Southern Business Review

Volume 13 | Issue 1 Article 3

April 1987

Excess Returns and Preferred Stock Rating Changes

Jerry G. Hunt
East Carolina University

Allen Rappaport
University of Northern Iowa

EXCESS RETURNS AND PREFERRED STOCK RATING CHANGES

Jerry G. Hunt and Allen Rappaport

Introduction

Do prices of preferred stock shares change in response to announcements of rating changes? Are rating announcements properly anticipated? This paper examines the behavior of preferred stock prices during the period surrounding the announcement of a rating change by one of the major rating services. The specific objectives of this paper are to test nonconvertible preferred stock issues about an announcement of a rating change in order to determine whether significant systematic risk exists, and then to determine the existence or lack of significant excess returns after the announcement date. Because previous common stock research generally concluded that price and return effects started to appear up to one year prior to announcements and to disappear soon (two-four weeks) after the announcement date, this study used fifty-six weeks, consisting of fifty-two prior and four post weeks. The estimation of systematic risk parameters was attempted because Studentized Range tests did not demonstrate serious deviations from normality. However, the systematic risk parameters were not highly significant, as only 17.1 percent of the total using a New York Stock Exchange Index (NYSEI) model and 26.8 percent using a Preferred Stock Index (PSI) model were significant. Hence, nonsignificant (and possibly unstable) parameter estimates could not be used to determine Cumulative Average Residuals (CARs), as has been done with common stocks.

The excess returns were computed by use of two indexes, but only the PSI (Preferred Stock Index) was used for final analysis. Few significant average excess returns were determined for the combined prior and post announcement period. Cumulative average excess returns using a variation of Mark Weinstein's [14] unitary beta approach were used to determine the possible impact of the rating change announcements. No impact was determined, but a positive trend developed over the period of one year prior to the zero point of the announcement. The results clearly indicate efficiency in the early impounding of information responsible for rating changes, hut also show positive CARs contrary to theory. Hence, the final tentative conclusions are mixed in their implications. Considerable efficiency in pricing and changing returns in response to potential rating changes seems to exist. However, some positive response to probable rating change announcements seems to occur, whether the rating change is an increase or a decrease. One possibility, as yet untested, is that the likelihood of an announcement stimulates increased activity in the preferred stock.

Previous Research

Research on price behavior of securities in response to rating changes has consisted primarily of work concerned with efficient markets for common stocks and bonds. A more limited amount of work characterizes preferred stock research. The typical methodology for studies of efficient markets has been the use of excess return residuals as determined by estimation of the single-factor market model.

The approach of Fama, Fisher, Jensen, and Roll (FFJR) [7], in which average excess return residuals are computed and accumulated over a period surrounding an event date, would follow acceptable standards. Yet, the cumulative average residual (CAR) model requires calculation of betas prior to the study period near the event of interest, and one must assume parameter stability over the period of study.

The evidence from common stock research shows price changes during the fifty-two weeks prior to announcement of the rating change, but there exists little evidence of significant change during the four-week period after the change. Roger Ibbotson's [8] common stock results support the viewpoint of limited changes after four weeks beyond the event. Considerable research on common stock and bond markets has generally found similar results. Research such as that by Mark Weinstein [14] on bond price changes associated with announcements of rating changes contained some evidence of price changes prior to the announcements. In a significant study, assuming unitary betas, he defined a risk-adjusted return by reference to a portfolio of bonds with the same rating as a given bond, namely, $RES_{jt} = R_{jt} - R_{it}$, where R_{it} is the return on the bond portfolio for month or period t, R_{jt} is the return on a bond j, and RES_{jt} is a residual return. Results showed that rating announcements appear to be fully anticipated.

Preferred stock research has not been as extensive as work on bonds and common stocks, but some aspects of the role of preferred stocks have been studied. In the modern era of risk and return studies, a major effort was John Bildersee's study [3] in which the single-factor market model was estimated for nonconvertible preferred stocks using multiple indexes. He presented results on systematic risk measures demonstrating that the responsiveness of preferred stocks to index changes ranged from bond-like to stock-like. The bond-like betas were quite low when compared to the value of unity for average common stocks. Bildersee's study [3] cast considerable doubt on the stability of betas for preferred stocks. Some recent research efforts such as that by Modani, Cooley, and Roenfeldt [11], and especially McDonald and Nichols [10], have extensively examined the risk parameter instability question. Moreover, in light of the recent work in intervention analysis, as developed in finance by the work of Larcker, Gordon, and Pinches [9], the use of CAR analysis may diminish considerably. However, whether intervention analysis would be superior to CAR analysis using Elroy Dimson's [5] method of aggregated coefficients has not been clearly established yet.

Methodology and Hypotheses

This paper used a preferred stock index (PSI) developed by S&P and also used the New York Stock Exchange Index (NYSEI). One could question why preferred stock issues might respond to the NYSEI, but according to the Bildersee study [3] some nonconvertible preferreds behave in a fashion similar to common stocks. Hence, both the PSI and the NYSEI were tested for some parts of this paper.

The basic model used to estimate the systematic risk of preferred stock issues was the following market model:

$$R_{jt} = \alpha_j + \beta_j R_{mt} + e_{jt}, \qquad (1)$$

where R_{jt} is the return on the j^{th} security for the week t, α_j is an excess

return parameter, β_j is a systematic risk parameter, e_{jt} is a random variable with zero mean and variance σ^2_e that may be interpreted as a random independent influence on the returns for preferred stock issue j. The purpose of the beta estimation is to determine whether there exists a consistent relationship over the study period. Failure to have statistically significant parameters means that the CARs could not be computed by use of model (1).

The excess returns are defined as

$$ER_{jit} = R_{jt} - R_{it}, \tag{2}$$

where ER_{jit} refers to the j^{th} return for the i^{th} security for week t, where R_{it} refers to the return on the relevant index for week t. The mean excess returns for the entire period of fifty-six weeks were computed along with standard errors, and significance tests were performed. The mean excess returns by security for the different indexes are defined as follows:

$$E_{ji} = \sum_{t=1}^{n} (ER_{jit})/n \tag{3}$$

where E_{ji} is the mean excess return for the j^{th} preferred issue for the i^{th} index.

The four weeks following the announcement date should show a significant change in the pattern of excess returns if the information is not already impounded in prices. While the mean excess returns for the entire period are required, special attention should be given to the period immediately surrounding the date of the announcement. Mean excess returns by security are given by (3) and mean excess returns by week are given by (4):

$$WAR_t = \sum_{j=1}^{J} E_{jt}/J, \tag{4}$$

where J refers to the number of securities for week t and WAR is the weekly average excess return for the J securities. The value of J was either all firms with ratings increases, all with decreases, or simply all sample firms combined. From (4), cumulative average residuals for the three groups for the period around the announcement were determined by (5):

$$CAR_k = \sum_{t}^{T} WAR_t, \tag{5}$$

where the index t was computed for $t = -51$ to $t = +4$, and $k = 1,2,3$.

The general hypothesis of this paper is that the market for preferred stock is efficient in semi-strong form. Hypotheses concerning the above tests are as follows: The first hypothesis is that there is no significant systematic risk measure for the preferred stock issue j. The alternate hypothesis is that there is a positive or negative systematic risk measure with statistical significance for the full period.

The second set of hypotheses concerns the excess returns. Simply stated, the hypothesis is that all average excess returns are zero (have an expected value of zero). The alternate hypothesis is that the expected value of some excess returns will be nonzero and statistically significant.

The third set of hypotheses concerns the behavior of cumulative mean excess returns for the entire period and for the four-week period after the announcement. The hypothesis is that the cumulative average returns will be insignificant

and will exhibit no change, especially after the announcement date, $t = 0$. The alternate hypothesis is that changes in trend occurred. Such a result would be most critical since it would indicate that significant changes in excess returns occur in the four weeks after the announcement of the rating change. Efficiency in pricing implies that the changes are gradually and surely impounded in the prices. When the announcement date occurs, only small or only insignificant changes are assumed to occur.

As a check on the normality of the returns and excess returns, the Studentized Range was computed for each actual return and excess return for preferred issue j. This was done for the Preferred Stock Index, and only 14.6 percent of the returns (6/41) fell outside the interval indicating normality as shown in Eugene Fama [6]. A similar result occurred for the excess returns, and results are shown in Table 1.

TABLE 1. STUDENTIZED RANGE FOR ACTUAL RETURNS AND PSI EXCESS RETURNS FOR COMBINED PERIOD OF STUDY (N = 56)

COMPANY	SR USING R_j	SR USING ER_j
American Can	4.703	5.175
Ashland Oil	5.313	4.566
Atlantic City Elec	5.533	6.372*
Brooklyn Union Gas	4.801	3.937
Cincinnati G & E	5.302	5.488
Cleveland Elec Illum	5.199	5.205
Colgate Palmolive	4.902	5.604
Consolidated Nat Gas	7.493*	7.459*
Dupont	4.781	5.396
Equitable Gas	4.702	4.851
Ethyl	4.933	5.584
Heinz	5.164	4.352
Int'l Min & Chem	5.904	4.979
Jones Laughlin Steel	4.536	5.246
Kansas Power & Light	5.326	4.411
LTV	4.759	4.145
Macy	4.606	3.756
Monsanto	6.330*	6.441*
National Fuel Gas	5.091	4.294
New York State E & G	4.706	4.960
Northern Nat Gas	5.562	5.573
Northwest Pipeline	4.421	5.178
Ohio Edison	9.176*	7.245*
Ohio Power	6.041*	5.881
Oklahoma G & E	4.283	4.108
Pennzoil	5.792	5.625
Portland GE	6.095*	6.108*
Public Service Colo	5.172	5.654
Public Service E & G	4.986	4.960
Public Service NH	5.773	5.384
Reliance Insurance	5.509	4.767
Southern Railroad	4.820	7.098*
Standard Brands	4.755	4.691
Stokely Van Camp	4.283	4.620
Toledo Edison	5.999	5.332
Trans Gas Pipeline	6.288*	5.961
Union Elec	4.871	5.223
United Illum	4.179	4.574
Western Union	5.184	4.978
Wisconsin E & P	4.344	4.165
Wisconsin Gas	4.293	4.617

* Falls outside the 1% range for normality.

Data Sample

The initial data sample was composed of 344 preferred stock rating changes as reported by **Standard and Poor's Bond Record** [13] for the years 1975-1981. About 240 companies were included initially and both major exchanges and OTC markets were included. In an effort to obtain more active trading, all 118 non-NYSE issues were eliminated for this study. Next, firms with multiple preferred securities undergoing different changes were eliminated. Finally, only a single change per company was permitted at the same time. The sample was further reduced to eighty-three companies (and changes). Of this total, forty were convertible and forty-three were nonconvertible. While future research might compare the convertibles to nonconvertibles on the basis of Bildersee's [3] finding that some nonconvertibles behaved as common stocks, that would be the subject of a separate paper.

A total of 312 weeks were included in the overall time frame, with the normal time for a single company being fifty-six weeks. The prices were recorded from **Barron's** [1] for the fifty-two weeks prior to and four weeks after the announcement date. Dividends were obtained from **Moody's Dividend Record** [12] for the years included. The weekly prices were matched with the dividends by including the dividend in the first week following the Ex-Dividend Dates. This seems appropriate, assuming a significant price drop-off occurs, as shown by Campbell and Beranek [4]. From these data, continuously compounded weekly holding period returns were computed. The weekly equivalent from the one-year Treasury Bill yield was determined as the risk-free rate. The weekly returns for the two indexes, NYSEI and PSI, were computed without dividends and assuming continuously compounded rates. Hence, a matrix of order 312 x 3 was generated to be used with the 56 x 1 return vector for the preferred issue j.

One final issue to be discussed concerns the price data employed. Instead of computing the returns using the traditional close-to-close as the price change, this paper uses the high-low average to counter thinness in the trading. While the prior measure is traditional because of the apparent stability in the price measurements, there is some recent evidence that the use of high-low ranges in variance estimation provides greater statistical efficiency than the traditional close-to-close measure. Stan Beckers [2] has given the most recent results and his methods most closely apply to the use of values of .5(H + L). Beckers' model was developed primarily for variance estimation, but efficiency in variance estimation should be relevant here, even though the excess returns are of primary interest.

Major Results

The estimation of the parameters of the market model as given by equation (1) was repeated for each of the forty-one issues remaining in the sample (two more issues were eliminated because of data deficiencies), and each issue was used to determine estimates for each index included. The results of the j estimations are given in Tables 2 and 3. The t values and significance levels of .1, .05, and .01 are indicated. One can see that only eight were significant when the index was PSI, if one looks at ratings decreases. For ratings increases, only three are significant. These correspond to 36.4 percent and 15.8 percent of the

subsample created by stratification into ratings increases and ratings decreases. Of the forty-one, the first nineteen (19) were increases and the last twenty-two (22) were decreases. Hence, for the total sample, eleven (11) or 26.8 percent were significant at the 0.10 level or better. The results of using the NYSEI were less significant, with only seven (7) significant, or 17.1 percent of the total sample.

TABLE 2. SUMMARY OF BETA ESTIMATES BY RATING CHANGE AND INDEX

	PSI INDEX	NYSEI INDEX
Ratings Increases	19	19
Significant	3	3
Percentage	15.8	15.8
Ratings Decreases	22	22
Significant	8	4
Percentage	36.4	18.2
Total	41	41
Significant	11	7
Percentage	26.8	17.1
Negative Betas	12	16
Significant	1	2
Percentage	8.3	12.5
Mean Beta	0.110899	-0.098292

TABLE 3. ESTIMATED PREFERRED STOCK BETAS BY INDEX AND RATING CHANGE

Issue Number	Rating Change	PSI INDEX Betas	PSI INDEX t Values	NYSEI INDEX Betas	NYSEI INDEX t Values
1	NR, A-	0.07533	0.21	0.03445	1.25
2	BBB, BB+	-0.01249	-0.11	-0.04516	-0.49
3	BBB+, A-	0.30773	1.00	0.19053	1.09
4	BBB, BBB+	0.03061	0.21	0.04350	1.47
5	A+, AA	-1.06796	-0.91	-1.03385	-0.91
6	A-, A	-0.00703	-0.03	-0.10135	-0.41
7	BB, A-	0.31783	1.39	0.30787	1.35
8	A, A+	0.35968*	1.67	0.04440	1.33
9	BB, BBB	-0.24064	-1.57	0.00014	0.09
10	A, A+	0.00404	0.03	-0.01084	-0.39
11	BBB, A	0.45091	0.72	-0.00606	-1.02
12	A, A+	1.20495	0.36	-3.49658*	-1.79
13	BBB, BBB+	0.15525	0.27	0.11346	0.35
14	BB, BBB-	0.33906***	2.91	0.40381***	3.62
15	A, A+	0.05099	0.03	-1.24590	-0.94
16	BBB, A	0.01953	0.14	0.09685	1.48
17	A, A+	0.17496**	2.35	0.02658***	3.13
18	BB, BBB-	0.05510	0.27	0.03373	0.88
19	A, AA	0.16697	1.50	0.05888	0.95
20	A, A+	-0.14624	-0.99	-0.01615	-0.77
21	A, A-	0.22024*	1.80	0.07288***	3.42
22	A, A-	0.44957	1.65	-0.05447	-0.40
23	AA, AA-	-0.01896	-0.14	0.06769	0.55
24	AAA, AA	-0.11859	-0.74	0.04807	0.39
25	BB, B	-0.41612*	-1.69	-0.23184*	-1.93
26	A+, AA-	0.26279**	2.17	0.08368	1.16
27	B, CCC	0.05747	0.26	-0.16292	-1.38
28	BBB+, BBB	-0.13344	-0.84	-0.10588	-0.74
29	A-, BBB	0.05616	0.33	-0.06722	-0.79
30	BBB, BBB-	-0.16396	-1.09	0.08222	1.03
31	A-, BBB	-0.37054	-1.24	-0.01695	-0.14
32	AA-, A-	0.15456	0.51	0.09141	0.39
33	BBB, BB	0.09798	0.37	0.20744	1.44
34	A+, A	0.10778	0.62	0.01949	0.92
35	BBB, BB	0.37518**	2.27	0.03249	1.61
36	AA, A	-0.19851	-1.11	-0.14713	-1.56
37	BB, BB-	0.74908***	3.66	0.29151	1.37
38	BBB, BBB-	0.46050***	2.67	0.12454	0.71
39	BBB, BBB-	0.30769**	2.22	0.04420**	2.53
40	BBB, BB-	0.40432*	1.83	0.27840*	1.76
41	BB, BB-	0.02526	0.09	-0.08635	-0.54

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

The results given in Table 3 demonstrate that the lack of significance (and possible lack of stability) implied by the results holds true for both index models. There are 12 negative betas (one significant) for the PSI index model, while there are 16 (two significant) for the NYSEI index model. The issues with significant betas are not identical for the PSI and NYSEI results, but there are six (6) cases in which the results for both indexes are significant.

The mean beta for the PSI index is seen to be 0.110899. For the NYSEI model, the mean beta is seen in Table 2 as −0.098292, a value not necessarily different from zero. The results are suggestive of insignificant systematic risk and would support acceptance of the hypothesis of insignificant systematic risk for these issues of preferred stock. Use of these estimated parameters to compute risk-adjusted returns was not justified for further use in this study.

The excess returns were computed in a manner analogous to the Weinstein method, as is indicated by equation (2). The preferred stock index (PSI) was selected as the most valid measure to determine estimated excess returns. The mean excess returns were determined by equation (3) and the results are presented in Table 4. The t-values for E_j are given in the table, and levels of significance are noted. It can be seen that only three (3) values of E_j are significant at .05 or better. In fact, even at 0.20 or better, only about 4-5 additional issues would possess significant excess returns.

TABLE 4. MEAN EXCESS RETURNS BASED ON PSI MODEL FOR FULL PERIOD

Issue Number	E_j Full Period	T-Values
1	.0035273	1.13
2	.0034372	1.16
3	.0023178	0.68
4	.0030096	0.90
5	.0043702	0.18
6	.0001681	0.03
7	.0057403	1.15
8	.0101383	2.65***
9	.0016365	0.76
10	.0020687	0.63
11	-.0043731	0.74
12	.0153335	0.44
13	.0073818	1.48
14	.0005738	0.19
15	.0422340	2.20**
16	.0016250	0.88
17	.0007336	0.31
18	.0050152	1.20
19	.0003550	0.19
20	.0035519	0.99
21	-.0012720	0.51
22	-.0006000	0.22
23	.0001835	0.05
24	.0020618	0.57
25	.0010425	0.36
26	.0006727	0.40
27	-.0000789	0.03
28	.0043802	1.17
29	.0016282	0.79
30	.0013879	0.68
31	.0022909	0.86
32	.0018937	0.35
33	.0067170	2.49**
34	.0011856	0.36
35	-.0017363	0.54
36	.0010588	0.46
37	.0049499	1.33
38	.0015689	0.41
39	.0020208	0.63
40	.0002023	0.06
41	.0000964	0.22

*** Significant at 1%.
** Significant at 5%.

The cumulative average returns (CARs) are shown in Table 5. The results are given for the entire period of fifty-five (55) weeks for the companies with ratings increases, ratings decreases, and all changes combined, respectively. Inspection of all figures shows a significant trend in the CAR results, with all changes associated with positive CARs. However, the trends are not affected by the announcement dates (N-4) in any significant way. With positive changes in ratings, the CARs are greater in absolute value; however, when the combined changes are used, there is some attenuation but without a reversal of the direction. The positive CARs could imply a lack of efficiency in the index that might account for mixed results. Whether the results indicate the presence of another effect such as increased trading volume is a potential interpretation. Nevertheless, the evidence clearly supports the hypothesis of efficiency in that the rating changes are anticipated.

TABLE 5. CUMULATIVE AVERAGE RESIDUALS FOR RATING INCREASES (CAR_1), RATING DECREASES (CAR_2), ALL RATING CHANGES (CAR_3)

WEEK	CAR_1	CAR_2	CAR_3
1	0.02809	0.00499	0.01570
2	0.03601	0.00434	0.01902
3	0.03439	0.00791	0.02018
4	0.08568	0.00764	0.04381
5	0.07126	0.02020	0.04386
6	0.07562	0.01811	0.04476
7	0.07705	0.01793	0.04533
8	0.08103	0.02256	0.04966
9	0.07334	0.02983	0.04999
10	0.08766	0.02621	0.05469
11	0.08854	0.03095	0.05764
12	0.08041	0.03211	0.05449
13	0.10871	0.04184	0.07283
14	0.09838	0.03464	0.06418
15	0.10591	0.04336	0.07235
16	0.11943	0.04639	0.08024
17	0.11353	0.04568	0.07712
18	0.13122	0.04897	0.08708
19	0.13792	0.03391	0.08211
20	0.15163	0.03174	0.08730
21	0.14343	0.03392	0.08467
22	0.13495	0.02922	0.07822
23	0.14523	0.02995	0.08337
24	0.14915	0.02996	0.08520
25	0.17980	0.03388	0.10150
26	0.19551	0.04394	0.11413
27	0.20338	0.04558	0.11871
28	0.20335	0.04753	0.11974
29	0.17485	0.04209	0.10361
30	0.16653	0.04333	0.10042
31	0.16475	0.04754	0.10186
32	0.17646	0.04888	0.10800
33	0.17717	0.05055	0.10922
34	0.18651	0.05418	0.11551
35	0.18814	0.04631	0.11204
36	0.18982	0.05360	0.11673
37	0.19046	0.05607	0.11835
38	0.19582	0.05370	0.11956
39	0.20905	0.05621	0.12704
40	0.18887	0.05603	0.11759
41	0.19455	0.05693	0.12070
42	0.20797	0.05160	0.12407
43	0.20965	0.05654	0.12749
44	0.22210	0.05667	0.13333
45	0.22986	0.05850	0.13791
46	0.24090	0.05304	0.14010
47	0.23931	0.05338	0.13954
48	0.23899	0.05394	0.13969
49	0.25487	0.06146	0.15109
50	0.25059	0.06687	0.15201
51	0.26107	0.06757	0.15724
52	0.26991	0.07548	0.16558
53	0.27550	0.07233	0.16648
54	0.26391	0.08072	0.16561
55	0.28880	0.07412	0.17360

Summary and Conclusions

This paper has attempted to measure excess returns of nonconvertible preferred stock using techniques similar to other research concerned with efficiency and completeness in securities markets. Research on the efficiency of pricing of common stocks has been extensive, and has demonstrated considerable efficiency, at least in a semi-strong form. The bond markets have been studied, and at least some recent evidence by Weinstein has shown considerable efficiency in bond market pricing. The general approach in most securities markets research has been an event study using excess return residual analysis based on either the single-factor or two-factor market model. This paper used a variation of excess return residual analysis most comparable to Weinstein's method.

The systematic risk parameters (betas) were estimated using the two indexes, New York Stock Exchange Index (NYSEI) and a Preferred Stock Index (PSI). Most betas were not statistically significant, with only 17.1 percent using the NYSEI and 26.8 percent using the PSI included at the five percent error level. Possible instability of the parameter estimates did not augur well for computation of Cumulative Average Residuals (CARs) using these betas. Hence, Weinstein's method was required since his approach avoided the use of betas.

The excess return residuals were computed by use of both indexes, but because of similar results only the set determined with the PSI were included for final analysis. CARs were computed for each week over all sets of securities (increases in ratings, decreases in ratings, all changes combined). Early impounding of information showed significant efficiency, but positive CARs arose possibly because of index inefficiency. The conclusion to be drawn, however, is that the rating changes were fully anticipated as the efficiency hypothesis required. While anticipated announcements of ratings changes may also cause positive returns because of increased activity, further research is clearly needed to identify the remaining anomalies in results.

References

1. **Barron's**, various issues, 1975-1981, Dow-Jones, Inc., New York.

2. Beckers, Stan. "Variances of Security Price Returns Based on High, Low, and Closing Prices." **Journal of Business**, Vol. 56 (1983), pp. 97-112.

3. Bildersee, John S. "Some Aspects of the Performance of Non-Convertible Preferred Stocks." **Journal of Finance**, Vol. 27 (1973), pp. 1187-1201.

4. Campbell, James, and William Beranek. "Stock Price Behavior on Ex-Dividend Days." **Journal of Finance**, Vol. 9 (1955), pp. 426-429.

5. Dimson, Elroy. "Risk Measurement When Shares Are Subject to Infrequent Trading." **Journal of Financial Economics**, Vol. 7 (1979), pp. 197-226.

6. Fama, Eugene F. **Foundations of Finance.** New York: Basic Books, Inc., 1976.

7. Fama, Eugene F., Lawrence Fisher, Michael Jensen, and Richard Roll. "The Adjustment of Stock Prices to New Information." **International Economic Review**, Vol. 10 (1969), pp. 1-21.

8. Ibbotson, R. G. "Price Performance of Common Stock New Issues." **Journal of Financial Economics**, Vol. 2 (1975), pp. 235-272.

9. Larcker, David F., Lawrence A. Gordon, and George E. Pinches. "Testing for Market Efficiency: A Comparison of Cumulative Average Residual Methodology and Intervention Analysis." **Journal of Financial and Quantitative Analysis**, Vol. 15 (1980), pp. 267-287.

10. McDonald, Bill, and William D. Nichols. "Nonstationarity of Beta and Tests of Market Efficiency." **The Journal of Financial Research**, Vol. 7 (1984), pp. 315-322.

11. Modani, Naval, Philip L. Cooley, and Rodney L. Roenfeldt. "Stability of Market Risk Surrogates." **Journal of Financial Research**, Vol. 6 (1983), pp. 33-40.

12. **Moody's Dividend Record**, various issues, 1975-1981.

13. **Standard and Poor's Bond Record**, various issues, 1975-1981.

14. Weinstein, Mark I. "The Effect of a Rating Change Announcement on Bond Prices." **Journal of Financial Economics**, Vol. 5 (1977), pp. 329-350.

Jerry G. Hunt is Professor of Finance and Acting Chairman of the Department of Finance in the School of Business at East Carolina University. Allen Rappaport is an Associate Professor of Finance in the Department of Management at the University of Northern Iowa.