FOREIGN TRADE OF WINE AND FRESH GRAPES IN THE VISEGRAD COUNTRIES

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ABSTRACT

The Visegrad countired, as countries of a single grouping that have pledged to help each other and to deepen their trade with each other. These are the countries of the Slovak Republic, the Czech Republic, Hungary and Poland. The main objective of the article is to identify the overall level of trade of the Visegrad countries in the commodity wine and fresh grapes concerning the World, the Visegrad countries as a whole and the individual countries of the Visegrad country. The analysis shall take into account the monetary clarification of trade volumes in millions of euros. The commodity structure is based on the international HS system. The main analysis is carried out through the basic indicators of turnover, trade balance and RCA (Revealed Comparative Advantage). Hungary has a comparative advantage in the wine trade at the World level but also within the Visegrad countries. The Slovak Republic has both comparative advantages and comparative disadvantages within the World and the Visegrad countries, but most of all with the Czech Republic and Poland. The Czech Republic showed comparative advantages only with Poland. Poland has no comparative advantages with any of the Visegrad countries.

Keywords: wine sector, Visegrad countries, foreign trade, export, import, comparative advantages, Revealed Comparative Advantage

JEL Code: Q170

1 INTRODUCTION

Wine is a globally popular beverage, but production is located in very few places. It is estimated that wine is produced in around sixty countries. Of these, many countries produce a negligible amount of wine. Countries that do not have the land area or climatic conditions to do so produce regional high-quality wines, but the quantity does not cover foreign markets and exports alone (Ayuda et al., 2020; Anderson and Pinilla, 2018; Rocchi and Stefani, 2002). The largest European traditional wine producers include coun- tries such as Italy, France, Spain and countries such as the USA, Australia, Chile, South Africa and New Zealand, which produce around 80–90% of the World volume. Interestingly (Dal Bianco et al., 2015). Claim

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that almost half of the wines produced in wine producing countries are consumed outside their country of production (Holmes and Anderson, 2017). The biggest turning point in wine trade took place in the 1980s, when the potential for wine demand in foreign markets became apparent to countries due to changes in wine policy that affected wine-producing countries in Europe (Cembalo et al., 2014; (Morrison and Rabellotti, 2014; Aizenman and Brooks, 2008; Dion, 1952). However, according to BALOGH et al. (2018), the global share of European wine production is declining. For more efficient foreign trade, grape growers and wine producers need to share uniform and tailored rules and policies (Fleury and Fleury, 2003; Ring and Van de Ven, 1994). The role of these policies is to improve international relations with this commodity (Borák, J. and Vacek, T. 2018; Kuemmerle, 1999; Woodward and Rolfe, 1993). The Visegrad countries are the Slovak Republic, the Czech Republic, Poland and Hungary. It is a specific group of countries located in the centre of Europe and character- ized by their historical links and political-economic relations. The countries have undergone changes in recent years which have had an impact on the structure of agriculture, particularly after the collapse of the former socialist system or the Eastern bloc. Restructuring has also affected foreign trade and, consequently, EU accession has brought new opportunities for agrarian foreign trade. However, even without the countries' accession to the EU, the Visegrad countries represent important foreign trade partners for each other in all economic areas (Svatoš and Smutka, 2014; Smutka, 2014; Smutka et al., 2013; Bojnec and Ferto, 2009; Basek and Kraus 2009; Bussiereet al., 2005). The agrarian foreign trade between the Slovak Republic and the Czech Republic is specific in that for many years these countries formed a single state and have existed separately for a relatively short time (Bielik et al., 2013; Urban 1991). For both countries, wine is a popular alcoholic beverage and annual per capita consumption averages 18 liters. However, Slovakia is a small wine producer and from a European perspective represents 0.2% of the total European production overall production is still decreasing and thus the negative balance in this sector is deepening (Judinová, 2018) The Czech Republic is no better off in the long term the country shows a negative balance, although in volume terms exports and imports are increasing every year, but imports still far exceed exports (Borák and Vácek, 2018). Hungary has been one of the top wine-producing countries since almost the 18th century and the largest wine producer, which is why it boasts an active trade deficit. Hungary has favourable conditions for viticulture although all countries are currently struggling with vineyard decline (State of the World Vine and Wine Sector in 2022, 2022; Bozzay, 2021; Pallás, E. I. et al., 2016). Poland does not naturally have good climatic conditions but is trying to develop and noble vineyards so that it can be grown there as well. Foreign trade is therefore more a matter of importing wine from various countries around the World and thus has a strongly passive trade balance. However, we can say that Poland is also a country where wine as an alcoholic beverage is very popular (Exporting wine to the Polish market, 2016; The alcoholic beverages market in Poland, 2014). The main objective of this article is to compare the foreign trade and comparative advantages of the Visegrad countries in the commodity group wine and fresh grapes.

2 METHODOLOGY AND DATA

The reference period, changes and developments in research is the span of years from 2000 to 2022. The main commodity structure has been defined according to the internationally recognized HS system, namely HS code number 2204 in full: Wine of fresh grapes. incl. fortified wines; grape must. partly fermented and of an actual alcohol- ic strength of > 0.5% vol or grape must with added alcohol of an actual alcoholic strength of > 0.5% vol (Database - Eurostat, 2024). In the first phase of the analysis, we analyzed the foreign trade of the individual countries with the World and within the Visegrad countries. In the second phase, we analyzed the basic foreign trade and the comparative advantages revealed in the trade of the Visegrad countries with each other as follows: SK-CZ, SK-HU, SK-PL, HU-CZ, HU-PL, CZ-PL. The data for the individual analyses were taken from Eurostat public databases. Values are expressed in millions of euros. The following methods and calculations were used in the paper:

Base index – this is the evolution of a number over time. The method was used in the analysis of the development of foreign trade, i.e. Imports and Exports in individual countries with the World and the Visegrad countries, where we used the following relationship (1) (Matejková et al., 2013).

(1)

$$IB(t) = Qt / Q0$$

Where:

IB(t)......the base index of the selected current period, Qt – the value of the current period, Q0 – the value of the base period

Turnover and trade balance – are the basic indicators of foreign trade. The trade balance can take two forms, namely active and passive. Active, if it is a state when a country's exports are higher than imports and passive if imports are higher than exports. The indicators are calculated according to the following relationships.

(2)

$$\text{Turnover} = \text{Export} + \text{Import}$$

(3)

$$\text{Trade balance} = \text{Export} - \text{Import}$$

Revealed comparative advantage (RCA) index – is used to determine the relative advantage or disadvantage in a commodity group in a given country (Revealed Comparative Advantage, 2021).

(4)

$$RCA = \ln\left(\frac{\frac{x_{ij}}{m_{ij}}}{\frac{X_j}{M_j}}\right)$$

Where:

x_{ij} ....the value of exports of the i-th product group of the analysed industry of country j, in our case it was the commodity group HS 2204;

m_{ij}- ....the value of imports of the i-th product group of the analysed industry of country j, in our case it was the com- modity group HS 2204;

X_j...........the value of total exports from country j, in our case the total exports consisted of agri-food exports of the country, which were compiled from the commodity groups HS 01-24.

M_j..........value of total imports into country j, in our case total imports were agri-food imports of the country, which were compiled from HS commodity groups 01-24.

For the RCA indicator: RCA < 0 - induces comparative disadvantage, RCA > - induces revealed comparative advantages,

3 RESULTS

3.1 Foreign trade with Wine of fresh grapes of the Visegrad countries.

3.1.1 Foreign trade with Wine of fresh grapes in Slovak Republic

Slovakia is the smallest of the Visegrad countries. The overview of foreign trade (Table 1) reflects a fluctuating situation over the period under review. It is evident that the country is dominated by total imports of wine and fresh grapes, resulting in a passive trade balance for almost the entire period. The only exceptions are 2002 and 2003, when the country had an active trade balance. Within the framework of the Visegrad countries relations, the country trades extensively with the Visegrad countries. In this respect, the active trade balance has been more frequent from 2000 to 2003. This was followed by a passive balance until 2017 when the active and passive balances alternated. The curves show us that the country trades to a high extent in exports only with the countries of the Visegrad countries, but most importantly with the Czech Republic and Hungary. In terms of imports, the most important countries are Italy, Hungary and Germany.

PRODUCT	Wine of fresh grapes. incl. fortified wines; grape must. partly fermented and of an actual alcoholic strength of > 0.5% vol. or grape must with added alcohol of an actual alcoholic strength of > 0.5% vol.							
CODE	2204							
FLOW	IMPORT	EXPORT	Turnover	Balance	IMPORT	EXPORT	Turnover	Balance
INDICATOR	Value in million €				Value in million €			
PERIOD	Foreign trade Slovakia between World				Foreign trade Slovakia between V4			
2000	6.153	4.313	10.47	-1.84	2.247	3.994	6.24	1.75
2005	19.364	5.435	24.80	-13.93	8.151	5.180	13.33	-2.97
2010	67.963	10.901	78.86	-57.06	41.551	10.043	51.59	-31.51
2015	63.450	16.231	79.68	-47.22	29.738	14.988	44.73	-14.75
2022	69.266	25.840	95.11	-43.43	29.143	23.384	52.53	-5.76
Basic index 2000/2005	3.15	1.26	2.37	7.57	3.63	1.30	2.14	-1.70
2005/2010	3.51	2.01	3.18	4.10	5.10	1.94	3.87	10.60
2010/2015	0.93	1.49	1.01	0.83	0.72	1.49	0.87	0.26
2015/2022	1.09	1.59	1.19	0.92	0.98	1.56	1.17	0.39
2000/2022	11.26	5.99	9.09	23.60	12.97	5.85	8.42	-3.30

Tab. 1 Perview table of Slovak Republic foreign trade in million €
Source: Eurostat, own calculations (2024)

PRODUCT	Wine of fresh grapes. incl. fortified wines; grape must. partly fermented and of an actual alcoholic strength of > 0.5% vol. or grape must with added alcohol of an actual alcoholic strength of > 0.5% vol.							
CODE	2204							
FLOW	IMPORT	EXPORT	Turnover	Balance	IMPORT	EXPORT	Turnover	Balance
INDICATORS	Value in million €				Value in million €			
PERIOD	Foreing trade Czechia between World				Foreing trade Czechia between V4			
2000	29.068	2.566	31.63	-26.50	11.706	1.310	13.02	-10.40
2005	86.923	4.960	91.88	-81.96	13.998	4.409	18.41	-9.59
2010	142.357	21.137	163.49	-121.22	142.357	21.137	48.95	-9.94
2015	175.850	26.529	202.38	-149.32	175.850	26.529	46.94	-6.18
2022	270.663	38.879	309.54	-231.78	50.013	10.536	60.55	-39.48
Basic index 2000/2005	2.99	1.93	2.90	3.09	1.20	3.37	1.41	0.92
2005/2010	1.64	4.26	1.78	1.48	10.17	4.79	2.66	1.04
2010/2015	1.24	1.26	1.24	1.23	1.24	1.26	0.96	0.62
2015/2022	1.54	2.40	1.53	1.55	0.28	0.70	1.29	6.39
2000/2022	9.31	9.01	9.79	8.75	4.27	2.64	4.65	3.80

Tab. 2 Overview table of Czech Republic foreign trade in million €
Source: Eurostat, own calculations (2024)

The year 2004 became an important milestone for Slovakia's foreign trade when the country joined the European Union. Although the active balance is still recorded in the years 2000–2003, the total volume of imports increased significantly by up to 11 times over the whole period under review. Exports over the whole period increased only 6 times, which is almost half as much. Trade with the Visegrad coutries also had a rising character, with imports increasing 13 times and exports only 6 times. The rapidly increase in trade volumes took place in the first 5 years after EU accession.

3.1.2 Foreign trade with Wine of fresh grapes in the Czech Republic

The Czech Republic is a very important partner in foreign trade with Slovakia when in the past they formed one country. (Table 2) shows the development of trade in wine and fresh grapes for the period under review both at the level of foreign trade with the World and with the Visegrad countries. Looking at the trends, the total imports to the Czech Republic differ significantly, starting at around 29 million euros in 2000 and increasing up to 9.31 times by 2022. Currently, imports of the commodity from all over the World amount to 270 million euros. Paradoxically, the Czech Republic has huge imports from the World, but if we compare this with the volume of imports from the Visegrad countries, this volume represents only 18%. The highest growth in imports from the Visegrad countries was recorded between 2005 and 2010 when imports increased 10 times. The biggest breakthrough came in 2013 when imports started to decline rapidly. Total exports are again very low and have not exceeded 50 million euros over the whole period under review. However, we can state that the trend has a rising character. And during the whole period under review, it has increased 9 times, most significantly between 2005 and 2010. The worst is the export to the Visegrad countries, which has increased 2.6 times over the whole period, but since 2013 it has had a significantly de- creasing character. Overall, the Czech Republic shows a passive trade balance.

3.1.3 Foreign trade with Wine of fresh grapes in Hungary

Hungary is the second largest of the Visegrad countries in terms of area, but Hungary is considered a wine-growing and wine-producing country, as evidenced by its foreign trade. The country is the only one that has long been exporting a commodity in excess of its imports (Table 3). Exports of the commodity have shown an increasing trend over the long term. From the early 2000s to 2022, exports have increased almost 2 times. From this perspective, it may appear as if exports are stagnating or increasing only modestly. This is not the case, but rather a long-term stable situation, due to the fact that the average volume of Hungarian exports over this period is EUR 77 million. However, if we look at exports from the point of view of the Visegrad countries, we can state that exports to the Visegrad countries account for only 29% of the country's total exports, and the country, therefore, exports 71% of its production to other countries in the World. Thus, since the Country is sufficiently self-sufficient in this sector and has long been showing an active trade balance which has increased 1.77 times in the last years 2015 to 2022 this growth has been the steepest of the whole period under review. Total imports into the country have shown a volatile pattern. With commodity imports being very low in the first five years, growing 7.7 times over the entire period under review, a faster growth rate than exports. The highest change in imports

PRODUCT	Wine of fresh grapes. incl. fortified wines; grape must. partly fermented and of an actual alcoholic strength of > 0.5% vol. or grape must with added alcohol of an ac- tual alcoholic strength of > 0.5% vol.							
CODE	2204							
FLOW	IMPORT	EXPORT	Turnover	Balance	IMPORT	EXPORT	Turnover	Balance
INDICATORS	Value in million €				Value in million €			
PERIOD	Foreing trade Hungary between World				Foreing trade Hungary between World			
2000	2.812	69.400	72.21	66.59	0.000	14.573	14.57	14.57
2005	10.903	57.929	68.83	47.03	0.025	12.315	12.34	12.29
2010	15.127	73.447	88.57	58.32	0.210	21.956	22.17	21.75
2015	19.144	74.051	93.20	54.91	0.323	21.266	21.59	20.94
2022	21.570	118.757	140.33	97.19	1.113	38.388	39.50	37.27
Basic index 2000/2005	3.88	0.83	0.95	0.71	0.00	0.85	0.85	0.84
2005/2010	1.39	1.27	1.29	1.24	8.37	1.78	1.80	1.77
2010/2015	1.27	1.01	1.05	0.94	1.54	0.97	0.97	0.96
2015/2022	1.13	1.60	1.51	1.77	3.45	1.81	1.83	1.78
2000/2022	7.67	1.71	1.94	1.46	0.00	2.63	2.71	2.56

Tab. 3 Overview table of Hungary foreign trade in million €

Source: Eurostat, own calculations (2024)

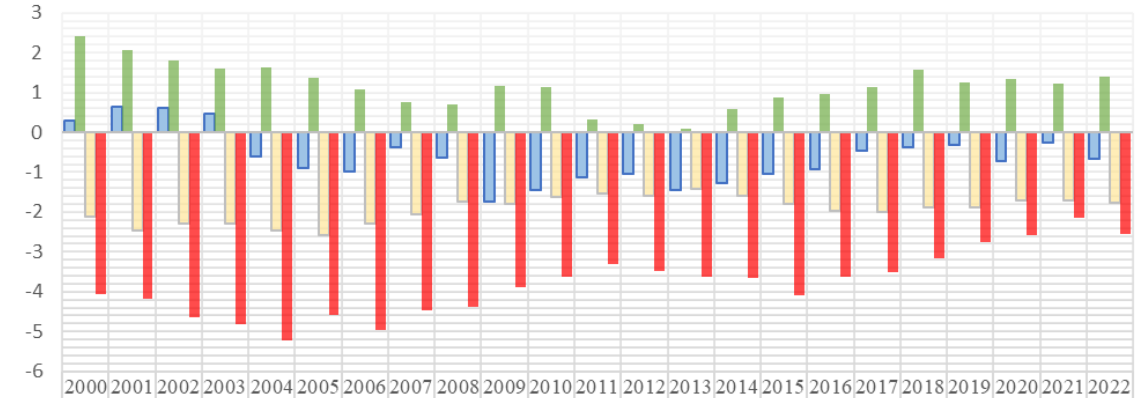
PRODUCT	Wine of fresh grapes. incl. fortified wines; grape must. partly fermented and of an actual alcoholic strength of > 0.5% vol. or grape must with added alcohol of an actual alcoholic strength of > 0.5% vol.							
CODE	2204							
FLOW	IMPORT	EXPORT	Turnover	Balance	IMPORT	EXPORT	Turnover	Balance
INDICATORS	Value in million €				Value in million €			
PERIOD	Foreing trade Poland between World				Foreing trade Poland between V4			
2000	53.885	0.765	54.651	-53.120	5.619	0.032	5.65	-5.59
2005	90.576	1.196	91.772	-89.381	5.557	0.284	5.84	-5.27
2010	153.705	5.034	158.739	-148.671	5.009	1.739	6.75	-3.27
2015	222.258	5.551	227.809	-216.707	8.022	0.068	8.09	-7.95
2022	380.584	43.374	423.958	-337.211	6.748	0.001	6.75	-6.75
Basic index 2000/2005	1.68	1.56	1.68	1.68	0.99	8.82	1.03	0.94
2005/2010	1.70	4.21	1.73	1.66	0.90	6.13	1.16	0.62
2010/2015	1.45	1.10	1.44	1.46	1.60	0.04	1.20	2.43
2015/2022	1.71	7.81	1.86	1.56	0.84	0.01	0.83	0.85
2000/2022	7.06	56.67	7.76	6.35	1.20	0.02	1.19	1.21

Tab. 4 Overview table of Poland foreign trade in million €
Source: Eurostat, own calculations (2024)

occurred between 2000–2005 and the highest import in value terms was in 2013 when the import volume reached 33 million euros. The country's self-sufficiency in this sector is also reflected in the country's imports from the Visegrad countries, which are very low. Ie no imports in 2000 and 2001.

3.1.4 Foreign trade with Wine of fresh grapes in Poland

Poland boasts the largest land area of all the countries of the Visegrad coutries, but in terms of its geographical location on the planet, it does not have very good climatic conditions for the production of wine and fresh grapes. The country has therefore had a long-standing passive balance of trade, and each year the passive balance is widening. (Table 4) The country's total imports of the commodity have increased 7 times from the beginning to the current year 2022. Compared to the Visegrad countries, Poland has the highest imports in 2022 at 380 million euros. This may point to an increase in wine con- sumption in Poland. In terms of imports from the Visegrad countries, we can state that Poland imports the commodity to the country only to a small extent, with an average of EUR 7 million over the whole period under review. Compared to total imports, imports from the Visegrad represent 4% for the whole period. Within the total exports, there has been a long-term growth, and it has increased up to 57 times over the whole period and the significant years for growth were from 2015 to the present. In terms of commodityexports to the Visegrad countries, this is not such a progression, and we can state that the highest growth was recorded from 2000 to 2010. Thus, Poland is looking for other countries to export its commodity.

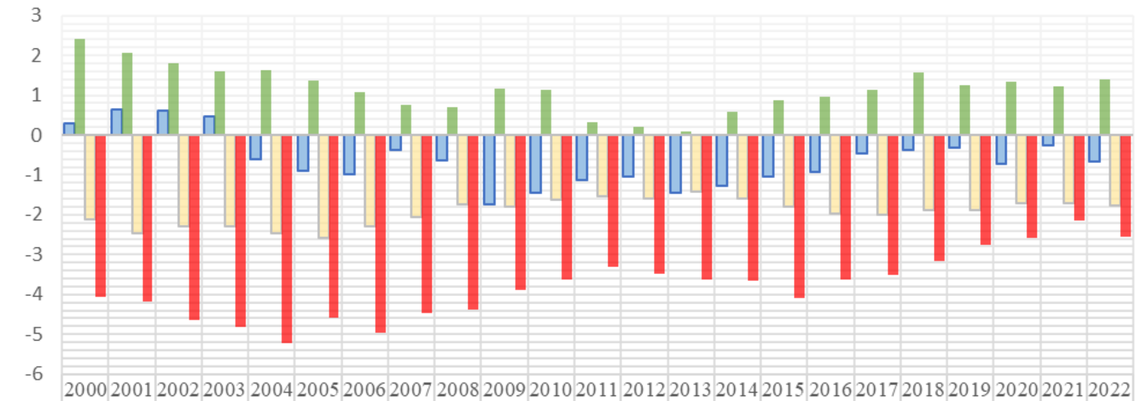


	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
SK	0,3	0,64	0,61	0,48	-0,6	-0,9	-1	-0,4	-0,6	-1,7	-1,5	-1,1	-1	-1,4	-1,3	-1	-0,9	-0,5	-0,4	-0,3	-0,7	-0,2	-0,7
HU	2,41	2,07	1,81	1,6	1,62	1,36	1,06	0,74	0,69	1,16	1,13	0,33	0,19	0,08	0,59	0,87	0,97	1,14	1,56	1,25	1,33	1,23	1,41
CZ	-2,1	-2,5	-2,3	-2,3	-2,5	-2,6	-2,3	-2,1	-1,7	-1,8	-1,6	-1,5	-1,6	-1,4	-1,6	-1,8	-2	-2	-1,9	-1,9	-1,7	-1,7	-1,8
PL	-4,1	-4,2	-4,6	-4,8	-5,2	-4,6	-4,9	-4,5	-4,4	-3,9	-3,6	-3,3	-3,5	-3,6	-3,7	-4,1	-3,6	-3,5	-3,2	-2,8	-2,6	-2,2	-2,6

Fig. 1: Revealed Comparative Advantage All Visegrad countries with World
Source: Eurostat, own calculations (2024)

3.2 Revealed Comparative Advantage Wine of fresh grapes on Visegrad countries

Like every country, the individual Visegrad countries have their stronger and weaker sectors. For a better understanding of the position of each country's foreign trade within the Visegrad countries wine and fresh grape industry with the World and also the Visegrad countries, the paper highlights the comparative advantages within the RCA index analysis. The analysis of the wine and fresh grape trade reveals comparative ad- vantages in this sector in Hungary (Figure 1). This points to the findings that Hungary is indeed a strong country in this sector and during the period considered it only had a comparative advantage, while in 2000 and



	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
SK	0,3	0,64	0,61	0,48	-0,6	-0,9	-1	-0,4	-0,6	-1,7	-1,5	-1,1	-1	-1,4	-1,3	-1	-0,9	-0,5	-0,4	-0,3	-0,7	-0,2	-0,7
HU	2,41	2,07	1,81	1,6	1,62	1,36	1,06	0,74	0,69	1,16	1,13	0,33	0,19	0,08	0,59	0,87	0,97	1,14	1,56	1,25	1,33	1,23	1,41
CZ	-2,1	-2,5	-2,3	-2,3	-2,5	-2,6	-2,3	-2,1	-1,7	-1,8	-1,6	-1,5	-1,6	-1,4	-1,6	-1,8	-2	-2	-1,9	-1,9	-1,7	-1,7	-1,8
PL	-4,1	-4,2	-4,6	-4,8	-5,2	-4,6	-4,9	-4,5	-4,4	-3,9	-3,6	-3,3	-3,5	-3,6	-3,7	-4,1	-3,6	-3,5	-3,2	-2,8	-2,6	-2,2	-2,6

Fig. 2: Revealed Comparative Advantage All Visegrad countries with Visegrad countries
Source: Eurostat, own calculations (2024)

	RCA					
	SK and CZ	SK and HU	SK and PL	HU and CZ	HU and PL	CZ and PL
2000	1.7047	-	-	-	-	1.1562
2001	2.4442	-3.8055	-	-	-	2.3654
2002	1.8152	-3.5791	3.3989	4.7909	6.6321	2.5337
2003	1.5800	-5.4325	4.8679	10.1738	-	3.6741
2004	0.7016	-7.7189	1.0632	3.1699	13.2652	0.9677
2005	0.6726	-8.7172	2.2488	5.5373	-	-1.4680
2006	0.3074	-2.8330	-	7.4489	8.0576	6.3893
2007	0.6826	-1.3864	2.8107	2.3512	-	1.1028
2008	0.5056	-2.7608	-	2.9141	-	2.4203
2009	-0.9103	-4.5449	-	3.6465	-	0.4477
2010	-0.4001	-6.7600	-	4.0287	-	0.5421
2011	0.2997	-5.7980	-1.6205	3.1950	-	0.9653
2012	0.3323	-3.2083	-1.6104	4.3892	7.5038	0.7712
2013	0.4188	-7.0361	-7.3034	3.7707	-	1.1660
2014	0.0589	-5.1556	1.6011	4.3488	-	1.2187
2015	0.5183	-6.4441	-0.5837	3.7499	-	3.0708
2016	1.3426	-6.3517	0.3497	3.7477	5.9141	5.1214
2017	1.9268	-6.7412	-2.6252	2.6152	7.0671	4.8269
2018	2.0394	-9.3880	-0.5006	2.7850	6.8813	5.3273
2019	2.1605	-5.2989	0.5863	3.0332	6.6372	3.5333
2020	2.0437	-4.8968	3.1126	5.0975	6.8119	6.5194
2021	2.5801	-5.5398	2.5114	7.2606	-	4.8766
2022	1.8525	-10.6514	-2.2190	6.3940	-	4.4866

Tab. 5 Summary table of the RCA indices of the Visegrad countries against each other
Source: Eurostat, own calculations (2024)

2001 the country had no imports of the commodity into the country. Slovakia, despite being the smallest country in terms of size in this sector, had a comparative advantage in this sector until 2003. The second weak- est country in terms of comparative advantage is the Czech Republic. Paradoxically, the Czech Republic is well known for its wine regions and high production in terms of wine and has very high imports, which may indicate a high consumption of wine in the Czech Republic. However, the RCA index has a long-term com The RCA index reaches a nega- tive trend while. This indicates that Imports largely exceed exports. Therefore, the coun- try will never achieve a comparative advantage in this sector. parative disadvantage with the highest index value reaching -2.48 in 2021. The worst-performing country in the survey is Poland. Poland is generally a large country but with different climatic con- ditions where grapes and wine do not fare well. The RCA index is negative here, with Imports far exceeding Exports, and this country will never have a comparative ad- vantage in this sector. The lowest value of the RCA index in Poland was achieved in 2004 (volume -5.23).

In (Figure 2) the next part of the RCA index research, we focused on a narrower selection of countries with which the Visegrad countries trade. We compare foreign trade between individual Visegrad countries with the foreign trade of the Visegrad countries as a whole. Closer analysis reveals that Hungary has high values in the uncovered comparative advantage in comparison the Visegrad countries, with the highest value of comparative advantage being 11.48 in 2003. However, the RCA index itself indicates a downward trend from the early 2000s to the present. The lowest value is in 2009 at -1.35, which could be related to adverse climate changes or the impact of the economic crisis in 2008. Otherwise, Slovakia maintains a very conservative line.

The Czech Republic is slightly worse off, showing negative values throughout the period under review, which represents a long-term comparative disadvantage, and the range of values is -2.73. Between 2007 and 2017, the performance was closer to 0 comparative advantage. Again, the weakest region is Poland with long-term and significantly negative RCA index values reaching as low as -10.20.

3.3 Revealed Comparative Advantage Wine of fresh grapes between the Visegrad countries

A closer look at the trade of the Visegrad countries with each other yields some interesting findings, which are presented in (Table 5). In the table, the yellow color represents zero imports and the blue color represents zero exports in the foreign trade of each country. The main objective was to find out the comparative advantages between the individual Visegrad countries. Significant and at the same time positive values of comparative advantages were shown by the Slovak Republic with the Czech Republic. It represents the largest share of the Slovak Republic exports to the Czech Republic. The only exceptions were the years 2009 and 2010 where a comparative disadvantage was demonstrated. However, the values largely exceed the level of 1. Therefore, we can assess that we are an important supplier of this commodity to the Czech Republic. In the second comparison between Slovakia and Hungary, we reach the opposite values, i.e. we reach a comparative disadvantage. As in the previous analyses, it emerges that Hungary is the dominant player in the Visegrad countries in the foreign trade in wine and fresh grapes. In 2022, Slovakia achieved the highest comparative disadvantage in comparison with Hungary at -10.65.

Poland is in third place in the Slovak Republic comparison. In this analysis, trade is very volatile and there were no exports of the commodity to Poland between 2008 and 2010.

Conversely, in 2000–2001 and 2006, there were no imports from Poland. All in all, Slovakia has a high comparative advantage vis-à-vis Poland. The relationship between Hungary and the Czech Republic has the same character as with Slovakia. Hungary's comparative advantage over the Czech Republic goes well beyond Hungary and Hungary is an important supplier of commodities to the Czech Republic. The relationship between Hungary and Poland presents only two possibilities in 2002, 2004, 2012 and 2016–2020 Hungary had a comparative advantage vis-à-vis Poland and in the other years, there were no imports from Poland to Hungary between the countries. In this case, Hungary achieved the highest RCA index value of 13.27. The last of the relationships is the Czech Republic and Poland. The RCA indices for the whole period show a comparative advantage on the side of the Czech Republic with the highest value in 2019 namely 5.33. The only exception was in 2005 when, on the contrary, Poland had a com- parative advantage.

4 DISCUSSION AND CONCLUSIONS

The Visegrad countries show different behavior of foreign trade in wine and fresh grapes. This is due to the fact that each country has a different size and agricultural con- ditions for grape and wine production. As evidenced by the State of the World Wine and Wine Sector in 2022 by Bozzay (2021) and Pallás, E. I. et al, (2016) Hungary is a country characterized by its wine-growing regions, and this is evidenced by its foreign trade in this commodity. We have observed a long-term active trade balance and high exports of the country, which have been moving more slowly over the whole period under review, with an increasing character, which was only 1.71 times over the twelve years. However, this is indicative of the stability of foreign trade in this commodity. As far as total exports to the Visegrad countries are concerned, this dynamic has been slightly more pronounced at 2.63 times from the initial year to the current year 2022. Imports are much lower as compared to exports although a more dynamic growth of imports has been recorded over the period under review at 7.67 times. Within the Visegrad countries, Hungary did not import anything into the country from 200 to 2001 and imports took off especially in 2005–2010. The RCA index indicates that the country has high compara- tive advantages both at the World level and for the Visegrad countries. Slovakia, as the smallest country in the analysis, surprised and came out of all the countries, that it trades mainly with the Visegrad countries. The trade balance turned out positive especially in the first years 2000–2003. The dynamics of total imports was at the level of 11.26 times from the beginning of 2000 to the present, and so were the imports of the Visegrad countries, which increased 12.97 times. Exports have increased approximately 6 times over the whole period, both to the World and within the Visegrad countries. Slovakia also surprised in comparative advantages in relation to the Visegrad countries, namely with the Czech Republic and Poland. The same situation is described by Judinová, (2018) and Rogovská (2018). The Czech Republic, also a major wine region, has long shown a passive trade balance. Comparative advantages have been revealed only with the country Exporting wine to the Polish market (2016) The alcoholic beverages market in Poland (2014) Poland and towards the other Visegrad countries and the World only a comparative disadvantage in this commodity has been revealed as evidenced by Borák and Vácek (2018). The steepest trend was in the Czech Republic's total imports of wine and fresh grapes into the country which increased 9.31 times over the period, as well as exports themselves increased 9 times. Exports to the Visegrad countries were less dynamic and increased only 2.64 times, but this is once as much as imports which increased 4.27 times. Poland, as the largest country in terms of area, has slightly unfavorable climatic conditions to produce grapes and wine, which is why in the analysis the balance of trade has long been negative and deeply in negative figures. This is why the country's imports are so high. The analysis showed that the country trades more with other World wine-producing countries than with the Visegrad countries. Negative values were also found for the comparative advantages and disadvantages with the Visegrad countries. However, the dynamics of foreign trade shows that the country is interested in consuming wine because imports have increased 7 times in the period under review from a World perspective. In terms of the Visegrad countries, imports have increased only by a marginal 1.20 times. However, Poland is keen to develop its wine industry, and this is particularly evidenced by exports, which have increased by a factor of 56.67 Worldwide. From the point of view of the Visegrad countries, exports are more negative, and this is because the dynamics were shown from 2000 until 2010, after which exports to these countries began to decline and, as a result, exports to these countries increased by a factor of only 0.02.

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