The profitability of foreign and domestic enterprises in Poland

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The main purpose of this article is to compare the profitability of foreign and domestic enterprises in Poland. It is assumed that foreign enterprises achieve better financial results in host country than domestic enterprises because of i.e. higher innovativeness of foreign enterprises (as in technology and organizational sphere) and better capital use. The analysis was conducted among large foreign-controlled and domestic-controlled enterprises in Poland. The research results indicate that taking risk related to financing by foreign capital led the direct invested enterprises to achieve higher profitability rates what may contribute to better development of foreign companies in Poland.

JEL Classifications: G32

Keywords: Foreign companies, domestic companies, profitability, capital structure, financial performance

Introduction

The Polish economy transition has a significant influence on foreign capital flows in Poland. Nowadays enterprises with participation of foreign capital are an integral part of the Polish economy and market relations. The comparative studies of domestic and foreign companies are subject to a number of studies. However, in Poland, this kind of analysis is conducted relatively rarely. The Authors have attempted to fill the gap in this area.

The main aim of this article is to compare the profitability of large foreign companies and large domestic companies in Poland. There are two main ways of foreign capital inflows: foreign direct investments and portfolio investments.

Due to OECD benchmark definition foreign direct investment ‘is a category of cross-border investment made by a resident in one economy (the direct investor) with the objective of establishing a lasting interest in an enterprise (the direct investment enterprise) that is resident in an economy other than that of the direct investor.’ The ‘lasting interest’ is evidenced by at least 10% the voting power of direct investor in direct investment enterprise (OECD, 2008).

For the purpose of this article the Authors use ‘foreign companies’ defined as direct investment enterprises with at least 50.01% participation of foreign capital. The ‘domestic companies’ are defined as enterprises with major participation of domestic capital.

The Authors state that in case of Poland:

H1: Large foreign companies are more profitable than large domestic companies.
H2: Large foreign companies are more indebted than large domestic companies.

1 The paper was reported at XVth ZAFIN Conference, “Financial Management - Theory and Practice”, May 19-21, Wrocław, Poland
In globalizing economy enterprises seek for investment locations that enable them to achieve greater return from invested capital. They consider number of factors such as labour costs, infrastructure, labour market, tax incentives, the economy stability and degree of market penetration etc.

It means that foreign companies, looking for new development opportunities, will invested mainly in those countries where there is the possibility of taking the advantages from previously used financial, organizational and production solutions in order to achieve greater profitability.

**Literature review**

The theories of foreign direct investment suggest the certain advantages that foreign investors may achieve due to expansion.

The theory of ownership advantages implies that foreign enterprises in host country have an advantages over domestic enterprises what is the basis for obtaining higher incomes. That is a compensation for bearing higher operating costs by foreign companies in relation to domestic ones. According to Hymer (1960) and Kindleberger (Kindleberger, 1969) the specific advantages include:

- technological advantages resulting in (i.a.) benefits from R&D activity conducted by parent company what enable the daughter company to product new products with better features or lower costs,

- financial advantages based on the ability to use external financing not only from host country but on the international capital market as well (home country especially),

- management advantages arising from the possibility of applying proven methods used in the home country.

The ‘follow - the - leader’ theory (Knickerbroker, 1974) proved that companies enter the market following ‘the leader’ strategy in order to maintain their current position. This action is necessary to prevent a situation in which leader reaches the advantages and the benefits of early entry into a new market.

The ‘cost of transaction’ theory (also called ‘internalization theory’) explains the reason why making foreign direct investment is more efficient than export. Due to inefficient markets, transnational corporations internalize the products and sources exchange when the transaction costs on external markets are higher than internal costs (Buckley and Casson, 1991).

The ‘eclectic theory’ of foreign direct investment is a synthesis of all theories. Dunning (1977) integrated the theory of monopolistic advantages, internalisation and location factors assuming that the company will be engaged in foreign direct investment only when three conditions will be fulfilled:

- company will have competitive advantages over local companies in the host country

- internalization advantages provide greater profits than through licenses, patents sale or products export

- combination of company’s assets, benefits of internalisation and host country advantages must be profitable.

To summarize, the above - mentioned factors provide to foreign enterprises significant competitive advantage over local firms. As a result it might be expected that the financial result will be greater than in case of domestic companies.

Technically, there is no difference in analyzing the financial effects of foreign and domestic companies’ activity. However, the foreign enterprises specific sometimes leads to obtaining additional benefits and bearing the additional costs by these enterprises which do not appear (or appear slightly) in case of domestic enterprises, for example:
- benefits of transfer prices applicability in transactions within the group, usually lower than those charged in international trade
- benefits of possibility to raise the capital in foreign markets from relatively cheaper sources and covered by lower risk
- cost related to foreign exchange risk in international transactions
- additional costs associated with hiring foreign employees if it is necessary
- costs of royalties, management and consulting fees (Jasiniak, 2013)

Moreover, there are some factors that may influence the effects of financial activity of foreign and domestic enterprises indirectly. In case of domestic enterprises it may be mentioned:
- knowledge about local supply and distribution chains and business environment institutions
- the technology and production processes adapted to local contractors requirements and needs
- large knowledge about domestic market and competitors
- knowledge about administrative procedures and law regulations (Jasiniak, 2013).

In case of foreign enterprises these factors may include:
- ability to use foreign supply chains including parent company
- availability to the latest technologies, innovations that enable the foreign enterprises to provide products with better quality and beneficial prices
- possibility of carrying out the activity on preferential conditions¹ (Jasiniak, 2013).

The research conducted in many countries outlines following results. Basti, Bayyurt, and Akin (2011) indicate that, in case of Turkey, there is no significant differences in profitability ratios (ROA, ROE, productivity ratio and BEP) achieved by foreign and domestic enterprises. Turkish enterprises are able to compete with foreign competitors in terms of implemented technologies, organizational capabilities and effectiveness of company management.

The New Zealand report also outlines some differences in effects of foreign and domestic enterprises activity. Foreign enterprises achieve better ROE ratio and are more productive than foreign enterprises. What is important, it was observed that there is no relation between the level of productivity and export what means that the foreign enterprises productivity cannot be explained by their higher tendency to export (Backley, 2009).

Results of the analysis conducted by Notta and Vlachvei (2008) among enterprises located in Greece show that enterprises with participation of foreign capital are characterized by higher productivity and company effectiveness than domestic companies. However there is no significant differences between foreign and domestic enterprises as for leverage.

In case of Asian countries (except Korea), the enterprises with participation of foreign capital are characterized by significantly higher productivity than domestic enterprises (Hallward-Driemeier, 2002). The results are similar in case of Japanese enterprises (Kiyoji, Ito, and Ug Kwon, 2005). Emmanuel and Oyelere (2002) show that there is no statistically significant differences in ROEM (Return on employees) of foreign and United Kingdom domestic enterprises. However, the profitability of foreign companies is lower in comparison to domestic ones. Wang and Mathur (2011) demonstrate that there are significant differences in group of multinationals and domestic companies group. In case of multinationals, the return on capital is significantly lower and the assets management is less efficient than in domestic companies. However, the multinationals profit margin is

¹ Due to law regulations, preferential conditions for business are dedicated to foreign and domestic companies as well, however, the higher innovativeness of foreign enterprises often makes them beneficiaries of investments incentives more often than domestic ones.
higher which shows that multinationals get a larger percentage of gross profit from their sales than domestic companies.

As Chkir and Cosset (2001) state the profitability in multinational corporations is negatively related to the debt ratio. In relation to Park, Suh and Yeung (2012), multinational corporations are characterized by lower average lever of leverage and are more profitable than domestic companies.

Research methodology

In order to verify the hypotheses the data base of foreign and domestic companies was created. The selected sample was based on following criteria: location, number of employees, turnover, foreign capital participation, financial data availability. Research was concentrated only on large companies. As a result the analysis was conducted among 1832 domestic and 1629 foreign large companies and based on financial data available for 2008-2012. The financial data were extracted from the annual reports as provided on the Amadeus database.

In order to evaluate the enterprises profitability ROA and ROE ratios were used as an independent variables and the leverage, measured as the relation of total debt to total assets, as depended variable. The statistic and econometric analysis were conducted and the results are presented above.

Main research results

The descriptive statistics (Tables 1-3) indicates that in case of foreign enterprises ROE ratio is higher in comparison to domestic ones if we consider median or mean indicators. The standard deviation is also higher. In relation to ROA ratio the significant differences might be noticed, however, the discrepancies are lower.

| TABLE 1. DESCRIPTIVE STATISTICS OF ROE RATIO IN FOREIGN AND DOMESTIC ENTERPRISES IN POLAND IN 2008-2012 |
|-----------------------------------------------------|-----------------|-----------------|
| Descriptive Statistics | Foreign enterprises | Domestic enterprises |
| Mean | 13.059 | 9.7163 |
| Median | 130515 | 8.6066 |
| Minimum | -208.05 | -233.09 |
| Maximum | 345.95 | 140.86 |
| Standard deviation | 34.344 | 21.64 |
| Variation | 2.4002 | 2.2722 |
| Skewness | -0.91045 | -2.0247 |
| Kurtosis | 17.792 | 21.905 |

Source: Own elaboration

| TABLE 2. DESCRIPTIVE STATISTICS OF ROA RATIO IN FOREIGN AND DOMESTIC ENTERPRISES IN POLAND IN 2008-2012 |
|-----------------------------------------------------|-----------------|-----------------|
| Descriptive statistics | Foreign enterprises | Domestic enterprises |
| Mean | 7.8222 | 5.1321 |
| Median | 6.1581 | 3.5794 |
| Minimum | -36.726 | -47.947 |
| Maximum | 77.71 | 70.477 |
| Standard deviation | 9.758 | 7.6604 |
| Variation | 1.2475 | 1.4926 |
| Skewness | 1.6428 | 1.1585 |
| Kurtosis | 7.5675 | 9.6333 |

Source: Own elaboration
TABLE 3. DESCRIPTIVE STATISTICS OF TOTAL DEBT/TOTAL ASSETS RATIO IN FOREIGN AND DOMESTIC ENTERPRISES IN POLAND IN 2008-2012

<table>
<thead>
<tr>
<th>Descriptive statistics</th>
<th>Foreign enterprises</th>
<th>Domestic enterprises</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>0.53156</td>
<td>0.50012</td>
</tr>
<tr>
<td>Median</td>
<td>0.53431</td>
<td>0.51066</td>
</tr>
<tr>
<td>Minimum</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Maximum</td>
<td>0.99319</td>
<td>0.99319</td>
</tr>
<tr>
<td>Standard deviation</td>
<td>0.21683</td>
<td>0.22236</td>
</tr>
<tr>
<td>Variation</td>
<td>0.40791</td>
<td>0.44462</td>
</tr>
<tr>
<td>Skewness</td>
<td>-0.11628</td>
<td>-0.098042</td>
</tr>
<tr>
<td>Kurtosis</td>
<td>-0.82912</td>
<td>-0.82447</td>
</tr>
</tbody>
</table>

Source: Own elaboration

In relation to level of debt it seems that, on average, foreign companies are more indebted than Polish companies. It may be concluded that the higher level of debt in case of foreign companies reflects in greater return on assets and equity.

If we consider the correlation matrix (Table 4 and 5) describing the relation between ROE and ROA it should be noticed that in foreign enterprises and domestic ones as well these ratios are strongly correlated. However, the correlation between the level of debt and profitability ratios is negative in foreign enterprises. It suggests that the debt increase causes decrease of profitability but the correlation at level of -0.38 in case of ROA means that the strength of these relation is not high.

TABLE 4. MATRIX CORRELATION FOR DOMESTIC ENTERPRISES

<table>
<thead>
<tr>
<th>Ratios</th>
<th>ROA</th>
<th>ROE</th>
<th>Total debt/ total assets</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROA</td>
<td>1</td>
<td>0.7212</td>
<td>-0.1926</td>
</tr>
<tr>
<td>ROE</td>
<td>1</td>
<td>0.01</td>
<td>1</td>
</tr>
</tbody>
</table>

Source: Own elaboration

TABLE 5. MATRIX CORRELATION FOR FOREIGN ENTERPRISES

<table>
<thead>
<tr>
<th>Ratios</th>
<th>ROA</th>
<th>ROE</th>
<th>Total debt/ total assets</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROA</td>
<td>1</td>
<td>0.692</td>
<td>-0.3862</td>
</tr>
<tr>
<td>ROE</td>
<td>1</td>
<td>-0.1579</td>
<td>1</td>
</tr>
</tbody>
</table>

Source: Own elaboration

The analysis of descriptive statistics for the studied population is insufficient for accurate conclusions and does not prove the high degree of described relations. As a result, in further test procedures, the econometric modeling was used. The procedure was as follows:

1. The mean all variables (ROE and ROA ratios) of all years was measured
2. On the basis of these results the appropriate test to compare mean or median was used
3. The OLS regression was used in order to check whether the profitability depends on foreign or domestic capital engaged in the company
4. A series of tests checking the correctness of statistical estimation were conducted.
These analyzes indicate that the hypothesis about normal distribution of ROE, ROA and level of debt variables cannot be confirmed. Figures 1 and 2 present the statistical test results verifying the distribution normality which indicate that in case of analyzed variables the distribution is not normal.

ROA ratio
Test for differences between v1 and v4
Wilcoxon test
H0: medians of both groups of companies are equal
n1 = 1542, n2 = 1833
w (rank sum, sample 1) = 2.87333e+006
z = (2.87333e+006 – 2.6029e+006) / 8908.25 = 30.3574
Prob(Z > 30.3574) = 0

ROE ratio
Test for differences between v2 and v5
Wilcoxon test
H0: medians of both groups of companies are equal
n1 = 1542, n2 = 1833
w (rank sum, sample 1) = 2.82684e+006
z = (2.82684e+006 – 2.6029e+006) / 8908.25 = 25.1388
Prob(Z > 25.1388) = 0

None of the normal distribution means that there is inability to use the tests for means equality in the analyzed groups of foreign and domestic companies. As a result for further inference the nonparametric tests should be used. It was decided to use the test of Wilcoxon rank sum to check whether the ROE and ROA median of foreign and domestic enterprises are statistically equal. According to the testing methodology, the H0 states that median of both populations are equal.

The Wilcoxon test shows the results for both variables. It indicates that ROE and ROA medians of both - foreign and domestic companies are not equal. This part of analysis indicates that there is a statistically significant difference between ROA and ROE median values among group of foreign and domestic companies.

The next step is to detail the research by using linear regression. The aim is to check whether there is a linear relationship in the proposed simple regression model. It is assumed that ROE and ROA ratios of foreign and domestic enterprises depend on constant variable value described by the level of debt ratio and binary variable determining
whether the company is characterized by majority of foreign or domestic capital (1 - Polish companies, 0 - foreign companies).

**Figure 2. ROE distribution**

Despite the analysis indicates that all variables in the model are statistically significant (p-value is almost 0) the further tests, that verify the statistical significance of the model, unable the correct inference on the basis of these parameters. First of all the test of residuals normality distribution indicates that received results cannot be the basis of further inference because the normal distribution does not exist on the proposed specification. It should be emphasized that the authors have tested several possible model specifications, appropriate for the economic interpretation, but all chosen forms had to be considered as not decision-making because of statistical imperfection.

In consequence, the proposed model of regression in case of ROA and ROE ratios does not bring to conclusion that the coefficients of the variables well describe the linear relation between these ratios and the level of debt in the group of foreign and domestic enterprises. It means that residuals are too large dissonant what is not included in presented model of regression. The model specification is probably wrong or, in case of foreign and domestic companies in Poland, there is no significant relation between the level of debt and profitability described by ROA and ROE ratios. To conclude, the results of regression modeling indicate that there is no strong relation between ROE and ROA ratios and the level of debt in groups of foreign and domestic companies in Poland.

**Conclusion**

In relation to the formulated hypotheses, the hypothesis: large foreign companies in Poland are more profitable than large domestic companies is confirmed in area of descriptive statistics. The second hypothesis: large foreign companies are more indebted than large Polish companies - is confirmed. The verification of formulated hypotheses also indicate that the differences between obtained values and the linearity of their relation is poor. It suggest that there is no significant differences between financial effects of large foreign and domestic companies in Poland and these differences are the result of sample selection or incorrect variable selection.

The conducted research present that there is a statistical difference between profitability of selected companies - large companies with majority of foreign capital in Poland and large companies with majority of Polish capital. The analysis indicate that the differences in the average values of ROE and ROA ratios at level of tens percent should be taken into
account by assessing the companies performance in the context of their origin. The Authors state that the differences in capital sources in some ways illustrate the company performance in Poland what has the confirmation in the literature. The appropriate business culture, methods of management, willingness to take risks etc., which are related with the origin of the capital, bring certain results what might be directly observed in the financial effects of company activity. However, linking company profitability - measured by ROA and ROE ratios, with the source of company origin is relatively difficult. The initial studies suggest that this relation is not linear.

The statistical and econometric analysis indicate that despite significant differences between the profitability in selected groups of companies, the relation between the capital origin and company profitability is more complicated than linear function. That is the reason why further studies, concentrated on finding the correct relation between analyzed variables, are necessary.

In our opinion, the hypothesis that foreign companies are more profitable than domestic ones is verified positively in case of large companies in Poland. However, the detailed analysis in this sphere should be conducted in further studies.

References


