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Challenges for the Global Agricultural Trade Regime after Doha

CZECH AGRICULTURAL TRADE AFTER EU ACCESSION AS A REFLEXION OF THE COMPETITIVENESS OF CZECH AGRICULTURE AND FOOD INDUSTRY UNDER THE EU SINGLE MARKET AND CHANGES IN WTO COMMITMENTS

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Abstract: The development of the Czech agricultural trade after EU accession in 2004 is a reflexion of changing trade conditions (especially the entry on the EU single market and taking over the EU commitments to the WTO), effectiveness of the Czech agriculture and food industry. The main characteristics of the changes are the growth of the negative trade balance, a substantial increase of the trade turnover with EU countries to the detriment of the third countries and the growth of exports of agricultural raw materials accompanied with the growth of imports of more processed products. The main cause is the orientation of the Czech agriculture on products with a lower demand on labour quantity and quality and on simpler technologies, together with a lower effectiveness of domestic primary processors. Besides the global trade indicators, this development is documented by selected RCA indicators.

Keywords: agricultural trade, Czech Republic, EU single market, , agriculture, food industry, effectiveness, revealed comparative advantage

INTRODUCTION

The Czech agricultural trade (CATD) after the Czech entry into the EU in 2004, it means on the EU single market, from more aspects has significantly changed. Besides the exchange rate and world price developments, the trade development has been influenced especially by changes in trade policy conditions and by effectiveness and competitiveness of the Czech agriculture and food industry. The paper is oriented on the main characteristics of the changes in the CAT after 2004 and their main causes.

1. METHODOLOGY AND SOURCES OF DATA

The basic sources of data and information for the assessment of the development of the CAT are EUROSTAT, the Czech Statistical Office (CSO), the Czech Ministry of Agriculture (e. g. Ministry of Agriculture 2010) and databases and documents of the Institute of Agricultural Economics and Information (IAEI). The sources are also utilised in the annually published Reports on the Czech agriculture for the government and the Parliament (e. g. Pohlová 2010; Bašek et al. 2009) and for other related Czech research documents (e. g. Buriánová 2010, Smutka et al. 2012, Smutka et al. 2013). The assessment of effectiveness and competitiveness of the Czech agriculture and food industry is based on the IAEI research documents (e. g. Doucha 2012, Plášil et al. 2010).

Comparative analyses based on the time series are the main method for the assessments. Comparative advantages are analysed by means of two basic indicators (Benedictis et al. 2001):

1. RCA-1: the index of revealed comparative advantage as the ratio of the share of exports of a commodity aggregate in the total Czech agricultural exports and the share of exports of this aggregate in the total EU-27 agricultural exports (Balassa 1965). That is: RCA-1 = $(X_{ij}/X_i)/(X_j/X)$, where: X_{ij} = Czech (*i*) exports of commodity aggregate *j*; X_i = total Czech agricultural exports; X_j = EU-27 exports of commodity aggregate *j*; X = total EU-27 agricultural exports. Values of the RCA-1 higher than one indicate that the Czech Republic is in the framework of the EU-27 specialized in the exports of a given commodity aggregate (revealing thus a comparative advantage) and *vice versa*.
2. RCA-2: the (domestic) index of revealed comparative advantage taking account also import values (Gálik 2009). That is: RCA-2 = $\ln (X_j/M_j)/(X/M)$, where: X_j = Czech exports of commodity aggregate *j*; M_j = Czech imports of commodity aggregate *j*; X = total Czech agricultural exports; M = total Czech agricultural imports. Value of the RCA-2 higher than zero signal a comparative advantage of a given commodity aggregate for the Czech Republic and *vice versa*.

However, the values of the both indices are only signal information for any assessments of comparative advantages/disadvantages in the trade. The indicators do not fully consider trade distorting factors such as export subsidies, tariff and non-tariff barriers, domestic commodity supports etc. That is why any assessment of the trade developments should be based on more indicators, or in the context of other information, respectively. An overview of RCA indices and other exports/imports indicators is presented in OECD documents (e.g. OECD 2010). It is also in the compliance with an initiative of the OECD and WTO for measuring trade in value added (OECD 2013).

2. CHANGES IN POLICY CONDITIONS FOR THE CZECH AGRICULTURAL TRADE AFTER EU ACCESSION

2.1. Market access

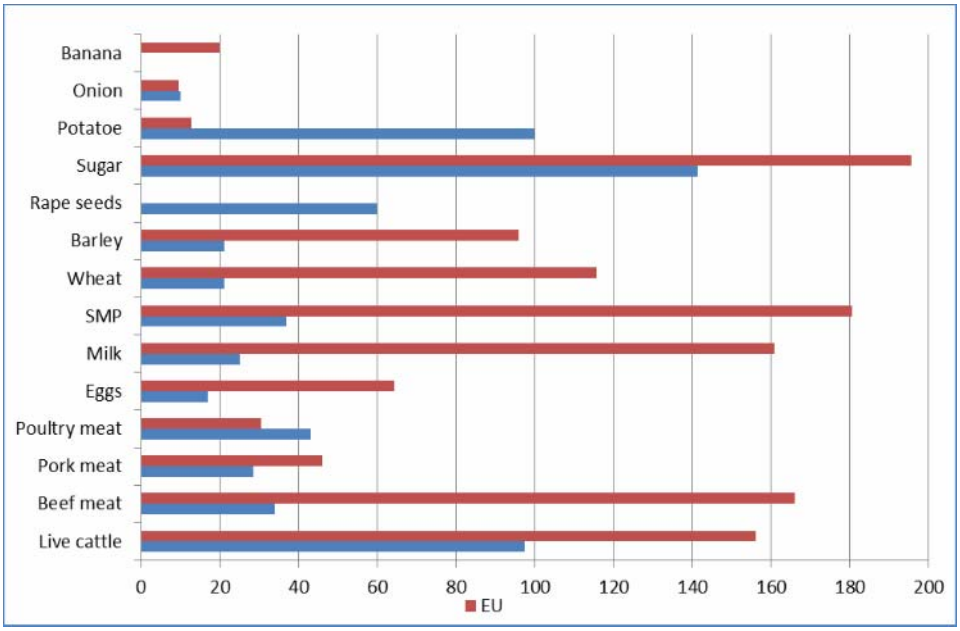
The entry on the EU single market in 2004 has brought significant changes in trade conditions for the Czech Republic. The changes in market access are among the most important. It means the non-tariff trade within the EU and changes in tariffs applied for the third countries (the Czech Republic took over the EU tariffs). The changes for selected commodities are illustrated in Graph 1.
It is evident from Graph 1 that with several exemptions (e. g. potatoes, rape seeds and poultry meat) the Czech Republic entered into the region with a higher general market protection in the relation to the third countries. All the previous Czech trade agreements were abolished (the CEFTA, the agreements with the BFTA and other concessions towards the third countries) and the Czech Republic took over all WTO commitments of the EU and all EU trade agreements.

EU continuously has been trying to apply non-tariff measures in the trade. Besides various quantity limits, sanitary and phytosanitary standards, there is a question of environmental, social and hygienic conditions under which the products are processed and distributed, including requirements on the identification of the product origin. In general, stricter requirements on the standards have been applied on the EU agriculture and food industry.

Already in the pre-accession period, the impacts of the so-called European Agreement between the Czech Republic and the EU, based on the mutual market liberalisation for selected (sensitive) commodities, indicated the future problems of the CAT on the EU single market.[1] The European Agreement was realised in the form of commodity specific Tariff Rate Quotas (TRQ), and lowered gradually tariffs up to the zero level (from the „double profit“ principle to the „double zero“ one). Under the given conditions, differences in the effectiveness of the domestic farms, processors and traders compared with the EU private firms have been disclosed which – together with the Czech natural comparative advantages/disadvantages - have been determining a real competitiveness of the Czech agrarian sector on the European and world markets.

[1] The fulfilment of the European Agreement in the mutual trade in pork meat represents a typical example. While the EU import quotas were fully utilised immediately after the triggering of conditions, the Czech export quotas were not in principle utilised by domestic producers and processors.

Graph 1: Comparison of tariffs in the Czech Republic and the EU (mil. CZK)



Source: Own calculations from official sources.

2.2. Export supports

The EU has been declaring for a longer time the goal to abolish all its export subsidies. Changes under the so-called Common Market Organisation (SMO) reflex this goal. The development of the Czech export subsidies in the total and for the selected commodities is shown in the first part of Table 1, which proves their marginal importance for the CAT especially after 2008.

Table 1: Supports for the Czech agrarian sector (mil. CZK)

Indicator	***2001-3 average***	***2004-8 average***	***2009***	***2010***	***2011***	***2012***	***Index 2010-12/2001-03***
Export subsidies							
Total supports	2 234	684	163	50	21	4	1.1
- dairy	1 837	479	70	44	1	0	0.8
- beef meat	287	12	6	4	17	4	2.9
Total supports							
Total	20 349	33 370	41 813	43 086	42 321	41 788	208.4
- farms	12 208	27 051	34 414	33 792	34 188	34 090	278.7
- food industry	2 884	1 342	1 255	344	270	277	10.3
- other [1)]	5 257	4 977	6 144	8 950	7 863	7 421	153.7

Note: 1) Including general services.
Source: Reports on the Czech agriculture 2004 – 2012 (MoA, IAEI).

2.3. Domestic supports

The level, orientation and conditions of the domestic supports under the EU Common Agricultural Policy (CAP) influence the agricultural trade indirectly. Regardless the argumentation of the EU for their maintenance (e. g. higher environmental and other standards for domestic producers), it is reality for the Czech area, that the gradually increasing particularly income supports (even though decoupled from production) has been weakening presses on the growth of effectiveness and a real competitiveness of the Czech producers.

The second part of Table 1 presents the total data on the public supports for the Czech agrarian sector. The average yearly supports for farms in the period of 2010-12 compared with the pre-accession period of 2001-03 have increased from about CZK 12 billion to about CZK 34 billion, it means almost three times (two times in real terms).

3. DEVELOPMENTS OF THE CZECH AGRICULTURAL TRADE IN 2004 – 2012

Before EU accession the negative balance of the CAT had been deepening. After the accession, the balance is characterised by a year-to year volatility without apparent trends. However, the balance has been accompanied by the growth of exports of agricultural raw materials to the detriment of exports of more processed products, whose imports (often originated in Czech raw materials) have been increasing.

3.1. Total balance of the Czech agricultural trade

The development of the total negative balance of the CAT and its growing turnover are presented in Table 2[2]. Compared with the pre-accession period, the total turnover in 2010-12 has increased 2.4 times, of which imports 2.2 times and exports even 2.6 times. It is the evidence of the large release of the trade room for the Czech Republic, especially on the EU single market, to be utilised by the private sphere including exporters.

Table 2: Balance of the Czech agrarian trade (bil. CZK)

Indicator	***2001-03***	***2004-06***	***2007-09***	***2010***	***2011***	***2012***	***Index 2010-12/2001-03***
Turnover	118.6	176.3	233.2	245.4	277.1	320.0	236.7
- Imports	70.8	103.4	131.4	140.0	156.7	172.3	220.7
- Exports	47.8	72.9	101.8	105.4	120.4	147.7	260.5
Balance	23.0	30.5	29.6	34.6	36.3	24.6	138.2

Source: Reports on the Czech agriculture 2004 – 2012 (MoA, IAEI).

[2] Data based on the CSO. The developments based on the EUROSTAT data are slightly different, because of different exchange rates and approaches to updating, compared with the Czech official statistics.

3.2. Territorial structure of the Czech agricultural trade

There are also significant changes in the territorial structure of the CAT after EU accession (see Table 3). Compared with the pre-accession period the share of EU-27 countries in the total Czech agricultural exports in 2010-12 has increased on 91.5 %, that is by more than 10 %. Similarly, in the case of imports the share of EU-27 countries has increased from the pre-accession 75.3 % on 85 % (on 92.7 % not considering the origin of goods, respectively). The absolute majority of the CAT is at present realized on the EU single market as the intra-trade. Consequently the share of the third countries both in exports and in imports has significantly dropped. This effect witnesses to relatively favourable conditions of the EU internal trade, but on the other hand, it signals large reserves of the Czech trade in the relation to the third countries.

Table 3: Territorial structure of the Czech agricultural trade

Imports/exports	**Countries**	**ø 2001-03**	**ø 2004-06**	**ø 2007-09**	**ø 2010-12**
Imports according to countries of origin (of goods)[1)]	EU 27	75.3	82.0	84.6	85.0
	of which: EU 15	51.9	55.9	57.2	56.5
	EU 12	23.4	26.1	27.4	28.5
	Third countries	24.7	18.0	15.4	15.0
Imports according to countries of delivery (of goods)[2)]	EU 27	75.3	90.6	92.8	92.7
	of which: EU 15	51.9	62.7	64.0	62.6
	EU 12	23.4	27.9	28.8	30.1
	Third countries	24.7	9.4	7.2	7.3
Exports[2)]	EU 27	83.1	87.3	91.8	91.5
	of which: EU 15	38.7	43.0	46.2	44.7
	EU 12	44.4	44.3	45.6	46.8
	Third countries	16.9	12.7	8.2	8.5

Source: 1) Eurostat, 2) Czech Statistical Office – Database of trade

It is true that especially exporters from EU new member states, and among them particularly Polish exporters, have profited from the EU enlargement. However, among the EU new member states, the Czech Republic belongs to the countries with the worst results in agricultural trade.

The main suppliers to the Czech Republic are for a longer time Germany, Poland, Slovakia, the Netherlands, Italy, Spain and Austria. The most important destinations for Czech agrarian products are Slovakia, Germany, Poland, Italy, Austria and Hungary. It is proved that better possibilities for the Czech exports exist on less demanding markets in new member states.

The trade with the third countries is all the time very variable from point of view of volumes and values and territorial and commodity structures, as well.[3]

[3] In 2010-12 the Czech exports went mainly to Russia, Ukraine, Croatia, Switzerland, the USA, Japan, Lebanon, Norway and China. The Czech imports descended mainly from Brazil, China, Turkey, the USA, Vietnam, Switzerland, Canada, Norway, Thailand, Columbia, Ecuador, Argentina, Morocco and Chile.

However, the Czech Republic a larger part of imports does not realize directly from the third countries, but via traders from EU countries (particularly from Germany and the Netherlands).

3.3. Commodity structure of the Czech agricultural trade

3.3.1. General view

Problems of the CAT consist not only in the development of its balance and in its territorial structure. From the point of view of the national economy, there is a question how to utilise comparative advantages in the Czech agrarian sector towards other regions and countries, related to individual commodities or commodity aggregates. However, the above mentioned gradual liberalisation in the trade relations with EU countries during the pre-accession period already indicated future problems in the development of the CAT. The liberalisation has issued in the asymmetry in the development of values and volumes in the intra-trade.

The entry on the EU single market has been accompanied by a sharper competition of other EU countries. As a consequence, large changes in the commodity structure of the CAT have occurred (for selected commodities and commodity aggregates see Table 4).

The interpretation of the changes in the commodity structure of the CAT, presented in Table 4, is evident. Exports of agricultural raw materials and also product with a lower added value have enormously grown. The same applies for imports of processed products with a higher added value[4]. At the same time, the imported products are often processed in abroad from the Czech raw materials. A leakage of value added and employment from the Czech area to the benefit of foreign producers and merchants is a consequence of those relations.

Table 4: Commodity structure of the Czech agricultural trade balance (bil. CZK)

Commodities	*KN*	*2001-03 average*	*2010-12 average*	*Index*
Live animals	01	1.08	3.78	350.0
Meat and fish, including processed products	02, 03, 16	-2.56	-16.61	648.8
Milk, dairy products, eggs	04	3.11	3.01	96.8
Fruits and vegetables, including processed products	07, 08, 20	-14.08	-21.34	151.6
Cereals	10	0.38	8.82	2321.1
Mill products, malt, starches	11	1.58	1.82	115.2
Oil seeds	12	2.13	2.29	107.5
Oils and fats	15	-2.05	-0.12	5.9
Sugars and sweets	17	1.23	2.07	168.3
Feed	23	-5.06	-2.81	55.5

Source: Czech Statistical Office – Database of trade

[4] For the Czech beef sector see also Malý 2013.

A present dominant position in the Czech agricultural exports belongs to cereals, malt and oilseeds, but with a large variability between years, followed in a longer time by milk and dairy products (with the growing share of raw milk to Germany and Austria after EU accession).

3.3.2. Assessment of the Czech agricultural trade by RCA indicators

The results of the assessment of the commodity structure for the CAT by means of RCA indices are presented in Table 5 (with territories by countries of delivery; commodities on HS 2-digit level[5]). The assessment utilising the RSA indices ascertains in principle the assessment using the value trade indicators and findings in other literature (e. g. Vološin 2011).

Table 5: Indices RCA-1 and RCA-2 for selected commodities/commodity aggregates

KN	Commodity/commodity aggregates	Extra + intra-trade				Extra-trade				Intra-trade			
		RCA-1		RCA-2		RCA-1		RCA-2		RCA-1		RCA-2	
		ø 01-03	**ø 10-12**	**ø 01-03**	**ø 10-12**	**ø 01-03**	**ø 10-12**	**ø 01-03**	**ø 10-12**	**ø 01-03**	**ø 10-12**	**ø 01-03**	**ø 10-12**
01	Live animals	1.40	2.05	1.66	1.27	1.26	3.85	2.42	3.39	1.38	1.83	1.52	1.17
02	Meat and edible meat offal	0.43	0.42	-0.04	-1.11	0.43	0.26	-0.42	0.61	0.41	0.41	0.01	-1.13
03	Fish and crustaceans, molluscs	0.52	0.35	0.07	-0.20	0.19	0.09	-2.21	-3.07	0.55	0.34	0.85	0.05
04	Dairy produce; eggs, natural honey	1.38	1.32	1.05	0.44	4.25	2.49	3.81	4.20	0.82	1.20	0.30	0.31
05	Product of animal origin not elsewhere included	1.91	1.04	-0.40	-0.43	0.23	0.49	-3.22	-1.74	2.33	1.16	0.29	-0.30
06	Live trees and other plants; bulbs; roots and the like; cut flower and ornamental foliage	0.11	0.11	-1.95	-1.92	0.04	0.03	-2.86	-2.43	0.12	0.11	-1.94	-1.87
07	Edible vegetable and certain roots and tubers	0.19	0.44	-1.99	-1.18	0.21	0.20	-1.93	-2.18	0.18	0.42	-2.05	-1.14
08	Edible fruit and nuts; peel of citrus fruit or melons	0.27	0.41	-1.97	-1.25	0.06	0.07	-4.94	-3.89	0.28	0.40	-1.48	-1.14
09	Coffee, tea, maté and spices	1.00	0.95	-0.76	-0.48	0.50	0.34	-2.09	-3.12	1.16	0.97	-0.11	-0.13
10	Cereals	0.98	2.01	0.66	1.71	0.26	0.38	-0.64	0.18	1.18	2.34	0.83	1.79
11	Products of the milling industry; malt; starches; inulin; wheat gluten	2.77	1.86	2.02	1.10	1.81	2.53	4.14	3.06	3.85	2.07	1.69	0.93

[5] For the assessment, the RCA values on the commodity HS 4-digit level are utilised, but they are not presented in the paper.

12	Oil seeds and oleaginous fruit; industrial or medicinal plants; straw and fodder	4.51	1.97	1.17	0.68	3.97	4.08	0.77	1.12	4.56	1.74	1.27	0.62
13	Lac; gums;, resins and other vegetable saps and extracts	1.98	1.76	0.60	0.41	3.31	5.10	1.37	0.18	1.45	1.45	0.11	0.48
14	Vegetable plaiting material; vegetable products not elsewhere included	0.28	0.95	-2.46	-1.00	0.14	0.52	-4.11	-3.42	0.29	0.88	-1.90	-0.74
15	Animal or vegetable fats and oils; prepared edible fats; animal or vegetable waxes	0.76	1.12	-0.55	0.21	0.44	0.08	-0.16	-1.97	0.85	1.16	-0.65	0.26
16	Preparations of meat, of fish of crustaceans, molluscs	0.48	1.03	-0.54	0.00	0.44	0.59	-1.14	-1.44	0.47	0.94	-0.45	0.08
17	Sugars and sugar confectionery	2.39	2.25	0.86	0.57	2.80	4.68	2.72	1.85	2.35	1.99	0.52	0.46
18	Cocoa and cocoa preparations	1.35	0.90	-0.12	-0.26	0.28	0.39	-1.59	0.48	1.53	0.96	-0.03	-0.27
19	Preparations of cereals, flour, starch or milk; pastrycooks` products	0.85	0.95	-0.26	-0.16	0.28	0.62	0.47	0.52	0.99	1.02	-0.37	-0.18
20	Preparations of vegetables, fruit, nuts, or other parts of plants	0.55	0.40	-0.59	-0.76	0.32	0.32	-1.60	-1.58	0.58	0.39	-0.38	-0.69
21	Miscellaneous edible preparations	1.97	1.48	-0.10	0.01	0.53	1.52	-1.37	-0.41	2.45	1.55	0.11	0.06
22	Beverages, spirits and vinegar	0.91	0.65	0.68	0.12	0.42	0.56	1.39	0.53	1.25	0.83	0.54	0.07
23	Residues and waste from the food industries; prepared animal fodder	1.03	1.20	-0.93	-0.14	0.68	1.59	-1.41	-0.27	1.04	1.12	-0.90	-0.13
24	Tobacco and manufactured tobacco substitutes	1.40	1.85	0.41	0.56	0.85	0.39	-0.86	-1.44	1.52	2.17	0.97	0.70

Source: Own calculation based on Eurostat data
Note: reference group of countries for RCA-1: EU-27

Not considering the so-called non-competitive commodities (tropical fruits, etc.) and products with prevailing re-exports (e. g. tobacco, coffee, etc.), the RCA indices reveal the main strong and weak aspects of the CAT after EU accession:

- Positive values of the both RCA indices for “live animals” (KN 01), “milk and dairy products” (KN 04), cereals (KN 10) and “mill products, malt and starch” (KN 11), it means for raw materials and low processed commodities.
- A decline of the RCA-2 index for “meats and offal” (KN 02) and decrease of the RCA-1 index for (less important) “other animal products” (KN 05). To the contrary, the both indices for “meat preparations” (KN 16) became better (but still without comparative advantage).
- A moderate decline of the both indices for “oil seeds” (KN 12), “sugar and sweets” (KN 17) and “drinks” (KN 22).
- Considering the commodity structure on the more detail HS 4-digit level, it is possible to observe:
- The non-competitiveness for crops (including processed) like flowers, potatoes, vegetables, fruits, flour and semolina. Further for starch, pastries, other sugar products and syrups.
- The non-competitiveness for animal products like cheese, curd, butter (after EU accession) and live pigs (since 2008).
- Comparative advantages for live cattle and poultry, raw milk, fermented/acidified dairy products, whey, cereals and the majority of oil seeds, malt, hops, , rape oil, sugar, sweets, beer, rape meal and feed preparations (since 2010). Further some more processed products like sausages, salami, ketchups, mustards, food preparations and lemonades.
- In general, worse values for the RCA-2 against the RCA-1 values are realised for commodities, which belong to important export/import goods, like live poultry, milk and dairy products, sugar and sweets.
- Within the extra-trade a stable or growing importance is evident for beer, dairy products, hops, malt, sugar, poppy seeds and live cattle.
- The RCA-1 and RCA-2 values for some commodities signal a high comparative advantage, but those commodities have only marginal importance for the Czech exports.

4. MAIN CAUSES OF THE CHANGES IN THE CZECH AGRICULTURAL TRADE AFTER EU ACCESSION

First, some comparative disadvantages issue from a lower soil quality and productivity of the prevailing share of the Czech agricultural land and from the landlocked geographical position of the Czech area.

However, the main cause of the hitherto development of the CAT under conditions of the EU single market and world markets is undoubtedly a lower effectiveness of the Czech farms and food industry, and also price preferences of the majority of Czech consumers, projected in the behaviour of the retail sector.
The competitiveness of the Czech agriculture in relation to foreign producers is lower particularly in the production of commodities with a higher demand on the labour quality and quantity (including management) and on technologies. There is a question especially of pigs, poultry, fruits and vegetables, whose production

under EU competition and particularly after EU accession has been significantly declining (e. g. in the case of pork meat from the original surpluses to about only 40 % of the domestic self-sufficiency at present).

On the contrary, the competitiveness of the Czech agriculture is relatively high in the production of commodities with a lower labour demand, or with simpler technologies, respectively. There is a question especially of cereals and rape seeds.

A lower competitiveness is a consequence of not only the domestic cost/price relations but also a lower level of co-operations of farms on markets and their willingness to innovations, product quality, etc. There is still a marginal involvement of the Czech producers in international quality systems on a private basis (factually e. g. in the Q systems for production, processing and distribution of meat).

But another serious cause of the growing deficit balance,,, increasing exports of raw materials and imports of processed products, is the effectiveness of the Czech food industry. There is particularly question of the primary processing – live animals (slaughterhouses), milk, cereals, fruits and vegetables. The Czech food industry performance is still on about 50 % of the productivity of EU 15, measured by the gross value added per worker. An insufficient technological concentration and a lower utilisation of capacities are leading to higher fixed costs. It is e. g. typical especially in the primary processing of live animals. Also under the pressure of the retail sector the farm-gate prices, bidding by domestic processors to farms, are usually much lower than farm-gate price, bidding to the Czech farms by foreign processors. The growing exports of the domestic raw materials to the detriment of their domestic processing are the real consequences.

In this context it is necessary to point out “myths” spreading by Czech producers and some politicians that the increased imports of processed products is caused by enemy policies and retail chains from developed EU countries and that after gaining power by them on the domestic market an extreme rise of consumer prices would occur. These myths penetrate into the Czech regulatory measures (see e. g. the Czech law against the economic power of the retail sector), into a high supports for marketing of the domestic products and even into economically dubious direct supports for non-competitive commodities.

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