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The Impact of Preferred-for-Common Exchange Offers on Firm Value

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ABSTRACT

This paper examines the impact of capital structure changes which have no corporate tax consequences. Specifically, exchange offers involving preferred and common stock are analyzed. We find that systematic changes in firm value occur when companies announce preferred-for-common exchange offers. Consequently, we interpret our results to be consistent with a signalling hypothesis. We also find weaker evidence suggesting the existence of agency cost effects or wealth redistributions across security classes. Our findings imply that capital structure changes need not alter the tax status of the issuing firm to affect firm value.

SINCE THE ORIGINAL MODIGLIANI-MILLER [28] irrelevance proposition, numerous hypotheses have evolved which attempt to explain why capital structure decisions may be of consequence to the securityholders of a firm. Each of these hypotheses posits the existence of one or more capital market imperfections. Such imperfections include corporate and personal taxes or bankruptcy costs [10, 14, 26], unequal access or imperfect substitutes [11], asymmetric information [15, 30, 31, 33], and agency costs [13, 29, 35]. Because the significance of such imperfections in the "real world" is unknown, the relevance of capital structure decisions becomes an empirical issue.

Recent empirical studies suggest that capital structure decisions impact firm value. Masulis [19–22], Dann [8], Vermaelen [36], McConnell and Schlarbaum [18], Mikkelson [24], Dann and Mikkelson [9], Masulis and Korwar [23], Asquith and Mullins [1], and Mikkelson and Partch [25] all document statistically significant security price movements in response to leverage-related, firm-specific events.[1] These studies suggest the existence of market imperfections which make capital structure decisions relevant. However, which imperfections, singly or in combination, are driving the results is still unresolved. Masulis [22] argues that the observed returns are attributable to a tax effect, a redistribution effect or a tax-based information effect. With the exception of Mikkelson [24], who leaves the question open, the other authors argue that signalling or agency cost effects dominate the tax effect.

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[1] Dann and Mikkelson [9] and Smith [34] provide an excellent summary of the empirical literature.

This paper analyzes potential signalling and agency cost and redistribution effects in an environment which is relatively free of corporate tax consequences. Specifically, we examine preferred-for-common exchange offers. Such offers increase (decrease) leverage when firms retire common (preferred) stock by issuing preferred (common). We refer both to leverage-increasing and leverage-decreasing events as preferred-for-common exchange offers.

Masulis [19, 22] considered preferred-for-common exchange offers as part of a larger set of capital structure changes. Moreover, he considered an information effect associated with the issuance of debt [22]. This study extends his analysis by examining the information effects which attend the issuance or retirement of preferred stock. We compare and contrast the predictions of the signalling hypothesis to the predictions of the agency cost and redistribution hypothesis.

Contrary to the "pure" redistribution hypothesis, our evidence suggests that firm values change significantly in response to preferred-for-common exchange offers. Therefore, the signalling or agency cost hypotheses at least partially explain the documented market reactions. Nevertheless, we find some evidence also of wealth transfers among different classes of securityholders.

In the next section of the paper, we discuss our data and sample design. In Section II, testable hypotheses are itemized. Section III presents our empirical results, and Section IV summarizes.

I. Data Description

The sample period extends from July 1962 through December 1980. The primary sources used to identify firms making preferred-for-common exchanges include Commerce Clearing Houses' *Capital Changes Reporter*, Prentice Hall's *Capital Adjustments*, Investment Dealer's Digest's *Corporate Financing Directory*, and the *Wall Street Journal Index*.

Over 125 offers were located from these primary sources. After applying screens which closely parallel the screens used in Masulis [19, 21], we further reduced the sample to 45 events (representing 37 firms).[2,3] Offers qualified for the final sample based upon the following criteria:

1. The common stock of the firm had to be listed on the NYSE or the ASE at the time of the announcement.
2. Only preferred and common stock could be affected by the exchange offer.
3. Cash or other asset distributions associated with the offer could not exceed 25 percent of the value of the securities to be retired.

[2] We are grateful to Ron Masulis for providing a list of the preferred-for-common exchange offers in his sample which consists of 43 events extending through mid-1976. Because of slight variations in criteria (1), (2), and (5), above, only 35 of Masulis' 43 offers are represented in our sample.

[3] Five firms made multiple offers. One firm made five offers. The most for any other firm was two. In total, there are 25 firms in the leverage-decreasing sample and 13 in the leverage-increasing sample. One firm announced a leverage-increasing offer in 1967 and a leverage-decreasing offer in 1973.

4. No other firm-specific announcements with "economic content" could coincide with the exchange offer announcement.[4]
5. The offer had to be completed.[5]

The attractive features of the design for holding other factors constant are that offers involving debt are eliminated (criterion 2); simultaneous asset distributions are minimized (criterion 3); and the event date is isolated (criterion 4).

Table I summarizes the major effects of the exchanges for individual shareholders participating in each of the offers. Column (2) gives the exchange ratio, i.e., the number of common shares exchanged for each preferred share issued or retired in the offer. The total number of preferred shares issued or retired is given in colunn (3). Columns (4) and (5) present dividend and price data for common shares, and columns (6) through (11) present liquidation values, dividend information and information regarding voting rights, protective covenants, and conversion privileges on preferred stocks involved in the exchanges.

Columns (9) through (11) require detailed explanation. For example, three types of voting privileges may be identified from column (9). Explicit voting rights are indicated by the number of votes per share belonging to preferred stockholders. Six of the preferred stocks in leverage-increasing events and 16 of the preferred stocks in leverage-decreasing events have explicit voting privileges. The median number of votes per preferred share in both types of offer is zero. Contingent voting rights (where preferred stockholders, as a class, elect a certain number of board members if dividend arrears exceed some pre-specified amount) occur more frequently. Preferred shares with contingent voting privileges are indicated with an asterisk (*). A double asterisk (**) indicates preferred shares whose holders can elect board members independent of dividend arrearages but who have no other voting rights. Some preferred stock issues in both leverage-increasing and leverage-decreasing offers carry both explicit and contingent voting privileges. Although explicit voting rights reduce the marginal benefit of the contingent vote, a contingent voting privilege probably still facilitates a cumulative voting effort.

Column (10) classifies preferred stocks by the strength of their protective covenants. The following excerpt from *Moody's Industrial Manual* describes the preferred stock retired in event 27 of the leverage decreasing sample:

> Consent of 66⅔% of preferred necessary to (1) create any lien on assets, except . . . ; (2) increase authorized preferred or create any stock prior or equal thereto, or any obligation convertible into such stock; (3) amend or appeal any protective provisions of preferred.

This covenant exemplifies the strongest type of protection we observe for pre-

[4] Not all conflicting announcements are eliminated. For example, one firm which announced plans to construct a new office building remains in the sample because its announcement was not judged to be economically significant. Another firm which terminated merger talks remains because the announcement occurred at least two days prior to the exchange offer announcement.

[5] Three discontinued offers are eliminated from our sample. However, including those offers in the analysis does not change our general conclusions.

Table I

Exchange Ratios and Other Selected Characteristics of Common and Preferred Stocks Issued or Retired in Leverage-increasing and Leverage-decreasing Preferred-for-Common Exchange Offers

			Common Stock		Preferred Stock					
Event (1)	Exchange Ratio (Number of Common Shares Exchanged Per Preferred Share Issued or Retired) (2)	Number of Preferred Shares Issued or Retired (000's) (3)	Price ($) One Week Prior to Announcement (4)	Dividend ($) (5)	Liquidation Value ($)[a] (6)	Dividend ($) (7)	Dividend Arrears ($) (8)	Votes Per Share (9)	Type of Protective Covenants[b] (10)	Conversion Ratio (Number of Common Shares into Which Preferred Can Convert) (11)
A. Leverage-increasing Offers										
1	1.00	270	7.75	0.63	10.50	1.28	NA[c]	NA	NA	0.00
2	3.00	400	9.50	0.00	10.00	1.25	NA	3.00	3	3.00
3	1.00	500	4.00	0.00	7.00	0.75	NA	0.00*	3	0.00
4	1.00	248	6.25	0.00	7.50	0.80	NA	0.00	3	0.00
5	10.00	5	4.88	0.00	60.00	6.00	NA	1.00	3	0.00
6[d]	0.00	2,775	82.25	3.05	12.50	3.68	NA	1.00*	3	1.00
7	10.00	22	1.75	0.00	30.00	3.60	NA	0.00*	2	0.00
8	1.00	2,855	11.00	0.20	15.50	1.40	NA	0.00*	3	0.00
9	1.00	350	19.13	1.00	20.50	2.10	NA	0.00*	3	0.00
10	1.00	250	39.00	0.45	25.00	1.75	NA	1.00*	3	1.00
11	10.00	160	5.38	0.00	75.00	4.50	NA	0.00*	3	0.00
12	3.00	266	15.88	0.50	75.00	3.00	NA	1.00*	3	1.25
13	1.00	61	1.88	0.00	5.00	0.25	NA	0.00	3	0.00
14	1.00	873	24.75	0.50	20.00	1.50	NA	0.90*	2	0.90
15	4.00	164	2.50	0.00	12.00	1.20	NA	0.00*	1	1.50
Mean	3.27	1,168	15.73	0.42	25.70	2.20	NA	0.56	NA	0.64
Median	1.00	266	7.75	0.00	15.50	1.50	NA	0.00	3	0.00
Mode	1.00	NA	NA	0.00	75.00	NA	NA	0.00	3	0.00
B. Leverage-decreasing Offers										
1	6.00	4	20.50	1.00	100.00	6.00	0.00	4.00	3	0.00
2	6.00	389	4.25	0.00	20.00	1.00	0.75	0.00**	2	0.00
3	4.20	134	5.75	0.00	20.00	1.00	0.75	0.00**	2	0.00
4	4.60	53	5.00	0.00	20.00	1.00	0.75	0.00**	2	0.00
5	4.00	27	6.38	0.00	20.00	1.00	0.75	0.00**	2	0.00
6	14.10	30	1.88	0.00	20.00	1.00	0.75	0.00**	2	0.00
7	1.53	34	32.75	0.45	50.00	2.50	0.00	0.00*	3	0.00
8	4.00	381	1.38	0.00	10.00	1.25	3.13	3.00	3	3.00
9[c]	4.00	25	6.00	0.10	1.00	−0.25	0.00	0.00**	3	0.00

10	2.06	75	20.50	0.00	40.00	2.00	4.00	1.00	3	0.00
11	1.00	406	4.88	0.00	0.50	0.00	0.00	1.00	3	0.00
12	6.00	28	5.00	0.00	65.00	2.00	4.00	1.00*	2	3.60
13	6.00	14	6.38	0.00	65.00	2.00	4.50	1.00*	2	3.60
14	2.17	21	37.00	0.00	100.00	4.25	0.00	0.00*	1	0.00
15[a]	5.00	222	18.13	1.00	100.00	5.00	0.00	0.00*	1	0.00
15[b]	4.88	57	18.13	1.00	100.00	4.88	0.00	0.00*	1	0.00
16[a]	4.00	104	22.75	1.16	100.00	4.50	0.00	1.00*	1	2.70
16[b]	2.00	305	22.75	1.16	50.00	2.25	0.00	0.50*	1	1.10
17	1.00	23	53.00	0.48	50.00	2.75	0.00	0.00*	1	0.00
18	2.00	851	4.13	0.00	10.00	0.40	2.70	0.10*	3	0.80
19	3.75	3	26.50	0.00	100.00	7.00	0.00	0.00*	1	0.00
20	1.05	729	12.00	0.00	10.00	0.30	0.00	1.00*	3	1.00
21	2.75	40	22.00	0.40	50.00	2.50	0.00	0.00*	1	0.00
22	1.00	256	14.50	0.00	7.00	0.40	3.40	0.00*	1	0.00
23[d]	0.50	2,856	12.13	0.40	29.00	−0.40	0.00	0.17*	2	1.50
24	5.00	4	17.00	1.00	100.00	5.00	0.00	0.00	3	0.00
25	16.00	4	4.63	0.00	50.00	3.00	21.75	1.00	1	0.00
26	4.25	5	23.25	0.99	100.00	7.00	0.00	1.00	3	0.00
27	5.00	46	23.13	0.00	110.00	5.50	4.13	0.00*	1	0.00
28[d]	1.00	213	40.63	0.00	−15.00	0.25	96.00	1.00	1	0.00
29	2.00	16	5.13	0.00	25.00	1.25	0.00	1.00*	2	0.00
30	0.33	150	42.88	1.44	20.00	0.48	0.00	1.00	NA	0.00
Mean	3.97	235	16.88	0.33	47.73	2.40	4.61	0.49	NA	0.60
Median	4.00	50	15.75	0.00	45.00	2.10	0.00	0.00	2	0.00
Mode	NA	4	NA	0.00	100.00	1.00	0.00	0.00	1	0.00

[a] The evidence of Linn and Pinegar [16] suggests that firms attempt to issue preferred stock at or close to its liquidation value. Consequently, liquidation values listed for leverage-increasing offers proxy for market values. In leverage-decreasing offers, liquidation values may deviate from the pre-offer market values. Nevertheless, by definition, the value paid by the firm to retire preferred stock should approximate the preferred stock's liquidation value.

[b] Protective convenants are categorized as follows: category 1 limits the creation without consent of any new security with status senior or equal to existing preferred; category 2 prevents only the creation of senior or equal preferred stock; and category 3 prohibits, at most, the creation of senior preferred stock.

[c] NA—These data are not available or not applicable.

[d] Combinations of common and preferred were issued in these offers. For example, in event 6 of panel A, two new shares of common and one-quarter share of new preferred stock were issued for each share of existing common stock. Thus, the proportionate number of shares held by each investor did not change. For all similar events, the figures in the table represent net figures (i.e., net dividends, etc.).

* These preferred shares have contingent voting rights. That is, shareholders can elect (as a class) a certain number of directors if dividends are in arrears by more than some pre-specified amount.

** These preferred shares permit stockholders (as a class) to elect a portion of the board independent of dividend arrearages.

ferred stocks in our sample. The constraint limits not only the creation of equal or senior preferred stock, but also the creation of secured debt (e.g., through liens). We classify preferred stocks with this type of protection into category 1. Category 2 provides intermediate protection because the covenants prevent the creation of senior or equal preferred stock but do not alter the firm's ability to raise debt. Finally, the covenants associated with category 3 just prohibit the creation of senior preferred stock. The median (and modal) value in column (10) for leverage-increasing offers is 3. However, in leverage-decreasing events, the median is 2 and the mode is 1. Thus, on average, the covenants on preferred stocks retired in leverage-decreasing offers are more restrictive than the covenants of preferred stocks issued in leverage-increasing events.

The conversion ratios listed in column (11) give the number of common shares into which each preferred share can be converted. Arguably, the conversion privilege protects preferred stockholders against future wealth transfers to common stockholders. Consequently, the conversion privilege may limit the need for other forms of protection in the indenture. Six of the leverage-increasing and seven of the leverage-decreasing events involve convertible preferred stock.

Table II describes the relative sizes of leverage-increasing and leverage-decreasing offers. On average, leverage-increasing events involve: (1) a greater percentage of total common shares outstanding; (2) a greater change in preferred stock liquidation values; (3) a larger impact on the cash dividends committed by the firm; and (4) a larger absolute percentage change in votes held by tendering shareholders than leverage-decreasing offers require.

The data in Tables I and II support the following conclusions about the effects of preferred-for-common exchange offers on securityholders and on the firm. In leverage-increasing events, shareholders tender common shares whose aggregate market value and dividend are less than the liquidation value and annual dividend of the preferred stock issued by the firm. Thus, the net effect on the firm is to increase its fixed obligations. Moreover, since the common shares tendered generally have one vote per share, the explicit voting rights of shareholders who participate in the offer are eliminated or reduced. Hence, explicit voting rights within the firm become more concentrated among nontendering shareholders. Protective covenants on the preferred stock issued are generally weak, but protection in some events is maintained through the conversion feature.

In leverage-decreasing events, preferred stockholders receive common shares, the aggregate market value of which approximates the liquidation value of the preferred shares tendered in the offer. Preferred stockholders frequently exchange (and are compensated for) their rights to dividend arrearages. Thus, fixed obligations are eliminated by the firm. However, the dollar amount of the decrease in dividends and preferred stock liquidation values is smaller than the aggregate increase in liquidation values and dividends in leverage-increasing events. In leverage-decreasing offers, preferred stockholders who tender their shares receive explicit voting rights. Hence, the voting power of existing common shareholders is diluted. However, the firm may gain flexibility by eliminating contingent voting (operative in several of the events in our sample) and highly restrictive covenants.

Generalizations about the motivation for leverage-increasing or leverage-decreasing offers are difficult to make because few firms state their rationale for

Table II

Means and Medians of Various Measures of Size of Leverage-increasing and Leverage-decreasing Preferred-for-Common Exchange Offers

	Mean	Median
A. Leverage-increasing Offers ($N = 15$)		
1. Number of Common Shares Sought as a Percent of Total Common Shares Outstanding[a]	0.29	0.30
2. Number of Common Shares Received as a Percent of Total Common Shares Outstanding[a]	0.19	0.18
3. Subscription Rate [(1) ÷ (2)][a]	0.69	0.83
4. Liquidation Value per Preferred Share Issued Relative to Market Value of Common Shares Retired	1.30	1.23
5. Net Increase in Aggregate Liquidation Value of Preferred Stock Issued ($millions)	17.42	4.00
6. Net Increase in Aggregate Dividends Committed ($millions)	0.98	0.38
7. Aggregate Percentage Decrease in Number of Votes Held by Tendering Shareholders[b]	0.11	0.08
B. Leverage-decreasing Offers ($N = 30$)		
1. Number of Common Shares Offered as a Percent of Total Common Shares Outstanding	0.20	0.08
2. Number of Common Shares Exchanged as a Percent of Total Common Shares Outstanding	0.15	0.05
3. Subscription Rate (1 ÷ 2)	0.74	0.78
4. Market Value of Common Shares Issued Relative to Liquidation Value of Preferred Shares Retired[c,d]	1.90	0.99
5. Net Decrease in Aggregate Liquidation Value of Preferred Stock Retired ($millions)[d]	7.21	1.97
6. Net Decrease in Aggregate Dividends Committed ($millions)	0.03	0.05
7. Aggregate Percentage Increase in Number of Votes Held by Tendering Shareholders[b]	0.07	0.03

[a] Event 6 from panel A of Table I was eliminated for these calculations because the net change in common shares sought is zero.

[b] These calculations do not include voting rights of preferred stock issues which were not affected by the offer. Thus, the percentage changes reported here are relative, not absolute.

[c] When events 9, 23, and 28 from panel B of Table I are eliminated, the mean and median are 1.25 and 0.99, respectively.

[d] Dividend arrearages are considered part of the liquidation value for these calculations.

making the offers. However, when firms do announce specific reasons, those reasons generally coincide with the effects of the offers discussed above. For example, reasons given for leverage-increasing offers include the payment of dividends or the concentration of voting power among insiders. Stated reasons for leverage-decreasing offers include the elimination of dividend arrearages, restrictive covenants or the conservation of cash. In some cases, however, the effects we have discussed may be only secondary to the real purpose of the offer. For example, one firm which announced a leverage-increasing offer indicated that the preferred stock issued might be used for subsequent (as yet undisclosed) mergers. Regardless of the stated reasons, we examine all of the events in our sample for their effects on the capital structure of the firm.

II. Hypotheses

The effects of preferred-for-common exchange offers discussed in Section I do not include a change in the tax shield available to the initiating firm.[6] Consequently, models of optimal capital structure which rely on corporate taxes cannot explain the market's response to such offers. On the other hand, the signalling or agency cost hypotheses and the redistribution hypothesis still apply.

Both the magnitude and priority of tendering stockholders' claims are altered by preferred-for-common exchange offers. Consequently, wealth may be transferred to (from) common stockholders from (to) existing senior securityholders unless: (1) existing claims are perfectly protected by appropriate "me-first" rules (as in Fama and Miller [12]) or (2) "equal access" or "perfect substitutes" exist (as in Fama [11]). Such redistributions may occur even though total firm value remains constant if the market perceives the firm's investment decision to be unaffected by the offer.

On the other hand, Ross [33], Miller and Rock [27], and Leland and Pyle [15] suggest reasons why preferred-for-common exchanges may signal information to the market regarding changes in expected cash flows to the firm. According to Ross [33], higher fixed obligations signal greater asset values. Consequently, increases (decreases) in liquidation values and dividends committed by the firm may convey "good" ("bad") news to the market.

Further, Miller and Rock [27] argue that firms prefer internal to external financing. Thus, an increase (decrease) in dividend obligations may suggest that the firm's expected internal cash flows have improved (deteriorated) relative to expected capital requirements.

Finally, Leland and Pyle [15] argue that the fraction of equity held by managers is positively related to expected cash flows. Hence, the concentration (dilution) of inside equity resulting from preferred-for-common exchanges may increase (decrease) the perceived value of the firm. However, other things equal, when the preferred stock issued (retired) is convertible, the concentration (dilution) of inside equity is dampened. Consequently, information effects are predicted to be less pronounced in offers involving convertible preferred stock.

Conversion privileges and voting rights also affect agency costs. Specifically, Jensen and Meckling [13] reason that equity agency costs decline when insiders hold a greater proportion of total equity. Therefore, when a company issues (retires) convertible preferred stock or preferred stock with voting rights to retire (issue) common stock, smaller changes in equity (and firm) values should result because the net change in inside equity is reduced, *ceteris paribus*.

Smith and Warner [35] also argue that protective covenants affect agency costs. Hence, exchange offers may be viewed as an attempt by management to alter those covenants so as to control conflict between prior and residual claimants to the firm's assets. Because of that conflict, a change in the contracting arrangements may cause some wealth redistribution. However, if an "optimal"

[6] Dividend payments to (preferred and common) stockholders provide no tax shield to the firm, and the exchange itself is generally treated as a tax-free reorganization under Section 368 of the Internal Revenue Code.

policy exists (as Smith and Warner suggest) and if managers pursue that policy, then the change in protective covenants occasioned by the offer should cause firm values to rise. This conclusion also holds for Jensen and Meckling's model in which managers seek to minimize total agency costs.

The predictions of the hypotheses we consider can be differentiated as follows. The pure redistribution hypothesis suggests that total firm values remain constant but that prices of common stock and existing senior securities will move in opposite directions. The signalling hypothesis predicts that firm values change in the same direction as the change in leverage. Managers maximize the value of the firm subject to their inside information. Thus, positive (negative) firm revaluations reflect positive (negative) revisions in expected future cash flows. The agency cost hypothesis predicts that managers maximize firm value by minimizing total agency costs. Some redistribution of wealth is possible, but the net effect of the exchange offer on firm value is positive. Both the signalling and the agency cost hypothesis predict that the magnitude of firm revaluations will be attenuated if the preferred stock issued (retired) is convertible or has voting privileges.

III. Empirical Results

The statistical tests for the event study portion of our analysis rely on the "comparison periods" approach developed in Masulis [19, 21]. Brown and Warner [4, 5] find that this approach compares favorably with several variations of the market model approach.

The announcement period for all securities in this study consists of trading days 0 and +1.[7] The comparison period for common stocks runs from day −40 to −1 and from day +2 to +40. For preferred stock, the comparison period is restricted to days −10 to −1 and +2 to +10. In addition to the traditional *t*-test, we employ the nonparametric sign and sign-rank tests to analyze announcement period returns. With the nonparametric tests, the median of the announcement period return is compared to the median of the comparison period returns on an individual security basis. With the *t*-test, mean returns are compared for the entire portfolio of events under the assumption that portfolio returns are normally distributed.

Table III contains the time series of portfolio returns to common stockholders for both leverage-increasing and leverage-decreasing events and to preferred stockholders for leverage-decreasing offers. In adjacent columns, the fraction of total returns which are positive [column (3)] or negative [columns (5) and (7)] is given. Returns at the expiration dates of the offers and announcement and comparison period means and standard deviations are given below each time series.

For leverage-increasing offers, the 4.05 percent announcement period return on common stocks is significantly different at the 0.01 level from the 0.22 percent

[7] For most events, day 0 corresponds to the day prior to the announcement of the offer in the *Wall Street Journal*. Where the source of the announcement is other than the *Wall Street Journal*, day 0 represents the date specified in that other source.

return during the comparison period. This result holds for the t-test as well as for both nonparametric tests. The consistency of the results across tests indicates that the large announcement period return is not solely attributable to outliers in the sample. This finding is corroborated by the observation that the fraction of positive returns during the announcement period (0.67) is approximately twice as large as the fraction of positive returns during the comparison period (0.38). That difference is also significant at the 0.01 level. Moreover, since the return at the expiration of the offer is only −0.65 percent, the positive announcement period effect appears to be permanent and not solely the consequence of some exchange offer premium or unrepeated tax arbitrage opportunity.[8]

In leverage-decreasing events, the absolute magnitude of returns on common stock is much smaller than in leverage-increasing offers. Nevertheless, the −0.73 percent announcement period return is significantly different from the 0.07 percent comparison period return at the 0.05 level for a one-tailed test. One-tailed probabilities for the t-test and the two nonparametric tests range from 0.0272 to 0.0494. The difference in the fraction of negative returns in the announcement versus the comparison period is significant at the 0.03 level.

The preferred stocks' mean announcement period return in leverage-decreasing offers is 6.58 percent. That return is statistically different from the mean comparison period return of 0.39 percent at the 0.01 level of significance. This result holds for both the t-test and the sign and sign-rank tests. Moreover, as column (7) indicates, not one of the 13 preferred stocks in the sample had a negative return on day 0. The returns at the expiration of the offer are negative. However, only 5 of the 13 preferred stocks were traded; so the permanence of the announcement period effect on preferred stocks cannot be gauged adequately by the returns at the expiration of the offer.

To examine the permanence of preferred stock returns more closely, we regress the average announcement period returns on the preferred stocks against the market value premium in the offers. The premium is defined as the difference in the (exchange-ratio-weighted) pre-offer market values of the common stock issues and the preferred stock retired divided by the value of the preferred stock retired. The regression results for the 13 preferred stocks in Table III are given below (with t-statistics in parentheses)

$$\begin{array}{lll} \text{Return} = 0.033 + 0.101\ (\text{Premium}) & & R^2 = 0.39 \\ \qquad\qquad\quad (1.98) \quad (2.67) & & F = 7.15. \end{array}$$

As the regression indicates, there is a premium effect in the returns to preferred stockholders in leverage-decreasing exchange offers. However, since the average premium was 32 percent, only half ($0.50 \cong 0.101\ (32)/(6.58)$) of the announcement period effect is accounted for by the premium. Even if the entire premium effect is temporary, the intercept of the regression indicates that other forces also are at work.

On the basis of Table III, we conclude that preferred-for-common exchange

[8] See Masulis [20] and Vermaelen [36] for a discussion of the effects of exchange offer premia on returns at the expiration of the offer. See Dann [8] for a discussion of unrepeated tax arbitrage opportunities.

Table III

Portfolio Rates of Return on Common and Preferred Stock in Leverage-increasing and Leverage-decreasing Preferred-for-Common Exchange Offers

	Leverage-increasing Events		Leverage-decreasing Events			
	Common Stock Returns		Common Stock Returns		Preferred Stock Returns	
Event Day[a] (1)	($N = 15$) (2)	Fraction > 0 (3)	($N = 30$) (4)	Fraction < 0 (5)	($N = 13$)[b,c] (6)	Fraction < 0 (7)
−10	0.0096	0.60	−0.0037	0.38	0.0045	0.38
−9	0.0110	0.53	0.0081	0.28	−0.0330	0.55
−8	0.0201	0.47	0.0086	0.41	0.0214	0.13
−7	−0.0033	0.33	0.0102	0.28	0.0362	0.17
−6	0.0046	0.53	−0.0063	0.48	−0.0030	0.33
−5	−0.0059	0.40	−0.0107	0.38	−0.0024	0.36
−4	0.0082	0.60	−0.0019	0.37	0.0042	0.42
−3	0.0040	0.33	−0.0038	0.30	−0.0055	0.50
−2	0.0139	0.40	−0.0019	0.27	0.0023	0.40
−1	−0.0064	0.33	0.0092	0.30	0.0020	0.42
0	0.0368	0.73	−0.0139	0.57	0.1175	0.00
1	0.0442	0.60	−0.0007	0.43	0.0140	0.54
2	0.0095	0.33	−0.0023	0.47	0.0056	0.31
3	−0.0089	0.27	−0.0026	0.37	0.0041	0.46
4	0.0060	0.40	−0.0004	0.40	0.0039	0.46
5	−0.0029	0.27	0.0113	0.33	0.0063	0.38
6	0.0031	0.20	−0.0053	0.37	−0.0071	0.42
7	−0.0067	0.20	−0.0035	0.43	0.0227	0.27
8	0.0106	0.33	0.0108	0.33	−0.0085	0.64
9	−0.0140	0.33	0.0039	0.40	0.0295	0.33
10	0.0310	0.53	0.0005	0.57	−0.0085	0.45

Return at Expiration	−0.0065	0.36	−0.0089	0.56	−0.0157[d]	0.80[d]
Announcement Period						
Mean	0.0405	0.67	−0.0073	0.50	0.0658	0.27
Standard Deviation	0.0052	NA[e]	0.0093	NA	0.0732	NA
Comparison Period						
Mean	0.0022	0.38	0.0007	0.37	0.0039	0.39
Standard Deviation	0.0107	NA	0.0057	NA	0.0155	NA

[a] Comparison period returns are presented here in abbreviated form. More complete results are presented in Pinegar [31].

[b] All of these preferred issues are nonconvertible.

[c] There are two preferred stock issues in this sample from the same event. The returns of both issues have been weighted by 0.5 so that the event does not have a disproportionate influence on the portfolio returns. The total number of events represented in the sample is 12.

[d] Only 5 of the 13 preferred stocks were traded at the expiration date.

[e] NA—These data are not available or not applicable.

offers produce significant announcement period returns to preferred and common stockholders. Moreover, those returns appear to be caused by more than an exchange offer premium, the effects of which are only temporary. Nevertheless, excluding any of the hypotheses discussed in Section II on the basis of the returns presented in Table III is difficult. Apparently, as columns (4) and (6) indicate, some redistribution occurs in leverage-decreasing offers because announcement-period returns on common and preferred stocks have opposite signs. However, in order for the "pure" redistribution hypothesis to hold, the value of the firm must not change.

Table IV compares aggregate changes in security values to the aggregate pre-offer market value of each firm. Leverage-increasing and leverage-decreasing events are listed in panels A and B, respectively. Columns (2) through (4) give the two-day announcement period change in security dollar values for common stock, preferred stock and debt. Column (5) shows the aggregate change in the value of the firm. In column (6), the pre-offer value of the firm is estimated as the sum of the market values of all listed securities plus the total book value of unlisted long-term debt or preferred stock. Column (7) presents the book value of these unlisted securities. Finally, columns (8) and (9) give the percentage changes in the estimated total firm value and the listed security values, respectively.[9]

For the leverage-increasing events, the aggregate firm value shows an increase for all but one (event 2) of the 15 firms. The average percent of aggregate value increase is 2.57 percent [column (8)] based on the total firm value and 7.45 percent [column (9)] based on the change in the aggregate value of listed securities. On average, all classes of claimholders experienced an increase in the value of their securities [columns (2) through (4)]. These results indicate that the signalling or agency cost effects are dominant in leverage-increasing offers.

For leverage-decreasing offers, interpretation of the results is less straightforward. Twenty of the 30 firms in this subsample show a decrease in the aggregate value of the firm after the exchange offer announcement. However, the magnitude of these percentage changes is small—averaging −0.30 and −0.21 percent for the estimated decrease in total firm value and the listed security values, respectively. Further, while, on average, common stockholders experience a decrease in the market value of their securities, the preferred stock and debt averages are positive [columns (3) and (4)]. These results are consistent with both a redistribution of wealth and a small negative change in firm value. Thus, no single hypothesis discussed in Section II describes the effects of leverage-decreasing offers completely. Nevertheless, given the results in Table IV, we can conclude that preferred-for-common exchanges affect firm value. Consequently, capital structure changes need not alter the pre-event tax status of the issuing firm to cause the firm to be revalued.

The remainder of the paper attempts to explain the revaluation more precisely based on the hypotheses discussed in Section II. According to Ross [33] and Miller and Rock [27], an increase (decrease) in the liquidation value of preferred

[9] Book values of securities without price data are taken from *Moody's Industrial Manual* or from *Moody's Public Utility Manual.*

stock or in the dividend commitment of the firm implies an increase (decrease) in firm value. According to Leland and Pyle [15] and Jensen and Meckling [13], the concentration (or dilution) of control may also imply higher (lower) asset values. Smith and Warner [35] also suggest that changes in protective covenants impact firm value. Based on these hypotheses, a series of one-way analysis of variance (ANOVA) tests was conducted to detect systematic differences in the returns reported in Table III [in columns (2) and (4)] and in the changes in firm value reported in Table IV [column (5)]. Then, regressions were run combining variables from the unreported results of the ANOVA which were "most successful" in differentiating changes in firm value or announcement-period returns. Since the results using changes in firm value are essentially the same as the results using announcement-period returns, only the regressions explaining changes in firm value are presented.

Table V reports the regression results of leverage-increasing offers in panel A and of leverage-decreasing offers in panel B. To avoid heteroskedastic error terms, we use weighted-least-squares regressions where the weights are the reciprocals of residual standard errors derived from OLS regressions (not reported here) of changes in firm value on the respective combinations of independent variables employed in Table V.

In regressions 1 and 2 of panel A, the change in firm value, ΔV_i, is regressed against the aggregate change in the liquidation value of preferred stock, ΔLiq_i, and against a (1, 0) dummy variable which differentiates the preferred stock issued in the offer on the basis of its convertibility (regression 1) or voting privileges (regression 2). In regressions 3 and 4, the aggregate change in the dividend commitment of the firm, ΔDiv_i, replaces ΔLiq_i from regressions 1 and 2.[10]

The data in panel A are consistent with the signalling and possibly also with the agency cost hypotheses. Both ΔLiq_i and ΔDiv_i have positive and significant coefficients at the 0.01 level for a one-tailed test. Moreover, the signs on the dummy variables for the conversion and voting privileges are negative, thus indicating an attenuation of the positive revaluation when the concentration of inside equity is decreased. However, the dummy coefficients in regressions 3 and 4 are insignificant at the 0.10 level.

In panel B, eight regressions are reported. Each of the first four regressions combines ΔLiq_i with one of the categorical variables differentiating preferred stock retired on the basis of conversion privileges or voting rights (regressions 1 and 2) or on the basis of the strength of the protective covenants or the existence of dividend arrearages (regressions 3 and 4). The last four regressions substitute ΔDiv_i for ΔLiq_i as in panel A. Each of the categorical variables is a (1, 0) dummy variable. The variable which differentiates preferred stocks by their protective covenants equals 1 if the covenants provide strong or intermediate protection as defined in Section I. The variable equals 0 if the covenants are weak.

[10] In regressions where the announcement period return rather than ΔV_i is the dependent variable, the independent variables reflecting the change in liquidation values and cash dividend commitments are represented as $\Delta Liq_i/S_i$ and $\Delta Div_i/S_i$, respectively, where S_i equals the total pre-offer market value of common equity for firm i, and ΔLiq_i and ΔDiv_i are defined as in the text.

Table IV

Comparisons of Observed Aggregate Changes in Security Values to Pre-offer Firm Values of Firms Involved in Leverage-increasing and Leverage-decreasing Preferred-for-Common Exchange Offers

Event (1)	Observed Two-day Aggregate Announcement Period Changes in Security and Firm Values ($millions)				Pre-offer Estimates of Total Firm Value ($millions)[a] (6)	Book Value of Unobservable Preferred Stock and Debt ($millions) (7)	Estimated Change in Total Firm Value (%)[b] (8)	Estimated Change in Observed Security Values (%)[c] (9)
	Common (2)	Preferred (3)	Debt (4)	Firm (5)				
A. Leveraging-increasing Offers								
1	0.42	0.00	NA[d]	0.42	19.74	6.69	2.13	3.22
2	−1.44	0.00	NA	−1.44	31.81	4.36	−4.53	−5.25
3	2.58	0.00	NA	2.58	49.63	42.75	5.20	37.50
4	1.12	0.00	NA	1.12	54.26	42.75	2.06	9.73
5	0.66	NA	NA	0.66	17.25	12.12	3.83	12.87
6	22.20	0.00	NA	22.20	1,975.75	1,062.77	1.12	2.43
7	0.24	0.00	NA	0.24	17.56	14.38	1.37	7.55
8	14.43	NA	0.00	14.43	453.52	232.47	3.18	6.53
9	12.66	0.36	NA	13.02	460.79	179.47	2.83	4.63
10	1.30	0.00	NA	1.30	91.83	11.53	1.42	1.62
11	3.80	0.00	−0.18	3.62	247.41	186.10	1.46	5.90
12	6.04	NA	0.27	6.31	79.58	4.53	7.93	8.41
13	0.19	NA	NA	0.19	9.82	7.09	1.93	6.96
14	2.78	0.00	NA	2.78	78.54	17.70	3.54	4.57
15	0.43	0.00	NA	0.43	8.36	0.00	5.15	5.15
Mean	4.49	0.03	0.03	4.52	239.72	121.65	2.57	7.45
Median	1.30	0.00	0.00	1.30	54.25	14.38	2.13	5.90
B. Leverage-decreasing Offers								
1	−0.10	NA	NA	−0.10	18.38	10.37	−0.54	−1.25
2	−6.61	0.85	NA	−5.76	67.37	10.13	−8.55	−10.01
3	−4.85	0.58	NA	−4.27	86.83	6.98	−4.92	−5.35
4	−1.63	0.23	NA	−1.40	69.12	0.74	−2.03	−2.05
5	−1.78	NA	NA	−1.78	93.32	2.55	−1.91	−1.96
6	−1.80	NA	NA	−1.80	29.71	2.68	−6.06	−6.66

7	7.22	NA	NA	7.22	176.61	19.05	4.09	4.58
8	0.00	0.14	NA	0.14	34.81	6.48	0.40	0.49
9	0.00	NA	NA	0.00	4.75	3.55	0.00	0.00
10	0.06	0.60	1.06	1.72	58.08	23.36	2.96	4.95
11	0.31	NA	NA	0.31	6.79	0.69	4.57	5.08
12	−0.52	0.00	0.00	−0.52	59.75	20.17	−0.87	−1.31
13	−1.08	−0.50	0.00	−1.58	69.56	20.17	−2.27	−3.20
14	1.01	−0.07	NA	0.94	118.75	40.05	0.79	1.20
15	0.00	NA	−0.45	−0.45	1,662.32	595.84	−0.03	−0.04
16	−7.74	4.40	0.00	−3.37	239.32	77.50	−1.41	−2.08
17	−0.67	NA	NA	−0.67	56.51	11.99	−1.19	−1.50
18	3.60	1.26	NA	4.86	87.90	32.99	5.53	8.85
19	−0.36	NA	NA	−0.36	27.83	2.26	−1.29	−1.41
20	0.00	NA	NA	0.00	78.60	56.20	0.00	0.00
21	−0.78	0.30	NA	−0.48	22.70	1.42	−2.11	−2.26
22	0.17	0.48	NA	0.65	6.46	0.12	9.82	10.00
23	−12.10	6.27	0.00	−5.83	357.14	124.20	−1.63	−2.50
24	−0.11	NA	NA	−0.11	18.41	3.04	−0.60	−0.72
25	−0.27	NA	−0.09	−0.36	26.96	8.21	−1.34	−1.92
26	−0.13	NA	NA	−0.13	24.70	0.98	−0.53	−0.55
27	−0.45	NA	NA	−0.45	27.13	7.82	−1.66	−2.33
28	−1.48	−0.64	NA	−2.12	62.06	10.52	−3.42	−4.11
29	0.53	NA	NA	0.53	10.03	4.58	5.28	9.72
30	−0.11	NA	NA	−0.11	41.38	4.59	−0.27	−0.30
Mean	−0.99	0.93	0.07	−0.51	121.44	36.97	−0.30	−0.21
Median	−0.20	0.30	0.00	−0.36	57.29	8.01	−0.73	−1.28

[a] Firm value is estimated as the sum of the aggregate market values of all listed securities plus the total book value of all unlisted long-term debt and/or preferred stock.

[b] The percentages in column 8 are computed by dividing column 5 by column 6.

[c] The percentages in column 9 are computed by dividing column 5 by column 6 minus column 7.

[d] NA indicates that all outstanding long-term debt and/or preferred stock was unlisted.

Table V

Weighted-Least-Squares Regressions of Changes in Firm Value (ΔV_i) Against Aggregate Dollar Value Changes in Preferred Stock Liquidation Values (ΔLiq_i) and Dividend Commitments (ΔDiv_i), and Against Categorical Variables Differentiating Preferred Stocks Issued (Retired) in Leverage-increasing (-decreasing) Preferred-for-Common Exchange Offers on the Bases of Conversion Privileges, Voting Rights, Protective Covenants, and Dividend Arrearages (t-Statistics in Parentheses)

Regressions	Intercept	ΔLiq_i	ΔDiv_i	$Conv_i$[a]	$Vote_i$[b]	Cov_i[c]	Arrears[d]	R^2	F	Prob > F
A. Leverage-increasing Offers ($N = 15$)										
1	2.68	0.19	NA[e]	−2.86	NA	NA	NA	0.67	12.26	0.0013
		(4.87)		(−1.58)						
2	2.70	0.19	NA	NA	−2.94	NA	NA	0.66	10.88	0.0025
		(4.63)			(−1.46)					
3	2.22	NA	3.32	−1.93	NA	NA	NA	0.67	12.35	0.0012
			(4.93)	(−1.03)						
4	2.22	NA	3.30	NA	−1.82	NA	NA	0.66	10.88	0.0025
			(4.65)		(−0.89)					
B. Leverage-decreasing Offers ($N = 30$)										
1	−0.18	0.07	NA	0.52	NA	NA	NA	0.08	1.13	0.3372
		(1.48)		(0.45)						
2	−0.34	0.07	NA	NA	0.56	NA	NA	0.08	1.21	0.3145
		(1.48)			(0.61)					
3	1.52	0.05	NA	NA	NA	−2.66	NA	0.28	6.41	0.0055
		(1.19)				(−3.18)				
4	0.46	0.07	NA	NA	NA	NA	−1.12	0.12	1.64	0.2134
		(1.45)					(−1.19)			
5	−0.55	NA	−2.11	−0.03	NA	NA	NA	0.04	0.54	0.5901
			(−1.04)	(−0.03)						
6	−0.83	NA	−2.46	NA	0.55	NA	NA	0.06	0.85	0.4396
			(−1.25)		(0.60)					
7	1.22	NA	−1.36	NA	NA	−2.68	NA	0.26	5.85	0.0080
			(−0.79)			(−3.15)				
8	0.10	NA	−3.36	NA	NA	NA	−1.55	0.13	1.88	0.1738
			(−1.60)				(−1.57)			

[a] This variable is 1 (0) if the preferred stock is convertible (nonconvertible).
[b] This variable is 1 (0) if the preferred stock has (no) voting rights.
[c] This variable is 1 (0) if the preferred stock has strong or intermediate (weak) protective covenants.
[d] This variable is 1 (0) if the preferred stock has (no) dividend arrears.
[e] NA—These data are not available or not applicable.

As regressions 1 through 4 indicate, the coefficients on ΔLiq_i are positive and generally significant at the 0.10 level for a one-tailed test. (The critical value for the t-statistic is approximately 1.28.) This result is consistent with the signalling hypothesis. Moreover, the coefficients on the conversion and voting right dummy variables are positive, which indicates an attenuation of the negative revaluation. However, those coefficients are insignificant, and the sign of the coefficient on the conversion dummy changes in regression 5. Thus, agency cost effects are not detected using these variables. The only categorical variable which is significant

in the first four regressions is the variable which separates preferred stocks by their protective covenants. The sign of the coefficient on that variable is negative, indicating that elimination of covenants which are more restrictive causes larger negative revaluations than eliminating less restrictive covenants.

Although the significance of the covenant variable may seem to support the agency cost or optimal-contracting hypothesis, recall that that hypothesis suggests that managers *maximize* firm value. The average change in firm value in leverage-decreasing events is negative. An alternative explanation for the sign and significance of the coefficient on the covenant variable is a signalling hypothesis not suggested by any of the models discussed in Section II. If the market perceives that protective covenants are being eliminated because they are about to become binding, then "bad" news may be inferred from a leverage-decreasing exchange offer. Moreover, *ceteris paribus*, the more restrictive the covenants, the more likely they are to become binding. Consequently, we might expect a more negative response in offers where highly restrictive covenants are eliminated.

In regressions 5 through 8, the sign of the coefficient on ΔDiv_i is negative and generally less significant than the coefficient on ΔLiq_i in regressions 1 through 4. However, in regression 8, the coefficient is significant at the 0.10 level for a one-tailed test. The sign and significance of the coefficient on ΔDiv_i are inconsistent with a signalling effect related to ΔDiv_i in leverage-decreasing exchange offers. However, if we compare the mean of ΔDiv_i relative to the mean of ΔLiq_i in panel B of Table II (i.e., −\$30 thousand versus −\$7.21 million), it seems probable that ΔLiq_i is the more important variable for signalling purposes. By multiplying the means of both variables by the variables' respective average coefficients (i.e., −2.44 versus 0.06), we observe that the change in firm value predicted by ΔDiv_i is only −\$0.07 million compared to −\$0.43 million for ΔLiq_i. Therefore, ΔDiv_i has relatively little economic significance for the leverage-decreasing offers in our sample.

The previous finding need not imply that dividends have no effect. The one categorical variable which we have not examined explicitly is the dummy variable on dividend arrearages. As regressions 4 and 8 indicate, the coefficient is negative. Moreover, the coefficient is significant (or just marginally insignificant) in regression 8 (4) at the 0.10 level for a one-tailed test. Thus, leverage-decreasing offers involving dividend arrearages cause more negative firm revaluations than offers in which no dividend arrearages are involved. This finding also has a potential explanation in a signalling context, i.e., as a cost imposed on the firm for not meeting a previously established fixed obligation.[11]

The premise of virtually all of our discussion concerning leverage-decreasing offers is that 0.10 is an acceptable level of significance for making inferences

[11] The larger negative revaluations are primarily associated with firms whose dividend arrearages do not exceed one year's obligation. The coefficient on ΔDiv_i for those six events is positive (6.18) but insignificant ($t = 0.90$). The mean change in firm value when dividend arrearages exceed one year's obligation is positive (i.e., \$0.70 million). This finding may suggest the successful resolution to an agency conflict since contingent voting rights are in effect for preferred stockholders in many of these offers.

with one-tailed tests. However, traditionally, lower significance levels are used. The need to resort to a 0.10 level underscores the statement made earlier that the leverage-decreasing offers in our sample are more complex than our leverage-increasing events. Nevertheless, if any of the hypotheses discussed in Section II dominates the others in explaining leverage-decreasing offers, it is the signalling hypothesis. This hypothesis alone predicts a negative change in firm value.

IV. Conclusions

Our analysis supports the hypothesis that changes in leverage need not alter the pre-event tax status of initiating firms to effect changes in firm value. Specifically, announcements of preferred-for-common exchange offers lead to positive firm revaluations in almost all of the leverage-increasing events in our sample. These changes relate strongly to changes in the aggregate liquidation value of preferred stock issued in the offer and to the change in the aggregate cash dividend commitment of the firm. We interpret this evidence as consistent with the signalling hypothesis. Somewhat weaker evidence also suggests an agency cost interpretation because changes in firm value are smaller, on average, when the preferred stock issued has voting or conversion rights.

The revaluations in leverage-decreasing offers are more difficult to interpret. Because common and preferred stock prices change in opposite directions, the redistribution hypothesis finds some support. However, a small negative revaluation still occurs. Therefore, the pure redistribution hypothesis does not explain the data completely. The sign of the revaluation is inconsistent with agency cost models in which firm values are maximized by minimizing total agency costs. However, a negative change in firm value is predicted by the signalling hypothesis when leverage-decreasing preferred-for-common exchange offers are announced. The variables which explain the negative revaluation most successfully are: (1) the change in the aggregate liquidation value of the preferred stock retired; (2) the existence of dividend arrearages; and (3) the strength of the preferred stock's protective covenants.

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