

# **ANALYSIS OF THE CAUSE-AND-EFFECT RELATIONSHIP BETWEEN THE OIL AND GAS INDUSTRY CRISIS OF 2022-2023 AND THE ECONOMIC AND PRICE STABILITY OF THE RUSSIAN FEDERATION AND THE EUROPEAN UNION**

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## **Abstract**

This paper describes the oil and gas industry in the Russian Federation in 2022-2023 and its impact on price stability and trading relationships with Europe. Since February 2022 the oil and gas industry experienced several shocks associated with political and economic conflicts, changes in the logistics sector and international trade caused adverse effects for the Russian companies, more precisely a significant loss of revenue. Due to this Russian companies and the Government are forced to implement a new model of trading in order to stabilize the situation for their advantage. Will be analyzed the cause-effect relationship between the portfolio of sanctions prepared by Europe and G7 in order to limit the export of crude oil and gas from the Russian Federation and decrease the revenue potential of the country and the consequences of this restriction for Russia and Europe. As long as European countries depend on the Russian supply, these shocks that occurred in the industry affected the economy of Europe and forced it to find alternative resources of oil or to change its political opinion.

**Keywords:** Oil and Gas industry crisis, cause-and-effect relationships, Russian Federation and EU price stability, channel of oil and gas distribution.

**JEL Classification:** L1

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## **Introduction**

Oil and gas are essential fossils for the global economy and production that ensure the well-being of society. In the last years, this industry experienced several shocks associated with the pandemic of COVID-19 and the Russian invasion. The consequences are which manifest themselves in the form of changes in supply and demand in the market which leads to changes in prices for goods and services on the macroeconomic level and have a negative effect on the consumers. In terms of the economy of the Russian Federation, the oil and gas industry has a significant contribution to the economy and revenue of the country. Thus, the instability and uncertainty lead to adverse effects on the

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economy of the Federation. The main consumer of Russian oil is Europe and the stability of the supply chain and global market have a big impact on the welfare of the EU and its economic growth.

The purpose of this study is to describe the shocks in the oil and gas industry which are caused by the Russian invasion of Ukraine and the casual relationships between the destabilization of the industry and economic changes in the EU and the Russian Federation. Sanction which were prepared by EU and G7 caused several supply and demand shocks, changes in the supply and distribution canals affected the price stability of the economies of the Russian Federation and European Union. Important to mention that the political situation has a significant impact on the global economy and on the oil and gas industry as well. Thus, the political restriction caused several adverse changes on the oil market.

The study entails analyzing statistics related to oil and gas production, distribution, and consumption. It delves into identifying cause-and-effect relationships between economic stress and shifts within the industry.

## **1. Review of the scientific literature**

The oil and gas industry is a key resource for the formation of GDP and profit of the state budget of the Russian Federation. It forms approximately 25.5% of the country's GDP, and the Russian Federation accounts for about 20% of all international supplies of energy resources and is one of the leaders in the supply of natural oil and gas on a global market (Naumov, 2023: p. 142).

Beginning in 2022, Russian exports were subject to a portfolio of sanctions limiting oil and gas supplies to Europe. As an empirical phenomenon, this was subsequently accompanied by a pronounced decline in production, thereby resulting in a commensurate reduction in revenues derived from oil and gas exports (Naumov, 2023: p. 142).

Also, in Russian scientific research, you can find the term "oil needle", which implies the dependence of the European Union on supplies of raw materials from Russia. That is, we can conclude that the embargo on Russian oil had an impact on EU price stability through a reduction in supplies and the negotiation of a price ceiling. Thus, the study is aimed at analyzing the cause-and-effect relationships between the crisis in the oil and gas industry in the Russian Federation and the price instability of the European Union in the period 2022-2023.

Transport & Environment conducted a study and, according to its conclusions, oil and gas exports from the Russian Federation go through the so-called "black corridor", that is, through countries such as Turkey, the United Arab Emirates, India, China, and Singapore. Sergey Kondratev the Head of Sector, Economic Department, Institute of Energy and Finance approved that almost all Russian exports go to Asia.

According to Eurostat statistics, energy prices in the EU have increased sharply: electricity - 35%, gas by approximately 40%. To protect consumers, the EU established restrictions on electricity consumption and also actively improved alternative energy sources (European Commission).

## **2. Research methodology**

General trends of the oil and gas industry in Europe 2022-2023

The oil and gas industry in Russia form approximately 25.5% of the country’s GDP, and the Russian Federation accounts for about 20% of all international supplies of energy resources and is one of leaders in supply of a natural oil and gas on a global market. Therefore, the oil and gas complex are an important factor in both the domestic and foreign policy of the Russian Federation. The biggest companies are the next: State-controlled Rosneft is the largest Russian oil producer, followed by private Lukoil, which is also the largest private company in Russia. Other major oil producers include Gazprom Neft, Surgutneftegas, Tatneft and Russneft. The largest Russian gas producer (68% of production in 2021) is state-owned Gazprom, followed by the private Novatek. Many Russian oil producers, including Rosneft, also produce gas. Those companies were affected by adverse factors and their financial situation is important for the stability of the oil sector. After the start of the special military operation in Ukraine, the scale and potential negative effect of these sanctions increased significantly. In this regard, the Analytical Center of the Government of the Russian Federation has identified three areas of risk:

- Oil production and refining - a ban on the purchase of oil and petroleum products in Russia; restrictions on the supply of equipment for oil production and oil refining to the Russian Federation.
- Investments - withdrawal of Western companies from joint projects in Russia, a ban on investments in the fuel and energy complex of the Russian Federation.
- Natural gas - reducing the EU's dependence on gas imports from Russia; refusal to renew contracts with PJSC Gazprom; suspension of certification of Nord Stream 2. (Naumov, 2023: p. 142)

Due to the impact of sanctions on Russian Federation, several shocks arise that destabilize the oil and gas sector. The first adverse effect is a change in supply. The chart below shows what countries replaced the Russian Federation on the Europe market.

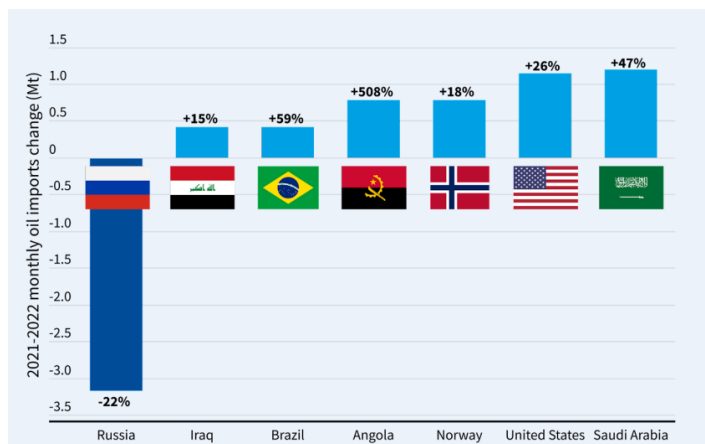
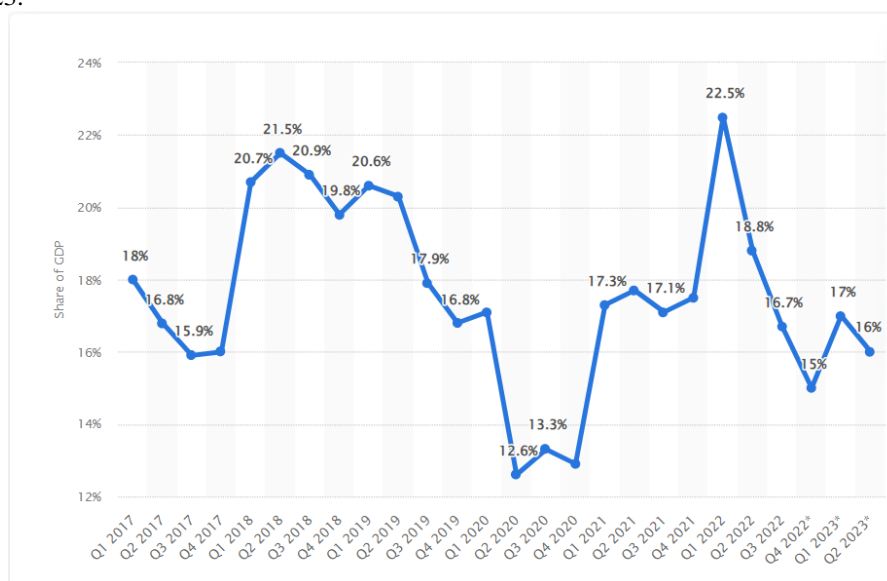


Figure 1. Biggest monthly oil export changes in the EU between 2021 and 2022

Source: Transport & Environment (2023), p. 5 – 2

The scale of import from Russia decreased in 22% between 2021 and 2022. Countries like United States and Saudi Arabia increased export volumes in 26% and 47%

respectively. According to data from Statista According to these data, a negative trend can be traced Share of the oil and gas industry in the gross domestic product. The graph below represents the dynamics of this indicator from the 1<sup>st</sup> quarter of 2017 to the 2<sup>nd</sup> quarter 2023.



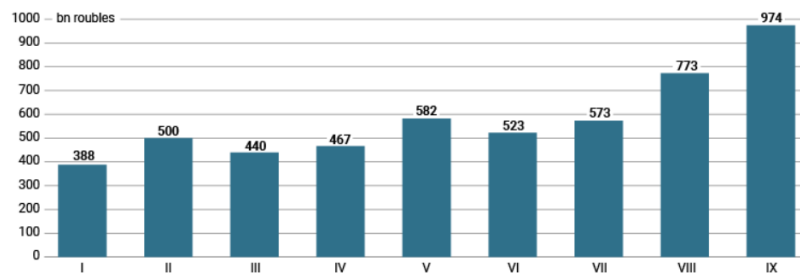
**Figure 2. Share of the oil and gas industry in the gross domestic product (GDP) of Russia from 1st quarter 2017 to 2nd quarter 2023**

Source: <https://www.statista.com/statistics/1322102/gdp-share-oil-gas-sector-russia/>

A sharp decline in the current indicator is visible from the 1st quarter of 2022. It is 22,5% which is the highest point and as per the 2nd quarter of 2023 the share is 16% which is a low point, but not critical compared to historical dynamics. The lowest point is visible for the period of the COVID-19 pandemic. It is 12,6% as per the 2nd quarter 12,6%. Based on these dynamics, we can conclude that a more critical situation can be observed during the pandemic than during the special operation and sanctions restrictions.

Under the portfolio of sanctions on the 2nd of December 2023, finance ministers of G7 agreed to a price cap of Russian oil as a new form of regulation and a geopolitical tool that establishes the maximum price for Russian oil at the level of \$60 per barrel. This restriction was implemented in order to reduce the export volume of Russian crude oil which will reduce Russian revenue. The Russian Federation has used retaliatory tactics, according to which Russian companies do not enter into transactions with countries that have signed this agreement and at the same time having a possibility to use Western companies to export the crude. This price dynamic has boosted Russia's budget revenues as the higher price for crude means that the government collects more tax. According to data from the International Energy Agency (IEA), Russian revenues from exports of oil and petroleum products totaled \$18.8 billion in September; this was the highest such figure since June 2022, before the West imposed its restrictions (Centre for eastern studies, 2023)

Chart 3 shows the dynamics of budget revenues collected from the oil extraction tax and export duty. The highest bar is visible for September 2023 with the indicator of 974 bn Russian roubles. Changes in oil transportation routes have contributed to the easing of sanctions to some extent and in the future will stabilize the situation on the Russian market, which in turn will bring the above-described indicators back to normal. Important to note that diplomatic relationship with OPEC countries is an important political factor which stabilized the situation till the end of 2022. By mid-March 2023, 75% of Russian seaborne oil was already traded without western services (Russian Oil And Gas Exports: One Year Of War Reverses Decades Of Energy Diplomacy Insights Report 2023, p. 9)



**Figure 3. Monthly budget revenue from the oil extraction tax and export duty between January and September 2023**

*Source:* Centre for eastern studies (2023)

Despite negative forecasts in summary in 2023 the production and export of oil increased by 2% and 7% respectively. As a result of tightening sanctions, oil and gas companies were forced to change oil transportation routes. Diplomatic relationship with countries of Middle East, Central Asia, China and India contributed to the export of raw materials. (Visual Capitalist)

Important to note that not all European countries were able to abandon Russian products. Chart 4 shows the list of countries which import oil from Russia. China is on the top of list as a main trading partner. United Kingdom, more precisely Slovakia, Hungary, Belgium, Spain, Netherlands, Bulgaria and Czech Republic did not apply sanction. The reason for it is incapacity to use alternative supply of oil and its economic inefficiency.

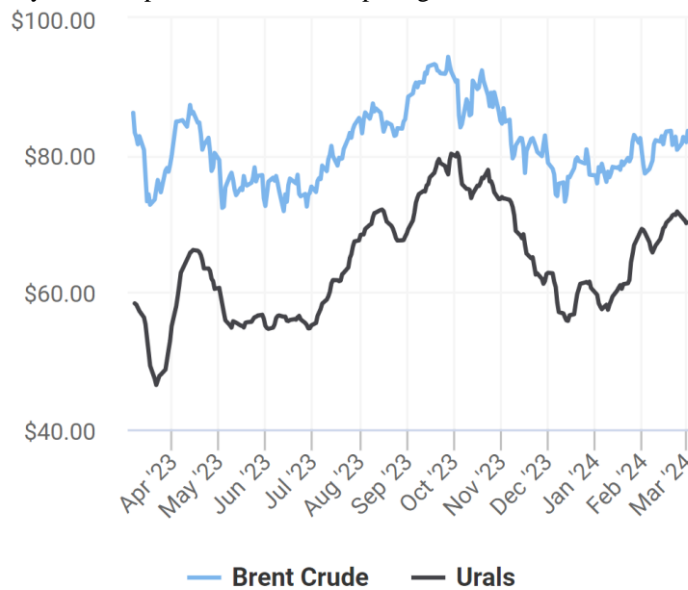
**Analysis of the cause-and-effect relationship between the oil and gas industry crisis of 2022-2023 and the economic and price stability of the Russian Federation and the European Union**

Country	Russian Fossil Fuel Imports* (Total)	Crude Oil	Natural Gas	Coal
China	\$30B	\$23.9B	\$2.7B	\$3.3B
EU	\$18.4B	\$11.2B	\$7.2B	\$0
India	\$15.2B	\$12.8B	\$0	\$2.5B
Türkiye	\$12.1B	\$7.3B	\$3B	\$1.7B
UAE	\$2.3B	\$2.3B	\$0	\$0
South Korea	\$2.1B	\$0.6B	\$0.3B	\$1.2B
Slovakia	\$2.0B	\$1.1B	\$0.9B	\$0
Hungary	\$1.9B	\$0.8B	\$1.1B	\$0
Belgium	\$1.9B	\$0.5B	\$1.4B	\$0
Japan	\$1.8B	\$0	\$1.5B	\$0.3B
Spain	\$1.7B	\$0.6B	\$1.1B	\$0
Singapore	\$1.7B	\$1.7B	\$0	\$0
Brazil	\$1.6B	\$1.4B	\$0	\$0.2B
Netherlands	\$1.6B	\$1.5B	\$0.1B	\$0
Saudi Arabia	\$1.5B	\$1.4B	\$0	\$0
Egypt	\$1.4B	\$1.3B	\$0	\$0.2B
Bulgaria	\$1.3B	\$1.1B	\$0.3B	\$0
Italy	\$1.2B	\$0.8B	\$0.4B	\$0
Malaysia	\$1.1B	\$1.0B	\$0	\$0.1B
Czech Republic	\$1.0B	\$1.1B	\$0	\$0

**Figure 4. Importers of Russian oil over the time period of Jan 1, 2023 to June 16, 2023 in U.S. dollars**

Source: Visual Capitalist

Price for the Russian oil is another indicator which shows that the price cap is ineffective. Also, important to mention that according to the one of main market rules: as lowest is price, as highest is demand there is an assumption that a low price will increase demand and it is a positive consequence for Russian Federation in terms of embargo. Chart 5 shows a dynamic of prices for Urals comparing with Brand.



**Figure 5. Urals and Brent Crude prices April 2023-March 2024**

Source: OilPrice

According to the data the lowest price drop after the price cap was implemented was pointed on the 13<sup>th</sup> of December 2023. The price for Urals was \$55,89 per barrel and \$74,26 for Brent. The second low point is determined for the 9<sup>th</sup> of January 2024 prices are \$58,16 and \$76,12 respectively. On the 1<sup>st</sup> of March 2024 the price for Urals is \$70,20 and \$83,55 for Brent. According to the graph the line which determines price for Urals goes upward correlating with price line for Brent, crossing the limit of \$60 per barrel. Thereby the applied price cap does not show the expected result. Sergey Kondratev the Head of Sector, Economic Department, Institute of Energy and Finance commented: “Now almost all Russian exports go to Asia. And the EU’s refusal to buy oil from Russia has led to the fact that prices for Russian oil are now formed in Asia, and for Asian buyers the restrictions introduced by the G7 countries, including the price ceiling, are not important and mandatory. Therefore, speaking about the price ceiling, now no, it is not in effect, Russian oil is sold at higher price” (TACC, 2023).

Important to mention that a price for a gas is a powerful market force, which groped significantly in 2023 (Chart 6). After the outbreak of hostilities in Ukraine, Russia significantly reduced gas supplies through the Nord Stream gas pipeline, and in early September completely stopped them. At the end of September, Nord Stream and Nord Stream 2 were heavily damaged as a result of sabotage. to Europe. Accordingly, a sharp increase in gas prices followed. The EU, in turn, set a price cap at \$2,000 per thousand cubic meters in order to protect consumers from price hikes (Forbes).



**Figure 6. Natural gas prices 2021-2024**

Source: Yahoo Finance

Alexey Belogoriev, Director of Research and Development at the Institute of Energy and Finance, commented on the results of 2023 for the Russian gas industry to the Oil and Capital magazine: “The main driver of growth is the Power of Siberia, gas supplies to Kazakhstan and Uzbekistan for the purpose of transit to China. With LNG everything is more complicated. By the end of this year, problems were discovered at Arctic LNG 2. Because of this expectation of growth, LNG exports from the Russian Federation are at risk by 18% in 2024. In 2023, supplies of liquefied gas from Russia decreased in the second and third quarters, and recovered only in the fourth, and the previous failures in volumes in physical terms were not compensated. “Arctic LNG 2” will most likely be launched on time, but reaching its design capacity may clearly not be achieved by the end of 2024. The

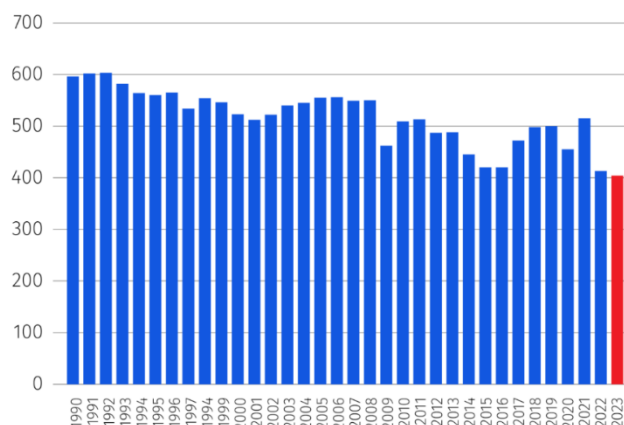
key question for the coming years is how to provide the gas industry with a sufficient volume of investment in the face of falling export revenues, maintain the financial attractiveness of new projects and level out budgetary returns through LNG exports, the profit from which will be clearly lower than from pipeline supplies in previous years” (Institute of Energy and Finance).

Sanction and market’s shocks influenced a financial performance of the integrated majority state-owned multinational energy corporation Gazprom, which is one of the biggest Russian company. It includes 53 subsidiaries, operating business in 20 countries. Gazprom Group has the next scope of business: 16% of a global gas reserve, 19% share in the total volume of oil and stable gas condensate refining in the Russian Federation, 70% of gas reserves in Russia, 11% share in world gas production, 16% share in the installed electrical capacity of stations of the Unified Energy System of the Russian Federation, 66% share in Russian gas production, 13% share of electricity generation on the territory of the Russian Federation, >50% share in the total volume of gas processing in the Russian Federation, human and intellectual capital consists of 492.200 people Group’s headcount, 3,119 patents, 18 partner universities, production assets consist of 179,280 km gas trunklines, 27 underground facilities across Russia, 7 gas and condensate, >80 plants, 3 refineries (Gazprom Group). As long as Gazprom corporation has a significant value and company’s scale in the oil and gas industry, its financial performance has an important impact on a Russian economy by its contribution and microeconomics figures are directly proportional to the macroeconomic indicators of the industry.

In 2022 Gazprom lost one and the biggest outlet under the influence of sanctions. Firstly, important to mention that situation with gas is more problematic than with oil. As of 2023 gas production in Russia decreased in 5,5% versus prior year and at the same time gas production from offshore fields increased by 10.9% (to 34.5 billion m<sup>3</sup>). Pipeline gas exports at the end of 2023 amounted to 91.4 billion m<sup>3</sup>, and liquefied gas exports amounted to about 43.6 billion m<sup>3</sup>. As long as the main European market was lost Russian companies concentrated more on the developing of the internal market. At the end of 2023, the gasification level was 73.8%. The President of the Russian Federation has set the task of bringing the country’s gasification level to 83%. Since 2021, the social gasification program has been continuing, that is, free gas supply to citizens’ homes in gasified settlements. During this time, more than 1.5 million applications for social gasification were submitted, more than 1.1 million contracts were concluded, more than 877 thousand were completed to the boundaries of the site, gas has already been supplied to 485 thousand households (Energy policy).

According to article Moscow Times, Gazprom lost a fifth of production, volumes decreased by another 9 billion cubic meters. Chart 7 shows the dynamics of gas production (Moscow Times).





**Figure 7. Gas production "Gazprom" bill m3**

Source: Moscow Times

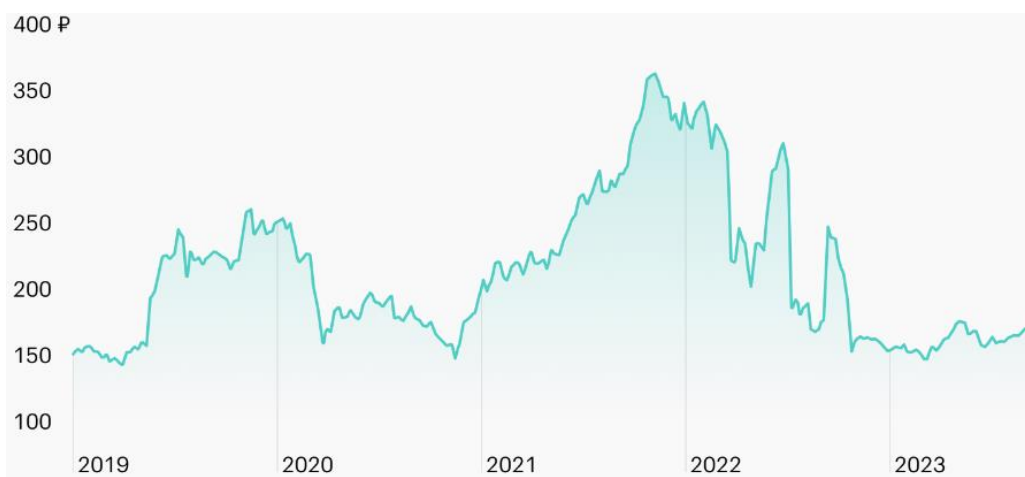
Based on the chart a decrease in gas production was recorded in the last two years. As per 2022 the volume of production reached approximately 400 billion m3 and didn't change significantly in 2023. Supplies to Europe fell to 28 billion cubic meters, the level of the second half of the 1970s. In the past year, China purchased a record 23 billion m3 through the Power of Siberia pipeline. This, however, compensated for only one-eighth of previous exports to the European Union (180 billion m3) (Moscow Times).

As the result a sales profit decreased by 62 and 51% compared to 2022 and 2021, respectively, and amounted to 241 billion rubles. Financial income decreased significantly: a drop of 92 and 30% compared to the figures for 2022 and 2021, with a result of 125 billion rubles. But financial expenses decreased by 50% compared to 2022 indicators and increased by 473% compared to 2021 indicators. In the first half of 2023, Gazprom was able to generate a profit of 296 billion rubles, but this is 88 and 69% less than in the same period in 2022 and 2021 (Tinkoff Journal).

	2k2021	2k2023	Change	2k2022	2k2023	Change
Revenue	2 067	1 811	-12%	2 546	1 811	-29%
Profit from sales	496	241	-51%	641	241	-62%
Financial income	178	125	-30%	1 627	125	-92%
Financial expenses	-80	-458	473%	-922	-458	-50%
Net profit	521	-19	—	1 027	-19	—

**Figure 8: Financial indicators per quarter**

Source: Tinkoff Journal



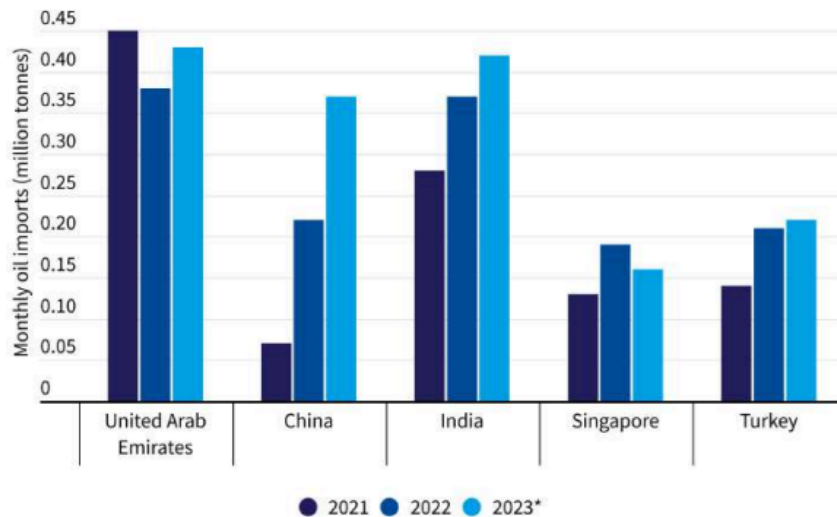
**Figure 9: Gazprom's stock quotes 2019-2023**

Source: Tinkoff Journal

The board of directors agreed the investment plan for 2024. According to this the amount of funding will be trillion rubles, this is 20.1% less than in 2023. “The approved financial plan will ensure that the obligations of Gazprom are covered without a deficit, in full. Decisions on raising borrowed funds under the Borrowing Program are planned to be made based on market conditions, liquidity and the financing needs of Gazprom,” the company notes (Finmarket).

Russian Federation is the main supplier of oil and gas for European countries. In 2022 some countries which applied embargo were obliged to find new sources of minerals. The largest shortage of oil and gas reserves is expected to be since sanctions were applied against Russia. As per statistics the largest suppliers of oil and gas are USA, Norway Saudi Arabia and United Arabian Emirates. Important to mention about the largest world oil cartel OPEC. Its share in global crude oil production is approximately 38%. The countries members of cartel are not able to increase the production and export of crude oil in order to satisfy EU needs. Instead in May and June countries of OPEC and OPEC+ agreed to cut production of crude oil in 23% in order to avoid a price drop which will be caused by low demand. As the result of market's changes Norway and USA became the main oil suppliers for Europe in 2023 with shares of 30% and 19% respectively (European Commission).

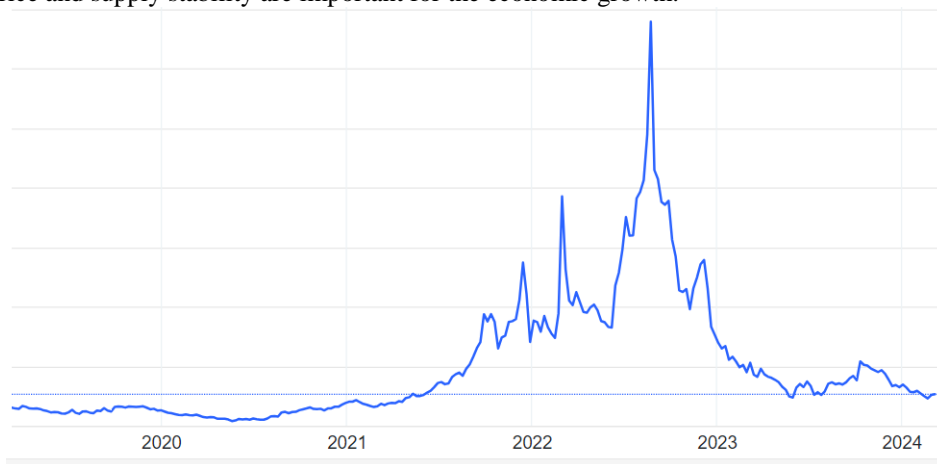
In study of Transport & Environment “Impact of Russia's war on Ukraine on supply and demand” in July 2023 is mentioned about transportation of Russian oil through the backdoor. As was mentioned before in this paper that Russian Federation Used the third parties in oil transportation in order to avoid restrictions. These countries are: India, China, Turkey, the UAE, and Singapore. Those countries increased their supply in EU, creating a backdoor for Russian oil. As a result, the share of refined products imported from these countries grew from 9% in 2021 to 13% in 2022 and 18% in early 2023. T (Transport & Environment, 2023, p.16)



**Figure 10: EU refined products imports from Russian oil ‘laundering’ countries**  
 Source: Transport & Environment (2023), p.16

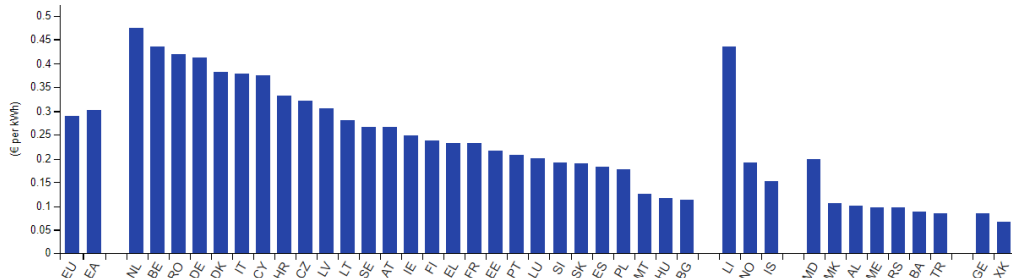
**Influence of industry’s shocks on the price stability of European Union countries**

Industrial shocks which were described above in this paper significantly affected European economy by changes in supply and price and created a deficit of gas and oil. These adverse effects caused a negative price change for goods and services in Europe. As long as oil and gas are mains minerals which are used in production and development their price and supply stability are important for the economic growth.



**Figure 11: Dynamic of natural gas price in Europe 2020-2024**  
 Source: Trading economics

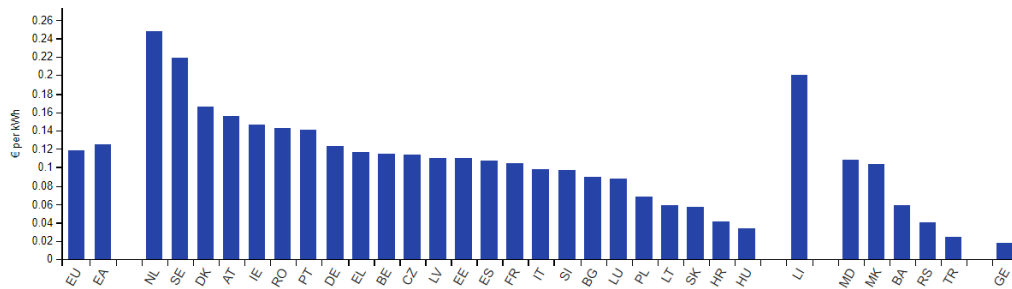
Between 2022 and 2023, a sharp rise in prices is observed according to Figure 11. More precisely, the highest points are as per Feb 2022 the price was established on the level of \$88,88 per MWh, Aug 2022 – \$136,36, Nov 2022 - \$97,98. The price dropped in 2023. As per Feb 2023 the price was established at the level of \$82,82, May 2023 - \$86,86, Now 2023 - \$88,88.



**Figure 12: Natural gas prices for household consumers, first half 2023**

Source: Eurostat

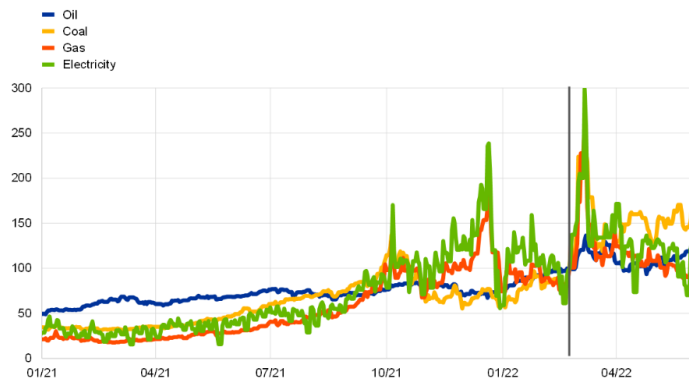
The highest natural gas price in 2023 was in Netherlands at the level of €0,2481 per KWh, Sweden – €0,2189, Liechtenstein - €0,2, Denmark - €0,1655, Austria - € 0,156, Ireland - €0,1465 and Romania - €0,1431. The average price in European Union was €0,1187 and in Euro area - €0,1253.



**Figure 13: Electricity price as per household consumers, first half 2023**

Source: Eurostat

The highest electricity prices as per the first half 2023 are in the next countries: Netherlands - €0,475, Belgium - €0,435, Romania - €0,4199, Germany - €0,4125 and Liechtenstein - €0,4351. The average price in European Union was €0,289 and in Euro area - €0,3009.



**Figure 14: Energy prices**

Source: Eurostat

The figure 14 shows a sharp rise in prices between January 2021 and May 2022. The price chart is increasing sharply starting from October 2021. This trend has a positive trend in February and April 2022.

As the result of energy crisis, the prices for electricity in Europe increased in 35%. EU energy ministers in the Council established new regulations which will be applied from 1 December 2022 to 31 March 2023. Thus, it is obligatory for EU countries to reduce consumption at least at 5%, voluntary measures to cut electricity use at 10%. Solar and wind energy have so far shielded Europe from the very worst of the energy crisis.

- On 1 April 2022, the Portuguese government announced that Portugal will aim to increase the share of renewables in electricity production to 80% by 2026, four years earlier than previously planned.

- In July 2022, the Romanian government published its Decarbonization Law, which states that it will phase out coal by 2032 rather than 2030, as previously planned. However, the law mentions that all lignite plants will be shut down by 2026, and a few will be kept in technical reserve until 2030, while the last hard coal plant will shut down in 2030.

- On 15 July 2022, the Hungarian government published an emergency decree, which said the country would increase the domestic production of lignite, the timeline and scope of which is unclear, and restore to production all units at the country's Matra coal plant and ensure that production continues.

- On 8 July 2022, the German parliament passed a package of energy laws which include provisions to allow for the reactivation of coal-fired power plants or an extension to their lifespans.

- On 26 June 2022, the French government announced it is "keeping open the possibility" of refiring the country's 647 MW Emile Huchet coal plant this winter.

- On 11 May 2022, the Norwegian government announced that it plans to develop 30 GW of offshore wind by 2040, up from 5 GW announced in 2020.

- On 7 April 2022, the UK updated its energy security strategy. It aims to increase the country's renewable capacity by 15% by the end of 2023.

- As part of the National Recovery and Resilience Plan (NRRP), Bulgaria is obligated to reduce energy production emissions by 40% from the 2019 level by 2025. At the start of 2023, Bulgarian lawmakers voted to start negotiations for a rollback on climate commitments.

- On 19 June 2022, Austria's government ordered the operator of the country's 246MW Mellach coal plant to prepare it for operation amidst questions over who will staff the plant, where the coal to burn at the plant will be procured from, and the legal basis for reversing the country's 2020 coal phase out. Austria is highly reliant upon hydropower, and periods of drought have hit the country's power systems hard (Beyond Fossil Fuels).

Thus, countries have begun to develop their alternative energy sources to protect consumers from skyrocketing prices triggered by the energy crisis.

- The EU's net greenhouse gas emissions decreased by around 3% in 2022, reaching a reduction of 32.5% compared to 1990 levels.

- The EU drastically reduced its dependence on Russian fossil fuel: phasing out coal imports; reducing oil imports by 90%; reducing gas imports from 155bcm in 2021 to around 80 bcm in 2022 and to an estimated 40-45 bcm in 2023.

- The EU reduced gas demand by more than 18%

- Gas storage facilities were filled to 95% of capacity ahead of the winter of 2022-2023.

- 2022 was a record year for new solar photovoltaic (PV) capacity, 39% of electricity was generated by renewables.

- Legislative targets were agreed for a minimum share of 42.5% of renewable energy, reduce final energy consumption by 11.7% by 2030 (European Commission).

### **3. Results and discussion**

This scientific study analyzes the cause-and-effect relationships between the shocks that affected the oil and gas industry and the economic and price stability of the European Union and the Russian Federation.

Since Feb 2022 the production of oil significantly decreased as the result of applied embargo. Responses to sanctions represent changes in oil transport routes using partner countries that are third parties in this scheme. The second restriction is a price cap which was established at the level of \$60 per barrel which did not affect the supply and revenue from oil industry in Russia, because the transportation of Russian oil occurred via the backdoor. Following this, the sanction did not meet the expectation about their effectiveness

The gas industry was more negatively impacted. Demand from consumers caused an increase in prices, but the impact of sanctions contributed to the loss of traditional gas transportation routes, which in turn led to a decrease in production volumes. This situation had a negative impact on the integrated majority state-owned multinational energy corporation Gazprom, which led to a critical financial situation and the loss of a large share of profits, which negatively affected the company's ability to fulfill its financial obligations to investors, customers and creditors.

The study indicates that the European Union depends on Russian supplies. Therefore, the unstable situation on the Russian side has a direct impact on the economy and price stability of the EU.

As a result, of our findings, several shocks which caused the oil and gas crisis led to an increase in prices for electricity, gas, and heating in Europe and big losses of revenue by Russian companies. Following this, the EU has adopted several restrictions on electricity consumption and also expanded its capabilities in the search and use of alternative energy sources to protect consumers from this growth.

### Conclusions

In the context in which European countries depend on the Russian supply and unstable situation, the present paper analyzed the oil and gas industry during 2 years: 2022 and 2023 considering the situation from Russian Federation and European Union.

After the analyze of cause-and-effect relationship regarding oil, resulted that the applied embargo conduced to a decrease regarding the production of oil. The consumer's demand of gas increased the prices, and the changes on market affected multinational energy corporation Gazprom, this sector being more impacted than oil sector.

All of the results, associated with the political situation that show a significant impact on the global economy represent a research area that can be analyzed further by many authors.

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