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The current state and prospects of trade relations between Ukraine and the European Union: the Visegrad vector

Abstract
The authors consider main trends and perspectives of trade relations between Ukraine and the Visegrad countries. There has been a significant reduction in Ukraine's foreign trade in recent years due to various factors related to the complicated economic situation and the military conflict in the East of Ukraine. In such adverse conditions, a gradual reorientation of the country's import and export trade flows from the Russian Federation towards the European Union is taking place, including the Visegrad countries. Ukrainian producers aim their efforts at diversification of markets and look for new business opportunities in this regard.

The results of Ukraine's export trade with the V4 countries analysis showed that the country's operations with Poland, Czech Republic and Slovak Republic were focused mainly on raw materials. There was a different situation regarding Hungary, where machine building sector export showed a sound increase. Nevertheless, the share of primary goods in Ukraine-Hungary trade increased as well. At the same time, bad economic conditions and high level of inflation in Ukraine stipulated decrease in import trade of goods, in particular, with the V4 countries.

It should be noted that substantial structural changes in foreign trade between the countries have not been observed. Other changes concerned different groups of raw materials and finished products. It means that most likely the changes were situational, and they were not caused by some new strategic directions regarding export activities. Intensification of foreign trade activities is essential to overcome the crisis situation in Ukraine and promote its economic development. In the context of DCFTA and the European Neighbourhood Policy realisation, particular attention should be given to elaboration of the national trade strategy and identification of export priorities, taking into account, on the one hand, the existing potential of the country, and, on the other hand, opportunities in international trade, which could be used to the full extent. If this strategy is implemented successfully, it will allow the country to improve its economic situation and integrate more effectively into the international trade system.

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Сучасний стан та перспективи розвитку торговельних відносин між Україною та Європейським Союзом: Вишеградський вектор

Анотація. У статті розглядаються основні тенденції та перспективи розвитку торговельних відносин між Україною та країнами Вишеградської групи. Слід відзначити, що значні структурні зміни в зовнішній торгівлі між країнами не спостерігалися. Зміни, що відбулися, мали відношення до різних груп сировинних товарів і готової продукції. Це означає, що такі зміни були ситуативними, і вони не були викликані новими стратегічними напрямами в експортній діяльності. Активізація зовнішньоекономічної діяльності має важливе значення для подолання кризової ситуації в Україні та сприяння її економічному розвитку. Особливу увагу слід приділити розробці національної торговельної стратегії та визначенню експортних пріоритетів, беручи до уваги, з одного боку, існуючий потенціал країни, а з другого - можливості міжнародної торгівлі, які б могли використовуватися повною мірою. Якщо така стратегія буде успішно запроваджена, це дозволить країні поліпшити своє економічне становище й більш ефективно інтегруватися в міжнародну торговельну систему.
Ключові слова: зовнішня торгівля; експорт; імпорт; Україна; країни Вишеградської групи.

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Современное состояние и перспективы развития торговых отношений между Украиной и Европейским Союзом: Вышеградский вектор

Аннотация. В статье рассматриваются основные тенденции и перспективы развития торговых отношений между Украиной и странами Вышеградской группы. Следует отметить, что значительные структурные изменения во внешней торговле между странами не наблюдались. Произошедшие изменения имели отношение к различным группам сырьевых товаров и готовой продукции. Это означает, что такие изменения были ситуативными, и они не были вызваны новыми стратегическими направлениями в экспортной деятельности. Активизация внешнеэкономической деятельности имеет важное значение для преодоления кризисной ситуации в Украине и способствованию её экономическому развитию. Особое внимание следует уделить разработке национальной торговой стратегии и определению экспортных приоритетов, принимая во внимание, с одной стороны, существующий потенциал страны, а, с другой - возможности в области международной торговли, которые следует использовать в полной мере. Если такая стратегия будет успешно реализована, это позволит стране улучшить свое экономическое положение и более эффективно интегрироваться в международную торговую систему.
Ключевые слова: внешняя торговля; экспорт; импорт; Украина; страны Вышеградской группы.

1. Introduction

One of the most pressing issues for Ukraine is to determine ways to increase the efficiency and competitiveness of its economy. The country should find out its own niche in the world economic system. New opportunities may open up to the country as a result of creation of the free trade zone with the European Union. Thus, appropriate steps should be taken to facilitate Ukraine's adaptation to the current economic conditions.

Various aspects of international trade are considered in a number of publications. For instance, Bilan (2009) [1] investigates factors which promote export growth and diversification in Poland and Hungary. Fitzov a and Zidek (2015) [9] analyse the influence of international trade on economic growth in the Czech Republic and the Slovak Republic. Love et al. (2016) [22] research the impact of international experience and age of UK SMEs on their exporting performance. Grazzi and Tomasi (2016) [11] explore the effect of firms' productivity on different modes of participation in international trade.

The state and perspectives of relations of Ukraine and the EU, including issues of trade policy, are also well described in economic literature. For instance, Lane (2007) [19] discusses possible scenarios for cooperation between Ukraine and the European Union, considering its economic and trade aspects.

Van der Loo and Van Elsuwege (2012) [32] examine the legal framework of the EU-Ukraine trade relations and the impact of the establishment of a Deep and Comprehensive Free Trade Area (DCFTA) in the context of the European Neighbourhood Policy.

According to Sadowski (2012) [23], integration of Ukraine into the European market with the aim to enhance political and economic stability of the country was among the EU's priorities during the negotiations.

Dabrowski and Taran (2012) [5] mention that DCFTA will have a positive impact on Ukrainian enterprises due to their better access to markets, based on harmonisation with EU product standards and benefits of scale.

Employing the disaggregated gravity equation, Shepotylo (2010) [24] points out that the EU accession would have had a positive effect on the total export volumes of Ukraine and the composition of the country's exports.

Applying the GTAP multi-country simulation model, Harbuzyuk and Lutz (2008) [13] discover that a customs union between Ukraine and the EU will not only help to avoid trade diversion with some partners, but also will foster trade creation and possibly a (modest) increase in the Ukrainian welfare.

On the basis of the Balassa index, Vavryshchuk (2007) [31] explores the composition of Ukraine's international trade. The received results show that Ukraine specialises mostly in the production and export of low value added goods, primarily metal products.

Duhinets and Tronko (2015) [7] pay attention that it is possible to improve the economic situation of Ukrainian enterprises owing to their integration into global value chains and development of import substitution in the frame of DCFTA.

Using a gravity model of trade, Gylfason et al. (2015) [12] investigate the effects of free trade agreements for the Eastern Partnership (EaP) countries (including Ukraine) with Russia and the EU respectively. Their research show that the EaP countries gain significantly from free trade agreements with the EU, whereas the effect of free trade agreements with Russia is limited.

Frey and Olekseyuk (2014) [10] analyse fiscal costs of trade liberalisation in Ukraine in the frame of the EU-Ukraine DCFTA. The simulation of this liberalisation confirms that it is essential to take into account fiscal costs of tariff elimination.

Various aspects of the EU-Ukraine free trade agreement and evaluation of its impact on main economic branches of the country are also considered in other publications by ECORYS and CASE (2007) [8], the Institute for Economic Research and Policy Consulting (2010) [15], and the International Renaissance Foundation and Institute for Economic Research and Policy Consulting (2015) [16].

At the same time, it should be noted that the number of publications regarding relations between Ukraine and the Visegrad countries is quite limited. These publications are primarily related to separate countries and economic branches (see, for instance, Clowes, 2013 [4]; Smith et al., 2008 [25]; Szeptycki, 2016 [30]; Butyter & Wachowska, 2015 [3]; Kharlamova, 2014 [18]). Taking into consideration this situation, more attention should be paid to this topic, and appropriate studies need to be conducted.

The aim of this paper is to investigate trends and peculiarities of trade activities of Ukraine and V4 countries and to outline potential directions for their improvement in the further perspective. During the preparation of the article, the data of the State Statistics Service of Ukraine were used.

2. Methodology

In order to study out how many times (what percentage) one indicator value changed compared to the other, we compare them proportionally. In our case, the comparison data characterise the simple intensity values for n periods p_0, p_1, p_2, ...p_n. Then we determine chain indices as a proportion of two consecutive values.

Another method used in this paper is regression and correlation analysis. One of the major objectives in a quantitative research is to examine the dependent variables. Assumptions on which the regression analysis is based are formulated into probabilistic regression model. In this work we used a linear regression with equation: $y'_j = b_0 + b_1 x_j$ and second degree polynomial function: $y'_j = b_0 + b_1.x_j + b_2.x^2_j$. Unknown parameters b_0, b_1, b_2 are calculated by using the method of the least squares.

Correlation analysis is a summary of methods and procedures by which we verify the explanatory ability of the quantified regression models both as a whole and its parts. The verification of explanatory ability of quantified regression models leads to the calculation of numerical characteristics which in concentrated form describe the quality of the calculated models. How much of the variability of dependent variable it is possible to explain by the selected regression function is expressed by the determination index with the formula given below:

$$I^2 = \frac{V}{C} = \frac{\sum_{j=1}^{n} \left(y'_j - \bar{y}\right)^2}{\sum_{j=1}^{n} \left(y_j - \bar{y}\right)^2} .$$

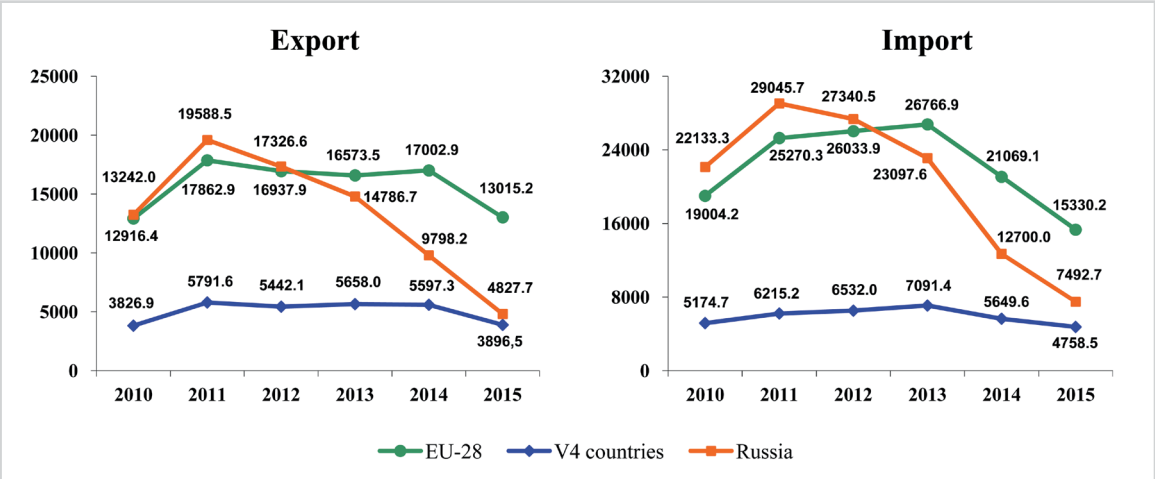
3. The current state of foreign trade between Ukraine and V4 countries

The situation regarding Ukraine's foreign trade has some peculiarities. The total volume of exported goods increased from USD 50,744.3 million in 2010 to USD 67,779.8 million in 2012 according to the data obtained from the State Statistics Service of Ukraine [27]. Later, this indicator declined, and in 2015 it was equal to USD 38,127.1 million [29]. However, the trends were different concerning the export of goods from Ukraine to the Russian Federation and EU countries. For instance, in 2010 and 2011, export operations to Russia were USD 13,242.0 million and USD 19,588.5 million respectively, while the corresponding figures for the EU member states were USD 12,916.4 million and USD 17,862.9 million respectively (Figure 1). After this period, the export trade with Russia had a downward trend and decreased to USD 4,827.2 million in 2015. The decline in export to the EU countries was not so substantial. As a result, in the period of 2010-2015, the share of the Russian Federation in the total export fell from 26.1% to 12.7%, while this indicator for the EU member states increased from 25.5% to 34.1%. The export of goods to the V4 countries went up from USD 3,826.9 million in 2010 to USD 5,791.6 million in 2011 and declined to USD 3,896.5 million in 2015. The share of these countries in export operations increased from 7.5% in 2010 to 10.2% in 2015.

With regard to Ukraine's import trade in the period of 2010-2012, its growth was observed from USD 60,352.0 million to USD 83,135.4 million. After that, there was a significant reduction of import activities, and, in 2015, this indicator was equal to USD 37,516.4 million (or by 54.9% less than in 2012). The import operations with the Russian Federation, reaching its peak in 2011 (USD 29,045.7 million), later, had a downward trend. In 2015, the import from the Russian Federation to Ukraine dropped to USD 7,492.7 million (or by 74.2% less if compared with 2011). The share of the Russian Federation in the total import decreased from 36.7% in 2010 to 20.0% in 2015. In the 2010-2013 period, the import trade with the EU member states increased from USD 19,004.2 million to USD 26,766.9 million. However, in 2015 it went down to USD 15,330.2 million (or by 42.7% less if compared with 2013). At the same time, the share of imported goods from the EU member states grew from 31.5% to 40.9% between 2010 and 2015. A similar situation was observed concerning imported goods to Ukraine from the V4 countries. In the 2010-2013 period, the import increased from USD 5,174.7 million in 2010 to USD 7,091.4 million in 2013, while in 2015 this indicator fell to USD 4,758.5 million (or by 32.9% if compared with 2013). The share of the V4 countries in the total import increased from 8.6% in 2010 to 12.7% in 2015 (Figure 1).

It can be concluded that there has been a significant reduction in Ukraine's foreign trade in recent years. This happened due to various reasons related to the complicated economic situation in the country and the conflict in the East of Ukraine. Nevertheless, despite these adverse conditions, there has been a trend in gradual reorientation of the country's import and export trade flows from the Russian Federation to the EU, including the V4 countries. For Ukrainian producers, it means diversification of markets and, based on this approach, a search for better economic opportunities in the future.

Let us consider the structures of exported goods from Ukraine to each of the V4 countries separately. Poland was the leader in



Note: The data for the 2010-2015 period are presented for Ukraine excluding the temporarily occupied territory of the Autonomous Republic of Crimea and Sevastopol; the data on Donetsk and Luhansk regions include enterprises, establishments and organisations that submitted reports to the State Statistics Service of Ukraine.

Fig. 1: **The foreign trade operations of Ukraine regarding goods, 2010-2015 (mln USD)**
Source: Own work based on the data of the State Statistics Service of Ukraine (2015 [27], 2016b [29])

terms of these trade operations during the stated period. The main types of export products were base metals and preparations thereof (2010 - 24.0%; 2015 - 22.3%), machines, equipment and mechanisms, electric and technical equipment (2010 - 12.0%; 2015 - 16.2%), and mineral products (2010 - 28.2%; 2015 - 13.3%) according to the data obtained from the State Statistics Service of Ukraine, 2011 [26], 2016a [28]. Thus, the export structure, to a large extent, was focused on raw materials. Nevertheless, there was some reduction in this trend during the presented period. Among the trade groups, which experienced the highest growth rates, there were natural or cultured pearls, precious stones (by 15.0 times), different industrial products (by 4.7 times), and live animals and livestock products (by 4.6 times).

In 2015, the largest shares in the export structure from Ukraine to Hungary were observed for machines, equipment and mechanisms, electric and technical equipment (54.0%), mineral products (20.5%), and wood and articles of wood (6.8%). The corresponding figures in 2010 were 62.4%, 12.9% and 5.8%. Hence, while finished products still had a relatively high proportion among exported goods, it can be clearly seen that trade operations concerning raw materials took place on a growing scale. During the 2010-2015 period, the highest increase of export activities occurred for commodity groups such as natural or cultured pearls, precious stones (by 28.9 times), live animals and livestock products (by 13.9 times), and optical, cinematographic apparatus (by 5.4 times).

The largest shares in the structure of exported goods from Ukraine to the Czech Republic were occupied by mineral products (2010 - 57.2%; 2015 - 46.4%), machines, equipment and mechanisms, electric and technical equipment (2010 - 11.3%; 2015 - 24.6%), and base metals and preparations thereof (2010 - 20.6%; 2015 - 9.7%). This means that export operations were mainly connected with raw materials. Concerning the commodity groups that had the largest increase during the presented period, ground, air and water transport facilities (by 11.4 times), different industrial products (by 381.9%), and live animals and livestock products (by 322.3%) can be mentioned.

Regarding the volume of exported goods from Ukraine to the Slovak Republic, it should be mentioned that among the commodity sections with the largest export portions were mineral products (2010 - 53.3%; 2015 - 42.4%), machines, equipment and mechanisms, electric and technical equipment (2010 - 11.4%; 2015 - 19.2%), and base metals and preparations thereof (2010 - 18.0%; 2015 - 18.1%). This export structure was mainly focused on raw commodities. During this period, the highest growth of the export was observed for commodity groups, such as paper bulk from wood or other vegetable fibres (by 8.4 times), live animals and livestock products (by 6.3 times), and raw leather and curry leather (by 4.4 times).

Summarising the results of the analysis of Ukraine's export trade with the V4 countries (Figure 1), it can be concluded that the country's operations with Poland, Czech Republic and Slovak Republic were chiefly focused on raw materials. A somewhat different situation occurred regarding Hungary. Though, the importance of primary goods for that country also increased. Considering the presented years (2013-2015), in most cases, the economic crisis of that period had a direct negative impact on export activities. It should be also noted that clearly visible structural changes in foreign trade of Ukraine with the V4 countries were not seen. For each country, those changes were related to different groups of raw materials and finished products. From our point of view, it means that most likely the changes were situational, and they were not caused by some new strategic directions regarding export and import activities.

To analyse changes of foreign trade operations of Ukraine with the V4 countries, we used a chain index methodology. It should be noted that the situation with the export of goods developed differently during the period of 2010-2015 (Table 1). In 2011, compared with 2010, the increase in the volume of export operations was observed for all the V4 countries: the Czech Republic - by 35.1%; Hungary - by 54.9%; Poland - by 56.4% and the Slovak Republic - by 47.8%. We suggest that the export growth was connected with the gradual recovery of the Ukrainian economy after the financial crisis of 2007-2008 and quite a favourable situation on external markets. In the next period, there was a year-on-year decline. The most significant decrease in the volume of exported commodities from Ukraine to the V4 countries took place in 2015, if compared to the year 2014: the Czech Republic - by 30.0%; Hungary - by 39.8%; Poland - by 25.2% and the Slovak Republic - by 30.1%. In our opinion, such reduction of the export volume happened due to the complicated economic situation in Ukraine as a consequence of the military conflict in the East of the country.

The situation with regard to export of services to the V4 countries was somewhat different (Table 1). In the period of 2011-2013, its volume grew for the Czech Republic (2011 - by 17.4%; 2013 - by 36.7%) and Poland (2011 - by 46.3%; 2013 - by 55.3%) in comparison with the previous years. In the 2011-2012 period, the decrease of that indicator was observed for Hungary and the Slovak Republic. It increased for those countries in 2013 (by 139.7% and 31.6% respectively). Since 2014, the fall of export of services has been observed for all the V4 countries. In 2015, compared with the year 2014, its reduction was as follows: the Czech Republic - by 16.1%; Hungary - by 6.6%; Poland - by 10.3% and the Slovak Republic - by 35.3%, which was connected with the deteriorating economic position of Ukraine.

Similar changes occurred with respect to imported goods to Ukraine from the V4 countries (Table 2). Between 2010 and 2011, there was a growth of import activities, and the respective figures for the Czech Republic, Hungary, Poland and the Slovak Republic were 57.8%, 5.4%, 13.9% and 35.9%. We suggest that it happened due to the improved economic situation of the country after the 2007-2008 financial crises. As a result, there was an increased demand for imported goods from the part of Ukrainian consumers. In 2014 and 2015, in comparison to the previous years, there was a gradual reduction in the import volume from the V4 countries (excluding Hungary), namely: the Czech Republic - by 30.3% and 30.3%, Poland - by 24.2% and 24.3%, and the Slovak Republic - by 34.5% and 18.9%. We suggest that the worsening economic situation, which was connected with the war conflict in the eastern part of Ukraine, led to a reduction in the income level of the majority of the Ukrainian people and, consequently, their demand on imported goods.

With respect to the import of services to Ukraine from the V4 countries, two groups can be identified, depending on the change of this indicator. The first group is represented by the Czech Republic and the Slovak Republic. The volume of imported services of the group showed a steady growth in the given period, with exception of 2012. The second group includes Hungary and Poland. For this group, there was a rise in import of services in the period of 2011-2012, while its volume declined steadily in the 2013-2015 period.

In this part, the most suitable model for each of the V4 countries versus Ukraine and the prediction of export and import volumes were made. They were carried out based on the methodology of regression and correlation analysis. To analyse a trend in the export of goods from Ukraine to the Czech Republic (Figure 2), the polynomial model of the second degree was used ($R^2 = 0.652$). The equation model has the form:

$y = -33.009x^2 + 217.33x + 453.85$.

The same type of model was applied to investigate a trend in the export of services. The equation is:

$y = -2.1554x^2 + 21.033x + 20.39$ ($R^2 = 0.814$).

The analysis of imported goods was grounded on the linear function:

$y = -87.363x + 1193.2$ ($R^2 = 0.297$).

The second degree polynomial model was developed to determine a trend in the import of services. In this case, the equation is the following:

$y = -3.2643x^2 + 21.307x + 23.1$($R^2 = 0.8297$).

To investigate tendencies concerning exported goods and services from Ukraine to Hungary (Figure 3), the second degree polynomial models were elaborated. The equations are as follows:

$y = -111.5x^2 + 804.92x + 151.23$ ($R^2 = 0.9546$)

and

$y = 6.3982x^2 - 59.233x + 236.71$ ($R^2 = 0.2731$).

The linear function was chosen for the analysis of the import of goods from Hungary to Ukraine using the equation:

$y = 79.074x + 1077.4$ ($R^2 = 0.7688$).

Regarding imported services, the polynomial model of the second degree was applied. The received equation has the form:

$y = -7.6232x^2 + 49.331x + 19.91$ ($R^2 = 0.7993$).

For trade operations between Ukraine and Poland and the Slovak Republic, trends with respect to export and import operations were identified, applying the polynomial models of the second degree. The respective equations are the following:

- regarding Poland (Figure 4):
  - export of goods:
  $y = -126.56x^2 + 900x + 1155.5$ ($R^2 = 0.7346$),
  export of services:
  $y = -7.25x^2 + 72.059x + 18.72$ ($R^2 = 0.8513$);
  - imported goods:
  $y = -198.49x^2 + 1331.1x + 1507.6$ ($R^2 = 0.8515$),
  imported services:
  $y = -8.2839x^2 + 52.245x + 88.45$ ($R^2 = 0.8702$).
- concerning the Slovak Republic (Figure 5):
  - export of goods:
  $y = -35.577x^2 + 223.74x + 414.63$ ($R^2 = 0.6973$),
  export of services:
  $y = -0.9964x^2 + 3.2321x + 46.5$ ($R^2 = 0.6456$);
  - imported goods:
  $y = -36.302x^2 + 228.84x + 255.81$ ($R^2 = 0.8485$),
  imported services:
  $y = 5.1214x^2 - 22.753x + 44.96$ ($R^2 = 0.8738$).

Tab. 1: **Export of goods and services from Ukraine to V4 countries, 2010-2015**

Export of goods	2010	2011	2012	2013	2014	2015
Czech Republic, mln USD	620.4	838.2	698.8	812.4	772.5	541.0
chain indices		135.1	83.4	116.3	95.1	70.0
increase / decrease (%)		35.1	-16.6	16.3	-4.9	-30.0
Hungary, mln USD	857.0	1327.9	1507.1	1552.8	1509.9	909.7
chain indices		154.9	113.5	103.0	97.2	60.2
increase / decrease (%)		54.9	13.5	3.0	-2.8	-39.8
Poland, mln USD	1785.6	2791.8	2571.0	2545.4	2644.7	1977.3
chain indices		156.4	92.1	99.0	103.9	74.8
increase / decrease (%)		56.4	-7.9	-1.0	3.9	-25.2
Slovak Republic, mln USD	569.3	833.7	665.2	747.4	670.2	468.5
chain indices		147.8	79.8	112.4	89.7	69.9
increase / decrease (%)		47.8	-20.2	12.4	-10.3	-30.1

Export of services	2010	2011	2012	2013	2014	2015
Czech Republic, mln USD	43.0	50.5	56.1	76.7	77.0	64.6
chain indices		117.4	111.1	136.7	100.4	83.9
increase / decrease (%)		17.4	11.1	36.7	0.4	-16.1
Hungary, mln USD	223.8	83.8	76.5	183.4	98.8	92.3
chain indices		37.4	91.3	239.7	53.9	93.4
increase / decrease (%)		-62.6	-8.7	139.7	-46.1	-6.6
Poland, mln USD	90.5	132.4	140.3	217.9	202.8	181.9
chain indices		146.3	106.0	155.3	93.1	89.7
increase / decrease (%)		46.3	6.0	55.3	-6.9	-10.3
Slovak Republic, mln USD	50.6	49.4	38.0	50.0	41.4	26.8
chain indices		97.6	76.9	131.6	82.8	64.7
increase / decrease (%)		-2.4	-23.1	31.6	-17.2	-35.3

Source: Own work based on the data of the State Statistics Service of Ukraine (2015 [27], 2016a [28])

Tab. 2: **Import of goods and services to Ukraine from V4 countries, 2010-2015**

Import of goods	2010	2011	2012	2013	2014	2015
Czech Republic, mln USD	745.6	1176.9	1247.9	986.7	687.9	479.7
chain indices		157.8	106.0	79.1	69.7	69.7
increase / decrease (%)		57.8	6.0	-20.9	-30.3	-30.3
Hungary, mln USD	1213.8	1279.8	1158.6	1400.1	1464.0	1608.5
chain indices		105.4	90.5	120.8	104.6	109.9
increase / decrease (%)		5.4	-9.5	20.8	4.6	9.9
Poland, mln USD	2778.1	3164.2	3545.4	4052.4	3070.8	2324.0
chain indices		113.9	112.0	114.3	75.8	75.7
increase / decrease (%)		13.9	12.0	14.3	-24.2	-24.3
Slovak Republic, mln USD	437.2	594.3	580.1	652.2	426.9	346.3
chain indices		135.9	97.6	112.4	65.5	81.1
increase / decrease (%)		35.9	-2.4	12.4	-34.5	-18.9

Import of services	2010	2011	2012	2013	2014	2015
Czech Republic, mln USD	38.5	59.3	52.4	58.4	45.8	34.6
chain indices		154.0	88.4	111.5	78.4	75.5
increase / decrease (%)		54.0	-11.6	11.5	78.4	75.5
Hungary, mln USD	52.3	101.0	107.9	85.1	65.4	50.0
chain indices		193.1	106.8	78.9	76.9	76.5
increase / decrease (%)		93.1	6.8	-21.1	-23.1	-23.5
Poland, mln USD	141.1	142.5	175.4	167.5	148.8	98.7
chain indices		101.0	123.1	95.5	88.8	66.3
increase / decrease (%)		1.0	23.1	-4.5	-11.2	-33.7
Slovak Republic, mln USD	18.2	33.6	27.6	30.8	46.0	101.8
chain indices		184.6	82.1	111.6	149.4	221.3
increase / decrease (%)		84.6	-17.9	11.6	49.4	121.3

Source: Own work based on the data of the State Statistics Service of Ukraine (2015 [27], 2016a [28])

Based on the presented models, a forecast of the export and import of goods of Ukraine and the Visegrad countries was worked out for the year 2016 (Table 3). It is necessary to pay attention that the calculated value of the import of services for Hungary (decrease for USD 8.3 million) cannot be used directly. This value should be understood keeping in mind that the volume of imported services to Ukraine from Hungary will have a significant downward trend, and it will be close to zero in 2016. The projected values of the export and import of goods and services may (and probably will) differ from the actual values, depending on economic and political development of Ukraine.

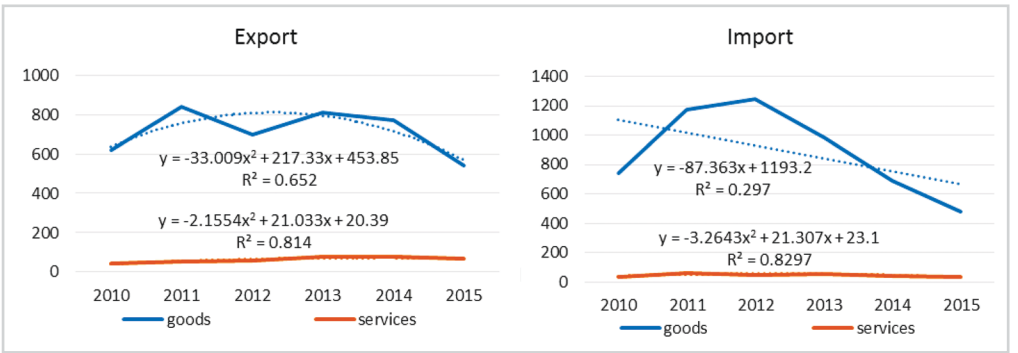


Fig. 2: **Foreign trade in goods and services between Ukraine and the Czech Republic, 2010-2015**
Source: Own work based on the data of the State Statistics Service of Ukraine (2015 [27], 2016a [28])

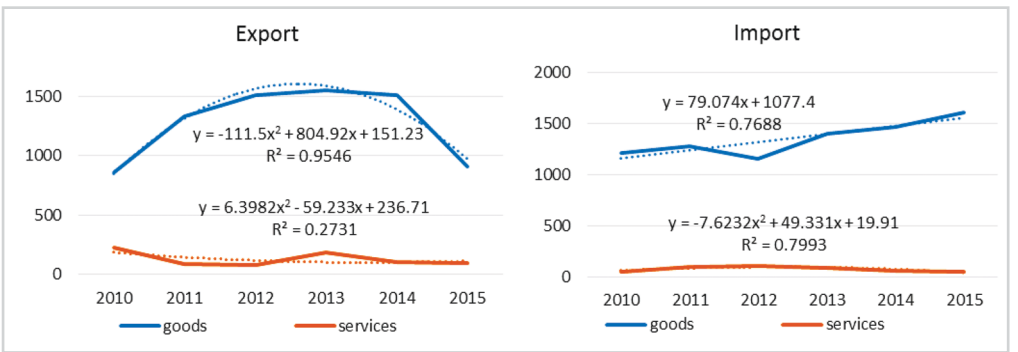


Fig. 3: **Foreign trade in goods and services between Ukraine and Hungary, 2010-2015**
Source: Own work based on the data of the State Statistics Service of Ukraine (2015 [27], 2016a [28])

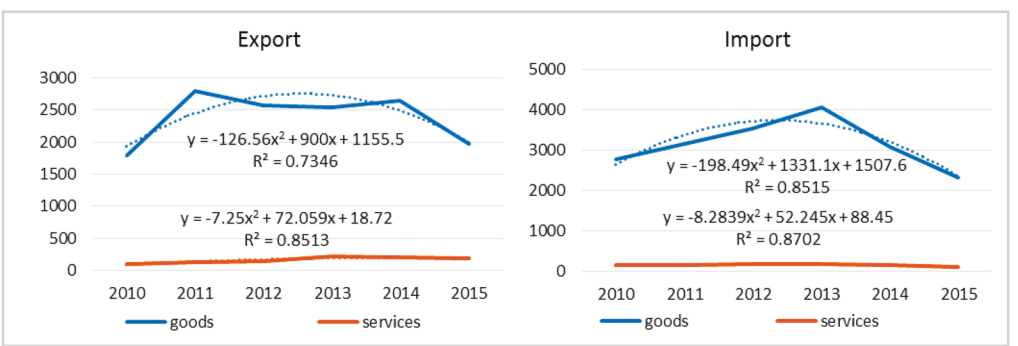


Fig. 4: **Foreign trade in goods and services between Ukraine and Poland, 2010-2015**
Source: Own work based on the data of the State Statistics Service of Ukraine (2015 [27], 2016a [28])

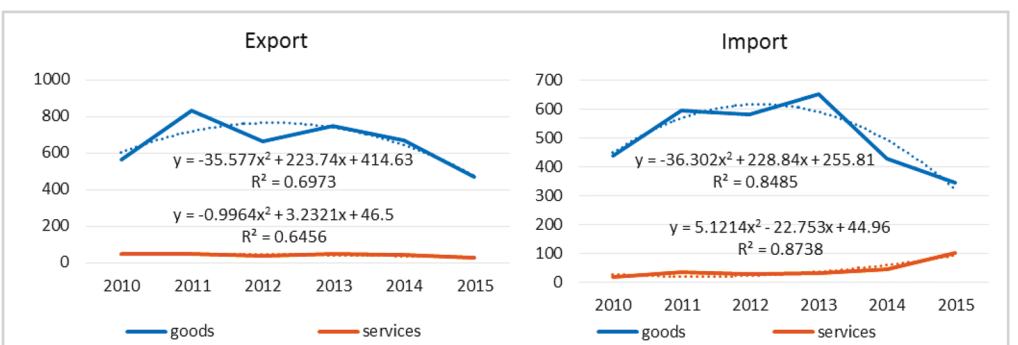


Fig. 5: **Foreign trade in goods and services between Ukraine and the Slovak Republic, 2010-2015**
Source: Own work based on the data of the State Statistics Service of Ukraine (2015 [27], 2016a [28])

Tab. 3: **Forecast of foreign trade in goods and services between Ukraine and V4 countries for 2016 (mln USD)**

Country	Export		Import	
	Goods	Services	Goods	Services
Czech Republic	357.7	62.0	581.7	12.3
Hungary	322.2	135.6	1630.9	-8.3
Poland	1254.1	167.9	1099.3	48.3
Slovak Republic	237.5	20.3	78.9	136.6

Source: Own work based on the data of the State Statistics Service of Ukraine (2015 [27], 2016a [28])

4. Perspectives of trade relations of Ukraine with V4 countries

In our opinion, Ukraine should elaborate a long-term trade strategy and define export priorities, taking into account both the existing potential of the country and the opportunities for the international trade, which could be used in the most efficient way. As stated by Brandi (2014) [2], three key ingredients can ensure a country's successful trade performance: support for trade-related infrastructure such as roads, railways, ports, energy and telecommunication; trade facilitation and the improvement of rules and procedures that govern how goods cross borders; and effective state-business relations. Thus, we guess that it is significant for the country to implement special programs aimed at tackling existing problems in these spheres.

Hoekman et al. (2013) [14] mention the following principles and approaches that can inform the Ukraine's trade strategy:

1) use supply chain councils as a focal point for international cooperation to integrate markets and lower trade costs;
2) safeguard current trade privileges, encourage foreign direct investment and think globally, including expanding the number of free trade agreements;
3) a strong national focus on reducing trade costs.

In the frame of the Doing Business project, the World Bank provides objective measures of business regulations for 189 economies. The data of Doing Business 2016 was used to compare Ukraine with the V4 countries. Attention was given to two indicators, namely: ease of doing business rank and trading across borders (Table 4).

Regarding the ease of doing business indicator, in 2016 the Visegrad countries occupied places ranging from the 25th to 42nd. Despite a slight improvement, compared with the year 2015, Ukraine was on the 83rd place. A much worse situation is observed for the country in terms of the trading across borders indicator. While all the V4 countries are on the first places in the ranking, Ukraine has only the 109th position. Thus, clear and consistent steps related to internal business environment and external trade activities ought to be implemented to facilitate the country's integration in the world trade system.

Tab. 4: **The rankings of Ukraine and V4 countries regarding the ease of doing business and trading across borders in 2015-2016**

Country	Ease of doing business rank		Trading across borders	
	2015	2016	2015	2016
Poland	28	25	1	1
Slovak Republic	29	29	1	1
Czech Republic	33	36	1	1
Hungary	40	42	1	1
Ukraine	87	83	109	109

Source: Own work based on the data of the World Bank Group (2016) [33]

We suggest that insufficient attention is paid in Ukraine to assist exporters to find markets for their goods, including through the creation of national export promotion agencies (EPAs). According to Lederman et al. (2010) [21], the services offered by EPAs can be divided into four broad categories: 1) country image building; 2) export support services; 3) marketing; 4) market research and publications. Also, they point out that EPAs are effective in terms of having an impact on national exports: a 10% increase in EPA budgets at the mean leads to a from 0.6% to 1% increase in exports, after correcting for selection and endogeneity biases.

DiPietro and Anoruo (2006) [6], Kharlamova and Vertelieva (2013) [17] examine the impacts of creativity and its components on export performance. The results of the cross-country regression analysis show that a country's creativity, innovation, the state of technology, the amount of technological transfer from other countries, and the extent of business startups are all positively correlated with the value of a country's exports. From our point of view, creativity and innovativeness should be considered important features to promote the growth of Ukraine's export trade. This is a not simple task, but Ukrainian enterprises need to implement innovative programs and technologies to be able to compete in the markets of the V4 counties.

Taking into consideration the results of the conducted analysis, we suggest that the reorientation of Ukraine's export to the Visegrad countries is needed. As it has been previously mentioned, there are trends in the reduction of exports of finished products and, on the contrary, an increase in the share of the export of raw materials. It will be essential to diversify export flows of the country. Ukraine should not be engaged only in trade of raw materials, but also in the export of finished commodities (including high-tech products). There is a number of Ukrainian enterprises, which, if appropriate modernisation takes place, can contribute to favourable changes in this regard. As stated by Leonidou et al. (2011) [20], the adoption of specific national export-promotion programs positively strengthens the firm's export-related resources and capabilities. This explains why the introduction of such programs will be essential from this point of view.

5. Conclusions

The carried out analysis has shown that the export of goods from Ukraine to the Visegrad countries was largely focused on raw materials, while finished products occupied a relatively small share. Substantial positive shifts with respect to the structure of exported goods were not observed, and changes concerning such trade activities were situational.

The projected values of foreign trade in goods and services of Ukraine with the V4 countries were calculated for 2016 by applying the methodology of regression and correlation analysis. The forecasted trade indicators, of course, might be different from the actual values, which will be connected with the political and economic state of Ukraine.

Intensification of foreign trade activities can give good opportunities to overcome the crisis situation in Ukraine and to promote its economic development. All possibilities, which are available for the country in the framework of the free trade agreement with the EU, should be used. Thus, it is necessary to work out a national trade strategy which should have well-defined export priorities. Trade relations should be established to ensure the maximum utilisation of economic potential of Ukraine and the diversification of its export structure, and taking into account the specific features of the V4 markets, to promote stable demand for Ukrainian goods in those countries. The solution of this problem will be quite difficult for Ukraine. Though, if this strategy is implemented successfully, it will allow the country to improve its economic situation and to integrate more effectively into the international trade system.

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