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## Information Content of Dividend Announcement: Analysis of the Oil and Gas Sector in Nigeria Using Event Studies and Back Testing

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**Abstract:** The objective of this article on information content of dividend announcement and stock price movement, using data drawn from oil and gas sector is to establish if there is any relationship between dividend announcement and stock price movement in the oil and gas sector in support/or not of signaling hypothesis in Nigeria. Using Event studies and back testing methodology. The research period is from 2009-2013. Result have confirmed that dividend change has a statistically significant value to investors. A dividend increase and dividend decrease resulted with a statistically stock price change in the same direction, but dividend retention resulted with no statistically significant stock price change.

**Keywords:** Dividend announcement, Dividend; Stock price oil & gas. Abnormal returns.

### Contents

<b>1. Introduction.....</b>	<b>13</b>
<b>2. Literature Review .....</b>	<b>14</b>
<b>3. Structure of Survey.....</b>	<b>16</b>
3.0 Data.....	16
3.1. Hypothesis.....	16
3.2. Methodology .....	16
<b>4. Emperical Results .....</b>	<b>17</b>
<b>5. Conclusion .....</b>	<b>17</b>
<b>References.....</b>	<b>17</b>

### 1. Introduction

Oil is a high-demand global commodity. In the global economic development, oil plays an important role. Nigeria earns about 85% income revenue from oil according to IMF report, and oil and gas sector has been the most active sector both in terms of capitalization and performance from the Nigeria stock Exchange fact file report. Thus the basis selecting the sector.

When there is an information symmetry, every participant has the same information about the company on the market .But when a participant or group of participants have a superior information about a company in comparison to other participant (s), information asymmetry exist on the market. Some theoreticians and investigators in economics and finance believe that Managers possess superior information, hidden by them, on the company they run than other participants on the market

The possible solution to this hidden information problem is signalling. Thus, the basis on signalling theory is information asymmetry, which exists on the market and represents an unequal access to information between Managers and Stockholders. Signally theory presumption is based on the possibility of reducing information asymmetry by dividends, used by insiders when they want to signal the company situation. Signalling concept originates from the work of Lintner (1956), when he demonstrated how stock price often reacts to changes in dividend. From their seminar paper, Miller and Modigliani (1961) stated that dividend policy is irrelevant to company value, but also added that market perception about dividend change can influence stock price reaction.

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Therefore, if a company has established a dividend policy with long term dividend payout ratio, changing in the dividend payout ratio will be seen as change in the management view of the company's prospect. Hence, dividend change conveys information to an investor to revalue their investment. This implying, dividend increase conveys bullish information, which in turn the stock price usually increases. While dividend decrease conveys bearish information, whereby stock price usually decreases.

The goal of this research is to investigate the effect of unexpected dividend change on stock price, while the objective is information content of dividend. Three methods are used to test the ability of dividend conveying information in scientific research. Thus, the type of approach depends on which question the researcher wants to answer. (Lease *et al.*, 2000):-

**A.** Do unanticipated changes in dividends, when announced, cause stock price reaction to change in the same direction?

**B.** Are unanticipated changes in dividend accompanied by revisions in the market's expectations of future earnings in the same direction as the dividend change?

**C.** Do dividend changes predict future earnings beyond those predicted by past earnings?

This article is concerned with the approach handling the first question. Thus answering the second and third question is not the subject of this research.

Organization of this paper is as follows .A brief literature review regarding dividend announcements in section 2. A description of the data, hypothesis and methodology in section 3. Empirical analysis of the relationship between dividend announcement and stock price reaction is described in section 4 while conclusion is the last section.

## 2. Literature Review

**Rulu *et al.* (2014)** Examined: The Chinese stock Dividend Puzzle: Examining the announcement effects of dividends with an emphasis on stock dividends in China's capital market. Using sample of listed firms from china's stock market from 1993-2006. Using Multivariate regression analysis. Finds the dividend-paying stocks exhibit significant positive abnormal returns while non-dividend-paying stocks show a negative announcement effect. The cumulative abnormal returns for pure stock dividends and combined dividend are the main drivers of this announcement effect .In contrast, pure cash dividend stocks experience no significant price run-up before announcement.

**Zane *et al.* (2014)** Investigated: Determinants of dividend payout. Using selected firms from Compustat database covering 2000-2012. Using regression and sensitivity analysis, life cycle theory or the residual income model, The results show moderate support for the model. A comparison of the period before and after the 2008 financial crisis indicates factor stability with minimal impact.

**Antonija and Silvije (2012)** Examined firm level factors influencing dividend policy. On the basis of previous empirical works profitability, stability of earnings, growth, debt level, ownership concentration and size are isolated as factors influencing dividend policy. Period 2006-2010. Method used:-Cross sectional regression analysis. By considering 5 European countries Australia, Japan and United States of America. Finds profitability significant in each analyzed country with positive effect on dividend level. Stability of Earning is statistically significant in half of analyzed countries with negative signs. Similarly finds negatively significant coefficients for growth variable in half of the analyzed countries. The impact of debt on dividend size is significant in 6 countries, but the signs of the coefficients are mixed. The ownership concentration regression analysis yielded 3 negatively significant coefficients. While Size coefficient appears to be significant in half of the country, but signs are inconsistent.

**Chhavi *et al.* (2014)** Investigated: Market reaction to stock dividends: Evidence from India period from Jan 2001 to June 30 2010. The market reaction captured in terms of impact on returns, liquidity and risk. Event study methodology used. The study finds that announcement of stock dividend induces an increase in the wealth of the shareholders in India. A consistent pattern of positive average abnormal return during the pre- announcement window till the announcement day and a pattern of negative average abnormal returns during the post-announcement window observed. Shareholders of the companies that issued stock dividends gain significant returns.

**Arun *et al.* (2014)** Examined momentum in stock index and empirically examined various factors contributing in generation of momentum. From April 2003 to March 2013. Momentum return is estimated from the National stock Exchange India's data. Using vector autoregressive (VAR) methodology and Impulse response function (IRF). Findings indicate inverse relationship of price-earnings ratio. Dividend yield index of industrial production and terms spread with momentum returns. Momentum returns are an inherent factor in the pricing of capital asset.

**Jack and Tsung-Hsin (2014)** Studied the effect of ex-dividend date for cash- dividend policy, are stock investors concerned with obtaining abnormal returns by acquiring certain information, try to demonstrate existence of abnormal return by examining the stock trading situations before and after ex-dividend, whether firm adopting cash dividend policy have different abnormal return on stock price performance depending on different variables. Data obtained from 1990-2011, Taiwan economic journal (TEJ) data base, using **Yilmaz and Gulay (2006)** method of analysing abnormal result of stock prices. Finds that normal return exist for listed Taiwan firms before and after the ex-dividend date.

**Ather and Kanwal (2012)** Examined the effect of dividend policy on stock prices of Karachi stock exchange, from 2001-2010 with a sample of 131 companies using panel data approach. Result showed dividend policy has significant positive on stock prices, stock dividend, profit after tax, earning per share and return on equity have positive relation with stock prices and significantly explain the variation in the market prices of share.

**Faiza et al. (2013)** Investigated the effect of dividend announcement on stock prices at Karachi, using ratio analysis of five selected companies from 2007-2011. Result showed that dividend announcement have strong impact on stock prices. Increase in dividend announcement increase the stock prices and vice versa.

**Ana et al. (2013)** Investigated the relationship between oil price shocks and macroeconomic evolution of the group of seven (G7) countries, from 1970 -2008. Using **Qu and Perron (2007)** methodology. Computing long-term multipliers showed that the response of output and inflation to oil price shocks is greatest in the 1970s and progressively disappears until the late 1990s. Then both effects reappear in the 2000s especially on inflation. The transmission of oil price shocks to the economy is weaker than in the 1970s meaning that oil price shocks have lost some of their explanatory power.

**Lutz (2010)** Investigated fluctuations in Gasoline prices: A joint Model of the Global crude oil market and the U.S. Retail gasoline market, from 2002-2008. Using VAR Model of the global crude oil market. Proposed in Kilian 2009. The article makes explicit the relationship between demand and supply shocks in these two markets. The result shown that it is essential to understand the origins of the given gasoline price shock, when assessing the response of the price of gasoline and of gasoline consumption, since each demand and supply shock is associated with responses of different magnitude, pattern and persistence.

**Neal and Charles (2013)** examine the Jump processes in the market for crude oil. They investigate the potential presence of jumps and time -varying volatility in the spot price of crude oil and in the futures prices. The investigation carried out over three data frequencies (monthly, weekly, daily) which allows for an investigation of temporal properties. Employing likelihood ratio tests to compare among four stochastic data- generating processes. Finds that allowing for both jumps and time-varying volatility improves the model's ability to explain spot prices at each level of temporal aggregation, this combination also provides a statistically improvement in the model fit for futures prices at the daily and weekly level. At the monthly level allowing for jumps does not provide a statistically significant increase in model fit after incorporating time- varying volatility into the model.

**Chitta et al. (2013)** Examine Capital structure, leverage and financing decision: An empirical analysis of selected public sector oil and gas companies in India. By assessing the degrees of associations between the selected leverage ratios and return on equity capital ( RoE) during the period 2000 Jan. to 2009-Oct. Using comparative analysis, correlation analysis, ratio analysis and statistical test. Indian oil corporation ltd (IOCL), Bharet petroleum corporation ltd (BPCL), Hindusan petroleum corporation ltd (HPCL) have both the leverages at high levels during the study period Meaning they are on a very risky position during the period understudy as compared to others in the industry.

**Sanjay and Radhika (2012)** Investigated relationship between oil price shocks and stock market performance: Evidence from select global equity markets, using market index data for 15 sample countries. Classified into four categories, based on their economic strength and oil exporting/importing status, to verify if the testable relationship varies across different economic settings. Period from 1 Jan 1993 to 31 march 2009. Event study methodology and market model equation used. Findings on a pre- event basis, sample stock markets do not provide any extra normal returns. Implying that there are no serious leakages in oil price information which could be exploited by investors in these markets. Further, after it is observed that irrespective of the nature of oil prices (price increase or decrease the high-growth emerging economies do provide significant positive returns on the post-event basis. The Chinese stock market reacts to oil price shock in a lagged manner.

**George (2011)** Examined the relationship of retail gas prices on oil company profitability using publicly available data from the US department of Energy (DOE) and the securities and exchange commission( SEC) from 1995-2006, using Regression analysis. This analysis indicates that the profit margins of the major integrated oil companies are lower, on average, during periods of extremely high gas and oil prices and if fact, are even lower than in times of extremely low gas and oil prices. Large oil companies are most profitable during periods of moderate gasoline prices. Smaller, vertically integrated oil companies and firms, primarily in the business of refining purchased crude oil, exhibit a habit consistently inverse relationship between profit margins and retail gas prices, as gas prices increase, these firms becomes less profitable. Finds no evidence for the increase in the gross profit margins of oil companies during episodes of very high retail gasoline prices.

**Andy and John (2012)** Investigated the Financial market reactions to a company disaster: The BP case 2010 .The British petroleum (BP) deep water horizon drilling rig exploded in the Gulf of Mexico on April 20 2010 leading to an unprecedented environmental and financial disaster. They give details responses in the financial markets for BP securities, including ADRs. Bonds, options, and credit default swaps. Following the disaster, BP share dropped more than 50% in value, with high volatility. BP share trading volume increased thirteen-fold, and the option trading volume increased twenty-fold. The implied volatility of BP shares also jumped, ranging between two and four times its earlier levels. Finally, on June 16, the company announced that cash dividends were suspended.

Research between dividend announcement and stock price movement has been investigated on many markets in the world by many authors, but scare in about Nigeria, concerning the oil and gas sector, in particular, whereby both are most active in terms of performance and capitalization in the stock Exchange. Secondly, oil and gas sector generating more than 80% of the country's income. Thus, its uniqueness for this investigation.

### 3. Structure of Survey

#### 3.0 Data

The survey period is from 2009-2013, while basic population where sample is taken are the oil and gas sector companies listed on the Nigerian stock Exchange. Most importantly with data availability both at the Nigerian stock Exchange and the Cash craft limited company websites.

In order to be included in the sample, the company had to meet the following criteria:

- A. Companies had to announce dividend in the period 2009-2013 compared with year before announcement.
- B. Absence of any other unexpected significant information which could influence the stock price on the announcement day.

In addition, these groupings need to be defined on announcement direction. This give rise to three groupings: - namely increased dividend, decreased dividend and dividend unchanged. Because the stocks of those companies including the oil and gas sector, listed in the Nigerian stock exchange were not listed in the S&P500, to be taken as the normal return, a proxy, calculating the normal returns two months before each of the announcement dates was done for all the companies in the sample. This ensures the use of market adjusted returns model. From 2009-2013, 11 companies made dividend increase announcements. 8 companies made dividend decrease, while 10 made dividend unchanged announcements.

#### 3.1. Hypothesis

Because information of dividend change is the objective of this investigation, and the goal is to investigate influence of unexpected dividend change on stock price. The main hypothesis is as follows:-

$H_1$ : Announcement of dividend change has significant value for investors in the oil and gas sector of the Nigeria stock Exchange.

Then, within the elaboration of this main hypothesis, dividend information value for investors is analyzed. In accordance to previous research in this area, the connection between dividend change and abnormal return is examined where abnormal return represents the difference between actual and expected return. Because dividend change can have three directions, increase, decrease or unchanged, three backing hypothesis is formed in order to confirm or reject the main hypothesis .Hence:-

$H_{1.1}$ :- There is a statistically significant connection between the unexpected dividend increase and positive abnormal return.

$H_{1.2}$ :- There is a statistically significant connection between the unexpected dividend decrease and negative abnormal return.

Because unexpected dividend increase or decrease represent relevant information for the market based on which the decisions about investment are made, while unexpected unchanged dividend doesn't represent relevant information, the third backing hypothesis is :-

$H_{1.3}$ :- The is no statistically significant relationship between unchanged dividend and abnormal returns.

#### 3.2. Methodology

When examining stock market reaction to dividend announcement, Event study methodology is commonly used though there is no single "best" methodological approach for an event study. Here we established a period of 25-days testing period (event window) for prices around the event dates, the events date plus 12 days before and 12 days after. Table 1a, 1b, 1c, provides the prices during the 25-days periods, separated under Table 1a for dividend increase, Table 1b for dividend decrease and Table 1c for the unchanged dividend. We standardize event dates (dividend announcements on the 13th date, standardized to be day 0) and compute returns for each stock during each of the days in the testing period. Data for the return is on Table 2a, table 2b and Table 2c respectively.

The next step is to determine normal or expected returns for each of the groups. Market adjusted return method is used, thus compute daily returns for the market index for each day in the 25-day testing period for each group. As stated earlier proxy was used here. Based on actual returns computed in, we compute daily residuals for each stock during each date in the testing period along with averages residual over the sample for each date. Since one of our objective is to determine whether any daily residual is statistically significantly different from zero. In-order to test our main hypothesis, standard deviation for each of the average daily residuals are computed along with normal deviates or test statistics from the cumulative abnormal return. Standard deviations measure the spread or variability of residuals for that day.

By assuming the residuals follow t-distribution and perform one-tail test with a 95% level of significance. Since our sample size is 11 for dividend increase, we have 10 degrees of freedom (11-1). The critical value is 1.812, Base on our computation none of the residual t-statistic (normal deviates or test statistics) exceed 1.812 for dividend increase, for dividend decrease at 95% level of significance (8-7), Degree of freedom 7= 1.896 still, none of our value is greater than. For unchanged dividend, degree of freedom 9 (10-1) 1.83. None of our value is greater than. But we may not conclude that with a 95% level of confidence that any residual differ from zero until we calculate the cumulative average residuals, standard deviation and normal deviates from the Cumulative abnormal return data.

We test for statistical significance of cumulative average residuals by computing standard deviation of the cumulative residual of the firms for each day and computing normal deviates. The data is given in Table 3a, Table 3b

and Table 3c. From the one-tail test with 95% certainty, we find that our benchmark for statistical significance is much less. Therefore, we have no reason to disregard our main hypothesis as well as the sub-hypothesis.

#### 4. Empirical Results

We have to investigate the influence of every direction of dividend announcement on stock price movement individually in-order to investigate the validity of the main hypothesis. From the table 3a for the dividend increase, even if our hypothesis concerning each date t in our testing period were given as follows:-

$$H_0: CAR_t \leq 0 \quad H_a : CAR_t > 0$$

We would not be able to reject the null hypothesis that  $CAR_t \leq 0$  with 95% confidence for any date. Reason none of the normal deviate exceeds the critical value of 1.812, Therefore considering a standard deviation of 8.654, which is the highest, shows the highest variability of a dividend increase impact on stock price in the event window, confirms the positive abnormal stock return on the announcement day is statistically significant on a 5% level.

The result of investigating the connection between the announcement of unexpected dividend decrease and stock price is shown on Table 3b. The unexpected dividend increase resulted in a statistically positive abnormal return on the announcement day, equally, on the dividend decrease, the standard deviation 2.792 compared to others before the announcement date is higher and is still statistically significant comparatively because the normal deviate is still far less than 1.896, Which therefore confirmed the second backing hypothesis  $H_{12}$  made on the connection between unexpected dividend decrease and stock price.

The table for the unchanged dividend is on table 3c. From the table, even though it has a standard deviation of 1.916, before this announcement date, there has been other higher value and even after.

Secondly the normal deviate is almost same, seven days before the announcement date and seven days after the announcement. Therefore announcement of same dividend (table 3c) as previous year do not have a statically significant influence on stock price movement on any day within the announcement period. An unchanged dividend does not represent statistically significant information for the market, which differentiates it from unexpected dividend increase or decrease announcement which supports signalling theory assumption. Because of the confirmation of all the backing hypothesis, a conclusion can be drawn confirming the main hypothesis of this research that say:-

$H_1$ : Announcement of dividend change has significant value for investors in the oil and gas sector of the Nigeria stock Exchange.

#### 5. Conclusion

Dividend change representing information relevant for market investors has been confirmed by the empirical result of this research. Because of shortage information about company's present and /or future business, investors use management's dividend decisions as information upon which they question the company's market value. When the announced dividend is above expected positively, that is an increase dividend, investors perceive this as a positive information used by management to signal present and /or future company business. This will lead to the stock price increase above expected on the announcement day.

This, imply also that the standard deviation will be highest on this announcement day comparatively. When the dividend announcement is below expected, that is a decrease amount, on the announcement day, the investors perceive this as a negative information and the stock price on that day will decrease or the next working day after the announcement. The standard deviation for this day will be less than the standard deviation on the dividend increase day announcement comparatively. While, on the unchanged dividend, the result here shows the normal deviate of no significant difference on the announcement day and the standard deviation, both before and after the announcement. This confirms the non-significant impact as well as information, of an unchanged dividend announcement to an investor on the announcement date. Hence, from the empirical result, there is a statistically significant relationship between dividend announcement and stock price moment of the oil and gas sector in Nigeria. This supports the signalling hypothesis.

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**Table-1a.** Dividend Increased Companies

12	12.75	58.9	159	175	34.3	20.68	49.23	148.99	253.94	125	158
11	12.9	58.49	163.49	170	34.3	20.68	49.23	149.99	253.94	125	150.1
10	13	54	163.49	175	34.3	19.7	49.23	135.27	253.94	120	150.1
9	13.1	54	163.49	174	34.3	19.7	49.23	122.7	253.94	120	160
8	12.91	54	163.49	173.9	34.3	19.7	51.82	111.3	253.94	120	157.25
7	13.17	54	163.49	173.9	36.1	19.75	51.82	106.2	253.94	120	157
6	13.2	54	163.49	173.75	36.1	19.75	51.82	106.2	253.94	120	165.07
5	12.95	59.5	163.49	169.62	36.1	19.75	51.82	106.2	253.94	120	165.07
4	12.5	59.5	163.49	161.55	36.1	19.75	51.82	101.29	253.94	120	169.9
3	12.5	59.5	163.49	160	36.1	19.71	49.36	101.29	253.94	120	169.9
2	13	59.5	163.5	116.1	38	19.71	47.01	101.29	253.94	120	165
1	13.02	59.5	163.5	116.41	40	19.73	47.01	96.5	253.94	125.41	165
0	13	58.9	163.6	161.42	40	20.76	47.01	92	253.94	132.01	165
-1	13.5	58.9	163.5	161.41	40	20.76	47.01	92	253.94	132.01	160.62
-2	13.94	61.99	163.5	161.55	40	20.76	47.01	92	253.94	132.01	170
-3	14	61.99	163.5	169.9	40	20.76	47.01	92	253.94	132.01	170
-4	13.5	61.99	163	178.84	40	20.76	47.99	90.5	253.94	132.01	165
-5	13.69	61.99	163	170.33	40	20.76	47.99	93.86	253.94	132.01	166
-6	13.39	61.99	163	162.22	40	21.85	47.99	93.86	253.94	132.01	166
-7	13	61.99	163	154.5	40	21.85	47.99	93.86	253.94	132.01	166
-8	12.43	61.99	158	147.15	40	23	47.99	98.8	253.94	132.01	160
-9	12.3	61.99	152	140.15	40	23	47.99	104	253.94	132.01	158
-10	12.3	61.99	152	135	40	23	50.51	104	253.94	132.01	164
-11	12.2	61.99	148.2	135	39.89	23	53.16	104	254.1	132.01	165
-12	12.3	62.43	148.2	133.02	39.89	23	53.16	94.39	254.1	132.01	160

**Table-1b.** Dividend Decreased Companies

12	14.16	21.68	32.29	36.14	174.67	40.98	49.15	195.5
11	14.11	20.65	32.29	36.14	174.67	40.98	44.62	195.5
10	14	17.85	32.29	36.14	174.67	40.98	40.48	195.5
9	14.3	17	32.29	36.14	174.67	40.98	38.56	195.5
8	14	17.82	32.29	36.14	174.67	40.98	34.99	195.5
7	14	19.72	32.29	36.14	174.67	40.98	31.75	195.5
6	14.05	20.75	32.29	36.14	174.67	40.98	30.24	195.5
5	13.95	20.53	32.29	36.14	174.67	40.98	20.8	195.5
4	14	22.72	32.29	36.14	166.36	40.98	20.8	195.5
3	14.4	22.8	32.29	36.14	166.36	40.98	20.8	195.5
2	15.12	23.5	32.29	36.14	158.44	40.98	20.8	195.5
1	15.3	24.39	32.29	36.14	158.44	39.79	20.8	195.5
0	14.69	23.52	32.29	36.14	150.9	39.79	20.8	195.5
-1	14.69	23.58	90.1	36.14	150.9	39.79	20.8	195.5
-2	14.69	23.56	90.1	36.14	150.9	37.9	20.8	195.5
-3	14.48	23.8	90.1	36.14	150.9	38.05	20.8	195.5
-4	14.4	23.7	90.1	36.14	150.9	37.39	20.8	195.5
-5	14.45	23.1	90.1	36.14	150.9	37.39	20.8	195.5
-6	14.47	22	90.1	36.14	150.9	37.39	20.8	195.5
-7	14.35	22.12	90.1	36.14	150.9	37.39	20.8	195.5
-8	14.12	23.28	90.1	36.14	150.9	39.35	20.8	195.5
-9	14.38	24.5	90.1	36.14	150.9	39.35	20.8	195.5
-10	14.7	25	90.1	36.14	150.9	39.35	20.8	195.5
-11	14.3	25.5	90.1	36.14	150.9	39.35	20.8	195.5
-12	15.05	25.3	90.1	32.86	150.9	37.48	20.8	195.5

**Table-1c. Dividend Unchanged**

12	81	38.76	67.22	32.29	132.9	112	12.79	10.5	39	171.11
11	81.65	38.9	67.22	32.29	132.9	112	12.79	10.5	39	173
10	78.53	38.9	67.22	32.29	132.9	112	11.61	10.5	40	173
9	117.8	40.8	67.22	32.29	132.9	119	11.61	10.5	38.91	179.6
8	124	40.6	67.22	32.29	132.9	119	11.06	10.5	38.91	179.6
7	128.5	40.6	67.22	32.29	132.9	119	10.54	10.5	39.65	171.05
6	124.9	40.89	67.22	32.29	132.9	119	10.04	10.65	39.65	171.02
5	123	41	67.22	32.29	132.9	119	10.04	11	43.95	170.5
4	118	41	67.22	32.29	132.9	119	10.04	11.05	43.95	170.5
3	115	42	67.22	32.29	132.9	119	9.57	11.05	43.95	170.5
2	113	40.71	67.22	32.29	132.9	119	9.12	10.86	43.95	170.5
1	114	40.7	67.22	32.29	132.9	119	9.12	10.86	43.95	170.5
0	114.55	42.8	67.22	32.29	132.9	119	9.12	10.86	43.95	170
-1	114	45.05	67.22	32.69	132.9	119	9.12	10.35	42	170
-2	120	45.99	67.22	32.29	132.9	120	9.12	10.83	39.44	170
-3	120	47.5	67.22	32.29	132.9	120	9.12	10.83	43.82	170
-4	115.5	48.95	70.75	33.98	132.9	120	9.12	10.83	43.56	170
-5	110	48.95	70.75	33.98	132.9	121.95	9.12	11.4	39.6	170
-6	114.5	50	70.75	33.98	132.9	121.95	9.12	11.4	39	170
-7	120	50	70.75	33.98	132.9	121.95	9.12	11.4	32.73	170
-8	126	50	70.75	33.98	132.9	121.95	9.12	10.95	29.76	173
-9	123.07	51	70.75	33.98	132.9	116.95	9.12	10.47	27.06	168.01
-10	117.21	51	70.75	33.98	132.9	116.95	9.12	10.47	24.6	166.05
-11	120.21	52.4	70.75	33.98	132.9	116.95	9.12	10.42	22.37	162
-12	126.53	50.49	72	33.98	132.9	116.95	9.12	10.42	20.34	159.99

**Table-2a. Returns Dividend Increased Companies**

12	0.090909091	0.007009745	-0.027463453	0.029411765	0	-0.006667111	0	-0.006667111	0	0	0.052631579
11	0.1	0.083148148	-0.027463453	-0.02857143	0	0.108819398	0	0.108819398	0	0.041666667	0
10	0.111111111	0	-0.027463453	0.005747126	0	0.102444988	0	0.102444988	0	0	-0.061875
9	0.125	0	-0.027463453	0.000575043	0	0.102425876	-0.049980702	0.102425876	0	0	0.017488076
8	0.142857143	0	-0.027463453	0	-0.049861496	0.048022599	0	0.048022599	0	0	0.001592357
7	0.166666667	0	-0.027463453	0.000863309	0	0	0	0	0	0	-0.04888835
6	0.2	-0.092436975	-0.027463453	0.024348544	0	0	0	0	0	0	0
5	0.25	0	-0.027463453	0.049953575	0	0.048474677	0	0.048474677	0	0	-0.028428487
4	0.333333333	0	-0.027463453	0.0096875	0	0	0.049837925	0	0	0	0
3	0.5	0	-0.027463453	0.378122308	-0.05	0	0.049989364	0	0	0	0.02969697
2	1	0	-0.027463453	-0.002663	-0.05	0.049637306	0	0.049637306	0	-0.043138506	0
1	0.001538462	0.010186757	-0.027463453	-0.27883781	0	0.048913043	0	0.048913043	0	-0.049996212	0
0	-1	0	-0.027463453	6.1954E-05	0	0	0	0	0	0	0.027269331
-1	-0.5	-0.049846749	-0.027463453	-0.0008666	0	0	0	0	0	0	-0.055176471
-2	-0.333333333	0	-0.027463453	-0.04914656	0	0	0	0	0	0	0
-3	-0.25	0	-0.027463453	-0.04998882	0	0.016574586	-0.020420921	0.016574586	0	0	0.03030303
-4	-0.2	0	-0.027463453	0.049961839	0	-0.035797997	0	-0.035797997	0	0	-0.006024096
-5	-0.166666667	0	-0.027463453	0.049993836	0	0	0	0	0	0	0
-6	-0.142857143	0	-0.027463453	0.049967638	0	0	0	0	0	0	0
-7	-0.125	0	-0.027463453	0.049949032	0	-0.05	0	-0.05	0	0	0.0375
-8	-0.111111111	0	-0.027463453	0.049946486	0	-0.05	0	-0.05	0	0	0.012658228
-9	-0.1	0	-0.027463453	0.038148148	0	0	-0.049891111	0	0	0	-0.036585366
-10	-0.090909091	0	-0.027463453	0	0.002757583	0	-0.049849511	0	-0.000629673	0	-0.006060606
-11	-0.083333333	-0.007047894	-0.027463453	0.01488498	0	0.101811633	0	0.101811633	0	0	0.03125
-12	#DIV/0!	#DIV/0!	-0.027463453	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!



**Table-2b.** Returns of Dividend Decreased Companies

12	0.003544	0.049879	0	0	0	0	0.101524	0
11	0.007857	0.156863	0	0	0	0	0.102273	0
10	-0.02098	-0.02098	0	0	0	0	0.049793	0
9	0.021429	-0.04602	0	0	0	0	0.102029	0
8	0	-0.09635	0	0	0	0	0.102047	0
7	-0.00356	-0.00356	0	0	0	0	0.049934	0
6	0.007168	0.010716	0	0	0	0	0.453846	0
5	-0.00357	-0.09639	0	0	0.049952	0	0	0
4	-0.02778	-0.02778	0	0	0	0	0	0
3	-0.04762	-0.02979	0	0	0.049987	0	0	0
2	-0.01176	-0.03649	0	0	0	0.029907	0	0
1	0.041525	0.041525	0	0	0	0	0	0
0	0	-0.00254	-0.64162	0	0	0	0	0
-1	0	0.000849	0	0	0	0.049868	0	0
-2	0.014503	0.014503	0	0	-0.00394	-0.00394	0	0
-3	0.005556	0.004219	0	0	0	0.017652	0	0
-4	-0.00346	0.025974	0	0	0	0	0	0
-5	-0.00138	-0.00138	0	0	0	0	0	0
-6	0.008362	-0.00542	0	0	0	0	0	0
-7	0.016289	-0.04983	0	0	0	-0.04981	0	0
-8	-0.01808	-0.01808	0	0	0	0	0	0
-9	-0.02177	-0.02	0	0	0	0	0	0
-10	0.027972	-0.01961	0	0	0	0	0	0
-11	-0.04983	-0.04983	0	0.099817	0.049893	0.049893	0	0
-12	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!

**Table-2c.** Returns Unchanged Dividend Companies

12	-0.007960808	-0.003598972	0	0	0	0	0	0	-0.010924855
11	0.039730039	0	0	0	0	0.10163652	0	-0.025	0
10	-0.33336163	-0.046568627	0	0	0	-0.058823529	0	0.028013364	-0.03674833
9	-0.05	0.004926108	0	0	0	0.049728752	0	0	0
8	-0.035019455	0	0	0	0	0.049335863	0	-0.018663304	0.049985384
7	0.028823058	-0.007092199	0	0	0	0.049800797	-0.014084507	0	0.000175418
6	0.015447154	-0.002682927	0	0	0	0	-0.031818182	-0.097838453	0.003049853
5	0.042372881	0	0	0	0	0	-0.004524887	0	0
4	0.026086957	-0.023809524	0	0	0	0.049111808	0	0	0
3	0.017699115	0.031687546	0	0	0	0.049342105	0.017495396	0	0
2	-0.00877193	0.0002457	0	0	0	0	0	0	0
1	-0.004801397	-0.049065421	0	0	0	0	0	0	0.002941176
0	0.004824561	-0.049944506	0	-0.012236158	0	0	0.049275362	0.046428571	0
-1	-0.05	-0.020439226	0	0.012387736	0	-0.008333333	0	-0.04432133	0.064908722
-2	0	-0.031789474	0	0	0	0	0	-0.099954359	0
-3	0.038961039	-0.029622063	-0.049893993	-0.049735138	0	0	0	0.005968779	0
-4	0.05	0	0	0	0	-0.01599016	0	-0.05	0.1
-5	-0.03930131	-0.021	0	0	0	0	0	0.015384615	0
-6	-0.045833333	0	0	0	0	0	0	0.191567369	0
-7	-0.047619048	0	0	0	0	0	0.04109589	0.099798387	-0.01734104
-8	0.023807589	-0.019607843	0	0	0	0.042753313	0.045845272	0.099778271	0.029700613
-9	0.049995734	0	0	0	0	0	0	0.1	0.011803674
-10	-0.024956326	-0.026717557	0	0	0	0	0.004798464	0.099687081	0.025
-11	-0.049948629	0.037829273	-0.017361111	0	0	0	0	0.099803343	0.012563285
-12	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!



**Table-3c.** Cumulative Abnormal Returns Standard Deviation and Nomal Devviate Dividend Increase Companies. Unchanged Companies

CR	CR	CR	CR	CR	CR	CR	CR	CR	CR	CR	CR	CR-CAR	D.F9(10-1)	NORMAL		
1(2009)	1(2010)	2(2010)	2(2011)	3(2011)	3(2012)	5(2010)	5(2011)	5(2012)	6(2013)	AVG.AR	CAR	SQUARED	CAR S.D	DEVIATE		
12	-0.206748118	-0.048244407	-0.067255104	-0.092455674	0.050329651	0.045584719	0.796175679	0.034498691	0.522604089	0.118564669	0.01112519	1.046346282	86.68370871	9.63152319	3.103469541	0.337153714
11	-0.208663853	-0.056495937	-0.067255104	-0.092455674	0.050329651	0.045584719	0.796175679	0.034498691	0.522604089	0.10898541	0.199321624	1.035221091	84.98817698	9.443130775	3.072967747	0.336879908
10	-0.22566662	-0.058315773	-0.067255104	-0.092455674	0.050329651	0.045584719	0.645278075	-0.015102726	0.547604089	0.05898541	-0.345307797	0.835899467	55.80102885	6.200114316	2.490002875	0.33570221
9	0.091423739	-0.011929096	-0.067255104	-0.095187914	0.050329651	0.104408248	0.595356078	-0.015102726	0.519590724	0.09573374	0.151639248	1.181207264	111.1908099	12.35453443	3.514901767	0.336056978
8	0.141547963	-0.017037122	-0.067255104	-0.092448188	0.050329651	0.004408248	0.495960906	-0.015102726	0.519590724	0.09573374	0.058347995	1.029568016	84.27152	9.363502222	3.059984023	0.336461893
7	0.215277096	-0.017582577	-0.067255104	-0.092448188	0.000336845	0.004408248	0.396625043	-0.015102726	0.54238626	0.045748355	-0.00108081	0.971220021	75.68664112	8.409626791	2.899935653	0.334910887
6	0.179916414	0.002400966	-0.067255104	-0.092448188	-0.047471375	0.004408248	0.346824246	-0.001018219	0.64238626	0.045572937	-0.033754812	0.972300831	75.85873697	8.428748553	2.903230709	0.334903054
5	0.132335264	0.010639449	-0.067255104	-0.095180429	-0.047471375	0.004408248	0.297292787	0.030799963	0.740224713	0.002618379	0.127602006	1.006055643	81.94132076	9.104591196	3.017381513	0.333420099
4	0.039985957	0.018102135	-0.067255104	-0.095180429	-0.047471375	0.004408248	0.247674467	0.03532485	0.740224713	0.026398867	-0.025569538	0.878453638	62.13103238	6.903448042	2.627441349	0.334338058
3	0.013899	0.041911659	-0.067255104	-0.092440703	-0.019302361	0.004408248	0.148985875	0.03532485	0.840224713	-0.017332912	0.201853738	0.904023176	66.45198169	7.383553521	2.717269497	0.332695442
2	-0.053744124	0.010224113	-0.067255104	-0.092440703	-0.005016646	0.004408248	0.049672489	0.017829454	0.840224713	-0.017332912	0.03486828	0.702169438	40.13380688	4.459311875	2.111708284	0.332512518
1	-0.094871119	0.009978413	-0.067255104	-0.092440703	8.47935E-06	0.004408248	0.049672489	0.017829454	0.840224713	-0.002540012	0.029728001	0.667301158	36.09602458	4.010669397	2.002665573	0.333206486
<b>0</b>	<b>-0.090069723</b>	<b>-0.073642251</b>	<b>-0.067255104</b>	<b>-0.092440703</b>	<b>0.049982098</b>	<b>0.004408248</b>	<b>0.049672489</b>	<b>0.017829454</b>	<b>0.840224713</b>	<b>-0.011363542</b>	<b>0.113977773</b>	<b>0.637573157</b>	<b>33.0439403</b>	<b>3.671548922</b>	<b>1.916128629</b>	<b>0.33274027</b>
-1	-0.094894284	-0.140840602	-0.067255104	-0.080204545	0.049982098	0.004408248	0.049672489	0.010067007	0.793796141	-0.011363542	-0.051784558	0.523595383	22.30281784	2.478090872	1.574195309	0.332611449
-2	-0.044894284	-0.105908622	-0.067255104	-0.049735138	0	0.012741582	0.049672489	0.054388336	0.728887419	-0.025170248	-0.117458118	0.575379942	27.05116024	3.005684471	1.733690996	0.331881485
-3	-0.044894284	-0.088404863	-0.067255104	-0.049735138	0	0.012741582	0.049672489	0.054388336	0.828841778	-0.025170248	-0.032950805	0.69283806	39.16501783	4.351668647	2.086065351	0.332126728
-4	-0.083855323	-0.05519857	-0.017361111	0	0	0.012741582	0.049672489	0.004432158	0.822872999	-0.07515647	0.080412718	0.725788865	43.55657994	4.839619994	2.199913633	0.329916981
-5	-0.133855323	-0.051601448	-0.017361111	0	0	0.028731742	0.049672489	0.054432158	0.722872999	-0.07515647	-0.119592019	0.645376148	34.52768672	3.836409635	1.95867548	0.32949621
-6	-0.094554013	-0.037744305	-0.017361111	0	0	0.110549924	0.049672489	0.054432158	0.707488384	-0.07515647	0.213530646	0.764968167	48.33523467	5.37058163	2.317451538	0.330090254
-7	-0.04872068	-0.037744305	-0.017361111	0	0	0.042753313	0.049672489	0.054432158	0.515921014	-0.07515647	0.103337466	0.551437521	25.30672304	2.811858115	1.676859599	0.328851337
-8	-0.001101632	-0.037601428	-0.017361111	0	0	0.042753313	0.049672489	0.013336267	0.399268695	-0.008668277	0.181051809	0.448100055	16.32727454	1.814141615	1.346900744	0.332689737
-9	-0.024909221	-0.00349873	-0.017361111	0	0	0	0.049672489	-0.032509005	0.299490424	-0.03836889	0.095407919	0.267048246	5.94368067	0.660408963	0.812655501	0.328611872
-10	-0.074904955	0.014052892	-0.017361111	0	0	0	0.049672489	0.005707555	0.199490424	-0.050172564	0.107925327	0.171640327	2.52784097	0.280871219	0.529972847	0.323866266
-11	-0.049948629	0.037829273	-0.017361111	0	0	0	0	0.000909091	0.099803343	-0.075172564	0.063714711	0.063715	0.410997153	0.04566635	0.213696866	0.298155988
-12	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

From the T-Distribution Table 95% CERTANTITY = 1.833 D.F=10-1=9