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A Re-Examination of Shareholder Wealth Effects of Calls of Convertible Preferred Stock

ERIC L. MAIS, WILLIAM T. MOORE, and RONALD C. ROGERS*

ABSTRACT

Common stock price reactions to announcements of 67 calls of in-the-money convertible preferred stocks are examined, and a significant average abnormal return of -1.6 percent is documented. The finding is robust to the choice of estimation period and the assumed return-generating process. Annual dividend obligations for the called preferred issues in the sample typically are greater than the dividends for the common shares into which they are converted, and announcement-period abnormal returns are negatively correlated with changes in dividends. Moreover, calls that result in dilution of voting rights appear to have greater adverse valuation effects than calls that do not alter voting rights concentration.

THE EMPIRICAL RECORD THAT has emerged over the past decade shows that leverage-increasing changes in capital structure are often associated with positive equity valuation effects, and leverage-decreasing changes are associated with negative equity price reactions (Smith (1986)). Calls of in-the-money convertible bonds result in leverage reductions, and Mikkelson (1981) reports a significant average abnormal decline in equity values of 2.13 percent for a sample of 113 calls.¹ Vu (1986) reports an average abnormal decline in equity value of 0.98 percent for a sample of 72 nonconvertible bond calls that result in reductions in leverage.

Calls of in-the-money convertible preferred stocks also entail reductions in leverage, though such call announcements are reported to result in insignificant average abnormal returns (Mikkelson (1981)).² In this study, convertible preferred stock calls are re-examined using a sample selection procedure that differs somewhat from Mikkelson's (1981). The study period extends from 1963 through 1986, and we select only firms that did not have other material announcements

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¹ More recently the same general result is reported by Ofer and Natarajan (1987), who report a significant average abnormal return over a two-day announcement period of -1.1 percent in their sample of 111 in-the-money convertible bond calls. Mazzeo and Moore (1988) also report a significant two-day average abnormal return of -2.24 percent for 115 in-the-money convertible bond calls.

² For a sample of 57 in-the-money preferred stock calls Mikkelson (1981) finds a two-day announcement period abnormal return of -0.36 percent, not statistically significant at conventional levels.

or news items in *The Wall Street Journal* during the announcement period. Though the resulting sample size of 67 exceeds Mikkelson's sample size (57) only slightly, we are able to reject the (null) hypothesis of no average valuation effect on equity. The two-day average abnormal return is approximately -1.6 percent, and the estimate is statistically different from zero (two-tailed test) at better than the 0.0001 level. The finding is robust with respect to the choice of return-generating process (market model or mean-adjusted returns model) and the estimation period (pre-announcement versus post-announcement). Viewed jointly, the results of Vu (1986) for leverage-decreasing calls of straight debt, Mikkelson's (1981) evidence on calls of in-the-money convertible bonds, and the findings of this study point to change in leverage as a common feature of security call announcement effects.

Theoretical predictions pertinent to calls of convertible preferred stock are reviewed in Section I. In Section II the empirical methods and sampling procedures are described, and sample summary statistics are provided. The main empirical results are presented and examined in Section III, and the findings are summarized in Section IV.

I. Predicted Equity Valuation Effects of Convertible Preferred Stock Calls

Calls of in-the-money convertible preferred stocks result in no immediate change in asset structure; thus, they are relatively "pure" capital structure changes, in common with exchange offers examined by Masulis (1980, 1983), Pinegar and Lease (1986), and others. In addition, such calls have no effect on corporate taxes or expected bankruptcy costs; thus, a large body of capital structure theory may be excluded from consideration.

A. Changes in Financial Leverage

Calling in-the-money convertible preferred stock, hence forcing conversion into common stock, reduces financial leverage, which may lead to adverse equity valuation effects for several reasons. An in-the-money call results in replacement of a fixed obligation (preferred dividends) with a variable cash outflow (common dividends); thus, the signalling model of Ross (1977) would predict a negative equity valuation effect.³

The dividend signalling theory set forth by Miller and Rock (1985) implies that a reduction in cash flow obligations may reveal that management's expectations of future profitability have diminished. Thus, in-the-money calls of convertible preferred stocks that result in lower total cash dividends should

³ Though the Ross (1977) framework is explicitly for debt financing, it could be easily modified to accommodate preferred stock.

precipitate an adverse equity valuation response.⁴ Jensen's (1986) free cash flow theory also predicts a negative valuation effect of in-the-money calls.

The information signalling and the free cash flow explanations predict that the magnitude of the valuation effect should be related to the magnitude of the change in dividend outlays resulting from conversion from preferred to common stock. This implication is tested below.

Most convertible preferred stock issues impose restrictive covenants on the issuing firms. Though covenants are typically fewer in number than those found in bond indentures, forcing conversion and thereby removing the covenants may convey the negative signal that some are about to become binding.⁵ This proposition is also tested below.

B. Changes in Concentration of Voting Rights

Stulz (1988) presents a theory of the effects of concentration of voting rights on firm value. He shows that, for firms with relatively low fractions (α) of voting rights controlled by management, increases in concentration of managerial voting rights will positively affect firm value, and decreases in concentration will negatively affect value. The voting rights of preferred stockholders are often limited relative to those of common shareholders; thus, a conversion-forcing call may reduce management's concentration of voting rights and lead to an adverse equity valuation effect. The nature of the voting rights of the preferred stockholders should influence the magnitude of the call announcement effect, and this proposition is tested below.

II. Sample Selection and Empirical Methods

A. Sample Selection

Calls of convertible preferred stocks were identified by first isolating those firms included in Standard & Poor's COMPUSTAT data base that had convertible preferred issues outstanding during the period 1963–1986.⁶ Firms that experienced reductions in convertible preferred stock outstanding during a given year were identified as candidates.⁷ Announcements by the sample firms of calls

⁴ Other theoretical explanations based on information signalling could also predict adverse equity valuation effects of convertible preferred calls. The "yield advantage hypothesis" of Constantinides and Grundy (1987) implies that a call forcing conversion may convey the expectation that common dividends will not rise sufficiently to invoke voluntary conversion. The signalling model of Harris and Raviv (1985) predicts an adverse equity reaction to convertible bond calls and appears to hinge on finite life of the conversion option. Since most convertible preferred stocks entail perpetual options, the Harris-Raviv model would have to be modified in order to offer the same prediction for convertible preferred calls.

⁵ This connection is made by Pinegar and Lease (1986, p. 812).

⁶ The COMPUSTAT data base includes the primary, supplementary, tertiary, OTC, annual research, and OTC research files. The research files include firms deleted from the active files due to merger, delisting, etc.

⁷ Book value of convertible preferred is determined from the COMPUSTAT file by subtracting "Debt-Convertible" (item #79) from "Convertible Debt and Preferred Stock" (item #39).

of convertible preferred issues were then identified in *The Wall Street Journal Index*. The sample was further restricted to those firms for which no other material firm-specific items were reported in *The Wall Street Journal (WSJ)* within two trading days before and two trading days after the announcements.⁸ Firms without common stock returns recorded in the Center for Research in Securities Prices (CRSP) NYSE/AMEX or NASDAQ Daily Returns File were eliminated. Finally, all call announcements in the final sample of 67 were made in the money.⁹ Summary statistics describing the sample are reported in Table I.

The average market value of the called issues (row (1)) for which we could find sufficient information ($N = 50$) is \$57.713 million. This is measured by the number of preferred shares outstanding times the market closing price as of the Friday preceding the call. The average ratio of the market value of the called issue to the market value of the firm (row (2)) is 0.076, with a range of 0.001 to 0.425. Firm value is measured as book value of debt and preferred stock plus market value of common equity. On average the called issues represent a nontrivial proportion of total firm value.

In row (3) of Table I we describe the ratio of market price to call price of the preferred shares. Since all of our sample consists of in-the-money calls, all of the ratios are greater than 1.0. The average ratio is 1.83, indicating that the issues were on average "deep" in the money. This sample characteristic is roughly consistent with the in-the-money convertible preferred sample examined by Ingersoll (1977).¹⁰

The called convertible issues represent claims on common shares that are substantial compared to the number of common shares outstanding before the calls. In row (4) of Table I we report that the average ratio of shares converted to shares outstanding before call is 0.111, with a range of 0.001 to 0.366. In row (5) we report that the average interval between call announcements and effective call dates is 27.7 trading days, or about 39 calendar days. The range is from 12 to 67 trading days (based on $N = 64$ observations).¹¹

B. Event Study Method

The abnormal return (AR_{jt}) determined from the market model for firm j on day t is given by (1) below:¹²

$$AR_{jt} = R_{jt} - \hat{\alpha}_j - \hat{\beta}_j R_{mt}. \quad (1)$$

⁸ By "material" is meant the types of events that have been shown to cause measurable impacts on the market's perception of equity value. For example, dividend announcements, earnings announcements, and calls of securities other than convertible preferred stock were events that prompted the removal of observations from the sample.

⁹ We were able to identify only four instances of calls of out-of-the-money preferred stock for which calling firms had complete data. Thus, the sample is restricted to only in-the-money calls.

¹⁰ Ingersoll (1977) reports an average excess of 69.9 percent over call price for 55 convertible preferred calls over the period 1968–1975.

¹¹ Of the 67 calls, 58 were made by firms listed on the New York Stock Exchange, five were listed on the American Stock Exchange, and four were traded over the counter.

¹² Results are also reported using the mean-adjusted returns model. See Brown and Warner (1985) for comparisons of the two models.

Table I
Summary Statistics for the Sample of Calls of Convertible Preferred Stock During the Period 1963–1986

Market value of the entire convertible preferred issue is determined as the product of the number of shares and the market price per share as of the Friday before the call announcement. This is based on ($N = 50$) observations. Firm value is the book value of debt and preferred stock from Standard & Poor's COMPUSTAT Annual Industrial File as of the year end prior to the call announcement, plus market value of common equity measured using closing price per share on the Friday before the call announcement ($N = 50$). Call prices were obtained from various issues of *The Wall Street Journal*, *Moody's Industrial Manual*, and *Standard & Poor's Stock Guide*. Effective call dates were obtained from *The Wall Street Journal*, *Moody's Industrial Manual*, and *Standard & Poor's Stock Guide* ($N = 64$).

	Mean	Minimum	Maximum
(1) Called Issue Size (\$millions)	57.713	0.310	459.875
(2) Called Issue Size/Firm Value	0.076	0.001	0.425
(3) Market Price/Call Price	1.834	1.049	12.093
(4) Shares Converted/Common Shares Outstanding Before Call	0.111	0.001	0.366
(5) Interval Between Call Announcement and Effective Call Date (Trading Days)	27.7	12	67

In (1) R_{jt} is the observed return on security j on day t and is obtained from the CRSP NYSE/AMEX or NASDAQ Daily Returns File. The coefficient estimates, $\hat{\alpha}$ and $\hat{\beta}$, are determined by ordinary least squares (OLS), and R_{mt} is the return on the equally weighted NYSE/AMEX CRSP index or the NASDAQ index on day t .¹³

The assumption is made that the abnormal returns (AR_{jt}) are multivariate normal and that AR_{jt} is independent of AR_{kt} ($j \neq k$). Under these assumptions, the variance of the sum of the AR_{jt} series over the time span from $t = T_1$ to $t = T_2$ is given by (2):¹⁴

$$S_{jT}^2 = \hat{\sigma}_j^2 \left[T + \frac{T^2}{N} + \frac{T^2 (\bar{R}_{mT} - \bar{R}_m)^2}{\sum_{t=1}^N (R_{mt} - \bar{R}_m)^2} \right]. \quad (2)$$

In (2), the number of observations in the period from $t = T_1$ to $t = T_2$ is denoted as T ($T_2 - T_1 + 1$). The mean square error of the market model is denoted as $\hat{\sigma}_j^2$. The number of returns in the estimation period is N ; $\bar{R}_m$ denotes the sample mean market index return over the estimation period; and $\bar{R}_{mT}$ is the sample mean index return during period T .

¹³ Four of the observations in the sample (described below) were for over-the-counter firms, and infrequent trading during the parameter estimation periods was apparent for three of them. The estimation results for these three firms were obtained by OLS regression and then by using the method of Scholes and Williams (1977) as a check. The estimates were virtually the same, and only the OLS results are reported below.

¹⁴ See Mikkelsen and Partch (1988), particularly footnote 9. We thank the referee for suggesting the event study method, and we appreciate Craig Ansley's efforts in providing the details of the derivation of (2).

Under the null hypothesis that the mean abnormal return is zero, the following test statistic is asymptotically unit normal:

$$Z = \frac{1}{\sqrt{n}} \sum_{j=1}^N \sum_{t=T_1}^{T_2} AR_{jt} / S_{jT}. \quad (3)$$

In (3), n denotes the sample size and S_{jT} is the square root of S_{jT}^2 (equation (2)).

III. Empirical Results

A. Announcement-Period Price Behavior

Daily average abnormal returns ($\overline{AR}$),¹⁵ associated Z -values (from equation (3)), and other related statistics for the full test period ($t = -30$ to $t = 10$) are presented in Table II. These results are for the market model estimated using the equally weighted CRSP Index as the market proxy. The prediction errors for trading days $t = -30$ to $t = 10$ are based on the market model estimated over the 120-day period commencing on day $t = -150$ and ending on day $t = -31$ relative to day $t = 0$, the *WSJ* announcement day.

It is evident from Table II that calls of in-the-money convertible preferred stocks are associated with significant negative average price reactions. That is, the average abnormal returns for days $t = -1$ and 0 are negative (-0.89 percent and -0.75 percent) and significant at the 0.0001 level ($Z = -4.162$) and the 0.005 level ($Z = -2.810$). The results are not driven by extreme observations since there are 48 negative and 19 positive abnormal returns on $t = -1$ and 44 negative and 23 positive on $t = 0$. Each of these proportions differs from 50 percent (34 observations) at the 0.05 level. The two-day cumulative average return is -1.6 percent, with associated Z -value from equation (3) of -4.919 . Thus, the two-day average abnormal return is negative and significant at the 0.0001 level.¹⁶

The finding of a significant average equity valuation effect upon calling convertible preferred stock is new. Mikkelsen's (1981) sample of 57 convertible preferred calls had an average two-day abnormal return of -0.36 percent (com-

¹⁵ $\overline{AR}_t = \sum_{j=1}^n AR_{jt}$.

¹⁶ The results are robust with respect to the return-generating process assumed. The mean-adjusted returns model estimated over the pre-event period of $t = -150$ to $t = -31$ results in an average two-day abnormal return of -1.67 percent, significant at the 0.001 level. In addition, the two-day average abnormal returns were calculated from the market model and the mean-adjusted returns model over a 120-day post-event estimation period commencing the day following the effective call date. The two-day average abnormal return using the market model was -1.50 percent, with Z -value of -3.30 . For the mean-adjusted returns model the average abnormal return was -1.30 percent, with Z -value of -4.3 .

Table II
Daily Average Abnormal Returns ($\overline{AR}$), Z-Values, Cumulative Average Abnormal Returns ($\overline{CAR}$), and Frequencies of Negative Observations for 67 Calls of in-the-Money Convertible Preferred Stock during the Period 1963–1986

Abnormal returns are from the market model estimated over the 120-day pre-event estimation period and are expressed as percentages. $\overline{CAR}$ values are the cumulative sums of $\overline{AR}$ beginning at $t = -30$ and are expressed as percentages.

Day	$\overline{AR}$ (%)	Z	Pos./Neg.	$\overline{CAR}$ (%)	Day	$\overline{AR}$ (%)	Z	Pos./Neg.	$\overline{CAR}$ (%)
-30	-0.12	-0.471	29/38	-0.12	-9	-0.53	-1.776	23/44	1.81
-29	-0.12	-0.565	32/35	-0.24	-8	0.26	0.999	33/34	2.06
-28	-0.02	-0.179	33/34	-0.26	-7	-0.19	0.128	26/41	1.87
-27	-0.10	-0.466	30/37	-0.36	-6	0.04	0.535	30/37	1.91
-26	0.46	1.340	35/32	0.09	-5	-0.04	-0.017	32/35	1.87
-25	-0.14	0.359	27/40	-0.05	-4	0.58	1.789	34/33	2.45
-24	0.53	2.184	42/25	0.48	-3	0.07	0.096	36/31	2.52
-23	-0.30	-0.834	30/37	0.18	-2	-0.08	-0.688	35/32	2.43
-22	-0.11	-0.550	29/38	0.07	-1	-0.89	-4.162	19/48	1.54
-21	0.34	0.507	34/33	0.41	0	-0.75	-2.810	23/44	0.79
-20	-0.17	-0.852	25/42	0.24	1	-0.25	-0.541	29/38	0.54
-19	-0.24	-0.807	27/40	0.00	2	-0.26	-0.495	31/36	0.28
-18	0.27	1.467	31/36	0.28	3	-0.16	-0.109	27/39	0.12
-17	0.56	1.788	37/30	0.83	4	0.32	1.480	29/38	0.44
-16	0.46	1.397	40/27	1.29	5	-0.03	-0.239	29/38	0.41
-15	1.26	4.022	42/25	2.55	6	0.21	0.659	29/38	0.62
-14	0.46	1.492	40/27	3.02	7	-0.26	-0.658	33/34	0.36
-13	-0.11	-0.027	34/33	2.90	8	-0.36	-1.182	24/43	0.00
-12	-0.72	-2.134	31/36	2.18	9	-0.28	-0.775	24/43	-0.28
-11	0.27	0.958	37/30	2.45	10	-0.24	-0.402	29/38	-0.52
-10	-0.11	-0.256	32/35	2.33					

pared to ours of -1.6 percent), and the null hypothesis could not be rejected at the 0.10 level.¹⁷

B. Cross-Sectional Analysis of the Announcement Effect

Calling and forcing conversion of in-the-money preferred stock generally results in a change in a firm's annual total dollar dividend commitments. An increase in such cash outlays conveys a positive signal in the Miller-Rock (1985) framework, and a decrease conveys a negative signal. Jensen's (1986) free cash flow theory offers the same prediction.

The dollar amount of annual dividends for the called preferred issue is calculated as the number of preferred shares outstanding at the time of call times the stated dividend per share. The dollar amount of dividends on the common shares into which the preferred shares are to be converted is the number of such shares times the common dividends per share paid over the 12 months prior to call. The preferred dividend obligation is then subtracted from the common dividend obligation, and the result is divided by the market value of common equity as of day $t = -2$. The resulting value, denoted as ΔDIV , represents the change in dividend obligation as a result of the call. Of the 56 observations for which data were available, 48 (85.7 percent) of the ΔDIV values were negative.¹⁸

The theoretical models of Miller and Rock (1985) and Jensen (1986) imply a positive association between the announcement-period abnormal return (AR_{jt}) and ΔDIV . The following model (4) is estimated using ordinary least squares regression:

$$AR_{jt} = -0.013 + 1.386 \Delta DIV. \quad (4)$$

(-2.859) (1.550)

Values in parentheses are test statistics for the coefficient estimates. The coefficient estimate for ΔDIV is 1.386, significant at the 0.13 level using a two-tailed test and 0.07 using a one-tailed test. Thus, the evidence represents weak support for the free cash flow and/or signalling hypotheses.

A call forcing conversion may remove restrictive covenants binding the firm. As Pinegar and Lease (1986) argue, removal of covenants may signal that they are about to become binding. Thus, a negative equity valuation effect may result. Of the 46 calls for which information was obtainable, 13 of the convertible preferred issues contained restrictions on issuance of equal or senior preferred

¹⁷ The difference in findings does not appear to be the result of sample size. Our preliminary sample collection efforts resulted in only 38 observations, and we were able to reject at the 0.01 level. The difference appears to lie more in the area of sample selection criteria. Mikkelsen shared his data set with us (for which we are grateful), covering the period 1963–1978. The majority of his sample points did not survive our screen for other firm-specific announcements surrounding the announcement dates.

¹⁸ The average dollar change in annual obligations for those 48 firms that reduced obligations by calling preferred was \$1,177,536, while the average change for those eight that increased their obligations was \$405,691.

stock and debt.¹⁹ Further, 33 contained restrictions on issuance of equal or senior preferred stock only. The average prediction error for the sample of 13 restricting both debt and preferred was -0.013 , and the average prediction error for the 33 restricting only preferred was -0.020 . The difference is not significantly different from zero at conventional levels; thus, the restrictiveness of the called issue does not exert a significant influence on the stock price reaction.²⁰

The voting rights of the 56 issues for which voting information was available included explicit voting in 37 cases (66 percent) and contingent voting rights to elect board members in the remaining 19 cases (34 percent). Changes in concentration of voting rights may affect firm value (Stulz (1988)). Forcing conversion will not materially affect concentration in the case of explicit voting rights, but in the case of contingent rights forced conversion will reduce concentration and should reduce firm value.

The average abnormal return for the sample of 37 called issues containing explicit voting rights is -0.015 , while the average abnormal return ($\overline{AR}$) for the 19 having only contingent voting rights is -0.025 . Each of the $\overline{AR}$ values is significantly different from zero at the 0.05 level, and the difference between the two is significant at the 11 percent level using a one-tailed test.²¹ Thus, there is weak evidence that dilution of voting rights exerts a marginal negative influence on equity value.

IV. Summary

Calls of in-the-money convertible preferred stock issues are associated with an average announcement-period abnormal return of -1.6 percent, significant at the 0.0001 level ($Z = -4.92$). Thus, conversion-forcing calls of preferred stocks are added to the list of other leverage-decreasing capital structure changes that reduce equity values.

Consistent with information signalling and free cash flow theories, the announcement-period abnormal returns are positively associated with the change in the firm's dividend obligation. Most firms in the sample (85.7 percent) experience reductions in dividend obligations due to the forced conversions.

The majority of the sample calls (66 percent) resulted in no material changes in concentration of voting rights, and this sample was associated with an average abnormal return of -1.5 percent, significant at the 0.05 level. Those calls that did result in dilution of voting rights were associated with a significant average abnormal return of -2.5 percent. The difference in average abnormal returns for the two samples is marginally significant (0.11 level).

¹⁹ The restrictions are summarized in *Moody's Industrial Manuals*.

²⁰ The test of the differences in means is based on the test statistic:

$$t = (\overline{AR}_1 - \overline{AR}_2) / (\hat{\sigma}_1^2/n_1 + \hat{\sigma}_2^2/n_2),$$

where $\hat{\sigma}_1^2$ and $\hat{\sigma}_2^2$ are sample variances of AR_{jt} observations in samples 1 and 2 and n_1 and n_2 denote sample sizes.

²¹ The difference in means is tested using the statistic in footnote 20. The test statistic is 1.25 and is Student- t distributed.

REFERENCES

- Brown, Stephen J. and Jerold B. Warner, 1985, Using daily stock returns: The case of event studies, *Journal of Financial Economics* 14, 3–31.
- Constantinides, George M. and Bruce Grundy, 1987, Call and conversion of convertible corporate bonds: Theory and evidence, Unpublished manuscript (Stanford University, Palo Alto, CA).
- Harris, Milton and Artur Raviv, 1985, A sequential signalling model of convertible debt call policy, *Journal of Finance* 40, 1263–1281.
- Ingersoll, Jon, 1977, An examination of corporate call policies on convertible securities, *Journal of Finance* 32, 463–478.
- Jensen, Michael C., 1986, Agency costs of free cash flow, corporate finance and takeovers, *American Economic Review* 76, 323–329.
- Masulis, Ronald W., 1980, The effects of capital structure changes on security prices: A study of exchange offers, *Journal of Financial Economics* 8, 139–177.
- , 1983, The impact of capital structure change on firm value: Some estimates, *Journal of Finance* 38, 107–126.
- Mazzeo, Michael A. and William T. Moore, 1988, Adverse stock price reactions to convertible bond calls: Some new evidence, Unpublished manuscript (Indiana University, Bloomington, IN).
- Mikkelson, Wayne H., 1981, Convertible calls and security returns, *Journal of Financial Economics* 9, 237–264.
- and M. Megan Partch, 1988, Withdrawn security offerings, *Journal of Financial and Quantitative Analysis* 23, 119–133.
- Miller, Merton H. and Kevin Rock, 1985, Dividend policy under asymmetric information, *Journal of Finance* 40, 1053–1070.
- Offer, Aharon R. and Ashok Natarajan, 1987, Convertible call policies: An empirical analysis of an information-signalling hypothesis, *Journal of Financial Economics* 19, 91–108.
- Pinegar, J. Michael and Ronald C. Lease, 1986, The impact of preferred-for-common exchange offers on firm value, *Journal of Finance* 41, 795–814.
- Ross, Stephen A., 1977, The determination of financial structure: The incentive-signalling approach, *Bell Journal of Economics* 8, 23–40.
- Scholes, Myron and Joseph Williams, 1977, Estimating betas from nonsynchronous data, *Journal of Financial Economics* 5, 309–328.
- Smith, Clifford W., Jr., 1986, Investment banking and the capital acquisition process, *Journal of Financial Economics* 15, 3–29.
- Stulz, René M., 1988, Managerial control of voting rights, *Journal of Financial Economics* 20, 25–54.
- Vu, Joseph D., 1986, An empirical investigation of calls of non-convertible bonds, *Journal of Financial Economics* 16, 235–265.