

СЕКЦИЯ А

БИЗНЕС-АДМИНИСТРИРОВАНИЕ МАЛЫХ И СРЕДНИХ ПРЕДПРИЯТИЙ

THE ROLE OF NATIONAL CULTURE IN THE RELATIONSHIP BETWEEN CAPITAL STRUCTURE AND INVESTMENT DECISIONS OF EUROPEAN INFORMATION SECTOR COMPANIES

Master student *Zarina Begulova*, professor *Natalja Lace*, Dr.oec.Riga Technical University, Riga, Latvia

Abstract – The paper explores the influence of national culture on the interaction between a firm's leverage and investment, measured as Capital Expenditure, across companies in European Information Sector. Using Hofstede's cultural indexes and based on analysis of scientific papers, investigating the influence of national culture on the investment and leverage, and effect of capital structure on investment, it was hypothesized that uncertainty avoidance and power distance have a positive moderating effect on leverage-investment relations, while individualism and masculinity affect negatively. The financial data of stock-listed companies from the information sector across European countries for the last 10 years was extracted from Amadeus database. Criteria for the company inclusion were financial data availability for the period 2008-2017 for companies across European Information Sector, and availability of a minimum of 3 companies per one country. The quantitative method was chosen for conducting the research, including univariate and regression analyses. The obtained results demonstrate that national culture affects the relationship between the company's level of leverage and investment.

Introduction. Nowadays one of the most discussed topics in the corporate finance among academics, company managers and government representatives is the influence of capital structure on the firms' investment decisions. Considering the growth of global competition on the country level, investment and diversification of the business are crucially important not only for firms' growth, but also for countries' economic growth. This is particularly topical for information industry, which has been experiencing stagnation for the last 10 years. For example, as it is reported by the European Telecommunications network operators' Association (2017), mean revenue per user in the telecom industry is decreasing in every region within the period 2006 to 2016. In order to alter its revenue decline, the telecom operators are intensively investing in 5G, thus trying to capture opportunities presented by monetizing 5G services. To achieve this, operators increase their infrastructure investments: in 2016, operators in the ENTO markets have devoted 17.7% of their revenues to investments (0.3 % more than previous year). The total amount of investment of made in tangible assets by telecommunication and cable operators across 28 European countries in 2016 accounted for 47.2 billion Euro. Meanwhile, benign capital-intensive industry, it is natural for telecommunication companies to finance its assets by employer more liabilities, with the average debt/equity ratio for telecom industry in Europe being 1.32 over the period from 2003 to 2013 (A.T. Kearney, Inc., 2014). Thus, it would be interesting to find out if the high leverage affects the investment level of these companies, and if this interconnection can be influenced by the inter-cultural differences.

Through years there have been conducted a range of researches, investigating the interconnection between capital structure and investment (Lang et al. (1996), Both Aivazian et al. (2005), Odit & Chittoo (2008), De Jong & Van Dijk (2007)). Meanwhile, Fazzari and Petersen (1993) and De Gryse & De Jong (2006) investigated the impact of net working capital on the relationship between leverage and investment. The main aim of all researches was to find to what extent can the leverage - investment relationship be explained by agency problems. Cross-analyzing the researches, it is easy to define the discrepancies in the results, since some empirical evidences are supporting, and others are rejecting the agency problems. Meanwhile, different scholars (Kwok and Tadesse, 2006, Chui et al., 2002, Gleason et al., 2000) have also been trying to examine the impact of national culture on the firm's capital structure. These studies suggest that inter-country effects caused by some cultural patterns across groups of countries is an important determinant of the capital structure. Thus, considering information stated above, cultural factors might not only become a mean to explain the capital structure, but also define the direction in the interaction between capital structure and investment of the firms across the countries. In this report there is an attempt to apply the relationship between culture and capital structure to information industry across European countries. The main aim of the research is to identify if the national culture has any effect on interaction between a firm's leverage and investment. The study includes Hofstede's Cultural Dimensions (Hofstede & Hofstede, 2005) as moderating variables that has not been considered by any of the previous researches. As a mean to reach the stated purpose, 3 research questions rose:

- What is the influence of company structure on the investment level of the firm of European Information Sector?
- What is the impact of national culture on investment level of the company of European Information Sector?
- What is the moderating effect of the national culture on the interaction between the financial leverage and investment level of the firm of European Information Sector?

In order to answer the above-stated research questions, there was conducted a literature analysis on these topics, based on which 3 regression models were built, based on original investment regression model of Aivazian et al. (2005a). The first part includes analysis of scientific papers and researches and development of hypotheses. The second part describes methodology of the research, specifically data collection approach, sources of data for empirical analysis employed, sample size selection and regression models developed. The results section presents findings of the research, based on empirical analysis. In conclusion, there were provided general conclusion of the paper and suggestions for future examination of the topic.

LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT. The impact of leverage on firm investment is one of the main issues in corporate finance. Meanwhile, there is a range of authors that have examined the relationship between national culture and capital structure, reaching interesting results.

Relation between leverage and investment decisions. Leverage. First of all, it is important to understand what leverage actually means. This term has a range of definitions in the literature, but the most common one is the amount in percentage terms borrowed money used to finance a company's assets. It is measured by dividing the total liabilities by total assets (Opler and Titman, 1994; Lang *et al.*, 1996; Odit, Chittoo, 2008).

Underinvestment and overinvestment. One of the widely discussed theories, supporting the idea of leverage's influence on capital investment decisions are underinvestment and the overinvestment agency theories that are empirically proved in a range of researches (Aivazian *et al.*, 2005a). Myers (1977, 581) in his paper described that companies with a high proportion of liabilities make managers more prone to decreasing investment. The main reason behind that theory is that the managers do not want to share the positive Net Present Value (NPV) with debtors. A high leverage ratio also implies lower financial flexibility due to increasing costs of obtaining external finance, which may lead to future liquidity problems. It altogether causes an inverse interconnection between investments and leverage, since managers will more likely to take preventive actions regarding the leverage ratio, as soon as growth opportunities are recognized. Overinvestment comes from a conflict between managers and shareholders (Jensen, 1986, 325; Stulz, 2003, 322), because the first group serve the purpose to expand the scale of the business even by investing into negative NPV-investment opportunities, and thus decreasing the value of the firm. Consequently, to support a sufficient amount of free cash flows, the managers have to borrow money that results in increasing leverage. Thus, debt plays a disciplinary role, since the lack of funds keeps managers from taking over negative NPV-projects. McConnell and Servaes (1995, 153) in their research came to conclusion that, due to the overinvestment problem, firms with low-growth opportunities experience a positive correlation between debt and investment level of the firm. It means that when companies with internally generated funds overcoming investment opportunities, finance their projects with debt, it leads increase in the value of the firm. Based on this, the following hypothesis has been elaborated and going to be tested. H1. There is a negative relationship between power leverage and investment.

Other determinants of investment decisions. In order to properly evaluate the influence of leverage on investment decisions and the role of national culture in its interactions, it is essential to control for other variables that can affect these decisions. **Tobin's Q.** Tobin's Q is a determinant for the future growth opportunities of a company. It is calculated by dividing the market value of a company's assets by the replacement cost of capital. Lang *et al.*, (1996, 5) mentioned that the firms with a market value overcounting their book assets might have some unmeasured assets, which leads to the point that the company is overvalued on the market. It is applicable to expect a positive relation between Tobin's Q and investment, because, probably, firms will invest more in the capital in this case. **Free Cash Flow.** As Myers (1984, 583) described in his pecking-order theory of, accounting for the financing hierarchy, and costs of external funding, firms first use internal funds, left after covering all expenses and debts, then own equity and the debt to finance its projects. Thus, cash flow plays an essential role in investment decisions. In addition, following Jensen (1986, 327), that managers prefer to use free cash flow to extend the business, thus, invest it into a profit-generating project than paying out dividends.

Profitability. Aivazian *et al.* (2005b, 285) and Odit and Chittoo (2008, 53) also accounted for profitability in their analysis, using Return on Assets (ROA), which helps managers to understand the efficiency of investment. High ROA implies that the company has higher retained earnings that can be used to finance the firm's investments that go along with pecking order theory. Considering that the same authors proved in their papers that firm with higher profitability tend to have higher investment rates, for this paper it is expected a positive relationship between profitability and investment. **Size.** Following the research, conducted by Costa Tomé (2017, 35), there is observed a negative relationship between the size of the firm and its investment rate among Portuguese firms. At the same time, large firms should have lower information asymmetries (Farinha and Prego, 2013, 117; Haque, 2014, 230), be more diversified (Antão and Bonfim, 2008, 190), and as a result have easier access to external financing. According to Farinha and Prego (2013, 2013), it means that larger firms are less exposed to liquidity issues than small firms, and thus can afford to borrow money to finance their investments (Haque, 2014, 230). As a result, it is expected that there is a positive relationship between firm size and investment. **Sales.** Results of studies hold by Odit and Chittoo (2008, 56) showed that sales play an essential role in investment decisions of the firm. According to Serrasqueiro *et al.* (2012, 59), sales growth may motivate companies to raise their investment in order to expand their market share. This allows concluding that sales and investments have a positive relation that has been already confirmed by Aivazian *et al.* (2005a).

Relation between national culture and investment decisions. As it was defined by Hofstede and Hofstede (2005, 4), «Culture is the collective programming of the mind that distinguishes the members of one group or category of people from the others». By means of a range of studies, and examining countries' culture all over the world, Hofstede (2001, 5) developed cultural dimensions, classifying different countries, regions, ethnicities, or even organizations according to their diverging culture. These dimensions are: power distance, individuality, masculinity, uncertainty avoidance. These measures have been employed in many of academic studies across a wide range of disciplines. Moreover, Hofstede's study results are coming from conducting interviews among employees in organizations that makes Hofstede's dimensions the most appropriate in a business context (Arosa *et al.*, 2014, 189).

Power distance. Power distance is a representative dimension of national culture, showing perception of power, the extent to which members of a society with relatively lower power expect and allow for uneven distribution of power. As it was mentioned by Cetenak *et al.* (2017, 361), companies from high power distance societies, and thus, clearly defined rule, avoid high investments. In addition, companies with flat hierarchical structure (from low power distance cultures) have

decentralized decision making process that distributes risk and gives more incentive for overinvestment by managers (Dimitratos *et al.*, 2011, 200). H2a. There is a negative relationship between power distance and investment. Thus, considering that it is expected that increase in power distance and leverage will decrease the investment, it is hypothesized that: H3a. Power distance has a positive moderating effect on the relationship between capital structure and investment decisions.

Individualism. As opposed to cohesion (collectivism), individualism determines the identity of personal goals, self-awareness as «I», protection of private interests, ties between individuals who are not burdened with strong obligations to act together; for collectivist culture there are group goals, self-awareness as «we», maintaining relationships, norms. Hofstede (2001, 25) Managers from individualistic societies normally overestimate their own capabilities and can be too optimistic in their forecasts, thus may tend to invest more into the company development, in expectation to generate more profit. Representatives from collectivistic cultures express high self-monitoring, thus making them less inclined to spontaneous decisions and overinvestments (Chen *et al.*, 2015, 5). In the light of this, the following hypothesis is proposed. H2a. There is a positive relationship between individualism and investment. Thereby, considering that individualism and leverage are expected to have opposite influence on investment, it is hypothesized that: H3b. Individualism has a negative moderating effect on the relationship between capital structure and investment decisions.

Masculinity. Masculinity means aiming at achieving results at any cost. Countries with a high value of this indicator are classified as «male», they are characterized by such qualities as rivalry, self-confidence, determination, and commitment to material values. Countries with a low value are classified as «female». They are characterized by honouring relationships, cultural values, caring for the quality of life. (Hofstede, 1983, 53). Thereby in cultures with high indicator of masculinity, the company managers are eager to compete and make more money and more disposed for making higher investments (Sargut, 2001) H2c. There is a positive relationship between masculinity and investment. Based on the hypothesis above, and keeping in mind that leverage and investment are expected to have a negative relationship, it can be hypothesized that: H3c. Masculinity has a negative moderating effect on the relationship between capital structure and investment decisions.

Uncertainty avoidance. Uncertainty avoidance determines the degree of perception and response to unfamiliar situations. For countries with a high value of the uncertainty avoidance indicator, it is typical to avoid ambiguous, unclear situations, striving to establish clear rules of behavior, trust in traditions and foundations, a tendency to intergroup harmony, intolerance towards people with a different lifestyle, way of thinking. For countries with low uncertainty avoidance rates, personal initiative, risk acceptability, calm acceptance of differences, other points of view are typical. A lot of researches proved that high uncertainty avoidance is associated with low risk taking of the companies (Mihet, 2013, 145; Kanagaretnam *et al.*, 2011, 868). Also Chen *et al.* (2015, 15) mentioned in his work that uncertainty avoidance is negatively associated with capital expenditures of the companies. It all allows to develop the following hypothesis. H2d. There is a negative relationship between uncertainty avoidance and investment. Thereby, considering that it is expected that rise in uncertainty avoidance and leverage will lower the investment, it is hypothesized that: H3d. Uncertainty avoidance has a positive moderating effect on the relationship between capital structure and investment decisions.

RESEARCH METHODOLOGY. At the initial stage for the research data for 146 stock-listed companies from Information sector of 20 European countries over the period 2008-2017 were selected, using Amadeus database. Later this samples size was decreased to 120 companies from 14 countries, since it was meant to meet the following criteria:

- From each country there should be at least 3 companies
- Each company should be stock-listed for period of 10 and more years in order to be able to calculate Tobin's Q
- Panel data should be balanced and contain data on all variables over the years

As a result, a sample size 960 company-year observations was applied for analysis.

In order to test proposed hypothesis, information about 7 firm-level variables was obtained from Amadeus database, and 4 country-level variables were used, following Hofstede's (2001) cultural dimensions. All variables are clearly described in Table 1, including the expected relationship between the dependent and independent variables.

In order to test the first hypothesis, regression model, adopted from Aivazian *et al.* (2005a)'s model was applied. Following Aivazian *et al.* (2005b), Odit and Chittoo (2008) and Haque (2014), the model was adjusted by adding two other determinants of investment, profitability and firm size, and is presented in Formula (1).

$$\frac{I_t^i}{FA_{t-1}^i} = \beta_0 + \beta_1 \left(\frac{CF_{t-1}^i}{FA_{t-1}^i} \right) + \beta_2 Q_{t-1}^i + \beta_3 SIZE_t^i + \beta_4 \left(\frac{SALE_{t-1}^i}{FA_{t-1}^i} \right) + \beta_5 ROA_{t-1}^i + \beta_6 LEV_{t-1}^i + \lambda^i + \mu_t + \varepsilon_t^i. \quad (1)$$

where I_t^i - net investment of firm i in the current period t;

FA_{t-1}^i - net fixed assets of firm I in the previous period t-1;

CF_{t-1}^i - cash flow of firm i in the previous period t-1;

Q_{t-1}^i - Tobin's Q of firm i in the previous period t-1;

$SIZE_t^i$ - size firm i in the current period t;

$SALE_{t-1}^i$ - net sales firm i in the previous period t-1;

ROA_{t-1}^i - profitability of firm i in the previous period t-1;

LEV_{t-1}^i - leverage of firm i in the previous period t-1;

β_0 - intercept;

β_n - coefficients of the variables;

λ^i - individual effect of the firm I;

μ_t - set of year dummies to control for time fixed effect;

The regression equation was calculated by means of applying pooled OLS. In addition, to assess the robustness of the results and control for individual firm heterogeneity fixed effects model was employed (Aivazian *et al.*, 2005a). In addition, the between estimator, which was used the cross-sectional dimension of the data and ignoring the time-effect, was applied.

Considering results of the studies of Cetenak *et al.* (2017) and Lee (2015), in order to test the second hypothesis, the first regression model, presented in Formula (1.), was modified by adding the cultural variables to the firm that are taken from Hofstede's (2001) measures of culture.

$$\frac{I_t^i}{FA_{t-1}^i} = \beta_0 + \beta_1 \left(\frac{CF_{t-1}^i}{FA_{t-1}^i} \right) + \beta_2 Q_{t-1}^i + \beta_3 SIZE_t^i + \beta_4 \left(\frac{SALE_{t-1}^i}{FA_{t-1}^i} \right) + \beta_5 ROA_{t-1}^i + \beta_6 LEV_{t-1}^i + \beta_7 POWD_t^i + \beta_8 INDV_t^i + \beta_9 MASC_t^i + \beta_{10} UNCA_t^i + \lambda^i + \mu_t + \varepsilon_t^i \quad (2)$$

where $POWD_t^i$ - the degree of power distance of firm i in the current period t;
 $INDV_t^i$ - the degree of individuality of firm i in the current period t;
 $MASC_t^i$ - the degree of masculinity of firm i in the current period t;
 $UNCA_t^i$ - the degree of uncertainty avoidance of firm i in the current period t.

After analysis standard practice in the literature, we estimate our models using random-effects panel data estimation with robust standard errors, along with between estimator, regressing individual average of dependent variable to individual average of independent variables.

With a purpose to test the third hypothesis and identify the interaction effect of cultural variables on the relationship between firm's leverage and investments decisions, the following moderation model was proposed.

$$\frac{I_t^i}{K_{t-1}^i} = \beta_0^i + \beta_1 \left(\frac{CF_{t-1}^i}{K_{t-1}^i} \right) + \beta_2 Q_{t-1}^i + \beta_3 SIZE_t^i + \beta_4 \left(\frac{SALE_{t-1}^i}{K_{t-1}^i} \right) + \beta_5 ROA_{t-1}^i + \beta_6 LEV_{t-1}^i + \beta_7 POWD_t^i + \beta_8 INDV_t^i + \beta_9 MASC_t^i + \beta_{10} UNCA_t^i + \beta_{11} LEV_{t-1}^i \times POWD_t^i + \beta_{12} LEV_{t-1}^i \times INDV_t^i + \beta_{13} LEV_{t-1}^i \times MASC_t^i + \beta_{14} LEV_{t-1}^i \times UNCA_t^i + \varepsilon_t^i \quad (3)$$

The indicators for the regression models, presented above were calculated manually for each company over the period from 2008 to 2017, using measurements, presented in table 1.

Table 1 – Measurements of variables and expected signs of the explanatory variables

Variables	Symbol	Measurement	Predicted Sign
Dependent Variable			
Investment	INV	(Capital Expenditure - Depreciation)/ Lagged Net Fixed Assets	
Independent Variables			
Cash Flow	CF	Lagged (Earnings before Extraordinary Items + Depreciation)/ Lagged Net Fixed Assets	+
Tobin's Q	Q	(Market Capitalization + Market Value of Liabilities)/ Total Assets	+
Size	Size	Natural Logarithm of Total Assets	+
Sales	SALES	Net Sales/Lagged Net Fixed Assets	+
Profitability	ROA	Net Profit/Average Total Assets	+
Leverage	LEV	Total Liabilities/Total Assets	-
Power Distance	POWD	Natural Logarithm of the Hofstede Power distance index	-
Individuality	INDV	Natural Logarithm of the Hofstede Individuality index	+
Masculinity	MASC	Natural Logarithm of the Hofstede Masculinity index	-
Uncertainty Avoidance	UNCA	Natural Logarithm of the Hofstede Uncertainty avoidance index	-

RESULTS. The results of the first investment equation (1) are presented in Table 2. The Hausman test was hold in order to identify which model is more suitable. Considering results, the null hypothesis was rejected at 1% significance level, allowing to claim that fixed effects model is the most appropriate one for this case.

Table 2 – The regression results for the first model

Variable	Random effects	Between estimator	Fixed effects
Intercept	-0.5187	-0.1471	-
<i>sig.</i>	<i>0.4508</i>	<i>0.6484</i>	-
CF	0.0039	-0.0574	0.0334
<i>sig.</i>	<i>0.4433</i>	<i>0.0000</i>	<i>0.0000</i>
Q	0.0841	0.0447	0.0234
<i>sig.</i>	<i>0.2618</i>	<i>0.3443</i>	<i>0.8391</i>
SIZE	0.0447	0.0031	1.9419
<i>sig.</i>	<i>0.2525</i>	<i>0.8572</i>	<i>0.0000</i>
SALES	0.1933	0.1323	0.2165
<i>sig.</i>	<i>0.0000</i>	<i>0.0000</i>	<i>0.0000</i>
ROA	-5.0412	-2.9117	-3.2699
<i>sig.</i>	<i>0.0000</i>	<i>0.0000</i>	<i>0.0043</i>
LEV	-0.8534	-0.1217	-0.2942
<i>sig.</i>	<i>0.0788</i>	<i>0.6293</i>	<i>0.7666</i>
Hausman test	chisq = 126.46, p-value = 2.2e-16		
Adj. R2	0.5050	0.9093	0.4459

This table provides the regression results of the equation (1) for European Stock-listed Information Sector firms from 2009 to 2017 using three alternative models for panel data (random effects model, between estimator model, and fixed effects model). The Hausman test is used to test the fixed effects model versus the random effects model.

It is seen that the financial leverage has a negative influence on the net investment, but the coefficient is statistically insignificant. At the same time, the same variable has a statically significant effect on investment at 1% level, using Random Effect Model, which ignores the time effect and regresses average leverage across period to average investment. It is that partially proves the null Hypothesis H1. Thereby, it is applicable to claim that there is a negative relationship between financial leverage and investment in European stock listed companies of Information sector in the long run.

An increase in leverage by one unit leads to the decrease of investment by 0.8534 in average in log term perspective. Thus, this inverse relationship between two indicators is a supportive element of the underinvestment theory, stating that higher amount of debt keeps managers of Information sector companies from investment and «disciplinary role» of leverage, implying that managers have to cover their debts by available funds instead of investing them.

A Cash Flow has a positive impact on Company Investment, as expected, and the coefficient is statistically significant at 1% level. Growth opportunities (Tobin's Q), in its turn, appeared to have a positive impact, but turned out to be statistically insignificant for this research across all models and equations. It implies that this indicator can be excluded from calculating the investment level in Information sector companies fie to its low level of significance. Size has a substantial positive and stoically significant (at 1% level) effect on the investment that supports the previous researches. Sales also influence positively on investment at a significance level of 1% with 1 unit increase in sales, resulting in 0.2165 units increase in investment. It is rather surprising tough that profitability has a negative effect on investment at a significance level of 1%, since it contradicts with the expected positive sign of relationship. However, it is logical to accept the negative relationship, since an increase in investment leads to an increase in total assets and decrease in net profit due to depreciation, and consequently decrease in profitability of assets.

Table 3 represents the results of the regression analysis for equations (2) and (3), which explores the influence of cultural variables on the investments and relationship between leverage and investment. Since the national culture variables are stable indicators and not changing over the time, it is was decided to use the models, which ignore the time effect of the indicators. From the table, it is seen that the sales and profitability are the only statically significant variables for equation (2), using the random effect model, and have a positive and negative effect on investment respectively.

Using the between estimator model, however, cash flow coefficient also becomes statically significant at 1% level but has a negative effect on investment. It is contradicting with the results from first equation and literature analysis. There is an inverse relation between leverage and investment, and between estimator model proves it to be statistically significant at 5% level. Turning to cultural variables, it is seen that power distance and individuality have negative and positive effects correspondingly on investment in equation (2) in both models, but the coefficients are statistically insignificant, based on which the null Hypotheses H2a and H2b are rejected. The regression analysis of equation (2), using between estimator yields the most statistically significant results with Masculinity and Uncertainty Avoidance having a negative effect on investment at 5% and 10% significance levels. While the letter proves the null Hypothesis 2d, the former contradicts with the null Hypothesis 2c. Presumably, it took place since in masculine societies the managers reach growth of the company are open for more aggressive financing by using debts and disregard the agency issues, thus increasing debts, which has a negative relationship with investment. Eventually, increase in masculinity by one unit decreases investment by 0.2313.

Table 3 – The regression results for the second and third models

	Model 2		Model 3	
	Random Effects	Between estimator	Random Effects	Between estimator
Intercept	-2.2732	1.0535	1.8395	7.6405
<i>sig.</i>	<i>0.6569</i>	<i>0.6339</i>	<i>0.8443</i>	<i>0.0810</i>
CF	0.0042	-0.0577	0.0054	-0.0570
<i>sig.</i>	<i>0.4082</i>	<i>0.0000</i>	<i>0.2980</i>	<i>0.0000</i>
Q	0.0888	0.0309	0.0946	0.0692
<i>sig.</i>	<i>0.2462</i>	<i>0.5157</i>	<i>0.2184</i>	<i>0.1527</i>
SIZE	0.0461	0.0075	0.0459	0.0093
<i>sig.</i>	<i>0.3239</i>	<i>0.7121</i>	<i>0.3304</i>	<i>0.6440</i>
SALES	0.1935	0.1288	0.1935	0.1227
<i>sig.</i>	<i>0.0000</i>	<i>0.0000</i>	<i>0.0000</i>	<i>0.0000</i>
ROA	-5.1102	-2.8706	-5.0262	-2.8833
<i>sig.</i>	<i>0.0000</i>	<i>0.0000</i>	<i>0.0000</i>	<i>0.0000</i>
LEV	-0.9137	-0.1717	-11.0984	-14.3175
<i>sig.</i>	<i>0.4899</i>	<i>0.0622</i>	<i>0.4421</i>	<i>0.0423</i>
POWD	-0.8618	-0.2334	1.5253	0.0653
<i>sig.</i>	<i>0.3160</i>	<i>0.5338</i>	<i>0.4958</i>	<i>0.9490</i>
INDV	0.6253	0.0715	0.1371	-0.3677
<i>sig.</i>	<i>0.4562</i>	<i>0.8429</i>	<i>0.9282</i>	<i>0.5824</i>
MASC	-0.0740	-0.2313	0.0679	-0.8248
<i>sig.</i>	<i>0.7587</i>	<i>0.0284</i>	<i>0.9049</i>	<i>0.0059</i>
UNCA	0.6588	-0.0665	-2.2228	-0.8130
<i>sig.</i>	<i>0.4090</i>	<i>0.0992</i>	<i>0.2349</i>	<i>0.0858</i>
LEV x POWD			-4.4255	-0.8188
<i>sig.</i>			<i>0.2502</i>	<i>0.6441</i>
LEV x INDV			1.3527	1.1431
<i>sig.</i>			<i>0.5693</i>	<i>0.2836</i>
LEV x MASC			-0.2167	1.1209
<i>sig.</i>			<i>0.8162</i>	<i>0.0270</i>
LEV x UNCA			1.9619	5.4425
<i>sig.</i>			<i>0.1962</i>	<i>0.0944</i>
Adj. R2	0.9130	0.9130	0.5037	0.9173

Applying the third regression analysis for testing moderating effect of national cultures on the interaction between leverage and investment, it is seen that the between estimator model is a better option for this analysis since it yields the highest adjusted R2 – 0.9173. The results show that Masculinity has a positive moderating effect on relation between debt and investment at 5% significance level, implying that the lower the level of masculinity in the society, the more negative the effect of leverage on investment level of the company. It naturally contradicts with null Hypothesis H3c. Uncertainty avoidance also has a positive moderating effect on the interaction between leverage and investment at the significance level of 10%, meaning that the negative effect of debt on investment is stronger for companies in the cultures with low level of uncertainty avoidance. The results prove the null Hypothesis H3a. It is interesting however that Power distance and Individuality do not have a statistically significant moderating influence on the relation between debt and investment.

The results of 3 regression models were summarized in the Table 4.

Based on the table it is seen that some of the hypotheses are proved or partially proved, and some are rejected based on the low level of statistical significance of the regression coefficients.

CONCLUSION Although the aim of this paper was to discover whether the national culture has any influence on leverage-investment relation, the research also investigates the determinates of firm's investment level by employing different firm-level variables and Hofstede's cultural dimensions.

As a result, the analysis has provided rather interesting results, contradicting with the proposed hypotheses. Cash flow provides a positive impact on investment in the first model, but negative in the second and third regression models, which use also cultural indexes as control variables. It means that in the long firm with high indicator free cash flow have a low investment level, implying that they are keeping their cash and not investing it into development. It was found out the company's growth opportunities, defined by Tobin's Q is not statistically significant across all models. It means that the power of this indicator to predict investment is too weak and can be excluded from the further research. Meanwhile, the size of the firm has a positive and significant influence on the investment of the firm, that is rather logical and goes in line with the proposal of Farinha and Prego (2013), that size of the firm matters when it comes to liquidity issue - the larger the firm the higher liquidity. But it obviously plays role in the short-term perspective, but it is insignificant in the long-run, and when the cultural indicators are added. Further researches need to be conducted in order to estimate the effect of size on firm's investment potential. Sales positively affect the investment level across all models that proves the previously-

conducted researches. When it comes to profitability, the results are rather surprising, since they contradict the previous researches, showing negative impact on investment. This relates to the fact that profitability is measured as a return on assets in this research, while investment into assets may decrease this indicator due to increase in total assets and decrease in total profit due to depreciation. For future researches, it is recommended to calculate this indicator, excluding the non-cash expenses from the net profit. Finally, the leverage was found out to be statically insignificant in the first model. But it has a dramatic and negative impact on the investment in the second and third models. It means that in the long-run the highly leveraged firms invest less into the assets, since they have a high debt burden, and prefer using funds to cover their liabilities than investing. In the short run, however, the level of total debts does not play a crucial role in making investment decisions.

Table 4 – Comparative table with predicted sign and regression analysis results

Variables	Symbol	Predicted Sign	Regression analyses results		
			Fixed Effects	Between Estimator	Between Estimator
Cash Flow	CF	+	+	-	-
Tobin's Q	Q	+	Statistically insignificant	Statistically insignificant	Statistically insignificant
Size	SIZE	+	+	Statistically insignificant	Statistically insignificant
Sales	SALES	+	+	+	+
Profitability	ROA	+	-	-	-
Leverage	LEV	-	Statistically insignificant	-	-
Power Distance	POWD	-		Statistically insignificant	Statistically insignificant
Individuality	INDV	+		Statistically insignificant	Statistically insignificant
Masculinity	MASC	-		-	-
Uncertainty Avoidance	UNCA	-		-	-
Moderating Effect of Power Distance	LEVxPOWD	+			Statistically insignificant
Moderating Effect of Individuality	LEVxINDV	-			Statistically insignificant
Moderating Effect of Masculinity	LEVxMASC	-			+
Moderating Effect of Uncertainty Avoidance	LEVxUNCA	+			+

Turning to the cultural variables, it was interesting to find that the power distance and individuality are not statistically significant indicators of investment level. Two other variables – masculinity and uncertainty avoidance, however, influence significantly and negatively on the company's investment. It shows that companies, coming from societies with a strong and aggressive attitude towards achieving results invest less that does not align with the hypothesis. As for companies from low uncertainty avoidance cultures, and thus, high-risk takers, they tend to invest and aggressively. These results prove the null hypothesis. Finally, turning to the last point, it is proved that the national cultures has a moderator effect on the leverage-investment interaction with uncertainty avoidance and masculinity having a positive effect.

It should be mentioned that the study has several limitations, which can be considered in the future researched. First, the models were built on the assumption that it investment depend only on current and or previous year explanatory variables, that in fact may have a more long-term dependence. Second, Tobin's Q could be replaced by price-to-earnings to measure firms' growth opportunities. Third, the sample size is rather limited for the global/scaled analysis and should be enlarged in the future researches, by adding countries from the none-European region. It should be also considered the macroeconomic factors, like interest rates and GDP growth. As for the cultural variables, in order to assess their influence, and avoid the complexity of the model, it is recommended to divide the countries into several cultural groups, using the Hofstede's dimensions, and run several regression models for each group.

LIST OF REFERENCES

1. Aivazian, V. A., Ge, Y., Qiu, J. (2005). Debt Maturity Structure and Firm Investment. *Financial Management*, Vol. 34, pp. 107–19.

2. Aivazian, V. A., Ge, Y., Qiu, J. (2005). The Impact of Leverage on Firm Investment: Canadian Evidence. *Journal of Corporate Finance*, Vol. 11, pp., 277-291.
3. Antão, P., Bonfim, D. (2008). Decisões das empresas portuguesas sobre estrutura de capital. *Relatório de Estabilidade Financeira*, Banco de Portugal, pp. 187–206.
4. Arosa, C.M.V., Richie, N., Schuhmann, P.W. (2014). The impact of culture on market timing in capital structure choices, *Research in International Business and Finance*. Vol. 31, p.178-192.
5. A.T. Kearney, Inc., (2014) [online]. Telecom Assets: Unlocking the Trillion-Dollar Treasure Chest, Website: ATKearney.com [accessed on 15 December 2018]. Available at: <https://www.atkearney.com/documents/10192/5099581/Telecom+Assets-+Unlocking+the+Trillion-Dollar+Treasure+Chest.pdf/d9fe9622-9f59-48fd-9101-49db354c5b26>
6. Costa Tomé, D.F.A. (2017). *Financial leverage and investment decisions: evidence from Portuguese listed companies*. Master Thesis. Porto: University of Porto. 42 p.
7. Cetenak, E.H., Cingoz, A., Acar E. (2017). The Effect of National Culture on Corporate Financial Decisions. *Risk Management, Strategic Thinking and Leadership in the Financial Services Industry*, pp. 355-368.
8. Chen, Y., Dou, P.Y., Rhee, S.G., Truong, C., Veeraraghavan, M. (2015). National culture and corporate cash holdings around the world. *J Bank Fin*, Vol. 50, pp. 1–18.
9. Chui, A.C.W., Lloyd, A.E., and Kwok, C.C.Y. (2002). The determination of capital structure: Is national culture a missing piece to the puzzle? *Journal of International Business Studies*, Vol. 33 Iss. 1, pp. 99-127.
10. De Gryse, H., De Jong, A. (2006). Investment and internal finance: Asymmetric information or managerial discretion? *International journal of industrial organization*, Vol. 24, pp. 125-147.
11. De Jong, A., Van Dijk, R. (2007). Determinants of Leverage and Agency Problems: A Regression Approach with Survey Data. *European Journal of Finance*, Vol.13 Iss. 6, pp. 565-593.
12. Dimitratos, P., Petrou, A., Plakoyiannaki, E, Johnson, J.E. (2011). Strategic decision-making processes in internationalization: does national culture of the focal firm matter? *J World Bus*, Vol. 46 Iss. 2, pp.194-204.
13. *European Telecommunications network operators' Association* (2017) [online]. Annual economic Report 2017, Website: Ento.eu [accessed on 15 December 2018]. Available at: [https://etno.eu/datas/publications/economic-reports/ETNO%20Annual%20Economic%20Report%202017%20\(final%20version%20web\).pdf](https://etno.eu/datas/publications/economic-reports/ETNO%20Annual%20Economic%20Report%202017%20(final%20version%20web).pdf)
14. Farinha, L., Prego, P. (2013). Investimento e situação financeira das empresas: evidência recente. *Relatório de Estabilidade Financeira*, Maio, Banco de Portugal, pp. 107–128.
15. Fazzari, S., Petersen, B. (1993). Working capital and fixed investment: new evidence on financing constraints. *RAND journal of economics*, Vol. 24 Iss. 3, pp. 328 -342.
16. Gleason, K.C., Mathur, L.K., Mathur, I., (2000). The Interrelationship between Culture, Capital Structure, and Performance: Evidence from European Retailers. *Journal of Business Research*, Vol. 50, pp. 185-191.
17. Haque, A. (2014). Role of financial leverage in determining corporate investment in Pakistan. *The Business & Management Review*, Vol. 5 Iss. 3, pp. 226–235.
18. Hofstede, G., Hofstede, G.J. (2005). *Cultures and organizations: Software of the mind*. Berkshire: McGrawHill. p. 4, 434.
19. Hofstede, G.H. (2001). *Culture's consequences: Comparing values, behaviors, institutions, and organizations across nations*. 2nd edition. Thousand Oaks, CA: Sage. 596 p.
20. Hofstede, G. (1983). National culture in four dimension: a research-based theory of cultural differences among nations. *Int Stud Manage Org*, Vol. 13 Iss.1–2, p. 46-74.
21. Jensen, M.C. (1986). Agency cost of free cash flow, corporate finance, and take-overs. *American Economic Review*, Vol. 76 Iss. 2, pp. 323–329.
22. Kanagaretnam., K, Lim, C.Y., Lobo, G.J. (2011). Effects of national culture on earnings quality of banks. *J Int Bus Stud*, Vol. 42 Iss.6, pp. 853–874.
23. Kwok, C.C.Y., Tadesse, S. (2006). National Culture and Financial Systems. *Journal of International Business Studies*, Vol. 37, pp. 227-247.
24. Lang, L.E., Ofek, E., Stulz, R. (1996). Leverage, investment and firm growth. *Journal of Financial Economics*, Vol. 40, pp. 3-29.
25. Lee, S. (2015). National Culture and Corporate R&D Investment. *Journal of Studies in Social Sciences*, Vol. 12 Iss. 2, pp. 309-322.
26. McConnell, J.J., Servaes, H., (1995). Equity ownership and the two faces of debt. *Journal of Financial Economics*, Vol. 39, pp. 131–157.
27. Mihet, R. (2013). Effects of culture on firm risk-taking: a cross-country and cross-industry analysis. *J Cult Econ*, Vol. 37 Iss. 1, pp. 109–151.
28. Myers, S.C. (1977). Determinants of corporate borrowing. *Journal of Financial Economics*, Vol. 5, pp. 147-175.
29. Myers, S.C. (1984). The Capital structure puzzle. *Journal of Finance*, Vol. 39, pp. 575-592.
30. Odit, M.P., Chittoo, H.B. (2008). Does financial leverage influence investment decisions: The case of Mauritian firms. *Journal of Business Case Studies*, Vol. 4 Iss. 9, pp. 49-60.
31. Opler, T.C., Titman, S. (1994). Financial distress and corporate performance. *Journal of Finance*, Vol. 49, pp. 1015–1104.
32. Peretz, H., Rosenblatt, Z. (2011). The role of societal cultural practices in organizational investment in training: A comparative study in 21 countries. *Journal of Cross-Cultural Psychology*, Vol. 42 Iss. 5, pp. 817–831.

33. Podrug N. (2011). Influence of national culture on decision-making style. *SE Eur J Econ Bus*, Vol. 6 Iss.1, pp. 37–44.
34. Sargut A.S. (2001). *Kulturler Arası Farklılaşma ve Yönetim*. Ankara: İmge Kitabevi.
35. Schwartz, S. H. (2004). *Mapping and interpreting cultural differences around the world*. In H. Vinkins, J. Soeters, and P. Esters (Eds.), *Comparing cultures: Dimensions of culture in a comparative perspective*. Boston, MA: Brill Academic Publishers. 36 p.
36. Serrasqueiro, Z., Mendes, S., Nunes, P., Armada, M. (2012). Do the investment determinants of new SMEs differ from those of existing SMEs? Empirical evidence using panel data. *Investment Analysts Journal*, Vol. 76, pp. 51–67.
37. Stulz, R.M., Williamson, R. (2003). Culture, openness, and finance. *Journal of Financial Economics*, Vol. 70 Iss. 3, pp. 313-349.

УДК 339

О РАЗВИТИИ КРЕАТИВНОЙ ЭКОНОМИКИ В РЕСПУБЛИКЕ БЕЛАРУСЬ

доктор экон. наук, профессор А.В. Данильченко, канд. экон. наук, доцент Е.В. Бертош, БНТУ, г. Минск

Резюме – в статье раскрывается понятие креативной экономики; анализируется позиция Республики Беларусь в международном рейтинге креативности; определяются проблемы и перспективы развития креативной экономики в Беларуси.

Введение. В современной зарубежной и отечественной науке, международными организациями для характеристики этапов экономического развития используется множество понятий: информационная экономика, инновационная экономика, экономика знаний, новая экономика, цифровая экономика, смарт-экономика, креативная экономика. Разнообразие точек зрения на экономическое развитие можно объяснить тем, какой отдельный фактор (информация, инновации, знания, креативность и т.д.), сегмент или сектор современной или будущей экономики вносит или будет вносить наибольший вклад в экономический рост и международную конкурентоспособность страны. При всех различиях в подходах, все приведенные выше понятия объединяет нечто общее. Так, никто не подвергает сомнению тот факт, что в первую очередь наукоемкость ВВП характеризует достигнутый уровень развития страны, обеспечивая ее поступательный экономический рост. Во-вторых, в условиях глобализации окончательно оформилась закономерность: экономический рост обеспечивается активным развитием третичного сектора экономики. Так, 64 % мирового ВВП формируется сектором услуг, в котором информационно-коммуникационные технологии (ИКТ) демонстрируют наибольшие темпы роста. В-третьих, в качестве современной тенденции развития общества экспертами ООН называется креативная экономика, как один из наиболее быстро растущих секторов мирового хозяйства не только с точки зрения получения дохода, но увеличения степени инновационной восприимчивости экономической системы, создания новых рабочих мест и роста объемов экспортных поступлений [1].

Основная часть. На наш взгляд, формирование креативной экономики должно быть нацелено на создание благоприятной экосистемы для раскрепощения творческого потенциала человека и быстрого развития «креативной индустрии» (термин, который традиционно используется в зарубежных публикациях), чтобы в конечном счете обеспечить решение трех стратегических целей – достижения сбалансированного самоподдерживающегося экономического роста, увеличение занятости и повышения благосостояния населения.

К креативной индустрии относятся разнообразные виды материальных и нематериальных услуг (промышленных, консалтинговых, научных, образовательных, коммуникационных и др.), в которых добавленная стоимость формируется за счет использования объектов интеллектуальной собственности (ОИС). Такой позиции придерживается Министерство по культуре, средствам информации и спорту Великобритании: креативная индустрия включает в себя отрасли, ориентированные на создание и использование объектов интеллектуальной собственности на основе современных информационно-коммуникационных технологий: реклама, архитектура, ремесла, кинематография, музыка, дизайн, интерактивные развлекательные программы, программное обеспечение, телевидение и радио и др. Согласно международной классификации услуг [2] – это услуги, входящие в подгруппу 35 (реклама, менеджмент в сфере бизнеса, административная деятельность в сфере бизнеса, офисная служба); класс № 38 (телекоммуникации); № 41 (воспитание, обеспечение учебного процесса, развлечения, организация спортивных и культурно-просветительных мероприятий); № 42 (научные и технологические услуги и относящиеся к ним научные исследования и разработки, услуги по промышленному анализу и научным исследованиям, разработка и развитие компьютеров и программного обеспечения). Применение международной классификации услуг дает возможность оценить развитие креативной индустрии и креативной экономики в целом как в мире, так и в рамках одной страны.

Учитывая важность креативной экономики, в последние годы стали составляться ее международные рейтинги. Так, глобальный индекс креативности строится на основе модели *3Т: технологии – талант – толерантность*. Развитие технологии оценивается с помощью таких показателей, как наукоемкость ВВП и количество патентов на душу населения. Талант оценивается по числу занятых в творческой сфере (наука; техника и технологии; искусство; культура; развлечения и средства массовой информации; бизнес и управление; образование;