[\frac{(Skewness)^2}{6} + \frac{(Kurtosis-3)^2}{24} \right]$$

BS will follow a χ^2 distribution with 2 degree of freedom.

SAMPLE DESIGN

The researcher has analyzed the data from the developed stock markets as NIKKEI in Tokyo Stock Exchange of Japan, FSTE in London Stock Exchange of United Kingdom, AORD in Australia Stock Exchange of Australia, NYSE in New York Stock Exchange of United States of America and emerging stock markets as SSFC in Shanghai Stock Exchange of China, ASPI in Colombo Stock Exchange of Sri Lanka, KLSE in Kuala Lumpur Stock Exchange of Malaysia, JKSE in Jakarta Stock Exchange of Indonesia, KSII in Korea Stock Exchange of Korea, BSE in Bombay Stock Exchange of India, STI in Singapore’s Stock Exchange of Singapore, and HSI in Hong Kong Stock Exchange of Hong Kong. This research covers twenty seven years sample period beginning from January 1985 to December 2012.

This sampling period is subdivided into three that is from 1985 to 1990, from 1991 to 1995, from 1996 to 2000 and finally from 2001 to 2012. The sampling period for testing the monthly effect is subdivided into two sub samples. Although the sampling period is from 1985, due to unavailability of data period has been shortened for some countries. Adjusted Closed values of each index were downloaded from websites of respective stock exchanges. The data used in this study is the market index which represents the market adjusted closing prices with observations. These data were extracted from the online web site data stream. To test the hypotheses the auto regression in the Minitab software methodology is used. Conclusions are drawn from the findings.

DATA PRESENTATION AND ANALYSIS

This study investigated the monthly seasonalities. Parametric and Non parametric tests were used to test the proposed hypotheses. The researcher found evidence of seasonal patterns in the stock returns is most of the countries. The seasonality is usually manifested in a significantly large mean return at the turn of the tax year. Furthermore, seasonality in these countries is not a size related anomaly. While the findings indicate a close association between the observed seasonality and the turn of the tax year. The aggregate nature of the data does not allow making definitive statement about the causality of this association. The unusual pattern of the seasonality around the tax year seems, however, to warrant further country by country analysis using Disaggregate individual stock return data.

Table: Summary Statistics for the January Effect

Period	Mean	t-Stat	Z-Value	P-Value	Skewness	Kurtosis	Observation
1985-2012	Japan						336
Jan	1.387	1.21	0.65	0.240	0.70	0.34	27
Feb	0.515	0.52	0.12	0.610	0.14	1.05	27
Mar	1.114	0.81	0.76	0.424	-0.25	0.58	27
Apr	0.853	0.72	0.70	0.480	-0.60	0.60	27
May	0.663	0.58	0.53	0.569	-0.29	-0.42	27
Jun	-0.586	-0.48	-0.47	0.635	-0.59	-0.02	27
Jul	-0.601	-0.52	-0.89	0.612	0.37	0.69	27
Aug	-0.590	-0.36	-0.16	0.721	-0.54	-0.19	27
Sep	-1.757	-1.36	-1.57	0.186	-1.16	3.78	27
Oct	-0.640	-0.49	-1.06	0.630	0.77	2.98	27
Nov	0.284	0.20	0.73	0.847	-1.10	0.98	27
Dec	0.612	0.52	0.68	0.610	-0.53	-1.32	27
<i>F-Stat = 0.53</i>		<i>(0.880)</i>		<i>K-W Stat = 6.77***</i>		<i>(0.817)</i>	
1985-2012	Australia						336
Jan	1.212	1.78	0.38	0.089	-0.37	-0.11	27
Feb	0.286	0.37	-1.03	0.714	-0.02	-0.21	27
Mar	1.225	1.39	-0.04	0.179	0.68	1.13	27
Apr	2.335	3.40***	2.08*	0.003	-0.77	0.16	27

May	0.740	1.16	-0.40	0.260	-0.37	0.83	27
Jun	0.021	0.03	-1.63	0.972	0.30	0.45	27
Jul	1.893	1.97*	0.88	0.061	0.62	0.63	27
Aug	0.579	0.68	-0.42	0.502	-0.32	-0.18	27
Sep	0.267	0.31	-0.64	0.758	-0.34	-0.75	27
Oct	-1.354	-0.51	0.19	0.614	-3.71	15.82	27
Nov	-0.115	-0.14	-1.14	0.887	-0.56	-0.55	27
Dec	2.385	4.01***	1.83	0.001	0.05	0.08	27
<i>F</i> -Stat = 1.05 (0.403)		<i>K</i> - <i>W</i> Stat = 13.19*** (0.281)					
1985-2012	United Kingdom						336
Jan	0.872	0.80	0.07	0.432	-0.08	1.82	27
Feb	1.023	1.22	-0.18	0.237	0.53	0.03	27
Mar	0.623	0.85	-0.10	0.403	-0.42	0.40	27
Apr	1.532	2.12*	0.95	0.046	-0.09	0.77	27
May	0.496	0.61	-0.68	0.549	0.73	1.02	27
Jun	-0.470	-0.67	-1.53	0.508	-1.07	0.82	27
Jul	0.617	0.71	-0.07	0.484	-0.44	0.00	27
Aug	0.081	0.09	-0.55	0.932	-0.53	-0.10	27
Sep	-1.252	-1.06	-1.90	0.300	0.05	-0.34	27
Oct	0.600	0.37	1.60	0.716	-3.05	11.32	27
Nov	0.741	0.85	0.47	0.403	-0.96	0.61	27
Dec	2.293	3.40***	1.98*	0.003	-0.26	0.87	27
<i>F</i> -Stat = 0.87 (0.568)		<i>K</i> - <i>W</i> Stat = 13.18*** (0.282)					

Table 2 Cont..

2000-2012	China						156
Jan	0.747	0.21	0.27	0.839	-1.17	0.82	12
Feb	4.527	2.42**	1.61	0.046	-0.70	0.39	12
Mar	2.649	1.22	0.88	0.264	-1.25	2.12	12
Apr	3.175	1.09	0.54	0.314	0.77	1.16	12
May	1.241	0.45	0.08	0.665	-0.19	-0.67	12
Jun	-0.593	-0.23	-1.00	0.828	0.61	0.84	12
Jul	-0.456	-0.15	-0.80	0.885	0.47	1.95	12
Aug	1.820	0.76	0.09	0.470	1.32	1.56	12
Sep	-0.450	-0.26	-0.68	0.805	0.40	-2.02	12
Oct	-0.920	-0.52	-1.02	0.622	0.62	-1.50	12
Nov	0.344	0.10	0.15	0.923	-1.31	2.95	12
Dec	2.795	0.68	-0.12	0.522	1.47	2.21	12
<i>F</i> -Stat = 0.42 (0.944)		<i>K</i> - <i>W</i> Stat = 6.34*** (0.850)					
1986-2012	Hong Kong						324
Jan	0.381	0.24	-0.49	0.814	-0.19	-0.41	26
Feb	3.531	2.16*	1.33	0.043	0.39	0.37	26
Mar	-1.424	-1.03	-1.72	0.315	-0.56	0.26	26
Apr	1.201	0.82	-0.15	0.420	0.53	2.27	26
May	1.473	0.83	0.40	0.415	-0.39	-0.54	26
Jun	0.267	0.18	-0.48	0.856	-0.99	2.13	26
Jul	2.411	2.02*	0.89	0.057	-0.11	-1.00	26
Aug	-1.127	-0.80	-1.33	0.432	-0.62	-0.63	26
Sep	0.617	0.40	-0.17	0.692	-0.30	-0.87	26
Oct	0.524	0.14	1.35	0.894	-2.17	6.02	26
Nov	1.002	0.70	-0.20	0.493	-0.05	0.38	26
Dec	2.760	1.76	0.61	0.095	1.97	6.46	26
<i>F</i> -Stat = 0.64 (0.794)		<i>K</i> - <i>W</i> Stat = 9.33*** (0.591)					
1997-2012	Indonesia						192
Jan	3.965	1.45	0.84	0.181	0.23	-0.30	15
Feb	-0.812	-0.69	-1.34	0.507	-1.83	3.89	15
Mar	1.565	0.77	0.04	0.462	-0.60	1.10	15
Apr	3.354	0.87	0.85	0.405	-0.18	-0.77	15
May	0.742	0.22	-0.18	0.829	0.03	-1.31	15
Jun	3.965	2.20*	0.95	0.055	0.24	-0.59	15
Jul	1.306	0.60	0.12	0.563	-0.69	-0.91	15
Aug	-9.277	-2.18*	-2.96***	0.055	-1.38	1.06	15
Sep	-0.491	-0.15	-0.27	0.884	-0.68	-0.57	15
Oct	1.042	0.46	-0.10	0.657	-0.51	-0.57	15
Nov	3.270	0.95	0.66	0.365	-0.42	2.74	15
Dec	5.074	3.01***	1.50	0.015	0.47	-0.05	15

F -Stat = 1.79 (0.063)	K -W Stat = 14.36*** (0.214)
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Table 2 Cont...

1997-2012	Korea						192
Jan	5.95	1.30	0.91	0.224	1.63	2.88	15
Feb	-1.04	-0.44	-0.61	0.668	-0.14	-0.97	15
Mar	-0.35	-0.12	-0.57	0.905	0.57	0.26	15
Apr	0.66	0.18	0.07	0.861	-0.00	-0.79	15
May	-1.65	-0.55	-0.48	0.598	-1.05	1.34	15
Jun	1.56	0.56	0.20	0.591	0.45	0.23	15
Jul	1.56	0.50	0.45	0.631	-0.40	-1.20	15
Aug	-0.21	-0.13	-0.46	0.900	0.03	0.06	15
Sep	-4.07	-1.57	-1.78	0.146	0.57	-0.97	15
Oct	-0.30	-0.07	0.22	0.947	-0.90	1.35	15
Nov	5.65	1.81	1.72	0.100	-0.52	-0.52	15
Dec	1.79	0.58	0.34	0.576	0.41	1.71	15
F -Stat = 0.81 (0.629)	K -W Stat = 7.75*** (0.736)						
1985-2012	United States of America						336
Jan	1.336	1.56	0.29	0.134	0.37	1.54	27
Feb	0.808	1.11	-0.38	0.280	0.06	-0.56	27
Mar	0.924	1.30	0.07	0.207	0.05	0.15	27
Apr	1.094	1.61	-0.01	0.121	0.36	-0.49	27
May	1.926	3.26***	1.20	0.004	0.23	-0.22	27
Jun	0.295	0.49	-1.02	0.631	-0.56	0.40	27
Jul	0.202	0.24	-1.09	0.811	-0.05	-0.33	27
Aug	-0.446	-0.43	-1.11	0.672	-1.65	3.74	27
Sep	-0.754	-0.81	-1.76	0.425	-0.58	-0.20	27
Oct	0.675	0.52	0.74	0.610	-3.19	12.95	27
Nov	1.298	1.47	1.11	0.156	-0.77	-0.50	27
Dec	2.348	3.59***	2.00*	0.002	0.07	1.64	27
F -Stat = 1.13 (0.336)	K -W Stat = 12.89*** (0.301)						
1985-2012	Sri Lanka						336
Jan	2.852	1.63	0.61	0.117	0.64	-0.21	27
Feb	0.976	0.88	-0.01	0.389	0.20	0.02	27
Mar	1.031	0.77	-0.03	0.452	0.44	0.38	27
Apr	0.474	0.43	-0.38	0.674	-0.20	0.66	27
May	1.268	0.58	-0.01	0.566	0.83	2.36	27
Jun	0.701	0.49	-0.35	0.627	0.42	2.98	27
Jul	2.126	1.71	0.55	0.102	0.72	0.47	27
Aug	1.022	0.61	-0.22	0.546	0.09	0.97	27
Sep	2.883	2.01*	1.36	0.057	0.16	-0.15	27
Oct	1.047	0.70	-0.39	0.489	1.16	2.34	27
Nov	0.368	0.22	-0.40	0.825	-0.16	-0.37	27
Dec	-0.373	-0.23	-0.73	0.822	-0.21	0.58	27
F -Stat = 0.40 (0.954)	K -W Stat = 3.39*** (0.985)						

Table 2 Cont...

1993-2012	Malaysia						240
Jan	1.175	0.63	0.91	0.540	-0.75	0.83	19
Feb	3.234	1.45	1.21	0.169	1.78	4.86	19
Mar	-2.137	-1.27	-1.22	0.226	-0.76	0.79	19
Apr	0.188	0.06	-0.36	0.950	1.33	2.83	19
May	-0.745	-0.42	-0.65	0.684	-0.21	0.50	19
Jun	-0.902	-0.56	-0.44	0.587	-1.33	3.01	19
Jul	-0.329	-0.21	-0.15	0.838	-0.29	0.17	19
Aug	-3.215	-1.15	-0.83	0.271	-1.61	2.23	19
Sep	-1.054	-0.45	-0.85	0.658	0.88	2.19	19
Oct	1.293	0.62	1.10	0.543	-1.64	4.14	19
Nov	0.122	0.05	-0.26	0.962	0.19	1.86	19
Dec	3.254	1.89	1.58	0.082	0.35	0.04	19
F -Stat = 0.81 (0.632)	K -W Stat = 8.93*** (0.628)						
1997-2012	India						192
Jan	1.003	0.50	-0.16	0.629	-0.97	1.27	15
Feb	1.795	1.01	0.08	0.341	-0.06	0.47	15
Mar	-0.855	-0.30	-0.90	0.773	0.08	-0.15	15

Apr	-1.850	-1.05	-1.64	0.323	-0.20	-0.57	15
May	-0.875	-0.25	-0.70	0.805	0.12	-0.79	15
Jun	2.034	0.93	0.28	0.377	-0.86	1.49	15
Jul	1.135	0.53	0.06	0.611	-0.62	-0.98	15
Aug	1.556	0.73	0.18	0.480	-0.51	-0.64	15
Sep	1.317	0.52	0.22	0.615	-0.62	-0.64	15
Oct	-0.392	-0.16	-0.82	0.876	0.37	-1.05	15
Nov	4.485	2.65***	1.74	0.024	-0.81	-0.25	15
Dec	4.985	3.30***	1.59	0.009	0.64	0.40	15
F-Stat =0.82 (0.623)			K-W Stat = 9.53*** (0.573)				
1987-2012	Singapore						312
Jan	1.582	0.95	1.52	0.354	-1.38	2.11	25
Feb	1.421	0.93	-0.80	0.363	2.62	7.59	25
Mar	-0.330	-0.26	-0.60	0.797	-1.24	1.79	25
Apr	2.103	1.44	0.85	0.167	1.10	3.48	25
May	-0.889	-0.56	-0.32	0.581	-1.51	1.86	25
Jun	0.345	0.22	-0.59	0.826	-0.10	0.81	25
Jul	0.571	0.71	-0.31	0.489	-0.25	0.95	25
Aug	-2.807	-1.64	-2.28**	0.118	-1.09	1.68	25
Sep	-1.305	-0.78	-1.11	0.447	-1.00	1.21	25
Oct	1.721	0.95	0.85	0.354	0.07	5.71	25
Nov	2.036	1.57	1.00	0.132	0.38	0.48	25
Dec	2.967	2.51**	1.83	0.022	0.17	1.02	25
F-Stat = 1.27 (0.241)			K-W Stat = 14.76*** (0.194)				

***, **, and * denote statistical significance at the 1%, 5% and 10% levels respectively.

The data were collected from NIKKI market for the period from January 1985 through December 2012, no monthly seasonality is detected significant level for the entire sample of the NIKKI market. However, in the sub sample period 1985 – 1995, June has a negative significant effect. After 1996 there is no any significant monthly effect is observed. This may be due to financial market clashes. Stock indices were collected form AORD stock market in Australia. The sample period is 1985 – 2012, the results of the test for the monthly seasonalities reveals that a positive significant mean return is reported in April and December for the entire sample period 1985 – 2012 in the AORD in Australia. The reason for this is that the tax year in Australia does not end in December as in many other countries. A positive returns in April lends support to the ‘turn of the tax year; effect.

Investigation was done to find the monthly effect in the Singapore stock market. For this purpose data were collected from the period 1987 to 2012. A positive mean return is reported significantly in December for the entire sample period 1987 – 2012.

This research examined the existence of the monthly effect in the FTSE stock market in UK for the period from 1985 – 2012. This monthly effect appearing in the FTSE market may be due to the settlement systems, thin trading effect when the monthly seasonalities are tested in the same market a positive significant mean return is reported in April and December significantly. These results may be a reflection of the information hypothesis postulated by Rozeff and Kinney (1976) with January representing the beginning and end of many potentially important financial and informational events for example the announcements of the previous calendar years accounting earnings and profits. Consequently, for those firms with year – end financial closings, the month of January represents a period of increased uncertainty and expectation due to the release of potentially important information. Unfortunately, the lack of firm specific data forbids any formal analysis of the information hypothesis. In conclusion, I suggest that high positive returns in January lend support to the ‘January’ and ‘turn of year’ effect whilst high positive returns in April lends support to the turn of tax year effect.

This research also examines the monthly effect in the stock markets in china data were collected for the period 2000 – 2012, the monthly seasonality test also reports a positive significant mean return in February for the entire sample period 2000 – 2012. China is an emerging market and the institutional characteristics of China’s stock market differ from those in other countries. A distinguishing feature of China’s market is that some firms issue two types of shares. Class A – Shares, which are dominated in RMB, are traded among Chinese citizens, while B – Shares stocks are traded among non – Chinese citizens or overseas Chinese. A – Shares and for the divided into state shares, legal person shares and tradable shares. These unique institutional features in China’s stock markets may provide some insight into solving the mystery of seasonal anomalies. Information flows primarily from the America’s to Europe and Asia. If this result holds, we would expect the US stock market to lead China’s stock markets. This conclusion is obviously consistent with an efficient market approach.

This research also examined the monthly effect in the NYSE stock market in USA for the sample period from 1985 – 2012 .The results reveal that there is a positive significant mean return in May and December in the NYSE market for the period from 1985 – 2012. Also a higher positive mean return is reported in January and in April. This may be reflection of the information hypothesis postulated by Rozeffi and Kinney (1976) with January representing the beginning and end of many potentially important financial and informational events for instant the announcements of the previous calendar year’s accounting earnings and profits. Consequently for those firms with year-end financial closings the month of January represent a period of increased uncertainty and expectation, due to the release of potentially important information. It can be suggested that high positive

returns in January lend support to the 'January' or 'turn of year' expect, while high positive return in April lends support to the 'turn of the tax' year effect.

Further an empirical test conducted to test the monthly effect in the KLSE market in Malaysia. This study covers the sample period from 1993 – 2012. The results of the monthly analysis reveal that none of the month is reported a significant effect but highest positive mean return is reported in December. These results may possibly depend on sample size or the period of study. Moreover the time frame that researcher had chosen was affected by the mid – Asian financial crisis in 1997 and the collapse of the blue chip stocks in US recently.

The monthly effect is tested in the Hong Kong stock market in Hong Kong also in this study. The sample period covers from 1986 – 2012. A test also conducted to find the monthly effect in the same market for the same sample period a positive significant mean return is reported in February and July for the entire sample period from 1986 – 2012. This possible explanation for this irregularity might be the effect of the global stock market crash that occurs on 19th October 1987. The crash had brought the unusual volatility and turbulence to the stock markets.

This study tested the monthly effect in the CSE stock market in Sri Lanka. This study covers a sample period from 1985 – 2012. The results of the monthly effect for the same market reveals although a high positive mean return is reported in January the significant effect is observed only in September. A January effect which occurs in other markets cannot be expected to occur in the CSE because there is no particular reason which motivates the investors to sell loser shares expecting tax gains. The reason for this is that the tax year in Sri Lanka does not end in December as in many other countries. Although the tax year in Sri Lanka ends in March, March effect also cannot be expected as losses from share trading are not tax deductible.

Empirical test were conducted to test the monthly effect in the JKSE stock market in Indonesia parametric and non- parametric test were conducted to analyze the data. The monthly effect also tested for the same stock market for the same sample period in the Indonesia. The results reveal that higher positive mean return is reported in January whereas a positive significant mean return is reported in June and December. The explanation for the irregularity might be the effect of the global stock market crash that occurred on 19th October 1987. The crash had brought the unusual volatility and turbulence to the stock markets. Asian crisis has the same effect as the global market crash. The sample period is included the global stock market crash and the Asian Crisis.

This study also examined the monthly effect in the KSII in Korea. The sample period is 1997 – 2012. The empirical evidence reveals that the monthly effect tested for the same stock market for the same sample period. Test is conducted for the entire sample period and it was further tested for sub sample period from 1997 – 2000 and 2001 – 2012 mean return for some of the months are reported negative while mean returns for some of the months are reported positively. But none of the mean return is reported a significant effect monthly effect is tested for the sub sample period 1997 – 2000, which found a negative significant mean return in February, August and September. But none of the month is reported a significant effect in the sample period 2001 – 2012. The reason for the irregularity in the stock market may be due to the Asian crisis and the global stock market crash. Some of the local crisis also may be the reason for this trend.

The monthly effect tested to the BSE in India also in this study. The sample period covers 1997 – 2012. The monthly effect also tested for the same market in India. The results reveals that a positive significant mean return in November and December But in the second sub sample a positive significant mean return is reported in June, August, September, November and December. The possible reason for this irregularity might be the effect of the global stock market crash. This crash had brought unusual volatility and turbulence to the stock markets.

CONCLUSIONS

In summary, a positive monthly mean return is reported in January in Japan, Australia, UK, China, Hong Kong, Korea, USA, Sri Lanka, Malaysia, India and Singapore. But the monthly mean return is significantly reported in April in the countries such as Australia, UK, China and Indonesia. The same effect is observed in December for Japan, Australia, UK, Indonesia, USA, India and Singapore.

The efficiency of capital market is an important indicator of the economics development of a country since the results of the study indicate the monthly effect, it has an important implementations for the investors, management of companies and the stock market regulating agencies. The monthly effects give prediction for immediate return from the investment because every month market situation is subject to changes due to direct and indirect environmental impacts. This will provides the investors with necessary information about the certainty of the return for their investment. This kind of research can motivate the development of share market activities through an effect of findings way and mean to earn better return to the investors of the world stock market and the development of stock exchange and to the development of the national economy.

These findings of this research indicate monthly effects in almost all countries. The close association between the observed seasonality and the turn of the tax year the aggregate nature of our data does not allow us to make definitive statement about the causality of this association. This unusual pattern of the seasonality around the tax year seems, however, to warrant further country- by- country analysis using disaggregate individual stock return data. The reason the monthly effect is unable to explain

clearly. Several alternative explanations with testable implications are to be included thereby these tests are differed for further research, size of the firm effect also differed for future research.

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