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VOLUME AND PRICE AS FACTORS OF POLAND'S EXPORT IN THE LIGHT OF OTHER BSR COUNTRIES

Abstract

The first part of the study summarises in general the new price relations in the international market as a determinant of export growth rate in the BSR countries subject to analysis. After the main features have been presented, short descriptions of the BSR countries are provided, particular emphasis being placed on the differences between their economic potentials and roles in the international trade.

The second and main part of the study presents an analysis of the dynamics of export value of individual BSR countries which underlies an evaluation of the effects of its determinants. Among these factors two have been identified as the major ones: the dynamics of the unit value indicators and export volume, and an attempt has been made to assess their impact on the aforementioned considerable discrepancies between the dynamics of export of individual BSR countries. In the final part, several general conclusions and suggestions are made.

Keywords: Baltic Sea Region, world prices, international, trade, prices versus volume.

Introduction

The last decade witnessed the emergence of new price relations in international trade – a fast relative growth in primary commodity prices. It seems interesting to

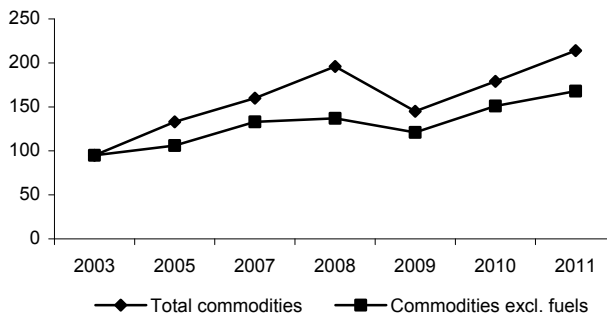
analyse the impact of this phenomenon on the dynamics of export by regions and countries in the aspect of differences in their export commodity structures, especially given the predominance of manufactured goods in the global exports (approx. 70%).

The purpose of this publication is to show the Baltic Sea Region (BSR) countries export dynamics in the light of influence of two fundamental factors: the price and the volume. Moreover, the authors strive to explain the selected consequences of the dynamics' differentiation, especially in the form of the changing role of individual countries in world exports.

1. Price movements in international trade in the 21st century

In the last two decades we have been observing an evident rise in commodity prices in international trade both in absolute terms and in relation to the prices of manufactured goods (see Figure 1). This trend has proved to be relatively stable – the surge in commodity prices, in absolute terms, witnessed since 2003 was interrupted only once throughout this period – in 2009. Since 2010 commodity prices have been constantly soaring, also in relation to the prices of manufactured goods. As a result, the IMF total commodity price index – in nominal terms – tripled (2000 = 100) by February 2012. In real terms (adjusted by the increase in the prices of manufactured

Figure 1. Relations between the prices of primary commodities and manufactured goods in international trade in the years 2003–2011 (prices of manufactured goods = 100)



Source: own study based on: *UNCTAD Handbook of Statistics*, UNCTAD, New York and Geneva 2011; www.imf.org/external/np/res/commod/table1a.pdf (11.05.2012).

goods), this surge was also impressive, as commodity prices more than doubled over the years 2000–2011 (the indicator amounting to 214). It was the soaring prices of crude oil (and other fuels) that explained most of the above-presented dynamics. The rises reported for raw materials and food alone (i.e. excluding fuels) were markedly lower (see Figure 1).

It is noteworthy to observe the relatively moderate increase in the prices of manufactured goods. In the entire period 2000–2011 (Q1) these prices – in nominal terms – increased only by slightly over 40%. Naturally, in real terms (taking into account the increase in the total commodity price index in international trade) it translated into an evident **absolute drop**.¹

2. The impact of new price relations on the development of the BSR's export

The literature on the subject does not provide a universal and widely accepted definition of the Baltic Sea Region. The definitions and composition of the BSR vary with the criterion adopted by the institutions or research centres in their studies.² For the purpose of this study the following countries are included in the BSR: Denmark, Estonia, Finland, Germany, Latvia, Lithuania, Norway, Poland, the Russian Federation and Sweden (BSR 10).³ All these countries except Norway and the Russian Federation are members of the European Union.⁴

¹ UNCTAD estimates the growth in the total *unit value* index for global exports in 2000–2010 at 155; for manufactured goods alone the estimate is 134 (see *UNCTAD Handbook of Statistics*, New York and Geneva 2011, p. 234). For more details see J. Dudziński, *Proces zwierania się nożyc cen w handlu międzynarodowym i jego przyczyny*, in: *Gospodarka międzynarodowa – wyzwania i nowe trendy*, Zeszyty Naukowe Uniwersytetu Ekonomicznego w Poznaniu No. 179, Poznań 2011, pp. 69–74.

² For more on the topic see A.B. Kisiel-Łowczyc, *Perspektywy bałtyckiej integracji ekonomicznej w sferze realnej do roku 2010*, in: *Współpraca międzynarodowa krajów i regionów*, ed. J. Dudziński, Wydawnictwo Naukowe Uniwersytetu Szczecińskiego, Szczecin 2000.

³ More and more publications classify also Belarus among the BSR countries (BSR 11), which is consistent with the classification set in *Vision and Strategies around the Baltic Sea* (VASAB). Information on intergovernmental multilateral co-operation of 11 BSR countries is available on www.vasab.org.

⁴ The EU enlargement of 2004 has undoubtedly boosted international trade within the BSR. For more on this topic see e.g. H. Jansson, M. Hilmersson, S. Sandberg, *EU-Enlargement Effects on International Trade in the Baltic Sea Region – The Case of Exporting/Importing SMEs from Southern Sweden*, Kalmar University, www.snee.org/filer/papers358pdf (25.05.2012).

BSR countries are a highly heterogeneous group in terms of economic conditions despite their geographical proximity. The differences between them concern not only economic development levels (e.g. Norway versus post-soviet countries) but also their sizes (Germany and Russia versus the Baltic Republics) or the role of foreign trade in the economy (Estonia versus the Russian Federation). It is noteworthy to observe that Poland plays an important part among the ten BSR countries. In absolute figures it is the third largest (following Russia and Germany) country in terms of population, economy and international trade.

Table 1. Gross domestic product and exports by BSR countries in 2010

Country	GDP		Exports		Exports ^a % of GDP
	millions USD	per capita USD	millions USD	per capita USD	
Denmark	309,866	55,830	97,299	17,531	50.56
Estonia	18,958	14,135	11,582	8,637	79.42
Finland	238,731	44,502	69,451	12,945	40.30
Germany	3,280,334	39,857	1,257,712	15,098	46.83
Latvia	24,014	10,663	9,523	4,228	53.80
Lithuania	36,478	10,975	20,728	6,236	68.25
Norway	413,056	84,589	131,395	26,909	41.94
Poland	469,393	12,263	159,570	4,169	42.48
Russian Federation	1,479,823	10,351	400,420	2,801	30.04
Sweden	458,725	48,906	158,397	16,887	49.96

^a Of goods and services.

Source: *UNCTAD statistical database*, <http://unctadstat.unctad.org> (11.05.2012).

In the last decade certain phenomena were observed in the world economy which have had a significant impact on the economic development of countries and regions, affecting in particular the dynamics of their exports. One of the most relevant examples is the new price relations in the international trade reflected in the accelerated expansion of primary commodity prices (both in nominal and real terms) resulting – among others – from financialisation and globalisation of the economy. The high dynamics of primary commodity prices – accompanied by slow changes in the prices of manufactured goods – offered much better opportunities for developing exports, thus boosting economic growth, to the countries which relied on export of

primary commodities, such as Russia and Norway and – to a lesser extent – Lithuania and Latvia (see Table 2).

Table 2. Commodity structure of exports in BSR countries
 in the years 2000–2010 (%)

Country	Agricultural products	Mining products	Manufactured goods
2000			
Denmark	22.23	8.04	64.16
Estonia	15.74	19.63	64.48
Finland	8.02	6.65	84.82
Germany	5.04	4.05	83.55
Latvia	35.70	8.82	55.48
Lithuania	16.82	22.95	60.02
Norway	7.08	70.01	18.52
Poland	9.62	10.16	79.78
Russian Federation	4.34	59.74	24.13
Sweden	7.71	5.79	81.76
2010			
Denmark	20.12	9.92	60.26
Estonia	15.54	15.66	63.77
Finland	8.51	13.65	76.33
Germany	5.98	5.53	81.80
Latvia	29.97	9.06	57.58
Lithuania	19.69	24.79	53.96
Norway	7.78	70.79	18.53
Poland	12.04	8.67	79.29
Russian Federation	4.48	75.23	15.00
Sweden	8.78	12.28	73.21

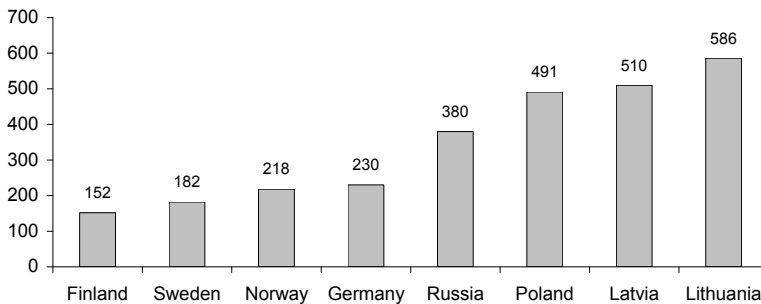
Source: as for Table 1.

The global financial and economic crisis is another major factor. It has decreased the export growth rate (as well as the GDP growth rate), particularly in small countries relying on international trade, and hence on the condition of the global economy.

3. Change of the BSR countries' role in the global export in the light of the dynamics of price, export value and volume

The impact of export determinants varies with the individual situation of each country, and it was also reflected in the highly diverse growth rates in **export values** reported for individual BSR countries in the last decade. On the one hand, there were countries like Lithuania with over 5-fold increase in exports, Poland reporting a nearly 5-fold growth and Russia with nearly 4-fold growth (see Figure 2). On the other hand, however, in some countries (Germany, Denmark or Norway) export only doubled whereas Finland experienced a mere 50 per cent growth in its exports. It follows that less developed countries took the opportunity to increase their export volumes related to their accession to the EU or new price relations (Russia) whereas the developed countries facing supply barriers (Norway) were not able to benefit from the new price relations (merely doubling their growth). Countries with high predominance of manufactured goods in their export (such as Germany), in turn, were affected by the unfavourable impact of the new price relations.

Figure 2. Changes in export values of selected BSR countries in 2000–2010 (2000=100)



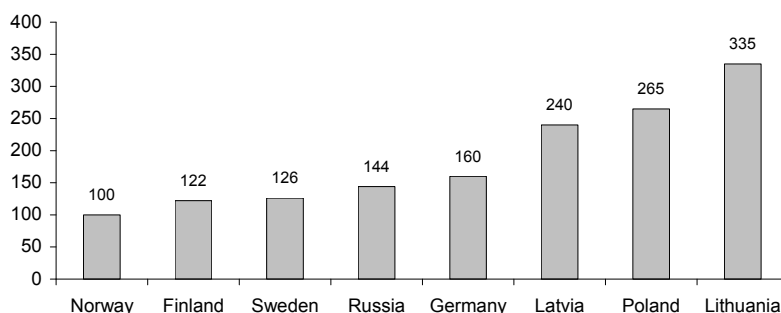
Source: *Yearbook of Foreign Trade Statistics of Poland 2011*, Central Statistical Office, Warsaw 2011; *UNCTAD statistical database*, <http://unctadstat.unctad.org> (11.05.2012).

Another important conclusion is that **export volume** and its growth potential are very important – yet usually overlooked – factors which boost export. Norway and Russia are good examples among BSR countries as the dynamics of their ex-

port values vary (while the role of fuels in export remains significant in both cases). On the other hand, Poland and other new EU member states are good examples of the positive impact of the analysed factor. Their accession to the EU, offering more potential for growth in export volume, has translated into faster expansion of their exports (see Figure 3).

An analysis of the data presented in Figures 2 and 3 reveals considerable similarities in the scale of the dynamics of both export value and volume,⁵ which supports the thesis that volume is the major determinant of changes in export value. The relatively faster growth of export in Russia than that observed in Germany (as compared to the volume dynamics) results on the one hand from the highly favourable effect of the new price relations on Russia's export, on the other hand, however, it confirms the existence of supply limitations observed in countries oriented at exporting primary commodities (hence relatively lower dynamics of export volume in Russia) – i.e. a phenomenon known from theoretical studies. Extreme limitations were observed – as already mentioned – in Norway.

Figure 3. Changes in export volumes of selected BSR countries in 2000–2010 (2000 = 100)



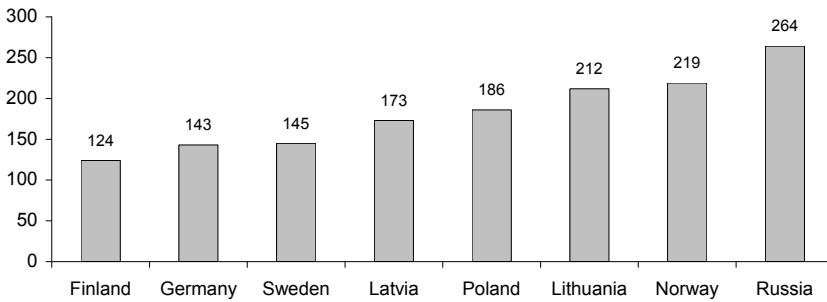
Source: as for Figure 2.

The dynamics of **export prices** as a driver of export, in turn, is less significant than it is widely believed. Figure 4 indicates that in the countries with the highest dynamics of export prices (Norway and Russia) the dynamics of export value

⁵ For more on this topic see J. Dudziński, *Cena i wolumen jako czynniki eksportu krajów i regionów*, in: *Konkurencyjność w handlu międzynarodowym – czynniki i uwarunkowania*, eds. M. Kaszuba, M. Maciejewski, S. Wydymus, Uniwersytet Ekonomiczny w Krakowie, Kraków 2008.

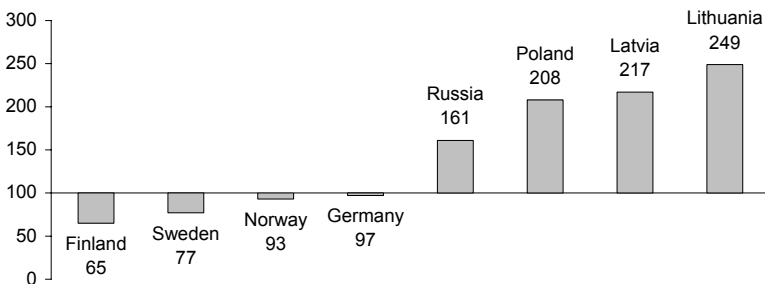
was relatively moderate (see Figure 3). These countries also either reported moderate growths in their share in the global export (Russia) or their shares even shrank (Norway) – see Figure 5. It is related to the fact that the impact of prices is usually compensated – in minus – by supply limitations, particularly affecting primary commodities. Poland experienced in the period of analysis a unique situation as it was able to benefit from a very rare combination of two positive trends at the same time, i.e. a dynamic growth in **both** export prices and volume. As a result, Poland's export growth rate was double the global export growth rate in that period.

Figure 4. Indices of export prices for the BSR countries in the years 2000–2010 (2000 = 100)



Source: as for Figure 2.

Figure 5. Changes of selected BSR countries' share in world exports in 2000–2010 (2000 = 100)



Source: own study based on *UNCTAD statistical database*, <http://unctadstat.unctad.org> (11.05.2012).

Emphasis should be placed on the scale of changes in the shares of individual countries in the total world exports, as it mirrors the above-presented discrepancies in export dynamics (see Figure 5). The shares of Poland, Latvia and Lithuania more than doubled whereas those of “old” EU member states fell in absolute terms (in Finland – by 35%, in Sweden by 23%, and in Germany – by 3%). The 7-percent fall – in absolute terms – reported in Norway is of particular interest if we keep in mind the very favourable impact of new price relations.

Conclusions

In the last decade one could observe a great differentiation in export volume dynamics of the individual BSR countries, especially in favour of new EU member states (Poland, Latvia, and Lithuania). Due to highly advantageous world price relations the Russian Federation has also achieved good outcomes. As a result, the countries mentioned have accomplished the significant increase in their world exports’ share (sometimes even doubled). Influence of the price factor, often highlighted in literature, has turned out to be less significant than commonly believed. On the other hand, the decisive role was played by the export volume dynamics. This could be considered as an explanation of relative poorer economic achievements of the developed countries (i.e. the “old” EU member states and Norway). In these cases the opportunities of fast export volume growth were often limited, taking into consideration the unfavourable price relations.

Statistical Annex

Table A1. The share of BSR countries in the world exports in the years 2000–2010 (%)

Country	2000	2002	2004	2006	2008	2009	2010
1	2	3	4	5	6	7	8
Denmark	0.793	0.083	0.837	0.762	0.722	0.748	0.643
Estonia	0.059	0.067	0.064	0.080	0.077	0.072	0.076
Finland	0.713	0.693	0.668	0.636	0.596	0.500	0.461
Germany	8.536	9.458	9.884	9.127	8.933	8.916	8.354
Latvia	0.029	0.035	0.044	0.051	0.063	0.061	0.063
Lithuania	0.055	0.081	0.101	0.116	0.146	0.131	0.137

1	2	3	4	5	6	7	8
Norway	0.931	0.921	0.890	1.007	1.071	0.966	0.866
Poland	0.491	0.633	0.815	0.912	1.053	1.087	1.025
Russian Federation	1.637	1.656	1.994	2.506	2.926	2.425	2.639
Sweden	1.348	1.252	1.339	1.217	1.132	1.043	1.042
Total BSR	15.592	14.879	16.636	16.414	16.719	15.949	15.306

Source: UNCTAD statistical database, <http://unctadstat.unctad.org> (11.05.2012).

Table A2. International trade indicators of BSR countries
in the years 2000–2010 (2000 = 100)

Year	Poland			Norway		
	value indices of exports	volume indices of exports	unit value indices of exports	value indices of exports	volume indices of exports	unit value indices of exports
2000	100.00	100.00	100.00	100.00	100.00	100.00
2001	114.03	111.76	102.03	98.55	105.81	93.14
2002	129.56	121.74	106.43	99.41	106.53	93.31
2003	169.57	143.60	117.78	112.36	107.72	104.31
2004	236.87	170.93	138.46	136.12	107.32	126.83
2005	282.45	188.09	150.17	172.75	107.38	160.88
2006	349.69	218.64	159.93	203.34	105.15	193.37
2007	442.19	239.46	184.71	227.06	107.16	211.90
2008	536.20	257.03	208.68	287.42	107.86	266.49
2009	429.54	234.75	182.98	201.27	103.49	194.48
2010	491.61	265.50	185.17	218.78	99.99	218.79
	Russian Federation			Latvia		
	value indices of exports	volume indices of exports	unit value indices of exports	value indices of exports	volume indices of exports	unit value indices of exports
2000	100.00	100.00	100.00	100.00	100.00	100.00
2001	96.51	100.68	95.86	107.26	108.20	99.13
2002	101.64	111.58	91.08	122.44	118.39	103.41
2003	128.76	121.35	106.11	155.09	128.45	120.74
2004	173.54	132.42	131.06	214.56	148.71	144.86
2005	230.95	131.93	175.05	276.59	180.99	152.83
2006	287.90	139.03	207.08	329.68	195.15	168.94
2007	335.72	146.83	228.64	444.83	213.05	208.79
2008	442.89	143.04	312.45	541.64	225.49	240.21
2009	287.39	126.68	226.86	411.26	199.76	205.88
2010	379.31	143.54	264.25	510.30	240.21	212.44

Year	Lithuania			Estonia		
	value indices of exports	volume indices of exports	unit value indices of exports	value indices of exports	volume indices of exports	unit value indices of exports
2000	100.00	100.00	100.00	100.00	100.00	100.00
2001	120.60	124.95	96.52	104.36	80.89	129.01
2002	147.45	154.94	95.17	113.35	84.01	134.92
2003	196.44	191.78	102.43	146.98	85.27	172.37
2004	261.68	228.23	114.65	154.62	79.82	113.70
2005	332.61	254.37	130.75	201.39	100.95	199.49
2006	398.19	286.31	139.07	252.85	120.81	209.29
2007	482.52	316.46	152.47	287.10	117.02	245.35
2008	663.51	363.26	182.71	323.97	118.53	273.32
2009	462.87	286.20	161.37	235.39	94.19	249.92
2010	586.62	335.06	175.08	302.72	119.97	252.54
	Denmark			Finland		
	value indices of exports	volume indices of exports	unit value indices of exports	value indices of exports	volume indices of exports	unit value indices of exports
2000	100.00	100.00	100.00	100.00	100.00	100.00
2001	100.97	102.11	98.88	93.94	101.21	92.18
2002	118.84	109.25	102.35	97.70	105.81	92.34
2003	129.69	106.60	121.67	115.35	108.84	105.98
2004	150.38	110.69	135.85	133.54	113.92	117.22
2005	166.29	116.45	142.81	142.36	119.07	119.58
2006	180.74	121.11	149.23	167.13	133.59	125.55
2007	201.37	124.53	161.70	195.49	139.31	140.33
2008	227.59	129.16	176.21	208.88	143.96	145.10
2009	182.81	115.55	158.21	136.12	108.17	125.85
2010	190.69	120.59	158.13	152.18	122.64	124.04
	Germany			Sweden		
	value indices of exports	volume indices of exports	unit value indices of exports	value indices of exports	volume indices of exports	unit value indices of exports
2000	100.00	100.00	100.00	100.00	100.00	100.00
2001	103.76	104.85	98.95	86.96	96.51	90.10
2002	111.35	109.74	101.96	93.32	99.52	93.77
2003	136.22	115.13	118.32	117.21	106.27	110.29
2004	165.00	127.98	128.93	141.57	116.87	121.13
2005	176.31	135.94	129.70	150.61	121.38	124.08
2006	201.13	152.48	131.90	169.89	129.89	130.79
2007	239.70	162.94	147.11	193.97	130.92	148.15
2008	261.66	165.09	158.49	210.06	134.74	155.90
2009	202.66	138.15	146.70	150.06	108.91	137.79
2010	230.29	160.44	143.54	181.97	125.78	144.67

Source: *Yearbook of Foreign Trade Statistics of Poland 2011*, Central Statistical Office, Warsaw 2011; *UNCTAD statistical database*, <http://unctadstat.unctad.org> (11.05.2012).

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WOLUMEN I CENA JAKO CZYNNIKI EKSPORTU POLSKI NA TLE KRAJÓW BSR

Streszczenie

W pierwszej części opracowania omówiono syntetycznie nowe relacje cen rynku międzynarodowego, jako czynnik determinujący dynamikę eksportu analizowanej grupy krajów BSR. Po ukazaniu głównych cech ruchu cen przedstawiono również krótką charakterystykę krajów BSR, ze szczególnym zaakcentowaniem zróżnicowania ich potencjału ekonomicznego oraz znaczenia w handlu międzynarodowym.

W drugiej, zasadniczej części dokonano analizy dynamiki wartości poszczególnych krajów BSR, umożliwiającej ocenę wpływu czynników ją określających. Wśród wspomnianych czynników zwrócono uwagę na dwa główne: dynamikę średnich cen eksportu (*unit value*) oraz wolumenu wywozu, starając się ocenić skalę ich wpływu na ukazane wcześniej silne zróżnicowanie dynamiki wartości eksportu poszczególnych krajów BSR. Opracowanie kończy się przedstawieniem kilku syntetycznych konkluzji.

Słowa kluczowe: Region Morza Bałtyckiego, ceny światowe, handel międzynarodowy, ceny a wolumen.