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Information Effects Associated with Debt-for-Equity and Equity-for-Debt Exchange Offers

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ABSTRACT

This study investigates the information effect caused by a firm's change in capital structure via debt-for-equity and equity-for-debt exchange offers. The evidence suggests that the former transactions lead to abnormal stock price increases, while the latter lead to abnormal stock price decreases. In addition, findings based on analysis of bond returns and cross-sectional regressions do not lend support to the wealth-transfer- and tax-effect hypotheses, but they are consistent with the information-effect hypothesis.

RECENT STUDIES PROVIDE EVIDENCE that firms' capital structure changes are associated with changes in common stock prices.[1] For instance, Masulis (1980, 1983) reports that exchange offers that result in increases (decreases) in leverage are associated with positive (negative) abnormal common stock returns. He interprets his findings as being consistent with tax-based theories of optimal capital structure, a positive debt level information effect, and leverage-induced wealth transfers across securities.[2] Mikkelson (1981, 1985) reports significant negative abnormal common stock returns at the announcement of convertible debt calls that force conversion of debt to common stock. He interprets this finding as being consistent with tax and information effects. Neither of these

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[1] For a review of the evidence on this subject, see Dann and Mikkelson (1984) and Smith (1986).

[2] In addition, McConnell and Schlarbaum (1981) present evidence of a positive abnormal common stock return in response to exchange offers involving income bonds for preferred stock and interpret their findings as being inconsistent with the corporate-tax-with-bankruptcy cost models of optimal capital structure. Finnerty (1985) and Rogers and Owers (1985) report significant negative abnormal returns at the announcement of stock-for-debt swaps and interpret their evidence as inconsistent with tax or wealth transfer effects. Peavy and Scott (1985) also document significant negative abnormal returns at the announcement of stock-for-debt swaps and conclude that their findings are inconsistent with wealth transfer and information effects.

studies, however, determines the extent to which the results reflect a corporate tax effect or an information effect.[3]

In this study, the information effects associated with a firm's change in capital structure via debt-for-equity and equity-for-debt exchange offers are empirically investigated, and management's motivation to convey information about the firm's future earnings prospects is addressed. The empirical analysis extends Masulis' (1983) and Mikkelson's (1985) cross-sectional regression studies by including proxies for the information effects of capital structure changes. The evidence suggests that announcements of debt-for-equity exchange offers lead to abnormal stock price increases, while equity-for-debt exchange offers lead to abnormal stock price decreases. Furthermore, contrary to Masulis' (1983) findings, empirical results on bond returns suggest that the stockholders' gains (losses) do not come at the expense (benefit) of non-convertible bondholders. In addition, stock price changes in debt-for-equity exchange offers are related to the firms' unexpected earnings increases and changes in managerial stockholdings. At the announcement of equity-for-debt exchange offers, stock price changes are related to unexpected earnings decreases. These findings support the hypothesis that stock price reactions to capital structure changes reflect information effects rather than tax and wealth transfer effects.

The remainder of the paper is organized as follows. Section I reviews the related corporate finance theory and develops the testable hypotheses. Section II identifies the data and methodology used. Sections III and IV present the findings, and the last section contains a summary, draws conclusions, and discusses implications of the empirical findings.

I. Testable Hypotheses

Exchange offers constitute pure capital structure changes because equal amounts of equity and debt are exchanged, while the assets are unchanged. The literature in this area identifies three possible effects arising from a change in the firm's capital structure: tax effects, wealth transfer effects, and information effects.

A. Tax Effects

According to the tax-effect hypothesis, a debt-for-equity exchange offer increases the firm's financial leverage and, therefore, increases its stock value by increasing its tax credits (Modigliani and Miller (1963)). Conversely, an equity-for-debt exchange offer reduces the firm's financial leverage, thus reducing the firm's tax credits and, hence, its stock price. This positive relationship between change in leverage and stock price continues to be controversial. First, the introduction of bankruptcy costs in the M-M model implies that there is an optimal debt ratio for each firm (the point where marginal tax credits equal

[3] In general, studies on other corporate events that also lead to capital structure changes lend support to the information effects of capital structure decisions. See for instance, Dann (1981) and Vermaelen (1981), who examine common stock repurchases, and Asquith and Mullins (1986), Kalay and Shimrat (1986), Masulis and Korwar (1986), and Mikkelson and Partch (1986), who study common stock offerings.

marginal expected bankruptcy costs). The use of any level of debt other than the optimum amount decreases the firm's value (Kraus and Litzenberger (1973), Scott (1976), and Kim (1978). Therefore, if the firm is not using an exchange offer to move to the optimal level, both types of exchange offers should lead to stock price reductions. Second, Miller (1977) argues that the personal tax disadvantage of debt offsets the corporate tax advantage and that this leads to capital structure irrelevancy at the firm level. Accordingly, neither type of exchange offer should affect stock prices. Third, DeAngelo and Masulis (1980) show that the presence of corporate tax shield substitutes for debt implies a market equilibrium in which each firm has a unique interior optimal capital structure. This model predicts that any leverage changes that moves a firm closer to its optimal tax-induced debt level leads to higher stock prices.

B. Wealth Transfer Effects

According to the wealth-transfer hypothesis, an unexpected debt-for-equity exchange offer (i.,e., an unanticipated increase in debt) makes outstanding debt more risky. The result is a wealth transfer from bondholders to stockholders. Furthermore, the size of the wealth transfer is positively related to the increase in the firm's financial leverage. Consequently, a positive relationship between stock price increases and financial leverage increases is expected. An unexpected equity-for-debt exchange offer (i.e., an unanticipated reduction in financial leverage) makes debt less risky and results in a wealth transfer from stockholders to bondholders (Galai and Masulis (1976)). In this case stock prices are expected to decline.

C. Information Effects

According to the information-effect hypothesis, changes in financial leverage convey management's expectations about the firm's prospects. This follows from various theoretical models that rely on information asymmetries to justify an optimal capital structure (Ross (1977), Leland and Pyle (1977), and Heinkel (1982)). Assuming that managers possess superior information relative to investors about the "intrinsic" value of the firm, these models suggest that the firm's capital structure changes are valid signals that allow managers to convey their inside information to investors.[4] Accordingly, a debt-for-equity (equity-for-debt) exchange offer conveys positive (negative) information abut the firm's future earnings prospects and results in an increase (decrease) in the firm's stock price. Moreover, the issuance of additional stock decreases managerial stockholdings (assuming that managers do not participate in the exchange offer). As a result, the potential conflict of interest between managers and outside stockholders increases and the firm's value decreases (Jensen and Meckling (1976)). In addition, in the Leland and Pyle (1977) model, managers maintain large stock

[4] As explained in Vermaelen's (1984) signalling model of repurchase tender offers, this (early) release of information may be important to insiders (i.e., managers holding common stock of their own firm) because it may prevent outside take-over bids at a price below the true stock price and may increase the value of the insiders' stock options after the offer.

positions only if they expect the future cash flows to be high relative to the firm's current value. Therefore, an equity-for-debt exchange offer that reduces the managers' fractional stockholdings is perceived as negative information, thus leading to a stock price decrease.[5]

II. Data and Methodology

A. Data

The data analyzed in this study consist of a sample of public announcements of debt-for-equity and equity-for-debt exchange offers (EO hereafter) by firms listed on the New York Stock Exchange (NYSE) or on the American Stock Exchange (AMEX) covering the period 1973–1983. The sample was identified through a search of the *Wall Street Journal Index*, *Investors' Dealers Digest*, and the *Registration and Offering Statistics File* of the Securities and Exchange Commission (SEC). The announcement day of the EO is the data when the offer was first published in one of these three publications (usually in the *Wall Street Journal*). Firms with takeover activities in the twelve months prior to the offer were excluded. The final sample contains forty firms undertaking debt-for-equity EOs and 115 firms proposing equity-for-debt exchanges. Characteristics of the sample are presented in Table I.

Table II presents summary statistics (means, standard deviations, and medians) of the sample of exchange offers. Examining Table II, certain statistics of the sample are notable. First, row 7 shows the relative size of the transaction, defined as the value of the transaction divided by the preannouncement (one month prior) market value of the firm's equity. Comparing this statistic for the two subsamples, it is evident that the relative size of transaction is much larger in the debt-for-equity EOs than in the equity-for-debt EOs. Second, comparing the number of shares replaced (issued) with the number of total shares (in millions) outstanding (row 10 in Table II), it appears that the increase in managerial holdings[6] in the debt-for-equity group is larger than the decrease in their holdings in the equity-for-debt group. Also, the managerial holdings (shown in row 12) are larger in the former group than in the latter group. Finally, the last two rows in both panels of Table II contain information concerning the firms' capital structure.[7] Examining four alternative debt ratios, it is evident that the average percentage increase in debt for the debt-for-equity sample is larger than the percentage decrease in debt for the equity-for-debt sample.

To test for a wealth transfer effect, publicly traded (on the New York or American Bond Exchange) bond issues were identified from the *Standard and*

[5] Similar predictions follow from the Miller and Rock (1985) and Myers and Majluf (1984) models. Since these models pertain only to new financing of investment, they are not discussed here.

[6] Managerial holdings include managerial ownership of common stock, ownership of managers' family members, and unexercised stock options as contained in proxies filled with SEC prior to the announcement.

[7] *CHLV*1 is similar to that used by Mikkelson and Partch (1986). *CHLV*2 is similar to that used by Masulis and Korwar (1986). *CHLV*3 differs from *CHLV*2 in that the latter measures the absolute difference in the firms' debt ratio while the former measures the percentage change in the firms' debt ratio. *CHLV*4 is similar to that used by Asquith and Mullins (1986).

Table I

Sample Characteristics for Forty Debt-for-Equity and 115 Equity-for-Debt Exchange Offers during the Period 1973–1983

	Debt-for-Equity		Equity-for-Debt	
Sample Characteristics	Number	% of Total	Number	% of Total
Type of debt[a]				
Straight	33	82.50	93	80.86[b]
Convertible	7	17.50	20	17.40
Type of stock[c]				
Common	35	87.50	106	92.17[d]
Preferred	5	12.50	8	6.96
Debt rating[e]				
Aaa	0	0.00[f]	4	3.48[g]
Aa	0	0.00	18	15.65
A	4	10.00	45	39.13
Baa	4	10.00	14	12.17
Ba	2	5.00	0	0.00
B	5	12.50	9	7.90

[a] This characteristic describes the type of debt issued in the debt-for-equity case and the type of debt replaced in the equity-for-debt case.

[b] For two firms, information about the type of debt replaced was unavailable.

[c] This characteristic describes the type of stock replaced in the debt-for-equity case and the type of stock issued in the equity-for-debt case.

[d] For one firm, information about the type of stock issued was unavailable.

[e] In the case of debt-for-equity exchanges, this characteristic identifies the rating of the firm's existing debt. For equity-for-debt exchanges, this characteristic identifies the rating of the debt issue being replaced.

[f] For twenty-five firms, either information about debt rating was unavailable or there was no rating on the firm's debt.

[g] For twenty-five firms, either information about debt rating was unavailable or there was no rating on the debt issue replaced.

Poor's Bond Guide for all firms in the original sample. To be included, a bond had to trade at least four times over the estimation period from $t = -41$ to $t = -11$ (relative to the initial announcement day ($t = 0$) of the EO) and at least once over the twenty-one-day period from $t = -10$ to $t = +10$. For each bond, closing prices were obtained (from the *Wall Street Journal*) for each day on which trading occurred during the fifty-two-day period from $t = -41$ to $t = +10$. Daily bond returns, including daily accrued interest, were computed from these prices. The coupon rates and dates of interest payments were obtained from the *Standard and Poor's Bond Guide.* Of the forty debt-for-equity EOs, there were eleven firms with a total of ten straight and eleven convertible bond issues. From the sample of equity-for-debt EOs ($N = 115$), there were sixty-five firms with a total of eighty-four straight and twenty-six convertible bond issues.

B. Methodology

The hypotheses examined in this study are tested by applying an event-study methodology, as described in Dodd and Warner (1983), and by estimating cross-sectional regressions. For each security, i, the market model is used to calculate

Table II

Summary Statistics for Forty Debt-for-Equity and 115 Equity-for-Debt Exchange Offers during the Period 1973–1983

	Mean	SD	Median
Panel A: Debt-for-Equity Exchange Offers			
(1) Total assets (millions of $)[a]	1002.28	2544.24	87.90
(2) Current debt (millions of $)[a]	44.15	73.36	3.77
(3) Long-term debt (millions of $)[a]	245.06	507.02	31.01
(4) Market value of common equity (millions of $)[b]	266.38	745.10	19.83
(5) Market value of preferred equity (millions of $)[b]	90.14	89.19	84.49
(6) Value of transaction (millions of $)	32.29	57.57	9.75
(7) Relative size of transaction (%)[c]	44.90	30.40	44.20
(8) Face value of debt issued (millions of $)	32.89	60.64	10.50
(9) Number of shares replaced (millions)	2.16	5.42	1.00
(10) Number of common shares outstanding (millions)[d]	10.95	21.01	3.81
(11) Number of preferred shares outstanding (millions of $)[d]	2.48	1.62	1.98
(12) Managerial holdings of common stock (%)[e]	20.41	15.91	14.96
(13) Pre-offer leverage relative to historical average (*DEBCAP*)[f]	0.94	0.24	0.97
(14) Change in leverage:[g] *CHLV*1	0.50	0.38	0.38
*CHLV*2	0.15	0.13	0.10
*CHLV*3	1.62	1.17	1.19
*CHLV*4	0.09	0.10	0.09
Panel B: Equity-for-Debt Exchange Offers			
(1) Total assets (millions of $)[a]	6028.58	11019.45	2202.21
(2) Current debt (millions of $)[a]	527.27	1453.93	75.68
(3) Long-term debt (millions of $)[a]	709.85	949.19	380.47
(4) Market value of common equity (millions of $)[b]	1457.38	3035.56	832.67
(5) Market value of preferred equity (millions of $)[b]	150.63	178.23	76.44
(6) Value of transaction (millions of $)	29.26	36.01	19.00
(7) Relative size of transaction (%)[c]	12.90	45.50	2.80
(8) Face value of debt replaced (millions of $)	35.39	37.68	20.00
(9) Number of shares issued (millions)	1.03	1.10	0.60
(10) Number of common shares outstanding (millions)[d]	43.05	87.70	27.02

(11) Number of preferred shares outstanding (millions)[d]	4.42	5.56	2.53
(12) Managerial holdings of common stock (%)[e]	8.17	13.50	3.42
(13) Pre-offer leverage relative to historical average ($DEBCAP$)[f]	1.04	0.22	1.01
(14) Change in leverage:[g] $CHLV1$	−0.17	0.57	−0.03
$CHLV2$	−0.03	0.05	−0.02
$CHLV3$	0.92	0.10	0.95
$CHLV4$	−0.02	0.05	−0.01

[a] These items reflect book values at year end prior to announcement as contained in COMPUSTAT tapes.

[b] Equals the number of shares outstanding times price per share at year end prior to announcement (taken from *Standard and Poor's Daily Stock Record*).

[c] Equals value of transaction divided by the pre-announcement (one month prior) market value of the firm's equity.

[d] At year end prior to the announcement.

[e] Includes managerial ownership, ownership of manager's family members, and unexercised stock options; based on proxies filed prior to the announcement.

[f] $$DEBCAP = \frac{DR1}{AVDR},$$

where $DR1$ is the debt-asset ratio at year end before the announcement and $ADVR$ is the firm's average debt-asset ratio over the five pre-announcement years.

[g] $$CHLV1 = \frac{DEBTF}{EQM12},$$

$$CHLV2 = \frac{LTD \pm DEBTF}{LTD + PRF12 + EQM12 \pm DEBTF \mp MVER} - \frac{LTD}{LTD + PRF12 + EQM12},$$

$$CHLV3 = \frac{LTD \pm DEBTF}{LTD + PRF12 + EQM12 \pm DEBTF \mp MVER} \Big/ \frac{LTD}{LTD + PRF12 + EQM12},$$

$$CHLV4 = \frac{LTD + CD \pm DEBTF}{TA} - AVDR,$$

where TA is total assets, CD is current debt, LTD is long-term debt, $DEBTF$ is face value of debt issued (+) or replaced (−), $PRF12$ and $EQM12$ are market values of preferred and common stock, respectively, at year end before the announcement, and $MVER$ is market value of equity replaced (−) or issued (+).

a prediction error (PE) for event day t as follows:

$$PE_{it} = R_{it} - (\hat{a}_i + \hat{b}_i R_{mt}), \tag{1}$$

where R_{it} and R_{mt} are the rate of return on security i and the rate of return on the CRSP equally weighted index on event day t. The coefficients $\hat{a}_i$ and $\hat{b}_i$ are ordinary least squares estimates of the intercept and slope of the market model regression. The estimation period is from $t = -136$ to $t = -16$ relative to the initial announcement day ($t = 0$).[8]

For each firm, i, and each trading day, t, within the event period ($t = -15$ to $t = +15$), a prediction error, PE_{it}, is calculated. The average prediction error on event day t for a portfolio of N securities is

$$APE_t = \frac{1}{N} \sum_{i=1}^{N} PE_{it}. \tag{2}$$

The test statistic, Z_t, for the APE_t is based on the standardized prediction error SPE_{it}[9] and is calculated as

$$Z_t = \sum_{i=1}^{N} SPE_{it}/\sqrt{N}. \tag{3}$$

The Z-statistic has a unit-normal distribution.

The mean-adjusted returns model (Masulis (1980) and Brown and Warner (1985)) is used to generate abnormal bond returns. The calculation of bond returns is complicated by their infrequent trading. This problem is handled by applying a version of the Handjinicolaou and Kalay (1984) methodology as used by Hite and Owers (1983). That is, if the bond is traded on day $t - n$ and on day t, the return is treated as an n-day return [$R_{it(n)}$], and an unbiased estimate of the return on any day t is $R_{it(n)}/n$. The parameters of the return distributions are estimated for the period from $t = -41$ to $t = -11$. During the event period from $t = -10$ to $t = +10$, if the bond is traded on day $t - n$ and next on day t, an abnormal return (AR_{it}) is computed only for day t as $AR_{it} = R_{it(n)} = n\bar{R}_i$, where $\bar{R}_i$ is the estimate of the mean bond return from the estimation period. The individual abnormal returns are standardized by dividing them by $S_i \sqrt{n}$, where S_i is the standard deviation of abnormal returns estimated for each bond during the estimation period. Average daily abnormal bond returns and test statistics are obtained by using the same procedure used for stock returns.

[8] Market model parameters were also estimated in the post-announcement period ($t = +16$ to $t = +136$). Since the results did not change, the findings reported in Section III are based on the pre-announcement estimation of the market model.

[9] Where

$$SPE_{it} = PE_{it}/S_{it},$$

$$S_{it} = \left[S_i^2 \left[1 + \frac{1}{L} + \frac{(R_{mt} - \bar{R}_m)^2}{\sum_{K=1}^{L} (R_{mk} - \bar{R}_m)^2} \right] \right]^{1/2},$$

and

S_i^2 = residual variance for security i from the market model regression,
L = number of observations during the estimation period,
R_{mk} = return on the market portfolio for the kth day of the estimation period,
R_{mt} = return on the market portfolio for day t, and
$\bar{R}_m$ = average return of the market portfolio for the estimation period.

III. Results

A. Common Stock Returns

Table III presents results on the behavior of the daily average prediction errors (hereafter, abnormal returns) for each day in the period from $t = -15$ to $t = +15$ days relative to the announcement day ($t = 0$). Columns 2–4 pertain to the thirty-five debt-for-common stock exchanges, while columns 5–7 refer to the 106 common stock-for-debt exchanges.

A.1. Debt-for-Common Stock Exchange Offers

Column 1 in Table III lists the event time relative to the announcement day in terms of trading days. Column 2 presents the daily average abnormal returns (ARs) for the sample of debt-for-common stock EOs on each event day; column 3 shows the corresponding Z-statistics; column 4 lists the number of positive and negative observations. As shown in Table III, announcements of debt-for-common stock EOs generate, on average, significant positive abnormal returns to common stockholders. On event day $t = -1$, the AR is 7.64 percent, significant at the 0.01 level ($Z = 12.75$). On the announcement day ($t = 0$), the AR is 2.81 percent, also significant at the 0.01 level ($Z = 5.70$). Furthermore, the two-day $(-1, 0)$ announcement period average cumulative abnormal return is 10.45 percent, which is significant at the 0.01 level ($Z = 13.04$).[10] The number of positive ARs relative to the number of negative ARs, shown in column 4, indicates that the abnormal common stock returns on event days $t = -1$ and $t = 0$ are not driven by outliers.

A.2. Common Stock-for-Debt Exchange Offers

Columns 5–7 in Table III show information on the sample of common stock-for-debt EOs. Column 5 reports the daily average abnormal returns (ARs) for the sample of common stock-for-debt EOs on each event day; column 6 gives the corresponding Z-statistics; column 7 lists the number of positive and negative observations. The findings indicate that common stock-for-debt EOs produce a significant negative abnormal return to the firms' common stockholders. On event day $t = -1$, the AR is -0.51 percent, which is significant at the 0.01 level ($Z = -2.93$), while on event day $t = 0$ the AR is -0.96 percent, significant at the 0.01 level ($Z = -5.98$).[11] In addition, stocks experience an average AR of -0.59% (significant at the 0.01 level; $Z = -3.34$) on event day $t = +1$. The number of

[10] Depending on what time during the trading day the announcement is made, either the publication day or the day before might be the relevant announcement day. Since the exact time of the announcement is not known, a two-day cumulative abnormal return is considered, as well as an announcement-period return. This two-day abnormal return is derived by adding the ARs from event days $t = -1$ and $t = 0$. The relevant Z-statistic is developed in Dodd and Warner (1983).

Subdividing the sample into those firms in which straight debt was issued (thirty-three firms) and those in which convertible debt was issued (seven firms) produces two-day announcement-period returns of 10.08 percent ($Z = 12.58$) and 5.72 percent ($Z = 2.64$), respectively, which are both significant at the 0.01 level.

[11] Subdividing the sample into those in which straight debt was replaced (ninety-three firms) and those in which convertible debt was replaced (twenty firms) produces two-day announcement-period returns of -1.39 percent ($Z = 5.71$) and -1.21 percent ($Z = -2.97$), respectively, which are both significant at the 0.01 level.

Table III

Daily Average Common Stock Abnormal Returns (ARs), *Z*-Statistics, and Number of Positive and Negative Observations for Debt-for-Common Stock and Stock-for-Debt Exchange Offers from 1973 to 1983

	Debt-for-Common Stock ($N = 35$) (Increasing Leverage)			Common Stock-for-Debt ($N = 106$) (Decreasing Leverage)		
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Day Relative to Announcement	Daily Average Abnormal Returns (%)	*Z*-Statistic	Positive: Negative	Daily Average Abnormal Returns (%)	*Z*-Statistic	Positive: Negative
−15	0.90	1.59	22:13	−0.15	−1.19	46:60
−14	−0.09	−0.28	17:18	0.32	1.62	58:48
−13	−0.21	−0.66	18:17	0.27	0.70	54:52
−12	1.01	2.19[a]	23:12	0.37	1.51	58:48
−11	−0.43	−1.11	10:25	0.12	0.44	55:51
−10	−0.73	−0.93	15:20	0.31	1.76	53:53
−9	0.88	1.19	19:16	0.05	0.40	56:50
−8	−0.68	−1.38	14:21	0.02	0.08	51:55
−7	1.70	2.76[a]	20:15	0.10	1.26	55:51
−6	0.04	−0.01	17:18	−0.63	−3.38[b]	38:68
−5	0.28	0.91	16:19	0.20	1.67	54:52
−4	0.42	0.60	19:16	0.22	1.10	57:49
−3	−0.76	−0.97	14:21	0.07	0.58	56:50
−2	0.60	1.48	22:13	−0.12	−0.16	46:60
−1	7.64	12.75	22:13	−0.51	−2.93	35:71
0	2.81	5.70	23:12	−0.96	−5.98	34:72
1	0.55	1.34	26:09	−0.59	−3.34	47:59
2	−0.50	−0.07	18:17	0.01	0.34	48:58
3	−0.56	−1.19	12:23	−0.21	−0.56	45:61
4	0.86	1.68	18:17	−0.25	−1.31	47:59
5	0.01	0.20	18:17	0.19	0.50	52:54
6	−0.27	−0.49	15:20	0.07	−0.17	55:51
7	0.56	1.14	17:18	0.12	1.40	53:53
8	−0.60	−1.59	12:23	0.31	0.88	61:45
9	0.51	0.79	17:18	0.14	0.92	59:47
10	−0.02	0.57	18:17	−0.35	−2.17[b]	46:60
11	−0.03	0.14	17:18	0.23	0.95	54:52
12	0.03	0.01	16:19	0.12	0.71	60:46
13	−0.78	−0.95	15:20	−0.35	−1.89	44:62
14	0.02	0.03	17:18	0.23	1.48	62:44
15	−0.44	−0.90	15:20	−0.01	−0.20	50:56

[a] Twelve trading days before the announcement day, two firms experienced significant positive abnormal returns. The *Wall Street Journal Index* indicated that, on this day, those firms announced increased quarterly earnings. In addition, seven days prior to event day $t = 0$, another two firms experienced positive abnormal returns as well. The *Wall Street Journal Index* revealed no information about these firms on this day. This accounts for the reported significant abnormal portfolio returns on event days $t = -12$ and $t = -7$.

[b] Six trading days before the event day of $t = 0$, five firms experienced negative significant abnormal returns, which accounts for the reported significant portfolio returns on this day. The *Wall Street Journal Index* reported unfavorable information (i.e., downgrading of debt, law suits, and decreasing quarterly income) for three of these firms, while on this day no information was found for the remaining two firms. Furthermore, ten trading days after the announcement day, two firms experienced negative significant abnormal returns. The *Wall Street Journal Index* revealed no information about either of these firms on that day.

positive ARs relative to negative ARs, shown in column 7, indicates that the abnormal common stock returns on event days $t = -1$ and $t = 0$ are not due to outliers.

The findings for the debt-for-equity sample of EOs are similar to those reported by Masulis (1980, 1983), Dann (1981), McConnell and Schlarbaum (1981), and Vermaelen (1981) that document a positive relation between financial leverage increases and common stock prices. The findings for the equity-for-debt sample of EOs confirm those reported by Masulis (1980, 1983), Finnerty (1985), Peavy and Scott (1985), Rogers and Owers (1985), Asquith and Mullins (1986), Kalay and Shimrat (1986), Masulis and Korwar (1986), and Mikkelson and Partch (1986). They suggest that decreasing the firm's financial leverage or increasing its equity position produces a negative abnormal return to the firm's common stockholders.

B. Bond Returns

The positive (negative) abnormal common stock returns in the debt-for-equity (equity-for-debt) exchange offers are consistent with a wealth transfer effect from bondholders to stockholders (stockholders to bondholders). Masulis (1980) and Kim, McConnell, and Greenwood (1977) find evidence that supports a wealth transfer effect.[12] However, recent studies by Kalay and Shimrat (1986) and Travlos (1987) provide no evidence of wealth transfer effects.[13] In an attempt to further investigate the existence of a wealth transfer, Table IV presents daily average returns (ARs) for straight (non-convertible) and convertible debt issues of eleven debt-for-equity and sixty-five equity-for-debt EOs for each day during the period from $t = +5$ to $t = -5$ relative to the announcement day ($t = 0$).[14] The wealth-transfer-effect hypothesis is supported if straight debt issues experience negative (positive) abnormal returns at the announcement of debt-for-equity (equity-for-debt) EOs. Because convertible debt has characteristics similar to common stock, it is expected that the abnormal return experienced with this type of debt will be in the same direction as the abnormal common stock returns.

Column 1 in Table IV lists the day relative to the initial announcement. Columns 2–4 present the daily average abnormal returns, the Z-statistics, and the number of positive and negative observations, respectively, for straight debt issues of the firms announcing debt-for-equity EOs. Daily average abnormal returns for all days in the announcement period from $t = -5$ to $t = +5$ are statistically insignificant. In addition, columns 8–10 depict the results for the straight debt issues of firms proposing equity-for-debt EOs. The daily average abnormal return for event day $t = 0$ is -0.48 percent, which is statistically significant at the 0.01 level ($Z = -2.58$). Given the number of negative observations ($N = 25$) relative to the number of positive observations ($N = 15$), it appears that the result is not driven by outliers. This conclusion is further

[12] Masulis (1980) examines EO announcements, while Kim, McConnell, and Greenwood (1977) examine the announcement of a formation of captive finance subsidiaries.

[13] Kalay and Shimrat (1986) analyze the announcement of new issues of equity. Travlos (1987) analyzes stock exchange acquisitions.

[14] Due to the infrequency of bond trading, the number of bond returns reported on any specific day may be less than the total number of bonds associated with a specific group.

Table IV

Daily Average Abnormal Returns (ARs), *Z*-Statistics, and Number of Positive and Negative Observations for Straight and Convertible Debt Issues for a Sample of Debt-for-Equity and Equity-for-Debt Exchange Offers from 1973 to 1983

	Debt-for-Equity						Equity-for-Debt					
	Straight ($N = 10$)			Convertible ($N = 11$)			Straight ($N = 84$)			Convertible ($N = 26$)		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Day Relative to Announcement	Daily Average Abnormal Return (%)	*Z*-Statistic	Positive: Negative	Daily Average Abnormal Return (%)	*Z*-Statistic	Positive: Negative	Daily Average Abnormal Return (%)	*Z*-Statistic	Positive: Negative	Daily Average Abnormal Return (%)	*Z*-Statistic	Positive: Negative
−5	−0.90	−0.74	3:4	0.13	0.48	6:4	−0.08	−1.12	21:26	0.05	0.40	10:9
−4	0.72	1.12	4:2	−0.26	0.03	6:2	−0.13	−0.79	20:23	0.07	−0.11	9:9
−3	0.04	−0.69	3:4	−0.06	−0.58	6:4	−0.36	0.41	24:21	−0.44	−1.90	5:11
−2	0.71	1.40	4:2	−0.49	−1.66	4:6	0.16	0.36	23:25	−0.35	−1.33	5:11
−1	−0.20	−0.21	3:2	1.17	2.53	9:1	0.14	0.19	23:23	0.43	−0.28	10:11
0	0.11	0.14	3:3	1.02	1.10	7:2	−0.48	−2.58	15:25	−0.91	−3.30	5:15
+1	0.09	−0.61	4:2	0.09	0.06	6:5	−0.20	−0.67	25:23	0.66	1.68	9:9
+2	−0.71	−0.42	2:3	−0.01	0.05	7:3	−0.20	−0.70	22:24	0.24	2.11	11:9
+3	−1.01	−0.40	3:2	−0.49	−0.93	5:5	−0.37	−1.70	18:29	−0.27	−1.05	7:12
+4	−0.31	−0.61	3:5	−0.11	−0.21	5:6	0.06	0.44	20:24	−0.84	−0.81	6:11
+5	−0.75	−0.48	3:3	0.03	0.19	6:3	0.37	1.61	28:20	−0.21	−0.96	9:9

supported by the fact that the Spearman correlation coefficient between the announcement period ($t = 0$) abnormal stock and straight debt returns is 0.3436, which is significant at the 0.05 percent level. The empirical findings for both types of EOs are inconsistent with the wealth-transfer hypothesis, which predicts that nonconvertible bondholders will lose (gain) at the benefit (expense) of stockholders in debt-for-equity (equity-for-debt) EOs.

Columns 5–7 refer to the convertible debt issues in the debt-for-equity EOs. The daily average abnormal return on day $t = -1$ is 1.17 percent, which is statistically significant at the 0.01 level ($Z = 2.53$). Columns 11–13 contain results for the convertible bond issues in the equity-for-debt EOs. For event day $t = 0$ the daily average abnormal return is −0.91 percent, which is statistically significant at the 0.01 level ($Z = -3.30$). The number of negative observations ($N = 15$) relative to positive observations ($N = 5$) suggests that this abnormal return is not due to outliers. From these results it is apparent that convertible debt returns behave similarly to common stock returns at the announcement of debt-for-equity and equity-for-debt EOs.

These findings, in conjunction with those for stock returns in Table III, do not lend support to the wealth-transfer hypothesis.[15] They are, however, consistent with the information hypothesis. Furthermore, it appears that nonconvertible bondholders share with the stockholders the losses associated with the unfavorable signal conveyed through an equity-for-debt EO, but they do not share the benefits associated with the positive information revealed through a debt-for-equity EO.

IV. Cross-Sectional Analysis

To obtain additional insights into the price effects of exchange offers and to assess the potential causes for stock price reactions to exchange offer announcements, the following regression model is estimated for individual announcement-period stock returns:

$$SCAR_{(-1,0)i} = a_0 + a_1 CHLV1_i + a_2 ZRMT_i + a_3 PCHOLD_i + a_4 TYPEDUM_i + e_i, \quad (4)$$

where $SCAR_{(-1,0)}$ is the two-day standardized cumulative abnormal return; $CHLV1$ is leverage ratio 1, as defined in Table II; $ZRMT$ is standardized unexpected earnings for the two-year period subsequent to the offer;[16] $PCHOLD$

[15] To provide a better comparison of stock and bond returns, we also analyzed the stock returns for the set of firms for which there are traded bonds (i.e., the data underlying Table IV). In the debt-for-equity EOs, the two-day ($t = -1$ to $t = 0$) average abnormal common stock return for the firms that have straight debt is 5.81 percent (Z-test is 3.10). For firms with convertible debt, the corresponding stock return is 8.93 percent (Z-test is 4.83). In the equity-for-debt EOs, the two-day common stock CARs are −1.75 percent (Z-test is −5.02) and −2.10 percent (Z-test is −2.29), respectively. These findings are consistent with the findings for the full sample.

[16] The standardized unexpected earnings per share is defined as forecast error divided by its standard deviation. The forecast error is obtained via the following model (see Kalay and Shimrat (1986)): $f(\Delta EPS_{it}) = b_{0i} + b_{1i}\Delta EPS_{mt} + b_{2i}\Delta LEV_{it}$, where $f(\Delta EPS_{it})$ = a forecast of first differences in earnings (adjusted for stock splits and stock dividends) per share for firm i in year t, ΔEPS_{mt} = a market index of earnings per share changes in year t computed as an equally weighted average of

measures the percentage change in managerial stockholdings caused by the exchange offer (equals percentage of total shares owned by managers subsequent to the exchange offer divided by their percentage of total shares owned prior to the exchange offer and is calculated assuming that managers do not participate in the transaction); *TYPEDUM* is a dummy variable for type of equity exchanged (common stock = 1; preferred stock = 0).

The debt ratio, *CHLV*1, measures changes in firms' leverage caused by exchange offers. As discussed in Section I.A, leverage changes have an ambiguous impact on stock returns. Given the unsettled nature of this relation, it is impossible to predict a priori the sign of the coefficient a_1. The variable *ZRMT* is included as one test of the information hypothesis. That is, changes in financial leverage caused by EOs convey managements' expectations about the firms' future prospects. Accordingly, the stock price reaction at the announcement date will be positively related to the unanticipated earnings changes, and a positive coefficient for a_2 is implied. The variable *PCHOLD* captures changes in management's fractional ownership of shares. Both Jensen and Meckling's (1976) agency theory and Leland and Pyle's (1977) signalling theory models predict that changes in management stockholdings are associated with similar changes in firm value. Therefore, a positive coefficient for a_3 is implied. *TYPEDUM* is used to control for the type of equity exchanged.

Panel A in Table V reports results of different versions of the general regression model estimated for the sample of debt-for-equity EOs, while Panel B shows regression results for the sample of equity-for-debt EOs.[17] The *F*-statistics reported in Table V indicate that the regression model has statistically significant explanatory power for both samples of exchange offers.[18] In addition, the coefficient for *PCHOLD* is positive and significant in all regressions for the debt-for-equity sample. This is consistent with both the Leland and Pyle (1977) signalling model and the Jensen and Meckling (1976) agency model.[19] Also consistent with

EPS figures of all the COMPUSTAT (1966–1986 version) firms, and ΔLEV_{it} = a change of the leverage ratio (total debt/total assets) of firm i between years $t-1$ and t. The forecast error (e_{it}) is computed as $e_{it} = \Delta EPS_{it} - b_{0i} - b_{1i}\Delta EPS_{mt} - b_{2i}\Delta LEV_{it}$. This model implies that the earnings forecast error at a time t is a function of the change of the earnings per share over the previous year, the change in a market index of earnings, and the change in the firm's financial leverage ratio. As Kalay and Shimrat (1986) suggest, the leverage ratio is important since this ratio changes subsequent to the exchange offer. The inclusion of this item as an explanatory variable allows for the separation of changes in earnings per share due to capital structure changes and those that may convey good or bad news.

[17] The rationale for presenting separate regression results for the two samples is the fact that, as seen in Table II, the two samples have significantly different size characteristics. Regressions are presented in the order they were obtained through the stepwise regression process. Alternative regression models were run utilizing the other debt ratios (*CHLV*2, *CHLV*3, *CHLV*4, and *DEBCAP*) as possible proxies of leverage changes. The results from these regressions were similar to those reported in this section and are available upon request.

[18] The number of observations reported for the regressions in Table V is less than the entire sample due to lack of data on managerial stockholdings and/or earnings per share.

[19] This finding can also be understood in the context of Stulz's (1988) model on the relationship between the value of the firm and the distribution of voting rights. Accordingly, the debt-for-equity EO consolidates voting rights in the hands of management, which increases the value of "α" for the firm. In addition, consistent with Harris and Raviv (1988) and Stulz (1988), the debt-for-equity EO also conveys information about the firm's prospects on the market for corporate control.

Table V

Estimated Coefficients and *t*-Statistics from Regressing the Standardized Cumulative Abnormal Stock Returns ($SCAR_{(-1,0)}$) on Various Variables for Forty Debt-for-Equity and 115 Equity-for-Debt Exchange Offers during the Period 1973–1983*

$$SCAR_{(-1,0)i} = a_0 + a_1 CHLV1_i + a_2 ZRMT_i + a_3 PCHOLD_i + a_4 TYPEDUM_i + e_i$$ [a]

Regression	a_0	a_1	a_2	a_3	a_4	N	R^2 (%)	F-Test	Significance of F-Test
				Panel A: Debt-for-Equity					
1	−6.86 (2.12)[b]	—	—	7.01 (3.05)[c]	—	29	25.58	9.28	0.01
2	−8.08 (−2.53)[b]	—	0.58 (1.76)[d]	7.51 (3.36)[c]	—	29	33.47	6.54	0.01
3	−8.04 (−2.48)[b]	−0.70 (−0.45)	0.54 (1.56)	7.78 (3.31)[c]	—	29	34.01	4.29	0.01
4	−8.05 (−2.40)[b]	−0.69 (−0.36)	0.54 (1.53)	7.77 (2.79)[c]	0.89 (0.02)	29	34.01	3.09	0.03
				Panel B: Equity-for-Debt					
1	−1.10 (−4.03)[c]	—	0.36 (2.17)[b]	—	—	48	9.26	4.69	0.04
2	8.07 (1.09)	—	0.34 (2.05)[b]	−9.43 (−1.24)	—	48	12.25	3.14	0.05
3	10.69 (1.14)	−3.80 (−0.44)	0.36 (2.08)[b]	−11.99 (−1.24)	—	48	12.63	2.12	0.11
4	13.77 (1.26)	−6.80 (−0.67)	0.36 (2.05)[b]	−13.72 (−1.35)	−1.31 (−0.61)	48	13.37	1.66	0.18

* *t*-Statistics are given in parentheses.

[a] $SCAR_{(-1,0)}$ = standardized cumulative abnormal return over the period −1 to 0 relative to event day 0,
$CHLV1 = DEBTF/EQM12$,
$ZRMT$ = standardized unexpected earnings per share for the two years subsequent to the announcement,
$PCHOLD$ = percentage of total shares owned by managers subsequent to the exchange offer divided by their percentage of total shares owned prior to the transaction,
$TYPEDUM$ = dummy variable for type of equity exchanged (common stock = 1, preferred stock = 0).

[b] Significant at the 0.05 level.

[c] Significant at the 0.01 level.

[d] Significant at the 0.10 level.

the Leland and Pyle (1977) signalling model, the coefficient for *ZRMT* is positive and significant for all regressions in the equity-for-debt sample and is marginally significant for one regression in the debt-for-equity sample.

The coefficient for *CHLV*1 is insignificant in all regressions. This is inconsistent with the tax-based theories of capital structure provided in Masulis (1983) and Mikkelson (1985).[20] Both studies use proxies for the change in the firm's debt-related tax credits. Based on estimates of cross-sectional regression models, both authors find that the stock price responses to capital structure changes are related to changes in interest expense tax deductions. In order to compare the evidence presented in this study with that reported in Masulis (1983) and Mikkelson (1985), the regression model (equation (4)) was altered slightly by replacing the variable *CHLV*1 with the variable TAX and by adding the variable WEALTH. TAX is a proxy for the firm's debt-related tax shields and, similar to Masulis (1983) and Mikkelson (1985), is defined as the face value of debt issued (retired) multiplied by 0.48. WEALTH is a proxy for the wealth redistribution between bondholders and stockholders induced by issuing (retiring) debt. Similar to Mikkelson (1985; pp. 276 and 283), it is defined as face value of debt issued (replaced) times the amount of debt relative to common stock outstanding after the exchange offer. Both variables are scaled by market value of equity one month prior to the EO announcement. For both samples of EOs the variable TAX is statistically insignificant at the 0.10 level. The variable WEALTH is statistically significant at the 0.10 level for the debt-for-equity EOs, but it has a negative sign that is inconsistent with the wealth-transfer hypothesis. Similar to the results reported in Table V, the variable *PCHOLD* is statistically significant (at the 0.05 level) in the debt-for-stock EOs and the variable *ZRMT* is statistically significant (at the 0.05 level) in the equity-for-debt EOs. The lack of evidence of a positive relation between abnormal returns and changes in tax credits contrasts with the findings of Masulis (1983) and Mikkelson (1985). One possible explanation, pointed out by both authors, is that their TAX variable proxies for an information effect. In this study, information effects are captured by the variables *PCHOLD* and *ZRMT*. These findings, therefore, corroborate the conclusion that the announcement-induced abnormal returns in exchange offers reflect inside information about the firm's future earnings prospects rather than changes in interest expense tax credits.

V. Summary, Conclusions, and Implications

This study presents additional evidence regarding common stock returns on the announcement dates of relatively pure capital structure changes caused by debt-

[20] One must be cautious, however, about the ability of event studies to pick up tax or redistribution effects. Suppose, for instance, that there exists an optimal financing policy that is tax driven. The outside investors know that the firm follows that policy. When a change in capital structure is made, this change is unlikely to convey information to investors since they have known that it would be made. Hence, the announcement effect of the leverage change via exchange offers can only be explained by an unexpected change in the state variables that determine the optimal amount of leverage. This means that the announcement effect is an information effect. However, the information conveyed is not a signal but a verifiable piece of information about an unexpected change in the state variables that push the firm toward a new capital structure equilibrium.

for-equity and equity-for-debt EOs. In the former event, the announcements of exchange offers result in significant positive abnormal returns for the firms' stockholders. In the latter case, the firms' common stocks experience significant negative abnormal returns. In addition, this study presents evidence on non-convertible and convertible bond returns at the announcement of EOs. In debt-for-equity EOs, non-convertible debtholders experience normal returns and convertible debtholders earn positive and significant abnormal returns. In equity-for-debt EOs, both non-convertible and convertible debtholders experience significant losses. These findings do not lend support to the wealth-transfer hypothesis, but they are consistent with the information-effect hypothesis. Additional evidence presented in this paper supports the hypothesis that exchange offers convey information about the firms' future earnings prospects. This hypothesis is examined by using both a measure of unexpected earnings subsequent to the EO announcement and a measure of the change in managers' proportional ownership of common stock in their own firms. In particular, results based on cross-sectional regression analysis indicate that, on the announcement date of debt-for-equity exchange offers, stock price increases are positively related to changes of managerial stockholdings and are marginally related to the firms' unexpected earnings. Furthermore, the empirical findings for the equity-for-debt exchange offers indicate that there is a significant relationship between abnormal returns and unexpected earnings changes. These findings, in conjunction with those for the debt-for-equity exchange offers, suggest that the market can distinguish between "good firms" and "bad firms" at the announcements of exchange offers and that it takes into account expected marginal benefits when it prices common stocks at exchange offer announcements. Such a conclusion supports the hypothesis that stock price reactions to pure capital structure changes reflect information effects rather than tax and wealth transfer effects.

REFERENCES

Asquith, P. and D. W. Mullins, Jr., 1986, Equity issues and offering dilution, *Journal of Financial Economics* 15, 61–89.

Brown, S. J. and J. B. Warner, 1985, Using daily stock returns: The case of event studies, *Journal of Financial Economics* 14, 3–31.

Dann, L. Y., 1981, Common stock repurchases: An analysis of returns to bondholders and stockholders, *Journal of Financial Economics* 9, 113–138.

——— and W. H. Mikkelson, 1984, Convertible debt issuance, capital structure change and financing related information, *Journal of Financial Economics* 13, 157–186.

DeAngelo, H. and R. W. Masulis, 1980, Optimal capital structure under corporate and personal taxation, *Journal of Financial Economics* 8, 3–29.

Dodd, P. and J. B. Warner, 1983, On corporate governance: A study of proxy contests, *Journal of Financial Economics* 11, 401–438.

Finnerty, J. D., 1985, Stock-for-debt swaps and shareholder returns, *Financial Management* 14, 5–17.

Galai, D. and R. W. Masulis, 1976, The option pricing model and the risk factor of stock, *Journal of Financial Economics* 3, 53–81.

Handjinicolaou, G. and A. Kalay, 1984, Wealth redistributions or changes in firm value: An analysis of returns to bondholders and stockholders around dividend announcements, *Journal of Financial Economics* 13, 35–63.

Harris, M. and A. Raviv, 1988, Corporate control contests and capital structure, *Journal of Financial Economics* 20, 55–86.

Heinkel, R., 1982, A theory of capital structure relevance under imperfect information, *Journal of Finance* 37, 1141–1150.

Hite, G. L. and J. E. Owers, 1983, Security price reactions around corporate spin-off announcements, *Journal of Financial Economics* 12, 409–436.

Jensen, M. C., and W. H. Meckling, 1976, Theory of the firm: Managerial behavior, agency costs and ownership structure, *Journal of Financial Economics* 11, 305–360.

Kalay, A. and A. Shimrat, 1986, Firm value and seasoned equity issues: Price pressure, wealth redistribution or negative information, New York University Working Paper.

Kim, H, 1978, A mean variance theory of optimal capital structure and corporate debt capacity, *Journal of Finance* 33, 45–63.

———, J. J. McConnell, and P. R. Greenwood, 1977, Capital structure rearrangements and me-first rules in an efficient capital market, *Journal of Finance* 32, 789–809.

Kraus, A. and R. Litzenberger, 1973, A state of preference model of optimal financial leverage, *Journal of Finance* 28, 911–922.

Leland, H. and D. Pyle, 1977, Information asymmetries, financial structure and financial intermediaries, *Journal of Finance* 32, 371–387.

Masulis, R. W., 1980, The effects of capital structure change on security prices: A study of exchange offers, *Journal of Financial Economics* 8, 139–178.

———, 1983, The impact of capital structure change on firm value: Some estimates, *Journal of Finance* 38, 107–126.

——— and A. N. Korwar, 1986, Seasoned equity offerings: An empirical investigation, *Journal of Financial Economics* 15, 91–118.

McConnell, J. J., and G. G. Schlarbaum, 1981, Evidence on the impact of exchange offers on security prices: The case of income bonds, *Journal of Business* 54, 65–85.

Mikkelson, W. H., 1981, Convertible debt calls and security returns, *Journal of Financial Economics* 9, 237–264.

———, 1985, Capital structure change and decreases in stockholders' wealth: A cross-sectional study of convertible security calls, in B. M. Friedman, ed.: *Corporate Capital Structures in the United States* (University of Chicago Press, Chicago, IL).

——— and M. M. Partch, 1986, Valuation effects of security offerings and the issuance process, *Journal of Financial Economics* 15, 31–60.

Miller, M., 1977, Debt and taxes, *Journal of Finance* 32, 261–275.

——— and K. Rock, 1985, Dividend policy under asymmetric information, *Journal of Finance* 40, 1031–1051.

Modigliani, F. and M. Miller, 1963, Corporate income taxes and the cost of capital: A correction, *American Economic Review* 53, 433–443.

Myers, S. and N. Majluf, 1984, Corporate investment and financing decisions when firms have information that investors do not have, *Journal of Financial Economics* 13, 187–221.

Peavy, J. W. and J. A. Scott, 1985, The effect of stock for debt swaps on security returns, *Financial Review* 20, 303–327.

Rogers, R. C. and J. E. Owens, 1985, Equity for debt exchanges and stockholder wealth, *Financial Management* 14, 18–26.

Ross, S. A., 1977, The determination of financial structure: The incentive signalling approach, *Bell Journal of Economics* 8, 23–40.

Scott, J., 1976, A theory of optimal capital structure, *Bell Journal of Economics and Management Science* 7, 33–54.

Smith, C., 1986, Investment banking and the capital acquisition process, *Journal of Financial Economics* 15, 3–29.

Stulz, R. M., 1988, Managerial control and voting rights, financial policies and the market for corporate control, *Journal of Financial Economics* 20, 25–54.

Travlos, N. G., 1987, Corporate takeover bids, methods of payment, and bidding firms' stock returns, *Journal of Finance* 42, 943–963.

Vermaelen, T., 1981, Common stock repurchases and market signalling: An empirical study, *Journal of Financial Economics* 9, 139–184.

———, 1984, Repurchase tender offers, signalling, and managerial incentives, *Journal of Financial and Quantitative Analysis* 19, 163–181.