The FDI profile in the Romanian manufacturing sector

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Abstract. The beneficial impact of FDI was especially important for the transition economies in Central and Eastern Europe, in need for additional capital investment, as well as access to foreign technology and management techniques in order to modernise and improve their economies and narrow the development gaps. Foreign capital played a decisive role in the reshaping of the transition economies in Central and Eastern Europe. Among the benefits from FDI there were also some indirect effects on local firms, such as increased local competition that force other firms to improve their economic performance. The countries in Central and Eastern Europe have been recipients of large foreign capital inflows, driven by the several factors such as: market size and its potential development, factor costs, especially labor cost, but also human capital (education and skills), trade openness, infrastructure reform, price liberalization, fiscal policy, institutional development, technological absorption capacity. The combination of all these factors explains why foreign investors decide to invest in a certain area. Predominance of one or the other of the basic factors and motives in the firms’ decision give a certain profile to the respective investment. This paper is aiming to explore the underlying factors that drive the FDI behavior in Romania, in the manufacturing sector.

Keywords: foreign direct investment, FDI behavior, types of large FDI, Cluster Analysis

JEL Codes: C38, F21

1. Evolution of FDI

After 1990, the barriers to foreign capital accession were lifted in Romania as well, creating the potential for rapid reforms to market structures and for the development of the economy. The physical capital stock of Romania was largely obsolete at the end of the communist regime and modernization was urgent. Since Romania opened up for foreign capital, the much needed foreign influx of investment gradually increased, FDI showing substantial growth rates especially after the accession to EU, with a high of 9.3 bn euro in 2008. Unfortunately, the economic crisis reversed this trend, inducing a sharp decrease in the FDI inflows: 3.49 bn in 2009, 2.22 bn in 2010 and only 1.9 bn euro in 2011

2. Determinants and motives for investing

There have been numerous empirical studies that have focused on the location choices of MNCs and FDI flows in developed countries (Shaver, 1998; Head et al., 1995; Friedman et al., 1992; Culem, 1988; Nachum and Wymbs, 2005). Since early-2000s these studies have also started to concentrate on the transition economies within the CEE region (Campos and Kinoshita, 2003; Deichmann, 2003; Resmini, 2003, 2007;
Boudier-Bensebaa, 2005; Cieślak and Ryan, 2005). According to Slay (2003, p.1) "... relative to the rest of the world, this region has been an excellent bet".

The theoretical framework of this paper addresses three branches of the literature:

1. The first branch emphasizes the new economic geography (NEG) initiated by Krugman (1991a, 1993, 1995) and later synthesized by Fujita et al., (1999). Krugman (1996, 1998) demonstrates that the location of economic activity is determined by two groups of factors. First, those that include traditional natural advantages of particular locations such as central location, market size, and external economies that relate to supply linkages or others such as knowledge spillovers. Second, those that consist of market forces including all kinds of input costs and non-market factors such as pollution. While all the above forces play some role in the choice of location, empirical studies suggest that their importance may vary depending on a region, country or industry.

2. The second branch of the literature derives from the knowledge-based view of the firm (Cantwell, 1989; Cantwell and Janne, 1999; Cantwell and Piscitello, 2002, 2005). Cantwell (1989) states that knowledge-seeking investments vary across locations because they depend on location specific factors, such as the number of scientists and educated people in the area, previously established innovations, R&D intensity, the education system, and good linkages between educational institutions and firms.

3. The third branch addresses the literature on the determinants of FDI in transition economies (Lansbury et al., 1996a; Holland and Pain, 1998; Mayer, 2001; Estrin et al., 2001; Rasmini, 2000; Lankes and Venables, 1996; Garibaldi et al., 2001; Brenton et al., 1999; Cieślak and Ryan, 2005). For instance, Lansbury et al., (1996a) demonstrate that labour costs and research intensity have a significant influence on the pattern of inward investment. The evidence is consistent with the notion that some investors have been attracted to CEECs by a combination of relatively low labour costs and the availability of skilled workers in particular sectors and countries.

In conclusion, the literature usually categorizes foreign investors according to their reasons for investment as follows:

- new markets - market seekers (usually the investors are internal/domestic market oriented)
- low labour costs and skilled labour force or/ and natural resources (efficiency seekers)

Countries in Central and Eastern Europe generally offer attractive conditions, especially comparative lower labour costs, along with educated and skilled labour force; they compete for attracting more FDI. Consequently, important foreign investors preferred to re-localize completely or partly or to open branches in these new areas. The ways of penetrating these economies are as follows:

- Full new investment (green field investment)
- As participant in the privatization process (brown field investment) or as buyer of already existing private or state owned companies

3. The dataset description and methodology

The data for the present study derives from the questionnaires, which were designed to examine the locational determinants of FDI in the Romanian Development Regions. The data collection was undertaken in June 2011. The list of 556 foreign companies was obtained from Romanian National Trade Office and it included names and addresses of foreign companies that have already established their presence on the Romanian market except Bucharest – Ilfov Region, in the form of FDI, before 2009 and having activity in 2009, in the manufacturing sector (10-33 NACE), having the number of employees >100 and also having a foreign contribution to capital >50%.
Due to the fact that the given data set was two years old, we examined its validity by checking the contact details of each investor using the internet and phone. We found that 15 companies were no longer reachable and 10 were double-counted. Out of this total number of firms, we received 235 answers, which is a good rate of responses.

The structure of questionnaire covered topics ranging from general information about the foreign companies (e.g. year of establishment, origins, employment, sales and turnover) to specific information about the Romanian location (e.g. entry mode, region, motive for investing).

In order to encourage participation in the survey, a system of third contacts, using the internet and phone, were established with potential respondents. First, a brief prentice e-mail was sent out to the senior management of all the companies for which the contact details had been verified, prior to sending the questionnaire. The aim of the letter was to explain the objectives and importance of the study, and to request their participation in it. Second, the questionnaire was sent out to the respondents who had expressed interest in participating in the study. Finally, a thank you letter was sent to all respondents after the collection of the results.

In order to reveal the types of large FDI in the manufacturing sector, we applied cluster analysis. The aim was to identify the groups which consist of similar firms (according to certain criteria), but the firms should be different from one group to another. Grouping criteria are those known in the literature as important for the FDI profile (cost level or efficiency seeking, and prospects of the market in Romania or market seeking), (Birsan M., Buiga A., 2008) We based our estimation on the firms’ answers regarding the importance of these criteria for the decision to invest in Romania. Since the manufacturing sector comprises not only capital/technological intensive activities, but also labor intensive activities, especially in some subsectors, we expect FDI in this sector to be of both types: efficiency seeking, and market seeking as well, but in various proportions. The proportion of each type is important, since it expresses two different ways of the manufacturing sector’s integration into the world economy through FDI flows. The aim of this part of our research was to check whether or not the FDI types in the manufacturing sector fit the —classical types mentioned in the literature.

4. Types of large FDI in the Romanian manufacturing sector

For grouping the firms we used a hierarchical (numerical) clustering method. Since the variables in our questionnaire are not of numerical nature we used codification – from 1, which is the least important, to 5, the most important and then considered them as being numerical scores. To group the firms, firstly we have chosen the two characteristics: the cost level (efficiency seeking) and the perspectives of the market in Romania (market seeking). These two clustering characteristics were based on the variables which were constructed using the answers from the 17th and the 18th questions (from the 6th module) of the questionnaire. From the total sample only 210 firms could be assigned to one of the two clusters and therefore the other 25 that couldn’t (using our proposed method) were dropped from the analysis.

The first significant difference between the two clusters is revealed right from the beginning of our analysis process and is due to the volumes of the groups: 147 efficiency seeking firms and only 63 market seeking ones. Thereby is clear right from the beginning that Romania was considered more often as an alternative by the foreign investors who seek for a place were to develop a manufacturing facility (that will work for a already existing foreign market).

Another important difference is revealed when analyzing the method used by the investors when they decided to start the investment. A significantly higher percentage of those seeking for efficiency (71.2%)
started a Greenfield investment (62.3% of those seeking for market started a Greenfield investment). Also noteworthy is the fact that over two thirds of the respondents decided for a Greenfield investment.

As it was expected a significantly higher percentage of the firms that were labeled as efficiency seeking are sending their products mainly to export. Almost 98% of them send their products to export when only 55.6% of the firms that are market seekers send the most important part of their products to export.

<table>
<thead>
<tr>
<th>MARK_EFF</th>
<th>MARKET</th>
<th>Count</th>
<th>Export</th>
<th>Romanian market</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>MARKET</td>
<td>35</td>
<td>28</td>
<td>63</td>
</tr>
<tr>
<td>EFFICIENCY</td>
<td></td>
<td>143</td>
<td>3</td>
<td>146</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>178</td>
<td>31</td>
<td>209</td>
</tr>
</tbody>
</table>

% within MARK_EFF: 55.5% | 44.4% | 100.0%
% within MARK_EFF: 57.3% | 2.1%  | 100.0%
% within MARK_EFF: 65.2% | 14.8% | 100.0%

Table 1 - Output main destination

When talking about the level of technology involved by the production process there is not much difference between our two clusters. About 77.8% of the market seeking firms and 81.0% of the efficiency seeking ones are Low Tech Companies (Table 2). Even though there is not a significant difference between the two clusters it is important to note that over three quarters of the foreign investments in the manufacturing sector are low tech companies. This is another evidence of the fact that the main advantage taken in consideration by a foreign investor when deciding to come to Romania is the cheap labor force.

<table>
<thead>
<tr>
<th>MARK_EFF</th>
<th>MARKET</th>
<th>Count</th>
<th>LT</th>
<th>HT</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>MARKET</td>
<td>49</td>
<td>14</td>
<td>63</td>
<td></td>
</tr>
<tr>
<td>EFFICIENCY</td>
<td></td>
<td>119</td>
<td>28</td>
<td>147</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>168</td>
<td>42</td>
<td>210</td>
<td></td>
</tr>
</tbody>
</table>

% within MARK_EFF: 77.8% | 22.2% | 100.0%
% within MARK_EFF: 81.0% | 19.0% | 100.0%
% within MARK_EFF: 80.0% | 20.0% | 100.0%

Table 2 – Firm’s technological profile

Going further with our analysis a significant difference involving the technological profile of the respondents is revealed. The difference appears when dividing each of the two technological profiles Low Tech and High Tech in two dichotomous classes Low Tech and Medium Low Tech and High Tech and Medium High Tech. The companies from the High Tech and Medium high Tech class do not show any significant difference (also important to note here, is the low number of companies with these profiles). A significant difference appears when talking about the low tech and medium low tech firms. As it is clearly shown in the Table 3 a significantly higher percentage of the efficiency seeking respondents are having a Low Tech technological profile. As mentioned before this can be considered as a very strong evidence of the fact that companies that seek for efficiency are mainly having a low technological production process and are choosing Romania for the low cost of the labor force.
Major differences are visible between our two groups when we are talking about a firm’s profile versus the type of the initial investment. The efficiency seeking firms that have a medium low technological profile are more inclined for a Greenfield investment (66.7%). Also a significant difference is easy to see when analyzing the companies with a medium high technological profile. The same phenomena is present and therefore firms that seek for efficiency prefer in a significant higher percentage (73.9%) a Greenfield type of investment.

Noteworthy is also that all efficiency seeking companies that have a high technological profile started their investment in Romania as a Greenfield one (this fact might be interesting when assessing the technological level of the Romanian companies and the Romanian research level from the higher education system).
In order to reveal other significant differences between our two clusters we continued our research by analyzing the results obtained at the first sixteen items of the 6th question (Table 5). We calculated the average score for each item for both clusters. The results are listed in the following table:

<table>
<thead>
<tr>
<th>Infrastructure</th>
<th>Market</th>
<th>Efficiency</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Transportation costs</td>
<td>3.08</td>
<td>2.54</td>
</tr>
<tr>
<td>2. Good road quality</td>
<td>1.78</td>
<td>1.59</td>
</tr>
<tr>
<td>3. The existence of the nearby airports</td>
<td>* 1.84</td>
<td>2.37</td>
</tr>
<tr>
<td>4. The infrastructure development level (utilities)</td>
<td>3.22</td>
<td>3.12</td>
</tr>
<tr>
<td>5. Favourable geographical conditions for production transportation</td>
<td>* 3.32</td>
<td>2.75</td>
</tr>
<tr>
<td><strong>Labour Force</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Available labor force</td>
<td>* 4.21</td>
<td>4.59</td>
</tr>
<tr>
<td>7. Low costs of the labor force</td>
<td>4.19</td>
<td>4.37</td>
</tr>
<tr>
<td>8. Available Qualified labor force</td>
<td>4.06</td>
<td>3.93</td>
</tr>
<tr>
<td>9. High education level of the population</td>
<td>2.93</td>
<td>2.71</td>
</tr>
<tr>
<td><strong>Concentration Factors</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Available raw materials suppliers in the region</td>
<td>* 3.02</td>
<td>2.33</td>
</tr>
<tr>
<td>11. The existence of other companies with the same profile</td>
<td>2.44</td>
<td>2.48</td>
</tr>
<tr>
<td>12. The existence of other foreign companies in the region</td>
<td>2.67</td>
<td>2.26</td>
</tr>
<tr>
<td><strong>Other Factors</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13. Tax incentives offered to investors in the region</td>
<td>2.47</td>
<td>2.09</td>
</tr>
<tr>
<td>14. The existence of universities and research centers in the region</td>
<td>* 2.20</td>
<td>1.67</td>
</tr>
<tr>
<td>15. Low rent levels and low land price</td>
<td>* 3.70</td>
<td>3.12</td>
</tr>
<tr>
<td>16. Cheap available raw materials</td>
<td>* 3.03</td>
<td>1.92</td>
</tr>
</tbody>
</table>

Table 5 – Foreign Direct Investments determinants

By analyzing the values from Table 5 it is obvious that firms that are seeking for efficiency are more interested in the existence of the nearby airports (item number 3), the available labor force (item number 6), the low costs of labor force (item number 7) and the existence of the other companies with the same profile (item number 11) (those that have a higher average score for the second column). Also important to note is the fact that only the differences registered for the existence of the nearby airports (item 3) and the available labor force (item 6) are statistically significant at a Confidence level of 95% (see Appendix).

Other significant differences are those registered for the favorable geographic condition (item 5), the available raw materials suppliers in the region (item 10), the existence of universities and the research centers (item 14), the low rent levels and low land price (item 15), the cheap available raw materials (item 16). All these 5 items were taken in consideration more by the companies that are seeking for new markets.
5. Conclusion

Our approach clearly reveals that two different types of foreign direct investments in Romania can be identified: market seeking companies and efficiency seeking companies. The differences between the two clusters, revealed by our analysis are significant when talking about the way that the investment was started and also about the technological level of the production process. Noteworthy is also the fact that Romania is mainly a destination for firms that are seeking for efficiency.

6. Acknowledgements

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7. References


