SHAREHOLDERS' RESPONSES AT THE ANNOUNCEMENT OF THE CHANGES IN NON-EXECUTIVE DIRECTORS: EVIDENCE FROM COLOMBO STOCK EXCHANGE (CSE)

Dunusinghe G Dharmarathna
[1] *Department of Accountancy &Finance, Faculty of Management Studies, Sabaragamuwa University of Sri Lanka, P.O.Box 02 , Belihuloya, Sri Lanka*
dunu@mgt.sab.ac.lk

Abstract

This study analyzes the shareholders' responses at the announcement of the changes in non-executive directors of the companies listed on the CSE thereby provides a test of the semi-strong form efficient market hypothesis of Sri Lankan Share Market by using event study mythology. The sample consists of 80 listed companies, which made 108 of public announcements of the changes in the non-executive director on the CSE from 2012-2016. The Market Model along with proxy of the CSE All Share Price Index (ASPI) were used in this study in generating abnormal returns surrounding subsequent each announcement. Specifically, the Market model was used by incorporating cluster volatility effect and information asymmetric effects to get a strong conclusion. Overall results of shareholders' responses to the changes in non-executive directors' announcements based on market model along with the proxy of CSE all-share price index show the positive reaction for information subsequent to the changes in non-executive directors' announcements in CSE. The abnormal returns appear on a prior to the actual announcement of the information, as well as after the actual announcement of the information. It confirms that the shareholders respond positive before and after the actual announcement of the information. In addition, these results confirm that the Sri Lankan Share market is inconsistent with semi-strong form market efficient hypothesis. These findings will be important to all parties interested in the share market. Especially, it is more important to the investors, the managers of the companies and the stock exchange regulatory agencies in their decision-making process.

Keywords: ARCH family Models, Event Study, Market Model, Semi-strong Form Efficient Market Hypothesis

Introduction

The published information in a capital market is very important for investors in their decision makings. Listed companies publishes often their significant material information over the capital market in order to make aware the public. When the companies announce this information to the public, it is considered as valuable information for the investors to choose their investment portfolios. The investors' judgment on these information changes the stock prices and as a result they may react positively or negatively in making trading decisions. Thus, Shareholders' responses to the published information is a well-established area in the corporate finance and the academics and the practitioners have very extensively investigated this phenomenon. Although there is abundant theoretical and empirical research on this area yet it is inconclusive. And also, it is evident that much of the studies on shareholders' responses to publicly available information for testing the efficiency of the stock markets based on developed stock markets and there is a paucity of such studies in emerging capital markets. In Sri Lanka few attempts have been made to test the relevance of corporate public announcements in assessing stock prices hence, an investigation of the different types of corporate public announcements and shareholders' responses becomes relevant to the CSE. The empirical findings of this study have practical implications for both the investors and policy makers. In particular, potential investors can exploit significant abnormal returns trading around information subsequent to the changes in directors of listed companies. In addition, the government can adopt an adequate regulatory framework that secures the transparency and the efficiency of the CSE. The following sections are organized as follows. Section II, III and IV describe the particular research problem and the objectives of the study and the hypothesizes of the study respectively. The selected prior studies which are highly associated in this are discussed in section V. Section VI gives detail explanation about the methodology of the study. The analysis and discussion take place in the section VII. Finally, the study ends up with the conclusion in the section VIII.

Research Problem

Decision to the changes in the Board of the Company Directors is one of the frequent publicly available information that can be observed in CSE. Theoretically, change in the directors may affect positively or negatively for the performance of a particular company or its market price. It depends on the performance of the directors. By the time, there is an empirical study in this respect in CSE. Thus, Dharmaratthna and Amarasekera (2016) found the positive reaction for information subsequent to the changes in executive directors' announcements in CSE. Therefore, this study answers the following research questions.

- How do the shareholders respond as soon as the information of the Changes in the Non-Executive Directors Announcements is published?
- How far does the Semi-Strong Form Efficient Market Hypothesis act according to the subsequent information announcements?

Objectives of the Study

The objective of this study is to examine how the stock price reacts as soon as the information of the changes in the non-executive directors' announcements is published thereby provides a test of semi-strong form efficiency of Sri Lankan Share Market.

Hypotheses

In finance literature, there are mainly three hypotheses namely no price effect, positive price effect and negative price with respect to new information announcements (Asquith and Mullins, 1986). It uses to develop hypothesis 1 (H_1) is as follows. Efficient Market Theory (Fama,1970) is used in developing the hypothesis 2 (H_2) in order to measure the market efficiency.

H_1: The shareholders respond negatively at the announcement subsequence to a Decision to changes in the Non-Executive Directors.

H_2: Information subsequent to a public announcement of the change in the Directors reflect fully and instantaneously on share prices.

Literature Search

Most corporate boards have a mixture of the firm's top executives, and non-executive directors from outside. A balanced board including both executives and non-executives reduces the agency costs and potential conflicts among decision makers and residual risk bearers. The executive directors provide valuable information about the firm's activities, while non-executive directors may contribute their expertise in monitoring the management team. While it is now widely accepted that non-executive directors have an important part to play in the proper running of boards of companies, it is often very difficult to define the exact role and contribution of a non-executive director. Cadbury (1992) recommended that companies should have a minimum number of non-executive directors and these directors should be actively involved in areas where conflicts between executive directors and company stakeholders are most likely to arise. Non-executives are not only legally bound to monitor given their fiduciary duty, but they also often represent the large shareholders in an equity market with strong ownership concentration (Becht and Mayer, 2000). The non-executive director's role is more visible than ever and involves greater responsibility and time commitment.

In organizations the expectations of non-executive directors have grown in recent years for a variety of reasons such as economic uncertainty, market volatility, business complexity, regulatory changes, governance recommendations, increased transparency, investor activism and media scrutiny.
A Non-Executive Director is a member of the board but without executive responsibilities in the company. While a Non-Executive Director is expected to bring independent judgment and experience to the board, he is not saddled with operational responsibilities of running of the business which executive directors have. His key role is dual in nature i.e. supervisory and managerial. This will be to

function actively in the areas of reviewing performance of the board and that of the executive and exhibit independent judgment where conflicts arise between the interest of the company as a whole and that of an executive. A Non-Executive Director does not only exhibit expertise on deliberations of the board in the area of strategy and business development, but also ensures that there is a suitable balance of power on the board where necessary and influences the chairman over board decision making with independent judgment. He should therefore understand the company's business, attend meetings and function actively in the decisive affairs of the company through compliance with legal and corporate governance policies. It is generally agreed that the experience required of a Non-Executive Director could be obtained from working in similar or other industries, however in reality he could be an executive in another public company, have professional qualification, experience in government or hold a chairmanship or non-executive position in other companies. Several factors influence the role of the non-executive director, including cultural considerations, the prevailing governance system and the structure of the board. While it varies from country to country and from company to company.

Non-executives need to gain a rapid understanding of the business in order to identify the questions that really matter, contribute insight and reach sound decisions. Executives expect non-executives to understand the business model and the key success factors. Being outside the mainstream of the company, non-executives have to work with partial information and get to the heart of an issue rapidly. They are required to be at arm's length and fully accountable at the same time. Non-executives are also required to think strategically about the business, looking five or 10 years ahead. Prospective directors who can work with complexity in an unfamiliar environment are most likely to learn and adapt to the challenges faced in the boardroom. According to Bhana (2016) a change in the composition of a firm's board could take the form of a new appointment or some form of removal from the board; namely, a new appointment, resignation, retirement and death.

Central to the governance perspective on the board of director's role in public companies is the use of non-executive directors to monitor the behavior of their executive colleagues. Given that executive directors' ability to evaluate their own behavior is questionable, non-executives are perceived to be the principal monitoring component of the board (Baysinger and Butler, 1985). In their monitoring capacity, it is suggested that non-executives identify with shareholder interests and use their experience in decision-making and control to counter any self-interested tendencies of corporate management. The board of directors performs multiple functions that concern, for example, the replacement of managers, financial policies, the preparation of strategic plans, and other actions that affect the performance of the company.

Warner et al. (1988) investigated the relationship between a firm's stock price performance and subsequent changes in its top management. The sample consisted of 269 firms listed on the NYSE and AMEX from 1963-1978. The event study results indicated that individual securities had a very small stock price reaction at announcement of a top management change but the average effect was zero.

In a similar way, Bonnier and Bruner (1989) analyzed the excess return to shareholders at announcement of change in senior management distressed firms. The sample consisted of all firms listed on the NYSE and AMEX from 1969-1983. The results showed that the abnormal were significantly positive at announcement of change in senior management distressed firms. Rosenstein and Wyatt (1990) have focused on the stock market reaction to the appointment of outside directors and reported a significant increase in stock prices on the day of the announcement when firms appoint additional outside directors for a sample of large US firms. Further, Rosenstein and Wyatt (1997) studied stock price reaction to appointments of inside directors. In general, they found that stock prices were not significantly different from zero when inside director was added to the board. In a parallel study, Sorasart (2003) found out that there was no significant stock price effect of adding inside or outside director to the board on a sample of listed firms in Thailand. Rhim et al, (2006) found that stock markets responded more positively to unanticipated change of CEO as compared to that of anticipated change in US firms. In Cyprus, Nikos and Adamos (2009) investigated the stock price performance of 166 firms appointing a new Chief Marketing Officer (CMO) between 1999 and 2005. Using event study methodology, the results revealed that abnormal stock returns around the appointment day were greater for firms appointing a CMO with prior marketing executive experience.

Nowland et al. (2011) studied on 1,126 appointments of outside directors between 2004 and 2006 in Australia. They divided the sample into two sub-samples consisting of 67 announcements of women directors and 1,059 of men directors and noticed that the announcement of outside women directors generates higher, always positive and statistically significant CARs in all time frames observed, unlike what takes place with the appointment of men. Lucey and Carron (2011) examined the market response of firms listed on the FTSE 100 to changes in board composition, executive director, and CEO appointments. The results from the analysis suggest that there was no significant difference in abnormal return when appointing outside directors, and a small positive response was associated with the appointment of inside directors.

Rossi and Cebula (2013) studied the Stock Market reaction to Announcements of board of Director Appointments by using 100 announcements for the appointment to the board of directors of 100 Italian listed public companies during the period 2012-2014. The results show a positive reaction within 20 days around the announcement date of the appointments and in four of the six study periods, Cumulative Abnormal Returns (CARs) are positive and statistically significant. Nthoesane and Kruger (2014) studied the market reaction to the announcement of the appointment of CEOs of companies listed on the Johannesburg Securities Exchange (JCE) under the Stock price and volume approach. To achieve this objective an Event Study was conducted. The sample consists of 43 firms which have announced the appointment of CEO within the 2000 to 2012. In this study both the volume traded and the share price were analyzed in the 72-month event window. As their result they found that cumulative returns are negative at 1% significance level. In contrast, under the volume trade approach the cumulative returns are showed positive returns. Zhang (2015) investigated if the sudden death of an executive will affect the company's stock price and performance, and to examine any other impacts of an executive's untimely death. This researcher used CEO death information from 1980 to 2013 to analyze the stock reaction and what other variables will affect the company's overall performance. The results showed that how the stock price reacted to a sudden executive death was also negatively correlated with the company's past performance. Those who had been a CEO of the company for a longer period of a time had a statistically significant negative correlation in comparison to the CEO who had spent a shorter time in the company. Ola & Proffitt (2015) studied the stock market response to both announcements and terminations of female CEOs. The empirical results showed that investor response to both appointments and terminations of female CEOs is not significantly different from that of male CEOs. Arioglu (2015) investigated the market reaction to appointments and departures of independent directors to boards and various board committees, as well as the magnitude of the market reaction based to the expertise and busyness of these directors. The findings suggest that investors in Turkish capital markets do not value the existence of independent directors on boards or committees of boards. In addition, the findings suggest that investors do not value the expertise of independent directors. Further he found investors appear to value the busyness of independent directors.

Sorley and Sherif (2016) examined the Stock Market Reaction to the Appointment of outside Directors in the development and emerging market by using a sample of 431 UK appointment announcements, 374 South African appointment announcements by using conventional event study methodology. They investigated the stock market's reaction to the appointment of outside board members over the period from 2007 through 2011. Researchers found that there is a strong interaction between market reaction and the pre-existing level or corporate governance system within the country. The poorer the corporate governance level, the greater the market reaction and hence greater abnormal returns were experienced around the announcement of the appointment of an outsider in a developing market than those experienced in a developed economy. Bhana (2016) investigated the impact of board changes on the share prices of the companies listed on the Johannesburg stock exchange (JSE) during the period 2004–2008. In this study four types of board changes are investigated. They are new appointments, resignation, retirement and joint appointments. The results showed that market participants consider a change in the composition of a company's board as having information content and produce statistically significant change in the share prices of the company concerned. In particular, the informational effects of new appointments are perceived differently by the market from resignations from the company board. The results also provide evidence that market reacts more favorably to the

appointment of an executive director in comparison to that of a non-executive director board appointment.

Methodology

This study employs the event study methodology. However, this study enriches the event study method even by incorporating stock volatility clustering phenomenon and information asymmetric effects to the Market Model. Thus, Abnormal returns around the event are generated by using market model incorporating ARCH family models namely GARCH (1,1), TGARCH (1,1) and EGARCH (1,1) models.

Taking the fact which is, especially availability of data this study has selected 80 listed companies which made 108 public announcements of the change in the non-executive director on the CSE from 2012-2016. Necessary data is collected through the Daily Market Reports published by the CSE and Computerized Data Base System of them. The sample has been selected purposively assigning the applicable criterion. For example, there should not be another published announcement during the event window. It is assumed that the event impact is limited to the 31 trading days. Thus, the total event period that is to be examined is 31 trading days. The event period starts with the day, immediately before the event date and goes back to 15 trading days. It closes with the day immediately after the event date and goes ahead to 15 trading days. This period is divided into three windows, namely pre-event window (-15 to -1), event window (0-day) and post-event window (+1 to +15).

The event window represents immediate market reaction. Pre-event window and post-event window represent earlier and delayed market reactions respectively. The prior researchers used different periods for an estimation period. For examples, Brown and Warner (1985) selected 239 days prior to the event. Chew and Liang (1993) used 100 days prior to the event in order to estimate parameters for their study. Bandara (2001) an estimation period of 200 days used in his study for the estimate window. Dharmarathne (2013) used 120 days prior to the event for the estimate window. As there are no well-defined criteria for the estimate period this study uses 120 of past returns over the pre-identified estimation window to estimate the return generating models.

Model is used to calculate Actual Returns

$$R_{i,t} = LN\left(\frac{P_t}{P_{t-1}}\right) \qquad (1)$$

Where,

$R_{i,t}$ = Rate of return of firm *i* on day *t*
LN =Natural Logarithm
P_t = Closing share price on day *t* (current trading date)
P_{t-1} = Closing share price on day *t-1* (previous trading date)

Models are used to calculate Expected Returns

1.Market Model

$$R_{i,t} + \alpha_i + \beta_i R_{m,t} + \varepsilon_{i,t} \qquad (2)$$

Assumptions: $E(\varepsilon_{i,t} = 0)$ and $VAR(\varepsilon_{i,t}) = \sigma^2_{\varepsilon_i}$

Where,

R_{it}= Rate of return of security on day *t*
R_{mt}= Rate of return on a market portfolio of stocks on day *t*.

α_i= Intercept term (alpha)
β_i= Systematic risk of stock *i* (beta) and
ε_{it}= Regression error term

2. ARCH Family Models (Cable and Holland ,1999)
I. GARCH (p, q) Model (Bollerslev, 1986)

$$\sigma_t^2 = \omega + \sum_{i=1}^{q} \alpha_i \varepsilon_{t-i}^2 + \sum_{i=1}^{p} \beta_i \sigma_{t-i}^2 \qquad (3)$$

II. Exponential GARCH (EGARCH) Model (Nelson, 1991)

$$Log(\sigma_t^2) = \omega + \sum_{j=1}^{q} \beta_j Log(\sigma_{t-j}^2) + \sum_{i=1}^{p} \alpha_i \left|\frac{\varepsilon_{t-i}}{\sigma_{t-i}}\right| + \sum_{k=1}^{n} \gamma_k \frac{\varepsilon_{t-k}}{\sigma_{t-k}} \qquad (4)$$

III. Threshold GARCH (TGARCH) Model (Zakoian,1994; Glosten et al., 1993; Engle and Ng, 1993; Tsay, 1998)

$$(\sigma_t^2) = \omega + \sum_{j=1}^{q} \beta_j \sigma_{t-j}^2 + \sum_{i=1}^{p} \alpha_i \varepsilon_{t-i}^2 + \sum_{k=1}^{n} \gamma_k \varepsilon_{t-k}^2 d_{t-k} \qquad (5)$$

3. Calculation of Abnormal Returns

$$AR_t = R_t - Y_t \qquad (6)$$

Where,
AR_t = Abnormal Return at time *t*
R_t = Actual Returns at time *t*
Y_t = Normal Returns at time *t*

4. Calculation of Average Abnormal Returns (AARs)

$$AAR_t = \frac{1}{N}\sum_{i=1}^{N} AR_{it} \qquad (7)$$

Where,
AAR_t = Average abnormal return for day *t*
N = Number of events in the sample

5. Calculation of Cumulative Average Abnormal Returns (CAARs)

$$CAAR_p = \sum_{t=1}^{p} AAR_t \qquad (8)$$

Testing Significance

Even though, a researcher had found large abnormal returns, it must be proved that the results are not gained by coincidentally or by biased time series. The assumption here is that the daily abnormal returns are distributed identically and independently. It is also assumed that over a long time stock prices have a tendency to approach the expectation value (mean value). This study uses t-test. The variables AR, CAR, AAR and CAAR are used to measure the informational content of the selected announcements and the efficiency with which this information is impounded into the share price. The null hypothesis is that AR, CAR, AAR and CAAR is drawn from a distribution with zero means; that means announcements of the events have a systematic effect on respective share prices on the

particular event announcement date. The null hypothesis is rejected, if the t-values obtained from the calculations are higher than the critical values.

1. Significance Testing (Parametric) for AAR

$$T(AAR) = \frac{AAR_t}{SE(AAR_t)} \qquad (9)$$

Where,

AAR_{it} = Average Abnormal Return for Company i for a day of the event window.

$SE(AAR_{it})$ = Standard Error of Average Abnormal Return of a company i during the estimated period.

2. Significance Testing (Parametric) for $CAAR_t$

$$T(CAAR) = {CAAR_t}/{SE(CAAR_{it})} \qquad (10)$$

Where,

CAR = Cumulative AAR for Company *i* for the selected event window.

SE (CAR_{it}) = Standard Error of Cumulative AAR of a company *i* during the estimated period.

Analysis and Discussion

The daily average abnormal returns (AAR) and Cumulative average abnormal returns (CAAR) of 108 change in non-executive directors' announcements stocks over a window period starting from day –15 to day +15 relative to the change in non-executive directors' announcement day (0-day) at overall portfolio level are analyzed and reported as follows. Thus, the results generated from each model within 31-day window period are presented in Table1.

Table 1. AAR and CAAR generated from each model

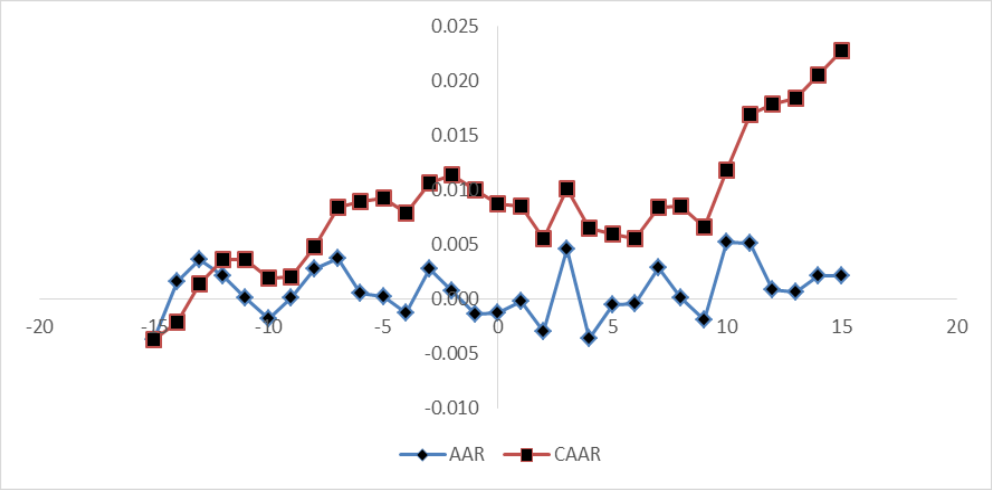
Date	AAR	T STAT	CAAR	T STAT
-15	-0.004	-1.192	-0.0038	-1.192
-14	0.002	0.566	-0.0022	-0.539
-13	0.004	1.730*	0.0014	0.483
-12	0.002	0.726	0.0036	0.849
-11	0.000	0.033	0.0037	0.947
-10	-0.002	-0.649	0.0019	0.481
-9	0.000	0.050	0.0020	0.507
-8	0.003	1.171	0.0047	1.438
-7	0.004	1.515	0.0085	2.442*
-6	0.001	0.197	0.0090	2.363*
-5	0.000	0.085	0.0092	2.134*
-4	-0.001	-0.445	0.0079	1.866*
-3	0.003	0.858	0.0107	2.358*
-2	0.001	0.282	0.0114	3.227*

-1	-0.001	-0.519	0.0100	2.689*
0	-0.001	-0.499	0.0087	2.363*
1	0.000	-0.053	0.0085	1.752*
2	-0.003	-1.204	0.0056	1.604
3	0.005	1.519	0.0101	2.377*
4	-0.004	-1.288	0.0065	1.602
5	-0.001	-0.242	0.0060	2.010*
6	0.000	-0.224	0.0055	1.985*
7	0.003	1.220	0.0084	2.501*
8	0.000	0.026	0.0085	2.960*
9	-0.002	-0.644	0.0066	1.601
10	0.005	1.743*	0.0118	2.782*
11	0.005	1.477	0.0170	3.450*
12	0.001	0.326	0.0179	4.567*
13	0.001	0.228	0.0185	5.012*
14	0.002	1.162	0.0206	8.089*
15	0.002	0.653	0.0228	4.836*

*Significant at 5% level.
Source: Survey Data (2018)

The results gained from the market model incorporated with ARCH family models of overall sample show that AAR during the entire period fluctuates positively as well as negatively. The value of AAR on the day 0 is -0.001 which is not statistically significant at 5% level. However, CAAR on the event day 0 is +0087 which is statistically significant. It means that investors do not earn abnormal returns on the event day itself. However, the results reveal that the AAR on the day -13 is positive and statistically significant during the pre-event window. It implies that market reacts earlier than the actual announcement and that this information has leaked to the market before publishing the particular event. More over during the post event window it shows AAR on the day 10 is positively significant. It intends that investors earn abnormal returns a few days after publishing the event. It may be due to the delay in dissemination the information throughout the market or lack of knowledge about information or may be inherent in nature of the investors.

The CAAR results show that only the days of -15 and -14 abnormal returns are negative and they are not statistically significant. Except these two days, on every other day it shows positive abnormal returns during the event window. The value of CAAR on the day 0 is 0.0087, which is statistically significant at 5% level. When consider about the pre-event window, it shows CAAR on the dates -7, -5, -6, -3, -2 and -1 are statistically significant. In addition, results of CAAR show positive significant reaction after the event date other than 2nd, 4th and 9th day.



Source: Data from Table 01

Figure 1. AAR and CAAR within 31-day period from each model

It is important to note that the abnormal returns appear not only on a prior to the actual announcement of the information, but also after the actual announcement of the information. This suggests that share price does not seem fully and instantaneously reflect the information contained in the announcement of changes in board of non-executive directors in CSE.
Dharmarathna and Amarasekara (2016) found shareholders' response negatively to the changes in directors' announcements in CSE. This study has considered about the changes in non-executive directors of companies listed in CSE and found that shareholders' response positively to the changes in directors' announcements in CSE. This confirms that these two findings are contradictory relating to changes in executive directors and non-executive directors of companies listed in CSE. In addition, they have found that the share price does not seem to fully and instantaneously reflect the information contained in the announcement of the stock announcements. In fact, it is similar to the findings of Dharmarathna and Amarasekara (2016).

Conclusion

This study analyzed the shareholders' responses in announcement of the changes in non-executive directors of the companies listed on the CSE. The sample consisted of 88 listed companies which made 108 public announcements of change in the non-executive director on the CSE from 2009-2013. Overall results of the market responses to the change in non executive directors' announcements based on market model along with ARCH family models show that abnormal returns appear subsequent to the event. The abnormal returns appear only a prior to the actual announcement of the information, as well as after the actual announcement of the information. It confirms that the market responds postively before and after the actual announcement of the information. It implies that the invertors in CSE interpret the announcements as an favorable news and assume that investors response will have a upward effect on the future stock prices. In addition, the analysis shows that there are earlier reactions and delayed reactions information subsequent to a public announcement of this event. This evidence suggests that Sri Lankan Share Market is inconsistent with semi-strong form efficient market hypothesis information subsequent to the announcement of changes in board of non-executive directors in CSE. The overall results confirmed that the Sri Lankan Stock Market is not a Semi-strong Form Efficient Market and contradicts with the EMH. This finding is somewhat peculiar to CSE as compared to the other develop market counterpart. The global classification of the CSE as an emerging market is reaffirmed by the results of the study. The results give some clues to investors in making investment decisions based on publicly available information. The investment decisions should be directed to some other superior analysis rather than relying on guise of EMH. Some policy guidelines are essentially important from regulators' point of view to bring the market toward efficient market

features. The early response of investors to new information arrival infer that it is required prompt intervention from the SEC to detect the leakage of information. On the other hand, the results can be attributable to information asymmetric of CSE. Thus, findings induce a need of a mechanism to free flow of information to the all the potential investors. One of the hallmarks of an efficient market is large number of buyers and sellers. Therefore, the inefficient nature of the market can be mitigated by attracting more investors to the market with wide publicity.

References

Asquith, P. and Mullins, D.W., (1986). Equity issues and offering dilution. *Journal of financial economics*, *15*(1), pp.61-89.

Bandara, D.B.P.H (2001). Dividend Signaling, Market Response to Dividend Change and Capital Market Efficiency: An Empirical Analysis. Annual research session 2000/2001 February, Faculty of Management and Commerce, University of Sri Jayewardenepura, pp.23-51.

Bhana, N. (2016). The Stock Market Reaction to Board Changes: The South African Experience. *Journal of Emerging Market Finance*, 15(3) 269–294.

Bollerslev, T., Chou, R.Y. and Kroner, K.F., (1992). ARCH modelling in finance: A review of the theory and empirical evidence. *Journal of econometrics*,*52*(1-2), pp.5-59.

Bollerslev,T. (1986). Generalized autoregressive conditional heteroscedasticity. *Journal of Econometrics* 31, pp.307–327.

Bonnier, K.A. and Bruner, R.F., (1989). An analysis of stock price reaction to management change in distressed firms. *Journal of Accounting and Economics*, *11*(1), pp.95-106.

Brown, S.J. and Warner, J.B., (1985). Using daily stock returns: The case of event studies. *Journal of financial economics*, *14*(1), pp.3-31.

Chew, I.K. and Liang, Y., (1993). Asymmetric market response to dividend changes. *Midwestern Journal of Business and Economics*, pp.17-28.

Dharmarathna, D., & Amarasekara, C. (2016). Shareholders' Responses at the Announcement of the Changes in Executive Directors and Simi - Strong Form Efficient Market Hypothesis: Evidence from Colombo Stock Exchange (CSE). *Proceedings in Management, Social Sciences and Humanities, 9th International Research Conference-KDU, Sri*, (pp. 183-189).

Dharmarathne, D.G., 2013. Stock price reaction to dividend announcements and information efficiency in Sri Lankan share market. *International Journal*,*3*(2), pp.2307-227X.

Engle, R.F. and Ng, V.K., (1991). Measuring and Testing the Impact of News on Volatility Download paper: PDF. *University of California at San Diego, Economics Working Paper Series*.

Frino, A. (2016). The relationship between board independence and stock price performance. *GOVERNANCE LEADERSHIP CENTRE*, 2-13.

Glosten, L.R., Jagannathan, R. and Runkle, D.E., (1993). On the relation between the expected value and the volatility of the nominal excess return on stocks. *The journal of finance*, *48*(5), pp.1779-1801.
MacKinlay, A.C., (1997). Event studies in economics and finance. *Journal of economic literature*, *35*(1), pp.13-39.

Nelson, D.B., (1991). Conditional heteroskedasticity in asset returns: A new approach. *Econometrica: Journal of the Econometric Society*, pp.347-370.

Nthoesane, M., & Kruger , J. (2014). Market reaction to Chief Executive Officers (CEOs) appoinments on Johannesburg Securities Exchange (JCE): Stock price and Volume approach. *Journal of Economics and Finance*, 15(3) 269–294.

Ola, J. C., & Proffitt, D. (2015). The Stock Market Response to CEO Changes: Does Gender Matter? *International Journal of Business and Management; Vol. 10, No. 5; 2015*.

Rosenstein, S. and Wyatt, J.G., (1990). Outside directors, board independence, and shareholder wealth. *Journal of financial economics*, *26*(2), pp.175-191.

Rosenstein, S. and Wyatt, J.G., (1997). Inside directors, board effectiveness, and shareholder wealth. *Journal of financial Economics*, *44*(2), pp.229-250.

Rossi, F., & Cebula, R. (2013). Stock Market Reactions to Announcements of Board of Director Appointments: Evidence from Italy.

Ruey S. Tsay, 1998. Testing and Modelling Multivariate Threshold Models. *Journal of the American Statistical Association,* Vol. 93, No. 443, pp. 1188-1202.

Sorasart Sukcharoensin, (2003). Stock Market Reaction to the Changes of Corporate Directors, Thammasat Review, 30-62.

Sorley, G., & Sherif, M. (2016). Stock Market Reaction to the Appointment of Outside Directors in the Developed and Emerging Markets.

Strong, N., (1992). Modelling abnormal returns: a review article. *Journal of Business Finance & Accounting*, *19*(4), pp.533-553.

Sukcharoensin, S. (2003). Stock Market Reaction to the Changes of Corporate Directors. *Thammasat Review, 30-62.*

Vafeas, N. and Vlittis, A., (2009). Stock market reaction to chief marketing officer appointment announcements. *Journal of Business & Economics Research*, *7*(11), p.29.

Wangui, M. L. (2013). The relationship between Chairmanship and CEO chnges and Stock return of the Manufacturing companies listed in the Nairobi Securities Exchange. 1-71.

Warner, J., Watts, R., and Wruck, K. (1988), "Stock prices and top management changes", Journal of Financial Economics, 20, 461-492

Zakoian, J.M., (1994). Threshold heteroskedastic models. *Journal of Economic Dynamics and control*, *18*(5), pp.931-955.

Zhang, Y. (2015). How Does Untimely Death of an Executive Affect Stock Prices and Company Performance? *All Graduate Plan B and other Reports. Paper 454.*