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Country-Specific Determinants of Intra-Industry Trade in Clothing and Footwear between Poland and European Union Countries

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Abstract
The present study investigated the country-specific determinants of intra-industry trade between Poland and its European Union trading partners in clothing and footwear during the time period 2004-2017. The econometric model for panel data was used to identify the factors determining bilateral intra-industry trade with EU countries. The research findings show that the size of the trading partners' economies has a positive impact on the development of intra-industry trade in clothing and footwear. The size of the country, measured by the size of its GDP, is equated with the size of the market and the possibilities of selling differentiated products in it. The geographical distance separating the trading countries turned out to be a factor limiting the development of intra-industry trade. An unfavourable effect on the intensity of intra-industry trade is also the degree of imbalance in trade between trade partners. The study confirmed that the direction of the impact of all determinants of intra-industry trade identified is consistent with the predictions of the theory.

Key words: *intra-industry trade, clothing, footwear, Poland, European Union, panel data.*

Introduction

Trade cooperation between the member countries of the European Union is based mainly on intra-industry exchange, which consists in the simultaneous export and import of similar products belonging to the same branches of industry. At the basis of this exchange lies the substitutability of economies. Intra-industry trade develops particularly well between countries which are similar due to the relative resources of production factors, the use of similar generation technologies, and the similar structure of buyers' preferences. Intra-industry trade volume is developing especially well in the area of processed products, which are accessible in many varieties [1-2].

Intra-industry trade is the subject of numerous theoretical considerations and empirical analyses, leading to the creation of the theory of intra-industry trade, which is now considered to be complementary to traditional theories of international trade, especially to the Heckscher-Ohlin theory as well as to newer concepts derived from it. As part of the continuously developed theory of intra-industry trade, identification of the factors determining this type of turnover is being made. A whole complex of factors determines whether intra-industry trade between countries will continue to develop. On the one hand, they reflect the market structure, the characteristics of products and industries (branches) in which the exchange takes place, and, on the other, the characteristics of the trading countries' economies [3-4].

The research objective of this paper is to identify country-specific determinants determining the intensity of intra-industry trade in Poland's trade with European Union countries in clothing and footwear industry products [5]. Trade in such products is quite well described in the literature on the subject [6-9]. However, the literature on the subject lacks empirical works on the factors determining intra-industry trade in these types of products, in particular trade among European Union countries. The few empirical works on the determinants of intra-industry trade in this important group of products from the point of view of buyers concern most often non-EU countries [10-12]. Therefore, this work is an attempt to fill a part of the existing research gap in this area.

Country-specific determinants of intra-industry trade

The literature on the subject points to many factors affecting the intensity of intra-industry exchange. The findings of empirical research show that the development of this type of exchange depends on the size of the economies of the trading countries. The larger the economies, measured by the size of their GDP, the more intensive the intra-industry exchange [13-14]. Large markets are conducive to the development of intra-industry trade, mainly due to the greater possibility of extending production characterised by growing economies of scale [15]. Higher GDP is then tantamount to having large capital stock and developed financial markets, which provide financial support to capital-intensive, technologically advanced industries [16-17]. This, in turn, enables the development of the processing industry manufacturing diverse goods. Small differences between the GDP of trade partners also have a positive impact on the development of intra-industry trade, as confirmed by numerous empirical studies [18-20].

A significant factor supporting the development of two-way exchange is a high level of GDP *per capita* [21-23]. In the case of consumers with a high GDP *per capita*, they are more likely to acquire many variants of diversified products and more processed products. Small differences between the GDP *per capita* of trading countries also constitute an important factor favouring the development of intra-industry trade [24-25]. They may be indicative of similar consumer preferences of buyers in the trading countries [26-27].

The factors supporting the development of intra-industry trade also include trade liberalisation and economic integration. The results of research [28-31] confirm that in conditions of imperfections of competition and product differentiation, integration processes and the related pro-

Table 1. *Intensity of intra-industry trade between Poland and European Union countries in clothing and footwear in the years 2004-2017.* ***Source:*** *Author's own calculations based on the Eurostat [43].*

Country	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Austria	0.374	0.555	0.464	0.409	0.781	0.717	0.649	0.647	0.833	0.830	0.869	0.796	0.833	0.676
Belgium	0.363	0.311	0.400	0.410	0.347	0.350	0.328	0.419	0.477	0.351	0.347	0.317	0.296	0.317
Bulgaria	0.585	0.208	0.363	0.377	0.358	0.421	0.517	0.427	0.426	0.331	0.309	0.503	0.345	0.304
Croatia	0.567	0.215	0.188	0.144	0.311	0.097	0.116	0.060	0.140	0.152	0.378	0.216	0.523	0.454
Cyprus	0.109	0.190	0.322	0.301	0.097	0.252	0.380	0.293	0.262	0.186	0.370	0.054	0.228	0.214
Czech Republic	0.535	0.728	0.669	0.673	0.698	0.745	0.785	0.770	0.670	0.676	0.642	0.748	0.676	0.562
Denmark	0.338	0.514	0.584	0.627	0.700	0.808	0.836	0.745	0.557	0.694	0.523	0.459	0.700	0.609
Estonia	0.297	0.256	0.183	0.202	0.186	0.133	0.120	0.091	0.158	0.068	0.088	0.099	0.089	0.046
Finland	0.492	0.433	0.654	0.591	0.724	0.435	0.570	0.086	0.182	0.090	0.110	0.097	0.046	0.088
France	0.351	0.417	0.511	0.669	0.769	0.607	0.503	0.483	0.516	0.583	0.587	0.566	0.599	0.553
Germany	0.440	0.542	0.594	0.638	0.781	0.862	0.862	0.874	0.866	0.824	0.885	0.899	0.927	0.934
Greece	0.228	0.619	0.515	0.359	0.751	0.590	0.609	0.406	0.489	0.425	0.114	0.142	0.187	0.223
Hungary	0.731	0.704	0.758	0.641	0.742	0.695	0.580	0.452	0.381	0.302	0.369	0.264	0.332	0.546
Ireland	0.040	0.035	0.145	0.034	0.175	0.221	0.294	0.356	0.368	0.557	0.634	0.572	0.546	0.619
Italy	0.719	0.794	0.700	0.665	0.620	0.596	0.508	0.461	0.532	0.482	0.540	0.585	0.537	0.504
Latvia	0.048	0.050	0.090	0.058	0.141	0.151	0.140	0.066	0.128	0.048	0.037	0.331	0.103	0.080
Lithuania	0.067	0.179	0.285	0.235	0.183	0.269	0.157	0.097	0.137	0.047	0.056	0.059	0.172	0.175
Luxembourg	0.445	0.541	0.493	0.291	0.171	0.330	0.299	0.271	0.329	0.289	0.592	0.614	0.457	0.394
Malta	0.680	0.103	0.217	0.217	0.106	0.112	0.000	0.475	0.628	0.474	0.280	0.009	0.069	0.175
Netherlands	0.283	0.305	0.412	0.534	0.584	0.590	0.644	0.674	0.685	0.701	0.719	0.695	0.702	0.683
Portugal	0.483	0.233	0.450	0.340	0.248	0.070	0.127	0.190	0.160	0.238	0.322	0.329	0.259	0.325
Romania	0.431	0.489	0.513	0.545	0.642	0.624	0.717	0.521	0.360	0.325	0.392	0.270	0.184	0.178
Slovakia	0.431	0.494	0.395	0.888	0.771	0.494	0.441	0.441	0.531	0.513	0.597	0.560	0.805	0.886
Slovenia	0.324	0.503	0.302	0.414	0.313	0.483	0.225	0.258	0.470	0.488	0.659	0.665	0.778	0.559
Spain	0.525	0.377	0.320	0.370	0.271	0.209	0.192	0.180	0.156	0.149	0.178	0.144	0.305	0.207
Sweden	0.304	0.469	0.473	0.525	0.445	0.478	0.528	0.504	0.592	0.634	0.526	0.458	0.460	0.601
United Kingdom	0.292	0.347	0.409	0.408	0.478	0.562	0.601	0.685	0.736	0.752	0.766	0.795	0.851	0.814

cess of eliminating barriers to trade are more conducive to the intensification of intra-industry trade rather than inter-industry trade. The geographical proximity of trading partners, common borders as well as the cultural community of trading countries, in particular common or similar languages, national identities, traditions and history, also exert a significant impact on the development of intra-industry trade [32-34].

Other factors affecting the development of intra-industry trade include a large share of processed goods in trade volume and a significant intensity of trade relations between countries [35-36]. Empirical studies confirm that the level of trade imbalance has a negative impact on the intensity of intra-industry trade [37]. If the trade between two countries is not balanced, then the ratio of intensity of intra-industry trade cannot reach the maximum value. Empirical works attempt to verify other factors, such as foreign direct investment [38-41]. The impact of FDI on the development of intra-industry trade is not explicit. It can be positive if foreign direct investment contributes to the modernisation of the economy, industrial development, and to the production of diversified goods, or negative, when they are a substitute for exchange with foreign countries.

Intra-industry trade in clothing and footwear between Poland and European Union Countries

In 2004-2017 there was a significant increase in Poland's trade with the EU. The total value of Polish clothing and footwear trade increased almost fivefold from EUR 2.5 billion to EUR 11.9 billion. In the period analysed, Germany was the most important trading partner within the European Union. In 2017, Germany's share in Poland's trade in clothing and footwear was 53% of the total turnover with the European Union. In the years 2004-2017 there was also an increase in the intensity of intra-industry trade in Poland's trade with the European Union.

The most widely used measure of intra-industry is the Grubel-Lloyd index [42]:

$$GL_i = \frac{(X_i+M_i)-|X_i-M_i|}{(X_i+M_i)} = 1 - \frac{|X_i-M_i|}{(X_i+M_i)}, \quad (1)$$

where:
X_i – value of exports of the industry i,
M_i – value of imports of the industry i.

The indicator above takes values from the interval [0;1]. The higher the GL_i indicator value, the more intense the intra-industry trade. The maximum value is achieved if the turnover of a given branch is balanced. Examining the intensity of intra-industry trade with a specific trading partner requires the use of the bilateral index:

$$GL_{ij} = \frac{(X_{ij}+M_{ij})-|X_{ij}-M_{ij}|}{(X_{ij}+M_{ij})} = 1 - \frac{|X_{ij}-M_{ij}|}{(X_{ij}+M_{ij})}, \quad (2)$$

where:
X_{ij} – value of exports to the country of the trading partner j of goods belonging to the industry i,
M_{ij} – value of imports to the country of the trading partner j of goods belonging to the industry i.

An aggregated measure that shows the intensity of intra-industry trade in all countries or a group of countries is obtained by calculating the weighted average value of indices for individual countries (GL_{ij}). The weights are the shares

of each of the countries in total trade in specific goods.

Intensity ratios for intra-industry trade in clothing and footwear are presented in ***Table 1***. They were calculated for Poland's trade with individual European Union countries in 2004-2017. Poland's 27 trade partners were considered, which were members of the European Union in 2017. These ratios were determined for three-digit groups of goods which make up two divisions identified in accordance with the Standard International Trade Classification. These were product groups under the following divisions: 84 − Articles of apparel and clothing accessories, and 85 − Footwear. The data presented show that in the time period 2004-2017, the intensity of intra-industry trade in clothing and footwear trade with most EU countries increased. The intra-industry trade with countries that were members of the Community before its enlargement in 2004 (EU-15) increased slightly more. However, the largest increase in the intensity of intra-industry trade was noted in the case of turnover with Ireland, the United Kingdom, and Germany. The largest decreases in two-way exchange ratios occurred in trade with Malta, Finland and Bulgaria (see ***Table 1***).

Theoretical hypotheses

Based on theoretical literature and the results of previous empirical studies on country-specific determinants of intra-industry trade, research hypotheses H1-H8 were formulated, shown below. They focus on the characteristics of the economies of countries that are Poland's trading partners within the European Union. All hypotheses apply to intra-industry trade in clothing and footwear products between Poland and European Union countries. The following research hypotheses were subjected to verification:

H1: The size of the economies of Poland's trade partners, measured by the size of their GDP, has a positive effect on the intensity of mutual intra-industry trade.

H2: The level of economic development of trade partners, measured by their GDP *per capit*a, is positively correlated with the intensity of intra-industry trade with these partners.

H3: There is a negative relationship between the relative differences in the size of the Polish economy and its trading partners' economies (measured by the size of GDP) and the intensity of mutual intra-industry trade.

H4: There is a negative dependence between the relative differences in the level of economic development of Poland and its trading partners (measured by the size of GDP *per capita*) and the intensity of mutual intra-industry trade.

H5: The level of imbalance in Poland's bilateral trade in clothing and footwear weakens the intensity of intra-industry trade in these kind of goods.

H6: There is a positive relationship between the intensity of trade exchange between countries, as measured by the share of a specific trading partner in Poland's total trade in clothing and footwear, and the intensity of mutual intra-industry trade.

H7: There is a negative correlation between the geographical distance which divides trading partners and the intensity of their mutual intra-industry trade.

H8: There is a positive dependence between the fact of having a common bor-

Table 2. *Variables used in empirical investigation.* ***Source:*** *Authors' own compilation.*

Variable	Description of variable
GL_{jt}	Intensity of intra-industry trade between Poland and country *j* in the period *t*, measured by the Grubel-Lloyd index. Data source: [43], code: DS-018995.
GDP_{jt}	Gross Domestic Product of the partner country *j*, in the year *t*. Data source: [43], code: nama_10_gdp.
PCI_{jt}	Variable representing the level of economic development of the trading partner *j* in the year *t*, expressed as GDP *per capita*. Data source: [43], code: nama_10_pc.
$DiffGDP_{jt}$	Index of the relative difference in the size of Poland's GDP and that of the trading partner *j* in the year *t*. The index values are determined by means of the following formula [13]: $$DiffGDP_{jt} = 1 + \frac{[wlnw + (1-w)ln(1-w)]}{ln\,2}, \quad (5)$$ $$w = \frac{GDP_{PLt}}{GDP_{PLt} + GDP_{jt}}, \quad (6)$$ where: GDP_{PLt}, GDP_{jt} – gross domestic product of Poland and its trading partner *j* in the year *t*. The index above takes values from the interval [0;1]. If the differences in GDP between the countries are large, then the index approaches the value of 1. With the same GDP of both countries, the value is 0. Data source: [43], code: nama_10_gdp.
$DiffPCI_{jt}$	Variable representing the difference in the level of economic development that between Poland and its trading partner *j* in the period *t*. Values of the index are measured using the following formula [13]: $$DiffPCI_{jt} = 1 + \frac{[wlnw + (1-w)ln(1-w)]}{ln\,2}, \quad (7)$$ $$w = \frac{PCI_{PLt}}{PCI_{PLt} + PCI_{jt}}, \quad (8)$$ where: PCI_{PLt}, PCI_{jt} – GDP *per capita* of Poland and its trading partner *j* in the year *t*. The index above takes values from the interval [0;1]. If the differences in *per capita* income between countries are high, then the index approaches 1. With the same GDP *per capita* of both countries, the value is 0. Data source: [43], code: nama_10_pc.
$TIMB_{jt}$	Degree of imbalance in trade between Poland and the country *j* in the year *t*. The variable is determined according to the formula below: $$TIMB_{jt} = \frac{\lvert X_{jt} - M_{jt} \rvert}{(X_{jt} + M_{jt})}, \quad (9)$$ where: X_{jt} – Polish exports to the country *j* in the year *t*, M_{jt} – Polish imports to the country *j* in the year *t*, The $TIMB_{jt}$ variable takes a value of 0 if the trade between Poland and its trading partner in the year *t* is balanced (X_{jt}=M_{jt}), and takes a value of 1 if in one of the countries, its exports or imports (but not both exports and imports at the same time) are equal to 0. Data source: [43], code: DS-018995.
TI_{jt}	Share of the country *j* in Poland's trade in clothing and footwear in the year *t*. Data source: [43], code: DS-018995.
$DIST_j$	Geographical distance, measured in kilometres, between the capital cities of Poland and its trading partner *j*. Data source: [44].
BOR_j	The dummy variable takes a value of 1 if Poland has a common border with a trading partner *j,* and a value of 0 if it does not border with the trading partner *j*.
v_{jt}	Random error in the object *j* in the time period *t*, which consists of the following components: e_t– impulses affecting all observations in the period *t*, u_j– impulses affecting all observations of the object *j*, ε_{jt}– impulses affecting only observations of the object *j* in the period *t*

Table 3. *Results of estimation of the model describing Poland's intra-industry trade in clothing and footwear with EU countries.* ***Source:*** *Author's own calculations.* ***Note:*** *[a] **Statistically significant variable at the level of 5%, *** Statistically significant variable at the level of 1%.*

Independent variables	Dependent variable $\ln[GL_{jt}/(1-GL_{jt})]$									
	Model before *a posteriori* elimination					Model after *a posteriori* elimination				
	Coefficient	Standard error	*t*-ratio	*p-value*	Significance[a]	Coefficient	Standard error	*t*-ratio	*p-value*	Significance[a]
const	0.211499	2.46651	0.08575	0.9317		-1.15836	1.41840	-0.8167	0.4141	
$\ln GDP_{jt}$	0.339632	0.117360	2.894	0.0038	***	0.342448	0.0607972	5.633	<0.00001	***
$\ln PCI_{jt}$	-0.111959	0.182518	-0.6134	0.5396		–	–	–	–	
$\ln DiffGDP_{jt}$	-0.0109389	0.042258	-0.2589	0.7957		–	–	–	–	
$\ln DiffPCI_{jt}$	0.0525173	0.0356566	1.473	0.1408		–	–	–	–	
$\ln TIMB_{jt}$	-0.501564	0.0592205	-8.469	<0.00001	***	-0.517009	0.0579418	-8.923	<0.00001	***
$\ln TI_{jt}$	-0.0088388	0.0905513	-0.09761	0.9222		–	–	–	–	
$\ln DIST_j$	-0.595636	0.290813	-2,048	0,0405	**	-0.575126	0.190465	-3.020	0.0025	***
$BORD_j$	0.162593	0.382902	0.4246	0,6711		–	–	–	–	
Observations	378					Observations	378			
Standard error of residuals	1.081518					Standard error of residuals	1.084313			
SS-sum of squares	432.7817					SS-sum of squares	440.9005			

der with a trading partner and the intensity of intra-industry trade.

Model estimation

In order to identify the factors affecting the intensity of intra-industry trade in Poland's foreign trade with EU countries in the field of clothing and footwear products, an econometric model for panel data was constructed. The logit of the bilateral Grubel-Lloyd index [$\ln(GL_{jt}/(1-GL_{jt})$] was taken to be an explanatory variable. A logit transformation of the GL_{jt} index was made in order to eliminate the possibility of obtaining its theoretical values beyond the permissible range [0;1].

The research hypotheses allowed model specification for panel data:

$$\ln[GL_{jt}/(1-GL_{jt})] = \alpha_0 + \alpha_1 lnGDP_{jt} + \alpha_2 lnPCI_{jt} + \alpha_3 lnDiffGDP_{jt} + \alpha_4 lnDiffPCI_{jt} + \alpha_5 lnTIMB_{jt} + \alpha_6 lnTI_{jt} + \alpha_7 lnDIST_j + \alpha_8 BORD_j + v_{jt} \quad (3)$$

$$v_{jt} = e_t + u_j + \varepsilon_{jt}, \quad (4)$$

A description of individual variables and sources of data used are presented in ***Table 2***.

Results and discussion

Estimation of the panel data model, designated by ***Equation (3)***, was made with the use of *Gretl* (*GNU Regression Econometrics Time-Series Library*) software. There were no *a priori* assumptions made for the occurrence and significance of individual effects, nor for the character of the individual effects (fixed or random). The choice of estimation methods (*pooled OLS, fixed effects, random effects*) was made with the use of a decision procedure from the field of econometrics advocated in literature[45]. The model was estimated with the use of the classical least squares method and diagnostic tests performed, as a result of which the following values of test statistics were obtained: the *Wald* test (F = 3.17936; p-*value* < 0.00001), the *Breusch-Pagan* test (LM = 35.6525; p-*value* < 0.00001), and the *Hausman* test (H = 1.15784; p-*value* = 0.763133). On the basis of the diagnostic tests conducted, it was finally established, with the risk of error at the level of 0.05 ($\alpha = 0.05$), that the appropriate model for describing the dependence studied is the one with random individual effects (*random effects, RE*). Thus, such a model was estimated.

Values of statistically significant parameters of the model described by ***Equation (3)*** are presented in ***Table 3***.

The model is correct in statistical terms. Three potential explanatory variables were found to be significant. All parameter evaluation signs obtained in the model, located next to a specific explanatory variable, are consistent with the predictions of the theory.

Interpretation of the size of estimates of the model parameters estimated in which the variable explained is the logit, *i.e.* $\ln[GL_{jt}/(1-GL_{jt})]$ is somewhat complicated. It should be noted that all variables are in the form of natural logarithms, therefore the following interpretation can be used: An increase in the explanatory variable by 1% causes *ceteris paribus* an increase or decrease(depending on the sign of the parameter) in the dependent variable of α % (the parameter for a specific explanatory variable). In this case the dependent variable is the logit, which means that the relation $GL_{jt}/(1-GL_{jt})$ changes by α %, which is the relation between intra-industry trade (GL_{jt}) and inter-industry trade ($1-GL_{jt}$). The higher this relation, the greater the importance of intra-industry trade in the total trade volume.

The research findings show that in the case of Poland's intra-industry trade in clothing and footwear with EU countries, an important role is played by those factors that are crucial in the gravity models of trade [46], which are the size of the economies of trading partners and the distance between trading countries. In the estimated model, geographic distance turned out to be the factor that has the strongest impact on the development of intra-industry trade between Poland and EU countries, reflecting the transport and insurance costs that arise from the need to transfer goods. Parameter α located in the $DIST_j$ variable was -0.575126, which means that the impact of this factor on exchange relations between intra-industry and inter-industry is less than proportional ($\alpha < 1$). The study confirmed the predictions of the theory that the smaller the distance between trading partners, the more intense the intra-industry exchange. It can therefore be concluded that there are no grounds to reject the H7 research hypothesis. The factor associated with geographical distance, which often turns out to be important, especially for prod-

ucts of high weight and/or dimensions, where transport costs are significant, is the existence of a common border with a business partner. In the case analysed, this factor ($BORD_j$) turned out to be statistically insignificant, and therefore the H8 hypothesis could not be verified.

The European textile industry is becoming increasingly innovative and competitive and plays a significant role in economic development [47]. The study confirmed that the size of the country of the trading partner, measured by the size of its GDP, has a positive effect on the intensity of intra-industry trade ($\alpha = 0.342448$). In the context of the clothing and footwear market, when interpreting the influence of this factor on the development of intra-industry trade, one can refer to the theoretical considerations of Amiti [48]. He argues that a high GDP of a country can be equated with the large domestic market of the given country and the diversified demand, which favours the sale of a large number of units of varied goods and a reduction in the unitary average cost. Bearing in mind the behaviour of buyers on the clothing and footwear market (love of variety [49-50]), this interpretation seems to be justified.

A factor that significantly and, at the same time, negatively affects the intensity of intra-industry trade is the degree of imbalance in trade in clothing and footwear between Poland and the European Union (the $TIMB_{jt}$ variable). A significant impact of this variable was to be expected because in a situation where trade between two countries is not balanced, the intensity of intra-industry trade determined by the uncorrected Grubel-Lloyd index cannot reach the maximum value. The α parameter in the $TIMB_{jt}$ variable was -0.517009. There is, therefore, no reason to reject the H5 hypothesis.

In the estimated model, the variables related to the *per capita* income of Poland's trade partners (PCI_{jt}, $diffPCI_{jt}$,) were statistically insignificant as well as the variable expressing the intensity of trade between countries (TI_{jt}) and that referring to relative differences in the size of economies ($diffGDP_{jt}$). Therefore, the H2, H3, H4, H6 hypotheses cannot be verified.

Conclusions

Intra-industry trade consisting in parallel importing and exporting similar products belonging to the same branch plays an increasingly important role in Poland's trade exchange with European Union countries. This also applies to products of the clothing and footwear industry. They are diverse products, occurring in many variants, and thus the potential for development of a two-way exchange of these products is quite large. The work identifies the factors determining Poland's intra-industry trade with European Union countries. The focus was on characteristics of the economies of the countries participating in the exchange; hence, these were country-specific determinants. The research findings show that the size of the trading partners' economies has a positive impact on the development of intra-industry trade in clothing and footwear. The size of the country, measured by the size of its GDP, is equated with the size of the market and possibilities of selling differentiated products in it. The geographical distance separating the trading countries turned out to be a factor limiting the development of intra-industry trade. An unfavourable effect on the intensity of intra-industry trade is also the degree of imbalance in trade between trade partners. The study confirmed that the direction of the impact of all determinants of intra-industry trade identified is consistent with the predictions of the theory.

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