

Local determinants of the spatial distribution of exporters in Poland: the role of FDI

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Firms' locational preferences have been subject to analysis for a long time. Special attention is often paid to the locational choices of foreign-owned enterprises (FOEs), due to their unique characteristics stemming from ownership, internalisation and localisation advantages (J.H. Dunning's OLI paradigm).

Usually, firm's choices are assessed using the data on location. We propose a deeper insight into the problem, by using data on localisation of exporters. Therefore we refer to one of the most important aspects of FOEs activity, which is exporting. It reflects many functions performed by FOEs, which (as defined by Forsgren 2008) are: domination, coordination, knowledge creation and exchange, networking designing and politicising.

An inquiry into exporting activity, in fact, is a part of competitiveness' assessment. Ability to sell (ability to export) reveals firms' and regions' competitive advantages – to which FOEs are contributing. We justify our focus on FOEs and their comparisons with domestic firms by the following reasons: (a) as already mentioned, due to their OLI advantages, FOEs are different, (b) FOEs contribution to Poland's exports is approx. 65%, however is strongly diversified by regions (especially at LAU 1 level - poviats) and by industries; (c) often, being the part of MNE they contribute to intra-industry trade, which translates into locational choices.

We use a unique database, comprising information on the value of exports and imports, the number of exporters and importers, the number of exporters and importers per product at CN four digit level, for Poland's LAU 1 over the period 2005-2015. The data on individual enterprises, which would be the most wanted way of the locational preferences assessment for Poland – are not available.

However, the LAU 1 scale allows for a fairly detailed level of the analysis and embracing (at least to a certain degree) heterogeneity of local units. We combine the data on poviats' export performance with structural characteristics of areas, available in the public statistics. Furthermore, we add information on the mean distances (in km), to specific places of interest (like a motorway, public road, sea/port, airport, border, railway line, railway station, regional capital city), computed in a GIS software. Additionally, we use poviats' the TFP estimates from Ciołek & Brodzicki (2016). Altogether, we achieve a consistent dataset that enables us to identify various locational factors as postulated by economic geography, locational/FDI/trade theory.

To depict the spatial distribution of exporters in Poland we use global and local indices of spatial association, namely the Moran's I statistics, tested with different schemes of spatial weight matrices. While presenting the results, we use a distance threshold of ca. 24,5 km as the one that suits the best spatial association among poviats. In the next step, we run a series econometric regressions to identify the role of specific determinants of the locational decisions of exporters in Poland, by estimating the expected value of the number of exporters within poviats. Due to the character of the data of the dependent variable (count), we utilize the

Poisson/negative binomial modelling approach, run jointly for domestic and FOEs for all poviats and then disjointly for domestic and foreign-owned entities in order to identify potential differences in their locational choices.

The strongest concentration of exporters can be noticed within and the in close proximity to the biggest cities in Poland (Warsaw, Poznan, Wroclaw, Katowice, Tri-City) and metropolitan areas. According to the Moran's I statistics, the level of spatial agglomeration of exporters in Poland in 2015 was rather moderate ($I=0.240$) and the above-mentioned areas were surrounded by others with high no. of exporters.

As could have been expected, the spatial distribution of exporters differs between domestic and foreign-owned exporters. We have identified 6 concentration nodes of domestic exporters, clustered around the major metropolitan areas, predominantly in the central and southern Poland. However, for FOEs, their number is lower – 3. Apart from the capital city of Warsaw, it is also Poznan and Wroclaw. They represent the most attractive locations attracting foreign investors. At the same time, the global Moran's I statistic is lower in the case of foreign-owned exporters ($I=0.195$), indicating a less clustered spatial pattern of distribution of foreign-owned exporters in comparison to the domestic ones ($I=0.273$).

Due to the more disperse distribution of foreign-owned exporters except for the main metropolitan areas, there is not enough critical mass for positive spillover effects into the neighbouring areas to initiate, as is the case with domestic entities.

In general, exporters are more frequently observed in better developed areas, with superior infrastructure quality and a specific geographical location. Out of the second-nature geographical factors, close proximity to the border, domestic road network, express and highway roads, regional capital cities, railway lines, ports and airports seem to play a decisive role in locational choices. Domestic and in particular international accessibility of a given area plays a major role.

The role of the distance to the border is heterogeneous, depending on the direction (Poland borders 7 countries) indicating the unequal role of particular country-specific effects. As far as structural factors are concerned – greater concentration of large firms, the sectoral structure of the local economy with a dominance of industry or services, a good situation on a labour market, the high share of the population with a higher education (proxy for human capital endowment), and area's size are important. The overall number of exporters is also facilitated by the presence of FOEs within poviats' economies.

The most imminent differences between domestic and foreign owned exporters, with regard to the locational determinants, is visible from the dissimilar significance of selected factors.

Foreign-owned exporters are more frequently located within close proximity to the newly built express roads and highways, as compared to the domestic exporters, which tend to locate closer to the national roads instead. Similar differences are observed as regards to the mean salary – domestic exporters chose more often the areas with lower average salary, while foreign-owned with higher levels (possible endogeneity – to be checked and eliminated).

The role of geographical distance to the border is also heterogeneous: domestic entities located more often close to the border with the Czech Republic, while foreign-owned entities – the i.e. German, indicating the role of proximity to selected foreign markets.

Conclusions and policy implications

Referring to exports, we show an important, often neglected aspect of spatial inequalities. Regions differ in terms of GDP per capita, economic structure, capital and labour endowment, productivity, etc. Also in terms of export performance and related localisation preferences revealed by exporters – regions differ.

According to the message of the New Economic Geography (agglomeration, Krugman 1991) and firms' heterogeneity (Melitz 2003), we envisage these inequalities to become even stronger over time. These leads to important implications for regional policy, especially in the presence of strong learning by exporting effects.

Analysis of locational preferences, shows FOEs' bias towards the southern and western part of Poland, as compared to non-FOEs. This implies that FOEs activity is contributing to regional inequalities (historically inherited east-west differences). The question is, to what extent (if at all) they shall be reduced by regional policy measures. One has to remember that the "hot spots" of exporting activity should at least in theory reflect the revealed comparative advantages of specific areas. According to the smart specialisation strategy approach, such advantages shall be strengthened, in order to improve the overall competitiveness and enhance growth prospects.

Furthermore, we show the concentration of exports and exporters along transportation (road) network in Poland. For FOEs, east-west oriented transportation network seems to determine exporting activity. In the case of non-FOEs, the picture is more diversified/mixed. It reflects FOEs' preferences towards locations suitable for supplying the Western EU member states.

Regions, municipalities and cities are competing for investors. Our research, by showing the determinants of their locational choices, guides how to improve the investment climate in order to attract exporting firms. As predicted by heterogeneous firms theory by M. Melitz and proved in the recent empirical research, exporters are the most productive firms, therefore, their contribution to regional competitiveness is more than proportional.

The identified LAU 1 areas, with a dominance of FOEs in total exports, are those that shall be monitored, as they are potential most vulnerable to the consequences of globalisation. Many FOEs are parts of the MNEs, meaning that their activity might be (relatively quickly) moved elsewhere if it would suit the strategy of the MNE.

References

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