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Long-Term Comparative Advantages of the Eurasian Economic Union Member States in International Trade

Abstract

On 1st January 2015 the Eurasian Economic Union (EAEU) – a new integration block comprising initially Belarus, Kazakhstan, and Russia, and later that year also Armenia and Kyrgyzstan – appeared on the world map. This paper endeavors to identify the EAEU countries' long-term international comparative advantages within four basic groups of goods according to the OECD classification of manufacturing industries based on technology intensity. The analysis, using B. Balassa's RCA methodology and covering the years 2000–2014, indicates that these countries lack competitiveness, with none of them possessing any RCAs in the high-technology category whereas in the medium-high-technology category – only Belarus. In contrast, all the EAEU countries fared the best in the medium-low-technology category, which is mostly attributable to the resources-based character of their economies. Surprisingly, dramatically low international competitiveness was recorded by Kazakhstan and Russia.

Keywords: international competitiveness, comparative advantages, Eurasian Economic Union
JEL: F14, O57, P45

Introduction

At the beginning of 2015, a new regional integration bloc – the Eurasian Economic Union (EAEU) – made its debut on the contemporary world map. Created at the initiative and under the aegis of Russia on the basis of the previously existing Customs Union of Belarus, Kazakhstan and Russia, as at now (August 2017) it comprises five member states in total. Apart from the EAEU founding states listed above, these are also Armenia (formally since January 2nd 2015) and Kyrgyzstan (formally since August 6th 2015). In Russia's view, the EAEU is to be the next, and this time long-term successful, form of economic cooperation in the post-Soviet area, which will effectively stop potential aspirations of the other four EAEU member states to integrate with the EU while keeping in check the growing influence of China in the region [Kirkham, 2016; Roberts, Moshes, 2016; Popescu, 2014]. What is more, the assumption goes that the role and economic importance of the EAEU in the world economy will gradually rise as a consequence of increasingly tighter cooperation between its member states, which fits in very well with Russia's growing imperial aspirations not only in the geopolitical but also in the economic arena [Molchanov, 2015; Starr, Cornell, 2014]. However, this process is unlikely to be quick and smooth for a number of reasons, both endogenous that is originating from within the EAEU member states themselves (as observed by Libman [2015], who stresses a lack of any stable pragmatic foundations for deeper cooperation within the bloc) and exogenous, that is coming from the world economy such as, amongst others, connected with their high vulnerability (sensitivity) to cyclical developments on international commodity markets (as noted by Boguslavska [2015]). At the same time, international interest in the EAEU is on the rise not only among politicians or business practitioners but also among researchers, as evidenced by the growing number of scientific publications on this integration project [see e.g., Vinokurov, 2017; Hartwell 2016; Khitakhunov, Mukhamediyev, Pomfret, 2016; Mussatayev, Kaidarova, Mekebaeva, 2015; Tarr, 2015; Lagutina, 2014; Roberts et al., 2014; Vymyatina, Antonova, 2014; Dragneva, Wolczuk, 2013].

In light of the above, the crucial question naturally arises as to the real position of this bloc (as diverse as it is when looking at the economic potential of its member states separately, which is pointed out by, amongst others, Bikár and Kmeťko [2015]) in the contemporary world economy, the acid test for which is the competitiveness of the individual EAEU member states' economies in international trade. It is, thus, the purpose of this paper to conduct a synthetic analysis of these countries' foreign trade in the years 2000–2014 in order to establish the actual competitiveness of their economies as well as to identify any comparative advantages possessed by them within the basic groups of goods in line with the OECD classification of manufacturing industries based on their technology intensity.

Additionally, it should be noted here that despite the fact that some research has already been conducted on the competitiveness of some selected aspects of the EAEU member states' economies [see e.g., Falkowski, 2017a; Ustyuzhanina, 2016; Amirbekova, Madiyarova, 2015; Fal'tsman, 2014; Saubanov, Bagautdinova, Maklakova, 2014; Mamadiev, 2013], the review of international economic literature has revealed an alarming lack of comprehensive comparative studies as to the competitiveness and competitive advantages of all the EAEU member states in international trade within any longer time horizons and using uniform methodology. Therefore, this paper is also an attempt at filling in this important research gap.

Moreover, another big advantage of this paper is likely to be its comparative approach to the analysis of international competitiveness of all five EAEU member states in a relatively long period of time (comprising the years 2000–2014) conducted using the afore-mentioned OECD classification of manufacturing industries based on their technology intensity [OECD, 2011; Hatzichronoglou, 1997], which allows for the comparison of achieved results and for drawing conclusions.

This paper puts forth the thesis that the competitiveness of Eurasian Economic Union member states in international trade differs significantly among them, albeit it is generally low, whereas their comparative advantages can only be detected in the medium-low and low technology categories relying heavily on their respective natural resource bases.

Literature Review

The issue of international trade competitiveness of Eurasian Economic Union member states as the integration bloc regarded in a comprehensive comparative approach is virtually non-existent in the international economic literature (exceptions being few and far between). This can be mostly put down to the EAEU's relative novelty. The review of international literature has revealed that papers devoted to competitiveness of the individual EAEU member states dominate, with main focus on Russia and Kazakhstan. Only in a handful of them can references to the competitiveness of the entire bloc be found. For instance, Drobot [2016] analyses the EAEU's potential as a whole by calculating ratios of foreign trade dynamics and by comparing key macroeconomic indices to determine the competitiveness of Russia and the other EAEU member states, though mostly focusing on Russian economy. The author concludes that Russian economy needs diversification and a shift from export of resources to sales of final products is required while stimulating import substitution. Incidentally, she also remarks that a unified economic security strategy for the EAEU should be developed.

In turn, Hartwell [2016], who in his paper identifies – using SWOT analysis of present and possible future EAEU member states – threats and opportunities for the improvement

of their economies' competitiveness in the coming years, stresses the importance of innovation barriers present in the EAEU economies, which seem to be the key factor significantly lowering their international trade competitiveness at present and in future. By eliminating such impediments to international competitiveness of the EAEU economies while simultaneously leveraging the synergy effects between them resulting from their economic integration, new internationally competitive value chains could possibly be built in some industries [Ustyuzhanina, 2016].

Coming back to Russia, its current competitive profile in the world economy, predominantly and almost entirely based on natural resources (especially the energy ones), which leads to the so-called "Dutch disease", is the subject of numerous papers [see: Fetisov, 2014; Dobrynskaya, Turkisch, 2010; Ahrend, 2005; Aslund, 2005, etc.]. According to Tabata [2006], who using, amongst others, the RCA method measured how comparative advantages of Russia's major export and import commodities were changing in the years 1994–2005, falling competitiveness in meat, plastics and vehicle production (and growing imports thereof) as well as stagnation in the machinery sectors need to be balanced out by rising competitiveness of Russia's crude and natural gas exports in the first place and, to a lesser degree, those of arms, some base metals, roundwood and fertilizers.

A detailed analysis of Russia's international trade competitiveness is conducted by Falkowski [2014], who shows that – bar just a few exceptions in the medium-low-technology goods in some years – Russia did not possess any comparative advantages in the years 1996–2010. What is more, the country's competitiveness in the groups of high-technology, medium-high-technology and low-technology goods dramatically decreased in that period, whereas the only groups of goods in which Russia recorded some comparative advantages in international markets in the same period were: non-ferrous metals (mostly copper, tin, zinc, aluminum), refined petroleum products, non-metallic mineral products, ferrous metals – all of which belong to the medium-low-technology category – and, albeit rarely, aircraft and spacecraft, from the high-technology category. Pharmaceuticals, computing and office machinery, motor vehicles and R&D apparatus, as well as textiles and textile products were among the most uncompetitive Russian goods in international markets in the analyzed period.

To similar conclusions, i.e. the alarming – from the point of view of the actual place of Russian economy in contemporary international trade – nature of low competitiveness of Russian high-tech industrial companies, came, amongst others, Garbuzova [2015], Connoly [2008], Cooper [2006], while Kuzin specifically stated that *"the state of Russian industry and its competitiveness causes serious anxiety"* [2007, p. 125].

Given these specifics of Russian economy and its competitive profile e.g., Bolshakov [2016] observes that, in order to increase the country's competitiveness, Russian authorities should put in place innovative measures aimed to create "competitiveness poles" which would allow for Russian resources (not only the mineral but also, more importantly, the human ones) to be used more effectively in future. Also, Udaltsova and Mikhelashvili [2016]

stress the importance of raising the efficiency of the national innovation system already implemented in Russia as a key factor to improving the competitiveness of its economy. And finally, according to Eletskikh [2015], the rate of creation of original cutting-edge innovative technologies and their export should be increased and funds should be raised for developing innovative businesses.

Like with Russia, in the case of Kazakhstan – the second largest economy in the Eurasian Economic Union – its dependence on the country's natural resource base is noticed [see e.g., Falkowski, 2017c; Farra, Burgio, Cernoy, 2011; Matveev, 2011]. For instance, Macerinskiene and Sakhanova [2011] state that, apart from its stable macroeconomic situation, Kazakhstan's main competitive advantage is its vast base of mineral resources; as the key weaknesses of Kazakh economy, which adversely affect its international competitiveness, the same authors identify its low innovativeness and pervasive corruption.

As for Kazakhstan's international competitiveness, what needs to be stressed is that, as observed by e.g., Khatibi [2008], despite some comparative advantages possessed by the country in the energy and mineral sectors (as, significantly, mineral fuels account for more than 80% of Kazakhstan's exports), its competitiveness has generally suffered a significant blow in the recent years, also with respect to the goods from these sectors. This is confirmed by Amirbekova and Madiyarova [2015]. The reasons seem to be the general rise in competitiveness in the increasingly globalized and internationalized contemporary world economy but also unfavorable price dynamics in the international energy resource markets [Alzhanova, 2013].

Concerning Kazakhstan's current competitive or, more broadly, economic profile, as stressed by Nurmukhanova [2008], the key decision for its future development will be the strategic choice between the resource-based vs. the innovative and technological orientation of its economy. Along the same line goes Danabayeva [2013], who observes that a major challenge still faced by Kazakhstan, a country with vast natural resources, is transformation of its economy into a knowledge-based one. Moreover, she also points out that taking the strategic course on industrial-innovative development of the country is a condition precedent for elaborating and then implementing new scientific ideas and technologies. This process of necessary transformation is currently underway in Kazakhstan, although it is progressing relatively slowly [Bhuiyan, 2011].

The body of research into the international trade competitiveness of the third largest EAEU economy, i.e. Belarus, which was published in English and is widely available to researchers worldwide, is very limited. The situation is worse still in the case of the remaining two EAEU member states, Armenia and Kyrgyzstan. An interesting study into Belarus' competitiveness in international trade was conducted by Freinkman, Bakanova and Sidarenka [2010], which shows that Belarus' comparative advantages have been decreasing for more than a decade or so. Using the RCA method, they found that the country's comparative advantages have moved away from labor- and capital-intensive goods towards natural resources and petroleum, which impedes job creation and productivity

improvements. Moreover, what has hardly changed is the so-called "export sophistication", a feature of more developed countries, meaning that they are able to export a wider range of higher value goods. This would indicate that the shift has been towards goods with lower technological content. Alarmingly, Belarus also seems to be losing its share in markets with higher export sophistication, namely Russia.

Similar conclusions were reached also by Falkowski [2017a], who found that Belarus' highest comparative advantages were with respect to trade in labor-intensive low-technology goods (mainly, wood and furniture, textiles and textile products, as well as food products, beverages and tobacco – the reasons for the success in the latter group are discussed by e.g., Gusakov and Pilipuk [2013]), as well as refined petroleum products and chemicals. On the other end of the spectrum, Belarus' competitiveness in international trade was by far the worst in high-technology goods, where Belarus not only did not have any comparative advantages whatsoever but also Belarusian products from this goods category were becoming less and less competitive by the year.

Big challenges facing Belarusian economy, also in the context of its actual relative low international competitiveness, are described by e.g., Shirov, Sabchishina and Potapenko [2016], Bikár and Kmeťko [2015], and Egorov [2014].

As for research into the international trade competitiveness of Armenia, the results of the study conducted by Weber and Yang [2011] are worth noting. According to them, in 2010 Armenia practically lost its external competitiveness, as evidenced by its greatly diminished share in world exports and poor performance of competitiveness indicators, as well as the exchange rate. The urgent need to take decisive actions aimed to improve the situation is highlighted by e.g., Ghulijanyan [2012]. And finally, with regard to Kyrgyzstan, Mamadiev [2013] points out that although – after regaining its independence in 1991 – the country was able to trade freely with the rest of the world, it did not manage to benefit much from international trade due to the total lack of competitiveness of its economy. Except for that one paper, a lack of any other economic analyses can be observed.

In summary, a thorough overview of international literature on the international trade competitiveness of EAEU member states has revealed a clear quantitative difference among them, in favor of the bloc's largest economies i.e., Russia and Kazakhstan. Therefore, the analysis of the competitiveness covering all countries forming the Eurasian Economic Union as conducted in this paper seems all the more needed.

Research Methodology and Data

To begin with, it should be stressed that there are various definitions of international competitiveness in the economic literature, depending on who (companies or countries) and at which level (mega, macro, mezzo or micro) as well as within which range (within

the sphere of production factors or goods) competes with other entities on the international stage. A synthetic overview of them can be found in e.g., Żmuda and Molendowski [2016], Bhawsar and Chattopadhyay [2015], Misala [2014], and Banwet et al. [2002].

However, as it is the subject of this article, it seems necessary that the notion of international competitiveness of economies in trade, as it is understood in this article, is defined. According to OECD [2005], said competitiveness should be understood as an economy's ability to compete fairly and successfully in international goods and services markets, which, as a result, leads to a steady rise in the living standards in the long term. Similar definitions are provided by i.a., Siggel [2006] and Boltho [1996]. In turn, Weresa [2014] stresses the dynamic character of competitiveness, stating that it is the ability to derive faster (than other countries) and bigger benefits from own and foreign production factors under the conditions of an open economy, which naturally also translates into a more dynamic growth of welfare. According to Carbaugh [2017], international competitiveness boils down to the ability to develop, produce and sell goods and services which are more attractive because of their price or quality than the export offer of other countries, as evidenced by the growing share of the given country in international trade with respect to the sale of such goods as compared to other countries.

The international competitiveness of economies can also be defined and analyzed from the so-called "competitive position" point of view (i.e., in static terms). According to Weresa [2014], in line with this approach competitiveness should be understood as the country's own place within the global economy. In practice, this is reflected in its contribution to broadly understood international trade, indicating the country's position in relation to other economies in trade in goods, services and the flow of international production factors [Carbaugh, 2017; Collignon, Esposito, 2014; Fagerberg, 1996].

While being aware of the existence of a multitude of different methods for assessing the international competitiveness of economies (a synthetic overview of which can be found in Startiene and Remeikiene [2014]), in this article the traditional and widely accepted (despite some controversies discussed hereinbelow) method of analyzing revealed comparative advantages (RCA) developed by Balassa [1965, 1989] has been applied; specifically, the paper uses Balassa's original logarithmic formula of:

$$RCA_{ij} = \ln\left(\frac{x_{ij}}{\sum_i x_{ij}} \bigg/ \frac{\sum_j x_{ij}}{\sum_j \sum_i x_{ij}} \right) \tag{1}$$

where:
RCA_{ij} – the revealed comparative advantages index of the given country in the i goods category in relation to the j country or category of j countries,
x_{ij} – exports of the i goods category from the given country to the j country or category of j countries,

$\sum_i x_{ij}$ – total exports from the given country to the j country or category of j countries,

$\sum_j x_{ij}$ – total exports of the i goods category from the j country or from the category of j countries,

$\sum_j \sum_i x_{ij}$ – total exports from the j country or from the category of j countries.

The logarithmic form of the formula ensures the symmetry of both positive and negative values of the RCA_i index in the region around 0, which facilitates their interpretation [Vollrath, 1991]. If $RCA_i > 0$, then the country enjoys a revealed comparative advantage in trading goods from the given category and the value of the index indicates the degree of such an advantage. On the contrary, if $RCA_i < 0$, then no such revealed comparative advantage, to a higher or lower degree, exists.

When choosing the method for analyzing economies' international competitiveness in trade using Balassa's RCA index described above, one should be aware of its certain limitations and fallibilities even though they do not discredit it entirely. According to Siggel [2006], the Balassa method does indeed enable one to detect the successes in the exports of a country as compared to the world as a whole; however, it fails to reveal the reasons of such successes, which could be the effect not of increased competitiveness and efficiency of the economy but of subsidies for the given manufacturing sector introduced by the country or manipulations of its currency's exchange rate. This opinion is shared by Hinloopen and Van Marrewijk [2001], who also point out that the Balassa method does not allow for the (ex ante) factors specific to the exporter-sector – being the source of comparative advantage – to be isolated. What is more, the methodology for detecting the existence of potential comparative advantages proposed by Balassa is also subject to some weaknesses concerning empirical distribution, the most important ones being time instability and poor ordinal ranking property. Similar reservations were made by Costinot, Donaldson and Komunjer [2012], who stated that, owing to its simplicity, the Balassa method fails to capture such subtleties as heterogeneous preferences and heterogeneous trade costs, which is why the RCA index shows the effects but not the reasons behind the comparative advantages already present. Another shortcoming of this method observed by Yeats [1985] is that results achieved when measuring a country's comparative advantage with Balassa's RCA index can often be inconsistent or even misleading as the index is skewed in favor of countries with a small market share in the world export market, giving them relatively stronger comparative advantage than others. Moreover, as Hoen and Oosterhaven [2006] point out, the distribution of the standard Balassa's RCA index seems impossible to be theoretically derived owing to its dependence on the number of countries and sectors included. Another problem observed by them is the instability of the index's mean and that it exceeds 1 – the value to be expected theoretically.

On the other hand, however, in spite of its different shortcomings identified above, Balassa's RCA index still enjoys the widest acceptance and remains broadly used today as a gauge of international specialization and comparative advantage. Unquestionably,

the most important virtue of this method of analyzing competitiveness of economies is that it allows one to spot and measure changes in comparative advantages possessed by a country with respect to goods of given factor intensity, i.e. the relative proportion of the various factors of production used to make a given good, with respect to technologically advanced goods, for instance; another one being the simplicity of the index's structure. Furthermore, as the *European competitiveness report 2014 "Helping firms grow"* [EC, 2014] observes, trade data used to calculate revealed comparative advantage indices are very detailed and can be further disaggregated to the level of individual products or groups of products, which gives a fuller picture of the advantages and disadvantages of an economy as a whole and of industrial sectors of individual countries separately. This, in turn, allows for comparisons between and rankings to be drawn of individual countries (with respect to the given sector) or individual sectors (within a given country) [De Benedictis, Tamberi, 2001; Balance, Forstner, Murray, 1987].

It should be clearly stressed, though, that despite there being many different theoretical modifications of the traditional Balassa's formula in use in the literature proposed on the grounds of its objective shortcomings as mentioned above [see e.g., Donges, Riedel, 1977; Bowen, 1983; Ballance, Forstner, Murray, 1985; Proudman, Redding, 2000; Hoen, Oosterhaven, 2006; Yu, Cai, Leung, 2008; Leromain, Orefice, 2013; Laursen, 2015], which in turn themselves are also subject to criticism, this approach continues to be widely used in a number of empirical studies concerning international competitiveness of economies from all around the world, ranging from special reports on the EU competitiveness commissioned by the European Commission [see e.g., EC, 2015; Pashev, 2015; EC, 2014; CIREM, 2013] to publications of the World Bank [Reis, Farole, 2012] and to research papers written by numerous economists [see e.g., Weresa, 2014; Ekmen-ÖzÇelÍk, Erlat, 2013; Saboniene, 2009]. All this seems to be proof enough that – to quote the words of Grigorovici [2009] – "RCA index is the most widely used for estimating the comparative advantage in the commercial relations between countries". The use of the RCA formula in order to conduct the analysis of the issue being the subject of this paper is thus fully justified.

In this paper, in order to assess international competitiveness and to detect potential competitive advantages of the EAEU countries in international trade, the trade goods structure of these countries in the years 2000–2014 has been analyzed within the basic groups of goods in line with the OECD classification of manufacturing industries based on their technology intensity. This allows one to measure the competitiveness of each of the five analyzed economies with respect to goods from the high-technology, medium-high-technology, medium-low-technology and low-technology goods categories [OECD, 2011; Hatzichronoglou, 1997]. Thanks to this methodology, conclusions can be drawn as to the actual international competitiveness of the EAEU countries with regard to goods from the high-technology and medium-high technology goods categories, which are particularly important for the competitiveness of the given economy in the international arena in face of the realities of the contemporary world, which increasingly relies on

knowledge, innovations and modern ICT. All data used for the analysis are derived from the United Nations Commodity Trade Statistics Database.

The timeframe for the analysis, i.e. the years 2000–2014, has been chosen intentionally, as it includes the 15 years directly preceding the formal formation of the EAEU. The analysis of the issue in question conducted in the paper is intended to constitute the benchmark for future research into the competitiveness of countries forming this integration bloc, taking into account the consequences of its formation for their competitiveness.

Empirical Research Results

Given the realities of the contemporary international trade on the one hand and the position of the country in the world economy on the other, comparative advantages are especially desirable in the high-technology goods category. Such advantages are achieved in industries characterized by intensive use of modern factors of production and high innovativeness. Under the OECD classification, the high-technology goods category comprises the following subcategories: *aircraft and spacecraft*; *medical, precision and optical instruments*; *office, accounting and computing machinery*; *pharmaceuticals*; and *radio, TV and communications equipment*.

First, when looking at the values of the RCA indices calculated for goods from the high-technology category overall (in line with the OECD classification) concerning international trade of the EAEU member states over the years 2000–2014, it is noticeable that none of them recorded any comparative advantages whatsoever in this respect (all RCA index values < 0). Kazakhstan, in particular, fared by far the worst among all the EAEU countries, followed closely by Kyrgyzstan and, surprisingly, Russia. More importantly, no discernible improvement in this regard can be observed for any of the analyzed countries, which allows one to assume that no improvement in the international trade competitiveness of these countries with respect to goods from the high-technology category can be expected in the foreseeable future either. In line with Hartwell [2016], this can be put down mostly to the low innovativeness of these countries.

More specifically, the values of RCA indices for the five subcategories of the high-technology category (in line with the OECD classification) listed above clearly show that the only EAEU countries which did, at times, record some, albeit very limited, comparative advantages in any of them during the analyzed period were Russia and Armenia. In the case of Russia, these were revealed in the *aircraft and spacecraft* subcategory in the years 2002–2003, whereas Armenia enjoyed comparative advantages in the *medical, precision and optical instruments* subcategory in the years 2002–2003 and in the *aircraft and spacecraft* subcategory in the years 2011–2013.

FIGURE 1. **Revealed Comparative Advantages (RCA) in exports of the EAEU countries within high-technology goods in the years 2000–2014**
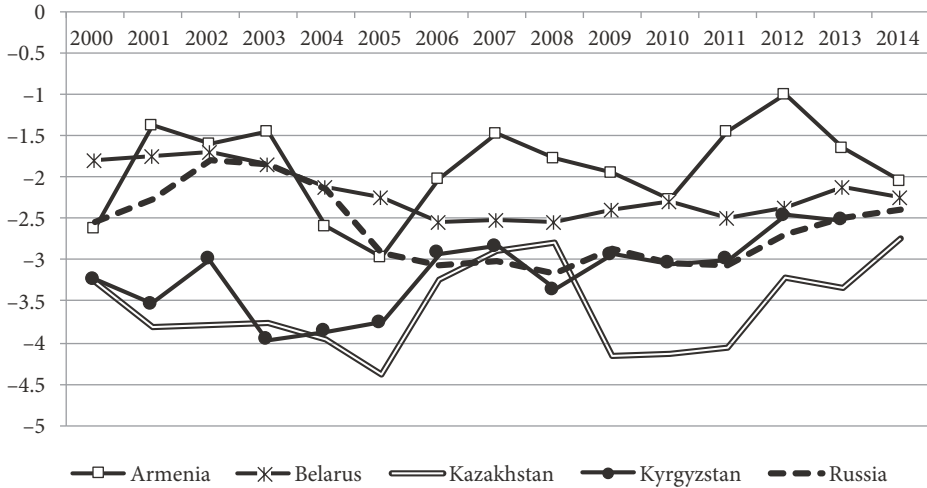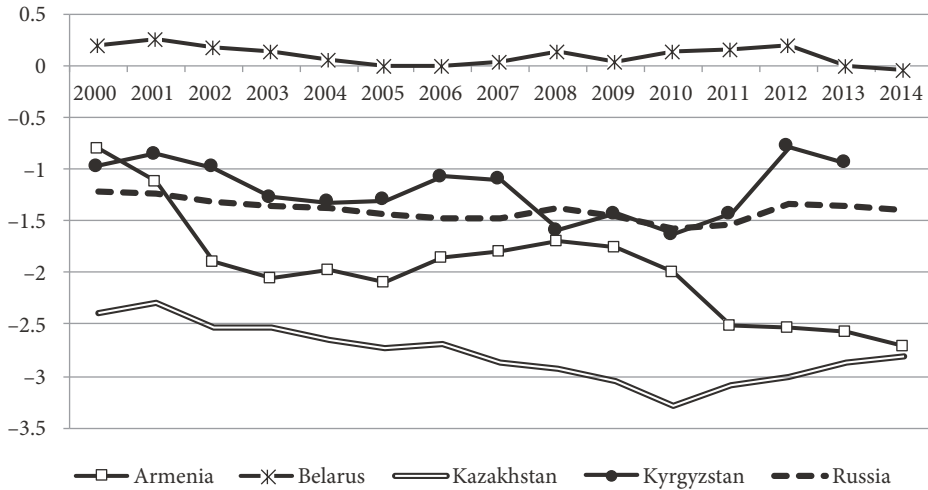

S o u r c e : own study based on United Nations Commodity Trade Statistics Database.

Second, as for the goods from the medium-high-technology category overall, which under the OECD classification comprises the subcategories: *chemicals excluding pharmaceuticals*; *electrical machinery and apparatus, n.e.c; machinery and equipment, n.e.c.*; *motor vehicles, trailers and semi-trailers*; and *railroad equipment and transport equipment, n.e.c.*, the situation was different insomuch as the only EAEU country enjoying some (rather small) comparative advantages in international trade in this respect was Belarus. In contrast, the worst performing countries were, again, Kazakhstan, and Armenia (Figure 2).

A closer look at the values of the RCA indices for the individual subcategories of the medium-high technology category (in line with the OECD classification) allows one to identify the leader among the EAEU countries in this regard, that is Belarus, which recorded some comparative advantages, *in fact* only in two subcategories, i.e. *chemicals excluding pharmaceuticals* – over the entire analyzed period – and *machinery and equipment, n.e.c.* – in the years 2000–2007, 2010 and 2013 (concerning, mainly, heavy goods vehicles and agricultural machinery exported predominantly to former USSR countries). However, the advantages in these two subcategories were high enough for Belarus to enjoy positive (> 0) values of RCA indices for goods from the medium-high technology category overall over the entire analyzed period. In contrast, it is noteworthy that none of the remaining EAEU countries (i.e., Armenia, Kazakhstan, Kyrgyzstan and Russia) achieved any comparative advantages in any of the five subcategories of the medium-high-technology category (in line with the OECD classification) and in any of the years of the analyzed period 2000–2014. In particular, the subcategory which proved the least competitive

in the international arena (that is, with the lowest recorded values of the RCA index) for all these countries was *vehicles, trailers and semi-trailers*.

FIGURE 2. Revealed Comparative Advantages (RCA) in exports of the EAEU countries within medium-high-technology goods in the years 2000–2014
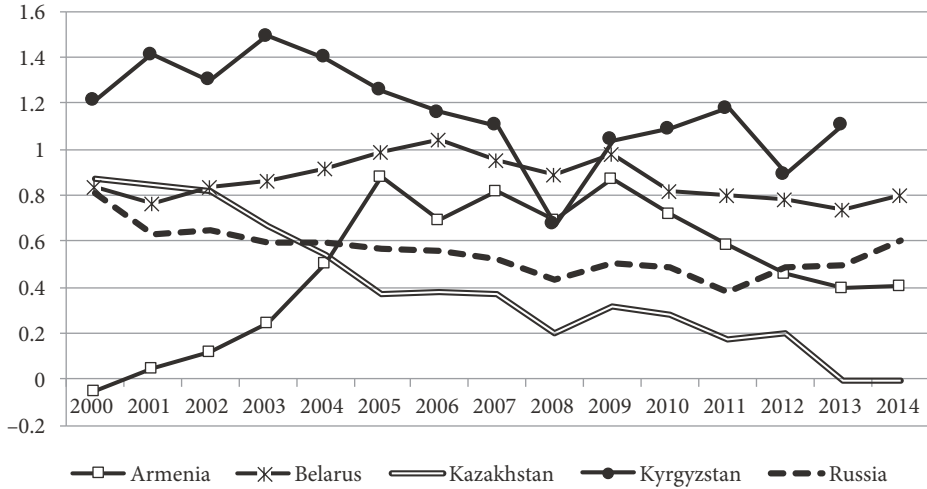

S o u r c e : own study based on United Nations Commodity Trade Statistics Database.

Third, the analysis has shown that the only category with respect to which all the EAEU member states are competitive in the international arena is the medium-low-technology category, which is characterized by both high capital-intensity and low innovativeness. Under the OECD classification, this category comprises the following subcategories: *basic metals and fabricated metal products*; *building and repairing of ships and boats*; *coke, refined petroleum products and nuclear fuel*; *other non-metallic mineral products*; and *rubber and plastics products*. In the years 2000–2014, all the EAEU member states enjoyed comparative advantages (RCA index values > 0) with respect to this category overall; their magnitude differed among the individual countries, though.

In particular, for many years the strongest – among all the EAEU member states – comparative advantages in international trade in the medium-low-technology category were observed in Kyrgyzstan (except for in 2008, the only year when Belarus scored better in this respect), mostly due to the high competitiveness of Kirgiz products from non-metallic minerals (i.e., in the *other non-metallic mineral products* subcategory). On the other end of the spectrum was Kazakhstan which not only fared by far the worst against the other EAEU countries but also recorded a downward trend in its international trade competitiveness in the medium-low-technology category, mostly attributable to the falling competitiveness of Kazakh economy in the *building and repairing of ships and boats* subcategory.

FIGURE 3. **Revealed Comparative Advantages (RCA) in exports of the EAEU countries within medium-low-technology goods in the years 2000–2014**
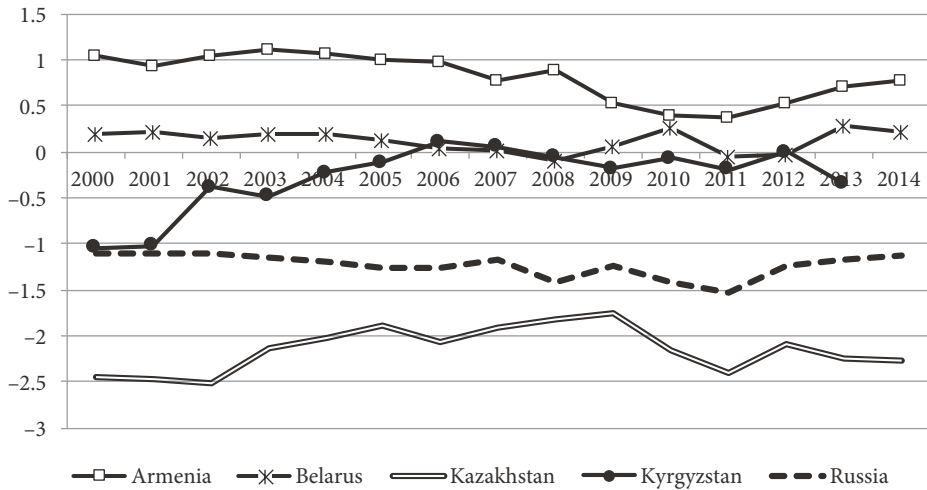

S o u r c e : own study based on United Nations Commodity Trade Statistics Database.

The more detailed analysis of the values of the RCA indices for the individual subcategories of the medium-low-technology category in the EAEU countries in the years 2000–2014 reveals that Armenia, Kazakhstan and Kyrgyzstan are decidedly the most competitive in the *basic metals and fabricated metal products* subcategory. In the case of Kyrgyzstan, also its high competitiveness in the *other non-metallic mineral products* subcategory, as mentioned earlier, should be noted. Russia, in turn, for many years enjoyed the highest comparative advantages in trade in goods from the *coke, refined petroleum products and nuclear fuel* subcategory, which is the direct consequence of the large deposits of mineral fuels, that is oil and natural gas, it possesses and exploits. Like Russia, Belarus also is very competitive in international trade with respect to the *coke, refined petroleum products and nuclear fuel* subcategory; however, this is mostly due to the relatively low-cost processing of crude oil imported from Russia at preferential prices.

Fourth, with respect to the fourth category in line with the OECD classification of manufacturing industries based on their technology intensity, i.e. the low-technology goods, which comprises the following subcategories: *food products, beverages and tobacco*; *manufacturing, n.e.c.*; *textiles, textile products, leather and footwear*; and *wood, pulp, paper, paper products, printing and publishing*, competitiveness of the EAEU member states differs extensively from one to another. For many years, the highest comparative advantages, as measured by the RCA index, have been achieved by Armenia, followed by Belarus. For Armenia, this is mostly attributable to its relatively high competitiveness with respect to production and exports of alcoholic beverages (including wines), fruits

and vegetables as well as tobacco products. In contrast, the countries which recorded the lowest comparative advantages in this category are again (like in the case of the high-technology goods) Kazakhstan and Russia.

FIGURE 4. **Revealed Comparative Advantages (RCA) in exports of the EAEU countries within low-technology goods in the years 2000–2014**

S o u r c e : own study based on United Nations Commodity Trade Statistics Database.

The detailed analysis of the RCA index values for the individual subcategories of the low-technology category in the years 2000–2014 calculated for the EAEU member states shows that Armenia enjoyed comparative advantages in the *food products, beverages and tobacco* and *manufacturing, n.e.c.* subcategories; Belarus – in *food products, beverages and tobacco* and *wood, pulp, paper, paper products, printing and publishing*; Kyrgyzstan – in *textiles, textile products, leather and footwear* (and in the years 2002–2008, it also recorded slight comparative advantages in the *food products, beverages and tobacco* subcategory); and Russia – only in the *wood, pulp, paper, paper products, printing and publishing* subcategory and only until 2007. In contrast, Kazakhstan was the only EAEU member state which did not have any comparative advantages with respect to the individual subcategories of the low-technology category (in line with the OECD classification).

Finally, by going one step further to look at the individual goods traded internationally by the EAEU member states and analyzing their comparative advantage for them as measured by the RCA index, their actual competitive position in the international arena can also be assessed through identifying their export bestsellers i.e., their most competitive products in international trade.

TABLE 1. **The most competitive goods in exports of the EAEU countries in 2014 (with highest RCA values)**

No.	Category*	Name	Value of the RCA index
		Armenia	
1.	MLT	Molybdenum, unwrought, bars/rods simply sintered, scrap	7.25
2.	MLT	Ferro-molybdenum	6.61
3.	HT	Watch cases, n.e.c.	5.97
4.	HT	Watch cases of, or clad with, precious metal	5.94
5.	LT	Spirits obtained by distilling grape wine, grape marc	5.67
		Belarus	
1.	MHT	Threshing machinery, n.e.c.	5.39
2.	LT	Bovine carcasses and half carcasses, frozen	5.35
3.	LT	Dairy spreads	4.71
4.	MHT	Potassium chloride, in packs >10 kg	4.71
5.	MLT	Bituminous mix, mastic from asphalt, bitumen/tar/pitch	4.61
		Kazakhstan	
1.	MLT	Beryllium, unwrought, waste or scrap/powders	5.32
2.	MLT	Ferro-silico-chromium	4.90
3.	MLT	Ferro-tungsten and ferro-silico-tungsten	4.82
4.	MLT	Natural uranium, its compounds, mixtures	4.68
5.	MHT	Chromium oxides, hydroxides except chromium trioxide	4.47
		Kyrgyzstan	
1.	MHT	Double or complex silicates of metals	7.57
2.	MHT	Filament lamps, of a power <= 200 Watt, > 100 volts	5.52
3.	MLT	Worked calcareous stone, n.e.c.	5.40
4.	LT	Woven fabric <85 per cent artificial staple+cotton, yarn dyed	4.89
5.	MLT	Float glass etc. in sheets, non-wired, clear	4.55
		Russia	
1.	MHT	Isoprene rubber (IR)	3.00
2.	MHT	Fertilizers with nitrates and phosphates, n.e.c., <=10 kg	2.94
3.	MLT	Ferro-chromium, <4 per cent carbon	2.89
4.	MLT	Bar/rod of silico-manganese steel not in coils	2.86
5.	MHT	Saturated acyclic hydrocarbons	2.80

* HT – high-technology category, MHT – medium-high-technology category, MLT – medium-low-technology category, LT – low-technology category.

S o u r c e : own study based on United Nations Commodity Trade Statistics Database.

As the data presented in Table 1 indicate, the most competitive products in international trade for each and every EAEU member state are all low-technology, low added-value and capital-intensive goods, mostly coming from industry sectors heavily relying on averagely-skilled workers. One exception to that rule is the relatively high international competitiveness of watch cases and parts thereof for Armenia. In all the remaining cases, however, these are mostly relatively low-processed natural raw materials and their derivatives.

However, if we look at the dynamics of revealed comparative advantages in international trade of the individual EAEU countries excluding any trade between them (to eliminate the factor of historically very strong trade relations between them, which potentially positively affects the values of RCA with respect to exports to the other EAEU countries of those goods which they cannot export outside the former Soviet area), it turns out that the values of RCA have changed most significantly for Belarus. As a result of such revision, Belarussian economy (which, as shown above, possessed comparative advantages in all categories except for the high-technology category) has lost all its comparative advantages in the medium-high-technology and low-technology category whereas those in the medium-low-technology have substantially decreased. The main reason for that is the fact that the other EAEU countries traditionally account for almost half of total Belarussian exports (in 2016, the respective share was 49.3%, of which Russia alone accounted for 47%). Moreover, if we look at the structure of the country's exports, which is dominated by machinery and equipment as well as transport equipment (tractors, heavy goods vehicles, combine harvesters, motorcycles, bearings and refrigerators), petroleum refining products, potassium fertilizers, as well as some agri-food products (such as dairy products, eggs, honey, and edible products), the results achieved are hardly surprising.

A similar adjustment has to be made in the case of Armenia and Kyrgyzstan, which, after the trade with the other EAEU countries has been excluded from the analysis, have lost their comparative advantages in the low-technology category while in the medium-low category – their advantages have significantly diminished. In the case of Russia and Kazakhstan, however, the same revision has not brought any significant changes in their comparative advantages.

Conclusions

The subject-matter of this paper was an in-depth analysis of the international competitiveness of the economies of the countries forming since 2015 the Eurasian Economic Union (EAEU) (Armenia, Belarus, Kazakhstan, Kyrgyzstan and Russia), conducted in order to identify their main comparative advantages in international trade in the years 2000–2014.

The analysis of comparative advantages enjoyed by individual EAEU member states within the four basic goods categories in line with the OECD classification of manufacturing industries based on their technology intensity, i.e. the high-technology, medium-high-technology, medium-low-technology and low-technology categories, has revealed that all the EAEU countries, without any exceptions, are able to compete internationally only in goods of relatively low technological advancement, low added value, high capital intensity, coming mainly from industries using medium-qualified workers i.e., generally speaking, in raw materials and their derivatives.

The analysis has shown that for many years running none of these countries had any comparative advantages in the categories of high-technology and medium-high-technology goods overall (the exception being Belarus in the latter category). Secondly, all analyzed EAEU member states recorded comparative advantages in trade in the medium-low-technology category, with their magnitude differing from one to another, whereas only two of them, namely Armenia and Belarus, possessed comparative advantages in the low-technology category.

It should be stressed here that the advantages recorded by the EAEU countries are the effect of a consistent and deliberate export specialization of their economies in the raw materials possessed and their derivatives, which is additionally strongly supported by the targeted policies of their governments. The most striking examples of this are, first and foremost, Russia but also Kazakhstan, albeit to a lesser extent, where, as is clearly visible, the natural resource sector is nurtured, controlled, and subsidized by state authorities. As a consequence, it further strengthens the negative effects of the so-called "Dutch disease", which is the overexploitation of natural resources (mostly the energy ones), owing to the relatively easy acquisition of extra budget revenues (taxes on their extraction and export), which in turn leads to stifled progress and falling competitiveness of other sectors of the economies of these two states (more on this subject: Falkowski [2017b]; Mironov and Petronevich [2015]; Dülger et al. [2013]). The analysis has shown that, paradoxically, the two largest EAEU economies, Russia and Kazakhstan, have a relatively low level of competitiveness in contemporary international trade, given their economic potential.

On the other hand, the strongest among all the countries of the EAEU, at least at face value, taking into account the comparative advantages in international trade in the years 2000–2014, is Belarus, which possessed such advantages in three categories: medium-high-technology, medium-low-technology and low-technology. However, its relatively high competitiveness in these categories is, *de facto*, to a large extent the direct consequence of low-cost processing of Russian petroleum imported at preferential prices, as well as the large share of post-Soviet countries (especially Russia) in Belarussian exports. Interestingly, and very importantly, if we consider the country's exports excluding the rest of the EAEU member states, Belarus loses its comparative advantages (in the middle-high-technology and low-technology categories) or they are significantly weaker (in the medium-low-technology category). This clearly underscores the real (i.e., low) competitiveness of the

Belarusian economy in contemporary international trade. Also, similar revisions have to be made to the comparative advantages of Armenia and Kyrgyzstan.

Given the above as well as the specifics of the contemporary, globalized world economy and dynamic changes in international trade, which is becoming increasingly dominated by high-technology and medium-high-technology goods, any substantial changes in the structure of comparative advantages of the countries forming the EAEU are hardly to be expected without decisive actions taken by their authorities to improve their competitive potential. The most important recommendations in this respect, addressed to all the EAEU countries, should include: (i) to create comprehensive, coherent and consistently implemented long-term economic policies fostering modernization and innovativeness, and, as a consequence, leading to increased productivity and competitiveness of their economies; (ii) to develop clear legal framework (i.a. to eliminate any inconsistencies in regulations, to protect ownership and to improve the effectiveness of efforts to combat corruption), which is necessary to raise these countries' investment attractiveness to foreign capital and to implement innovative projects, including R&D ones; (iii) to take action to diversify as much as possible their export offer, i.a. by gradually abandoning the state policy of selectively supporting and subsidizing the sectors of extraction and processing of raw materials and, instead, by supporting the development of knowledge- and innovation-based sectors; (iv) to deepen systematically and consistently the integration within the EAEU in order to create a fully-fledged economic union allowing for free movement of production factors, which can lead to their increased productiveness, and thereby improve the competitiveness of the individual EAEU economies (especially the smaller ones – Armenia and Kirgizstan), and of the entire bloc as a whole.

In conclusion, in view of the growing importance of the issue of international competitiveness on the one hand (in connection, amongst others, with the search for causes and consequences of the divergence which has been growing for years), and the attempts at ever closer economic integration in the post-Soviet area within the Eurasian Economic Union on the other, the need for further research into the EAEU's competitiveness using research methods other than the one applied in this paper seems to be justifiably called for. Also, it would be expedient to conduct a cross-sectional analysis for the economies of the each EAEU member state separately to evaluate their individual competitiveness. With the passage of time and new statistical data becoming available, it should also be checked whether and to what extent the formation of the EAEU has contributed to the improved competitiveness of the individual EAEU countries in contemporary international trade.

Notes

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