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VPLYV UNILATERÁLNYCH PREFERENCIÍ NA VÝVOZNÚ ŠTRUKTÚRU NAJMENEJ ROZVINUTÝCH KRAJÍN

IMPACT OF UNILATERAL PREFERENCES ON EXPORT STRUCTURE OF THE LEAST DEVELOPED COUNTRIES

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Hlavným cieľom článku je zistiť, ako sa exporty najmenej rozvinutých krajín (LDC) vyvíjali z hľadiska komoditnej a geografickej štruktúry od zavedenia hlavných preferenčných režimov pre najmenej rozvinuté krajiny – Všetko okrem zbraní (EBA) Európskej únii (EÚ) a Africký zákon o raste a príležitosti (AGOA) Spojených štátov amerických (USA) a neskôr čínsky bezcolný program bez kvót. Výsledky nenaznačujú, že preferenčné režimy pre najmenej rozvinuté krajiny prispeli k väčšej diverzifikácii vývozu najmenej rozvinutých krajín alebo k zvýšeniu podielu výrobkov náročných na spracovanie. V rámci Európskej únie, Spojených štátov a Číny však došlo k významným zmenám v geografickej štruktúre vývozu najmenej rozvinutých krajín.
Kľúčové slová: najmenej rozvinuté krajiny, nereciprocné obchodné preferencie, Čína, EÚ, Spojené štáty

The main aim of the paper is to find out how the exports of the least developed countries (LDCs) have evolved in terms of the commodity and geographical structure since the introduction of the main preferential schemes for LDCs - Everything but Arms (EBA) of the European Union (EU) and African Growth and Opportunity Act (AGOA) of the United States (US) and later Chinese duty-free, quota-free program. The results do not suggest that preferential schemes for LDCs have contributed to a greater diversification of LDCs exports or an increase in the proportion of processing-intensive products in them. However, there have been significant changes in the geographical structure of the LDCs exports within the European Union, the United States and China.
Key words: least developed countries, nonreciprocal trade preference, China, EU, United States
JEL: F10, F15, F40, O10

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1 INTRODUCTION

Poverty is one of the most complex and widespread global problems humanity has ever faced. And while trying to find different ways to eradicate poverty, the experts found that one of the most effective means able to fight the poverty is trade. Thus, encouraging the trade has become common way, how richer countries try to help poor countries. Developed and some developing countries grant unilateral trade preferences to poor countries to make it easier for them to market their products on the world market and benefit from engaging in international trade. Although there is currently around fifty countries provide unilateral trade preferences this paper deals solely with the three preferences schemes of the European Union, the United States and China.

The first part of this paper provides a brief overview of preference schemes for the LDCs provided by the European Union, the United States and China. Although these preferences have been granted for a long time, to this point, it is not clear whether they achieve their purpose of promoting exports of beneficiary countries. Selected studies dealing with the impacts of preferential schemes are closer discussed in the literature review.

The majority of authors, including those mentioned in the literature review, who dealt with trade preferences in their studies sought to measure the impact of these preferences on the volume of exports of the beneficiary countries. The most common tool used in these impact studies to assess whether and by how much exports to countries granting preferences increased was the gravity model. Compared to these studies we intend not to assess the impact of preferences on the volume of exports from LDCs but to map the changes in the structure of these exports that have occurred since the introduction of the preferential schemes.

The main aim of the paper is to find out how the exports of the least developed countries have evolved in terms of the commodity structure since the introduction of the main preferential schemes for LDCs – Everything but Arms of the European Union and African Growth and Opportunity Act of the United States and later Chinese duty-free, quota-free program. We also try to find out whether the geographical structure of exports of the least developed countries within the three selected economies, i.e. the European Union, the United States, and China, has changed over the years especially after the introduction of the preferential system of China in 2010.

The paper will therefore provide answers to the two offered research questions. The first research question is whether the beneficiary LDCs' exports evolve over the time towards exports less concentrated and exports of the higher value-added products.

The second research question is whether the introduction of a program for the LDCs by China in 2010 caused some LDCs to shift part of their exports from the European Union and the United States to China.

To identify structural changes in the LDCs exports following the introduction of the preferential schemes in question, several groups were separately created 2000

and 2018 within the LDCs. These groups were generated based on the similarity of their exports. For each group applies that all the countries included in it have same main characteristics and therefore are similar in terms of the export structure and its geographical focus. Conversely, countries belonging to different groups are very different in their export structure and geographic focus.

2 BACKGROUND

Empirical evidence supports the idea that the expansion of trade is one of the most proven means to boost the growth and development of developing countries (Grossman & Helpman, 2015). Therefore, all countries even the least developed ones should have a chance to engage in international trade and benefit from it. But being successful in competing with others in the world market can be difficult for some countries, especially the less developed ones. The idea that developing countries should receive "special and differential treatment" in the trade area originated from the General Agreement on Tariffs and Trade (GATT) in the early 1970s. Under the GATT was in 1979 adopted Enabling clause which allows developed members to give differential and more favorable treatment to developing countries. This special treatment can take several different forms, although its most well-known form is the Generalized System of Preferences (GSP). Under this scheme, developed countries apply concessional measures towards developing countries in the form of unilateral trade preferences (Pareja et al., 2016). As the word *unilateral* implies, these preferences are granted by a donor country to a developing country without any reciprocal preferences for the donor's exports. The expected result of these measures is an increase in exports of beneficiary countries towards the preference-giving country. These preferences may take the form of duty-free access to the donor's market or substantially lower than the normal Most-favoured-nation tariffs. The list of affected products varies from several dozens to thousands of items for different preferential schemes.

Unilateral preferences have been applied since the early 1970s and are currently part of the trade policies of all developed countries. Most of these countries have also introduced more privileged preference programs that can be targeted either at developing countries located in a particular region or countries with a high degree of underdevelopment.

One of the longest applied and most comprehensive preference schemes is the Generalized System of Preferences of the European Union. The first GSP scheme of the European Community was applied in an initial phase between 1971–1981 and has been subsequently renewed several times. At each renewal, the GSP was also revised in terms of the range of products covered, quotas and ceilings as well as the lists of beneficiaries and conditions for the export of agricultural products (Aiello, 2010). The

General System of Preferences of the European Union is one of the most studied preferential schemes, especially its Everything but Arms initiative.

The Everything but Arms initiative became part of the European Union´s preferential scheme on March 5th, 2001. This initiative is targeted specifically on the least developed countries and compared to other preferences under the GSP, the Everything but Arms has an unlimited period of its implementation. All products from the least developed countries except for arms and munitions have duty-free access and access without any quantitative restrictions to the market of the European Union under the Everything but Arms. The expectations from the EBA were from the beginning high even though, as Brenton (2003) proved, the vast majority of imports from the least developed countries have already entered the EU without duty and quotas before the EBA´s implementation. Currently is 7,200 products covering also agricultural products including sensitive ones eligible for the EBA initiative.

The second most frequently studied preferential scheme is the African Growth and Opportunity Act that came into force in 2001 with intend to enforce trade and investment of sub-Saharan African countries in the United States. This cooperation is supposed to stimulate economic growth and help the countries of sub-Saharan Africa to integrate into the world economy (AGOA, 2018). However, like the EBA, the African Growth and Opportunity Act is not entirely flawless and is criticized for several reasons. For example, Fayissa and Tadesse (2008) point to the fact that exports from African countries are mainly dominated by petroleum products with relatively low value-added and that most of the African imports to the US come only from a few African countries.

Developed countries are no longer the only ones that provide unilateral preferences. Recently, several developing countries have also introduced their preferential schemes. One such a country is China, which in 2001 started to grant duty-free treatment to developing countries. One of the main prerequisites for granting these preferences were the good diplomatic relations of the recipient country with China. Since then, China has been gradually working towards an increase in the product coverage of its LDC scheme. The Chinese duty-free, quota-free market access program for LDCs entered into force in 2010 covering 95 percent of China's total tariff lines.

3 LITERATURE REVIEW

Although unilateral preferences have been applied by developed countries for a long time, the evidence of their effectiveness is inconsistent. While some authors conclude that trade preferences contribute to increasing trade, others deny these claims and say that preferences are not capable of affecting trade in developing countries in significant way.

One of the authors finding positive effects is Aiello (2010) who studies impact of preferences on the LDC´s export to OECD countries on three different levels of data

aggregation: total exports, total agricultural exports, and export flow for ten groups of agricultural products at 2-digit level. In line with Aiello´s findings, Thelle (2015) finds that EU´s GSP preferences have contributed to an export increase of covered products by up to 5%, compared to the pre-preference export level. Thelle also points out that preferences under the Everything but Arms scheme have generated higher export responses than preferences under the GSP General Arrangement or GSP+ scheme.

In contrast to these positive findings, there are also several studies showing the negative impact of non-reciprocal preferences. The effectiveness of the Generalized System of Preferences is questioned, for example, by Herz and Wagner (2011) who in their study draw attention to the short duration of effects. They state that the GSP tends to foster developing countries' exports in the short-run but hampers them in the long-run. They also point to the fact that the GSP granting countries are initially able to promote their exports, since the GSP recipients import inputs mainly from the GSP granting country.

Ornelas (2018) acknowledges the positive effect of preferences on trade but with some limitations. He claims that unilateral preferences boost the exports of the least developed countries, but only if these countries are members of the World Trade Organization (WTO). However, non-reciprocal preferences help non-LDCs promote foreign sales only if they are not members of the WTO. Cernat (2004) focuses solely on the impacts of the Everything but Arms on third developing countries and the LDCs in his study. The study shows moderate trade gains from the EBA initiative with the largest gains being recorded for sub-Saharan Africa. Only minor impact of EU´s GSP on the trade of beneficiary countries is found also by Cipollina et al. (2013) with preferences having a significant impact only in some sectors such as ceramics and glassware, textiles and footwear and for specific exporters.

Gradeva and Martínez-Zarzoso (2010) on the example of the African, Caribbean and Pacific LDCs show that eligibility for the EU´s Everything but Arms scheme alone does not contribute to the increase of the exports of these countries because there cannot be found any substantial improvements in their export performance. They also address the issue of replacing development assistance with non-reciprocal preferences, which they consider to be highly questionable. So far, studies showing the significant impact of EU preferences on LDCs exports are very scarce.

Following the introduction of the AGOA by the United States in 2001, the attention of experts shifted also in this direction. Regarding the AGOA, there is also prevalent the empirical evidence suggesting little or no significant impact. Among the studies showing positive effects of the AGOA belongs for example study of Kassa (2019) in which he claims that most of the eligible countries register gains in exports due to the African Growth and Opportunity Act. However, the gains are relatively unevenly distributed, with the exports of oil and other minerals making up the largest

part of the growth in exports. The study by Wamisho (2015) indicates that the AGOA trade preferences do not have a statistically significant impact on sub-Saharan Africa´s agricultural exports. Fernandes (2018) finds the positive impact of the AGOA on the export of the least developed countries in Africa. He shows on a sample of African countries exports to the US at HS 6-digit level in 26 years that the biggest boost from the AGOA to African countries' exports was for apparel products.

Since China's preferential scheme has been applied for the shortest time of the three preferential schemes in question, there are very few studies examining it. Here we can mention the study of Minson (2007) who examines its potential and weaknesses.

There are also quiet rare studies in which they are the preferential systems are not only evaluated but also compared to each other. Coulibaly (2017) examines the impacts of the AGOA and EBA on the LDCs located in Africa over the period 2001-2015. Although he finds positive impacts of these preferential schemes, he also states that not all African countries have benefited from them, such as some West African countries. Klasen´s (2016) study assesses the impact of specific preference regimes of different economies on the exports of LDCs. Out of the nine different preferential systems examined, a positive and significant impact on exports has been proven only in the case of GSP granted by Canada, Australia, and the European Union.

4 DATA AND METHODOLOGY

The final groups of the LDCs were formed based on the results of two different cluster analyzes. Cluster analysis is a multivariate method which purpose, as explained by Bijnen (1973), is „to group and distinguish comparable units, and separate them from differing units." Cluster analysis aims to classify objects based on given variables into several groups or as Sinharay (2010) put it: to group similar observations into a number of clusters based on the observed values of several variables for each individual. The resulting clusters are defined through an analysis of the given data, where the similarity of the cases within cluster and dissimilarity between groups is maximized.

The methods of cluster analysis can be divided into two main groups: hierarchical methods and non-hierarchical methods. To generate groups of LDCs based on the similarity of their commodity and geographical structure we use agglomerative hierarchical cluster analysis.

Irani (2016) describes hierarchical clustering as follows: "*Hierarchical clustering algorithms work to divide or merge a particular dataset into a sequence of nested partitions.*" We recognize two types of hierarchy of these nested partitions: agglomerative and divisive, commonly known as bottom-up and top-down. While in

the agglomerative clustering each object acts as a separate cluster at the beginning of the process, in a divisive clustering are all objects gathered in a single cluster and at each step of iteration the most heterogeneous cluster is divided into two. This way the initial cluster is gradually decomposed until all the objects form separate clusters.

Agglomerative hierarchical clustering, that we use in this paper, is an iterative classification multi-step method. Although we can find a number of different agglomerative hierarchical clustering techniques, they are all based on one single approach. At the beginning of each agglomeration hierarchical analysis, all objects in the analysis begin as separate clusters. In the first step, the dissimilarity between the N objects is calculated. Based on the rule of minimization of agglomeration criterion are the first two objects clustered together creating a class comprising these two objects. Then again using agglomeration criterion the dissimilarity between this cluster and other, now N - 2, objects are calculated. The two objects or classes of objects for which the agglomeration criterion is minimal are then clustered together. This process is repeated, reducing the number of clusters in every iteration. At the end of the process, there is only one cluster containing all objects left.

The graphical output of the hierarchical clustering is a dendrogram. A dendrogram is a tree-shaped diagram displaying the clusters formed at each step of the algorithm together with their similarity levels. With the help of the dendrogram, the optimal number of clusters is selected from all possible cluster solutions.

The objects of our analysis were the least developed countries in the world. To obtain complex overview of situation of poor countries the countries that already graduated from LDCs were also included. Since the export data of the least developed countries were inconsistent, we had to exclude some of the LDCs from the analysis due to lack of actual data. In the end, the total number of the least developed countries for which the actual data were available summed up to 41 LDCs.

To identify the changes in LDCs exports to three preference-granting economies in a given period 2000 - 2018, it was necessary to generate groups of countries in two different years, at the beginning and the end of the period. The different number of groups, different characteristics and mainly the change in the position of individual LDCs within these groups allowed us to identify how the patterns of LDCs´ exports have changed since 2000.

In both cluster analyzes the shares of individual product categories in total EU-US-China exports of the LDCs acted as variables. These product categories were based on the Standard International Trade Classification on a one-digit level. These categories are:

- food, drinks and tobacco (Sections 0 and 1 - including live animals);
- raw materials (Sections 2 and 4);
- energy products (Section 3);
- chemicals (Section 5);
- manufactured goods classified chiefly by material (Section 6)
- machinery and transport equipment (Section 7);
- other manufactured goods (Section 8).

Section 3, energy products, was from analysis excluded due to unavailability of the actual data, therefore we worked with six product categories.

Three main export flows of the LDCs were used in the analysis: exports to the European Union, the United States and China. Each export flow was divided into six product categories. This means that we got 18 variables based on which individual clusters of countries were created. The first six variables are the shares of each product category exported by given LDC to the EU in total EU-US-China exports of this LDC. The next six variables are the shares of individual product categories exported to the USA in EU-US-China exports and the last six variables are shares of product categories exported to China in EU-US-China exports of the given LDCs. The main characteristic of each group of the LDCs is the product category that makes up the largest share of the total export of given LDC and destination of this share. All export-related data were taken from UNCTADstat, i.e. the statistical database of the United Nations Conference on Trade and Development.

As a linkage method for the evaluation of similarity between clusters, we used Ward´s method since this method is most appropriate for quantitative variables. Ward´s method seeks to join the two clusters whose merger leads to the smallest within-cluster sum of squares (Moral, 1980). Field (2000) describes Ward´s method as follows: "The difference between each case within a cluster and that average similarity is calculated and squared. The sum of squared deviations is used as a measure of error within a cluster. A case is selected to enter the cluster if it is the case whose inclusion in the cluster produces the least increase in the error."

Ward method is calculated as:

$$\Delta(A,B) = \sum_{i \in A \cup B} \left\| \vec{x}_i - \vec{m}_{A \cup B} \right\|^2 - \sum_{i \in A} \left\| \vec{x}_i - \vec{m}_A \right\|^2 - \sum_{i \in B} \left\| \vec{x}_i - \vec{m}_B \right\|^2 \quad (1)$$

$$= \frac{n_A n_B}{n_A + n_B} \left\| \vec{m}_A - \vec{m}_B \right\|^2 \quad (2)$$

where $\vec{m}_j$ presents the centre of cluster *j*, and n_j is the number of points in it. Δ is the merging cost of combining clusters A and B.

As a distance measure we used Square Euclidian Distance, which is measure proposed for the Ward´s method and also the most common measure used in cluster analysis when working with interval data. According to Sakthivel (2015) squared Euclidean distance is the sum of the squared differences between scores for two cases on all variables calculated as

$$d(i,j) = \sum_{k=1}^{n} (X_{ik} - X_{jk})^2 \quad (3)$$

where $i = X_{in}$ and $j = X_{jn}$ are two *n* dimensional data objects.

5 EMPIRICAL RESULTS

In the first cluster analysis based on the export data of the least developed countries in 2000, the six groups of countries were generated. Then according to the results of the second cluster analysis based on data from 2018, the countries were again divided into groups. This time, however, nine groups were identified as the optimal number.

As can be seen in the Table 1, the five groups in 2018 had the same characteristics as those of the year 2000. The individual pairs of these groups shared the same product category that contributed most to their exports and the same destination of these exports.

We can also see that in 2000 the European union was the most important export market for all the LDCs excluding 6 countries whose exports were mainly focused on other manufactured goods going to USA.

The exports of the LDCs in 1st groups were strongly concentrated in both years. More than 50% of the total EU-US-China exports of these countries were made of the raw materials exported to the European Union. Moreover, when taking in account all product categories, almost 90% of the total exports of these LDCs went to the European Union.

Both 2nd groups in 2000 and 2018 comprise of countries whose EU-US-China exports were dominated mainly by machinery and transport equipment and miscellaneous manufactured articles directed to the European Union. Therefore, we can say that these countries concentrated mainly on exports of high value-added products.

Countries in the 3rd groups in 2000 and 2018 also focused on exports of products with higher added value. The vast majority of their exports were made up of manufactured goods classified chiefly by material and were directed to the European Union.

Both 4th groups included countries which exported predominantly food, drinks and tobacco to the European union.

Countries in the 5th groups were also strongly oriented towards export to the European Union. These countries exported mainly product from two product categories, i.e. food, drinks and tobacco and raw materials most of which were exported to the European Union.

As we can see the structure of these groups has changed significantly and only eight countries remained in the same group in both years, i.e. Burkina Faso, Chad, Botswana, Burundi, Malawi, Senegal, Uganda, and Yemen. Which means that their export structure in 2000 and 2018 was similar.

The 6th, the last group in 2000 consists of countries whose EU-USA-China exports were more than fifty percent composed of miscellaneous manufactured articles destined to the USA. Based on the data from 2018 there was not generated any group similar to this one. This means that in 2018 the largest share of these countries' exports was made up of other products than miscellaneous manufactured articles or the largest share of exports went to the EU or China instead of the United States. For example, in Bangladeshi and Cambodia, the largest share of exports in 2018 was again made up of miscellaneous manufactured articles but exported to the European Union instead of the US. Therefore, we can say that these two countries have shifted part of their exports to the European Union from the United States.

The other groups created in 2018 have no equivalent among the groups in 2000 and have very different main features. This means that some countries have changed focus of their exports and thus disconnected from their original groups from 2000 and created completely new ones in 2018.

These were mainly groups of countries whose largest share of exports went to China in 2018. This was particularly the case for the eighth group in 2018, that included seven countries for which raw materials to China accounted for the largest share of exports. The same goes for the sixth group, which included countries whose EU-US-China export was largely made up of manufactured goods from the sixth product category heading to China. It can be seen in the table 1 that the 6th group actually originated from countries that shifted a significant part of their exports of

manufactured goods from the European Union to China. This means that in 2018 these countries concentrated their exports more to China instead of the European Union.

The 7th group contained countries whose EU-US-China exports in 2018 consisted of more than 60% of raw materials going to China. This group was of medium size and contained five countries. Although this group of countries had the same product and geographic focus of the largest share of exports as the 8th group, these two groups are, in fact, different. When considering all products categories, the 8th group exported in total most to the European Union but the 7th group exported most to China.

The last 9th group created in 2018 included countries that in 2000 originally exported the largest part of their exports consisting mainly of food, beverages, tobacco and raw materials to the European Union. In 2018, however, the largest share of these countries' exports was directed to the United States.

Table 1: Groups of LDCs created based on data from 2000 and 2018

EU 2+4		EU 8		EU 6		EU 0+1		EU 0+1, 2+4		USA 8		China 6		China 2+4		China 2 + 4		USA 0+1	
														Total: China		Total:EU			
2000																			
Afghanistan	1	Bhutan	2	Botswana	3	Burundi	4	Eritrea	5	Banglades	6								
Benin	1	Djibouti	2	Central Af	3	Ethiopia	4	Kiribati	5	Cambodia	6								
Burkina Faso	1	Lao Peopl	2	Dem. Rep	3	Malawi	4	Samoa	5	Lesotho	6								
Chad	1	Madagasc	2	Gambia	3	Mozambiqu	4	Solomon Is	5	Maldives	6								
Guinea	1	Sierra Leo	2	Zambia	3	Rwanda	4	Somalia	5	Myanmar	6								
Mali	1					Senegal	4	Togo	5	Nepal	6								
Mauritania	1					Timor-Leste	4	Yemen	5										
Niger	1					Uganda	4												
Vanuatu	1					United Rep	4												
2018																			
Burkina Faso	1	Banglades	2	Bhutan	3	Burundi	4	Afghanistan	5			Dem. Rep	6	Eritrea	7	Benin	8	Kiribati	9
Chad	1	Cambodia	2	Botswana	3	Djibouti	4	Ethiopia	5			Zambia	6	Gambia	7	Central Africa	8	Samoa	9
Somalia	1			Mozambiq	3	Malawi	4	Lesotho	5					Guinea	7	Mali	8	Timor-Leste	9
						Maldives	4	Madagasca	5					Lao Peopl	7	Mauritania	8	Vanuatu	9
						Senegal	4	Myanmar	5					Solomon Is	7	Niger	8		
						Uganda	4	Nepal	5							Sierra Leone	8		
								Rwanda	5							Togo	8		
								United Rep	5										
								Yemen	5										

Source: processed by author

The Table 1 heading shows the numbers indicating the product group and destination of the largest share of LDCs exports. For example, the EU 2 + 4 column lists LDCs whose largest share of exports were raw materials destined for the European Union.

6 CONCLUSION

The paper aimed to identify how the introduction of preferential systems for the least developed countries by the European Union, the United States and later China influenced the structure and geographical focus of LDCs exports to these economies.

The preferential schemes should help LDCs to better assert themselves on the world market and gradually expand their product portfolio so that they are not dependent on exports of primary commodities. Exporting high value-added products brings much more to LDC economies than primary commodity exports.

Nevertheless, the export of LDCs has not evolved within the product structure, and still mostly raw materials, agricultural products, food, and beverages are exported to the preferential economies. Therefore, we can say that the results do not suggest that preferential schemes for LDCs of the European Union, the United States, and China have contributed to a greater diversification of LDCs exports or an increase in the proportion of processing-intensive products in them. Countries have not seen any shift towards increasing the share of products with higher added value in their exports. On the contrary, the number of countries whose largest part of exports consisted of these products decreased compared to 2000.

However, there have been significant changes in the geographical focus of LDCs exports within the European Union, the United States and China. In 2000, of the three preferential economies, the European Union was clearly the largest export market for LDCs. More precisely, the European Union took the largest share in exports of 34 LDCs. In 2018, however, the EU occupied the largest share of exports in only 24 least developed countries. This finding is consistent with the fact that the European Union's share in world trade is gradually decreasing. The share of the United States in LDCs exports has also decreased since 2000, but not as significant as that of the European Union. While in 2000 China was not the largest export market for any LDC within EU-US-China exports, in 2018 the largest share of export of twelve countries was exported to China. Therefore, we can say that China's share in LDCs exports has increased at the expense of the EU and the US.

However, in the light of the results, it is necessary to realize that China was already experiencing a period of rapid economic growth at the time of the introduction of its preferential plan. It cannot therefore be ruled out that China, as the main export market for LDCs, has overtaken the EU and the US partly because of its increasing domestic demand or because it has begun to be seen by LDCs as a more prospective trading partner for the years to come.

In conclusion, it should be noted that although the effects of the preferential systems of the European Union, the United States and China failed to meet the expectations of changes in the pattern of exports of LDCs, it is not excluded that they largely affected the volume of these exports. However, this will be the subject of further research.

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