



ORIGINAL PAPER

Citation: Falkowski, K. (2018). Trade interdependence between Russia vs. the European Union and China within the context of the competitiveness of the Russian economy. *Equilibrium. Quarterly Journal of Economics and Economic Policy*, 13(4), 667–687. doi: 10.24136/eq.2018.032

Contact: kfalkow@sgh.waw.pl, World Economy Research Institute, Warsaw School of Economics, Al. Niepodległości 162, 02-554 Warszawa, Poland

Received: 3 September 2017; Revised: 4 June 2018; Accepted: 27 June 2018

Krzysztof Falkowski

Warsaw School of Economics, Poland

Trade interdependence between Russia vs. the European Union and China within the context of the competitiveness of the Russian economy

JEL Classification: F14; F40; P45

Keywords: trade interdependence; competitiveness; competitive advantages; Russia; European Union; China

Abstract

Research background: The position of a country in the international division of labour is determined by the competitiveness of its trade, the structure of which may both reveal and perpetuate the comparative advantages possessed. This is particularly true for Dutch disease economies such as Russia. Recently, economic literature has seen a growing interest in the topic of Russia's economic relations with the European Union and China. This article is aimed at being the Author's contribution to this discussion.

Purposes of the article: (1) to discuss the existing trade interdependence between Russia and the EU28, and Russia and China; (2) to try to assess the extent to which the current structure of Russian trade with these two partners corresponds with the competitiveness of the Russian economy.

Methods: An in-depth analysis of Russia-EU28 and Russia-China trade interdependencies in 2007–2015 has been conducted, with emphasis on the categories of goods within the spectrum from low- to high-technology, according to the OECD classification. Furthermore, in order to analyse Russia's competitive profile with regard to the same categories of goods, Balassa's methodology of revealed comparative advantages has been applied.

Findings & Value added: In the recent years, a growing importance of China in Russian trade turnover can be observed, being the effect of dynamic growth of Chinese economy,

cooling political relations between Moscow and Brussels and the drop in oil prices in international markets. The existing structure of Russian trade with the EU28 and China seems likely to preserve its traditional competitive advantages in the medium-low-technology goods and oil, which, in turn, will only further exacerbate the negative consequences of the so-called Dutch disease affecting the Russian economy.

Introduction

In today's strongly globalized world economy, the position of a country in the international division of labour is in practice determined by the trade competitiveness of its economy. In particular, the country's potential comparative advantages in exports are of paramount importance in this respect. On the other hand, the existing structure of foreign trade of the country, which is the direct consequence of its economy's place in the international division of labour, can be (under certain conditions arising from trade agreements or the possession of resources which are in low supply worldwide) an extremely important factor perpetuating the competitive advantages already enjoyed (Falkowski, 2017). This is particularly so for 'Dutch disease' economies, such as the Russian economy (Ito, 2017; Tabata, 2013; Dobrynskaya & Turkisch, 2010). In light of the above, it is important and interesting to identify the current trade interdependence between Russia and the European Union (EU28) as well as Russia and China — Russia's two major trade partners.

The advisability of such a study may be confirmed by the fact that over the recent years there have been a growing number of articles on economic relations of Russia with the EU28 (i.a.: Harsem & Claes, 2013; Lavrov, 2013; Dragnev & Wolczuk, 2012) and China (i.a.: Simola, 2016; Unnikrishnan & Purushothaman, 2015; Sidorenko, 2014; Rautava, 2011) in international economic literature. This study is intended to be the Author's contribution to this discussion.

The main objective of this article, apart from an in-depth analysis of Russian-EU and Russian-Chinese mutual trade interdependencies, is to answer the question to what extent the existing commodity structure of Russia's trade with the EU and China reflects the international competitive profile of the Russian economy in the contemporary world.

In order to analyse in detail the competitiveness of the Russian economy in contemporary international trade, the method of analysing Balassa's revealed comparative advantages (1965, 1989) was applied, which is one of the most widely accepted and used measures of international trade specialisation and comparative advantage.

Hereinbelow, the study puts forth the thesis that although both the EU28 and China have traditionally been very important trade partners of Russia, over the recent years a gradual increase of China's importance in Russian foreign trade can be observed. This is not only due to the dynamic growth of the Chinese economy and the cool political relations between Moscow and Brussels following the introduction of economic sanctions in 2014, but also of the decline in oil prices on international markets. Furthermore, the existing structure of Russian trade turnover with the EU28 and with China strongly reflects the competitive profile of the Russian economy and further reinforces its traditional competitive advantages, which have for years been in medium-low technology goods and oil.

This article consists of five main parts, plus the introduction and the conclusions. In the first part, a synthetic review of literature on the subject is presented. The next section discusses the research method applied, also pointing to its main advantages and weaknesses. The third part analyses in detail the scope and structure of trade interdependencies between Russia and the EU28, and Russia and China in the period 2007–2015, while the fourth part describes the competitive profile of the Russian economy in international trade in the same period, with special emphasis on the revealed comparative advantages of Russian exports. In the next part of the article, the obtained results are discussed and conclusions confirming the research hypothesis are formulated.

Literature review

The EU countries have long been traditional trading partners for Russia. According to some economists, one can even speak of a special partnership in this regard (Lavrov, 2013), although this relationship has recently become weaker due to the trade sanctions imposed on the Russian Federation by the EU in 2014 in the wake of the annexation of the Crimea and of Russian countersanctions, as observed by i.a. Crozet and Hinz (2016), Tuzova and Qayum (2016), Priede and Pereira (2015) and Rutland (2014). Nevskaya (2016) states that the EU sanctions led to a decline in Russia-EU trade, putting future economic cooperation in question. She goes on to observe that it is Russia that has been hit especially hard by the sanctions, as it has simultaneously been affected by falling oil and gas prices. Still, the most important element of this partnership is cooperation concerning trade in energy resources, as pointed out by Romanova (2014). An interesting analysis of Russia's importance as a trading partner for the EU28 economies separately has been conducted by Liuhto (2015). According to his

conclusions, the country which depends most on trade with Russia is Lithuania, followed by Finland, Bulgaria and Latvia. A detailed analysis of the EU28 trade with Russia has been published by the European Commission (2017); according to it, the EU exports to Russia are clearly dominated by manufacturing goods (88.4% in 2016), while imports from Russia — by primary goods (75.2% 2016), of which as many as 66.5% are mineral products. In addition, the disparities in mutual trade exchange in the years 2006–2016 in terms of turnover and commodity structure for goods of different technological advancement are clearly indicated. Herrero and Xu (2016), in turn, point out that the Chinese economy is a huge challenge for further the EU trade cooperation with Russia.

The particularly important and growing role of China as a trading partner of Russia (especially in imports) is highlighted by, among others, Rautava (2011), who points out that while in 1998 China's share of Russian imports was just 3%, by 2010 it went up to as high as 17%. Moreover, precisely because of the large and highly receptive Russian domestic market, China is very much interested in the development of mutual economic cooperation, especially in the context of the deterioration of Russia's economic relations with the EU28 (Unnikrishnan & Purushothaman, 2015). The obvious consequence of this is the growing deficit in Russia's trade with China. Rautava (2011) also draws attention to the structure of the Russian-Chinese trade; on the one hand, China's exports are dominated by natural resources, especially energy ones, while, on the other hand, in the imports prevail high-value-added, technologically advanced industrial goods. Furthermore, according to Lukin (2013), it will be extremely difficult for Russia to increase its exports to China as it is hardly able to offer any other goods — apart from natural resources — which would be competitive on the Chinese market. Nevertheless, as Simola (2016) notes, despite the growing economic interdependence between the two countries, albeit asymmetric with the predominance of Russia's dependence on China, it is hard to describe it as strong. Similar conclusions were reached by i.a. Wilson (2015). Yet, both countries seem largely forced to expand their mutual commercial and investment cooperation, as observed by Huasheng (2016) and Wilson (2016). Moreover, as Popkova and Sukhodolov (2017) stress, this may be a very important factor for Russia's economic growth in the medium term as the need for Russian goods to face competition in the Chinese market may stimulate efforts to increase their competitiveness and to diversify the goods structure of Russian exports to China.

A key role in Russian trade with both the EU28 and China is played by energy resources, which, as emphasized by Covi (2014), constitute the foundation of the international competitive profile of the Russian economy,

to the obvious detriment of the development of other sectors of the economy. Moreover, as Locatelli *et al.* (2017) state, the existing and planned energy agreements between Russia and China will further strengthen their interdependence, especially in the context of the EU efforts to increase the diversification of sources of energy resources (Dannreuther, 2016; Harsem & Claes, 2013).

Research method

First, the detailed, in-depth analysis of the size and structure of trade turnover between Russia and the EU28 and Russia and China in 2007–2015 has been conducted using the OECD classification of manufacturing industries based on their technological advancement (Hatzichronoglou, 1997; OECD, 2011). Under this classification, 4 basic categories of goods have been distinguished, i.e. the high technology, the medium-high technology, the medium-low technology and the low technology goods. Additionally, for the purposes of this study, oil has been singled out for separate analysis to show its special importance in the Russian trade turnover.

Secondly, being aware of the existence in the literature of a wide variety of methods for assessing the competitiveness of economies in international trade (Startiene & Remeikiene, 2014), this article uses the traditional and widely applied method of analysing the revealed comparative advantages developed by Balassa (1965, 1989); in particular, the logarithmical version of its original formula is applied, which is as follows:

$$RCA_i = \ln \left(\frac{X_{ij}}{X_j} \div \frac{X_i}{X} \right) \quad (1)$$

where:

RCA_i – the revealed comparative advantages index of the given country in the i goods category;

X_{ij} – exports of the i goods category from the given country to the j country or category of j countries;

X_j – total exports from the given country to the j country or category of j countries;

X_i – global total exports of the i goods category;

X – global total exports.

The logarithmic form of the formula ensures the symmetry of both positive and negative values of the RCA_i indicators in the region around zero,

which facilitates their interpretation (Falkowski, 2018; Vollrath, 1991). A revealed comparative advantage in trading in a particular commodity group is only present when the value of this indicator for the given group is greater than zero ($RCA_i > 0$).

When choosing the above method of analysing the revealed comparative advantages, one must be aware of its limitations and unreliability, which, however, do not discredit it.

For example, Siggel (2006), drawing attention to the weaknesses of the RCA method, stressed that although it helps identify the existence of potential competitive advantages in exports of a given country in relation to the world as a whole, its use does not allow to identify the sources of these comparative advantages. What is more, he also pointed out the fact that such advantages must not necessarily be a sign of improvement in the general competitiveness and efficiency of a given economy, but e.g. they might be the result of a policy of subsidising the production of specific goods by the state or a policy of manipulating the exchange rate. Similar conclusions were reached by Hinloopen and Van Marrewijk (2001), who stated that Balassa's method does not allow for the exporter-sector (*ex ante*) specific factors which are the source of comparative advantage to be isolated. Furthermore, there are some empirical distribution weaknesses in Balassa's method of analysing potential comparative advantages, mainly time instability and poor ordinal property ranking. Similar objections were raised by Costinot *et al.* (2012), who stated that, due to the simplicity of Balassa's method, subtleties such as heterogeneous preferences and heterogeneous trade costs are omitted, and therefore, using the RCA index, we show the effects and not the causes of the comparative advantages possessed. The biggest problem with the RCA index according to Laursen (2015) is when the index is applied across countries with large differences in sizes. For example, extremely high RCA values will be recorded if exports of certain commodity account for a large share of total domestic exports, but they form only a very small component of total international exports. Deb and Hauk (2017) emphasize that given the growing importance of global production chains, RCA indices calculated based on gross export values may not show an accurate picture of the underlying comparative advantages possessed by a given country. Therefore, an adjustment of the RCA index might seem quite relevant to incorporate domestic value-added in exports. Gnidchenko and Salnikov (2015) listed three main weaknesses of the original formula of Balassa's RCA index, namely: 1) its sensitivity to the number of exported goods as well as countries in the reference group; 2) the interdependence of the index values for one good on the values for other goods as a high share of one good in total exports at the same time means

a low share of other goods in total exports; 3) its asymmetry, significantly limiting the comparability of its values over time and space.

The weaknesses and limitations of Balassa's method of analysing revealed comparative advantages (RCA) listed above are widely known and in the literature on the subject attempts have been presented to construct standardised indicators of relative comparative advantage, e.g. the additive RCA index (Hoen & Oosterhaven, 2006), the standardized relative comparative advantage index (Yu *et al.*, 2000), the relative symmetrical comparative advantage index (Dalum *et al.*, 1998; Iapadre, 2001). However, it should be made clear that they have so far not been widely recognised by economists dealing with the competitiveness of economies in international trade.

Despite these weaknesses, Balassa's RCA index remains one of the most widely used methods of measuring international trade specialisation and comparative advantages. This is due to its greatest advantage — simplicity, of both the construction of the index itself and the interpretation of the results obtained (Gnidchenko & Salnikov, 2015). Furthermore, the European Competitiveness Report 2014 “*Helping firms grow*” (European Commission, 2014) notes that trade data traditionally used to calculate revealed comparative advantage indices are very comprehensive and it is easy to disaggregate them to the level of individual products or groups of products. Thanks to the use of such disaggregated data, a more complete picture of the advantages and disadvantages of a specific economy or industrial sectors of individual countries can be obtained. This, in turn, allows for comparisons and rankings to be made between countries (within a sector) and between sectors (within a country).

All the statistical data used for the analysis are derived from the United Nations Commodity Trade Statistics Database (UN Comtrade, 2017).

Scope and structure of trade interdependence between Russia vs. the EU28 and China in 2007–2015

Over the years 2007–2015, the value of Russia's trade turnover with foreign countries fluctuated markedly. While in 2007 it stood at 552 billion USD, a year later it jumped to reach 735 billion USD (an increase of 33.2% year-on-year), before shrinking to the dramatically low level of just 472.6 billion the following year (a decrease of 35.7% year-on-year) on the back of the global economic crisis, which reached its trough in 2009. In the following years (2010–2013), the value of Russian foreign trade was increasing steadily, from 626 billion USD in 2010 to 842.2 billion USD in 2013.

From 2014 onwards, however, it started to decline again, reaching just 526.7 billion USD in 2015. The reasons for this spectacular fall were mostly: 1) a decline in energy commodity prices (especially oil) in international markets, and 2) the sanctions imposed on Russia in connection with the annexation of Crimea and its support for separatists in eastern Ukraine. On the other hand, the counter-sanctions introduced by the Kremlin to target Western countries, which consisted, amongst others, in the introduction of an embargo on goods imported from these countries (mainly agri-food products), adversely affected Russian imports. Despite all that, however, Russia managed to keep its traditionally high trade surplus.

When looking at the Russian trade turnover with the EU28 and China in the analysed period, it can be observed that the EU28 countries were a far more important trading partner for Russia than China. In 2015, the EU28 accounted for 38.4% of the total value of Russian foreign trade (202.2 billion USD), while China — only for 12.1% (63.5 billion USD). What is more, in 2008–2009 the value of Russian trade with the EU28 exceeded half of the country's total trade turnover (reaching 52.2% and 50.5%, respectively).

Yet, a systematic rise of China's importance as Russia's trading partner is also noteworthy. In the analysed period, China's share in Russian foreign trade total almost doubled from 7.2% in 2007 to 12.1% in 2015 while the value of total trade between the two countries jumped by 60.4% in the same period (from 39.6 billion USD in 2007 to 63.5 billion USD in 2015). Conversely, in the same period an opposite tendency was recorded in trade with the EU28. The share of all the EU28 countries in Russia's total trade turnover shrank from 46.4% in 2007 to 38.4%, and the value of total trade between Russia and the EU28 went down by 21% (from 255.9 billion USD in 2007 to 202.2 billion USD in 2015).

Furthermore, China is a much more important trade partner of Russia in imports rather than in exports, which is reflected in Russia's negative trade balance with that country. China's share in the total Russian imports reached 19.3% in 2015 (against 12.2% in 2007), whereas in the exports it was 8.2% (4.3%, respectively). In 2015, the value of Russian imports from China reached 28.3 billion USD, up by staggering 86.2% on 2007 (15.2 billion USD), while the value of exports to China was 35.2 billion USD, i.e. 44.3% more than in 2007 (24.4 billion USD).

In contrast, unlike with China, Russia has traditionally recorded a positive, albeit declining, trade balance in its trade with the EU28. While in 2007 the EU28's share in the total Russian exports stood at 47.9% and in imports — at 43.6%, in 2015 the respective figures were only 39.8% and 35.8%. The value of total Russian imports from the EU28 went down by

25% (from 87.2 billion USD in 2007 to 65.4 billion USD in 2015) and its exports to the EU28 dropped by 18.9% (from 168.7 billion USD in 2007 to 136.8 billion USD in 2015).

When analysing the goods structure of Russian exports to the EU28 and China, one cannot but notice the enormous importance of oil. In the case of exports to the EU28, the value of trade in this commodity over the analysed period ranged from 87.7 billion USD in 2007 to 127.6 billion USD in 2012, with the exception of 2009 (71.8 billion USD) and 2015 (only 54 billion USD), which was caused by a significant fall in prices of this raw material in international markets (Figure 1). In relative terms, the share of oil in total Russian exports to the EU28 exceeded 50% between 2007 and 2012, only to gradually decrease in the following years to 48.9% (2013), 43.7% (2014), and 39.5% (2015).

In contrast, the general trend was quite the opposite in trade with China (Figure 2). Until 2011 (except for 2008), the value of exports of Russian oil to China did not exceed 40% of the value of all exports, rising to over 50% of total exports from 2011 onwards. The record value was achieved in 2014, when the relevant share was 58.7%. In absolute terms, however, the value of trade in this raw material with China was not as high as that with EU28, the main buyer of Russian oil, fluctuating between 5.4 billion USD in 2007 and 22 billion USD in record-breaking 2014.

Next, if we look at the significance of other goods in Russian exports, it is clear that in the analysed period Russian exports to the EU28 were mostly from the medium-low technology category (Figure 1). Their share in total Russian exports to the EU28 ranged from 32.3% in 2007 to 43.7% in 2015. Exports of coke, refined oil products and nuclear fuel played the most important role in this category. The significance of medium-high technology and low-technology goods was very low (for example, in 2015 their shares were 5.7% and 3.2% respectively), and of high technology goods — dramatically low. In 2007, the latter's share was barely 0.4%, but then it gradually increased year by year, eventually reaching 2.4% in 2015.

On the other hand, during the analysed period the most important (besides oil) in the structure of Russian exports to China were low technology goods (Figure 2), although their share in total Russian exports to China went down from 23.7% in 2007 to 15.1% in 2015. Russia's absolute export hits in this category were wood, paper, paper products, and — to a much lower degree — food and beverages. Interestingly, the share of high technology goods in the total Russian exports to China was significantly higher than to the EU28, and ranged between 1.5% in 2011 and 5.2% in 2015. The most important goods from this category were planes and other aircraft.

As for Russian imports to the EU28, they have traditionally been dominated by medium-high technology goods (Figure 3). In the analysed period, nearly half of total Russian imports were from this category. The highest share of these goods in Russian total imports of 50.9% (33.3 billion USD) was recorded in 2015. The most important goods in this category were machinery and equipment, n.e.c. as well as motor vehicles.

In contrast, in the analysed period almost equally important in Russian imports from China were goods from high, medium-high and low technology categories (Figure 4). Their share in the total Russian imports ranged from 24.3% (2013) to 26.1% (2011); from 22.6% (2015) to 31.8% (2015); and from 33.2% (2013) and 30.2% (2009), respectively. The most important role in the imports was played by the following subcategories: radio, TV and communications equipment (in the high technology category); machinery and equipment, n.e.c. (in the medium-high technology category) and textiles, textile products, leather and footwear (in the low technology category).

Summing up what has been said so far, in its trade with the EU28 Russia recorded a surplus (positive trade balance) in trade in oil and low technology goods throughout the entire analyzed period, but had a significant deficit (negative trade balance) in trade in medium-high technology goods (Figure 5).

Like with the EU28, also with China, Russia recorded a positive balance in trade in oil in the analyzed period. What is worth noting is that the balance had grown significantly over the years 2007–2015 (from 5.4 billion USD in 2007 to as much as 15.1 billion USD in 2015, i.e. almost threefold). However, with respect to all other categories, i.e. the high, medium-high, medium-low and low technology goods, Russia consistently recorded negative, and steadily growing, balances throughout the analyzed period (Figure 6). Therefore, it comes as no surprise that the overall balance in Russia's trade with China is negative.

Competitive profile of the Russian economy in international trade in 2007–2015

The analysis of potential comparative advantages in Russia's foreign trade in 2007–2015 conducted using B. Balassa's method of analysing revealed comparative advantage clearly shows that the international competitiveness of this country is generally very low and, in practice, is only limited to raw materials and their derivatives as exemplified by positive (and relatively stable) RCA values for the low technology category in the analysed period

(Figure 7). Within this category, Russia's strongest relative comparative advantages have traditionally been in trade in non-ferrous metals (mainly copper, tin, zinc, aluminium), refined oil products, non-metallic mineral products and ferrous metals. These are mainly raw materials and low-value-added goods, which best reflects the real competitive profile of the modern Russian economy.

In the remaining categories of goods, i.e. in the high, medium-high and low technology categories, Russia did not have any comparative advantages in international trade during the analysed period. In particular, a difficult, if not dramatic, situation could be observed in the category of high technology goods in total, although it does not mean that Russia does not possess any competitive advantage in this category. It is a respected and competitive worldwide exporter of aviation equipment and aircraft, including spacecraft, as well as some types of arms.

On the other hand, the most uncompetitive Russian goods in the international market, as far as high technology, medium-high technology and low technology goods are concerned, have for years been pharmaceuticals, computing and office machinery, motor vehicles and R&D apparatus, as well as textiles and textile products.

Discussion

The analysis of the scope and structure of the existing trade interdependence between Russia and the EU28, and Russia and China has shown that the most important goods in Russian exports to these countries are those in which Russia enjoys strong competitive advantages, i.e. raw materials, especially oil and oil products (low-added-value and low technologically advanced goods). In contrast, Russian imports from these countries are dominated by goods in which Russia does not have any competitive advantage at all — for imports from the EU28, these are medium-high technology and high technology goods (in 2015, they accounted for as much as 68.8% of total Russian imports from the EU28), whereas, in the case of imports from China, high technology, medium-high technology and low technology goods absolutely dominate (83.9% of total Russian imports from China in 2015). It is very clear from the above that Russia's foreign trade structure with the EU28 and China is in line with the competitive profile of the Russian economy. In this way, the existing studies on Russia's trade with the EU28 and China were complemented by an extremely important aspect of the international competitiveness of the Russian economy, with special emphasis on the country's comparative advantages in the

structure of trade with the EU28 and China, taking into account the technological advancement of the goods traded.

Additionally, it should be clearly emphasized that the analysis carried out for the years 2007–2015 clearly shows that the goods structure of Russian trade with the EU28 and China has nothing but further "cemented" the country's competitive profile, by reinforcing traditional competitive advantages long enjoyed by Russia in the medium-low technology category and oil, which is a direct consequence of extensive economic growth. Worse still, it is difficult to find any qualitative changes in the Russian economy in terms of utilising existing production resources (not just raw materials), which could serve as a foundation for stable growth independent of cyclical developments in international commodity markets. A specific correlation can be observed between the competitiveness of the Russian economy (its revealed comparative advantages) and the structure of trade with Russia's most important trading partners, i.e. the EU28 and China. On the one hand, this trade (its structure) strengthens the comparative advantages possessed in Russian exports, sanctioning the economic policy conducted in Russia to date; on the other hand, however, it deepens the competitive gap in Russian imports. To some extent, therefore, this study complements the knowledge of contemporary Russia and its economy (Ivanter, 2018; Gregory, 2018; Miller, 2018) by explaining the impact of the external economic environment on Russia's internal economic situation in this respect.

It should be remembered that the biggest problem affecting modern Russia is the co-called "Dutch disease", i.e. the overexploitation of natural resources (mainly the energy ones) as a relatively easy source of budget revenue, which in turn leads to a decline across the rest of the Russian economy (Mironov & Petronevich, 2015; Dülger *et al.*, 2013). Unfortunately, the existence of large markets for Russian energy, mainly oil and natural gas, in the EU28 and China only further exacerbates the negative consequences of that disease for the Russian economy (Ito, 2017).

In addition, it should be borne in mind that the ever closer trade interdependence between Russia and China, as exemplified by the growth in the mutual trade over the recent years, may have a negative impact on the EU economy. It is worth noting that Herrero and Xu (2016) came to a similar conclusion, stressing that the Chinese economy will be a huge challenge for further the EU trade cooperation with Russia. However, complementing the conclusions reached by Herrero and Xu (2016), based on the results of the research presented in this article, it may be added that to a large extent the commodity structure of the Chinese exports to Russia is similar to that of the EU, which, in a situation of possible and announced further liberalisa-

tion of trade tariffs between Russia and China, may trigger additional shifting effects, creating trade between these economies to the obvious detriment of the EU. To the greatest extent, it may concern the EU exports to Russia of Machinery and transport equipment, Chemicals and related prod, n.e.s., Miscellaneous manufactured articles, as well as Food and live animals.

To sum up, the added value of this paper is the conducted in-depth analysis of Russian-EU and Russian-Chinese mutual trade interdependencies at the same time and its reference to the international competitive profile of the Russian economy in the modern world in order to verify to what extent the existing commodity structure of Russia's trade with the EU and China reflects this profile. Despite the existence of various studies dedicated to Russia's economic relations with the EU28 (e.g.: Harsem & Claes, 2013; Lavrov, 2013; Dragnev & Wolczuk, 2012) and China (e.g.: Simola, 2016; Unnikrishnan & Purushothaman, 2015; Sidorenko, 2014; Rautava, 2011) separately, there is a lack of comprehensive comparative coverage of this issue in the Polish and international literature in one study, which has been done in this study.

Conclusions

The subject-matter of this article was an analysis of Russia's trade interdependence with the EU28 countries and with China — its main trading partners, with respect to basic goods categories of different technological advancement in 2007–2015. In addition, the international competitive profile of the Russian economy has been concisely analysed to see how the existing commodity structure of the trade corresponds (reflects) that profile.

It is clear from the analysis of this issue that for years both the EU28 and China have been very important trading partners for Russia, although in recent years China's role in Russia's foreign trade has gradually increased. There are at least a few reasons for this, which include, in particular, the dynamic development of the Chinese economy, the cooling of political relations between Moscow and Brussels following the introduction of economic sanctions in 2014, and the fall in oil prices on international markets. However, the existing trade structure of Russia with the EU28 and China strongly reflects the competitive profile of the Russian economy and, moreover, further strengthens the traditional competitive advantages Russia has enjoyed over the years in medium-low technology goods and oil.

Taking into account the above, as well as the specifics of the modern globalised world economy and dynamic changes in international trade, in

which high and medium-high technology goods play an increasingly important role, it will be difficult to expect any qualitative changes in the structure of Russia's trade with the EU28 and China for the benefit of Russia without decisive action taken by the Russian authorities aimed at increasing the competitive potential of the Russian economy. The most important recommendations in this context, addressed to the Russian authorities, include, amongst others, the creation of a comprehensive, coherent and consistently implemented long-term economic policy, focused on modernisation, innovation and, consequently, growth of productivity and competitiveness of the economy. It would also be necessary to take measures to diversify the export offer as widely as possible, i.a. by gradually abandoning the state policy of selective support and subsidising the sectors of extraction and processing of raw materials in favour of supporting the development of sectors based on knowledge and innovation.

As for the limitations of the research, taking into account objective limitations of the applied research method to determine the competitiveness of the Russian economy in contemporary international trade, no reasons have been identified in this article for Russia's low competitiveness in this area. Due to the specific simplicity of the applied research method, the analysis avoided such subtleties as heterogeneous preferences and heterogeneous trade costs, and therefore, the effects, and not causes, of the revealed comparative advantages were shown. In addition, the strength of the impact of Russia's trade with the EU28 and China on the comparative advantages possessed by the Russian economy was not determined either. In this case, a different research method should be used and an appropriate econometric model built. The above-listed limitations of the research conducted may indicate areas for possible future studies.

References

- Balassa, B. (1965). Trade liberalization and 'revealed' comparative advantage. *Manchester School of Economic and Social Studies*, 33.
- Balassa, B. (1989). 'Revealed' comparative advantage revisited. In B. Balassa (Ed.). *Comparative advantage, trade policy and economic development*. New York: New York University Press.
- Bond, I., Odendahl, C., & Rankin, J. (2015). *Frozen: the politics and economics of sanctions against Russia*. Centre for European Reform.
- Costinot, A., Donaldson, D., & Komunjer, I. (2012). What goods do countries trade? A quantitative exploration of Ricardo's ideas. *Review of Economics Studies*, 79(2). doi: 10.1093/restud/rdr033.

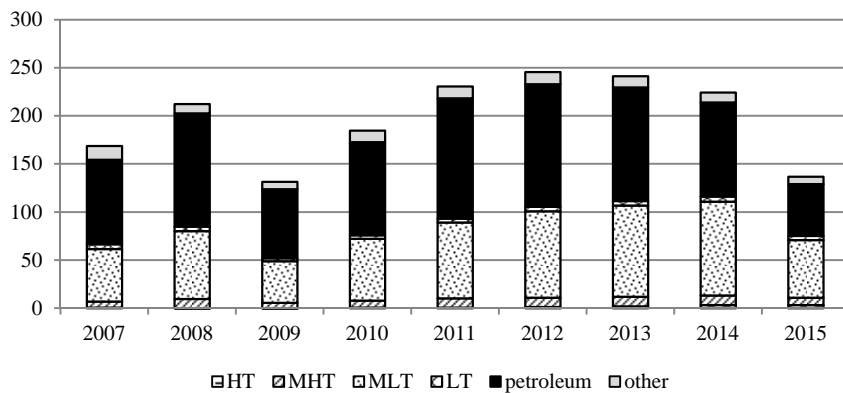
- Covi, G. (2014). Dutch disease and sustainability of the Russian political economy. *Economics and Policy of Energy and the Environment*, 2. doi: 10.3280/EFE2014-002005.
- Crozet, M., & Hinz, J. (2016). Friendly fire – the trade impact of the Russia sanctions and counter-sanctions. *Kiel Working Paper*, 2059.
- Dalum, B., Laursen, K., & Villumsen, G. (1998). Structural change in OECD export specialization patterns: de-specialization and ‘stickiness’. *International Review of Applied Economics*, 12(3). doi: 10.1080/02692179800000017.
- Dannreuther, R. (2016). EU-Russia energy relations in context. *Geopolitics*, 21(4). doi: 10.1080/14650045.2016.1222521.
- Deb, K., & Hauk, W. R. (2017). RCA indices, multinational production and the Ricardian trade model. *International Economics and Economic Policy*, 14(1). doi: 10.1007/s10368-015-0317-z.
- Dobrynskaya, V., & Turkisch, E. (2010). Economic diversification and Dutch disease in Russia. *Post-Communist Economies*, 22(3). doi: 10.1080/14631377.2010.498680.
- Dragneva, R., & Wolczuk, K. (2012). Russia, the Eurasian customs union and the EU: cooperation, stagnation or rivalry? *Chatham House Briefing Paper REP BP*, 2012/01. doi: 10.2139/ssrn.2125913.
- Dülger, F., Lopcu, K., Burgaç, A., & Ballı, E. (2013). Is Russia suffering from Dutch disease? Cointegration with structural break. *Resources Policy*, 38(4). doi: 10.1016/j.resourpol.2013.09.006.
- European Commission (2014). *European competitiveness report 2014 "Helping firms grow"*. Brussels: European Commission.
- Falkowski, K. (2017). Long-term comparative advantages of the Eurasian Economic Union member states in international trade. *International Journal of Management and Economics*, 53(4). doi: 10.1515/ijme-2017–0024.
- Falkowski, K. (2018). Competitiveness of the Baltic States in international high-technology goods trade. *Comparative Economic Research*, 21(1). doi: 10.2478/cer-2018-0002.
- Gnidchenko, A. A., & Salnikov, V. A. (2015). Net comparative advantage index: overcoming the drawbacks of the existing indices. *Higher School of Economics Research Paper*, WP BRP 119/EC/2015. doi: 10.2139/ssrn.2709009.
- Gregory, P. (2018). A reassessment of Putin's Russia: the economy. *South Central Review*, 35(1). doi: 10.1353/scr.2018.0009.
- Harsem, O., & Claes, D. H. (2013). The interdependence of European-Russian energy relations. *Energy Policy*, 59. doi: 10.1016/j.enpol.2013.04.035.
- Hatzichronoglou, T. (1997). Revision of the high technology sector and product classification. *STI Working Papers 1997/2*.
- Herrero, A. G., & Xu J. (2016). The China-Russia trade relationship and its impact on Europe. *Working Paper*, 4. Retrieved from http://bruegel.org/wp-content/uploads/2016/07/WP-2016_04-180716.pdf.
- Hinloopen, J., & Van Marrewijk, C. (2001). On the empirical distribution of the Balassa index. *Weltwirtschaftliches Archiv*, 137. doi: 10.1007/BF02707598.

- Hoen, A. R., & Oosterhaven, J. (2006). On the measurement of comparative advantage. *Annals of Regional Science*, 40(3). doi: 10.1007/s00168-006-0076-4.
- Huasheng, Z. (2016). Sino-Russian economic cooperation in the Far East and Central Asia since 2012. *Eurasia Border Review*, 6(1). doi: 10.14943/ebr.6.1.103.
- Iapadre, P. L. (2001). Measuring international specialization. *International Advances in Economic Research*, 7(2). doi: 10.1007/BF02296007.
- Ito, K. (2017). Dutch disease and Russia. *International Economics*, 151. doi: 10.1016/j.inteco.2017.04.001.
- Ivanter, V. V. (2018). Prospects of economic development in Russia. *Studies on Russian Economic Development*, 29(3). doi: 10.1134/S1075700718030061.
- Laursen, K. (2015). Revealed comparative advantage and the alternatives as measures of international specialization. *Eurasian Business Review*, 5(1). doi: 10.1007/s40821-015-0017-1.
- Lavrov, S. (2013). State of the Union Russia-EU: prospects for partnership in the changing world. *Journal of Common Market Studies*, 51. doi: 10.1111/jcms.12047.
- Liuhto, K. (2015). The economic dependence of EU member states on Russia. In A. Pabriks & A. Kudors (Eds.). *The war in Ukraine: lessons for Europe*. Riga: University of Latvia Press.
- Locatelli, C., Abbas, M., & Rossiaud S. (2017). The emerging hydrocarbon interdependence between Russia and China: institutional and systemic implications. *Europe-Asia Studies*, 69(1). doi: 10.1080/09668136.2016.1274020.
- Lukin, A. (2013). Russian-Chinese relations. *ISPI Analysis*, 167.
- Miller, Ch. (2018). *Putinomics. Power and money in resurgent Russia*. Chapel Hill: The University of North Carolina Press.
- Mironov, V. V., & Petronevich, A. V. (2015). Discovering the signs of Dutch disease in Russia. *Resources Policy*, 46(2). doi: 10.1016/j.resourpol.2015.09.007.
- Nevskaya, A. (2016). *Russia-EU economic relations: assessing two years of sanctions*. Retrieved from <http://www.russia-direct.org/analysis/russia-eu-economic-relations-assessing-two-years-sanctions>.
- Organisation for Economic Co-operation and Development (2011). *ISIC Rev. 3 Technology intensity definition. Classification of manufacturing industries into categories based on R&D intensities*. Retrieved from <http://www.oecd.org/sti/ind/48350231.pdf>.
- Popkova, E. G., & Sukhodolov, Y. A. (2017). *Foreign trade as a factor of economic growth. Russian-Chinese foreign trade cooperation*. Springer International Publishing.
- Priede, J., & Pereira E. T. (2015). European Union's competitiveness and export performance in context of EU-Russia political and economic sanctions. *Procedia – Social and Behavioral Sciences*, 207. doi: 10.1016/j.sbspro.2015.10.138.

- Rautava, J. (2011). Russia's economic policy and Russia-China economic relations. In A. Moshes & M. Nojonen (Eds.). *Russia-China relations. Current state, alternative futures, and implications for the West*. Helsinki: The Finnish Institute of International Affairs.
- Romanova, T. (2014). Russian energy in the EU market: bolstered institutions and their effects. *Energy Policy*, 74. doi: 10.1016/j.enpol.2014.07.019.
- Rutland, P. (2014). The impact of sanctions on Russia. *Russian Analytical Digest*, 157.
- Sidorenko, T. (2014). The scope of economic cooperation between Russia and China and future prospects. *Problemas del desarrollo*, 45(176).
- Siggel, E. (2006). International competitiveness and comparative advantage: a survey and a proposal for measurement. *Journal of Industry, Competitiveness and Trade*, 6(2). doi: 10.1007/s10842-006-8430-x.
- Simola, H. (2016). Economic relations between Russia and China – increasing inter-dependency? *BOFIT Policy Brief*, 6.
- Startiene, G., & Remeikiene, R. (2014). Evaluation of revealed comparative advantage of Lithuanian industry in global markets. *Procedia – Social and Behavioral Sciences*, 110. doi: 10.1016/j.sbspro.2013.12.887.
- Tabata, S. (2012). Observations on Russian exposure to the Dutch disease. *Eurasian Geography and Economics*, 53(2). doi: 10.2747/1539-7216.53.2.231.
- Tuzova, Y., & Qayum, F. (2016). Global oil glut and sanctions: the impact on Putin's Russia. *Energy Policy*, 90. doi: 10.1016/j.enpol.2015.12.008.
- UN Comtrade (2017). United Nations commodity trade statistics database. Retrieved from <https://comtrade.un.org/>.
- Unnikrishnan, N., & Purushothaman, U. (2015). *Trends in Russia-China relations*. New Delhi: Observer Research Foundation.
- Vollrath, T. (1991). A theoretical evaluation of alternative trade intensity measures of revealed comparative advantage. *Weltwirtschaftliches Archiv*, 127(2). doi: 10.1007/BF02707986.
- Wilson, J. L. (2015). *Strategic partners: Russian-Chinese relations in the post-Soviet era*. New York: Routledge.
- Wilson, J. L. (2016). The Eurasian Economic Union and China's silk road: implications for the Russian-Chinese relationship. *European Politics and Society*, 17(1). doi: 10.1080/23745118.2016.1171288.
- Yu, R., Cai, J., & Leung, P. (2009). The normalized revealed comparative advantage index. *Annals of Regional Science*, 43(1). doi: 10.1007/s00168-008-0213-3.

Annex

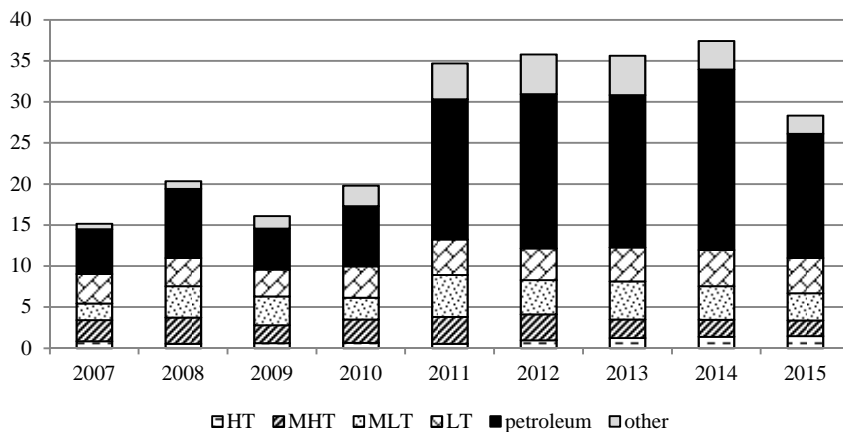
Figure 1. Goods structure of Russian exports to the EU28 in 2007–2015 (billion USD)



HT – high-technology goods, MHT – medium-high-technology goods, MLT – medium-low-technology goods, LT – low-technology goods (here and in the following figures)

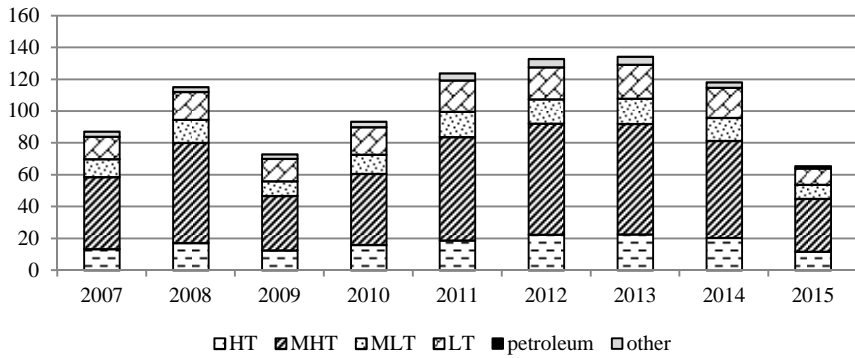
Source: own elaboration based on United Nations Commodity Trade Statistics Database.

Figure 2. Goods structure of Russian exports to China in 2007–2015 (billion USD)



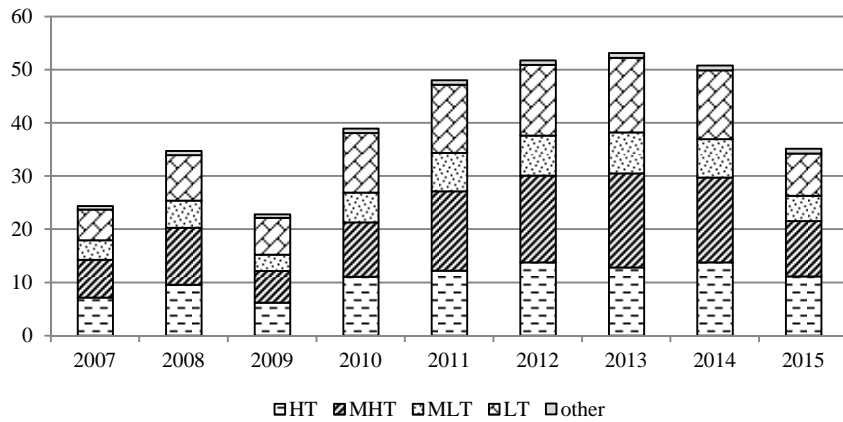
Source: own elaboration based on United Nations Commodity Trade Statistics Database.

Figure 3. Goods structure of Russian imports from the EU28 in 2007–2015 (billion USD)



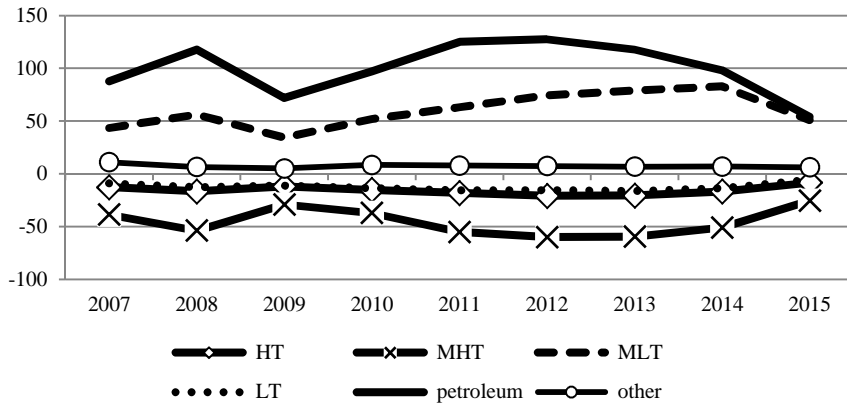
Source: own elaboration based on United Nations Commodity Trade Statistics Database.

Figure 4. Goods structure of Russian imports from China in 2007–2015 (billion USD)



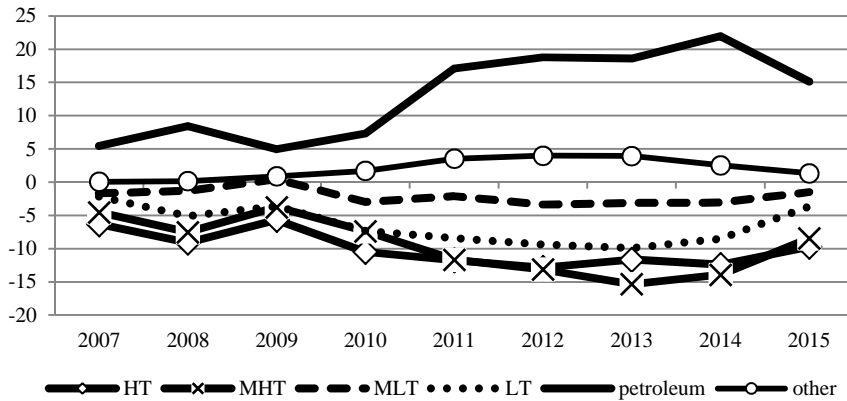
Source: own elaboration based on United Nations Commodity Trade Statistics Database.

Figure 5. Trade balance in Russian trade exchange with the EU28 in 2007–2015 (billion USD)



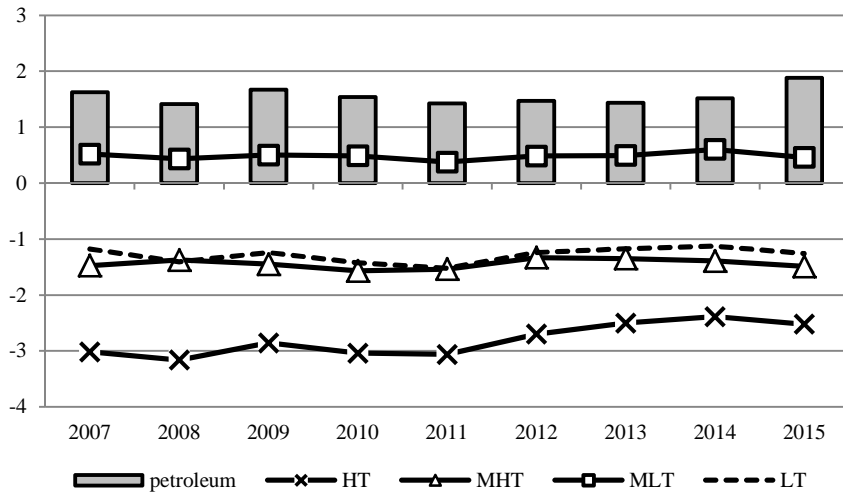
Source: own elaboration based on United Nations Commodity Trade Statistics Database.

Figure 6. Trade balance in Russian trade exchange with China in 2007–2015 (billion USD)



Source: own elaboration based on United Nations Commodity Trade Statistics Database.

Figure 7. Dynamics of comparative advantages (RCA) in Russian foreign trade in 2007–2015, according to the OECD classification of manufacturing industries based on their technological advancement excluding oil, presented separately



Source: own elaboration based on United Nations Commodity Trade Statistics Database.