Price Reaction Surrounding Dividend Announcements: An Empirical Evaluation of the Kuwait Stock Exchange

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1. Introduction

Dividend and earning announcements effect are highlighted by extensive empirical studies in many countries and in particular the U.S. Ashley[1](1962) presented evidence that stock prices listed in the New York Stock Exchange (NYSE) and the American Stock Exchange (ASE) respond significantly to changes in earnings and dividends. The Ball and Brown[2](1968) study provided the first comprehensive evidence of the adjustment of stock prices to earnings announcements. They found that an average sign of earnings forecast errors was associated with the sign of abnormal security returns. Beaver[3]in the same year (1968) observed significant price changes and trading volume during the earnings announcement week. A related study by May[4](1971) investigated price changes of stocks listed on the ASE and found that price changes were greater during week in which the company made earnings announcements than weeks in which announcements of earnings were not made. Kiger[5](1972) also presented evidence that there were substantial volume price reactions to quarterly earnings announcements of a sample of NYSE securities. Recently, Morse[6] (1981) investigated price changes of stocks listed on the NYSE, the ASE and over the coun-

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1 – Ashley, John W., "Stock Prices and Changes in Earnings and Dividends: Some Empirical Results", Journal of Political Economy (February 1962).

2 – Ball, R., and P. Brown, "An Empirical Evaluation of Accounting Income numbers", Journal of Accounting Research (Autumn 1968).

3 – Beaver, William H., "The Information Content of Annual Earnings Announcements", Forthcoming in Empirical Research in Accounting: Selected Studies, 1968, Supplement to Volume 6 of the Journal of Accounting Research.

4 – May, Robert G., "The Influence of Quarterly Earnings Announcements on Investor Decisions as reflected in Common Stock Price Changes", Empirical Research in Accounting: Selected Studies, 1971, Supplement to Vol. 9, Journal of Accounting Research.

5 – Kiger, J., "An Empirical Investigation of NYSE Volume and Price Reactions to the Announcement of Quarterly Earnings", Journal of Accounting Research (Spring 1972).

6 – Morse, D., "Price and Trading Volume Reaction Surrounding Earnings Announcements: A Closer Examination, Journal of Accounting Research (Autumn 1981).

ter (OTC). He found that the most significant price changes and exce trading volume occurred the day prior to and the day of the Wall Stre Journal (WSJ) announcement. More recently, Jennings and Stark (1985) found that the duration of price adjustments increased with a nual earnings.

Dividend announcements effect was first highlighted by Pettit[2] (197 which found that market participants made use of announcements changes in dividend payments in assessing the value of a securi Charest[3] (1978) also affirmed that the methodology applied to t NYSE stocks produced statistically significant residuals (abnormal r turns) in the months following dividend cahnges. In a more rece study, Miller and Scholar[1][4] (1982) focused primarily on dividends a taxes found significant evidence of a dividend announcement.

A study of the market reaction to either earnings or dividend announc ments is useful because it shows how stock prices adjust to other inf mation events. It may also describe whether the market is informatic ally efficient or not and it provides evidence which is useful in influer ing the way the investors respond to information. Although researche and people in the Kuwait Stock Exchange (KSE) appreciate such stu no evidence has been provided on the KSE reaction to such or otl corporate announcements. This is attributed to the difficulty in getti the security and the market return data. There is no such place as thc in the U.S. such as Center for Research in Security Prices at the Univ sity of Chicago (CRSP). In this study returns were calculated using t security daily prices and the market daily index. The primary purpose this paper is to find empirical evidence about the KSE prices reactior announcements of divided.

2. Sample

The sample used in this study includes daily data for years (Oct. 198 Nov. 1989) for 21 securities traded on the KSE, for 63 announcemer The securities selected based on the following criteria:

1 – Jennings, R. and L. Starks, "Information Content and Speed of Stock Price Adjustment". J nal of Accounting Research (Spring 1985).

2 – Pettit, R., "Dividend Announcements, Security Performance and Capital Market Efficien Journal of Finance (Dec. 1972).

3 – Charest, G., "Dividend Information, Stock Returns and Market Efficiency". Journal of Finar Economics 6 (September 1978).

4 – Miller, M. and M. Scholes, "Dividend and Taxes: Empirical Evidence." Journal of Poli Economy 90 (Dec. 1982).

1. The firm must be listed on the KSE.
2. Only firms that had announced dividend in the years 1986-88 were chosen.
3. Only the Kuwaiti firms.
4. Only firms with traded securities during the four years were included here.

Firms in the sample are listed in Table 1. For the sample of 21 securities, the price and market index were taken from the Al-Amual Company. All per-share data were adjusted for stock splits and stock dividends and the closing prices were used in this study. The dividend announcement dates and dividend data were obtained from the KSE records and were checked. Distribution of announcement dates are listed in Table 2. The date of the announcement was defined as the day announcements appeared in Kuwaiti newspapers. This occurs usually a day after the Board meeting of a company. The sample data were grouped according to the direction of dividend changes from one year to another as listed in Table 3.

To examine when the market reacts to dividend announcements, the security and the market daily return data were calculated using the security daily prices and the market daily index. Then the returns were used to calculate daily residuals using the following equation:

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

where

R_{it} = daily return of security i in period t.

R_{mt} = daily return on market index.

U_{it} = return residual for security i at time t.

α_i, β_i = regression coefficients and constants determined by linear regression from daily data (Oct. 1986 – Nov. 1989).

$E(u_{it}) = 0$

TABLE 1

SAMPLE

Company Name	Industry
National Bank of Kuwawit (NBK)	Banking
The Gulf Bank (GB)	Banking
Commercial Bank (CB)	Banking
Al Ahli Bank of Kuwait (AAB)	Banking
The Bank of Kuwait and Middle East (BKME)	Banking
Kuwait Real Estate Bank (REB)	Banking
Burgan Bank (BB)	Banking
Kuwait Finance Hosue (KFH)	Banking
Al Ahli Insurance Company (AAI)	Insuranc
Warba Insurance Company (WIS)	Insuranc
Kuwait Insurance Company (KIS)	Insuranc
Gulf Insurance Company (GIS)	Insuranc
The National Industries Company (NID)	Industry
Kuwait Metal Pipes Industries Company (KMP)	Industry
Refrigeration Industry Company (RS)	Industry
Livestock Transport & Trading Company (LIV)	Food
Kuwait Foods Company (KFC)	Food
Kuwait United Poultry Company (KUP)	Food
National Real Estate Company (NRE)	Real Esta
Moble Telephone System Company (MOB)	Service
Commercial Facilities Company (CF)	Investme

TABLE 2

Distributioin of Announcement Dates

Year	Total	December	January	February	March
1986-87	22	1	3	12	6
1987-88	20	–	3	15	2
1988-89	21	–	7	11	3
Total	63	1	13	38	11

TABLE 3

Year to Year Change in Dividend per Company

Year	No Change in Dividends	Increase in Dividends	Decrease in Dividends
1986	4	16	1
1987	7	9	5
1988	2	12	7
Total	13	37	13

3. Empirical Tests and Results:

Daily estimated security return and daily estimated return on the mark index were calculated. Equation (1) was run for each security over th entire period studied using an (OLS) regression, that is 780 daily r turns on each security in the sample were used along with the daily r turns on the market. Then a line that gives the "best fit" was derived a suming that there is a linear relationship between these two sets a r turns. the intercept and slope of the linear relationship between the da ly market and security returns were determined. The daily return resid als were then calculated using the estimated parameters of equatic

To examine whether the residual term (U_{it}) had a zero expected valu or not, return observations were focused on for fifteen days before ar fifteen days after each dividend announcement. This is done aft grouping the sample data into three subsets: no change in dividend increases in dividends and decreases in dividends. The residuals e pected value in the period surrounding each announcement date w not be zero if the annoucements of dividends have no systematic effe on corresponding stock prices. For any day within the fifteen days b fore to the fifteen days after an announcement date for each of the groups, the average residual (AR) was calculated using the followi equation[2]:

$$AR_t = \frac{1}{Q} \sum_{q=1}^{Q} \frac{1}{N_q} \sum_{i=1}^{N_q} U_{iqt} \qquad (1$$

where Q is the number of years.

N_q is the number of firms in each year.

To test the hypothesis that the average residual at day t (AR_t) is statis cally different from zero, the following t- statistic is used:

$$t(AR_t) = \frac{AR_t \cdot \sqrt{Q}}{S(e_{qt})} \qquad (1$$

1 – Fogler, H. Russell and Ganapathy, S., "Financial Econometrics for researchers in Fina and Accounting. Prentice-Hall, Inc. Englewood Cliffs, New Jersey.

2 – Aharony, Joseph and Swamyu Itzhak, "Quarterly Dividend and Earnings Announcem and Stockholders Returns: An Empirical Analysis. The Journal of Finance (March 1980).

$$e_{qt} = \frac{1}{N_q} \sum_{i=1}^{N_q} U_{iqt} \qquad (4)$$

$$S(e_{qt}) = \sqrt{\frac{1}{(Q-1)} \sum_{q=1}^{Q} (e_{qt} - AR_t)^2} \qquad (5)$$

To provide an overview of the results, the cumulative abnormal returns (CAR) were obtained by summing the average residuals over the days surrounding the dividend announcement dates as follows:

$$CAR_k = \sum_{t=-15}^{k} AR_t \qquad (6)$$

The daily average residuals and the cumulative daily average returns for each group in the thirty days surrounding the dividend announcement dates are presented in tables (4,5,6). The t-statistics which indicate whether the average residuals are significantly different from zero or not are also presented in the above tables. The CAR plotted on normal graph paper to provide an overview of the results.

Results in Table (4) are for companies that had no change in dividends. Results indicate that the AR values are small in magnitude. The CAR values are negative and start to decrease noticeably in magnitude a day before the announcement date onward. Figure (1) shows these results. However, statistically significant abnormal returns occured on days 10, 9, 4 and 3 before the announcement dates and days 2 and 4 after. No statistically significant abnormal returns occured during the announcement dates or a day before or after. This means that stockholders of these companies earned only normal returns on the announcement dates as predicted from the market model. This emphasizes the fact that the announcement had no effect on the market for the case of no change in dividends.

Table (5) shows results for companies that had dividend increase. Re-

sults indicate that although the AR values are small in magnitude, th CAR values are positive in magnitude in general and started to increas noticeably a day before the announcement dates and on ward (see fi ure 2). Statistically significant abnormal returns in this case occured days 13, and 9 before and days 3,5,11, and 12 after the announceme dates. No statistically significant abnormal returns occured during th announcement dates or a day before or after. This means again th stockholders of these companies earned only normal returns on the a nouncement dates as predicted from the market model which indicat that the announcements did not affect the market.

Results in Table (6) are for companies that had dividend decrease. R sults indicate that majority of the AR values are negative. The CA values are also negative in magnitude in general. Statistically sign cant abnormal returns occured here on days 6 before and 4 after the a nouncement dates. Also no statistically significant abnormal returns c cured during the announcement dates or a day before or after. TI means that stockholders of these companies sustained normal retur on the announcement dates again as predicted from the market mo which indicates that the announcement had no effect on the market.

4. Conclusion

Statistically significant abnormal returns did not occur the day of the a nouncement or a day before or after. This supports the fact that the K do not adjust to new dividend informatioin. The market model prec the returns on the announcement dates and no abnormality on retu occured on these dates.

By closely examining tables 4, 5 and 6 we notice that abnormal retu took place in the three cases before the announcement dates. This ir cates that dividend informatiion had become known even before days of Board meetings. Thus, we conclude that significant private age of information occurred earlier than a day prior to its announ ment.

TABLE 4

Price Changes Surrounding Dividend Announcement Dates (No Change in Dividend)

Date	AR (%)	t Value	Car (%)
−15	−0.533	−1.198	−0.533
−14	0.073	0.325	−0.460
−13	−0.087	−0.337	−0.547
−12	0.066	0.476	−0.481
−11	0.000	0.001	−0.481
−10	0.445	3.416**	−0.036
−9	−0.542	−2.264*	−0.578
−8	0.071	0.210	−0.507
−7	0.097	0.493	−0.410
−6	−0.231	−0.587	−0.641
−5	0.248	1.194	−0.393
−4	0.487	2.706*	0.095
−3	−0.711	−2.513*	−0.616
−2	−0.054	−0.132	−0.670
−1	−1.854	−1.784	−2.524
0	0.114	0.125	−2.411
+1	0.363	0.778	−2.048
+2	−0.178	−1.899*	−2.225
+3	0.145	0.850	−2.070
+4	−0.683	−6.963****	−2.763
+5	0.412	1.671	−2.351
+6	−0.253	−0.539	−2.605
+7	−0.244	−0.343	−2.850
+8	0.119	0.337	−2.730
+9	−0.251	−0.438	−2.981
+10	−0.195	−0.818	−3.176
+11	0.532	1.220	−2.644
+12	0.071	1.028	−2.573
+13	−0.174	−0.249	−2.747
+14	0.068	0.657	−2.679
+15	−0.102	−0.203	−2.780

* Significant at 10 % level.
** Significant at 5 % level.
*** Significant at 2.5 % level.
**** Significant at 1% level.

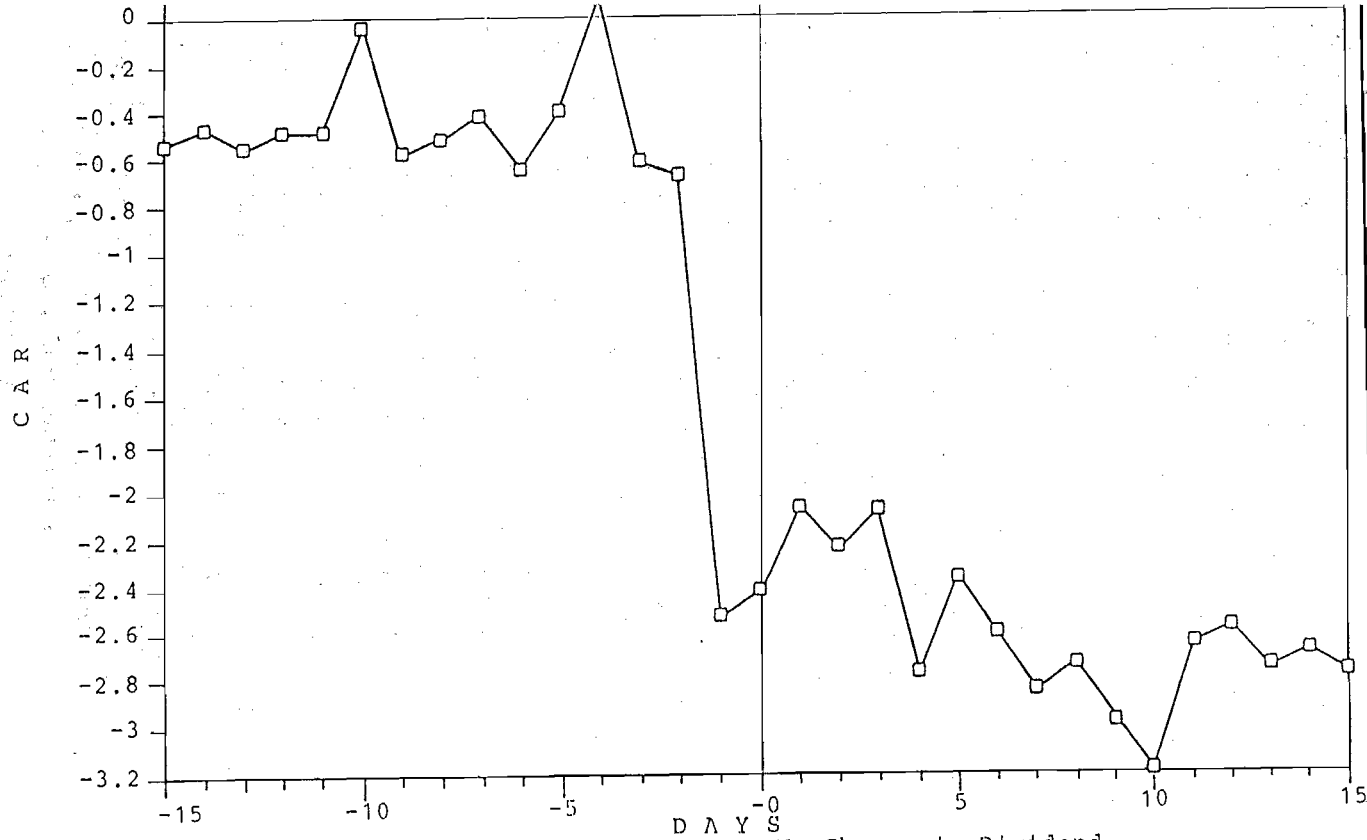

FIGURE (1): DAYS V.S. CAR - No Change in Dividend

TABLE 5

Price Changes Surrounding Dividend Announcement Dates (Dividend Increaase)

Date	AR (%)	t Value	Car (%)
–15	–0.040	–0.364	–0.040
–14	–0.039	0.180	–0.079
–13	0.375	2.371*	0.296
–12	0.146	1.190	0.442
–11	–0.037	–0.334	0.404
–10	–0.192	–1.577	0.213
–9	–0.348	–3.641**	–0.136
–8	0.188	0.778	0.052
–7	–0.151	–0.593	–0.098
–6	0.123	0.652	0.025
–5	0.001	0.002	0.026
–4	–0.220	–1.677	–0.195
–3	0.214	1.679	0.701
–2	0.682	0.885	0.701
–1	1.118	1.110	1.819
0	0.334	0.555	2.153
+1	–0.057	–0.502	2.096
+2	–0.040	–0.351	–2.055
+3	–0.497	–2.196*	1.558
+4	–0.043	–0.183	1.515
+5	0.281	4.308***	1.796
+6	–0.156	–0.639	1.640
+7	0.146	0.423	1.786
+8	–0.083	–0.226	1.703
+9	0.184	1.815	1.887
+10	–0.127	–0.559	1.760
+11	0.593	2.272*	2.353
+12	0.316	2.670*	2.670
+13	–0.339	–1.626	2.331
+14	–0.004	–0.026	2.327
+15	–0.142	–0.805	2.185

* Significant at 10 % level.
** Significant at 5 % level.
*** Significant at 2.5 % level.

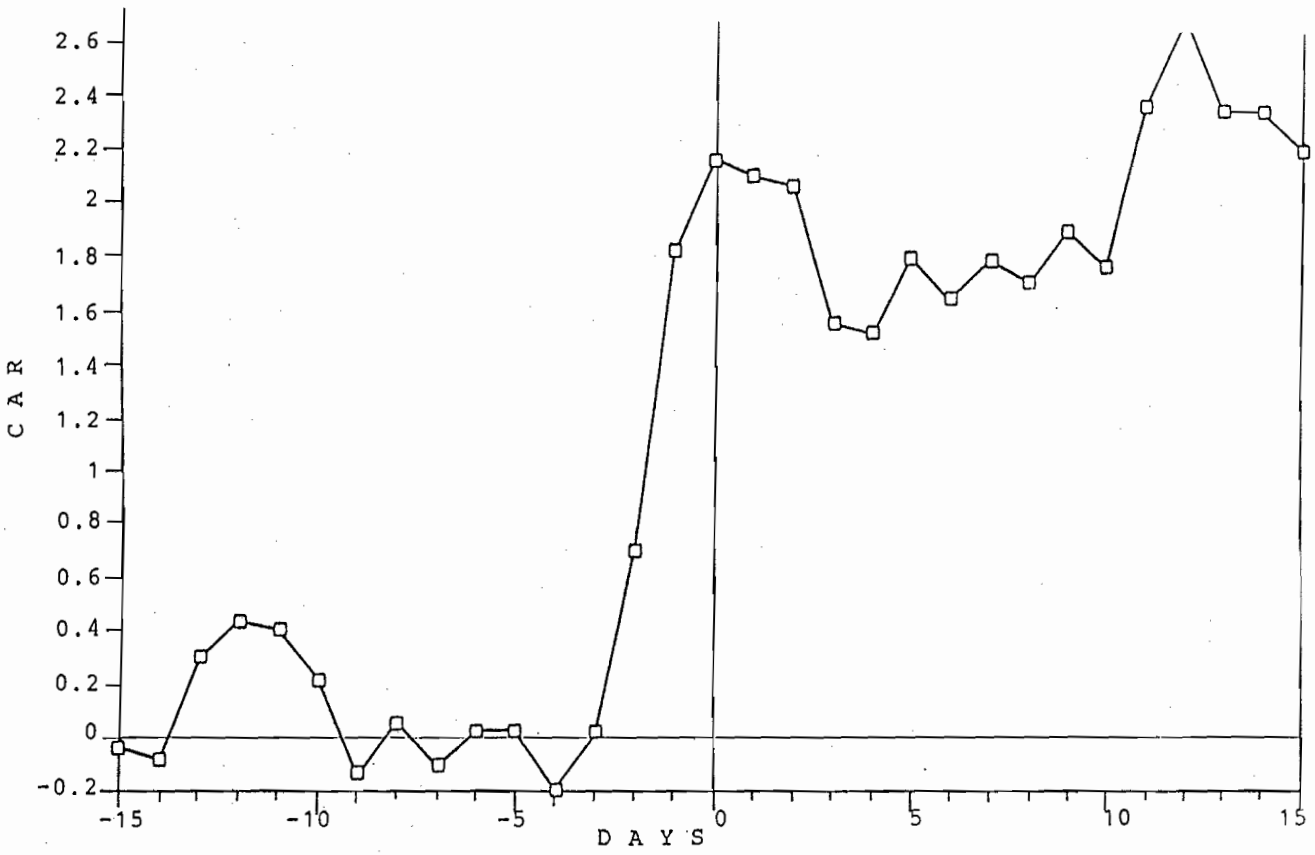

FIGURE (2): DAYS V.S. CAR - Dividend Increase

TABLE 5

Price Changes Surrounding Dividend Announcement Dates (Dividend Increaase)

Date	AR (%)	t Value	Car (%)
–15	0.457	0.760	0.457
–14	–1.085	–0.826	–0.628
–13	0.541	1.042	–0.087
–12	–0.344	–1.021	–0.431
–11	–0.024	–0.308	–0.455
–10	1.421	1.007	0.966
–9	–0.476	–1.496	0.490
–8	–0.587	–1.356	–0.097
–7	–0.716	–1.282	–0.813
–6	–0.322	–2.357*	–1.135
–5	–0.336	–0.569	–1.471
–4	–0.237	–0.583	–1.708
–3	–0.121	–0.611	–1.828
–2	0.008	0.018	–1.821
–1	–0.228	–0.460	–2.049
0	–0.291	–0.662	–2.340
+1	0.269	0.630	–2.071
+2	–0.489	–0.965	–2.560
+3	0.012	0.080	–2.547
+4	0.322	3.105**	–2.225
+5	–1.409	–1.885	–3.634
+6	0.896	1.030	–2.648
+7	0.020	0.111	–2.628
+8	–0.551	–1.183	–3.179
+9	–0.149	–0.260	3.328
+10	–1.116	–1.349	–4.444
+11	0.614	1.173	–3.831
+12	0.009	0.063	–3.822
+13	–0.173	–0.539	–3.995
+14	–0.986	–1.625	–4.891
+15	0.025	0.145	–4.866

* Significant at 10 % level.
** Significant at 5 % level.

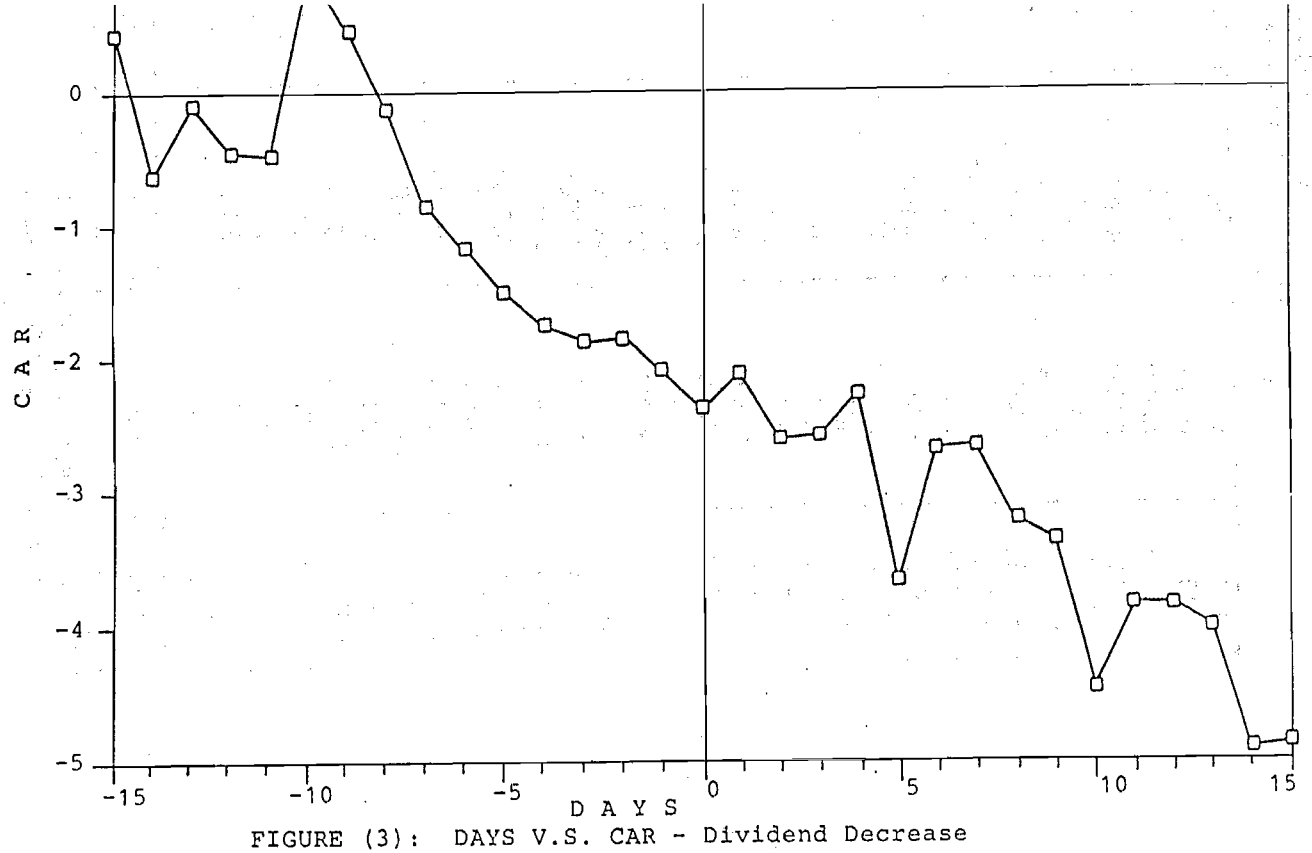

FIGURE (3): DAYS V.S. CAR - Dividend Decrease