

# Hydrocarbon trade deflection and supply-chain trade restructuring under sanctions imposed during the Russia–Ukraine conflict

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## Abstract

In response to international sanctions, Russia has restructured its hydrocarbon commerce through trade deflection, redirecting exports from sanctioning to non-sanctioning countries. The research aimed to analyze hydrocarbon trade deflection under the Russia–Ukraine conflict within the context of the China–Russia Strategic Partnership and BRICS, and to assess the restructuring of Russia’s crude oil and natural gas supply chains from 2020 to 2023. Two questions were addressed: Whether trade deflection shifted towards non-sanctioning countries, including China and other BRICS countries; whether Russia’s oil and gas supply chains were restructured towards these regions? Design incorporates the method developed by the author which generates and utilizes an integrated database of Bill of Lading and export data to analyze supply-chain trade restructuring, identifying specific shifts in trade flows by product, country, and enterprises. Findings reflected that after sanctions were imposed in early 2022, Russian hydrocarbon exports to sanctioning countries declined sharply, while exports to non-sanctioning countries, particularly China and India, increased significantly. Findings demonstrate the effectiveness of trade deflection as a strategic response to sanctions. This strategy has mitigated the adverse impacts on Russian oil and gas industry, with significant increases in exports to China and India. The Comprehensive Strategic Partnership with China has helped secure a substantial market for Russian crude oil and increased China’s energy security. This study enhances understanding of trade deflection mechanisms and provides a framework for analyzing the interplay between international trade, geopolitical strategies, and economic resilience. Geopolitical alliances and trade partnerships have ensured resilience and continuity in global trade. This shift indicates strategic diversification towards Asian markets and increased Central Asian involvement. BRICS engagement has provided Russia with a platform to advocate for energy security and challenge Western dominance in global energy governance. Future research should explore other supply-chain components and analyze trade within the BRICS+ group and Russia–China bilateral trade.

*Keywords:* trade deflection, sanctions, Russia–Ukraine conflict, oil and gas supply chains.

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## 1. Introduction

On February 24, 2022, Russia intervened in Ukraine, starting what it calls a special military operation. In response, the United States led a coordinated and comprehensive effort to impose economic and political sanctions, along with partners and allies. Since then, more than 30 countries have imposed sanctions against Russia, reducing energy imports, blocking financial transactions, and halting shipments of key exports; and more than 1,000 foreign companies have ceased their operations in the country (Sung, 2023). At present, Russia is the most sanctioned country in the world, with 21,167 sanctions.<sup>1</sup>

Russia has been able to partially overcome sanctions by implementing trade deflection; designing and implementing strategic measures; and strengthening ties with China and BRICS (Brazil, Russia, India, China, and South Africa) countries, some of which also face sanctions from the West. The term “trade deflection” refers to the practice of diverting trade to non-sanctioning countries to circumvent trade barriers or sanctions. This process has brought about a restructuring of the hydrocarbon (oil and gas) supply chain.

Research’s objective is two-fold. First, to carry out a mixed-methods exploratory study to analyze hydrocarbon trade deflection under the Russia–Ukraine conflict, considering the alternatives that Russia has implemented within the context of the China–Russia Strategic Partnership in energy and the BRICS group of countries. The China–Russia Strategic Partnership (CRSP), also known as the “Comprehensive Strategic Partnership of Coordination,” has been characterized by growing cooperation in areas such as trade, energy, and security. China and Russia have been cooperating in the oil sector since the early 2000s. On February 4, 2022, the Russian Federation and the People’s Republic of China issued a *Joint Statement on the International Relations Entering a New Era and Global Sustainable Development*. The Joint Statement asserts that China and Russia seek to advance development plans in various areas, thus promoting greater interconnectedness. China is now Russia’s largest customer for crude oil, accounting for almost 20% of Russian oil exports (Levkevic and Senotrusova, 2022). Additionally, China and Russia have been working together to build a pipeline that transports Russian oil to China, which increases China’s energy security and reduces its reliance on Middle Eastern oil.

Furthermore, both countries support the deepened strategic partnership within BRICS and promote the expanded cooperation in three main areas: politics and security, economy and finance, and humanitarian exchanges (Piri, 2023). In the energy sphere, Russia leverages BRICS as a platform to advocate for energy security and to present an alternative to Western hegemony in global energy governance amid sanctions. Russia’s interaction with other BRICS countries besides China is characterized by ongoing dialogues aimed at fostering energy cooperation, expanding energy markets, alleviating the impact of sanctions, and contributing to a multipolar world order that could serve as a counterweight to Western dominance (Nezhnikova et al., 2018).

Second, to analyze the restructuring of Russia’s supply-chain trade in crude oil and natural gas.

Research questions are: For the 2020–2023 period, has hydrocarbon export trade deflected towards non-sanctioning countries, including China and other BRICS

<sup>1</sup> See Venezuela’s Observatory on Sanctions. <https://observatorio.gob.ve/rusia/>

countries? Have Russia's oil and gas supply chains been restructured during the 2020–2023 period towards China and other BRICS countries? To answer the first question, research design focuses on export data. To answer the second question, research design applies *the method developed by the author, which builds an integrated database from Bill of Lading, and import–export related data organized by Harmonized Tariff Schedule System (HS) codes, to identify supply-chain trade restructuring*. The Bill of Lading (BoL) is a document issued by a carrier that provides information on: HS codes; exporter name; departure date; location and country of destination; description of goods; and estimated value, among others. The HS is an international trade classification established by the World Customs Organization (WCO) and is used by most countries to report on their trade and negotiate trade agreements. The HS has a 6-digit level disaggregation, which can be broken down at a country level into more digits.

## 2. Literature review and research gap

This literature review examines studies that have focused on export deflection and supply chain analyses that utilize Bill of Lading data. Export deflection, a special case of trade diversion, is generally defined as a change in the exports' destination in response to trade barriers. Bown and Crowley's (2007) seminal work defined it as export reorientation to other markets due to increased trade barriers. For example, if a tariff is imposed on exports from country A to country B, exporters can redirect their exports to country C.

Studies on export deflection have used different quantitative methodologies, including econometric dynamic models (Bown and Crowley, 2007), game theory applications (Mattoo and Staiger, 2019), input–output analysis, and customs data analysis (Haidar, 2017). These works focus on analyzing the effects of trade barriers at the national level during specific periods. While previous research has focused primarily on trade literature and country or industry level analysis, there is a need to integrate Bill of Lading data and geopolitical constructs in export deflection studies.

Haidar (2017) examines Iranian non-oil export deflection under sanctions from 2006 to 2011 and classifies these between those destined for sanctioning countries (SC) and non-sanctioning countries (NSC). The study concludes that Iranian exports to SC decreased after sanctions were imposed, while exports to NSC increased. The analysis also reveals insights into exporter-level data, highlighting the role of exporter size, previous export status, and pricing strategy (Haidar, 2017).

Escaith (2021) emphasizes considering not only trade decoupling, but also the substitution and deflection effects affecting third countries. This broader perspective recognizes the consequent impact on global trade dynamics, given that trade deflection undermines sanctions.

Only three studies have been identified that use Bill of Lading data to analyze supply chain disruptions, although these do not focus on trade deflection. Jain et al. (2020) used Bill of Lading data, studied the role of different supply chain strategies, and built a set of data on the actual sourcing of public U.S. firms. Aponte-Garcia (2024) identified alternatives to disruptions in pandemics and atmospheric disasters. Aponte-Garcia et al. (2024) investigated the COVID-19 vaccine supply chain trade in six Latin American and Caribbean countries.

A gap in the analysis of trade deflection in the hydrocarbon sector is the lack of a method of analysis linking international trade data, value and supply chains, and companies, to analyze restructuring of supply-chain trade. A second gap concerns the analysis of trade deflection in the hydrocarbon sector within the context of the China–Russia Strategic Partnership and Russia’s membership in BRICS that presents quantitative trade and Bill of Lading data. This research integrates the method application in the context of the themes of supply-chain trade restructuring, geopolitics (sanctions and wars), and trade deflection.

### 3. Research design, data, and methods of analysis

Research design is exploratory, and the methodology is mixed. To carry out this analysis, the first research component focuses on sanctions and alternatives, framed within the context of the CRSP and BRICS membership, and establishes a hypothesis. The second research component focuses on the method applied to restructuring of the hydrocarbon supply-chain trade.

The research also develops a descriptive quantitative analysis. The analysis of each concept, geopolitical criteria, and hydrocarbon exports is operationalized by linking the construct with the information available in a database. The qualitative method includes a preliminary content analysis of the China–Russia alliance. The sanctions to be examined, and their respective response and hypothesis, are summarized in Table 1.

The proposed method (the second component) provides a quantitative approach that poses certain advantages over previously developed methods, as it relies on analyzing trade and Bill of Lading data, available both monthly and annually. Unlike earlier approaches concentrating on business functions, this method centers on the components within the value or supply chain. By using HS codes, the activities present in the international chains can be analyzed.

The procedure involves several sequential steps. Initially, specific products are selected for supply chain analysis, relying on validated lists from national or international entities (e.g., crude oil and natural gas). The second step entails analyzing the pertinent data for the selected products within the studied value and

**Table 1**

Research design operationalization—the first component.

Sanctions	Counter-strategy	Geopolitical criterion and/or counterstrategy construct	Source or database	Hypothesis
Import ban affecting exports of oil and gas	Trade deflection to non-sanctioning countries.	Geopolitical criterion: Sanctions imposed by the United States, EU and other countries. Russia’s list of sanctioning and non-sanctioning countries	Data on sanctions based on: <a href="http://www.bscn.nl/sanctions-consulting/sanctions-list-countries">http://www.bscn.nl/sanctions-consulting/sanctions-list-countries</a>	Russia increases exports to non-sanctioning countries, including China and India, which are BRICS member countries
	Exports to China and India. Exports to other BRICS countries (Brazil, South Africa)	Russian exports to sanctioning and non-sanctioning countries. Chinese and India’s imports of mineral fuels	Data on exports: Bruegel.com and Market Inside	

Source: Compiled by the author.

supply chain, considering their schedule codes in the Harmonized Tariff Schedule System (2709 for petroleum and 2711 for gas). In Step 2, data is analyzed for all products included in oil and gas supply chain in different databases, according to their HS codes: Bruegel and Market Inside. Utilizing the Market Inside database, we analyzed 22,000 cases of HS codes 2709 and 2711. Data limitations of Market Inside are that this database only includes a subset of all export transactions.

The third step involves creating an integrated database that connects international trade data with Bill of Lading data, according to HS codes for relevant years. This process gathers information on Russia's exports. Additionally, a data subset is derived from the Market Inside database, focusing on companies and utilizing the HS codes. Within this subset, data is organized based on the company's buyers and suppliers, establishing pertinent relationships. For this specific dataset, additional steps are implemented within the method's framework.

The fourth step entails categorizing the previously selected data from Step 3 according to the corresponding components of the value and supply chain. Following this, in the fifth step, the analysis of trade and Bill of Lading data for the chosen products is conducted to examine the hypotheses or questions formulated in Section 1. The sixth step involves categorizing the data selected in Step 5 according to the Broad Economic Categories, as defined by the specifications established by the United Nations. In the case under consideration, both HS codes belong to the primary products category, and therefore, this step is not included in the analysis.

Moving on to the seventh step, a thorough analysis of the data for the selected products is performed, considering aspects like potential export markets. This analysis is conducted for Russian exports. In the eighth step, a specific subset of data from the Market Inside database is assessed to determine the role of enterprises in the supply chain restructuring process.

The final step is to generate conclusions from the integrated analysis performed. These findings offer a detailed map of supply chain restructuring. Once the integrated database is created, we can carry out the analysis according to the research questions formulated and the directional hypotheses to be examined.

## 4. Results and discussion—the first component

### 4.1. Sanctions on Russia

Russia has significant hydrocarbon reserves and is an important producer with large state-owned enterprises. It owns the largest gas reserves on the planet, equivalent to 25% of the world's reserves (1688.228 trillion cubic feet). It is among the top ten countries with the largest oil reserves, occupying the eighth position globally in 2021, equivalent to 5% of the planet's total reserves (80 billion barrels).<sup>2</sup>

As a major player, Russia is among the top three crude oil (with Saudi Arabia and the United States) and gas (behind the United States) producers in the world. It is also the world's largest gas exporter and controls an extensive oil and gas pipelines' network across Europe and Asia (see Petroleum Economist Cartographic, 2014).

Russian companies include Rosneft, Lukoil, Gazprom Neft, Surgutneftegas and Novatek. State-owned Gazprom holds about 71% of the country's gas reserves, and

<sup>2</sup> <https://www.eia.gov/international/data/world>

about 16% of the world's total (Saiymova et al., 2021). Rosneft, also state-owned, is Russia's largest oil producer. It is followed by Lukoil, which is the largest private oil company in the country. Gazprom and Novatek are Russia's main gas producers, but many Russian oil companies, including Rosneft, also operate gas production facilities.

Since 2014, Russia has been subject to an unprecedented level of international sanctions, in response to the conflict with Ukraine and the Crimea annexation. In 2014, the United States and the European Union imposed sanctions on Russia's energy sector, which restricted its access to financing and advanced technologies. Russia then deflected trade and imposed counter-sanctions that restricted imports from the Western countries, including food and agricultural products. Additionally, it imposed restrictions on hydrocarbon exports to them, significantly impacting the global energy market.

The sanctions initiated by the United States were based on several Executive Orders, which were subsequently reinforced by the 2017 Countering Russian Influence in Europe and Eurasia Bill and the 2017 Countering America's Adversaries Through Sanctions Act (CAATSA) (United States Congress, 2017). These measures were aimed at individuals and entities that were considered to be compromising Ukrainian security, and they also affected Russian critical economic and military sectors (Congressional Research Service, 2022). Amid the restrictions, a key focus has been Russia's energy sector. U.S. president Joseph Biden signed an Executive Order on March 8, 2022, that ceased Russian oil imports, liquefied natural gas (LNG), and coal, and prevented U.S. investments in the Russian energy sector.

The European Union aligned with this approach. This included the cessation of coal imports, and plans to reduce natural gas imports, alongside several comprehensive sanctions' packages encompassing asset freezes, travel bans, and restrictions on financial interactions with Russian entities. Sanctions target specific Russian oil companies and two activities: accessing debt financing and obtaining oil and shale exploration and production technology for deep-water projects, including the offshore Arctic.

The Russian government implemented economic policies aimed at reducing sanctions' impact on the energy, defense and finance sectors which were particularly hard hit. Policies focused on import substitution and the development of economic relations with non-Western countries. Russification and diversification in the energy sector, as well as strengthening connections with non-Western countries that possess advanced oil and gas technologies, were promoted.

Despite sanctions, Russian companies have been able to navigate Russia's export duty and tax policies on oil, which have provided them with capital and incentives to increase oil production and exports. However, in the long term, sanctions on oil production technology could potentially affect Russian oil production, as some European and U.S. companies have pulled out of certain oil exploration and development projects (Congressional Research Service, 2022).

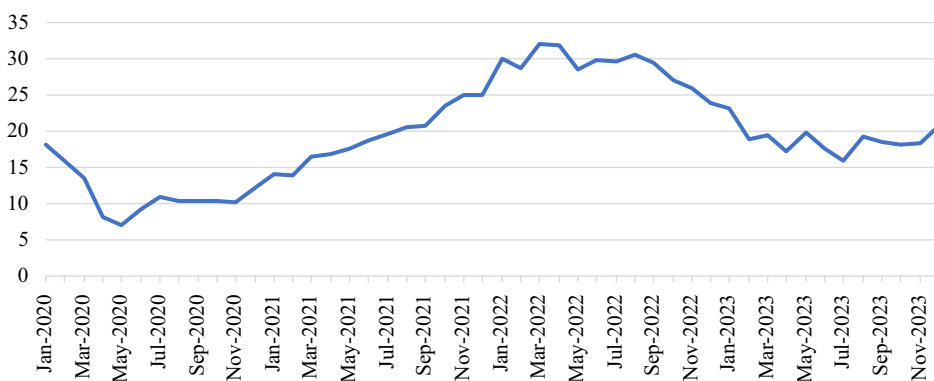
The scholarly inquiry into the effectiveness of Western sanctions imposed on Russia post-2014 reveals a stark division in academia. Some researchers contend that these sanctions have substantially eroded Russia's economic foundations, activities, and military capabilities (Rącz et al., 2023). These works suggest that the West, particularly the EU, should heighten sanctions to further weaken Russia's power. Gurvich and Prilepskiy (2015) explore how sanctions have affected sanctioned state-controlled banks, oil, gas, and arms companies by con-

straining foreign funding. The ripple effect on the Russian economy is significant, impacting GDP and spurring strategic adjustments such as using foreign assets for debt repayment and reducing gross capital outflow. Mbah and Wasum (2022) review the war's global economic impact, emphasizing sanctions' repercussions on the Russian economy, including increased oil, natural gas, and food prices.

Conversely, other authors argue against the anticipated effectiveness of sanctions, and point to European vulnerability in enforcing impactful sanctions, highlighting Russia's adaptation over time, effectively neutralizing the intended effects. Glenn (2023) casts doubt on the effectiveness of the EU's sanctions in altering Russia's foreign policies, attributing this to its strategic resilience and shortcomings in EU strategy. Timofeev (2022) discusses Russia's strategic economic adaptations to navigate the complexities imposed by sanctions. Galbraith (2023) suggests that while sanctions have historically impacted smaller economies, their influence on larger, industrialized nations like Russia remains debatable. Bubnova (2022) challenges the narrative of catastrophic economic collapse under sanctions, citing federal reserves and the booming hydrocarbon market as buffers. Targeted sanctions have not isolated or critically impaired Russia's energy sector, which is crucial for the country's budget revenue. Bubnova (2022) notes Russia's agility in seeking alternative trade partners and shifting currency transactions to insulate its revenues from Western financial systems.

#### 4.2. Sanction No. 1: Import ban on oil and gas

In 2022, the oil and gas sectors were identified as key components of Russia's economy, contributing 40% to the national budget and being essential for both civilian and military industries. In response to the situation in Ukraine, these sectors were specifically targeted by international sanctions. By March 2022, Russian oil had been excluded from international exchange listings. Following the U.S. and the UK's lead, other European countries progressively withdrew from purchasing Russian fossil fuels, leading to a collective decision by the EU to cease the maritime transport of Russian oil starting December 5, 2022, and extend the embargo to oil products from February 5, 2023 (European Commission, 2023). As depicted in Fig. 1, exports



**Fig. 1.** Russia's mineral fuels exports among 38 countries (billions U.S. dollars at current prices).

Note: Data includes coal.

Source: Prepared by the author and C. Alvarez based on Darvas et al. (2022).

decreased after sanctions were imposed, but then attained relative stabilization after January 2023, reaching sales above 2020 levels (except for January 2020), and fluctuating between \$15 billion and \$20 billion.

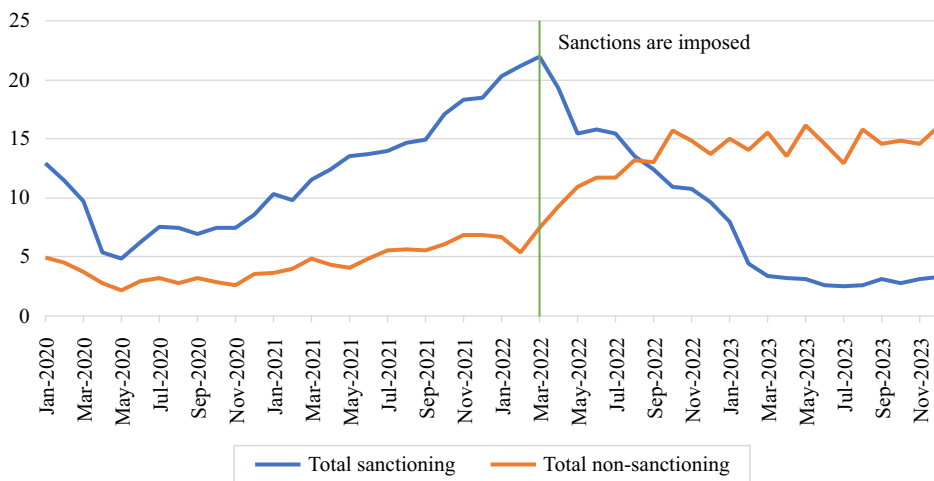
### 4.3. Trade deflection

Results reflected hydrocarbon trade deflection in two directions: (1) Export deflection away from sanctioning countries and towards non-sanctioning countries (Fig. 2); (2) Export deflection away from European countries and into China and India (Fig. 3).

Fig. 2 shows how Russian hydrocarbon (oil and gas) exports increase between April 2020 and February 2022 for sanctioning and non-sanctioning countries. After March 2022, exports to sanctioning countries fall abruptly. This fall is offset by exports to non-sanctioning countries, which started to increase sharply by March 2022, and by August 2022, already exceeded exports to sanctioning countries, thus confirming the directional hypothesis of trade deflection.

Fig. 3 provides a more detailed look at the trade deflection. In this chart, we can see how, after sanctions were imposed in March 2022, it is exports to China and India that most compensate for the EU's export decline. This confirms both trade deflection and Asia's important role in Russia's strategy in seeking alternatives to compensate for the drop in its exports, as both China and India are BRICS members.

When we arrange the data by including BRICS and BRICS+ (new member countries are Egypt, Ethiopia, Iran, Saudi Arabia (pending incorporation), and United Arab Emirates) countries covering the period after sanctions were imposed in 2022, and until 2024, the finding is confirmed. BRICS countries register the greatest increase in both oil and gas exports from Russia during the January 2023–February 2024 period, as Fig. 4 illustrates, and Europe, the greatest reduction. This result is partly attributable to China and India being BRICS members.



**Fig. 2.** Russian hydrocarbon exports to sanctioning and non-sanctioning countries (billions U.S. dollars at current prices).

*Note:* Sanctioning countries include EU 27, US, UK, Japan, South Korea; non-sanctioning countries include China, India, and Turkey. Mineral fuels definition includes coal exports.

*Source:* Prepared by the author and C. Alvarez based on Darvas et al. (2022).



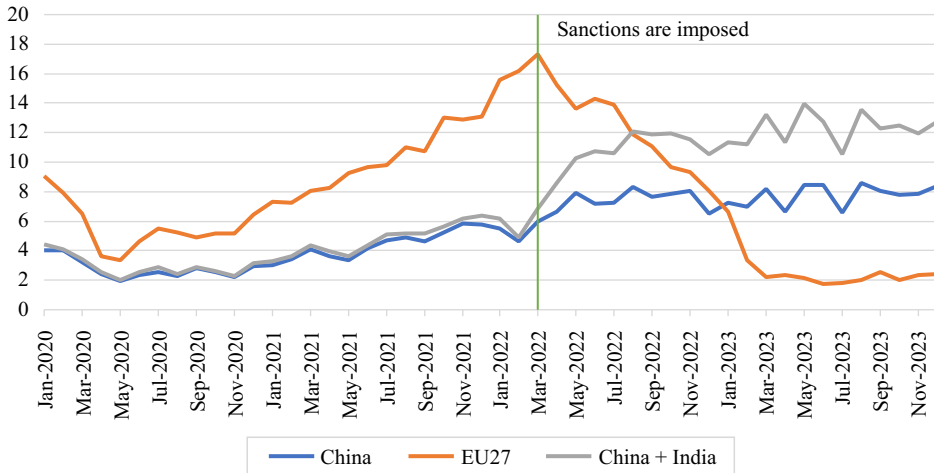


Fig. 3. Russia’s hydrocarbon exports to the European Union, China and India (billions of U.S. dollars at current prices).

Source: Prepared by the author and C. Alvarez based on Darvas et al. (2022).

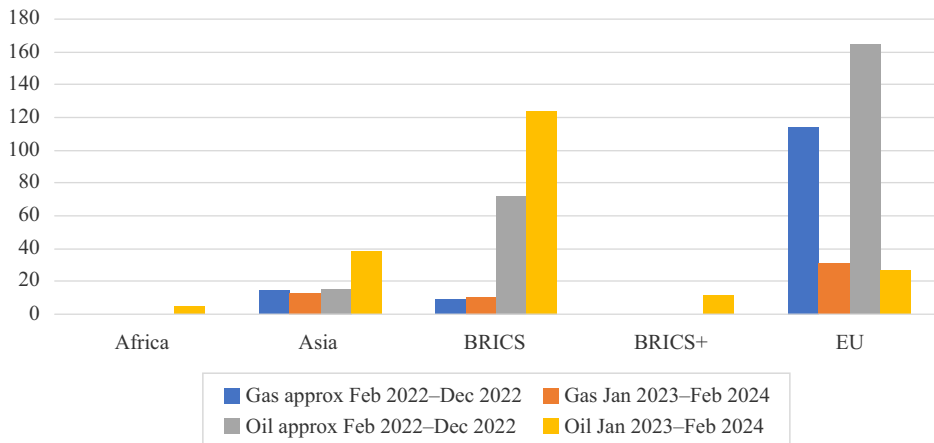


Fig. 4. Russian gas and oil exports by destination and period (billions U.S. dollars at current prices).

Source: Prepared by the author and C. Alvarez based on Darvas et al. (2022).

### 5. Results and discussion: The second component

This section presents findings on trade restructuring of Russian supply-chain trade for hydrocarbons from 2020–2021 to 2022–2023 by enterprise and reveals significant shifts in regional engagement for Gazprom, Rosneft, and Lukoil. Results are presented in Table 2. For Gazprom, based on the trade data for products HS 270900 and HS 271119, there was a significant restructuring in trade patterns by region from the period 2020–2021 to 2022–2023.

During 2020–2021, European countries dominated the trade landscape for both product codes, with key partners being the Netherlands, Germany, Belarus, Croatia, and Austria for 270900, and Belarus, Poland, Bulgaria, Latvia, and Germany for 271119. In contrast, the 2022–2023 period saw a shift towards

**Table 2**

Supply-chain trade restructuring of Gazprom enterprise, for two periods and two HS codes (U.S. dollars at current prices).

2020–2021					
HS 270900			HS 271119		
Region	Country	Value	Region	Country	Value
Europe	Netherlands	507,692,917	Europe	Belarus	450,670,957
Europe	Germany	171,735,240	Europe	Poland	1,638,374
Europe	Belarus	148,073,277	Europe	Bulgaria	516,879
Europe	Croatia	148,039,676	Europe	Latvia	297,106
Europe	Austria	104,961,614	Europe	Germany	281,794
2022–2023					
HS 270900			HS 271119		
Region	Country	Value	Region	Country	Value
Asia, East/ Southeast	China	19,936,313,993	Europe	Albania	1,717,911,700
Asia, South	India	8,720,934,391	Europe	Bulgaria	1,449,868,976
Europe	Netherlands	5,933,310,221	Europe	Ukraine	544,012,668
Europe	Austria	4,341,541,600	Middle East	Turkey	459,371,235
Europe	Germany	3,677,498,520	Middle East	Armenia	305,761,900

*Note:* The region was determined based on classification of the CIA (2023).

*Source:* Prepared by the author and C. Alvarez based on Market Inside database.

Asia and the Middle East. For the product code 270900, major trade partners included China and India from Asia, alongside continuing significant engagement with European countries such as the Netherlands, Austria, and Germany. For the product code 271119, although European countries like Albania, Bulgaria and Ukraine remained crucial, there was a noticeable increase in trade with Middle Eastern countries such as Turkey and Armenia. This shift indicates a diversification of trade partnerships and a broader geographical distribution of trade activities.

For Lukoil, as shown in Table 3, the trade data for products 270900 and 271119 indicates a noticeable shift in regional trade patterns from the period 2020–2021 to 2022–2023. In 2020–2021, trade for the product HS 270900 was primarily dominated by East Asia and Europe, with key partners including Japan, Switzerland, Belarus, and Finland.

For the product HS 271119, European countries, such as Poland and Switzerland, were the main partners. By 2022–2023, there was a significant diversification of trade regions. For the product HS 270900, the Middle East emerged prominently with the United Arab Emirates becoming a major trade partner. Europe continued to play a significant role, with Switzerland, Bulgaria, and Italy remaining key partners, and East Asia/Southeast Asia being represented by Singapore. For the product HS 271119, while Europe still had strong representation with Poland, Latvia, and Ukraine, Central Asian countries like Uzbekistan and the Kyrgyz Republic became more prominent trading partners. This shift highlights a broader geographical spread in trade partnerships, with increasing involvement from the Middle East and Central Asia, indicating a strategic diversification of trade networks.

For Rosneft, as summarized in Table 4, the trade data for products 270900 and 271119 shows significant regional shifts from the period 2020–2021 to 2022–2023.

**Table 3**

Supply-chain trade restructuring of Lukoil enterprise, for two periods and two HS codes (U.S. dollars at current prices).

2020–2021					
HS 270900			HS 271119		
Region	Country	Value	Region	Country	Value
Asia, East/ Southeast	Japan	544,488,652	Europe	Poland	1,849,928
Europe	Switzerland	463,301,876	Europe	Switzerland	743,505
	Unknown	296,961,657			
Europe	Belarus	257,151,980			
Europe	Finland	210,620,039			
2022–2023					
HS 270900			HS 271119		
Region	Country	Value	Region	Country	Value
Unknown	Unknown	21,302,658,459	Europe	Poland	76,609,840
Middle East	United Arab Emirates	13,304,912,615	Europe	Latvia	58,255,246
Europe	Switzerland	12,068,523,306	Central Asia	Uzbekistan	41,887,092
Europe	Bulgaria	5,211,460,500	Central Asia	Kyrgyz Republic	26,175,266
Europe	Italy	3,596,074,115	Europe	Ukraine	20,973,394
Asia, East/ Southeast	Singapore	3,161,523,090			

Note: The region was determined based on classification of the CIA (2023).

Source: Prepared by the author and C. Alvarez based on Market Inside database.

**Table 4**

Supply-chain trade restructuring of Rosneft enterprise, for two periods and two HS codes (U.S. dollars at current prices).

2020–2021					
HS 270900			HS 271119		
Region	Country	Value	Region	Country	Value
Asia, East/ Southeast	China	4,782,742,096	Middle East	Georgia	17,274
Europe	Switzerland	1,158,316,682	Middle East	Georgia	23,655
Europe	Germany	659,410,868	Middle East	Georgia	12,479
Europe	Poland	655,581,264	Middle East	Georgia	8,561
Europe	UK	653,308,633	Middle East	Georgia	7,558
2022–2023					
HS 270900			HS 271119		
Region	Country	Value	Region	Country	Value
Asia, East/ Southeast	China	57,946,352,329	South Asia	Afghanistan	25,657,254
Asia, South	India	28,217,422,326	Asia, East/ Southeast	Mongolia	14,875,955
Asia, East/ Southeast	Hong Kong SAR, China	26,322,066,749	Central Asia	Kyrgyz Republic	4,795,082
Middle East	United Arab Emirates	12,940,330,933	Middle East	Turkey	4,577,004
Europe	Switzerland	8,703,699,268	Asia, East/ Southeast	China	4,080,000

Note: The region was determined based on classification of the CIA (2023).

Source: Prepared by the author and C. Alvarez based on Market Inside database.

During 2020–2021, trade for the product HS 270900 was largely concentrated in East Asia/Southeast Asia and Europe, with key partners being China and Switzerland, followed by several European countries such as Germany, Poland, and the United Kingdom. For the product HS 271119, the Middle East, particularly Georgia, was a prominent trade partner, despite having relatively smaller trade values. In the 2022–2023 period, there was a substantial increase in trade activity in Asia and the Middle East for the product HS 270900. China continued to be a major trade partner, with significant contributions from India, Hong Kong SAR, and the United Arab Emirates. Europe maintained a strong presence with Switzerland. For the product HS 271119, South Asia, particularly Afghanistan, emerged as a key partner, along with increased trade with East Asia/Southeast Asia, including Mongolia and China. Central Asia also saw notable engagement with countries like the Kyrgyz Republic. The Middle East, represented by Turkey, remained an important region for trade.

Overall, this period witnessed a diversification and expansion of trade networks, with greater involvement from Asian and Middle Eastern regions, highlighting a strategic shift in trade partnerships. This restructuring process was accompanied by a diversification of top buyers for each one of these companies.

The trade restructuring from 2020–2021 to 2022–2023 shows a distinct shift in regional trade patterns for Gazprom products (Table 5). In 2020–2021, European countries such as Switzerland, Belarus, Serbia, and the United Kingdom were major buyers, reflecting a strong European engagement with Gazprom. By 2022–2023, there was a notable shift towards Asia, with China and India emerging as significant buyers, and Kazakhstan becoming a key player in Central Asia. This period also saw an increase in trade with Ukraine within the European region. These changes indicate a diversification of Gazprom's trade partners, with a growing emphasis on Asian markets, particularly Central and East/Southeast Asia, while maintaining some level of engagement with European countries.

The trade restructuring from 2020–2021 to 2022–2023 for Lukoil products demonstrates a shift in regional trade dynamics, as shown in Table 6. During 2020–2021, Europe, specifically Switzerland and Belarus, were the primary buyers of Lukoil products, with notable involvement from Russia within Central Asia. By 2022–2023, Switzerland remained a significant buyer, but there was an increased engagement from Central Asia, particularly Uzbekistan and Kyrgyzstan. The Middle East, specifically the United Arab Emirates, also emerged as an important market for Lukoil. Additionally, Ukraine and Latvia in Europe became notable buyers. This restructuring indicates a diversification of Lukoil's trade partners, with a growing focus on Central Asia and the Middle East while maintaining strong ties with European countries.

As summarized in Table 7, the trade restructuring from 2020–2021 to 2022–2023 shows a significant regional shift in the buying patterns for Rosneft products. In 2020–2021, key buyers were from Asia, Europe, and Central Asia, with China and Russia being prominent buyers. The Middle East, particularly Georgia, also played a role as a significant buyer. By 2022–2023, the focus shifted more towards Asia, with China remaining a major buyer but with increased volumes. South Asia, specifically Afghanistan and India, became important markets. Europe continued to be significant, with Poland emerging as a notable buyer. This period also saw new





**Table 7**  
Supply-chain trade restructuring and diversification of five top buyers and regions of Rosneft, for two periods and two HS codes (U.S. dollars at current prices)

2020–2021							
HS 271119							
Region	Country	Top 5 Buyers ROSNEFT	Value	Region	Country	Top 5 Buyers ROSNEFT	Value
Asia, East/ Southeast	China	CHINESE NATIONAL UNITED OIL CORPORATION	4,503,140,195	Middle East	Georgia	LLC JEO-OIL	23,655
Central Asia	Russia	ROSNEFT TRADING SA	2,490,995,097	Middle East	Georgia	LLC JEO-OIL	17,274
Europe	United Kingdom	GLENCORE ENERGY UK LTD	806,238,180	Middle East	Georgia	GAZ GEORGIA IMPORT LLC	12,479
Asia, East/ Southeast	Singapore	CEFC SHANGHAI INTERNATIONAL GROUP (SINGAPORE) PTE LTD	568,144,244	Middle East	Georgia	GAZ GEORGIA IMPORT LLC	8,561
Europe	United Kingdom	QHG TRADING LLP	457,415,519	Middle East	Georgia	GAZ GEORGIA IMPORT LLC	7,558
2022–2023							
HS 271119							
Region	Country	Top 5 Buyers ROSNEFT	Value	Region	Country	Top 5 Buyers ROSNEFT	Value
Asia, East/ Southeast	China	CHINA NATIONAL ASSOCIATED PETROLEUM CORPORATION	38,860,113,422	South Asia	Afghanistan	SALEM KHAN PETROLEUM LTD	9,110,400
Asia, East/ Southeast	China	NORD AXIS LIMITED	25,708,103,343	South Asia	Afghanistan	ZIAYEE PETROLEUM LTD	8,492,692
Asia, South	India	INDIAN OIL CORPORATION LIMITED	13,053,565,610	Europe	Switzerland	VITOL S.A.	3,942,642
Europe	Poland	POLISH OIL CONCERN ORLEN S.A.	8,297,092,230	Asia, East/ Southeast	Mongolia	OOO MANCHZHURSKAYA COMPANY DALNEVOSTOK-GAZ	2,924,984
Asia, East/ Southeast	China	CHINA NATIONAL UNITED PETROLEUM CORPORATION	6,603,613,240	Asia, East/ Southeast	Singapore	COO DASHVAANZHIL	2,703,758

Note: The region was determined based on classification of the CIA (2023).

Source: Prepared by the author and C. Alvarez based on Market Inside database.

involvement from East Asia/Southeast Asia, particularly Mongolia and Singapore. These changes indicate a diversification in Rosneft's trade partnerships, with a stronger emphasis on Asian markets while maintaining some European engagement.

## **6. Discussion**

Sanctions against Russian state enterprises by the U.S., the UK, and Europe have been extensive and targeted various sectors, including financial institutions, technology, and the defense sector. Within the China–Russia Strategic Partnership, trade has been reoriented, particularly in turning to Chinese technology and equipment (Balashov, 2022). Røseth (2018) details the accelerated formation of a priority partnership in oil and gas between Russia and China. Yilmaz and Changming (2020) view the China–Russia cooperation under the Belt and Road Initiative as a foundational element for Eurasian geoeconomic and geopolitical reshaping. Ershov (2019) provides insight into the broader strategic partnership, highlighting economic, cultural, and educational cooperation institutionalization through BRICS. Lastly, Shabykova (2023) identifies an increase in mutual trade turnover, particularly in primary energy carriers, indicative of Russia's strategic redirection towards the Chinese market amidst Western sanctions.

According to the Center for Strategic and International Studies (CSIS, 2022), Russian enterprises have moved towards non-Western markets to offset the trade disruptions caused by sanctions. This diversification of trade partners, particularly towards Asian economies, signifies a strategic shift in Russian international trade policies.

The multifaceted strategic maneuvers undertaken by Russian hydrocarbon enterprises after 2022 sanctions, spotlighted the enhanced role of strategic partnerships within BRICS and the important China–Russia axis as cornerstones of Russia's adaptive management in the hydrocarbon sector. The response has been multifaceted, with both resilience and strategic adaptation playing a critical role in the ongoing economic narrative of post-2022 Russia. The sanctions imposed by the Western powers, while having an immediate impact on the Russian economy, have not achieved the anticipated level of disruption in Russian state enterprises. This resilience is primarily due to strategic adaptation and realignment towards non-Western economic spheres.

In the energy sphere, Russia leverages BRICS as a platform to advocate for energy security and to present an alternative to Western hegemony in global energy governance (Røseth, 2018; Ershov, 2019) amid sanctions. The synergy between Russia and China is increasingly central to Russia's energy strategy, as evidenced by numerous oil and gas agreements that have fortified their bilateral relationship. Russia's interaction with other BRICS nations is characterized by ongoing dialogues aimed at fostering energy cooperation, expanding energy markets, alleviating the impact of sanctions, and contributing to a multipolar world order that could serve as a counterweight to Western dominance (Nezhnikova et al., 2018; Ershov, 2019). Despite these strategic energy partnerships, challenges persist, including the need for diversifying export routes and reconciling domestic energy demands with export obligations (Holtzinger, 2010).

China and Russia have been cooperating in the natural gas sector for years. The two countries signed a U.S. dollars 400 billion 30-year gas supply contract



in 2014, for gas sales and pipelines' construction (Pires and do Nascimento, 2021). The Power of Siberia pipeline, a landmark Russia–China joint venture, marks a major stride in energy cooperation, funneling natural gas from Siberia to Shanghai. It began construction in September 2014 and started gas supply in December 2019. Gazprom has projected that the Power of Siberia pipeline will reach its design capacity of 38 billion cubic meters/year (Bcm/year) by 2025 (Liu and Xu, 2021). Increased deliveries were expected throughout 2024, in line with Gazprom's agreement with China's National Petroleum Corporation (CNPC).

Russia and China are nearing an agreement on the construction start for Power of Siberia 2 (PoS2) pipeline by 2024. This new pipeline, with a 50 Bcm/year proposed capacity, aims to deliver Russian gas from West Siberia, previously designated for European export, to industrial areas north of Beijing via Mongolia by 2030.<sup>3</sup>

This development is particularly noteworthy as China maintains a neutral stance on Russia's recent military actions (Pires and do Nascimento, 2021), indicating a significant geopolitical shift towards Eurasian integration. Røseth (2018) delineates the progression of Russia's energy policies towards China from initial hesitation to prioritized partnership, influenced significantly by Western sanctions. Nezhnikova et al. (2018) advocate for the diversification of Russia's energy export strategy, recognizing China's important role in this context. Menon (2009) extends the discourse to the strategic imperatives of this partnership, suggesting that both nations are keen to exploit their synergistic energy dynamics for collective gain.

Holtzinger's (2010) analysis probes the partnership's stability and depth, considering internal and external geopolitical influences. Gallo et al. (2020), while acknowledging the strategic nature of the Sino–Russian energy relationship, emphasize its inherent fragility and the imbalance tilted in China's favor, especially within the Eurasian Economic Union negotiations. Hang (2018) underlines the mutual benefits and complementary aspects of the energy cooperation, with a potential expansion into new energy technologies, despite the challenges in specific joint ventures. Jing (2012) provides a strategic lens via a SWOT (Strengths, Weaknesses, Opportunities, and Threats) analysis, exploring the energy partnership's potential trajectory. Connolly (2018, 32) delves into Russia's vision of 'Greater Eurasia,' an initiative underscoring its drive for geopolitical autonomy and attention to Asia's rising influence—particularly with escalating geopolitical tensions with the EU and NATO.

This geostrategic reorientation serves as Russia's buffer against Western sanctions and military pressures. These analyses present a partnership that is central to the energy security and strategic positioning of both nations. The literature indicates that while the alliance has deepened, particularly against the backdrop of Western sanctions and China's escalating energy demands, it remains complex and delicately balanced amidst global politics and market dynamics.

## 7. Conclusion

In the face of international sanctions, Russia has strategically restructured its hydrocarbon trade through a process known as trade deflection. By redirecting exports from sanctioning to non-sanctioning countries, Russia has effectively

<sup>3</sup> <https://jpt.spe.org/russia-nears-pipeline-deal-as-gas-exports-to-china-hit-new-records>

mitigated the adverse impacts of sanctions on its oil and gas industry. This shift is underscored by the significant increase in Russian hydrocarbon exports to countries such as China and India, both of which are members of the BRICS alliance. The strategic partnership with China, formalized through the Comprehensive Strategic Partnership of Coordination, has been particularly instrumental. This partnership has not only secured a substantial market for Russian crude oil but also fostered greater energy security for China.

The primary objective of our research was two-fold: first, to analyze hydrocarbon trade deflection under the Russia–Ukraine conflict within the context of the China–Russia Strategic Partnership and BRICS; second, to assess the restructuring of Russia’s supply-chain trade in crude oil and natural gas during the 2020–2023 period. To achieve these objectives, the study posed two critical research questions: Has hydrocarbon trade deflection shifted towards non-sanctioning countries, China, and other BRICS countries; have Russia’s oil and gas supply chains been restructured towards China and other BRICS countries?

The literature review highlighted the concept of trade deflection, a special case of trade diversion, as the redirection of exports to avoid trade barriers in the case of sanctions. Previous studies have primarily focused on national-level impacts of trade barriers, utilizing various quantitative methodologies such as econometric models and game theory. However, a significant gap exists in the application of Bill of Lading data to analyze supply-chain trade restructuring and trade deflection in the hydrocarbon sector within the geopolitical context of the China–Russia Strategic Partnership and BRICS.

This research addressed these gaps by integrating Bill of Lading data to provide an analysis of supply-chain trade restructuring. This method allowed for the identification of specific shifts in trade flows and the role of enterprises in non-sanctioning countries in absorbing the redirected exports.

The results confirm that after the imposition of sanctions in March 2022, Russian hydrocarbon exports to sanctioning countries declined sharply, while exports to non-sanctioning countries, particularly China and India, increased significantly. This realignment reflects a broader strategic diversification of trade partnerships, with a notable shift towards Asian markets and increased Central Asian involvement. The engagement with BRICS has provided Russia with a platform to advocate for energy security and to challenge Western dominance in global energy governance, fostering a more balanced global energy market.

Future research can include other components of the oil and gas supply chain since this analysis focused on primary products only. In addition, other venues for development of future research are to analyze supply-chain trade within the BRICS+ group of countries and in Russia–China bilateral trade.

In conclusion, the study underscores the effectiveness of trade deflection as a strategic response to economic sanctions. The findings illustrate how geopolitical alliances and trade partnerships can facilitate resilience and continuity in global trade. The restructuring of Russia’s hydrocarbon supply chains highlights the dynamic nature of international trade and the importance of adaptive strategies in maintaining economic stability amidst geopolitical challenges. This research contributes to the understanding of trade deflection mechanisms and provides a framework for analyzing the interplay between international trade, geopolitical strategies, and economic resilience.

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