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THE IMPACT OF INNOVATION CAPITAL ON FIRM VALUES

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The current worldwide tendency to transform the global economy into a knowledge economy indicates that there is a need to analyze intellectual capital and approaches to its measurement, management and influence on company value. Taking into account the intangible nature of intellectual capital its measurement is an unconventional task for researchers with tough choices of adequate proxies. In this paper, we differentiate between components of intellectual capital and focus on innovation capital. We propose a methodology to measure intellectual capital and we analyze how intellectual capital influences company value in emerging markets. For this purpose, we investigate the relation between intellectual capital and the cost of equity influencing a company's value through a discount rate.

Keywords: innovation capital; intellectual capital; cost of equity; asset pricing; emerging markets

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Literature review

The cost of equity estimation taking into account the intellectual capital, is one of the most challenging tasks in corporate finance. Under globalization, with the discovery of new developing markets, diversification and the possession of specific assets generating cash flows, investors need to have tools to incorporate risks into estimated rates of return.

The theory of corporate finance has a number of approaches to measure and value intellectual capital. The specific nature of its components makes it difficult to generate a universal tool of measurement. Bontis (2001) proposed dividing the valuation methods of intellectual capital into several groups: direct intellectual capital, market capitalization, return on assets, and scorecard methods. Many of these methods incorporate calculating the difference between the market and the book values of a company. The main problem with these methods is that this difference between book and market value reflects not only the value of intellectual capital, but also investor expectations about company growth. With limited data, this method is not applicable for emerging markets. These methods give the overall value of intellectual capital and do not provide the measurement of components of intellectual capital.

Among the first researchers who proposed analyzing non-financial, or "intangible" indicators influencing the cost of equity were Blume et al. (1998), Pinches and Mingo (1973). Even though analysis of the influence of intellectual capital on the cost of equity has been conducted on companies from developed markets, the results do not provide univocal outputs about the relation between the rate of return and the level of intellectual capital. Some researchers confirm the existence of a negative relation (Mangena et al., 2016, Thomaz, Swaminathan, 2015), while others do not observe any relation (Himme, Fischer, 2014, Boujelbene, Affes, 2013, Djamil et al., 2013, Fehle, 2008). This lack of consensus in developed markets makes the analysis of emerging markets more complicated.

Considering a number of classifications of intellectual capital, we adopt in this paper its division into three components: human, structural and relational capital (Edvinsson, Malone, 1997) and focus on structural capital. Structural capital consists of organizational capital (corporate culture), processional capital (technical procedures) and innovation capital (databases, patents). The importance of the components of structural capital may vary over time. In an economy based on knowledge, innovation capital can be the most important. Innovation capital reflects the firm's ability to create and monetize new knowledge. It seems that a low level of innovation capital bears higher risk for a company meaning there is a higher probability of losing market leadership and moderating growth. At the same time innovation activity is related to uncertainties about the results of this activity. This duality assumes an urgency of empirical testing of the influence of innovation capital on the cost of equity.

According to Roos et al. (2007) innovation capital estimation is performed with direct methods (financial indicators) and the scorecard method (non-financial indicators). Chen et al. (2004) and Wu et al. (2010) group the indicators of innovation capital in the following way:

- Non-financial indicators
    - The number of new products/services/processes brought to market during the last 3 years
    - the average development time of new products/services/processes
    - the number of patents
    - The number of personnel in R&D department
    - the maintenance of an innovation culture
    - Management ability to conduct innovative projects
- Financial indicators
    - R&D expenses
    - Sales of new products/services
    - Income from license fees.

One of the main proxy variables used in studies of innovation capabilities is the level of R&D expenditure (Chan et al., 2001, Li, Liu, 2010, Sydler et al., 2013, Gu, 2016). It is probably the only indicator of innovation activity included in the company's financial statement and, consequently, available for cross-company analysis. This indicator is mostly used in research; however, the researchers usually prefer to study the influence of innovation capabilities on company's profitability and other measures of performance (Hirschey, 1982; Roberts & Hauptman, 1987; Grabowski & Mueller, 1988). The number of papers devoted to stock market reactions is significantly smaller and the results generally provide evidence of a positive relation between R&D and stock returns under particular circumstances (Gu, 2016, Li, 2011).

The main reason for differences in returns is mispricing by investors and an increase in company risk (Porter, 1992, Hall, 1993). Mispricing could arise from regarding R&D as a company expense and the complexity in separating intangible assets from R&D activity. Investors generally have small planning horizons (Porter, 1992, Hall, 1993), so they could neglect potential innovation activity outcomes. An increase in risk is associated with the low predictability of innovation and the consequent high volatility of future earnings.

Chan et al. (2001) found no significant difference between stock returns of companies with and without R&D expenditures; however, the relation between R&D intensity and future stock return was discovered for the stocks with a high ratio of R&D expenditure to market value of equity. Chambers et. al. (2002) discovered that this relation was caused by the inability to control risks arising from innovation activity rather than by mispricing. Li (2011) stated that the relation between R&D and future stock returns was caused by a company's financial constraints. Cohen et. al. (2013) showed that the relation existed only for companies able to transfer R&D expenditure into the real sales growth. Gu (2015) found that the relation between stock returns and R&D expenditure was positive and it was stronger for industries with higher competition.

Research applying other indicators of innovation activity dealt with smaller samples and usually focused on several specific companies and characteristics. Connoly and Hirshey (1987) demonstrated that the number of patents had a positive impact on company capitalization. Chin et al. (2006) found that innovative companies were underpriced before IPOs, but their shares had higher returns in the long run, compared to companies with low innovation activity. The list of innovation indicators includes R&D expenditure disclosed in the prospectus, the number of new patents and the number of patent quotations.

This paper fills the gap in the literature related to innovation capital measurement and proposes a methodology to aggregate indicators of innovation capital for estimating its influence on the cost of equity with data envelopment analysis (DEA). We analyze Russia and India, and use the US market as the benchmarking for our results.

In the following section, we develop the methodology to measure innovation capital as a component of intellectual capital and test the relation between innovation capital and the cost of equity. We then describe the sample and conduct empirical analysis. We provide empirical evidence, interpret the results and make suggestion for further investigations.

Methodology applied for innovation capital measurement

Innovation capital is usually measured as R&D expenses divided by company revenue (Cohen et al., 2013). We apply this indicator in the analysis of the Indian and US markets. R&D-based indicators are often criticized for failing to capture other aspects of innovation capital, such as patent activity, efficiency of innovations and existence of innovational culture in the organization.

To take into account this incompleteness we decided to incorporate additional indicators of innovation capital. However, due to limited data on emerging markets, particularly, the absence of relevant data with a long history and unchanged methodology for calculation, we managed to find relevant data for the Russian market only.

We follow Chen and Chen (2008) and determine additional indicators of innovation capital. This data includes the following indicators:

- $\frac{RD}{Sales}$ – research and development expenses normalised to company's sales. For companies that did not disclose R&D, the industry average was used.
- $EmpRate$ – the proportion of employees involved in the innovation process
- $InnProdNew$ – the ratio of revenue earned from the sale of new products (introduced in the last 3 years)
- $InnProdModif$ – the ratio of revenue earned by sales of modified and changed products (modified in the last 3 years)
- $PatentAppScaled$ – the number of patent claims, adjusted for the year's average level.

To determine the overall level of innovation capital that a company possesses we first account for investor preferences for stocks with high returns and low volatility. We use DEA to determine the companies with the highest returns and the lowest volatility (outputs) given the set of factors related to innovation capital (inputs). We use OSDEA program to conduct this analysis. Under this concept, the maximization of returns and the minimization of volatility is reached when the input is at the lowest level. We receive a rating of companies based on the level of their efficiency determined as maximum output values with minimum input values. This level serves as the proxy for innovation capital. If this level is close to one, the values of innovation capital indicators are low and the proxy for innovation capital is low. A level of efficiency close to zero means high values of the indicators of innovation capital.

An empirical examination of the influence of innovation capital on the cost of equity

An empirical estimation of the influence of innovation capital on the cost of equity was performed applying Fama-MacBeth procedure (Fama, MacBeth, 1973).

Independent variables are determined in the following way. In June, companies are sorted by size, calculated as the number of shares multiplied by the share price. The choice of June for market capitalization calculation is explained by the fact that investors obtain access to published financial statements with fiscal year-end in December not earlier than spring, and investor reaction to published financials is accounted for in the share price.

The B/M ratio is determined by the book value of its equity as of the end of preceding year and market capitalization as of June this year.

Portfolios were constructed using a consequent sorting procedure. First, the sample of Indian and US markets was divided into three portfolios based on their innovation capital indicator (highest 30%, lowest 30% and the rest), for the Russian market the sorting was based on medium values. Then the portfolios for the Indian and US markets (the Russian sample) were split into three (two) portfolios based on their growth level. Finally, companies in each of the portfolios were grouped into two new portfolios based on company's size, so the final number of portfolios was 27 for the sample of the Indian and US markets (8 for the Russian market). Consequent sorting was applied to get the same number of companies in portfolios and to prevent the appearance of empty portfolios. The independent variables included market capitalization, B/M ratio and R&D/Sales ratio served as a proxy for innovation capital.

Portfolio returns were constructed as the average returns on stocks included in the portfolio weighted on their capitalization. The difference between the market risk premium was estimated as the difference between market return and the risk-free rate. The premiums for other risk factors were estimated following Fama-French methodology. SMB was the difference between the return on portfolios of small stocks and on portfolios of large stocks. HML was the difference between the return on portfolios of value stocks, with a high B/M ratio, and on portfolios of growth stocks, with a low B/M ratio. Finally, LICMHIC (low innovation capital minus high innovation capital) was the difference between the return on portfolios of stocks with low innovation capital and on portfolios with high innovation. Regression equations were different for each country:

$$\mathrm{R_{it}} - \mathrm{R_{ft}} = \propto_i + \beta_\mathrm{i} * (\mathrm{R_{mt}} - \mathrm{R_{ft}}) + \mathrm{s_i} * \mathrm{SMB_t} + \mathrm{h_i} * \mathrm{HML_t} + \mathrm{rc_i} * \mathrm{LICMHIC_t} + \varepsilon_\mathrm{it} \text{ (1), where}$$

- $\mathrm{R_{it}}$ – the return of portfolio *i* in time period *t*,
- $\mathrm{R_{ft}}$ – the risk-free rate,
- $\propto_i$ – the abnormal return,
- $\mathrm{R_{mt}} - \mathrm{R_{ft}}$ – the market risk premium,
- $\mathrm{SMB_t}$ – the size premium (applied for the Indian market only),
- $\mathrm{HML_t}$ – the premium for high B/M (applied for all countries),

- $\mathrm{LICMHIC_t}$ – the innovation capital premium (applied for all countries).

The regression equations were run according to the Fama-McBeth procedure. The returns and factor premiums were applied on a monthly basis. The observation period was three years; the shift in observation period was 4 weeks, or one month. We apply a rolling regression to discard the standard assumption of the inalterability of the covariation of share return and market return while determining beta coefficients during the observable period. Potential changes in beta coefficients for companies from emerging markets are determined by unstable economic and political economic conditions. Fama and MacBeth (1973) applied a 5-year period with a shift each month. Berglund et al. (1999) insist that a 5-year period does not necessarily account for the rapid changes in emerging markets due to fundamental economic changes. Thus, a we chose observation period from 1 to 5 years to get a fair number of observations for precise beta coefficient estimation while capturing the structural movements in these coefficients over time.

The Fama-MacBeth regression (1973) gives the beta coefficient for each portfolio during observation period *t*. To detect premiums by size, growth and proxy for innovation capital we applied a panel analysis where the dependent variable is the average return for each portfolio and independent variables are beta coefficients estimated during the preceding step:

$\mathrm{MR_{it}} = \mathrm{f}(\hat{\beta}_{it}^{MRP}, \hat{\beta}_{it}^{SMB}, \hat{\beta}_{it}^{HML}, \hat{\beta}_{it}^{IC})$ (2), where

- $\mathrm{MR_{it}}$ – the average return of portfolio *i* in time window *t*
- $\hat{\beta}_{it}^{MRP}$- the beta coefficient for the market risk premium for portfolio *i* in time window *t*
- $\hat{\beta}_{it}^{SMB}$- the beta coefficient for the size premium for portfolio *i* in time window *t* (for the Indian market only)
- $\hat{\beta}_{it}^{HML}$- the beta coefficient for the growth premium for portfolio *i* in time window *t*
- $\hat{\beta}_{it}^{IC}$- the beta coefficient for the innovation capital premium for portfolio *i* in time window *t*

Sample

The study was conducted on a sample of companies from the Indian (National Stock Exchange and Bombay Stock Exchange), Russian (MICEX) and US (AMEX) markets.

Due to limited data, the observation period for the Russian market is 2006–2014, for the Indian market 1997–2015.

Companies with returns exceeding 100% were excluded from the sample due to possible dependence on external unpredicted events, following Karolyi and Wu (2012).

Stock market data was obtained from the Capital IQ and the Bloomberg databases; company-level indicators (particularly, R&D expenses and Sales/Revenue) were obtained from COMPUSTAT. The number of patent applications was obtained from World Intellectual Property Organization website for each company during each year: a patent application was counted if the relevant company was claimed as an applicant and the application was sent in the studied year. The HSE data books "Indicators of Innovations in Russian Federation" were the source of the additional indicators of innovation activity.

For the market index and risk-free rate we used the following data: for the Russian market – MICEX and returns on 10-year Russian government bonds, for the Indian market – SENSEX index and 10-year Indian government bonds, for the US market – S&P 500 and 10-year Treasury Bonds.

The list of companies in the sample varied due to omitted data on some indicators, so the final sample included the following number of companies:

Table 1. Number of companies in the sample

Year	Russia	India	USA
1996	n/a	8	436
1997	n/a	67	829
1998	n/a	112	874
1999	n/a	120	947
2000	n/a	136	1027
2001	n/a	132	1053
2002	n/a	114	1068
2003	n/a	128	1086
2004	n/a	138	1117
2005	41	198	1156
2006	63	280	1181

2007	85	390	1216
2008	91	485	1227
2009	92	528	1222
2010	139	592	1210
2011	148	609	1213
2012	160	624	1209
2013	160	597	1207

The returns on company stock were estimated on a monthly basis as the ratio of closing prices for the period and for the previous period minus 1.

Empirical analysis of the influence of innovation capital as a component of intellectual capital on the cost of equity

For the Russian market we conducted DEA to find a proxy for innovation capital incorporating R&D/Sales, EmpRate, InnProdNew, InnProdModif, and patents. For each year we sorted companies on the basis of the efficiency level obtained while applying DEA to select companies with maximum returns and minimum volatility given the lowest values of innovation capital indicators. The descriptive statistics of $ProxyforInnovationCapital$ are given in Table 2.

Table 2. Descriptive statistics of $ProxyforInnovationCapital$

Year	Minimum	Maximum	Median
2006	0,0000	0,7856	0,1215
2007	0,0000	0,9645	0,1236
2008	0,0000	0,9512	0,3669
2009	0,0000	0,9184	0,3384
2010	0,0000	0,9461	0,4729
2011	0,0000	0,9306	0,6121
2012	0,0000	0,9459	0,6228
2013	0,0000	0,9218	0,2717
2014	0,0000	0,8696	0,2403

To analyse the influence of innovation capital we formed 27 (8) portfolios for innovation capital in the Indian and US sample (the Russian market). The information of their returns is presented in Tables 3-5 below.

Table 3. Return spreads of portfolios with high and low innovation capital (Russia)

	LicMHic
Average annual spreads	-7,4%
Standard deviation of monthly spreads	0,05
t-stat	1,34
p-value	18,3%

Table 4. Return spreads of portfolios with high and low innovation capital (India)

	SMB	HML	LicMHic
Average annual spreads	7,2%	10,1%	0,2%
Standard deviation of monthly spreads	0,05	0,07	0,05
t-stat	1,64	1,54	0,05
p-value	10,20%	12,60%	96,10%

Table 5. Return spreads of portfolios with high and low innovation capital (America)

	HML	LicMHic
Average annual spreads	-7,0%	-9,4%
Standard deviation of monthly spreads	0,03	0,07
t-stat	2,83	1,82

The correlation analyses of independent variables are presented in Tables 6-7.

Table 6. Correlation analysis of factors SMB, HML, LicMHic (India)

	SMB	*HML*	*LicMHic*
SMB	1		
HML	-0,29791	1	
LicMHic	-0,23081	-0,21119	1

Table 7. Correlation analysis of factors SMB, HML, LicMHic (USA)

	HML	*LicMHic*
HML	1	
LRCMHRC	-0,01246	1

The next step incorporates the regression analysis where the independent variables were SMB, HML, LicMHic and the premium for market risk $Rm - Rf$. As a result of the regression analysis performed with tools of RStudio, where an observation window is 3 overlapping years with a 1 month shift, the average significant beta coefficients for each portfolio are obtained. The results are given in Tables 8-10.

Table 8. Average beta coefficients in model with innovation capital (India)

	β	**s**	**h**	**ic**
Small Value Low	-0,16	0,76	0,16	0,86
Medium Value Low	0,04	0,64	-0,10	1,27
Big Value Low	0,02	-0,26	0,12	0,65
Small Neutral Low	-0,01	0,61	0,62	0,68
Medium Neutral Low	0,04	0,47	0,38	0,58
Big Neutral Low	0,02	-0,27	0,52	0,71
Small Growth Low	0,11	1,01	0,93	1,11
Medium Growth Low	-0,13	0,51	1,43	0,64
Big Growth Low	-0,17	-0,21	1,12	0,92
Small Value Middle	-0,08	0,65	0,29	0,09
Medium Value Middle	0,00	0,19	0,16	0,24
Big Value Middle	-0,04	-0,14	0,14	0,07
Small Neutral Middle	0,05	0,93	0,58	0,13
Medium Neutral Middle	-0,03	0,35	0,74	0,13

Big Neutral Middle	0,06	-0,40	0,61	0,31
Small Growth Middle	0,09	1,03	1,00	0,28
Medium Growth Middle	0,18	0,34	1,11	0,75
Big Growth Middle	-0,06	-0,05	1,08	0,10
Small Value High	0,00	1,08	-0,06	-0,07
Medium Value High	0,05	0,33	0,21	0,02
Big Value High	-0,07	0,15	0,23	-0,13
Small Neutral High	0,05	0,75	0,37	-0,22
Medium Neutral High	-0,03	0,29	0,49	-0,22
Big Neutral High	-0,01	-0,12	0,48	-0,16
Small Growth High	-0,18	0,65	1,39	-0,51
Medium Growth High	-0,17	0,35	1,12	-0,17
Big Growth High	0,11	-0,24	0,96	-0,13

Table 9. Average beta coefficients in model with innovation capital (Russia)

	β	**ic**
Small Value Low	0,16	1,33
Big Value Low	0,05	1,13
Small Growth Low	-0,09	0,98
Big Growth Low	0,05	0,87
Small Value High	-0,01	0,28
Big Value High	-0,01	0,16
Small Growth High	0,03	-0,19
Big Growth High	0,16	0,06

Table 10. Average beta coefficients in model with innovation capital (USA)

	β	**s**	**h**	**ic**
Small Value Low	1,31	-0,01	0,36	1,31
Medium Value Low	1,26	-0,17	0,11	1,26
Big Value Low	0,84	0,38	0,16	0,84
Small Neutral Low	1,18	-0,45	0,20	1,18
Medium Neutral Low	1,15	-0,31	0,16	1,15
Big Neutral Low	0,97	-0,17	0,27	0,97

Small Growth Low	1,07	-0,96	0,12	1,07
Medium Growth Low	1,15	-0,82	0,14	1,15
Big Growth Low	1,36	-0,42	0,29	1,36
Small Value Middle	1,23	-0,33	-0,22	1,23
Medium Value Middle	1,22	0,00	-0,15	1,22
Big Value Middle	0,94	0,26	-0,12	0,94
Small Neutral Middle	1,00	-0,60	-0,25	1,00
Medium Neutral Middle	1,21	-0,26	0,03	1,21
Big Neutral Middle	1,03	-0,24	0,04	1,03
Small Growth Middle	1,02	-0,86	-0,26	1,02
Medium Growth Middle	1,14	-0,79	-0,20	1,14
Big Growth Middle	1,16	-0,75	-0,01	1,16
Small Value High	1,10	0,33	-1,08	1,10
Medium Value High	1,28	0,29	-0,97	1,28
Big Value High	1,05	0,41	-0,48	1,05
Small Neutral High	1,10	-0,22	-1,06	1,10
Medium Neutral High	1,31	-0,25	-0,71	1,31
Big Neutral High	1,10	-0,24	-0,42	1,10
Small Growth High	0,97	-1,32	-0,98	0,97
Medium Growth High	1,16	-1,08	-0,84	1,16
Big Growth High	1,20	-0,85	-0,65	1,20

The next step incorporates the panel analysis for premiums for each factor – SMB, HML and LicMHic for India (Table 11), LicMHic for Russia (Table 12), LicMHic for US (Table 13).

Table 11. Premiums for factors: size, B/M, innovation capital (India)

	Premium	**Standard deviation**	**t-statistics**	**p-value**
Market premium	17,8%***	0,00145	9,48	0,00000
Size premium	8,8%***	0,00051	13,91	0,00000
B/M premium	7,6%***	0,00052	11,68	0,00000
Innovation capital premium	1,6%***	0,00047	2,82	0,00478

***- 0,1% level of significance

Table 12. Premiums for factors: size, B/M, innovation capital (Russia)

	Premium	Standard deviation	t-statistics	p-value
Market premium	-12,6%*	0,004	-2,518	0,012
Innovation capital premium	6,7%**	0,002	3,327	0,001

**- 1% level of significance, *-5% level of significance

Table 13. Premiums for factors: size, B/M, innovation capital (USA)

	Premium	Standard deviation	t-statistics	p-value
Market premium	-4,3%***	0,00070	-5,17	0,00000
B/M premium	-10,6%***	0,00040	-22,84	0,00000
Innovation capital premium	-9,2%***	0,00046	-17,55	0,00000

***- 0,1% level of significance, **-1% level of significance, *-5% level of significance

All premiums are significant during an observable period.

The market premium is negative for the Russian market which is a consequence of a drop in the market index and a sharp growth in the risk-free rate of government bonds due to increased risks of emerging markets.

A robustness check includes a change in the observation period. The window changes from one to three overlapping years. A shift in the observation period under a rolling regression changes from 1–3 months. These changes do not have an impact on the significance of the premiums.

We obtained a negative relation between the level of innovation capital and the cost of equity for the US market, and a positive one for the Indian and the Russian markets. A negative premium means that investors require a higher return for companies with high innovation capital. This result can be explained by:

1. The non-linear influence of innovations, the existence of a “natural rate” of innovation activity
2. Uncertainty about the results of a company’s innovation activity.

The innovation process including intangible assets, knowledge and the generation of new knowledge which are pivotal for competitiveness. In the race to gain these competitive advantages some companies may increase their expenditure on innovation at the expense of current operating activity maintenance and profit extraction from assets in place. In this case high innovation capital means lower expenditure on operating activity and business processes optimization.

Another explanation is related to company specific uncertainty. An innovative product may not be successful in the market; the market may either reject the product or delay recognition. Changes in customer tastes or the adaptation of a product requires time which bears losses for the company. At this time there is no guarantee that the company can wait and continue promoting the product. Moreover, sometimes innovation means a change in the company's business model, its image and reputation which may negatively influence the company's activity in the current market segments. In launching a product in a new market segment a company may discourage current customers (e.g., company operating in premium segment may both discourage current customers and lack new ones after entering mass segment).

However, the positive relation for the Indian and the Russian markets could be evidence for investor perceptions of the innovation activity as an increase in intangible assets which may generate future cash flows. This perception is general, but for emerging markets the associated risks could be estimated at a lower level than future potential benefits by investors. The other probable explanation may be the lower level of competition in the Indian and the Russian markets, especially product competition. According to Gu (2015), a high level of innovation activity increases the risk for companies operating in competitive industries: for these companies the chance of losing the innovation race is higher, but for markets with weak competition the increase in risk associated with innovation activity is low.

Conclusion

This paper measured innovation capital in a way which has not been employed previously in corporate finance and tested the relation between intellectual capital and the cost of equity in emerging markets. We determined a proxy for innovation capital quantitatively and took into account the potential risks imposed by the inappropriate management of intellectual capital in emerging markets.

We concluded that there is a negative relation between innovation capital and the cost of equity for the US market and a positive one for the Indian and the Russian markets. This controversial evidence can serve as a guide for investors valuing a return on a company's shares, which receives not only benefits from having intellectual capital, but also negative consequences of this during instabilities. Thus, the urgency of the research is confirmed by the results: contrary to expectations, the presence of intellectual capital is not a guarantee against lower risks in estimating a company by investors.

Our model can be extended with additional company's efficiency factors. Portfolio formation with a different level of efficiency can contribute to a deeper analysis of the nature of intellectual capital for companies from emerging markets.

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