DOI: http://dx.doi.org/10.21686/2410-7395-2024-4-42-58

РАЗВИТИЕ РОССИЙСКО-КИТАЙСКОЙ ТОРГОВЛИ ЭНЕРГЕТИЧЕСКИМИ РЕСУРСАМИ В УСЛОВИЯХ ЭКОНОМИЧЕСКИХ САНКЦИЙ ЕС И США[1]

Линь Шэнфу, Н. Б. Давидсон
Уральский федеральный университет, Екатеринбург, Россия

Данное исследование посвящено анализу российско-китайской торговли энергетическими ресурсами в контексте экономических санкций ЕС и США. Статья восполняет пробел в исследованиях о влиянии санкций на экономику России на уровне отдельных отраслей экономики, в частности, в энергетическом секторе. Анализ основан на статистических данных о российско-китайской торговле энергоресурсами с 2000 по 2023 г., охватывая период до и после введения санкций, а также документах и информации об экономических санкциях ЕС и США. Рассмотрены виды экономических санкций, тенденции развития российско-китайской торговли энергоресурсами в условиях санкций, а также адаптивные меры, принятые в российско-китайской торговле энергоресурсами и их последствия. Сопоставлено воздействие экономических санкций 2014 и 2022 гг. на экономику и торговлю России, а также рассмотрено влияние санкций на российско-китайскую торговлю энергоресурсами. Сделан вывод о том, что в результате санкций ЕС и США и адаптивных мер, принятых Россией и Китаем, энергетическая торговля и сотрудничество между двумя странами укрепились, однако перед Россией стоит вызов диверсификации экспорта и развития торговли в условиях санкций и энергетического перехода. Предложены практические рекомендации по энергетическому сотрудничеству между Россией и Китаем.
Ключевые слова: Россия, Китай, энергетика, торговля.

DEVELOPMENT OF ENERGY TRADE BETWEEN RUSSIA AND CHINA UNDER EU AND US ECONOMIC SANCTIONS[2]

Lin Shengfu, Natalia B. Davidson
Ural Federal University, Ekaterinburg, Russia

The objective of this study is to analyse energy trade between Russia and China in the situation of the EU and US economic sanctions. The article fills the gap in research on the impact of sanctions on the Russian economy at the level of individual sectors of the economy, in particular energy sector. The analysis is based on statistical data on Russia-China energy trade from 2000 to 2023, i. e. before and after sanctions were imposed, as well as documents and information on the EU and US economic sanctions. We consider the types of economic sanctions, trends in the

[1] Статья подготовлена по результатам исследования, проведенного при финансовой поддержке Российского научного фонда (код: 23-18-01065).
[2] The article is based on the results of the study conducted with the financial support of the Russian Science Foundation (code: 23-18-01065).

development of Russia-China trade in energy resources under sanctions, as well as adaptive measures taken in Russia-China energy trade and their consequences. The impact of 2014 and 2022 economic sanctions on the Russian economy and trade is compared, and the effect of sanctions on Russia-China energy trade is analysed. It is concluded that because of EU and US sanctions and adaptive measures taken by Russia and China, energy trade and cooperation between the two countries have strengthened; however, Russia faces the challenge of diversifying exports and developing trade in the context both of sanctions and the energy transition. This article contributes to research in the field of international energy trade, and offers practical recommendations for energy cooperation between Russia and China.
Keywords: Russia, China, energy, trade.

Introduction

Energy trade is an important component of international trade and relations between countries. For Russia, energy sector provides a substantial share of budget revenues. At the same time, the EU and US economic sanctions aimed at this sector are quite substantial [1]. Therefore, the development of energy trade under sanctions deserves attention. The objective of this study is to analyse the development of energy trade between Russia and China in the situation of the EU and US economic sanctions. Russia is one of the world's largest energy exporters, while China's demand for energy is the world's largest[1]. Energy trade between Russia and China has become an important part of the international energy market. In 2023, Russia became China's largest crude oil supplier, the second largest coal supplier and the third largest liquefied natural gas supplier[2]. These trade relations are developing in the situation of the EU and US sanctions against Russia.

During recent years, economic sanctions have been increasingly used as a means of intervention in geopolitical challenges. Economic sanctions mainly include sanctions in the financial, trade, and fiscal fields. Cortright and Lopez put forward that the main purpose of the sanctions is to exert economic pressure on the target entity [9]. As stated by Morgan et al. and by Haidar, sanctions are used by a country or international organization against a country to force it to change its policies or behaviours [18, 11]. Ananyev analyses economic sanctions in the context of the International Relations theories – liberalism and realism – and concludes that to understand sanctions additional theoretical background is needed [6].

As for the impact of economic sanctions on international trade, Hufbauer and Elliott found that the US economic sanctions have significantly and negatively affected trade, employment, and wage levels in countries under

[1] Energy Balance of Trade. In World Energy and Climate Statistics – Yearbook 2024. – URL: https://yearbook.enerdata.net/total-energy/world-import-export-statistics.html (accessed 11.09.2024).

[2] Downs E., Losz A., Mitrova T. The Future of the Power of Siberia 2 Pipeline. – URL: https://www.energypolicy.columbia.edu/publications/the-future-of-the-power-of-siberia-2-pipeline/ (accessed 31.05.2024).

sanctions [13]. Meanwhile, Lindsay re-examines the effectiveness of sanctions in achieving compliance, subversion, deterrence and symbolic significance both internationally and domestically, arguing that sanctions often fail in the pursuit of compliance, subversion and deterrence, but possess symbolic significance [17].

Hufbauer et al. [14] believes that the effectiveness of sanctions depends on a variety of factors, including the economic vulnerability of the target country, and on the determination and consistency of sanctions implementers. However, Pape argues that while economic sanctions have had some success in a few cases, overall, they are ineffective [20]. Dizaji provides an in-depth analysis of the dynamics of economic sanctions, revealing that successful sanctions are often evident in the early stages, but compliance with sanctions wanes over time [10]. Caruso based on the gravity model of international trade found that multilateral sanctions have a greater negative impact on trade flows than unilateral sanctions [7]. Ananyev emphasizes that excessive sanctions result into decreased economic transactions for a sanctioning country and formation of new ties between countries under sanctions [6]. Overall, the findings are controversial and require further research.

After the outbreak of the Ukrainian crisis in 2014, Europe and the United States have imposed several rounds of sanctions that have put pressure on Russia's economic development and international trade [23]. Romanova emphasizes the qualitative change brought about by the 2014 sanctions on EU–Russia economic relations [21]. Hosoe used a computable general equilibrium model of world trade to quantify the possible impact of EU and US economic sanctions imposed on Russia and found that the impact of sanctions on energy supply will affect all sanctions-sending countries [12].

Concerning energy trade between Russia and China, Zhang points out that the energy partnership between Russia and China has been firmly established [25]. Experts point out multiple factors that can strengthen or weaken economic relations between the two countries[1]. Besides, EU and US sanctions concern Russia's trade partners as well. At the same time, there is still a lack of research on the development of energy trade between Russia and China under the EU and US economic sanctions. Our study fills in this gap to contribute to understanding of energy trade between Russia and China and help provide relevant policy recommendations.

The next section describes methodology, then the EU and US economic sanctions and their role in Russia's trade are discussed. The analysis of energy trade between Russia and China follows, and the last section provides conclusion and policy recommendations.

[1] Wachtmeister H. Russia-China Energy Relations Since 24 February: Consequences and Options for Europe : Report 1, 2023. – URL: https://www.ui.se/globalassets/ui.se-eng/publications/sceeus/russia-china-energy-relations-since-24-february.pdf (accessed 11.09.2024).

Methodology

The analysis in this paper is based on the statistical data on trade between Russia and China and, specifically, on energy trade between the two countries, provided mainly by the United Nations Trade Database covering the period from 2000 to 2023.

In addition, for a comprehensive understanding of the EU-US sanctions and their role in energy trade between Russia and China, we analysed the EU and US sanctions policies, the implementation time, and the adaptive measures taken by Russia and China after the implementation of EU-US sanctions, based on the official websites, including the website of The Office of Foreign Assets Control (OFAC) of the US Department of the Treasury[1] and the European Commission website[2].

Russia's trade in the situation of the EU and US economic sanctions

After the Ukrainian crisis in 2014, European Union and USA imposed a series of economic sanctions on Russia, which were further intensified in 2022. Table 1 summarises the measures implied by the sanctions in 2014 and 2022.

Table 1

Main Sanctions against Russia imposed by the EU and US*

Sanction Gategory	Measures in 2014	Measures in 2022
Financial sanctions	Asset freezes and restrictions on access to capital markets for banks and financial institutions	Further restrictions on banking transactions, disconnecting banks from the SWIFT system
Energy sector sanctions	Restrictions on investment and services in the oil and gas sector, particularly in deep-water, Arctic, and shale projects	Prohibitions or restrictions on importing energy products, especially oil and natural gas
Military and dual-use goods sanctions	Ban on exporting military equipment and dual-use goods and technology	Expanded controls on the export of dual-use and high-tech products including semiconductors and communications technology
Sanctions on Individuals and entities	Travel bans and asset freezes for certain individuals and entities	Broadening the scope of sanctions to include more government officials, business leaders, and influencers
Diplomatic sanctions	Reduction in diplomatic interactions, suspension of certain bilateral cooperation projects	Increased diplomatic isolation, cancellation or suspension of diplomatic and political contacts

Source: EU sanctions against Russia explained. – URL: https://www.consilium.europa.eu/en/policies/sanctions-against-russia/sanctions-against-russia-explained/; Ukraine-/Russia-related Sanctions. Office of Foreign Assets Control. – URL: https://ofac.treasury.gov/sanctions-programs-and-country-information/ukraine-russia-related-sanctions (accessed 07.06.2024).

[1] Ukraine-Russia-related Sanctions. Office of Foreign Assets Control. – URL: https://ofac.treasury.gov/sanctions-programs-and-country-information/ukraine-russia-related-sanctions (accessed: 07.06.2024).

[2] EU sanctions against Russia following the invasion of Ukraine. – URL: https://eu-solidarity-ukraine.ec.europa.eu/eu-sanctions-against-russia-following-invasion-ukraine_en (accessed 07.06.2024).

Specifically, the EU and the US have imposed a series of restrictions on Russia's energy industry, that touched especially the investment and services in the oil and gas sector [1]. This includes prohibiting the provision of technology, goods and services to Russia's deepwater, Arctic and shale oil and gas projects. The sanctions imposed in 2022 further restricted Russia's economic activities, affecting also energy sector, as the import of oil and gas from Russia was prohibited or restricted. Sanctions are imposed on Russian energy companies to limit their access to international capital markets and technology.

Besides, the export of high-tech products to Russia was prohibited, especially military and dual-use (military and civilian) technologies. Investment in Russia's high-tech and defence sectors was restricted. Tariffs or bans were imposed on goods imported from Russia, while restrictions were placed on the export of certain goods to Russia. Overall, the sanctions of 2022 were more comprehensive than those of 2014, and have affected both the Russian and global economy, specifically, energy markets and food supplies, particularly influencing the countries and regions that have economic ties with Russia.

The issue of sanctions' effectiveness is addressed by researchers. Schott believes that the economic sanctions imposed by Western countries have put pressure on Russia's trade and finances but have not achieved their political goals; however, combined with continued economic and military support for Ukraine, the sanctions are hindering Russia's activities [22].

Russia's GDP had a growth trend till 2014; due to the economic sanctions it fell sharply in 2014-2016, started recovering in the following 2017-2019 and declined due to COVID-19 in 2020; it regained growth in 2021-2022, which was interrupted because of the 2022 sanctions[1]. Since 2014, Russia has partly reoriented from the European to Asian market, specifically, in energy trade, has worked on import substitution plan, and financial risks prevention; besides, the rise in fossil fuel prices has been crucial in mitigating the short-term effect of sanctions. At the same time, the consequences of 2022 sanctions are an important issue for further research.

The economic sanctions have had a significant impact on Russia's trade. From 2014 to 2016, Russia experienced a decline in imports, exports, and overall trade volume; after a recovery in 2016–2018, a significant decline in trade occurred in 2019–2020[2], due to the COVID-19 pandemic and the drop in

[1] World Bank Open Data. – URL: https://data.worldbank.org/indicator/NY.GDP.MKTP.CD?locations=RU (accessed 11.06.2024).

[2] Bilateral Trade between Russian Federation and World. – URL: https://www.trademap.org/Bilateral_TS.aspx?nvpm=1%7c643%7c%7c000%7c%7cTOTAL%7c%7c%7c2%7c1%7c1%7c2%7c2%7c1%7c1%7c1%7c1%7c1; UN Comtrade. – URL: https:// comtradeplus.un.org/ (accessed 11.06.2024).

oil prices in 2019–2020[1]. 2022 sanctions resulted in decline of Russia's trade volumes.

Sycheva points out that as a result of EU and US sanctions, Russia's trade with the sanctioning countries has declined, and Russia reoriented its trade towards such countries as China, India and Turkey. Trade volume with these countries is already larger than with the EU [2]. Specifically, the role of China as Russia's trade partner is growing[2]. Special emphasis is made on integration blocks. Experts underscore the need for trade diversification both in terms of countries and sectors to improve Russia's terms of trade. Indeed, domination of several countries in trade allows them to demand discounts for goods exported from Russia and markups for goods imported in Russia [2]. The next section is devoted to energy trade between Russia and China under EU and US sanctions.

The impact of EU-US economic sanctions on energy trade between Russia and China

Energy trade has a substantial role in Russia's foreign trade, while energy sanctions account for an important part of the EU–US economic sanctions against Russia. They have had a strong impact on Russia's energy trade, especially since 2022. European countries used to be the main Russia's partners in export of energy resources [8]. When EU and US imposed sanctions in 2014, exports to the EU remained a large share of Russia's oil and gas exports, 79% in 2014, and 66,9% in 2016 [5]. However, Russia's energy trade with EU has been declining as a result of sanctions [2], and Russia's energy export is currently reorienting to the Asian countries, including China [1].

Xin based on a three-party energy evolution game including Russia, sanctioning countries and non-sanctioning countries found that the sanctioning countries could not affect the energy trade strategy of non-sanctioning countries. Non-sanctioning countries still choose to import Russian energy, and setting an energy price cap is expected to aggravate the energy crisis of sanctioning countries [24]. Chen based on a global multi-region comparative static CGE model quantitatively analysed the impact of EU-US energy sanctions on Russia and revealed that energy sanctions will cause economic losses to both Russia and the EU. Energy sanctions are bringing about a direct energy trade transfer effect, as the EU's energy imports are shifting to non-Russian markets, and Russia's energy exports – to the Asian market; as a result, energy trade between Russia and the EU will significantly decline [8].

---

[1] Crude Oil Prices – 70 Year Historical Chart. Marcrotrends. – URL: https://www.macrotrends.net/1369/crude-oil-price-history-chart (accessed 11.09.2024).

[2] China's exports to Russia. Trading Economics. – URL: https://tradingeconomics.com/china/exports/russia; Russia's Export to China. Trading Economics. – URL: https://tradingeconomics.com/russia/exports/china (accessed 11.06.2024).

The EU–US economic sanctions have led to increase in energy trade between Russia and China. Russia's trade is characterized both by geographic concentration and lack of diversification in terms of sectors and goods. As energy sector plays the key role in Russia's export, in 2022 the share of energy resources in Russia's export to China increased to around 75%; at the same time, sanctions are aimed at limiting energy trade with Russia also for non-sanctioning countries [2]. Budget revenues of Russia from the energy sector declined in 2023 by 3 tn rubles compared to 2022 and reached 9 tn rubles, under oil prices higher than the base price set for calculating the budget [1].

Lei and Sui emphasise that in the post-Cold War era, China has been deepening its strategic partnership with Russia; the two countries have continuously expanded their cooperation areas, especially in the fields of oil and gas [15].

Russia's total primary energy production in 2022 was 59.9 Quadrillion BTU, but the country's total primary energy consumption was only 32.5 Quadrillion BTU. Coal production, natural gas, and oil production exceed domestic consumption needs, with a surplus of 4.76 Quadrillion BTU for coal, 6.33 Quadrillion BTU for natural gas, and 16.24 Quadrillion BTU for oil[1]. Russia's abundant energy resource production and low domestic consumption determine its position as an exporter on the world energy market.

In turn, China is the world's largest energy consumer with the total primary energy consumption of 173.96 Quadrillion BTU, and the total primary energy production 137.83 Quadrillion BTU in 2022, meaning that China has to import energy to meet its domestic consumption needs. China's largest energy gap is oil, of about 20 Quadrillion BTU[2].

Thus, Russia and China have a complementarity in energy trade. Moreover, as Russia and China are adjacent to each other and have convenient trade and transportation conditions, this facilitates the energy trade between the two countries.

The development of energy trade between Russia and China under the EU and US sanctions can be divided into five periods (Figure 1). First, before 2014, energy trade between the two countries grew slowly. Second, from 2014 to 2016, it declined due to the first wave of EU-US economic sanctions. Third, from 2017 to 2018, with the gradual implementation of adaptive measures for energy trade between Russia and China to economic sanctions, energy trade volume grew rapidly and surpassed the trade volume before the EU–US economic sanctions.

Fourth, from 2019 to 2020, due to the impact of the global COVID-19 and oil price fluctuations, energy trade between Russia China stagnated and even fell in 2020. Then, from 2021 to 2023, with the initial relaxation of epidemic restrictions in Russia in June 2020, energy trade rebounded in 2021 and grew at

[1] URL: https://www.eia.gov/international/overview/ country/RUS (accessed 11.06.2024).
[2] URL: https://www.eia.gov/international/overview/ country/CHN (accessed 11.06.2024).

a faster rate in 2022. In 2022 oil and gas trade between the two countries (in terms of value, USD) increased by 54%[1].

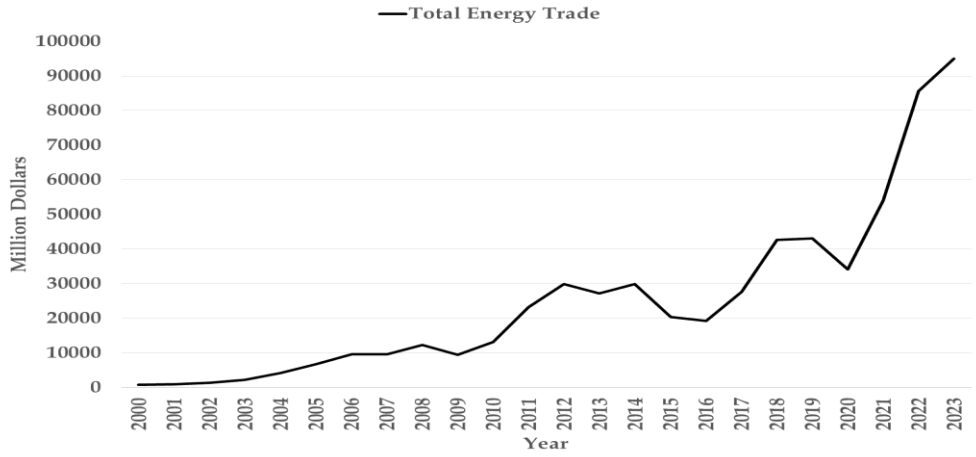

Figure 1. Total energy trade between Russia and China in 2000–2023 (in million dollars)[2]

The strengthening of energy trade between Russia and China meets Russia's needs to find export markets, and China's strategic needs of energy security. However, China's dominating Russia's energy exports creates risks for Russia, primarily, in terms of commercial conditions.

As for China's energy imports from Russia, Figure 2 shows that compared with the steady growth from 2000 to 2013, they increased significantly from 2013 to 2023, despite the restrictions on investment and services in the energy sector under the economic sanctions.

In 2014-2016, international energy prices fluctuated drastically, with oil prices plummeting from a high of $98.05 per barrel in 2013 to $43.4 in 2016 and hitting a new low since the global financial crisis in 2009[3]. As a result, China's energy imports from Russia fell sharply, by as much as 32.11%[4]. Li et al. pointed out that sanctions against the energy industry are the main driving factor for fluctuations in oil prices and energy company stock prices [16]. Subsequently, in 2017 and 2018, China's imports of Russia's energy resources rebounded significantly, especially in 2018, with a growth rate of 54.35%. In 2021–2022, energy trade between Russia and China grew again, especially in

[1] Wachtmeister H. Russia-China energy relations since 24 February: Consequences and options for Europe. Swedish National China Center : Report 1, 2023. – P. 20. – URL: https://www.ui.se/globalassets/ui.se-eng/publications/sceeus/russia-china-energy-relations-since-24-february.pdf (accessed 11.09.2024).

[2] URL: https://comtradeplus.un.org/ (accessed 11.06.2024).

[3] Cushing, OK Crude Oil Future Contract 1 (Dollars per Barrel). – URL: https://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=pet&s=rclc1&f=a (accessed 11.06.2024).

[4] URL: https://comtradeplus.un.org/ (accessed 11.06.2024).

2022, with a growth rate of 59.32%, mainly due to intensification of EU-US sanctions against Russia in 2022.

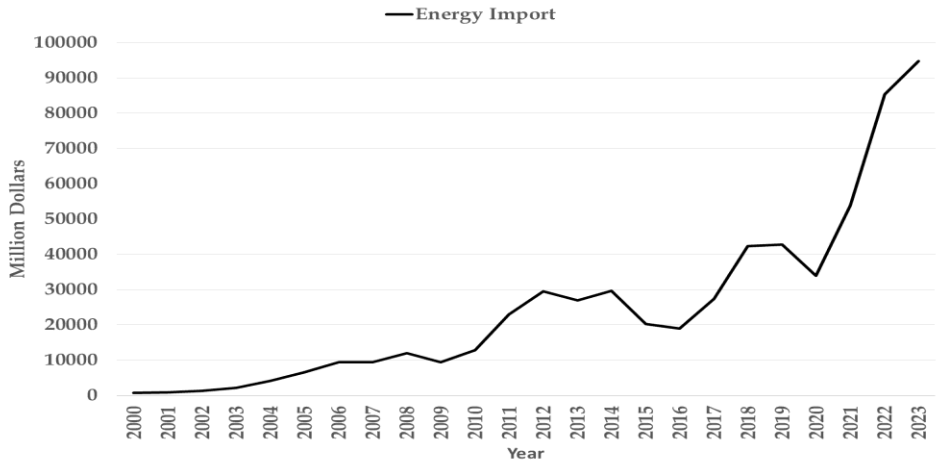

Figure 2. China's energy imports from Russia in 2000-2023 (in million dollars)[1]

Russia's energy export to China exceeds its energy import from China (Figure 3). China's energy exports to Russia are relatively more volatile. For example, in 2014, exports dropped significantly, by 35.51%, while in 2017 and 2018, they grew by more than 50%. Particularly noteworthy is the 93.42% surge in exports in 2022 compared to 2021, following additional EU and US economic sanctions.

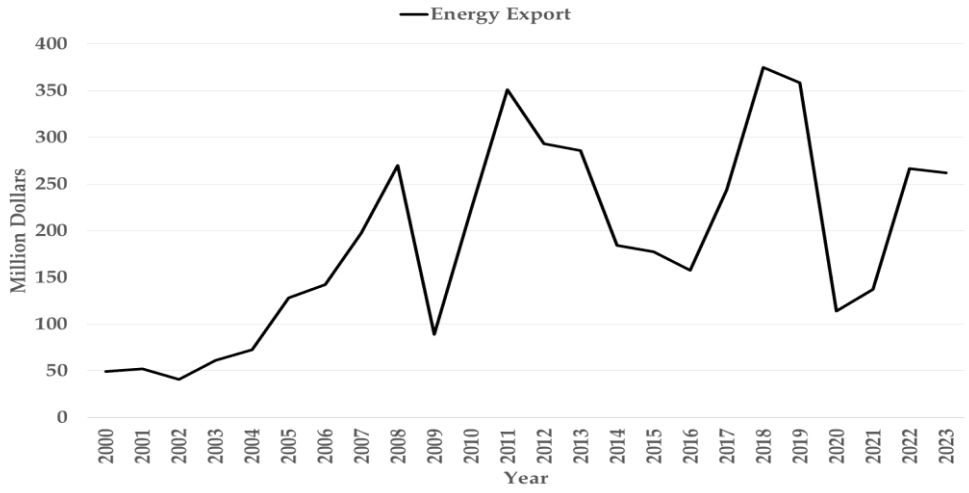

Figure 3. China's energy exports to Russia in 2000-2023 (in million dollars)

[1] *Source Figure* 2; 3: URL: https://comtradeplus.un.org/ (accessed 11.06.2024).

Having analysed Russia's trade under sanctions and trade relations between Russia and China, in the next section we consider trade policy of the two countries in energy sector under sanctions.

Adaptive measures of Russia and China in energy trade and their effects

Nguyen based on data on 49 trade partners of Russia from 2011 to 2018 found that sanctions had a serious impact on the Russian exports of petroleum products, reducing exports by about 36.56%, while the impact of sanctions on the Russian non-petroleum product exports was negligible [19]. To reduce the impact of EU-US economic sanctions on energy trade and to support energy trade, Russia and China have taken a series of adaptive measures (Table 2).

Table 2

Adaptive measures of energy trade between Russia and China under EU-US economic sanctions*

Adaptation Measures	Measures in 2014	Measures in 2022
Diversification of energy exports	Russia sought new energy export markets, notably enhancing cooperation with China and other Asian countries	Russia further strengthened energy cooperation with China, including the increase in exports of natural gas and oil, and expanded to other Asian markets
Adjustment of energy trade settlement mechanisms	Discussions began on using local currencies in energy trade settlements to reduce the reliance on the US dollar	Accelerated use of the renminbi and ruble in energy trade, reducing dependency on Western financial systems
Long-term contracts and advance payments	Long-term energy supply contracts and advance payment mechanisms used to ensure the stability of energy exports	Increased signing of long-term contracts with mechanisms like advance payments to secure investment projects and continuous energy supply
Energy infrastructure development	Acceleration of energy transportation infrastructure projects, such as the China-Russia East-Route Natural Gas Pipeline	Continued expansion of energy transportation infrastructure, including gas pipelines and port facilities, to strengthen land and maritime energy transport capabilities
Technological development and cooperation	Enhanced cooperation in energy exploration and technological development to improve efficiency and enhance self-sufficiency	Strengthened cooperation in energy exploration and technological development to enhance self-sufficiency

* *Compiled on*: [1; 2; 8].

In May 2014, Russia and China signed the Eastern Line natural gas pipeline agreement, which marks a major shift in Russia's energy exports to

the Eastern market. In the following years, Russia and China accelerated the construction of energy transmission infrastructure. Besides, they began to implement the use of RMB and rubles for energy trade settlement to maintain flexibility and autonomy. At the same time, the two countries established a long-term contract and advance payment mechanism for energy trade. These contracts provide long-term energy supply and income guarantees for both parties, the efficiency and safety of energy transmission. In terms of technical cooperation under the limited access to Western technology, Russia and China have strengthened collaboration in energy exploration and development technology.

As in 2022 the EU and US economic sanctions have intensified, the adaptive measures for energy trade between Russia and China have also developed. First, Russia has increased the export volume of natural gas and oil to China and expanded its energy exports to other Asian markets. Russia and China announced in 2022 that they would increase the supply of natural gas through the China-Russia East-Route natural gas pipeline[1].

Second, Russia and China have accelerated the use of the RMB and the ruble in energy trade. Third, Russia and China have promoted the use of the long-term contracts and advance payments to attain the long-term stability and strengthen the guarantee of energy supply in the uncertain international environment. Fourth, the two countries continue to expand energy transmission infrastructure, including the construction of new natural gas pipeline projects and port facilities, which strengthens energy transmission capacity and enhances the risk resistance of energy trade. Finally, Russia and China have taken new steps in energy technology cooperation and have the potential for development of clean energy and energy efficiency improvement.

At the same time, for Russia it is essential to enhance trade of higher value-added goods, not only in energy sector but also in the other sectors [2]. Meanwhile, Chinese government is implementing a strategy of technological development and promotes fundamental and applied science [4].

This creates a potential for cooperation in technological sphere between Russia and China, while technological development, as well as the development of human capital, are essential for Russia in the situation of the on-going technological revolution, evolving global value chains and energy transition [3].

Conclusion

The above analysis demonstrates that the economic sanctions have promoted energy trade between Russia and China due to strong complementarity in the production and consumption of energy and the

[1] Yermakov V., Meidan M. Russia and China Expand Their Gas Deal: Key implications. Oxford Energy Comment. March 2022. – URL: https://www.oxfordenergy.org/publications/russia-and-china-expand-their-gas-deal-key-implications/ (accessed 11.09.2024).

adaptive measures in the energy trade taken by the two countries, including energy trade settlement mechanism, long-term contracts and advance payment mechanism, energy infrastructure construction, and technical cooperation. Based on our research, we put forward the following recommendations for the development of energy trade between Russia and China.

First, Russia and China can increase investment in energy infrastructure construction – oil and gas pipelines, liquefied natural gas receiving terminals, energy storage facilities – to enhance energy transportation and storage capacity. Cooperation can be strengthened in the energy industry chain: enhancing independent development capability and technical cooperation in energy exploration, extraction, processing, storage, and transportation.

Second, Russia and China could benefit from developing financial cooperation and payment mechanism innovation in energy trade, such as the use of local currency settlements, digital currencies or other innovative financial instruments. Third, it is worth improving policy communication and coordination in energy trade, including the transparency of energy policy. In addition, expanding trade and investment cooperation in non-energy sectors would promote the development of the two economies.

Besides, Russia and China should diversify their energy trade. Given the current tendencies towards clean energy both in China and Russia, it is essential to develop cooperation in the field of renewable energy, as the demand for fossil fuel is expected to decrease with the shift towards alternative energy sources. Specifically, Russia can use its endowment of mineral resources to develop equipment for renewable energy production in cooperation with China. Both for Russia and China it is vital to continue energy transition to mitigate climate change, while considering the impact on the environmental situation of mining for minerals needed for the clean energy facilities.

Finally, it is important for Russia to diversify its export both in terms of goods and trading partners in order to benefit from better commercial conditions, improve the terms of trade and create possibilities for sustainable development.

Список литературы

1. *Глинская М. В.* Антироссийские санкции в отечественной нефтегазовой отрасли // Международная торговля и торговая политика. – 2024. – Т. 10. – № 2 (38). – С. 123–135. DOI: 10.21686/2410-7395-2024-2-123-135

2. *Сычева К. Г.* Торговое сотрудничество России: формирование стратегического партнерства в условиях санкций // Международная торговля и торговая политика. – 2024. – Т. 10. – № 1. – С. 144–162. – DOI: 10.21686/2410-7395-2024-1-144-162

3. *Фролова Е. Д., Шувалова О. В., Фролова А. С.* О глобальных технико-экономических вызовах современной эпохи и их влияние на промышленность России // Международная торговля в условиях новых стрессов в развитии глобальной экономики. – 2023. – Т. 9. – № 1 (33). – С. 172–186.

4. *Черников А. В.* Реализация политики технологического суверенитете в Китае // Международная торговля и торговая политика. – 2024. – Т. 10. – № 2. – С. 5–15. – DOI: 10.21686/2410-7395-2024-2-5-15

5. *Шкваря Л. В.* Динамика и структура экспорта углеводородов из России в ЕС и влияние санкций // Крымский научный вестник. – 2017. – № 4 (16). – С. 21–37.

6. *Ananyev B.* Sanctions in IR: Understanding, Defining, Studying // International Organisations Research Journal. – 2019. – Vol. 14. – N 3. – P. 136–150. – DOI: 10.17323/1996-7845-2019-03-07

7. *Caruso R.* The Impact of International Economic Sanctions on Trade – an Empirical Analysis // SSRN Scholarly Paper 895841. Rochester. New York, 2003. – DOI: 10.2139/ssrn.895841

8. *Chen Y., Jiang J., Wang L., Wang R.* Impact Assessment of energy Sanctions in Geo-Conflict: Russian–Ukrainian War // Energy Reports. – 2023. – Vol. 9. – P. 3082–3095. – DOI: 10.1016/j.egyr.2023.01.124

9. *Cortright D., Lopez G.A.* The Sanctions Decade: Assessing UN Strategies in the 1990s // The Sanctions Decade. Lynne Rienner Publishers, 2000. – December, 31. – DOI: 10.1515/9781685858490

10. *Dizaji S. F., van Bergeijk P. A. G.* Potential Early Phase Success and Ultimate Failure of Economic Sanctions: A VAR Approach with an Application to Iran // Journal of Peace Research. SAGE Publications Ltd. – 2013. – Vol. 50. – N 6. – P. 721–736. – DOI: 10.1177/0022343313485487

11. *Haidar J. I.* Sanctions and Export Deflection: Evidence from Iran // Economic Policy. – 2017. – Vol. 32. – N 90. – P. 319–355. – DOI: 10.1093/epolic/eix002

12. *Hosoe N.* The Cost of War: Impact of Sanctions on Russia Following the Invasion of Ukraine // Journal of Policy Modeling. – 2023. – Vol. 45. – N 2. – P. 305–319. – DOI: 10.1016/j.jpolmod.2023.04.001

13. *Hufbauer G. C., Elliott K.* US Economic Sanctions: Their Impact on Trade, Jobs, and Wages: Working Paper Special (2) // Working Paper Series. – – 1997. – April. – URL: https://www.piie.com/publications/working-papers/us-economic-sanctions-their-impact-trade-jobs-and-wages

14. *Hufbauer G. C., Schott J. J., Elliott K. A.* Economic Sanctions Reconsidered: History and Current Policy. – Washington, D.C: Institute for International Economics, 1985.

15. *Lei Y; Sui S.* China–Russia Strategic Partnership and the Oil and Gas Collaboration // Journal Contribution. – 2023. – December. – DOI: 10.1080/13511610.2023.2289827

16. *Li M., Zhang Z., Wang X., Guo R.* Dynamic Spillover Effects Between EU Economic Sanctions Against Russia, Oil Prices, and Share Prices of Energy Companies in Third Countries: Evidence from China and the USA // Environmental Science and Pollution Research. – 2024. – Vol. 31. – N 13. – P. 19381–19395. – DOI: 10.1007/s11356-024-32250-z

17. *Lindsay J. M.* Trade Sanctions as Policy Instruments: A Re-examination // International Studies Quaterly. – 1986. – Vol. 30. – N 2. – P. 153–173. – URL: https://web.stanford.edu/class/ips216/Readings/lindsay_86.pdf

18. *Morgan T. C., Syropoulos C., Yotov Y. V.* Economic Sanctions: Evolution, Consequences, and Challenges // Journal of Economic Perspectives. – 2023. – Vol. 37. – N 1. – P. 3–30. – DOI: 10.1257/jep.37.1.3

19. *Nguyen T. T., Do M. H.* Impact of Economic Sanctions and Counter-Sanctions on the Russian Federation's Trade // Economic Analysis and Policy. – 2021. – Vol. 71. – P. 267–278. – DOI: 10.1016/j.eap.2021.05.004

20. *Pape R. A.* Why Economic Sanctions Still Do Not Work // International Security. 1998. – Vol. 23. – N 1. – P. 66–77. – URL: https://web.stanford.edu/class/ips216/Readings/pape_97%20(jstor).pdf

21. *Romanova T.* Sanctions and the Future of EU–Russian Economic Relations // Europe-Asia Studies. – 2016. – Vol. 68. – N 4. – P. 774–796. – DOI: 10.1080/09668136.2016.1159664

22. *Schott J. J.* Economic Sanctions Against Russia: How Effective? How Durable? // SSRN Scholarly Paper 4431076. Rochester. – New York, 2023. – URL: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4431076

23. *Syropoulos C., Felbermayr G., Kirilakha A., Yalcin E., Yotov Y. V.* The Global Sanctions Data Base-Release 3: COVID-19, Russia, and Multilateral Sanctions // Review of International Economics. – 2024. – Vol. 32. – N 1. – P. 12–48. – DOI: 10.1111/roie.12691

24. *Xin B., Zhang M.* Evolutionary Game on International Energy Trade Under the Russia-Ukraine Conflict // Energy Economics. – 2023. – Vol. 125. – P. 106827. DOI: 10.1016/j.eneco.2023.106827

25. *Zhang Y.* International Law in the China-Russian Energy Partnership: Mapping the Partnership-Based Relational Approach // Journal of International Economic Law. – 2023. – Vol. 26. – N 4. – P. 737–755. – DOI: 10.1093/jiel/jgad041

References

1. Glinskaya M. V. Antirossiyskie sanktsii v otechestvennoy neftegazovoy otrasli [Anti-Russian Sanctions in the Domestic Oil and Gas Industry]. *Mezhdunarodnaya torgovlya i torgovaya politika* [International Trade and Trade Policy], 2024, Vol. 10, No. 2 (38), pp. 123–135. (In Russ.). DOI: 10.21686/2410-7395-2024-2-123-135

2. Sycheva K. G. Torgovoe sotrudnichestvo Rossii: formirovanie strategicheskogo partnerstva v usloviyakh sanktsiy [Russian Trade Cooperation: Forming a Strategic Partnership in the Context of Sanctions]. *Mezhdunarodnaya torgovlya i torgovaya politika* [International Trade and Trade Policy], 2024, Vol. 10, No. 1, pp. 144–162. (In Russ.). DOI: 10.21686/2410-7395-2024-1-144-162

3. Frolova E. D., Shuvalova O. V., Frolova A. S. O globalnykh tekhniko-ekonomicheskikh vyzovakh sovremennoy epokhi i ikh vliyanie na promyshlennost Rossii [On Global Technical and Economic Challenges of the Modern Era and Their Impact on Russian Industry]. *Mezhdunarodnaya torgovlya v usloviyakh novykh stressov v razvitii globalnoy ekonomiki* [International Trade Under New Development Stresses in the Development of the Global Economy], 2023, Vol. 9, No. 1 (33), pp. 172–186. (In Russ.).

4. Chernikov A. V. Realizatsiya politiki tekhnologicheskogo suverenitete v Kitae [Implementation of the Policy of Technological Sovereignty in China]. *Mezhdunarodnaya torgovlya i torgovaya politika*. [International Trade and Trade Policy], 2024, Vol. 10, No. 2, pp. 5–15. (In Russ.). DOI: 10.21686/2410-7395-2024-2-5-15

5. Shkvarya L. V. Dinamika i struktura eksporta uglevodorodov iz Rossii v ES i vliyanie sanktsiy [Dynamics and Structure of Hydrocarbon Exports from Russia to the EU and the Impact of Sanctions]. *Krymskiy nauchnyy vestnik* [Crimean Scientific Bulletin], 2017, No. 4 (16), pp. 21–37. (In Russ.).

6. Ananyev B. Sanctions in IR: Understanding, Defining, Studying. *International Organisations Research Journal,* 2019, Vol. 14, No. 3, pp. 136–150. DOI: 10.17323/1996-7845-2019-03-07

7. Caruso R. The Impact of International Economic Sanctions on Trade – an Empirical Analysis. *SSRN Scholarly Paper 895841*. Rochester. New York, 2003. DOI: 10.2139/ssrn.895841

8. Chen Y., Jiang J., Wang L., Wang R. Impact Assessment of energy Sanctions in Geo-Conflict: Russian–Ukrainian War. *Energy Reports,* 2023, Vol. 9, pp. 3082–3095. DOI: 10.1016/j.egyr.2023.01.124

9. Cortright D., Lopez G. A. The Sanctions Decade: Assessing UN Strategies in the 1990s. *The Sanctions Decade. Lynne Rienner Publishers*, 2000, December 31. DOI: 10.1515/9781685858490

10. Dizaji S. F., van Bergeijk P. A. G. Potential Early Phase Success and Ultimate Failure of Economic Sanctions: A VAR Approach with an Application to Iran. *Journal of Peace Research. SAGE Publications Ltd*, 2013, Vol. 50, No. 6. pp. 721–736. DOI: 10.1177/0022343313485487

11. Haidar J. I. Sanctions and Export Deflection: Evidence from Iran. *Economic Policy,* 2017, Vol. 32, No. 90, pp. 319–355. DOI: 10.1093/epolic/eix002

12. Hosoe N. The Cost of War: Impact of Sanctions on Russia Following the Invasion of Ukraine. *Journal of Policy Modeling,* 2023, Vol. 45, No. 2, pp. 305–319. DOI: 10.1016/j.jpolmod.2023.04.001

13. Hufbauer G. C., Elliott K. US Economic Sanctions: Their Impact on Trade, Jobs, and Wages: Working Paper Special (2). *Working Paper Series,* 1997, April. Available at: https://www.piie.com/publications/working-papers/us-economic-sanctions-their-impact-trade-jobs-and-wages

14. Hufbauer G. C., Schott J. J., Elliott K. A. Economic Sanctions Reconsidered: History and Current Policy. Washington, D.C, Institute for International Economics, 1985.

15. Lei Y; Sui S. China–Russia Strategic Partnership and the Oil and Gas Collaboration. *Journal contribution,* 2023, December. DOI: 10.1080/13511610.2023.2289827

16. Li M., Zhang Z., Wang X., Guo R. Dynamic Spillover Effects Between EU Economic Sanctions Against Russia, Oil Prices, and Share Prices of Energy Companies in Third Countries: Evidence from China and the USA. *Environmental Science and Pollution Research,* 2024, Vol. 31, No. 13, pp. 19381–19395. DOI: 10.1007/s11356-024-32250-z

17. Lindsay J. M. Trade Sanctions as Policy Instruments: A Reexamination. *International Studies Quaterly,* 1986, Vol. 30, No. 2, pp. 153–173. Available at: https://web.stanford.edu/class/ips216/Readings/lindsay_86.pdf

18. Morgan T. C., Syropoulos C., Yotov Y. V. Economic Sanctions: Evolution, Consequences, and Challenges. *Journal of Economic Perspectives,* 2023, Vol. 37, No. 1, pp. 3–30. DOI: 10.1257/jep.37.1.3

19. Nguyen T. T., Do M. H. Impact of Economic Sanctions and Counter-Sanctions on the Russian Federation's Trade. *Economic Analysis and Policy,* 2021, Vol. 71, pp. 267–278. DOI: 10.1016/j.eap.2021.05.004

20. Pape R. A. Why Economic Sanctions Still Do Not Work. *International Security,* 1998, Vol. 23, No. 1, pp. 66–77. Available at: https://web.stanford.edu/class/ips216/Readings/pape_97%20(jstor).pdf

21. Romanova T. Sanctions and the Future of EU–Russian Economic Relations. *Europe-Asia Studies*, 2016, Vol. 68, No. 4, pp. 774–796. DOI: 10.1080/09668136.2016.1159664

22. Schott J. J. Economic Sanctions Against Russia: How Effective? How Durable? *SSRN Scholarly Paper 4431076*. Rochester, New York, 2023. Available at: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4431076

23. Syropoulos C., Felbermayr G., Kirilakha A., Yalcin E., Yotov Y. V. The Global Sanctions Data Base-Release 3: COVID-19, Russia, and Multilateral Sanctions. *Review of International Economics,* 2024, Vol. 32, No. 1, pp. 12–48. DOI: 10.1111/roie.12691

24. Xin B., Zhang M. Evolutionary Game on International Energy Trade Under the Russia-Ukraine Conflict. *Energy Economics,* 2023, Vol. 125, pp. 106827. DOI: 10.1016/j.eneco.2023.106827

25. Zhang Y. International Law in the China-Russian Energy Partnership: Mapping the Partnership-Based Relational Approach. *Journal of International Economic Law,* 2023, Vol. 26. No. 4, pp. 737–755. DOI: 10.1093/jiel/jgad041

Сведения об авторах

Линь Шэнфу
Аспирант института экономики и менеджмента УрФу.
Адрес: Уральский федеральный университет имени первого Президента России Б. Н. Ельцина, Екатеринбург, 620062, ул. Мира, д. 19.
E-mail: 1249821454@qq.com

Наталья Борисовна Давидсон
кандидат экономических наук, доцент кафедры международной экономики и менеджмента, Институт экономики и менеджмента УрФу.
Адрес: Уральский федеральный университет имени первого Президента России Б. Н. Ельцина, Екатеринбург, 620062, ул. Мира, д. 19.
E-mail: natalya.davidson@gmail.com

Information about the authors

Lin Shengfu
Post-Graduate Student, Graduate School of Economics and Management of UrFU.
Address: Ural Federal University named after the first President of Russia B. N. Yeltsin, 19 Mira Street, Ekaterinburg, 620062, Russian Federation.
E-mail: 1249821454@qq.com

Natalia B. Davidson
PhD, Associate Professor at the Chair of International Economics and Management, Graduate School of Economics and Management, UrFU.
Address: Ural Federal University named after the first President of Russia B. N. Yeltsin, 19 Mira Street, Ekaterinburg, 620062, Russian Federation.
E-mail: natalya.davidson@gmail.com