Economic Integration and New Export Opportunities for the Eurasian Economic Union[1]

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At a time when oil prices are low, non-oil exports are important for the members of the Eurasian Economic Union (EEU). This study assesses the effects of the EEU's economic integration on the development of new exports.

EEU countries are far behind global export leaders in several categories according to the revealed comparative advantage, used by the Hausmann-Klinger method to assess national export baskets. Belarus exports the most products, and Russia and especially Armenia and Kazakhstan export notably fewer.

The comparative advantages of Kazakhstan and Russia are concentrated mainly in minerals, chemical products and metals. The export structure for the other EEU countries is more diverse, with a high share of foodstuffs in Armenia and textiles in Belarus. Kazakhstan and, to a greater extent, Belarus and Russia show a rather complex export basket, significantly ahead of Armenia according to this indicator. For the EEU as an independent participant, its trade complexity index is higher than that for its member countries individually.

This article uses the Hausmann-Klinger methodology to identify the future comparative advantages of the EEU countries. These are product groups, towards which a structural transformation of the EEC exports most likely occurs. The research focuses on the integration aspect of possible non-oil exports, seeking to identify goods, including chemicals and textiles, that can eventually provide a comparative advantage for the EEU as a whole. Most of the products considered have a greater economic complexity than those in the EEU's current export basket, so would improve its overall export structure.

Key words: Eurasian Economic Union (EEU); trade integration; comparative advantage; Hausmann-Klinger methodology

Introduction

A clear understanding of the costs and benefits associated with regional trade and economic integration is essential to ensuring the sustainability of regional blocs. At the early stages of the creation of the Customs Union (CU) between Belarus, Kazakhstan and Russia, the economic

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benefits of this enterprise were questioned, and they continue to be. For example, the main reason for doubt in Kazakhstan was the growth of its import tariffs after entry into the CU. In order to implement the Common Customs Tariff in the CU, Kazakhstan almost doubled its average tariff, from 5.3% to 9.5% [Shepoltylo, 2011, p. 88] during the first year of its accession.

In 2015, the Customs Union was transformed into the Eurasian Economic Union (EAEU), and two new members joined it – Armenia and Kyrgyzstan. The new member states of the EAEU have prior international obligations as WTO members: Kyrgyzstan joined the WTO in 1998, and Armenia did so in 2001. In 2014, the simple average import tariff rate under the most favored nation status in Armenia was 3.7%; in Kyrgyzstan this figure is 4.6%. Due to differences between the obligations of Armenia and Kyrgyzstan to the WTO and the tariff schedules of the EAEU, these new members do not apply the full Common Customs Tariff of the EAEU. The accession of Armenia and Kyrgyzstan to the EAEU leads to numerous exceptions to the Common Customs Tariff. Additionally, these new EAEU member states started a procedure to correct their WTO obligations.

Despite the adverse effects of higher import prices being caused by the implementation of the Common Customs Tariff of the EAEU, Armenia and Kyrgyzstan stand to enjoy benefits that will compensate for the costs of being EAEU members. The importance of remittances from the countries of the EAEU to Kyrgyzstan and the benefits associated with the free movement of labor within the EAEU could eclipse the cost of increased import tariffs in terms of importance. Armenia also benefits from the free movement of labor, receiving Russian gas without export duties, and is interested in keeping the military guarantees provided by Russia through the Collective Security Treaty Organization.

In this period of high energy prices, the benefit to Belarus of participation in the CU was evident as high Russian export taxes on oil and gas were waived for it.

Within the framework of the EAEU, Kazakhstan's ambition is to be a safe haven for FDI in the production of goods and services for all five countries in the regional block.

The decrease of energy prices could significantly alter the balance of costs and benefits of being part of the EAEU for all five member states. In our opinion, it is important to understand whether there are other potential benefits (not mentioned above) to the deep integration of the five countries.

This study quantifies EAEU economic integration in terms of the development of new exports outside the Union. The benefits of the integration are defined as additional opportunities that the Union as a whole has in comparison with those of individual countries. We compare prospects for the non-oil exports of individual countries with the potential exports of the EAEU as an integrated single player in the global market for goods and services. The current state of the export basket of the EAEU is determined by summing up the exports of the member states to third countries and disregarding internal trade within the EAEU. The difference between the developed export opportunities of integrated associations and the total capacities of individual countries determines the potential benefits of the integration. It is worth mentioning that the importance of the new exports increases significantly when energy prices are low, and when other sources of benefits from regional integration that have been relevant in a time of high prices are exhausted.

The rest of the paper is organized as follows: in part 2 we describe the data; part 3 contains a description of the methodology; part 4 discusses the results, and is followed by a conclusion.

Data

The following data are used in our calculations.

The UN COMTRADE database (2014) provides data on the value and volume of export flows from the EAEU member states to every country in the world using HS2012 6-digit classification http://comtrade.un.org/data/

The World Bank database contains data on GDP per capita and population figures http://databank.worldbank.org/data/home.aspx

Due to the lack of data on Kyrgyzstan's exports in the COMTRADE database for 2014, it is excluded from the analysis. Thus, the calculations are carried out for four EAEU countries – Armenia, Belarus, Kazakhstan and Russia.

Methodology

Our analysis of the prospects for the economic integration of the EAEU countries is carried out on the basis of the method proposed in a series of articles by Hausmann and Klinger [Hausmann, Klinger, 2006, 2007]. This method suggests a possible evolution of exports for each country. Usually, such evolution moves from technologically simple products, which are usually produced by poor countries, to more sophisticated products, which tend to be sold by rich countries. This process is called a structural transformation.

The method is based on a stylized fact consistently observed in empirical data: the structural transformation of national export baskets usually follows a certain pattern. The crucial observation is that over time, the country starts to export products, which are in some sense "close" to the basic products of the current export basket.

Hausmann and Klinger's notion of the proximity of goods is based on the concept of "product space" they proposed along with Cesar A. Hidalgo, and Albert-László Barabási in 2007 (see detailed description in [Hausmann et al., 2011, pp. 44–55], which attempts to visualize trade networks and spatially depict the comparative advantages and relatedness of products traded in the global market. The product space is a graph consisting of vertices (product groups) and edges whose length reflects the proximity of goods; related products requiring similar production capacity are depicted as being closer together and more central in the trade network.

The theoretical model estimates the profitability of a company from the new goods it produces. Switching to a new product is fundamentally different from the expansion of an existing product and involves certain costs. The costs of the structural transformation from one product to another depends on their relative proximity; in particular, on how the human capital of the employee applies in the new environment and how effective the producer is at re-purposing whatever was used in the production of the old goods.

The production of any good depends on such specific factors as human capital, fixed assets, intermediate goods, regulatory and infrastructure requirements, as well as ownership structure and other factors that are not always observable. The proximity of goods is determined by the aggregate proximity of factors required for their production. Since the space of factors is not always possible to specify explicitly, as not all of its components are observable and measurable, one can use the export basket of a country to guess to what extent it is supplied with all necessary factors. The logic behind this is the idea comes from the Heckscher-Ohlin model, where the comparative advantage of a country depends on factor abundance and demand for factors by production.

As a measure of proximity of two products, Hausmann and Klinger suggest using the frequency of their simultaneous appearance as products of revealed comparative advantage (RCA) in the export baskets of various countries. Moreover, the proximity of goods empirically estimated with the procedure described above is interpreted as proximity of the production factors required for the effective production of these goods. Consequently, if there are some goods which are close to those contained in the export basket of a country and at the same time not contained in it themselves, one can expect that the probability of a structural transformation in the direction of these goods is higher than that it would be for the production of other, more 'distant' products.

The product space is not uniform; it has a densely filled central area where each commodity group has many close neighbors (i.e. many products in which direction a structural transformation is probable) and a much more sparse periphery, where the number of possible opportunities for expedient transformation is more limited.

The degree of proximity between goods reflects variation in specific factors of production, the speed of structural transformation depends on how sparse or, alternately, densely populated the product space is next to the existing country's revealed comparative advantage.

The density of the product space significantly influences the probability of the emergence of new comparative advantages. Some countries are in a sparse area of the product space, and some, on the contrary, in a much more densely-filled area. Structural transformation may slow down or stop in the event of a local price peak, when firms have no incentive to switch to the production of new goods, or if economically more advanced (and therefore more expensive) products are far away in the product space.

To formalize the model, Hausmann and Klinger introduce a few concepts. The presence of revealed comparative advantages in the country with exports of good *i* at time *t* is determined by the Balassa index. It is believed that there is a revealed comparative advantage, if the share of this product in country's exports $xval_{c,i,t} \Big/ \sum_i xval_{c,i,t}$ exceeds the share of this product in global trade $\sum_c xval_{c,i,t} \Big/ \sum_i \sum_c xval_{c,i,t}$, i.e. the Balassa index is greater than 1.

In determining the affinity between any two commodities, Hausmann and Klinger assume that similar products are exported to most countries at the same time. The proximity between the goods *i* and *j* is defined as the smallest of the conditional probabilities of having a revealed comparative advantage in good *i*, if good *j* is exported as well, and vice versa (RCA of good *j*, if good *i* is exported as well):

$$\phi_{i,j,t} = \min\left\{P(x_{i,t} \mid x_{j,t}), P(x_{j,t} \mid x_{i,t})\right\},$$

where $P(x_{i,t} \mid x_{j,t})$ – is the conditional probability of exporting good *i*, provided that good *j* is exported at the time *t*. Conditional probabilities are calculated for all countries in year *t* [Hausmann and Klinger, 2007, p. 16].

The measure of "price", reflecting the attractiveness of transition to the production of new good, is a measure of profitability of goods *i* – $PRODY_{i,t}$. This measure was proposed in [Hausmann and Klinger, 2006, p. 17]. PRODY of good *i* is defined as a weighted sum of GDP per capita in countries exporting good *i*, with weights equal to value of Balassa RCA of good *i*:

$$PRODY_{i,t} = \sum_{c} \left[\frac{xval_{c,i,t} \Big/ \sum_{i} xval_{c,i,t}}{\sum_{c} \left(xval_{c,i,t} \Big/ \sum_{i} xval_{c,i,t} \right)} \times GDPpercapita_{c,t} \right]$$

This measure is used to calculate the level of complexity of the country's export basket, $EXPY_{c,t}$, as the $PRODY_{i,t}$ for each component of exports, weighted on its share in exports:

$$EXPY_{c,t} = \sum_{i} \left(\frac{xval_{c,i,t}}{\sum_{i} xval_{c,i,t}} \times PRODY_{i,t} \right)$$

Hausmann and Klinger's methodology has been used in a variety of studies of countries' structural transformation of revealed comparative advantage with the help of historical data (see [Abdon and Felipe, 2011; Jankowska et al., 2012; Bayudan-Dacuycuy, 2012; Stafforte and Tamberi, 2012]).

There are also a number of studies that examines possible changes of RCA to product groups that are close to existing exports in a probabilistic sense. This transition is named diffusion of revealed comparative advantage (see [Hidalgo et al., 2007, pp. 5–6]).

In order to determine commodity groups, which could be the results of the diffusion process for the EAEU countries, it is necessary to study product groups that are close enough in the product space to the revealed comparative advantages of EAEU countries. To do this, we chose a proximity threshold of 0.7 and noted all the product groups, which are within this distance of the existing goods with RCA. It seems worth mentioning that this is a high level of proximity: as a rule, in other studies authors consider the values within the range 0.55–0.65 as a threshold level (see [Hidalgo et al., 2011, p. 6; Bayudan-Dacuycuy, 2012, p. 4]). To account for the possible structural transformation of the country's exports, a similar procedure was carried out five times. We have also performed the sensitivity analysis of the results to the choice of the number of steps and the proximity threshold.

Results of the Study

Within our study (based on GDP per capita data and COMTRADE export data at the 6-digit product disaggregation for 2014) we consider two variants for the product space, a real-world one and a hypothetical one with the EAEU member countries combined into a single agent of world trade.

For real-world product space, we consider product groups with RCA for the EAEU member countries and with the help of the 5-step diffusion procedure define the groups where RCA could appear due to the structural transformation of national exports in the future.

Then the similar diffusion procedure is applied to the hypothetic product space, that occurs if the EAEU is considered as a single agent of foreign trade. Thus we obtain five sets of perspective goods: four sets for the countries included in the research (Armenia, Belarus, Kazakhstan, and Russia) and one for their hypothetical union (EAEU).

Finally we compare the prospective goods for the four national export baskets with those for the EAEU, focusing on those product groups that, while not offering RCA prospects for

each separate country of the union, could benefit the EAEU in terms of their RCA as a single agent of foreign trade.

At the first step of our study, we identify product groups for which the EAEU countries had RCA in 2014, i.e. whose contribution to national exports was higher than the overall contribution of this product to global trade. According to the results obtained, the EAEU countries significantly lag the world export leaders in terms of the number of product groups with RCA. The largest number of products with comparative advantage is observed in the export basket of Belarus – 621 six-digit commodity groups, while in case of Russia and especially Armenia and Kazakhstan, this number is notably less – 377, 230 and 193 product groups respectively. As can be seen from the data presented in Table 1, the number of product groups with RCA in Armenia and Kazakhstan are almost an order of magnitude less than the respective figures for such world trade leaders as China and the United States.

To get some insight about the economic complexity of the national export baskets of the EAEU countries, one can use EXPY, the index of the sophistication of exports (see the definition in the Methodology section). Our estimates suggest that Belarus, Kazakhstan and Russia demonstrate relatively high values of economic complexity of national export baskets, significantly ahead of Armenia in this indicator. In the case of international comparisons, the complexity of the exports of the EAEU countries is close to China's level (around USD 20,000–22,000), albeit far behind the successful exporters of high-tech products, specifically the USA (over USD 26,000).

It is also worth mentioning that the complexity level of exports of the EAEU as an independent market engaged in foreign trade is higher than that of the separate member countries. This indicates that the EAEU members' exports to third countries are more sophisticated than exports within the Union's borders.

Table 1: Characteristics of products with revealed comparative advantage for the EAEU member countries, China and the US

Index	Armenia	Belarus	Kazakhstan	Russia	EAEU	China	USA
Number of product groups with revealed comparative advantage (RCA)	230	621	193	377	325	2196	1749
Export complexity (EXPY), USD	12345	20217	19383	21296	22625	22720	26560

Source: Authors' calculations on UN COMTRADE data.

If we talk about the involvement of member countries in trade within the EAEU, the country which is most dependent on its partners' markets is Belarus, with 45% of its exports sent to EAEU countries (primarily Russia). Armenia sends 22% of its exports to its EAEU partners. The exports of oil-producing Kazakhstan and Russia are much more likely to be sent to countries outside the EAEU; these countries' trade with other EAEU members accounted only for 8% and 7% of exports, respectively.

With regard to the range of export baskets of the member countries, it may be noted that almost a third of all 6-digit commodities exported from Belarus are completely targeted at the EAEU countries. For other member countries, the share of goods traded exclusively within the union is lower, about 10% for Russia and Armenia, and 22% for Kazakhstan. Over 80% of the types of products Belarus exports are sent to fellow EAEU states more often than not (for these

products, 50%+ of exports are to EAEU members). More than 55% of the types of products Russia exports are primarily sent to its EAEU partners. Some integration figures are shown in Table 2.

Table 2: Indicators of economic integration within the EAEU

Country	The share of trade within the union in total exports, %	The share of goods exported only to EAEU countries EAEU, %	The share of export goods predominantly (50%+) bought within the EAEU, %
Armenia	22	10	23
Belarus	45	31	81
Kazakhstan	8	22	49
Russia	7	10	56

Source: Authors' calculations on UN COMTRADE data.

Products with Revealed Comparative Advantage

An analysis of the sectoral structure of comparative advantages suggests that Kazakhstan and Russia's export benefits are concentrated mainly in the production of mineral and chemical products as well as metals, while the RCA structure of other member countries is more diverse, with a high share of food products in Armenia and textiles in Belarus (Fig. 1). It should also be noted that Belarus has more goods with revealed comparative advantage in the group "machinery and electronics" (about 80 product groups).

For the EAEU as a consolidated participant in global trade (net of internal trade flows between the countries of the union), the sectoral distribution of RCA reflects those of Russia and Kazakhstan, with a predominance of metal production as well as chemical and mineral products.

Furthermore, we estimate how close, or, alternately, how far the effective part of the export basket of the EAEU countries is from the rest of the commodities (we call the product groups without RCA the "opportunity set"). In other words, we try to understand the likelihood of the structural transformation of exports from current goods with RCA towards those that are currently not produced efficiently. This can be done using the indicator "the distance to the current export basket", which is calculated as the inverse of average proximity between a product from the opportunity set and all existing products with RCA. This indicator measures how close in terms of the Hausmann-Klinger method products are from the opportunity set to the current effective part of the national export basket.

The diagram below presents the opportunity spaces for each of the four countries included in the research (Fig. 2). For each product group from the opportunity set, the dependence is shown between the distance to the most effective part of the country's export basket and the relative complexity of this product (the complexity is defined as the logarithm of the product complexity index (PRODY), normalized to the value of the total complexity of the effective part of the national export basket (EXPY)). Thus, more complicated products (whose complexity is greater than the average complexity of the effective part of the national export basket) are located above zero on the vertical axis. In terms of another variable, distance, the closer the goods are to the vertical axis, the more likely it is to expect their appearance as a commodity of comparative advantage in the export basket of the country.

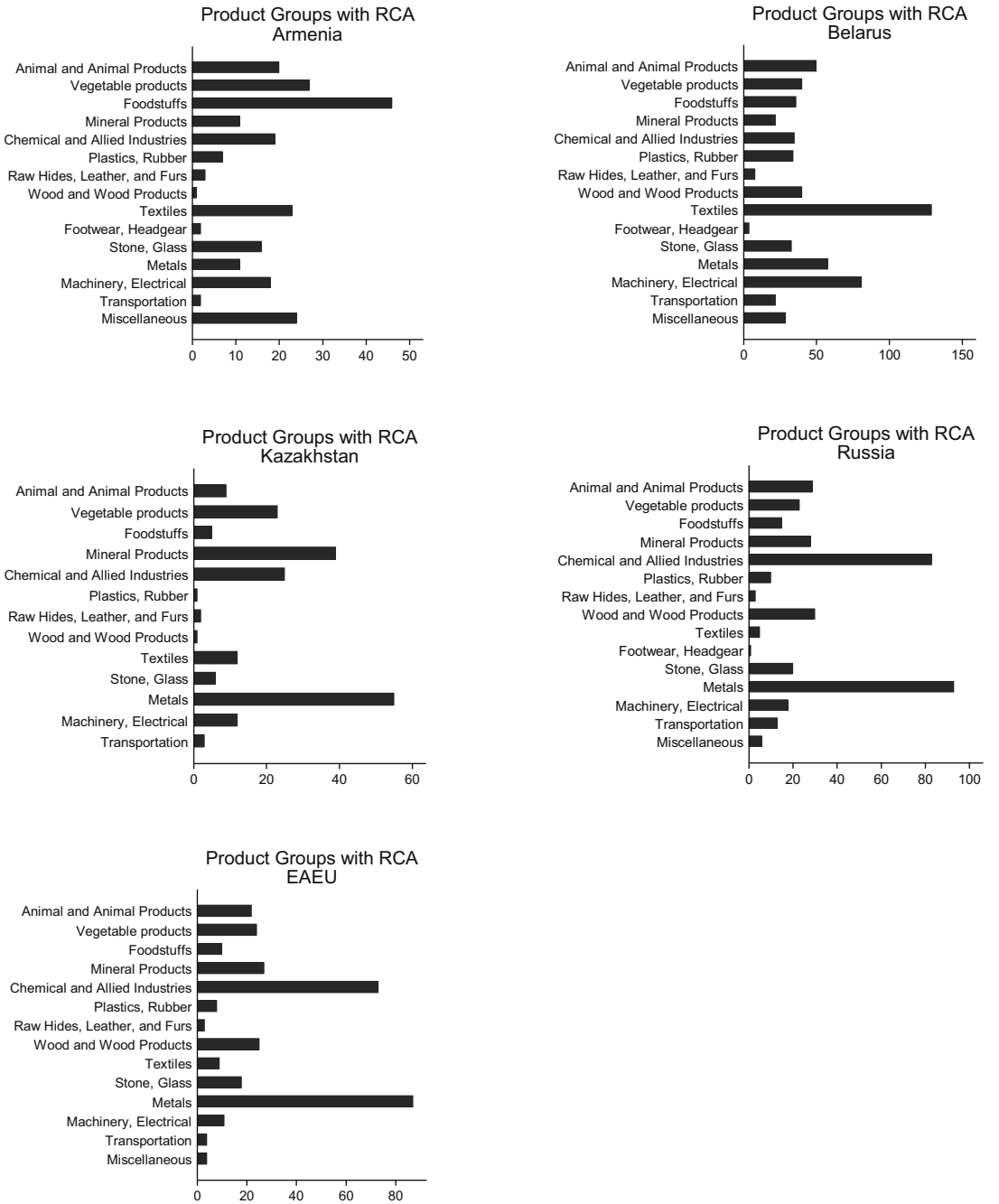


Figure 1: Product groups with revealed comparative advantage (RCA) for the member countries and the EAEU as a single agent of foreign trade

Source: Authors' calculations on UN COMTRADE data.

Among the countries of the EAEU, the closest distance from the opportunity set of products to the most effective part of the actual export basket is observed for Belarus (6.0). For Russia, Armenia and especially Kazakhstan, this distance is significantly higher: 12.7, 14.1 and

24.3, respectively. Thus, we can conclude that the high diversification of the export basket of Belarus, as well as the favorable location of its RCA groups in the central, densely filled part of the product space, facilitates the future structural transformation of the country's exports in comparison with Armenia and Russia. At the same time, the prospects of a successful structural transformation of Kazakhstan's export are small. It is also worth mentioning that some upward shift of the opportunity set for Armenia reflects the relatively lower complexity of the current effective part of the national export basket.

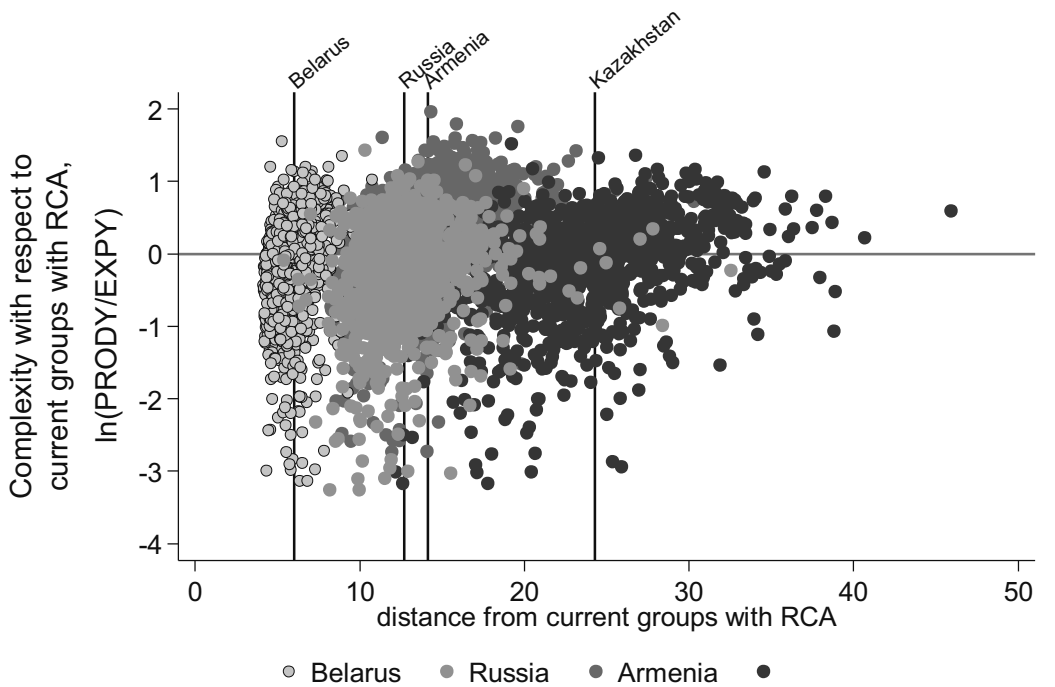


Figure 2: The relative complexity of the goods without RCA, depending on the measure of the probability of their appearance in the effective part of the national export basket for EAEU countries, 2014

Source: Authors' calculations on UN COMTRADE data.

Expected Groups with RCA

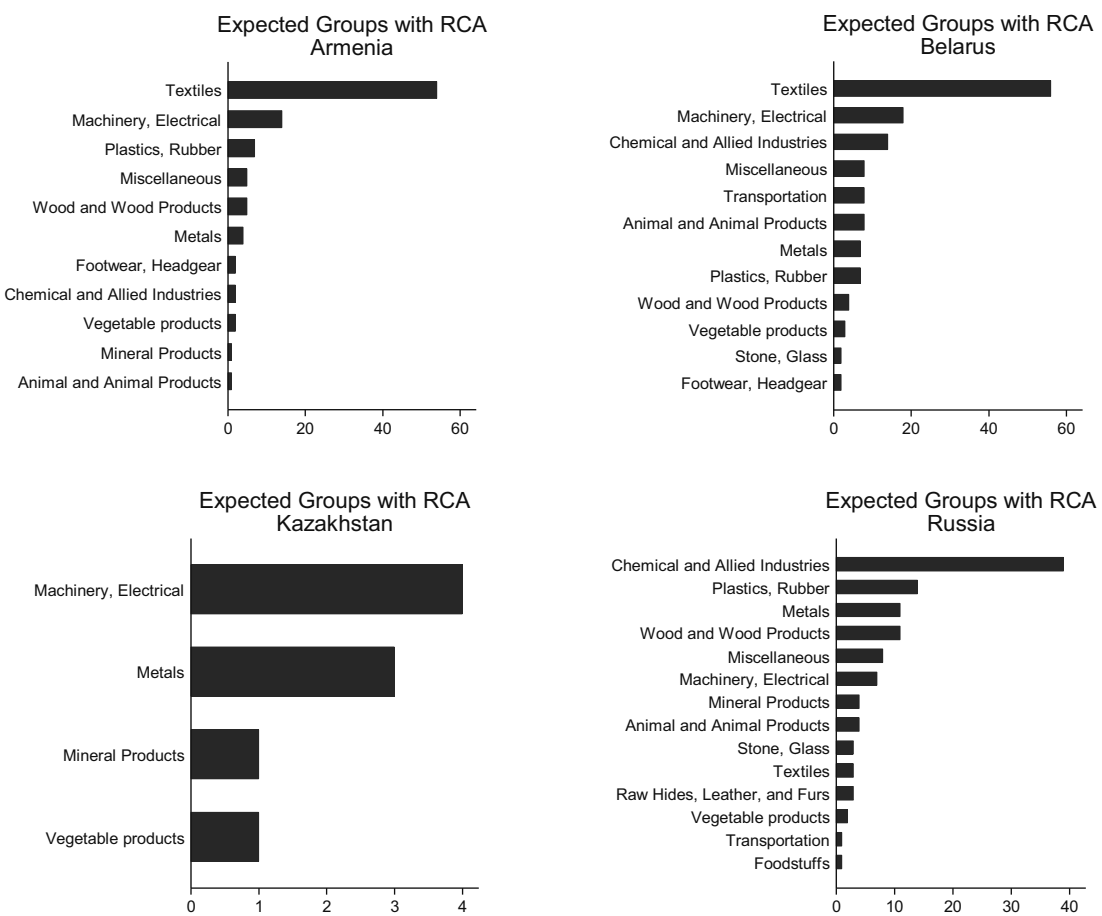
During the analysis for each country we generate a list of product groups which are close to the current products and possess revealed comparative advantage (we also call them expected product groups with RCA). These items were defined with the help of a 5-step diffusion procedure with a proximity threshold equal 0.7 at each step. The probability of appearance in the export basket of new products with revealed comparative advantage depends on how easily the country's current capacity can be adapted to the production of new goods. Most expected products for Armenia and Belarus can be categorized as light industry, and Russia's production capacity could allow it to excel in the chemical industry as well as the production of plastics and metals (Fig. 3). Note that the number of such groups for Kazakhstan is significantly less (9 as compared to 97 for Armenia, 137 for Belarus, and 111 for Russia), and their relationship with current products with RCA is weaker. This can be explained by the fact that current goods with RCA

in the export basket of Kazakhstan belong to the minerals and metals group, and are mainly located on the periphery of the product space, where the density of groups falls significantly.

With regard to the EAEU's prospects as a consolidated participant in global trade, the sectoral structure of the expected product groups with RCA resembles Russia, as in the case of current products with RCA. However, there would be a EAEU predominance of chemical products and markedly lower share of plastics and machinery products; one notable exception is that the expected RCA of light industry would grow significantly. One can assume that it is due to a large density within the textile and clothing cluster of the product space, which includes many products from the effective parts of the Armenian and Belorussian export baskets.

In order to evaluate the effect of economic integration in the sectoral structure of expected groups with RCA for the EAEU as a consolidated participant in global trade, we have focused on the products that are not expected products with RCA for any of the EAEU countries separately.

Figure 4 shows the distribution of products, from the perspective of the EAEU as a consolidated participant of foreign trade. The white areas of the bars on the chart correspond to the groups whose transition to the status of the products with RCA is expected for the union as a whole, the green – only for Belarus, the blue – only for Russia and the dark blue – for several countries within the EAEU. The most interesting, in terms of cooperation, are white areas corresponding to the 6-digit commodity groups. There you find anticipated products with RCA only for the EAEU in general, and not for any of the member countries separately.



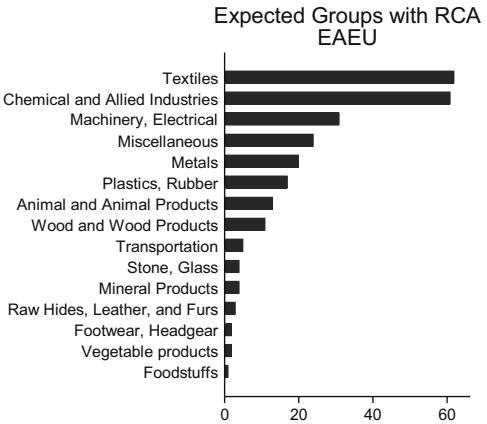


Figure 3: Sectoral structure of prospective product groups for EAEU countries' exports

Source: Authors' calculations on UN COMTRADE data.

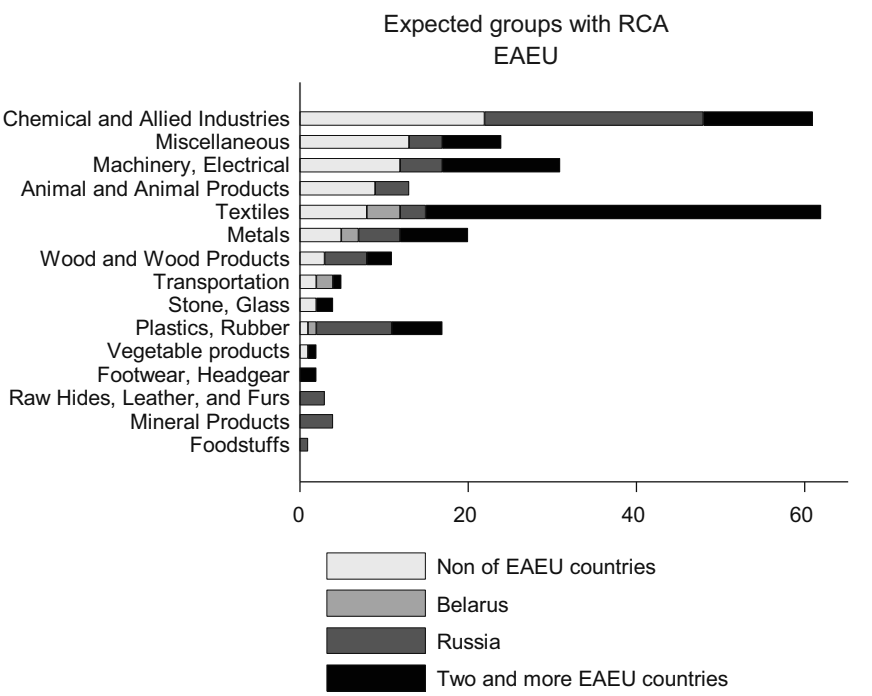


Figure 4: The sectoral structure of expected groups with RCA for the EAEU as a consolidated participant in foreign trade

Source: Authors' calculations on UN COMTRADE data.

The total number of expected product groups with RCA is 78. Most often they are related to chemicals (22 products), other products (13 products), as well as machinery and engineering (12 items). Most of these products (62 out of 78) have greater economic complexity than the average complexity of the export basket of the EAEU, and therefore their export growth will

improve the overall export structure. Groups of goods selected by the diffusion procedure are presented in the table below (Table 3).

Table 3: Expected product groups with RCA only for the EAEU as a whole (i.e., that are not expected for any of the EAEU countries individually)

Field	HS4 (2012)		Balassa index	PRODY	World trade, bln USD, 2014
Wood and Wood Products	481830	Tablecloths and serviettes, of paper pulp, paper, cellulose wadding or webs of cellulose fiber	0.0153	19026	1.21
Wood and Wood Products	482040	Manifold business forms and interleaved carbon sets made of paper or paperboard; albums for samples or for collections and book covers made of paper or paperboard	0.0207	19026	0.11
Wood and Wood Products	440890	Other articles of wood, sawn lengthwise, sliced or peeled, of a thickness not exceeding 6 mm, including planed, sanded, spliced and end-jointed	0.4020	19026	1.86
Animal and Animal Products	30473	Frozen fillets of pollock (Pollachius virens)	0.0092	19026	0.18
Animal and Animal Products	30561	Herrings (Clupea harengus, Clupea pallasii), salted but not dried or smoked and fish in brine, other than edible fish offal	0.9429	19026	0.03
Animal and Animal Products	20311	Pork, fresh or chilled, carcasses and half-carcasses	0.0000	19026	2.63
Animal and Animal Products	30224	Flat fish Turbots (Psetta maxima, Scophthalmidae), fresh or chilled, excluding fish fillets and other fish meat of heading	0.0015	19026	0.13
Animal and Animal Products	40310	Yogurt, including concentrated, containing added sugar or other sweeteners as well as flavored or containing added fruit, nuts or cocoa	0.1384	19026	2.35
Stone, Glass	700800	Multiple-walled insulating units of glass	0.0283	19026	1.56
Stone, Glass	711011	Platinum, unwrought or in powder form	0.1450	19026	8.83
Machinery, Electrical	846711	Hand tools, pneumatic tools, and rotary-type tools (including combined rotary-percussion)	0.0295	19026	0.9
Machinery, Electrical	851521	Machines and apparatuses for the resistance welding of metal, fully or partly automatic	0.0455	19026	1.88
Machinery, Electrical	847981	Other machines and mechanical appliances, for treating metal, including electric wire coil-winders	0.1195	19026	1.76
Machinery, Electrical	850730	Electric accumulators, as well as separators, whether or not rectangular (including square), nickel-cadmium	0.2099	19026	0.96
Machinery, Electrical	844530	Textile doubling or twisting machines	0.0019	19026	0.23
Machinery, Electrical	846593	Grinding, sanding or polishing machines	0,0268	19026	0,29
Machinery, Electrical	842129	Other filtering or purifying machinery and apparatuses for liquids	0,0665	19026	8,57
Machinery, Electrical	842420	Spray guns and similar appliances	0,0197	19026	1,71
Machinery, Electrical	844842	Reeds for weaving machines (looms), heddles and heddle-frames	0.0343	19026	0,06

Field	HS4 (2012)		Balassa index	PRODY	World trade, bln USD, 2014
Machinery, Electrical	840310	Central heating boilers	0.0425	19026	5.09
Machinery, Electrical	841360	Other rotary positive displacement pumps for liquids, whether or not fitted with a measuring device	0.0808	19026	6.35
Machinery, Electrical	842511	Pulley tackle and hoists other than skip hoists or hoists of a kind used for raising vehicles, powered by electric motors	0.0392	19026	1
Metals	741011	Foil (whether or not printed or backed with paper, paperboard, plastics or similar backing materials) of a thickness not exceeding 0.15 mm, of refined copper	0.0574	19026	1.45
Metals	722100	Bars and rods, hot-rolled, in irregularly wound coils, of stainless steel.	0.0005	19026	1.9
Metals	722720	Bars and rods, hot-rolled, in irregularly wound coils, of silico-manganese steel	0.5832	19026	0.44
Metals	721250	Flat-rolled products of iron or non-alloy steel, of a width of less than 600 mm, otherwise plated or coated	0.0013	19026	0.57
Metals	820340	Pipe-cutters, bolt croppers, perforating punches and similar tools	0.0097	19026	0.18
Plastics, Rubbers	390740	Polycarbonates	0.0577	19026	7.75
Vegetable products	120510	Low erucic acid rape or colza seeds	0.3277	19026	10
Miscellaneous	900319	Frames and mountings for spectacles, goggles or the like, and parts thereof, of other materials	0.0032	19026	2.03
Miscellaneous	902720	Chromatographs and electrophoresis instruments	0.0141	19026	1.84
Miscellaneous	950440	Table or parlor games: playing cards	0.0018	19026	0.76
Miscellaneous	900653	Other cameras, for 35mm roll film	0.0112	19026	0.06
Miscellaneous	901850	Other ophthalmic instruments and appliances	0.0317	19026	4.03
Miscellaneous	902990	Revolution counters, production counters, taximeters, mileometers, pedometers and the like; speed indicators and tachometers; stroboscopes: parts and accessories	0.0303	19026	1.54
Miscellaneous	902519	Thermometers and pyrometers, not combined with other instruments, other	0.0718	19026	2.4
Miscellaneous	902230	X-ray tubes	0.2294	19026	1,57
Miscellaneous	903082	Other instruments and apparatuses for measuring or checking semiconductor wafers or devices	0.0007	19026	3.09
Miscellaneous	901390	Parts and accessories for liquid crystal devices; lasers, other than laser diodes; other optical appliances and instruments	0.1101	19026	5.76
Miscellaneous	940600	Prefabricated buildings	0.2133	19026	8.98
Miscellaneous	950639	Golf clubs and other golf equipment	0.0000	19026	1.11
Miscellaneous	940360	Other wooden furniture	0.0844	19026	26.22
Textiles	540744	Other printed woven fabrics, containing 85 % or more by weight of filaments of nylon or other polyamides	0.3462	19026	0.15

Field	HS4 (2012)		Balassa index	PRODY	World trade, bln USD, 2014
Textiles	610451	Women's or girls' skirts and divided skirts of wool or fine animal hair	0.0080	19026	0.05
Textiles	630259	Other table linen of other textile materials	0.8066	19026	0.14
Textiles	551642	Dyed woven fabrics of artificial staple fiber, containing less than 85 % by weight of artificial staple fiber, mixed mainly or solely with cotton	0.0009	19026	0.06
Textiles	620312	Men's or boys' suits of synthetic fiber	0.0075	19026	0.77
Textiles	620899	Women's or girls' other clothing articles of other textile materials	0.0182	19026	0.2
Textiles	620590	Men's or boys' shirts of other textile materials	0.0048	19026	0.74
Textiles	610690	Women's or girls' blouses, shirts and shirt-blouses, knitted or crocheted of other textile materials	0.0042	19026	0.52
Transportation	871639	Other trailers and semi-trailers for the transport of goods: other	0.1039	19026	8.86
Transportation	860730	Hooks and other coupling devices, buffers, and parts thereof for of railway or tramway locomotives or rolling-stock	0.3129	19026	0.85
Chemical and Allied Industries	381511	Supported catalysts with nickel or nickel compounds as the active substance	0.0012	19026	1.07
Chemical and Allied Industries	381519	Other supported catalysts	0.3505	19026	4.4
Chemical and Allied Industries	292219	Other amino-alcohols, other than those containing more than one kind of oxygen function, their ethers and esters; salts thereof	0.0987	19026	2.28
Chemical and Allied Industries	291229	Other cyclic aldehydes without other oxygen functions	0.0000	19026	0.45
Chemical and Allied Industries	292149	Other aromatic monoamines and their derivatives; salts thereof	0.0001	19026	1.04
Chemical and Allied Industries	382430	Non-agglomerated metal carbides mixed together or with metallic binders	0.0142	19026	0.7
Chemical and Allied Industries	293321	Hydantoin and its derivatives	0.0000	19026	0.17
Chemical and Allied Industries	291429	Other cyclanic, cyclenic or cycloterpenic ketones without other oxygen function	0.0005	19026	0.82
Chemical and Allied Industries	290539	Other diols	0.0000	19026	1.72
Chemical and Allied Industries	292529	Other imines and their derivatives; salts thereof	0.1325	19026	0.73
Chemical and Allied Industries	290522	Acyclic terpene alcohols	0.0017	19026	0.26
Chemical and Allied Industries	291639	Other aromatic monocarboxylic acids, their anhydrides, halides, peroxides, peroxyacids and their derivatives	0.0002	19026	0.72
Chemical and Allied Industries	292990	Other compounds with other nitrogen function	0.1182	19026	0.62
Chemical and Allied Industries	290920	Cyclanic, cyclenic or cycloterpenic ethers and their halogenated, sulphonated, nitrated or nitrosated derivatives	0.0003	19026	0.08

Field	HS4 (2012)		Balassa index	PRODY	World trade, bln USD, 2014
Chemical and Allied Industries	291469	Other quinones	0.0003	19026	0.4
Chemical and Allied Industries	293369	Other compounds containing an unfused triazine ring (whether or not hydrogenated) in the structure	0.3902	19026	1.54
Chemical and Allied Industries	290899	Other halogenated, sulphonated, nitrated or nitrosated derivatives of phenols or phenol-alcohols	0.0013	19026	0.12
Chemical and Allied Industries	290329	Other unsaturated chlorinated derivatives of acyclic hydrocarbons	0.0000	19026	0.12
Chemical and Allied Industries	291539	Other esters of acetic acid	0.0865	19026	1.55
Chemical and Allied Industries	330290	Other preparations based on odoriferous substances, of a kind used for the manufacture of beverages	0.0077	19026	7.82
Chemical and Allied Industries	291100	Acetals and hemiacetals, whether or not with other oxygen functions, and their halogenated, sulphonated, nitrated or nitrosated derivatives	0.0020	19026	0.11
Chemical and Allied Industries	291823	Other esters of salicylic acid and their salts	0.0001	19026	0.21

Note. * – 2015, exports of this group has increased significantly, reaching USD 2 mln (for comparison, in 2014 – USD 5,000)

Source: Authors' calculations on UN COMTRADE data.

Conclusion

According to the results of our research, the EAEU member countries are far behind the world export leaders in terms of number of product groups with revealed comparative advantage (RCA), which within the Hausmann-Klinger method are interpreted as the most effective part of the national export basket. The largest number of products with comparative advantage is observed in the export basket of Belarus, while in the case of Russia and especially Armenia and Kazakhstan, their number is notably less (however, it must be kept in mind that over 4/5 of the products Belarus exports are shipped predominantly (50% and more) to Russia). The export baskets of Belarus and Russia are highly complex, as measured by the EXPY (export sophistication) index, followed by Kazakhstan, which, in turn, is significantly ahead of Armenia in terms of this indicator. EAEUIf seen as a consolidated participant in global trade, the EAEU's complexity index is higher than that of member countries separately. The comparative advantages of exports from Kazakhstan and Russia are concentrated mainly in the production of minerals, chemical products, and metals, while the export structure of the effective part of exports for other member countries is more diverse, with a high share of foodstuffs in Armenia and textiles in Belarus.

Within the analysis we defined a list of product groups, within which one can expect the occurrence of revealed comparative advantage in the future. According to the results, groups in Armenia and Belarus groups which should expect RCA are mostly related to light industry, and Russia should expect RCA from chemical production and related industries. For Kazakhstan, the number of potential comparative advantages is much smaller due to the peculiarities of the sectoral structure of the current effective part of the national export basket: these goods (mainly

minerals and metals) are located on the periphery of the world product space, where the density of the product groups significantly drops, casting doubt on the success of structural transformation in the future.

In the sectoral structure of the EAEU as a consolidated participant in foreign trade, chemical products and light industry products stand to offer the best RCA. The marked increase in the importance of textiles and clothing for the EAEU can be attributed to the development of this sector in Armenia and Belarus, as well as the high density of the textile cluster in the world product space, where the current products with RCA are located in the tight environment of other product groups in the sector.

To estimate the possible effect of economic integration within the EAEU, one must consider commodities that are not promising in terms of comparative advantage for any of the EAEU countries individually, but are nonetheless promising for the EAEU as a consolidated participant in global trade. According to our calculations, most often such goods belong to the chemical industry (22 products), other products (13 products), as well as machinery and engineering (12 items). Most of these products (62 out of 78) have greater economic complexity than that of the current EAEU export basket, so one can assume that their export growth will improve the overall export structure of the EAEU countries.

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