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THE RELATIONSHIP BETWEEN EXPORT STRUCTURE AND ECONOMIC DEVELOPMENT: THE BULGARIAN CASE

The Bulgarian government faces the challenge of finding solutions to improve the economic situation of the country taking into account both the specifics of the country and its membership in the European Union. Of course, these solutions are not simple or unidirectional and affect different aspects such as investment, foreign trade, innovation and other. For a small and open economy such as Bulgaria export-oriented growth model is an option to achieve growth and economic development. A large body of publications examines the relation between export and economic growth. Some of them support the idea that the switch to export from low to high-tech industries products increases the potential for economic growth, while the geographical diversification of exports establishes conflicting results, Some of other emphasize the need for additional measures related to other sectoral policies to improve export performance. To this end, the paper aims to analyze the main changes in the structure of the Bulgarian exports of goods, taking into account their technological complexity and the quality of the workforce and to what extent they relate to economic growth. This analysis should consider factors such as volume, destination and product mix.

Key words: foreign trade, competitiveness, high-skill and technology intensive manufacturers, CMSA

Fig. 2**, Tab.** 3**, Ref.** 9.

Introduction

The search for sources of growth and development has been the permanent focus of governments and researchers. In the last decade, this issue has become even more pressing for a number of reasons: the various types of crises, including the global economic crisis, the processes of globalization and integration, and the resulting closer relationship between economic and political entities. In this light, the concept of export-based growth and development of an economy, acquires new meaning and dimensions. It is no longer focused only on exports of goods and services; it combines the economic, the political (governmental) and social dimension. The political dimension is the result of modern governance of international economic relations, which results in many regulations at various levels (global, regional, national, firm) and regulatory bodies (organizations). The social dimension is associated with sustainable development, social corporate responsibility, green growth, social equity, which in turn influence the behaviour of economic entities and largely affect international trade and export-oriented companies.

Bulgaria, as a small and open economy, also relies on its foreign trade to improve the economic situation and to achieve growth. With the outbreak of the global economic crisis, foreign trade has greatly shrunk. The GDP has also shrunk, its growth rate in 2009 being 4.2%, according to the data disclosed by the World Bank. After this downturn, economy has been slowly recovering, as evidenced by both the GDP and the values of exports and imports. To what extent they contribute to economic growth, is a matter of a close analysis. This analysis should consider factors such as volume, destination and product mix. The purpose of this paper is to analyze the main changes in the structure of the Bulgarian exports of goods, taking into account their technological complexity and the quality of the workforce and to what extent they relate to economic growth.

The relationship between exports and growth

There exists a large body of publications on the relationship between export and economic growth. Hausmann, Jason Hwang and Dani Rodrik (2) find out that the type of goods in which a country specializes has important implications for the economic performance. The countries that specialize in the types of goods that rich countries export are

likely to grow faster than the ones that specialize "poor-country" goods. Santos, Ribeiro and Carvalho in their paper " Export-Led Growth in Europe: Where and What to Export?", examine how the product and the destination structures of exports influence the growth of EU countries. They find that economic growth is fostered through export specialization in high value-added products and also by export diversification across partners. At the same time enlarging the portfolio of partners, which are less developed and more distant, has negative impacts on the European growth (9). The role of export diversification is also studied by other authors like Louis S. Hodey, Abena D. Oduro, Bernardin Senadza (6).Their study provides evidence on the relationship between export diversification and economic growth based on data for forty-two (42) Sub-Saharan Africa countries. The results of their study showed that export diversification has a positive impact on the economic growth of these countries. Another author who studies the relation between the export of high-tech and lower-tech commodities is Jim Lee (6). He explores the impact of exports of high-tech products on the rate of growth in 71 countries. The results show that countries that export high-tech commodities such as airplanes and electronics report a faster economic growth. The opposite is found for countries exporting lower-tech commodities such as textiles or food. The idea of export-based development is also discussed by Andras Inotai in „Sustainable Growth Based on Export-Oriented Economic Strategy. The Bulgarian Case in an International Comparison" (4). Based on theoretical grounds for export-oriented growth model and foreign trade analysis he arrives at the conclusion, that for a small country like Bulgaria which is less developed than other Member States, to pursue export-oriented strategy is an option for development and avoiding the limitations of the domestic market.

Along with the studies in favour of export-based growth, we should also mention its political dimension. Bulgaria as a member state of the European Union complies with both its own interests and with the guidelines for integrated community development. In accordance with the EU strategy "Europe 2020" for smart, sustainable and inclusive growth, our country has developed an innovative strategy for smart specialization (ISIS). It says that the most companies and the most employed are in low-tech activities. They create the largest part of the added value. The low-tech activities involve 82% of the employees who create 75% of the added value in technological activities. This fact, as well as the priorities set by the EU require a reorientation in production and targeting sectors such as ICT, mechatronics and clean technologies, industries for healthy living and biotechnology, new technologies in creative and recreational industries (3) i. e. to activities generating higher added value. Along with the innovation strategy for smart specialization, the country has developed numerous sectoral export strategies designed to promote the internationalization of Bulgarian companies and their competitiveness in international markets, especially of small and medium enterprises.

It should be noted that a large number of studies devoted to the relationship between trade and economic growth, including exports, highlight both the possible benefits for the individual economies and the limitations. They underline that more and more countries see trade as an opportunity for development and overcoming poverty and economic difficulties. The idea that the switch to export from low to high-tech industries products increases the potential for economic growth, while the geographical diversification of exports establishes conflicting results, has been increasingly gaining support. More research, especially related to the export structure of the developing countries, emphasize the need for additional measures related to other sectoral policies to improve export performance. The number of publications, proposing new or improved tools for the study of foreign trade and its effects has also been growing.

Methodology

For the needs of the present study, we have used various general research and quantitative methods, such as nominal values and relative weights of commodity groups in

total export to analyze the trends in the volume and the structure of the export of the country, depending on their complexity. The data used is third disaggregation level according to SITC Rev. 3 and are grouped according to the classification of UNCTADSTAT "Manufactured goods by degree of manufacturing groupings", in which the goods are classified as "Labour-intensive and resource-intensive manufactures" (LIRIM), "Low-skill and technology-intensive manufactures" (LSTIM), "Medium-skill and technology-intensive manufactures" (MSTIM) and "High-skill and technology-intensive manufactures" (HSTIM). The goods that are not included into this classification are labelled Other goods. The analysis covers the period between 2000 and 2014, which allows us to trace the changes in the structure of the export of goods from the country. The analysis in the post-crisis period is complemented with a traditional shift-share analysis, also known as constant market share analysis (CMSA). To this end we used the formulas proposed by Wawan Juswanto and Puji Mulyanti (5), and by Ninez Piezas-Jerb and Coleman Nee (8). This variation of the method allows us to analyze the change in the market share of the country due to the growth rates of the export compared to the world export, of the product mix or the specific features of the countries targeted by commodity flows. One of the assumptions of the method is that if the country's competitiveness has not changed, and all other factors are held constant, the market share will remain constant over time as well.

Under this conditions, the change in the growth of exports can be decomposed into four components: „a global component (GLOBO) indicating changes due to overall growth of world trade, a geographical component (GEO) indicating changes due to the country's distribution of trading partners, a product composition component (COMPO) indicating growth due to the mix of products exported, and a residual term indicating changes in competitiveness, or performance (PERFO) (8, p.9).

The analysis was performed at three levels. To describe the various levels and effects we use the following notations:

i – commodity,

j – country,

$X_{i.}$ – Value of A's exports of commodity i in period 1,

$X'_{i.}$ - Value of A's exports of commodity i in period 2,

$X_{.j}$ - Value of A's exports to country j in period 1,

$X'_{.j}$ - Value of A's exports to country j in period 1,

X_{ij} - Value of A's exports of commodity i to country j in period 1,

X'_{ij} - Value of A's exports of commodity i to country j in period 2,

r – Percentage change in world exports between periods 1 and 2,

r_i - Percentage change in world exports of commodity i between periods 1 and 2,

r_{ij} - Percentage change in world exports of commodity i to country j between periods 1 and 2.

Then, we can obtain the total exports of the commodity i by summing up the export flows to the different countries j, and the total export to the country j by summing up all products i :

$$\sum_j X_{ij} = X_{i.} \quad \sum_i X_{ij} = X_{.j} \tag{1}$$

Therefore, the total export of commodities from one country is obtained by summing up the total values of the different commodity groups or the values of the export by partners:

$$\sum_i \sum_j X_{ij} = \sum_i X_{i.} = \sum_j X_{.j} = X_{..} \tag{2}$$

At the first level, it is assumed, that commodities and countries do not differ, i.e. as in the case of the export of one commodity for one country. Therefore, if we change the market share of a country A, then the increase in exports will be $rX_{..}$ and we will have the following relationship:

$$X'_{..} - X_{..} \equiv rX_{..} + (X'_{..} - X_{..} - rX_{..}) \tag{3}$$

The one-level analysis divides the export growth into a part associated with general increase in world exports (GLOBO) and a residual, the competitiveness effect. This relationship can be used for a product class, if we assume that we have different products and different markets. In this case we have the following relationship:

$$X'_{i.} - X_{i.} \equiv r_i X_i + (X'_{i.} - X_{i.} - r_i X_{i.}) \tag{4}$$

which may be aggregated to

$$X'.. - X.. \equiv \sum_i r_i X_{i.} + \sum_i (X'_{i.} - X_{i.} - r_i X_{i.})$$

$$\equiv (rX..) + \sum_i (r_i - r) X_{i.} + \sum_i (X'_{i.} - X_{i.} - r_i X_{i.}) \tag{5}$$

The "two-level" analysis examines the growth of the export of country A resulting from the general increase in world exports, commodity composition (COMPO) ($\sum_i (r_i - r) X_{i.}$) and a residual. The $\sum_i (r_i - r) X_{i.}$ indicates whether the country exports commodities at a higher rate compared to the world average for all commodities. In this case $(r_i - r)$ has a positive value.

The three-level analysis assumes that both countries and commodities differ. Some are characterized by higher growth rates, other – by lower. In this case we can use the equation:

$$X'_{ij} - X_{ij} \equiv r_{ij} X_{ij} + (X'_{ij} - X_{ij} - r_{ij} X_{ij}) \tag{6}$$

It can also be presented as:

$$X'.. - X.. \equiv \sum_i \sum_j r_{ij} X_{ij} + \sum_i \sum_j r_{ij} X + (X'_{ij} - X_{ij} - r_{ij} X_{ij})$$

$$\equiv (rX..) + \sum_i (r_i - r) X_{i.} + \sum_i \sum_j (r_{ij} - r_i) X_{ij} + \sum_i \sum_j (X'_{ij} - X_{ij} - r_{ij} X_{ij}) \tag{7}.$$

Here the growth in exports is due to the general increase in world exports, commodity composition, the market distribution of A's exports (GEO) and a residual indicating "competitiveness" or "performance"(PERFO).

This method was used to analyze data of SITC Rev. 3 at first disaggregation level.

Results

The analysis of the data on the Bulgaria's exports shows the trend of increase, its value decreasing in 2009 due to the global economic crisis and the global decrease in demand. According to UN Comtrade, in 2012 exports in USD was lower compared to the previous year (Table 1).

Table 1. Bulgaria's exports of goods in Value to all trade partners

Year	Total export (mln. USD)	Number of export partners
2000	4821,8	173
2001	5113,9	177
2002	5748,9	191
2003	7540,2	175
2004	9931,1	169
2005	11739,3	179
2006	15101,5	188
2007	18575,1	197
2008	22485,5	205
2009	16502,5	202
2010	20608,0	196
2011	28165,2	199
2012	26698,8	200
2013	29510,6	203
2014	29386,5	203

In terms of geographical diversification it was found that Bulgaria has a significant number of commercial partners, exporting to 203 countries in 2014. In the analysis of the geographic diversification we should pay attention to the value of commodity flows to commercial partners. The relative shares of exports to the countries shows that despite the large number of partners, about 50% of exports were concentrated in a few countries. In 2014 these included Germany, Italy, Greece, Romania, Belgium and Turkey. Most of them were major importers in 2012, too. The exception was Romania, which share of exports had been 1.8% in the total value in 2000, while in 2014 it was 7.9%. We can say that these are close markets and according to the reviewed theoretical concepts, dealing with them should be beneficial with the appropriate product mix.

The values of exports of the groupings formed by degree of manufacturing show that the highest absolute value and relative share of exports have commodities that do not fall under the classification of UNCTADSTAT "Manufactured goods by degree of manufacturing groupings". These are products with low added value (Fig. 1 and Fig. 2).
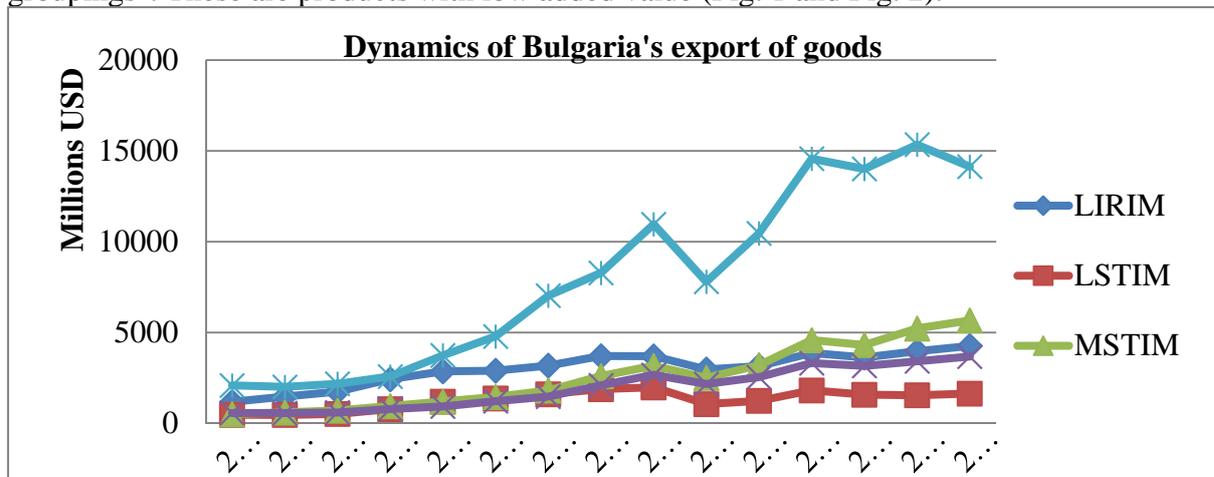
Figure 1.Dinamics of Bulgaria's export of goods
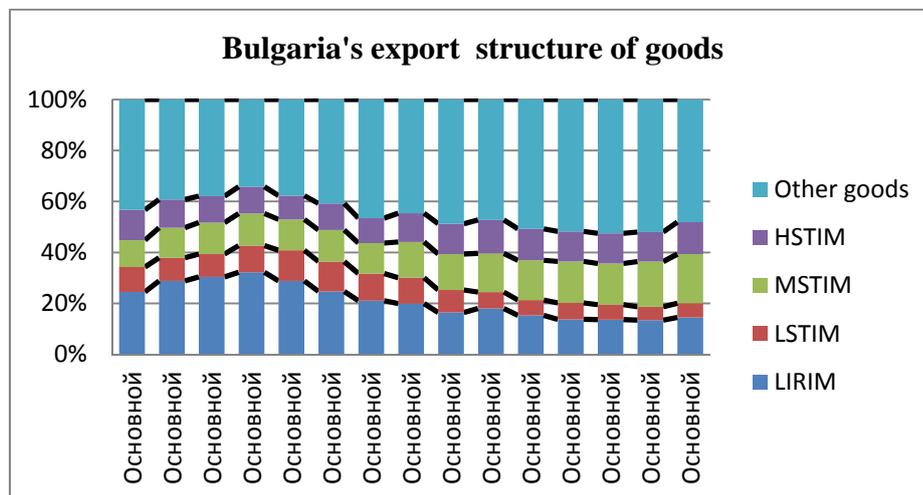
Figure 2. Bulgaria's export structure of goods

For the period between 2000 and 2014 the export of HSTIM slightly increased its share being 12.5% for 2014. A more pronounced increase was seen in the exports of MSTIM, of 19.3% in 2014. The rest groups registered a decrease in the relative share of Bulgaria's exports, the most significant being in LIRIM, which from nearly 24% at the beginning of the period dropped to 14.5 at its end.

The statistics on the main countries-importers of Bulgarian goods outline similar trends. What is favourable here is, that there is considerable diversification of commodity exports of HSTIM, as well as of the exports of MSTIM (see. Table 2). It is evident that the

trade in HSTIM slightly changed for the period 2000-2014; in MSTIM and LIRIM there is an increase of about 40 mln USD respectively and a decline of 10 mln USD in LSTIM.

Table 2. Export of manufactured goods by degree of manufacturing groupings

	HISIM exports				MSTIM exports			
	Mln. USD		Commodity groups – in number		Mln. USD		Commodity groups – in number	
	2011	**2014**	**2011**	**2014**	**2011**	**2014**	**2011**	**2014**
Belgium	15,9	3,8	36	38	7,7	12,8	41	41
Germany	29,9	30,8	47	50	89,4	112,6	44	45
Greece	12,5	19,8	51	51	10,3	15,8	43	44
Italy	22,5	23,7	46	47	37,8	39,9	44	43
Romania	33,1	35,7	51	53	57,5	57,1	44	43
Turkey	16,3	16,4	50	50	15,5	31,2	44	43
	130,2	130,3			218,2	269,3		
	LSTIM exports				LIRIM exports			
	Mln. USD		Commodity groups – in number		Mln. USD		Commodity groups – in number	
	2011	**2014**	**2011**	**2014**	**2011**	**2014**	**2011**	**2014**
Belgium	1,6	2,9	15	13,0	7,9	9,0	29	28,0
Germany	31,8	33,9	22	20,0	63,7	72,8	29	31,0
Greece	9,7	8,5	21	22,0	42,8	46,3	31	31,0
Italy	9,2	11,2	22	22,0	96,4	88,9	30	30,0
Romania	46,4	32,1	23	23,0	21,0	24,5	31	31,0
Turkey	5,3	4,8	22	22,0	16,2	16,5	31	28,0
	103,9	93,6			248,0	258,0		

The analysis of the export structure can be complemented with the results of the Constant Market Share Analysis (see, Table 3). Such an analysis can enhance the government in taking corrective action in terms of product mix, business partners, or individual sectoral policies. The results show that growth in world exports (GLOBO) has had a positive impact of Bulgaria's exports. The positive values indicate that the export of the country in the period grows faster than the average growth for the world. The higher the growth rate of the country, the smaller this effect is (8).

The factor commodity composition (COMPO) had a negative impact on the export growth, which means that Bulgaria exported commodities the markets of which were growing relatively slow. The market distribution (GEO) also had a negative impact on the export growth. This means that the country has concentrated its exports in a more stagnant region. The data indicates, that the exports for some main partners like Romania, Greece and Belgium considerably declined compared to 2011.

Table 3. Constant Market Share Analysis of Bulgaria's Exports (%)

	2011 - 2014
GLOBO	78,0
COMPO	-25,3
GEO	-59,6
PERFO	106,9
TOTAL CHANGE	100

The competitiveness component (PERFO) also has a positive effect. It may have resulted from various factors such as changes in the export prices, the restructuring of export

and others. This analysis would be much more informative if it was made at a higher disaggregation level. This would allow to identify products and markets, which are of great importance for the Bulgarian exports, respectively for the economic development of the country.

Conclusion

Numerous empirical studies confirm a correlation between economic growth and exports. There is much empirical evidence that specialization in high-tech products generates higher growth rates compared to specialization in more low-tech. It is noteworthy that some of the studies emphasize that along with specialization or orientation of the countries in the production of high-tech goods, it is also needed the government to give support through formulation and implementation of adequate policies and measures. Overall, cahnges are observed in the Bulgarian economy in favour of redirecting efforts and resources to industries and sectors that will stimulate growth. Despite some positive trends in the export structure of the country, in the Bulgarian export prevail products with low added value.

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