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SELECTED GLOBAL AND LOCAL VIEWS ON THE WORLD TRADE IN MINERAL WATER AND NON-ALCOHOLIC BEVERAGES*

WYBRANE GLOBALNE I LOKALNE OPINIE NA TEMAT ŚWIATOWEGO HANDLU WODĄ MINERALNĄ I NAPOJAMI BEZALKOHOLOWYMI

Key words: global trade, mineral and aerated water, Czech Republic, Slovakia

Słowa kluczowe: handel globalny, woda mineralna, Republika Czeska, Słowacja

Introduction

The bottled water market consists of sparkling flavoured water and unflavoured water. Mineral and aerated water play a significant role in both the flavoured and unflavoured market [King 2008]. The demand for clean water in emerging markets has helped boost global bottled water consumption. Bottled water continues to experience a boost from a heightened awareness of the need for hydration and its benefits on the human body and mind. Bottled water is now becoming more accessible in emerging economies such as Latin America and East Europe [Zenith International... 2010]. An average of 15 litres of bottled water is drunk yearly per person. Western Europeans are the major consumers, drinking nearly half of all the world's bottled water, with an average of 85 litres/person/year. The United States and China are the two largest national markets, with Indonesia and Mexico maintaining their lead over Italy in 5th place. Asia and Australia represents the largest regional market with a 26.5% share share [United Nations, World... 2010].

Nowadays the global bottled water market has been constantly growing and in 2006/2007 global bottled water market reached a value of 60,938.1 mln USD. In 2011, the market is forecast to have a value of 86,421.2 mln USD, an increase of 41.8% since 2006. The market grew by 8.1% in 2006/2007 to reach a volume of 115,393.5 million litres. In 2011, the market is forecast to have a volume of 174,286.6 mln litres, an increase of 51% since 2006. The still unflavoured segment is the largest in the market, holding a 65.7% share. Europe is the leading region in bottled water sales, holding a 52.9% share of the global market [Interbrand – Mineral... 2010].

Aim and Methodology

The paper's main ambition is to analyze international trade in mineral water and non-alcoholic beverages development and to analyze position of the Czech Republic and Slovakia (former Czechoslovakia) in the global market. The aim of the paper is to analyze the development of value, volume and territorial structure of international trade in mineral water and non-alcoholic beverages. The analysis is focused on world trade in HS 2201 10 (mineral and aerated waters not sweetened or flavoured) and HS2202 10 (waters, including mineral waters and aerated waters, containing added sugar or other sweetening matter or flavoured). These two commodity sub-groups represent an important part of world trade in bottled water and fresh-water products.

A very important part of the paper is the analysis of the individual regions' and countries' competitiveness. Individual subjects' competitiveness is analysed – especially through the revealed comparative and revealed export advantage indices (the basic consumption of *RCA* index was conducted by Ballasa in 1964) [Bielik 2009]. The revealed export advantage index RCA_2 (comparative advantage at global/regional level):

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$$RCA2 = (X_{ij}/X_{nj})/(X_{it}/X_{nt})$$

where:

X – represents exports,

I – represents analysed country,

J – represents the analysed economy sector/commodity/industry,

n – represents some set of countries or world,

t – represents the sum of all economy sectors/commodities/industries.

A comparative advantage is „revealed”, if $RCA2 > 1$. If RCA is less than 1, the country is said to have a comparative disadvantage in the commodity/industry. It is argued that the $RCA2$ index is biased due to the omission of imports especially when country size is important.

The revealed comparative advantage index RCA_1 (comparative advantage at national level):

$$RCA1 = \ln(X_{ij}/X_{it}) / (M_{ij}/M_{it}) * 100 = \ln(X_{ij}/M_{ij}) / (X_{it}/M_{it}) * 100$$

where:

X – represents exports,

M – represents imports,

i – represents analysed country,

j – represents the analysed economy sector/commodity/industry,

t – represents the sum of all economy sectors/commodities/industries.

In the case of $RCA1$, the index ratio ranges from -1 ($X_{ij} = 0$ and revealed comparative disadvantage) to +1 ($M_{ij} = 0$ and revealed comparative advantage). However, regarding $RCA2$, ambiguities exist around zero values.

Gruber-Lloyd Index (intra industry trade index):

$$GLI = [(X_j/M_j) - |X_j - M_j|] / (X_j + M_j)$$

where:

X – represents exports,

M – represents imports,

j – represents the analysed economy sector/commodity/industry.

The index ranges from zero to one. A value of zero indicates that gross flows are in one direction only; a value of one indicates that inflows exactly match outflows.

World trade in mineral water and non-alcoholic beverages – territorial structure (the analysis of trade in selected regions and groups of countries)

Table 1 provides data about the world exports of „mineral water and non-alcoholic beverages development. The most significant players in this area of trade are the following regions and groups of countries. OECD members are the main exporters. Their share in total world export is about 86%. The most important traders are EU members (71%) and North America (6%). Shares of other regions are only minor: Asia (5.5%), Africa (0.64%), Latin America (2.3%), Oceania (1.4%) and the least developed countries (only 0.11%).

Table 2, which follows, provides data about the territorial and regional trade in mineral water development. The table contains data which analyzes the world territorial structure of trade in mineral and aerated waters not sweetened or flavoured. The table shows information about imports to the individual analyzed regions. Among the most important importers are the following regions or group of countries: Europe (over 60%), European Union (54%), North America (16%) and Asia (14%). The shares of Africa (about 3.3%), Oceania (2.4%) and Latin America (cc 1.4%) are

Table 1. Export of mineral water and non-alcoholic beverages in selected regions (current prices)

Years	Export of water and non-alcoholic beverages in selected regions [USD]					
	America LAIA	Asia	ES27 2007	North America	OECD	World
1996	40 318 424	59 238 318	1 504 179 000	289 048 701	1 874 000 643	2 374 741 193
2008	203 443 020	489 041 810	6 258 174 751	522 638 359	7 581 926 144	8 841 491 330

Source: United Nations, Comtrade... 2010.

Table 2. Import of mineral water and non-alcoholic beverages in selected regions (current prices)

Years	Import of water and non-alcoholic beverages in selected regions [USD]					
	America LAIA	Asia	ES27 2007	North America	OECD	World
1996	28 622 626	312 360 469	1 291 596 325	349 131 004	1 838 867 726	2 374 741 193
2008	125 016 959	1 214 288 321	4 758 214 044	1 424 740 143	6 772 367 519	8 841 491 330

Source: United Nations, Comtrade... 2010.

only minor. It can be stated that the main importers are the developed countries (only OECD members' share in total traded value is about 77%), while the developing and especially the least developed countries share is very low – in the case of the least developed countries it is only 2.3%.

The analysis of individual countries and regions' competitiveness

Participation of individual regions or groups of countries in world trade in Mineral water and non-alcoholic beverages is different. There are many factors which have influenced a region's or country's ability to participate in world business with analyzed groups of commodities. Some of those factors are for example: available water recourse, technology for water pumping and stocking, processing capacities, sufficient infrastructure for transportation of fresh water etc. Very important presumptions of successful participation in trade in these commodities are also purchasing power of potential consumers, consumers' habits, sizes of individual markets etc.

Table 3. RCA2 index (competitiveness at world level, total trade) in selected regions

Years	RCA2 index					
	Africa	Latin America	Asia	Europe	North America	OECD
2008	0.52	0.9	0.21	1.66	0.66	1.25

Source: United Nations, Comtrade... 2010 and own processing.

Considering the ability of individual regions to compete at a global level, it can be said that world trade in mineral water and non-alcoholic beverages is under the control of developed countries. These countries or regions have a competitive advantage (Tab. 3).

The position of selected countries in world trade in mineral water and non-alcoholic beverages

World trade in mineral water and non-alcoholic beverages is dominated by the limited number of countries. Eighteen countries control over 80% of trade value and volume. According to mineral water and non-alcoholic beverages export value, the most dominant traders are France, Austria, Germany, Belgium, Netherlands, Italy, USA, UK and Mexico. The share of countries in total world export value is over 75%. Their share in world traded volume is also dominant – almost 70%. The shares of the Czech Republic and Slovakia in world trade in mineral water and non-alcoholic beverages are 1.24% and 0.6%, respectively (the both countries are in top twenty mineral water exporters in the World).

During the analysed time period, individual regions, countries or groups of countries participated in world traded in a different way. Individual analysed subjects' trade intensity was also changing. Individual selected regions' and groups of countries' inter annual growths of traded value and volume are the following (growth rate of export value/export volume in %): Europe (12/7.3), Asia (14.6/17), Africa (25/29), North America (5/0.3), Latin America (27/32) and Oceania (9.5/2.6). The main driver of world trade in Mineral water and non-alcoholic beverages is Europe – especially EU-15 members. EU-15 participates in world trade value by over 72% (share in total trade volume is about 65%). On the basis of this analysis we can see that the situation in world trade has been constantly changing. The position of main drivers (Europe and North America) has been slowly diminishing, but their shares are still dominant. Especially Africa and Latin America have a great potential to increase their share in world trade volume, and especially value.

Price is one of the most important factors which have been influencing the world trade in Mineral water and non-alcoholic beverages. Between the monitored countries, huge differences in the unit price of exports exist. The highest price can be found in Austria – 1.55 USD/kg and on the other hand the lowest price we can meet Guatemala – 0.27 USD/kg. The average value of unit world price is 0.6 USD/kg. Speaking about Czech and Slovakian unit prices – huge differences between these countries exist. While in Czech Republic the unit price is about 0.49 USD/kg (the average value of inter annual growth rate is 4%), in Slovakia the value of unit price is 0.28 USD/kg and the average value of inter annual growth of rate is nearly 8%.

Table 4. Mineral water and non-alcoholic beverages trade competitiveness development (within total merchandise trade) in Selected countries and regions

Total RCA2	Trade competitiveness development of mineral water and non-alcoholic beverages									Average
	2000	2001	2002	2003	2004	2005	2006	2007	2008	
Africa	0.85	0.91	1.05	1.06	0.72	0.46	0.27	0.45	0.61	0.52
Asia	0.19	0.22	0.19	0.20	0.20	0.26	0.22	0.24	0.20	0.21
Austria	1.36	1.36	1.28	8.27	15.54	16.17	17.16	15.21	14.22	7.81
Belgium	3.37	3.42	3.03	2.46	2.13	2.12	2.26	2.34	2.64	2.40
Canada	1.25	0.92	0.88	1.46	1.18	0.90	0.72	0.46	0.44	1.29
Czech Rep.	3.25	2.80	2.41	1.54	0.95	1.11	1.32	1.35	1.25	1.60
EU-15	1.82	1.79	1.76	1.82	1.94	1.98	2.13	2.04	2.07	1.84
EU-27	0.44	0.39	0.39	0.40	0.52	0.60	0.73	0.74	0.67	0.54
Europe	1.69	1.65	1.62	1.63	1.71	1.72	1.82	1.75	1.75	1.66
France	5.85	5.47	5.52	4.53	4.47	4.30	4.72	4.13	4.29	5.04
Germany	0.46	0.57	0.71	0.74	0.71	0.81	0.97	0.87	1.00	0.63
Guatemala	2.23	6.88	18.32	15.22	16.35	11.80	1.77	12.52	15.44	8.98
Ireland	1.23	1.11	1.49	1.26	1.20	1.41	1.62	1.39	1.23	1.21
Italy	1.48	1.68	1.89	1.67	1.51	1.62	1.53	1.45	1.54	1.43
Latin America	1.20	1.37	1.64	0.99	0.88	0.96	0.82	1.02	0.90	1.00
Malaysia	0.84	1.19	1.09	0.89	0.68	0.65	0.63	0.76	0.70	0.81
Mexico	1.12	1.28	2.04	1.10	1.12	1.22	1.21	1.08	1.08	1.18
Netherlands	1.36	1.56	1.42	1.26	1.14	1.13	1.25	2.14	1.60	1.55
North America	0.65	0.53	0.53	0.66	0.56	0.51	0.46	0.44	0.54	0.66
Oceania	1.34	0.85	0.95	0.89	0.89	0.99	0.89	1.03	0.60	0.81
OECD	1.20	1.18	1.21	1.24	1.29	1.30	1.37	1.32	1.35	1.25
Poland	1.04	0.56	0.91	0.70	1.44	1.85	1.53	1.27	1.27	1.15
Slovakia	2.05	3.57	3.20	1.74	1.86	1.95	1.58	1.26	1.24	1.72
CIS	0.23	0.19	0.16	0.13	0.14	0.18	0.20	0.19	0.18	0.26
United Kingdom	1.40	1.41	0.90	1.17	1.09	1.16	1.22	1.12	1.43	1.34
USA	0.44	0.38	0.40	0.36	0.31	0.36	0.36	0.44	0.57	0.44
World (Aggregate)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Source: United Nations, Comtrade... 2010 and own processing.

The following part of the paper is devoted to analysis of individual analyzed subjects' competitiveness in the world market. Table 4 provides data about individual regions' and countries' competitiveness development.

If we analyze the individual regions' competitiveness, we can see that it is only Europe, which was able to keep comparative advantage, while the other regions did not reach any competitive advantage. On the basis of this analysis it can be said that the following countries were able to reach competitiveness in mineral water and non-alcoholic beverages trade at world level: Austria, France, Guatemala, Slovakia, Czech Republic, Ireland, Belgium, Canada, Italy, Mexico, Netherlands, Poland and United Kingdom. The others did not reach comparative advantage. If we analyze individual subjects' development trend, we can see that some regions or countries have constantly been increasing their level of comparative advantage, and some countries have been losing their competitiveness. Regions or countries like for example Europe – especially EU-15, Austria, France have been increasing their competitiveness in the world market. Regions or countries like Belgium, Canada, France, CIS have been losing their competitiveness. If we analyze the results of comparative advantage analysis, we gain the following results. Probably the highest level of competitiveness can be found in the case of the following countries or regions: Austria, Belgium, Czech Republic, Guatemala, France, Italy, Netherlands and Slovakia. On the other hand the lowest level of comparative advantage were reached by Asia, Africa, CIS and USA. Especially in the case of Asian region, the results of comparative advantage analysis is negative. The result of the analysis is as follows. The highest level of competitiveness is seen in the case of developed countries – especially OECD members. Speaking about OECD members, probably the best traders with the most significant level of competitiveness are the European countries – especially EU-15 members and Czech Republic, Slovakia and Poland.

The position of the Czech and Slovak Republics in world trade in mineral water and non-alcoholic beverages, and their competitiveness at the regional and global level

The Czech and Slovak Republic participates in world export by 111 and 53 mln USD respectively. Their share in world export value is about 2%, speaking about export volume their share is about 3%. The volume of actual trade is about 225 million tonnes in the case of Czech Republic and about 188 mln tonnes in the case of Slovakia. The Czech trade territorial structure is dominated by: European countries – especially Slovakia, Poland, Austria, Hungary, Germany and Norway. These countries' shares in total traded value and volume are more than 80 and 90% respectively. The shares of non-EU members in Czech exports is minor. Speaking about Slovakian trade territorial structure we can see that the main destinations of Slovakian exports are European countries (over 99% of value and over 99% of trade). Exports are dominated by Czech Republic, Sweden, Austria, United Kingdom, Hungary and Poland. Slovakian exports territorial structure is much more concentrated in comparison with Czech territorial structure. The share of the first three most important export destinations (Czech Republic, Austria and Sweden) in total trade is over 94%. Especially Slovakian trade with Czech Republic is very important. It represents about 90% of Slovakian export value and volume. Marketing plays a very important role in both countries' mineral water and non-alcoholic beverages trade. There are several examples of good practice in marketing of mineral water and soft drinks both at home and international markets. One of the famous is MATTONI, the soft drink produced by Karlovarské minerální vody, founded in 1873 by Heinrich Mattoni. The main missions of the company are to make their products famous brands with international worth and increase awareness of the quality of mineral water from Karlovy Vary (Carlsbad). After Karlovarské minerální vody cornered the home market, they decided to broaden their production to foreign markets. Nowadays you can get MATTONI mineral water in more than 10 countries all over the world. The company currently exports their products to Denmark, Croatia, Canada, Hungary, Poland, Russia, Slovakia, Germany, United Arab Emirates, Sweden, Switzerland and USA. Karlovarské minerální vody puts the greatest efforts into the building of world-famous brands with considerable image, which will contribute to an increase in quality and culture of drinking, not only in Czech Republic. The company marketing can boast with a good promotion of products, especially commercial advertisements on TV, which got number of awards. Nowadays we can see advertisement on TV with a top model Hana Soukupová, which is dressed in the liquid dress of Mattoni water. This commercial tries to show to customers that „where is mattoni, there is life”. This advertisement was translated in all languages of import countries. Regarding the situation of the Slovak mineral springs, it could be said, that this country is quite rich in the amounts of mineral water. Some of them are packed to the bottles and distributed to the trade net, which is reflected on the market as brands like Korytnica, Santovka, Cígelka, Fatra, Rajec, Klášťorná, Budiš, Mitická etc. But unfortunately they are not very known behind the Slovak borders. The producers and distributors of Slovakia are mostly oriented on home market though there have been some attempts to penetrate to foreign markets in the past. For instance, the mineral water Salvator was exported to United Arab Emirates, Israel, USA and Canada. It had an identification in etiquette „made in Slovakia” and sometimes the company put there a small Slovak symbol. Currently Salvator do not export mineral waters abroad.

Conclusion

The Czech and Slovak Republic participates in world export by 111 and 53 mln USD respectively. The Czech and also Slovakia trade territorial structure is dominated by the countries of the European Union. The mentioned countries' shares in total traded value and volume are between 80-90% (in the case of the Slovakia the share of EU members is almost 100%). If we analyze the comparative advantage of trade in mineral waters and non-alcoholic beverages within the total merchandise trade and total agrarian trade both for Czech Republic and Slovakia, we find out that nowadays both countries trade in mineral waters and beverages reaches a slight level of comparative advantage within total agrarian trade structure, but it must be stressed that the intensity of this comparative advantage has been slowly declining. Speaking about the competitiveness of trade in water and beverages within the individual countries' total merchandise trade, we can see that while Czech Republic trade is able to reach the comparative advantage (which is slowly disappearing), in the case of the Slovakia the comparative advantage already disappeared and nowadays Slovakian trade does not have a comparative advantage within the total Slovakia trade commodity structure. The reason for the decline of comparative advan-

Table 5. Czech and Slovakian trade competitiveness development

Total RCA1		Trade competitiveness development								
		2000	2002	2003	2004	2005	2006	2007	2008	Average
Czech Rep.	agrarian: 0+1+4	1.78	1.90	1.00	0.64	0.57	0.70	0.57	0.37	-
Czech Rep.	total	1.54	1.62	0.64	0.25	0.26	0.32	0.22	0.09	-
Slovakia	agrarian: 0+1+4	1.00	1.10	0.83	0.94	0.46	0.15	0.00	0.06	-
Slovakia	Total	0.41	0.64	0.41	0.59	0.15	-0.06	-0.35	-0.54	-
RCA2		2000	2002	2003	2004	2005	2006	2007	2008	Average
Czech Rep.	agrarian: 0+1+4	5.59	5.41	3.25	1.89	1.85	2.35	2.40	2.27	3.04
Czech Rep.	total	3.25	2.41	1.54	0.95	1.11	1.32	1.35	1.25	1.60
Slovakia	agrarian: 0+1+4	4.34	6.71	4.09	3.52	2.82	2.37	2.18	2.51	3.31
Slovakia	total	2.05	3.20	1.74	1.86	1.95	1.58	1.26	1.24	1.72
GL		2000	2002	2003	2004	2005	2006	2007	2008	-
Czech Rep.		0.38	0.35	0.71	0.88	0.86	0.83	0.87	0.94	-
Slovakia		0.83	0.75	0.81	0.74	0.96	0.93	0.82	0.72	-

Source: United Nations, Comtrade... 2010 and own processing.

tage in both countries is not the worsening of individual countries trade in water and beverages characteristics, but the turbulent growth of other economic and agricultural and foodstuff sectors export.

The last competitiveness analysis is devoted to position of Czech and Slovakia exports within total world agrarian and merchandise trade. Analyzing the position of Czech and Slovakian export of water and non-alcoholic beverages within the total world agrarian and foodstuff products trade, we can see that both countries are able to reach the competitive advantage in comparison with other countries and regions. They are also able to reach comparative advantage if we analyze the participation of their water and non-alcoholic beverages trade (exports) within their global merchandise trade. They have also competitive advantage because of their location in the middle of Europe and they have a good possibility to penetrate the most developed mineral water and non-alcoholic beverages market in the world (European Union). Speaking about their competitiveness within the frame of EU market, an advantage of both countries is the low price of their production in comparison with the main competitors. For details describing the both analyzed countries' competitiveness both at national and global level (Tab. 5).

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Streszczenie

Wartość światowego rynku wody mineralnej i napojów bezalkoholowych szacowana jest na ok. 9 bln USD i rośnie z roku na rok. Jednakże udział poszczególnych państw i regionów w tym rynku jest różny. Na taki stan rzeczy ma wpływ wiele czynników na wszystkich etapach łańcucha dostaw, w tym źródła wody, zdolności produkcyjne, możliwości magazynowe. Duży wpływ mają także czynniki związane z konsumentem. Republika Czeska i Słowacja mają znaczący udział w rynku wody mineralnej i napojów bezalkoholowych, stanowiący ok. 2% światowego eksportu (160 mln USD). Obydwa kraje mają znaczące przewagi konkurencyjne na tym rynku.

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