# Comparison of foreign and domestic companies in terms of investment measurement and management

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Abstract

The study analyses selected areas of business management while comparing companies in the use of investment measurement and management models and methods. The paper aimed to find out dominant differences in investment tools linked with possible positive effects on business performance. The research tested the business entities in the transitional economy of Slovakia in Central Eastern Europe. Statistical analysis of contingency as an appropriate testing method for categorical variables was applied in the research. Findings demonstrated better business performance in companies with partly or fully foreign ownership. Results present statistically significant differences in the use of individual investment tools between foreign firms against local firms as well as comparison in automotive, engineering, and other industries.

Keywords: Business Management; Investment; Investment projects; Foreign companies.

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## 1. Introduction

Suitable selected approaches, methods, and models of investment measurement and management belong among determinants of business performance and development, contrary inadequate concepts may be the reason for the insufficient performance of companies best-known worldwide and domestic experts in management agree on the fact that each enterprise should have qualified strategy and created its effective way of realization based on the latest management approach (Sujová, Rajnoha & Merková, 2014). Theory fundamentals for the importance of investment project preparation, their content, structure, range, or quality describes for example Bangs (1995) or Blackwell (1989). In the evaluation of a particular investment, the project is evaluated for its suitability, efficiency, and feasibility (Rajnoha, Jankovský & Merková, 2014).

Preparation of investment projects is the main assumption for successful realization and use of investment, according to Drábek & Polách (2008) there is evaluated the impact of the investment project on the total effectiveness, prosperity, and financial stability of the company. Due to appropriate and precise investment project can companies react quickly and adequately to changes in surrounding conditions, increase the hope to succeed in given entrepreneurial activities, and gives presumptions for improving long-term economic results of the enterprise. If local firms do not make any investment projects, or they make them in a non-adequate way, it can be the factor of failure. Pre-investment work has to identify each investment project, with a high degree of detail, in terms of the efficiency of the investment for the enterprise, the level of risk involved (rate of return on, and payback period of, invested capital), the exploitation of technical developments, etc. based on market survey results and the previous use of the enterprise's assets. The enterprise thus identifies and evaluates each investment project to select for implementation those projects that are the best match to the enterprise's investment objectives, i.e., the projects which maximize the present net project value while increasing the competitiveness and market value of the business (Drábek & Merková, 2015).

Investment valuation methods can be classified into two basic categories. Absolute valuation methods quantify the intrinsic value of an investment project directly. The literature describes various absolute valuation methods, however, methodology based on discounted cash flow is given to prominent position in investment valuation in business practice. This methodology explicitly assumes that the investment project will meet the expected cash flow with no intervention by management in the investment process and the uncertainty is handled in the risk-adjusted discount rate. Discounted cash flow methods recognize that investment projects are dynamic (Trigeorgis, 1999; Damodaran, 2004). Relative valuation methods estimate the value of an investment project by comparing several similar or comparable projects (versions, scenarios) while respecting predetermined criteria (Damodaran, 2004; Clayman, Fridson & Troughton, 2012). Their implementation and understanding are distinctive advantages. Limitation in applying these methods is formed in fact that most investment projects are unique and incomparable with another whose value is explicit.

Investment valuation can be realized in several approaches, each company defines what concepts or tools are applied in its measurement and management system. The most frequently mentioned methods in theory (e.g., Levy & Sarnat, 1986; Khan, 1993; Brealey & Myers, 2003, Damodaran, 2012, etc.) are Net Present Value (NPV) and Internal Rate of Return (IRR) considering the discount rate. Discounted cash flow valuation is based on expected future cash flows and discount rates. While discounted cash flow valuation is only one of the three ways of approaching valuation, it is the foundation on which all other valuation approaches are built (Damodaran, 2012). Brealey and Myers (2003) also deal with often-used indicators

Return on Investment (ROI) or Return on Equity (ROE), but these methods do not consider the time factor and so dynamic value of money.

### 1.1. Related studies

Quantitative analysis of the effects of foreign direct investment (Rajnoha, Novák & Merková, 2012) has confirmed some important facts, at the level of the whole country is a particularly high correlation between FDI stock and GDP growth in Slovakia, at the level of the wood-processing industry, was found the significant impact of investment to growth of sales and productivity. Qualitative analysis of the effects that are difficult to measure, but affects the sector, showed some spillover effects characteristic of the wood-processing industry. According to Blomström & Kokko (1998) when there is a realization of spillovers, domestic firms improve their efficiency by copying a technology (product design, production processes, management techniques such as supply management, production management, marketing, and sales skills, research and development) of foreign companies operating in the local market.

A study that investigated models and methods of strategic business measurement and management (Rajnoha et al., 2013), described their impact on business performance. The main conclusion statistically confirmed that better business performance is significantly dependent on foreign ownership. The best-performing companies (they most typically reach ROE above 10%) are mainly or wholly financed from abroad, and vice versa, for purely domestic ownership is the distinctive lower performance with a value of ROE indicator in the level of 0-2%. Consequently, the next study (Drábek & Merková, 2015) proved that the use of investment controlling valuation has a significant impact on the business performance growth of companies in Slovakia. Investment is considered a dominant factor in the growth of enterprise performance, without investment in cannot particularly expect the growth in value-added, labor productivity, or competitiveness of enterprises (Merková, Drábek & Polách, 2011). Entry of foreign investor support in many cases the development of the invested area, however, it is not always true that foreign direct investment is the salvation for the country.

Although there is a temporary increase in employment, the country receives from the investor no more than the contributions for health and social insurance. Everything else is reasonably exported abroad and often not to the investor's home country. It is therefore especially useful to research all parallels in the scope of direct quantitative effects as well as spillovers that foreign companies bring. Foreign direct investment is considered a resource for increasing the competitiveness of the Slovak economy through changes that direct to the restructuring of enterprises and strengthening of their capital. The positions of foreign investors in the world market, their capital strength, and unique knowledge improve the chances to create conditions in our country for new jobs that are sustainable. The participation of foreign enterprises in the Slovak economy keeps domestic companies to change their strategy consistently and quickly (Merková, & Drábek, 2010). Following the issue described above, this paper focuses on models and methods of investment measurement and management.

### 1.2. Purpose of study

The paper aimed to find out dominant differences in investment tools linked with possible positive effects on business performance. The research investigated differences in the use of individual investment tools between foreign firms against local firms as well as differences between obtained performances in companies with partly or fully foreign ownership in comparison with local firms in Slovakia. The study also compares performance and selected measurement and management approach in automotive, engineering, and other industries to try to find out differences and positive impact on higher ROE indicator in companies. The issue of investment project planning has defined the assumption, that preparation of investment projects and investment planning is more typical for foreign firms than domestic firms, it has

a significant impact on business performance and this tool is applied in companies that achieve a moderate or higher ROE indicator. Results of the verification are presented in the paper.

## 2. Material and Methods

### 2.1. Data Collection Instrument

The research tested the business entities in Central Eastern Europe in the scope of the transitional economy of Slovakia. To build data collection there was created online questionnaire through an internet application (more in Questionnaire Survey, 2013 or Rajnoha et al., 2013).

### 2.2. Participants

Complete anonymity of participating firms was maintained. The size of the research sample was 164 counts. All companies were analyzed in complex research, next was created samples according to certain industries (engineering, automotive, wood processing, etc.). Tab. 1 presents basic information about the tested groups in the study.

**Table 1**
*Tested groups*

| Tested groups / Industry | Sample size |
|---|---|
| Sample of all tested companies | 164 companies |
| Sample of wood processing industries | 34 companies |
| Sample of the automotive industry | 16 companies |
| Sample of the engineering industry | 30 companies |
| Sample of other companies: All other industries except the wood processing, automotive, and engineering | 84 companies |

*Source*: own

### 2.3. Analysis

Companies were initially analyzed according to the distribution of the achieved performance of the 6 groups (Groups 0-5, group 0 – the worst performance with negative ROE, Group 5 - the highest performance with the ROE over 10%). Statistical analysis of contingency as an appropriate testing method for categorical variables (Pearson, 1904; Pánik, 2005 and others) was applied in the research. Two-dimensional inductive statistics there was used, and the chi-squared test was calculated. Results of chi-squared tests describe selected statistics: Pearson's chi-square and significance p-value „p", Pearson's contingency coefficient (CC), Adjusted contingency coefficient (Adj. CC), and degrees of freedom (df).

$$\text{Pearson's Chi-square: } \chi^2 = \sum_{i=1}^{k}\left[\left(f_{o_i} - f_{e_i}\right)^2/f_{e_i}\right]; \text{ while } \sum(f_o - f_e) = 0 \qquad (1)$$

$$\text{Pearson's contingency coefficient CC: } CC = \sqrt{\chi^2/(\chi^2 + N)} \qquad (2)$$

$$\text{Maximum contingency coefficient } CC_{max}: CCmax = \sqrt{(q-1)/q} \qquad (3)$$

$$\text{Adjusted contingency coefficient Adj. CC: } Adj.CC = CC/CCmax; \text{ while } CC \leq CCmax \qquad (4)$$

Where:

$f_{o_i}$ – observed frequency in a field of the table,

$f_{e_i}$ – expected (theoretical) frequency in a field of the table,

k – number of cells in the table

N – sample size

q – number of rows or columns (in square tables)

For statistical analysis, numeric and graphical presentation of the research results, the program MS Office Excel and software Statistica12 from StatSoft, Inc. were used. Several hypotheses have been established in the study:

- $H_1$: There is a significant difference in investment project planning between foreign and domestic firms.
- $H_2$: Investment projects planning has an impact on business performance.
- $H_3$: Companies applying investment projects achieve a moderate or higher value of the ROE indicator.

For each hypothesis were formulated null hypothesis H0 and alternative hypothesis H1 representing the opposite of the basic hypothesis. The decision to accept or reject the H0 was carried out as follows: If $\alpha < p$, $H_0$ cannot be rejected. If $\alpha \geq p$, $H_0$ is rejected in favor of $H_1$. The significance level was set as $\alpha = 0.05$.

## 3. Results

The paper presents significant results in the issue of investment projects planning. Significance is based on the results of statistical testing with a p-value $p<0.05$, considering formulated hypotheses in methodology.

Dependence between the use of this investment tool and company ownership there was demonstrated. Tab. 2 presents detailed statistical results of the chi-square test. Planning of investment projects considering local or foreign firms is typical for the second mentioned group, against the local firms without extensive making of business or investment projects. This fact is explained by the residual frequencies presented in Tab. 3. Although most domestic enterprises prepare investment projects, it is not sufficient for foreign companies and the relationship between investment projects and foreign capital is significant.

**Table 2**

*Contingency: Foreign ownership x Investment project planning – Statistics*

| Foreign investment x Investment project planning (Statistics) | Chi-square | df | p-value |
|---|---|---|---|
| Pearson's Chi-square | 5.804882 | df=1 | p=0.02 |
| M-L Chi-square | 6.635459 | df=1 | p=0.01 |
| Contingency coefficient (CC) | 0.18 | | |
| Adjusted contingency coefficient (Adj. CC) | 0.26 | | |

*Source:* own

Table 3

*Contingency: Foreign ownership x Investment project planning – Frequencies*

| Investment project preparation | Domestic ownership | Foreign ownership | Row Totals |
|---|---|---|---|
| Observed Frequencies | | | |
| Without investment projects | 32 | 4 | 36 |
| Planning of investment projects | 88 | 40 | 128 |
| Totals | 120 | 44 | 164 |
| Expected Frequencies | | | |
| Without investment projects | 26.3415 | 9.65854 | 36.00 |
| Planning of investment projects | 93.6585 | 34.34146 | 128.00 |
| Totals | 120.0000 | 44.00000 | 164.00 |

| Residual Frequencies | | | |
|---|---|---|---|
| Without investment projects | **5.65854** | -5.65854 | 0.00 |
| Planning of investment projects | -5.65854 | **5.65854** | 0.00 |
| Totals | 0.00000 | 0.00000 | 0.00 |

*Source:* own

Differences in the emphasis on planning investment projects, especially in separate industries were found. From the statistical results (Tab. 4 and 5) it can be stated that the preparation of investment projects is characteristic of the category of engineering and automotive industries, while the WPI industry and other sectors do not consider the investment project planning as principal.

**Table 4**

*Contingency: Industry vs. Investment project planning - statistics*

| Foreign investment x Investment project planning (Statistics) | Chi-square | df | p-value |
|---|---|---|---|
| Pearson's Chi-square | 7.12318 | df=3 | p=0.07 |
| M-L Chi-square | 8.26091 | df=3 | p=0.04 |
| Contingency coefficient (CC) | 0.20 | | |
| Adjusted contingency coefficient (Adj. CC) | 0.26 | | |

*Source:* own.

Table 5.

Contingency: Industry vs. Investment project planning – frequencies

| Investment project preparation | Other | Wood processing | Automotive | Engineering | Row Totals |
|---|---|---|---|---|---|
| Observed Frequencies | | | | | |
| Without investment projects | 24 | 8 | 2 | 2 | 36 |
| Planning of investment projects | 60 | 26 | 14 | 28 | 128 |
| Totals | 84 | 34 | 16 | 30 | 164 |
| Expected Frequencies | | | | | |
| Without investment projects | 18.43902 | 7.46341 | 3.51220 | 6.58537 | 36.00 |
| Planning of investment projects | 65.56098 | 26.53659 | 12.48780 | 23.41463 | 128.00 |
| Totals | 84.00000 | 34.00000 | 16.00000 | 30.00000 | 164.00 |
| Residual Frequencies | | | | | |
| Without investment projects | **5.56098** | **0.536585** | -1.51220 | -4.58537 | 0.00 |
| Planning of investment projects | -5.56098 | -0.536585 | **1.51220** | **4.58537** | 0.00 |
| Totals | 0.00000 | 0.000000 | 0.00000 | 0.00000 | 0.00 |

*Source:* own

Concerning the achieved performance in these sectors which follows the relationship of industry and planning of investment projects, this means higher performance in the engineering and automotive industries, while lower performance in wood processing and other industries). It is possible to express the statement that the preparation of investment projects affects the performance of enterprises. Unfortunately, the direct evidence about the relationship between investment project planning and achieved business performance could not be statistically proven.

## 4. Discussion

When the enterprise has comprehensibly formulated its investment objective and chosen an appropriate investment strategy for achieving that objective, it is possible to proceed to developing concrete investment projects, evaluating them, selecting those most beneficial, and preparing the latter for implementation. Pre-investment work is the basic prerequisite for the successful implementation of projects and their functioning (Kalugin, Dubskaya, Poddubny & Bukhvald, 2021). It is demanding in that it

involves a varied array of engineering and economic works (marketing, risk assessment, financial analysis, technical and technological characteristic of a project, etc.) and their mutual coordination.

The analysis also shows that 22% of surveyed enterprises still do not prepare investment projects. Considering the structure of investment projects, the financial and economic effectiveness analysis as a part of the project is important for 46% of companies, from which it is possible to note the relatively low importance of financial and economic analysis in the investment project (Piątkowski, 2020). This result can be affected by the fact that businesses consider this part to be important, but they do not have sufficient or appropriate processing capacities, likely methodological procedures, qualified workforce, data availability, etc. are missing. 41% of enterprises consider as important to characterize the production program and 36% of enterprises define the objectives of the enterprise. Related, market-oriented important parts of the project were signed market analysis, competition, and marketing strategy. 18% of enterprises consider important risk analysis.

The smallest importance (4%) had the part related to the localization of the business, which seems to indicate that the placement is a long-term fixed and therefore the set factor and enterprises focus on more suggestible parameters. There is the obvious but negative fact that the personal plan was included among categories with low importance, only 10% of companies see the personal plan as an important part of the investment project. Businesses, therefore, do not consider the issue of human resources - qualified labor, wage costs to be important although the total labor costs often form a dominant cost item and the quality of work can be a determinant factor of the business performance (Leitão, Pereira & Gonçalves, 2019).

Some sophisticated practices, techniques, concepts, or methods in investment management are not used in domestic firms, which achieve worse performance. There are several reasons for the absence of some modern and useful knowledge fundamentals in local firms. The most important is the lack of capital to buy or form own knowledge. But it is possible to mention the typical sign of local firms - indifference and aversion to using new and unfamiliar tools, they do not understand those. If the company doesn´t trust them, it doesn´t expect possible future effects and performance to improve. Just foreign investors bring and implement tools used in investment decision-making, measurement, and management, which cause better business performance (Zahera & Bansal, 2018).

Local firms benefit from the entry of foreign capital and improve their knowledge base which relates to sophisticated production, higher value-added, and economic growth. Foreign investment may become the basis for the modernization of production facilities, the transfer of new technologies, knowledge, creating healthy competition and more efficiently integrating our economy into the international labor market, decreasing unemployment, growth of GDP as well as providing access to European and global market (Kurpayanidi, 2021).

However, an enterprise can largely influence its success by planning its business activities responsibly, i.e., by developing an investment project with a purposeful target structure (Kurnia, Kotusev, Shanks, Dilnutt & Milton, 2021). An investment project should map and analyze the entire period from the intent to invest (in a given area or line of business) up to the time when all invested funds have been paid back,

or all earned funds have been used for the further development of the enterprise's business operations, as the case may be.

The limitations of research results are regional. From described findings, businesses in the Slovak economy can benefit in terms of investment project planning. Recommendations mentioned in the paper are directed primarily to domestic firms that use investment planning at a lower level than foreign firms.

## 5. Conclusion

The paper analyzed and described significant differences between the use of selected tools in foreign firms against local firms as well as higher performance in companies with partly or fully foreign ownership. Consequent decisions on the hypotheses formulated at the beginning of the study were made. Several conclusions can be highlighted according to the presented statistical testing results:

- H1: Null hypothesis H0 was rejected in favor of alternative one H1. There is a significant difference in investment project planning between foreign and domestic firms. From residuals in the testing of the hypothesis, it follows that investment planning is more typical for foreign firms.

- H2: Null hypothesis H0 was not rejected. The dependence of business performance on investment projects planning was not statistically proven.

- H3: Null hypothesis H0 was not rejected. The significant impact of investment project planning on business performance was not demonstrated and consequently, it cannot be said about the achieved level of the ROE indicator.

Moreover, investment projects planning is characteristic for the category of engineering and automotive industries, while the wood processing and other industries do not consider the planning of investment projects as principal. The same trend can be seen in achieved performance in separate categories of the industry: Engineering and automotive with investment projects linked with higher performance, in contrast with the absence of investment projects planning in the wood processing industry related to lower performance.

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