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THE EFFECT OF EARNINGS ANNOUNCEMENT ON SHARE PRICE OF MANUFACTURING COMPANIES ON THE GHANA STOCK EXCHANGE

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ABSTRACT: *It has been well documented in developed Capital markets that stock prices react to earnings announcement. This research therefore investigated the effect earnings announcement on market price of manufacturing firms on the Ghana Stock Exchange. The event study methodology was adopted for this study because it examines the effect of information on stocks. With a 21 days window and a 60 day estimation period, the researchers used the Standardized Excess Return approach which corrected for most of the challenges associated with intercompany aggregation of stocks. Using the Single Index and Risk Adjusted Returns Model the study found out that earnings announcement had no effect on stock price and as such that the Ghana Stock Exchange is not efficient in the semi strong form.*

KEYWORDS: Earnings, Event Study, Abnormal Returns, Efficient Market.

INTRODUCTION

Capital markets react to various corporate announcements, and one such significant announcement is the earnings announcement (Mlonzi, Kruger & Nthoesane, 2011). An important element in the financial statement is the earnings of the firm. The importance of earnings is derived from the fact that acts as a gauge of the profitability of the business. Earnings also give an indication of the success of an organisation's investments activities. A good bottom line (earnings/profitability) is touted as one of the key signals of good corporate performance, and is very important to investors. A Firm's performance is of great importance to investors since it has a direct impact on returns on their investment. It is therefore expected that upon release of financial reports, or announcement of earnings an efficient market should immediately absorb the information and adjust the stock prices accordingly (Keirumu, Galo & Mutegi, 2013). Eleke-Aboagye & Opoku (2013) observed that information released to the general public by firms directly or indirectly has a major influence on investors' perceptions of the business hence its value. It is therefore expected that upon release of information on earnings, a market should immediately absorb the information and adjust the value of the firm accordingly. Management has a duty to inform both shareholders and investors about the state of health of a firm. Earnings announcements provide a yardstick that can be utilised by the market to assess the wealth and profitability of a firm (Mlonzi, Kruger & Nthoesane 2011). This was indicated by Aharony & Swary (1980) who opined that earnings carry inside information about the company's future prospects. In their view earnings provide critical information to shareholders as far as the company's past performance is concerned, and are also used extensively in forecasting future performance and valuations of equity.

One approach to examining the impact of earnings announcement on share price is to conduct an event study. According to Tonks (2007) 'event studies examine the average stock market reaction to a particular stock market event by averaging across the same events in different companies, or at different times in the same company. This research examines the effect of

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earnings announcement on stock prices of listed manufacturing companies on the Ghana Stock Exchange.

Several studies has been conducted on the effect of earnings announcements. In Ghana a few studies have been examined within a number of contexts on the Ghana Stock Exchange. For example, Osei (2002) investigated "the asset pricing characteristics and the response to annual earnings announcements of the Ghana Stock Market (GSM)", with the view to establishing the efficiency of the market within the context of Fama (1970) and others. Similarly, Eleke-Aboagye and Opoku (2013) examined "the effect of earnings announcement on the Ghana Stock Exchange by analyzing changes in share prices for the period January 2010 to June 2013". The study population in both instances comprised of all firms listed on the Ghana Stock Exchange. The manufacturing sector remains the driving force for economic development. This sector may have characteristics that are unique and different from all the other sectors. Unfortunately, most researchers do not give it research exclusivity. Rather, all the industries on the Ghana Stock Exchange are bundled together for research. There is the possibility that bundling all shares together for earnings announcement studies may cloud the unique characteristics of the manufacturing sector. In effect, there is a gap in literature in earnings announcement studies peculiar to the listed manufacturing firms on the Ghanaian Stock Exchanges. This research attempts to fill the gap by isolating the manufacturing sector and investigating the effect of earnings announcements on its stock prices.

LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

May (1968) has distinguished between two types of earnings per share (EPS): EPS created by mergers and acquisition and EPS created by relevant corporate fundamentals of systematic growth in corporate earnings. He warns that there could be growth in EPS and attendant improved price movements merely by firms acquiring or merging, likening the situation to a chain letter. This has the potential of 'bursting', leading to pre-merger stock prices and negative growth, the very moment the firm in questions stops acquisitions/mergers. Curley (2001) investigates the ambiguities of computations associated with earnings per share in mergers and acquisitions. He questions the rationale for computing growth in earnings per share post-merger (in conglomerate situations) when indeed any such phenomenon is transitory. A challenge with EPS and stock price movements is exhibited by investors 'reaction to earnings per share announcement by firms. According to an editorial of the Wall Street Journal (1974) 'a lot of executive apparently believe that if they can figure out a way of boosting reported earnings their stock prices will go up (growth) even if the higher earnings do not represent any underlying economic change'. Several years on, executives still 'worship' earnings per share, regardless of the fact that its simplicity could lead to abuse and destruction of value (McKinsey and Co, 1996). Interim announcements of earnings per share with due cognizance of changes that might have been included in the final announcements may also cause investors to price stock wrongly. However, to correct for issues such as 'unexpected earnings' and allied sensitivities, the earnings response coefficient (ERC) is used to examine the 'relationship between earnings and share price (movements)'. (Park and Pincus, 2000). ERC intend relies on a number of factors such as 'perceived auditor quality (Teoh and Wong, 1993), and 'riskless interest rates and the riskiness, growth and/or persistence of earnings' (Collins and Kothari, 1989) among others. Wang & Wang (2013) examined the strategies of different types of investors (the insider, the information follower, and the price follower) who have asymmetric information about future news events and how these strategies affect stock prices. They show

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that stock price jumps occur when the insider receives accurate inside information or a low expected news event happens. In addition, the stock trading volume increases when the insider has private information. Their empirical tests show that the trading volume is high before and after stock price jumps. In this model, the price follower is in a disadvantaged position, which can be alleviated by the competition between the insider and the information follower. Iqbal & Farooqi (2015) investigated the stock price reaction to public announcement of quarterly after tax profit by listed firms on the Karachi Stock Exchange by employing 5 year data on stock prices from January 2004 to August 2008 for 114 non-financial firms. The study found that there is no abnormal return post earnings announcement. Moreover the study provides evidence that there is a bigger element of surprise in bad news than in good news as the market reaction to bad news is stronger. The results of a study by Eleke-Aboagye & Opoku (2013) indicated that the abnormal returns around the earnings announcement were not significant at a 5 % margin of error and the insignificant cumulative average abnormal returns surrounding the event date are inconsistent with EMH. They suggest that the Ghana stock market does not efficiently adjust to earnings information. The researchers concluded that earnings announcement depicted no major effect on share prices of companies at the time of the announcement as well as immediately after the announcements. Menike (2014) reveals, however, that dividend announcement has information content and market respond to it positively on the event day. However it is also reveals that market response before and after the announcement which is means that CSE not confirm the semi-strong form of market efficiency. Mlonzi et al (2013) investigate whether there are any significant abnormal returns around the public announcement of earnings and to establish whether the efficient capital market hypothesis applies to the small ALtX market. The study focused on all the companies listed on the JSE-ALtX that announced annual earnings between 1 January and 31 December 2009. The method used for calculating the expected returns was the Capital Asset Pricing Model (CAPM). Empirical evidence demonstrates that there is substantial negative share price reaction to earnings announcements on the small ALtX stock market. The ALtX also shows the weak form of market efficiency. The study concluded that during a recessionary period, shareholders' wealth is eroded in the small ALtX market; however, the weak form of market efficiency provides an opportunity for entrepreneurs and investors to exploit the market for profits when the market is performing well. In another study Truong & Corrado (2010) found no significant difference in the immediate stock price response to earnings information announcements in samples split between firms with listed options and firms without listed options. However, within the sample of firms with listed options stratified by options volume, the authors found that higher options trading volume reduces the immediate stock price response to earnings announcements. This conforms to evidence that stock prices of high options trading volume firms have anticipated and pre-empted some earnings information in the pre-announcement period. The authors found that higher abnormal options trading volume around earnings announcements hastens the stock price adjustment to earnings news and reduces post-earnings announcement drift.

Using the naïve expectation model to determine the investor's expectation towards earnings announcements Sare, Akuoko & Esumanba (2013) used a 15 trading days inclusive of the day of announcement of earnings as the event window which includes 7 days before and 7 days after earning announcement. The market portfolio index was used in terms of its movements as a substitute for the expected returns which was compared to the actual returns generated from the changes in stock prices for the duration of the event window to determine the existence of abnormal returns. An observation was made that there is well built evidence which suggests that earnings

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announcements do carry weight when it comes to investors making decision on share prices. This shows a very clear position that the investors on the Ghana Stock Exchange rely on the signals that come out as a result of announcements made on earnings in making investment decisions. Below & Johnson (1996) examined the differential share price reaction to dividend increase and decrease announcements with respect to market phase. The study found that market phase has a significant impact on abnormal returns around the announcement, and it appears that more information is conveyed by dividend (earnings) change announcements which run counter to market phase. Dasilas, Lyroudi & Ginoglou (2008) confirm the signalling hypothesis which predicts positive market reaction to the joint dividend and earnings announcements. In the view of Blitzerm (2014) the time of financial report publication has an influence on investors' reaction. This suggests that investors react to financial reports not just based on their intrinsic information content but also in respect of their publication time. Kerimu et al (2013) opined that announcements of accounting and financial results are very useful because they do not only give information on the firm itself but they also give indications of performance of similar companies. Moreover earnings announcements provide a yardstick that can be utilised by the market to assess the wealth and profitability of a firm (Aharony & Swary, 1980). We therefore posits that:

H_{1A}: Earning Announcement has an effect on stock price of Manufacturing firm on the Ghana Stock Exchange.

In stock market the process by which information is incorporated into stock prices has been termed as Efficient Market Hypothesis. Fama (1970) defined efficient market as a market with large numbers of rational profit maximizing individuals actively competing with each other and doing attempts to predict future market values of individual securities, and where all important relevant information is almost freely available to all investors. Efficient market in its semi strong form reflect all historical and all publicly available information and if share price react quickly and accurately to incorporate any new information as it becomes available. The Semi-Strong Form is a market in which θ_t is taken to be all information that is publicly available at time *t*. (Jensen 1978, 2002). If earnings announcement affect stock price of manufacturing organisation's on the Ghana stock Exchange then additionally we posit that:

H_{1B}: The Ghana Stock Exchange is Efficient in the Semi Strong Form.

METHODOLOGY

Population, Sample and Sampling procedure

The Ghana Stock Exchange (GSE) provides a well ordered and organized platform for trade in securities of firms through its regulatory and 'facilitatory' functions. It provides the facilities and framework to the public for the purchase and sales of bonds, shares and other securities'. Incidentally, it is the only organized market for trading in securities in Ghana. Eleke-Aboagye and Opoku (2013) examined the 'Effect of Earnings Announcement on Share Prices in Ghana' using 'stocks listed on the Ghana Stock Exchange' as population for the study. Osei (2002) had earlier examined the 'Asset Pricing and Information Efficiency of the Ghana Stock Exchange'

ISSN 2054-6319 (Print), ISSN 2054-6327(online)

using 16 of the 21 listed firms without resort to classifications or groupings (five of the firms were excluded from the research on the basis of inadequate information or de-listing from the exchange). However, this researcher argues that firms in different industries may have different characteristics that are likely to influence trading trends and hence the need to investigate features within sub-groups or classes. It was in the light of the above that the population for the research was limited to firms in the 'Manufacturing Category' on the GSE. The Sampling Frame used for the research was the 'Manufacturing and Construction' firms in the SEM Listed Company Industrial Classification as shown in Table below.

Table 1 Sampling Frame-Manufacturing and Construction Firms on the Ghana Stock Exchange

SUB-SECTOR	COMPANIES
Consumer Goods	Ayrton Drugs Manufacturing, PZ Cussons Starwin Products, Unilever
Print and Paper Products	Camelot, Sam Woode, Super Paper Products (African Champions Ltd)
Aluminum	Pioneer Kitchenware Factory, Aluworks
Agro-Processing	Benso Oil Palm Plantation, Cocoa Processing Company, Golden Web

Source: SEM Financial Services Listed Company Industrial Classification (2008)

This research sought to examine issues related to manufacturing companies listed on the Ghana Stock Exchange. It was therefore imperative to use the stratified random sampling method that ensured that the issues identified related strictly to firms in that category. However, the classification acknowledged that there were sub-groups within. It was therefore important to stratify the group based on issues of commonality of features. Therefore the stratified random sampling procedure was used on two bases: broad classification and specific characteristics

The broad classification represented the generic characteristics of the group as defined by the SEM Classification. The specific characteristics relates to the individual characteristics of the firm. Firms with very similar specific characteristics have one selected. The research utilized both event methodology (which provided quantitative data) supplemented by semi-structured interview (which provided qualitative data).

Data

The research uses both quantitative as well as qualitative data. Even though earnings is a quantitative measure, issues of relevance have a modicum of subjectivity. The use of qualitative approach was necessary to understand the reasoning behind some of the actions taken by corporate executives in the course of routine or special operations as well as account preparation. Quantitative data was also used. The quantitative data used included the following:

a) Quarterly Earnings of listed Manufacturing Companies on the Ghana Stock Exchange

ISSN 2054-6319 (Print), ISSN 2054-6327(online)

b) Daily Returns of Listed Manufacturing Companies on the Ghana Stock Exchange
c) The Ghana Stock Exchange All Share Index/Ghana Stock Exchange Composite Index
d) Other relevant quantitative data for event studies

This research adopted Market and Adjusted Risk Return in the computation of Abnormal Returns. Therefore, the use of quantitative data ensured that scientific relationship between the variables was obtained.

Event Study Methodology

The event in question is 'quarterly earnings announcement' and firm's stock prices, an event window of 21 days is assumed. This comprises of 10 days prior to release of information, the date for the quarterly announcement and 10 days after the release. This is used to estimate the effect of the Abnormal Returns. A 60 day estimation period was selected for estimating expected or normal returns. This is defined as 60 days before the event window. The selection of such as lengthy time was an attempt to prevent the start dates coinciding with the estimation window which would have 'diluted' the results of the research. MacKinley (1997) used the quarterly earnings reported by the Institutional Brokers Estimate System (I/B/E/S) as a proxy for expected quarterly earnings. This system uses the mean forecast earnings from the last month as the estimate for the quarter. However, the lack of such a system to track the quarterly earnings on the Ghana Stock Exchange compelled the researcher to use GSE Returns as a proxy. Specifically, the quarterly returns were obtained by splitting the annual returns into four, and using the prior quarterly return as the forecast return for the current period. The Total Number of quarterly announcements used for the research is 192 computed as follows:

a) Number of quarterly announcements in a year-4 (QA)
b) Number of years-6 years (2008-2013 inclusive) (Y)
c) Number of Listed Manufacturing Firms Selected-8 (LMF
d) $\text{Total Earnings Announcement} = (\text{QA} * \text{Y} * \text{LMF})$

Normal and Abnormal Returns

It is assumed that price and returns tend to move together. In line with the above (expected and unexpected income) it is assumed that in the absence of new information, returns expected can be described as normal. New information on the other hand comes with abnormal returns which can be estimated as the difference between the actual return (of stock prices) less the expected return (normal return). The Model adopted for this research is the Single Index Market and Risk Adjusted Returns' Model. It is assumed that security returns are linearly related to market returns through stock betas. Therefore, the stock betas' are estimated over firm estimation periods as follows:

1. $\boldsymbol{R}\text{jt} = \acute{\alpha} + \boldsymbol{R}\text{mt} + \varepsilon$

R_{jt} = Actual Daily Return on Security j at Day t. This is computed as follows:

$$\boldsymbol{R}\text{jt} = \text{In}\ (\frac{\text{Pt}}{\text{Pt}-1})$$

$\acute{\alpha}$ = Regression Intercept

ISSN 2054-6319 (Print), ISSN 2054-6327(online)

ß = Regression Slope (Stock Sensitivity to Market Return)

ε = Error Term

Rmt = Expected Market Return: The GSE Return is used as a Proxy for Market Return as follows:

a) Expected Return is then computed by using the estimated ά and ß values in (1) above as follows: $E(Rjt) = \acute{\alpha} + ß\, Rm$t

Abnormal Return

Abnormal Return (ARjt) is computed as follows:

$$ARjt = Rjt - E(Rjt)$$

Let AARjt be the Average Abnormal Return defined as

$$AARjt = \frac{\sum ARjt}{N}$$

Let SERjt be the Standardized Excess Returns defined as

$$SERjt = \frac{AARjt}{s(at)}$$

Where N is the Number of firms Sampled in time t in the event window (21 days) (Mackainley, 1997; Kiremu et al., 2013)

Hypotheses are then tested as follows:

1. H_0: Earnings announcement of listed manufacturing firms on the Ghana Stock Exchange affect stock prices. SER = 0
2. H_1: Earnings announcement of listed manufacturing firms on the Ghana Stock Exchange affect stock prices. SER ≠ 0
3. H_0^1: The Ghana Stock Exchange is Semi Strong Efficient SER = 0
4. H_1^1:The Ghana Stock Exchange is not Semi Strong Form Efficient SER ≠ 0

The terminal step in event studies is the running of statistical test for significance of SER using an appropriate test statistic. According to Brown and Warner (1980) 'systematically non-zero abnormal security returns which persist after a particular type of event are inconsistent with the hypothesis that security prices adjust quickly to fully reflect new information (informational efficiency). The implication is that a non-zero SER which persists within the event window is necessary and sufficient evidence that security prices adjust to reflect any new information. Therefore if SER is found not to be significant within the event window then information efficiency is suspect on the particular market in question.

FINDINGS

The returns within the estimation period (normal returns) were computed using the natural logs of current and previous prices of shares. These returns were regressed against the expected

ISSN 2054-6319 (Print), ISSN 2054-6327(online)

market returns (obtained by dividing the GSE Returns into four and using prior quarter figures as forecast for the current period).Expected Returns were computed as follows:

$$E(Rjt) = \acute{\alpha} + ß\, Rmt$$

Appendix 1 gives the following:

a) Normal Returns of the various stocks and the corresponding Expected Market Returns

b) Regression outputs

c) Regression Coefficients ($\acute{\alpha}$ and$ß$), Expected Market Returns (Rmt) and Expected Returns $E(Rjt)$

Model Validity

The validity of the regression model used was tested in terms of normality, homoskedasticity, linearity and autocorrelation. The results were rather mixed. Table 2 below presents the results.

Table 2: Validity of regression model for manufacturing stocks

	Benchmark	**Camelot**	**Pioneer Kitchenware**
Normality	Observed normal patterns of a histogram of Standardized Residual Plot	Less Normal	Not Normal
Autocorrelation	Observed patterns in a time order Residual Plot	There is autocorrelation	Pattern detected-Autocorrelation exists
Homoscedasticity	Lack of patterns in an observed plot of Standardized Residuals and Standardized Predicted Values	Lack of pattern-There is homoscedasticity	Heteroscedasticity
Linearity	Linear pattern of a plot Standardized Residual and Standardized Predicted Values/R^2 values	Less linear with R^2 = 0.113	Low linearity with R^2 = 0.028

	Sam Wood	**Starwin**	**Golden Web**	**Aluworks**
Normality	Normality	Normal	Skewed	Skewed
Autocorrelation	Pattern detected/Autocorrelation	Pattern	Pattern	Pattern
Homoscedasticity	Heteroscedasticity	Pattern	Pattern	Pattern
Linearity	Less Linear with R^2=0.074	Less Linear	Linear	Pattern

	Unilever	**African Champions**		
Normality	Normality	Skewed		
Autocorrelation	No pattern	Pattern		
Homoscedasticity	Homoscedasticity	Pattern		
Linearity	Linear	Linear		

ISSN 2054-6319 (Print), ISSN 2054-6327(online)

Abnormal Returns

As previously discussed, Abnormal Returns for various stocks were computed using the following equation:

$$ARjt = Rjt - E(Rjt)$$

Where $ARjt =$ Abnormal Return; Rjt = Actual Return and $E(Rjt)$is the Expected Return

These values were computed within the event window of 21 days.

Average Abnormal Returns

Averages of the Abnormal Returns across the days within the event window were computed for each quarter for the respective stocks.

Let AARjt be the Average Abnormal Return defined as $AARjt = \frac{\sum ARjt}{N}$ (21 days) (Mackainley, 1997; Kiremu et al., 2013)

Appendix II shows the Average Abnormal Returns $AARjt$ of the respective stocks.

Testing of Hypothesis

Level of Significance

ά = 5%

Test Statistic

The relevant test statistic is defined as:

$$Z = \frac{\sum SER}{\sqrt{N}}$$

Where N is the total number of days within the event window

Decision Rule

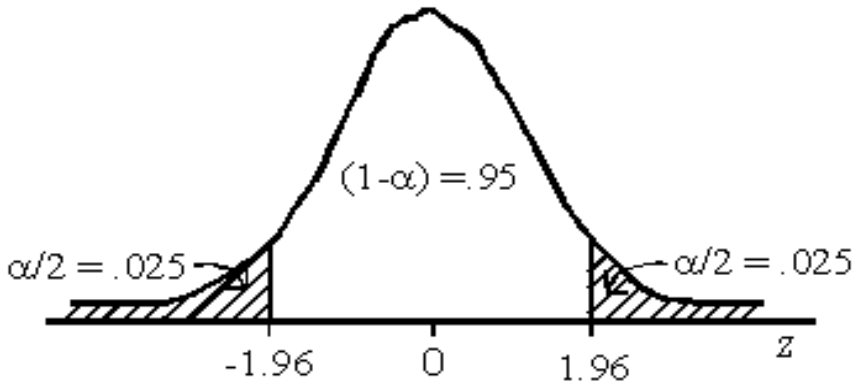

Figure 1: Z score Test

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If $-1.96 \leq Z_{CAL} \leq 1.96$. Do not reject the H_0. Else reject H_0.

Computations

Let AARjt be the Average Abnormal Return defined as

$$AARt = \frac{\sum ARjt}{N}$$

Let SERjt be the Standardized Excess Returns defined as

$SER = \frac{AARt}{s(at)}$ Where N is the Number of firms in Sample in time *t* in the event window (21 days) (Henderson, 1989; Brown & Warner, 1985; Mackainley, 1997; Kiremu et al., 2013). AppendixI gives the results of the respective stocks across time.

$\text{Zcal} = \frac{\sum \text{SER}}{\sqrt{\text{N}}} = \frac{465.059}{\sqrt{21}} = 101.48$ The null hypothesis is rejected since the Zcal is in the rejection region. Thus, we reject the hypothesis 1A because there is no significant evidence to suggest that earnings announcement affect stock prices of manufacturing companies on the Ghana Stock Exchange. Hypothesis IB is also rejected and it can be concluded that the Ghana Capital Market is not efficient in the Semi Strong Form.

DISCUSSIONS

This study sought to examine earnings per share as a key indicator of corporate growth by investigating the signalling the effect of quarterly earnings announcement on stock prices of listed manufacturing firms. The conceptual framework for the research comprised Ball and Brown (1968), Brown and Warner (1980) and Brown and Warner (1985). The event window adopted was twenty one (21) days together with an estimation period of sixty (60) days. The Simple Linear Regression model was used to estimate regressions coefficients (after testing validity of the model). The regression coefficients were used to estimate expected returns and subsequently the abnormal returns within the event window. The study adopted the Standardized Excess Return (SER) to test for hypotheses rather than the Cumulative Average Abnormal Returns (CAAR) which have been copiously used in researches on the Ghanaian Stock Exchange. The results show that earnings announcement has no effect on the stock price of manufacturing organisations on the Ghana stock Exchange and consequently there was no significant evidence to show that the market is efficient. Put differently, the market is unable to capture information contained in earnings announcement and allow stock prices to adjust spontaneously. The result is consistent with those obtained by a number of studies conducted on the Ghana Stock Exchange such as Osei (2002) and Eleke-Aboagye and Opoku (2013). These studies concluded that the Ghana Stock Exchange was not informational efficient. It however contradicts the Iqbal & Farooqi (2015) and Truong & Corrado (2010) and Sare, Akuoko & Esumanba (2013) found no significant difference in the immediate stock price response to earnings information announcements.

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IMPLICATIONS FOR RESEARCH & PRACTICE

There are two significant issues contained in the results. First, most of the market efficiency researches conducted on the exchange used a collection of stocks of different industries, which may be an average as against the current research that focused solely on the manufacturing sector. Second, in spite of the differences in approaches adopted by the two blocks of researches it is evident there were similarities in the results obtained. This may be a reflection of reality or a mere coincidence. It is therefore recommended that in depth research be conducted using other individual sectors (industries), before a general conclusion can be drawn that sector efficiency of firms is indicative of that of the market and vice versa. Licensed Dealing Members and other stakeholder have attempted to develop models for use on the exchange. These include indices which in most cases use ex post information and exhibit deficiency in forecasts. It is therefore suggested that stakeholders could develop forecasting tools that will improve the efficiency of market research on the Ghana Stock Exchange. This should necessarily include sector forecasting tools. Deficiencies in data are symptomatic of possible lapses in enforcement of filing regulations by listed firms or officials of the regulators (once listed firms have filed their quarterly returns). A strict adherence to filing regulations is suggested.

CONCLUSIONS

The exchange must take a critical look at the inactivity in the sections of listed stocks such as the manufacturing sector. This is in view of the crucial role of the exchange in measuring the state of the economy (as the barometer of the economy). This is achievable through education and sensitization. Investors are advised to take a second look at the manufacturing sector in view of the current low prices. An indication of possible future firm growth must be enough impetus for current and potential investors to buy manufacturing stocks. Uniformity in classification in sectors of the Ghana Stock Exchange is worth looking at.

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Appendix 1: Computation of SER

Event Window	CAMELOT	(AR- Ā)^2	PIONEERKIT CHENWARE	(AR- Ā)^2	SAMWOOD	(AR- Ā)^2
-10	0.021826784	0.001508333	0.00576	0.000518495	0.00181801	0.000354512
-9	0.006272873	0.000577131	0.00576	0.000552752	0.00181801	0.000382933
-8	0.00293776	0.000409493	0.00576	0.000531679	0.00181801	0.000365428
-7	0.00293776	0.000495164	0.00576	0.000628731	0.00181801	0.000446583
-6	0.00293776	0.000493574	0.00576	0.00062694	0.00181801	0.000445074
-5	0.00293776	0.000443142	0.00576	0.000569929	0.00181801	0.000397252
-4	0.00293776	0.000451925	0.00576	0.000579883	0.00181801	0.00040557
-3	-0.003732466	0.000300225	0.00576	0.000719283	0.00181801	0.000523378
-2	-0.000687714	0.000325633	0.00576	0.000599908	0.00181801	0.000422345
-1	-0.000687714	0.000358941	0.00576	0.000644828	0.00181801	0.000460165
0	0.00293776	0.000532383	0.00576	0.000670585	0.00181801	0.000481964
1	0.00293776	0.000476006	0.00576	0.00060712	0.00181801	0.000428399
2	0.00293776	0.000508195	0.00576	0.000643404	0.00181801	0.000458963
3	0.00293776	0.000585716	0.000196	0.000460524	0.00181801	0.000532771
4	0.00293776	0.000565408	0.00576	0.000707589	0.00181801	0.00051341
5	0.00293776	0.000385412	0.00576	0.000504188	0.00181801	0.0003427
6	0.00293776	0.000428238	0.00576	0.000553009	0.00181801	0.000383148
7	0.00293776	0.000542354	0.00576	0.000681771	0.00181801	0.000491453
8	0.00293776	0.000492675	0.00576	0.000625927	0.00181801	0.000444221
9	0.00293776	0.00059775	0.00576	0.000743716	0.00181801	0.00054425
10	0.00293776	0.000474621	0.00576	0.000605556	0.00181801	0.000427086

Appendix 1 continued

UNILEVER	(AR- Ā)^2	STARWIN	(AR- Ā)^2	ALUWORKS	(AR- Ā)^2	AFRICAN CHAMPS.	(AR- Ā)^2
-0.07561114	0.003434037	0.00011462	0.000293269	-0.00407825	0.000167243	-0.03265	0.000245
-0.07154256	0.002893567	0.00011462	0.000319169	0.00148556	0.000370033	-0.03265	0.000222
-0.07657417	0.003513644	0.012101373	0.000864333	0.00148556	0.000352829	-0.03265	0.000236
-0.07725752	0.003357392	0.00011462	0.000377491	-0.00197506	0.000300657	-0.03265	0.000178
-0.07283543	0.002868316	0.00011462	0.000376103	-0.00611117	0.000173386	-0.03265	0.000179
-0.07649129	0.003408004	0.00011462	0.000332253	0.00686938	0.000624128	-0.03265	0.000211
-0.07623632	0.003354212	0.00011462	0.000339863	0.00885767	0.000738667	-0.03656	0.000333
-0.07673144	0.00309937	0.00011462	0.000448341	-0.00588656	0.000230217	-0.03656	0.00024
-0.07783447	0.003492982	0.00011462	0.000355233	0.01078321	0.000871208	-0.03656	0.000318
-0.07176908	0.002718123	0.00011462	0.000389987	-0.0024857	0.000294046	-0.03656	0.000286
-0.07899346	0.00346424	0.00011462	0.000410074	0.00148556	0.000467477	-0.04095	0.000433
-0.07333654	0.002965537	0.00011462	0.000360788	0.00148556	0.000414748	-0.03656	0.000313

ISSN 2054-6319 (Print), ISSN 2054-6327(online)

-0.07423385	0.002984266	0.00011462	0.00038888	-0.00342207	0.000261901	-0.03656	0.000287
-0.07485791	0.002872327	-0.011872133	8.82037E-05	0.00148556	0.000517534	-0.03656	0.000234
-0.07703572	0.003157898	-0.011872133	8.04323E-05	0.00148556	0.000498455	-0.03656	0.000247
-0.07543477	0.003450461	0.012101373	0.000829182	0.00908229	0.000664424	-0.03656	0.000395
-0.07633407	0.003431373	0.012101373	0.000891471	0.00148556	0.000370243	-0.03656	0.000354
-0.07750734	0.003266877	0.00011462	0.000418831	-0.00611117	0.000202765	-0.03656	0.000263
-0.07636642	0.003261311	0.00011462	0.000375319	0.00148556	0.000430317	-0.0365	0.000299
-0.07480398	0.002840124	-0.011872133	9.29109E-05	-0.00611117	0.00023716	-0.0365	0.000226
-0.07308248	0.002941374	0.00011462	0.000359583	0.00148556	0.000413455	-0.0365	0.000314

Appendix 1 continued

GOLDE NWEB	(AR- Ā)^2	S(at)^2	Art	(ARt)^2	(SER)^2	SER
-0.05326	0.001314	0.000979	-1.2489	1.559747	1592.617	39.9076
-0.05326	0.001261	0.000822	-1.12407	1.263544	1536.555	39.19891
-0.05326	0.001293	0.000946	-0.99894	0.997873	1055.056	32.48163
-0.05326	0.001152	0.000867	-0.87402	0.763919	881.1039	29.68339
-0.05326	0.001155	0.00079	-0.74911	0.561168	710.6326	26.65769
-0.05326	0.001235	0.000903	-0.62398	0.389357	431.3779	20.76964
-0.05326	0.001221	0.000928	-0.49896	0.248957	268.2684	16.3789
-0.05326	0.001037	0.000825	-0.37407	0.13993	169.6683	13.02568
-0.05326	0.001192	0.000947	-0.24893	0.061968	65.42519	8.088584
-0.05326	0.001131	0.000785	-0.12412	0.015405	19.61441	4.428816
-0.05326	0.001097	0.000945	0.001063	1.13E-06	0.001195	0.034576
-0.05326	0.001182	0.000843	0.125949	0.015863	18.80743	4.336753
-0.05326	0.001133	0.000833	0.250937	0.06297	75.57546	8.693414
-0.05326	0.001024	0.000789	0.375888	0.141292	178.9899	13.37871
-0.05326	0.001051	0.000853	0.500959	0.25096	294.33	17.15605
-0.05326	0.001337	0.000989	0.626112	0.392016	396.5586	19.91378
-0.05326	0.001261	0.000959	0.751079	0.56412	588.2004	24.25284
-0.05326	0.001083	0.000869	0.875977	0.767336	883.2583	29.71966
-0.05326	0.001156	0.000886	1.000996	1.001994	1131.434	33.63679
-0.05326	0.001008	0.000786	1.125885	1.267616	1612.253	40.15287
-0.05326	0.001184	0.00084	1.250945	1.564863	1863.023	43.16275
						465.059

ISSN 2054-6319 (Print), ISSN 2054-6327(online)

Appendix II Average Abnormal Returns

Event Window	CAMELOT	PIONEER KITCHENWARE	SAMWOOD	UNILEVER	STARWIN
-10	0.021826784	0.00576	0.00181801	-0.07561114	0.00011462
-9	0.006272873	0.00576	0.00181801	-0.07154256	0.00011462
-8	0.00293776	0.00576	0.00181801	-0.07657417	0.012101373
-7	0.00293776	0.00576	0.00181801	-0.07725752	0.00011462
-6	0.00293776	0.00576	0.00181801	-0.07283543	0.00011462
-5	0.00293776	0.00576	0.00181801	-0.07649129	0.00011462
-4	0.00293776	0.00576	0.00181801	-0.07623632	0.00011462
-3	-0.003732466	0.00576	0.00181801	-0.07673144	0.00011462
-2	-0.000687714	0.00576	0.00181801	-0.07783447	0.00011462
-1	-0.000687714	0.00576	0.00181801	-0.07176908	0.00011462
0	0.00293776	0.00576	0.00181801	-0.07899346	0.00011462
1	0.00293776	0.00576	0.00181801	-0.07333654	0.00011462
2	0.00293776	0.00576	0.00181801	-0.07423385	0.00011462
3	0.00293776	0.000196	0.00181801	-0.07485791	-0.011872133
4	0.00293776	0.00576	0.00181801	-0.07703572	-0.011872133
5	0.00293776	0.00576	0.00181801	-0.07543477	0.012101373
6	0.00293776	0.00576	0.00181801	-0.07633407	0.012101373
7	0.00293776	0.00576	0.00181801	-0.07750734	0.00011462
8	0.00293776	0.00576	0.00181801	-0.07636642	0.00011462
9	0.00293776	0.00576	0.00181801	-0.07480398	-0.011872133
10	0.00293776	0.00576	0.00181801	-0.07308248	0.00011462

Appendix II continued

Events Window	ALUWORKS	AFRICANCHAMPS.	GOLDENWEB	ĀVERAGE
-10	-0.00407825	-0.0326539	-0.05326	-0.017010485
-9	0.00148556	-0.0326539	-0.05326	-0.017750675
-8	0.00148556	-0.0326539	-0.05326	-0.017298171
-7	-0.00197506	-0.0326539	-0.05326	-0.019314511
-6	-0.00611117	-0.0326539	-0.05326	-0.019278764
-5	0.00686938	-0.0326539	-0.05326	-0.018113178
-4	0.00885767	-0.0365578	-0.05326	-0.018320758
-3	-0.00588656	-0.0365578	-0.05326	-0.021059455
-2	0.01078321	-0.0365578	-0.05326	-0.018733018
-1	-0.0024857	-0.0365578	-0.05326	-0.019633458
0	0.00148556	-0.0409478	-0.05326	-0.020135664
1	0.00148556	-0.0365578	-0.05326	-0.018879799

ISSN 2054-6319 (Print), ISSN 2054-6327(online)

2	-0.00342207	-0.0365578	-0.05326	-0.019605416
3	0.00148556	-0.0365578	-0.05326	-0.021263814
4	0.00148556	-0.0365578	-0.05326	-0.02084054
5	0.00908229	-0.0365578	-0.05326	-0.016694142
6	0.00148556	-0.0365578	-0.05326	-0.017756146
7	-0.00611117	-0.0365578	-0.05326	-0.02035074
8	0.00148556	-0.0365578	-0.05326	-0.019258534
9	-0.00611117	-0.0365578	-0.05326	-0.021511164
10	0.00148556	-0.0365578	-0.05326	-0.018848041

ISSN 2054-6319 (Print), ISSN 2054-6327(online)