

AGRARIAN FOREIGN TRADE OF THE CZECH REPUBLIC IN THE PERIOD OF 2004–2008, COMPETITIVENESS OF COMMODITIES

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Abstract

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The paper deals with agrarian foreign trade (AFT) of the Czech Republic during the period of 2004–2008. Distinct changes in the trade volume, but also changes in the net export structure were observed. The export is being assisted with a much larger trading area without customs restrictions but it is also exposed to a much tougher competition. A methodology that makes it possible to evaluate the competitiveness of individual commodities is described in the first part. A sequence of individual items from a total list of basic food goods was analyzed using chosen indicators – Balass indicator RCA (Revealed Comparative Advantage) as well as the Michaely index MI that shows a specific degree of specialization for export. In the Results section, attention is firstly focused on the year 2004. The values of export and import for 24 items of basic food commodities are summarised, and the most important items in respect of the share in total export are selected. Analogical output was acquired for the year 2008. The values of RCA and MI indicators are then itemised, and a sequence is determined for the highest values for the commodities able to compete that shows the specific degree of specialization for export.

agrarian foreign trade, foreign trade, competitiveness, competitive advantage, Balass RCA indicator, Michaely index

Foreign trade (FT) is one of the decisive factors influencing the growth of both individual countries and the entire global economy. FT has an impact on the creation of internal economic balance (transformation function) and participates in the international division of labor with a resultant effect of saving national labor and resources (growth function) (Jeníček and Krepl, 2009).

Agrarian Foreign Trade (AFT) in the Czech Republic represents only about 5% of the total trade turnover. In respect of the food commodities supplies there can be no doubt about its important position. The AFT long-term balance is negative and in recent years the percentage of the coverage of the agricultural imports by exports has been in the range of 65–80%. Some studies (Svatos and Smutka, 2009) have observed annual changes in the volume of agricultural exports and imports in longer

term (1997–2006). In all new member countries the period following their accessions has been characterized by a significant increase in the volume and value of exports and imports. The European market has provided new opportunities for these countries. The older EU countries recorded a significantly lower growth rate during this period.

Following the Czech Republic's accession to the EU, the country's integration into the European market space has been accompanied with a significant opening of the national economy. Export is assisted with a much larger market area without customs restrictions but it is also exposed to a much tougher competition. The mentioned effects are manifested by a significant change in volume, but gradually also by a change in the structure of net exports for agricultural foreign trade during the period of 2004–2008. Some commodities have

started to perform more strongly in the foreign market, but some, even the “traditional” ones, gradually lost their positions. The European agrarian market is developing and the current situation in the Czech Republic exports is documented by the results of 2008. Compared with the results of 2004, i.e. after only four years since joining the EU the changes are obvious.

In recent years, both at the national and supranational levels, increased attention is being paid to issues of competitiveness. Success in the foreign trade activity is one of the measures of success of a given industry but also of the entire national economy. Evaluation of the competitiveness of a given commodity is usually based on easily observable, quantified data, using certain recommended indicators.

MATERIALS AND METHODS

The aim of this study is to quantify the changes in the Agrarian Foreign Trade of the Czech Republic, which have occurred after its accession to the EU during the following four years. Furthermore, using selected indicators, the aim is to show how individual commodities perform in the European market within the entire branched structure of agricultural production – 24 chapters of food products.

This topic is addressed within the framework of the research project titled Economy of Czech agriculture resources and their effective use within the multifunctional agri-food systems, No. MSM 6046070906, PEF CZU (Faculty of Economics and Management, Czech University of Life Sciences Prague), Substantive Phase No. 4. The study pursuing agricultural production efficiency in terms of performance on the foreign market is addressed in the Section 4.8 – *The competitiveness of the CR Agrarian Foreign Trade and its impact on economic and social development of rural areas*.

The use of RCA and MI indicators

The measure of competitiveness of individual agricultural commodities of the agrarian foreign trade of the CR can be provided by the net exports of a given commodity in relation to the total turnover of the given commodity or to the total agricultural trade. The whole complex of economic and non-economic factors that affect the competitiveness of commodities cannot be determined statistically, but it is possible to use a proxy, e.g. – an indicator of Revealed Comparative Advantage (RCA). The concept of RCA was expressed by its author (Balassa, 1965, 1985) as follows:

$$RCA_j = (E_j - I_j) / (E_j + I_j) \times 100,$$

where E_j and I_j are values of exports and imports of agrarian foreign trade of the j -th commodity into a given area. RCA indices can be determined for both the aggregates of commodities, and for more detailed

sectoral structure of agricultural production. We can consider as competitive those commodities which have attained balanced high positive values of the RCA index during a period under observation. As commodities with an uncompetitive position in the market we can consider those whose long term RCA index values move in highly negative numbers.

Michaely Index (Michaely 1962, 1977) is used in this form:

$$MI_j = E_j / E - I_j / I,$$

where E and I are the values of total exports and imports. The index shows the degree of specialization of exports or the lack of specialization in specific commodity groups. For $0 < MI < 1$ the index indicates a certain degree of specialization in a given commodity, for $-1 < MI < 0$ the index indicates an insufficient pro-export specialization in a given commodity.

Usage of these indicators has also been documented in (Burianová, 2005, 2008).

RESULTS AND DISCUSSION

Development of the CR Agrarian Foreign Trade

Export and import values in millions of CZK were summed up, and the balance and the turnover in 2004, the year of accession to the EU, were calculated for 24 commodities aggregations, using the CN identification numbers. Results are shown in Table I.

The AFT Export for this year was 61.5 billion, imports 93.5 billion, the total turnover was of over 155 billion CZK.

Table II shows the most significant items of the CR AFT export in 2004 and their share of the total export. The first two CN 04 Milk, cream, eggs, and CN 17 represent 25% of export, while the listed 8 commodities represent 63.24% of export.

When the results of the CR AFT for 2008 are compiled in the same manner we get Table III.

The CR AFT export in 2008 was 106.6 billion, imports 129.9 billion, and the total turnover exceeded 236.5 billion CZK. This means that since joining the EU in 2004, the CR AFT exports in 2008 increased by 73.28% and imports by 38.87%, while the balance decreased by 27.24% and the total turnover increased by 52.53%.

When we observe the most important items of the CR AFT export in 2008 shown in Table II, and their share of total exports, the first two, CN 04 Milk, cream, eggs and CN 22 Beverages, alcohol liquids, represent 25% of exports, while the eight listed commodities represent 63.12% of exports.

Using MI and RCA indicators

In accordance with the definition of the RCA indicator, it measures the net exports (balance) for a given commodity reached by a total turnover of

I: *Total CR AFT in 2004 (million CZK)*

CN	Commodity name	Export 2004	Import 2004	Balance (EX-IM)	Turnover (EX+IM)
1	Live animals	3 268.2	634.4	2 633.9	3 902.6
2	Meat and consumable chitterlings	2 526.4	7 231.0	-4 704.5	9 757.4
3	Fish, crustaceans, molluscs and other aquatic invertebrates	1 240.0	1 510.7	-270.8	2 750.7
4	Milk, eggs, honey, edible products of animal origin	8 238.7	5 556.0	2 682.7	13 794.6
5	Products of animal origin not shown elsewhere	617.5	1 026.7	-409.2	1 644.2
6	Live plants and floricultural products	269.2	2 664.3	-2 395.1	2 933.6
7	Vegetables, plants, tubers, edible roots	788.7	6 227.8	-5 439.1	7 016.5
8	Fruits, nuts, edible lemon peel, fruits, melons	1 753.1	10 459.4	-8 706.2	12 212.5
9	Coffee, tea, yerba and spices	494.5	1 868.5	-1 373.9	2 363.0
10	Cereals	1 670.6	1 296.8	373.9	2 967.4
11	Flour mill products, malt, starch, inulin, wheat gluten	2 538.5	556.7	1 981.8	3 095.2
12	Oil seeds, fruits, medicinal plants, industrial straw, etc.	3 619.3	2 730.5	888.8	6 349.8
13	Shellac, rubber, resins etc, juices, plant extracts	736.8	507.4	229.4	1 244.2
14	Vegetable knitting materials, and other plant products	5.2	48.0	-42.8	53.3
15	Fats, animal and vegetable oils, food waxes	1 226.3	3 984.4	-2 758.2	5 210.7
16	Products from meat, fish, crustaceans, and other aquatic invertebrates	991.4	2 217.4	-1 226.0	3 208.8
17	Sugar and sweets	7 124.7	3 154.9	3 969.9	10 279.6
18	Cocoa and cocoa products	2 722.4	4 880.0	-2 157.6	7 602.4
19	Products from cereals, flour, starches, milk, pastry	2 877.5	6 098.8	-3 221.4	8 976.3
20	Products from vegetables, fruits, nuts	1 719.8	4 389.2	-2 669.4	6 109.0
21	Various food products	5 910.8	7 964.4	-2 053.6	13 875.1
22	Beverages, alcohol liquids, vinegar	6 517.9	6 494.6	23.4	13 012.5
23	Scraps, wastes from food industry, fodder	2 135.4	7 831.8	-5 696.4	9 967.3
24	Tobacco, manufactured tobacco substitutes	2 533.0	4 209.9	-1 676.9	6 742.9
Total		61 526.1	93 543.6	-32 017.5	155 069.8

Source: Research Institute of Agricultural Economics and data processed by author

II: *The most significant items of the CR AFT export in 2004 and 2008 and their shares of the total export*

CN	Name	% 2004	% 2008
04	Milk, cream, eggs	13.40	13.59
17	Sugar and sweets	11.58	5.35
22	Beverages, alcohol liquids	10.60	9.67
21	Food products	9.62	8.33
12	Oil seeds	5.88	7.75
10	Cereals	2.72	7.14
24	Tobacco, products	4.12	6.58
1	Live animals	5.32	4.71

Source: Research Institute of Agricultural Economics and data processed by author

the commodity. We can consider commodities as having successfully performed in exports when they have attained balanced high positive values of the RCA index during a period under observation.

The RCA values during the years from 2004 to 2008 have been determined for all 24 groups of commodities and the results are summarized in Table IV.

In the long term, only 8 commodity aggregates of the total 24 have attained positive values of the

indicator. These commodities perform distinctly better in exports on the agrarian market. When we create a sequence of the first six of these commodities for the years under observation, we get Table V.

In terms of the prevalence of exports over imports in the years listed in Table V, the best performance was shown by the aggregations of the commodities CN 1 (live animals), CN 11 (flour mill products ...), CN 12 (oilseeds), CN 10 (cereals), previously also

III: *Total CR AFT in 2008 (million CZK)*

CN	Name of goods	Export 2008	Import 2008	Balance (EX-IM)	Turnover (EX+IM)
1	Live animals	5 017.9	1 466.9	3 550.9	6 484.8
2	Meat and consumable chitterlings	4 069.7	13 752.8	-9 683.2	17 822.5
3	Fish, crustaceans, molluscs and other aquatic invertebrates	1 620.0	2 361.4	-741.4	3 981.5
4	Milk, eggs, honey, edible products of animal origin	14 483.1	10 001.2	4 481.8	24 484.3
5	Products of animal origin not shown elsewhere	542.3	1 176.0	-633.6	1 718.3
6	Live plants and floricultural products	288.4	3 134.0	-2 845.7	3 422.4
7	Vegetables, plants, tubers, edible roots	2 018.8	8 871.8	-6 853.0	10 890.6
8	Fruits, nuts, edible peelings of lemon fruit, and melons	2 373.0	11 458.0	-9 085.0	13 831.0
9	Coffee, tea, yerba and spices	1 330.6	3 296.6	-1 966.0	4 627.2
10	Cereals	7 612.1	2 425.0	5 187.1	10 037.1
11	Flour mill products, malt, starch, inulin, wheat gluten	3 241.0	1 124.8	2 116.2	4 365.9
12	Oil seeds, fruits, medicinal plants, industrial straw, etc.	8 265.4	2 770.0	5 495.4	11 035.3
13	Shellac, rubber, resins etc, juices, plant extracts	766.7	1 034.9	-268.2	1 801.6
14	Vegetable knitting materials, and other plant products	4.9	33.6	-28.7	38.5
15	Fats, animal and vegetable oils, edible waxes	3 664.3	5 141.2	-1 476.8	8 805.5
16	Products from meat, fish, crustaceans, and other aquatic invertebrates	2 740.8	4 228.7	-1 487.9	6 969.5
17	Sugar and sweets	5 698.9	3 784.3	1 914.6	9 483.2
18	Cocoa and cocoa products	4 033.0	6 101.6	-2 068.6	10 134.7
19	Products from cereals, flour, starches, milk, pastry	5 632.1	8 725.8	-3 093.7	14 357.9
20	Products from vegetables, fruits, nuts	2 269.2	6 541.4	-4 272.2	8 810.6
21	Various food products	8 874.6	10 515.2	-1 640.5	19 389.8
22	Beverages, dbased liquids, vinegar	10 303.9	9 757.1	546.8	20 061.0
23	Scraps, wastes from food industry, fodder	4 749.3	8 799.6	-4 050.2	13 548.9
24	Tobacco, manufactured tobacco substitutes	7 012.5	3 406.9	3 605.6	10 419.4
Total		106 612.5	129 908.8	-23 296.3	236 521.3

Source: Research Institute of Agricultural Economics and data processed by author

IV: *The values of RCA indicator in CR for individual aggregates of commodities during the period of 2004–2008 (CN numerical identification)*

CN	Name of commodity	2004	2005	2006	2007	2008
1	Live animals	67.49	57.20	59.31	61.58	54.76
2	Meat and consumable chitterlings	-48.21	-56.29	-0.03	-55.80	-54.33
3	Fish, crustaceans, molluscs and other aquatic invertebrates	-9.84	-17.88	-17.56	12.52	-18.62
4	Milk, eggs, honey, edible products of animal origin	19.45	17.44	19.21	20.15	18.30
5	Products of animal origin not shown elsewhere	-24.89	-37.67	-32.96	-39.34	-36.88
6	Live plants and floricultural products	-81.65	-77.77	-77.45	-75.88	-83.15
7	Vegetables, plants, tubers, edible roots	-77.52	-67.25	-63.95	-63.77	-62.93
8	Fruits, nuts, edible lemon peel, fruits, melons	-71.29	-56.07	-67.30	-64.36	-65.69
9	Coffee, tea, yerba, spices	-58.14	-47.77	-41.41	-40.92	-42.49
10	Cereals	12.60	70.91	41.37	47.08	51.68
11	Flour mill products, malt, starch, inulin, wheat gluten	64.03	49.86	51.56	37.99	48.47
12	Oil seeds, fruits, medicinal plants, industrial straw, etc.	14.00	30.36	11.13	55.72	49.80
13	Shellac, rubber, resins etc, juices, plant extracts	18.43	18.04	11.54	-11.42	-14.89
14	Vegetable knitting materials, and other plant products	-80.30	-73.22	-70.64	-81.38	-74.72
15	Fats, animal and plant oils, edible waxes	-52.93	-28.46	-23.99	-9.30	-16.77
16	Products from meat, fish, crustaceans, and other aquatic invertebrates	-38.21	-22.44	-27.79	-27.32	-21.35
17	Sugar and sweets	38.62	37.06	27.48	0.32	20.19
18	Cocoa and cocoa products	-28.38	-29.97	-26.95	-25.57	-20.41
19	Products from cereals, flour, starch, milk, pastry	-35.89	-33.12	-29.60	-26.38	-21.55
20	Products from vegetables, fruits and nuts	-43.70	-40.23	-41.85	-42.27	-48.49
21	Various food products	-14.80	-16.74	-17.85	-12.33	-8.46
22	Beverages, alcohol liquids, vinegar	0.18	1.71	2.56	5.90	2.73
23	Scraps, waste from food industry, fodder	-57.15	-41.80	-38.73	-31.19	-29.89
24	Tobacco, manufactured tobacco substitutes	-24.87	-15.97	-34.52	-15.74	34.6

Source: Research Institute of Agricultural Economics and data processed by author

V: *The order of the highest RCA values in the CR AFT for the 2004–2008 period*

The order of commodities		1	2	3	4	5	6
AFT total	2004	CN 1	CN 11	CN 17	CN 4	CN 13	CN 12
	2005	CN 10	CN 1	CN 11	CN 17	CN 12	CN 13
	2006	CN 1	CN 11	CN 10	CN 17	CN 4	CN 13
	2007	CN 1	CN 12	CN 10	CN 11	CN 4	CN 3
	2008	CN 1	CN 10	CN 12	CN 11	CN 24	CN 17

VI: *The MI indicator values of CR AFT for the period of 2004–2008*

CN	Name of commodity	2004	2005	2006	2007	2008
1	Live animals	0.0463	0.0388	0.0407	0.0327	0.0358
2	Meat and consumable chitterlings	-0.0362	-0.0624	-0.0620	-0.0620	-0.0677
3	Fish, crustaceans, molluscs and other aquatic invertebrates	0.0040	-0.0014	0.0001	0.0051	-0.0030
4	Milk, eggs, honey, edible products of animal origin	0.0745	0.0624	0.0837	0.0777	0.0589
5	Products of animal origin not shown elsewhere	-0.0009	-0.0037	-0.0026	-0.0039	-0.0040
6	Live plants and floricultural products	-0.0241	-0.0211	-0.0188	-0.0120	-0.0214
7	Vegetables, plants, tubers and edible roots	-0.0538	-0.0493	-0.0540	-0.0549	-0.0494
8	Fruits, nuts, edible peelings of citrus fruit and melons	-0.0833	-0.0702	-0.0688	-0.0636	-0.0659
9	Coffee, tea, yerba, spices	-0.0119	-0.0120	-0.0099	-0.0119	-0.0129
10	Cereals	0.0133	0.0755	0.0512	0.0550	0.0527
11	Flour mill products, malt, starch, inulin, wheat gluten	0.0353	0.0187	0.0206	0.0165	0.0217
12	Oil seeds, fruits, medicinal plants, industrial straw, etc	0.0296	0.0348	0.0189	0.0574	0.0562
13	Shellac, rubber, resins and other saps, plant extracts	0.0066	0.0045	0.0033	0.0001	-0.0008
14	Plant materials for knitting and other plant products	-0.0004	-0.0002	-0.0002	-0.0002	-0.0002
15	Fats, animal and plant oils, edible waxes	-0.0227	-0.0094	-0.0046	0.0021	-0.0052
16	Products from meat, fish, crustaceans, and other aquatic invertebrates	-0.0076	-0.0042	-0.0053	-0.0087	-0.0068
17	Sugar and sweets	0.0821	0.0672	0.0516	0.0120	0.0243
18	Cocoa and cocoa products	-0.0079	-0.0140	-0.0088	-0.0117	-0.0091
19	Products from cereals, flour, starch, milk, pastry	-0.0184	-0.0210	-0.0136	-0.0160	-0.0143
20	Products from vegetables, fruits, nuts	-0.0190	-0.0200	-0.0197	-0.0241	-0.0291
21	Various food products	0.0109	-0.0049	-0.0001	0.0004	0.0023
22	Beverages, alcohol liquids, vinegar	0.0365	0.0250	0.0356	0.0333	0.0215
23	Scraps from food industry, fodder	-0.0490	-0.0311	-0.0230	-0.0200	-0.0232
24	Tobacco, Tobacco, manufactured tobacco substitutes	-0.0038	-0.0020	-0.0142	-0.0033	0.0396

Source: Research Institute of Agricultural Economics and data processed by author

VII: *The order of the highest MI values in the CR AFT for the 2004–2008 period*

Order of commodities		1	2	3	4	5	6
AFT total	2004	CN 17	CN 4	CN 1	CN 22	CN 11	CN 12
	2005	CN 10	CN 17	CN 4	CN 1	CN 12	CN 22
	2006	CN 4	CN 17	CN 10	CN 1	CN 22	CN 11
	2007	CN 4	CN 12	CN 10	CN 22	CN 1	CN 11
	2008	CN 4	CN 12	CN 10	CN 24	CN 1	CN 17

CN 17 (Sugar, sweets), and over a long term: CN 4 (milk ...).

For the MI indicator it is crucial that the share of a given commodity export in total exports is greater than the share of imports of this commodity in total imports. We then get a positive value of MI and the index shows a certain degree of specialization in export. The Michaely MI index was calculated for all 24 groups of agricultural commodities. The results are shown in Table VI.

In the above listed years, from the MI indicator point of view, the following commodities aggregates were the best performers: CN 4 (milk...), CN 17 (sugar, sweets), CN 12 (oil seeds), CN 10 (cereals) and, to a certain extent, also CN 20 (beverages) and CN 1 (live animals). It is interesting to note how distinctly poor position in the pro-export specialization has been taken by the long term commodity aggregate CN 2 (meat). This is apparently due to the significant and growing import of pork in particular.

SUMMARY

The role of the EU's internal agricultural market is becoming dominant for most countries, there is a restructuring of the market with agricultural products.

There is an effort for orientation towards export commodities with higher rate added values. EU12 countries are members of the European community for a rather short time. It is expected that the differences between the EU 12 and EU 15 will gradually disappear, and structure of commodities and their volumes and values will come closer together under the influence of the common agrarian policy and existing unified market (Svatoš, Smutka and Miffek, 2010).

Following the Czech Republic's accession to the EU the value of the agrarian export has markedly increased. The AFT export at the year 2004 was 61.5 billion CZK, while the import was 93.5 billion CZK, and the total turnover exceeded 155 billion CZK. The CR AFT export for 2008 was worth 106.6 billion CZK, while import of 129,9 billion CZK and the total turnover exceeded 236.5 billion CZK. This means that since the 2004 accession to EU the AFT export in 2008 increased by 73.28%, the import by 38.87%, the balance decreased by 27.24% and the total turnover increased by 52.53 %. This indicates that the Czech agrarian products can be successful in this challenging market.

The structure of exported commodities has also changed. The methodology using the Balassa RCA indicators and Michaely MI indices was applied; it is possible to select commodities which have proved to be competitive on the EU market and were successful due to a certain measure of their specialization. The RCA value for 24 aggregates of commodities in accordance with the CN numerical identification was calculated for individual years of 2004–2008 and the sequence of the highest values was determined. The following commodity aggregates CN 1 (Live animals), CN 11 (Flour milling products), CN 12 (Oil seeds), CN 10 (Cereals), at the beginning of the period also CN 17 (Sugar and sweets), in the long term CN 4 (Milk...) succeeded in this period. Analogically, the MI index was calculated and the sequence was determined. Aggregates CN 4 (Milk...), CN 17 (Sugar and sweet), CN 12 (Oil seeds) a CN 10 (Cereals) as well as CN 22 (Beverages...) and CN 1 (Live animals) have the best position from this point of view.

The above mentioned results document that the selected indicators can serve as suitable tools for the analysis of net export. The analyses can provide useful information for managers of agrarian enterprises when searching for the Czech Republic's agrarian production potential success on the foreign markets.

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REFERENCES

- BALASSA, B., 1965: *Trade liberalisation and 'revealed' comparative advantage*, The Manchester School of Economic and Social Studies Vol. 33, pp. 92–123.
- BALASSA, B., 1985: *Exports, Policy Choices and Economic Growth*, *Journal of Development Economics*, 18, 23–35.
- BURIANOVÁ, J., 2005: *Volba a hodnocení ukazatelů konkurenceschopnosti agrárního zahraničního obchodu*, Sborník z mezinárodní konference Firma a konkurenční prostředí, KONVOJ, spol. s r. o., Brno, ISBN 80-7302-099-8, str. 7–13.
- BURIANOVÁ, J., 2008: *Analýza konkurenceschopnosti agrárního zahraničního obchodu ČR po vstupu do EU*, Mezinárodní vědecké dni 2008 Konkurenceschopnost a ekonomický rast: Evropské a národní perspektivy, 28. 5.–30. 5., Nitra, SR.
- JENÍČEK V., KREPL V., 2009: *The role of foreign trade and its effects*, *Agric. Econ. – Czech*, 55 (5), 211–220.
- MICHAELY, M., 1962: *Concentration in International Trade*, North-Holland, Amsterdam, 1962.
- MICHAELY, M., 1977: *Exports and Growth: an empirical investigation*, *Journal of Development Economics*, 4, 49–53.
- SVATOŠ M., SMUTKA S., 2009: *Influence of the EU enlargement on the agrarian foreign trade development in member states*, *Agric. Econ. – Czech*, 55 (5), p. 233–249.
- SVATOŠ M., SMUTKA S., MIFFEK O., 2010: *Competitiveness of agrarian trade of EU-15 countries in comparison with new EU member states*, *Agric. Econ. – Czech*, 56 (12), p. 569–582.

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