THE EFFECT OF DIVIDEND ANNOUNCEMENT ON SHARE PRICES: A STUDY ON THE GHANA STOCK EXCHANGE

By

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DECLARATION

I hereby declare that this submission is my own work towards the Master of Business Administration (Finance Option) Degree, and that, to the best of my knowledge, it contains no material previously published by another person nor material which has been accepted for the award of any other degree of the university except where due acknowledgment has been made in the text.

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ABSTRACT

Maximising Shareholder's wealth in modern times has become the primary goal of financial management. The wealth of shareholders is found in the share prices of a company and thus is maximised when the prices of company's shares increase.

Amongst the several factors that affect the prices of company's shares, researchers have argued that one of the most influential is dividends paid to investors. Available literature from the Ghanaian context has shown mixed results on the relevance of dividends with several of these researches pointing to the inefficiency of the Ghana Stock Exchange.

This study analysed the behaviour of share prices around 30 dividend announcement days for eleven companies listed on the Ghana Stock Exchange with the aim of determining if there was a relationship between dividend announcements and share prices. The sample companies were also analysed in light of their market capitalisation to determine if the market's reaction to dividend announcement were influenced by the size of listed companies. Data used were mainly obtained from the Ghana Stock Exchange and GSE filings of Annual Reports Ghana and included the closing share prices of sample companies, daily Ghana Stock Exchange Composite Index and published dates of dividend announcements.
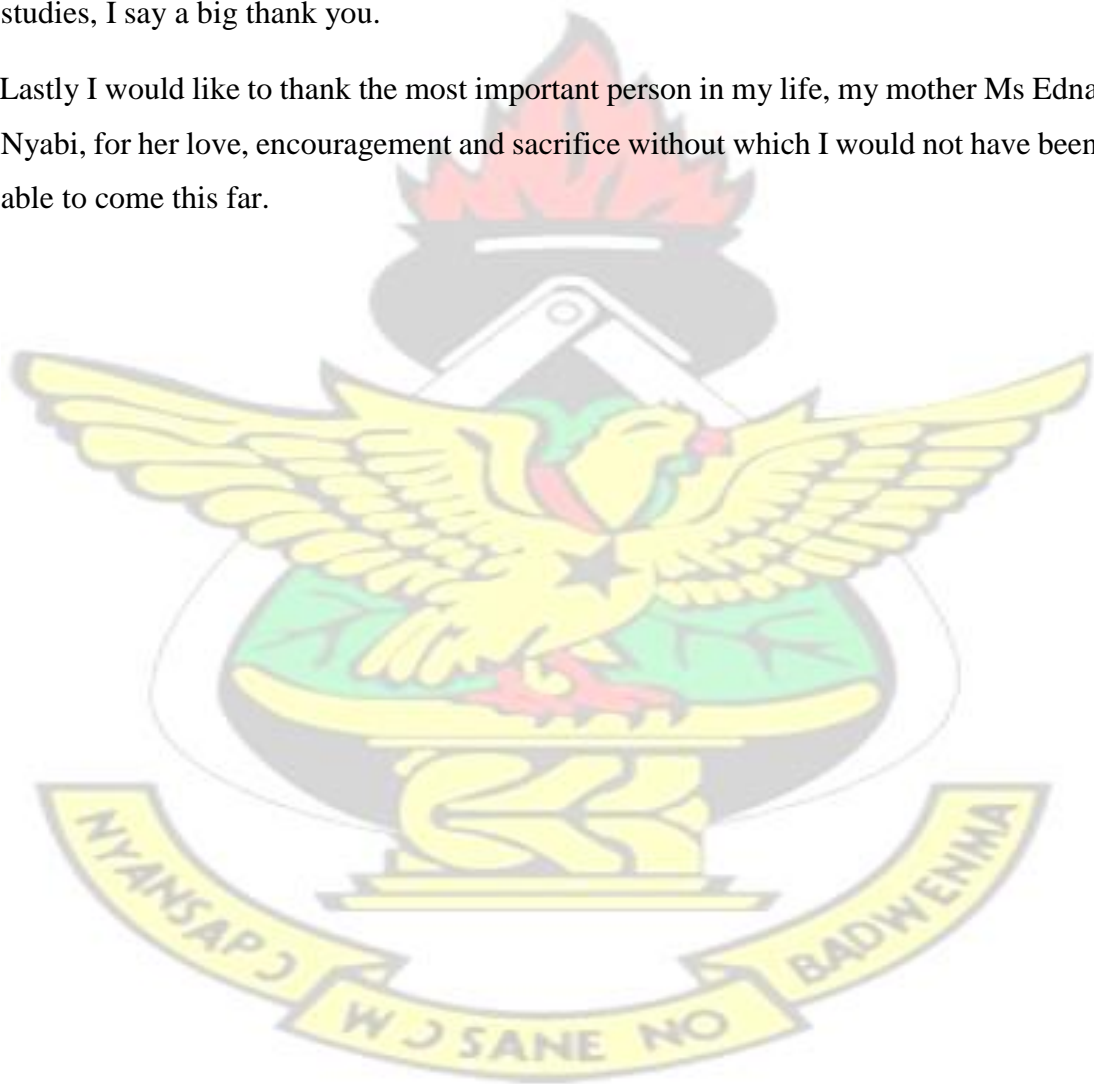
The study established that dividends carry negative information to the market and company size influences the effect and the speed with which the market reacts to dividend announcements on the Ghana Stock Exchange.

ACKNOWLEDGEMENTS

DEDICATION

I dedicate this work to God almighty for giving me the wisdom, strength and the resources to successfully complete this research. All praise and honour to His Holy Name.

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LIST OF ABBREVIATIONS

AAR	Average Abnormal Returns
ACI	Africa Champions Industries Limited
ALW	Aluworks Limited
ARG	Annual Reports Ghana
AYRTN	Ayrton Drugs Manufacturing Company Limited
BOPP	Benso Oil Palm Plantation
CAAR	Cumulative Average Abnormal Returns
CAL	Cal Bank
CSE	Colombo Stock Exchange
DSE	Dhaka Stock Exchange
EBG	Ecobank Ghana Limited
ETI	Ecobank Transnational Incorporated
FML	FanMilk Limited

GCB	Ghana Commercial Bank Limited
GGBL	Guinness Ghana Breweries Limited
GOG	Government of Ghana
GOIL	Ghana Oil Company Limited
GSE	Ghana Stock Exchange
GSE-CI	Ghana Stock Exchange Composite Index
GSE-FSI	GSE Financial Stocks Index
HFC	HFC Bank Limited
KSE	Karachi Stock Exchange
MAC	Mega Africa Capital Limited
NYSE	New York Stock Exchange
PBC	Produce Buying Company Limited
PZ	PZ Cussons Company Limited
SCB	Standard Chartered Bank
SEC	Securities and Exchange Commission
SG	Societe Générale
SOGEGH	Societe Generale Ghana Limited
SPSS	Statistical Package for the Social Sciences
SSB	Social Security Bank Limited

SSNIT   Social Security and National Insurance Trust

UNIL   Unilever Ghana Limited

UTB   UT Bank

YTD   Year to Date

CHAPTER ONE INTRODUCTION

1.1 Background of Study

Dividend policy remains one of the controversial issues in corporate finance. Among several researches done on this subject, the effect of dividend pay-out on share prices has been one of the most studied. Dividends are commonly defined as the distribution of a company's earnings among the shareholders of the firm in proportion to their ownership. The set of guidelines a company uses to decide how much of its earnings it will pay out to shareholders as dividend is referred to as dividend policy. In light of drawing an optimal dividend policy which seeks to maximise shareholders' wealth, policy makers are faced with the challenge of how much of the company's earnings should be paid as dividends as the flexibility of investing in future profitable projects depends on the amount of earnings that has been retained. Dividend policy has been referred to by Brealey and Myers (2005) as one of the ten most difficult issues in financial economics which has not yet been solved. After a study on dividend by Black in 1976 he said, "The harder we look at the dividend picture, the more it seems like a puzzle with pieces that just do not fit together".

Several researches have been conducted to determine the relationship between dividends and shareholders' wealth over the last several decades but a universal conclusion has not been reached, as the results from these studies have always not agreed with each other.

The dividend irrelevance theory was initiated by Modigliani and Miller in a famous seminar paper in 1961. They argued that, given a perfect capital market (without tax and restrictions), only the firm's ability to earn money and the riskiness of its activity can have an impact on the value of the company not its dividend policy. In the real world where capital markets are imperfect however, changes in dividend policy often affect stock prices. Due to information asymmetry between managers and shareholders, shareholders see dividend announcements as conveying information about the performance of the company. An increase in dividend is usually seen by the market as the company possessing strong future prospects, with a decrease in dividend indicating otherwise. It has therefore been argued by a number of researchers such as Lintner (1956), Walter (1956) and Gordon (1959) that the value of a company's stock is affected by its dividend policy since the company's future earnings play a major role in determining a company's dividend policy. Fama et al (1969) and Amberish et al (1987) have also shown that dividends have information content thus signalling to the market the future prospects of the company. In imperfect markets, due to the information content of dividends, the announcement of dividends will cause shareholders to react in a certain way and thus influencing the prices of the company's shares. Ross, Westerfield, & Jaffe (2008) found out from their study that stock prices of companies increased when dividend increase was announced and prices decrease when dividend decrease was announced.

Researchers like Loughlin (1982) and Easton and Sinclair (1989) who found the market to react negatively to dividend announcement attributed the behaviour of the market to the different tax treatment for dividends and capital gain. In situations where shareholders are

in a higher personal tax bracket, capital gains will be preferred to dividends. Stock prices thus tend to decline after dividends have been announced.

Dividend announcement is an official public statement made by a company to inform its shareholders of the portion of the company's profit that has been decided to be paid out as dividends. The speed with which current share prices adjust to reflect available information, in this case, dividend announcement, determines how efficient the market is (Fama, 1970). A market is said to be weak efficient if current share prices reflect all past information. A semi strong form of efficiency is when prices reflect all publicly available information as well as all past information. The highest level of market efficiency, strong form of efficiency, is where all public and private information are reflected in current share prices.

This study seeks to determine if dividend announcements have an effect on share prices of listed companies on the Ghana Stock Exchange.

1.2 Problem Statement

Over the years, a number of researchers have attempted to explain dividend phenomenon in the Ghanaian context using theoretical and empirical models without arriving at a concrete conclusion. Their varying findings have made it impossible to draw a dividend theory that can either explain the process of dividend decision making or serve as a guide for companies when drawing optimal dividend policies.

Works of previous researchers are also inclined towards the reaction of the Ghana Stock

Exchange (GSE) as a whole or the reactions of certain specific segments of the exchange (mainly industry or company based analysis) to dividend announcements. In addition to conducting further empirical studies on the effect of cash dividend announcement on share prices of listed companies on the Ghana Stock Exchange, the study also seeks to analyse the reaction of another segment of the exchange to dividend announcements which is to investigate if the size of listed companies influences the market's reaction to dividend announcements.

1.3 Objectives of Study

- To investigate the relationship between cash dividend announcements and share prices on the Ghana Stock Exchange.
- To investigate the extent to which dividend announcements affect share prices on the Ghana Stock Exchange.
- To investigate the relationship between company size and the reaction of share prices to dividend announcements.

1.4 Research Hypothesis

For this research, the following hypothesis is considered:

- H_o: No significant average abnormal returns (AAR) exist around the dividend announcement date.

H_1: Significant average abnormal returns (AAR) exist around the dividend announcement date.

- H_o: Positive significant average abnormal returns (AAR) exist around the dividend announcement date.

- H_1: Negative significant average abnormal returns (AAR) exist around the dividend announcement date.

- H_o: No significant cumulative average abnormal returns (CAAR) exist around the dividend announcement date.
  H_1: Significant cumulative average abnormal returns (CAAR) exist around the dividend announcement date.

- H_o: Positive significant cumulative average abnormal returns (CAAR) exist around the dividend announcement date.
  H_1: Negative significant cumulative average abnormal returns (CAAR) exist around the dividend announcement date.

- H_o: Market reaction to dividend announcement is affected by the size of listed companies.

- H_1: Market reaction to dividend announcement is not affected by the size of listed companies.

1.5 Scope of Study

This research focuses on examining how dividend announcements impact share prices of listed companies on the Ghana Stock Exchange. The study covers a sample of eleven companies that declared dividend over a period of three years from 2012 to 2014. Data has been collected from the GSE filings of Annual Reports Ghana and the Ghana Stock Exchange.

1.6 Relevance of Study

Dividend announcements have been argued to convey information to the market (Litner (1956) and Gordon (1959)) thus resulting in the increase or decrease of the wealth of shareholders which is represented in the company's share prices.

The role of the finance manager should therefore be geared toward finding an optimal dividend policy that will increase the value of shareholders. Over the years, researchers have argued that the share prices of firms tend to dwindle whenever there is a reduction in the dividend payments with dividend increase generating positive stock returns (Miller and Modigliani (1961), Fama et al (1969), Pettit (1972) and Battacharya (1979)).

Various studies on the impact of dividend on shareholder's wealth and tests on market efficiencies have been extensively done in developed markets (Asquith and Mullins (1983), Schultz (2004)). Unfortunately, the same cannot be said for emerging markets such as Ghana, though previous studies such as Amidu and Abor (2006) and AppiahKusi and Menyah (2003) have attempted work on the Ghana Stock Exchange. The few studies done have not shown unanimity in their findings and has led to insufficient literature to

understand the market's efficiency and the stock market reaction to dividend announcements. Studies done in developed markets used variables that were unique to their environment. Results of these studies can therefore not be used in explaining the behaviour of Ghana's stock market.

The study aims to identify whether dividend announcements have an effect on stock prices of companies listed on the Ghana Stock Exchange and the extent of the impact which will serve as a good decision reference for companies and investors.

1.7 Limitations of Study

This study uses a sample of eleven companies out of the 36 listed and covers only a three year period. The number of companies listed on the Ghana Stock Exchange and failure of some listed companies to issue dividends within the study period limited the number of companies that could be used for this study. Another problem encountered was the difficulty in separating dividend announcement from other announcements which were made around the same time. Despite the fact that reliable conclusions can be made from this research, data collected for this research is specific to the selected listed companies, so may not necessarily apply to some of the companies listed but not covered in this study and companies not listed on the GSE.

1.8 Organisation of Study

The report is organised in five chapters. Chapter one introduces the entire project by discussing dividend policy and the on-going debate about the information content of

dividend. The chapter also discusses the relevance of the study, the objectives and the scope of the study.

Chapter two presents a review of studies done by previous researchers on dividend policy. This chapter begins with a brief overview of some of the major theories on dividend policies, followed by empirical studies done by researchers on other capital markets and then narrowed down to studies done on the Ghana Stock Exchange.

The data, sample size, various models and techniques used to carry out this research are discussed in chapter three. Chapter four presents the analysis and discussions of the findings obtained from the tests conducted in the previous chapter. Chapter five offers a summary and a discussion of findings, implications for practice, and recommendations for improving Ghana's stock market.
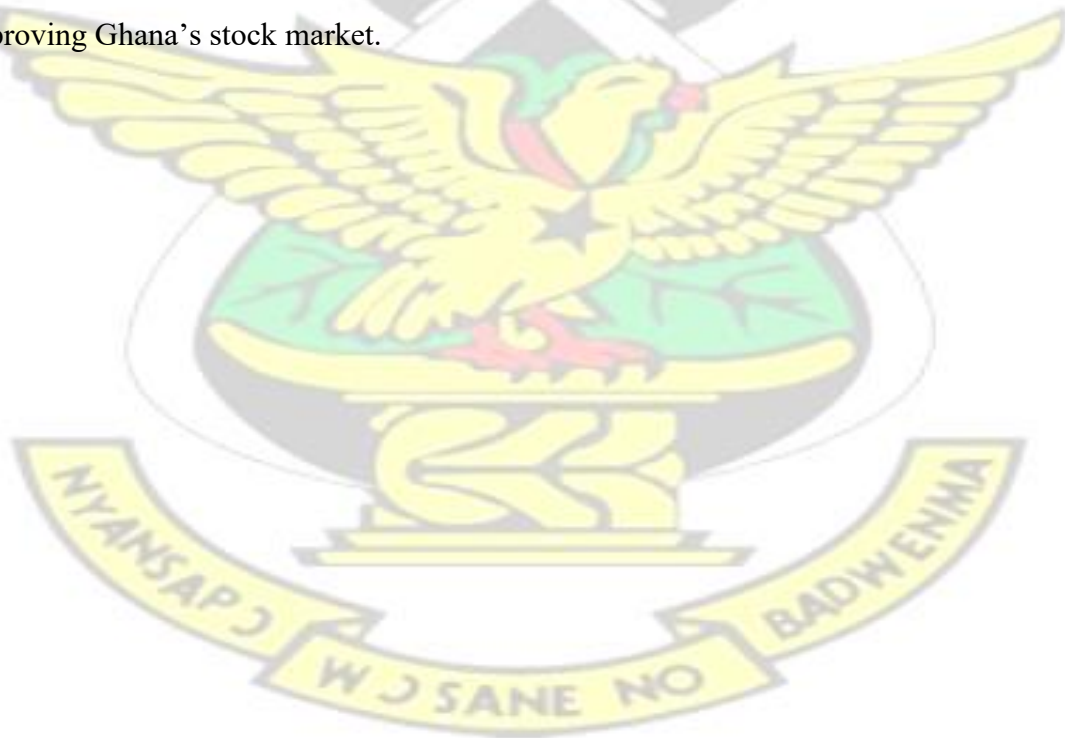
CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

Many studies have been conducted by researchers to determine the relationship between dividend announcements and their impact on share prices. This chapter seeks to review some preceding works and discuss various theories that are relevant to our study. Theories and empirical researches on stock splits and stock repurchases are not discussed in this chapter as this study focuses mainly on cash dividends.

2.2 Theoretical Overview

2.2.1 Information-Signalling Hypothesis

Litner (1956) and Gordon (1959) were the pioneers to put forward the information content of dividends (dividend relevance theory). This school of thought argues that there is direct relationship between the value of a company and its dividend policy as the company's future earnings play a major role in determining a company's dividend policy.

In situations where the management of a company is different from shareholders, managers tend to have more information about the company than shareholders. Dividend announcements are therefore interpreted by shareholders as a signal of the future profitability of the firm. Though an increase in dividend payout may in reality be due to

the fact that the company is mature and has fewer growth opportunities, the market may interpret it as the firm having good future prospects. Similarly, dividend cuts may be seen to be a signal that the firm has no or few future prospects which are profitable though in reality, the company is retaining more earnings to invest in economically viable projects. Dividend cuts thus lead to a decrease in share prices with dividend increase leading to share price increase. The information gap which exists between managers and the market may therefore cause the market to place a value on the firm which might be different from its true intrinsic value. Lipson et al (1998) observed that,

"managers do not initiate dividends until they believe those can be sustained by future earnings". Pettit (1972), Fama et al (1969) and Venkatesh (1989) document that announcements of dividend increase are followed by significant price increase with dividend decrease being followed by significant fall in price.

Miller (1986) argued that it was the difference between the actual dividend paid and the dividend the market expected to be paid that matters not the direction in which the dividend changed. If the market for instance was expecting a fall in dividend payments and the actual fall was greater than what was expected, then share prices will fall. The dividend relevance theory proposed by Lintner (1956) was countered by Miller and Modigliani (1961). They argued that the shareholder's value is rather affected by the earnings of a company which reflects a company's investment policy, and not the amount of dividend paid out to shareholders. According to them, the value of a company's stock is independent of the level of dividend a company pays to its shareholders as long as a company followed its optimal investment policy. Their argument was based on the assumptions that, capital markets are perfectly efficient; managers seek to maximise

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shareholders value, there is no asymmetry of information, no transaction cost in converting shares into cash, no corporate or personal tax and no transaction cost in floating shares. Another argument they put forward to support the dividend irrelevance theory was that, shareholders could create "homemade dividend" by selling their shares at the market price in the capital market if the firm did not pay dividend.

Black & Scholes (1974) found no relationship between dividend policy and stock prices. Their results supported the dividend irrelevance theory, further explaining that dividend policy does not affect the stock prices and it is the decision of investors to either keep high or low yielding securities; in both cases the returns earned by them remains the same.

2.2.2 Agency Cost

The impact of dividend payments is borne by a variety of the company's stakeholders, including debt holders, managers, and suppliers. Agency problem according to Jensen and Meckling (1976) comes about when there is a conflict of interest between managers and shareholders. In Miller and Modigliani's theory, one of their assumptions was that no conflicts of interests existed between managers and shareholders in a perfect capital market. In practice, however, where the owners of the firm are distinct from its management, this assumption may not hold. The interest of the managers may be different from that of shareholders which is to maximise shareholder's value. For instance, where managers compensation is tied to the firm's profitability and size, managements becomes more interested in low dividend payout levels as that will provide enough retained earnings to invest in other profitable projects that will benefit them without the need to

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turn to capital markets for financing. Shareholders on the other hand, prefer that management pay out earnings as dividend and obtain financing from the capital markets, as this will reduce the free cash flow available to managers and thus increase managerial efficiency in investment decisions.

Jensen (1989) introduced the free cash flow hypothesis stating that managers prefer to have more free cash (retained earnings) available to them so as to avoid being under the threat of bankruptcy hence their reluctance in paying out dividend. According to Jensen (1976), dividends help reduce agency cost by serving as a mechanism for monitoring managers, causing them to invest in only profitable projects and not pursue their selfish interests. Dividend announcements therefore have information content with dividend increase indicating that the future performance of the company will be better as agency cost has been reduced and managers will be making more efficient investment decisions. Announcement of dividend decrease on the other hand carries negative information to shareholders.

Agency cost has also been talked about by Rozeff (1982) and Easterbrook (1984). They supported the free cash flow hypothesis by stating that agency cost can be reduced by increasing the dividend paid to shareholders. According to them, the market helps in monitoring the company when external funding is used for financing. Other researchers such as DeAngelo and DeAngelo (2000) and La Porta et al (2000) have supported the free cash flow hypothesis with results from a study by Dennis and Sarin (1994) finding no supportive evidence.

2.2.3 The Clientele Effect

Researchers have argued that clienteles (investors) will be drawn to firms that follow dividend policies that best suit their particular needs. They pointed out that shareholders' preference for dividends or capital gains are influenced by certain factors such as transaction costs, differential tax rates and financial needs.

For investors with regular needs to meet, such as pensioners, dividends will be preferred over capital gain. Other investors who do not need dividends as regular source of income will prefer capital gains. In cases where preferences are based on tax treatments and transaction costs associated with selling stocks, investors are attracted to the option with the minimum tax and transaction cost. Brennan and Thakor (1990) showed in their research that despite the preferential tax treatment of capital gains for individual investors, the majority of shareholders may support a cash dividend payment for small distributions. The preference for either dividends or capital gains will cause investors to invest in companies whose dividend policies meet their requirements.

A study on the extent of the effect of transaction costs and taxes on investor's portfolios in USA was conducted by Pettit (1977). Studying 914 investors' portfolios, his findings supported the clientele effect theory. He reported that there was a positive relationship between investors' ages and their portfolios' dividend yield whiles the incomes of investors were negatively related to dividend yield. He concluded that investors such as the aged who depended more on dividends as their main source of income and those who have portfolios with low un-diversifiable risk preferred dividends to capital gains and thus invest in stocks that paid higher dividends. His findings supported the taxinduced clientele

effect. Eckbo and Verma (1994) and Short et al (2002) also obtained similar results in their study.

Firms therefore tend to build up a clientele of shareholders who are satisfied with their dividend policies. This implies that, a significant change in a company's dividend policy will have an effect on its share price. This can be seen in the works of Dennis et al (1994), Litzenberber and Ramaswamy (1982) and Bajaj and Vijh (1990), whose results show that changes in dividend, have a significant effect on share prices.

2.2.4 Efficient Market Hypothesis

The efficient market hypothesis proposed by Fama (1965) assumes that stock price at any point in time is a good estimate of its intrinsic value. He went ahead to state that for an efficient market, stock prices will quickly adjust to reflect all available information. According to Khoury (1983), the efficiency of a market can be tested by measuring the ability of the market to anticipate new information and how quickly it adjusts to such information.

In a seminal paper by Fama (1970), he went ahead to categorise efficient markets into three forms, namely; weak, semi-strong and strong form. A market is weak efficient when current prices fully reflect all past information. The weak form therefore suggests that an investment strategy that is based on a company's past information cannot yield abnormal returns for the investor. The semi- strong form of market efficiency proposes that current prices reflect all publicly available information hence by trading on publicly available information, investors should not be able to gain abnormal returns. The strong form of

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market efficiency states that all privately and publicly available information are reflected in the current stock price.

Fama et al (1969) carried out a study to investigate the efficient market hypothesis. Their results from examining the effect of stock split announcement on share prices on the New York Stock Exchange from 1927 to 1959 revealed that stock prices adjust rapidly to these announcements, indicating a semi strong efficient market. Reviewing over 163 articles on the efficient market hypothesis, Sewell (2011) found that 50% of the articles he reviewed were in support of EMH with the other 50% contradicting it. Researchers such as Blume and Durlauf (2007) have also challenged the efficient market hypothesis.

2.2.5 Insider Trading

Insider trading comes from the hypothesis that dividends have information content. An insider dealer who receives prior information on a company's dividend policy before that information is made available to the public is able to take certain actions to avoid losses or make riskless profit. If for instance the dealer knows before it is publicly announced that the company will decrease its dividend payout to shareholders, he will sell his shares before the announcement is made thereby avoiding the loss in share value that comes with dividend decrease. Insider trading has been disallowed to ensure fairness in the market as everyone will receive price sensitive information at the same time. Laws such as those preventing management from carrying out certain activities such as buying or selling their shares immediately before dividend announcements are made are examples of measures put in place to prevent insider trading.

Studies done by various researchers on insider trading include Sivakumar and Waymire (1994), Park et al (1995) and Cheng et al (2005). Some results have revealed insider trading in some markets whiles others have revealed otherwise.

2.3 Emperical Literature

Laabs and Bacon (2013) tested the effect of announcing dividend increase on stock prices being traded on the New York Stock Exchange. Findings from the analysis performed on a sample of 15 randomly selected firms from November 20, 2008 to July 26, 2012 showed that prior to the firms announcing dividend increase, stock prices went up hence showing a positive market reaction. They went ahead to state that the market's positive reaction was because investors viewed increased dividend as a signal that the firm had future bright prospects which will bring in bigger cashflows. Findings also support efficient market theory at the semi-strong form level as documented by Fama (1970).

Evidence from research done by Neetu and Shuchi (2010) indicates that dividend increase announcement by companies on Indian's National Stock Exchange yields positive abnormal returns thus supporting the Efficient Market Hypothesis. The study showed that shareholder's value does not increase prior to the announcement day as well as on the announcement day but gain significant value in the period after the announcement day. This study adopted the event study methodology to observe the reaction of stock prices of 15 listed companies for a period of thirty days before and after the announcement day.

Muhammad and Syed (2011) conducted their study on different sectors in Pakistan. Analysing 26 dividend announcements from 2004-2008, share prices were found to react

positively to dividend announcements on the announcement day as well as immediately after such announcements.

Eyup (2008) analysed the effect of cash dividends announcement on share prices on the Istanbul Stock Exchange. Using 330 announcements made by 88 companies from 2003 to 2007, their study revealed that significant negative abnormal returns were earned on share prices after dividends had been announced with a higher negative abnormal return being observed when higher cash dividend was announced. On the other hand the announcement of a decrease in cash dividend resulted in a significant lower negative abnormal return or a positive abnormal return after the announcement day. The study did not record any significant abnormal returns prior to the announcement day indicating that information on dividend payments did not leak before it was announced to the public. Eyup (2008) attributed the negative relationship between cash dividend announcement and abnormal returns to the tax clientele effect. He explained that since taxes on capital gains on the Turkish market were lower than that on dividend yields, shareholders preferred firms to retain earnings than to pay these earnings as dividends to shareholders.

Shahid, Muhammad and Abdul (2011) used the market, mean and risk adjusted models to study the effect of cash dividend announcement on share prices on the Karachi Stock Exchange (KSE). A sample of 100 dividend announcements from 2005 to 2009 was used. It was observed that results obtained from all three models used in the event study were almost similar though there was a marginal bias. Their findings were different from that obtained by Eyup (2008) on the Instabul Stock Exchange. They observed that share prices reacted positively to cash dividend announcements hence rejecting dividend irrelevance hypothesis on the KSE and supporting the evidence of agency cost. This relationship was

attributed to the existence of information asymmetry. Positive abnormal returns were obtained in the pre event window indicating insider trading.

Similar study on the KSE was conducted by Madiha, Mahira and Hassanc (2012). This study focused on the impact of cash dividend announcement on share prices of four different sectors of the Karachi Stock Exchange. Using data covering six years from 2005 to 2006, it was revealed that share prices of none of the sectors were significantly impacted by cash dividend announcements. Returns for the 21 day event window were mostly negative and was attributed to the tax effect of cash dividends.

Dharmarathne (2013) examined stock price reaction to dividend increase announcements, dividend decrease announcements and dividend no change announcements and information efficiency on the Colombo Stock Exchange, CSE from 1999 to 2005. The study analysed 137 dividend announcements made by 61 listed companies on the CSE using the market model event study methodology. Findings for all three cases of dividend announcements showed that stock prices react positively to dividend announcements. Since the highest AARs were recorded on the announcement days for each case, it was concluded that the stock prices reflect all publicly available information hence Sri Lankan Share Market is semi-strong efficient.

Sameer (2012) in the "Impact of Dividend Announcement on Stock Prices: a Study in Malaysian stock exchange context", studied the stock price reaction to the announcement of dividend increase or decrease in comparison with the previous year's dividend. He also sought to find out the market efficiency that exists in Malaysian stock exchange (Bursa Malaysia). Stock prices reaction to dividend announcements 77 companies from 2010 to 2012 was analysed using the event study methodology. It was observed that abnormal

returns were earned when divided increase was announced thereby supporting the dividend signalling theory. Sameer (2012) also realised that the announcement of dividend decrease did not have a significant effect on share prices. He attributed this reaction to the fact that listed firms publish quarterly financial reports hence in situations of dividend decrease, shareholders would have already anticipated it.

Sameer's results were consistent with some previous studies done on the Malaysian stock exchange; (Hussin, Ahmed, and Ying, 2010), (Taneem and Yüce, 2011) and (Yilmaz and Selcuk, 2010) but were inconsistent with others such as (Abdullah, Rashid, and Ibrahim, 2002) and (Mandal and Rao, 2010).

Dividend irrelevancy hypothesis by Miller and Modigliani (1961) was supported by Uddin (2003). His study was based on 137 companies listed on Dhaka Stock Exchange (DSE) who had paid dividend from October 2001 to September 2002. Results showed that share prices did not increase on the announcement of dividends. Shareholders however lost about 20% of stock value 30 days preceeding the dividend announcement day, through to 30 days after the announcement.

2.4 Empirical Findings from Ghana

In Ghanaian context, a few studies have analysed the dividend behaviour of corporate firms:

A study by Attah-Botchwey in 2014 showed the impact of dividend policy on share price of selected listed companies in Ghana from 2005 to 2009. The sample comprised of three companies listed on the Ghana Stock Exchange. From the analysis done on information derived from questionnaires filled out by 60 shareholders, the study found out that as the dividends of companies increase, share prices also increase. He concluded that firms with

increasing share prices were those that paid higher dividends and firms that paid lower dividends experienced decreasing share prices as a result of a fall in demand for their shares.

Using the Johansen cointegration methodology, Frimpong and Boako (2014) assessed the strength of the dividend irrelevance theory on the Ghana stock market. Dividends paid, earnings and stock prices of companies from 2011 to 2013 were analysed. The results established that price of equity in Ghana do not change when dividend payments are announced.

Asamoah (2010) conducted a study on the Ghana Stock Exchange to determine whether companies' share prices are instantly affected when dividend announcements are made. Using the event study methodology as well as the Wilcoxon Matched-Pair signedRanked Test, the major finding was that the GSE was not semi-strong efficient

indicating that, asset prices will not reflect all publicly available information.

Studying the Ghana Stock Exchange's (GSE) responds to annual earnings announcement by measuring abnormal returns of listed companies over a 17 week event window, Osei (2002) found the GSE to be inefficient as the market continuously drifts upwards and downwards before and after the announcement week.

Using weekly closing stock prices of listed firms on the GSE from January, 2007 to June, 2012, Ayentimi et al (2013) examined the weak-form efficiency of the GSE. Their results showed that both the descriptive statistics of the weekly market returns and the normality tests did not follow the normal distribution thus highlighting the market's inefficiency.

By analyzing changes in share prices of 10 listed companies from January 2010 to June 2013, Eleke - Aboagye and Opoku (2013) examined the effect of earnings announcement

on the Ghana Stock Exchange. Using the market model event study methodology their results indicated that at a 5 % margin of error, the abnormal returns around the earnings announcement were not significant and the cumulative average abnormal returns surrounding the event date were insignificant thus inconsistent with

Efficient Market Hypothesis. They concluded that Ghana's stock market does not efficiently adjust to earnings information since earnings announcement had no major effect on share prices of companies on the day of the announcement as well as immediately after the announcements. Similar study by Appiah-Kusi and Menyah (2003) has confirmed the inefficiency of the Ghana Stock Exchange.

According to Asare et al (2014) dividend initiation announcements are greeted positively by investors on the GSE. Using the event study methodology and data from 1990 to 2012, industry based analysis was made to ascertain if there was a difference in how firms in different industries react to dividend initiation announcement. Their results showed that investors in the manufacturing industry reacted stronger than those in the other industries.

2.5 Conceptual Framework
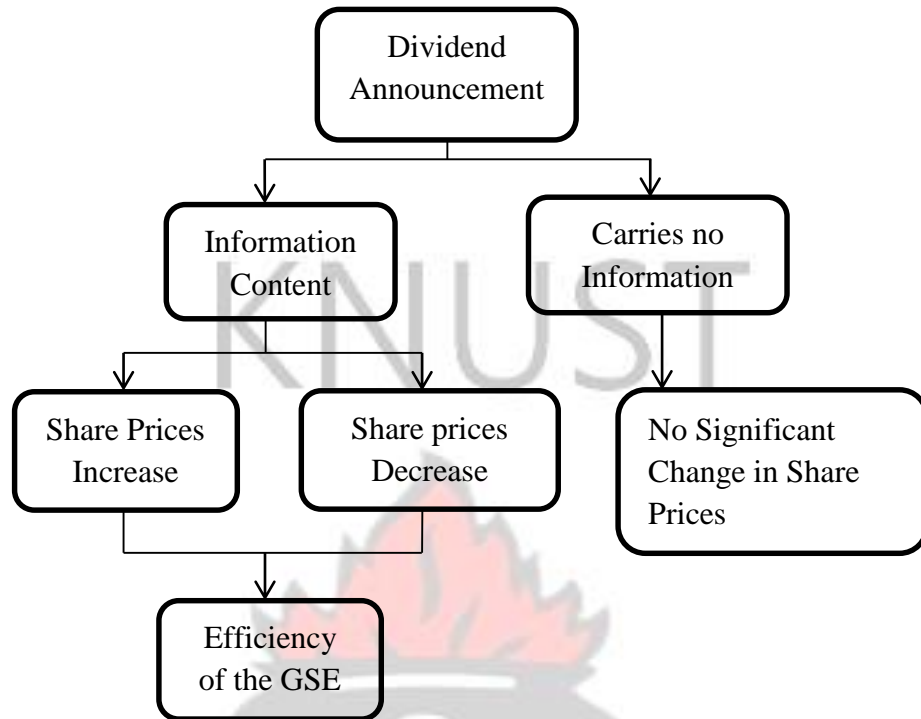
Figure 2.1 **Conceptual Framework**

CHAPTER THREE METHODOLOGY AND CASE STUDY PROFILE

3.1 Introduction

This chapter will cover an overview of the methods and materials of the study, the nature and source of data used and the method of data collection. The tools and techniques used to analyse and process data to achieve various research objectives have also been discussed.

3.2 Population and Sample

The target population for this study is the listed companies on the Ghana Stock Exchange (GSE). Out of the 36 firms listed on the GSE, a sample of 11 companies who had made a total of 30 announcements from 2012 to 2014 was used for this research. Companies chosen for this study were those that had paid dividend at least twice within the three year period and had made no interim dividend announcements within the estimation and event windows. For this study, the sample companies were divided into three different categories and analysis was performed on each category. The first category included all the eleven sample companies chosen to represent the entire Ghana Stock Exchange. This category was subdivided into two groups based on individual company's market capitalisation averaged over the three year period of this study.

Companies with market capitalisation above one billion Ghana Cedis were grouped under the name "Big Companies" and those with theirs below the aforestated value grouped under "Small Companies". The AAR and CAAR of the first category which includes all sample companies are reported as AAR_F and CAAR_F respectively. Those for the second and third categories are reported as AAR_B and CAAR_B for the Big Companies and AAR_S and CAAR_S for the Small companies. The companies selected for this study are shown in Table 1 below.

Table 3.1: Selected Companies

Listed Companies	Trading Names	Date Listed
Big Companies (Market Capitalisation > GH¢1 billion)		
Standard Chartered Bank	SCB	November 12th, 1990

Ghana Commercial Bank Limited	GCB	May 17th, 1996
Ecobank Ghana Limited	EBG	July, 2006
Small Companies (Market Capitalisation < GH¢1 billion)		
Ghana Oil Company Limited	GOIL	November 16th, 2007
Benso Oil Palm Plantation	BOPP	April 16th, 2004
Ayrton Drugs Manufacturing Company Ltd	AYRTN	August 14th, 2006
FanMilk Limited	FML	October 18th, 1991
Produce Buying Company Limited	PBC	May 17th, 2000
Cal bank	CAL	November 5th, 2004
Societe Generale Ghana Limited	SOGEGH	October 13th, 1995
Unilever Ghana Limited	UNIL	August 23rd, 1991

3.3 Data Collection

Data used for this study include:

- Published dates of the final dividend announcements of each company in the sample from 2012 to 2014.

- Closing share prices of sample companies for each day in the estimation and event window.

- Ghana Stock Exchange Composite Index (GSE-CI) for each day in the estimation and event window.

Daily stock returns have been used by researchers like Scholes (1972), Corrado (1989), Frankfurter and Schneider (1995). A total of 30 dividend announcement dates and daily

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GSE Composite Index for the period under study were collected from the GSE filings of Annual Reports Ghana (ARG) and the daily closing stock prices of sample companies were obtained from the Ghana Stock Exchange.

3.4 Data Analysis

Microsoft Excel, SPSS and Minitab Statistical Software were used for the analysis of data collected. The main software used in the computations was the Microsoft Excel.

Regression analysis to obtain companies' beta and alpha was conducted with SPSS. Minitab was used to run T tests on the AARs and CAARs for each day in the event window to determine their significance.

3.5 Methodology

The basic research method used in this study to observe the impact of dividend announcements on share prices is the event study methodology which has been used successfully by Pettit (1972), Masulis (1980), Aharony and Swary (1980), Bowman (1983), Brown and Warner (1985), Kong and Taghavi (2006), Dasilas et al. (2008), Das et al. (2008) and Laidroo (2008). Event study is a commonly used method to find out the relevance and magnitude of a certain event on another. According to MacKinlay (1997), the effect of a specific event on a firm's value can be measured using event study. Das et al (2008) argues that not only the effect but the significance of that effect on a firm's value can be measured using event study.

An event study duration of -140 to +20 days was used with 120 trading days (day -140 to day -21) being the estimation window and 41 trading days including the announcement

day (day -20 to day +20, where day 0 is the announcement date) being the event window. Peterson (1989) in his study noted that the standard duration of the estimation window can be from 100 to 300 days. The estimation window is the period over which the normal return of each stock is calculated and the event window is the period within which the dividend announcement could influence share prices. The event window is thus not included in the estimation window to prevent the event (announcement) from influencing the calculation of the normal return.

The main purpose of event study is to measure how much of the reaction of a dependent variable, in this case share prices, to an event (dividend announcement) is abnormal. To achieve this purpose the first step was to calculate the expected return of each stock which was compared to the actual returns. Stock and market returns are not readily found on the GSE and thus had to be calculated using the daily closing prices of each company and with their equivalent daily Composite Index within the estimation period.

Various models have been used by previous researchers to calculate abnormal returns. For this study, the market model was used.

3.5.1 Stock Returns (Rit) and Market Returns (Rmt)

Daily actual stock returns are calculated as follows:

Rit   =   (Pit – Pit-1) / Pit-1

Where,

Rit   =   the day t return on stock i

Pit   =   the closing price of the stock 'i' on day t (current day)

Pit-1   =   the closing price of stock i on day t-1 (previous day)

Similarly returns on Market Index are calculated as follows:

Rmt   =   (It –It-1)/It-1

Where,

Rmt   =   the day t return of the market (Composite Index)

It   =   the composite index for day t (current day)
It-1   =   the composite index for the day t-1 (previous day)

3.5.2 The Market Model

The expected returns required to compute abnormal returns were forecasted using the market model. Pettit (1972), Aharony and Swary(1980) successfully measured abnormal returns in their studies using the market model. After studying the various event study methods, Brown and Warner (1980) concluded that it is difficult to indicate the best methodology since there is no evidence that the more complicated methodologies convey any benefits. They however stated that a simple methodology based on the market model is both well-specified and relatively powerful under a wide variety of conditions.

To calculate the expected returns, α and β for each company was first estimated using the stock and market returns previously calculated. Using the actual daily stock returns as

dependent variables and their equivalent market returns as independent variables, a regression analysis was run to obtain the intercept (α) and slope (β).

The market model is expressed as:

$$R_{it} = \alpha_i + \beta_i R_{mt} + \epsilon_{it}$$

Where,

R_{it} =   the day t return on stock i

R_{mt} =   the day t return of the market (ASPI)

α_i =   the intercept (alpha) on stock i obtained from the regression analysis β_i

=   the systematic risk (beta) of stock i obtained from the regression analysis and

ϵ_{it} =   the regression error term

Expected returns were calculated by imputing the α and β of each company into the market model.

In calculating the expected returns, the following equation was used:

$$E(R_{it}) = \alpha_i + \beta_i R_{mt}$$

3.5.3 Abnormal Returns

Daily abnormal returns for the event window were then calculated using the formulae:

$$AR_{it} = R_{it} - E(R_{it}), \quad t = (-20, -19 \ldots \ldots 20),$$

Where,

ARit   =   the day t abnormal return of stock i for the event period

Rit   =   the day t actual return on stock i for the event period

E (Rit)   =   the day t expected return on stock i for the event period.

3.5.4 Average Abnormal Returns (AARs)

The abnormal returns for each day in the event window were averaged to obtain the AAR using the formulae:

AARt   = $Avg(ARit) = (1/N)\sum ARit$

Where,

AARt   =   the day t average abnormal return

N   =   the number of announcements made by the sample companies

3.5.5 Cumulative Average Abnormal Returns (CAARs)

In situations where information on the dividend announcement leaks before the day it is officially announced, share prices might start to react to the information before the announcement date. A better indicator of the impact of the announcement on share prices will thus be the cumulative abnormal return, other than the average abnormal return (Bodie et al. 2008). This is calculated by aggregating the AARs from the start to the end of the event window.

CAARt   =   Σ AARt, (where t = -20 to 20)

CAAR could be positive or negative. A negative CAAR obtained after dividend announcements suggests that dividend announcements do not add to shareholders value whiles a positive CAR indicates otherwise. For an efficient market, AARs and CAARs should be close to zero. Graphs of AAR and CAAR were then plotted against time, thus each day in the event window (day -20 to day +20) to determine if there is a visible graphical relationship between time and either AAR or CAAR.

3.5.6 Significance Testing

The significance of the average abnormal returns (AAR) and the cumulative abnormal return (CAAR) for the event period was tested using t-statistics at 5% and 10% significance levels. The main aim of these tests was to determine if the AARs and CAARs were significantly different from zero.

□ **T Test for AAR**

t   =   AARt / SE,t (AARt)

Where,

AARt   =   the day t Average Abnormal Return

SE,t (AAR) =   the Standard error of average abnormal return

SE,t   =   SDt / √N

SDt   = $\sqrt{(1/N-1) \sum (ARit - AARit)^2}$

Where,

SDt   =   the day t standard deviation

SE,t   =   the day t standard error

N   =   the total number of events (announcement dates)

☐ T Test for CAAR

t   =   CAARt / SE,t (CAARt)

SE,t(CAAR) = SDt * √P

SDt   = $\sqrt{(1/N-1) \sum (CARit - CAARit)^2}$

Where,

CAARt   =   the day t cumulative average abnormal return

SE(CAAR) =   the standard error of cumulative average abnormal error

SDt   =   the day t standard deviation

P   =   the number of days over which AARs was cumulated

3.6 Case Study Profile

3.6.1 The Ghana Stock Exchange (GSE)

The Ghana Stock Exchange (GSE) is Ghana's primary stock exchange. In July 1989, the GSE was incorporated as a private company but became a limited public company in April 1994. Trading on the exchange begun in November 1990, with just 11 equities. The number of listed companies rose to 22 in 2000, 34 by the end of 2011, and currently lists 38 equities from 36 companies and 2 corporate bonds. Up until January 2011, the main measure of the GSE's performance was the GSE All-Share Index. The GSE currently uses two indices, namely the GSE Composite Index (GSE-CI) and the GSE Financial Stocks Index (GSE-FSI).

The GSE was awarded the best performer among all emerging markets in 1994, 1998, 2003, 2008 and 2013 but was counted as one of the worst performers in 2009. The All Share Price Index in 2003 gained 154.67% and 91.83% in 2004 but made a loss of – 29.85% in 2005. The market recovered in 2006 with a year-to-date gain of 0.44% by May 2006.

In 2008, one of the best performing years, a year to date gain of 58.06% (GSE All Share Index of 10,431.64) was achieved on the index as compared to 6,599 in 2007. Listing of new shares by three companies, additional issue of shares by four companies and price appreciations were the factors that drove the performance of the exchange in 2008. Four companies made between 104% to 203% gains in share prices, twelve companies made above 10% gains, two companies made gains below 10% and ten companies sustained

their share prices. Seven companies however, documented loses on their share prices in 2008.

The global financial crisis, migration from paper certification to electronic book entry of securities on the GSE as well as the increased attractiveness of the money market due to the rise in local interest rate made 2009 a difficult year for the GSE. With the GSE AllShare index falling by -46.58% in 2009, the Ghana Stock Exchange was the least performing market in Africa. Recovering in 2010 with a gain of 32.3%, the market declined again by 3% in 2011.

The year 2011 came with some major changes being made in the trading activities of the Ghana Stock Exchange. The exchange extended its trading hours and replaced the GSE All Share Index with two new indices; the GSE Composite Index (GSE-CI) and the GSE Financial Stocks Index (GSE-FSI). Notwithstanding these changes, the volume of shares traded went up by 27%. The GSE-CI however by the end of the year was 969.03 (863.09 for the GSE-FSI), recording a loss of 3%. The performance of the GSE Composite Index went up in 2012 ending the year with a cumulative gain of 23.8%.

The year 2013 recorded a 78.8% rise in the GSE Composite Index (from a GSE-CI of 992.25 in January 2011 to 2099.90 by October 2013). In the first quarter of the same year, Databank's quarterly market research adjudged the Ghana Stock Exchange, in terms of returns to investors, the best performing market in Africa. The Bank of Ghana attributed this outstanding performance to the good operating results of many of the listed companies and the restored investor confidence in the Ghanaian market and economy. For this year, ten companies made over 100% gains on their share prices, five companies made above 50% gains, five companies made gains of 50% and below, eight companies had no change

in their share prices and five companies made losses between 20% to 5% on their share prices.

As compared to the performance of the exchange in 2013, the return gained in 2014 was marginal, with a 5.4% increase in the GSE-CI. The best performing listed companies in terms of capital gains by the end of 2014 were HFC Bank Ltd (HFC) leading with 56%, Ecobank Transnational Incorporated (ETI) with 47%, Mega Africa Capital Ltd. (MAC) with 45% Standard Chartered Bank (SCB) with 36%, Ecobank Ghana (EBG) with about 36%, Sam Woode and Societe General Ghana both followed with a gain of 33% and Benso Oil Palm Plantation Ltd. (BOPP) with about 28% gain. Africa Champions Industries Ltd (ACI), PZ Cussons Company Ltd (PZ), Guinness Ghana Breweries Ltd (GGBL), Aluworks Ltd. (ALW), UT Bank (UTB) and eleven other companies on the other hand obtained negative gains. Four companies maintained their share prices.

Figure 3.1 shows a graphical representation of the gains and losses of the Ghana Stock Exchange from 1990 to 2014.
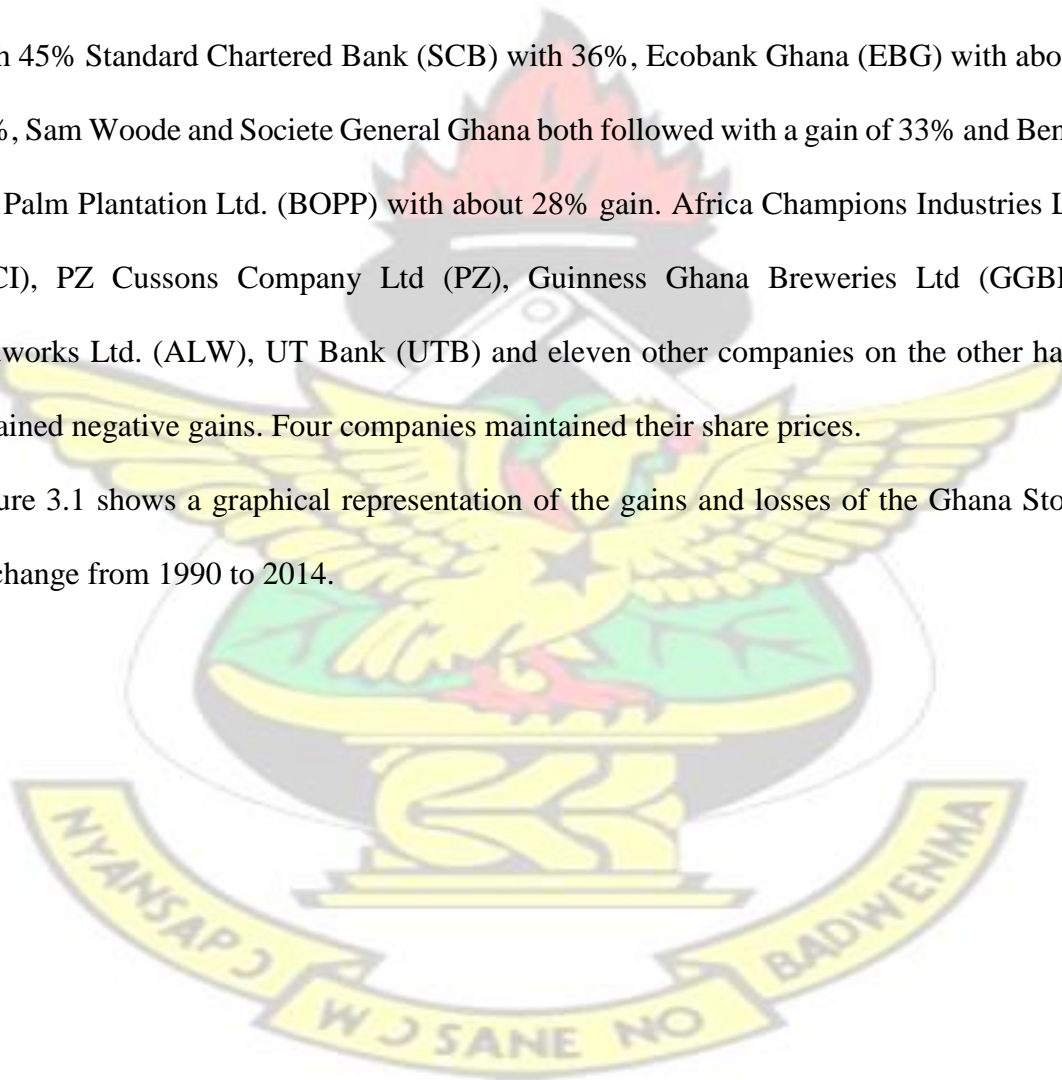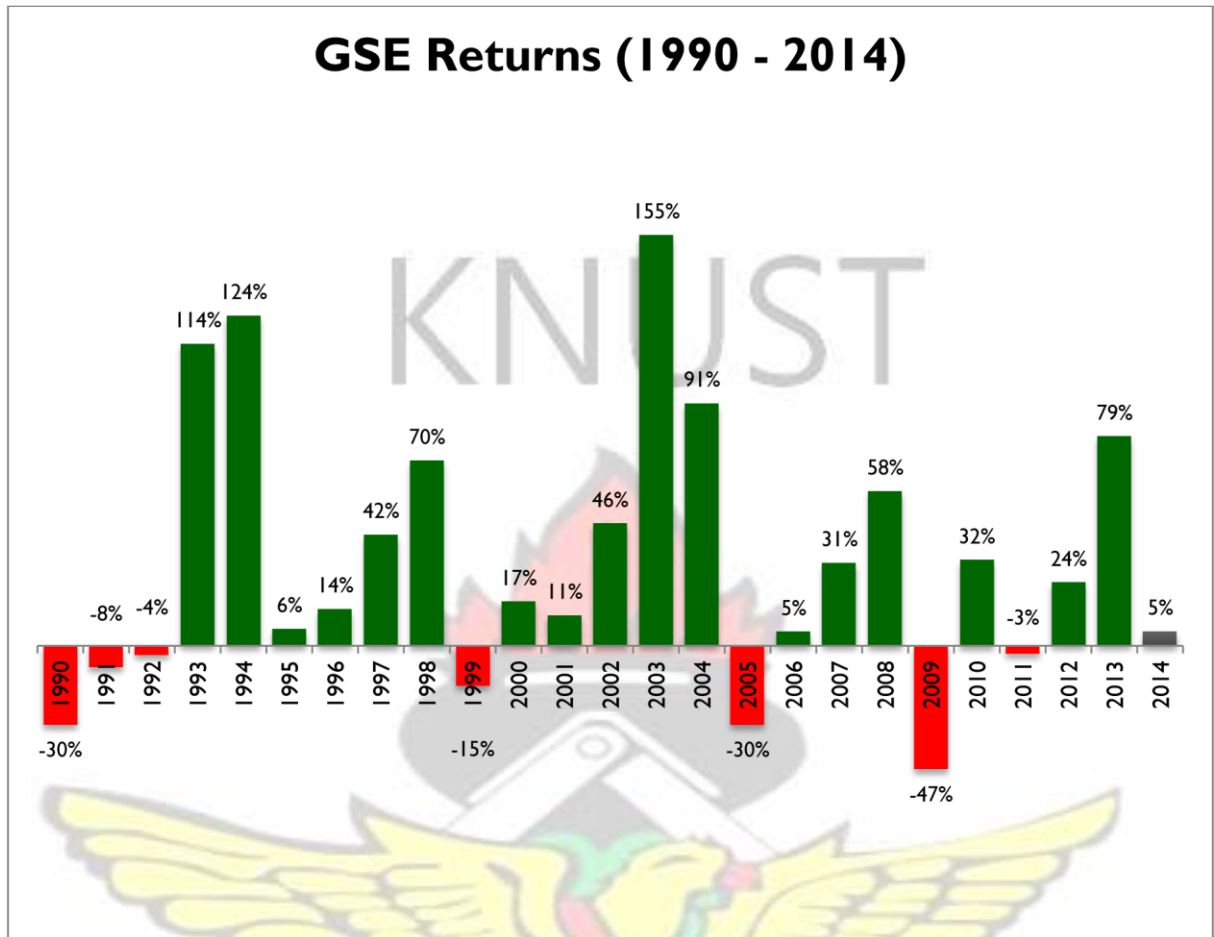
Figure 3.1 **Ghana Stock Exchange Returns from 1990 to 2014**

CHAPTER FOUR DATA ANALYSIS AND DISCUSSIONS

4.1 Introduction

This chapter seeks to present, discuss and analyse the results obtained from the research.

The Average Abnormal Returns (AAR) and the Cumulative Average Abnormal Returns

(CAAR) in the event window show the reaction of the stock market to dividend

announcement.

4.2 Descriptive Analysis of AAR and CAAR for the Entire Sample

The average abnormal returns which are obtained by summing the abnormal returns for each day across the firms and dividing by the number of events, takes into account the possibility that the event (dividend announcement) may impact each firm in the sample differently. CAARs show the impact of dividend announcement over time (event window). It is the sum of the average returns to a point in time. The CAARs from -20 to day -1 should be approximately zero if the capital market does not anticipate the occurrence of the event. CAARs therefore give an indication of the existence of insider trading in the capital market. Table 4.1 shows the Average Abnormal Returns (AARs) and Cumulative Average Abnormal Returns (CAARs) for each day in the event window (-20 to 20), calculated for 30 dividend announcements from 2012 to 2014.

Corresponding t values for the AARs and CAARs are also shown in the table.

Table 4.1: Table showing AAR and CAAR for each day in the event window for the entire sample (n=30)

Day	AAR	t-stat. AAR	CAAR	t-stat CAAR
-20	0.00139	0.45	0.00139	0.45
-19	0.00278	0.97	0.00417	0.77
-18	0.00657	1.33	0.01074	1.37
-17	-0.00184	-0.51	0.00890	0.84
-16	0.00101	0.65	0.00991	0.88
-15	0.00352	1.15	0.01343	1.1
-14	0.00773	1.46	0.02115	1.38

-13	0.00018	0.07	0.02133	1.35
-12	0.00220	0.75	0.02353	1.38
-11	-0.00092	-0.15	0.02262	1.11
-10	0.00138	0.33	0.02400	1.02
-9	0.00140	0.26	0.02540	0.91
-8	0.00138	0.59	0.02678	0.93
-7	0.00068	0.27	0.02746	0.96
-6	-0.00220	-2.45**	0.02525	0.87
-5	-0.00363	-1.41	0.02162	0.73
-4	0.00034	0.17	0.02196	0.73
-3	-0.00102	-0.68	0.02095	0.69
-2	0.00264	0.78	0.02358	0.74
-1	0.00022	0.09	0.02380	0.73
0	-0.00310	-1.19	0.02070	0.62
1	-0.00141	-1.03	0.01929	0.57
2	0.00211	0.42	0.02140	0.62
3	-0.00680	-1.18	0.01460	0.43
4	-0.00268	-1.31	0.01192	0.34
5	-0.00080	-0.34	0.01112	0.31
6	-0.00464	-2.2**	0.00648	0.18
7	-0.00208	-1.01	0.00440	0.12
8	-0.00550	-2.07**	-0.00110	-0.03

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9	0.00074	0.34	-0.00036	-0.01
10	0.00260	1.19	0.00224	0.06
11	-0.00599	-1.02	-0.00374	-0.1
12	-0.00365	-1.11	-0.00740	-0.19
13	0.00062	0.16	-0.00678	-0.17
14	0.00311	1.44	-0.00366	-0.09
15	0.00131	0.55	-0.00235	-0.06
16	-0.00060	-0.15	-0.00295	-0.07
17	-0.00090	-0.27	-0.00385	-0.1
18	0.00093	0.67	-0.00292	-0.07
19	0.00349	0.82	0.00057	0.01
20	-0.00241	-0.99	-0.00184	-0.04

The asterisks ** indicate the level of significance (based on the t values) at 5%

4.2.1 Analysis of the Behaviour of AAR on and Around the Dividend Announcement Day

It is observed from the p values that the AARs for the event window are all statistically insignificant at a 5% level of significance except for the AARs of days -6, 6 and 8.

Out of the 20 trading days preceeding the dividend announcement date, only 5 days recorded negative abnormal returns thus days -3, -5, -6, -11and -17 with only the AAR on day -6 found to be statistically significant at a 5% level of significance. A significant reaction by the market before the announcement day (day -6) is an indication that information on the announcement leaked before it was made known to the public. It is

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observed that the AAR for the announcement day (day 0) is also negative. AARs fluctuated throughout the event window. Severe fluctuations were observed from day 20 to day -13. The severity of the fluctuations reduced from day -12 to two trading days after the dividend announcement day (day 2). Day -14 before the announcement date recorded the highest AAR (0.00773) amongs all the days in the event window with the lowest AAR being recorded on day 3 (-0.00680) after the announcement. However both values werefound to be statistically insignificant at a 5% significance level. Days -10, -9 and -8 recorded approximately the same AARS (0.00138, 0.00140, 0.00138 respectively). A positive AAR of 0.00264 was recorded on day -2 (two trading days before the announcement day) but declined to 0.00022 on day -1 then gained a negative AAR (-0.00310) on the announcement day, day 0. The positive AARs prior to the announcement date and the negative value obtained on the announcement day acould be due to other market factors since the values were found to be statistically insignificant. It was observed that twelve days after the divividend announcement day had negative AARs. Comparing the number of days post dividend announcement that had negative AARs to those before the announcement day, shows that the performance of stocks dropped after the dividend announcement day. Though AAR of -0.00141 was gained in day 1, fig 4.1 shows an upward trend in AARs after the dividend announcement day reaching 0.00211 by day 2. The lowest negative AAR of the entire event window, 0.00680, was however obtained in day 3 after the announcement day but was found to be insignificant at a 5% level of significance. The AARs continued fluctuating to the end of the event window (day 20) with only the values of days 6 and 8 being statistically significant at a 5% level of significance. This shows the innefficiency of the GSE as the effect of the dividend

announcement was felt only on days 6 and 8 after the dividend announcement day. The general fall in performance of stocks after the dividend announcement day, though significance was seen 6 to 8 days after the announcement, can be attributed to the information content in dividend announcements made by the event firms on the Ghana Stock Exchange. Results therefore indicate that share prices are affected by dividend announcements.
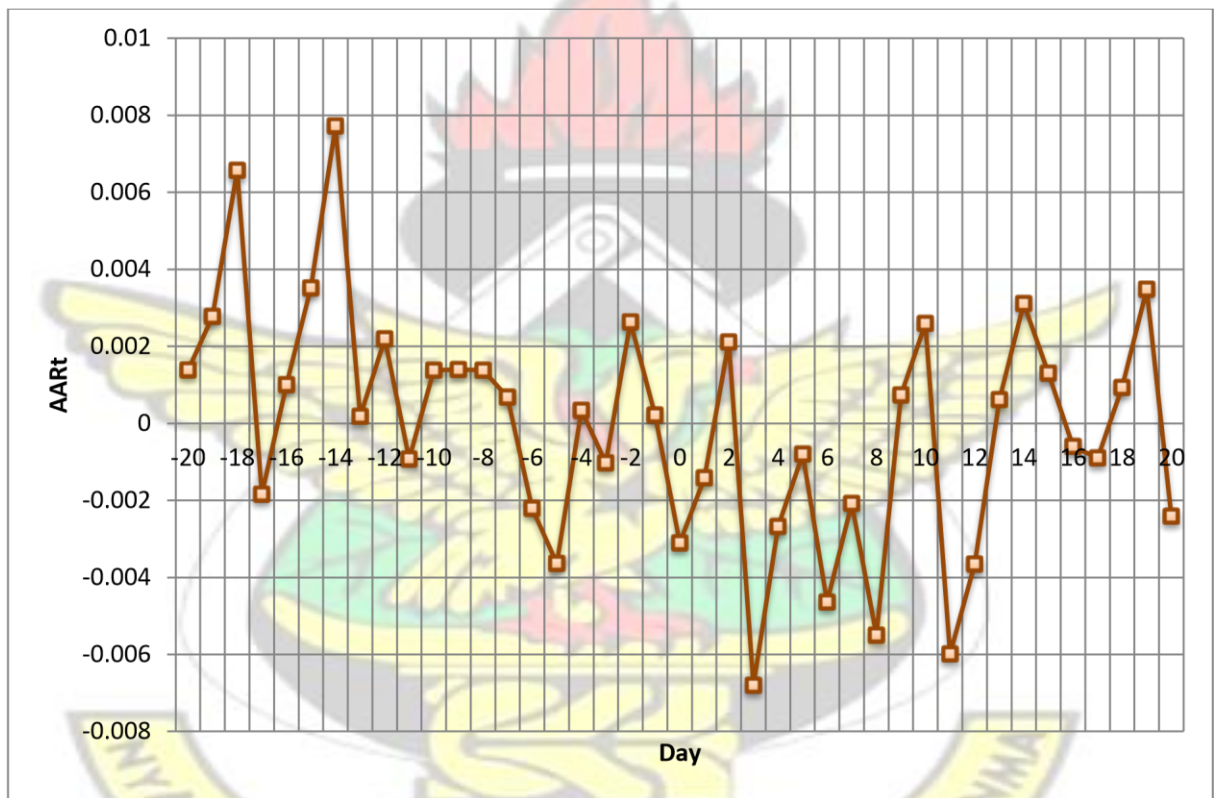
Figure 4.1 **Average Abnormal Returns (AARt) Against Day (Event Window) for the Entire Sample (n=30)**

4.2.2 Analysis of the Behaviour of CAAR on and Around the Dividend Announcement Day

For further analyses of the effect of dividend announcemnt on share prices, the CAAR for each day of the event window was calculated from the AARs.

Fig 4.2 and Table 4.2 present the CAAR for each day in the event window for the entire sample. Positive CAAR is observed from the beginning of the event window (day -20) till eight trading days (day 8) after the announcement day. There is a steady increase of CAAR from 0.00139 on day -20 to 0.02746 on day -7, though days -17 and 11experience a slight dips in their values. CAAR falls to 0.02525 on day -6, rises two trading days to the announcement day (recording 0.02358 on day -2 and 0.02380 on day -1) then falls again on the announcement day to 0.02070. The rising of the CAAR a few days before the announcement day could be an indicator of the presence of insider trading on the Ghana stock exchange. Information of the dividend anouncement probably leaked prior to its announcement day hence the markets reaction. The presence of insider trading was also observed by Eleke - Aboagye and Opoku (2013) in their study on the effect of earnings announcement on share prices in Ghana. This decline continues to day 1, rises to 0.02140 on day 2 afterwhich it falls sharply, reaching a negative CAAR of -0.00110 on day 8. CAAR rises shortly for two days after day 8 but falls to the lowest CAAR of -0.00740 observed over the entire event window on day 12 then begins to rise again. The results show that stocks on the GSE performed well from the beginning of the event period but peformance begun to drop a few days before the announcement day, with the fall in performance intensifying three days after the announcement. The CAARs for the entire

event window are seen to be statistically insignificant at a 5% level of significance indicating that the Ghana Stock Exchange is ineffecienct.
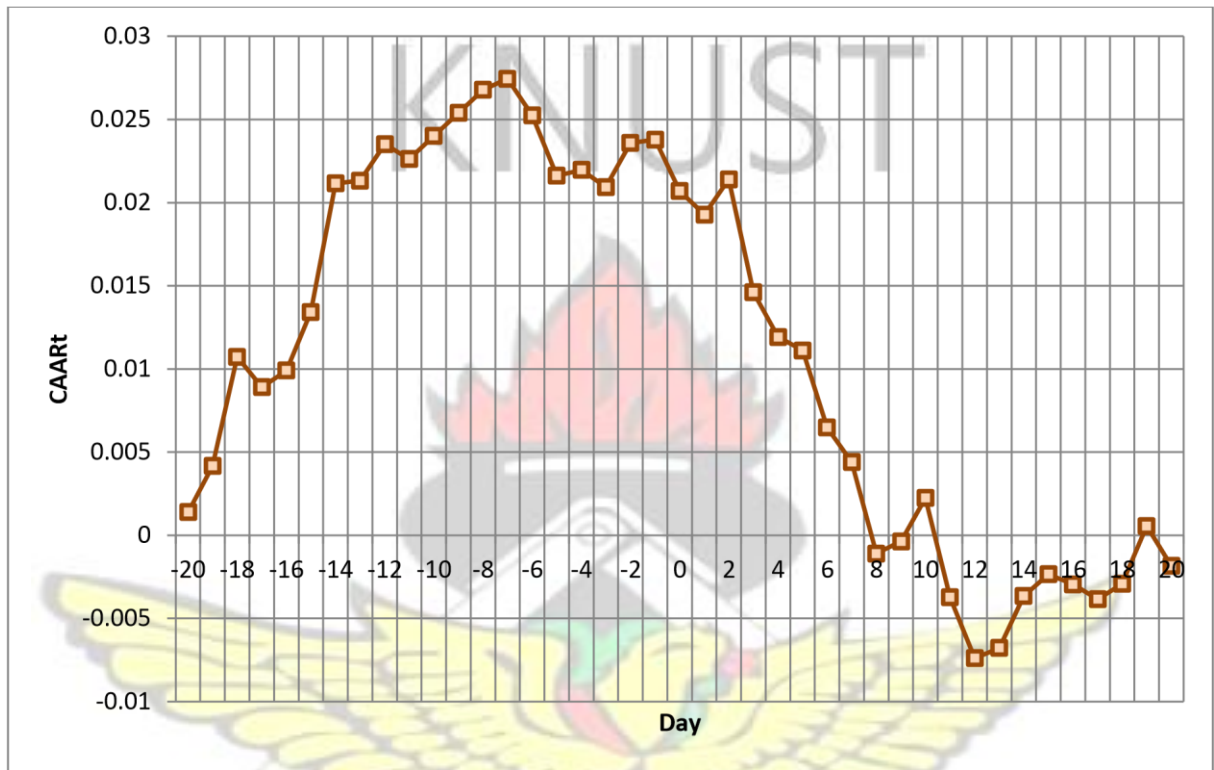
Figure 4.2 **Cummulative Average Abnormal Returns (CAARt) Against Day (Event Window) for the Entire Sample (n=30)**

4.3 Analysis of the Behaviour of AAR on and Around the Dividend Announcement Day of Big and Small Companies

Table 4.2 shows the average abnormal returns (AARt_B and AARt_S) for each day in the event window of companies grouped into their market capitalisation which is Big Companies and Small Companies respectively.

Table 4.2: Table showing AAR for each day in the event window for Big (AAR_B) and Small (AAR_S) Companies

Day	AAR_B (n=9)	t-stats. AAR	AAR_S (n=21)	t-stats. AAR
-20	0.00553	0.99	-0.00039	-0.1
-19	0.00003	0.01	0.00396	1.22
-18	0.00741	0.53	0.00621	1.52
-17	-0.00906	-1.07	0.00125	0.34
-16	0.00036	0.11	0.00129	0.72
-15	-0.00048	-0.21	0.00523	1.23
-14	0.00988	1.30	0.0068	0.99
-13	0.00894	1.42	-0.00358	-1.48
-12	-0.00149	-1.24	0.00378	0.91
-11	-0.00103	-0.60	-0.00087	-0.1
-10	0.00090	0.34	0.00159	0.27
-9	-0.00319	-1.11	0.00336	0.43
-8	0.00307	0.90	0.00066	0.22
-7	0.00494	0.85	-0.00115	-0.45
-6	-0.00122	-0.70	-0.00262	-2.48**
-5	-0.01066	-2.07***	-0.00062	-0.22
-4	0.00555	0.94	-0.00189	-1.33
-3	-0.00047	-0.17	-0.00125	-0.68
-2	-0.00163	-1.38	0.00447	0.94

-1	0.00043	0.18	0.00013	0.04
0	-0.00289	-0.69	-0.00319	-0.96
1	0.00153	0.46	-0.00267	-2.00**
2	-0.00268	-2.67**	0.00417	0.57
3	-0.00044	-0.19	-0.00953	-1.17
4	-0.00429	-3.49*	-0.002	-0.69
5	0.00116	0.37	-0.00165	-0.53
6	-0.00089	-0.22	-0.00624	-2.54**
7	-0.00131	-0.42	-0.00241	-0.9
8	-0.00847	-1.16	-0.00422	-1.84***
9	0.00049	0.20	0.00085	0.29
10	0.00312	0.90	0.00238	0.85
11	-0.00111	-0.70	-0.00808	-0.96
12	-0.00804	-1.49	-0.00178	-0.43
13	-0.00294	-1.07	0.00215	0.4
14	0.00492	0.85	0.00234	1.19
15	-0.00083	-0.21	0.00223	0.75
16	0.00193	0.77	-0.00168	-0.29
17	0.00541	1.05	-0.0036	-0.87
18	0.00655	1.71	-0.00147	-2.02***
19	0.00648	0.59	0.00221	0.55
20	-0.00313	-0.47	-0.0021	-0.96

The asterisks *, **, and *** indicate the level of significance (based on the t values) at 1%, 5% and 10% respectively and n is the number of events.

It is observed that the AARs for both the Big and small companies fluctuate before and after the dividend announcement in a similar manner as that obtained for the entire sample. Comparing the reaction of the big companies to that of the small ones, both companies reacted in the same direction (either positive or negative AARs) for twentythree days out of the forty-one days in the event window. The reaction of both groups for the remaining seventeen days (nine days before and eight days after the announcement day), were in different directions thus the big companies recording negative AARs and the small companies recording positive AARs and vice versa. Out of these seventeen days, AAR for day 2 is seen to be significant for the big companies and that for days 1 and 18 to be significant for the small companies. The highest AAR (0.00988) and the lowest AAR (-0.01066) were both gained by the big companies on days -14 and -5 respectively with day -14 being statistically insignificant and day -5 being statistically significant at a 10% significant level. An AAR of -0.00262 which is significant at a 5% level of significance was obtained on day -6 for the small companies. The significant returns both categories of companies obtained prior to the dividend announcement day indicates the leakage of dividend information with the smaller companies reacting to the information earlier than the big ones. On the dividend announcement day, similar reaction was observed for both groups of companies as an AAR of -0.00289 was obtained by the big companies with the small companies having an AAR of -0.00319. As shown in Figure 4.3, the AAR for the small companies starts rising after the announcement day, reaching a statistically significant negative AAR (-0.00267) on day 1 at a 5% level of significance. A non-

significant positive AAR was however recorded by the big companies for that same day. The significant effect of dividend announcement is felt by the big companies on day 2 and day 4 resulting in AARs of -0.00268 and -

0.00429 respectively. Though both groups start reacting to the dividend announcements on different days after the announcement day, their reaction are similar. For the Small Companies, an AAR of -0.00267 was obtained on day 1 and   -0.00268 was obtained for the Big Companies. The reaction speed of both the small and big companies to dividend announcement is seen to be faster than that observed for the study done on entire sample where significant AARs were only seen on the sixth and eighth day after the dividend announcement. Statistically significant AARs were also obtained on days 6, 8 and 18 for the small companies. It was observed that all statistically significant AARs for both groups were negative, indicating a negative market reaction to dividend announcements. This could be attributed to the argument put forward by Miller (1986) that the market reaction to dividend announcements will be negative if dividends do not meet the expectations of the market. In addition to the fact that small companies had more days in its event window recording more statistically significant AARs than the big companies, the small companies are seen to react faster to dividend announcements than the big companies. This shows that the impact of dividend announcements on stocks of smaller companies on the GSE is greater than that on big companies as proposed by the differential information hypothesis which says that investors of small firms are seen to overreact to dividend announcements as information about small companies may not be available to investors.
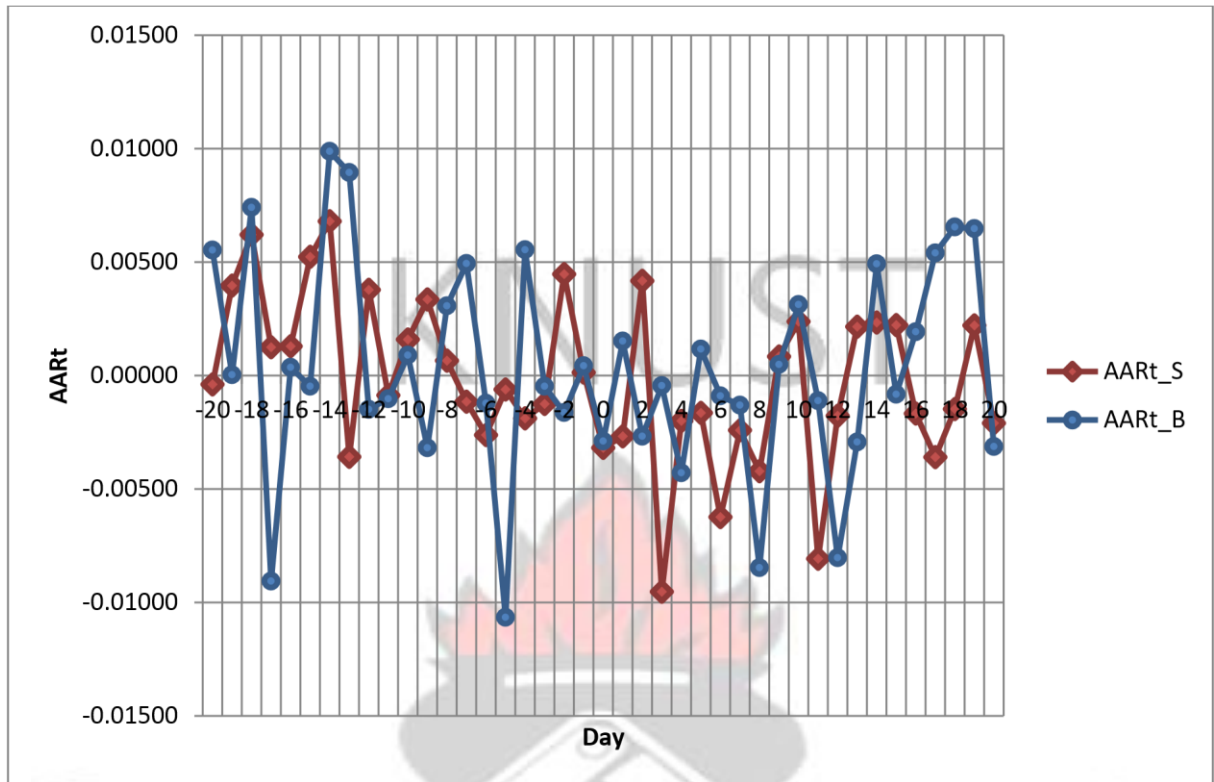
Figure 4.3 **Average Abnormal Returns for Big (AARt_B) and Small Companies (AARt_S) against Day (Event Window)**

4.3.2 Analysis of the Behaviour of CAAR on and Around the Dividend Announcement Day of Big and Small Companies

Table 4.3 shows the cumulative average abnormal returns (CAARt_B and CAARt_S) for each day in the event window of companies grouped into two sizes of market capitalisation which is Big Companies and Small Companies respectively.

Table 4.3 Table showing CAAR for each day in the event window for Big

(CAAR_B) and Small (CAAR_S) Companies

Day	CAAR_B (n=9)	t-stat CAAR	CAAR_S(n=21)	t-stat CAAR
-20	0.00553	0.99	-0.00039	-0.10
-19	0.00556	0.51	0.00357	0.56
-18	0.01297	0.52	0.00979	1.51
-17	0.00391	0.13	0.01103	1.29
-16	0.00427	0.14	0.01233	1.28
-15	0.00379	0.13	0.01756	1.42
-14	0.01367	0.38	0.02436	1.48
-13	0.02262	0.68	0.02078	1.15
-12	0.02113	0.64	0.02456	1.21
-11	0.02010	0.60	0.02369	0.91
-10	0.02100	0.63	0.02529	0.82
-9	0.01781	0.51	0.02865	0.77
-8	0.02088	0.58	0.02930	0.76
-7	0.02582	0.70	0.02816	0.74
-6	0.02459	0.66	0.02554	0.66
-5	0.01393	0.34	0.02492	0.64
-4	0.01948	0.45	0.02303	0.59
-3	0.01901	0.43	0.02177	0.55
-2	0.01738	0.39	0.02624	0.63

-1	0.01781	0.39	0.02637	0.61
0	0.01492	0.31	0.02318	0.53
1	0.01644	0.34	0.02051	0.46
2	0.01376	0.28	0.02468	0.54
3	0.01332	0.27	0.01515	0.34
4	0.00903	0.18	0.01316	0.28
5	0.01019	0.20	0.01151	0.24
6	0.00930	0.19	0.00527	0.11
7	0.00800	0.16	0.00286	0.06
8	-0.00047	-0.01	-0.00137	-0.03
9	0.00002	0.00	-0.00052	-0.01
10	0.00314	0.05	0.00186	0.04
11	0.00203	0.03	-0.00622	-0.13
12	-0.00600	-0.10	-0.00800	-0.16
13	-0.00894	-0.14	-0.00585	-0.12
14	-0.00402	-0.06	-0.00351	-0.07
15	-0.00485	-0.07	-0.00128	-0.03
16	-0.00292	-0.04	-0.00296	-0.06
17	0.00248	0.03	-0.00657	-0.14
18	0.00903	0.12	-0.00804	-0.17
19	0.01551	0.19	-0.00583	-0.12
20	0.01238	0.15	-0.00793	-0.16

The asterisks *, **, and *** indicate the level of significance (based on the t values) at 1%, 5% and 10% respectively and n is the number of events.

From Figure 4.4, it is observed that with the exception of certain days where a few variations are seen, the CAAR for both groups of companies a seen to follow a similar trend from day -20 to day 16 of the event window after which the CAAR for the big companies increases steeply whiles that of the small companies is seen to fall. On the average, the small companies outperformed the big companies from the beginning of the event window to a few days after the dividend announcement (day -20 to day 5). Positive CAARs were obtained for each day in the event window from day -20 to day 10 for the small companies and from day -20 to day 11 for the big companies. CAAR around the announcement day for the big companies is seen to fall gradually from day -4 to day 3, with a slight fluctuation seen from day -1 to day 1. An increase in CAAR of the big companies is seen on day -1 before the announcement day, a fall in CAAR on the announcement day and another increase a day after the announcement. Within that same period for the small companies, a similar reaction is seen prior to the dividend day but unlike the big companies, the reaction begins on day -2 and is maintained on day -1but falls on the announcement day continuing the downward trend to day 1, rising again on day 2 after which CAAR falls sharply. The behaviour of CAAR for both groups prior to the dividend announcement day points to the possibility that information of dividend announcement was leaked to some investors before the formal announcement was made. The general fall in CAAR for both groups after dividend announcement shows that both groups react negatively to dividend announcements though a statistically insignificant rise in CAAR was experience on day 2 after the announcement day. CAAR for the big

companies is seen to rise sharply after day 15 to day 19 with that of small companies moving in the opposite direction. Since none of the CAARs for both groups of companies were however found to be significant at a 5% level of significance, the behaviour of the CAARs could be as a result of other market factors other than dividend announcements.
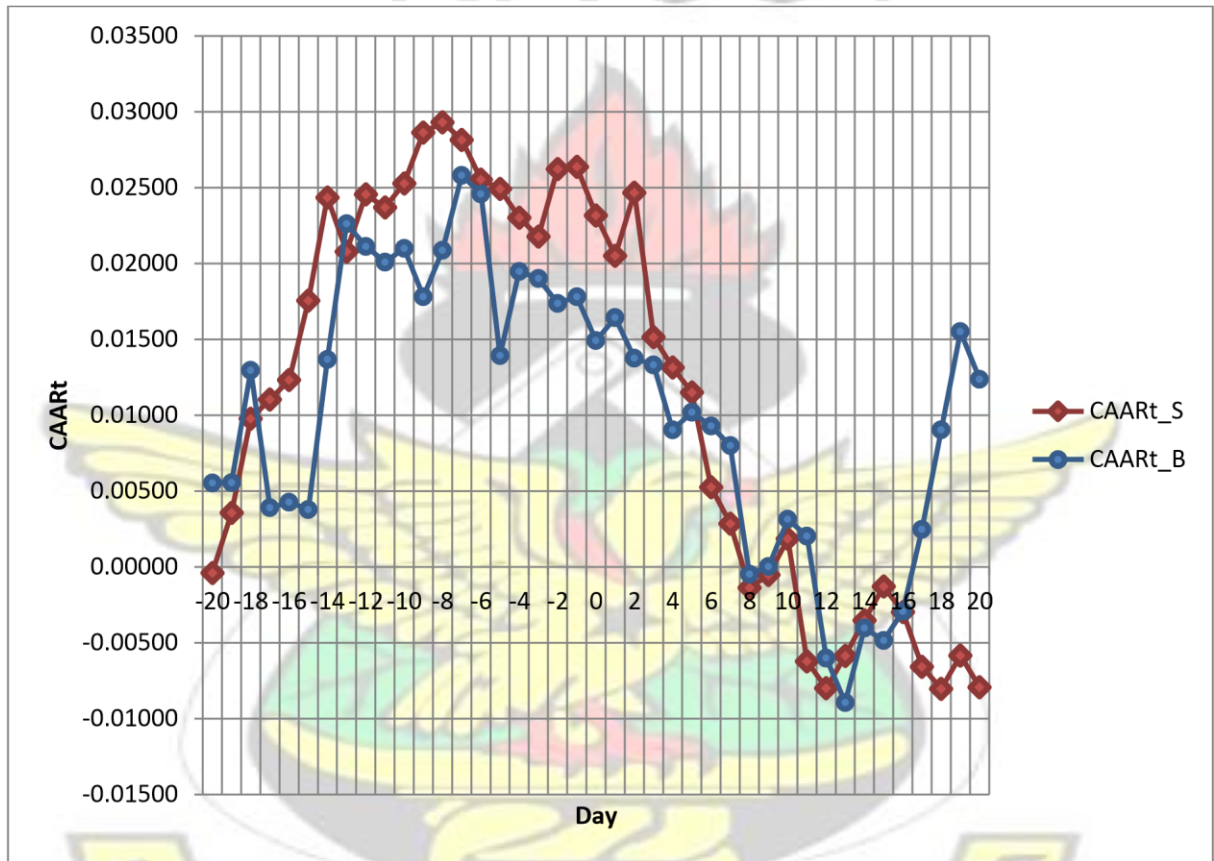
Figure 4.4 **Cumulative Average Abnormal Returns for Big (CAARt_B) and Small Companies (CAARt_S) Against Day (Event Window)**

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSION AND

RECOMMENDATIONS

5.1 Introduction

Building on the previous researches done on the Ghana Stock Exchange (GSE), this study was set out to investigate the effect of dividend announcements on share prices on the GSE, coming out with findings that will help listed companies in making optimal dividend and capital structure decisions. This chapter presents a summary of the findings from the study, giving recommendations to listed companies and on how Ghana's stock market can be improved.

5.2 Summary of Findings

Using event study methodology, secondary data of closing prices of shares for eleven listed companies, the Ghana Stock Exchange (GSE) composite index and dividend announcements dates from 2011 to 2014 were analysed to determine if there is information content in dividend announcement of companies listed on the GSE. The study sample was first tested as a whole and then divided into two groups based on individual company's market capitalisation (Big Companies and Small Companies).

The findings of this research conducted showed that AARs were statistically significant on only three trading days (days -6, 6 and 8 at 5% significance level) for analysis done on

the entire sample, three trading days (days -5 at 10% significance level and days 2 and 4 at 5% significance level) for the Big Companies and five days (days -6, 1, 6 at a 5% significance level and days 8 and 18 at 10% significance level) for the Small Companies. No statistically significant CAAR was obtained in the entire event window for all the categories at 5% and 10% significance levels. According to this results, the null hypothesis which states that no significant average abnormal return (AAR) exists around the dividend announcement date has been rejected and the null hypothesis which states that no significant cumulative average abnormal return (CAAR) exists around the dividend announcement date has been accepted.

Significant AARS observed on day -6 for both the entire sample and the Small Companies as well as day -5 for the Big Companies indicates the possibility of dividend information leakage prior to the announcement day. The negative reaction of the market before the announcement day shows that the public anticipated the announcement will contain some negative information. It was also observed that the market reacted negatively to dividend announcements as all statistically significant AARs for all three groups were negative and the performance of stocks, shown by their CAARs begun falling a few days before the dividend announcement then falling sharply after the announcement. This result could be attributed to companies not meeting the dividend expectations of investors as pointed out by Miller (1986). He argued that the market will react negatively to dividend announcements if the actual dividend paid was different from what the market expected. The negative significant AARs obtained reject the null hypothesis that positive significant average abnormal returns (AAR) exist around the dividend announcement date.

Initial significant AARs obtained after the dividend announcements were on day 1 for the Small Companies, day 2 for the Big Companies, and day 6 for the entire sample. Though results from the Big and Small Companies showed that the market reacted more efficiently to dividend announcements than the results for the entire sample, the GSE was found to be inefficient since share prices on the announcement day were not affected by the event and no significant CAARS were observed for all three sample groups.

The reaction of the Small Companies to the dividend announcements was however seen to be faster with the effect of the event lasting longer than the Big Companies. The result is seen to be in support of the differential information hypothesis (Zeghal (1984) and Eddy and Seifert (1988)) which says that investors of small firms may see information to be more valuable than investors of big companies as information about small companies may not be available to investors. This confirms the hypothesis that market reaction to dividend announcement is affected by the size of listed companies.

5.3 Conclusion

The effect of dividend announcements on share prices has been a puzzle which many researchers have tried to solve over the years without a definite conclusion being reached. Some studies have revealed that dividend announcements convey information to investors whiles others have revealed that dividends have no effect on share prices. Nevertheless, the study of the relationship between dividends and share prices of companies is very important as it plays a significant role in the regulation and supervision of the capital market and also in determining a company's optimal dividend policy.

Literature on the effect of dividend announcements on share prices on the Ghana Stock Exchange has so far focused on the entire market or industry specific reaction to dividend announcement. This research sought to investigate the GSE's reaction to dividend announcements by examining first the entire market's reaction (based on the study sample), the reaction of companies with their market capitalisation greater than GH¢ 1 billion (Big Companies) and those below GH¢ 1 billion (Small Companies).

The results from all three analysis support the information signalling hypothesis thus confirming the findings of Attah-Botchwey (2014) but contradicting the works of Frimpong and Boako (2014), Osei (2002) and Eleke - Aboagye and Opoku (2013). It can therefore be concluded that dividend announcements do carry information to investors no matter how long it takes investors to react to the announcements.

The GSE was found to be inefficient supporting the findings of Ayentimi et al (2013), Asamoah (2010) and Appiah-Kusi and Menyah (2003).

The study observed that investors react negatively to dividend announcements with the Small Companies reacting faster to the announcement and the effect of the event on their share prices lasting longer than that of the Big Companies.

The study also revealed the presence of insider trading on the GSE confirming the findings of Eleke - Aboagye and Opoku (2013).

5.4 Recommendations

It has been documented from this study that dividend announcements convey negative information to investors. This could be an indicator that investors are not satisfied with

the current dividend policies of listed companies. Policy makers of listed companies are therefore urged to review their dividend policies and drawing policies that will give positive signals to investors.

The results from this study showed that Small Companies react faster to dividend announcements with the effect of the event lasting longer than Big Companies. This was attributed to information of Small companies not being readily available to investors. It is therefore recommended that the management of Small Companies should make information concerning their company available to investors so that investors do not overreact to announcements.

The efficiency of the GSE can be improved by increasing the participation of investors who have adequate knowledge of the operations of the stock exchange such as large institutional investors and foreign investors. These large capital investments will not only help solve the liquidity problem on the exchange, but improve the quality of information assessment on the market. It is thus recommended that efforts should be made to make the market more attractive by putting in place relevant policies and providing online trading to increase the frequency of trading by investors.

Efforts should be made by the Securities and Exchange Commission (SEC) to effectively monitor the market so as to make sure market participants comply with insider trading laws. Inside trading on the GSE, as revealed by this study, can also be curtailed and eventually stopped if listed companies release dividend information to the public on time as the delay in doing so rather encourages speculation among investors and causes information to leak out before the actual announcement is made. Stricter laws should

therefore be put in place by regulatory bodies to make sure companies release of information on time. This will go a long way to improve the efficiency of the GSE.

An increase in the confidence level of investors in the stock market as well as an increase in the number of listed companies can improve the efficiency of the GSE. The government should make efforts to create an environment which is conducive and attractive enough for investments by ensuring macroeconomic stability in the country.

Further research should be conducted to provide a solid clarification of the market's reaction to dividend announcements. Other areas in this regard can be explored, such as the impact of dividend increase and dividend decrease.
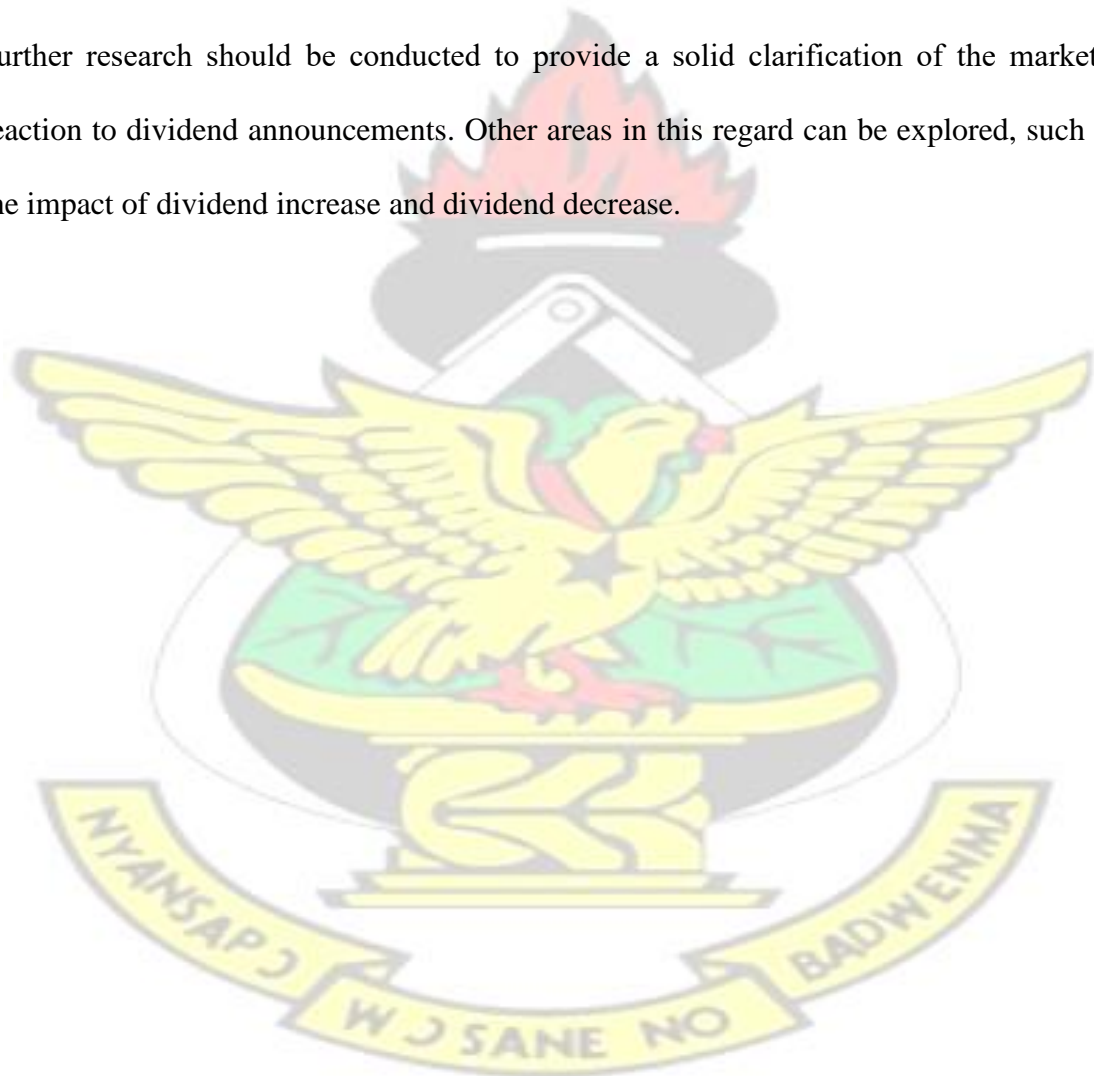
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APPENDICES

APPENDIX I: Alpha (α) and Beta (β) of Sample Companies

Company	2012		2013		2014	
	Alpha	Beta	Alpha	Beta	Alpha	Beta
SCB	0.002	2.391	-0.015	4.083	0.003	0.269
GOIL	0.004	0.068	0.004	0.728	0.000	-0.018
BOPP	0.007	0.446	0.001	0.410	-0.002	0.049
AYRTN	0.001	-0.205	0.000	0.073	-	-
GCB	0.000	0.163	0.003	0.176	-0.002	0.038
FML	-0.001	0.029	0.004	0.621	0.001	0.007
PBC	-0.001	0.034	-0.001	0.154	-	-
CAL	0.001	0.303	0.002	0.307	-0.001	0.071
EBG	0.000	0.823	0.000	0.563	0.005	0.285
SOGEGH	0.000	0.432	0.002	0.643	-0.001	0.040
UNIL	0.001	0.260	0.001	0.266	-	-

APPENDIX II: Market Capitalisation of Sample Companies

Company	Market Capitalisation (GH¢)

	2012	2013	2014	Average Capitalisation
SCB	1,328,330,000	1,725,680,000	2,350,570,000	**1,801,526,667**
GOIL	130,320,000	224,480,000	264,830,000	206,543,333
BOPP	48,720,000	111,710,000	142,680,000	101,036,667
AYRTN	38,700,000	36,550,000	38,700,000	37,983,333
GCB	556,500,000	1,285,250,000	1,404,500,000	**1,082,083,333**
FML	421,410,000	769,290,000	610,090,000	600,263,333
PBC	86,400,000	81,600,000	57,600,000	75,200,000
CAL	208,340,000	531,810,000	553,740,000	431,296,667
EBG	879,690,000	1,645,010,000	2,228,540,000	**1,584,413,333**
SOGEGH	160,270,000	250,420,000	333,890,000	248,193,333
UNIL	532,500,000	1,144,380,000	668,750,000	781,876,667

APPENDIX III: Average Abnormal Returns, Cumulative Abnormal Returns and Equivalent t stats and p values for the Entire Sample (n=30)

t	AARt	SD_AARt	t-stats AARt	p-value AARt	CAARt	SD_CAARt	t-stats CAARt	p-value CAARt
-20	0.001387	0.016966	0.45	0.658	0.001387	0.016966	0.45	0.658
-19	0.002782	0.015666	0.97	0.339	0.004168	0.029717	0.77	0.449
-18	0.006573	0.027063	1.33	0.194	0.010741	0.046309	1.37	0.214
-17	-0.00184	0.019971	-0.51	0.617	0.008897	0.057723	0.84	0.405
-16	0.001012	0.008544	0.65	0.522	0.009909	0.061335	0.88	0.383
-15	0.003517	0.016739	1.15	0.259	0.013426	0.066997	1.10	0.281
-14	0.007729	0.028906	1.46	0.154	0.021154	0.084195	1.38	0.179
-13	0.000179	0.014758	0.07	0.948	0.021333	0.086417	1.35	0.187
-12	0.002200	0.016030	0.75	0.458	0.023533	0.093610	1.38	0.179
-11	-0.00092	0.032914	-0.15	0.880	0.022615	0.111782	1.11	0.277
-10	0.001384	0.022897	0.33	0.743	0.023999	0.128308	1.02	0.314
-9	0.001397	0.029910	0.26	0.800	0.025396	0.152573	0.91	0.369
-8	0.001381	0.012784	0.59	0.559	0.026777	0.157344	0.93	0.359
-7	0.000679	0.013695	0.27	0.788	0.027456	0.156711	0.96	0.345
-6	-0.00220	0.004926	-2.45	0.021	0.025252	0.158348	0.87	0.390

t	AARt	SD_AARt	t-stats AARt	p-value AARt	CAARt	SD_CAARt	t-stats CAARt	P-value CAARt
-5	-0.00363	0.014087	-1.41	0.169	0.02162	0.162152	0.73	0.471
-4	0.000344	0.011268	0.17	0.868	0.021964	0.163958	0.73	0.469
-3	-0.00102	0.008257	-0.68	0.505	0.020946	0.165197	0.69	0.493
-2	0.002638	0.018495	0.78	0.441	0.023584	0.173469	0.74	0.462
-1	0.000219	0.012700	0.09	0.929	0.023802	0.178609	0.73	0.471
0	-0.00310	0.014292	-1.19	0.245	0.020704	0.183557	0.62	0.542
1	-0.00141	0.007540	-1.03	0.313	0.019290	0.184591	0.57	0.571
2	0.002114	0.027884	0.42	0.681	0.021404	0.190185	0.62	0.542
3	-0.00680	0.031604	-1.18	0.248	0.014603	0.187888	0.43	0.673
4	-0.00268	0.011218	-1.31	0.200	0.011920	0.192825	0.34	0.737
5	-0.00080	0.012943	-0.34	0.736	0.011116	0.197306	0.31	0.761
6	-0.00464	0.011522	-2.20	0.036	0.006478	0.196829	0.18	0.858
7	-0.00208	0.011282	-1.01	0.321	0.004399	0.195765	0.12	0.903
8	-0.00550	0.014552	-2.07	0.048	-0.00110	0.202980	-0.03	0.977
9	0.000739	0.011807	0.34	0.734	-0.00036	0.205003	-0.01	0.992
10	0.002603	0.011968	1.19	0.243	0.002245	0.206928	0.06	0.953
11	-0.00599	0.032200	-1.02	0.317	-0.00374	0.206019	-0.10	0.921
12	-0.00365	0.018089	-1.11	0.278	-0.00740	0.210394	-0.19	0.849
13	0.000623	0.021089	0.16	0.873	-0.00678	0.213158	-0.17	0.863
14	0.003113	0.011863	1.44	0.161	-0.00366	0.215903	-0.09	0.927
15	0.001310	0.012963	0.55	0.584	-0.00235	0.219281	-0.06	0.954
16	-0.00060	0.022116	-0.15	0.883	-0.00295	0.218583	-0.07	0.942
17	-0.00090	0.018217	-0.27	0.789	-0.00385	0.219010	-0.10	0.924
18	0.000934	0.007626	0.67	0.508	-0.00292	0.221805	-0.07	0.943
19	0.003492	0.023207	0.82	0.417	0.000574	0.227604	0.01	0.989
20	-0.00241	0.013324	-0.99	0.329	-0.00184	0.231960	-0.04	0.966

APPENDIX IV: Average Abnormal Returns, Cumulative Abnormal Returns and Equivalent t stats. and p values for the Big Companies (n=9)

t	AARt	SD_AARt	t-stats AARt	p-value AARt	CAARt	SD_CAARt	t-stats CAARt	P-value CAARt
-20	0.005532	0.016831	0.99	0.353	0.005532	0.016831	0.99	0.353
-19	0.000032	0.018013	0.01	0.996	0.005564	0.032690	0.51	0.623
-18	0.007407	0.042158	0.53	0.612	0.012971	0.074646	0.52	0.616
-17	-0.00906	0.025470	-1.07	0.317	0.003911	0.090476	0.13	0.900

-16	0.000358	0.009677	0.11	0.914	0.004269	0.093503	0.14	0.894
-15	-0.00048	0.006833	-0.21	0.838	0.003789	0.089701	0.13	0.902
-14	0.009885	0.022869	1.30	0.231	0.013673	0.106737	0.38	0.711
-13	0.008944	0.018908	1.42	0.194	0.022618	0.100220	0.68	0.517
-12	-0.00149	0.003595	-1.24	0.249	0.021128	0.099722	0.64	0.543
-11	-0.00103	0.005186	-0.60	0.568	0.020098	0.100290	0.60	0.564
-10	0.000898	0.008027	0.34	0.746	0.020996	0.100706	0.63	0.549
-9	-0.00319	0.008643	-1.11	0.301	0.017810	0.105381	0.51	0.626
-8	0.003071	0.010185	0.90	0.392	0.020880	0.108777	0.58	0.581
-7	0.004935	0.017478	0.85	0.422	0.025816	0.110878	0.70	0.505
-6	-0.00123	0.005266	-0.70	0.505	0.024591	0.111746	0.66	0.528
-5	-0.01066	0.015423	-2.07	0.072	0.013931	0.121587	0.34	0.740
-4	0.005552	0.017644	0.94	0.373	0.019482	0.129349	0.45	0.663
-3	-0.00047	0.008182	-0.17	0.868	0.019014	0.131468	0.43	0.676
-2	-0.00163	0.003559	-1.38	0.206	0.017382	0.132635	0.39	0.704
-1	0.000427	0.007202	0.18	0.863	0.017809	0.135941	0.39	0.705
0	-0.00289	0.012503	-0.69	0.507	0.014917	0.142244	0.31	0.761
1	0.001525	0.009909	0.46	0.657	0.016442	0.145486	0.34	0.743
2	-0.00268	0.003017	-2.67	0.029	0.013762	0.145859	0.28	0.784
3	-0.00044	0.007017	-0.19	0.855	0.01332	0.146205	0.27	0.792
4	-0.00429	0.003682	-3.49	0.008	0.009032	0.147216	0.18	0.859
5	0.001163	0.009493	0.37	0.723	0.010195	0.150439	0.20	0.844
6	-0.00089	0.011921	-0.22	0.828	0.009302	0.149064	0.19	0.856
7	-0.00131	0.009237	-0.42	0.682	0.007995	0.154210	0.16	0.880
8	-0.00847	0.021854	-1.16	0.279	-0.00047	0.169790	-0.01	0.994
9	0.000493	0.007562	0.20	0.850	0.00002	0.174973	0.00	1.000
10	0.003124	0.010441	0.90	0.396	0.003145	0.181167	0.05	0.960
11	-0.00111	0.004795	-0.70	0.507	0.002034	0.181603	0.03	0.974
12	-0.00804	0.016181	-1.49	0.175	-0.00600	0.188920	-0.10	0.926
13	-0.00294	0.008225	-1.07	0.315	-0.00894	0.192272	-0.14	0.892
14	0.004918	0.017393	0.85	0.421	-0.00402	0.201724	-0.06	0.954
15	-0.00083	0.011708	-0.21	0.837	-0.00485	0.208760	-0.07	0.946
16	0.001929	0.007503	0.77	0.463	-0.00292	0.214083	-0.04	0.968
17	0.005405	0.015483	1.05	0.326	0.002483	0.223754	0.03	0.974
18	0.006550	0.011500	1.71	0.126	0.009033	0.231522	0.12	0.910
19	0.006477	0.033119	0.59	0.574	0.015510	0.242710	0.19	0.853
20	-0.00313	0.019802	-0.47	0.648	0.012376	0.255867	0.15	0.888

APPENDIX V: Average Abnormal Returns, Cumulative Abnormal Returns and Equivalent t stats and p values for the Small Companies (n=21)

t	AARt	SD_AARt	t-stats AARt	p-value AARt	CAARt	SD_CAARt	t-stats CAARt	P-value CAARt
-20	-0.000390	0.017118	-0.10	0.918	-0.00039	0.017118	-0.10	0.918
-19	0.003960	0.014874	1.22	0.237	0.00357	0.029186	0.56	0.581
-18	0.006215	0.018724	1.52	0.144	0.009785	0.029624	1.51	0.146
-17	0.001249	0.016893	0.34	0.738	0.011034	0.039254	1.29	0.212
-16	0.001292	0.008254	0.72	0.481	0.012327	0.044014	1.28	0.214
-15	0.005230	0.019425	1.23	0.232	0.017556	0.056836	1.42	0.172
-14	0.006805	0.031613	0.99	0.336	0.024361	0.075404	1.48	0.154
-13	-0.003578	0.011108	-1.48	0.155	0.020783	0.082521	1.15	0.262
-12	0.003781	0.018938	0.91	0.371	0.024564	0.093405	1.21	0.242
-11	-0.000869	0.039498	-0.10	0.921	0.023694	0.118705	0.91	0.371
-10	0.001592	0.027097	0.27	0.791	0.025286	0.140744	0.82	0.420
-9	0.003361	0.035409	0.43	0.668	0.028647	0.171099	0.77	0.452
-8	0.000657	0.013915	0.22	0.831	0.029304	0.176472	0.76	0.456
-7	-0.001145	0.011753	-0.45	0.660	0.028159	0.175187	0.74	0.470
-6	-0.002623	0.004845	-2.48	0.022	0.025535	0.177094	0.66	0.516
-5	-0.000620	0.012681	-0.22	0.825	0.024916	0.179371	0.64	0.532
-4	-0.001888	0.006493	-1.33	0.198	0.023028	0.179674	0.59	0.564
-3	-0.001254	0.008479	-0.68	0.506	0.021774	0.180706	0.55	0.587
-2	0.004468	0.021891	0.94	0.361	0.026242	0.191235	0.63	0.537
-1	0.000129	0.014598	0.04	0.968	0.026371	0.197083	0.61	0.547
0	-0.003186	0.015285	-0.96	0.351	0.023185	0.201842	0.53	0.604
1	-0.002674	0.006133	-2.00	0.059	0.02051	0.202325	0.46	0.647
2	0.004168	0.033301	0.57	0.573	0.024679	0.209522	0.54	0.595
3	-0.009526	0.037452	-1.17	0.257	0.015153	0.206485	0.34	0.740
4	-0.001996	0.013244	-0.69	0.498	0.013157	0.212694	0.28	0.780
5	-0.001647	0.014296	-0.53	0.603	0.011510	0.217703	0.24	0.811
6	-0.006243	0.011254	-2.54	0.019	0.005267	0.217445	0.11	0.913
7	-0.002409	0.012249	-0.90	0.378	0.002858	0.214591	0.06	0.952
8	-0.004224	0.010503	-1.84	0.08	-0.00137	0.219566	-0.03	0.978
9	0.000845	0.013387	0.29	0.775	-0.00052	0.220662	-0.01	0.991
10	0.002380	0.012803	0.85	0.404	0.001859	0.221266	0.04	0.970
11	-0.008080	0.038457	-0.96	0.347	-0.00622	0.219842	-0.13	0.898

12	-0.001776	0.018905	-0.43	0.671	-0.00800	0.223400	-0.16	0.871
13	0.002149	0.024691	0.40	0.694	-0.00585	0.226036	-0.12	0.907
14	0.002339	0.008997	1.19	0.248	-0.00351	0.226525	-0.07	0.944
15	0.002226	0.013634	0.75	0.463	-0.00128	0.228661	-0.03	0.980
16	-0.001681	0.026127	-0.29	0.771	-0.00296	0.225713	-0.06	0.953
17	-0.003603	0.018967	-0.87	0.394	-0.00657	0.222481	-0.14	0.894
18	-0.001472	0.003340	-2.02	0.057	-0.00804	0.223167	-0.17	0.871
19	0.002213	0.018342	0.55	0.587	-0.00583	0.226734	-0.12	0.907
20	-0.002105	0.010011	-0.96	0.347	-0.00793	0.227378	-0.16	0.875