Do Firms Invest More After Calling Their Convertible Bonds?

Michael J. Alderson
Brian L. Betker
Department of Finance
John Cook School of Business
Saint Louis University

Duane R. Stock
Price Investments Professor
Department of Finance
Michael F. Price College of Business
University of Oklahoma

September 2002

Contacts: Alderson: Tel. 314.977.8169, Fax 314.977.1479, E-mail: Alderson@slu.edu
Betker: Tel. 314.977.7154, Fax 314.977.1479, E-mail: Betkerbl@slu.edu
Stock: Tel. 405.325.5690, Fax 405.325.1957, E-mail: Dstock@ou.edu

We thank Nikolay Kosturov for research assistance.

Do Firms Invest More After Calling Their Convertible Bonds?

Abstract

Forced conversion of convertible bonds has an important role in corporate governance if it leads to increased investment, as predicted by the staged financing hypothesis. We examine the characteristics of companies that issue convertible bonds and compare the industry-adjusted financial characteristics of companies that force conversion to those of convertible issuers that do not. Firms forcing conversion do not invest more heavily; instead, the sole effect is a reduction in financial leverage. These results do not support the agency motive for issuing convertibles.

Do Firms Invest More After Calling Their Convertible Bonds?

Agency problems provide the basis for many capital structure theories. In agency models a firm's debt load is chosen to minimize managers' incentives to deviate from the value-maximizing investment policy. Agency considerations may also motivate the choice of public, private, short-term, long-term, callable and convertible debt. In this paper we test the staged financing theory, an agency model of capital structure formation that explains why firms issue convertible bonds (Mayers, 1998). The model suggests that convertibles enable companies to control overinvestment by providing equity financing only when good projects are available. It has a simple empirical prediction: firms will increase investment after forcing conversion of their bonds. Evidence supporting this relation would be consistent with the strategic objective of issuing convertible bonds to minimize agency costs.

An alternative to the staged financing model is the "back door equity," or market timing, model proposed by Stein (1992), in which firms issue convertible bonds to avoid issuing undervalued equity. Stein's model is consistent with Baker and Wurgler's (2002) argument that observed capital structures largely reflect the cumulative outcome of attempts to time the equity market. Forced conversion, in the market-timing model, minimizes the after-tax cash flow stream to the convertible bondholders. It is a pure capital structure change with no implication for investment activity.

A comparison of industry-adjusted financial data before and after forced conversion does not support the staged financing hypothesis. Our analysis reveals a significant change in only one variable around forced conversions: industry-adjusted financial leverage declines over the two years following the event. Firms that issue convertible bonds but don't force conversion engage in the same level of investment activity, but don't experience a similar decline in leverage, holding the age of the convertible issue constant. Thus, forced conversions result in pure capital structure changes and are not catalysts for increased investment activity. This result does not support the agency motive for issuing convertibles, as described by the staged financing hypothesis.

I. Why do companies issue convertibles?

Empirical research has shown that convertible bonds tend to be issued by small growth firms. Companies issuing convertibles typically have smaller market capitalizations, higher market-to-book ratios and face higher levels of business risk than companies that issue straight debt or equity (Lewis et al., 1999). Although common stock prices decline on average when the decision to issue convertibles is announced (Mikkelson, 1981 and Lewis et al., 1999), only companies with classic value characteristics - low market-to-book ratios, relatively few intangible assets and low post-issue capital expenditure activity - generate these negative announcement residuals (Jen et al., 1997). The absence of a market reaction among growth firms may indicate that the market expects these companies to sell convertibles.[1]

Financial theorists have observed that convertible bonds create strategic opportunities for growth companies by allowing them to (1) delay issuing common shares that are currently undervalued (Stein, 1992), (2) minimize the incentive for underinvestment and risk shifting (Green, 1984) and/or (3) control overinvestment (Mayers, 1998). These problems are particularly acute for growth companies because their valuations are often determined in the presence of hidden information, subject to greater uncertainty, and are frequently contingent upon a series of discretionary capital expenditures.

Growth opportunities create the need for capital but also introduce the possibility of overinvestment when managers have the discretion to invest in poor projects (Jensen, 1986). Convertibles may reduce overinvestment by providing equity financing in stages. Extending the work of Schultz (1993) on unit offerings, Mayers (1998) argues that convertibles solve two problems: the need to control overinvestment and the need to minimize issue costs. Requiring the firm to obtain new financing every time it has a profitable investment opportunity can control overinvestment. But that approach subjects the firm to additional issue costs, requiring the company to face a trade-off between flotation costs and the agency costs of managerial discretion.

[1]If convertible bonds are called with the purpose of forcing conversion, share prices again decline significantly (Mikkelson and Partch, 1986). Only firms forcing conversion with an underwritten call experience these negative abnormal returns (Singh et al., 1991) and the net valuation effect for the entire firm is significantly negative (Datta and Iskandar-Datta, 1996). However, the negative abnormal returns associated with forced conversion are reversed shortly after the announcement and there does not appear to be any erosion of earnings quality following the forced conversion, which is often viewed as a signal of unfavorable information (Ederington and Goh, 2001).

In Mayers' model, convertible bonds solve this problem by providing the firm with staged financing at minimal cost. Firms obtain funds when they issue convertibles, along with an option to obtain additional equity financing at no cost if profitable investment options are available later. If positive NPV projects are available, the firm calls the bonds for redemption, thereby forcing conversion and creating debt capacity. The firm then obtains additional debt financing and invests. Otherwise, the convertible remains a debt instrument and the coupon payments disgorge free cash flow from the firm. Mayers (1998) finds that, following forced conversion, firms increase their investment and financing activity compared to firms in the same industry, which is consistent with the staged financing model.

Stein (1992) examines the role of convertible bonds in the presence of hidden information. In Stein's model firms issue convertible bonds when information is distributed unevenly, making share prices sensitive to its disclosure. For these companies, the choice between releasing proprietary information or issuing undervalued equity can be avoided by selling convertibles which, if converted, result in the delayed issue of common shares at higher prices. Small firms and companies with greater market-to-book ratios and idiosyncratic return variation are generally considered to be more susceptible to this hidden information problem, and these companies are active issuers of convertibles.

The empirical implications of these two theories are different. Under the market-timing model developed by Stein, forced conversion is an ancillary event that occurs to minimize the value of the convertible claim (Ingersoll, 1977). Calling the bonds for redemption does not have any implication for investment activity at the time of conversion. In contrast, forced conversion has a more direct role in Mayers' model: it facilitates increased investment activity and growth.[2] In this paper we test Mayers' staged financing model against the market-timing model by examining the empirical relation between forced conversions and changes in investment activity and leverage.

II. Sample selection and characteristics

The Fitch Investment Securities Data Base (FISD) contains detailed information on over 15,000 corporate bond issues. We searched the database for bonds that were convertible into

common stock and found 1,246 issues sold by 1,007 companies over the period 1982 through 1999. Table I contains information on the population of convertible issues. As reported in Panel A, the bulk of the issues (approximately 33%) occurred in the late 1990's. Based upon our discussions with the technical staff at Fitch, the bonds in our sample issued after 1987 represent virtually the entire population of convertible bonds sold in each calendar year.

Panel B of Table I further describes the sample bonds. The majority of bonds in the sample became convertible into common stock almost immediately (7 days) following the offering date. The conversion option expires in 14.5 years on average, and the median length of time over which the bond can be converted is 10 years. The expiration of the conversion option occurs at the maturity date of the issue for virtually the entire sample.

The conversion premium represents the excess (in percentage terms) of the conversion price over the market price of underlying common stock at issue. The average conversion premium is 25%, with a median value of 21.46%. If converted at the date of issue, the number of common shares outstanding would increase by an average (median) of 18.6% (13.94%). The FISD file indicates whether the covenant restricts forced conversion for a period of time following the issue date for 866 of the sample issues. Of those issues, 357 restrict forced conversion for an average (median) period of 2.69 (2.55) years.

Practitioners frequently refer to conversion restrictions as "soft" if the restriction on conversion is lifted when the market price of the underlying stock exceeds a specified percentage of the conversion price for a minimum number of days within a longer trading window. In the most common instance, the conversion restriction is lifted early if the closing common share price exceeds 150% of the conversion price for 20 of 30 trading days. Among the issues reporting information on lifting the restrictions early, eight require the share price to exceed between 160% and 280% of the conversion price; a total of 205 and 94 issues, respectively, specify thresholds of exactly 150% and 140%. The remaining 31 issues with information for this item report a lower threshold for early conversion.

For issues with a 25% conversion premium, a 2.5 year conversion restriction and a 150% early-redemption threshold, the underlying common stock would need to realize average annual appreciation of 37% in order for the company to force conversion after only two years. When

---

[2]Green (1984) argues that convertible bonds can reduce underinvestment by decreasing risk-shifting incentives, lowering debt service requirements, and lessening the risk of financial distress. Like the market-timing model,

compared to the approximate historical market return of 10%, the conversion premium imposes a significant performance requirement on firms looking to force conversion early.

We next examine the financial characteristics of the firms that issued convertible debt. The results show that the companies in our sample display the same high growth profile exhibited by convertible issuers in prior studies.

We searched the COMPUSTAT File for select financial statement information on the 1007 companies that issued the 1,246 convertibles in initial sample. Only the first issue of convertible bonds was examined (exchangeable bonds were not included) and companies in the financial sector (with SIC codes between 6000 and 6999) were eliminated from the analysis because their investment opportunities do not conform to the "real options" profile envisioned by the staged financing hypothesis. A total of 477 firms reported information on at least one of the following data items requested: total assets, capital expenditures, price-earnings ratio and long-term debt. Table II contains median levels of these four variables from three years prior to the sale of the first convertible issue through 5 years after.

While the companies in our sample are small, with median total assets equal to only $351 million in the year of issue, they exhibit rapid growth over the nine-year period around the first issue of convertible bonds. At the end of the third fiscal year prior to the first sale of convertible debt (t = -3), the median level of total assets was only $174 million, increasing to just over $788 million at the end of the fifth fiscal year (t = +5). The average compound growth in total assets from year –3 through year 0 was just over 26%, versus 17.6% from year 0 through year +5.

Capital expenditures and long-term debt displayed similar rates of growth. Outlays for capital goods more than quadrupled, increasing from $10 million in year –3 to $24.3 million in year 0, and then to $48.56 million in year +5. Median price-earnings ratios peaked in the year of issue and declined over the following years, consistent with accelerating earnings growth following the issue. Levels of long-term debt also rise, increasing more than six-fold from three years prior to the issue through five years following.

We next examine several financial ratios over the nine-year period around the issue date. We report industry-adjusted levels of capital expenditures (relative to prior-year total assets), asset growth, return on assets (EBIT/prior-year total assets) and debt ratios (long-term debt/total assets) for the entire sample. We also examine separate subsamples around the year of issue

---

Green's model does not have any implication for investment or financing activity at the time of forced conversion.

based on whether firms subsequently forced conversion or never forced conversion of their bonds.

We report the mean difference between firm-level observations and the industry median ratio, where industries are defined at the two-digit SIC code level.[3] Table III summarizes the results. Consistent with prior research, we find that both before and after the convertibles are issued, the convertible issuers invest more, have higher asset growth and return on assets, and borrow more than other firms in the same industry. However, these results hold whether the firm ultimately forced conversion or not. In fact, in the nine years surrounding the convertible issue, we do not find any cases where firms that forced conversion invest more or grow faster than firms that never called their convertible bonds.

This finding carries a key implication for our analysis of forced conversions, because it implies that industry benchmarks alone are inadequate when evaluating the impact of forced conversion. Instead, the set of *convertible issuers that did not call their bonds should be used as a control group as well*.

III. Method

Mayers (1998) examines the industry-adjusted financial activity of a sample of convertible issuers in the years around the time that they call the bonds and force conversion. His evidence suggests that these companies experience increased investment and financing activity in the years following the forced conversion, consistent with the role of convertibles in facilitating the acquisition of capital in stages.

Mayers' approach to isolating the influence of forced conversions may be incomplete, given that companies selling convertible bonds are known to be smaller, to have higher market-to-book ratios, and to experience greater levels of business risk than the average firm in the same industry. These characteristics, common among rapidly growing companies, imply that the growth profile of convertible issuers may be different than that of other firms in the same industry, making industry affiliation an inadequate benchmark against which to evaluate post-conversion investment and financing activity. As we observed in the previous section, convertible issuers invest more and grow faster than their industry counterparts whether they force conversion or not.

We obtain conversion dates from the Fitch file and check them for accuracy with Moody's Bond Guide. Our analysis of investment and financing activity around the call then proceeds in two steps. First, we examine industry-adjusted figures for capital expenditures and debt ratios for years –1 through +2 relative to the call year (year 0). We examine whether investment and financing activity increased in years 0 through +2, relative to the level of activity in year –1. Thus we use a firm's own behavior in the year prior to the call as a benchmark, to see if investment and financing activity increased following the call.

Next, we compare the industry-adjusted investment and financing activity of firms that called their bonds to firms that issued convertibles at the same time, but did not call them. This means, for example, that firms forcing conversion in the third year after issue are compared with firms that did not call their convertible bonds during the third year that the issue was outstanding. Thus, we hold the age of the convertible bond constant when comparing firms that called their bonds to a control group of convertible issuers who did not call their bonds. If we assume, as Mayers (1998) does, that firms issue convertibles in response to the presence of real options, this approach also holds the age of the real option constant between the calling firms and their control group.

Our method differs from Mayers (1998) in one other respect. We scale capital expenditures by end-of-prior-year total assets, whereas Mayers scales capital expenditures by end of year –1 assets, where year 0 is the year of the call. If a firm is growing faster than its industry for reasons that have nothing to do with calling its convertibles, Mayers' approach will show increasing industry adjusted capital expenditures, even if the rate of capital expenditures to prior-year assets is constant.

IV. What is the effect of forced conversions?

This section reports summary statistics on industry-adjusted levels of capital expenditures (relative to prior-year total assets) and debt ratios (long-term debt/total assets) for the year-end prior to the call date (year –1) through the second year following forced conversion (year +2). Industry-adjusted figures are the difference between firm-level observations and the median value of the same financial variable for all firms on COMPUSTAT with the corresponding two-digit SIC code. To avoid truncation bias, we limit our examination to companies that issued

[3]We obtain similar results using medians, but to save space these results are not reported.

convertibles prior to 1995, thereby allowing for up to five years of financial data following the issue date.[4] As a consequence, we only examine convertibles that are called within five years of issue. Table IV presents an aging schedule of bonds called. Of the 176 sample bonds that were called, 98 (56%) were called within five years of issuance.[5]

A. Analysis of capital expenditures

Table V contains industry-adjusted financial data for capital expenditures for one year prior to the redemption year through each of the two years following. The table reports the mean and median level of industry-adjusted capital expenditures over total assets at the beginning of the year. Significance levels are reported for the null hypothesis that the mean value is zero and for the null hypothesis that the difference between the means in years (-1,0), (-1,+1) and (-1,+2) is zero.

The firms that we examine invest significantly more than their industry counterparts from the year prior to the call through two years after. Industry-adjusted capital expenditures as a percentage of total assets averaged 4.08% in the year before the forced conversion, 2.98% during the redemption year, and 3.81 and 3.05%, respectively, during the two succeeding years. The median level of investment activity over the same event years was lower, ranging between one and two percent above industry levels. We can reject the null hypothesis that industry-adjusted capital expenditures were zero during each of the years around the forced conversion.

To measure any change in investment activity following the forced conversion, we computed the change in industry-adjusted capital expenditures relative to the year before the forced conversion. As shown in Table V, average investment activity actually fell during the year of the forced redemption and during each of the two years following, although none of the declines were statistically significant.

We also examined capital expenditures based on the age of the convertible issue and compared the investment activity of companies that forced conversion with that of convertible issuers that did not. Table VI displays the mean level of industry-adjusted capital expenditures

[4]In unreported tests, using all firms and ignoring the possibility of truncation bias does not affect any conclusions from the results that follow.

[5]After year +5 there are a relatively small number of bonds called in each year, and the availability of COMPUSTAT data decreases as well. Furthermore, it seems unlikely that managers who issue convertible bonds in year zero do so with an eye towards financing a real option that will become in-the-money six or seven years later.

for bonds called in the second, third, fourth and fifth years after issue, respectively. As a control for the tendency of convertible issuers to exhibit rapid growth, we also computed the average industry-adjusted level of capital expenditures as a percentage of total assets for the companies that did not call their convertibles as of the second, third, fourth and fifth years after issue, respectively. The reported figures allow us to control for both industry influences and the unique nature of companies that issue convertibles.

A comparison of mean industry-adjusted capital expenditures for the sample of firms forcing conversion and for their respective control groups fails to evince a significant difference in post-conversion investment. For example, companies that forced conversion in the second year of the life of the convertible had a mean value for industry-adjusted capital expenditures to assets of 4.27% in the year prior to the call, when the bond had been outstanding for two years. The corresponding figure for the control group is 7.75%. Subsequent to the call, industry-adjusted capital expenditures decline slightly for both groups, but the difference between average investment levels is not significant at conventional levels and we are unable to conclude that firms forcing conversion invest more than non-forcing convertible issuers. We obtain similar results for bonds called in the third through fifth years of their lives.

These findings are not consistent with the hypothesis that forced conversion leads to increased investment. Firms that force conversion make greater capital expenditures than the median industry firm, but that relation holds both before and after the year in which the convertibles are called for redemption. Similarly, companies that force conversion don't invest more than other convertible issuers that do not force conversion.[6] We therefore conclude that forced conversion does not lead to increased investment.

B. Analysis of financial leverage

We next examine industry-adjusted debt ratios around the forced conversion year. As with the analysis of capital expenditures, we look at changes in financial leverage for all firms that forced conversion, then examine the change in debt ratios based on the age of the convertibles for both redeeming and non-redeeming issuers. If the staged financing theory is correct, firms forcing conversion will on average replace the debt previously provided by the convertible bond and experience only a temporary reduction in their level of borrowing.

The financial leverage of firms that forced conversion displays three distinct characteristics. Companies that forced conversion use significantly more debt than the median industry firms before and after the redemption; they use significantly less debt after the call than before it; and they sometimes use significantly less (but never more) financial leverage after forcing conversion than other convertible issuers that don't redeem their bonds.

As shown in Table VII, industry-adjusted debt to assets declined from 17.33% in the year prior to the forced conversion to 7.34 and 7.98%, respectively, in the first and second years afterward. Mean industry-adjusted debt to assets ratios in each event year –1 through +2 are significant at the one-percent level. Average industry-adjusted debt ratios fell by 10% from the year prior to the forced conversion through the year after and by 9.35% from the end of year –1 through the end of year +2. The respective changes in leverage are significant at the one percent level. Thus, firms calling their convertibles have higher leverage ratios prior to the redemption that fall significantly after conversion is forced.

We also examine debt ratios based on the age of the convertible issue and compare the financial leverage of companies that forced conversion with that of convertible issuers that did not. Table VIII displays the mean level of industry-adjusted debt ratios for bonds called in the second, third and fourth years after issue, respectively. We also computed the average industry-adjusted level of debt to assets for the companies that did not call their convertibles as of the second, third and fourth years after issue, respectively. As in the analysis of capital expenditures, the reported figures allow us to control for both industry influences and the unique nature of companies that issue convertibles.

Our results do not suggest a significant difference in post-conversion debt ratios. The results for bonds called in their third year are the most striking. For those companies, the industry-adjusted debt ratio declined from an average of 13.62% in year –1 (when the bond had been outstanding for two years) to 3.90% in year +2. The corresponding figures for the control group are 15.09% in year –1 and 14.84% in year +2. The difference between average debt ratios for the sample and control groups is significant at conventional levels for the year of the call and each of the two years following. However, the same pattern is not observed among convertibles that were called in their second or fourth years. Thus, we are unable to conclude that firms forcing conversion consistently use less financial leverage than non-forcing convertible issuers.

---

[6]We find a qualitatively similar relationship when we examine industry-adjusted asset growth rates.

V. Conclusion

Theories of convertible bond issuance are distinguished by a simple empirical prediction. Only Mayers' (1998) staged financing hypothesis predicts an increase in capital expenditures following a forced conversion. Other theories imply that a forced conversion is a pure capital structure change. We isolate the influence of forced conversion on investment and leverage using two-digit SIC codes to control for industry affiliation as well as a control group consisting of convertible issuers that didn't force conversion.

We find that firms forcing conversion invest more, borrow more, earn a higher return on assets, and experience higher rates of total asset growth than the median firm in their industry. But we cannot conclude that forced conversion leads to greater investment and financing activity, for several reasons. First, the companies forcing conversion display the same financial characteristics in the *year prior* to the event as well as two years afterward, with one exception: companies that force conversion experience a significant decrease in industry-adjusted financial leverage over the two years following the forced conversion.

Second, similar investment and financing activity is observed among firms that issued convertibles and did *not* force conversion, again with one exception: industry-adjusted financial leverage remains constant during the five years after the convertible issue. Otherwise, significance tests show no difference in industry-adjusted capital expenditures between the forcing and non-forcing samples.

Our results suggest a simple conclusion: convertible issuers share the characteristics of growth firms, whether they force conversion or not. If they do force conversion, they experience a decline in financial leverage that reflects the effect of a pure capital structure change. Our results are not consistent with the theory that convertibles are staged financing designed to control the agency costs of overinvestment. Our results are also consistent with Baker and Wurgler's (2002) proposition that capital structure formation is less influenced by corporate governance considerations than previously supposed.

References

Baker, Malcolm and Jeffrey Wurgler, 2002, Market timing and capital structure, *Journal of Finance* 57, 1-32.

Datta, Sudip and Mai Iskandar-Datta, 1996, New evidence on the valuation effects of convertible bond calls, *Journal of Financial and Quantitative Analysis* 31, 295-307.

Ederington, Louis H. and Jeremy C. Goh, 2001, Is a convertible bond call really bad news? *Journal of Business* 74, 459-476.

Green, Richard, 1984, Investment incentives, debt and warrants, *Journal of Financial Economics* 13, 115-136.

Ingersoll, Jonathon, 1977, An examination of corporate call policies on convertible securities, *Journal of Finance* 32, 463-478.

Jen, Frank C., Dosoung Choi and Seong-Hyo Lee, 1997, Some new evidence on why companies use convertible bonds, *Journal of Applied Corporate Finance* 10, 44-53.

Jensen, Michael C., 1986, Agency costs of free cash flow, corporate finance, and takeovers, *American Economic Review* 76, 323-329.

Lee, Inmoo and Tim Loughran, 1998, Performance following convertible bond issuance, *Journal of Corporate Finance* 4, 185-207.

Lewis, Craig M., Richard J. Rogalski and James K. Seward, 1999, Is convertible debt a substitute for straight debt or for common equity? *Financial Management* 28(3), 5-27.

Mayers, David, 1998, Why firms issue convertible bonds: The matching of financial and real investment options, *Journal of Financial Economics* 47, 83-102.

Mikkelson, Wayne H., 1981, Convertible calls and security returns, *Journal of Financial Economics* 9, 237-264.

Mikkelson, Wayne H. and M. Megan Partch, 1986, Valuation effects of security offerings and the issuance process, *Journal of Financial Economics* 15, 31-60.

Myers, Stewart C., 1977, Determinants of corporate borrowing, *Journal of Financial Economics* 5, 147-175.

Schultz, Paul, 1993, Unit initial public offerings: A form of staged financing, *Journal of Financial Economics* 34, 199-230.

Singh, Ajai K., Arnold R. Cowan and Nandkumar Nayar, 1991, Underwritten calls of convertible bonds, *Journal of Financial Economics* 29, 173-196.

Stein, Jeremy C., 1992, Convertible bonds as backdoor equity financing, *Journal of Financial Economics* 32, 3-21.

Table I
Characteristics of convertible issues. The sample is all 1246 companies in the Fitch Database that issued convertible bonds over the period 1980-1999 that also had financial data on COMPUSTAT.

Panel A. Frequency distribution of issues by calendar year for the full sample.

Year	Count	Percent Frequency	Year	Count	Percent Frequency
1980	9	0.72%	1990	26	2.09%
1981	19	1.52%	1991	55	4.41%
1982	4	0.32%	1992	65	5.22%
1983	41	3.29%	1993	91	7.30%
1984	15	1.20%	1994	42	3.37%
1985	53	4.25%	1995	41	3.29%
1986	82	6.58%	1996	147	11.80%
1987	80	6.42%	1997	171	13.72%
1988	22	1.77%	1998	171	13.72%
1989	48	3.85%	1999	64	5.14%

Panel B. Select attributes of the convertible issues

Time to maturity is the length of time between the offering date and the date that the final interest payment and principal amount are due. Time to expiration of the conversion option is the length of time between the offering date and the last date that the bond can be exchanged for common shares. Absent any condition for an earlier call, the redemption restrictions prohibit forced conversion between the offering date and the date upon which the restrictions are lifted. The conversion price is the price of common shares at which the conversion value equals the maturity value of the bond. The conversion premium is the excess of the conversion price over the market price of a common share at the offering date. Convertible shares represent the number of common shares that would be issued if the entire issue were exchanged for common stock.

	Mean	Median	Firms reporting
Time to maturity	14.5 years	10.0 years	1,064
Time to expiration of conversion option	14.5 years	10.0 years	1,064
Time between offering date and lifting of redemption restrictions	2.69 years	2.55 years	344
Conversion premium	25.01%	21.46%	1,061
Convertible shares to common shares at issue of convertible	18.60%	13.94%	484

Table II

The financial characteristics of companies issuing convertibles over the period 1982-1999.

The sample is the set of all companies in the Fitch Database that issued convertible bonds over the period 1982-1999 that also had financial data on COMPUSTAT. Year zero is the fiscal year in which the convertible was issued. Number is the number of companies with data in the observation year. The values shown are median values in millions of dollars for the number of companies reporting total assets, capital expenditures, price-earnings ratios and long-term debt on COMPUSTAT in each event year.

Panel A. Median levels of total assets and capital expenditures (in $ millions)

Event year	-3	-2	-1	0	+1	+2	+3	+4	+5
Total assets	174.25	197.81	239.65	350.51	532.65	591.78	683.49	763.12	788.45
Number	357	417	447	458	439	355	296	258	244
Capital expenditures	10.11	11.94	16.25	24.38	29.25	35.53	42.48	48.56	43.14
Number	352	410	437	448	430	351	287	253	238

Panel B. Median levels of price/earnings and long-term debt

Event year	-3	-2	-1	0	+1	+2	+3	+4	+5
Price/earnings	14.95	16.10	15.96	18.31	15.88	14.55	16.23	14.45	16.19
Number	154	193	260	304	318	255	221	208	204
Long-term debt ($ millions)	34.49	39.02	43.66	75.78	172.76	184.19	200.76	210.83	212.81
Number	356	416	466	458	439	354	296	258	243

Table III

Mean financial ratios around year of convertible bond issue. Industry-adjusted value is the difference between the ratio for each sample firm minus the median ratio for COMPUSTAT firms with the same two-digit SIC code. The sample is the set of all companies in the Fitch Database that issued convertible bonds over the period 1982-1999 that also had financial data on COMPUSTAT. Year zero is the fiscal year in which the convertible was issued. Called represents firms that forced conversion of their bonds. Never called represents firms that never forced conversion. P-value is for a difference in means test for the called and never called subsamples.

Panel A. Industry-adjusted capital expenditures to total assets

-3	-2	-1	0	1	2	3	4	5	
0.068*	0.065*	0.098*	0.111*	0.081*	0.048*	0.038*	0.027*	0.022*	All firms
0.051*	0.036*	0.054*	0.064*	0.063*	0.042*	0.038*	0.028*	0.022*	Called
0.081*	0.086*	0.131*	0.144*	0.095*	0.056*	0.037*	0.025**	0.023**	Not called
0.375	0.016	0.180	0.012	0.178	0.419	0.959	0.815	0.924	p-value for difference in means

Panel B. Industry-adjusted asset growth

-3	-2	-1	0	1	2	3	4	5	
0.290	0.389	0.584	0.527	0.520	0.153	0.370	0.091	0.053	All firms
0.180*	0.157*	0.214*	0.280*	0.408*	0.164*	0.110*	0.087*	0.060	Called
0.381*	0.563*	0.867*	0.705*	0.609*	0.140*	0.889	0.100	0.033	Not called
0.050	0.000	0.047	0.000	0.068	0.726	0.320	0.891	0.726	p-value for difference in means

Panel C. Industry-adjusted return on assets

-3	-2	-1	0	1	2	3	4	5	
0.067*	0.075*	0.084*	0.096*	0.088*	0.057*	0.049*	0.043*	0.046*	All firms
0.058*	0.073*	0.075*	0.080*	0.080*	0.057*	0.050*	0.046*	0.051*	Called
0.076*	0.077*	0.092*	0.110*	0.095*	0.058*	0.045*	0.032**	0.034*	Not called
0.232	0.720	0.208	0.050	0.252	0.948	0.644	0.694	0.219	p-value for difference in means

Panel D. Industry-adjusted debt to total assets

-3	-2	-1	0	1	2	3	4	5	
0.077*	0.077*	0.072*	0.086*	0.183*	0.154*	0.145*	0.139*	0.132*	All firms
0.087*	0.083*	0.082*	0.094*	0.191*	0.165*	0.143*	0.136*	0.131*	Called
0.066*	0.072*	0.062*	0.080*	0.175*	0.138*	0.150*	0.148*	0.134*	Not called
0.348	0.585	0.312	0.486	0.340	0.188	0.734	0.656	0.917	p-value for difference in means

*Significantly different from zero at the 1% level.
**Significantly different from zero at the 5% level.

Table IV. Calls of convertible bonds relative to year of issue

Total Number of Convertible Issues in Fitch File		1246
Issues Eliminated:		
Issuer not listed on COMPUSTAT	211	
Issue not first convertible issue by firm	466	
Financial firm (SIC code 6000-6999)	92	
Convertible issued after 1994	223	
Number of convertible issues for analysis		254
Issues called, relative to year of issue:		
Year 1	0	
Year 2	18	
Year 3	36	
Year 4	21	
Year 5	23	
Year 6	14	
Year 7	16	
Year 8	15	
Year 9	9	
Year 10 or later	24	
Total number of convertible issues called		176
Number of convertible issues not called by 1999		78

Table V

Industry-adjusted capital expenditures around the year of the call for all firms forcing conversion. Industry-adjusted capital expenditures is the difference between the ratios of capital expenditures to prior-year total assets for each sample firm minus the median ratio of the firms on COMPUSTAT with the same two-digit SIC code. P-value for mean is the probability of a Type I error in a two-tailed significance test on the null hypothesis that the mean value is zero. P-value for difference is the probability of a Type I error in a two-tailed significance test on the equality of the year+1 (year +2) mean and the year –1 mean.

	Year -1	**Year called**	**Year +1**	**Year +2**
Mean	4.08%	2.98%	3.81%	3.05%
Median	2.03%	0.92%	1.31%	2.15%
Number	108	96	72	50
p-value for mean	0.0%	0.0%	0.0%	0.1%
Mean difference from Year -1		-1.1%	-0.3%	-1.0%
p-value for difference		35.0%	84.2%	47.2%

Table VI

Industry-adjusted capital expenditures around forced conversions during the second, third, fourth and fifth years after the issue. Industry-adjusted capital expenditures are computed as described in Table III. Mean for forced conversions is the average of industry-adjusted capital expenditures for firms that forced conversion in the second, third and fourth year after the convertible bond was issued. Mean for the control group is the average of industry-adjusted capital expenditures for firms that did not call convertibles that were issued two, three or four years ago, respectively. P-value for mean is the probability of a Type I error in a two-tailed significance test on the null hypothesis that the difference between the mean values is zero.

		Year -1	**Year called**	**Year +1**	**Year +2**
Bonds called in second year after their issue	Mean for forced conversions	5.84%	4.28%	2.58%	4.01%
	Number	18	19	18	18
	Mean for control group	5.61%	3.93%	3.82%	2.40%
	Number	205	216	212	215
	p-value for difference	94.00%	87.47%	65.42%	41.16%
		Year -1	**Year called**	**Year +1**	**Year +2**
Bonds called in third year after their issue	Mean for forced conversions	4.27%	4.17%	4.63%	2.52%
	Number	34	34	33	32
	Mean for control group	3.87%	3.76%	1.99%	1.78%
	Number	180	178	182	181
	p-value for difference	81.94%	85.05%	8.08%	60.59%
		Year -1	**Year called**	**Year +1**	**Year +2**
Bonds called in fourth year after their issue	Mean for forced conversions	5.53%	2.65%	3.59%	
	Number	21	21	21	
	Mean for control group	3.52%	1.90%	1.54%	
	Number	157	161	160	
	p-value for difference	47.06%	68.47%	25.91%	
		Year -1	**Year called**	**Year +1**	**Year +2**
Bonds called in fifth year after their issue	Mean for forced conversions	1.33%	0.35%		
	Number	21	22		
	Mean for control group	1.90%	1.65%		
	Number	143	141		
	p-value for difference				

Table VII

Industry-adjusted debt ratios around the year of the call for all firms forcing conversion. Industry-adjusted debt ratios is the difference between the ratios of debt to prior-year total assets for each sample firm minus the median ratio of the firms on COMPUSTAT with the same two-digit SIC code. P-value for mean is the probability of a Type I error in a two-tailed significance test on the null hypothesis that the mean value is zero. P-value for difference is the probability of a Type I error in a two-tailed significance test on the equality of the year+1 (year +2) mean and the year –1 mean.

	Year -1	**Year called**	**Year +1**	**Year +2**
Mean	17.33%	11.87%	7.34%	7.98%
Median	17.33%	9.95%	4.44%	5.56%
Number	102	88	68	46
p-value for mean	0.0%	0.0%	0.0%	0.1%
Mean difference from Year -1		-7.4%	-12.9%	-11.8%
p-value for difference		2.20%	0.00%	0.20%

Table VIII

Industry-adjusted debt ratios around forced conversions during the second, third and fourth years after the issue. Industry-adjusted debt ratios are computed as described in Table III. Mean for forced conversions is the average of industry-adjusted debt ratios for firms that forced conversion in the second, third and fourth year after the convertible bond was issued. Mean for the control group is the average of industry-adjusted debt ratios for firms that did not call convertibles that were issued two, three or four years ago, respectively. P-value for mean is the probability of a Type I error in a two-tailed significance test on the null hypothesis that the difference between the mean values is zero.

		Year -1	**Year called**	**Year +1**	**Year +2**
Bonds called in second year after their issue	Mean for forced conversions	21.91%	11.64%	10.70%	15.63%
	Number	17	17	16	16
	Mean for control group	17.60%	15.76%	14.91%	14.28%
	Number	203	200	191	197
	p-value for difference	33.48%	33.16%	32.79%	76.06%
		Year -1	**Year called**	**Year +1**	**Year +2**
Bonds called in third year after their issue	Mean for forced conversions	13.62%	8.86%	2.98%	3.90%
	Number	31	31	32	30
	Mean for control group	16.16%	16.08%	16.47%	14.84%
	Number	169	160	165	164
	p-value for difference	42.19%	1.69%	0.00%	0.24%
		Year -1	**Year called**	**Year +1**	**Year +2**
Bonds called in fourth year after their issue	Mean for forced conversions	17.99%	15.24%	11.63%	
	Number	21	21	20	
	Mean for control group	15.79%	16.65%	15.28%	
	Number	139	144	144	
	p-value for difference	54.83%	71.22%	40.01%	
		Year -1	**Year called**	**Year +1**	**Year +2**
Bonds called in fifth year after their issue	Mean for forced conversions	17.97%	13.24%		
	Number	20	19		
	Mean for control group	16.44%	15.59%		
	Number	124	125		
	p-value for difference				