

# An Empirical Investigation of Preferred Stock Issuance by Utilities: Market Reaction and Firm Motivation

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## Abstract

*Conventional wisdom suggests that preferred stock is a hybrid--similar to bonds in some respects and to common stock in others. This research affirms the conventional wisdom. Specifically, issuers of preferred stock appear to consider preferred to be equity in their adjustments toward their long-term debt-to-equity ratio. However, other balance sheet items including total asset size and asset composition indicate that preferred stock issuers are more like debt issuers than like common equity issuers.*

## 1. Introduction

In the 1960s, academics suggested that preferred stock was near its demise as a source of capital [Santow (1962) and Fischer and Wilt (1968)]. However, during the 1970s and 1980s the capital markets witnessed a resurgence of preferred stock as an important source of funding. Indeed, between 1979 and 1987 utility firms raised a total of almost \$54 billion by this method. In spite of this consistent financing activity, finance textbooks rarely more than mention preferred stock. For example, Brigham (1989) states that "Preferred stock is a hybrid -- it is similar to bonds in some respects and to common stocks in others." If preferred stock is similar to bonds, then it is puzzling why any firm would choose to issue preferred stock given the tax deductibility of interest payments. Copeland and Weston (1988) offer some rationale for preferred stock issuance in their statement: "preferred stock is much like subordinated debt except that if the promised cash payments (i.e., the preferred coupons) are not paid on time, then the preferred shareholders cannot force the firm into bankruptcy." This explains that preferred stock gives the firm flexibility -- the possibility of making fixed coupon payments while not requiring those payments if the firm finds itself in financial difficulty. Such flexibility might be judged as advantageous to the issuing firm. However, this logic could be used to argue that the firm announcing an issue of preferred stock is signalling that management is uncertain of future cash flows and values the ability to forego cash payments greater than the tax benefits that would be available from the issuance of debt.

Several recent papers have addressed preferred stock much more thoroughly. For example, Emanuel (1983) uses an option pricing framework to describe the value of preferred stock. Linn and Pinegar (1988) measure the common stock price reaction to the issuance of preferred shares. Fooladi and Roberts (1986) develop a partial equilibrium model in which preferred shares are both supplied and demanded. Their model shows why preferred stock is not necessarily a bond with a tax disadvantage. Houston and Houston (1990) investigate the distribution of issues by industry group and test the two hypotheses: 1) that firms issuing preferred stock have lower tax rates than the average firm; and, 2) that firms purchasing preferred stock have higher than average tax rates. These studies each expand our understanding of preferred stock and the firm's motivation for preferred stock issuance.

This present study adds further to our still limited knowledge of preferred stock issuance. In particular, this research addresses two broad aspects of preferred stock issuance. First, the market's reaction to the issuance of preferred stock is compared to the issuance of debt as well as common equity. Second, the characteristics of those firms issuing preferred stock are compared to the characteristics of those issuing debt or common equity. The results generated from inquiring into these two areas should lend insights into the decision to issue preferred stock over debt or common equity.

The paper is organized as follows: the next section discusses the data and the constraints imposed upon the selection of the sample. Section 3 presents the models to be employed. The fourth section presents and discusses the empirical results. The last section summarizes and concludes the paper.

## 2. Data

The initial sample consists of all issues made by public utility firms of fixed-dividend preferred stock, common stock, and fixed-coupon mortgage bonds as reported on the Securities and Exchange Commission's Registered Offering Statistics (ROS) file between 1979 and 1987.(1) The sample is further constrained to meet the following criteria:

1. The announcement of the issue was reported in the Wall Street Journal prior to the issue date.
2. There was no other firm-specific announcement on the day of, the day before, or the day after the initial announcement date in the Wall Street Journal Index.
3. No secondary shares were attached to the issue and each issue is of only one security type. That is, no unit offerings are included in the sample.
4. The daily common stock returns of the issuing utility are available on the Center for Research in Security Prices (CRSP) 1988 Daily Returns File for 20 days prior through 20 days after the announcement date. Also, the daily common stock returns are available for a minimum of 50 days for the estimation period from 170 days to 20 days prior to the announcement date.

5. Because mortgage bonds make-up the overwhelming majority of the debt issues of utility firms during the sample period, the debt sample includes only mortgage bonds.
6. For the firm-specific information the firm had to be on the Compustat tape for ten years preceding the year of issue.

Table 1 displays the financing activities by utility firms in the areas of mortgage bonds, fixed dividend preferred stock, and common stock. The mean issue size for all issues is \$68.2 million. The preferred issues have the lowest mean size of \$51.326 million while the mortgage debt issues have the highest mean size of \$92.548 million. The number of preferred issues ranged from a low of no issues in 1985 to a high of 17 in 1980. There were very few issues of preferred stock after 1983 while the issuance of common and mortgage bonds was quite slow in 1985 through 1987.

## 3. Models

### A. Market Reaction

The average daily common stock abnormal returns around the announcement date for each of the types of issues is examined. If we assume that a simple market model can describe the daily common stock return process, then the abnormal return of security  $j$  for day  $t$ ,  $AR(jt)$ , is calculated by differencing its predicted value from its actual value as follows:

$$AR(jt) = R(jt) - [a(j) + b(j)R(mt)] \quad [1]$$

**Table 1**  
**Utility Issues In Sample By Year**  
**(\$ in thousands)**

Year	Fixed Dividend Straight Preferred Stock				Common Stock				Fixed Coupon Mortgage Debt			
	Number	Mean	Minimum	Maximum	Number	Mean	Minimum	Maximum	Number	Mean	Minimum	Maximum
1979	8	\$43,750	\$25,000	\$75,000	31	\$54,977	\$7,575	\$196,875	19	\$85,652	\$19,911	199,606
1980	17	43,735	15,000	137,500	48	49,423	7,050	148,500	30	79,279	23,000	250,000
1981	7	42,785	12,000	137,500	37	53,223	10,463	193,750	23	83,746	29,625	248,478
1982	10	49,500	25,000	75,000	40	63,926	11,363	257,500	31	101,281	49,250	247,718
1983	9	48,361	18,750	100,000	37	54,032	11,375	217,200	19	95,957	29,925	248,750
1984	2	50,000	50,000	50,000	13	37,624	7,700	77,250	19	99,992	15,000	250,000
1985	0	-	-	-	2	149,500	16,500	282,500	5	99,693	50,000	149,625
1986	5	112,000	50,000	300,000	1	111,875	-	-	9	95,054	19,786	198,750
1987	1	45,000	-	-	3	32,296	25,513	36,625	4	141,623	74,948	294,750
Total	59	\$51,326	\$12,000	\$300,000	212	\$54,712	\$7,050	\$282,500	159	\$92,548	\$15,000	\$294,750

where the coefficients  $a(j)$  and  $b(j)$  are the firm specific ordinary least squares estimates of the intercept and slope, respectively, of the market model regression,  $R(mt)$  is the return to the market at time  $t$ , and  $R(jt)$  is the actual return to firm  $j$  at time  $t$ . The estimation period is from  $t=-170$  to  $t=-20$  relative to the announcement of the issue,  $t=0$ . The value-weighted index of NYSE and AMEX stocks with dividends taken from the CRSP daily returns file is used in the market model.(2)

### B. Firm Specific Characteristics

A major purpose of this research is to identify any difference in firm specific characteristics when a public utility firm announces that it will issue preferred stock, mortgage bonds, or common stock. A model developed by Marsh (1982), and later employed by Billingsley, Lamy, and Thompson (1988) and Billingsley, Lamy, and Smith (1990), can be used to investigate for differences among firms that are offering different types of securities to the primary market. Specifically, Marsh developed a dichotomous dependent variable model where the dependent variable equals one if a specific type of security is issued and zero otherwise.

If the probability that the issuing firm chooses a certain issue type is a linear function of the independent variables, the usual technique would be the estimation of the linear regression model using ordinary least squares. Although the parameter estimators for the linear probability model are unbiased and consistent, there are serious problems with ordinary least squares estimation. First, since the distribution of the errors is not normal, the ratio of the estimated coefficient to its standard error does not follow an approximate normal distribution, which implies that hypothesis testing and confidence intervals are invalid. Second, the estimated probability of the issue can be outside the (0,1) range, which is not reasonable. Third, there is heteroskedasticity of the error terms and if weighted least squares regression is used to correct the heteroskedasticity, there is a loss of efficiency. A logit specification transforms the linear probability model in such a way that guarantees that the predicted probability of an issue is within the (0,1) range. After transformation, the model is nonlinear so a nonlinear estimation technique is required. Although the nonlinear estimators are consistent and asymptotically efficient for large samples, there is no guarantee that the estimators are unbiased after transformation. However, the biased estimator problem is mitigated with maximum likelihood estimation. Because the ratio of the estimated coefficient to its estimated standard error approximately follows a normal distribution, parameter estimators are asymptotically normal, which permits the use of standard hypothesis testing to determine the significance of the regression.(3) For the reasons just discussed, logit regression will be used to investigate differences in firm specific

characteristics when a public utility announces that it will issue mortgage bonds, preferred stock, or common stock. In this paper the differences to be described are those between a series of pair-wise choices. That is, the firm chooses between mortgage bonds and preferred stock, preferred stock and common stock, and mortgage bonds and common stock. Therefore, the empirical model is developed to distinguish between each of these three pair-wise choices.

The independent variables fall into four broad categories:

1. the difference between the firm's target and current leverage ratio;
2. the determinants of the target ratio which includes firm size, asset composition, and market and business risk;
3. market conditions of the bond and equity markets around the issue date; and
4. the firm's payout ratio and a measure of return on investment.

### C. The Independent Variables

#### Deviations from Target

The decision of what type of security the firm will issue has been argued to be a function of the difference between the firm's target debt-to-equity ratio and its current debt-to-equity ratio.(4) That is, if the firm has a target debt-to-equity ratio the securities issued should assist the firm in maintaining that ratio over time. The problem that Marsh discusses in detail is that the firm's target is unobservable. With this in mind, Marsh develops two proxies to measure the firm's deviation from target.

Marsh's first measure is the difference between the firm's ten-year average debt-to-equity ratio and the firm's ratio in the year of issuance. However, in Marsh's ratio the amount of the issue is added to the firm's total beginning of the year outstanding debt regardless of the type of security actually issued. If the firm actually does have a target debt-to-equity ratio, the resultant ratio should move toward the ten-year average when debt is issued and away from the average when another security type is issued.

This measure offers potential insights in the context of preferred stock versus either common equity or debt. Specifically, the first aspect of discussion focuses upon the sensitivity of the model to the specification of the debt ratio. That is, should preferred stock be included as debt or as equity? Regulators might be expected to include preferred with equity while some stock analysts might place preferred with debt.(5) The second proxy generated by Marsh is the short-term-debt to total-debt

ratio. Once again, the average of the previous ten years is computed and the after-issue ratio is compared. It has been argued that this short-to-total relationship adds to the firm-specific information and could assist in explaining the type of security to be issued.

### Determinants of the Target Ratio

Like Taggart (1977) and Scott (1972), Marsh provides evidence that companies appear to make their choice of financing instrument as though they had target leverage ratios and were making adjustments to them. It appears that these targets are functions of size, asset composition, and risk. Because flotation costs as a percentage of the issue decrease as issue size increases, smaller firms might raise less external capital, and hence have a smaller leverage ratio relative to larger firms. The logarithm of total assets is used for the firm-size variable. Asset composition is measured as the ratio of fixed assets to total assets.

Because of the increased probability of bankruptcy, less risky firms should use more debt relative to risky firms. Two measures are used to capture this relationship. The first measure, developed by White and Turnbull (1974), is EBIT less fixed charges divided by the ten-year standard deviation of EBIT. The second measure, developed by Brealey, Hodges, and Capron (1976), is simply the ten-year standard deviation of EBIT scaled by total assets. The other two risk measures include a measure of total risk, the standard deviation of equity returns, and the firm's equity beta measuring market risk.

### Market Timing Variables

Two market timing variables describe the conditions in the capital markets around the time of issue. The debt market forecasting model is as follows:

$$D(t) = \alpha + \beta D(t-1) + \gamma M(t-1) + \delta M(t-2) + \varepsilon(t) \quad [2]$$

where  $D(t)$  and  $D(t-1)$  are the level of primary corporate bond issues in months  $t$  and  $t-1$  and  $M(t-1)$  and  $M(t-2)$  are the yields on ten-year constant maturity U.S. Treasury issues in months  $t-1$  and  $t-2$  and  $\varepsilon(t)$  is the residual error. The common equity forecasting model is developed similarly except primary market common issues are used and the returns are for the equity market in months  $t-1$  and  $t-2$ .

The last of the market timing variables is the residual return to a firm's equity over the 150 trading days ending 20 trading days before the issue. Taggart, Scott, Marsh, and Jalilvand and Harris (1984) find evidence of

attempts by firms to time long-term debt and equity issues.

### Other Variables

Finally, two other variables are included in the model because Marsh reports that Martin and Scott (1974) find them to be "useful discriminators." They are the firm's payout ratio and its after-tax return on shareholder's investment. Firms that pay out more earnings should be expected to generate a larger portion of their equity through primary market sales, *ceteris paribus*.

## 4. Empirical Results

### *A. Event Study*

Table 2 contains a summary of the event studies from  $t=-10$  to  $t=+10$  relative to the announcement day,  $t=0$ . For mortgage bond issues of public utilities, the two-day abnormal return is  $-0.06\%$  ( $t=0.550$ ). For preferred stock issues, the two-day abnormal return is  $-0.15\%$  ( $t=0.788$ ). The common stock issues have a significant two-day return of  $-0.78\%$  ( $t=-7.327$ ). In each case these results are consistent with other findings. For example, with the issuance of common stock by public utility firms Masulis and Korwar (1986) find a price effect of  $-0.74\%$  while Asquith and Mullins (1986) find a  $-0.90\%$  price effect. The study by Mikkelsen and Partch (1985) reveals that the issuance of preferred stock increases common stock prices by  $1.53\%$ . However, their sample size was only 12. Linn and Pinegar (1988) study in great detail the effect of issuing preferred stock. With a sample of 201 straight preferred with fixed dividends issued by public utilities they find that the two-day abnormal return is  $0.178\%$  and statistically significant, but argue that it is economically insignificant. We find, for a different time period, that the two-day abnormal return is  $-0.15\%$  but do not find it to be statistically significant.

The cumulative abnormal returns for the announcement period and 10 days afterwards is statistically insignificant for the mortgage bonds and preferred stock issues, but significant for the common stock issues. See Table 2.

Issuance of mortgage bonds has not been intensely studied. It is reasonable to expect that the effect on common stock price of issuing mortgage bonds should be similar to the effect of issuing straight debt. The findings here support this expectation. The issuance of straight debt generally results in a slightly negative price appreciation but not significantly different from zero. Indeed, this is consistent with our findings in Table 2. These results could be interpreted as weak evidence that preferred stock is considered by common shareholders to be more like debt than common equity since its price

**Table 2**  
**Event Study - Summary**

Day	Mortgage Bonds		Preferred Stock		Common Stock	
	ARs	CARs	ARs	CARs	ARs	CARs
-10	-0.06		-0.05		-0.01	
-9	0.04		0.11		0.05	
-8	0.05		0.15		-0.06	
-7	-0.01		-0.06		0.00	
-6	0.02		-0.10		0.09	
-5	0.04		0.08		-0.03	
-4	0.14		0.02		-0.07	
-3	0.01		-0.02		-0.03	
-2	-0.04		0.22		0.06	
-1	0.15		-0.13		0.04	
0	-0.08	-0.08	-0.16	-0.16	-0.58	-0.58
1	0.02	-0.06	0.01	-0.15	-0.20	-0.78
2	-0.00	-0.06	0.14	-0.01	-0.00	-0.78
3	-0.08	-0.14	-0.32	-0.33	-0.05	-0.83
4	-0.05	-0.19	0.05	-0.28	-0.05	-0.88
5	-0.11	-0.30	0.08	-0.20	-0.05	-0.93
6	0.03	-0.27	-0.00	-0.20	0.12	-0.81
7	0.18	-0.09	0.26	0.06	0.00	-0.81
8	-0.07	-0.16	-0.02	0.04	-0.08	-0.89
9	-0.10	-0.26	-0.01	0.03	-0.08	-0.97
10	-0.16	-0.42	-0.04	-0.01	-0.07	-1.04
2 day AR	-0.06	-	-0.15	-	-0.78	-
11-day CAR	-	-0.42	-	-0.01	-	-1.04
t-statistic	-0.550	-1.857	-0.788	-0.023	-7.327	-4.189
n	258	258	84	84	399	399

appreciation at the announcement of the issue is not significantly different than zero.

#### *B. Firm Specific Characteristics*

The firm specific investigation pursues two separate types of investigation. First, simple univariate tests are presented, analyzing the differences in the means of the independent variables among the three groups. Second, the logit regression analysis is presented.

#### Univariate Tests

The univariate tests are presented in Table 3. These results are presented in two forms: first, an analysis of variance among the three groups of issuers is presented; second, individual t-tests are presented to test for differences between preferred issuers and issuers of the two other security types.

Of those variables designed to measure the deviation from target capital structure, only the long-term-debt-to-equity ratio indicates significant differences among the three types of issuers. Specifically, the individual t-tests indicate that preferred and common issuers do not have significantly different deviations from this target during the year of issue (means of -0.038 and -0.044). However, the mortgage bond issuers (mean of 0.027) did have a significantly different ( $\alpha=0.0001$ ) relationship with this target than did those firms issuing preferred stock.

Among the proxies for target variables, all but the standard deviation of returns variable display significant differences among the three types of issuers (minimum  $\alpha=0.0373$ ). The size, composition of assets, and standard deviation of return variables all display that preferred stock issuers differ from common stock issuers, but not from mortgage debt issuers. Among the risk measures, both the bankruptcy risk variable and

**Table 3**  
**Group Means of Independent Variables and Results of Univariate Tests**

Variables	Means			Analysis of Variance Three Issue Types		Results of Individual t-statistics			
	Common	Preferred	Mortgage Debt	F	Prob. > F	Preferred vs. Common		Preferred vs. Mortgage Debt	
						t	Prob. >  t	t	Prob. >  t
Deviation from target									
Long-Term Debt	-0.038	-0.044	0.027	12.71	0.0001	0.3491	0.7276	3.9476	0.0001
Short-Term Debt	0.919	1.643	0.905	1.32	0.2693	-1.3795	0.1782	-1.5759	0.1186
Proxies for Target									
Log of Assets	7.678	8.049	8.172	12.44	0.0001	-2.7636	0.0068	0.8732	0.3835
Asset Composition	0.895	0.914	0.908	5.47	0.0045	-3.6834	0.0003	-1.3066	0.1933
Bankruptcy Risk	-2.026	-1.652	-1.293	20.12	0.0001	-2.1157	0.0353	2.4592	0.0147
Std. Dev. EBIT	62.111	83.449	155.484	35.35	0.0001	-2.0996	0.0367	4.7354	0.0001
Beta	0.438	0.440	0.491	3.31	0.0373	-1.3273	0.1855	0.3880	0.6984
Std. Dev. Returns	0.013	0.012	0.013	1.31	0.2718	1.8020	0.0745	1.2131	0.2264
Market Timing									
Equity Market Forecast	1823.304	1843.250	1749.579	0.79	0.4550	-0.2183	0.8345	-0.9436	0.3464
Debt Market Forecast	4149.401	4814.044	4453.693	2.10	0.1232	-1.8112	0.0741	-0.8808	0.3794
Residual Return	0.001	-0.001	0.001	1.81	0.1649	1.8941	0.0593	0.6739	0.5011
Other									
Return on Equity	0.113	0.113	0.111	0.25	0.7753	0.2539	0.8000	-0.4142	0.6791
Payout Ratio	0.632	0.614	0.603	1.30	0.2735	1.1355	0.2573	-0.6359	0.5255
Sample Size	59	212	159						

standard deviation of EBIT indicate that preferred stock issuers are significantly different from both common stock and mortgage debt issuers, and the mean values of these variables indicate that the preferred stock issuers have values between each of the other two types of issuers.

The remaining variables offer only two significant results. In the category of market timing, both the debt market forecast and the 150-day residual return variable indicate significant differences ( $\hat{\alpha}=0.0741$  and  $0.0593$ , respectively) between the issuers of preferred and common stock.

These results offer some weak indication that with regard to the long-term debt ratio, issuers of preferred appear more like issuers of common. That is, preferred stock should be considered more like equity. However, from the other balance sheet information it appears that preferred stock issuers have size and asset composition more in common with the issuers of mortgage debt than with common stock issuers. With respect to the risk measures included, preferred stock issuers are different from either common stock or mortgage debt issuers, but bounded on either side by the two. Finally, with respect to the market timing variables, the preferred stock issuers appear to be more like the issuers of common stock in terms of the measure of the debt market forecast and the 150-day residual return. These results indicate certain patterns of differences among the issuers of the three types of securities and tend to place preferred stock issues in a category between the issuers of

the other security types.

#### Logit Regression

The logit results presented in Table 4 add information beyond the simple means tests developed in the univariate analysis. Indeed, the three pair-wise comparisons indicate that in every instance this model is significant (minimum prob.=0.0144) in describing the decision between each pair-wise choice. In each instance the logit regression is specified with the most debt-like of the security issuers identified with a 1, the more common-equity-like with a 0.

The results of Table 4 are quite consistent in that there are no sign changes among the significant estimated coefficients of any of the variables. As an example, the long-term debt deviation from target variable is positive and significant in both the mortgage debt vs. common stock and mortgage debt vs. preferred stock equations. This specific relationship is not only consistent with the results of the univariate tests, but is consistent with the above suggestion that issuers consider preferred stock as equity in their capital structure decisions.

The balance of the significant estimated coefficients continue to support both conventional wisdom and the earlier results indicating that preferred stock is more debt-like when compared to common stock yet more common-like when compared to debt.

**Table 4**  
**Estimated Coefficients from Logit Regression**

Variables	MORTGAGE BONDS VS. COMMON (MORTGAGE BONDS = 1)		MORTGAGE BONDS VS. PREFERRED (MORTGAGE BONDS = 1)		PREFERRED VS. COMMON (PREFERRED = 1)	
	Coefficient	Prob. Value	Coefficient	Prob. Value	Coefficient	Prob. Value
Intercept	-0.7613	0.8200	-9.9823	0.0983	-7.8375	0.1497
Deviation from Target						
Long-Term Debt	3.5931	0.0004	7.0291	0.0002	-0.8416	0.5189
Short-Term Debt	-0.0713	0.7693	-0.4458	0.1871	0.3058	0.2372
Proxies for Target						
Log of Asset Size	-0.6514	0.0113	-1.7155	0.0002	0.0950	0.7604
Asset Composition	6.1730	0.0940	1.5936	0.8013	8.5900	0.1001
Bankruptcy Risk	0.6186	0.0001	0.2813	0.1860	0.3110	0.0593
Std. Dev. EBIT	0.0127	0.0000	0.0181	0.0001	0.0006	0.8694
Beta	0.8289	0.3001	1.2530	0.3079	0.9951	0.3850
Std. Dev. Returns	-57.2658	0.3126	25.1643	0.7631	-110.8448	0.1489
Market Timing						
Equity Market Forecast	-0.0001	0.5114	0.0003	0.3579	0.0001	0.8039
Debt Market Forecast	0.0000	0.2237	-0.0000	0.4274	0.0001	0.0806
Residual Return	-106.4583	0.2456	129.5101	0.2818	-108.2783	0.3640
Other						
Return on Equity	7.5140	0.0853	8.9954	0.1235	-4.9450	0.7240
Payout Ratio	-1.0419	0.2334	0.3793	0.7473	-1.7031	0.3903
Chi-Square of Equation		122.73		57.36		26.52
Prob. of Equation		0.0000		0.0000		0.0144

### C. Additional Investigation

One additional test is pursued. The possibility arises that these market and firm specific variables might be used in an effort to explain the event study residuals presented earlier. The approach is simply that of an explanatory model, and no theoretical foundation is provided. The logic is simply that if these variables can be used to discriminate among the issuers of the alternative securities, the characteristics captured in these variables might hold some value in explaining the preferred stock issuers' two-day residuals presented in Table 2. The results of a multiple regression analysis is presented in Table 5. All the independent variables were regressed against the two-day residuals. The regression is significant and explains 14.68% of the variability of the two-day residuals.

The three independent variables that are statistically significant are beta, the standard deviation of returns, as well as the 150-day residuals from the preannouncement estimation period. The preferred stock issuers with

higher estimated betas had lower two-day excess returns ( $\alpha = 0.0151$ ), all other things held constant. Those firms with higher firm risk, as measured by the standard deviation of the returns during the preannouncement estimation period, however, had significantly higher two-day excess returns ( $\alpha = 0.0410$ ). Finally, those firms that experienced higher accumulated returns during the 150-day preannouncement estimation period displayed significantly lower ( $\alpha = 0.0557$ ) two-day excess returns. This is consistent with previous reports that stock prices react more negatively when new issues are made shortly after a stock-price run-up. These results indicate that there are variables that allow discrimination among the various returns generated by the announcement of an offering of preferred stock.

### 5. Summary

The results presented in this paper are consistent with the conventional wisdom with respect to the issuance of preferred stock. Issuers do tend to have certain characteristics in common with common equity issuers while at

**Table 5**  
**Regression Results**  
**Dependent Variable: Two-day Residuals From**  
**Preferred Stock Issuance Event Study**


Variables	Estimated Coefficients	Prob. >  T
Intercept	0.01199	
Deviation from Target		
Long-term Debt	0.0390	0.1274
Short-term Debt	-0.0031	0.5160
Proxies for Target		
Log of Asst Size	-0.0062	0.2732
Asset Composition	-0.1083	0.3408
Bankruptcy Risk	-0.0015	0.6051
Std. Dev. EBIT	0.0000	0.4730
Beta	-0.0535	0.0151
Std. Dev. Returns	2.5379	0.0410
Market Timing		
Equity Market Forecast	0.0000	0.2591
Debt Market Forecast	0.0000	0.5529
Residual Returns	-3.2532	0.0557
Other		
Return on Equity	-0.0013	0.9951
Payout Ratio	-0.0113	0.8173
F-statistic of Equation	1.768	0.0791
Adjusted R-squared	14.68%	

the same time sharing other characteristics with the issuers of debt. Specifically, issuers of preferred stock appear to consider preferred to be equity in their adjustments toward their long-term debt-to-equity ratio. However, other balance sheet items including total asset size and asset composition (fixed to total assets) indicate that preferred stock issuers are more like debt issuers than like common equity issuers.

In summary, one might conclude that preferred stock issuers are much like the securities they issue. They share the characteristics of the issuers of debt and equity, just as the securities they issue share the characteristics of these other securities.

#### Suggestions For Future Research

The results presented in this paper reveal that there is substantially more research to be done if we are to

fully understand the firm's decision to issue preferred stock or the market's assessment of such an issuance. A more theoretically based model that might be employed in an attempt to explain the corporate decision regarding the appropriate type of security to issue would significantly add to the findings reported in this paper. Such a theoretical foundation may well aid in explaining the firm's common stock returns when announcing forthcoming sales of preferred stock or other corporate securities. Indeed, such modelling should aid researchers as they continue in their efforts to explain common share price reaction to the announcement of forthcoming issues of all types of corporate securities. 

#### \*\*\*Footnotes\*\*\*

1. The sample only includes the offerings of public utility issuers because there were too few cash offerings of fixed-dividend, preferred stock by



industrial firms to generate meaningful results. While this may appear to be inconsistent with the sample used by Houston and Houston (1990), they did not limit their sample to public, cash offerings but rather included both cash and exchange offerings as well as both public offerings and private placements.

2. The authors are satisfied that an extended discussion of event-study methodology is not called for in this paper. For the reader interested in the details of the methodology the authors would suggest Brown and Warner (1980 and 1985).
3. See Pindyck and Rubinfeld (1981) for a thorough discussion of dichotomous dependent variable models.
4. Some argue that the firm's target ratio is the industry average debt-to-equity ratio. Although this industry target ratio would be reasonable to use in many studies, it is not so in this case. Since this study investigates only utilities, all firms would have the same target ratio. Therefore, this study uses the firm's ten-year average-debt to-equity ratio as its target debt-to-equity ratio.
5. The analysis presented below considers all preferred stock already outstanding as equity in computing debt ratios. The analysis was not at all sensitive to considering outstanding preferred stock as debt. Indeed, the results are qualitatively unaltered when such an adjustment is made.

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