Why Do Firms Issue Convertible Bonds with a High Initial Conversion Premium?

Abstract: This paper identifies the motives for selling convertible bonds with a higher-than-average initial conversion premium, using a sample of 300 convertible debt issues carried out between 2004 and 2014 by manufacturing and service companies from the United States, Europe and Asia. Empirical analysis indicates that high premium convertibles are issued by strongly undervalued companies with poor financial performance, looking to increase their equity capital through the backdoor, under more favorable conditions in comparison to the issuance of common stock. For this reason, convertibles designed in this way are likely to be perceived by firms as a delayed equity rather than a debt sweetener.

Keywords: corporate finance, debt financing, convertible bonds, initial conversion premium

JEL: G15, G23, G32
1. Introduction

Convertible bonds are the most popular hybrid financial instruments used by firms across the world. The motives for using convertibles have been examined since the 1950s. Most of them are based on asymmetric information and agency conflicts framework. According to the researchers, hybrid debt may be used by companies to eliminate adverse selection problems resulting from information asymmetry between firms and investors (Brennan, Schwartz, 1988; Stein, 1992); to mitigate agency conflicts between shareholders, bondholders and managers (Green, 1984; Isagawa, 2000); and to finance multi-stage investment projects (Mayers, 1998).

A success of convertible debt financing depends largely on a pre-arranged conversion price – that is, the price at which bondholders have the right to take up a certain number of the issuer’s shares if they decide to exercise a conversion option embedded in convertible bonds. Usually it is settled at about 15–25% above the company’s share price at the moment of convertibles issuance (Das, 2001). This is the so-called “initial conversion premium”. Bondholders decide to convert debt into equity if a conversion option is in-the-money, meaning any time during a conversion period an issuer’s stock price exceeds a predetermined conversion price. A conversion of debt means that a company increases its equity capital “through the backdoor” (Stein, 1992) at a certain moment after debt issuance, at a higher price and at a lower dilution, since in order to raise the desired amount of funds, a firm issues a fewer number of shares.

Sometimes convertible debt is issued with a higher-than-average conversion premium (about 30–80%). One can interpret this decision in two ways. First, by doing this, managers may incite bondholders to refrain from converting debt into equity. This strategy is perhaps aimed at raising cheaper external financing in comparison to straight debt without interfering in shareholders structure, since a conversion option is unlikely to become in-the-money during a conversion period (Brennan, Schwartz, 1988). Note that due to a conversion option attached to convertible bonds, bondholders usually accept a lower coupon compared to ordinary debt. A similar effect can be achieved by issuing convertibles when companies are overvalued, as it is highly probable that bonds remain out-of-the-money until maturity. Secondly, in contrast to the above, managers can issue high premium convertibles when they consider their firms to be strongly undervalued. By doing this, they envisage an increase of equity capital at a later time under more favorable conditions as a result of conversion of debt into common stock. Hence, the issuance of hybrid debt may constitute a credible signal for the market that managers anticipate a significant increase of firm’s share price, which will end in exercising a conversion option by bondholders (Stein, 1992). Despite a key role of initial conversion premium in hybrid debt financing, this issue has been examined very rarely thus far. Apart from the observations of market practice, where an average
premium usually amounts to 15–25%, it is still unclear why some companies decide to fix a relatively high conversion price in relation to their share price at the moment of convertibles issuance while others settle for a very low premium. Answering this question is the main point of this article. To put it more simply, the aim of this paper is to identify the motives for the issuance of convertibles with a relatively high conversion premium and to verify whether these instruments serve companies as a substitute for equity or as an alternative for straight debt. Moreover, the analysis has been performed among issuers from different geographical locations to check whether the reasons for issuing high premium convertibles vary across different hybrid debt markets.

It seems that the idea employed by overvalued companies to issue convertible bonds as a sort of cheap debt raises strong doubts. It is simply possible that CFOs underestimate future levels of companies’ revenues and, contrary to their initial prediction, a conversion option eventually becomes in-the-money, which usually ends in converting debt into equity. To minimize this risk, managers can set a relatively higher conversion price, but this may be interpreted as an action against the interest of shareholders. In theory, an overvalued company should issue ordinary shares and sell them at a higher price, rather than carry out an issuance of debt instruments (Brennan, Schwartz, 1988). Actually, firms usually do not proceed this way for two reasons. First, CFOs may not be willing to bear an excessive cost of selling common stock in the public market (Brown et al., 2012). Secondly, as Lee and Loughran (1998) noticed, one in three companies issues equity within two years before hybrid debt offerings. Another stock issuance may be read by investors as a further attempt to sell overvalued equity, which can result in reduced demand for newly issued shares.

If, then, the issuance of convertible bonds as a source of cheap debt bears a risk of unwanted conversion, one should consider issuing convertibles as an alternative of common stock. In this regard, managers decide to issue hybrid debt to increase equity capital “through the backdoor” by giving bondholders a right to convert bonds into a certain number of a company’s shares in the future (Stein, 1992). The success of this strategy strongly depends on whether a conversion option becomes in-the-money during a conversion period. The issuers should then sell hybrid debt when they are undervalued and wait until their stock price exceeds a predetermined conversion price. Settling a higher-than-average conversion premium (ca. 40–80%) may constitute a signal to the market that a firm is deeply undervalued and that managers tend to sell new shares later on at a higher price through a debt conversion. Thereby, it can be assumed that convertible bonds with a high conversion premium may be used by firms mainly as a deferred equity, not as a debt sweetener. While a company does considerably reduce its costs of debt service by choosing this source of financing, it does not seem to be its primary purpose. In light of these considerations, the main hypothesis of this paper is as follows: con-
vertible bonds with a high initial conversion premium are issued by firms as an alternative for common stock, rather than a substitute for straight debt.

The final sample used in the research comprises three hundred issues of straight, callable and putable convertibles carried out by manufacturing and service companies from the United States, France, Germany, Great Britain, the Netherlands, China, Japan and Hong Kong between 2004 and 2014. The verification of the stated hypothesis was undertaken through an analysis of ten proxies for companies’ leverage, liquidity, profitability, investment opportunities and by the cost of raising capital using descriptive statistics, statistical significance tests and logistic regression models.

The remainder of this article expands as follows: Section 1 provides a brief literature review on motives for issuing convertible bonds and the role of initial conversion premium in hybrid debt financing. Section 2 describes the sample description and methodology. Section 3 sets forth the research results and discussion of key findings.

2. Literature review

According to Stein (1992), using convertible bonds may be profitable for companies that are willing to keep off raising capital, either through stock issuance (due to a high level of information asymmetry between a firm and the market) or through issuing straight debt (to avoid problems with repaying debt obligations toward bondholders). The risk of selling undervalued stock is particularly high for firms whose financial results and investment opportunities are difficult to anticipate by the market (young and small firms, for instance). As a consequence, they would raise less capital and have to forego profitable investment options, which is known as an adverse selection problem first formulated by Akerlof (1970). The issuance of straight debt usually leads to similar constraints. A higher coupon of newly issued bonds may drive companies into liquidity troubles and difficulties with redeeming debt at maturity. Stein suggests that using convertible bonds can help firms solve this two-fold problem. He argues that a construction of hybrid debt allows firms to increase equity capital “through the backdoor” while avoiding redemption of bonds and bearing lower costs of interests compared to straight debt. For that reason, Stein asserts that by issuing convertibles, companies can signal their good future financial performance as they demonstrate to the market their belief that converting debt into equity is highly probable.

However, not all research findings support Stein’s viewpoint. First, the announcement effect of offering convertibles is usually negative in most markets (Kim, Stulz, 1992; Ammann, Fehr, Seiz, 2006; Dutordoir, Van de Gucht, 2007). This can be explained on the grounds of the pecking order theory of Mayers and
Majluf (1984). Consistent with this concept, firms tend to issue common stock when they are overvalued, which is met with current shareholders’ response, who start to get rid of their shares. For a similar reason, the issuance of convertible debt may be interpreted by investors as a company’s attempt to sell overvalued common stock “through the backdoor.” In support of this supposition, Lee and Loughran (1998) as well as Spiess and Affleck-Graves (1999) showed that the stock price of convertible bonds issuers underperforms in the long run.

Another potential motive for using convertible debt was observed by Lewis, Rogalski and Seward (2001). They attribute the firms’ decision to issue convertibles to their limited access to the equity market. This view is close to that of Stiglitz and Weiss (1981), where lenders are unwilling to provide funds to the borrowers if they consider the costs of adverse selection as too high. This situation urges companies to use hybrid debt securities which can be transformed into equity capital thereafter.

Bringing the considerations of Stein (1992) and Lewis, Rogalski and Seward (2001) together, it can be assumed that companies perceive convertibles primarily as a delayed equity which enables them to avoid issuing undervalued shares and helps them raise equity capital at a later time under more favorable conditions. Although Brennan and Schwartz (1988) suggest that several firms can also use convertible bonds as a debt sweetener (overvalued companies in particular), no one can assure that a conversion option will remain out-of-the-money until maturity and bondholders resign from converting debt into equity. Thus, it is probable that using high premium convertible debt is aimed more at increasing equity capital through the backdoor rather than at protecting managers from miscalculating a future market capitalization of a company, which would result in unwanted conversion of debt.

The motives for using convertibles as a substitute for common stock was first confirmed in the mid-1950s (Pilcher, 1955). Similar findings were then bore out in more actual research concerning the American and the European market (Billingsley, Smith, 1996; Graham, Harvey, 2001; Bancel, Mittoo, 2004a; 2004b; Brounen, de Jong, Koedijk, 2006; Drobetz, Grüninger, Wöhle, 2006) in which companies issue convertible debt to circumvent a short-term equity dilution and to avoid a sale of undervalued shares. At the same time, many firms perceive convertible bonds as an alternative for straight debt which helps them benefit from a tax shield and decrease debt coupons compared to ordinary corporate bonds. Nevertheless, this motivation seems to be slightly less popular than treating convertibles as a delayed equity.
3. Sample description and methodology

The research sample encompasses the issues of straight, callable and putable convertibles carried out between 2004 and 2014 by service and manufacturing companies from the United States, Europe (Great Britain, Germany, the Netherlands and France) and Asia (Japan, China and Hong Kong). In order to grasp the potential reasons for using high premium convertibles, the sample was divided into two groups: the first contains 128 issues of convertible debt with a high initial conversion premium (higher than 40 percent), hereafter HP/CBs. The second consists of 172 issues of low premium convertibles (conversion premium lower than 20 percent), hereafter LP/CBs. All zero-coupon convertibles have been excluded from the research (as they are used mostly for tax purposes, not analyzed in this paper) as well as all exchangeable bonds which belong to a different type of hybrid debt that can be exchanged for the stock of a firm other than the issuer. Together these two groups comprise a final sample totaling 300 issues of convertible bonds, of which 241 were conducted by American, 30 by European and 29 by Asian companies. The initial data for this analysis was sourced from the Bloomberg Database.

The verification of the main hypothesis was conducted based on 10 proxies for financial performance of hybrid debt issuers. All indicators were collected from the most recent annual financial reports from the last year preceding the convertible issue. They describe firms’ leverage (“Debt/Assets”, “Debt/Equity”), profitability (“Net margin”, “ROA”, “ROE”), liquidity (“Financial slack”\(^1\), “EBITDA/Interest”), growth opportunities (“Tobin’s Q Ratio”) and costs of raising capital (“WACC Cost of Equity”, “WACC Cost of Debt after tax”). These indicators are commonly used in the research concerning a hybrid debt financing to make a comprehensive assessment of economic situation of the issuers.

In the first part of the research, descriptive statistics (mean, median, standard deviation) and statistical significance tests (Mann-Whitney U test) are used in order to analyze a financial situation of the issuers of both HP/CBs and LP/CBs. Thereafter, several logistic regression models are employed to indicate the set of factors which may determine the issuance of HP/CBs across different continents.

4. Research results and discussion

The analysis starts with the examination of 10 proxies for financial performance of the HP/CBs and LP/CBs issuers from the U.S., Europe and Asia. Due to strong divergences from a normal distribution, the expected values of all analyzed indicators are closer to their median rather than to their mean values (Table 1). The

\(^1\) Financial slack is calculated as cash plus liquid assets divided by total assets.
results show that the HP/CBs and the LP/CBs issuers differ from each other statistically in terms of only a few parameters, but a closer look at the outcomes leads to some important findings.

Table 1. Proxies for financial performance of the HP/CBs and LP/CBs issuers

<table>
<thead>
<tr>
<th>Variable</th>
<th>Convertible Type</th>
<th>USA</th>
<th></th>
<th>Europe</th>
<th></th>
<th>Asia</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>n</td>
<td>Median</td>
<td>p-value</td>
<td>n</td>
<td>Median</td>
<td>p-value</td>
</tr>
<tr>
<td>Debt/Assets</td>
<td>LP/CBs</td>
<td>144</td>
<td>0.491</td>
<td>0.299</td>
<td>10</td>
<td>0.614</td>
<td>0.538</td>
</tr>
<tr>
<td></td>
<td>HP/CBs</td>
<td>97</td>
<td>0.547</td>
<td></td>
<td>20</td>
<td>0.501</td>
<td></td>
</tr>
<tr>
<td>Debt/Equity</td>
<td>LP/CBs</td>
<td>130</td>
<td>0.900</td>
<td>0.122</td>
<td>10</td>
<td>1.628</td>
<td>0.383</td>
</tr>
<tr>
<td></td>
<td>HP/CBs</td>
<td>90</td>
<td>1.164</td>
<td></td>
<td>19</td>
<td>0.848</td>
<td></td>
</tr>
<tr>
<td>Financial slack</td>
<td>LP/CBs</td>
<td>144</td>
<td>0.183</td>
<td>0.214</td>
<td>10</td>
<td>0.080</td>
<td>0.071*</td>
</tr>
<tr>
<td></td>
<td>HP/CBs</td>
<td>97</td>
<td>0.181</td>
<td></td>
<td>20</td>
<td>0.208</td>
<td></td>
</tr>
<tr>
<td>EBITDA/Interest</td>
<td>LP/CBs</td>
<td>117</td>
<td>4.094</td>
<td>0.015**</td>
<td>7</td>
<td>7.252</td>
<td>0.583</td>
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<tr>
<td></td>
<td>HP/CBs</td>
<td>84</td>
<td>3.010</td>
<td></td>
<td>19</td>
<td>6.260</td>
<td></td>
</tr>
<tr>
<td>Net margin</td>
<td>LP/CBs</td>
<td>140</td>
<td>0.016</td>
<td>&lt;0.0001***</td>
<td>10</td>
<td>0.067</td>
<td>0.003***</td>
</tr>
<tr>
<td></td>
<td>HP/CBs</td>
<td>97</td>
<td>–0.083</td>
<td></td>
<td>20</td>
<td>–0.033</td>
<td></td>
</tr>
<tr>
<td>ROA</td>
<td>LP/CBs</td>
<td>143</td>
<td>0.015</td>
<td>0.002***</td>
<td>10</td>
<td>0.034</td>
<td>0.015**</td>
</tr>
<tr>
<td></td>
<td>HP/CBs</td>
<td>97</td>
<td>–0.064</td>
<td></td>
<td>20</td>
<td>–0.025</td>
<td></td>
</tr>
<tr>
<td>ROE</td>
<td>LP/CBs</td>
<td>143</td>
<td>0.078</td>
<td>0.001***</td>
<td>10</td>
<td>0.097</td>
<td>0.006***</td>
</tr>
<tr>
<td></td>
<td>HP/CBs</td>
<td>96</td>
<td>–0.099</td>
<td></td>
<td>20</td>
<td>–0.082</td>
<td></td>
</tr>
<tr>
<td>Q Ratio</td>
<td>LP/CBs</td>
<td>120</td>
<td>1.968</td>
<td>0.293</td>
<td>6</td>
<td>1.197</td>
<td>0.109</td>
</tr>
<tr>
<td></td>
<td>HP/CBs</td>
<td>68</td>
<td>1.789</td>
<td></td>
<td>18</td>
<td>1.492</td>
<td></td>
</tr>
<tr>
<td>WACC Cost of Equity</td>
<td>LP/CBs</td>
<td>144</td>
<td>9.544</td>
<td>0.963</td>
<td>10</td>
<td>9.765</td>
<td>0.011**</td>
</tr>
<tr>
<td></td>
<td>HP/CBs</td>
<td>93</td>
<td>9.513</td>
<td></td>
<td>19</td>
<td>10.887</td>
<td></td>
</tr>
<tr>
<td>WACC Cost of Debt</td>
<td>LP/CBs</td>
<td>144</td>
<td>2.416</td>
<td>0.242</td>
<td>10</td>
<td>0.915</td>
<td>0.142</td>
</tr>
<tr>
<td></td>
<td>HP/CBs</td>
<td>94</td>
<td>2.637</td>
<td></td>
<td>19</td>
<td>0.836</td>
<td></td>
</tr>
</tbody>
</table>

p-value – the probability of the Mann-Whitney U test
* significant at the α = 0.1
** significant at the 0.05 level
*** significant at the 0.01 level.

Source: own elaboration

First, the HP/CBs issuers from the U. S. are much less profitable than the companies that issue LP/CBs (Net margin = –8.3% to 1.6%, ROA = –6.4% to 1.5%, ROE = –9.9% to 7.8%), slightly more leveraged (Debt/Assets = 54.7% to 49.1%, Debt/Equity = 1.2 to 0.9; differences statistically non-significant) and with no liquidity problems (EBITDA/Interest close to 3, Financial slack = 18.1%). The Q Ratio of more than 1 (exactly between 1.8–2.0) suggests that the issuers of HP/CBs and LP/CBs may be engaged in investment process and thus searching for capital to finance their new projects (differences statistically non-significant). Fur-
thermore, it seems that all companies bear similar costs of raising equity and debt capital (9.5% and 2.5% respectively; differences statistically non-significant).

The HP/CBs issuers from Europe are much less profitable in comparison to the issuers of LP/CBs (Net margin = –3.3% to 3.4%, ROA = –2.5% to 3.4%, ROE = –8.2% to 9.7%), less indebted (Debt/Assets = 50.1% to 61.4%, Debt/Equity = 0.8 to 1.6; differences statistically non-significant) and not at risk of losing liquidity (Financial slack = 20.8% to 8.0%, EBITDA/Interest = 6.2 to 7.2). The values of the Q Ratio (1.5 to 1.2; differences statistically non-significant) indicate that at the moment of hybrid debt issuance, the HP/CBs issuers are more engaged in carrying out new investment projects than the firms that issue LB/CBs and thus they may use convertible bonds to finance their investment process. Moreover, the cost of equity is about one percentage point higher for the HP/CBs issuers (10.9% to 9.8%; differences statistically non-significant), but the cost of debt remains at a similar level for both groups of firms (0.9% to 0.8%; differences statistically non-significant).

The issuers of HP/CBs from Asia are characterized by a relatively safe capital structure (Debt/Equity = 0.96 to 1.3 for the LP/CBs issuers; Debt/Assets = 48.9% to 56.4%; differences statistically non-significant), but they seem to underperform compared to the companies issuing LP/CBs (Net margin = 0.9% to 4.2%, ROA = 0.4% to 2.0%, ROE = 1.5% to 5.1%). It is highly probable that at the moment of convertibles issuance, all analyzed Asian companies are not engaged in an investment process on a large scale (Q Ratio of about 1.1; differences statistically non-significant). It also appears that the issuers of HP/CBs raise equity at a higher cost (WACC Cost of Equity = 10.2% to 8.1% for the LP/CBs’ issuers), but the cost of raising debt is nearly equal (WACC Cost of Debt = 0.3% to 0.4%).

In the second part of the research, logistic regression models were used in order to estimate the probability of using HP/CBs by manufacturing and service companies. It turns out that the cost of equity and the cost of debt have the biggest impact on the choice of convertibles with higher-than-average conversion premium among all considered factors (Table 2).

As for American companies, under ceteris paribus assumption, if the cost of equity rises by one percentage point, the probability that a firm issues HP/CBs increases by ca. 12%. Moreover, a raise of Q Ratio by 1 increases a likelihood of choosing high premium convertibles by ca. 66%. It may suggest that American firms issue bonds with a relatively high conversion price to finance their new in-

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2 Ten independent variables were used in the models: (1) Debt/Assets, (2) Debt/Equity, (3) Financial Slack, (4) EBITDA/Interests, (5) Net margin, (6) ROA, (7) ROE, (8) Q Ratio, (9) WACC Cost of Equity, (10) WACC Cost of Debt. The estimated models have a relatively high discriminatory power. They correctly classify 88.8% of LP/CBs and 31.5% of HP/CBs issued by the American companies (it predicts overall 65.7% of issues), 66.7% and 94.1% for the European companies (87.0% for the whole model), 94.4% and 88.9% for the Asian companies (92.6% for the whole model).
vestment options: if they turn out to be profitable and thus increasing companies’ market capitalization, it encourages bondholders to exercise a conversion option embedded in convertible bonds.

Table 2. The results of logistic regression for the issuance of HP/CBs

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>S(B)</th>
<th>Wald Statistic</th>
<th>p-value</th>
<th>exp(B)</th>
<th>$R^2_{Nag}$</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td>1: USA</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Financial Slack</td>
<td>-0.567</td>
<td>0.290</td>
<td>3.816</td>
<td>0.051*</td>
<td>0.567</td>
<td>0.213</td>
<td>241</td>
</tr>
<tr>
<td>Q Ratio</td>
<td>0.508</td>
<td>0.145</td>
<td>12.301</td>
<td>&lt; 0.0001***</td>
<td>1.662</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WACC Cost of Equity</td>
<td>0.114</td>
<td>0.058</td>
<td>3.934</td>
<td>0.047**</td>
<td>1.121</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>-2.553</td>
<td>0.719</td>
<td>12.599</td>
<td>&lt; 0.0001***</td>
<td>0.078</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2: Europe</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.605</td>
<td>30</td>
</tr>
<tr>
<td>WACC Cost of Equity</td>
<td>0.649</td>
<td>0.276</td>
<td>5.517</td>
<td>0.019**</td>
<td>1.913</td>
<td></td>
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<tr>
<td>WACC Cost of Debt</td>
<td>-2.025</td>
<td>1.095</td>
<td>3.420</td>
<td>0.064*</td>
<td>0.132</td>
<td></td>
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<tr>
<td>Constant</td>
<td>-2.944</td>
<td>2.429</td>
<td>1.469</td>
<td>0.225</td>
<td>0.053</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3: Asia</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.809</td>
<td>29</td>
</tr>
<tr>
<td>WACC Cost of Equity</td>
<td>1.281</td>
<td>0.645</td>
<td>3.943</td>
<td>0.047**</td>
<td>3.601</td>
<td></td>
<td></td>
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<tr>
<td>WACC Cost of Debt</td>
<td>-24.799</td>
<td>13.639</td>
<td>3.306</td>
<td>0.069*</td>
<td>0.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>-2.974</td>
<td>4.799</td>
<td>0.384</td>
<td>0.535</td>
<td>0.051</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*B – the non-standardized regression coefficient
*S(B) – coefficient B estimation error
$R^2_{Nag}$ – Nagelkerke $R$-square
* significant at the $\alpha = 0.1$
** significant at the 0.05 level
*** significant at the 0.01 level.

Source: own elaboration

It should be noted that the results for “financial slack” are not consistent with the outcomes obtained from the descriptive statistics. In the regression model, the higher the level of liquidity, the lesser the probability of issuing HP/CBs. According to the descriptive statistics in turn, a median for “financial slack” is quite high and similar for both the HP/CBs’ and the LP/CBs’ issuers (amounts to 18%). However, if we take another proxy for firms’ liquidity into account, namely “EBITDA/Interest”, which for the HP/CBs issuers stands at 3, there might be evidence that these firms should not face any difficulties in debt repayment; hence, the problem of issuers’ liquidity is not crucial for further analysis.

The results concerning European companies demonstrate that under ceteris paribus assumption, a rise of the cost of equity by one percentage point increases the probability of HP/CBs issuance by ca. 91% and an increase of the cost of debt by one percentage point decreases a chance of issuing these bonds by ca. 87%. The analysis of Asian firms leads to similar findings. In their case, a rise of the cost of equity by one percentage point increases a likelihood of issuing HP/CBs by ca. 360% and the same change of cost of debt results in decreasing this probability by ca. 100%.
To sum up, it seems that a decision to use HP/CBs by firms from the U.S., Europe and Asia is influenced mostly by the cost of raising equity: the higher it is, the higher the initial conversion premium of newly issued convertibles set by the issuers. This may suggest that, in accordance with the concepts of Stein (1992) and Lewis, Rogalski and Seward (2001), companies perceive convertible debt financing mainly as a substitute for equity capital rather than an alternative for straight debt. A necessity to avoid issuing new shares perhaps arises from their high financial and operating risk. This might be reflected by the beta in the CAPM model that increases the cost of raising equity by companies. By issuing convertible bonds, they get a chance to avoid selling undervalued common stock and to increase equity capital thereafter under more favorable conditions (at about 40–80% higher price and at a lower dilution). These findings are consistent with Billingsley and Smith (1996), Graham and Harvey (2001) and Bancel and Mittoo (2004a; 2004b).

A negative or very low profitability of the American, European and Asian companies provides some evidence that all issuers of high premium bonds may be strongly undervalued. However, these firms are able to raise additional debt due to their moderate leverage and lack of liquidity problems. This may facilitate the HP/CB issuers to attract external investors to buy convertibles which gives them an opportunity to become their shareholders in the future.

The results of logistic regression models indicate that the higher the cost of debt, the less probable the issuance of HP/CBs is. This means that convertibles with a high conversion premium are not likely to be used by firms to reduce the cost of debt service. This role perhaps falls to LP/CBs. Such bonds can be issued by companies in two cases: First, if they want to economize on a relatively lower coupon compared to ordinary bonds, but on the other hand fixing a lower premium makes debt conversion more probable; and secondly, if they are willing to raise cheap convertible debt when they are overvalued. In this case they misleadingly settle a lower-than-average conversion premium to attract potential investors to buy hybrid debt, but with a full awareness that a conversion option will never become in-the-money. However, such dubious strategy may ruin their good relations with the market and negatively influence future issues of any securities.

Moreover, if Tobin’s Q is close to 2 for the HP/CBs issuers and the results of logistic regression indicate that this parameter is one of three factors that impact managers’ decision to issue HP/CBs, it may suggest that firms from the U.S. are likely to use high premium hybrid debt to finance their new investments. Managers expect that these projects will boost companies’ financial results, which increases a probability of debt conversion and thus gives them a chance to undertake further investment options. This approach is consistent with the sequential financing concept of Mayers (1998).
It should also be stressed that a number of findings drawn from this research needs to be treated with caution. First, statistically significant differences between the HP/CBs and LP/CBs issuers were observed in terms of only a few parameters (e.g., profitability and cost of capital). Second, some differences are statistically significant at a relatively low significance level (e.g., liquidity). Furthermore, the research sample concerning the issues carried out by the European and Asian companies is relatively small (about 30 issues) compared to issues carried out by the American firms (241 issues). It is also questionable whether the results obtained from the analysis can be comparable across markets from three different continents.

5. Conclusions

The motives for the issuance of convertible bonds have been examined for more than seventy years. However, little attention has been paid to problems of convertible design, such as the question of initial conversion premium. The purpose of this article was to identify the reasons for using convertibles with a higher-than-average conversion premium. Using a sample of 300 convertible issues carried out between 2004 and 2014 by manufacturing and service companies from the United States, Europe and Asia, it was shown that in all analyzed markets high premium hybrid debt is used as a substitute for common stock rather than for straight debt. A deep undervaluation of companies due to their poor financial performance may incite managers to delay increasing equity capital and to look for an alternative source of funds. The issuance of high premium convertibles enables corporations to raise equity at a later time under more favorable conditions. It is possible that some firms use convertible debt to finance their new investment projects which will improve their weak financial results.

The problem of initial conversion premium in hybrid debt financing needs a further examination. The future research should verify whether, consistent with the findings from this article, issuers of high premium convertible bonds do enhance their financial results following debt issuance. Another scope of review may concentrate on the announcement effect of convertibles. Assuming that issuers sell high premium bonds when they are undervalued, one should check whether or not the market reacts positively to the information that a company is about to issue such designed instruments.
References


Dlaczego przedsiębiorstwa emitują obligacje zamienne z wysoką początkową premią konwersji?

Streszczenie: Celem artykułu jest identyfikacja przyczyn emisji obligacji zamieniących z wysoką początkową premią konwersji. Analiza trzystu emisji długu zamiennej przeprowadzonych w latach 2004–2014 przez spółki ze Stanów Zjednoczonych, Europy i Azji działające w sektorze produkcyjnym i usługowym wykazała, że obligacje zamienne z wysoką premią konwersji są wykorzystywane przez niedowartościowane przedsiębiorstwa znajdujące się w trudnej sytuacji finansowej, które traktują dług zamienię bardziej jako alternatywę dla emisji akcji niż dla zwykłych obligacji korporacyjnych bez wbudowanej opcji konwersji. Emisja obligacji zamieniących najprawdopodobniej ma pozwolić tym spółkom na podniesienie kapitału własnego w późniejszym czasie i na dużo lepszych warunkach w porównaniu z publiczną emisją akcji.

Słowa kluczowe: finanse przedsiębiorstw, finansowanie długiem, obligacje zamienne, początkowa premia konwersji

JEL: G15, G23, G32