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Terms of trade in Bulgarian post-crisis international trade

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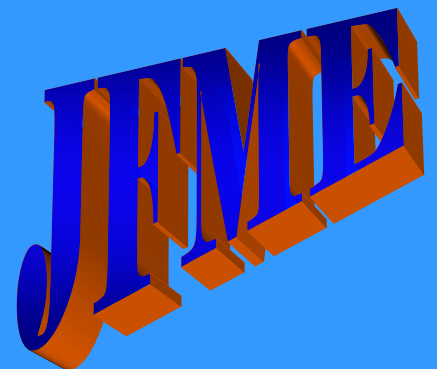
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ROMANIAN ACADEMY

“COSTIN C.KIRIȚESCU” NATIONAL INSTITUTE FOR ECONOMIC RESEARCH

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Research published scientific research aimed both economic development and clarification of the current economic phenomena and processes. As a result, conclusions and proposals offered by the authors address both academia - scientists, teachers, students - as well as decision makers. We emphasize the importance of scientific contributions, together with the clarity of concepts, methodologies and conclusions offered.

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TERMS OF TRADE IN BULGARIAN POST-CRISIS INTERNATIONAL TRADE

Eduard MARINOV¹³³

Abstract

The study aims to assess the impact of Bulgaria's accession to the EU and of the Global financial crisis through an analysis of the changes in the country's international trade for the period 2004-2016. Firstly it summarizes the general trends in dynamics of the country's trade flows in terms of value and volume, then it assesses the economy's dependence on international trade and the dynamics of intra-EU trade. To assess the benefits of trade of Bulgarian post-crisis international trade relations an index of terms of trade is calculated and then the results are analyzed and compared with the results for the EU as a whole and the Central and Eastern European Member States. The conclusion summarizes the main implications from the analysis and draws some recommendations regarding some possible measures in Bulgaria's international trade policy.

Keywords: post-crisis economic development, international trade, EU membership, economy openness, terms of trade

JEL classification: F10, F14, O52

Introduction

International trade as an expression of the external sector of an economy is indicative of its openness, its participation in the international division of labour, its international trade specialization and competitiveness.

In theory integration processes stimulate foreign trade, especially within the integration community, contribute to deepening the process of opening up the economy and improve the terms of trade for the participants, but at the same time create prerequisites for strengthening the negative effects of crises for the participating economies.

The study aims to analyze the changes in the dynamics of the Bulgaria international commodity trade for the period before and after the country's accession to the EU, in order to take into account its influence on the trade relations of the country. It also seeks to assess the impact of the Global financial crisis on the country's international trade flows, as "there are assumptions that the crisis may continue to smolder for decades with the outburst of relevant collapses and revitalizations as an expression of short- and medium-term economic cyclicality" (Byanova, 2018, p. 138). To achieve the goals set, the changes in the country's international trade are studied, the main research tasks being:

- to summarize the general trends in dynamics of the country's trade flows in terms of value and volume and to outline the main trends in the changes in value and volume of both exports and imports;
- to analyze the value and the share of trade with other EU Member States;
- to assess the economy's openness and its dependence on international trade;
- to calculate an index of terms of trade and to compare the country's results to those of the EU and the Central and Eastern European Member States.

The analysis covers the period 2004-2016, which was chosen, on the left, to have a basis for comparison with the development before the accession of Bulgaria to the EU, and on the right – in order to take into account the state of the country's international trade indicators before the beginning of the Global financial crisis. This period is also indicative of the development of other sectors of the economy, such as agriculture, which is characterized by a number of structural changes stemming from Bulgaria's membership in the Community (Byanov, 2017, p.153).

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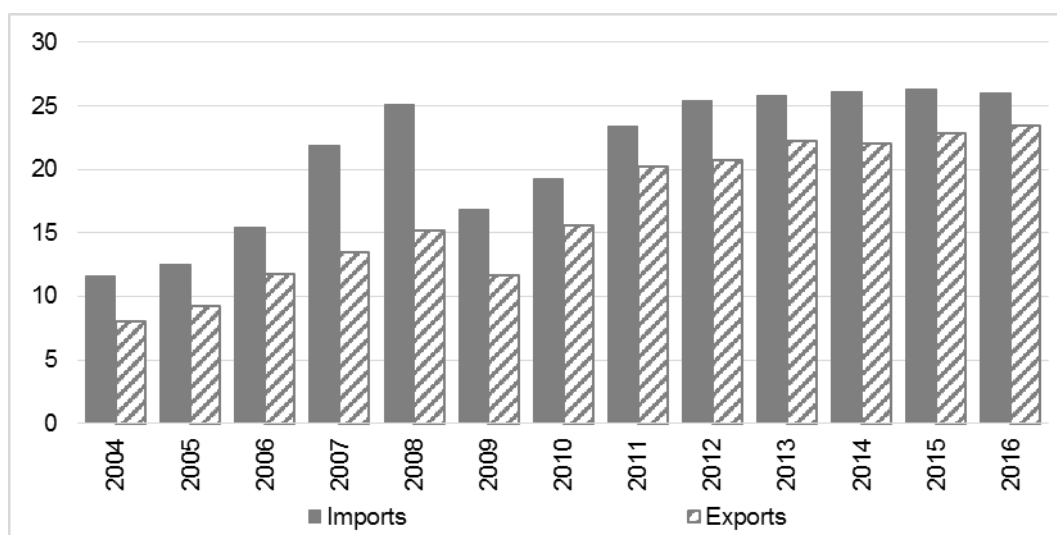
All data used in the study are own calculations by the author based on import and export data from Eurostat and the International Trade Center.

Dynamics of Bulgarian trade flows

The analysis in this section will afford to check the extent to which the hypotheses imposed in the theoretical literature that membership in a developed economic integration community: firstly, fosters the increase of the total volume of trade flows (Viner, 1950; Balassa, 1961; Panusheff, 2003); secondly, leads to the intensification of the negative effects on foreign trade in the presence of a crisis – global or in the integration community itself (Allen, 1963, Inotai, 1991, Marinov, 1999).

For the period 2004-2016 the total value of Bulgaria's foreign trade grew almost 2.5 times – from 19.6 to 49.5 Billion Euro, with much of this increase occurring even before Bulgaria's accession to the EU – in 2007 the value of commodity exchange if the country is 35.4 Billion Euro (Figure 1). There is a significant decrease due to the Global financial crisis – by nearly 12 Billion to 28.6 Billion in 2009, followed by a sharp increase to 46.2 Billion in 2012, while by the end of the period there is a gradual slight increase.

Figure 1. Value of Bulgarian international trade (2004-2016, Billion Euro)



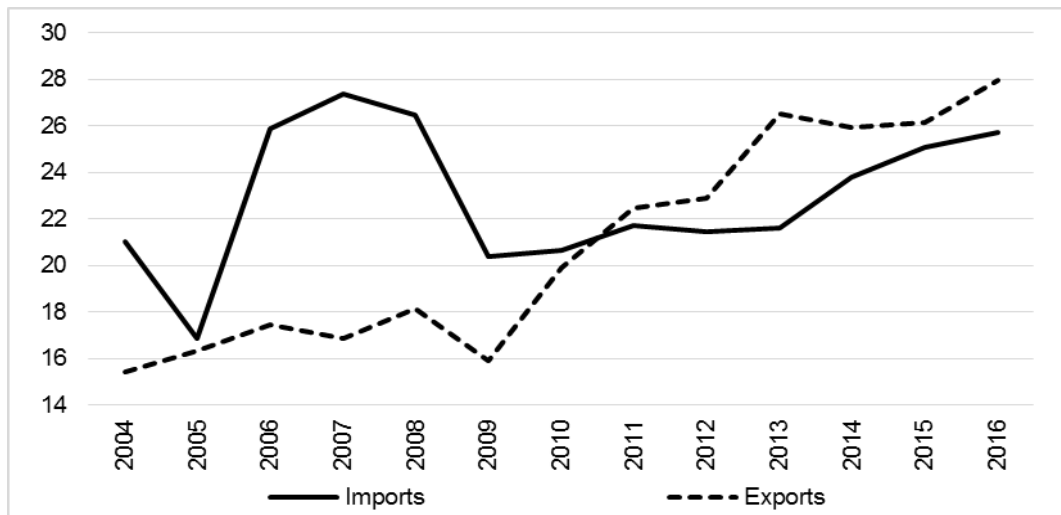
Source: Eurostat, EU trade since 1988 by SITC database.

A similar but smoother trend is the increase in the volume of traded goods (Figure 2) starting from 36 Million tons in 2004, increasing to 44 Million tons in 2008, down to 36 Million tons in 2009, followed by a gradual steady increase to 53.7 Million tons in 2016.

Similar trends are observed in imports and exports. The increase up to the peak of 2008 is characterized by a faster growth rate of imports than exports – to 25 and 15 Billion euro respectively, but the 2009 drop is more serious in imports, with a total decrease of around one third, while the decrease is lower in exports – by 23% compared to 2008.

During the whole period of Bulgaria's membership in the EU after the Global crisis, the value of exports grows faster than that of imports, with the two indicators reaching 23.5 and 26 Billion Euro in 2016. This trend is even more obvious in the volume of trade flows where exports become more than imports after 2011, while imports still (in 2016) have not reached their quantity of before the global crisis. In 2016, Bulgaria exports 28 Million tons and imports 25.7 Million. In the period of the country's membership in the EU, the first indicator has grown by over 11 Million tons while the second has decreased by just over 2 Million tons.

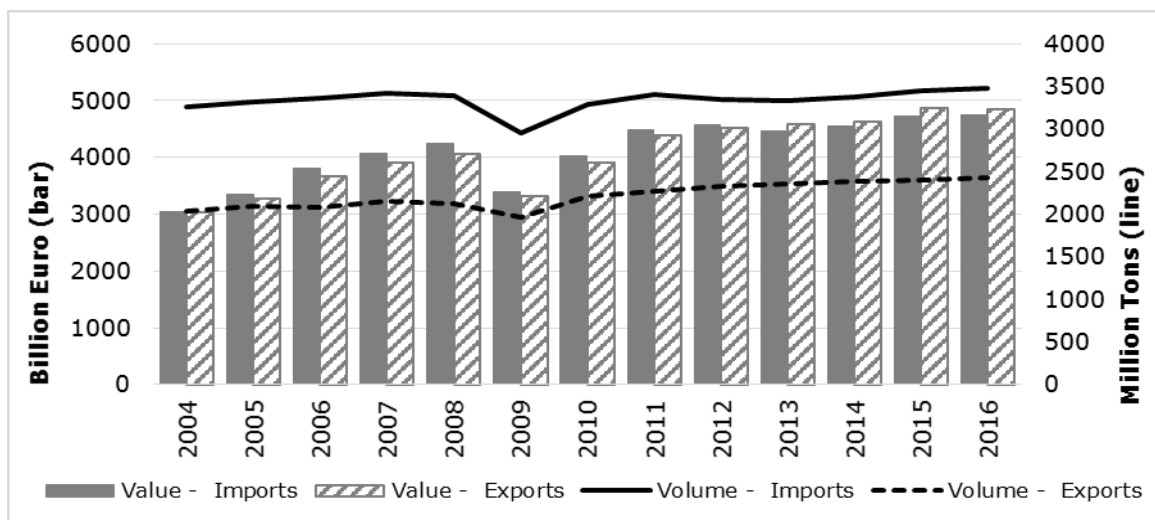
Figure 2. Volume of Bulgarian international trade (2004-2016, Million tons)



Source: Eurostat, EU trade since 1988 by SITC database.

Trends regarding the value of total commodity exchange in the EU, which are observed during the period under review, are similar to those for Bulgaria (Figure 3). However, the decrease in total trade in 2009 in the EU is more gradual than in Bulgaria (a decrease of 20% for the EU and 30% for Bulgaria compared to 2008). The overall increase in the value of trade flows for the period is much lower in the EU than in Bulgaria.

Figure 3. Dynamics of EU international trade (2004-2016)



Source: Eurostat, EU trade since 1988 by SITC database.

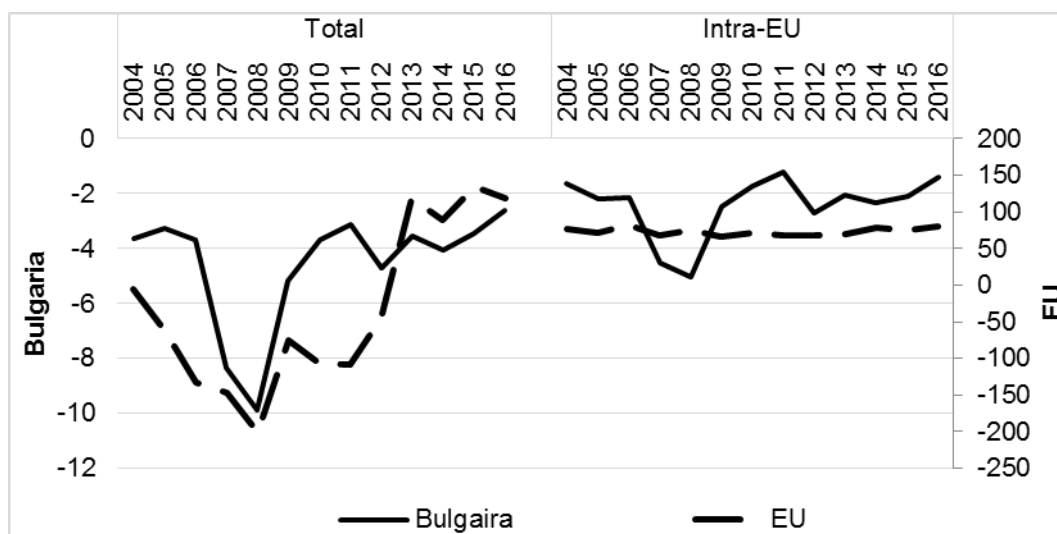
The situation in the volume of trade flows is different – in the EU it is relatively constant (both the total, as well as in terms of imports and exports) with a slight increase – from 5.3 to 5.9 Billion tons, with a decline only in 2009. In the EU, unlike in Bulgaria, the volume of imports remains higher than that of exports throughout the period 2004-2016.

The faster increase in the value of Bulgarian exports leads to a constantly decreasing trade account deficit – when Bulgaria entered the EU it is close to –8.4 Billion Euro, while in 2016 it is –2.6 Billion (Figure 4). However, the reduction of the trade deficit is more a result of a decrease in imports than of an increase in exports.

Here one could see the link with foreign direct investment: "The decrease in FDI volumes is accompanied by a reduction of imports and exports, which is a clear indicator of limited investment activity in the industrial sector. While in the pre-crisis period the current account deficit is one of the reasons for the increase of macroeconomic imbalance, in the post-crisis period the decline in

Bulgarian exports and imports is the reason for the reduction of the current account deficit." (Christova-Balkanska, 2017, p. 130).

Figure 4. Net exports (2004-2016, Billion Euro)



Source: Eurostat, EU trade since 1988 by SITC database.

The trend for a faster growth in exports, observed in the EU has led to a negative net export value going to positive, with its value reaching 119 Billion Euro in 2016. The tendency for a faster export growth, typical of the EU, leads to a negative value of net exports going to a positive one, reaching 20 billion in 2016.

The analysis of the dynamics of international trade confirms the hypothesis that membership in a developed economic integration community fosters international trade – In the case of Bulgarian EU membership trade is growing – in terms of both value and quantity both of imports and exports. One could regard as positive the fact that in Bulgaria the impact of the Global financial crisis and the sovereign debt crisis in the Eurozone is felt weaker than the in EU as a whole, which partly rejects the hypothesis that the inclusion in the integration processes creates prerequisites for strengthening the negative effects for participating economies in the emergence of crises.

Openness of the economy

A traditional indicator in analyzing foreign trade is the "openness of the economy" (Krugman, Obstfeld and Melitz, 2013; Sabotnova, 2015). It represents the share of international trade of the economy's GDP and serves as an indicator of the degree of integration of a country's economy into the global economy. The openness of the economy is a measure of the degree of international interconnection of the national economy (Appleyard and Field, 2014; Sotirova and Ivanova, 2015). By examining the degree of openness of the national economy one could draw conclusions on the participation of the national economy in the international division of labour, its integration in global economy, as well as on the dependence of the national economy on the processes in the global economy (Savov, 1995; Appleyard and Field, 2014). In order to characterize the degree of openness of the economy the analysis here uses the indicators "export quota" – the ratio of exports to GDP and "international trade quota" – the ratio of international commodity trade to GDP.

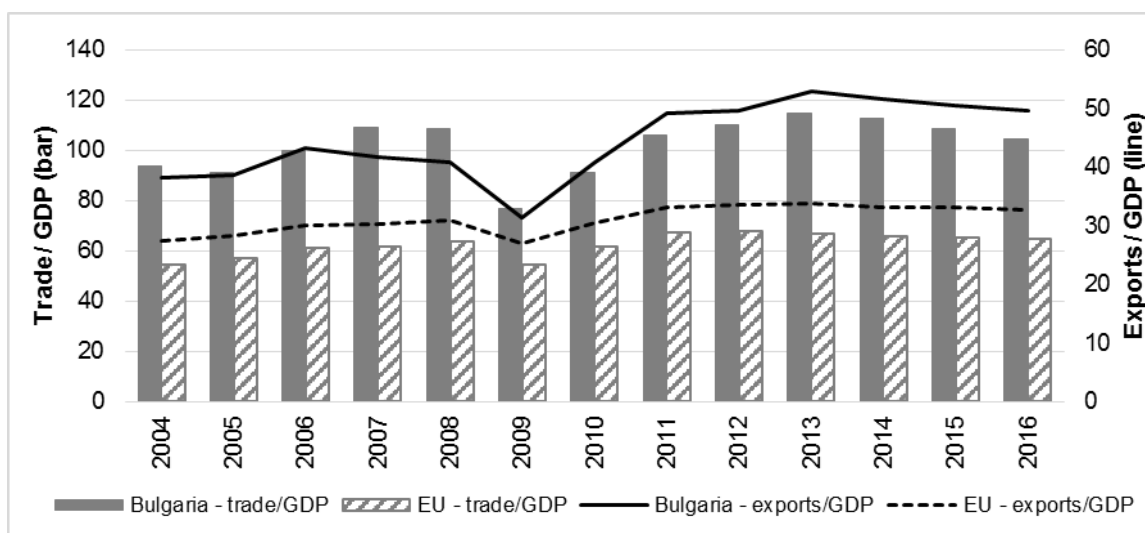
"Bulgarian economy is one of the most open economies, with the trade openness indicator rising from 56% to 69% only for the last seven years. Openness should help boost competitiveness, but Bulgarian companies find it hard to resist competition in the Single Market, which further slows convergence." (Bobeva, 2017, p. 22).

The dynamics of the indicator "international trade quota" for Bulgaria is volatile over the period under review – from 2005 to 2008 there is an increase (from 92% to 108%), then as a result of the Global crisis its value drops to 76% in 2009. From 2010 to 2013 there is another increase to 114%, after which the value of the indicator decreases by about 4 percentage points per year, reaching 104.6% in 2016 (Figure 4). Thus, for the whole period 2004-2016, the share of total trade in the

country's GDP increased by almost 11 percentage points, but due to the higher value of the indicator in 2007, the Global crisis thereafter, and especially after the decline in the last two years, for the period of Bulgaria's membership in the EU the share of trade in goods in GDP decreased by almost 4 percentage points.

The “export quota” indicator shows different dynamics – here too there is a significant drop in 2009 (with 10 percentage points, to 31%), followed by a significant increase to 53% in 2013. In the last few years there is a decrease, albeit weaker – by about 1 percentage point per year, thus in 2016 exports account for 50% of Bulgaria's GDP. The total increase for the period 2004-2016 is 12 percentage points, and within the period of Bulgaria's EU membership there is also an increase of 8 percentage points.

Figure 5. Commodity trade to GDP ratio (2004-2016, %)



Source: Eurostat, EU trade since 1988 by SITC database.

The values of both indicators for Bulgaria over the whole surveyed period are much higher than those for the EU. In “international trade quota” Bulgaria stands ahead of the EU by around 40 percentage points. The decline in the EU as a result of the Global crisis is smoother, while in recent years the value of this indicator for the EU is almost constant. On the “export quota” indicator the EU decrease is also smoother than Bulgarian (from 31% in 2008 to 27% in 2009), but the subsequent increase is much faster for Bulgaria, thus the difference with the EU increases to almost 20 percentage points in 2013 and is 17 percentage points in 2016.

From the analysis one can conclude that Bulgaria's EU membership results in an increasing openness of the economy, with the expected negative impact of the global crisis on this indicator is reflected both the in the share of exports to production as well as in the overall dependence of the economy of foreign trade.

On the other hand, however, one should bear in mind that "the value added in the country is significantly lower than the rest of the EU economies, while the value added of imports is much higher, which shows the country's high import dependence for the realization of its international economic activity but also the significant presence in global value chains" (Panusheff, 2017, p. 219).

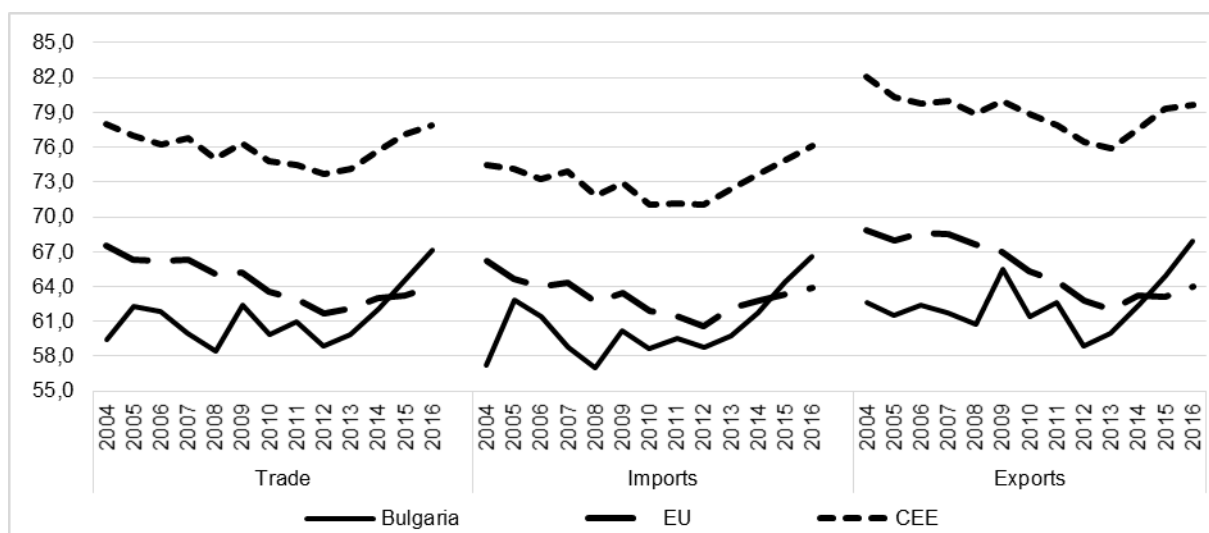
Intra-EU trade

Numerous studies state that one of the most significant positive changes that can be expected when a country joins an integration community with a functioning common market is the increase of the value and share of intra-community trade in the country's overall trade flows (Viner, 1950, Balassa, 1961; Marinov, 1999). This hypothesis will be checked for Bulgaria as well as in comparison with the other EU Member States from Central and Eastern Europe (Estonia, Lithuania, Latvia, Poland, Romania, Slovakia, Slovenia, Hungary, Croatia and Czech Republic). It will also be examined to what extent the global crisis influences the dynamics of the intra-Community trade flows of Bulgaria and the EU as a whole.

When considering the dynamics of the share of the intra-Community trade of Bulgaria for the period 2004-2016, one could identify two distinct sub-periods. From 2004 to 2011 the share of trade with EU countries remains relatively the same – 58-61% of the total trade flows of the country, with no significant difference as a result of Bulgaria's accession. The only year in which there is a sharp increase in the share of intra-EU trade (from 58% to 62%, the highest share for the whole period) is 2009 – obviously as a response to the Global financial crisis that started in 2008. After that the share stabilizes again around 60%. Over almost the entire period after 2004, the share of intra-EU exports exceeds that of imports by 2-5 percentage points, with the exception of 2005 and 2006 (when imports are 1-2 percentage points higher than exports) and in the last two years the share of both indicators is almost equal due to the sharp decline (almost 4 percentage points) in the share of Bulgaria's exports to the EU (Figure 6). Since 2012, the three indicators – the share of total trade, imports and exports in the EU are almost equal over the years, with a general trend of steady growth (by around 1 percentage point per year), reaching their highest values (67.2%, 66.5% and 67.9%, respectively) in 2016.

The overall trend in intra-Community trade is similar in the EU, but with more gradual changes, with its share being lower than in Bulgaria, reaching 64% in 2016 (Figure 5). In the catching-up economies of Central and Eastern Europe, the share is higher – 78% in 2016, and although exports have seen some decline over the period as a whole, the share of exports to the EU remains very high – nearly 80% in 2016.

Figure 6. Share of intra-EU trade (2004-2016, %)



Source: Eurostat, EU trade since 1988 by SITC database.

Regarding trade within the EU, one should note the serious reduction of the deficit in Bulgaria's net exports, which was recorded during the period under review and especially during the country's membership in the Union – from –5 billion Euro in 2007 to slightly below –1 Billion in 2016 (Figure 4).

The analysis confirms the hypothesis that the country's membership in the EU leads to an increase in the share of intra-community trade – the value and volume of trade flows are growing more rapidly in trade with the EU (total trade by 186%, exports – by 218%, and imports – by 161%). This effect of membership is further exacerbated by the response of the Bulgarian economy to the Global crisis and the Eurozone crisis.

Terms of trade

To complete the assessment of the effects of Bulgarian EU membership and the impact of the Global financial crisis on the country's international trade flows, a synthetic indicator will be constructed to assess the benefits Bulgaria derives from trade - "terms of trade".

The indicator "terms of trade" represents the ratio in which one commodity is exchanged for another on the global market (Savov, 1995; Appleyard and Field, 2014; Sabotina, 2015). It can express the relationship between prices, between quantities or between a combination of both in

an exchange (Appleyard and Field, 2014; Sotirova and Ivanova, 2015). One of the most commonly used indicators for measuring terms of trade in international economics is the “net barter terms of trade” – the ratio between the export price index and the import price index. This indicator shows how many units of foreign goods can be imported per one unit of export income, i.e. how many import goods can be purchased per one unit of export goods. If the prices of the exported goods grow faster than those of the imported ones or are reduced less, the terms of trade improve and the benefits (profit) from trade grow. When the prices of imported goods rise faster than these of the exported, the terms of trade deteriorate and the trade advantage for the country decreases. (Krugman, Obstfeld and Melitz, 2013; Appleyard and Field, 2014).

For the purposes of this analysis, terms of trade are presented as:

$$[(QI_0 * PI_0) / (QX_0 * PX_0)] / [(QI_n * PI_n) / (QX_n * PX_n)],$$

where:

- QI_0 represents the quantitative import volume for the base year;
- PI_0 – the import value for the base year;
- QX_0 – the quantitative export volume for the base year;
- PX_0 – the export value for the base year;
- QI_n – the quantitative import volume for the relevant year;
- PI_n – the import value for the relevant year;
- QX_n – the quantitative export volume for the relevant year;
- PX_n – the value of exports for the respective year.

Three different base years have been adopted for calculating the terms of trade index – 2004, 2007 and the previous year.

There are wide variations in the terms of trade of Bulgaria, calculated on the basis of change over the previous year (Table 1) – starting from a serious advantage in exports (index value is 141) in 2005, in the next two years the terms of trade worsen (to about 70), then increase again until 2010 (144), then worsen to 87 in 2014, and in the last two years the again improve – in 2016 the index value is again positive, reaching 108. No such great fluctuations are observed in the EU and the CEE countries – the value of the index is around 100 throughout the period with the exception of a few years, when it is slightly higher (2009, 2012 and 2013), at the end of the period being neutral again (100).

Table 1. Terms of trade index (2004-2016)

year	Base year – previous			Base year – 2004			Base year – 2007		
	<i>Bulgaria</i>	EU	CEE	<i>Bulgaria</i>	EU	CEE	<i>Bulgaria</i>	EU	CEE
2005	141.72	98.71	105.87	141.72	98.71	105.87			
2006	71.68	96.50	96.62	101.58	95.26	102.29			
2007	74.37	101.67	94.70	75.54	96.85	96.87			
2008	108.92	98.65	100.21	82.28	95.54	97.07	108.92	98.65	100.21
2009	130.38	108.42	127.35	107.27	103.58	123.62	142.01	106.95	127.62
2010	144.15	100.68	99.93	154.63	104.28	123.54	204.70	107.68	127.53
2011	114.86	99.66	98.70	177.61	103.93	121.94	235.12	107.31	125.88
2012	97.05	105.40	108.97	172.38	109.54	132.87	228.19	113.10	137.17
2013	121.62	105.50	108.64	209.65	115.57	144.36	277.54	119.33	149.03
2014	87.13	99.26	100.02	182.66	114.71	144.39	241.81	118.44	149.06
2015	98.32	99.46	98.63	179.60	114.09	142.42	237.75	117.81	147.02
2016	108.20	100.14	99.51	194.33	114.25	141.72	257.25	117.97	146.30

Source: own calculations based on data from EU trade since 1988 by SITC database.

With 2004 as base year there is a serious improvement in Bulgaria’s terms of trade – here one also observes a decline in 2007-2008 and 2013-2014, but the general trend is positive and at the end of the period the index value reaches 194, which is 53 points higher than the index of CEE and almost 80 points higher than the one of the EU. These differences are even more serious when the

base year is 2007 – terms of trade for Bulgaria are positive throughout the period, with the value of the index reaching 257 in 2016 – more than 110 points more than that of CEE and almost 140 more than the index of the EU.

The assessment of terms of trade leads to the conclusion that they are improving in terms of the overall commodity trade of Bulgaria, while this indicator has a much higher value than the EU average and the catching-up CEE economies. The significant improvement of terms of trade in Bulgaria during the EU membership period means that the country manages to accumulate more capital with the help of its exports than it spends on its imports, but as already mentioned exports are highly import-dependent.

Conclusions

Within the period under review Bulgarian international trade has a dynamic development. Total trade increased by 153%, with exports increasing faster than imports (194% and 124%, respectively).

The analysis of the dynamics of different trade indicators shows that in general Bulgaria's EU accession has a positive impact on the development of the country's international trade relations.

The analysis confirms the hypotheses that the volume and value of foreign trade commodities are expanding, as well as the value and share of intra-EU trade in Bulgaria's international trade. The country's economy is becoming more open and fully involved in global trade relations, especially in terms of exports, which are increasing both in nominal terms and in comparison with the EU as a whole and with the other catching-up economies of Central and Eastern European Union Member States. Terms of trade in terms of the country's overall trade are improving, Bulgaria's growth in this indicator being much higher than both the EU average and the catching-up economies.

One could assess as positive the fact that in Bulgaria the impact of the Global financial crisis and the Eurozone crisis is felt but is weaker than in the EU as a whole and it does not affect all aspects of foreign trade relations which somewhat rejects the hypothesis that participation in integration processes creates prerequisites for strengthening the negative effects of crises for participating economies.

As a small, highly open economy participating in a highly developed integration community, Bulgaria does not have too many opportunities to produce large volumes of products and hence to achieve economies of scale in its potentially competitive products. To avoid the marginalization of the country from the perspective of international trade – trade only with the large EU market, with goods and services with low value added, which in fact benefits the big producers in the bigger Member States, one has to carefully select with the help of the right analytical tools a limited number of competitive national industries for manufactured goods and services with high value added which could be traded both within and outside the EU.

One of the alternatives, which could support stabilization of the good positions in international trade, especially in the context of globalizing markets and increased international competition, is increase in exports and "opening up" to new markets. Deepening and expanding international trade relations can be both a key factor in finding different perspectives for the Bulgarian economy and a catalyst for its development. In this regard, Bulgaria should look for ways to realize its output not only in the EU but also on other major markets.

In order to pursue such a policy the government should take consistent and active measures – both domestic – to encourage such industries, and commercial – to impose the products of these industries on potential foreign markets, as well as to responsibly, effectively and actively participate in the development of the trade policy of the integration community itself, thus protecting our national interests.

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