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Do Callable Convertibles Support The Investment Process Of A Company? An Analysis Of The World Market Of Hybrid Debt

Abstract

Using a sample of 1,705 convertible bonds issued by manufacturing and service companies from the United States (1,138 issues); Europe (270); and Asia (297) between 2004 and 2014 this paper investigates the role of callable convertibles in the corporate investment process. This research shows first that callable convertibles are used to finance investment projects particularly by American firms which may exercise new investment options to improve poor financial performance. Secondly, the same strategy may be followed by European companies, but they seem not to carry out investments on as large a scale as American firms. Thirdly, the research results do not provide evidence that Asian enterprises use callable convertibles for investment purposes: they likely use these instruments for different reasons.

Keywords: *debt financing, investment opportunities, callable convertible bonds*

JEL: *G15, G23, G31*

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1. Introduction

Hybrid securities are financial instruments that combine both debt and equity features. One of the most popular hybrid instruments used by companies across the world is the convertible bond. The reasoning as to why firms elect convertible bond financing has been examined since the mid-1950s. As pointed out by researchers, convertible bonds can be used to minimize the negative effects of information asymmetry between the company's insiders and outsiders, thus eliminating an adverse selection problem (e.g., Brennan and Kraus 1987; Brennan and Schwartz 1988; Stein 1992); mitigate agency conflicts between shareholders, bondholders and managers (e.g., Green 1984); and to finance multi-stage investment projects (e.g., Mayers 1998).

According to the Bloomberg Database, one-third of convertibles issued all over the world are callable, meaning that issuers have a right to redeem them or to force conversion on bondholders before maturity. Researchers argue first that callable convertible debt may allow companies to avoid difficulty in redeeming bonds at maturity (Nyborg 1995; Ekkayokkaya et al. 2012). Secondly, it may be used as tool to reduce agency problems between management and shareholders by helping to control opportunistic managerial behavior and a natural tendency of managers to overinvest (Isagawa 2000, 2002). Thirdly, callable convertible (hybrid) debt is considered as a profitable device to finance corporate investment projects of uncertain value and timing (Mayers 1998, 2000; Liu and Switzer 2013).

This article focuses on the latter rationale for using callable hybrid debt, namely on its role in the corporate investment process. As Mayers (1998) suggests, convertibles with a call option may enable firms to finance their future investment opportunities by resolving the overinvestment problem when the investment option turns out to be "out-of-the-money", and to reduce the costs of raising additional capital when the option is valuable. The objective of this paper is to find out whether, in line with the sequential financing hypothesis of Mayers (1998), companies utilize callable convertibles in order to raise funds to finance their new investment projects irrespective of their country of domicile. Put differently, this article aims to check whether empirical findings on callable hybrid debt from different parts of the world are consistent with the theory of Mayers (1998). The reasoning behind posing this question is many researchers have verified the stage financing hypothesis by analyzing mainly American and Asian markets (Mayers 1998; Chang et al. 2004), so it seems to be necessary to confirm whether their findings can be generalized to cover convertible bonds issuers from other countries, like Europe. In order to do this, a broader look at the role of callable convertibles in the corporate investment process is required. This aspect is also important for market practices, which has been proven by

a range of studies examining the motives for convertible bond issuance among corporate CFOs from the United States and Europe (Bancel and Mittoo 2004).

If Mayers (1998) is correct and the issuance of callable convertibles does support the investment process of a company, it can be assumed that hybrid debt may be used by firms with a relatively low return on assets and a low asset turnover, since their managers may have a strong desire to get involved in new projects in order to increase the effectiveness of using the company's assets, thereby raising profitability. Hence, it can be predicted that at the moment of debt issuance the issuers of callable convertible bonds may have lower growth opportunities in comparison to companies which use "plain vanilla" convertibles (without any options). In light of these considerations, the two main hypotheses of this paper are as follows:

H1: Callable convertibles are issued by firms with a lower return on assets and a lower asset turnover than issuers of "plain vanilla" convertible debt.

H2: Issuers of callable convertibles have lower growth opportunities than companies that issue "plain vanilla" convertible bonds.

The final sample encompasses 1,705 issues of straight and callable convertibles issued between 2004 and 2014 by manufacturing and service companies from the United States, France, Germany, Great Britain, the Netherlands, China, Japan and Hong Kong. In order to achieve the main goal of this study, seven different indicators of companies' growth and investment opportunities have been analyzed. In terms of statistical and econometric methods, descriptive statistics, statistical significance tests (the Mann-Whitney and Kruskal-Wallis tests), as well as logistic regression and classification trees have all been used.

The remainder of this article is organized as follows: Section II provides a brief review of the literature, focused primarily on the role of convertible bonds in corporate investment processes. Section III describes the sample description and methodology. Section IV sets forth the research results and discusses the key findings. The final section offers conclusions.

2. Review of the Literature

Every investment process of a company should be planned long term by managers. CFOs should be ready to provide financing to undertake potential profitable investment projects at any time and exercise each investment option which turns out to be "in-the-money". The managerial decision to get involved in one project just after having finished another is determined by, among other factors, current market conditions, the economic performance of a company and

the financial effect of previous investments. This line of thinking is the keystone of the sequential financing hypothesis of Mayers (1998), in which callable convertibles are considered to be the most suitable instruments for financing multistage investment projects of a company, as they are purported to be the best device to match a firm's cash inflows with expected outlays on new investments. In his paper, Mayers (1998) indicates the potential shortcomings of carrying out investment projects by means of straight debt financing. If a company issues short-term straight bonds which will have to be redeemed at about the time when the underlying investment becomes profitable, a firm may not have sufficient capital to get involved in a new project and may be forced to bear the costs of raising additional funds. In contrast, if a company uses long-term straight debt and the investment turns out to be worthless, managers may have an incentive to spend excess capital on financing potentially non-profitable projects, which may result in reduction of company's value. This is known as an overinvestment problem described by Jensen (1986).

Mayers (1998) shows that the use of callable convertibles can help a firm to eliminate both the pitfalls mentioned above. He argues that if the investment option turns out to be "in-the-money," hybrid debt can be converted to common equity, which allows an issuer to economize on issue costs in the future. Why does the issuance of new securities become cheaper? First, because a conversion leaves the capital in a company since the bonds do not have to be redeemed from the bondholders and secondly, it reduces leverage, making it easier for a firm to raise additional funds from other external sources. In contrast, if the project is worthless, an issuer redeems convertibles at maturity, returning cash to investors and minimizing the risk of spending excess capital on negative NPV investments, which helps a firm to overcome an overinvestment problem.

In order to verify his suppositions, Mayers (1998) examined 289 convertibles issues and found an increase in capital expenditures and new long-term debt financing around the year in which the issuer forces conversion by exercising a call option. These results provide strong support for the sequential financing hypothesis and indicate that convertible bonds can help companies to carry out new investments as the most cost-effective way to finance their future investment options. These findings were also confirmed based on a sample of Taiwanese-listed firms investigated by Chang, Chen and Liu (2004). They show that the issuers' new net financing is not significantly different from zero over the maturity of convertible bonds, which may be evidence that the main motive for using convertible debt may be the desire to reduce future issue costs.

Liu and Switzer (2013) demonstrate that even if managerial predictions about the profitability of a future project prove correct, convertible debt financing may still be an optimal strategy for firms faced with uncertainties in

the timing of their investments, i.e., when they cannot predict the moment when a new investment will become fully operational. They argue that the incentives to use convertibles are much greater for enterprises without a strong financial performance than for other types of companies.

Korkeamaki and Moore (2004a) set forth a model in which firms with a high marginal benefit of waiting to begin new projects (with high cash flow volatility and high growth prospects) tend to postpone investment during the period following the issuance of convertible debt. In contrast, companies with low benefits of waiting (with low cash flow volatility and low growth opportunities) or high costs of waiting (a high interest rate environment) tend to invest shortly after the issuance of convertibles.

Korkeamaki and Moore (2004b) also took a deeper look into convertible bond design, finding that firms with higher levels of capital expenditures just after debt issuance use convertibles without or with a weak call protection (so-called "soft call protection"), likely in order to have the right to force an immediate conversion when convertibles become "in-the-money," perhaps as a result of exercising profitable investment options. Similarly, companies which experience lower capital investments tend to issue convertibles with a "hard call protection" which makes hybrid debt non-callable for a certain period. Put simply, Korkeamaki and Moore (2004b) show that the capital expenditure levels following the issuance of convertible bonds are inversely related to the length of the "call protection" provisions.

3. Sample description and methodology

This article concentrates on identification of the motives for using straight convertibles (hereafter CBs) and callable convertibles (hereafter CB/CALLs), focusing on the growth and investment opportunities of companies from three different continents and from eight different countries: (1) North America (the United States); (2) Europe (Netherlands, France, Germany and Great Britain); and (3) Asia (China, Japan and Hong Kong). The choice of these markets was driven by a high popularity of hybrid debt financing among local enterprises. The research sample encompasses firms only from the service and manufacturing sectors, excluding companies operating in the banking and insurance fields, as well as public entities.

The final sample comprises 1,705 issues of straight and callable convertible bonds carried out between 2004 and 2014, of which 1,138 were issued by American; 270 by European; and 297 by Asian companies. The initial data for the analysis was taken from the Bloomberg Database.

The verification of the two main hypothesis was conducted based on seven proxy variables for companies' growth and investment opportunities: (1) *Total Asset Turnover* (*TAT*); (2) *Return on Assets* (*ROA*); (3) *CAPEX/Total Assets*; (4) *R&D/Total Assets*; (5) *Tobin's Q* (*Q Ratio*);[1] (6) *Issue Size/Total Assets*; and (7) *Issue Size/Tangible Assets*. All necessary data was collected from the most recent financial reports from the year preceding the issuance of hybrid debt.

In order to achieve the main objective of the paper, several statistical and econometric methods have been used (i.e., descriptive statistics, the statistical significance test (the non-parametrical Mann-Whitney U test and the Kruskal-Wallis test). Additionally, both logistic regression and classification trees models have been employed to indicate the set of factors which may determine the issuance of callable convertibles.

4. Research results

In the first part of the research, five proxies for growth and investment opportunities of companies from the United States, Europe and Asia were analyzed. It is noteworthy that the values of each variable strongly diverge from a normal distribution, which means that their expected values are rather closer to their median than to their mean values. Moreover, a statistically significant difference between the CBs and CB/CALLs issuers, in terms of their growth and investment prospects, are most aligned with American companies. In Europe and in Asia these proxies do not statistically differ from each other and their values are very similar (Tab. 1).

Table 1. Proxies for growth and investment opportunities of the CBs and CB/CALLs issuers

Variable	Maturity Type	*n*	Mean	Median	Standard Deviation	*p*
1: USA						
TAT	CB	850	0.752	0.607	0.641	<0.0001***
	CB/CALL	239	0.636	0.362	0.715	
ROA	CB	883	-0.485	-0.029	2.603	<0.0001***
	CB/CALL	236	-0.808	-0.164	2.792	
CAPEX/Total Assets	CB	889	-0.055	-0.027	0.086	0.001***
	CB/CALL	248	-0.039	-0.022	0.065	

[1] Tobin's Q is one of the most frequent proxies for growth opportunities used in research on convertible debt financing (see, e.g., Loncarski et al. 2006; Chemmanur and Simonyan 2010).

R&D/Total Assets	CB	890	0.131	0.038	0.348	<0.0001***
	CB/CALL	247	0.196	0.099	0.522	
Q Ratio	CB	732	3.195	1.793	4.903	<0.0001***
	CB/CALL	200	12.134	2.514	19.751	
2: Europe						
TAT	CB	213	0.946	0.836	0.850	0.120
	CB/CALL	51	1.201	0.916	1.260	
ROA	CB	219	-0.120	-0.014	0.413	0.873
	CB/CALL	51	-0.069	-0.027	0.158	
CAPEX/Total Assets	CB	219	-0.049	-0.028	0.068	0.278
	CB/CALL	51	-0.047	-0.034	0.048	
R&D/Total Assets	CB	219	0.026	0.000	0.097	0.485
	CB/CALL	51	0.019	0.000	0.037	
Q Ratio	CB	193	1.570	1.258	1.885	0.575
	CB/CALL	47	1.366	1.236	0.527	
3: Asia						
TAT	CB	244	0.777	0.715	0.521	0.652
	CB/CALL	52	0.762	0.696	0.395	
ROA	CB	245	0.025	0.028	0.064	0.973
	CB/CALL	52	0.029	0.030	0.063	
CAPEX/Total Assets	CB	245	-0.031	0.000	0.058	0.077*
	CB/CALL	52	-0.042	0.000	0.068	
R&D/Total Assets	CB	245	0.014	0.002	0.023	0.774
	CB/CALL	52	0.013	0.000	0.021	
Q Ratio	CB	243	1.187	0.987	0.746	0.148
	CB/CALL	52	1.244	1.084	0.540	

p-value – the probability of the Mann-Whitney U test; * statistically significant differences at $\alpha = 0.1$; *** statistically significant differences at $\alpha = 0.01$.

Source: author's own elaboration.

The results show that the CB/CALL issuers from the United States have a considerably lower return on assets and a lower asset turnover than the firms that issue straight CBs – their revenues constitute merely one third of their total assets (*TAT* = 36%) and each dollar invested in their properties and machinery yields a \$0.16 loss (*ROA* = –16%). Therefore, these firms seem to have a relatively poor financial performance and may require quick changes to increase their profitability. A *Q Ratio* higher than 1 for both groups of companies implies that at the time of hybrid debt issuance, the CBs and CB/CALLs issuers may have been actively involved in an investment process. However, the much higher levels of

Tobin's Q for the issuers of CB/CALLs (*Q Ratio* 2.5 to 1.8) and their much higher expenditures on research and development to total assets (*R&D/Total Assets* 9.9% to 3.8%) may suggest that these companies carry out investments on a much larger scale than the issuers of CBs.

Due to the fact that difference between proxies for growth and investment opportunities for the issuers of CBs and CB/CALLs from Europe and Asia are not statistically significant, no meaningful conclusions on the use of hybrid debt in their investment process can be drawn. However, a closer look on the value of certain parameters shows some interesting findings.

The research outcomes demonstrate that Asian firms are not likely to issue CB/CALLs in order to raise capital to finance their new investments, since they seem not to be involved in carrying out any large projects (*Q Ratio* close to 1, *CAPEX/Total Assets* and *R&D/Total Assets* equal to zero). Their relatively high asset turnover (*TAT* = 70%) and high return on assets (*ROA* = 3%) may suggest that they do not require any immediate actions to improve their financial standing, suggesting they might use callable convertible bonds for different reasons than their American counterparts. They may, for instance, issue hybrid debt to reduce the information asymmetry costs of common stock issuances and obtain delayed equity financing (Stein 1992), but this presumption requires further examination.

As for European companies, the empirical analysis shows that the issuers both of CBs and CB/CALLs have the highest level of asset turnover among the analyzed sample (*TAT* amounted to 84% and 92% respectively), but simultaneously generate a net loss, which results in their negative return on assets (*ROA* equal to –1.4% and –2.7% respectively). Moreover, their *Q Ratios* are only slightly larger than 1 while the issuers of CB/CALLs make more capital expenditures in relation to their total assets (*CAPEX/Total Assets* 3.4% compared to 2.8% for the issuers of CBs). It may be thus posited, though with certain amount of caution, that similar to American companies, callable convertibles may help European firms in raising funds to finance new investment projects aimed at increasing their financial performance. However, the scale of these investments tends not to be as large as the projects carried out by American companies. The analysis of the average size of issue to total assets and tangible assets strongly support this supposition (see Tab. 2).

Table 2. Size of issues carried out by the American, European and Asian issuers of CBs and CB/CALLs

Variable	Continent	*n*	Mean	Median	Standard Deviation	*p*
1: CB/CALL						
Issue Size/Total Assets	USA	248	1.961	0.217	19.985	<0.0001***
	Europe	49	0.128	0.061	0.159	
	Asia	52	0.122	0.085	0.122	
Issue Size/Tangible Assets	USA	232	0.861	0.310	2.510	<0.0001***
	Europe	37	0.170	0.075	0.243	
	Asia	50	0.131	0.087	0.151	
2: CB						
Issue Size/Total Assets	USA	885	2.327	0.214	34.683	<0.0001***
	Europe	217	0.310	0.096	1.336	
	Asia	245	0.273	0.100	1.775	
Issue Size/Tangible Assets	USA	837	1.367	0.280	15.212	<0.0001***
	Europe	179	0.469	0.130	2.004	
	Asia	235	0.285	0.102	1.818	

p-value – the probability of the Kruskal-Wallis; *** statistically significant differences at $\alpha = 0.01$.

Source: author's own elaboration.

It turns out that the size of issues carried out by American firms is considerably higher – they amounted to one fifth of their total assets (*Issue Size/Total Assets* = 21.7%) and to one third of their tangible assets (*Issue Size/Tangible Assets* = 31%). In contrast, the size of issues done by companies from other countries is incomparably smaller and stands at 6–8% for European companies and ca. 8.5% for Asian companies. If we consider higher-than-average *Q Ratio* levels for American issuers of CB/CALLs (2.5 compared to 1.2 for European and 1.1 for Asian firms), it is highly probable that callable convertibles are used to finance new investments mostly by companies from the United States. If their new projects turn out to be profitable, which may result in a gradually increase of their market capitalization, managers will force conversion and change the firms' capital structure by decreasing their leverage long before debt maturity. This may then help firms to economize on the issue costs of new securities to continue their investment process.

The assumption that American companies use callable convertibles to finance their investment projects is also evidenced by the results of the logistic regression models. It appears that among all the considered factors the *Q Ratio*

has the most important influence for the choice of this form of debt financing.[2] Assuming *ceteris paribus*, if Tobin's *Q Ratio* increases by 1, firms from the United States are ca. 8% more likely to choose CB/CALLs and not the CBs (Tab. 3).

Table 3. The results of logistic regression for the issuance of CB/CALLs by American firms

Variable	B	S(B)	Wald Statistic	P	exp(B)
Q Ratio	0.074	0.013	32.904	<0.0001***	1.077
Constant	-1.672	0.100	279.898	<0.0001***	0.188
R^2_{Nag}	0.106				
n	858				

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

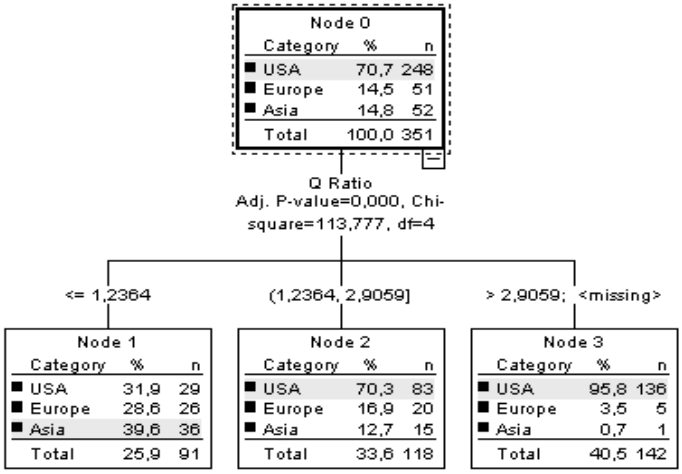
Source: author's own elaboration.

The analysis of classification trees leads to similar conclusions. It clearly indicates that the main criterion which differentiates the choice of CB/CALLs by companies from various continents is the *Q Ratio*[3]. It appears that with higher levels of Tobin's Q, the chance that CB/CALLs are issued by American firms becomes almost certain (it is estimated at 96% if the *Q Ratio* is higher than 2,9). In contrast, the fact that the lower the *Q Ratio*, the greater is the probability that CB/CALLs are used by Asian firms, may suggest that companies from Asia do not issue these instruments for investment purposes (Fig. 1).

[2] Five independent variables were used in the logistic regression model: (1) *TAT*, (2) *ROA*, (3) *CAPEX/Total Assets*, (4) *R&D/Total Assets* and (5) *Q Ratio*. The model correctly classifies 12.0% of CB/CALLs and 99.7% of CBs issues. It overall predicts 81.4% of issues.

[3] Five independent variables were used in the classification tree model: (1) *TAT*, (2) *ROA*, (3) *CAPEX/Total Assets*, (4) *R&D/Total Assets* and (5) *Q Ratio*. The tree was built by means of the CHAID algorithm. The model correctly classifies 88.3% of CB/CALLs issues carried out by American, 0.0% by European and 69.2% by Asian companies. It overall predicts 72.6% of issues.

Figure 1. Classification tree for the issuance of CB/CALLs by American, European, and Asian companies



Source: author's own elaboration.

To sum up, it seems that CB/CALLs may be used by companies to raise capital to finance their new investments and it is most likely this strategy is followed mainly by American enterprises; for these entities, there are no grounds to reject hypotheses *H1* and *H2*. This research shows that CB/CALLs issuers from the United States have higher proxies for growth and investment opportunities (e.g. the *Q Ratio* and *R&D/Total Assets*) and they organize three to four times larger issues than firms from other continents, which means that at the moment of selling convertibles they may be actively involved in an investment process. Perhaps carrying out new projects is aimed at improving their poor financial performance and weak effectiveness of using their assets (*ROA* ≈ –16%, *TAT* ≈ 36%). For this reason a call provision, apart from its role in staged investment financing, may prevent underperforming American companies from redeeming bonds at maturity (Ekkayokkaya et al. 2012). This option may enable managers to repay par value of debt before their firms lose liquidity, if investment projects turn out to be unprofitable.

Secondly, the analysis indicates that around the time of debt issuance, issuers of CB/CALLs from Europe may carry out new investments as well, but on a much smaller scale than the Americans do, as evidenced by a relatively low size of issues (*Issue Size/Total Assets* = 7.5%) and Tobin's *Q Ratio*, which is only slightly higher than 1 (*Q Ratio* = 1.2). As in the United States, European firms may initiate new investments to improve their poor financial results (*ROA* ≈ –3%). In their case, a call option may again act as a form of "safety cushion" and entitles managers to either force conversion on bondholders before maturity

(Nyborg 1995), or to make an early redemption of the bonds if they anticipate any difficulties in repayment of debt in the future (Ekkayokkaya et al. 2012). However, the findings of this research do not allow for drawing any unequivocal conclusions in this area.

Thirdly, it seems that Asian companies do not use CB/CALLs in order to raise funds to finance their investment projects, since they do not bear any large expenditures on research and development, their *Q Ratio* is close to 1, and they are relatively more profitable (*ROA* = 3%). Hence, firms from Asia may issue convertible bonds with a call option for different reasons. Perhaps they use these instruments as a "debt sweetener" (Hoffmeister 1977), since the conversion option embedded in hybrid debt allows them to sell convertibles with a lower coupon in comparison to straight debt. Note that a call provision enables companies to call bonds before maturity in response to unfavorable market fluctuations or firms' poor financial performance. Using convertibles may also help Asian enterprises to reduce the information asymmetry costs related to common stock issuance and to increase equity capital "through the backdoor" later on (Stein 1992). However, additional research is needed to confirm these suppositions.

5. Conclusions

Convertible debt is one of the most popular hybrid instruments used by companies across the world. Thanks to its peculiar construction, which combines features of both equity and straight debt, it can be the most effective way for firms to raise capital instead of issuing common stock or corporate bonds. About one third of convertibles issued by enterprises are callable, which means that the issuer is entitled to redeem them or to force conversion on bondholders before maturity. Using a sample of nearly two-thousand issues carried out by manufacturing and service companies from three different continents between 2004 and 2014, the purpose of this paper was to examine the role of a call option in convertible bond financing to verify whether companies issue callable convertibles to finance their investment projects irrespective of their domicile.

The main findings of this study are as follows. First, callable convertibles are likely to be commonly used in an investment process particularly by American companies. They may decide to carry out new projects which lead to improving their poor financial performance and thereby enabling managers to force conversion on bondholders before debt maturity. Favorable changes in firms' capital structure following a conversion result in reducing their leverage and facilitate companies to raise additional capital to exercise another valuable investment options. A call option can simultaneously act as a "safety cushion,"

since it gives managers of underperforming companies a right to make an early redemption of bonds if they anticipate any difficulties in repaying debt at maturity. Secondly, the study shows that European companies may also use callable convertible debt to raise funds to begin new investments which may help them to improve their weak financial results, but they seem to carry out projects on a much smaller scale than American firms do. By adding a call option, companies from Europe may ensure themselves a right to redeem hybrid debt before maturity and avoid financial distress if their investment options turn out to be worthless. Thirdly, the research does not support the evidence that Asian firms use callable convertibles for investment purposes. Their relatively higher profitability, as compared to their American and European counterparts, suggest, that they may consider convertible debt as a delayed equity or as a tool to reduce costs of external financing, but these suppositions need more precise investigation.

The problem of callable hybrid debt financing requires further examinations. Future research should find the motives for using callable convertibles by Asian companies. Another scope of studies could concentrate on convertible debt design (e.g., issue size, maturity, coupon) among American and European firms in order to investigate how properly designed convertible contracts support their investment process.

References

Bancel F., Mittoo U.R. (2004), *Cross-Country Determinants of Capital Structure Choice: A Survey of European Firms*, 'Financial Management', vol. 33(4).

Brennan M., Kraus A. (1987), *Efficient Financing under Asymmetric Information*, 'Journal of Finance', vol. 42(5).

Brennan M.J., Schwartz E.S. (1988), *The Case for Convertibles*, 'Journal of Applied Corporate Finance', vol. 1(2).

Chang S.C., Chen S.S., Liu Y. (2004), *Why Firms Use Convertibles: a Further Test of the Sequential-Financing Hypothesis*, 'Journal of Banking and Finance', vol. 28(5).

Chemmanur T., Simonyan K., (2010), *What Drives the Issuance of Putable Convertibles: Risk-Shifting, Asymmetric Information, or Taxes?*, 'Financial Management', vol. 39, no. 3, p. 1027–1068.

Ekkayokkaya P., Gemmill G., Koufopoulos K. (2012), *Why are Some Issues of Convertibles Callable and Others Not?* http://ssrn.com/abstract=2158237 (25.04.2016).

Green R.C. (1984), *Investment Incentives, Debt, and Warrants*, 'Journal of Financial Economics', vol. 13(1).

Hoffmeister J.R. (1977), *Use of Convertible Debt in the Early 1970s: a Reevaluation of Corporate Motives*, 'Quarterly Review of Economics and Business', vol. 17.

Isagawa N. (2000), *Convertible Debt: an Effective Financial Instrument to Control Managerial Opportunism*, 'Review of Financial Economics', vol. 9(12).

Isagawa N. (2002), *Callable Convertible Debt under Managerial Entrenchment*, 'Journal of Corporate Finance', vol. 8(3).

Jensen M.C. (1986), *Agency Costs of Free Cash Flow, Corporate Finance, and Takeovers*, 'American Economic Review', vol. 76(2).

Korkeamaki T., Moore W.T. (2004), *Capital Investment Timing and Convertible Debt Financing*, 'International Review of Economics and Finance', vol. 13(1).

Korkeamaki T., Moore W.T. (2004), *Convertible Bond Design and Capital Investment: The Role of Call Provisions*, 'The Journal of Finance', vol. 59(1).

Liu J., Switzer L.N. (2013), *Convertible Bond Issuance, Risk, and Firm Financial Policy: A New Approach*, 'International Journal of Business', vol. 18(1).

Loncarski I., ter Horst J., Veld C. (2008), *Why Do Companies Issue Convertible Bond Loans? An Empirical Analysis for the Canadian Market*, 'Canadian Journal of Administrative Sciences', vol. 25(3).

Mayers D. (1998), *Why Firms Issue Convertible Bonds: The matching of Financial and Real Investment Options*, 'Journal of Financial Economics', vol. 47(1).

Mayers D. (2000), *Convertible Bonds Matching Financial and Real Options*, 'Journal of Applied Corporate Finance', vol. 13(1).

Nyborg K. (1995*), Convertible Debt as Delayed Equity: Forced versus Voluntary Conversion and the Information Role of Call Policy*, 'Journal of Financial Intermediation', vol. 4(1)

Stein J.C. (1992), *Convertible Bonds as Backdoor Equity Financing*, 'Journal of Financial Economics', vol. 32(1).

Streszczenie

CZY OBLIGACJE ZAMIENNE Z OPCJĄ CALL WSPIERAJĄ PROCES INWESTYCYJNY PRZEDSIĘBIORSTWA? ANALIZA ŚWIATOWEGO RYNKU DŁUGU HYBRYDOWEGO

Celem artykułu było wyjaśnienie roli jaką pełnią obligacje zamienne z opcją call w procesie inwestycyjnym współczesnych przedsiębiorstw. Analiza obejmowała 1705 emisji długu hybrydowego przeprowadzonych w latach 2004–2014 przez przedsiębiorstwa produkcyjne i usługowe mające swoją siedzibę w Stanach Zjednoczonych (1138 emisji),

Europie (270 emisji) i Azji (297 emisji). Otrzymane wyniki pozwalają przypuszczać, że na emisję obligacji zamiennych z opcją call z myślą o zdobyciu funduszy na sfinansowanie nowych inwestycji decydują się przede wszystkim spółki amerykańskie i europejskie, a realizacja nowych projektów najprawdopodobniej ma przyczynić się do poprawy ich złych wyników finansowych. Wydaje się, że podobna strategia nie jest prowadzona przez przedsiębiorstwa azjatyckie, które mogą dokonywać emisji długu zamiennego w celach innych niż inwestycyjne.

***Słowa kluczowe**: finansowanie długiem, inwestycje, obligacje zamienne z opcją call*