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The Effect of Common-Stock Dividend Reductions on the Returns of Nonconvertible Preferred Stocks: A Note

JAMES ROSENFELD*

THIS NOTE REPORTS THE price responses of nonconvertible preferred securities and their common stocks to the announcement of a reduction in the firm's common-stock dividend. We find that both preferred and common-share prices tend to fall in the event month, while the preferred stocks show further evidence of price declines in the following month. However, this lagged response is primarily due to those preferred issues with limited trading activity.

I. Research Design

The event investigated is the announcement of a reduction in a firm's common-stock dividend. A "dividend cut" is defined as a reduction in the annual dividend from its former level. The elimination of an extra dividend is not considered to be a dividend cut.

Prior studies have shown that a dividend cut has a strong negative effect on the price of common stocks.¹ However, its impact on the price of a firm's preferred stock may be quite different. According to the information-content-of-dividends hypothesis, a cut in the level of a common-stock cash dividend has a negative connotation regarding the corporations' future earnings prospects.² If preferred stockholders interpret this as a signal that future preferred dividends may be endangered, the price of the preferred stock will tend to fall. However, agency theory suggests that the dividend cut may cause a wealth transfer which will tend to offset this decline. Without contractual arrangements which fully protect senior claimants from expropriation by the common shareholders, corporate actions which increase the firm's leverage may transfer wealth from the senior securityholders to common shareholders.³ On the other hand, dividend cuts which reduce leverage will tend to lower common-stock prices and raise the prices of unsecured senior securities, including preferred stock, via the wealth-transfer effect. In summary, although the information-content and wealth-transfer effects reinforce each other in tending to reduce common stock prices, the net change in the prices of preferred issues will depend upon which effect is more powerful.

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¹ Included among these studies and those by Pettit [9], Watts [13], Charest [5], and Ahorony and Swary [1].

² Ibid.

³ Jensen and Meckling [7].

The sample consists of 48 firms (47 industrials and one public utility) with publicly listed common stock and nonconvertible preferred stock.⁴ These firms had 53 preferred issues outstanding. Since one firm had undergone two distinct, and hence nonoverlapping, dividend cuts over the period examined, the preferred stock sample consisted of 54 events. The parallel common-stock sample consists of 48 issues and events.

46 of the preferred securities were listed on the NYSE, two were listed on the ASE, and five traded OTC. Of the common stocks, 40 were listed on the NYSE, four on the ASE, and four OTC.

Abnormal returns were estimated by means of the one-factor market model. Letting $\tilde{R}_{jt}$ and $\tilde{R}_{mt}$ represent the random returns on security j and on the market index, respectively, in month t , the market model may be written as:

$$\tilde{R}_{jt} = a_j + b_j \tilde{R}_{mt} + \tilde{e}_{jt}$$

where $\tilde{e}_{jt}$ is the random error term with the assumed property $\text{Cov}(\tilde{R}_{mt}, \tilde{e}_{jt}) = 0$. Parameter estimators were calculated over the 60-month interval ending 12 months before the event month. Letting $\hat{a}_j$ and $\hat{b}_j$ denote estimates of a_j and b_j , respectively, the estimated abnormal return (residual) of the security in month t is then

$$\hat{e}_{jt} = \tilde{R}_{jt} - \hat{a}_j - \hat{b}_j \tilde{R}_{mt}$$

For each sample, average residuals and cumulative average residuals were calculated.⁵ Residuals were computed for the 25-month interval centering on month zero, the event month, and average residuals for month t were obtained using the following formula:

$$\text{AR}_t = \frac{\sum_{j=1}^n \hat{e}_{jt}}{n}$$

⁴ An initial listing of companies which (1) had experienced a reduction in their annual dividend/share over the January 1953–December 1975 period; and (2) had one or more publicly listed issues of nonconvertible preferred stock during the year of the reduction was obtained from the compustat tapes and *Moody's Industrial Manuals*. *Moody's Dividend Record* was used to determine if the reductions were due to an actual cut in the quarterly dividend level as well as the month of the announcement (i.e., the “declaration date”). We then eliminated those firms which had undergone a “significant event” which could have materially changed the beta coefficient of the securities during the six year pre-event period. These included a prior cut in either a common-stock or preferred-stock dividend and covering a preferred stock arrearage. These events were chosen because the information on the timing of their occurrence was readily available in *Moody's Dividend Record*. We also required that publicly available quotes exist for a period of six years preceding and one year following the month of the event for each security and that nearly continuous month-end quotes be available for each seven-year span investigated. If a security did not trade on the day examined, the mean of the bid-ask quote was used as a proxy. We did not have any securities in our sample, preferred or common, which experienced more than three no-quote months. In these rare instances, we used the average price of the two surrounding months. A few preferred issues experienced bid-only months, but only one of these had more than two over the seven-year span. In such cases, we adjusted the bid price upward by one-half the bid-ask spread in the 12 surrounding months. None of our preferreds experienced bid-only months during the 25-month period used to compute residuals.

⁵ Monthly returns for common stocks listed on the NYSE were obtained from the CRSP tapes. The returns for the preferred stocks were computed using month-end prices/quotes from the *Bank and Quotation Record*.

where

- n = number of sample securities;
 AR_t = average residual for month t ; and
 $\hat{e}_{jt}$ = measure of abnormal performance for security j in month t .

Cumulative average residuals were computed as follows:

$$CAR_t = \sum_{k=-12}^t AR_k$$

where

- CAR_t = cumulative average residual for month t ;
 AR_k = average residual for month k .

We use a preferred-stock index to compute preferred-stock residuals and a common-stock index to compute common-stock residuals.⁶ Accordingly, we con-

Table I
 Abnormal Returns of Common and Preferred Shares Around Announcement of Dividend Cut

Common Stocks (48 observations)				Preferred Stocks (54 observations)			
Month	AR (%)	t	CAR (%)	Month	AR (%)	t	CAR (%)
-12	-1.49	-1.59	-1.49	-12	-0.19	-0.54	-0.19
-11	-2.48	-2.03*	-3.97	-11	-0.48	-1.48	-0.67
-10	0.04	0.06	-3.93	-10	-0.17	-0.44	-0.84
-9	0.40	0.57	-3.53	-9	-0.23	-0.67	-1.07
-8	-1.62	-1.51	-5.15	-8	0.44	1.33	-0.63
-7	-1.92	-2.10*	-7.07	-7	0.62	1.60	-0.01
-6	-0.56	-0.50	-7.63	-6	-0.46	-1.13	-0.47
-5	-2.40	-2.05*	-10.03	-5	-0.17	-0.45	-0.64
-4	-2.46	-2.94*	-12.49	-4	-0.09	-0.18	-0.73
-3	-0.55	-0.39	-13.04	-3	-0.62	-1.34	-1.35
-2	-4.17	-4.99*	-17.21	-2	-0.44	-0.93	-1.79
-1	-2.10	-1.76	-19.31	-1	0.30	0.74	-1.49
0	-9.05	-5.87*	-28.36	0	-3.30	-4.03*	-4.79
+1	-1.87	-1.36	-30.23	+1	-1.40	-2.34*	-6.19
+2	-0.82	-0.56	-31.05	+2	0.05	0.06	-6.14
+3	0.28	0.22	-30.77	+3	-0.05	-0.07	-6.19
+4	-2.03	-2.00	-32.80	+4	-0.30	-0.64	-6.14
+5	-0.29	-0.20	-33.09	+5	0.46	0.88	-6.03
+6	1.04	0.81	-32.05	+6	0.96	1.45	-5.07
+7	-0.54	-0.40	-33.59	+7	-0.76	-1.84	-5.83
+8	0.12	0.10	-32.47	+8	-0.26	-0.58	-6.09
+9	0.10	0.01	-32.46	+9	1.16	2.18*	-4.93
+10	0.67	0.60	-31.79	+10	0.55	1.21	-4.38
+11	-0.60	-0.61	-32.39	+11	-0.03	-0.08	-4.41
+12	0.18	0.14	-32.21	+12	-0.29	-0.61	-4.70

* Significant at the 5% level using a two-tail test.

⁶ Due to the high interest-sensitivity of preferred stocks, we might anticipate more stable preferred stock betas computed using a preferred-stock index relative to a common-stock index. Alexander [2] shows empirically that corporate bond betas derived using a corporate-bond index do not appear to be affected by changes in the general level of interest rates. On the other hand, those derived using a common-stock index as well as a composite index of common stocks, corporate bonds, and government bonds displayed a significant upward shift in periods of rising interest rates.

structed an equally-weighted index of month-end preferred-stock returns, including dividends, covering the May 1947–December 1976 period. The 30 issues comprising our index were used by Moody's to compute the average yield on "high-dividend" and "low-dividend" nonconvertible industrial preferreds over the same period.

II. Analysis of Abnormal Returns

Estimated abnormal returns for preferred and common stocks are presented in Table I. The average abnormal return for common stocks in the announcement month is -9.05% , which is highly significant, and the abnormal returns are significantly negative in 5 of the 12 months preceeding the event.⁷ Assuming that the "event anticipation" is primarily the result of prior announcements which are related to the unfavorable news conveyed by the event, this behavior is consistent with an information efficient market. Return behavior after the announcement month appears to be random.

The preferred issues of the sample firms show far less evidence of pre-event adjustment, although the abnormal returns for the announcement month and succeeding month are significantly negative.⁸ Assuming that the dividend cut was primarily responsible for the price declines, the results also indicate that the wealth-transfer effect was dominated by the information-content effect.⁹

Of particular interest is the fact that $AR(+1)$ is -1.40% , with a t -value significant at the 2% level. This curious result warrants further study. One explanation for the adjustment lag may be due to differences in market thinness among the preferred stocks in our sample.

Daily trading volume of preferred stocks is quite small relative to that of

⁷ The null and alternative hypotheses tested were

$$H_0: \bar{\epsilon}_t = 0 \quad H_1: \bar{\epsilon}_t \neq 0$$

where $\bar{\epsilon}_t$ = true average error during month t .

The t -test utilized was as follows:

$$t = \frac{AR_t}{S_{et}/\sqrt{n}}$$

where S_{et} = estimated standard deviation of the abnormal performance measures during month t .

The fact that monthly data, as opposed to daily data, are used in our experiments helps justify our application of the t -test. Fama [6] found that security returns computed from monthly data have a frequency distribution which more closely approximates a normal distribution.

⁸ 39 of our 47 common stocks, or 83%, have negative residuals in month zero compared to 43 out of 54 preferred issues, or 80%.

⁹ Since there is no theoretical basis for assuming that a preferred-stock index represents the optimal market surrogate, we repeated our experiments on the preferred issues using a common-stock index and a two-index model consisting of a common-stock index and a bond index. Bildersee [3] demonstrates that the price movements of lower-quality preferreds tend to behave like common stocks while those of the higher quality conform more closely to bonds. The inclusion of both indices is intended to capture movements in the returns caused by changes in both business risk and interest rates. The common-stock index used in the tests was the CRSP Value-Weighted Index of NYSE Common Stocks, including dividends. The bond index was an equally-weighted index based on the holding period returns for a selected group of U.S. government bonds with term-to-maturities in excess of 20 years. The results were virtually identical to our prior findings.

common stocks, and this may account for lags in the price-adjustment process. To test for the effect of trading activity, the preferred sample was divided into "thin" and "nonthin" categories. Trading volume was based upon the total number of preferred shares traded over the three-year period preceding and including the year of the announced cut. Because trading activity on all exchanges has increased dramatically over the past 30 years, the trading-volume statistics for each preferred issue were standardized by an "index of trading activity" using the 1952–54 interval (the earliest period examined) as our base period.¹⁰ Preferred stocks with an average standardized trading volume of less than 20,000 shares/year were placed in the low-volume category; those with more than 20,000 shares/year were considered high-volume issues.¹¹

Table II

Estimated Abnormal Returns for Low-Volume and High-Volume Preferreds

Low-Volume Preferreds (33 observations)				High-Volume Preferreds (18 observations)			
Month	AR (%)	<i>t</i>	CAR (%)	Month	AR (%)	<i>t</i>	CAR (%)
-12	0.16	0.32	0.16	-12	-0.70	-1.46	-0.70
-11	-0.44	-0.96	-0.28	-11	-0.48	-1.04	-1.18
-10	-0.26	-0.46	-0.54	-10	-0.14	0.23	-1.04
-9	-0.07	0.14	-0.47	-9	-0.60	-1.30	-1.64
-8	0.09	0.22	-0.38	-8	0.99	1.73	-0.65
-7	0.88	1.49	0.50	-7	0.24	0.62	-0.41
-6	-0.69	-1.19	-0.19	-6	-0.50	-1.62	-0.90
-5	0.19	0.40	0.00	-5	-0.98	-1.43	-1.89
-4	-0.56	-0.89	-0.89	-4	1.09	1.27	-0.79
-3	-0.07	-0.12	-0.96	-3	-1.42	-1.64	-2.21
-2	-0.65	-1.05	-1.61	-2	0.07	0.08	-2.14
-1	-0.26	-0.50	-1.87	-1	1.42	1.45	-0.72
0	-3.75	-3.41*	-5.62	0	-2.83	-2.99*	-3.55
+1	-2.36	-2.92*	-7.98	+1	0.28	0.29	-3.23
+2	0.59	0.48	-7.50	+2	-1.27	-1.44	-4.54
+3	-0.03	-0.03	-7.53	+3	0.25	0.20	-4.29
+4	-0.36	-0.52	-7.98	+4	-0.31	-0.49	-4.60
+5	0.13	0.18	-7.76	+5	1.36	1.01	-3.24
+6	0.83	0.92	-6.93	+6	0.36	0.69	-2.88
+7	-0.83	-1.41	-7.76	+7	-0.06	-0.16	-2.94
+8	-0.52	-0.98	-8.28	+8	0.85	1.14	-2.09
+9	0.84	1.14	-7.44	+9	1.17	1.52	-0.92
+10	0.43	0.75	-7.01	+10	0.39	0.51	-0.53
+11	0.26	0.63	-6.75	+11	-0.22	-0.35	-0.76
+12	-0.10	-0.14	-6.85	+12	-0.96	-1.62	-1.72

* Significant at the 1% level using a two-tail test.

¹⁰ An example should clarify the procedure. From 1952–54, 1.266 billion shares were traded on the NYSE compared to 13.571 billion shares over the 1974–76 interval. If a firm announced a dividend cut in 1976, the three-year trading volume for its preferred issue (over the same period) would be multiplied by a factor of .093 ($1.266 \div 13.571$). The result would be the issues "standardized volume."

¹¹ The average adjusted volume for the low-volume group was 7690 shares/year with a median annual volume of 6348 shares. The high-volume group recorded an average adjusted volume of 158,921 shares/year with a median of 40,024 shares. Had we excluded one issue (Lorillard) with an annual adjusted volume of 656,133 shares, the mean volume would have been 52,481 shares/year. We were unable to obtain trading volume statistics for three securities from our original sample.

Table II gives the results.¹² The high-volume group shows no evidence of a delayed response to the announcement while the low-volume group displays a one-month adjustment lag.¹³ The magnitude of the pre-event adjustment for both classes is similar to the results reported in Table I.

¹² Although not reported here, we achieved similar results using the other indices.

¹³ This slower adjustment cannot be due to the use of "closing prices" which may have preceded the announcement. 23 of the 33 low-volume issues recorded a transaction on the final trading day of the event month. For the remaining 10 securities, the mean of the bid-ask quote for the last trading day of the month was used to compute the event month's return.

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