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Impact Of The Manufacturing Sector On The Export Competitiveness Of European Countries – A Spatial Panel Analysis

Abstract

The purpose of this paper is to determine how changes in the export competitiveness of the EU economy (measured by exports and net exports) depend on changes in the competitiveness of processing industries, on the basis of manufacturing data from 19 EU countries over years 1995-2009 and using a spatial panel data model. The determinants of export competitiveness are selected in the light of predictions from international trade theory, growth theory and the theory of innovation. In particular, the paper explores how the size of foreign demand, the value of domestic demand, the level of ULC in the sector, the degree of openness of the sector to foreign markets, labour productivity and intermediate consumption in a sector affect the export competitiveness of the European economies selected. The results from spatial data models lead to a conclusion about the statistical significance of spatial dependencies in export competitiveness modelling. The analysis indicates the different determinants of export competitiveness, both if it is measured by export value and if it measured by net exports. The authors hope that the results will be a voice in the discussion on enhancing the competitiveness of European industrial sectors

***Keywords**: international trade, export competitiveness, manufacturing, spatial data model, European Union*

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1. Introduction

In 2010, the European Union announced a new 'Europe 2020 Strategy' with three key drivers for the next decade: smart growth (fostering knowledge, innovation, education and a digital society), sustainable growth (making production more resource-efficient while boosting competitiveness) and inclusive growth (increasing participation in the labour market, the acquisition of skills and the fight against poverty). Although the Strategy sets five targets, which define where the EU should be by 2020, each EU country is trying to find a way to achieve these objectives. One of the possible strategies is an export growth strategy, based mainly on the export of manufacturing.

The positive experiences of Asian countries in the 90s, which achieved sustained economic growth through a strong export orientation of their economies could be a sufficient stimulus. However, nowadays in the literature there is a discussion of whether an export competitiveness oriented policy is still feasible (Ketels 2010, p.4). Some empirical analyses provide insights into a positive and stable relationship between trade and growth (Baldwin 2003, p. 502; Dollar, Kray 2002, p.138) or between trade and productivity (Coe, Helpman 1995, p. 962; Ciccone, Alcala 2004, p.623). Other economists are more sceptical, especially regarding the stability of this relationship over time (Rodriquez, Rodik 2000, p. 262; Clemens, Wiliamson 2001, p. 44). Nevertheless, there is no consensus in the discussion about the usefulness of an export grow strategy, and export competitiveness is still one of the most popular tools for the assessment of country competitiveness and still the central element in the competitiveness policies of many countries.

On the basis of the numerous reports we can conclude that the most competitive countries are often the most industrialized, providing leadership in technology and innovation. Reffering to UNIDO's Industrial Development Report 2012-2013 and Global Competitiveness Report 2013-2013, we can confirm that the most competitive economies in the world – such as Switzerland, Singapore, Germany, the USA and Japan – simultaneously belong to the group of the top ten most industrially competitive nations. Furthermore, most EU countries reach a better position among the most industrialized countries in the world than their ranking in the Global Competitiveness Report.[1] According to these reports, for example, the Polish economy is ranked in 41st place among 144 competitive economies (measured by the Global Competitiveness Index) but

[1] For more about GCI, see: www. http://reports.weforum.org/global-competitiveness-report-2012-2013/; to find out more about CIP, see: http://www.unido.org/fileadmin/user_media/Services/PSD/Competitive_Industrial_Performance_Report_UNIDO_2012_2013.PDF

in 25th place in the ranking of 133 industrialized countries measured by CPI (Competitive Industrial Performance). Therefore, the industrial potential of the Polish economy is much greater than its global competitiveness level. The strength of Polish industry lies mainly in a large share of value added manufacturing in total GDP (22.5% in 2013) and of manufactured exports in total exports (87.83% in 2013), which justifies the choice of a strong manufacturing export oriented strategy in the Polish economy.

To assess whether it is worth focusing on an industrial goods export growth strategy, an evaluation of how manufacturing exports determine the competitiveness of EU economies is needed. The purpose of this article is to determine how changes in the competitiveness of the economy (measured either as total exports or net exports) depend on changes in the competitiveness of industry, using manufacturing data for selected 19 EU countries in years 1995-2009 and a spatial panel data model. Hypotheses about the spatial relationships between the net export/export value of selected countries will also be verified. The paper is organized as follows. The next section contains discussion of different approaches to defining and measuring export competitiveness. In section 3, the determinants of export competitiveness are discussed. Section 4 opens up the methodological part of the paper by introducing the methodology of spatial panel data models. Section 5 presents the data and the results of the analysis, and the last section gives our conclusions.

2. Export competitiveness as a narrow definition of macro-competitiveness - theoretical issues

Over the last three decades, the term competitiveness has been widely used and sometimes abused. Despite this, the concept of competitiveness is still not clearly defined. Even Porter, in his book "The competitiveness advantage of nations" (Porter 1990) does not directly define competitiveness, even though he uses the term repeatedly.

The main difficulties in defining competitiveness are met at the macro level. Krugman call these attempts a "dangerous obsession" because, unlike firms, nations cannot be uncompetitive, i.e. the line between a competitive economy and a non-competitive one does not exist (Krugman 1981, p.960). Despite the lack of consensus among economists on how to define international competitiveness at the macro level, there is a consensus in the literature that the origin of the concept of international competitiveness should be found in mainstream theories of international trade. In this strand of literature, national competitiveness is understood narrowly as " the degree to which [a nation] can,

under free and fair market conditions, produce goods and services that meet the test of international markets" (President's Commission on Competitiveness 1984, p.1). Thus, the more products and services a country can sell abroad, the more competitive it is. Nowadays, definitions of macro competitiveness are much broader. Good results in international trade are simultaneously connected with the achievement of a high standard of living for citizens (European Commission 2000, p.17), high real domestic incomes (OECD 1992, p.11), productivity (Word Economic Forum 2012, p.3), or simply better prosperity for people.

Therefore, a variety of country competitiveness definitions result from the different aspects of the economy to which these definitions refer. In this paper, we do not assess all aspects of competitiveness but focus mainly on export competitiveness. Export competitiveness, which is often defined as "the ability of the country to produce and sell goods and services in foreign markets at prices and quality that ensure long-term viability and sustainability", can be treated as a synonym of the above-mentioned narrow definition of national competitiveness. This is because the value of a country's exports is generally used as the most important diagnostic tool to measure the condition of an economy's fundamentals and the best way to assess the capabilities of national companies to compete in international markets (Farole 2010, p.5).

The use of the value of exports as an index of export competiveness has sometimes been criticized. It has been held that analysis based on this figure could lead to inconsistent or even contradictory findings, due to the many possible economic phenomena which affect the value of exports (Carneiro, Rocha, Silva, 2007, p.3). An alternative approach is to use net exports (instead of total exports) as a measure of export competitiveness (Deardorff 1980, pp. 941-957, Greehalgh,Taylord 1990, pp.12-15, Greennhalg, Taylord, Wilson 1994, pp.102-135). The use of this measure is particularly appropriate in view of the serious external imbalances from which many EU countries still suffer. If we take net exports as our indicator of export competitiveness, we understand export competitiveness as "the ability of the economy to cope with international competition and maintain a high rate of domestic demand without compromising the trade balance" (Wysokińska 2001, p.36). In this paper we analyze export competitiveness using both indicators of export competitiveness, i.e. the values of both, total exports and net exports.

There are various papers exploring the relationship between export competitiveness, measured by export value, and its determinants. Very often these studies consider only one particular European economy, not the EU countries as a single group. Moreover, few analyses related to the export competitiveness of EU countries focus on evaluating the influence of one particular factor on the export value of the European Union (e.g. labour costs,

productivity, innovation, or relative prices). There are no papers examining the impact of all these determinants on the export competitiveness of the EU countries within a single study. Furthermore, the role of spatial relations in export competitiveness is always ignored. The present paper, therefore, fills this gap.

It is even harder to find analyses of EU export competitiveness measured in terms of net exports. In the literature we find the view that competitiveness and trade deficits are two different things (Lenz 1991, pp.89-95) and that the cause of trade deficits is connected to other macroeconomic fundamentals than the level of an economy's competitiveness (Hilke, Nelson 1987, p.152; Parry 1994, pp.20-23). The present study checks the hypothesis of a significant impact of industrial competitiveness on the trade balance in the EU countries.

3. The main determinants of export competitiveness and spatial relations in export competitiveness research

In the literature we can find a few dominant trends identifying the determinants of export competitiveness of economies. First of all, analyses based on classical and neoclassical foreign trade theories focus on the price or non-price competitiveness of the economy, determined by decreases in the real exchange rate (Boltho 1996, p.3), by lower unit labour costs, or by low relative values of export prices (Aiginger 2009, p.35).

The second trend in research is connected with Schumpeter's findings and concentrates on R&D intensity and its impact on the international competitiveness of the economy (Lall, Kumar 1981, p.453-463; Hirsch, Bijaoui 1985, p.247; Wakelin 1998, p.840). In addition, analyses relating to the new theories of international trade and growth based on a model of imperfect competition (Grossman, Helpman 1991) focus on studying the relationship between the intensity of innovation among sectors and the level of international competitiveness of the economy (Amendola et al 1993, pp.451-471, Amendola, Padoan, Guerrieri 1992, pp.173-197; Soete 1981, pp.638-660; Fragerberg 1988, pp.355-374).

The third line of research is related to the 'learning by exporting' mechanism, where export activity influences the efficiency level of firms in the domestic market and their productivity, and thereby affects the growth of international competitiveness of the economy (Wagner 2007, p.67).

Other studies indicate other determinants of international competitiveness which do not fit the above-mentioned trends, such as: degree of concentration, degree of product differentiation, degree of openness, or the intensity of intra-industry trade (Helpman, Krugman 1985, pp.16-29).

In order to meet the aims of this study, here we focus on six determinants that affect competitiveness, some at the macro level (exports) and some at the mezzo level (industry sector). The choice of determinants is to a certain extent conditioned by the availability of statistical data.

The basic determinant of export competitiveness are prices. The most commonly used measures of price competitiveness are the real effective exchange rate and price indices such as the CPI, PPI and relative unit prices. In addition to the assessment of price competitiveness, a cost approach is used, assuming that the price level is determined mainly by the level of the production costs involved, mainly labour costs. Within this approach, the best measure is unit labour costs (Peters 2010, p.10) and this will be adopted as one of the determinants employed in this paper. We hypothesize that a decrease in unit labour costs will promote export competitiveness.

The second determinant of export competitiveness chosen here is foreign demand. The vast majority of EU country exports are directed at other EU markets. The EU market is highly integrated, barrier-free and contains trade partners with a relatively similar demand structure. Therefore, the greater the demand from foreign partners, the greater the value of exports a country might expect to achieve (Ghose, Kharasa 1993, pp.377-398).

The third factor which could influence the value of total or net exports is domestic demand. One might hypothesize that a high level of domestic demand does not lead to improving the competitiveness of exports, i.e. a significant increase in domestic demand for a sector's products may discourage domestic manufacturers from increasing sales abroad. On the other hand, exporters who often incur high costs of entering a foreign market will probably increase their exports even in the case of domestic demand growth. Porter also holds the view that a growth in domestic demand positively affects export competitiveness, i.e. the bigger demand from national buyers, the faster businesses update and modernize their offer, and the more exports can be expected (Porter 1990).

Another factor which positively influences export competitiveness is openness of the economy. It is likely that openness of the market causes a greater accumulation of production factors and a better transfer of production factors to more productive sectors, which creates the possibility of achieving comparative advantages. In addition, openness allows economies of scale and the benefits from agglomeration to be achieved in production, which can accelerate the transfer of technology (Nair, Madhavan, Vengedasalam 2006, pp. 878-890).

A further determinant of export competitiveness chosen in this study is labour productivity. Growth in labour productivity positively translates into an increase in export competitiveness through two channels. We call the first of these the technological effect. This is reflected in an increasing number of new

products or new markets. The second channel of transfer of labour productivity growth to export competitiveness is visible in competitive pricing, i.e. low unit labour costs for domestic producers (Ciccone, Alcala 2004, pp.613-646).

We also use intra-industry indices to explain changes in the export competitiveness of selected EU countries. Intra-industry trade refers to the exchange of similar products belonging to the same industry, i.e. the same types of goods are both imported and exported. Countries with similar relative amounts of factors of production are predicted to have intra-industry trade and they gain from this due to economies of scale (lower costs) and more consumer choice (Krugman 1981, pp.959-973).

Next, we choose investment intensity as a determinant of export competitiveness in our analysis. This indicator is calculated as the ratio of gross fixed capital formation in a certain industry to the value added in that industry and shows how much of the new value added in the economy is invested rather than consumed. We hypothesize that the more investment there is in gross fixed capital, the more modern production methods are, and so we expect greater chances of winning the competition in international markets.

The final determinant of export competitiveness that we choose for our study is intermediate consumption in industry, calculated as the share of intermediate consumption related to production value. Nowadays, the increasing fragmentation of production across borders and the increasing use of foreign inputs can lead to a situation in which a country exports a lot but the value added to the gross value of exports is small (Yuqing 2011, p.9). We expect that the smaller the share of intermediate consumption in the production of a sector is, the more competitive the economy gets.

Trade is spatial by nature, but the international trade literature pays less attention to space. Paul Krugman was the first to present a model of trade between two regions (Krugman 1990, p.8). However, the most popular econometric model in which a determinant of trade flows is the distance between countries is the gravity trade model (Tinbergen 1962, pp.262-293). The greater the distance between countries, the greater the cost of transport and so less trade flows between two countries. The current nature of modern international trade – i.e. production outsourcing, international fragmentation of production processes and the emergence of international production networks – allows us to hypothesize that the strength and direction of exports to one country also depend on the strength and direction of exports to a neighbouring country.

4. Spatial dependence and spatial panel data models

A sample which consists of N cross-sectional observations of individuals over T time periods allows the estimation of a panel data model written as follows:

$$y_{it} = x_{it}\beta + \varepsilon_{it} \quad i = 1,2,...,N \quad t = 1,2,...,T, \tag{1}$$

where y_{it} is a NT ×1 vector, x_{it} is a NT × K matrix and the random disturbance ε_{it} is a NT ×1 vector. Random disturbance can be decomposed into individual effects α_i, time effects μ_t, and white noise ξ_{it}. Depending on the character of individual and time effects, they are treated as fixed or random effects.

This form of the model ignores a potentially significant spatial dependence between the objects analyzed, which can lead to misspecification, loss of information that is important for the analysis, and finally to incorrect conclusions. It seems to be crucial to take neighbour dependence into consideration. In spatial econometrics, neighbour dependence is expressed by means of a spatial weight matrix, which shows the interactions between units in different locations. This reflects an influence of unit i on unit j and vice versa. There are several ways of constructing a spatial weight matrix, but the correct selection of the matrix should take the nature of the phenomenon analyzed into account.

A panel data model including spatial interactions is given as:

$$\begin{aligned} y_{it} &= \lambda(W_1 y)_{it} + x_{it}\beta + \alpha_i + \mu_t + \xi_{it} \\ \xi_{it} &= \rho(W_2 \xi)_{it} + u_{it} \end{aligned}, \tag{2}$$

where W_1 is a spatial weight matrix which reflects the spatial autoregression of variable y, and W_2 is a spatial weight matrix for the spatial autocorrelation of random disturbance.

Assuming an equality of the spatial processes of the dependent variable and error model, matrices $W_1 = W_2 = W$. Row-standardization results in the parameters of the spatial structure, λ and ρ, belonging to < -1, 1 >.

Taking into consideration all the above-mentioned, the spatial dependence in fixed effects and random effects two-way panel data models are as follows:

1. Spatially lagged endogenous variable with individual effects treated as fixed – SAR FE model:

$$y_{it} = \alpha_i + \mu_t + \lambda(Wy)_{it} + x_{it}\beta + \xi_{it} \tag{3}$$

2. patially autocorrelated error components with individual effects treated as fixed – SE FE model:

$$\begin{aligned} y_{it} &= \alpha_i + \mu_t + x_{it}\beta + \xi_{it} \\ \xi_{it} &= \rho(W\xi)_{it} + u_{it} \end{aligned} \tag{4}$$

3. spatially lagged endogenous variable with individual effects treated as random – SAR RE model:

$$\begin{aligned} y_{it} &= \alpha_0 + \lambda(Wy)_{it} + x_{it}\beta + \varepsilon_{it} \\ \varepsilon_{it} &= \alpha_i + \mu_t + \xi_{it} \\ var(\varepsilon_{it}) &= \sigma_\alpha^2 + \sigma_\mu^2 + \sigma_\xi^2 \end{aligned} \tag{5}$$

4. spatially autocorrelated error components with individual effects treated as random – SE RE model:

$$\begin{aligned} y_{it} &= \alpha_0 + X_{it}^T\beta + \varepsilon_{it} \\ \varepsilon_{it} &= \alpha_i + \mu_t + \xi_{it} \\ \xi_{it} &= \rho(W\xi)_{it} + u_{it} \end{aligned} \tag{6}$$

5. Data and Empirical Results

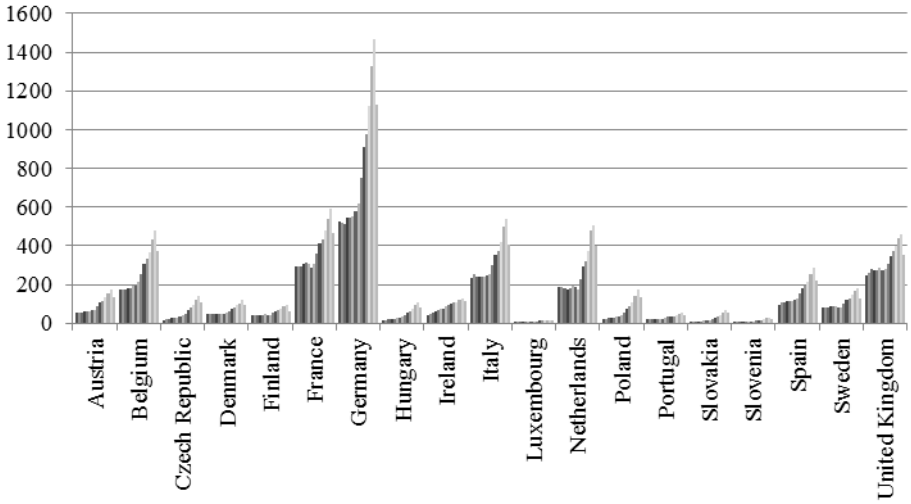
The theory of spatial panel econometrics is employed in order to explain how domestic demand, foreign demand, labour productivity, openness of economy, export prices, intra-industry trade, investment intensity and the intermediate consumption share of production influence the export competitiveness of European economies. As a measure of export competitiveness, we use two variables independently: exports (EXit) and exports in relation to imports (NEXit). Figures 1 and 2 present the endogenous variables over the period 1995-2009.

In this investigation, domestic demand (DDit) is expressed as the sum of the final consumption expenditures of households, non-profit organization

serving households and government, fixed capital formation and changes in inventories and valuables. The foreign demand indicator (FDit) is built as the sum of the imports of 34 OECD and selected non-OECD countries from the countries included in the analysis. Labour productivity (LPROit) is measured as the ratio of the gross output of industry to the total hours worked by persons engaged in it. As a measure of openness of the sector (OPENit) we employ the share of exports in the gross value added. Export prices are described by unit labour costs (ULCit). The rest of the variables – intra-industry trade (IITit), investment intensity (IIVAit) and the intermediate consumption share of production (ICSPit) – are taken directly from databases. All data are expressed in U.S. dollars.

Finally, we examine 19 countries[2] using balanced panel data for the period 1995-2009. The sources of the dataset used for the calculation are the OECD STAN Database and the WIOD input-output tables, all data are

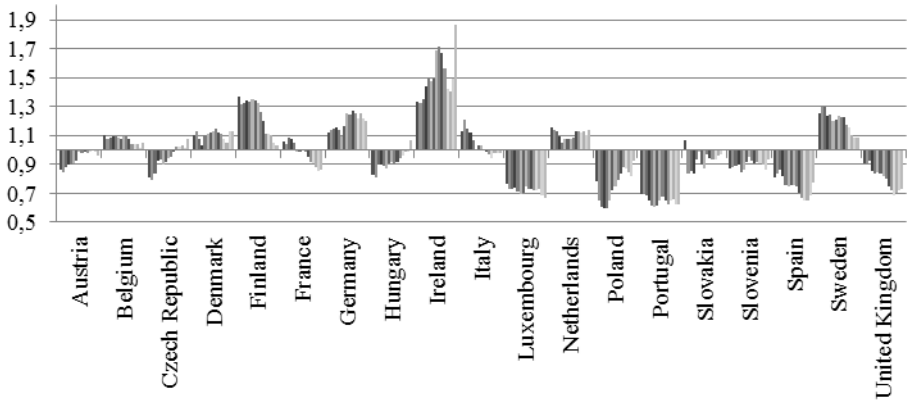
Figure 3. Manufacturing sector exports, in thousands of USD



Source: own elaboration on the basis of the OECD STAN database.

[2] Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Hungary, Ireland, Italy, Luxembourg, Netherlands, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, United Kingdom.

Figure 4. Exports in relation to imports of the manufacturing sector



Source: own elaboration on the basis of the OECD STAN database.

For each variable, we employ a spatial panel data model which is as follows:

$$\ln EX_{it} = \alpha + \beta_1 \ln DD_{it} + \beta_2 \ln FD_{it} + \beta_3 OPEN_{it} + \beta_4 LPRO_{it} + \beta_5 ULC_{it} + \beta_6 IIT_{it} + \beta_7 IIVA_{it} + \beta_8 ICSP_{it} + \varepsilon_{it} \quad (7)$$

$$NEX_{it} = \alpha + \beta_1 \ln DD_{it} + \beta_2 \ln FD_{it} + \beta_3 OPEN_{it} + \beta_4 LPRO_{it} + \beta_5 ULC_{it} + \beta_6 IIT_{it} + \beta_7 IIVA_{it} + \beta_8 ICSP_{it} + \varepsilon_{it} \quad (8)$$

The investigation begins with estimation of pure panel data models without spatial dependence for both the endogenous variables. This allows us to start by knowing whether we can observe a relationship between the measures of competitiveness and their determinants, which have been chosen on the basis of the literature. The significance of the regressors is confirmed, both for exports and the exports to imports relationship. Additionally, the Hausman test is applied and the hypotheses of consistency of the GLS estimator are rejected. We also test the significance of individual and time effects. Based on the results, we can conclude that a two-way model should be appropriate. The results of the estimations of models (7) and (8) are presented in Table 1.

The next step is the construction of the spatial weight matrix. For both equations we decided to focus on a row-standardized first order queen contiguity matrix. As the analysis of main trade partners shows, the nearest neighbours, especially large economies, can be the most important partners in international trade, the choice of a spatial weight matrix can be treated as economically grounded.

Taking spatial relationships into consideration, different forms of the models are estimated for both variables: the spatial autoregressive fixed effects model, SAR FE, and the spatial autoregressive random effects model, SAR RE, according to formulas (3) and (5); the spatial error fixed effects model, SEM FE, and the spatial error random effects model, SEM RE, according to equations (4) and (6); and, as a control, the SARAR (1,1) model in accordance with equation (2), assuming equality of the spatial weight matrices.

The assumption of two-way influence is rejected in the spatial models. Neither in the SAR models nor in the SE models are time effects significant. As before, a spatial Hausman test allows us to reject the null hypothesis that the GLS estimator is consistent. The choice of the spatial autoregressive model is made on the basis of the results of Baltagi, Song, Jung and Koh LM tests. In the SARAR model, the spatial autocorrelation parameter ρ turns out to be insignificant. To summarize, we estimate one-way spatial autoregressive fixed effects models for both measures of international competitiveness. The results of the estimations are presented in Table 1.

Table 1. Export competitiveness – export equation and export-to-import relationship equations

	export equation				export/import equation			
	two-way FE LSDV		one-way SAR FE ML		two-way FE LSDV		one-way SAR FE ML	
lnDD	0.29979 (7.894)	***	0.18026 (6.797)	***	-0.00298 (-0.137)		-0.02577 (-1.340)	
lnFD	0.29572 (11.850)	***	0.26037 (13.974)	***	0.09647 (6.416)	***	0.04658 (3.585)	***
LPRO	0.00003 (3.086)	***	0.00005 (6.675)	***	0.00001 (2.781)	***	0.00001 (1.474)	
ULC	-1.72954 (-3.270)	***	-1.76190 (-4.253)	***	-3.08285 (-10.180)	***	-2.54130 (-8.602)	***
OPEN	0.01399 (10.480)	***	0.00002 (2.121)	**	-0.000003 (-0.387)		0.00103 (1.433)	
IIT	0.00595 (2.790)	***	0.00553 (3.235)	***	-0.00468 (-3.952)	***	-0.00536 (-4.233)	***
IIVA	0.00082 (0.344)		-0.00476 (-2.499)	**	-0.00499 (-3.585)	***	-0.00371 (-2.733)	***
ICSP	-0.00954 (-1.353)		-0.00558 (-1.199)		-0.01651 (-3.972)	***	-0.02851 (-9.026)	***
intercept	9.46288 (12.550)	***	1.74293 (6.164)	***	9.46288 (12.550)	***	3.13118 (11.715)	***
lambda	-	-	0.55171 (20.409)	***	-	-	0.17656 (3.611)	***

significant at 10 % level, ** significant at 5 % level, *** significant at 1 % level, ( ) is the *t* statistics

Source: own calculations.

6. Conclusion

This paper has employed spatial econometrics to explain how total export competitiveness depends on domestic demand, foreign demand, labour productivity, unit labour costs, openness of the economy, intra-industry trade, investment intensity and intermediate consumption in the manufacturing sector. The results for 19 EU countries over 15 years (1995 – 2009) indicate a strong influence of chosen variables, characterized manufacturing sector on total export competitiveness of the analized UE countries.

On the basis of the results, we can confirm that taking the influence of the local neighbourhood into account in the regressions shows that this is a statistically significant factor, affecting both total export value and exports in relation to imports. This means that an increase in the export value of neighbouring economies will influence export growth.

Comparing the estimations of both regressions, we find that the determinants of exports and of the ratio of exports to imports are different. The only common significant variables are foreign demand and unit labour costs. Moreover, the direction of influence does not change regardless of the model. If we measure the export competitiveness by the export value, we can state that an increase of domestic demand, foreign demand, labour productivity, openness of the economy, intra-industry trade promotes the competitiveness growth, as well as an decrease of unit labour costs in the manufacturing sector. Based on export/ import relation as the competitiveness indice we find that only the growth of foreign demand and labour productivity causes the competitivess growth, as the decrease in intra-industry trade, in the investment intensity and in the intermediate consumption in the manufacturing sector.

It would be interesting for future research to use differently weighted matrices which would capture cross-country interdependence in other ways. Another direction of future research could involve the use of a spatial cross-regressive model, allowing the evaluation of the impact of spatially lagged exogenous variables on the phenomena studied here. Focusing on the cross-sectional dimension of the data analyzed, the time dimension and possible non-stationary data should also be taken into consideration.

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Streszczenie

WPŁYW SEKTORA PRZEMYSŁU PRZETWÓRCZEGO NA KONKURENCYJNOŚĆ EKSPORTU WYBRANYCH KRAJÓW UNII EUROPEJSKIEJ - PRZESTRZENNA ANALIZA PANELOWA

Celem niniejszej pracy jest określenie, przy użyciu przestrzennego modelu panelowego, w jaki sposób zmiany w konkurencyjności eksportu wybranych gospodarek Unii Europejskiej, mierzone wielkością eksportu i eksportu netto, zależą od zmian w konkurencyjności przemysłu przetwórczego. Determinanty konkurencyjności eksportu zostały wybrane w świetle dorobku teorii handlu międzynarodowego, teorii wzrostu i teorii innowacji. W szczególności, autorzy chcieli zbadać, w jakim stopniu wielkość popytu zagranicznego, wielkość popytu krajowego, poziom jednostkowych kosztów pracy, stopień otwartości na rynki zagraniczne, wydajność pracy i zużycie pośrednie w sektorze przemysłowym wpływają na konkurencyjność eksportu wybranych gospodarek europejskich. Wyniki przeprowadzonej analizy wskazują na istotnie statystyczne zależności przestrzenne w modelowaniu konkurencyjności eksportu. Analiza wskazała również na nieznacznie odmienne determinanty konkurencyjności eksportu mierzonego wielkością wywozu (jednostkowe koszty pracy, popyt krajowy, popyt zagraniczny) i analizowanego przez pryzmat eksportu netto (jednostkowe koszty pracy, popyt zagraniczny, zużycie pośrednie).

Słowa kluczowe: *handel międzynarodowy, konkurencyjność eksportu, produkcji, przestrzenny model danych, Unia Europejska*