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## MARKET REACTION TO DIVIDEND ANNOUNCEMENTS: ANALYSIS AT NAIROBI SECURITIES EXCHANGE

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## MARKET REACTION TO DIVIDEND ANNOUNCEMENTS: ANALYSIS AT NAIROBI SECURITIES EXCHANGE

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### Abstract

**Purpose:** The study sought to check the efficiency of Nairobi Securities Exchange with regard to dividend announcements on semi-strong form of efficiency.

**Methodology:** The study employed event study methodology which is descriptive in nature. Census was carried out to determine which dividend announcements qualified for analysis. The period of study extended for five years from 2012 to 2016. Window period covered 30 days before and 30 days after the announcement. Average abnormal returns were evaluated for significance at 95% confidence level.

**Findings:** The results indicated that the market was efficient for 4 years except one year where the market was found to be inefficient in semi strong form perhaps due to the prevailing economic conditions during the year.

**Unique contribution to theory, practice and policy:** This study recommended that the NSE be checked for efficiency from time to time. This is informed by the fact that an efficient market allocates the resources optimally from areas they are less required to sectors they are highly required hence contributing to economic development. The study recommends regulatory bodies to come up with strategies to enhance and sustain efficiency at NSE.

**Keywords:** *Event study, Dividend Announcements, Abnormal Returns, Semi-strong for*

## **INTRODUCTION**

### **Background of the Study**

When a market is efficient, it means it is able to incorporate all information available at the moment into the securities market prices (Madura, 2007). Moreover, Malkiel (1992) describes an efficient market as one where participants will not be able to benefit from revealed information as prices are not affected. In efficient market, securities always reflect all known information (both private and Public). For efficient market to exist several conditions have to be met; information should be costless and readily accessible to participants in the market in the same time (investors have homogeneous expectations). The market is assumed to have no transaction costs and taxes. This means that players in the market are price takers i.e. prices are not affected by the trading volume of a single person or institution, and market players are rational and utility maximizers.

Rozeff and Kinney (1976) discovered size effect as one of intriguing anomalies where small firms have high earnings on stock when compared to their lower capitalization with regard to risk. The same anomaly was observed by Banz (1981), and Roll (1983), where stocks with small capitalization perform better in comparison large capitalized firms stocks.

### **Problem Statement**

The study sought to address the controversy of whether the NSE is efficient or not in semi-strong form around dividend announcements. The study was unique as it involved a comparative element of five different years.

### **Objective of the Study**

The main objective of the study was to analyze the effect of dividend announcements on the share prices at NSE. This was to aid in assessing market efficiency at semi-strong form around dividend announcements. The study was hypothesized as follows:

$H_0$ : The share prices are not significantly influenced by dividend announcements of NSE.

## **LITERATURE REVIEW**

### **Random Walk Theory**

Kendall (1953) introduced the random walk theory where prices of securities are purported to random. This means that an individual cannot outperform the market and make abnormal profits as the prices are unpredictable in nature. Technical analysis which involves forecasting future prices from past outcomes cannot be beneficial as the prices

follow random path. Future prices are purely independent of past outcomes and events (Fama, 1965).

### **Signaling Theory**

According to Ross (1977), announcements of events can be used to influence share price movements especially where the market is inefficient. An increase in earnings can be used to portray potential growth of a company hence attracting investors while a decrease in earnings or dividends may signify company struggling hence investors may decide to offload such stock (Miller & Modigliani, 1961).

### **Evidence from Dividend Announcements**

Anwar, Singh and Jain (2015) analyzed the impact of dividend announcement on both short and long term. The study analyzed how returns behave in terms of variability in Mumbai Stock Exchange. The study concluded that variance is low on the long run in comparison to short run where variance is high. While investigating the influence of dividend announcements on share prices at Bombay Stock Exchange, Rane and Guntur (2017) found that there were leakages of information before announcement in banking sector. The study concluded the abnormal returns were significant at 5% significance level. The study confirmed the signaling hypothesis dividend announcements. Urszula and Sabina (2016) carried a study on how dividend announcements affect share prices at Warsaw Stock Exchange. The study concluded that the significance level of abnormal returns and cumulative abnormal returns were low deeming the market to be efficient after evaluating the event.

Several studies have also been carried at Warsaw by different scholars on dividend announcements (Czekaj, 2014; Perepeczo, 2014; Tuzimek, 2013). Shireen and Kavita (2016) investigated how market reacts after dividend announcement at Oman. The sample consisted of 21 companies listed at Muscat Securities Market. The study recorded significant returns which were abnormal in the announcement period when the event study methodology was adopted. Hashemijoo, Ardekani and Younesi (2012) focused on the relationship dividend policy and share price volatility in Malaysian market. The study involved 84 companies from 2005 to 2010 and the findings indicated that a relationship which is significant negatively while employing regression.

Locally, some studies have covered the dividend area. Waithaka, Ngugi, Aiyabei, Itunga and Kirago (2012) found announcement for dividend to significantly influence prices of stocks while carrying out a study on dividend policies. Olweny (2012) concluded the NSE to be inefficient in semi-strong form while investigating effects of dividend

announcements. The study analysed data from 1999 to 2003 with a sample of 12 companies. Market model was adopted in the study. Maringa and Muturi (2016) observed that announcement for dividends have significant influence on stock prices in his study at NSE. He examined data from 2010 and observed abnormal returns were very significant. Event study methodology was employed with 80 day event window.

Jagongo and Ndende (2016) carried out research on signaling power of dividend at NSE. The study employed ordinary least square and established that there was rise in prices of shares for firms declaring dividends while price falls were observed for companies that declared decreased dividends. Firms that maintained the same level of dividends were observed to have mixed reactions.

### **RESEARCH METHODOLOGY**

Event study methodology was used in the study. This involved analysis of average abnormal returns around the event announcement period. The study used thirty days before and thirty days after the announcements to get the abnormal returns which were then aggregated and mean computed to get the average abnormal returns. Census approach for sampling was considered appropriate for the study. T-test was considered appropriate to check for average abnormal returns significance at 95% confidence level.

### **RESULTS AND DISCUSSIONS**

The results were evaluated year by year and discussed as follows.

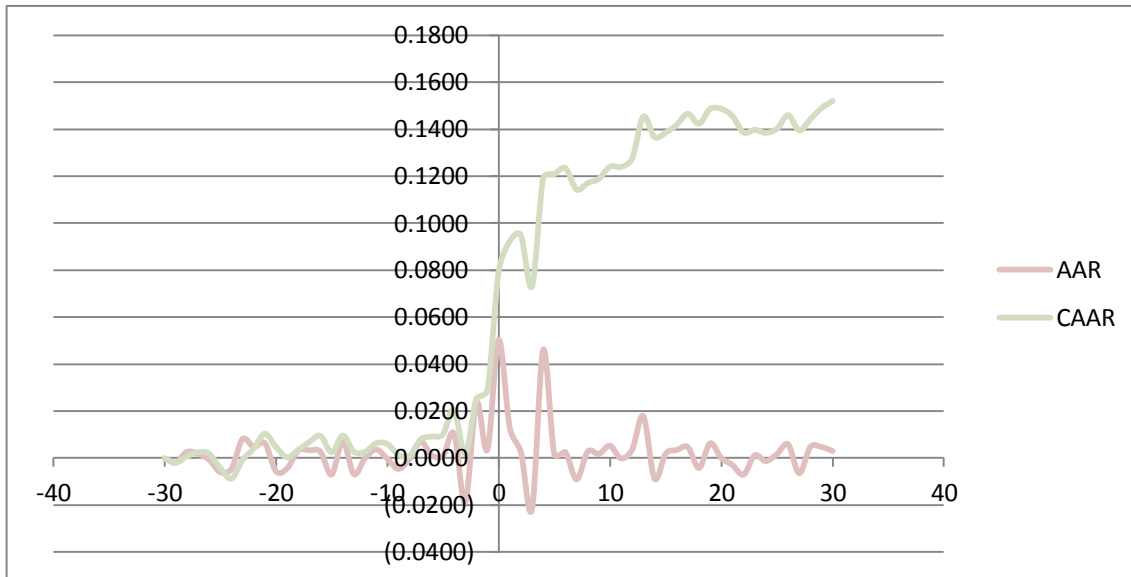
#### **Analysis for Dividend Announcements year 2012**

There were 18 announcements which qualified for analysis from year 2012 to year 2016. The analysis for year 2012 is shown below in Table 1.

**Table 1: Asset Pricing Characteristics of Dividend Issues at NSE year 2012**

<b>Company</b>	<b>A=<math>\alpha</math></b>	<b>B=<math>\beta</math></b>	<b>t-statistic</b>	<b>R-squared</b>
BARCLAYS	0.001	0.752	3.015	0.135
EABL1	0.002	0.389	1.785	0.052
HFCK	-0.003	0.081	0.243	0.001
BAT	0.002	0.252	0.938	0.015
BAMBURI 1	-0.002	0.680	1.877	0.057
BOC 1	-0.001	0.101	0.316	0.002
EQUITY	-0.002	0.385	1.433	0.034
BAI	-0.001	1.011	1.529	0.039
TPS E.A	-0.001	0.956	1.475	0.036
ATHI RIVER MINING	0.000	0.414	0.802	0.011
SAFARICOM	0.002	-0.060	-0.129	0.000
NMG	0.000	0.366	1.302	0.028
EABL2	0.001	0.752	3.015	0.135
KAKUZI	0.003	-0.533	-0.787	0.011
KENYARE	0.002	0.235	0.354	0.002
BAMBURI 2	0.000	0.304	0.882	0.013
BOC 2	0.000	0.286	0.493	0.004
JUBILEE	-0.002	0.523	1.543	0.039

A beta of 1 exhibits average market risk while a beta more than one shows the stocks are exhibit risk more than the average market which means the share is expected to perform more than average with absence of firm specific information generating announcement. A beta less than 1 shows lower than average market risk on the stock. R squared explains the extent to which the relationship between dependent and independent variable can be explained. For example market returns (NSE 20 share index) can be approximated to have caused changes to stock return of Jubilee Insurance at 3.9419% and less than market average risk.



**Figure 1: CAARs and AARs for Dividend Announcements year 2012**

The abnormal returns for every company were established for each of the firms. They were averaged to find the Average Abnormal Returns (AAR) for the whole year. A graphical presentation is shown above in Figure 1 across the days in observation. Cumulative Average Abnormal Returns were established to show the cumulative effect. This is usually done to determine when the information was actually received in the market and whether there were leakages before the actual date on the listing. Leakage of information mostly signifies presence of insider trading (Eleke-Aboagye & Opoku, 2013). The AAR showed a lot of disturbance between 3 days before and 3 days after the announcement day which is day 0. This indicated that the dividend announcement had an effect on the share prices resulting to that disturbance. The presence of abnormal returns before the announcement date shows that the market anticipated the information. When abnormal returns exhibit after the date of announcement, the market is portrayed as being slow in incorporating the announcement.

**Table 2: T test results for Dividend Announcements year 2012**

Test Value = 0						
T	Df	Sig. (2-tailed)	Mean Difference	95% Confidence Difference	Interval of the	
				Lower	Upper	
AAR	1.761	60	0.083	0.002	0.000	0.005

The AARs for the period were tested for significance at 95% confidence level as in Table 2. The AARs were found to be insignificant. The p value was .083 greater than 0.05 leading to null hypothesis being accepted. The same applied to the t test where the critical t is supposed to be between -1.96 to + 1.96 to accept the null hypothesis. The t value was 1.761 hence accepting the null hypothesis. Thus we conclude dividend announcement did not have significant effect on stock prices in year 2012. The interpretation is in line with Thanwarat(2012) who employed t test in his the study of dividend announcements at Stock Exchange of Thailand. The findings are in contrast with Olweny (2012) who analysed NSE from 1999 to 2003 and found the market to be inefficient in semi strong form.

### Analysis for Dividend Announcements year 2013

The same 18 dividend announcements qualified for analysis. The asset pricing characteristics were established as follows.

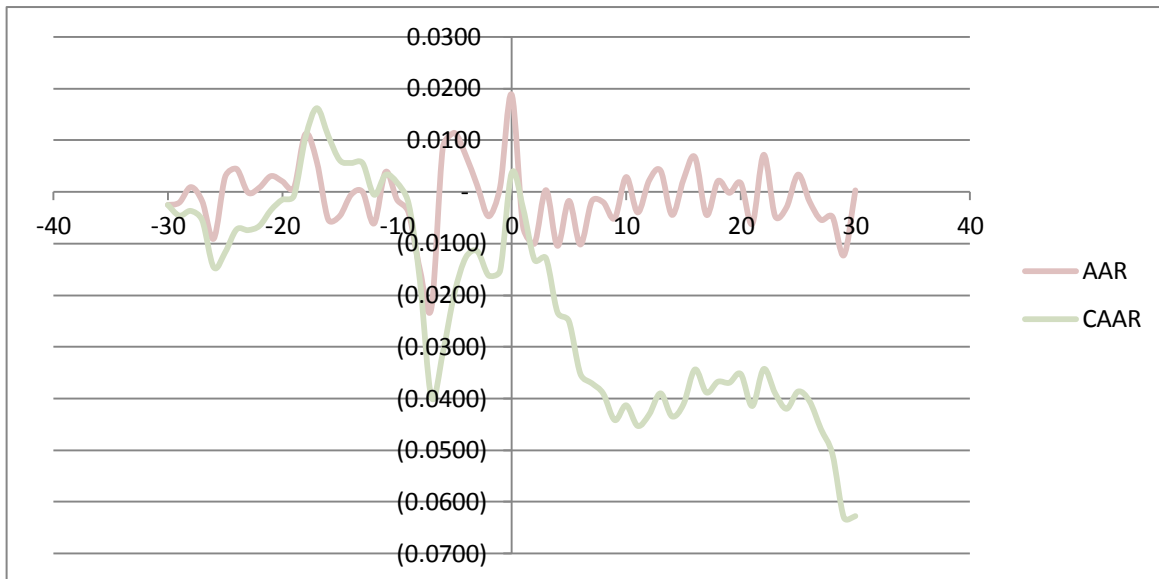
**Table 3: Asset Pricing Characteristics of Dividend Issues at NSE year 2013**

Company	A= $\alpha$	B= $\beta$	t-statistic	R-squared
BARCLAYS	0.00055	1.147175	2.888381	0.125752
EABL1	0.002176	-0.03653	-0.17058	0.000501
HFCK	0.000726	0.010253	0.022517	8.7E-06
BAT	0.001414	0.801193	3.076245	0.140273
BAMB 1	0.002416	0.353599	1.358178	0.030824
BOC 1	-0.00138	-0.23312	-0.46746	0.003753
EQUITY	0.000246	1.049263	3.433454	0.168919
BAI	-0.00063	0.816753	2.504247	0.097575
TPS E.A	0.002144	-0.07063	-0.17323	0.000517
ATHI RIVER MINING	0.029946	8.558437	0.726285	0.009013
SAFARICOM	0.000935	0.625675	3.11537	0.143349
NMG	0.001775	0.741143	2.548797	0.100725
EABL 2	0.003407	1.683834	4.183848	0.231835
KAKUZI	0.000953	0.177056	0.484956	0.004038
KENYA RE	-0.00021	1.800388	6.004677	0.383347
BAMBURI 2	0.000621	0.823345	2.663989	0.10902
BOC 2	0.001312	0.116878	0.367531	0.002324
JUBILIEE	-0.0009	0.512221	1.312623	0.028849

Table 3 indicated the results of asset pricing. A beta of 1 exhibits average market risk while a beta more than one shows the stocks are exhibit risk more than the average



market which means the share is expected to perform more than average with absence of firm specific information generating announcement. A beta less than 1 indicates lower than average market risk on the stock. R square explains the extent to which the relationship between dependent and independent variable can be explained. For example market returns (NSE 20 share index) can be approximated to have caused changes to stock return of JUBILEE Insurance at 2.8849% and less than market average risk.



**Figure 2: CAARs and AARs for Dividend Announcements year 2013**

The AAR showed a decline and sharp increase before the announcement date after which it stabilized as indicated in Figure 2. The CAAR was negative after the announcement date which shows departure from EMH where it is supposed to remain slightly positive. CAAR moved negatively indicating the market reacted negatively when the announcement for dividend were made.

**Table 4: T test significance results for Dividends Announcements year 2013**

	Test Value		Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
	T	Df			Lower	Upper
AAR20 13	-1.223	60	.226	-.0010311	-.002717	.000655

The AARs for the period were tested for significance at 95% confidence level and results put in Table 4. The AARs were found to be insignificant. The interpretation process was consistent with Babitha, Prakash and Shakila (2017) on P value obtained. The p value was .226 greater than 0.05 leading to null hypothesis being accepted. The same applied to the t test where the critical t was supposed to be between -1.96 to + 1.96 to accept the null hypothesis. The t value was -1.223 hence accepting the null hypothesis. Thus the study concluded that dividend announcement did not have significant effect on stock prices in year 2013.

### Analysis for Dividend Announcements year 2014

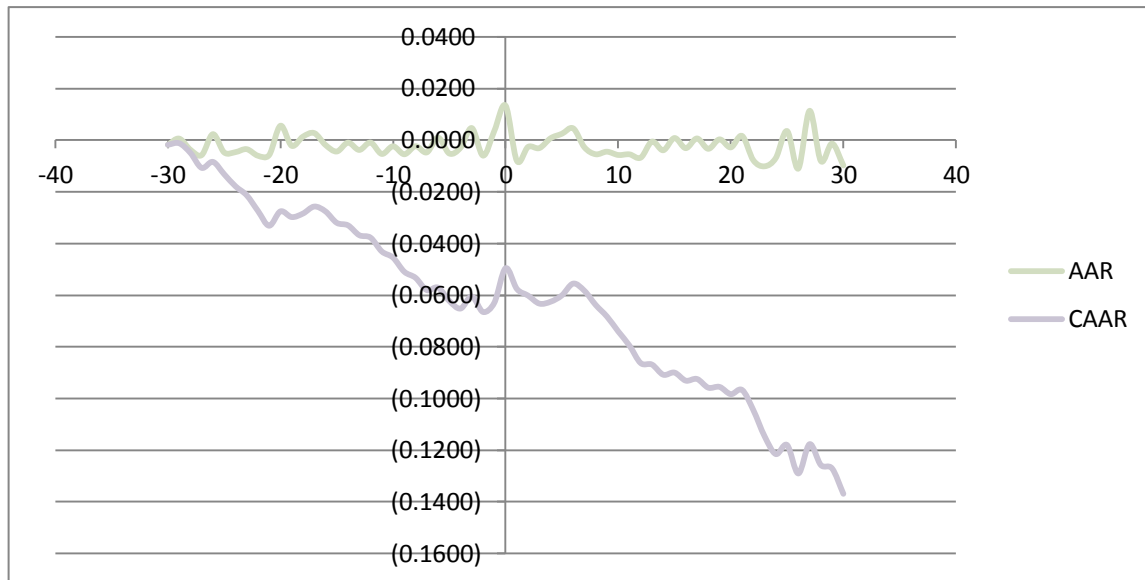
The same 18 dividend announcements qualified for analysis.

**Table 5: Asset Pricing Characteristics of Dividend Issues at NSE 2014**

Company	A= $\alpha$	B= $\beta$	t-statistic	R-squared
BARCLAYS	0.000212	0.36776	1.468452	0.035846
EABL 1	-0.00278	0.886697	2.599963	0.104383
HFCK	0.003758	0.799537	2.174711	0.075393
BAT	0.000245	1.0811	1.989418	0.063879
BAMB 1	-0.0007	1.025824	2.895739	0.126313
BOC 1	0.006069	0.640036	1.183313	0.023573
EQUITY	-0.00162	0.756829	2.021002	0.065789
BAI	0.010144	1.234225	1.504563	0.037563
TPS E.A	0.000692	0.562915	1.117147	0.021064
ATHI R.	0.002422	1.80676	5.192461	0.317339
SAF	0.00228	1.339064	4.567268	0.264519
NMG	1.63E-05	0.349841	1.324375	0.029353
EABL2	0.001107	0.67633	1.425681	0.033858
KAKUZI	0.004113	0.263452	0.442841	0.00337
KENYARE	0.003656	0.247063	0.56083	0.005394
BAMB2	-0.00204	1.37602	1.920327	0.059779
BOC2	0.001299	1.129469	1.371829	0.031427
JUBILEE	0.003657	-0.07583	-0.11621	0.000233

Table 5 indicates the asset pricing characteristics for year 2014. A beta of 1 exhibits average market risk while a beta more than one shows the stocks are exhibit risk more than the average market which means the share is expected to perform more than average with absence of firm specific information generating announcement. A beta less than 1 shows lower than average market risk on the stock. R square explains the extent to which

the relationship between dependent and independent variable can be explained. For example market returns (NSE 20 share index) can be approximated to have caused changes to stock return of JUBILEE Insurance at 0.0233% and less than market average risk.



**Figure 3: CAARs and AARs for Dividend Announcements year 2014**

The AARs and CAARs were established for year 2014 as shown in Figure 3. The AARs showed a lot of movement around dividend announcement period. The CAAR moved downward even before the announcement date which was day 0. This indicated the information had already been anticipated before announcement and was perceived negatively hence the downward movement. The CAAR continued to move downwards even after the study period perhaps indicating the uncertainty in the economy at that particular period.

**Table 5: T test for significance for Dividends Announcements year 2014**

Test Value		= 0			
T	Df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
				Lower	Upper

AAR20 14	-3.765	60	.000	-.0022443	-.003437	-.001052
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The AARs for the period were tested for significance at 95% confidence level as indicated in Table 5. The AARs were found to be significant. The p value was .000 less than 0.05 leading to rejection of null hypothesis and acceptance of alternative hypothesis. Thus null hypothesis was rejected. The same applied to the t test where the critical t is supposed to be between -1.96 to + 1.96 to accept the null hypothesis. The t value was -3.765 hence rejecting the null hypothesis. Thus the study concluded dividend announcement did have significant effect on stock prices in year 2014. The findings are in line with Maringa and Muturi (2016) who found the NSE market to be inefficient in semi-strong form with regard to dividend announcements using data covering year 2009 to 2011.

#### Analysis for Dividend Announcements year 2015

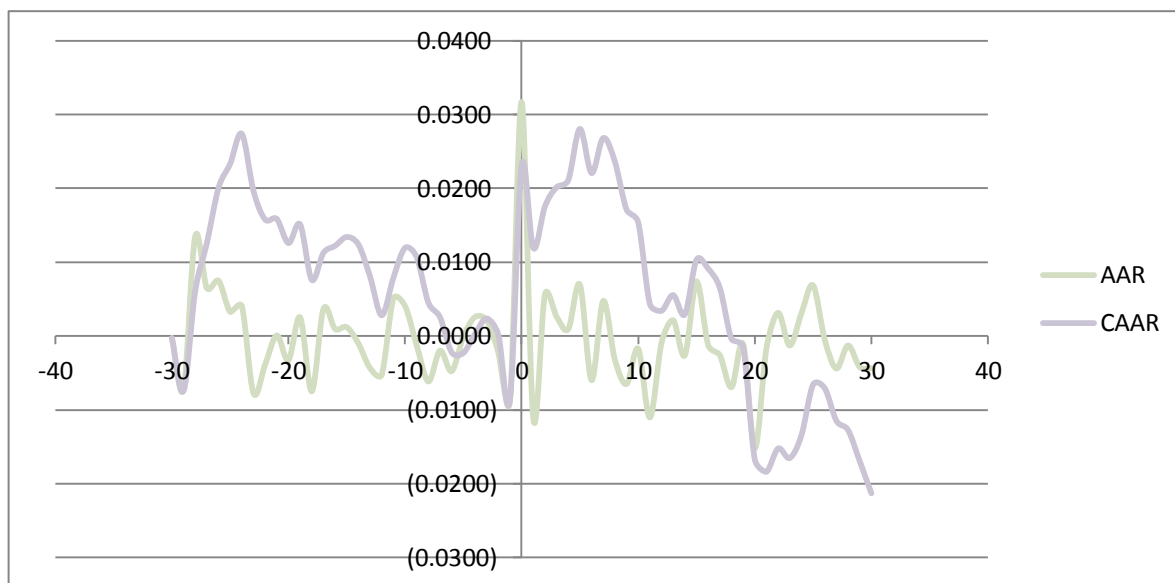
The same 18 dividend announcements qualified for analysis. The study established the regression equations for year 2015 for the respective companies. The results were expressed in Table 7 below. A beta of 1 exhibits average market risk while a beta more than 1 shows the stocks are exhibit risk more than the average market which means the share is expected to perform more than average with absence of firm specific information generating announcement. A beta less than 1 shows lower than average market risk on the stock.

**Table 7: Asset Pricing Characteristics of Dividend Issues at NSE year 2015**

Company	A= $\alpha$	B= $\beta$	t-statistic	R-squared
BARCLAYS	-0.00076	0.379614	1.701787	0.047558
EABL1	0.001727	0.560917	1.743526	0.049802
HFCK	-0.00115	0.332793	0.532777	0.00487
BAT	-0.0011	1.205254	2.276381	0.082016
BAMBURI 1	-8.3E-05	1.025775	2.200527	0.077055
BOC 1	0.000889	1.03356	1.398348	0.032614
EQUITY	0.001112	1.379412	4.623304	0.269291
BAI	0.001438	1.369923	3.213907	0.151168
TPS E.A	-0.00146	0.64442	0.946832	0.015221
ATHI RIVER MINING	-0.00119	0.67469	2.163813	0.074696
SAFARICOM	0.001299	0.786773	2.134464	0.07283

NMG	-0.00403	0.767106	1.418021	0.033507
EABL2	-0.0001	0.229795	0.611008	0.006396
KAKUZI	0.004503	-1.09477	-1.38942	0.032212
KENYA RE	0.001753	-0.35478	-0.60941	0.006362
BAMBURI 2	0.001202	0.549189	1.534106	0.038995
BOC 2	0.00208	1.087762	1.461932	0.035539
JUBILEE	-0.00031	-0.07644	-0.12468	0.000268

R squared explains the extent to which the relationship between dependent and independent variable can be explained. For example market returns (NSE 20 share index) can be approximated to cause changes to stock return of JUBILEE Insurance at 0.0268% and less than market average risk.



**Figure 4: CAARs and AARs for Dividend Announcements year 2015**

The individual AR were established, aggregated and averaged to find AAR for the market in 2015. These were plotted on the graph Figure 4 above with the respective CAAR. The AAR indicated slight movement around the dividend announcement period. The fact that CAAR had an increase before day 0 which is the announcement date indicated that there was possible leakage of information. The AAR stabilized and remained positive as expected in efficient market after day 0 before starting to decline after day 10.

**Table 8: T test results for significance for Dividend Announcements year 2015**

T	Test Value = 0		Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
	Df	T			Lower	Upper
AAR2015			.686	-.0003492	-.002068	.001370

Table 8 indicates the results for t test. The AARs for the period were tested for significance at 95% confidence level. The AARs were found to be insignificant. The p value was .686 greater than 0.05 which led to null hypothesis being accepted. Thus null hypothesis was accepted. The same applied to the t test where the critical t is supposed to be between -1.96 to + 1.96 to accept the null hypothesis. The t value was -.406 hence accepting the null hypothesis. Thus the study concluded dividend announcement did not have significant effect on stock prices in year 2015. Ndung'u, Simiyu, Galo and Mbogo (2014) recorded contrasting findings that abnormal returns were significant hence NSE was inefficient in semi-strong. The study covered 57 companies in year 2010.

#### Analysis for Dividend Announcements year 2016

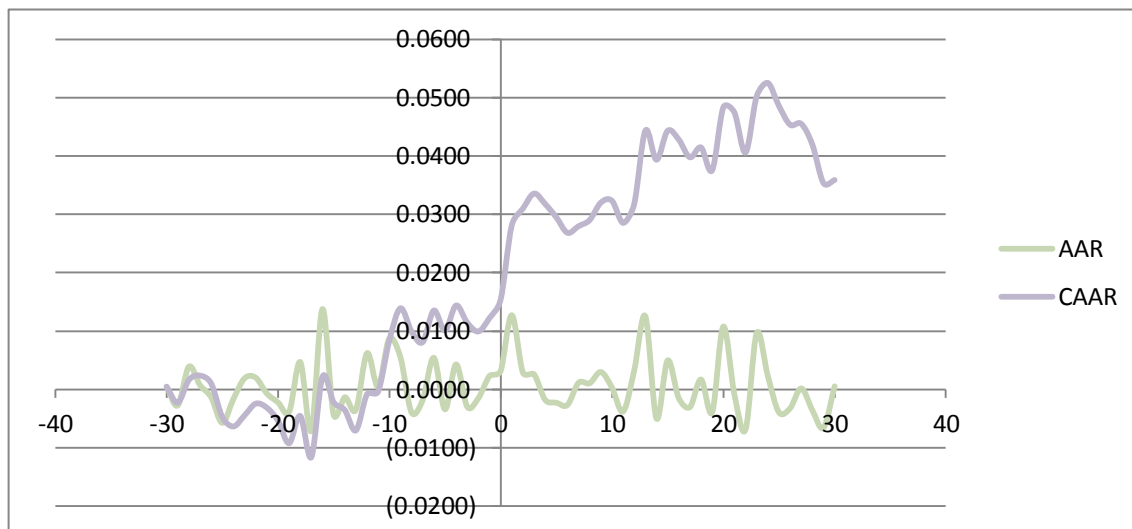
The same 18 dividend announcements qualified for analysis.

**Table 9: Asset Pricing Characteristics of Dividend Issues at NSE year 2016**

Company	A= $\alpha$	B= $\beta$	t-statistic	R-squared
BARCLAYS	-0.00044	0.61067	2.969976	0.132006
EABLI	-0.00017	0.490245	2.507484	0.097802
HFCK	2.57E-05	0.568828	1.642873	0.044466
BAT	0.000676	0.171593	0.44332	0.003377
BAMBURI 1	0.001683	0.351305	1.09792	0.02036
BOC 1	-0.00113	-0.24945	-0.39417	0.002672
EQUITY	-0.00129	0.365256	0.960404	0.015654
BAI	-0.00267	-0.11627	-0.29395	0.001488
TPS E.A	0.000819	-0.30985	-0.45136	0.0035
ATHI RIVER MINING	-0.00081	2.988623	4.134419	0.227629
SAFARICOM	0.000842	1.051027	4.178779	0.231403
NMG	-0.00262	0.76808	1.324939	0.029377

EABL2	0.00142	0.666052	2.038268	0.066842
KAKUZI	-0.00138	-0.03621	-0.10387	0.000186
KENYA RE	0.000114	1.164535	3.961315	0.212941
BAMBURI 2	-0.00137	0.829056	1.843491	0.055351
BOC 2	-0.0026	0.239213	0.401752	0.002775
JUBILEE	0.00044	-0.13723	-0.45081	0.003492

Table 9 indicated the regression results of asset pricing characteristics. A beta of 1 exhibits average market risk while a beta more than 1 shows the stocks are exhibit risk more than the average market which means the share is expected to perform more than average with absence of firm specific information generating announcement. A beta less than 1 shows lower than average market risk on the stock. R square explains the extent to which the relationship between dependent and independent variable can be explained. For example market returns (NSE 20 share index) can be approximated to have caused changes to stock return of JUBILEE Insurance at 0.3492% and less than market average risk.



**Figure 5: CAARs and AARs for Dividend Announcements year 2016**

The study established the regression equations for year 2016 for the respective companies as indicated in Figure 5. The individual AR were established, aggregated and averaged to find AAR for the market in 2016. The AAR indicates rapid and sharp movements even before day 0, at day 0 which is the announcement date and even after that. This indicated the announcement had an impact on the returns hence an impact on share prices too. The CAAR started to rise even before day 0 the announcement date. This can be interpreted to

mean that even before official day of announcement; the information was already out with investors who perceived it positively and hence trading on it. This might be due to insider trading.

**Table 10: T test results for significance for Dividend Announcements year 2016**

	Test		Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference		
	T	Df			Value = 0	Lower	Upper
						AAR20 16	.944

The AARs for the period were tested for significance at 95% confidence level as depicted in Table 10. The AARs were found to be insignificant. The p value was .349 greater than 0.05 leading to null hypothesis being accepted. Thus null hypothesis was accepted. The same applied to the t test where the critical t is supposed to be between -1.96 to + 1.96 to accept the null hypothesis. The t value was 0.944 hence accepting the null hypothesis. Thus we conclude dividend announcement did not have significant effect on stock prices in year 2016.

According to Waithaka et al. (2012), he found the Nairobi Securities Market to be inefficient in semi-strong form with regard to dividend announcement. Olweny (2012) got similar findings where Nairobi Securities Market was found to be inefficient in semi-strong form while investigating effects of dividend announcements. The study analysed data from 1999 to 2003 with a sample of 12 companies. Market model was adopted in the study. Maringa and Muturi (2016) observed that announcement for dividends have significant influence on stock prices in his study at NSE. He examined data from 2010 and observed abnormal returns were very significant. Event study methodology was employed with 80 day event window. The findings may be different due to employment of different methods or the study being carried in different time periods.

## **SUMMARY, CONCLUSIONS AND RECOMMENDATIONS**

### **Summary of Findings**

The findings indicated that NSE was efficient for year 2012, 2013, 2015 and 2016 in semi



strong form with regard to dividend announcements. However, the market was inefficient in semi strong form with regard to dividend announcement in year 2014.

### **Conclusion**

The study concluded that NSE is generally efficient in semi-strong form with respect to dividend announcements. The inefficiency in year 2014 may be attributed to prevailing economic conditions which were not favorable in the period.

### **Recommendations of the Study**

The study recommends that managers should be aware of the timings of their announcements as it conveys information to investors which leads to trading activities being affected in the market. The study highly recommends continuous testing of the market for efficiency form time to time. This is necessitated by the fact that we live in a dynamic world where technology keeps changing together with market conditions. There is need for testing simultaneous announcement and how they impact on the share prices. The government needs to improve communication infrastructure so that the population in rural areas can have information on daily trading activities of firms listed. This will enhance more trading and improve on information assimilation in the market. Future researchers should consider investigating simultaneous events happening at the same time and how they influence share prices. Political events, death of CEOs and resignation should also be investigated on how they impact stock price movement.

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