Analysis of Development of Czech Foreign Trade in Foods and Beverages

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Anotace

Cílem tohoto příspěvku bylo analyzovat vývoj českého zahraničního obchodu s potravinářskými výrobky a nápoji (v systému klasifikace produkce jde o CPA 10 a 11) a zhodnotit pozici jednotlivých skupin CPA a jejich produktů, a to i v rámci EU, za použití dvou indexů komparativních výhod (RCA) a obchodních bilancí. Smyslem je přispět k hlubšímu poznání této problematiky, neboť analytické práce věnované celému agrárnímu zahraničnímu obchodu ČR jsou na oblast potravin a nápojů méně zaměřeny. Přitom by mělo jít o stěžejní oblast tohoto obchodu, a to zejména s ohledem na konkurenceschopnost celého agrárního sektoru. Zdrojem dat o zahraničním obchodě byly veřejné databáze ČSÚ (databáze zahraničního obchodu) a Eurostat (International Trade database). Hodnoceným obdobím jsou roky 2005 až 2013. Ke značným změnám v českém zahraničním obchodě s potravinami a nápoji došlo v souvislosti se vstupem do EU, k těm se však již tato práce nevrací. Zaměřena je na období, kdy již ČR členem EU byla a plně se v ní etablovala. Jde však o to, s jakými výsledky v dané oblasti. Výsledky ukázaly, že hodnota českého dovozu potravinářských výrobků a nápojů se v letech 2005-2013 zvýšila vyšší měrou nežli hodnota jejich vývozu, což vedlo k nárůstu záporného saldo obchodu o 51 % na 29,3 mld. Kč. Stupeň krytí dovozu vývozem se však vzhledem k nižší dynamice růstu dovozu než vývozu zlepšil ze 73,0 % na 77,3 %. Mimo vlastního hodnocení vývoje zahraničního obchodu ČR s potravinami a nápoji se příspěvek zabývá také konkrétním způsobem převodu Kombinované nomenklatury na nomenklaturu CPA. Metodickým přínosem je pak sestavení vlastního souboru kódů celního sazebníku, resp. jejich agregací spadajících do jednotlivých oborů CPA. Tento soubor je využitelný k dalším analýzám.

Klíčová slova

Potraviny, nápoje, vývoz, dovoz, bilance zahraničního obchodu, RCA index, Klasifikace produkce CPA, Kombinovaná nomenklatura EU, agrární obchod.

Abstract

The aim of this paper is to analyse the development of Czech foreign trade in food products and beverages (the CPA groups 10 and 11 within the Classification System) and to evaluate the position of individual CPA groups and their products, even within the EU, using two indices of comparative advantage (RCA) and trade balances. The purpose is to contribute to a deeper understanding of the given issue as the analytical work dealing with whole Czech agrarian foreign trade is less focused on foods and drinks. However, they should be a core area of business, especially with regard to competitiveness of the agricultural sector. The sources of data on foreign trade are public databases of Czech Statistical Office (External Trade Database) and Eurostat (International Trade database ComExt). Regarding the time series, period of the years 2005-2013 is analysed. Significant changes in the sales and purchases of foodstuff and beverages were occurred in the context of accession to the EU but these changes are not in focus yet. The paper is engaged in the period when the Czech Republic has already been a member of the EU, and fully entrenched. The point is which results in foreign trade with.

Results showed that value of Czech imports of food products and beverages in the years 2005-2013 increased in the larger extent than exports, and negative trade balance deepened by 51 % to 29.3 Bn CZK. The degree of coverage of imports by exports, however, improved from 73.0 % to 77.3 % due to lower dynamics of growth of imports than exports.

Besides of the own assessment of the Czech food and beverage foreign trade, our work has consisted in specific transfer of the Combined Nomenclature to the nomenclature CPA. The methodological contribution

is then our own list of customs codes, respectively their aggregations, belonging to the individual CPA disciplines. This should be useful for next analysis.

Key words

Food, beverages, exports, imports, trade balance, RCA index, Classification of Products by Activity (CPA), Combined Nomenclature of the EU, agrarian trade.

Introduction

In generally, domestic food and beverage consumption is covered mostly by foods and beverages produced in the Czech Republic. Food and beverage production is a key sector of the manufacturing industry. However, to maintain its position it is necessary to increase its efficiency and competitiveness. Traill (1998) identified sectoral competitiveness and used the following definition of this term: a competitive industry is one that possesses the sustained ability to profitably gain and maintain market share in domestic and/or foreign markets. Putičová and Mezera (2011) were engaged in the issue of the competitiveness and the performance of the Czech food industry. Both these attributes are evaluated in the framework of the domestic manufacturing sector and domestic market, as well as from the foreign trade point of view in context of European and world markets. They concluded that the sector competitiveness was not in critical situation. However, the sector competitiveness assessed by the RCA indices and foreign trade indicators had not been improving, the stagnation were confirmed. As Čechura (2009, 2012) said, technical efficiency in the Czech food processing industry did not change significantly within the period from 2000 to 2007. A common detected feature of all analysed food processing industry branches (food processing industry total, slaughtering, dairy, milling, feedstuffs, beverages) in the analysed period was that the technological changes did not contribute substantially to the development of efficiency. On the other hand, he concluded that Total Factor Productivity (TFP) in the food processing industry increased significantly within the analysed period. Evidence suggests that innovation activities can have a positive effect on business performance of the food companies, and vertical cooperation increases exports of processed food products substantially (Ghazalian and Furtan, 2007). A technological change is an important factor determining the TFP increase. Nevertheless, the improvement in production possibilities was caused rather by diffusion of knowledge generated in another part of economy, or imported from abroad, than by own sector research and development.

The aim of this paper is to analyse the development of Czech foreign trade in food products and beverages. The paper is organised as follows. First part describes using of classification systems and RCA indices. The second part is devoted to description of the results. The last part presents conclusions.

Materials and methods

Basic foreign food and beverage trade is regular part of "Panorama of food industry", which is published annually by Ministry of Agriculture (with cooperation with Institute of Agricultural Economics and Information). But this publication uses primary data provided by Ministry of Industry and Trade, which are aggregated to whole food and beverage CPA groups[1]. The publication assesses especially production and economic characteristics of the food sector and its branches, and from the broader perspective the sector competitiveness as well. Foreign trade in this publication has only a supplementary character. More detailed view on commodity and territorial structure of Czech foreign food and beverage trade[2] must be obtained on the basis of import and export data of CZSO, i. e. of Harmonised Commodity Description and Coding System, respectively Combined Nomenclature of the EU[3] or SITC[4], from External Trade Database.

Import and export data (in EUR) on foods

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[1] Classification of Products by Activity (CPA) is a part of an integrated system of statistical classifications. The CPA is a product classification. Their elements are related to activities as defined by NACE Rev. 2 (Classification of economic activities in the European Communities).

[2] Within the foods and beverages defined by the CPA groups 10 and 11, also animal feed and some products for technical use are included.

[3] Combined Nomenclature of the EU (8-digit codes) is based on Harmonized Commodity Description and Coding System (2, 4 and 6-digit codes).

[4] SITC is the United Nations' Standard International Trade Classification.

and beverages by PRODCOM[5] for the Czech Republic and other EU members are available in Eurostat database (Statistics on industrial production and international trade). These data, however, do not cover foreign trade of countries in the same extent as the external trade statistics. In comparison to values of food and beverage imports and exports in publication "Panorama of food industry" they are obviously lower. It is caused by other source of data, other way of data collection, other reporting units, currency conversion, various data standardisation etc.

Development of foreign trade in processed products and unprocessed commodities is regularly analysed in Agrarian foreign trade yearbook of the Czech Republic, which is published by Institute of Agricultural Economics and Information, but this analysis uses the adjusted classification of Regmi et al. (2005)[6]. It is based on 6-digit HS codes and is related to HS chapters 01-24 (includes also tobacco and tobacco products). That is why the list of processed agrarian products does not correspond to the list of foods and beverages defined by CPA 10 and 11. For example semi-

processed agrarian products include live animals and processed agrarian products incorporate eggs according to the adjusted Regmi et al.

Regarding Classification of Products by Activity (CPA), this classification started in the Czech Republic for statistical purposes on 1st January 2008. Before, Standard Classification of Production (SKP) had been in force[7]. CPA nomenclature is a part of integrated system of statistical classification, see following diagram.

Transition of HS/CN codes to CPA codes is basic precondition of practical monitoring and more detailed analysis of Czech foreign food and beverage trade which can use data from external trade database. However, the converter between HS/CN and CPA codes cannot be created absolutely accurate, and it cannot avoid certain simplifications. Although majority of HS/CN codes correspond to RCA codes, in some cases, exact transition is not possible. Problems by converting are caused, for example, by impossibility of separating agrarian commodities from food products in all cases because some items, even on 8-digit CN codes, contain both unprocessed and processed goods, products within some CN codes could be included in more CPA groups than in one, HS/CN items which are described as "others" could not be identified in every time, as well sometimes it could not be

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[5] PRODCOM is the classification of goods used for statistics on industrial production in the EU.

[6] This classification defines four categories: bulk commodities, horticulture products, semi-processed products and processed products. Production of the first two categories depend on land availability, geography and climatic conditions, while the next two categories are less dependent upon those factors, undergo some transformation prior to their final use and in principle, can be produced almost anywhere.

[7] SKP was based on the Industrial Classification of Economic Activities (Czech acronym is OKEČ). This classification and NACE are cohesive till 2-digit codes.
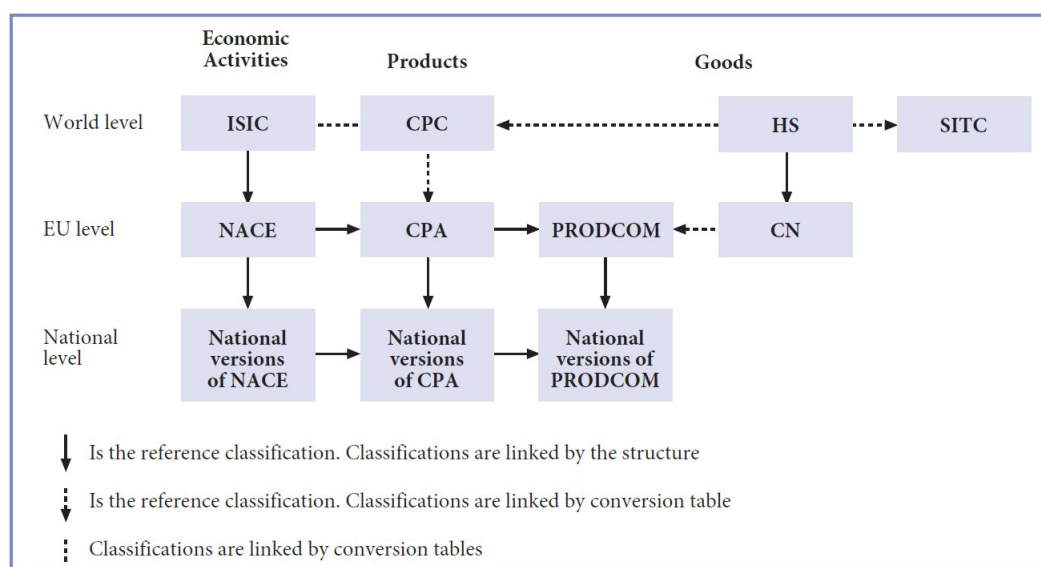
Source: Eurostat, NACE Rev. 2 Statistical classification of economic activities in the European Community

Diagram 1: Statistical classification integral system.

clear what a CPA group incorporates. Problems what is included or removed in individual codes can be partly sort out by relevant explanatory notes of HS, CN, CPA and NACE nomenclature[8], but in some cases, it is not possible even with them. Besides that, nomenclatures are revised and their codes are chanced[9].

Convertors between Combined Nomenclature and CPA classification for 8-digit CN codes and 6-digit CPA codes are at public disposal on Eurostat web, as well as on Czech Statistical Office web. These convertors are available for CN a CPA codes of 2008, so they had to be adjusted.

Additional adjustments were done for the reason of some specifics of Czech agrarian foreign trade. An essential imperfection of the official convertor is that CPA 10.5 Dairy products include the code CN 0401 20 99 "Milk, not concentrated, nor sweetened, of a fat content exceeding 3 % but not exceeding 6 %, in immediate packing exceeding 2 litres", which incorporates predominantly raw milk (unfortunately, raw milk has no own customs code). That is why the code CN 0401 20 99 was excluded out of the group 10.5. In a similar way, there was excluded the code CN 2201 90 00 "Waters, not sweetened nor flavoured" which include normal water, not only packaged (it is deduced, among others, from its extremely low export price), out of CPA 11 Beverages. Next adjustments are small-scale and concerns, for example, selection of unprocessed and processed spices and see fruits.

The official convertor was respected in case of HS 1602 10 "Homogenised preparations of meat, meat offal or blood", which belong to CPA 10.8 Other food products, not to CPA 10.1 Preserved meat and production, as well as in cases of HS 2005 10 "Homogenised vegetables", HS 2006 "Vegetables, fruit, nuts, fruit-peel and other parts of plants, preserved by sugar" and HS 2007 10 "Homogenised fruit preparations", which rank also among CPA 10.8 Other food products, not among CPA 10.3 Processed and preserved fruit and vegetables.

Data sources on foreign food and beverage trade were Czech Statistical Office and Eurostat. Foreign trade is comprised of trade with third countries, as well as of trade with other EU members. The term net exports means trade balance surplus,

and similarly net imports trade balance deficit.

Data on trade realised between EU members are collected from subjects who are VAT (value added tax) registered companies and who has exceeded a given threshold for dispatches or for arrivals. In the Czech Republic, the threshold was 4 Mio CZK on the arrival side and 2 Mio CZK on the dispatch side since May 2005 till 2008, and now, since 2009, has been amounted to 8 Mio CZK on the both sides. Subliminal trade is estimated by Czech Statistical Office with the aid of mathematical and statistical methods (but only for 2-digit HS codes). There are so used data without this adjustment in this work. See more in Intrastat Guide CZ.

The Revealed Comparative Advantage (RCA) index, or so called Balassa index, has been used as an indicator of trade competitiveness, which reveals the export efficiency. The advantage of the RCA index is simplicity and quite good interpretation, what is also meant by Smutka and Buriánová (2014). For an analysis of Czech and Slovak agricultural foreign trade, RCA indices were used as well as by Bielik et al. (2013). Various modifications of RCA index are applied. There are following formulas in the paper:

$RCA\text{-}1 = Xij \,/\, Xi : Xj \,/\, X,$

where „Xij" is Czech exports of the product, „Xi" is total Czech food and beverage exports, „Xj" is exports of the product from a reference group of countries, and „X" is total food and beverage exports from a reference group of countries. There is the EU a reference group in this work (both EU extra and intra-exports).

If $RCA\text{-}1 > 1$, the Czech Republic specialises in exports of the product and has a comparative advantage, and if $RCA\ 1 < 1$, it is not and has not any comparative advantage.

$RCA\text{-}2 = ln\ (Xj/Mj : X/M),$

where „Xj" is Czech exports of the product, „Mj" is Czech imports of the product, „X" is total Czech food and beverage exports, and „M" is total Czech food and beverage imports.

If $RCA\ 2 > 0$, the Czech Republic has a comparative advantage in trade of the products, and if $RCA\ 2 < 0$, it is on the contrary.

The concept has received much criticism due to its shortcomings in numerous articles. RCA values are therefore often investigated over time for a particular country and product group, but changing trade performance of the rest

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8 Explanatory notes to CPA and NACE differ between each other slightly.
9 Combined Nomenclature of the EU is revised to a certain extent every year. Bigger changes are managed in years when a revision of Harmonised system by the World Customs Organisation is performed (in 2012 for the last time and in 2007before).

economy will have a high impact on the dynamics of the index. That is the reason why RCA indices are often regarded rather as indicator of specialisation, than indicator of competitiveness.

Results and discussion

Development of Czech food and beverages imports and exports

Share of food products and beverages in total Czech foreign trade in the period of 2005-2013 increased from 2.8 % to 3.2 % on the export side (i. e. to the maximum up to now), and from 4.0 % to 4.7 % on the import side (with the maximum of 5.0 % in 2009)[10].

Value of Czech food and beverage imports in 2013 compared with 2005 rose by 57.4 Bn CZK (i. e. by 80 %) to 129.0 Bn CZK, while value of Czech food and beverage exports increased by 47.5 Bn CZK (i. e. by 91 %) to 99.8 Bn CZK.

Balance deficit in trade in these products from 2005 to 2013 grew by 9.9 Bn CZK (i. e. by 51 %) to 29.3 Bn CZK, as a result of the higher increase of imports than exports. At the same time, coverage of imports by exports improved by 4.3 percentage points to 77.3 %, in consequence of the higher

dynamics of the export growth then import growth[11].

In the monitored period, import value rose especially within groups CPA 10.1 (by 16.0 Bn CZK, i. e. 2.3times to 28.5 Bn CZK), CPA 10.8 Other food products (by 12.0 Bn CZK, i. e. by 63 % to 31.5 Bn CZK) and CPA 10.5 Dairy products (by 6.6 Bn CZK, i. e. 2times to 13.3 Bn CZK). Great dynamics of import growth was occurred not only at groups 10.1 and 10.5 but also at group CPA 10.6 Grain mill products, starches and starch products (where import value increased 2.3times to 5.3 Bn CZK).

The most substantial increases of export values were proved at groups CPA 10.8 Other food products (by 12.0 Bn CZK, i. e. by 53 % to 29.4 Bn CZK), CPA 10.4 Vegetable and animal oils and fats (by 7.5 Bn CZK, i. e. 3,8 times to 10.2 Bn CZK) and CPA 10.1 Preserved meat and meat products (by 7.1 Bn CZK, i. e. 2,4times to 12.0 Bn CZK). Significant increase in percentage expression is apparent at above mentioned group CPA 10.4, and then at groups CPA 10.9 Prepared animal feeds (3.6times to 6.0 Bn CZK) and CPA 10.7 Bakery and farinaceous products (3.1times to 7.4 Bn CZK) as well.

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[10] Due the fact that values of food and beverage imports and exports are with "no adjustment", their share are calculated in relation to the corresponding total imports and export with "no adjustment" too. The share in total import and export values with "adjustment" is slightly lower (mostly by 0.1 percentage point).

[11] Within the Czech agrarian foreign trade (defined by HS chapters 01 – 24), balance deficit was 23.9 Bn CZK and coverage of imports by exports reached 86.9 %. It reflects relatively high shares of bulk commodities in Czech agrarian exports (as wheat and rapeseed) and unprocessed animal commodities (as raw milk, live animals and poultry).
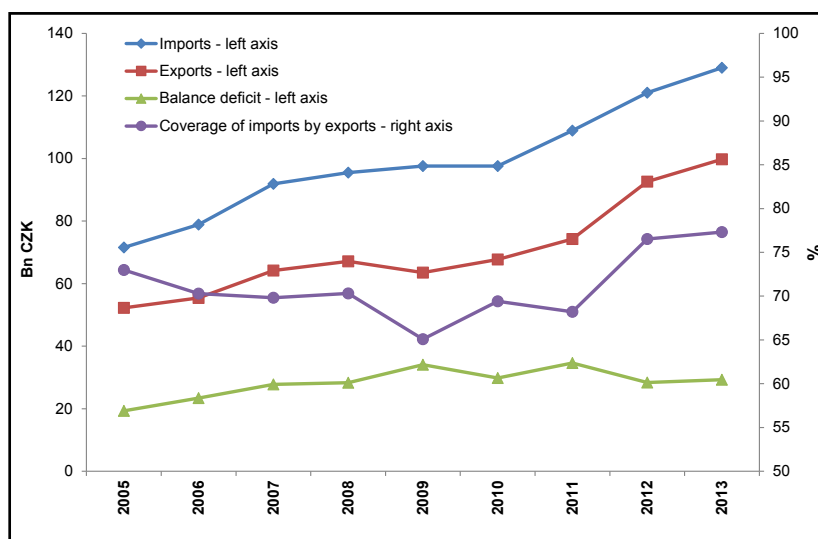
Source: External Trade Database of the Czech Statistical Office (data with „no adjustment"),
author`s calculations

Graf 1: Development of Czech food and beverages imports and exports in the period of 2005-2013 (%).

Structure of Czech food and beverages imports and exports by CPA groups

Since 2010, the biggest participation in Czech food and beverage imports has been comprised by groups CPA 10.8 Other food products (24.2 % in 2013), CPA 10.1 Preserved meat and meat products (22.1 %), and CPA 10.5 Dairy products (10.3 %).

On the export side, in the long term, the most significant groups are CPA 10.8 Other food products (29.5 % in 2013), CPA 11 Beverages (13.7 %) and CPA 10.5 Dairy products (13.2 %). In 2013 compared with 2005, their shares were distinctly lower. Participation of the next important group CPA 10.1 Preserved meat and meat products, on the contrary, increased from 9.4 % to 12.0 % during the period of 2005 - 2013.

Development of RCA-1 and RCA indices, and trade balance of individual food and beverage groups

Deep trade balance deficit and RCA-1 and RCA-2 indices indicating comparative disadvantage are typical for CPA 10.1 Preserved meat and meat products, CPA 10.2 Processed and preserved fish, crustaceans and molluscs, as well as for CPA 10.3 Processed and preserved fruit and vegetables.

Not taking account an ambiguous value of RCA-2 index in 2008, unfavourable values of all three indicators (although not in such extent as in case of previous three CPA groups) are apparent also

within CPA 10.6 Grain mill products, starches and starch products.

Negative trade balance and simultaneously positive values of both RCA-1 and RCA2 indices is shown by CPA 10.8 Other food products, and since 2009 also by 10.7 Bakery and farinaceous products (RCA-1 became favourable in 2007 and RCA-2 index slightly favourable then in 2009).

Trade balance of CPA 10.5 Dairy products was positive only till 2008, afterwards it was negative. Values of both RCA indices, however, were always favourable und showed comparative advantages, although they have been deteriorated.

Usual trade balance deficit, but changing values of RCA indices, is distinctive for CPA 10.4 Vegetable and animal fats and oils. According to RCA indices, the group was in comparative advantage in last two monitored years.

A change of all three indicators was observed within CPA 10.9 Prepared animal feeds. Their formerly negative balance was slightly positive in 2011 and in 2013; nevertheless, RCA-1 index has indicated comparative advantage already since 2006, and RCA-2 index since 2008.

Trade balance surplus is typical for CPA 11 Beverages. Their RCA-2 index was favourable in the whole monitored period, while RCA-1 index was (except for 2008 and 2009) rather slightly unfavourable.
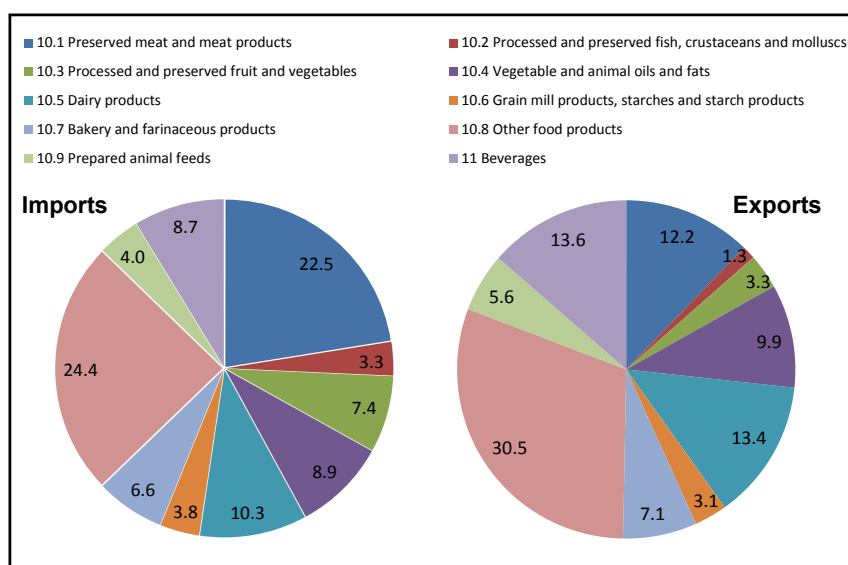
Source: External Trade Database of the Czech Statistical Office (data with „no adjustment"), author`s calculations

Graf 2: Structure of Czech food and beverages imports and exports in the average of the period of 2011 - 2013 (%).

			2005	2006	2007	2008	2009	2010	2011	2012	2013
10.1	Preserved meat and meat products	Balance (Mio CZK)	-7 647	-8 705	-10 226	-10 844	-12 728	-12 913	-14 830	-16 589	-16 538
		RCA-1	0.53	0.55	0.59	0.61	0.64	0.64	0.68	0.67	0.68
		RCA-2	-0.62	-0.61	-0.58	-0.56	-0.57	-0.61	-0.57	-0.64	-0.61
10.2	Processed and preserved fish, crustaceans and molluscs	Balance (Mio CZK)	-2 469	-2 543	-2 710	-2 753	-2 689	-2 530	-2 601	-2 732	-2 954
		RCA-1	0.17	0.18	0.18	0.20	0.25	0.26	0.25	0.26	0.28
		RCA-2	-1.44	-1.34	-1.30	-1.27	-1.02	-0.98	-0.94	-0.95	-0.92
10.3	Processed and preserved fruit and vegetables	Balance (Mio CZK)	-3 915	-4 860	-5 681	-6 047	-5 533	-5 917	-5 845	-5 705	-6 047
		RCA-1	0.54	0.58	0.54	0.45	0.45	0.41	0.45	0.41	0.42
		RCA-2	-0.67	-0.67	-0.69	-0.87	-0.75	-0.91	-0.78	-0.81	-0.79
10.4	Vegetable and animal oils and fats	Balance (Mio CZK)	-4 465	-4 328	-3 200	-4 779	-6 754	-2 556	-4 447	254	-1 591
		RCA-1	0.83	0.92	1.02	0.89	0.69	1.24	1.00	1.47	1.31
		RCA-2	-0.65	-0.50	-0.21	-0.35	-0.73	0.00	-0.21	0.29	0.11
10.5	Dairy products	Balance (Mio CZK)	1 841	1 443	1 679	933	-516	-833	-328	-916	-50
		RCA-1	1.23	1.34	1.32	1.18	1.18	1.10	1.19	1.02	1.05
		RCA-2	0.56	0.52	0.52	0.45	0.37	0.28	0.35	0.19	0.25
10.6	Grain mill products, starches and starch products	Balance (Mio CZK)	-972	-983	-1 473	-801	-1 673	-1 427	-1 644	-1 615	-2 065
		RCA-1	0.69	0.83	0.80	0.78	0.64	0.73	0.76	0.75	0.81
		RCA-2	-0.24	-0.11	-0.21	0.02	-0.28	-0.21	-0.16	-0.19	-0.24
10.7	Bakery and farinaceous products	Balance (Mio CZK)	-2 082	-2 063	-2 127	-1 999	-2 103	-1 758	-2 294	-1 679	-1 089
		RCA-1	0.89	0.98	1.08	1.17	1.20	1.35	1.42	1.37	1.47
		RCA-2	-0.31	-0.21	-0.12	-0.05	0.01	0.04	0.01	0.03	0.12
10.8	Other food products	Balance (Mio CZK)	177	-2 147	-5 190	-3 527	-3 345	-3 033	-3 350	-1 299	-1 712
		RCA-1	1.96	1.73	1.61	1.72	1.68	1.56	1.56	1.62	1.51
		RCA-2	0.32	0.24	0.12	0.20	0.28	0.23	0.24	0.22	0.20
10.9	Prepared animal feeds	Balance (Mio CZK)	-1 366	-1 255	-1 119	-897	-1 286	-709	100	-103	518
		RCA-1	0.96	1.00	1.11	1.30	1.14	1.33	1.59	1.38	1.59
		RCA-2	-0.29	-0.16	-0.02	0.09	0.03	0.17	0.41	0.25	0.35
11	Beverages	Balance (Mio CZK)	1 554	2 014	2 295	2 369	2 549	1 829	610	1 978	2 274
		RCA-1	0.93	0.97	0.99	1.01	1.09	0.95	0.85	0.77	0.81
		RCA-2	0.51	0.58	0.58	0.58	0.68	0.55	0.44	0.45	0.44

Note: Within the RCA-1 index, reference group is the EU-28.

CPA classification is applied also in the period of 2005 - 2008 although SKP classification was in forced in these years.

Source: External Trade Database of the Czech Statistical Office (data with „no adjustment"), author`s calculations

Table 1: RCA-1 and RCA-2 indices, and trade balances (in Mio CZK).

Main net exported and net imported items

In detailed commodity view, the biggest balance deficit in the average of the period of 2011-13 has been observed in Czech trade in "pig meat", "soya-been oilcakes", "wine", "poultry meat and edible offal", "cheese and curd", „bread and bakers` wares, sweetened or not", "chocolate and other food preparations containing cocoa", "beef meat", "fruit, nuts and other edible parts of plants, otherwise prepared or preserved", "extracts, essences and concentrates of coffee", „butter", "glucose and glucose syrup", „margarine", "prepared or preserved fish", "fish fillets and other fish meat", "spirituous beverages (less

than 80 % vol)", "preparations for infant use, put up for retail sale", "husk or milled rice", "other food preparations" (HS 2106), "sauces and preparations therefor (not soya and tomato sauces), mixed condiments and seasonings", „sunflower oil", "fruit and vegetable juices", "other vegetables (without tomatoes), prepared or preserved (not by vinegar or acetic acid), frozen" and "not frozen", and „ice creams". A lot of above mentioned net imported products (aggregates) are also important net exported items.

On contrary, the most substantial balance surplus was showed in trade in "rapeseed oil", "beer", "sugar", "malt", "milk and cream, concentrated", "sugar confectionery, not containing cocoa", "milk and cream, not concentrated", "rapeseed oilcakes", "yoghurts", "homogenised composite food preparations", "sausages and similar products", "whey", "pectins", "prepared foods obtained by the swelling or roasting of cereals, grains, flakes or other worked grains (except flour, grouts and meal), pre-cooked or otherwise prepared"[12], "sweet biscuits, waffles and wafers", "homogenised preparations of meat, meat offal or blood", and "dog or cat food, put up for retail sale".

Foods and beverages with comparative advantage

The following assessment, using averages of the periods 2005-07, 2008-10 and 2011-13, covers only some products with respect to their importance in Czech trade.

Within CPA 10.1 Preserved meat and meat products", comparative advantage has been observed only in case of „sausages and similar products" (although their trade balance in average of the period 2005-07 was still negative), and "raw hides and skins". For meat and meat product comparative disadvantage is otherwise characteristic. Also Smutka and Buriánová (2013) in their paper concerning the competitiveness of Czech agrarian trade observed that the Czech Republic lost out primarily in the case of trade in meat and meat products.

No product aggregate has a comparative advantage within CPA 10.2 Processed and preserved fish, crustaceans and molluscs, as well within CPA 10.3 Processed and preserved fruit and vegetables. Only "vegetables, fruit, nuts and other edible parts of plants, prepared or preserved by vinegar or acetic acid" in the average of 2005-07 and 2008-10 showed tiny comparative advantage

according to the index RCA-1 (in spite of negative balance and unfavourable index RCA-2).

A substantial comparative advantage is typical within CPA 10.4 Vegetable and animal oils and fats for "rapeseed oil" (and this comparative advantage has increased according to all three indicators) and "rapeseed oilcakes". "Margarine" lost his comparative advantage at the beginning of monitored period, and is now a significant net imported product.

Favourable values of RCA indices have been observed at many products within CPA 10.5 Dairy products. It concerns "milk and cream, not concentrated", "milk and cream, concentrated" (but their comparative advantage has been reduced), and at "whey". Net exported "fermented or acidified milk products" are characterised by favourable values of RCA-1 index, but value of RCA-2 index was sometimes negative (particularly in average of 2005-07 and 2001-13). "Butter" has been a net imported product since accession to the EU, and is (like "cheese and curd" and "ice creams") in lasting comparative disadvantage. Also "dairy spreads" have lost their comparative advantage; it happened in second half of monitored years, although in average of 2005-07 value of their RCA-1 index was still one of the best.

Ambiguous situation has been detected within CPA 10.6 Grain mill products, starches and starch products at slightly net imported „cereal grains, otherwise worked, and germ of cereals". These products showed moderate comparative advantage according to the RCA-1 index (according to the RCA-2 only in average of 2011-13). Increasing comparative advantage has been, during monitored years, observed at "prepared foods obtained by the swelling or roasting of cereals, grains, flakes or other worked grains, pre-cooked or otherwise prepared".

Within CPA 10.7 Bakery and farinaceous products, "sweet biscuits, waffles and wafers" had a stable comparative advantage according to the RCA indices, although their trade balance was positive only in average of 2011-13. Slight comparative advantage, but only in average of 2011-13, and only according to RCA-1 index, was shown at "sweetened bakers` wares". Relatively high comparative advantage is typical for less traded "gingerbread" (its usually active trade balance was passive in average of 2005-07).

The group CPA 10.8 Other food products include a lot miscellaneous products. According to the all

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[12] for example corn flakes and preparation of the Müsli type

indicators, "pectins", "homogenised preparations of meat, meat offal or blood", "sugar", "sugar confectionery, not containing cocoa", „ketchup and other tomato sauces", "mustard", and "homogenised composite food preparations" have comparative advantages. "Sauces and preparations therefor (not soya and tomato sauces) lost their comparative advantage during monitored years.

On contrary, within CPA 10.9 Prepared animal feeds, "dog or cat food, put up for retail sale" gained a comparative advantage. Usually net imported „other preparations of a kind used in animal feeding" are ambivalent.

Within CPA 11 Beverages, traditional Czech articles "beer" and "malt" are in clear comparative advantages". Beer is one of the products which are traded globally, and the Czech Republic participates. Among others Goldberg and Knetter (1999) dealt with competing companies producing beer. "Lemonades" have a comparative advantage as well, but only according to RCA indices, their trade balance in average of 2011-13 was, in contrast to the previous periods, negative (but only in financial expression, in quantity expression it was always active).

Values of trade balances and of RCA indices are mostly in accordance (both RCA-2 index and trade balance are derived from relation between exports and imports), but it does not agree absolutely. Especially, within CPA 10.8 Other food products, some aggregates show favourable value of RCA-1 index but their trade balance, alternatively RCA-2 index, is unfavourable. It concerns for example "chocolate and other food preparations containing cocoa", "roasted coffee", "extracts, essences and concentrates of coffee", "yeasts and prepared baking powders" or "other food preparations" (HS 2106). The Czech Republic exports these products in a large extent (and their share in Czech food and beverage exports is higher than in corresponding EU exports), but their imports is still larger. In some cases, it is related with fact that these products originate from uncompetitive ingredients.

Conclusion

The article has assessed Czech foreign trade in foods and drinks in more detailed product structure with adjusted methodology which is not provided by other studies. That is why, for example, "Panorama of food industry" has

partly different results. Value of Czech food and beverage imports in 2013 compared with 2005 rose by 57.4 Bn CZK, i. e. by 80 %, while value of Czech food and beverage exports increased by 47.5 Bn CZK, i. e. by 91 %. Balance deficit in trade in these products from 2005 to 2013 grew by 51 % to 29.3 Bn CZK, as a result of the higher value of increase of imports than exports. At the same time, coverage of imports by exports improved by 4.3 percentage points to 77.3 %, as a consequence of higher dynamics of the export growth than import growth.

Since 2010, the biggest participation in Czech food and beverages imports has comprised by groups CPA 10.8 Other food products (miscellaneous products), CPA 10.1 Preserved meat and meat products, and CPA 10.5 Dairy products. On the export side, in the long term, the most significant groups are CPA 10.8 Other food products, CPA 11 Beverages, and CPA 10.5 Dairy products.

There are identified food and beverage products with comparative advantage within the CPA groups 10 and 11 in the article. The biggest balance deficit in the average of the period of 2011-13 has been observed in Czech trade in "pig meat", "soya-been oilcakes", "wine", "poultry meat and edible offal", "cheese and curd", „bread and bakers` wares, sweetened or not", "chocolate and other food with cocoa". The most substantial balance surplus was showed in trade in "rapeseed oil", "beer", "sugar", "malt", "milk and cream, concentrated", "sugar confectionery, not containing cocoa", "milk and cream, not concentrated", "rapeseed oilcakes", "yoghurts", "homogenised composite food preparations", "sausages and similar products", "whey" and "pectins".

Among others, RCA indices for CPA groups and their commodities, for periods 2005-07, 2008-10 and 2011-13, have been calculated. It is important to mean that RCA indices do not incorporate all factors influencing foreign trade, they are not fully decisive. However, despite their limitations, in context of other information, RCA indices serve as a useful analytical tool. As for whole CPA groups, deep trade balance deficit and RCA-1 and RCA-2 indices indicating comparative disadvantage are typical for CPA 10.1 Preserved meat and meat products, CPA 10.3 Processed and preserved fruit and vegetables, CPA 10.2 Processed and preserved fish, crustaceans and molluscs, and CPA 10.6 Grain mill products, starches

and starches products. Negative trade balance and simultaneously favourable values of both RCA 1 and RCA2 indices is shown at CPA 10.8 Other food products, and since 2009, also at CPA 10.7 Bakery and farinaceous products and CPA 10.5 Dairy products. The indicators within CPA 10.4 Vegetable and animal oils and fats have been changing. Trade balance surplus, unfavourable RCA-1 index and favourable RCA-2 are typical for CPA 11 Beverages.

The results may be useful for agricultural policy makers. Some products will be always imported to the Czech Republic, such tropical fruits and the like, but other products, included so-called sensitive products, can be, with a certain support, produced domestically, and their import can be limited.

Contribution of the work is, among other things, also methodical. Official converter between the Combined Nomenclature and the CPA has been subjected to critical examination, and on its basis our own list of CN codes pertaining to individual CPA branches has been compiled, which can be used for further analysis, for example from the territorial aspect.

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