New Evidence on the Valuation Effects of Convertible Bond Calls

Sudip Datta and Mai Iskandar-Datta*

Abstract

This study examines the wealth effects of convertible bond call announcements on stockholders, straight bondholders, and called and non-called convertible debtholders. We document that forced conversions are associated with a significant loss in firm value. The results suggest that convertible call announcements can trigger both negative signal and wealth transfer effects. We show that at least part of the negative effect on stock prices results from wealth transfer to straight bondholders. Our analysis also lends empirical validity to the common contention that called convertible bondholders suffer wealth expropriation due to the elimination of the premium. The wealth effect on non-called convertible debtholders is insignificant. Cross-sectional analysis reveals that the negative signal effect is important in explaining bond, stock, and firm excess returns. Finally, we present evidence that refutes the notion that bonds are called to relieve the firm from restrictive debt covenants.

I. Introduction

Financial economists have conducted several studies in recent years to gain an understanding of the corporate decision to call convertible debt. While the adverse wealth effect on stockholders is well established (see Mikkelson (1981), Ofer and Natarajan (1987), and Cowan, Nayar, and Singh (1990)), the impacts on different classes of bondholders and the firm as a whole remain undocumented. Thus far, the primary explanation provided in the literature for the adverse stock price response has been based solely on the notion that call announcements emit a negative signal about the firm's cash flow prospects. Harris and Raviv's (1985) signaling model is at the heart of this rationale. However, another potential explanation for the adverse stock price response is the wealth transfer to the bondholders via a reduction in leverage.

We provide evidence on several issues involving a firm's decision to force conversion of a convertible bond. This study documents for the first time the valuation effects of convertible bond call on straight debtholders, called convertible

*Department of Finance, Bentley College, Waltham, MA 02154, and Department of Accounting and Finance, University of Massachusetts-Dartmouth, North Dartmouth, MA 02747, respectively. The authors wish to thank Jonathan Karpoff (the editor), JFQA Associate Editor Robert Korajczyk, and JFQA Referee Avner Kalay for their many insightful comments. The usual disclaimer applies.

and non-called convertible bondholders, as well as stockholders. Hence, we are able to measure the valuation effect of forced conversions on the firm as a whole.

Mikkelson (1981) examines straight bond price reaction to calls of convertible debt using a sample of 19 bonds. Using a weekly raw return measure, he finds that the announcement week debt return is statistically insignificant. However, Mikkelson ((1981), p. 258) acknowledges that the use of "weekly return data may not allow for sufficiently powerful tests to identify a small wealth effect." In addition to examining the impact of the call on various bondholder classes, this study uses a larger straight bond sample and daily bond returns. Further, we apply a more refined bond event study methodology developed by Handjinicolaou and Kalay (1984), which adjusts for the common problem of infrequent bond trading and any shifts in the term structure of interest rates.

Our analysis enables us to investigate whether the wealth transfer effect is partly responsible for the negative stock price response to convertible bond call announcements documented in prior studies. If negative signaling is the only explanation for the adverse stock price response, then the bondholders should also be adversely affected by the change in the expectation of the firm's cash flow prospects. Datta and Dhillon (1993) use this line of reasoning and provide evidence that the information content of unexpected earnings announcements has similar effects on a firm's bond and stock values.

Stockholders' loss can also be due to a wealth transfer to the bondholders since the convertible call reduces leverage thereby making the firm's remaining debt less risky. Emery, Iskandar-Datta, and Rhim (1994) document that calling firms experience a significant decline in their leverage during the year of the call, which remains at that reduced level in the subsequent year. Moreover, the exchange of typically subordinated convertible bonds for the lower priority common stock should enhance the value of bondholders who have lower priority or pari passu claims relative to the called convertible issue. The lower leverage resulting from the conversion should also decrease the incentives to transfer wealth from bondholders to stockholders (see Mikkelson (1981)). These arguments form the basis of the wealth transfer hypothesis. The conflicting predictions of the negative signal hypothesis and the wealth transfer hypothesis on the price behavior of straight bonds enable us to empirically test their relative importance.

Due to the hybrid nature of convertible debt, the net wealth effect on non-called convertible bondholders is expected to be somewhere between the valuation effects experienced by straight debtholders and stockholders. As a result of the call, the straight debt component of the security is expected to gain while the option component should be adversely affected. Our analysis will reveal the net impact on these securityholders resulting from convertible bond calls.

It is commonly argued in mainstream corporate finance textbooks that a forced conversion of a convertible bond effectively results in an expropriation of wealth from the called convertible bondholders to the firm (see, for example, Brealey and Myers (1991), p. 545, Ross, Westerfield, and Jaffe (1993), p. 668, and Brennan and Schwartz (1988)). The wealth expropriation from the called debtholders is due to the elimination of the premium. Based on this line of reasoning, called convertible bonds are expected to react negatively to such an announcement. We call this the convertible bondholder expropriation hypothesis. Finally, we provide evidence on

Vu's (1986) proposal that corporations call bonds to eliminate restrictive covenants. We call this the restrictive covenant elimination hypothesis.

Our finding of a significant negative stock price response to a call announcement corroborates the results of Mikkelson (1981) and Ofer and Natarajan (1987). However, in contrast to Mikkelson's (1981) finding, we document a significant positive wealth gain for straight bondholders at the announcement of conversion-forcing calls. These results suggest that convertible bond calls can trigger both negative signal and wealth transfer effects. The wealth effect on non-called convertible bondholders is insignificant, most likely because of the hybrid nature of these securities. As expected and commonly argued in finance textbooks, we find that the called convertible bondholders suffer a significant wealth loss due to the elimination of their premium by the forced conversion. Considering the wealth effects on all securityholder classes, we estimate that the net valuation effect of forced conversions on the overall firm is significantly negative. This result documents that Harris and Raviv's negative signal hypothesis also holds for the firm as a whole, and not just for stockholders. We find that the strength of the negative signal as proxied by the amount of the call as a fraction of the market value of common equity is a significant determinant of the excess returns to the straight bondholders, stockholders, and the firm. Finally, we do not find any evidence to suggest that firms engage in convertible bond calls to eliminate restrictive debt covenants.

II. The Sample

A. Sample Formation Process

An initial sample of convertible bond calls during the period 1980–1992 is identified from various issues of Standard and Poor's Bond Guide. Calls of more than one series of convertible debt on the same day are treated as a single call. We use the following criteria to select the stock sample. The convertible call is not accompanied by any confounding corporate event, such as earnings or dividend announcements. Announcements are excluded if the call was related to a merger or an acquisition. The exact date of the announcement must be identifiable from the Wall Street Journal Index (WSJI). Common stock returns data must be available from the CRSP master tapes and financial variables must be available from the Compustat tapes. The final stock sample that meets the above criteria consists of 173 in-the-money convertible call announcements. In-the-money calls are defined as those bonds for which the call price is less than the conversion value. The calls are distributed over the 13-year period of the study without much concentration in any one year. To obtain a bond sample, the following additional screens are imposed. To be included in the sample, a bond must trade both before and after the call announcement. If more than one bond is traded, the most frequently traded bond is chosen.[1] The final bond samples include 116 bonds from 86 firms. This

[1]The same criterion was also used in Kalay and Shimrat (1987). Using the most liquid bond will not influence our results. For the called convertible bond sample, the bond included in the sample was the only called bond traded. For the non-called convertible sample, 15 of the 16 bonds had only one bond traded during the event window. Finally, 60 percent of the straight bond sample had only one

sample of 116 bond issues is composed of 50 straight bonds, 50 called convertible bonds, and 16 non-called convertible bonds.

B. The Data

Closing bond prices from 11 days before the call announcement through 10 days after the event are collected from the Wall Street Journal (WSJ). Treasury bond prices with coupon rate and maturity closely matching that of the corresponding sample bond are also collected from the WSJ. To compute daily returns from bond prices, with cumulated daily coupon interest, Standard & Poor's Bond Guides are used to identify the interest payment dates of the sample bonds. The stock return data are from the University of Chicago's CRSP NYSE/Amex and Nasdaq master tapes. Financial information and issue characteristics (such as the amount of the issue, the bond rating, the maturity, etc.) are retrieved from the Compustat tapes, Moody's Manuals, Standard and Poor's Bond Guides, and WSJ articles announcing the call.

C. Sample Characteristics

Table 1 provides relevant descriptive statistics of the calling firms and their convertible calls. In general, the typical firm has a total median asset base of $523 million and median equity market value of $267 million. The size of the convertible call issue is not trivial, whether it is measured as a percent of book value of total assets (5.87 percent) or as a percent of total debt (11.90 percent). Further, the mean leverage of sample firms declines from 52.95 percent in the year before the announcement to 47.73 percent in the year of the call. The percentage decline in leverage is statistically significant at the 1-percent level (t-statistic = -4.84). Similar results obtain when leverage is measured in terms of market value.

Table 2 describes the straight, non-called, and called convertible bond samples in terms of the amount of the issue outstanding, debt maturity, bond rating, subordination status, and the frequency of trading during the event window. Although the sizes of the various types of debt issues are similar (Panel A), it is interesting to note that the non-called and called convertible debt samples have a relatively longer time to maturity than the straight bonds (Panel B). Panel C shows that straight bonds are generally of higher quality than the convertible bonds. Fifty-four percent of the straight bonds are of investment grade in contrast to only about a third of the non-called and called convertible debt issues. The subordination status shows a more pronounced difference between straight and convertible bond samples. As shown in Panel D, 52 percent of the outstanding straight issues are nonsubordinated while only 8.0 percent of the called convertible issues and 18.8 percent of the non-called convertible sample fall into this category. Panel E of Table 2 shows that the percent of bonds that have at least 12 or more trades during the event window ranges from 69 percent for the straight debt sample to 80 percent for the called convertible bond sample.

bond outstanding or one bond trading, 22 percent had two bonds trading, and the remaining firms had three or more bonds trading.

TABLE 1

Descriptive Statistics of Firms Calling Convertible Debt, 1980–1992

Variables	Mean	Median
Total assets (in millions)	$2,507.04	$522.81
Common equity (in millions)	$914.17	$266.71
Amount of called issue (in millions)	$69.80	$50.00
Amount of called issue/total assets (%)	5.87	4.71
Amount of called issue/total debt (%)	11.90	8.21
Book debt ratio for year −1 (%)	52.95	55.03
Book debt ratio after conversion (%)	46.49	48.35
Book debt ratio for year 0 (%)	47.73	48.68

Financial variables are obtained from Compustat tapes and Moody's Manuals while the amount of the called issue is collected from Standard & Poor's Bond Guide or Wall Street Journal articles on the day of the call announcement. Total assets are measured for the year prior to the call in book value terms. Common equity is the market value of common stock at fiscal year-end preceding the call announcement. The amount denotes the amount of convertible debt outstanding when the issue is called. Leverage in year −1 is total book value of debt divided by total book value of assets for the fiscal year-end preceding the call. Leverage in year 0 is total book value of debt divided by total book value of assets for the fiscal year-end of the convertible call. Leverage after the forced conversion is measured as [(total debt−amount of called issue)/total assets].

TABLE 2

Descriptive Statistics Indicating the Amount of Debt Outstanding, the Maturity of the Debt, the Bond Rating, the Subordination Status of the Issue, and the Frequency of Bond Trading for Straight Debt, Called Convertible Debt, and Non-Called Convertible Debt Samples

(Percentages in Parentheses)

Categories	Straight Bond Sample ($N = 50$)	Convertible Bond Sample ($N = 16$)	Called Bond Sample ($N = 50$)
Panel A. Amount of Debt Outstanding			
Mean (in millions)	$73.2	$52.9	$78.4
Median (in millions)	$50.0	$45.0	$53.7
Panel B. Debt Maturity			
Mean (in years)	13.2	18.5	17.3
Median (in years)	14.0	20.0	19.0
Panel C. Standard & Poor's Bond Rating			
Investment grade (AAA-BBB)	27 (54.0)	6 (37.5)	17 (33.3)
Junk grade (BB or lower)	23 (46.0)	10 (62.5)	33 (66.7)
Panel D. Subordination Status			
Nonsubordinated issues	26 (52.0)	3 (18.8)	4 (8.0)
Subordinated issues	24 (48.0)	13 (81.2)	46 (92.0)
Panel E. Frequency of Bond Trading during the Event Window			
18 <= Trades	26 (52.0)	5 (31.3)	18 (36.0)
15 <= Trades < 18	2 (4.0)	5 (31.3)	10 (20.0)
12 <= Trades < 15	6 (12.0)	2 (12.5)	12 (24.0)
9 <= Trades < 12	9 (18.0)	1 (6.3)	6 (12.0)
6 <= Trades < 9	4 (8.0)	3 (18.8)	4 (8.0)
Trades < 6	3 (6.0)	0 (0.0)	0 (0.0)

Bond characteristics are obtained from Moody's Manuals. Bond ratings are from Standard and Poor's Bond Guide as of the month prior to the announcement.

III. Empirical Methods

A. Stock Methodology

Standard market model event study methodology is used to estimate stock excess returns. Since Cowan, Nayar, and Singh (1990) show that post-event estimation period for market model parameters is more appropriate, we use daily stock returns from +40 to +285 days following the WSJ announcement day (day 0) to estimate the market model parameters.[2]

B. Bond Methodology

The mean-adjusted returns methodology adapted for bonds by Handjinicolaou and Kalay (1984) is used to estimate excess bond returns. To adjust for changes in the term structure of interest rates, each corporate bond is matched with a Treasury bond according to maturity and coupon rate. The adjusted bond return is calculated as the holding period bond return for each firm minus the return over the same period for the matched Treasury bond. Daily accrued coupon interest is added to the price change to calculate the bond's holding period return. The comparison period is day $t-10$ to day $t-2$ and day $t+2$ to day $t+10$. Since bond returns are a series of single and multiple day returns, they are adjusted to yield equivalent *single day* returns and standardized using the estimated standard deviation of the comparison period returns for the bond. Finally, the standardized mean excess return for the portfolio of bonds for each day over the entire 21-day period is estimated (for further details see Handjinicolaou and Kalay (1984)).

IV. Empirical Analysis

A. Wealth Effects on Stockholders and Straight Debtholders

The average standardized stock and bond excess returns around convertible bond call announcements are reported in Table 3. We document an announcement period (days -1 and 0) stock price response of -1.09 percent (Z-statistic $= -4.67$), which is statistically significant at the 0.01 level.[3] The abnormal stock return on day -1 of -0.75 percent (Z-statistic $= -4.48$) is also statistically significant at the 0.01 level. These findings corroborate the significant negative stock price response documented by Mikkelson (1981) and Ofer and Natarajan (1987) and provide evidence of the robustness of the results over time since our study uses a later sample period.

Our analysis indicates that the straight bond price response occurs on days 0 and +1, hence, we define these two days as the announcement period. The announcement day straight bond excess return is 0.34 percent, which is statistically significant at the 0.01 level with a Z-value of 2.42. The two-day announcement

[2]Mikkelson (1981), Cowan, Nayar, and Singh (1990), and Campbell, Ederington, and Vankudre (1991) discuss the bias inherent in using a pre-event estimation period.

[3]Datta and Dhillon (1993) and Dhillon and Johnson (1994) also report standardized excess returns that are technically not percentage returns. The unstandardized mean excess returns are similar in size to the standardized returns but tend to be more influenced by outliers.

TABLE 3

Standardized Bond (BER) and Stock Excess Returns (SER) around Convertible In-the-Money Bond Call Announcements; the Bond Samples are for Straight, Called Convertible, and Non-Called Convertible Debt

(*Z*-Statistics are in Parentheses below the Excess Returns)

	Straight Bonds ($N = 50$)		Called Convertible Bonds ($N = 50$)		Non-Called Convertible Bonds ($N = 16$)		Stocks ($N = 173$)	
Event Day	BER(%) (*Z*-Stat.)	Percent Positive	BER(%) (*Z*-Stat.)	Percent Positive	BER(%) (*Z*-Stat.)	Percent Positive	SER(%) (*Z*-Stat.)	Percent Positive
−1	−0.138 (−0.78)	50.0	−0.713* (−4.28)	40.0	−0.359 (−1.32)	46.7	−0.750* (−4.48)	38.7
0	0.342* (2.42)	66.7	−0.418* (−2.90)	34.0	−0.233 (−0.99)	50.0	−0.340** (−2.05)	41.0
+1	0.300** (1.80)	63.9	−0.405* (−2.62)	36.4	0.026 (0.10)	37.5	−0.141 (−0.85)	41.6
0, +1	0.642* (2.98)	64.0	−0.823* (−3.90)	34.0	−0.207 (−0.63)	37.5	−0.481** (−2.05)	39.9
−1, 0	0.204 (1.16)	64.0	−1.131* (−5.08)	30.0	−0.592 (−1.63)	50.0	−1.090* (−4.67)	34.1
−1, 0, +1	0.504** (1.99)	68.0	−1.536* (−5.66)	30.0	−0.566 (−1.28)	43.8	−1.231* (−5.01)	32.4

The mean adjusted bond event-study methodology developed by Handjinicolaou and Kalay (1984) is used to estimate standardized excess bond returns. The comparison period is day $t-10$ to day $t-2$ and day $t+2$ to day $t+10$. Corporate bond prices and the matching Treasury prices were hand collected from the Wall Street Journal. The market model is used to obtain stock excess returns where the market model parameters are estimated using daily stock returns from 40 to 285 days following the announcement day.
*,**Significant at the 1-percent and 5-percent levels, respectively (using two-tailed test).

period excess return (0, +1) for the straight bond sample is 0.64 percent, which is also statistically significant (*Z*-statistic = 2.98). These results lead us to conclude that, on average, in-the-money convertible bond calls are wealth enhancing for straight bondholders.

While our stock result is consistent with the results reported by Mikkelson (1981) and Ofer and Natarajan (1987), our findings suggest that the wealth loss suffered by the stockholders is not solely due to the negative information effect as currently understood in the literature. We propose that at least part of this negative stock price impact is due to a wealth transfer to the straight debtholders. Our finding of a significant positive wealth effect on straight debtholders is in contrast to Mikkelson's (1981) result. These results also suggest that for bondholders, the positive impact of the wealth transfer more than offsets any negative information effect.

B. Wealth Effect on Called Convertible Debtholders

As Table 3 shows, the called convertible bondholders experience statistically significant losses on all three days (−1, 0, and 1) surrounding the call announcement. Specifically, the standardized excess bond returns are −0.71 percent ($Z = -4.28$), −0.42 percent ($Z = -2.90$), and −0.41 percent ($Z = -2.62$) on

days -1, 0 and $+1$, respectively. This finding empirically validates the commonly advanced argument that called convertible bondholders suffer wealth expropriation due to the elimination of their premium as a result of the call. The results, therefore, support the convertible bondholder expropriation hypothesis.

C. Wealth Effect on Non-Called Convertible Debtholders

As presented in Table 3, we do not observe any significant wealth effect on non-called convertible debtholders, primarily because of the hybrid nature of this security. Abstracting from any Harris and Raviv (1985) type signaling implication, the leverage reduction due to the call leads to a wealth enhancement for the straight debt component and a corresponding wealth loss for the equity (option) component of the non-called bonds. The empirical outcome of these two opposing effects seems to be neither a loss nor a gain for these bondholders.

D. Dollar Excess Returns for Different Securityholder Groups and the Firm

To determine the total firm valuation effect of convertible bond calls, we calculate the dollar excess returns around the call announcement for stockholders, straight bondholders, called convertible bondholders, non-called convertible bondholders, and the firm as a whole. The results are presented in Table 4. In our sample, there are 86 firms that have stock and at least one class of bonds traded. We calculate the dollar wealth change for each class of security by multiplying its announcement period excess return by the market value of all the securities in that class. The market value is calculated as of the month-end preceding the call announcement. If, for a certain firm, the excess return for a security class is not available due to non-trading, then we use the sample average excess return for that security class to calculate the dollar excess return. We obtain the market value of all the outstanding bond issues of the calling firm from Standard and Poor's Bond Guides. If a certain issue did not trade during the month prior to the announcement, we use instead the book value of that issue. The market value of the equity is obtained from the CRSP NYSE/Amex and Nasdaq master tapes.

We report in Table 4 the mean and median two-day $(-1, 0)$ and three-day $(-1, 0, +1)$ announcement period dollar excess returns for stocks, three classes of bonds (straight, called, and non-called convertible debt) and the firm. For stocks, we find that mean (median) dollar excess returns for the two-day and three-day periods are $-\$12.12$ million ($-\$3.81$ million) and $-\$17.11$ million ($-\$3.88$ million), respectively. These dollar losses to stockholders are significant at the 0.04 level or better. On the other hand, the dollar excess gains to straight bondholders are highly significant. The mean (median) two-day and three-day dollar bond excess returns are \$1.95 million (\$0.02 million) and \$2.24 million (\$0.09 million), respectively. Similar to the stockholders, the called convertible debtholders also suffer significant abnormal dollar losses during these event windows, albeit for different reasons. The mean wealth effect on the non-called debtholders is statistically insignificant. The combined dollar abnormal losses to stockholders and called convertible debtholders more than outweigh the gains to straight bondholders. Our analysis reveals that the net wealth effect on the total firm is significantly

TABLE 4

Mean and Median Dollar Stock, Straight Bond, Called and Non-Called Convertible Bonds, and Firm Excess Returns around the Announcement of Forced Conversion

(*p*-values in Parentheses are Based on Two-Tailed Test)

Securityholder Type	Two-Day Dollar Excess Return (−1, 0)		Three-Day Dollar Excess Return (−1, 0, +1)	
	Mean (*p*-Value)	Median (*p*-Value)	Mean (*p*-Value)	Median (*p*-Value)
Change in Stockholders' Wealth	−12.120 (0.04)	−3.813 (0.02)	−17.110 (0.04)	−3.879 (0.04)
Change in Bondholders' Wealth: *Straight*	1.950 (0.02)	0.020 (0.00)	2.238 (0.01)	0.088 (0.00)
Called Convertible	−1.049 (0.01)	−0.337 (0.00)	−1.442 (0.01)	−0.577 (0.00)
Non-Called Convertible	−0.360 (0.12)	−0.000 (0.00)	−0.400 (0.12)	−0.005 (0.00)
Change in Firm Value	−11.580 (0.06)	−3.887 (0.04)	−16.690 (0.07)	−6.149 (0.01)

Dollar $SER_{2\text{-day}}$ ($SER_{3\text{-day}}$) is calculated by multiplying days −1, 0 (−1, 0, +1) percent excess return by the market value of the common stock at the month-end preceding the convertible call. Dollar straight $BER_{2\text{-day}}$ ($BER_{3\text{-day}}$) is computed by multiplying days −1, 0 (−1, 0, +1) percent excess return by the market value of straight issues at the end of the month prior to the convertible call. The dollar excess return for the called and non-called convertible debt categories were calculated similarly. The change in firm value is determined by adding the corresponding dollar stock and various bonds dollar excess returns. All figures are in millions of dollars.

negative. Specifically, the two-day and three-day mean (median) dollar firm excess returns are −$11.58 (−$3.89) million and −$16.69 (−$6.15) million and are significant at the conventional levels.

E. Contingency Analysis

To obtain some additional insights into the wealth consequences of the calls on stockholders and straight bondholders, we conduct a contingency analysis. We construct a two-by-two contingency table by pairing the three-day stock and straight bond excess returns of each firm according to their signs. We find that the highest frequency (N = 22, 44 percent) occurs in the quadrant representing a wealth transfer from stockholders to straight bondholders while the second highest frequency (N = 10, 20 percent) occurs in the cell in which both straight bondholders and stockholders experience net losses. We must point out, however, that these results are presented purely for descriptive purposes. It is not possible to draw reliable statistical inference from this small sample of 50 observations divided into four quadrants.

F. Are Convertible Bond Calls Undertaken to Remove Restrictive Bond Covenants?

To examine whether convertible bond calls, on average, create more flexibility for the firms by removing restrictive covenants, we hand collected from various issues of Moody's Manuals the types of protective covenants for all the bond issues of our 86 bond sample firms.[4]

Panel A of Table 5 describes the covenant features of the called bond and the sample firm's remaining bonds. It is clear from this analysis that, in general, the firm's remaining debt issues impose more restrictive debt covenants than the called convertible bond. For example, more than 54 percent of called bonds have no restrictive covenants while only 25 percent (19/74) of the firm's remaining debt is without protective covenants.[5] Panel B of the table provides a comparative analysis of the restrictiveness of the called bond indentures vis-à-vis those of the remaining bonds. We observe that in approximately 43 percent of the cases, the firm's remaining bonds impose stricter restrictions than the called bond. In about 37 percent of the cases, the restrictions imposed by the called bonds are similar to those of the remaining bonds. Only in 10 percent of the cases do we find that the remaining bonds have less stringent indenture restrictions.

The evidence presented in this section clearly refutes the notion that bonds are called to relieve the firm from restrictive covenants. This finding implies that no increase in stockholder-bondholder agency costs is expected as a result of the convertible call. Thus, the wealth impact on the remaining bondholders is unlikely to be negatively affected (as a result of the elimination of restrictive covenants) by the call. Our findings corroborate the results for in-the-money convertible preferred stock calls documented by Mais, Moore, and Rogers (1989) and for out-of-the-money convertible bond calls reported by Cowan, Nayar, and Singh (1993).

G. Cross-Sectional Regression Results

In this section, we examine the influence of the negative information effect and the wealth transfer effect on straight bonds (BER), stocks (SER), and the firm excess returns (FER) using regression analysis. We use the independent variable AMT/CS (amount of the call divided by the market value of common stock) to proxy for the strength of the negative signal emitted at the announcement of the in-the-money convertible bond call. It is expected that the larger the amount of the convertible debt as a proportion of the value of common equity, the greater the adverse wealth impact on the securityholders. Similarly, Eckbo (1986) suggests that the size of the external financing serves as a proxy for the strength of the

[4]It may be noted that removing restrictive covenants will increase the agency cost of debt. Hence, if the motivation for the bond call is indeed to relieve the firm from indenture restrictions, then a bond call is expected to have a negative effect on the remaining bonds. However, the net effect of the call on the remaining debtholders will depend on the combined effect of deleveraging the firm and the negative effect of the removal of protective covenants.

[5]Our findings are consistent with those obtained by Iskandar-Datta and Emery (1994). They document that convertible bonds are less restrictive than straight bonds and conclude that the conversion feature is "used in-lieu of restrictive covenants" since it vitiates the bondholder-stockholder agency conflict.

TABLE 5

Description and Comparison of Restrictive Covenants of Called Convertible Debt vis-à-vis All the Firm's Outstanding Debt Issues

Panel A. Description of Restrictive Covenants

Specifics of Restrictive Covenants	Frequency in Called Sample	Frequency for Remaining Bonds
No Restrictive Covenants	44	19
Restrictive Covenants	37	55
No Existing Issues	n.r.[a]	12
Unavailable Information	5	0
Type of Covenant Restrictions		
Dividend	34	37
Debt	5	15
Lien	1	19
Sale-leaseback	0	20
Disposition of assets	1	2
Put option	0	1

Panel B. Comparison of Covenant Restrictions of Called Convertible Issues with the Firm's All Remaining Debt Issues

Comparative Restrictiveness	Frequency	Percent
Remaining Issues:		
More restrictive	37	43.02
Similar restrictions	32	37.21
Less restrictive	9	10.47
Different restrictions	3	3.49
Cannot compare due to unavailable information	5	5.81

The restrictive covenants were hand collected from Moody's Manuals for the year prior to the call announcement.
[a] n.r. denotes not relevant.

negative signal. Inclusion of this variable enables us to test Harris and Raviv's (1985) prediction not only for stockholders, but also for straight bondholders and the firm as a whole. The *p*-values are shown in parentheses below the coefficient estimates,

$$(1) \qquad BER_{3\text{-day}} = \underset{(0.00)}{0.007} - \underset{(0.05)}{0.014}\ AMT/CS, \qquad R^2 : 0.044.$$

As shown in equation (1), the significant negative coefficient for the AMT/CS variable implies that the bondholders interpret the call announcement as a negative signal about the firm's prospects. The negative impact on bondholders is proportional to the strength of the signal as captured by AMT/CS. This finding indicates that Harris and Raviv's prediction also holds for straight bondholders,[6]

$$(2) \qquad SER_{3\text{-day}} = -\underset{(0.83)}{0.000} - \underset{(0.001)}{0.121}\ AMT/CS, \qquad R^2 : 0.094,$$

[6] In another variation of this model, we examine the role of the riskiness of the straight outstanding bonds and their maturities on bond excess returns by including the bond's rating and maturity as additional independent variables. Neither of these variables is found to be significant.

$$(3) \qquad \underset{3\text{-day}}{FER} = \underset{(0.56)}{-0.004} - \underset{(0.0001)}{0.093}\ AMT/CS, \qquad R^2 : 0.106.$$

Equations (2) and (3) present the corresponding regression results explaining the wealth effects on the stockholders and the firm as a whole. The announcement period firm excess return (FER) is calculated as the three-day dollar change in firm value scaled by the market value of debt and equity. The coefficients of the AMT/CS variable are significantly negative for both stockholders and the firm at the 0.001- and 0.000-percent levels, respectively. The results imply that the negative information effect is significant in determining both stock and total firm excess returns.

V. Conclusions

This study examines the valuation effects of convertible bond call announcements on straight bondholders, and called and non-called convertible debtholders, as well as stockholders. As a result, the study sheds new light on the valuation effect of forced conversions on the total firm. Our findings suggest that convertible bond calls trigger both negative information and wealth transfer effects. We document that at least part of the negative effect on stock prices results from the transfer of wealth to straight bondholders.

Our finding of a significant adverse wealth effect on called convertible debtholders supports the contention that they suffer wealth expropriation due to the elimination of the premium. The wealth effect on non-called convertible debtholders is insignificant, perhaps because of the hybrid nature of this security. The gains in the straight debt component of this security seem to offset the loss for the equity (option) component. We document that call announcements are associated with a significant loss in firm value in dollar terms, which is consistent with the negative signal hypothesis proposed by Harris and Raviv (1985). Cross-sectional analysis reveals that the negative signaling effect is important in explaining bond, stock, and firm excess returns. We also present evidence that clearly refutes the notion that bonds are called to relieve the firm from restrictive covenants.

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