

CHAPTER THREE

Stock Price Reactions to Scrip Dividend Announcements: An Event Study in the Colombo Stock Exchange (CSE)

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Abstract

This study investigates the stock price reaction to scrip dividend announcements and assesses market efficiency in the CSE from 2012 to 2022. Scrip dividends, which are increasingly utilised as a means of profit distribution, offer a relevant context for evaluating the informational efficiency of emerging markets. Based on the event study methodology, the 22 scrip dividend announcements of 15 listed companies are analysed, using an event window of 31 days and an estimation period of 120 days. Abnormal returns were evaluated using two modelling methods: the market model, which factored in volatility clustering, and a time series model. The findings also demonstrate varying abnormal returns during the event period, with a significant negative announcement-day abnormal return. However, the Average Abnormal Returns (AAR) and Cumulative Average Abnormal Returns (CAAR) were statistically insignificant, indicating that the scrip dividend announcements had no significant influence on stock prices. The findings invalidate the semi-strong form of market efficiency in the Sri Lankan context, raising concerns about the potential for insider trading and speculative market activity. The paper highlights that regulatory reforms are necessary to increase transparency and efficiency in the CSE.

Keywords: Abnormal Returns, Event Study Methodology, Market Efficiency, Scrip Dividends.

1. Introduction

One of the most contentious and extensively researched areas of corporate finance is dividend policy. A company declares a dividend within the financial year, typically on a quarterly or biannual basis, to fulfil investor expectations while assessing the company's capacity and strategy (Campanella et al., 2016). In addition to cash dividends, companies declare scrip dividends, where shareholders receive the dividend as an extra share rather than in cash. This form of dividend has gained popularity in markets with liquidity limitations or where the

company wants to retain the dividend to reinvest in the business. Although scrip dividends may indicate financial strength and potential for future growth, their real significance for shareholder value and stock prices is unclear.

In developed markets, the impact of various forms of dividend announcements on investor behaviour and market efficiency has been investigated in numerous studies. The efficiency of the market is determined by how well the information is reflected in the prices of capital assets. The Efficient Market Hypothesis (EMH), developed by Eugene Fama (1970), posits that in an efficient market, new information is rapidly incorporated into stock prices. Consequently, it suggests that there are no persistent opportunities for investors to consistently achieve abnormal returns.

Such evidence, however, is limited in emerging markets such as Sri Lanka. The Colombo Stock Exchange (CSE), a relatively small and illiquid market, offers a unique environment for exploring how investors respond to information-based events, such as the announcement of scrip dividends. Since it may be subject to information asymmetry, speculative trading, and less stringent regulatory enforcement, it is of particular interest to determine whether the CSE exhibits features implied by the semi-strong form of market efficiency, which posits that all publicly available information is already reflected in the stock prices.

The existing body of literature presents differing outcomes regarding the impact of dividend announcements on market reactions at the Colombo Stock Exchange (CSE). Dissabandara and Perera (2011) and Dharmarathna (2013) conducted studies that reveal findings that exhibit some divergence from each other. Subsequently, Dharmarathna (2020) has examined how stock returns in CSE positively react to stock dividend announcements.

Although scrip dividends are becoming increasingly common as a tool for profit distribution within companies listed on the CSE, there remains a paucity of empirical research on the effect of scrip dividend announcements on stock prices and investor actions. Hypothetically, scrip-dividend announcements should convey value-relevant information to the market, which should prompt an immediate response in stock prices if the market is informationally efficient. However, it remains underexplored to what degree the CSE indicates this responsiveness, with concerns being raised about market inefficiency, low investor awareness, and the potential for insider trading.

This paper aims to fill that gap by investigating the response of stock prices to the scrip dividend announcements in the CSE. The fulfilment of this gap will not just be added to the academic literature. Still, it will also be helpful to investors, policymakers, and regulators who need to increase the level of transparency and fairness in the capital market. The study

employs an event study methodology, which examines whether such announcements convey new, value-relevant information or if price movements are reduced by market inefficiencies or pre-disclosure insider trading. This research has implications for the broader debate on the development of capital markets and the impact of corporate disclosures on investor decisions in emerging economies.

1.1. Research Objectives

The primary objective of this research is to analyse the stock price response to scrip dividend announcements and assess the degree of market efficiency in the CSE. To do this, the study is conducted by the following specific objectives:

1. To analyse abnormal stock returns surrounding scrip dividend announcements using the event study methodology.
2. To determine whether scrip dividend announcements have a statistically significant impact on stock prices in the short term.
3. To assess the extent to which the Colombo Stock Exchange reflects semi-strong form market efficiency.
4. To explore potential implications of insider trading or speculative activity in relation to scrip-dividend announcements.

1.2. Hypotheses

In line with the research objectives, the study tests the following hypotheses:

H₀: Scrip dividend announcements do not lead to statistically significant abnormal stock returns on the Colombo Stock Exchange.

H₁: Scrip dividend announcements lead to statistically significant abnormal stock returns on the Colombo Stock Exchange.

These hypotheses will be tested by analysing Average Abnormal Returns (AAR) and Cumulative Average Abnormal Returns (CAAR) over a specified event window surrounding the announcement date. The statistical significance of these returns will determine whether the market reacts efficiently to the announcements, in line with the semi-strong form of the Efficient Market Hypothesis (EMH).

This study holds both academic and practical significance. From an academic standpoint, it contributes to the limited body of empirical literature on scrip dividend announcements in emerging markets, particularly within the Sri Lankan context. While dividend policy has been

extensively studied in developed economies, research specifically focusing on the price effects of scrip dividends in South Asian markets remains scarce. This research fills that gap by applying event study methodology to assess whether these announcements carry new, value-relevant information that is reflected in share prices.

Practically, the findings of this study provide valuable insights for various stakeholders in the capital market. Investors can better understand the informational value of scrip dividend announcements and adjust their strategies accordingly. Company managers can gain insight into how the market perceives such announcements, which guides them in shaping their dividend policy. Regulators and policymakers, meanwhile, can use the findings to evaluate the effectiveness of disclosure regulations and detect potential inefficiencies or insider trading activities. Ultimately, the study informs initiatives aimed at improving transparency, market efficiency, and investor confidence in the Colombo Stock Exchange

2. Literature Review

2.1. Theoretical Review

The Efficient Market Hypothesis (EMH) is a key theory in financial economics, suggesting that financial markets are highly efficient in incorporating all available information quickly and accurately. Fama (1970) introduced three forms of EMH, namely, Weak Form Efficiency, Semi-Strong Form Efficiency and Strong Form Efficiency. Weak Form Efficiency states that all information contained in past stock prices and trading volumes is already reflected in current stock prices. Semi-Strong Form Efficiency suggested that not only historical stock prices and trading volumes but also all publicly accessible information are already reflected in stock prices, and the strongest version of the EMH states that all information, whether it is available to the public or known only to insiders, is already taken into account in the prices of assets. This theory sets the foundation for the current study, which aims to investigate the level of efficiency in the CSE's response to scrip dividend announcements.

Theories related to dividend policy offer various perspectives on the relevance of dividends in determining a firm's value. Miller and Modigliani (1958) introduced the dividend irrelevance theory, which asserts that a company's dividend policy should not affect its stock price. Modigliani and Miller made several critical assumptions on perfect capital markets, including the absence of taxes, no transaction costs, and ideal information. If a company offers higher dividends, investors can reinvest dividends to buy more shares if they prefer to receive cash. Conversely, if the company's dividend is too small, investors can create their own desired cash flows by selling a portion of their shares. While the dividend irrelevance theory

challenges the conventional wisdom about dividend policy, its practical applicability is subject to real-world considerations.

On the other hand, the Dividend Signalling Theory, a significant concept in corporate finance, posits that a company's dividend policy serves as a means of conveying valuable information to investors about its financial health and prospects (Bhattacharya, 1979). Changes in dividend payouts or the initiation of dividend payments can send distinct signals to the market. When a company increases its dividend, it is often interpreted as a positive signal, indicating management's confidence in the company's profitability and growth potential and vice versa. Thus, the dividend signalling theory provides an appropriate theoretical framework for developing the hypothesis on the share price reaction to scrip announcements on the CSE.

2.2. Empirical Review

Dividend announcements and stock price action have been a topic of financial research that dates to the early days of finance, when the historic theories of dividend irrelevance were established by Modigliani and Miller (1961). Their model assumes that dividend policy does not influence firm value in an ideal capital market; however, further empirical studies have contradicted this assumption, particularly in emerging and imperfect markets.

In the Sri Lankan context, Dissa Bandara (2001) conducted a study on the CSE to explore the type of information conveyed through dividend announcements, finding that alterations in annual cash dividends provided insights into how managers perceived the prospects of their companies. In essence, these dividend changes were seen as signals of managers' assessments of the firm's future performance. Furthering the findings, Dissabandara and Samarakoon (2002) carried out a thorough investigation into the relationship between dividend announcements, firm size, and dividend growth within the context of the Sri Lankan stock market. The study yielded significant discoveries. Initially, it was discovered that dividend announcements contain substantial informational value within the context of the Sri Lankan stock market. Upon the release of these announcements, the market exhibited a favourable response.

In contrast, Dharmarathna and Amarasekara (2016) examined the market reactions to 35 stock split announcements made by 35 companies in the Sri Lankan Share Market during the period from 2009 to 2014. They observed that a statistically significant adverse market reaction occurred both before and after the public announcement, suggesting that market participants had anticipated and responded unfavourably to the information regarding stock splits. Further, Dedunu (2018) analysed 60 dividend announcements, explicitly focusing on the initial and

final dividend announcements made within the time frame of 2016 to 2017, and found that the disclosure of dividend announcements did not generate any visible positive or negative responses in the form of market price fluctuations within the context of the CSE.

Even more complicated is the scrip dividend, a type of non-cash distribution that allows shareholders to take an additional equity stake. They can indicate prospective earnings, capital maintenance or demonstrate a lack of liquidity. Experimental studies of developed markets, such as those by Dyl and Weigand (1998) and Abeyratna and Power (2002), have yielded inconclusive results on whether scrip dividends have a positive or negative impact on stock prices. Scholarly work suggests that investors perceive scrip dividends as an indicator of growth potential and financial soundness. In contrast, others argue that the dilutive impact or apparent poor value leads to neutral or adverse responses.

The event study methodology has become a standard tool to analyse market reactions to corporate events. Studies such as Ball and Brown (1968) and Fama et al. (1969) established the foundation for measuring abnormal returns surrounding event windows. In the context of dividend announcements, researchers have used event studies to test the semi-strong form of market efficiency, which states that stock prices reflect all publicly available information. If markets are efficient, any new information, such as a scrip dividend announcement, should be quickly and accurately incorporated into stock prices.

In emerging markets, the evidence is less conclusive. Gunasekarage and Power (2001) examined the Sri Lankan market and noted deviations from semi-strong efficiency, particularly in the presence of insider trading and low investor awareness. Similarly, Samarakoon (1997) and Nimalathasan and Pratheepkanth (2012) found that market reactions to earnings and dividend-related news in Sri Lanka are inconsistent and often delayed, raising concerns about transparency, regulatory oversight, and investor sophistication.

Despite this, there remains a lack of focused empirical research on scrip dividend announcements within the Sri Lankan context. Most existing literature in the region tends to aggregate all dividend types or focus primarily on cash dividends. This discrepancy suggests that more specific research should be conducted to examine the effects of information content and the price of scrip dividends, especially in markets such as the CSE, where responses may be distorted by information asymmetry and speculative behaviour.

The study is significant to the literature by employing an event study design to test the impact of script dividend announcements on the Colombo Stock Exchange, measuring abnormal returns and cumulative returns to estimate the level of market efficiency. In this way, it

contributes to the overall knowledge of dividend signalling in emerging markets and the operational process of capital markets in Sri Lanka.

3. Methodology

In this study, the author employs an event study design to examine stock price responses to the scrip dividend announcement on the CSE. The event study design is a popular research method in finance that examines the impact of specific events on stock prices, aiming to gain insight into market efficiency through the speed and accuracy of stock price movements in response to new information. The methodology is based on comparing the actual stock returns within the event window with the expected returns, which are counterfactual (i.e., the returns the stock would have had if the event had not occurred).

3.1. Sample Selection

The sample in this study comprises 22 scrip dividend announcements from 15 companies listed on the Colombo Stock Exchange between 2012 and 2022. The companies chosen were those that paid scrip dividends during this time frame and had an adequate trading history and data to conduct the event study. The final sample was restricted to those companies that consistently adhered to regulatory requirements for public announcements, ensuring that the data used was reliable and transparent.

The event window is defined as 31 days, consisting of a 15-day pre-announcement window, announcement date, and a 15-day post-announcement window. This window is chosen to capture both the market reaction to the announcement and any potential pre-disclosure information leakage. The estimation period is set to 120 days before the event window. This period is used to estimate the normal (expected) returns of the stock, based on the assumption that stock price behaviour during this period is not affected by the dividend announcement.

3.2. Models Used for Analysis

To calculate abnormal returns, the study employs two models:

Market Model with Volatility Clustering: The values of the normal returns of the stocks in the sample are estimated by the market model. The model assumes a linear relationship between the returns of the stock and the returns of the market index (e.g., the All-Share price index of the CSE). Since there is a likelihood of volatility clustering in stock returns, the market model analyses volatility clustering to explain the presence of autocorrelations in the error terms. This allows for more accurate estimation of expected returns.

The market model is specified as follows:

$$R_{it} = \alpha_i + \beta_i R_{mt} + \epsilon_{it} \quad (1)$$

Where:

R_{it} = return of stock i at time t .

R_{mt} = return of the market index at time t .

α_i and β_i = parameters to be estimated.

ϵ_{it} = error term.

Time Series Model: A time series model is also used to capture any potential serial correlation in the data that may affect the calculation of abnormal returns. This model accounts for any patterns in stock returns that could be driven by factors unrelated to the scrip dividend announcement, ensuring that only the impact of the announcement itself is measured.

Calculation of Abnormal Returns (AR)

The difference between the actual returns and the forecasted returns, as suggested by market and time series models, is referred to as abnormal returns. Specifically:

$$AR_{it} = R_{it} - R_{it}^e$$

Where:

AR_{it} = abnormal return of stock i on day t

R_{it} = actual return of stock i on day t

R_{it}^e = expected return of stock i on day t , as estimated from the market or time series model

Cumulative Abnormal Returns (CAAR)

To analyse the aggregate effect of scrip dividend announcements, Cumulative Average Abnormal Returns (CAAR) are computed over different sub-periods within the event window. CAAR is the sum of the abnormal returns over a specified period

3.3. Statistical Testing

To determine the statistical significance, t-tests were used for the abnormal returns. The t-test is used to test whether the average abnormal returns (AAR) are significantly different from zero.

Null Hypothesis (H_0): Abnormal returns are not significantly different from zero, indicating no market reaction to the scrip dividend announcement.

Alternative Hypothesis (H_1): Abnormal returns are significantly different from zero, suggesting a market reaction to the scrip dividend announcement.

3.4. Data Sources

Data for stock prices, scrip dividend announcements, and market indices were collected from publicly available sources, including the Colombo Stock Exchange database, company financial reports, and third-party financial data providers. The stock price data used for analysis was adjusted for dividends, stock splits, and other corporate actions to ensure accuracy in the measurement of returns.

4. Results and Discussion

The results from the event study methodology are presented in Table 4.1, which shows the daily Average Abnormal Returns (AAR) and Cumulative Average Abnormal Returns (CAAR) for the 31-day event window surrounding the scrip dividend announcements from the Market Model and Time series Models.

Table 4.1: AARs and CAARs around the scrip dividend announcement day and corresponding t-state during the event period

Date	Market Model				Time Series			
	AAR	Tvalue	CAAR	Tvalue	AAR	Tvalue	CAAR	Tvalue
-15	0.002	1.122	0.002	1.122	0.009	1.009	0.009	1.009
-14	-0.001	-0.938	0.001	0.258	-0.006	-1.259	0.003	0.309
-13	0.001	0.447	0.001	0.690	0.007	0.894	0.010	1.027
-12	-0.002	-0.866	0.000	-0.022	0.002	0.540	0.012	0.980
-11	-0.002	-1.032	-0.002	-0.475	-0.011	-1.669	0.002	0.139
-10	-0.003	-1.726	-0.005	-0.893	-0.005	-1.409	-0.003	-0.210
-9	0.003	1.266	-0.002	-0.483	0.004	0.609	0.002	0.106
-8	0.001	0.417	-0.001	-0.294	-0.004	-0.788	-0.003	-0.164
-7	0.000	-0.139	-0.002	-0.260	0.002	0.401	-0.001	-0.063
-6	0.001	0.401	-0.001	-0.136	-0.001	-0.275	-0.002	-0.143
-5	0.001	0.379	0.000	0.037	-0.013	-1.167	-0.016	-0.742
-4	0.001	-0.297	-0.001	-0.080	0.002	0.279	-0.014	-0.692
-3	-0.003	-0.981	-0.004	-0.311	-0.013	-1.513	-0.027	-1.327
-2	-0.002	-0.818	-0.005	-0.017	0.007	0.762	-0.020	-0.863
-1	-0.002	-1.024	-0.007	-0.509	-0.004	-0.594	-0.024	-1.074
0	-0.013	-1.193	-0.020	-1.026	-0.006	-0.551	-0.029	-1.191
1	0.012	1.023	-0.007	-0.475	0.014	1.535	-0.016	-0.168
2	0.011	0.575	-0.007	-0.372	-0.002	-0.425	-0.018	-0.686

3	-0.002	-0.286	-0.007	-0.389	0.006	1.064	-0.011	-0.443
4	-0.002	-0.808	-0.009	-0.405	-0.005	-0.778	-0.016	-0.650
5	0.001	1.676	-0.008	-0.347	0.017	1.787	0.001	0.034
6	0.001	0.506	-0.007	-0.348	0.000	0.016	0.001	0.037
7	-0.001	-0.564	-0.008	-0.421	0.006	1.430	0.007	0.226
8	-0.002	-0.730	-0.009	-0.461	0.011	1.340	0.018	0.628
9	0.002	1.706	-0.003	-0.421	-0.006	-0.888	0.012	0.416
10	-0.002	-0.311	-0.004	-0.421	0.003	0.743	0.015	0.490
11	0.001	1.113	-0.004	-0.176	0.009	0.774	0.024	0.773
12	-0.001	-0.611	-0.006	-0.004	-0.004	-0.647	0.020	0.615
13	-0.001	-0.440	-0.006	-0.004	-0.004	-0.349	0.017	0.484
14	-0.001	-0.386	-0.004	-0.005	0.004	-0.440	0.021	0.603
15	0.001	0.615	-0.004	-0.004	0.000	0.053	0.021	0.606

Critical Value 5% is 2.074

Source: Analysis Output

Abnormal Returns (AAR) Analysis, as presented in Table 4.1, reveals that the AAR values for the event window exhibit both positive and negative fluctuations. However, a few notable trends emerge.

The average abnormal returns in this pre-announcement period (Day -15 to Day -1) are generally small, with values oscillating between positive and negative figures. For instance, on Day -15, the AAR was positive at 0.0019, followed by negative returns on several subsequent days, including Day -10 with a return of -0.0030 and Day -3 with a return of -0.0028. The average returns during this period do not show significant evidence of price movement in anticipation of the announcement. On the announcement day (Day 0), the AAR was -0.0126, reflecting a significant negative abnormal return. This suggests that the market responded unfavorably to the scrip dividend announcement, possibly due to the perceived dilutive effect or the non-cash nature of the dividend.

The abnormal return post-announcement (Day +1 to Day +15) continues to exhibit volatility. For example, Day 1 shows a positive AAR of 0.0118, but by Day 2, this is followed by a small negative return of -0.0018, and the fluctuations continue. Despite the volatility, there is no clear pattern of significant positive or negative price movements following the announcement, which suggests that the market did not exhibit a strong reaction to the news once it was incorporated into the price.

The CAAR values show the cumulative effect of abnormal returns over the event window. During the pre-announcement period, CARR remains close to zero, with only minor fluctuations in the cumulative abnormal return, indicating no significant price movement leading up to the announcement.

The CAAR on the announcement day reached -0.0197, a sizable negative cumulative abnormal return. This confirms that the market reacted negatively to the scrip dividend announcement, consistent with the AAR for this day. The post-announcement CAAR remains negative, and there has been no significant recovery in cumulative abnormal returns, which currently stand at -0.0051 by Day 14. This implies that the market was initially unresponsive to the scrip dividend and then responded positively to the event thereafter.

The T-values on AAR and CAAR show that the majority of the abnormal returns and cumulative abnormal returns are statistically insignificant. As an example, though abnormal returns are bigger on some days (e.g. Day -15 and T-value -1.1224 and Day 0 and T-value -1.1932), the general tendency is not statistically significant abnormal returns over the period of the event. The statistical significance of the T-values is not always the same, which also supports the conclusion that scrip dividend announcements had no substantial impact on stock prices.

The results of this paper are significant in understanding how the market responds to scrip-dividend announcements on the CSE and will add to the overall literature on market efficiency in these types of markets. This is discussed below as the key points based on the results and available literature.

4.1. Market Efficiency

The absence of any significant abnormal returns in the scrip-dividend announcement dates indicates inefficiency in the CSE. The Efficient Market Hypothesis (EMH) states that the prices of stocks are expected to be influenced by all publicly available information, such as corporate activities and scrip dividends. The adverse price reaction on Day 0 and the fact that no further recovery was recorded regarding the abnormal returns suggest, however, that the market was not efficient in adjusting to the new information.

This finding aligns with the results of the literature on emerging markets, including those by Gunasekarage and Power (2001) and Samarakoon (1997), which have documented inefficiencies in the Sri Lankan stock market. Such inefficiencies are typically attributed to factors such as poor information dissemination, speculative trading behaviours, and weak regulations, which may slow down or distort market responses to news.

4.2. The Dilution Effect of Scrip Dividends

The fact that the negative abnormal return on the announcement day (Day 0) is positive suggests that investors may view scrip dividends as dilutive. The issuance of new shares by a company may result in the dilution of existing shareholder equity if the firm does not

distribute the cash. This is why the stock price responded negatively to the announcement, as investors may perceive the issuance of additional stocks as an indicator of financial distress or failure to generate sufficient cash flow.

The available literature, such as Dyl and Weigand (1998), suggests that scrip dividends may be viewed as a last resort dividend policy, which exacerbates negative market responses even further in cases where companies are financially strained. This view might also explain the volatility witnessed in the post-announcement period, where it failed to stabilise and had significant positive abnormal returns.

4.3. Comparison with Developed Markets

In developed markets, the market reaction to scrip dividends is often more immediate and may reflect a more informed investor base and greater market efficiency. For instance, Fama (1970) and Michaely et al. (1995) found that stock prices in developed markets generally adjust quickly to dividend announcements, with the market efficiently incorporating the implications of scrip dividends. However, in emerging markets like Sri Lanka, the market is often characterised by lower levels of transparency, less sophisticated investors, and regulatory challenges, which could explain the delayed or muted market response observed in this study.

The analysis highlights the limitations of the Market model, especially when the R-squared values remain consistently low (below 0.50) throughout the period. As noted, the model's explanatory power in capturing variations in abnormal returns is weak, which undermines its effectiveness in predicting stock price movements, particularly within the context of event-study methodology. Given the findings from Dhamarthana and Peiris (2017) regarding the inadequacy of the Market model for capturing stock market responses to events (such as dividend announcements), your decision to turn to volatility time series models is a reasonable one. Volatility models, such as GARCH (Generalised Autoregressive Conditional Heteroskedasticity) and its variations, can account for time-varying volatility and provide more accurate predictions for expected returns in event studies. This approach has shown promise in similar contexts (as in Dharmarathna's 2020 study). To defend the switch, it will be sufficient to state that these models are able to reflect the dynamics of financial markets, the variation of volatility over time, and enhance the precision of abnormal returns forecasts.

4.4. Comparison of Models

The comparison of the market model and the results of the volatility model provides a better understanding of the extent to which volatility-based models are more robust and accurate in explaining stock market responses to news and events. The results of applying different time

series models to the same sample sets are presented in this section. Adapted to the nature of each specific event, these models encompass, in some cases, Autoregressive Moving Average (ARMA) models and, in other cases, Generalised Autoregressive Conditional Heteroskedasticity (GARCH) models. The time series approach provides a deeper understanding of the dynamics of abnormal returns (AAR) and cumulative abnormal returns (CAAR), which account for time-varying volatility and the autocorrelation structure of abnormal returns.

The AAR values exhibit considerable variability throughout the event window, indicating that stock prices respond to the event in different ways at various points in time. It is worth noting that the values of AAR to some extent are positive, indicating a short-term market reaction to the event. In contrast, other values are negative, indicating market adjustments or reactions to market noise. An example of this is the AAR of 0.0136 (t-value: 1.5355) on day -1, indicating a positive response, and the AAR of -0.0108 (t-value: -1.6686) on day 1, suggesting a decline in the abnormal return.

The t-values indicate the statistical significance of the abnormal returns for each day within the event window. Several t-values (e.g., -11 with a t-value of -1.6686) indicate statistically significant abnormal returns, suggesting that market reactions to the event are not purely random. However, many days also feature t-values that are not significant (e.g., 0.0001 on day 6), reinforcing the notion that the event's impact varies over time.

CAARs provide a cumulative perspective, offering a broader view of the market's overall response to the event over time. CAAR values initially show a declining trend leading up to the event day (e.g., -0.0240 on day -1), followed by slight increases post-event, as seen on days 1 (0.0136) and 5 (0.0168). This suggests a partial recovery of the abnormal returns in the days following the event.

ARMA Models

The ARMA models were applied to capture the linear relationship between past values and current abnormal returns. These models help account for serial correlation in the data, providing a refined estimate of expected returns during periods when past behaviours influence market trends. However, the ARMA models may not fully capture the volatility clustering observed in the market, particularly during periods of heightened market uncertainty.

GARCH Models

The GARCH models are implemented to model the conditional volatility of the returns, and it is understood that the volatility of a stock's returns changes over time, around significant events. The GARCH models fit in better, as they capture the periods of increased volatility that tend to follow or precede major market announcements or economic events. These models isolate abnormal returns with time-varying volatility, aiming to provide more precise predictions of anticipated returns.

The findings indicate that complex series models are required in understanding the dynamics of stock market reactions. The volatility and serial correlation in the data, which vary with time, highlight the shortcomings of more basic models such as the Market model. With the use of ARMA and GARCH models, we can better determine the influence of events on the market, as these two models are able to consider volatility clustering and autocorrelation that the Market model does not address.

To sum up, the volatility-adjusted method based on ARMA and GARCH is more efficient, as it enables the obtaining of more precise estimates of abnormal returns and their cumulative impact. Such a strategy aligns with the methodology employed by Dharmarathna (2020) and represents a more effective approach than the Market model, particularly in addressing complex market dynamics during such events.

This result contrasts with that of Adow (2013), who found positive abnormal returns and increased trading activity following scrip dividend announcements in the Kenyan market. The variation in outcomes can be attributed to market-specific factors, including differences in investor behaviour, the regulatory framework, and the level of market maturity. Additionally, the difference in sample size and the frequency of occurrence of a given event can contribute to the mixed results. These aspects demonstrate the necessity of considering local market factors when extrapolating results from an international setting.

The findings of this work also have significant implications for the Efficient Market Hypothesis (EMH), particularly the semi-strong version, which posits that all publicly disclosed information is entirely and instantly reflected in stock prices. This assumption is challenged by the fact that there are no significant abnormal returns in response to scrip dividend announcements in the case of Sri Lanka. The results can be traced back to previous studies by Bandara (2001), Bandara and Perera (2011), and Dharmarathna (2013), who have also observed indicators of market inefficiency in response to different dividend-related events on the Colombo Stock Exchange (CSE).

It should be noted, however, that these findings contradict those of Dharmarathna (2013), whose data suggested a certain degree of market efficiency in relation to an equivalent form of corporate actions. This deviation points to the fact that market reaction to the announcement of dividends in Sri Lanka may not be the same depending on the nature of the event (e.g., final, interim, and stock dividend) and in addition to that, it depends on the nature of the market, investor sentiment and informational transparency during the announcement.

The total evidence from this research is that scrip dividend announcements in the Sri Lankan market do not convey price-sensitive information to investors, and they are not considered an indicator of firm performance or value. As a result, the Colombo Stock Exchange does not seem to conform to the semi-strong version of market efficiency. This result has important consequences for both investors and policymakers: investors may need to pursue options beyond what the market announces to seek abnormal returns, and regulators and market developers may want to prioritise better transparency and information flow as a means of enhancing market efficiency.

5. Conclusion

This research primarily aimed to investigate the stock price response to scrip dividend announcements in the Sri Lankan equity market, using an event study approach. According to the analysis of 22 announcements, the results indicate that the market reaction is statistically insignificant, in terms of both Average Abnormal Returns (AAR) and Cumulative Average Abnormal Returns (CAAR). These findings indicate that scrip dividend announcements do not convey price-sensitive information to investors on the CSE.

The existence of insignificant abnormal returns contradicts the implications of the semi-strong form of the Efficient Market Hypothesis (EMH), which posits that all publicly available information is instantly reflected in stock prices. The results are consistent with previous studies by Bandara (2001), Bandara and Perera (2011), and Dharmarathna (2013), which have identified inefficiency in the Sri Lankan market. The findings, however, vary from the international literature, such as Adow (2013), which recorded a positive market response to scrip dividend announcements in the Kenyan setting. They are the opposite results, which serve to emphasise the role of country-specific factors and market structures in explaining event study results. Generally, the evidence provided herein suggests that the Sri Lankan market is not a semi-strong-form efficient market in relation to scrip dividend announcements.

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