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## Article

# The essence of the emerging markets' investment risk: Comparative analysis of American and Central European convertible bond issuers

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**JAKUB MARSZAŁEK\***

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**The Essence Of The Emerging Markets' Investment Risk.  
Comparative Analysis Of American And Central European  
Convertible Bond Issuers**

**Abstract**

*This paper attempts to identify the determinants of credit ratings for debt instrument issuers in the so-called emerging markets. The study was conducted on the sample of convertible bonds issuers in 2001-2012, half of which originated from Central and Eastern Europe, while the rest were U.S. operators. The analysis is focused exclusively on pairs of bonds with the same rating given by the British Fitch agency, which specialises in analysing Central and East European markets. The conducted studies show that solvency risk, interpreted as indebtedness, financial leverage and current solvency, is a major difference between the two groups of bonds. Changes in indebtedness, i.e. in assets held by foreign investors, are apparently the reasons of higher requirements for issuers from the emerging markets.*

**Keywords:** *emerging market, convertible bond, rating, financing*

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## 1. Introduction

An issuer's credit risk analysis is an inherent element of the profitability assessment for an investment in debt instruments. An instrument that facilitates such an analysis is the rating by a rating agency. However this rating has got both its advantages and disadvantages. Thanks to its relatively simple interpretation, it enables a quick assessment of the creditworthiness of a given issuer. The use of ratings for the analysis of the profitability of an investment in traditional debt instruments seems fairly easy. Comparing the current market price of a bond to the flow of interest or its redemption value helps estimate the internal rate of return, which reflects the bond's profitability, which is the primary parameter used to compare bonds. Bond rating determines profitability because it depends on the issuer's solvency risk. Rating agencies autonomously identify the risk and present the methodology used to calculate the rating. However they do not specify how a given rating was specifically calculated in a given case. Such information is confidential and forms a part of agency's know-how. Thus investors might speculate on how a change in selected economic parameters may determine the rating, even though such a change does not necessarily have to take place. The only certain aspect is that a change in rating will impact the identified risk level and may determine a bond's profitability. A rating agency's prestige thus becomes the fundamental factor in determining the reliability of the assessment and evaluating the investors' decisions connected with it.

This paper attempts to identify the determinants of credit rating for debt instrument issuers in the so-called emerging markets. By using financial data from selected items in the balance sheets and profit and loss accounts, in combination with the characteristics of issued bonds, we compared these issues with the ratings. The study covers only instruments with the same rating issued by similar companies. To eliminate the risk of an issuer's insolvency, the analysis focuses only on convertible bonds. By comparing the above mentioned groups of financial parameters, based on differences among them we will be able to identify additional risk factors. The analysis centres around bonds issued in the United States and in the countries of Central and Eastern Europe. The selection of different countries in the same group is in accordance with the previous research. It was proved that credit ratings for the emerging market should be based rather on global or regional economic factors than on local factors (Diaz Weigel, Gemmill 2006). The differences identified should highlight the substance of credit risk connected with debt instruments issued by operators from emerging markets.<sup>1</sup>

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<sup>1</sup> This is consistent with previous research. E. I. Altman (2005) compared emerging market corporate bonds with high yield American corporate bonds.

## **2. Convertible bonds ratings**

### **2.1. Issuance of convertible bonds - specific features**

Hybrid instruments which give the holder an option to convert them into the common stock of the issuing company on the date of redemption are assessed differently from traditional bonds. The difference in approach results from the way creditor's claims can be satisfied. The availability of the conversion option is fundamental in this case. The issuer may preset the conversion price and the time when conversion becomes exercisable, and may avail itself of the early conversion option, of the call option when it calls the bonds, or of the put option when bonds are put back to the issuer. It may also use the reset option, which consists of a change of the conversion price or of the conversion ratio. The above listed possibilities make convertible bonds extremely flexible instruments for financing, but at the same time they complicate comparisons of the risk involved. The issuer may reduce the risk of the debt not being redeemed with attractive conversion terms. Thus, it is worth considering the basic concepts that justify the issuance of convertible bonds, inasmuch as they seem relevant for the assessment of investment risk in different markets. Most of them are based on the asymmetric information theory. The term "agency costs", introduced by Jensen and Meckling (1976), gave rise to analyses addressing the conflicts of interest among managers, shareholders and bondholders, which directly impact company operations. Lack of symmetry in access to information increases managers' propensity to take higher investment risk after debt has been issued, to replace safer assets with securities bearing much greater risk, and to increase the market value of a company's own equity at the expense of a lower value of external capital. This might lead to an overinvestment, i.e. a reduction of the value of company's equity caused by too much capital allocated to unprofitable investment projects. On the other hand, the investors' lack of trust in managers may also lead to underinvestment, i.e. to giving up profitable investments for fear of alleged difficulties hidden by the Board. In such circumstances, financing with the use of convertible bonds is considered to be a solution bearing additional risk. Why would not a company issue ordinary bonds or shares, opting instead for an instrument implying difficulties in valuation? This problem seems relevant for an issuer's rating, in particular in the context of this paper. Ratings are given by rating agencies from highly developed countries, for which the reality faced by economic operators in the emerging markets is heavily burdened with the risk of unclear legal regulations, too close ties with political circles, and an underdeveloped corporate governance culture. All of these factors relate to the problem of information asymmetry and may play a significant role in determining the rating of the issuer of convertible bonds.

In his studies, Green (1984) suggested that convertible bonds may alleviate adverse effects of conflicts of interest between bondholders and shareholders. He provided evidence that shareholders get involved in risky investment projects, as in case of failure the value of their assets may drop, while bondholders face the risk of their bonds not being called. Thus, when the investment is successful the shareholders will take over a portion of the assets owned by bondholders as their rate of return will increase, while creditors will receive a constant rate of return. The conversion option built into convertible bonds enables holders to participate in the possible profits resulting from the engagement of a company in an investment representing above-average risk. In the context of our considerations, it is important to identify the possibility of exposing creditors to excess risk in emerging markets. The issuance of convertible bonds might then involve a potentially higher investment risk and reduce the rating in comparison to mature markets. The financial leverage of a given company may be a measure of the lack of trust in a Board's decisions (Boutron, Hubler 2010, p. 20).

Brennan and Kraus (1987) demonstrated that convertible bonds may become a good source of attracting capital for companies when there are difficulties in objectively estimating the financial risk of the issuer. This is especially pertinent when we consider the fact that the hybrid nature of convertible bonds makes their value insensitive to changes in an issuer's risk (Brennan, Schwartz 1987). This results from the mechanism of reduction in the bond's value and an increase in the value of stock option(s) attached to the bond. Both are caused by increased volatility of an issuer's performance. Compared to mature markets, emerging markets represent a higher volatility of the stock market which, in accordance with Black-Scholes model (Black, Scholes 1973), increases the value of convertible bonds without decreasing their risk. Following the line of thinking of Brennan and Schwartz we should not observe any differences between the issues in the U.S. and in Central and Eastern Europe, and the volatility in stock prices should offset the risk of insolvency. However, from the point of view of a rating agency that might be irrelevant, as its assessment focuses on the probability of paying back one's liabilities rather than on the rate of return. The rating of convertible bonds from emerging markets may be more strict as there are no relevant links between the above-outlined concept and the aim of rating analysis. Companies may offset higher debt risk with conversion parameters: the time of conversion and conversion ratio. A lower conversion ratio means a higher probability of the debt being repurchased, which is usually due to optimistic issuer perspectives (Kim 1990). A longer conversion deadline increases the likelihood of conversion when repurchase prospects are unfavorable (Marszałek 2014). Companies from emerging markets may apply both solutions to offset the higher risk of issued debt, in particular to foreign investors.

The reasons behind the issuance of convertible bonds are considered in a similar way in the *backdoor equity hypothesis* (Stein 1992). According to Stein, companies aim at issuing stock rather than at repurchasing their debt. At the time of issuance, however, stock valuation is not profitable, which is why operators try to defer it. Funds raised from bonds are supposed to trigger additional profits which increase the company's value and facilitate the conversion. The issuance of convertible bonds means a company expects increased revenues in the future. Managers must be sure that future price of shares will be high enough for bondholders to convert their bonds into the issuer's stock. Stein's theory seems to discredit the issuers from emerging markets in the eyes of Western rating agencies. The assumption underlying conversion implies serious difficulties when it is not exercised. Such liabilities are burdened with higher risk, which is additionally increased by higher market risk. Issuers from emerging markets should thus offer more attractive terms of conversion to foreign investors. This is particularly important when we take into account the strong dependence between the valuation of emerging markets and the involvement of Western investors.<sup>2</sup> Nor are domestic investors indifferent to this risk.

The specificity of rating convertible bonds in emerging markets is approached differently in the *sequential financing hypothesis* (Mayers 1998). This hypothesis assumes that well-designed convertible bonds allow for avoiding the negative effects of both underinvestment and overinvestment. When a company considers new investment their effects will determine the conversion. If the profitability of investment is too low and managers decide not to carry it out, convertible bonds will be redeemed by the issuer and the company will have no problem with the excess capital raised earlier. This will avoid overinvestment. If managers decide that the investment is profitable, conversion will give them capital which will then be used to carry out the project, thus avoiding underinvestment. Similar arguments for the rationale of issuing convertible bonds can be found in Isagawa (2000), who demonstrated that they can be used to control managers who show tendencies toward excessive expansion of the companies they manage. Both concepts assume the existence of a self-regulatory mechanism which prevents the Board from taking excessive risk. In the context of this paper this means that the investment risk for issues in both developed countries and in emerging markets is the same for bonds representing the same risk level. Potential differences in ratings may be due to the risk involved by the emerging market, not the issuer, which coincides with adopted hypothesis.

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<sup>2</sup> Such a determinant has been showed by Campbell and Taksler (2003).

It is also worth devoting attention to additional aspects of the issuance of convertible bonds (Jalan, Barone-Adesi 1995). These premises may be decisive for the involvement of issuers in selected countries, since tax benefits depend on local regulations. The rating assessment of companies from emerging markets may be increased even above that in developed countries. The relevance of the premise is hard to validate, however, as we are dealing with highly individualised tax circumstances of the issuers.

## **2.2. Convertible bond rating specificity**

Although hybrid debt forces the issuer to service the debt, it does not have to be treated as a typical liability. This depends to a large extent on the structure of the instrument at hand, but often the long-term of the potential bond payoff, combined with the option to convert, makes investors treat it as equity rather than debt. A lower interest rate is often a contributing factor. Rating agencies interpret hybrid debt as a typical liability, but its modifications (such as mandatory convertible bonds) are considered taking account their equity characteristics.

This approach can be exemplified by the standard assessment procedure for hybrid instruments applied by Standard & Poor's and Fitch. Such securities are divided into three categories: 100% equity; 50% equity and 50% debt; 100% debt, depending on the structure of the instrument in question.<sup>3</sup> Hybrid debt, as it may be converted into shares, is treated as a contribution to a company's growth and prevention against the risk of bankruptcy. However, the fact that the liability occurs already at an initial stage of financing makes the agency treat it mainly as debt instrument. Moreover, the notching of hybrid debt from the point of view of the impact of the equity component does not affect the issuer's rating.

Moody's agency stresses that hybrid debt instruments may play an important role in the case of an issuer's insolvency. However, they claim that the current contemporary structure of these instruments is extremely complex due to additional clauses and options in the bond indenture/agreement, which allow the company to use the conversion option as a tool to avoid or delay debt-related payments.

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<sup>3</sup> See: Treatment and Notching of Hybrids in Nonfinancial Corporate and REIT Credit Analysis. Sector-Specific Criteria, Fitch Rating, 13 December 2012, [www.fitchratings.com](http://www.fitchratings.com); Equity Credit For Corporate Hybrid Securities, [www.standardandpoors.com](http://www.standardandpoors.com).; Moody's Hybrid Tool Kit: Limiting Equity Credit in the Capital Structure(2008), Moody's New Instruments Committee and Fundamental Credit Committee, March 2008, [www.moody.com](http://www.moody.com)

The possibility to replace a financial benefit, especially with a clause of mandatory conversion, makes hybrid instruments a higher risk debt. This is also due to the circumstances surrounding the issuance. Fitch notes that due to the frequent subordination of hybrid debt, the risk of its not being paid back increases. Such instruments are considered as very much loaded with financial risk, which reduces their rating by at least two grades compared to the risk of an issuer's insolvency.<sup>4</sup> A similar approach applies to the assessment of the risk of insolvency of a company representing a sector of high growth potential. The rating is then reduced by one grade. Thus, the total rating of hybrid financial instruments may be lower by three grades compared to traditional debt instruments of the same issuer.<sup>5</sup> They may differ only with respect to the characteristics of the option to convert. Nevertheless, that may be decisive for the category of the securities in question, which may be considered highly risky.

This means that the hybrid nature of these instruments determines their perception. This is particularly important for the assessment of hybrid instruments in investment and non-investment risk categories. Although we may apply the same assessment procedure to both groups of instruments, for bonds of issuers with a speculative rating Fitch suggests an individual risk assessment.<sup>6</sup>

In assessing debt financial instruments, analysts apply the term equity credit, i.e. debt which is intended to become equity. The key to understanding this dual notion lies in the analysis of the debt and equity characteristics of a given instrument in the context of an issuer's capital structure, the financial leverage that it applies, and the risk of its insolvency. Rating agencies, taking into consideration the risk connected with excess expectations of setting off the insolvency with conversion, have drafted guidelines for the safe share of hybrid liabilities in an issuer's capital structure in order to be able to shape it freely. The guidelines do not intend to limit the use of conversion debt, but to restrict the potential role of conversion capital in equity. The threshold of allowable hybrid debt is determined against the average amount recommended to potential issuers. It is not based on any scientific premises but on economic practice. A higher issuance of equity hybrid capital may jeopardize an issuer's rating if potential financial difficulties connected with the instrument in question are taken into consideration. Hence, if the rule is not observed hybrid debt, irrespective of its category, will be treated fully as debt.

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<sup>4</sup> The reference point is the category of *Issuer Default Rating (IDR)*, i.e. a rating describing the risk of an issuer's default in relation to earlier assumed obligations. See: *Definitions of Ratings and Other Forms of Opinion*, Fitch Ratings, Feb 2013, [www.fitchratings.com](http://www.fitchratings.com), p. 9.

<sup>5</sup> The approach of Standard & Poor's to the problem is similar.

<sup>6</sup> Moody's does not apply such an approach.



The rating of hybrid debt may also be determined by the option of a call for debt redemption before its maturity. This option is not decisive here, but it may change the value of the coupon, which is considered a material change in the effective maturity deadline. In turn, the possibility to delay the payment of interest for at least five years allows for treating such a hybrid instrument as shareholders' equity credit.

In contrast to Moody's and Standard & Poor's, Fitch pays a lot of attention to the problem of mandatory conversion. Analysis of such hybrid instruments focuses on terms of the debt conversion. The rating by a rating agency should be more precautionary if the conversion might contribute to reduced credit worthiness of an issuer resulting from operations designed to stop excess capital dilution. The above-presented restrictions in payments may also diminish the value of the equity characteristics of an instrument.

The overview of the methodology employed to assess the credit worthiness of hybrid debt instruments allows, despite a few differences among rating agencies, for formulating some general conclusions. The main problem seems to be the identification of the role played by the option to convert debt into equity. All agencies agree that the conversion is an added value of an instrument and may not become a tool to circumvent a debtor's liability. The mere classification of assets, irrespective of how detailed it is, seems to be set aside from the principal rating. The allocation to a particular basket is mainly designed to assist the investor in the assessment of risk which will materialize when the issuer fails to pay due amounts and tries to replace them with conversion.

### **3. Credit risk analysis for selected emerging markets**

#### **3.1. Sample description**

The study was conducted on the sample of 212 issuers of convertible bonds, half of them originating from Central and Eastern Europe and the rest from U.S. operators. Issuers were grouped in pairs based on the following criteria: rating, sector, time, and size. Analysis was focused exclusively on pairs of bonds with the same rating. Due to economic and geographical diversity and the potential for subjective assessment, we used ratings of the British Fitch agency, which specialises in analysing Central and East European markets. To eliminate a potential preference given in rating assessments to larger companies, which might be caused by the fact that they have more assets to secure their

liabilities, we formed pairs whereby, at the same rating, the difference in the balance total was the smallest and revenues from sales were similar. Different industry profiles represent different operating risks and economic cycles, which is why we analysed only pairs of companies from the same sector. For reasons pertaining to the specificity of financial analysis for operators from the finance industry, the study excluded banks, investment funds, brokers and insurance companies. And finally, the moment when rating is assessed may determine the way a rating agency perceives the current economic situation and its future prospects. Thus we selected pairs of issues which took place at the same time, which helped us eliminate comparing bonds offered in the times of economic slump in one market and boom in the other. Of course, there is the risk of there being little convergence between the U.S. and Central and East European markets, observed in recent years as a result of FED's Quantitative Easing. However the sample dates back to 2001-2012, when markets covered by the survey were closely correlated.

The specificity of convertible bonds called for further standardisation. Early exercise CALL/PUT options or mandatory conversion materially impact the nature of an issuer's liability and its rating. This is why we considered only pairs of bonds with the same options. No mandatory convertible bonds were analysed. Convertible bonds without CALL/PUT options represented 84% of the examined group. In the remaining cases both options were present.

We were able to match issues under such restrictive conditions only thanks to having access to the very well developed market of such instruments in the U.S. Almost each East European issue was matched with a similar one from the States. These instruments are not so widely used in Central and East European market, which can be explained by little developed capital market, as is confirmed by the data in Table 1. Issues from Poland and Russia, i.e. from the most developed countries, dominate. For example, the share of issues from Latvia and Estonia is symbolic, similar to their role in the economic map of Central and Eastern Europe. It is worth stressing that the selection of Russian issues was limited to those placed in the local market, which excluded the issues by international economic tycoons whose links with a typical emerging market are practically only historic. These firms raise funds in the international market and are independent of the risks associated with emerging markets.

The higher risk associated with emerging markets significantly restricted the scope of possible ratings, excluding the level above A1. In our study, to the extent possible we used the ratings on the day of the issue. When the rating was allocated later, we took account of the first evaluation allocated before the end of the first fiscal year following the issue. By doing so, we excluded from the study changes in the rating resulting from an issuer's operations after the day of the issue.

**Table 1. Characteristics of the examined sample of convertible bonds issued in Central and Eastern Europe in 2001-2012**

Rating	Country											Total
	Croatia	Czech Rep.	Estonia	Hungary	Latvia	Lithuania	Poland	Slovakia	Slovenia	Romania	Russia	
<b>BBB-</b>	0	1	0	0	0	1	2	0	0	0	0	<b>4</b>
<b>BB+</b>	0	1	1	0	1	1	2	0	1	0	0	<b>7</b>
<b>BB</b>	0	0	0	1	0	0	1	0	0	0	1	<b>3</b>
<b>BB-</b>	1	1	1	1	1	1	2	1	1	1	2	<b>13</b>
<b>B+</b>	1	0	0	1	0	0	2	1	1	1	1	<b>8</b>
<b>B</b>	3	2	2	4	1	2	7	1	2	2	4	<b>30</b>
<b>B-</b>	2	1	1	2	1	1	3	1	1	1	5	<b>19</b>
<b>CCC+</b>	0	0	0	0	0	0	1	0	0	0	1	<b>2</b>
<b>CCC</b>	0	0	0	0	0	0	1	0	0	0	0	<b>1</b>
<b>CC</b>	0	0	0	1	0	0	1	0	0	0	1	<b>3</b>
<b>C+</b>	1	0	0	1	0	1	2	0	1	1	3	<b>10</b>
<b>C</b>	1	0	0	1	0	0	2	0	0	0	1	<b>5</b>
<b>C-</b>	0	0	0	0	0	0	1	0	0	0	0	<b>1</b>
<b>Total</b>	<b>9</b>	<b>6</b>	<b>5</b>	<b>12</b>	<b>4</b>	<b>7</b>	<b>27</b>	<b>4</b>	<b>7</b>	<b>6</b>	<b>19</b>	<b>106</b>
<b>CALL-PUT</b>	3	2	2	4	1	2	9	1	2	2	7	<b>35</b>

Source: own studies based on Bloomberg.

### 3.2. Methodology

The study was designed to identify differences between analysed groups of issuers, which may be decisive for the higher risk rating of convertible debt in Central and East European countries. The data used in financial analyses and ratings came from the Bloomberg database. Financial data was taken from the latest annual financial statements of the issuers available at the date of the issue. The parameters of the issued convertibles were those published in the prospectuses. The market valuation of the issuer is reflected in the closing price of

company's shares as of the day prior to the issue. The following financial ratios were selected to provide the financial characteristics of both groups of companies included in the study:

- Price/book value (P/B) – as a relative measure of the market value of a company;
- EBITDA/interest – as a measure of the ability to service the debt;
- Fixed assets/Total assets (FA/TA) – as a measure of the structure of assets and the ability to secure the debt;
- Total debt/Total assets (TD/TA) – as a relative measure of indebtedness;
- Equity/Fixed assets (E/FA) – as a measure of security of the business conducted;
- Financial leverage (FL) – as a relative measure of the risk of insolvency;
- ROE, ROA – as relative measures of profitability;
- (Long-term debt + Equity)/Fixed assets (CC/FA) – as a measure of the growth potential of a company,
- Current ratio (CL/CA) – as a measure of the current liquidity of the company;
- Amount issued/Total debt (AI/TD) – as a measure of the debt growth,
- Amount issued/Fixed assets (AI/FA) – as a measure of the security of issued bonds;
- Conversion ratio (CR) – as a measure of the equity dilution;
- Payback period (PP), Conversion period (CP) – as measures of conversion probability.

Statistical analysis was conducted using tests to assess the significance of the difference (t-tests). The selection of tests was not unequivocal, as the main assumption for the test was to analyse the results for pairs of companies (or rather bond issues – American and Eastern and Central European) with the same ratings. Hence, despite the fact that these are different subjects in physical terms, we used paired difference tests. Student's t-test is the basic test for comparing the two paired populations. In order to perform it, we needed differences between paired measurements, which represent normal distribution. The assumption was not always met in the case of examined companies, and in such cases we tried to "stabilise" the distribution through logarithmic transformations or, when there were numerous negative ranks for variables, we used the non-parametric equivalent of t-Student's test for paired samples, i.e. the Wilcoxon signed rank test. For both tests the null hypothesis assumes a lack of differences between both types of bonds (measured with the expected value of random variable for the t-Student test or the distribution function for the Wilcoxon test), and thus the alternative hypothesis is: there are differences. It was decided that the variable in comparable populations of bonds is statistically significant if the probability in the test,  $p$ , was below the assumed level of significance ( $\alpha=0.05$ ). Calculations were made in IBM SPSS Statistics 22.0.

### 3.3. Results

By analysing the statistical differences between parameters characteristic for both groups of issuers, we may identify some common features. European issuers have statistically significant higher EBITDA/interests, E/FA, ROE, and S/FA ratios, (Table 2) while their American counterparts report higher (LD+SD)/TA ratio and FL.

**Table 2. Differences in the financial standing of convertible bond issuers carrying the same rating and issued in the U.S. (US) and in CEECs (C&EE) in 2001-2012**

		Average	Median	Standard deviation	p	t-test for the significance of the difference
P/B	C&EE	3.766	2.073	8.596	0.440	test t
	US	3.382	2.086	4.021		
EBITDA/interests	C&EE	50.870	<b>6.355</b>	477.943	0.030**	test t (logarithmic data)
	US	57.808	5.165	690.561		
FA/TA	C&EE	0.790	0.846	0.204	0.632	test t
	US	0.787	0.850	0.203		
(LD+SD)/TA	C&EE	0.288	0.276	0.177	<0.001**	test t
	US	<b>0.339</b>	0.322	0.154		
E/FA	C&EE	<b>0.648</b>	0.552	0.517	0.008**	test t
	US	0.581	0.505	0.425		
FL	C&EE	3.271	2.255	8.416	0.063*	test t (logarithmic data)
	US	3.730	<b>2.388</b>	5.836		
ROE	C&EE	-0.144	<b>0.056</b>	1.224	0.029**	Mann-Whitney test
	US	-0.195	0.035	0.966		
ROA	C&EE	-0.014	0.024	0.172	0.118	Mann-Whitney test
	US	-0.029	0.013	0.172		
(LD+E)/FA	C&EE	1.011	0.856	0.617	0.290	test t (logarithmic data)
	US	1.019	0.855	0.557		
CA/SD	C&EE	<b>1.138</b>	0.948	0.834	0.013**	test t
	US	1.083	0.887	0.855		

\* statistically significant differences when  $\alpha=0.10$ ; \*\* statistically significant differences when  $\alpha=0.05$ ; groups for which results were significantly higher are marked in bold (given mean is significantly higher).

Source: own calculations based on Bloomberg.

The obtained results demonstrate the better financial standing of issuers from the European emerging markets. The higher EBITDA/interest coverage ratio means a lower debt burden upon operating performance. However, one must note the deep differentiation of the sample covered by the study, which is reflected in the significant difference between the average and the median and a very high standard deviation. Despite that, the debt burden upon operating performance in the analysed companies was relatively low. European issuers also report a higher equity to fixed assets ratio (E/FA), which confirms a more conservative, i.e. safer, financing policy. The ratio is at a moderate level for both groups and is not very much differentiated within each of them. Companies from the emerging markets are also more profitable, although the ratio can hardly be considered satisfactory. Average ROE is negative and the median slightly exceeds 0. Results within the European group are more differentiated than within the American one. This may mean an overall low profitability of issuers, including those from the U.S., a thesis backed up by the average ROA levels. Neither are the companies grossly overvalued in the market, as evidenced by low P/BV ratio. This may explain one of the reasons for issuing convertible bonds: difficulties in issuing shares of stock. Companies from Central and Eastern Europe have higher liquidity than American ones. The current liquidity ratio in both groups is moderately low, but it is also quite differentiated.

American companies have a higher liabilities to total assets ratio  $((LD+SD)/TA)$ , which is indicative of a more aggressive financing policy compared to the group from the emerging markets. This is also confirmed by the higher financial leverage (FL). Hence, American operators are more sensitive to changes in operating performance. We may observe higher financial risk for American issuers, who are more indebted at the time of the issue than businesses from Europe. On top of that, these are low profitability companies with moderately low liquidity.

The analysis of parameters for both groups of bonds partly makes reference to what we have learned from the financial analysis of the issuers (Table 3). We may identify statistically significant differences in the value of issued assets in proportion to the total debt of a company  $(AI/TD)$  and to its fixed assets  $(AI/FA)$ . Higher values can be observed for American issuers, which once again confirms their higher exposure to solvency risks. American bonds also have statistically significant higher conversion ratios, which undoubtedly makes them more attractive in the eyes of investors. Nevertheless, we must highlight the high volatility of the parameter and its strong link with the value of shares. A higher conversion ratio may indicate more watered-down stock after the conversion, but it may also result from a low valuation of a company. For that reason we may assume, although with some limitations, that the U.S. companies are statistically less favourably perceived by the market than

those originating from the emerging markets. In the case of conversion period and buyback period no statistically significant differences were observed, although the mean values in both groups indicate shorter periods for European bonds.

**Table 3. Differences in parameters of convertible bonds carrying the same rating issued in the U.S. and in CEECs in 2001-2012**

		Average	Median	Standard deviation	p	t-test for the significance of the difference
AI/TD	C&EE	0.777	0.425	0.940	0.006**	test t (logarithmic data)
	US	<b>0.912</b>	<b>0.438</b>	<b>1.199</b>		
AI/FA	C&EE	0.531	0.218	0.792	0.09*	test t (logarithmic data)
	US	<b>0.641</b>	<b>0.231</b>	<b>1.055</b>		
CR	C&EE	52.342	37.034	41.161	0.017**	Mann-Whitney test
	US	<b>164.458</b>	<b>95.887</b>	<b>352.289</b>		
BP	C&EE	3356.162	1555.0	2269.039	0.218	Mann-Whitney test
	US	4382.452	2895.000	3004.284		
CP	C&EE	1265.144	1353.5	856.836	0.225	test t (logarithmic data)
	US	3789.224	2795.244	2146.2438		

\* statistically significant differences when  $\alpha=0.10$ ; \*\* statistically significant differences when  $\alpha=0.05$ ; groups for which the results were significantly higher are marked in bold (given mean is significantly higher).

Source: own calculations based on Bloomberg.

#### 4. Conclusions

The analysis of relationships between selected issuers of hybrid debt, representing the same rating, allows us to draw some general conclusions. Firstly, entities from emerging markets are less exposed to solvency risks, and their reported operating results are less burdened with interest. Companies more often use their own capital/ equity to finance fixed assets. Their liquidity is also higher. American companies, in turn, are more indebted and use higher financial leverage. The rating of both groups of analysed companies was similar, which may be indicative of a more strict assessment of the emerging markets. The bonds from the U.S. issues seem more risky. They put more burden on issuers' liabilities. The equal rating is partly justified by their similar profitability, which is far from satisfactory. It seems, however, that the equal treatment of issues with diverse statistical profiles lies in their origin. We can clearly see that bonds offered by entities from the emerging markets must meet higher standards in

order to be rated equally to those issued by the U.S. companies. The currency of the issued bonds is the main reason behind such a differentiation. In emerging markets we are dealing with exotic currencies featuring with significantly low liquidity. This may provoke rapid changes in debt valuation caused by speculation. U.S. dollar-denominated convertible bonds are free from such problems. Another factor undermining the credibility of debt in emerging markets is less efficient corporate governance. Despite more than two decades of transformations, the existing legislation is not stable enough, which complicates any unambiguous assessment of issuer's economic intentions.

The conducted studies helped us realise that solvency risk, interpreted as indebtedness, financial leverage and current solvency, is a major source of difference between the two groups of bonds. Changes in indebtedness, i.e., in assets held by foreign investors are apparently the reasons for the higher requirements for issuers from the emerging markets. The second potential determinant of the difference in assessment is the lack of trust in efficient legal solutions allowing for debt recovery when liquidity is lost in emerging market countries. And finally, the higher volatility of the stock markets in Central and Eastern Europe, which increases the value of the conversion option, may encourage issuers to offer induced conversion convertible bonds. Then turbulences in the stock market may make the conversion not possible, putting the issuer in a difficult situation in which it must redeem the debt.

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### Streszczenie

## **ISTOTA RYZYKA INWESTYCYJNEGO RYNKÓW WSCHODZĄCYCH. ANALIZA PORÓWNAWCZA AMERYKAŃSKICH I ŚRODKOWOEUROPEJSKICH EMITENTÓW OBLIGACJI ZAMIENNYCH**

*W niniejszym artykule podjęto próbę identyfikacji czynników determinujących rating kredytowy emitentów instrumentów dłużnych na rynkach wschodzących. Padaniu poddano*

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*grupę emitentów obligacji zamiennych z lat 2001-2012, z czego połowa pochodziła z Europy Środkowej i Wschodniej, natomiast druga część to podmioty amerykańskie. Analiza dotyczyła wyłącznie par obligacji o tym samym ratingu, nadanym przez brytyjską agencję Fitch, która specjalizuje się w analizie rynków wschodniej i centralnej Europy. Przeprowadzona analiza pozwala zauważyć, że istotnym czynnikiem różnicującym obie grupy obligacji jest ryzyko wypłacalności rozumiane przez poziom zadłużenia, stopień dźwigni finansowej oraz płynność bieżącą. Zmiany wartości zadłużenia, a więc posiadanych przez inwestorów zagranicznych aktywów wydają się główną przyczyną wyższych wymagań wobec emitentów z rynków wchodzących.*

**Słowa kluczowe:** *rynek wschodzący, obligacja zamienna, rating, finansowanie*