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THE IMPACTS OF THE GLOBAL ECONOMIC CRISIS ON SELECTED SEGMENTS OF THE WORLD TRADE IN COMMODITIES

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Abstract

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This paper deals with the impacts of the economic crisis on the world trade in order to highlight the mutual interdependence of the development of the world output and trade. The paper observes mutual correlation in development of the world trade and output. The results of the analysis indicate that changes in the value of world GDP and world trade are correlated by more than 90%. It is important to mention that in the years 2000–2009, the value of world trade and world output increased significantly (although in 2009, a significant decline in both value and volume of global production and trade was recorded due to the crisis). In relation to the world trade, it should be noted that its commodity structure is dominated by trade in manufactures. The crisis that occurred in the period 2008–2009 greatly affected the world economy and trade in particular. In this respect it should be pointed out that the crisis mainly affected trade in manufactures and then trade in fuels and mining outputs in terms of both absolute and relative indicators. Agrarian trade dealt with the crisis the best and the impact of the crisis on development of its values and volume was the least significant. This verifies the fact that agrarian and food products tend to be the most resistant to the crisis (on contrary, in times of global economic growth or reconstruction, the trade in agrarian and food products shows lower degree of elasticity in relation to the global GDP growth in comparison to other segments of commodities trade).

world, trade, output, relationship, crisis, impacts, structure, commodities, sensitivity, value

The world economy experienced very significant changes in the last few years. First, it witnessed very rapid economic growth that influenced last two decades (1990–2010) in general, however, this growth was not continuous and it was interrupted by a few minor recessions and one notable crises. Among the most important problems of the world economy, it is possible to include the recession from the year 2001 and the crisis that hit the world economy in late 2008 and early 2009 (WTO, 2010).

If we left out of consideration the shocks that affect the world economy mentioned in the introduction of this paper, last 20 years can be classified very positively and it can be said that the world economy grew at a record pace (WB, 2010). During the last ten years, the world output increased to a record USD 61 trillion in 2008. Compared to 2000, it was an increase of about USD 30 trillion in current prices. In constant prices, the GDP also raised considerably, from USD 32 trillion in 2000 to more than USD 40 trillion in 2008. In the observed period, the GDP grew by about 6.8% per year (current prices) or by 2.4% per year (constant prices of 2000) (UN COMTRADE, 2011). Growth of the world output in the observed period was accompanied by a very significant increase in the world trade which value and volume had been constantly raising (Bielik, 2010). Just in the years 1948–2009, the value of the world trade increased from USD 62 billion to more than USD 12 trillion in nominal value (Bielik *et al.*, 2010). This means that the share of the world trade turnover in the value of the world output increased from about 20% to more than 50% (WTO, 2010). In this regard, it is worth mentioning the fact that nowadays, the world trade is highly territorially concentrated; the share of Europe, North America

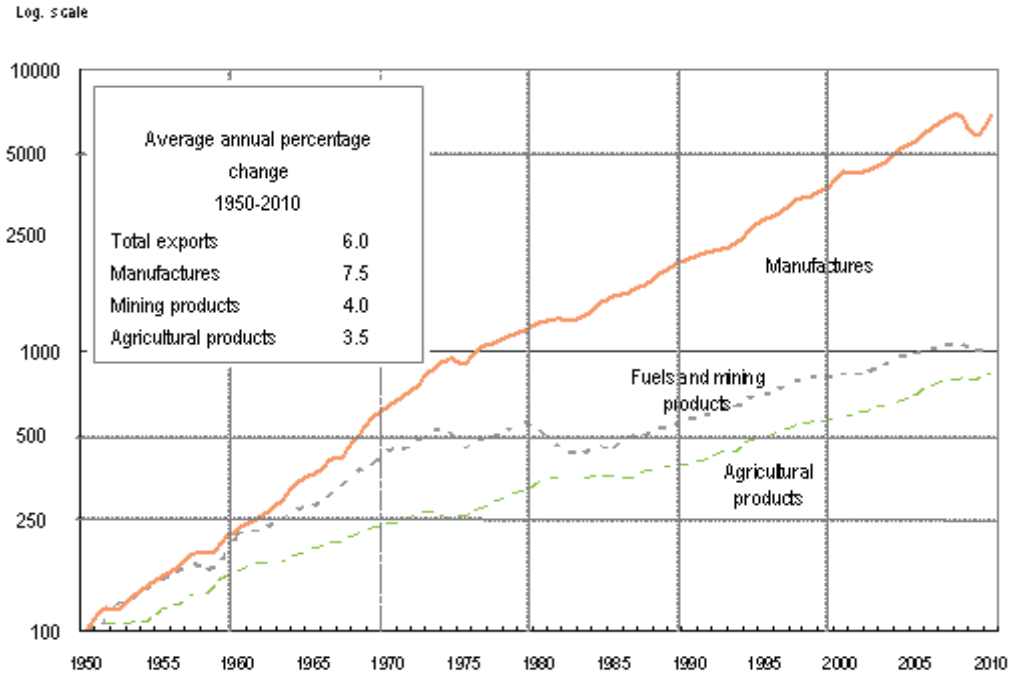
and Southeast Asia in the value of the world commodity trade is more than 80% (Horská *et al.*, 2011). The world commodity trade is basically represented by the transactions implemented in three commodity segments (manufactures, fuels and mining products, and agricultural and food products) (Jeníček, 2009). Currently, the share of individual segments in the resulting value of trade is approximately 76% in the case of manufactures, approximately 16% in the case of fuels and mining products and less than 8% in the case of food and agricultural commodities (Svatoš *et al.*, 2009). Details regarding the development of the value of individual segments of the world trade in 2000–2009 are included in the following Tab. I.

Constantly decreasing the share of trade in agrarian and food production in particular is caused by consistently lower dynamics of growth of its value and volume in comparison to the growth rate of value and volume of trade in manufactures especially (Fig. 1).

In this respect it should be noted that global trade and global output development are closely related. Based on the comparison of Tabs. I and II, it can be seen that the value of the world trade and the value of the world output are closely correlated. In this regard, the degree of mutual correlation in both current and constant prices amounts to more than 90%. This fact is reflected in the Fig. 2.

It should be emphasized that the correlation between changes in the value of global production and trade is subject of many studies (Rodriguez and Rodrik, 2000; Summers, Heston and Aten, 2001; Thomas *et al.*, 1991; Weiss, 1992; Joshi and Little, 1996; Helleiner, 1994; Bleaney, 1999 and Ahmed, 2000). These studies point out the fact that it is the trade that allows enhancing of economic cooperation among economies at increased level. Moreover, it allows better use of existing resources through the international division of labour and thereby leads to an increase in global output.

On the other hand, it is necessary to mention that it is the development of global output as a whole which influences the development of trade because when the global economy grows, it creates the space for cooperation and there are free resources for international exchange not only of goods and services; but when there is more or less significant slowdown of economic growth, both at the level of the global economy and at the level of individual



1: *The development of the volume of individual segments of the world trade in the period time 1950–2009 (Index, 1950 = 100)*
Source: WTO, 2011

I: *The value of the world commodity trade in the time period 2000–2009*

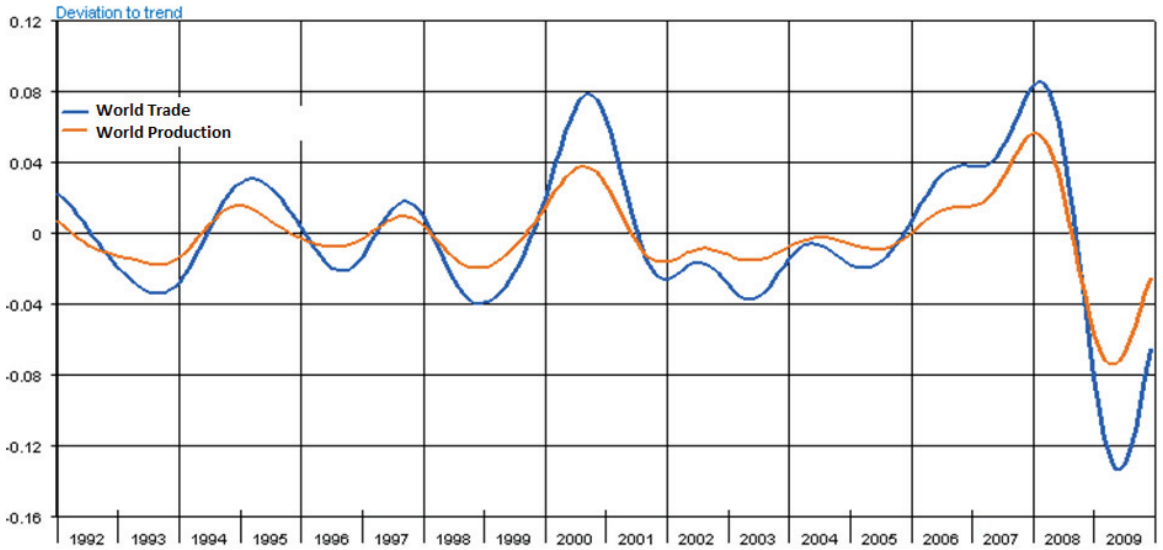
World Trade (export) b. USD	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Agrarian and Food products	401.7	416.8	443.6	512.9	586.6	638.2	708.8	849.6	1 021.5	910.0
Fuels and Mining products	814.5	747.0	754.6	917.4	1 198.1	1 559.7	1 985.9	2 142.0	3 020.8	1 965.6
Manufactures	4 926.2	4 776.6	5 045.7	5 841.4	7 052.1	7 769.6	8 945.8	10 247.5	11 256.7	9 030.1
Total Commodity Trade	6 142.4	5 940.4	6 243.9	7 271.8	8 836.9	9 967.4	11 640.5	13 239.1	15 299.0	11 905.7

Source: UN Comtrade, 2011

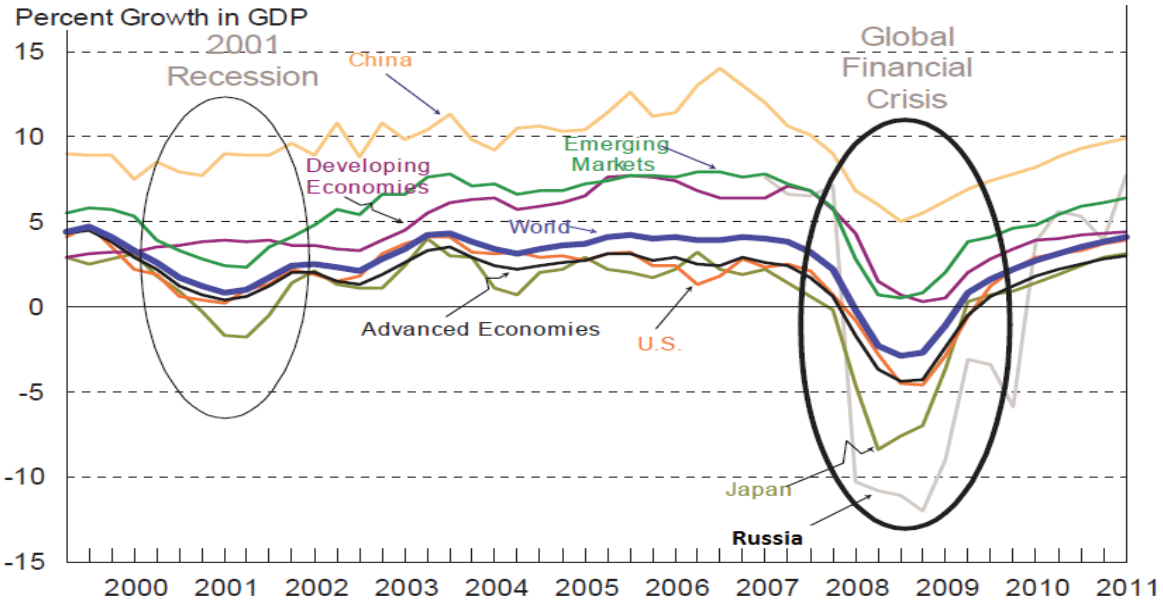
II: *The value of the world GDP in the time period 2000–2010*

	Indicator Name	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
World	GDP (constant 2000 US$) – in bil.	32 249	32 785	33 436	34 334	35 739	37 007	38 505	40 037	40 613	39 677	41 348
World	GDP (current US$) - in bil.	32 240	32 046	33 305	37 466	42 229	45 658	49 506	55 849	61 305	58 088	63 124
World	Trade (% of GDP)	49.61	48.33	47.70	48.23	51.33	53.56	56.33	57.27	59.44	50.84	55.86
World	Population, total (in bilion)	6.08	6.16	6.23	6.31	6.38	6.46	6.53	6.61	6.69	6.76	6.84

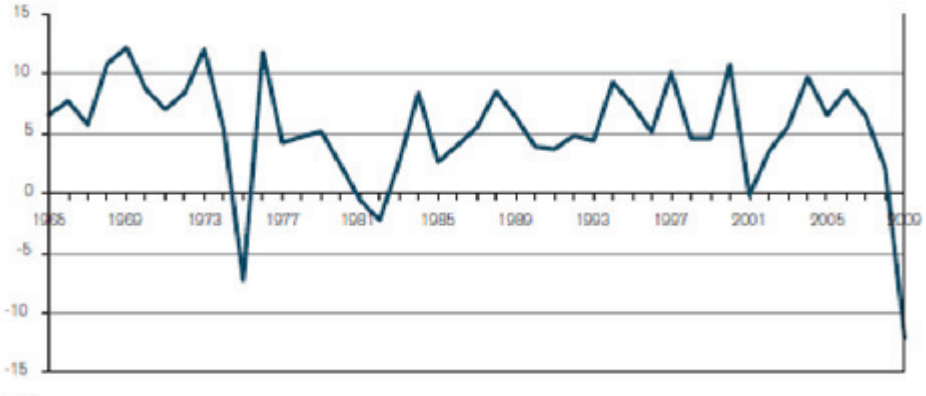
Source: WB, WDI database, 2011



2: *Correlation between values of deviations from trend in case of development of world trade and world output in the time period 1992–2009*
Source: WTO, 2011



3: *The value of global GDP (percentage change) including the most important regions of the world in 2000 to 2011 (estimation according to the WTO)*
Source: WTO, 2011



4: *The value of world trade in the time period 1985–2009*
Source: WTO, 2010

(especially large) economies, there is a significant slowdown of the trade in particular because of the reduction in demand for both goods and services (Dollar and Kray, 2004; Thirlwall and Santos-Paulino, 2004; Tervio and Irwin, 2002; Frankel and Romer, 1999).

This reduction in demand is further enhanced by the efforts of number of countries to protect their own economies and solve their own problems primarily. These efforts often lead to the introduction of protectionist measures which are restricting the development of foreign trade volume even more (Beneš, 2004).

Mutual sensitivity between the development of global output and development of trade value is further enhanced by the development of prices in the global market (Van Marrewijk, 2002). While in the time of general economic growth the value of global trade is increasing not only through the growth of traded goods but also through raising prices which are increasing due to high demand; during a recession, or crisis, the value of global trade is declining not only due to the decline of the physical quantity of goods demanded but also because of the decline in global prices which occurs due to the decline in global demand. This can be easily demonstrated by the crisis of the years 2008 and 2009. During this period, there was a significant reduction in prices in the global market compared with the reduction of production which subsequently resulted in the non-proportional development when, for example, the volume of trade in fuels decreased by about 4.5% but its dollar value decreased by about 37% (Tabs. III and IV).

The results of the analysis imply that the world trade is very sensitive to changes in the development of world economy.

Any significant decline of global output value development was followed by a sharp decline in the world trade and vice versa and it is worth highlighting that the degree of sensitivity of the world trade value to the change in the global output value is very high. Interdependence in the development of the global output and development of the world trade is documented by Figs. 3 and 4. Comparing the two figures, close interconnection between the two variables can be observed.

OBJECTIVES AND METHODS

The aim of this paper is to analyze the development of values and structures of the world trade in relation to the development of the world GDP value in order to identify the impacts of the global economic crisis of 2008/2009 on development and structure of the world commodity trade. Subsequently, the paper analyzes the development in 2010 in order to analyze the recovery process of economic growth.

In order to achieve the aim pursued in this paper, the development of the GDP and development of the world commodity trade in current and constant prices of the year 2000 are observed (constant prices are based on the methodology applied by the World Bank). The value of both GDP and trade is denominated in the USD. In terms of time frame, an emphasis is laid on the period 2000–2009. However, development of the global economy and trade in the year 2010 is also analyzed in order to analyze the processes associated with the process of restructuring of global economy. However, the primary aim of this paper is to compare the recession of the year 2001 and the crisis of the years 2008/2009 and to determine whether there are some similarities typical for the development of value and structure of commodity trade in the case that the global economy gets into troubles. The second aim of this paper is to monitor the process of global economy growth recovery.

The development of the commodity trade is observed based on the division into three main segments according to SITC (see methodology of the WTO) which are: trade in manufactures (SITC aggregation as nom. 5, 6, 7, 8), trade in fuels and mining products (aggregation according to SITC nom. 2 and 3) and trade in agrarian and food production (according to SITC aggregation nom. 0, 1 and 4). The paper analyzes mutual

relation between the development of value of the world output and trade (degree of correlation). Furthermore, it is observed the impact of decline in the GDP growth on value of the world trade and its structure (in this respect, it is worth noting that not only elasticity of the above mentioned aggregation groups is observed, but also elasticity of individual sub-aggregations[1]), through functional elasticity calculations based on the following formula (Tvrdoň, 2006):

$$E = \frac{\partial y}{\partial x} \times \frac{x}{y},$$

where x represents the average value of the world trade and y represents the theoretical value of the global GDP.

The elasticity is calculated by regression function (in the form: $y = ax + c$) which expresses the relationship between the development of value of the trade in individual aggregation or sub-aggregation (endogenous variable) and development of value of the global GDP (exogenous variable).

RESULTS AND DISCUSSION

The results of the analysis shows that the economic crisis in 2008/2009 had very large impact on the global output development as well as on trade (Tab. III).

From the above it is obvious that the volume of world production fell by more than 2.5% annually and the volume of production of manufactures was the most influenced one, it decreased by 7%. In the case of the world trade, there was a very significant decrease in the volume of realized transactions. The volume of traded goods was reduced by about 12%. The most affected segment was trade in manufactures where there was a reduction in realized trade by more than 15.5%. The least affected segment of the world economy and world trade was

III: *The development of the world trade, production and GDP*

Annual change (%)	2000–2009	2008	2009
World commodity trade	3.0	2.0	–12.0
Agrarian and food products	3.0	2.0	–3.0
Fuels and mining products	2.0	0.5	–4.5
Manufactures	3.5	2.5	–15.5
World commodity production	1.5	1.0	–5.0
Agrarian and food products	2.0	3.5	0.5
Fuels and mining products	1.0	1.0	–2.0
Manufactures	1.0	1.0	–7.0
World GDP	2.0	1.5	–2.5

Source: WTO, FAO, WB, 2011

IV: *The value of the world trade in the time period 2008–2009*

	Agricultural and food production	Fuels and mining products		Manufactures					
	Total	Total	Fuels	Total	Steel	Chemistry	Office, communication technique	Automobiles	Textile and clothes
Value	1 169	2 263	1 808	8 355	326	1 447	1 323	847	527
Share in commodity trade (%)	9.6	18.6	14.8	68.6	2.7	11.9	10.9	7.0	4.3
	Annual change in %								
2008	18	33	41	10	23	14	4	4	5
2009	–13	–36	–37	–20	–45	–14	–16	–32	–16

Source: WTO, 2010

1 Individual sub-aggregation in this regard are not derived from the nomenclature based on the Classification of international goods (SITC) used above but for a better demonstration of the results, the nomenclature based on the Harmonized System Of Combined Custom Nomenclature of the EU is used. This nomenclature divides commodity trade into 99 sub-aggregations allowing better analysis of sensitivity reactions of trade value to changes in value of the GDP compared to the nomenclature SITC which, in the basic layout of the commodity structure, divides commodity trade to 67 sub-aggregations only.

agrarian and food sector. The volume of its trade and production decreased only minimally. This reflects the reality that due to the fact that the agrarian and food products serve to meet basic human needs (see Maslow), their ability to resist a consumption crisis is very high (moreover, demand is stimulated by constant growth of world population (Jeníček, 2010) that grows independently on the global economy). Tab. IV provides an overview of the development of the world trade in the observed period.

The data presented in Tab. IV implies that in terms of value, the most affected segment of the world trade was the trade in fuels and mining products and then the trade in manufactures (mainly in steel and automobiles). On the contrary, trade in agricultural and food production reduced its value by about 13% only.

In relation to the sensitivity of individual segments of the world trade in global economy, it can be stated the following. The value of the world trade is always sensitive to changes in global output development, and thus to the demand (Tab. V). This is showed mainly by the development between the years 2001 and 2009. An interesting finding is how a change in development of the world output affects the individual segments of the commodity trade. It is always clearly observable that trade in fuels, mining products and manufactures is the most affected one by the global recession while trade in agricultural and food production is the least affected one. This fact is illustrated by Tab. VI – it monitors the development of elasticity of individual segments of the world commodity trade in relation to the percentage change of the world GDP. The results of the analysis show again that the agricultural and food production is the most resistant group to economic crisis.

World trade and production in 2010

Global economy responded to the sharp decline in production and trade in the year 2009 by a significant growth one year later. Both global trade and the GDP raised (Fig. 5). The presented data show that the economic drop in the year 2009 was more or less fully compensated. While in 2009, there was a decline in volume of the global production and trade by 2.5% and 12% respectively, in 2010, there was an increase in the volume of the global production and trade by about 4% and 14%, respectively. The table above (Tab. II) provides a brief overview of the development of the global economy. The presented results imply, based on the analysis of data of the development of the global GDP both in current and constant prices, that in 2010, the value of the global output reached even higher values than in 2008, thereby it compensated for the loss in 2009. In case of the world trade, which declined much more significantly compared to the global output due to the crisis, an increase in the volume and value of transactions in 2010 was not enough to offset the 2009 decline. The increase in the value of the global commodity trade in 2010 offset the decrease from 2009 by only about 73% (measured in constant USD prices of the year 2000). The details concerning the development of growth of value of the commodity trade are provided in Tab. VII. The table implies that agricultural products, which were affected by the crisis only marginally, continued to grow in the value of the realized business contracts and in 2010, the world agricultural trade exceeded USD 1.3 trillion (global rise in prices of agricultural and food products contributed to the growth of the values very significantly). In the case of the trade in fuels and mining products, increase in value of the realized trade in 2010 did not manage to fully compensate the fall in 2009. However, the value of the realized trade (about USD 3 trillion) in 2010 very closely reached values from 2008 (by 99%). As well as in the case of agricultural trade, growth in global prices of mining products contributed to the rapid decrease in their value.

V: *The annual changes in the development of the values of world commodity trade and its individual segments in the time period 2001–2009*

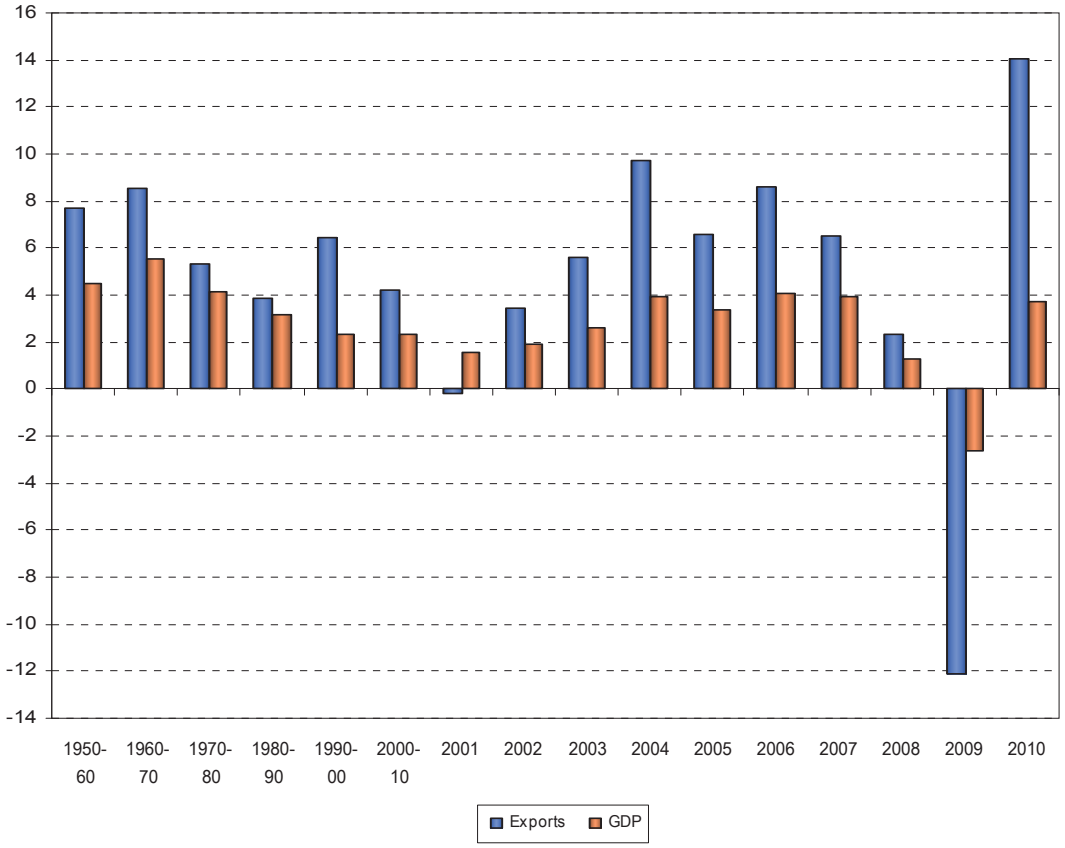
(chain index)	2001	2002	2003	2004	2005	2006	2007	2008	2009
Agrarian and food products	1.038	1.064	1.156	1.144	1.088	1.111	1.199	1.202	0.891
Fuels and mining products	0.917	1.01	1.216	1.306	1.302	1.273	1.079	1.41	0.651
Manufactures	0.97	1.056	1.158	1.207	1.102	1.151	1.146	1.098	0.802
Total commodity trade	0.967	1.051	1.165	1.215	1.128	1.168	1.137	1.156	0.778

Source: own calculations, 2011

VI: *The change in the value of trade of each observed commodity segments in % per percentage change in world GDP*

Elasticity – Change in value of trade in % per percentage change in the world GDP	2001	2002	2003	2004	2005	2006	2007	2008	2002–2008	2009
Agrarian and food products	–6.02	1.61	1.25	1.13	1.08	1.32	1.54	2.05	1.43	2.09
Fuels and mining products	13.49	0.26	1.73	2.41	3.71	3.26	0.61	4.15	2.31	6.68
Manufactures	4.94	1.41	1.26	1.64	1.25	1.81	1.13	0.99	1.36	3.78
Total commodity trade	5.35	1.28	1.32	1.69	1.57	2.01	1.06	1.58	1.51	4.24

Source: own calculations, 2011



5: *The volume of world commodity exports and GDP in the time period 1950–2010 (Annual Percentage Change)*
Source: WTO, 2011

VII: *The world commodity exports by major product group, 2010*

(Billion dollars and percentage)	Share in world commodity trade	Annual percentage change								
		1980–85	1985–90	1990–95	1995–00	2000–05	2005–10	2008	2009	2010
Agricultural products	9.2	–2	9	7	–1	9	10	19	–12	15
Fuels and mining products	20.4	–5	3	2	10	16	11	33	–36	33
Manufactures	67.1	2	15	9	5	9	6	10	–20	20

Source: WTO, 2012

Regarding the trade in manufactures, it can be mention that growth of trade value in 2010 did not manage to compensate the decrease of value from 2009. While in 2008, the value of global trade was around USD 11.3 trillion, in 2009, it was only a little over USD 9 trillion dollars. And then, in 2010, the value of transactions reached only about 10 trillion (so it can be seen that the decline of value in 2009 was far from being compensated at such high levels as in the case of trade in fuels and mining products as well as in the case of agrarian trade). In 2010, trade in manufactures did not grow as much as trade in fuels and mining products and trade in agrarian products because while the prices of primary mining products recorded growth, in the case of manufactures there was a decline.

In relation to the development of the global trade, it should be mentioned that during the period of reconstruction of the global economy, the trade in agrarian and food products showed lower sensitivity to the GDP growth in comparison to the trade in mining products and manufactures. In 2010, the GDP value of the global economy grew by about 8.7% annually (at current USD prices), agrarian trade increased its value by 15%, trade in mining products increased by 33% and trade in manufactures increased by approximately 20%. Therefore, the facts mentioned above imply that one percent growth in the value of global output cause an increase of trade in agrarian products by about 1.75%, in fuel and mining products by about 3.85% and elasticity of the trade in manufactures reached about 2.26%.

VIII: *The development of the sensitivity of individual aggregations of the world commodity trade in relation to the change of the world GDP*

2001			2009			2000-2009		
36.77	Tin and articles thereof	H1-80	9.57	Other base metals, cermets, articles thereof	H1-81	2.97	Animal,vegetable fats and oils, cleavage products, etc	H1-15
34.85	Pulp of wood, fibrous cellulosic material, waste etc	H1-47	9.43	Iron and steel	H1-72	2.94	Ores, slag and ash	H1-26
24.53	Nickel and articles thereof	H1-75	9.03	Fertilizers	H1-31	2.63	Mineral fuels, oils, distillation products, etc	H1-27
23.82	Zinc and articles thereof	H1-79	7.82	Nickel and articles thereof	H1-75	2.62	Fertilizers	H1-31
18.78	Photographic or cinematographic goods	H1-37	7.64	Mineral fuels, oils, distillation products, etc	H1-27	2.51	Copper and articles thereof	H1-74
18.56	Electrical, electronic equipment	H1-85	7.14	Tin and articles thereof	H1-80	2.50	Iron and steel	H1-72
17.81	Coffee, tea, mate and spices	H1-09	6.95	Aircraft, spacecraft, and parts thereof	H1-88	2.37	Lead and articles thereof	H1-78
16.63	Copper and articles thereof	H1-74	6.69	Inorganic chemicals, precious metal compound, isotopes	H1-28	2.34	Pharmaceutical products	H1-30
16.22	Vegetable textile fibres nes, paper yarn, woven fabric	H1-53	6.45	Railway, tramway locomotives, rolling stock, equipment	H1-86	2.30	Tin and articles thereof	H1-80
16.04	Arms and ammunition, parts and accessories thereof	H1-93	6.34	Salt, sulphur, earth, stone, plaster, lime and cement	H1-25	2.26	Nickel and articles thereof	H1-75
15.48	Silk	H1-50	6.30	Aluminium and articles thereof	H1-76	2.24	Zinc and articles thereof	H1-79
14.58	Manmade filaments	H1-54	6.26	Vehicles other than railway, tramway	H1-87	2.02	Articles of iron or steel	H1-73
14.52	Mineral fuels, oils, distillation products, etc	H1-27	5.82	Copper and articles thereof	H1-74	1.90	Ships, boats and other floating structures	H1-89
11.90	Carpets and other textile floor coverings	H1-57	5.73	Raw hides and skins (other than furskins) and leather	H1-41	1.90	Commodities not elsewhere specified	H1-99
11.77	Manmade staple fibres	H1-55	5.57	Works of art, collectors pieces and antiques	H1-97	1.86	Pearls, precious stones, metals, coins, etc	H1-71
9.61	Iron and steel	H1-72	5.33	Zinc and articles thereof	H1-79	1.83	Cereals	H1-10
9.00	Cork and articles of cork	H1-45	5.31	Articles of iron or steel	H1-73	1.80	Oil seed, oleagic fruits, grain, seed, fruit, etc, nes	H1-12
8.72	Special woven or tufted fabric, lace, tapestry etc	H1-58	5.30	Animal,vegetable fats and oils, cleavage products, etc	H1-15	1.79	Salt, sulphur, earth, stone, plaster, lime and cement	H1-25
8.60	Musical instruments, parts and accessories	H1-92	5.24	Special woven or tufted fabric, lace, tapestry etc	H1-58	1.78	Milling products, malt, starches, inulin, wheat gluten	H1-11
8.34	Clocks and watches and parts thereof	H1-91	5.17	Wool, animal hair, horsehair yarn and fabric thereof	H1-51	1.71	Rubber and articles thereof	H1-40
8.02	Wood and articles of wood, wood charcoal	H1-44	5.06	Cereals	H1-10	1.69	Railway, tramway locomotives, rolling stock, equipment	H1-86
7.23	Explosives, pyrotechnics, matches, pyrophorics, etc	H1-36	4.89	Manufactures of plaiting material, basketwork, etc.	H1-46	1.68	Cereal, flour, starch, milk preparations and products	H1-19
6.91	Miscellaneous manufactured articles	H1-96	4.82	Pulp of wood, fibrous cellulosic material, waste etc	H1-47	1.64	Manufactures of plaiting material, basketwork, etc.	H1-46
6.78	Toys, games, sports requisites	H1-95	4.78	Tools, implements, cutlery, etc of base metal	H1-82	1.63	Miscellaneous chemical products	H1-38
6.08	Tanning, dyeing extracts, tannins, derivs,pigments etc	H1-32	4.73	Stone, plaster, cement, asbestos, mica, etc articles	H1-68	1.62	Other made textile articles, sets, worn clothing etc	H1-63
5.98	Lead and articles thereof	H1-78	4.57	Wood and articles of wood, wood charcoal	H1-44	1.62	Inorganic chemicals, precious metal compound, isotopes	H1-28
5.48	Wool, animal hair, horsehair yarn and fabric thereof	H1-51	4.52	Nuclear reactors, boilers, machinery, etc	H1-84	1.60	Soaps, lubricants, waxes, candles, modelling pastes	H1-34
5.15	Nuclear reactors, boilers, machinery, etc	H1-84	4.48	Lead and articles thereof	H1-78	1.57	Essential oils, perfumes, cosmetics, toileteries	H1-33
4.11	Knitted or crocheted fabric	H1-60	4.18	Cork and articles of cork	H1-45	1.57	Aluminium and articles thereof	H1-76
3.85	Products of animal origin, nes	H1-05	4.12	Ores, slag and ash	H1-26	1.56	Vegetable, fruit, nut, etc food preparations	H1-20
3.55	Aluminium and articles thereof	H1-76	4.06	Rubber and articles thereof	H1-40	1.53	Meat, fish and seafood food preparations nes	H1-16
3.47	Ceramic products	H1-69	4.04	Miscellaneous articles of base metal	H1-83	1.53	Cocoa and cocoa preparations	H1-18
3.21	Paper & paperboard, articles of pulp, paper and board	H1-48	4.04	Silk	H1-50	1.53	Beverages, spirits and vinegar	H1-22
3.09	Plastics and articles thereof	H1-39	3.89	Manmade filaments	H1-54	1.53	Stone, plaster, cement, asbestos, mica, etc articles	H1-68
3.07	Rubber and articles thereof	H1-40	3.89	Plastics and articles thereof	H1-39	1.52	Miscellaneous edible preparations	H1-21
3.02	Impregnated, coated or laminated textile fabric	H1-59	3.86	Cotton	H1-52	1.50	Plastics and articles thereof	H1-39
2.97	Commodities not elsewhere specified	H1-99	3.86	Vegetable textile fibres nes, paper yarn, woven fabric	H1-53	1.49	Lac, gums, resins, vegetable saps and extracts nes	H1-13
2.64	Organic chemicals	H1-29	3.85	Dairy products, eggs, honey, edible animal product nes	H1-04	1.49	Miscellaneous articles of base metal	H1-83
2.59	Wadding, felt, nonwovens, yarns, twine, cordage, etc	H1-56	3.74	Ceramic products	H1-69	1.45	Other base metals, cermets, articles thereof	H1-81
2.52	Bird skin, feathers, artificial flowers, human hair	H1-67	3.70	Clocks and watches and parts thereof	H1-91	1.43	Residues, wastes of food industry, animal fodder	H1-23
2.45	Tobacco and manufactured tobacco substitutes	H1-24	3.64	Glass and glassware	H1-70	1.43	Edible fruit, nuts, peel of citrus fruit, melons	H1-08
2.10	Umbrellas, walking-sticks, seat-sticks, whips, etc	H1-66	3.62	Furniture, lighting, signs, prefabricated buildings	H1-94	1.42	Organic chemicals	H1-29
1.42	Pearls, precious stones, metals, coins, etc	H1-71	3.55	Miscellaneous chemical products	H1-38	1.41	Toys, games, sports requisites	H1-95
0.87	Vehicles other than railway, tramway	H1-87	3.48	Manmade staple fibres	H1-55	1.39	Live trees, plants, bulbs, roots, cut flowers etc	H1-06
0.44	Miscellaneous chemical products	H1-38	3.44	Furskins and artificial fur, manufactures thereof	H1-43	1.37	Coffee, tea, mate and spices	H1-09
0.29	Optical, photo, technical, medical, etc apparatus	H1-90	3.41	Carpets and other textile floor coverings	H1-57	1.36	Vehicles other than railway, tramway	H1-87
0.18	Headgear and parts thereof	H1-65	3.39	Organic chemicals	H1-29	1.35	Furniture, lighting, signs, prefabricated buildings	H1-94
0.18	Articles of apparel, accessories, not knit or crochet	H1-62	3.35	Musical instruments, parts and accessories	H1-92	1.34	Articles of apparel, accessories, knit or crochet	H1-61
-0.01	Stone, plaster, cement, asbestos, mica, etc articles	H1-68	3.16	Tanning, dyeing extracts, tannins, derivs,pigments etc	H1-32	1.31	Products of animal origin, nes	H1-05
-0.01	Inorganic chemicals, precious metal compound, isotopes	H1-28	3.16	Toys, games, sports requisites	H1-95	1.30	Explosives, pyrotechnics, matches, pyrophorics, etc	H1-36
-0.10	Live animals	H1-01	3.14	Milling products, malt, starches, inulin, wheat gluten	H1-11	1.29	Edible vegetables and certain roots and tubers	H1-07
-0.20	Glass and glassware	H1-70	3.08	Impregnated, coated or laminated textile fabric	H1-59	1.29	Headgear and parts thereof	H1-65
-0.25	Animal,vegetable fats and oils, cleavage products, etc	H1-15	3.07	Printed books, newspapers, pictures etc	H1-49	1.27	Meat and edible meat offal	H1-02
-0.36	Furniture, lighting, signs, prefabricated buildings	H1-94	3.04	Electrical, electronic equipment	H1-85	1.26	Live animals	H1-01
-0.67	Works of art, collectors pieces and antiques	H1-97	2.89	Paper & paperboard, articles of pulp, paper and board	H1-48	1.22	Special woven or tufted fabric, lace, tapestry etc	H1-58
-0.71	Manufactures of plaiting material, basketwork, etc.	H1-46	2.85	Articles of apparel, accessories, not knit or crochet	H1-62	1.22	Wadding, felt, nonwovens, yarns, twine, cordage, etc	H1-56
-1.17	Cotton	H1-52	2.73	Articles of leather, animal gut, harness, travel goods	H1-42	1.21	Nuclear reactors, boilers, machinery, etc	H1-84
-1.36	Articles of apparel, accessories, knit or crochet	H1-61	2.71	Beverages, spirits and vinegar	H1-22	1.19	Glass and glassware	H1-70
-1.39	Railway, tramway locomotives, rolling stock, equipment	H1-86	2.60	Wadding, felt, nonwovens, yarns, twine, cordage, etc	H1-56	1.18	Ceramic products	H1-69
-1.49	Live trees, plants, bulbs, roots, cut flowers etc	H1-06	2.58	Miscellaneous manufactured articles	H1-96	1.17	Electrical, electronic equipment	H1-85
-1.90	Miscellaneous articles of base metal	H1-83	2.53	Photographic or cinematographic goods	H1-37	1.17	Dairy products, eggs, honey, edible animal product nes	H1-04
-2.45	Tools, implements, cutlery, etc of base metal	H1-82	2.52	Articles of apparel, accessories, knit or crochet	H1-61	1.14	Optical, photo, technical, medical, etc apparatus	H1-90
-2.46	Fertilizers	H1-31	2.38	Knitted or crocheted fabric	H1-60	1.12	Tools, implements, cutlery, etc of base metal	H1-82
-2.99	Vegetable, fruit, nut, etc food preparations	H1-20	2.25	Albuminoids, modified starches, glues, enzymes	H1-35	1.11	Tanning, dyeing extracts, tannins, derivs,pigments etc	H1-32
-3.01	Salt, sulphur, earth, stone, plaster, lime and cement	H1-25	2.23	Meat, fish and seafood food preparations nes	H1-16	1.10	Articles of apparel, accessories, not knit or crochet	H1-62
-3.11	Articles of leather, animal gut, harness, travel goods	H1-42	2.22	Footwear, gaiters and the like, parts thereof	H1-64	1.06	Sugars and sugar confectionery	H1-17
-3.37	Cereals	H1-10	2.18	Headgear and parts thereof	H1-65	1.06	Pulp of wood, fibrous cellulosic material, waste etc	H1-47
-3.66	Other made textile articles, sets, worn clothing etc	H1-63	2.18	Vegetable, fruit, nut, etc food preparations	H1-20	1.05	Knitted or crocheted fabric	H1-60
-3.81	Footwear, gaiters and the like, parts thereof	H1-64	2.13	Soaps, lubricants, waxes, candles, modelling pastes	H1-34	1.04	Albuminoids, modified starches, glues, enzymes	H1-35
-3.83	Printed books, newspapers, pictures etc	H1-49	2.11	Meat and edible meat offal	H1-02	1.03	Footwear, gaiters and the like, parts thereof	H1-64
-3.91	Other base metals, cermets, articles thereof	H1-81	2.02	Products of animal origin, nes	H1-05	1.03	Miscellaneous manufactured articles	H1-96
-4.39	Fish, crustaceans, molluscs, aquatic invertebrates nes	H1-03	1.89	Optical, photo, technical, medical, etc apparatus	H1-90	1.02	Articles of leather, animal gut, harness, travel goods	H1-42
-4.59	Soaps, lubricants, waxes, candles, modelling pastes	H1-34	1.86	Pearls, precious stones, metals, coins, etc	H1-71	1.02	Arms and ammunition, parts and accessories thereof	H1-93
-4.69	Ores, slag and ash	H1-26	1.75	Essential oils, perfumes, cosmetics, toileteries	H1-33	0.96	Clocks and watches and parts thereof	H1-91
-5.61	Milling products, malt, starches, inulin, wheat gluten	H1-11	1.70	Oil seed, oleagic fruits, grain, seed, fruit, etc, nes	H1-12	0.96	Printed books, newspapers, pictures etc	H1-49
-6.34	Edible fruit, nuts, peel of citrus fruit, melons	H1-08	1.43	Live trees, plants, bulbs, roots, cut flowers etc	H1-06	0.96	Furskins and artificial fur, manufactures thereof	H1-43
-7.43	Beverages, spirits and vinegar	H1-22	1.19	Other made textile articles, sets, worn clothing etc	H1-63	0.95	Wood and articles of wood, wood charcoal	H1-44
-7.52	Articles of iron or steel	H1-73	1.12	Coffee, tea, mate and spices	H1-09	0.94	Impregnated, coated or laminated textile fabric	H1-59
-7.91	Oil seed, oleagic fruits, grain, seed, fruit, etc, nes	H1-12	1.04	Cereal, flour, starch, milk preparations and products	H1-19	0.91	Carpets and other textile floor coverings	H1-57
-7.94	Meat and edible meat offal	H1-02	1.00			0.90	Fish, crustaceans, molluscs, aquatic invertebrates nes	H1-03
-10.75	Meat, fish and seafood food preparations nes	H1-16	0.97	Commodities not elsewhere specified	H1-99	0.89	Works of art, collectors pieces and antiques	H1-97
-10.92	Aircraft, spacecraft, and parts thereof	H1-88	0.95	Edible fruit, nuts, peel of citrus fruit, melons	H1-08	0.86	Paper & paperboard, articles of pulp, paper and board	H1-48
-11.48	Albuminoids, modified starches, glues, enzymes	H1-35	0.90	Lac, gums, resins, vegetable saps and extracts nes	H1-13	0.84	Musical instruments, parts and accessories	H1-92
-12.13	Lac, gums, resins, vegetable saps and extracts nes	H1-13	0.89	Explosives, pyrotechnics, matches, pyrophorics, etc	H1-36	0.82	Aircraft, spacecraft, and parts thereof	H1-88
-12.65	Miscellaneous edible preparations	H1-21	0.84	Live animals	H1-01	0.76	Bird skin, feathers, artificial flowers, human hair	H1-67
-12.83	Cereal, flour, starch, milk preparations and products	H1-19	0.81	Bird skin, feathers, artificial flowers, human hair	H1-67	0.71	Cotton	H1-52
-14.17	Raw hides and skins (other than furskins) and leather	H1-41	0.80	Residues, wastes of food industry, animal fodder	H1-23	0.65	Tobacco and manufactured tobacco substitutes	H1-24
-14.29	Dairy products, eggs, honey, edible animal product nes	H1-04	0.68	Fish, crustaceans, molluscs, aquatic invertebrates nes	H1-03	0.64	Umbrellas, walking-sticks, seat-sticks, whips, etc	H1-66
-14.42	Furskins and artificial fur, manufactures thereof	H1-43	0.66	Miscellaneous edible preparations	H1-21	0.55	Manmade filaments	H1-54
-15.44	Residues, wastes of food industry, animal fodder	H1-23	0.49	Edible vegetables and certain roots and tubers	H1-07	0.52	Silk	H1-50
-16.52	Essential oils, perfumes, cosmetics, toileteries	H1-33	-0.09	Cocoa and cocoa preparations	H1-18	0.52	Cork and articles of cork	H1-45
-16.99	Edible vegetables and certain roots and tubers	H1-07	-0.12	Ships, boats and other floating structures	H1-89	0.50	Manmade staple fibres	H1-55
-17.71	Ships, boats and other floating structures	H1-89	-0.37	Vegetable plaiting materials, vegetable products nes	H1-14	0.44	Vegetable textile fibres nes, paper yarn, woven fabric	H1-53
-28.95	Sugars and sugar confectionery	H1-17	-0.49	Tobacco and manufactured tobacco substitutes	H1-24	0.42	Vegetable plaiting materials, vegetable products nes	H1-14
-32.14	Vegetable plaiting materials, vegetable products nes	H1-14	-0.89	Arms and ammunition, parts and accessories thereof	H1-93	0.30	Raw hides and skins (other than furskins) and leather	H1-41
-38.79	Cocoa and cocoa preparations	H1-18	-0.90	Pharmaceutical products	H1-30	0.24	Photographic or cinematographic goods	H1-37
-43.08	Pharmaceutical products	H1-30	-1.18	Sugars and sugar confectionery	H1-17	0.12	Wool, animal hair, horsehair yarn and fabric thereof	H1-51

Source: own calculations, 2011

CONCLUSION

The results of the analysis imply that in the time period 2000–2008, the value of the world trade increased significantly. The growth of this value was temporarily slowed-down by problems of the global economy only in the year 2001. Another significant fluctuation in the global economy occurred in 2009 and it was then reflected by fall in values of the global GDP and trade. However, just a year later, i.e. in 2010, a re-growth of economy occurred and it largely offset the losses from 2009.

In 2009, the world trade decreased from 15 to 12 trillion compared to 2008 but one year later, in 2010, there was an increase in the value of the world trade to about 14.3 trillion USD again (WTO estimates). This growth did not fully compensate the drop from 2009 but it is important to stress that it led to the overall stabilization of the world economy in which further slowdown was stopped. However, lower growth rate of trade (compared to the period before the crisis) remains to be a weakness in relation to the further development of the global economy which subsequently has a direct impact on the limited growth of the world GDP.

If we look at the resistance of individual segments of the world trade to the crisis, the results indicate that the most resistant segment of the global commodity trade is the trade in agrarian and food products. On the contrary, the most vulnerable segment of the world trade in relation to the decline of the global GDP value is trade in mining products, fuels and manufactures. On the other hand, in relation to the period of growth and reconstruction of the economy, agrarian trade has the lowest sensitivity level in relation to growth of the global product value.

In the case of a crisis food and agrarian products behaves very specifically, as it can be seen in Tab. VIII (see Appendix). The table implies that agrarian and food products, which have below average growth rate of values in general and which are characterized by only an average to below average level of elasticity in relation to the development of the world GDP in the case that the economy is growing, tend to resist in the case of a crisis and inherently, they response to the crisis by reducing the elasticity with respect to a change in the world GDP. Tab. VIII shows that in the case of the crisis, agrarian aggregations (items highlighted by yellow colour, according to the Combined Nomenclature) tend to get together at the bottom of the table. This table shows individual aggregation of the world commodity trade in relation to their reaction to the percentage change in the value of the global GDP. It is interesting to see that this is particularly evident when there are global problems, as it happened in 2001 and 2009. The year 2001 was also specific in the fact that while all other segments of the commodity trade, on average, reduced their value, the value of agrarian trade continued to grow which resulted in an exceptional situation when the trade in agrarian and food production responded to the stagnation of the global economy by continued growth of its value. However, in 2009, when the global economic crisis was associated with a temporary drop in prices on the world markets, the value of trade in agrarian and food production decreased as well, despite the fact that unlike other segments of the global economy, agrarian and food sector increased its own production capacity.

SUMMARY

The world economy experienced very significant changes in the last few years. First, it witnessed very rapid economic growth that influenced last two decades (1990–2010) in general, however, this growth was not continuous and it was interrupted by a few minor recessions and one notable crises. Among the most important problems of the world economy, it is possible to include the recession from the year 2001 and the crisis that hit the world economy in late 2008 and early 2009. The aim of this paper is to analyze the development of values and structures of the world trade in relation to the development of the world GDP value in order to identify the impacts of the global economic crisis of 2008/2009 on development and structure of the world commodity trade. Subsequently, the paper analyzes the development in 2010 in order to analyze the recovery process of economic growth. The paper deals with the impacts of the economic crisis on the world trade in order to highlight the mutual interdependence of the development of the world output and trade. The paper observes mutual correlation in development of the world trade and output. The results of the analysis indicate that changes in the value of world GDP and world trade are correlated by more than 90%. It is important to mention that in the years 2000–2009, the value of world trade and world output increased significantly (although in 2009, a significant decline in both value and volume of global production and trade was recorded due to the crisis). In relation to the world trade, it should be noted that its commodity structure is dominated by trade in manufactures. The crisis that occurred in the period 2008–2009 greatly affected the world economy and trade in particular. In this respect it should be pointed out that the crisis mainly affected trade in manufactures and then trade in fuels and mining outputs in terms of both absolute and relative indicators. Agrarian trade dealt with the crisis the best and the impact of the crisis on development of its values and volume was the least significant. This verifies the fact that agrarian and food products tend to be the most resistant to the crisis (on contrary,

in times of global economic growth or reconstruction, the trade in agrarian and food products shows lower degree of elasticity in relation to the global GDP growth in comparison to other segments of commodities trade). The year 2010 was marked by renewed growth in the global economy which was showed by growth of the value of global trade as well but the decrease of values in 2009 was not fully compensated, especially in the segment of trade in manufactures.

REFERENCES

AHMED, N., 2000: Export responses to trade liberalisation in Bangladesh: a cointegration analysis, Applied Economics, Vol. 32, pp. 1077–1084.

BENEŠ, V. a kol., 2004: Zahraniční obchod, Grada Publishing, ISBN 80-247-0 558.

BIELIK, P. et al., 2010: Economics, social policy and citizenship in the EU – Evidence of V4 countries and perspectives for Ukraine, SPU, Nitra, ISBN 978-80-552-0448-2.

BIELIK, P. et al., 2010: Economics, social policies and citizenship in the Europe of regions, SPU, Nitra, ISBN 978-80-552-0366-9.

BLEANEY, M., 1999: Trade reform, macroeconomic performance and export growth in ten Latin American countries 1979–1995, Journal of International Trade and Economic Development, Vol. 8, pp. 89–105.

DOLLAR, D. AND KRAY A., 2004: Trade, Growth and po verty, Economic Journal, Vol. 114, Issue 493, pp. 22–49.

FRANKEL, J. A. and ROMER, D., 1999: Does trade cause growth?, The American Economic Review, Vol. 89, Issue No. 3, pp. 379–399.

IRWIN, D. A. and TERVIO, M., 2002: Does trade raise income? Evidence from the twentieth century, Journal of International Economics, Vol. 58, pp. 1–18.

JENÍČEK, V., 2010: Population problem in the future – challenges, questions, Agric. Econ. – Czech, 56 (2010): 97–107, ISSN 0139-570X.

JENÍČEK, V., 2009: The role of foreign trade and its effects, Agric. Econ. – Czech, 55 (2009): 211–220, ISSN 0139-570X.

JOSHI, V. and LITTLE, I. M. D., 1996: India's economic reforms 1991–2001, Oxford: Oxford University Press.

HELLEINER, G., 1994: Trade policy and industrialisation in turbulent times, London: Routledge, pp. 31.

HORSKÁ, E. et al., 2011: European studies on intercultural dimension of international business, SPU, Nitra, ISBN 978-80-552-0530-4.

RODRIGUEZ, F. and RODRIK, D., 2000: Trade policy and economic growth: A Skeptic's guide to the cross-national evidence, National Bureau of Economic Research, (NBER) No. 7081, Cambridge MA.

SUMMERS, R., HESTON, A. and ATEN, B., 2001: Penn world table version 6.0, Center for International Comparisons at the University of Pennsylvania (CICUP).

SVATOŠ, M. a kol., 2009: Zahraniční obchod – teorie a praxe. Grada. 1. vyd. Praha. ISBN 978-80-247-2708-0.

THIRLWALL, T. and SANTOS-PAULINO, A., 2004: The impact of trade liberalisation on exports, imports and the balance of payments of developing countries, The Economic Journal, February issue, Vol. 114, Issue 493, pp. 50–73.

THOMAS, A., 1991: Economic modelling of the Canada-U.S. free trade agreement: introduction, Journal of Policy Modelling, Vol. 13(3), pp. 417–419.

TVRDOŇ, J., 2006: Econometrics. ČZU, Praha; ISBN 80-213-0819-2.

UN, 2011: COMTRADE trade database, available at: http://comtrade.un.org/db/, 06/06/2011.

UN FAO, 2011: FAOSTAT database, available at: http://faostat.fao.org/site/339/default.aspx, 04/05/2011.

VAN MARREWIJK, CH., 2002: International trade and the world economy, Oxford University Press, USA; 1st edition, ISBN-10: 0199250049.

WEISS, J., 1992: Export response to trade reforms: recent Mexican experience, Development Policy Review, Vol. 10, pp. 43–60.

WORLD BANK, 2010: WDI on-line database, available at: http://data.worldbank.org/data-catalog/world-development-indicators, 05/06/2011.

WTO, 2010: International trade statistics 2010, Ženeva, ISBN 978-92-870-3466.

WTO, 2011: World trade report 2010, Ženeva, ISBN 978-92-870-3708-4.

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