USING STOCK PRICE BEHAVIOR ABOUT A DIVIDEND CHANGE AS A PREDICTOR OF BEHAVIOR AROUND FUTURE CHANGES

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Scope and Method of Study: This study performs a test of the Information Content of Dividends hypothesis and the relative use of the hypothesized information. The data was obtained from Standard and Poor's 40-quarter COMPUSTAT tape. Using Jensen's Excess Returns form of the capital asset pricing model, stock price performance about a dividend change was observed. The observed performance was then used as a predictor of performance around subsequent changes. The relative size of the dividend change was also tested as a predictor.

Findings and Conclusions: A price adjustment was observed; however, its timing was such that it was of no use to the investor. Counter-intuitively, it was found that the stock price adjusted in the opposite direction in the months after the change, in general negating the adjustment prior to the change. Also, it was found that neither the size of the dividend change nor the truth of a prior dividend was an indication of the truth of dividend change signal.

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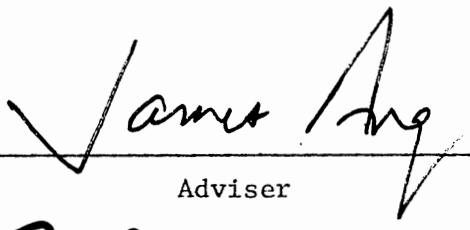

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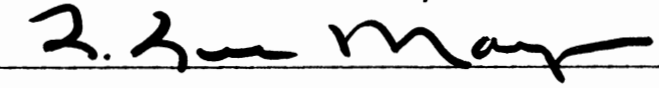

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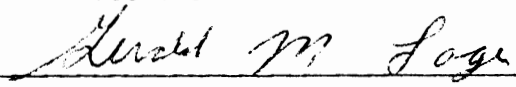

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CHAPTER I

INTRODUCTION

Lintner (1956) was the first to propose that dividends could carry some type of information. He concluded that managers (of larger firms) were averse to lowering their dividends, decreasing them only when they were sure that cash flows could not support the payout rate and vice versa for dividend increases. The information seen by Lintner was that dividends gave some clue as to management's certainty of present earnings. The closer the actual dividend to the firm's target payout, the more certain managers are of present earnings.

Miller and Modigliani (1961) on the other hand, suggest that a firm's dividends are a function of future expected earnings. A change in dividends is seen as change in management's expectations of future earnings, not dependent upon present and past firm performance. It is further stated that even though dividend policy per se is irrelevant to the value of the firm, a change in a stable dividend pattern could be perceived by investors as a signal of changes in management's expectations of future firm performance.

Tests of the "Information Content of Dividends" hypothesis are generally in disagreement about the amount and the use of the hypothesized information in the dividend change. It is thought that these disagreements have arisen for several reasons: 1) Assuming that all firms follow a similar dividend generating process. This has led to the failure to

distinguish dividend changes which are signals from those which are not, and those which are "true" from those which are "false." 2) Methodological and sampling errors which have led to erroneous conclusions about the information available. These will be briefly discussed in section III.

In keeping with the above discussion, this paper will attempt to test the usefulness of the hypothesized information by separating those changes which are signals from those which are not by observing firm performance around the dividend change. At the same time, try to answer the following questions: 1) Can the investor use the information in a dividend change to determine whether or not the firm is signaling?, and 2) If a firm is found to be signaling true one time, can the investor expect this to happen again?

CHAPTER II

DIVIDEND CHANGES AS SIGNALS

A. Reasons for Expecting Signals

There are two conceptual reasons why we should expect firms to engage in some type of signaling or information transfer: 1) Informational asymmetries, and 2) Expectational asymmetries. In a theoretical paper, Leland and Pyle (1977) state that, in financial markets, informational asymmetries are particularly pronounced. Due to their position, managers have more information concerning their own abilities, the general health of the firm, and a closer view of the firm's opportunities and threats than do investors. They have what has come to be known as "inside information." Jaffee (1974) showed the non-triviality of this information by finding that trading securities on the basis of this information leads to abnormal returns.

Often management's expectations of the future prospects of the firm seem more optimistic than those of investors' asymmetric expectations. First, due to the informational asymmetries discussed above, management may have good reason to be optimistic. Second, there may be a substantial reward for exaggerating the positive qualities of a firm and "playing down" the negative, constituting a "moral hazard" problem. Thus, not all forms of information transfer are credible.

Information can gain increased credibility by not being direct and not being costless. Indirect information transfer circumvents the moral hazard problem. Then, rather than listening to what management says, the

investor may do well to observe what management does as "actions speak louder than words." At the same time, there are very few actions which management may take that are costless. That is, most actions have a penalty for being wrong. The higher the cost of being wrong, the less likely management will take the incorrect action and "place their heads on the chopping block." Knowing that it is in the firm's (and the manager's) best interest to be acting correctly, the investor can use the actions as signals.

B. Dividend Changes as Signals

In line with the above discussion, certain types of dividend changes are conceptually good candidates for use as signal devices. Dividend changes as information carriers are neither direct nor costless. The dividend change is an action by management which has placed the firm in a position where it is legally bound to pay dividends once they are declared and generally a higher level of firm performance is needed to support a higher level of dividends.

There are several conditions which could be perceived as desirable for the dividend change to be a signal: 1) The firm must have a normally stable dividend policy (Miller and Modigliani, 1961), 2) The change or the magnitude of the change must be unexpected (Watts, 1973), and 3) The change should be perceived as "permanent," or inflexible.

The more stable a firm's dividend policy, the easier an investor can locate the changes which might be signals. This does not necessarily mean the dividend must be unchanging, just that changes (if any) are predictable and fall into a known pattern. This is, an investor will more likely discern a possible relationship between the change in dividends and future

firm performance if he knows the present relationship between dividends and firm performance.

Similarly, the change or the magnitude of the change must be unexpected. A moment's consideration will reveal the impossibility of an expected change to carry useful information. If the investor knows of the change, he either has "inside information" or he is getting his information from publicly available sources. However, we are speaking of the normal investor, who does not have "inside information." In an expected dividend change, we would find that a change in firm performance leads the dividend change; in an unexpected change, the dividend change would lead firm performance. Thus, the expected dividend change is the result of a change in firm performance and the unexpected change is the result of a change in management's expectations of future performance. Then, for the information hypothesis to have merit, a change in firm performance must occur subsequent to the unexpected change in dividends.

Finally, the unexpected change must be perceived as a permanent. If a future change in firm performance is related to the change in dividends, a temporary change would be perceived as carrying little information about the value of the firm as short-term performance does not affect the value. It is to be assumed that the only way an investor can benefit is if the value of the firm changes.

It should not be assumed that all unexpected dividend changes are true, or even signals. A firm may be changing its payout rate due to, for example, a lack of investment opportunities. Black and Scholes (1973) found that a change in payout would not lead to increased firm value, a "bird in hand" fallacy. Believing, erroneously, that investors place

a premium on stocks with high payouts, managers might be trying to increase the value of the firm. Finally, it is possible that, for one reason or another, management's expectations are not realized. Due to the possibility of false and non-signals, a second requirement for the information hypothesis to have merit is that the investor must be able to distinguish dividend changes which are signals carrying useful information from those that are not.

CHAPTER III

PREVIOUS STUDIES

There have been numerous empirical studies of dividend policies. For the most part they fall into two broad categories, those using earnings as a performance measure (Ang, 1974; Fama and Babiak, 1969; Watts, 1973) and those using risk-adjusted stock returns (Charest, 1978; Griffin, 1976; Pettit, 1972). For the sake of brevity, only Watts (1973) and Charest (1978) will be discussed at any length.

Watts explicitly assumes that all firms follow a partial adjustment process and forced his entire sample to conform to a partial adjustment regression equation (see Nerlove, 1958; Fama and Babiak, 1969). After regressing the change in the dividend against past earnings, present earnings and last period's dividend, Watts used the error term, a measure of the unexpected change in the dividend, to predict changes in the following period's earnings. Via this process, he concluded that there was little information in dividend changes. Ang (1974) cast doubt on the partial adjustment type model used by Watts, as it did not "fit" the data very well. Thus, using the residual term as the unexpected change in dividends would likely generate erroneous signals. There are also several problems involved with using earnings as a measure of firm performance: 1) Earnings are accounting variables and are subject to bias. By changing accounting methods, one can cause earnings to vary greatly. 2) Earnings figures alone ignore what the industry and market as a whole are doing. That is,

earnings may increase after a dividend increase, but relative to the market and industry, they may be losing ground. 3) Due to numbers 1 and 2, there is the problem of computing the unexpected change in dividends and the unexpected change in earnings.

Even though Charest (1978) used risk-adjusted returns as a measure of firm performance, he ignored the possibility of different dividend policies. This leads to what has been called an "anticipation effect," a term coined by Fama, Fisher, Jensen and Roll (1969). It refers to the fact that a group of dividend-increasing stocks (or decreasing) begin making abnormal returns as much as 12 months before the dividend change, and has been explained as investors anticipating the change in dividends and are thus placing a premium on the higher dividend. Incidentally, this would also mean that the dividend change did not carry any information. Returning to Black and Scholes (1973), it is doubtful that the market is placing a premium on the dividend change. It is my contention that the abnormal returns are caused by changes in firm performance, the same changes which lead to the changes in dividends. In his sample, dividend-increasing firms continue earning abnormal returns after the change, so there are likely fewer firms who pursue an "information" type dividend policy, since the bulk of the abnormal returns occur before the change. It is also felt the reason the returns did not cumulate as much following the change in dividends was that Charest placed no restrictions on the stability of the dividend after the change. Thus, it is likely that some of the changes are not permanent.

CHAPTER IV

METHODOLOGY

A. Sample and Data

The sample of firms comes from Standard and Poor's 40-Quarter COMPUSTAT tape (July, 1968 to July, 1978). Firms enter the dividend changing sample on the basis that there were no cash dividend changes for at least eight quarters before the change and that, once changed, would remain at that level for at least eight more quarters. At the same time, a sample of firms was drawn which did not change their dividend over a period of 16 quarters. In order to test whether or not a firm which signals true once will do it again, a sample of dividend increases was taken from the sample of firms which had already increased their dividends once. So for each dividend-increasing firm, there are two dividend increasing periods. The total sample consists of 116 firms increasing their dividend, 43 firms decreasing, and 102 firms which did not change their dividend. Data was unavailable to draw a second change for the decreasing group. At the same time the sample was chosen, 48 months of stock prices around the dividend change was drawn. Obviously, this is not a large amount of data; however, by increasing its length substantially would have caused a decrease in the number of firms which changed their dividend twice.

A note about the COMPUSTAT tape must be made. While a firm may have 40 quarters of data, beginning data dates do not coincide across firms. Actual data dates were found to be as much as 12 months out of line with one another. Due to the nature of this research, the actual data dates

had to be found. These were found through a time-consuming process of cross-checking via the ISL Daily Stock Price Index. A second problem found was that stock prices are reported on the tape in dollars and eighths instead of dollars and cents.

The dividend announcement months were found in Standard and Poor's Annual Dividend Record along with the payment month of the dividend. It should be mentioned that the signal occurs in the month of announcement, not in the month of payment as once declared, payment is a certainty. The payment month is assumed to be in the same month each quarter (first, second or third). Other data needed is the 30-day Treasury Bill rate and the market rate of return, both found in Sinquefeld and Ibbotson (1976).

B. Measuring Firm Performance

To measure changes in firm performance, the excess returns form of Jensen's Index (Jensen, 1975) will be used. The Index is a combination of Sharpe's (1963) diagonal model (market model) and the capital asset pricing model. The following equation will be estimated for each dividend changing period:

$$Y_{jt} = a_j + B_j X_{mt} + u_{jt}$$

where:

Y_{jt} = The return on security j over period t, less the riskless rate of return over period t.

X_{mt} = The return on the market over period t, less the riskless rate of return over period t.

The coefficients will be estimated using ordinary least squares (OLS) and a deletion approach. This will be done by using the 48 months of data and deleting months -11 through +12, where month 0 is the announcement month.

This was done so that any abnormal occurrences in the 24-month period (-11 to +12) about the dividend change announcement month would not bias the coefficients. Assuming the coefficients are stationary over time, there should be no problem in using the months subsequent to the deleted period. This is a reasonable assumption, since the total period is short (49 months). Thus, the coefficients will be estimated with 24 months of data. The abnormal returns for the deleted period, the period of interest, can be computed by applying the following model to months -11 to +12:

$$U_{jt} = Y_{jt} - (\hat{a}_j + \hat{B}_j X_{mt})$$

where $\hat{B}$ and $\hat{a}$ are the estimated coefficients, and Y and X are the same as before. Thus, U_{jt} is the measurement of the deviation of a security's return from its normal relationship in time t. Over time, the drift from the normal relationship can be calculated:

$$CU_j = \sum_{t=-11}^{+12} U_{jt}$$

The direction and the size of the CU_j proxy the truth of the signal. The abnormal returns can now be grouped by several criteria: 1) the direction of the dividend change, 2) the "size" of the dividend change, and 3) by the "truth" of the previous dividend change for the dividend-increasing stocks. The size measure will simply be the percentage change in the dividend. Group performance can be determined:

$$AU_t = \sum_{j=1}^{J} U_{jt}/_N \text{ , for any t -11 to +12}$$

where N is the number of stocks in the group. Group performance over time can be calculated in the same manner as single stocks.

As mentioned earlier, there is a possibility that the coefficients are not stationary. If the coefficients are not stationary as assumed, then even Generalized Least Squares (GLS) will not provide an unbiased estimate of the expected return. This would cause the absolute values of the U_{jt} to be large, on the average (Pettit, 1972). A large number of firms in the sample would minimize this problem. Thus, there is no problem with the groupings by the direction only. However, measuring smaller groups (14-25) could cause the results to be especially biased, as with the truth measure the very means of grouping is the possibly biased number. Also, the relative shortness of the data stream prevents the use of "moving betas." If the truth measure is biased, the alternative is to use frequency data, assuming that the direction of the truth measure is not biased. In particular the chi-square test of independence will be used. This will be done by grouping the returns by size measures against the direction of the cumulation. Truth in the first period will also be tested against truth in the second dividend-changing period.

CHAPTER V

RESULTS

A. Creating Efficient Estimators

The above regression was run for the 375 dividend changing (or non-changing) periods. In roughly 20% of the cases, auto-correlation was found. While only 6% were significant using the Durbin-Watson d statistic at the 5% level, it was felt that, since the data stream was short, if the statistic fell in the inconclusive range serial correlation should be assumed. At first it was thought that this was due to the non-independence of price changes around a dividend change. However, by observing the break-downs of the three samples, the 20% figure is consistent throughout. This leads to the conclusion that many of the stocks' successive price changes are not independent for this sample.

Regardless of the reason for the serial correlation, the estimated coefficients are not at their minimum variance. While the coefficients are unbiased and consistent, the use of the OLS estimates for "prediction" as we are doing here can cause the prediction error to be quite high. Also, in the face of serially-correlated disturbances, the usual OLS statistics, t and F, are invalid (Huang, 1970).

There is no choice at this point but to transform the data and use GLS. The method for estimating the coefficients to be used is the Paris-Winston Two-Step (Ray, 1979). The first step is to apply OLS to the original equation. Using the computed residuals, $\hat{u}_{jt}$, an estimate of the

autocorrelation coefficient can be obtained:

$$\hat{p} = \sum_{t=2}^{T} \hat{u}_{jt}\hat{u}_{jt-1} \Big/ \sum_{t=2}^{T} \hat{u}^2_{jt-1}$$

where p is the autocorrelation coefficient, for all t except the 24 months around the change. Using p, the data is then transformed:

$$W_{jt} = Y_{jt} \cdot \sqrt{1-\hat{p}_j^2} \quad \text{for } t=1$$

$$W_{jt} = Y_{jt} - \hat{p}Y_{jt-1} \quad \text{for } t=2\ldots T$$

$$Q_{mt} = X_{mt} \cdot \sqrt{1-\hat{p}_j^2} \quad \text{for } t=1$$

$$Q_{mt} = X_{mt} - \hat{p}X_{mt-1} \quad \text{for } t=2\ldots T$$

For the second step, the following equation is estimated using OLS to obtain the coefficients:

$$W_{jt} = a_j Q_{1t} + B_j Q_{2t} + e_{jt}$$

deleting the same months (-11 to +12). Keeping in mind the estimated autocorrelation structure, the abnormal returns can be calculated:

$$U_{jt} = Y_{jt} - \hat{a}(1-\hat{p}) + \hat{B}_j X_{mt} - \hat{p}_j \hat{B}_j X_{mt-1} + \hat{p}Y_{jt-1}$$

Selected cross-sectional statistics for each of the groups is given in Table 1. A comparison between OLS and GLS abnormal returns is given in Table 2. The differences are not great; however, if placed in small groups, several autocorrelated return streams could bias the results. Subsequently, the GLS estimated returns will be reported.

TABLE 1

SELECTED CROSS-SECTIONAL REGRESSION STATISTICS

Coefficient	Mean	Standard Error	Quartile 1	2	3	4
B-1st	1.1015	.5401	.4913	.8902	1.2001	1.8257
a-1st	.0039	.0183	-.0154	-.0036	.0067	.0283
p-1st	-.1798	.2060	-.4398	-.2561	-.1091	.0857
R^2-1st	.3241	.1764	.1044	.2665	.3788	.5569
	.9807	.5034	.5030	.7934	1.0871	1.6652
a-2nd	.0000	.0191	-.0245	-.0037	.0055	.0228
p-2nd	-.1493	.1858	-.3742	-.2229	-.0914	.0912
R^2-2nd	.3382	.1985	.0955	.2583	.3925	.6067
B-non	1.1698	.5496	.4476	1.0190	1.3621	1.8508
a-non	-.0029	.0221	-.0270	-.0068	.0022	.0200
p-non	-.1132	.2102	-.3688	-.1772	-.0643	.1575
R^2-non	.2691	.1784	.0762	.2571	.3743	.5380
dec	1.2312	.4864	.6234	1.0740	1.3339	1.8382
a-dec	-.0086	.0185	-.0339	-.0134	-.0026	.0131
p-dec	.1507	.1859	-.3885	-.2306	-.0962	.1211
R^2-dec	.2691	.1375	.0882	.2157	.3070	.4391

Estimated model is: $W_{jt} = a_j Q_{1t} + B_j Q_{2t} + e_{jt}$

1st = First dividend increasing period for increasing sample
2nd = Second dividend increasing period for increasing sample
non = Non-dividend changing sample
dec = Dividend decreasing sample

TABLE 2

COMPARISON BETWEEN GLS AND OLS ABNORMAL RETURNS[1]

(First Increasing Dividend Only)

OLS		GLS		
AU_t	CAU_t	AU_t	CAU_t	t
.01651	.01651	.01429	.01429	-11
.01760	.03411	.02018	.03447	-10
.00339	.03750	.00531	.03978	- 9
.02432	.06182	.02333	.06311	- 8
.01339	.07521	.01739	.08050	- 7
.00055	.07576	.00119	.08169	- 6
.01746	.09322	.01602	.09771	- 5
.00710	.10032	.00708	.10479	- 4
.01769	.11801	.01476	.11955	- 3
.01029	.12830	.01383	.13338	- 2
.01409	.14239	.01502	.14840	- 1
.01465	.15704	.01822	.16662	0
.00651	.16355	.00821	.17483	1
-.00357	.15818	-.00423	.17060	2
.00040	.15848	.00375	.17435	3
-.01348	.14510	-.01569	.15866	4
.00485	.14995	.00155	.16021	5
-.00673	.14322	-.00772	.15249	6
-.00411	.13911	-.00604	.14645	7
-.00120	.13791	-.00373	.14272	8
-.01185	.12606	-.01324	.12948	9
-.00688	.11918	-.01123	.11825	10
-.00145	.11773	-.00223	.11602	11
-.01228	.10545	-.01082	.10520	12

1. N = 116

B. Abnormal Returns and Investment Policy

How should the investor act on the basis of a dividend change or a lack of? Shown in Table 3 are the average abnormal returns for each period, the cumulative average returns for a 24-month holding period, and the cumulative average returns for a holding period of 12 months on the basis of dividend information, for each of the groups of stocks based on the dividend change direction. The non-changing group is behaving exactly as it was anticipated, abnormal returns moving randomly around zero with no cumulation to speak of. While investing in securities that do not change their dividend for eight quarters appears to lose about 2% over the 12 months after the change, it is felt that this is "luck of the draw."

The performance in general for dividend-increasing and dividend-decreasing stocks is counter-intuitive. It was expected that any relationship between the dividend change and the returns after the dividend change would be positive, the cumulative returns moving in the same direction as the dividend change. The pre-announcement period results are consistent with the results over the same period with earlier studies. For example, Charest's (1978) sample of dividend-increasing stocks cumulate to 10.52% for the same period that dividend-increasing stocks in this study cumulate to 10.15%. For decreasing stocks, Charest's cumulated to -20.24%, while in this study, they cumulate to -18.36%. Here, however, the similarities end. In most other studies, the abnormal returns continue to cumulate in the expected direction in the post-announcement period, while in this study, they begin to move in the opposite direction. A reconciliation of these results will be given in Section VI. It would seem in general that most signals are false signals for investors and the best policy

TABLE 3

COMPARISON OF THE RETURNS ON ALL TYPES OF DIVIDEND CHANGES

Non-Changing Dividend[1]			Dividend Decreasing[2]			Dividend Increasing[3]			
AU_t		CAU_t	AU_t		CAU_t	AU_t		CAU_t	t
.0051	.0051		.0058	.0058		.0042	.0042		-11
-.0022	.0029		.0112	.0170		.0168	.0210		-10
.0142	.0172		-.0097	.0072		.0002	.0212		- 9
.0056	.0229		-.0087	-.0014		.0147	.0359		- 8
-.0054	.0175		-.0126	-.0140		.0078	.0438		- 7
-.0054	.0120		-.0117	-.0258		.0012	.0451		- 6
.0067	.0188		-.0108	-.0366		.0036	.1488		- 5
0074	.0113		.0045	-.0321		.0073	.0561		- 4
	.0127		-.0231	-.0553		.0077	.0639		- 3
.0036	.0164		-.0361	-.0914		.0117	.0756		- 2
-.0191	-.0026		-.0167	-.1081		.0079	.0836		- 1
.0098	.0071	.0000	-.0755	-.1836	.0000	.0179	.1015	.0000	0
.0095	.0164	.0095	-.0264	-.2100	-.0264	-.0007	.1008	-.0007	1
-.0120	.0045	-.0025	-.0207	-.2308	-.0472	-.0019	.0984	-.0026	2
.0051	.0097	.0026	.0056	-.2251	-.0415	.0008	.0997	-.0018	3
-.0067	.0029	-.0041	-.0112	-.2364	-.0527	-.0032	.0965	-.0050	4
-.1424	-.0112	-.0184	.0048	-.2315	-.0479	.0087	.1052	.0037	5
-.0107	-.0219	-.0291	.1427	-.1891	-.0055	-.0068	.0984	-.0030	6
.0224	.0004	-.0066	.0207	-.1684	.0152	-.0113	.0871	-.0143	7
015	-.0110	-.0181	.0140	-.1543	.0292	.0013	.0885	-.0130	8
.0007	-.0102	-.0174	-.0140	-.1684	.0152	-.0060	.0824	-.0190	9
-.0036	-.0139	-.0210	.0067	-.1617	.0219	-.0134	.0690	-.0324	10
-.0065	-.0204	-.0276	.0110	-.1506	.0287	-.0020	.0670	-.0344	11
.0045	-.0158	-.0230	.0325	-.1181	.0612	-.0054	.0615	-.0399	12

1. N = 102
2. N = 43
3. N = 232

apparently is not to invest in dividend-increasing (or sell dividend-decreasing) stocks solely on the information in the dividend change. Since data was not available for a second change in the decreasing category, the rest of the results refer only to the dividend-increasing sample.

C. The Size and Truth of Signals

Not all of the cumulative abnormal returns, CU_j, of the first dividend-increasing period are negative. Roughtly 48% of the returns in both the first and second changing periods cumulate positively. There is the problem, though, of determining which of the dividend changes are true signals before the fact. The first measure attempting to isolate the true signals was the size measure, the percentage increase in the dividend. Using a cluster analysis program (BMDP), the percentage increases were divided into four classes for the first dividend change period. The returns were then grouped according to the size measure. The results of the cumulation from month zero to month 12 are given in Table 4. The only group in which a positive return is made is the greater than 5% and less then 12% dividend change. Ignoring the possible reasons for this, the same change size group for the second period was tested. However, the CU_j was negative and it was found that a policy of investing in these size dividend changes would not lead to any positive returns every time.

The next measure used is the truth of the first signal. This is based on the belief that, once a security is found to be signaling true---regardless of the reasons (good management, nature of the firm, etc.)---it is likely to do so again. The CU_j were divided into four roughly equal size groups: very positive, positive, negative, and very negative (in the first period). The abnormal returns for the second period were then placed in groups

TABLE 4

ABNORMAL RETURNS BY THE SIZE OF THE DIVIDEND CHANGE

(First Change Period)

Group 1		Group 2		Group 3		Group 4		
AU_t	CAU_t	AU_t	CAU_t	AU_t	CAU_t	AU_t	CAU_t	t
-.01351	-.01351	.02790	.02790	-.00342	-.00342	.00399	.00339	1
-.01676	-.03027	.01461	.04251	-.02507	-.02849	.02173	.02572	2
-.01792	-.04819	.01328	.05579	-.00431	-.03280	.02610	.05182	3
-.00989	-.05808	-.00626	.04953	-.02129	-.05409	-.03818	.01364	4
.00598	-.05210	-.00235	.04718	-.00325	-.05734	.01391	.04555	5
.00169	-.03041	-.00856	.03862	-.00129	-.05863	-.06864	-.02309	6
.00214	-.02827	.00201	.04063	-.01003	-.06866	-.03268	-.05577	7
-.03516	-.06343	.01124	.05187	-.00999	-.07865	.00123	-.05454	8
-.02249	-.08592	-.01231	.03956	-.00668	-.08533	-.03266	-.08720	9
.01104	-.07488	-.01856	.02100	-.00706	-.09239	-.02706	-.11426	10
-.00410	-.07898	.01347	.03447	-.00895	-.10134	-.03597	-.15023	11
.00331	-.07567	-.01147	.02300	.00012	-.10122	.02991	-.12032	12

Group 1 - Change less than 5%, N = 14
Group 2 - Change greater than or equal to 5% and less than 12%, N = 45
Group 3 - Change greater than or equal to 12% and less than 25%, N = 43
Group 4 - Change greater than 25%, N = 14

according to what they did the first period. The results in Table 5 give no indication that a relationship between truth this time and truth last time exists.

TABLE 5

ABNORMAL RETURNS BY TRUTH OF THE FIRST SIGNAL
(Second Increasing Period)

Group 1		Group 2		Group 3		Group 4		
AU_t	CAU_t	AU_t	CAU_t	AU_t	CAU_t	AU_t	CAU_t	t
.01	-.01701	-.03290	-.03290	-.00455	-.00455	.01332	.01332	1
-.01861	-.03562	-.00002	-.03292	.00228	-.00227	.01604	.02936	2
.03634	.00072	-.00794	-.04086	-.00433	-.00660	-.02904	.00032	3
-.00526	-.00454	.00111	-.03975	.01341	.00681	.02529	.02561	4
.05260	.04806	.00682	-.03293	.00267	.00948	.01100	.03661	5
-.01631	.03175	-.02149	-.05442	.05003	.05951	-.04003	-.00342	6
-.00557	.02618	-.00978	-.06420	-.00131	.05820	-.04858	-.05200	7
-.00916	.01702	.02453	-.03967	.01496	.07316	-.01030	-.06230	8
-.02744	-.01042	-.02512	-.06479	-.03662	.03654	.01490	-.04740	9
-.00898	-.01940	-.03608	-.10087	.00029	.03683	-.01875	-.06615	10
.01156	-.00784	.01858	-.08229	.00540	.04223	-.03519	-.10134	11
.00771	-.00013	.00206	-.08023	-.01260	.02963	.00355	-.09779	12

Group 1 - CU_j cumulated greater than .19 in the first period, N = 26
Group 2 - CU_j cumulated less than or equal to .19 and greater than 0 in the first period, N = 29
Group 3 - CU_j cumulated less than 0 and greater than or equal to -.23 in the first period, N = 30
Group 4 - CU_j cumulated to less than -.23 in the first period, N = 31

In Tables 6 and 7, the results of the test of independence of the size of the dividend change and the direction of the cumulation of returns are given. The size measures for the second signaling period are slightly different than those in the first period as a cluster analysis was also run for the relative change size in the second group. The results of both tests are the same, the size of the dividend and the truth of the signal are statistically independent.

In Table 8, the results of the test of independence of the direction of cumulation in the first signaling period and in the second period are given. As with the size measure, the truth measures are also independent.

TABLE 6

TEST OF INDEPENDENCE BETWEEN TRUTH AND CHANGE SIZE

(First Increase)

		Truth		
		True	False	
Size	1	O = 5 E = 6. 63	O = 9 E = 7.36	14
	2	O = 26 E = 21.33	O = 19 E = 23.66	45
	3	O = 19 E = 20.38	O = 24 E = 22.61	43
	4	O = 5 E = 6.63	O = 9 E = 7.36	14
		55	61	116

O = The observed value
E = The computed expected value
1 = Change less than 5%
2 = Change greater than or equal to 5% and less than 12%
3 = Change greater than or equal to 12% and less than 25%
4 = Change greater than or equal to 25%

$X^2 = 3.651$

X^2(df=3, .9 significance) = 6.251

TABLE 7

TEST OF INDEPENDENCE BETWEEN TRUTH AND CHANGE SIZE

(Second Increase)

		Truth: True	Truth: False	
Size	1	O = 10 E = 13.26	O = 17 E = 13.73	27
	2	O = 27 E = 24.56	O = 23 E = 25.43	50
	3	O = 13 E = 12.28	O = 12 E = 12.71	25
	4	O = 7 E = 6.87	O = 7 E = 7.12	14
		57	59	116

1 = Change less than 6.25%
2 = Change greater than or equal to 6.25% and less than 11%
3 = Change greater than or equal to 11% and less than 20%
4 = Change greater than or equal to 20%

$X^2 = 2.141$

X^2(df=3, .9 significance) = 6.251

TABLE 8

INDEPENDENCE OF TRUTH BETWEEN THE TWO SIGNALING PERIODS

		Second Period: True	Second Period: False	
First Period	True	O = 23 E = 27.025	O = 32 E = 27.974	55
	False	O = 34 E = 29.974	O = 27 E = 31.025	61
		57	59	116

$X^2 = 2.242$

X^2(df=1, .9 significance) = 2.706

CHAPTER VI

CONCLUSIONS AND A RECONCILIATION OF RESULTS

There is the question of how the above results can be reconciled with the information hypothesis and several empirical studies. In general, the results were opposite of what was expected. Presupposition of what the results should look like has potential to bias any study, causing the results to be reworked until they look as they "should." The results of this study refute the information hypothesis, at least for firms which do not change their dividends for long periods, and imply that the relationship between firm performance and dividend changes is somewhat instantaneous, performance leading change.

The characteristics of this sample are atypical for firms of any given time period. Here there are firms which do not change their dividends over long periods of time. This type of change policy is far from similar to the population of dividend paying securities. In many cases, not used, a succession of dividend changes was noted, changing every second to fourth quarter. A non-changing dividend for more than six quarters is an exception. This can lead our conclusions into two general areas: 1) the abnormalities of the sample have made the results ungeneralizable to the population, and 2) on the other hand, if we assume that all dividend changes are basically alike and by holding the dividend constant once the change is made, we have filtered much of the noise of other dividend changes out of our results. The second area will be pursued

in further discussion.

Other empirical studies found, on average, that after the dividend increase, the security continues to earn positive abnormal returns. At the same time, they made no requirements about the stability of the dividend subsequent to the change. Thus, continued shocks or dividend changes biased their results upwards in the post-announcement period. That is to say, firm performance continued to change being followed up by the dividends. While the dividend change per se will not cause the price of the stock to change, it can lead to instability of price.

The reasons for the exceptionally good performance of the dividend-decreasing stocks can be explained similarly . Also there is a survivor-ship bias. That is, the way the sample was chosen, only those firms with 40 quarters of data were used. A number of firms were found to have been removed from the data base subsequent to the dividend decrease and did not enter the sample.

As reported in Section V, the relative size of the dividend change had no relationship with the truth of the signal. Also, the truth of the previous signal does not enhance the ability to predict the truth of the second signal. Keeping in mind that truth is measured by the abnormal returns after the change announcement, it would seem that firm performance after the dividend change is independent of the dividend change. The higher level of dividends is being supported by a prior change in firm performance rather than a subsequent change. It appears that the size of the dividend change is not a signal of the size of the direction of the returns. Also, since we could not isolate any firms, a substantial number, that the truth of the last signal helped to predict the truth of

the second. Their independence would again be pointed to.

In conclusion, dividend changes are not signals of future firm performance. It would seem that the only information available in the change is that past or current performance may have changed. When we consider that most of the stock price adjustment is occurring before the dividend change, the information is of no use to the investor. One would do well to try to predict changes in firm performance instead of dividend changes since the changes are generally based upon performance. This is not to say that dividend changes do not have the potential to carry information, just that few, if any, firms are using their dividends, by design or by accident, as carriers of information. Consequently, this implies that managers do not use their unique position to determine dividend levels, so there are better signaling devices that are being used.

BIBLIOGRAPHY

Akerlof, G., "The Market for 'Lemons': Qualitative Uncertainty and the Market Mechanism", Quarterly Journal of Economics, (August, 1970), pp. 488-500.

Ang, James S., "Dividend Policy: Informational Content or Partial Adjustment?", The Review of Economics and Statistics, (January, 1975), pp. 65-71.

Black, Fischer and Myron Scholes, "The Effects of Dividend Yield and Policy on Common Stock Prices and Returns", Journal of Financial Economics, (1974), pp. 1-22.

Charest, Guy, "Dividend Information, Stock Returns and Market Efficiency", Journal of Financial Economics, (1978), pp. 299-330.

Fama, Eugene and Harvey Babiak, "Dividend Policy: An Empirical Analysis", Journal of American Statistical Society, (December, 1968), pp. 1133-1161.

Fama, Eugene, Lawrence Fisher, Michael Jensen, and Richard Roll, " The Adjustment of Stock Prices to New Information", American Economic Review, (February, 1969), pp. 1-21.

Griffin, Paul, "Competitive Information in the Stock Market: An Empirical Study of Earnings, Dividends and Analysts Forecasts", Journal of Finance, (May, 1976), pp. 631-650.

Huang, David S. Regression and Econometric Methods. (New York: John Wiley and Sons, 1970).

Jaffee, Jeffrey, "Special Information and Insider Trading", Journal of Business, (July, 1974), pp. 410-418.

Jensen, Michael C., "Tests of Capital Market Theory and Implications of the Evidence", Research Paper, The Financial Analysts Research Foundation, (1975).

Leland, Hayne E. and David H. Pyle, "Information Assymmetries Financial Structure and Financial Intermediation", Journal of Finance, (1977), pp. 371-384.

Lintner, John, "Distribution of Income of Corporations Among Dividends, Retained Earnings and Taxes", American Economic Review, (1956), pp. 97-113.

Miller, Merton and Franco Modigliani, "Dividend Policy, Growth and the Value of Shares", Journal of Business, (1961), pp. 411-433.

Nerlove, Marc, "Distributed Lags and Demand Analysis for Agriculture and Other Commodities", U.S. Department of Agriculture, Agriculture Handbook, (1958).

Pettit, R. Richardson, "Dividend Announcements, Security Performance and Capital Market Efficiency", Journal of Finance, (1972), pp. 993-1007.

Ray, Derrold, "Procedures for Estimating Regression Coefficients When the Disturbances are Autocorrelated", Oklahoma State Agricultural Economics Department mimeo, (1979).

Scholes, Myron, "What does the Dividend Freeze Really Mean and Why All the Fuss About Dividends?" Massachusetts Institute of Technology mimeo, (1973).

Sharpe, William, "A Simplified Model for Portfolio Analysis", Management Science, (January, 1963), pp. 277-293.

Sinquefeld, Rex and Roger Ibbotson, "Stocks, Bonds, Bills and Inflation: Year-by-Year Historical Returns", Journal of Business, (January, 1976), pp. 11-47.

Watts, Ross, "The Information Content of Dividends", Journal of Business, (1973), pp. 191-211.

A P P E N D I X A

DIVIDEND INCREASING SAMPLE

I.D. NO.	NAME	ANNOUNCEMENT DATE	$\hat{B}$	$\hat{a}$	$\hat{p}$	R^2	d
149123	Caterpillar Tractor Co.	4/1971	1.190	.003	-.028	.534	1.976
		4/1973	1.071	.004	-.225	.625	2.394
57264	Baker International Corp.	4/1971	2.161	.024	-.599	.643	2.968**
		4/1973	.735	.033	.021	.229	1.887
406216	Halliburton Corp.	2/1969	.949	.025	-.138	.202	2.180
		2/1973	.897	.011	.015	.410	1.846
582562	McNeil Corp.	10/1968	1.058	.018	-.245	.220	2.380
		4/1973	.916	.004	-.201	.378	2.221
860486	Stewart-Warner Corp.	10/1969	1.599	.012	-.385	.520	2.433
		1/1972	1.546	.005	-.060	.612	2.046
848355	Sperry Rand Corp.	5/1971	1.418	-.001	-.101	.498	2.122
		6/1973	1.310	.029	-.161	.579	2.267
631226	Nashua Corp.	9/1968	1.322	-.0125	-.185	.308	2.210
		9/1970	.974	.012	-.272	.313	2.522
369604	General Electric Co.	5/1971	.601	-.014	-.065	.306	2.051
		9/1973	1.322	-.004	-.108	.689	2.200
759457	Reliance Electric Co.	8/1969	2.391	-.015	-.120	.585	2.219
		8/1973	1.442	-.012	-.176	.652	1.976
903422	U.V. Industries, Inc.	3/1970	1.729	-.021	.030	.441	1.833
		3/1973	1.017	-.005	-.201	.369	2.356
559108	Magic Chef Inc	9/1967	.877	.031	-.375	.216	2.632*
		5/1972	1.666	.000	-.232	.411	2.330
867068	Sunbeam Corp.	6/1969	1.165	-.002	-.016	.248	2.028
		6/1973	1.519	.029	-.332	.781	2.566*
620076	Motorola Inc.	6/1970	1.903	.004	-.387	.530	2.467
		9/1972	1.081	.029	-.432	.389	2.649*

I.D. NO.	NAME	ANNOUNCEMENT DATE	$\hat{B}$	$\hat{a}$	$\hat{p}$	R^2	d
181486	Clark Oil and Refining	11/1968	.630	.016	.106	.054	1.753
		11/1973	1.533	-.002	-.056	.234	2.109
492386	Kerr-McGee Corp.	8/1971	.623	.010	.145	.211	1.589
		2/1974	.651	.006	.054	.142	1.713
907770	Union Oil of California	6/1969	1.375	.006	-.345	.478	2.668*
		10/1973	1.101	.017	-.141	.302	2.232
863314	Stride Rite Corp.	2/1969	.904	.036	-.333	.261	2.644*
		2/1972	1.178	.002	-.033	.406	2.047
912605	U.S. Shoe Corp.	9/1968	1.085	-.009	-.449	.482	2.685*
		12/1972	.190	-.030	-.383	.023	2.226
30710	Ameron Inc	10/1968	1.128	.008	-.123	.331	2.176
		6/1972	.405	-.004	-.197	.104	2.280
141375	Carborundum Co.	7/1970	1.373	-.006	-.204	.534	2.254
		7/1972	.753	.003	-.146	.219	2.249
19573	Allied Thermal Corp.	10/1968	1.929	-.009	-.283	.397	2.546
		11/1972	.429	.003	-.146	.085	2.291
144465	Carrier Corp.	3/1969	.497	-.004	-.415	.140	2.797**
		7/1972	.955	-.028	-.048	.246	2.059
892892	Trane Co.	10/1969	.726	-.001	-.119	.138	2.165
		12/1972	.645	-.005	.205	.226	1.561
150033	Ceco Corp	10/1969	.533	.038	-.012	.079	2.019
		11/1971	1.190	-.035	-.420	.509	2.736*
276317	Eastern Co.	8/1970	.261	-.005	-.209	.014	2.334
		11/1972	.281	.023	-.316	.081	2.447
105655	Braun Engineering	8/1969	1.712	.025	-.593	.545	2.841**
		8/1971	.846	-.035	-.309	.115	2.430

I.D. NO.	NAME	ANNOUNCEMENT DATE	$\hat{B}$	$\hat{a}$	$\hat{p}$	R^2	d
460146	Intl. Paper Co.	11/1968	1.040	-.009	.045	.564	1.717
		2/1973	.821	-.011	-.299	.671	2.546
905530	Union Camp Corp.	1/1969	1.004	.002	-.226	.334	2.403
		2/1972	.806	.034	-.292	.254	2.464
434398	Hoerner Waldorf Corp.	11/1969	1.447	.012	-.338	.316	2.603*
		6/1972	1.032	.015	-.219	.292	2.325
932270	Wallace Bus. Forms	10/1970	1.225	.007	-.176	.426	2.324
		7/1973	.560	-.007	.000	.157	1.948
783073	Rust Craft Greeting Cards	11/1968	1.081	-.007	-.147	.189	2.272
		3/1972	1.083	-.009	-.033	.199	2.060
260543	Dow Chemical	5/1971	.845	.011	-.353	.591	2.450
		6/1973	1.099	.026	-.138	.662	2.176
127055	Cabot Corp.	5/1970	.994	-.006	-.154	.140	1.940
		7/1972	.788	-.001	-.146	.253	2.241
2824	Abbott Laboratories	3/1969	.677	-.008	.040	.287	1.695
		3/1973	1.160	.020	-.112	.571	2.206
599292	Miles Laboratories, Inc.	10/1968	1.104	-.012	-.035	.261	2.038
		10/1972	1.455	-.007	-.162	.686	2.592
375766	Gillette Co.	4/1969	1.107	-.011	-.387	.386	2.596*
		4/1973	.822	-.003	-.401	.457	2.682*
761525	Revlon, Inc.	10/1969	1.427	-.020	-.556	.675	2.616*
		5/1973	1.002	.016	-.311	.628	2.554
315405	Ferro Corp.	4/1969	.621	.015	.176	.204	1.644
		7/1972	.829	-.014	.171	.236	1.568
492746	Kewanee Ind.	7/1969	.617	.013	.161	.067	1.675
		1/1973	1.010	-.011	.100	.419	1.612

I.D. No.	NAME	DATE	b	a	p	k	d
761753	Reynolds (R.J.) Inds.	10/1969	.891	-.003	.026	.366	1.917
		1/1972	.792	.016	-.084	.216	2.108
547779	Lowenstein (M.) & Sons, Inc.	12/1968	1.122	.020	-.147	.353	2.121
		12/1973	2.319	-.041	.055	.483	1.786
758556	Reeves Bros. Inc	11/1968	1.918	.025	-.159	.690	2.289
		8/1973	.400	.000	.068	.103	1.804
910858	United Merchants and Mfrs.	5/1969	1.091	.019	-.521	.460	2.917**
		2/1974	1.517	-.015	-.012	.484	1.961
911332	United Piece Dye Works	12/1968	2.125	.079	.056	.344	1.679
		11/1970	1.342	-.053	-.332	.155	2.560*
95293	Blue Bell Inc	12/1968	1.530	.029	-.344	.493	2.600*
		11/1970	1.094	.023	.130	.440	1.616
718592	Phillips Van Heusen	4/1970	.114	.003	.274	.004	1.334*
		2/1973	1.235	.019	-.425	.372	2.824**
782242	Russ Togs, Inc.	3/1972	2.544	.032	-.205	.549	2.390
		3/1974	1.873	.002	-.259	.448	2.472
918204	V. F. Corp.	11/1970	1.252	-.009	-.278	.386	2.530
		2/1973	1.166	.040	-.594	.434	2.536
158525	Champion Intl. Corp.	5/1969	1.111	.001	-.100	.217	2.068
		8/1973	1.510	-.023	.102	.647	1.918
962166	Weyerhaeuser Co.	4/1969	1.242	-.002	.197	.478	1.511
		10/1972	.543	-.012	.029	.280	1.933
497656	Kirsch Co.	8/1969	1.064	.035	-.324	.128	2.561*
		11/1972	2.216	-.020	-.489	.516	2.945**
608030	Mohasco Corp.	4/1969	1.760	.031	-.059	.368	2.067
		4/1973	1.006	-.000	-.070	.304	2.083

I.D. NO.	NAME	ANNOUNCEMENT DATE	$\hat{B}$	$\hat{a}$	$\hat{b}$	R^2	d
374586	Giant Yellowknife Mines	2/1971	.845	-.033	-.232	.084	2.417
		8/1973	1.925	-.032	-.205	.436	2.306
369856	General Foods Corp.	2/1969	.639	-.004	-.003	.283	1.472
		2/1971	.947	-.003	-.265	.296	2.443
296470	Esmark Incorporated	12/1970	1.155	-.005	-.393	.232	2.467
		12/1972	.392	.005	-.004	.158	1.830
484098	Kane-Miller Corp.	2/1971	2.646	-.011	.243	.555	1.428*
		4/1974	.152	-.004	-.066	.006	1.222**
500755	Kraftco Corp.	2/1972	.957	.003	-.343	.327	2.573*
		4/1974	.108	-.034	-.112	.004	1.154**
134429	Campbell Soup Co.	12/1968	1.119	-.002	-.472	.544	2.919**
		12/1972	.529	.006	.023	.202	1.813
832696	Smucker (J.M.) Co.	6/1969	.579	.017	-.015	.077	2.013
		4/1973	.312	.009	.168	.073	1.657
751277	Ralston Purina Co.	4/1970	.485	.018	-.412	.085	2.751**
		1/1973	.799	.011	-.250	.564	2.330
32172	Amstar Corp.	11/1970	.774	-.026	-.405	.350	2.467
		2/1974	.404	.004	-.141	.069	2.277
155177	Central Soya Co.	10/1970	1.369	.004	.063	.373	1.858
		12/1973	1.767	-.005	-.056	.442	2.104
811850	Seagram Co. Ltd.	11/1968	.708	.000	-.409	.492	2.575*
		11/1971	.860	.004	-.175	.296	2.250
713448	Pepsico Inc.	5/1969	.940	.001	.062	.376	1.741
		7/1973	1.612	.021	-.421	.859	2.570*
780240	Royal Crown Cola Co.	11/1968	1.270	.017	-.070	.349	2.133
		11/1971	2.072	-.019	.103	.550	1.782

I.D. NO.	NAME	ANNOUNCEMENT DATE	$\hat{B}$	$\hat{a}$	$\hat{p}$	R^2	d
81689	Bendix Corp.	11/1968	1.651	-.004	-.560	.672	2.790**
		2/1974	.866	.020	-.070	.203	2.074
235811	Dana Corp.	5/1969	1.126	.014	-.524	.490	3.013**
		3/1972	1.756	.006	-.401	.451	2.720*
866713	Sun Electric Corp.	8/1968	.586	.020	.117	.040	1.747
		5/1973	.801	.031	-.129	.164	2.182
573275	Martin Marietta Corp.	11/1968	1.556	-.009	-.224	.684	2.400
		11/1972	.517	.000	-.012	.159	1.989
361448	Gatx Corp.	10/1968	.720	.004	-.037	.273	2.020
		10/1972	1.045	.000	.107	.545	1.776
30087	American Sterilizer Co.	8/1971	1.643	-.025	-.428	.308	2.654*
		8/1973	1.015	-.006	-.551	.418	3.098**
445582	Hunt (Philip A.) Chem.	7/1971	.851	.006	-.162	.159	2.301
		6/1973	1.623	-.012	.178	.501	1.628
481088	Jostens, Inc	3/1968	1.311	-.008	-.063	.340	2.068
		3/1970	1.093	-.004	-.298	.192	2.556
143897	Carolina Freight Carriers	6/1971	.538	-.041	-.198	.104	2.376
		7/1973	.853	-.029	-.538	.469	3.067**
985514	Yellow Freight System	10/1968	1.302	.026	-.594	.591	3.169**
		10/1970	1.825	.017	-.404	.366	2.805*
886444	Tidewater Marine Service	3/1971	1.031	-.001	-.050	.128	1.960
		6/1973	.838	.011	.061	.390	1.799
247361	Dealta Air Lines, Inc.	7/1970	1.572	.007	-.342	.543	2.506
		7/1973	1.376	-.013	.325	.753	1.334*
30177	American Tele. & Teleg.	11/1969	.502	-.000	-.004	.154	1.879
		8/1972	.496	-.001	-.129	.313	2.179

I.D. NO.	NAME	ANNOUNCEMENT DATE	$\hat{B}$	$\hat{a}$	$\hat{p}$	R^2	d
171870	Cincinnati Bell, Inc.	5/1971	.738	-.001	-.201	.357	2.372
		11/1973	.580	-.009	-.311	.232	2.497
24735	American Broadcasting Co.	2/1970	1.971	.047	-.169	.399	2.259
		4/1973	1.136	.020	-.285	.413	2.530
224003	Cox Broadcasting	10/1969	1.455	.024	-.263	.353	2.467
		3/1973	.997	.035	-.060	.302	2.105
40555	Arizona Public Service Co.	10/1969	.813	-.005	-.294	.149	2.557
		10/1972	.514	-.006	-.274	.151	2.221
60077	Bangor Hydro-Electric Co.	3/1971	.208	-.008	-.197	.013	2.357
		3/1973	.413	-.010	-.254	.175	2.501
560483	Maine Public Service	5/1971	.261	-.001	-.335	.086	2.578*
		5/1973	.616	-.001	-.332	.310	2.548
694784	Pacific Power & Light	6/1969	.566	.013	-.326	.166	2.650*
		6/1971	.641	.009	-.241	.284	2.398
604110	Minnesota Power & Light	1/1969	.848	-.001	-.283	.391	2.470
		1/1971	.813	-.012	-.291	.330	2.574*
689648	Otter Tail Power Co.	1/1971	.205	-.008	-.163	.027	2.087
		1/1973	.418	.004	-.323	.307	2.629*
790654	St. Joseph Power & Light	11/1968	.556	-.000	-.307	.475	2.175
		7/1971	.505	-.005	-.169	.317	1.960
826418	Sierra Pacific Power Co.	7/1972	.341	-.003	-.143	.133	2.232
		7/1974	.458	-.004	-.056	.162	2.083
976843	Wisconsin Public Service	7/1970	.189	-.001	-.011	.957	1.970
		7/1972	.217	-.003	-.114	.076	2.202
698465	Panhandle Eastern Pipe Line	7/1970	.517	-.007	-.007	.115	1.751
		11/1972	1.017	.008	-.002	.428	1.680

I.D. NO.	NAME	ANNOUNCEMENT DATE	$\hat{B}$	$\hat{a}$	$\hat{p}$	R^2	d
882440	Taxes Gas Transmission	10/1968	1.199	.019	-.228	.441	2.300
		2/1971	1.900	.010	.423	.711	1.145**
147339	Cascade Natural Gas Corp.	3/1969	.803	-.006	-.214	.269	2.260
		12/1972	.712	.003	-.317	.263	2.633*
605741	Mississippi Valley Gas Co.	8/1970	.620	-.011	-.181	.161	2.252
		5/1973	.459	.003	.060	.101	1.819
645869	New Jersey Natural Gas Co.	7/1968	.912	-.013	-.432	.290	2.735*
		8/1970	.496	-.004	-.261	.114	2.341
679043	Oklahoma Natural Gas Co.	10/1970	.612	-.011	-.066	.266	1.943
		4/1973	.464	.002	-.325	.329	2.527
31141	Amfac Inc.	10/1968	1.288	.003	-.067	.424	2.132
		8/1971	1.265	-.038	.030	.318	1.914
566319	Marcor Inc.	5/1970	1.838	-.004	.167	.325	1.639
		5/1973	1.094	-.011	-.230	.399	2.458
495890	Kings Dept. Stores	2/1971	1.959	-.016	.037	.359	1.886
		2/1973	.916	.021	-.278	.357	2.280
89023	Big Bear Stores	6/1971	1.035	-.008	-.267	.203	2.423
		2/1974	1.037	.017	-.356	.199	2.639*
491782	Kenwin Shops	4/1971	1.193	-.040	-.185	.135	2.362
		4/1974	1.390	-.066	-.025	.050	2.041
540414	Loehmanns, Inc.	7/1969	2.114	.031	-.480	.365	2.792*
		8/1973	1.097	.031	-.202	.334	2.192
859145	Sterchi Brothers Stores, Inc.	12/1968	1.267	-.006	-.337	.359	2.649*
		6/1973	.740	-.000	-.183	.159	2.347
262188	Drug Fair, Inc.	10/1969	.900	.004	.075	.090	1.691
		1/1973	1.095	.015	.097	.545	1.691

I.D. NO.	NAME	ANNOUNCEMENT DATE	$\hat{B}$	$\hat{a}$	$\hat{\rho}$	R^2	d
912877	U.S. Trust Co. of New York	4/1970	1.250	-.000	-.261	.288	2.518
		10/1973	.314	.009	-.120	.043	2.063
335554	First Nat'l Boston Corp.	8/1970	1.033	.010	-.082	.341	1.833
		8/1972	.421	-.013	-.100	.103	2.157
413841	Harris Bank Corp., Inc.	4/1971	1.250	.008	.121	.438	1.712
		5/1973	.695	.004	-.194	.415	2.378
585518	Mellon National Corp.	11/1970	.682	-.007	.283	.257	1.419*
		11/1973	.899	-.001	-.179	.273	2.214
568287	Marine Midland Banks	7/1970	.904	-.008	-.574	.490	3.147*
		7/1972	.288	-.017	-.359	.069	2.533
337162	First Tenn. Nat'l Corp.	1/1970	.470	.021	-.039	.093	2.076
		1/1972	.534	-.005	-.285	.122	2.505
760820	Republic of Texas Corp.	4/1970	.901	.004	-.270	.175	2.333
		9/1972	1.497	.004	-.285	.547	2.499
226822	Crocker National Corp.	2/1969	1.140	.007	.059	.686	1.710
		11/1971	1.164	-.003	.030	.712	1.824
957688	Western Bancorporation	9/1969	.596	.005	.063	.143	1.828
		2/1973	.913	-.009	-.215	.302	2.422
912129	U.S. Leasing Int'l, Inc.	10/1969	2.304	.062	-.296	.318	2.325
		4/1972	2.150	-.009	.116	.369	2.634
449268	I.C. Inds.	8/1969	1.890	.011	-.292	.361	2.480
		11/1971	2.442	.008	-.030	.580	1.971
880370	Tenneco, Inc.	10/1969	1.498	-.005	-.219	.545	2.406
		10/1972	.757	.010	-.163	.355	2.206

A P P E N D I X B

NON-CHANGING DIVIDEND SAMPLE

I.D. NO.	NAME	BEGINNING DATA DATE	$\hat{B}$	$\hat{a}$	$\hat{p}$	R^2	d
882887	TexasGulf, Inc	3/1970	.761	-.003	-.037	.080	2.038
651639	Newmont Mining Corp.	9/1968	1.559	-.002	.254	.457	1.468
43556	Hollinger Mines Ltd.	2/1971	.470	-.016	.196	.341	1.558
437614	Homestake Mining	4/1967	.518	.039	-.054	.041	2.106
656780	North American Coal	1/1968	1.672	.006	-.335	.227	2.497
709903	Pennzoil Co.	10/1968	1.941	-.038	-.397	.543	2.792**
868273	Superior Oil Co.	1/1967	1.199	.012	-.074	.370	2.102
779382	Rowan Cos. Inc.	1/1968	1.464	.010	.041	.237	1.626
254111	Dillingham Corp.	7/1969	1.767	-.031	-.341	.432	2.671*
261471	Dravo Corp.	1/1969	1.069	-.022	-.039	.415	2.067
580033	McDermott (J. Ray) Co.	10/1967	1.400	.014	-.186	.274	2.361
802037	Santa Fe Int'l	4/1968	1.706	-.005	-.421	.488	2.841**
245217	Del Monte Corp.	9/1967	1.135	-.015	-.456	.307	2.615*
861504	Stokely-Van Camp, Inc.	12/1968	1.406	.003	.053	.333	1.815
852563	Staley (A.E.) Mfg. Co.	1/1968	.970	-.006	-.156	.317	2.125
24069	American Bakeries Co.	7/1970	.937	.052	-.419	.085	2.607*
864592	Sucrest Corp.	1/1968	.153	.000	-.132	.010	2.152
22771	Amalgamated Sugar Co.	1/1969	1.198	-.016	-.278	.601	2.262
716026	Peter Paul Inc.	10/1968	.555	.004	-.191	.039	2.365
25393	American Distilling Co.	10/1969	.165	-.013	-.065	.008	2.126
635655	National Distillers & Chemical	4/1970	.913	.006	-.198	.373	2.169
532202	Liggett Group	7/1972	.347	-.049	.356	.004	1.028**
73239	Bayok Cigars, Inc.	10/1969	.898	-.001	-.321	.265	2.307

I.D. NO.	NAME	BEGINNING DATA DATE	$\hat{B}$	$\hat{a}$	$\hat{\rho}$	R^2	d
131691	Burlington Inds. Inc.	7/1968	1.870	-.008	-.081	.417	2.004
316549	Fieldcrest Mills	10/1970	.390	-.000	-.043	.093	2.049
623555	Mount Vernon Mills, Inc.	1/1967	.561	-.002	-.233	.261	2.308
683574	Opelika Mfg. Corp.	10/1971	.569	-.005	-.174	.216	2.207
549662	Ludlow Corp.	7/1968	1.606	.002	-.020	.294	2.017
408306	Hammermill Paper Co.	10/1967	1.555	-.014	-.304	.294	2.591*
963303	@hippany Paperboard	1/1971	.343	-.000	.287	.042	1.361*
165159	Chesapeake Corp. of VA	4/1968	.889	.002	-.074	.149	1.801
296659	Esquire, Inc.	10/1968	1.507	-.020	-.099	.338	1.901
808741	Scott Foresman Co.	2/1969	1.671	-.023	.077	.418	1.728
25321	American Cyanamid Co.	4/1969	.677	-.026	-.503	.229	2.898**
150843	Celanese Corp.	7/1969	1.119	-.005	-.141	.275	2.163
383883	Grace (W.R.) Co.	10/1969	1.121	.018	-.290	.358	2.246
857721	Stauffer Chemical Co.	4/1969	1.195	-.008	-.175	.349	2.176
905581	Union Carbide Corp	1/1969	1.172	.000	-.120	.397	2.229
680665	Olin Corp.	7/1970	2.129	-.005	.063	.360	1.793
709317	Pennwalt Corp.	1/1970	2.133	-.000	-.026	.610	1.843
227111	Crompton And Knowles Corp.	7/1972	.144	-.050	.434	.088	1.024**
977385	Witco Chemical Corp.	4/1968	1.540	.007	-.083	.451	2.131
812302	Searle (G.D.) & Co.	7/1969	.893	.018	-.141	.188	2.271
843477	Smithkline Corp.	4/1972	.376	.001	.168	.080	1.615
852245	Squibb Corp.	1/1968	.950	.005	-.138	.275	1.985
503624	La Maur Inc.	7/1970	1.603	-.024	.018	.392	1.801
739732	Pratt and Lambert, Inc.	1/1972	1.168	-.018	-.166	.340	2.238
824348	Sherwin-Williams Co.	9/1970	1.016	.021	-.260	.449	2.447
866645	Sun Chemical Corp.	1/1972	1.214	-.036	-.205	.345	2.122

I.D. NO.	NAME	BEGINNING DATA DATE	$\hat{B}$	$\hat{a}$	$\hat{p}$	R^2	d
211813	Continental Oil Co.	10/1969	1.301	.015	-.330	.542	2.334
565845	Marathon Oil Co.	1/1969	1.059	-.014	-.193	.209	2.348
718507	Phillips Petroleum Co.	4/1968	.547	.004	-.273	.084	2.369
822635	Shell Oil Co.	1/1969	1.649	-.014	-.367	.526	2.710*
830575	Skelly Oil Co.	4/1970	.886	.011	.175	.276	1.638
402460	Gulf Oil Corp.	7/1970	.667	.002	-.373	.246	2.642*
339711	Flintkote Co.	1/1967	1.894	.009	.043	.641	1.748
23519	Amerace Corp.	4/1971	.994	.016	-.292	.460	2.512
42465	Armstrong Rubber	7/1970	.077	.000	-.040	.002	2.032
608302	Mohawk Rubber Co.	1/1972	.979	.022	-.314	.120	2.567*
817814	Seton Co.	1/1970	.558	-.015	-.151	.111	2.107
962149	Weyenberg Shoe Mfg. Co.	1/1969	1.224	.018	-.300	.496	2.266
690768	Owens-Illinois, Inc.	4/1967	1.541	-.008	.555	.757	3.071**
130541	California Portland Cement	2/1972	1.016	.021	.201	.477	1.503
542290	Lone Star Inds.	7/1972	.675	-.055	.207	.116	2.106
606215	Missouri Portland Cement Co.	7/1967	.880	.004	-.086	.247	2.152
460578	Interpace Corp.	10/1967	1.077	.020	-.093	.198	2.179
668605	Norton Co.	1/1968	1.482	-.000	-.433	.565	2.852**
457470	Inland Steel Co.	4/1968	1.750	.010	-.148	.772	2.031
594593	Michigan Seamless Tube	11/1970	.453	-.004	-.075	.259	2.096
22249	Aluminum Co. of America	4/1968	1.327	-.012	-.072	.317	2.103
217210	Copeland Corp.	4/1968	1.425	.000	-.026	.381	1.833
690207	Overhead Door Corp	1/1967	2.394	-.004	-.354	.689	2.460
604739	Mirro Aluminum Co.	4/1967	.660	.015	-.202	.269	2.327
244199	Deere and Co.	11/1967	1.035	.004	-.316	.328	2.513
904274	Unarco Inds., Inc	4/1968	1.405	.006	-.040	.283	2.068

I.D. NO.	NAME	BEGINNING DATA DATE	$\hat{B}$	$\hat{a}$	$\hat{\rho}$	R^2	d
261597	Dresser Inds., Inc.	5/1968	1.957	.000	.000	.604	1.995
172172	Cincinnati Milacron Inc.	1/1969	1.350	-.015	-.329	.349	2.497
867323	Sundstrand Corp.	4/1969	1.541	-.054	.096	.236	1.781
481196	Joy Mfg. Co.	4/1969	1.704	-.005	.196	.223	1.603
524462	Leesona Corp.	7/1967	.235	-.032	.137	.006	1.603
456866	Ingersoll-Rand Co.	4/1967	1.269	-.000	-.328	.627	2.651*
23753	American Air Filter Co.	11/1966	1.231	.029	.383	.234	1.125**
925853	Victor Comptometer Corp.	1/1969	2.535	-.030	-.103	.392	2.200
562706	Mangood Corp.	4/1968	1.243	-.001	.004	.128	1.967
749285	RCA Corp	7/1972	1.479	-.050	-.456	.072	1.265
524192	Leeds & Northrup Co.	9/1972	1.669	-.018	-.115	.269	2.046
810640	Scovill Mfg. Co.	1/1967	1.563	-.010	-.083	.454	2.115
829302	Singer Co.	1/1968	1.278	.005	-.333	.537	2.495
963320	Whirlpool Corp.	7/1967	1.374	.015	-.028	.382	2.015
208291	Conrac Corp.	10/1967	2.585	-.008	.090	.472	1.802
561246	Mallory (P.R.) Co.	1/1968	1.319	.000	-.421	.379	2.041
359370	Fruehauf Corp.	1/1967	1.045	.001	-.065	.249	2.405
313549	Federal-Mogaul Corp.	4/1969	.427	-.016	-.235	.122	2.442
420758	Hayes-Albion Corp.	5/1968	1.414	-.003	-.111	.400	2.155
775422	Rohr Industries	2/1968	1.222	.001	.222	.272	1.403
75815	Beckman Instruments Inc.	4/1971	1.350	.014	-.152	.547	2.187
478366	Johnson Controls, Inc.	7/1971	.768	.018	-.037	.342	1.880
752159	Ranco Inc.	1/1971	.112	-.002	.150	.005	1.611
731095	Polaroid Corp	10/1967	1.961	-.007	-.202	.510	2.393
890278	Tonka Corp.	1/1968	1.710	.027	-.164	.338	2.327
1688	AMF, Inc.	4/1968	1.990	.042	-.461	.628	2.899*
667281	Northwest Airlines	1/1969	1.441	-.020	-.015	.232	1.988

A P P E N D I X C

DIVIDEND DECREASING SAMPLE

I.D. NO.	NAME	ANNOUNCEMENT DATE	$\hat{B}$	$\hat{a}$	$\hat{\rho}$	R^2	d
305189	Fairmont Foods Co.	10/1971	.737	-.001	-.018	.103	1.968
766481	Riegel Textile Corp.	10/1969	1.599	-.026	-.082	.278	2.056
860163	Stevens (J.P.) & Co.	6/1971	1.434	.003	-.155	.408	2.098
410342	Hanes Corp.	2/1970	1.330	-.011	.221	.168	1.467
624590	Movie Star, Inc.	7/1971	1.057	-.044	-.115	.173	2.192
293389	Ennis Business Forms	4/1971	1.032	-.011	.204	.161	1.511
285335	Electrographic Corp.	2/1971	.828	-.012	-.167	.588	2.318
644171	New England Nuclear Corp.	1/1969	2.210	.036	-.224	.454	2.433
382388	Goodrich (B.F.) Co.	11/1970	1.160	-.039	-.215	.253	2.101
806517	Schenuit Inds.	3/1971	1.614	-.003	.110	.271	1.759
929092	Vulcan Corp.	7/1970	.579	-.010	.333	.028	1.259**
69869	Basic Inc.	8/1971	1.206	.001	-.149	.457	2.021
42195	Armco Steel Corp.	1/1971	1.196	.004	-.360	.368	2.691*
87509	Bethlehem Steel Corp.	1/1971	1.091	-.008	-.233	.256	2.382
912656	U.S. Steel Corp.	10/1971	.782	.007	-.360	.281	2.605*
483098	Kaiser Steel Corp	10/1970	.742	-.024	-.377	.059	2.593
736202	Poatec, Inc.	7/1971	.537	-.034	-.378	.158	2.573*
483008	Kaiser Aluminum Chem. Corp.	9/1971	1.129	.012	.014	.297	1.894
369298	General Cable Corp.	9/1969	1.511	-.030	-.491	.353	2.930**
629156	N. L. Inds.	11/1970	1.317	-.006	-.147	.491	2.103
29917	American Standard Inc.	5/1971	1.303	.001	-.283	.259	2.557
413342	Harnischfeger Corp.	8/1969	1.932	.012	-.0921	.317	2.492
966323	Whiting Corp.	3/1971	.769	-.003	-.450	.174	2.873
597715	Midland-Ross Corp.	12/1971	1.576	.004	-.242	.442	2.357
6716	Addressograph-Multigraph	11/1970	1.182	-.014	.037	.159	1.827

I.D. NO.	NAME	ANNOUNCEMENT DATE	$\hat{B}$	$\hat{a}$	$\hat{p}$	R^2	d
628862	NCR Corp.	5/1970	2.062	-.022	.070	.564	1.855
521894	Lear Siegler Corp.	4/1971	1.528	-.030	-.282	.33	2.591*
171196	Chrysler Corp.	2/1970	1.095	-.006	-.038	.27-	2.071
459578	Int'l Harvester Co.	5/1971	1.071	.006	-.148	.312	2.226
418398	Hastings Mfg. Co.	8/1969	.153	.031	.027	.043	1.878
97023	Boeing	1/1970	1.518	-.001	.152	.197	1.634
954701	Stanray Corp	9/1970	2.428	-.036	-.232	.551	2.464
803701	Sargent-Welch Scientific	2/1971	1.199	-.034	-.336	.191	2.568*
982594	Wurlitzer Co.	7/1970	1.329	.000	-.269	.249	2.523
655694	Norfolk & Western Railway	7/1970	.850	-.013	-.129	.411	2.033
862131	Storer Broadcasting Co.	4/1968	2.220	.024	-.452	.406	2.608*
40879	Arkansas Louisiana Gas	10/1970	1.000	-.006	-.217	.331	2.399
594508	Michigan Gas Utilities Co.	11/1968	.248	-.000	-.294	.062	2.456
313855	Federal Signal Corp.	7/1972	1.037	-.001	.106	.297	1.767
934136	Wards Co., Inc.	1/1971	1.349	-.022	.016	.062	1.938
26879	American Investment Co.	5/1970	1.487	-.038	-.294	.302	2.449
530710	Liberty Loan Corp.	9/1969	.956	-.008	.052	.125	1.766
344872	Foote Cone Belding Comm.	7/1970	1.129	-.000	-.141	.327	2.270

KEY FOR APPENDICES:

$\hat{B}$ = GLS estimated Beta, systematic risk

$\hat{a}$ = GLS estimated alpha, expected return

$\hat{p}$ = Transformation value stimate from OLS

R^2 = GLS goodness of fit

d = Durbin-Watson "d" statistic estimated by OLS

* = Autocorrelation test, inconclusive at the 5% level

** = Autocorrelation indicated at the 5% level

VITA

Vernon Lee Rupp

Candidate for the Degree of

Master of Business Administration

Report: USING STOCK PRICE BEHAVIOR ABOUT A DIVIDEND CHANGE AS A PREDICTOR OF BEHAVIOR AROUND FUTURE CHANGES

Major Field: Business Administration

Biographical:

Personal Data: Born in Abilene, Texas, July 6, 1956, the son of Robert and Dorothy Rupp.

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