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THE INFLUENCE OF GLOBAL VALUE CHAINS PARTICIPATION ON TRADE DEFICIT IN COUNTRIES WITH SMALL OPEN ECONOMY

MARINA GRICHIK, ELENA DAVYDENKO
Belarusian State University, Belarus

As countries become more and more involved in global value chains the share of domestic value added in gross exportlowers and foreign value added rises. In this paper the author analyses a number of conditions which should be met in order to attain surplus in balance of trade.

Unlike GDP foreign trade is usually calculated as a gross indicator, but large volumes of intermediate products introduce errors into foreign trade statistics as they're double counted in the process. As high import content of export is commonly associated with trade balance deficit, finding the domestic value added in export may explain the reasons behind trade surplus or deficit formation.

The dominance of intermediate products is typical for Belarusian export as well as to its import. During the last 5 years its share varied from 63.4% (2013) to 69.9% (2012) in exports, and from 64.1% (2014) to 75.2% (2011) in imports [1]. It implies that more than two thirds of Belarusian foreign trade consists of intermediate products. Main articles of intermediate imports include energy products and commodities: crude oil, natural gas, electrical energy, rolled iron, rubber, copper and copper products. Apart from them import volumes of auto parts and components, engines, animal nutrition products, vaccines, textiles, paper and cardboard, steel tubes,iron steelwork, plastic products exceed annually 100 millionU.S. dollars. Oil and oilproducts, potash and nitrogen fertilizers are main items of export. Higher than 100 million U.S. dollars are export volumes of tires, auto parts and components, ethylene polymers, polyamide plastics, plastic products, timber wood, chip board, chemical fibers and yarn, ferrous metal products [1]. Hence it means that Belarus takes part in both, upstream and downstream, production processes.

In order to calculate domestic and foreign value added (DVA and FVA) shares in gross export researchers combine foreign trade statistics with Input-Output tables (IOT).The column indicates the amounts of foreign and domestic intermediate input needed for production and thus it is possible to calculate how many imported products were used in production [7]. It should be taken into account that gross FVA includes not only foreign intermediates used in production of exported goods (direct FVA), but also foreign intermediates used in production of domestic intermediates later used in production of exported goods (indirect FVA). The results of that calculation are presented in Table 1.

Table 1 – The structure of Belarusian gross export, %

	2011	**2012**	**2013**	**2014**
	fact			estimation
Direct FVA	40.8	38.9	38.6	37.3
Indirect FVA	2.1	3.1	5.2	2.3
Total FVA	**42.9**	**42.1**	**43.8**	**39.6**
Domestic intermediates	20.1	23.0	18.8	23.4
Direct DVA	37.0	35.0	37.4	37.1
Total DVA	**57.1**	**57.9**	**56.2**	**60.4**

Source: author's calculation on [1, 4–6].

From 2011 to 2014 direct FVA has fallen by 3.5% from 40.8 to37.3%, while indirect FVA has risen during 2011–2013 from 2.1to 5,2%. At the same time exports fluctuated at much higher rate: their rate of growth amounted to 111.2% in 2012, 80.8% in 2013 and 97.0% in 2014. Share of FVA in Belarusian exports is comparable to measures of performance of other small open economies. The most extensive international statistics on FVA is compiled in OECD Trade in Value Added Database (TiVA). It covers 61 countries (Belarus is not included) and time period from 1995 to 2011 (due to the long-term lag in national IOT publications) [8] 5 out of 61 countries included in TiVA had higher FVA shares than Belarus in 2011: Hungary (48.7%), Slovak Republic (46.8%), Czech Republic (45.3%), Ireland (43.6%) and Chinese Taipei (43.6%). Generally the bigger the country the lower its FVA rate is: FVA in exports from Poland makes 32.4%, Italy – 26.5%, Germany – 25.5%. Involvement in global value chains (GVC) also plays a significant role: share of FVA in Romanian exports is only 24.4% [8].

According to foreign trade statistics 5 main product groups accounted for 69.0% of total exports from Belarus in 2013, while 10 product groups 89.9% totally. Figure hows that the share of twoproduct groups (petroleum products and transport products) exceeded the share of FVA in exports (75.8and 47.6% correspondingly).

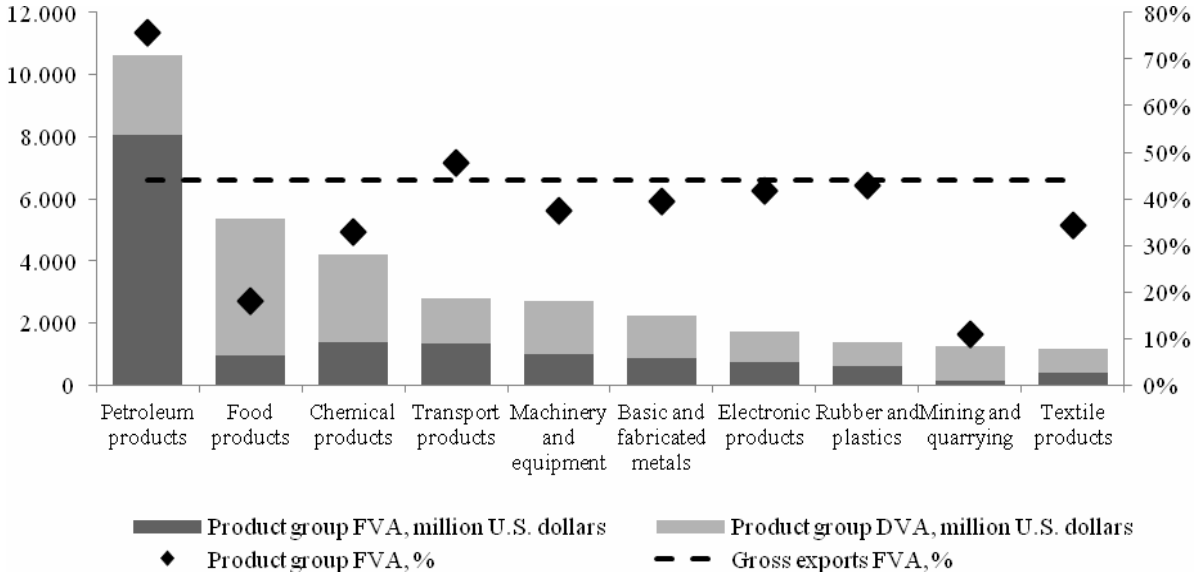

Fig. Top-10 export product groups' FVA share, U.S. dollars million

Source: author's calculation on [1, 4–6].

Besides that FDI stock volume in high- and medium-technology sectors is relatively small: 235.0million U.S. dollars in transport production (3.8% of total FDI stock), 161.9 million U.S. dollars in machinery and equipment production (2.6%), 148.9 million U.S. dollars electronics production (2.0%). Bulk of FDI stock is concentrated in services sector: 52.3% of FDI stock raised in transport and communications, wholesale and retail trade, real estate and construction. Prevalence of FDI flows in services is typical for many countries, for example, 86.9% of FDI stock in Hungary is concentrated in services sector. Nevertheless, it is necessary to take into account that the absolute volume of FDI stock in high- and medium-technology sectors in European countries is much bigger than in Belarus (Table 2).

Table 2 – Export structure, FVA and FDIstock of selected product groups, 2011

	Hungary	Slovak Republic	Czech Republic	Poland	Romania	Belarus
Transport products						
Product group exports,millionU.S. dollars	15 848.4	15 651.8	25 683.5	29 388.7	7 116.4	2 803.4
Share in exports, %	14.8	22.3	16.7	13.8	12.2	7.5
FVA, %	60.6	60.4	53.1	47.2	25.5	47.6
FDI stocks, million U.S. dollars	4129.6	-	14 829.2	11 230.5	-	235.0
Machinery and equipment						
Product group exports, million U.S. dollars	8 928.4	3 898.4	13 580.4	12 102.9	3 874.3	2 697.9
Share in exports, %	8.4	5.6	9.0	5.7	6.6	7.3
FVA, %	46.2	45.8	46.5	36.9	32.5	37.6
FDI stocks, million U.S. dollars	1 738.4	-	-	2 569.9	-	161.9
Electronics products						
Product group exports, million U.S. dollars	22 757.3	10 266.5	30 079.8	18 419.2	5066.0	1 743.9
Share in exports, %	21.3	14.6	19.6	8.6	8.7	4.7
FVA, %	71.8	56.6	62.2	48.0	21.1	41.8
FDI stocks, million U.S. dollars	3 660.8	-	1 528.3	1 950.1	-	125.6

Source: author's calculation on [1–6, 8].

Nevertheless countries with the biggest FVA shares have surplus in balance of trade. Trade surplus in Hungary made up 8.1 billion U.S. dollars in 2011, in Slovak Republic–0.3 billion U.S. dollars, Czech Republic–

8.9 billion U.S. dollars, Ireland – 48.2 billion U.S. dollars, Chinese Taipei– 31.8 billion U.S. dollars [8]. At the same time countries with much lower FVA share have trade deficit. Trade deficit in Poland accounted for (-7.3) billion U.S. dollarsin 2013, (-10.0) billionU.S. dollars in Romania. Thus obvious that high FVA share is not the cause of foreign trade deficit formation. One of the highest FVA shares does not prevent Ireland from trading with trade surplus that is equal to 18% of GDP. In fact within the framework of foreign trade analysis in value-added terms trade surplus means that DVA volume in export surpasses import volumes consumed in the country (formulae 1):

$$DVA > IM_{d,fin} + IM_{d,int}, \quad (1)$$

where $IM_{d,fin}$ – import of final products consumed domestically;

$IM_{d,int}$ – import of intermediate products used in production of final products for domestic market.

Correspondingly it is not only relative share of DVA that matters but its absolute volume as well. The other distinctive feature of countries with high FVA share is high DVA volumes per capita (it must be admitted though that amount of total exports in those countries is high as well). For example, DVA per capita in Hungary was 5 502.7U.S. dollars in 2011, Slovak Republic – 6 916.0U.S. dollars, Czech Republic – 8 007.5 U.S. dollars. At the same time DVA per capita in Poland figured up to 3 793.7U.S. dollars, Romania – 2 196.7 U.S. dollars. In Belarus it made up2 235.0 U.S. dollars per capita in 2011.

At the same time, the analysis of foreign trade shows that at the present stage the share of FVA of hi-tech products in case the country specializes on its export exceeds FVA in gross export. Export of electronic products in 33 out of 61 countries included in the TiVa database makes more than 5% of total export volume (4.7% in Belarus), and 31 of them have higher FVA share in electronics export than FVA level of total exports (with exception of USA and Romania). The similar situation is in export of transport products: in 31 out of 61 countries included in the TiVa they occupied a bigger share in export than in Belarus (7.5%), and in 29 of them FVA share was higher than FVA level of gross export (with exception of Japan and Korea) [8].

Thus, participation in global value chains raises growth of parts and components import that raises share of FVA in gross export. However, on the other hand, it enables production of competitive saleable products. As a result, total exports and absolute value of a DVA rises (though its relative share can be relatively low) and exceeds domestic import consumption.

That calculation proves that the reason behind foreign trade balance deficit in Republic of Belarus is not the high FVA share.On the contrary, performance of other small open economies shows that trade surplus can be reached with much higher FVA in exports. This indicator rather shows involvement of the country in global value chains as the result of industrial cooperation development and FDI in flows. Particularly it concerns high- and medium-technology sectors (electronics, transport, machinery and equipment production). Countries involved in global value chains have high absolute levels of DVA in exports per capita.That means that the problem of exports increase has to be solved with measures of industrial and investment policy. FDI should be attracted to export-oriented sectors and national companies should be incited to join global value chains and upgrade within them.

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