



e-ISSN: 2319-8753 | p-ISSN: 2347-6710

IJRSET

International Journal of Innovative Research in
SCIENCE | ENGINEERING | TECHNOLOGY



INTERNATIONAL JOURNAL OF INNOVATIVE RESEARCH

IN SCIENCE | ENGINEERING | TECHNOLOGY

Volume 12, Issue 6, June 2023

ISSN INTERNATIONAL
STANDARD
SERIAL
NUMBER
INDIA

Impact Factor: 8.423

9940 572 462

6381 907 438

ijirset@gmail.com

www.ijirset.com

The Oil Crisis: in Reference to Russia-Ukraine War

Dr. Naveen Tewari

Professor, Dr.Bhim Rao Ambedkar Govt. College, Sriganganagar, Rajasthan, India

ABSTRACT: After it invaded Ukraine in 2022, Russia cut 80 billion cubic metres (bcm) of pipeline gas supplies to Europe, plunging the region into an energy crisis. While the European Union committed to phase out Russian fossil fuel imports “as soon as possible,” it faced an immediate energy deficit it needed to fill.

KEYWORDS-Russia, Ukraine, War, oil, crisis, fuel, Europe

I.INTRODUCTION

As the second-largest oil producer and natural gas exporter, Russia’s war with Ukraine has severely impacted the energy market. To what extent has the war influenced crude oil prices, and has it altered the long-term dynamics of oil prices? An objective analysis of the effects of the Russia–Ukraine war on the crude oil market can assist relevant entities in developing both short-term emergency strategies and long-term response plans. This study establishes an analytical framework of the event analysis method based on multiresolution causality testing (EMC). The results of the multiresolution causality testing reveal a significant one-way causality between the Russia–Ukraine war and crude oil prices. Afterward, using the event analysis based on variational mode decomposition (VMD), from October 1, 2021, to August 25, 2022, as the event window, we found that the war and its chain events caused the West Texas Intermediate (WTI) crude oil prices to increase by \$37.14, a 52.33% surge, and the Brent crude oil price to rise by \$41.49, a 56.33% increase. During the event window, the Russia–Ukraine war can account for 70.72% and 73.62% of the fluctuation in WTI and Brent crude oil prices, respectively. Furthermore, the war amplified oil price volatility and fundamentally altered the trend of crude oil prices. Consequently, this study proposes four recommendations: the establishment of an emergency management mechanism for the oil market, the diversification of oil and gas imports by energy-importing countries, the steady advancement of energy transformation, and the judicious use of financial instruments by enterprises to hedge risks.

After weeks of tensions, Russian President Vladimir Putin ordered Russian troops to invade Ukraine, prompting an international sanctions response targeting Russia’s economy but not directly its oil supplies or energy payments. But as sanctions on Russia intensified and as financial institutions started to refuse financing Russia-related transactions, including opening letters of credit or clearing payments and as some companies became reluctant to purchase Russian crude, Brent on March 2 (the time of writing) was trading above \$110 for the first time since 2014.

Looking forward the market focus should not only be on whether the oil sector will be directly targeted by sanctions, but also the crescendo effect of self-sanctioning along the oil supply chain all the way from marketing to financing to shipping. Fears over energy sanctions and the ambiguity over the banking sanctions have already seen companies avoid purchasing Russian barrels, pushing prices to new multiyear highs and shaving-off shock mitigation policies such as the SPR releases. Also, it has become clear that traders holding Russian crude on their books are struggling to clear cargoes and this has been reflected in widening differentials and rising shipping and insurance costs. [1,2,3]

The next stages for Russian crude supplies are highly uncertain but some possible impacts include:

– Massive shifts in trade flows and sharp adjustments in price differentials to reflect shifts in Russian crude exports. Particularly, there could be a greater re-redirecting of flows from Europe to Asia, but there are limits to such re-direction and not all Urals previously destined to Europe will flow into Asia.

– Russian oil companies could offer sweeteners to buyers to make their barrels more attractive, for instance shifting cargoes from FOB to CFR basis. Also, in response to more extensive self-sanctioning, Urals and ESPO could be offered at discounts so large that cargoes would eventually clear, potentially as masked cargoes or via ship-to-ship transfers. But there are limits to this strategy given the large volumes of Russian exports and the intensification and widening of sanctions.

– Self-sanctioning escalates over the coming weeks leading to a reduction in Russian production and supply disruptions at a larger scale.

In the current environment of ever rising tensions, one should also not also exclude the possibility that in an escalation situation where Russia struggles to clear its barrels, weaponizing energy becomes the next chapter in Russia's ongoing standoff with the West. As these are still early days, a scenario in which Russian oil supplies get disrupted in a sudden manner should also be considered. This will exert significant pressure on both market balances and prices in the near-term and for most of 2022. In the short term, potential responses to ease the price pressure are likely to come from the supply side. The current plan of OPEC+ to return withheld supplies back to market, Iran fully returning to the market and non-OPEC production growth particularly in North America accelerating, these combined supply responses can help fill any potential supply gap. The planned SPR releases will offer little support to a potential shortfall. But in such scenario the demand responses will also play their role and become more visible beyond the near-term. In terms of products, the market and refiners appear less flexible faced with constraints both in terms of costs and feedstock availability. Also, the impacts of the current shock will extend beyond the short-term and beyond balances and prices. The recent crisis will elevate energy security (including oil security) in policy makers' agenda with long-term consequences for governments' energy policies including their energy transition.

II.DISCUSSION

- Russia's invasion of Ukraine has had rippling humanitarian and economic impacts across the globe, particularly on the energy industry.
- The imperative for oil and gas companies, working in concert with governments, is to mitigate the potential disruption of supplies from Russia.
- Over the longer term, the industry needs to strengthen its resilience and relevance in a fast-changing energy world.

Russia's invasion of Ukraine has had a deep human, economic and business impact. It has disrupted lives and livelihoods, as well as supply chains, industries and economies.

The energy industry, like all others, is now operating in an uncertain environment.

Oil prices were rising globally even prior to the full escalation of the war.

However, when Russia attacked Ukraine, the price of crude oil in the global market skyrocketed from around \$76 per barrel at the start of January 2022 to over \$110 per barrel on 4 March 2022.

The price of crude oil was already inflated even before the war due to higher demand fueled by the recovery of global economies from the COVID-19 pandemic and low investment in the oil and gas industry.

With the recovery of demand following the easing of pandemic restrictions, the imbalance between supply and demand was expected to grow to 2% in 2022.

Russia is one of the biggest producers of oil and natural gas. It also produced an average of 10.5 million barrels of liquid fuel products per day in 2020.

The invasion of Ukraine affected energy markets globally, particularly in Europe, which remains the main market for Russian oil and gas due to the lack of these energy sources in European countries.

Hence, by extension, Europe is also the main source of revenue for Russia, and the European Union acknowledges its dependency on the Russian hydrocarbon industry.[4,5,6]

However, after Russia invaded Ukraine in February 2022, the U.S. government under President Biden signed an executive order banning imports of Russian oil, natural gas and coal on 8 March 2022.

The United Kingdom followed suit, announcing its intention to ban hydrocarbon products from Russia. The European Union also said it would cut Russian oil imports by two-thirds. Both the invasion of Ukraine and the series of reactions from Western countries sent the prices of oil and gas soaring.

The demand for hydrocarbons has increased as economies reopen and enter recovery phases.

Hydrocarbon output before the invasion of Ukraine by Russia was stagnant due to low demand and stalled economic activity as a result of the COVID-19 pandemic.

The war further affected this output due to the economic sanctions and foreign policy directives issued by Western countries. The current situation illustrates another important factor affecting the prices of oil and gas: international relations and geopolitics, as well as the foreign policies of influential countries.



A global disruption in oil and gas supply due to the Russia-Ukraine war affected not only the prices of these commodities but also every economic activity reliant on hydrocarbons. Stock exchanges in different markets also sank, including exchanges in Germany and France, the FTSE 100 in London and the Dow Jones and S&P 500 in the U.S. Several leaders of the European Union have rejected the idea of banning Russian hydrocarbon imports. German Chancellor Olaf Scholz said that the EU deliberately exempted the hydrocarbon industry of Russia from sanctions. Prime Minister of the Netherlands Mark Rutte admitted that his country remains dependent on Russia for energy. Several strategies have been rolled out to deal with the impact of the Russia-Ukraine War on global oil and gas prices. Maciej Kolaczowski of the World Economic Forum said that members of the Organization for Economic Cooperation and Development were releasing 60 million barrels of oil, equivalent to 12 days of Russian exports, in the global market from their strategic reserves. The United States is also tapping its strategic reserves to alleviate rising gasoline prices. Other strategies include pressing oil and gas producers to increase their production output to meet the global demand.

Countries that are dependent on Russian hydrocarbon imports have also explored sourcing from other countries. The situation has also prompted them to reexamine their energy security policies and their respective energy mixes. Going forward, countries will be trying to figure out how they can break their dependency on Russian energy while mitigating the impacts to their economies of doing so.

III.RESULTS

Prior to its invasion of Ukraine, Russia was the EU's leading supplier of oil, natural gas and solid fossil fuels, vital components of the continent's energy mix. In 2019, Russia was the world's second-largest exporter of crude oil, contributing \$123bn to its economy. [7,8,9]

Yet many European countries imposed new sanctions against Russia in retaliation for the invasion of Ukraine, which have threatened these supply chains that were so reliant on Russian production..

The West imposed a range of sanctions intended to disrupt Russian industrial production and economic influence across a range of sectors. The economic sanctions intended to penalise Russia severely for its conduct and effectively hinder Russia's ability to continue its aggression.

Individual sanctions targeted individuals who supported, financed, or carried out actions that undermined Ukraine's territorial integrity, sovereignty, and independence or benefited from such activities. As such, many of those targeted by the sanctions are leading figures withing Russian energy, and oil and gas in particular, which has led to further disruption.

However, such is the strength of the Russian oil and gas sector, and such is the demand for its products, that it is unclear if Western actions will make a significant impact. With oil a cornerstone of the Russian economy, the state may well be able to endure sanctions and withdrawals from Western powers. In December 2021, Russia's crude oil exports were reported at 4,510 bpd (barrels per day). According to the Organisation of the Petroleum Exporting Countries, this is a decline from the previous month's figure of 4,617bpd.

Russia's invasion of Ukraine has produced the biggest energy shock to Europe since the 1970s oil crises. It has also laid bare the strategic blunder at the heart of Europe's energy policy – its long-standing dependence on Russian supplies. With Moscow weaponising its dominant position in Europe's energy system, European leaders had little choice but to wean Europe off its addiction to cheap Russian gas and oil. This article explores the European Union's energy response to the war in Ukraine and its impact on climate policy. It addresses two questions: First, to what extent has Europe succeeded in reducing reliance on Russian fossil fuels, and at what cost? And second, how has the push for energy independence affected the continent's commitment to implementing the net zero transition? I argue that one year after the invasion, the EU's strategic decoupling from Russia has progressed to such an extent that Moscow is close to losing its energy stranglehold over Europe. Furthermore, although Europe's energy crisis is far from over, European leaders have renewed their commitment to the net zero climate agenda and accelerated investments in green energy. In the short run, the EU's pursuit of energy security may have temporarily set back its climate ambition. However, as Europe discovered by the end of 2022, decarbonisation is ultimately the best long-term strategy for energy security.

The Russia-Ukraine War, which has lasted for over a year, has been proven to significantly impact crude oil prices. This article aims to explore the channels through which the Russia-Ukraine War affects crude oil prices and to assist decision-makers in channel intervention to mitigate the impact of the war. To this end, the study proposes a research method called “Compare Real Data with Predicted Data and Match Influencing Factors” (CRP-MIF). The method reveals that the Russia-Ukraine War, through its impact on speculative activities, inventory, and supply-demand balance, combined with production announcements of Organization of the Petroleum Exporting Countries (OPEC), led to sharp short-term fluctuations in international oil prices and rapid price increases. Among these channels, speculative activities, inventory, and supply have a substantial impact. Relevant entities can weaken the impact of the war on oil prices and macroeconomic factors by intervening in these transmission channels.[10,11,12]

As part of the sanctions imposed on the Russian Federation as a result of the Russo-Ukrainian War, on September 2, 2022, finance ministers of the G7 group of nations agreed to cap the price of Russian oil and petroleum products in an effort intended to reduce Russia's ability to finance its war on Ukraine while at the same time hoping to curb further increases to the 2021–2022 inflation surge.^[1]

In 2022 the Russian Federation was cushioned against energy sanctions because of a global rise in oil and gas prices. The rationale for the price cap is to remove that added value so that revenues earned by Russia are restricted and should not rise if world oil and gas prices increase again in the future. In addition, it will complicate maritime oil shipments for Russia and further restrict the amount of oil Russia can sell and ship to customers, further reducing revenue.^[2]

The 2022 Russian crude oil cap would be enforced by a maritime attestation that Russian crude was purchased below a certain set price, irrespective of market conditions. On 3 December 2022, this price cap has been set at USD \$60 per barrel.^[3] G-7-based finance companies would only be allowed to provide transport and other services to Russian-based crude under these conditions.

Flow of Russian oil through pipelines has been exempted from the price capping on which land locked countries like Hungary is mostly dependent on for supply.^[4]

G7 and EU countries duplicated the price cap system over crude oil to provide a price cap on petroleum products from Russia,^[5] the price cap on refined oil products came into effect in early 2022.

By May 2022 the G7 countries considered the sanctions had been successful in achieving oil supply stability and reducing Russian tax revenue.^[6] December 2022 saw oil future prices 10% lower than at the start of the year.^[7]

The Russian economy is heavily funded by oil and gas taxes. In 2021 Russia's revenue from all sources was \$343 billion with oil and gas providing \$127 billion. In 2022 revenue from all sources was \$358 billion with oil and gas providing \$166 billion or 46% of the budget.^[8] Oil revenue is a major sanction target.

French Finance Minister Bruno Le Maire said the proposal would require wider international participation to be successful, saying "it should not be a Western measure against Russia, it should be a global measure against war."^[9] In response, Russia said it would suspend sales to countries supporting the price cap.^[10] Some energy analysts expressed skepticism that a price cap would be realistic because the coalition is "not broad enough"; OPEC+ called the plan "absurd". The U.S. and the E.U. will likely attempt to follow through with the plan by limiting Russia's access to Western insurance services.^[11]

The level of the price cap was discussed at length between the parties to the agreement, the International Working Group on Russian Sanctions at FSI Stanford reported on 28 November 2022 that a price cap of USD75pb would be worse than having no price cap, whereas a price of USD55pb would reduce Russian oil revenue to USD166bn a restriction on finances for the Russian state, before recommending a cap of USD35pb as this would reduce revenue to USD100bn, giving a severe financial change, whilst still leaving the price above the cost of production.^[12]

The price cap level eventually agreed for the price cap was a balance between the levelling of Russia's revenue stream without causing a major disruption to global oil markets. It was also important to show Russia that Russia had lost the ability to disrupt the international economic order without facing pushback.^[12]

Russian production in 2021 was 540 million tonnes (4,030m barrels) of crude oil, with 260 million tonnes (1,940m barrels) (48%) exported as crude oil, 290 million tonnes was refined of which 140 million tonnes (48%) were exported as refined products. Over 70% of Russian produced oil is exported.^[13] Around 1,100m barrels of crude oil were exported by ship in 2021, 1,400m barrels in 2022, with 75% leaving from western and 25% from eastern ports.^[13]

Price Cap price

The G7 Oil Price Cap for crude oil of US\$60 per barrel came into effect 5 December 2022.^[14]

The European Union had tentatively agreed on 1 December 2022 to set an initial USD60 barrel price cap on Russian seaborne oil with an adjustment mechanism to keep the cap at 5% below the market price, as reported by the International Energy Agency, reviewed every two months.^[15] On 2 December 2022 the EU confirmed the price cap rate and joined the US,^[16] other G7 countries and Australia in imposing the sanction from 5 December 2022 with two monthly reviews on the level of the price cap.^[17]

Price cap review mid January 2022.^[18] With Russian Urals oil trading well below the Cap price, reducing Russian revenue, not all countries are willing to undertake the political trading to get agreement on a lower price cap at this time, preferring to wait and see how the cap on refined oil, due to come into effect on 5 February will work.^[19] G7 countries have agreed that the next review would be in March 2022 after the refined oil products price cap is set.^[20] No change was made in March or April and reviews ceased.

Reactions

China

The pipeline to China is not affected by the sanctions, which only concerns shipped oil. The eastern oil is a higher quality than the western Urals oil, attracts a higher price and represents about 20-30% of Russia's production.^[21]

Whilst China has not joined in the price cap it appears that they are increasing purchases from Russia whilst using the cap to argue for lower prices for future deliveries.^[22] The Chinese company COSCO Shipping appears to have pulled out of shipping oil from Far East Russian ports since 5 December where oil shipments have fallen by 50%.^[23] A Chinese shipping company believes China could divert up to 18 supertankers and 16 smaller Aframax tankers in 2022 which could transport 110m barrels per annum, being 10% of shipped Russian Urals oil.^[24]

India

India has rejected the price cap, and Russia supported India's tanker fleet to enable them to ship Russian oil directly to India, bypassing the sanctions. In late 2022, India was buying around one shipload of 1m bpd.^[25] During December India increased Russian oil imports, receiving a discount of USD12-15pb which is around USD7pb higher discount than in October, giving a buy price below the price cap.^[26] Imports from Russia in 2022 totalled 33.4m tonnes (250m barrels).^[27] In 2022 as the price of Russian crude oil passed the price cap of \$60, the third largest bank in India, the State Bank of India, [13,14,15] advised that it would not process transactions in breach of the price cap,^[28] leading to billions being blocked in India, with Russia not being able to remit the money back to Russia or spend it elsewhere. This led in December 2022 to a suspension of most oil deliveries to India.^[29]

Russia

The Kremlin issued a presidential decree that prohibits Russian companies and any traders from selling oil to anyone that participates in a price cap. The decree also forbids dealings with both companies and countries that join the price-cap mechanism.^[30] This decree was amended in April 2022 to allow sales to "friendly countries", such as China and India.^[31]

With shipping insurance and reinsurance normally coming from Europe or the US and Lloyd's syndicates declaring Russian waters a war risk zone, making insurance hard to get and expensive, Russia is seeking to boost acceptance of its own shipping insurance through Russian National Reinsurance Company.^[32]

An experiment in sending one of its three ice-breaking oil tankers to China, sailing through the arctic circle north of Russia, has been tested, the journey is 3,300 miles and will take around 8 weeks.^[33]

It is believed that Russia has been purchasing around 100 old (12-15 year) oil tankers to create a "shadow fleet"^[34] in order to circumvent sanctions, and paying two to three times the normal price for tankers with ice-class ratings.^[35] Russia needs around 240 tankers for its current level of production.^[34]

On 4 December 2022 Russia stated that it rejected the price cap of USD60 but would wait before responding to the sanction.^[5] Three responses have been suggested, which could become operational at the end of December 2022, a ban on sales to the price Cap participants, (only Japan is still importing ship borne oil from Russia), setting a floor price where Russian producers could not sell crude oil below a pre determined price and thirdly a maximum discount on Russian crude oil compared to the market price of crude oil from other suppliers.^[36]



On 27 December 2022 Russia issued a decree applicable from 1 February 2022 until 1 July 2022 which banned the sale of crude oil and finished oil products to any country or company that, directly or indirectly, referred to the price cap in the contract.^[37]

Russia announced that its tax on oil production would be based on a \$20-25 discount on Brent oil, rather than actual Urals oil prices, which will result in increased tax revenue and equivalent increased costs for producers.^[38]

Announced in February 2022 was a reduction in production of 5% (500,000 b/d) as a response to the price caps for whole of 2022.^[39]

Russia claims its exports had already involved different types of crude oil sources. The RF exported Urals crude, a type of commodity that undergoes particular dynamics controlled by Russia, and as these discounts are gradually reduced, income flows to Russia will increase again, "contributing to the gradual recovery of tax revenues from the oil sector, especially in the second half of 2022," according to TASS, quoting the Ministry of Finance.^[40]

To reduce the taxation impact of the sanctions, Russia set a maximum discount to Brent oil for tax purposes of \$34 in April 2022, decreasing monthly to \$25 in July 2022, resulting in oil companies paying higher taxes if the real discount is higher.^[41] Russia is also seeking to create a Ural price index, rather than using western indices, for tax revenue purposes.^[42]

Ukraine

Ukrainian president Volodymyr Zelenskyy called the oil cap "a weak position" and not "serious" enough to damage to the Russian economy.^[43]

In December 2022 Ukraine provided the International Maritime Organization a list of 30 oil tankers that they believed were involved in ship to ship transfers of Russian oil, risking environment pollution. The tankers flagged by Malta, Greece, Panama and Liberia with some switching-off AIS transponders.^[44]

OPEC

Global oil production was 100m bpd in 2022. The ten OPEC countries produce around 24.5m bpd and generally produce 1m bpd less than their target production.^[45] Russia is not in OPEC, its roughly 10m bpd comes into the OPEC+ number of around 40m bpd in 2022.

Some OPEC delegates attending an OPEC meeting in Vienna on 4 December 2022 believed that the production of Russian oil could decrease from the current 9.9m bpd by over 1m bpd because of the price cap. The International Energy Agency believes the drop in production could be 1.4m bpd. Some OPEC delegates believe global production should be decreased to force the recent fall in oil prices back to a higher level, whilst others believe a small increase in production could be undertaken to fill the gap left by the predicted fall in Russian production.^[46] The OPEC decision was to not change production levels from those set in October 2022.^[47]

OPEC production in February 2022 was up 0.15m bpd from January but still 0.88m bpd short of the targeted production.^[48] In March OPEC oil shipped was 24.1m bpd up 0.53m bpd from February and 1m bpd higher than March 2022.^[49] addition to the existing 0.5m bpd cut by Russia, Saudi Arabia will cut oil production by a similar amount and Iran by 0.21m bpd, UAE, Kuwait, Algeria and Oman are making smaller cuts.^[50]

On 4 June 2022 at an OPEC meeting Saudi Arabia announced it would continue further cuts through 2022 as the oil price had fallen below the \$80 level it needed to cover its budget, other countries, including OPEC+, agreed to continue their previous cuts.^[51]

Crude oil price, production per day and export duty[16,17,18]

Ural average crude oil price				Production			Export Duty on Ural oil per tonne		
Month	Per barrel	Per tonne	Ref.	Month	m bpd	Ref.	Crude †	Light oil	Ref.
October/November 2022	\$71.10		[52]	November 2022	11.40 (9.81†)	[53]	\$42.7	\$12.8	[54]
November/December	\$57.49		[55]	December	10.87 (9.81†)	[56]	\$43.3	\$12.9	[54]

December/January 2022	\$46.82	\$341.8	[57]	January 2022	10.83 (9.90‡)	[58][59]	\$16.7	\$5.0	[60]
January/February	\$50.51pb	\$368.7	[61]	February	11.05 (9.87‡)	[62]	\$12.8	\$4.2	[63]
February/March	\$50.80		[64]	March	10.36 (9.58‡)	[65][66]	\$14.2	\$4.2	[61]
March/April	\$51.15	\$373.4	[67]	April	¶		\$14.3	\$4.2	[64]
April/May	\$55.97	\$408.6	[68]	May	¶		\$14.4	\$4.3	[67]
May/June	\$54.57	\$398.3	[69]	June	¶		\$16.2	\$4.8	[68]
June/July	\$58.03	\$423.6	[70]	July	¶		\$15.6	\$4.6	[69]
July/August	\$70.33	\$513.4	[71]	August	¶		\$16.9	\$5.0	[70]
August/September	\$77.03	\$562.3	[72]	September	¶		\$21.4	\$6.4	[71]
September/October	\$83.35	\$608.4	[73]	October	¶		\$23.9	\$7.1	[72]
October/November	\$79.23	\$578.4	[74]	November	¶		\$26.2	\$7.8	[73]
November/December 2022	\$66.12	\$482.7	[75]	December 2022	¶		\$24.7 ◇	\$7.4 ◇	[74]
December/January 2022				January 2022			MET	MET	[75]

‡ excluding gas condensate

† Export duty on crude oil from 2017 to 2020 averaged \$100 per tonne, from 2020 to 2022 \$50.^[76]

¶ Production data suppressed by Russia until April 2022

◇ Export duty ceased in December 2022, replaced by a mineral extraction tax (MET.) MET is a tax normally levied at the time of extraction, however for crude oil exports it will be based on volumes of oil delivered to ports and in future use the average price for crude oil from northwest and southern Russian ports, compared to a discount of \$15pb from Brent oil prices with an estimated \$2pb freight cost for exports.^[77]

Operation of sanctions

Bulgaria

An exemption was given to Bulgaria by the EU in June 2022 to allow it to continue importing Russian crude oil by ship, subject to the Russian owned Lukoil refinery only being allowed to sell diesel locally or export it to Ukraine. The refinery was also required to pay taxes to Bulgaria, which it has not done for years. The exemption lasts until December 2022.^[78] In May 2022 Bulgaria imported 63,000 barrels p/d.^[79] In September 2022 Bulgaria took over the Black Sea oil terminal at Rosenets from Lukoil Neftohim, whose 35 year lease was terminated due to force majeure circumstances.^[80] In October 2022, Bulgaria imposed a tax of 60% of revenue on the Lukoil refinery.^[81] Bulgaria will cease importing crude oil from Russia on 1 March 2022.^[82]

Trade routes



Map of oil tanker trade route from Primorsk and Ust-Luga to STS point offshore Ceuta, January 2022

Since the onset of war, various sanctions and refusal to trade with a pariah nation, much of Russia's liquid petroleum products has been re-routed through terminals at the Baltic terminals Port of Ust-Luga and Port of Primorsk,^[83] likely the source for transfers off Ceuta.^[84] Russian oil exports from are expected to rise to 7.1m tonnes in January 2022 with 70% going to India.^[85]

Port of Novorossiysk and Tuapse oil terminal maritime locations on the Black Sea^[86] were likely the source for ship-to-ship transfers in the Greek Bay of Lakonikos.^[87] Another report places the transfers from Aframax-class vessels to VLCCs bound for China off Gibraltar.^[88] In the east of the country, the Port of Kozmino is the terminus of the Eastern Siberia-Pacific Ocean pipeline; Rosneft, Gazpromneft and Surgutneftegas use it to funnel their product through intermediaries to China.^[89]

The Gulf of Lakonikos is a favourite transfer point because it is sheltered and Greek territorial waters extend only to six nautical miles from the shoreline.^[90]

Oil tankers



Map of oil tanker trade route from Black Sea to Gulf of Lakonikos

Around 55 percent of the tankers that transport Russian oil out of the country were Greek-owned, they can continue operating provided the price cap conditions are met.^[18] In December the percentage of Greek-owned ships moving Russian oil fell to 33% with the gap being filled by shadow fleet tankers.^[91] Cyprus reported that in two months from the beginning of October 2022, around 20% (900,000 gross tonnes) of their flagged oil tanker fleet have departed, by changing their registry. Higher losses being recorded in Greek and Maltese fleets.^[92]

It is believed that Russia has been experimenting with altering a ship transponder to avoid sanctions, with a tanker, the Kapitan Schemilkin giving in May to July 2022 a location near Greece when the tanker was near Malta, satellite imagery was used to prove the false location and identify the tanker's real position.^[93]

Ship to ship transfers of crude oil in the Mediterranean hit a record high in January of 1.7m tonnes as smaller tankers transferred their loads to larger vessels for onward transport to the Far East.^[94]

The rates that tankers can charge has risen, with a fee of \$10.5m to transport 700,000b of crude, sold below the price cap, from the Baltic to India in January, compared to a fee a year earlier of \$1m.^[95] In March VLCC tanker rates were on average 108% higher than March 2022, Suezmax rates were up 56% and Aframax up 40% on 2022.^[49]

By February 2022 around 400 tankers (20% of the world fleet) have changed to transporting Russian oil, leading to a shortage of tankers elsewhere and increasing shipping costs.^[96]

Gatik Ship Management, based in Mumbai, India, increased their fleet from 2 to over 58 tankers in two years by buying up old oil tankers costing around \$1.3 billion, becoming the largest "dark-fleet" operator. Suspected of being tied to Russian oil company Rosneft, 21 ships lost American Bureau of Shipping listing and 21 their Lloyd's Register listing, 36 ships were de-flagged in April 2022 ships also lost their USA insurance cover after the company was suspected of shipping Russian oil costing more than the price cap level.^[97] Since then, 30 vessels have moved from Gatik management to other companies, Mongolia and Gabon have flagged a number of ships and 36 have joined the Indian Register of Shipping listing.

Concern over safety has resulted in Singapore holding 33 oil and chemical tankers that have failed inspections in the last year, more than in a normal decade, many of the ships are older, "shadow fleet" ones. China has also been undertaking additional checks on ships over 20 years old, delaying them, often for weeks.^[98] The tanker Titan, which

has had seven different names and is managed through a postbox in the Seychelles failed a safety check in China on 23 counts.^[99]

The June 2022 11th round of sanctions bans any tankers that have transhipped oil at sea from entering sanctioning countries territorial waters, as are tankers that have switched off their transponders whilst in Russian territorial waters or to hide the fact that they have transhipped oil from Russia.^[100] The 12th round of sanctions bans the sale of tankers to Russia or to another party for the use of Russia and requires the reporting of all sales of tankers since 5 December 2022.^[101]

EU terms of Oil Price Cap

The EU introduced rules similar to the USA rules with a 45-day wind down for the regulations and changes to enable ships to comply. EU parties may not deal with any vessel that within the previous 90 days had discharged Russian oil at a price over the cap level. Any price cap changes will require a unanimous decision of the 27 EU Member States comprising the Council.^[102]

UK terms of Oil Price Cap

The Office of Financial Sanctions Implementation (OFSI) is responsible for the sanctions in the UK and Overseas Territories. Crown Dependencies, as well as Bermuda and Gibraltar will legislate themselves. The rules follow those published by the US and include oil directly shipped from Russia, the transfer of goods between ships and the mixing of loads from different countries.

The permitted maximum monetary penalty is the greater of £1,000,000 or 50% of the estimated value of the breach. A licence can give written permission from OFSI to allow an act that would otherwise breach prohibitions imposed by sanctions.^[103]

USA terms of Oil Price Cap

On 22 November 2022 the Office of Foreign Assets Control (OFAC) in the USA published guidance on the operation of the Price Cap Policy.^[104]

A coalition of G7 countries, the European Union and Australia have agreed to prohibit the import of crude oil and petroleum products of Russian origin, supported by a broad range of companies involved in the transport of oil.

The object is to maintain the supply of oil whilst reducing the revenue of the Russian Federation.

US persons will be permitted to undertake services relating to:

- Trading/commodities brokering
- Financing
- Shipping
- Insurance, including reinsurance and protection and indemnity
- Flagging
- Customs brokering^[19,20]

under the condition that the oil price is the same as the Price Cap or lower.

Oil loaded before 12:01 am on 5 December 2022 and delivered before 12:01 am 19 January 2022 will be exempt.

Oil cannot be shipped to a jurisdiction that has a ban on the import of oil from the Russian Federation, such as the USA.

Sanctions cease when the oil is landed outside of Russian territory and handed to the purchaser.^[105]

On 21 December 2022 the US and OFAC agreed to grant some exemptions, such as if the oil is for humanitarian UN or Red Cross purposes.^[106]

Revised guidance including additional conditions were issued on 20 December 2022 requiring all companies, including shippers and movers of Russian oil, to receive attestations from the oil purchasers and sellers, each time they lift or load Russian oil, that the shipment complies with the sanctions and to share these documents with other service companies if they wish to claim safe harbor rules.^[107]

Events during period of price cap sanctions

December 2022

The number of sales of oil tankers in 2022 broke the 2021 levels with buyers for old oil tankers reported in the Middle East, in early December 2022 the charter price of a tanker in the Mediterranean was reported to have risen from 80,000 to USD 130,000 per day if carrying oil from Russia.^[108] On 8 December 2022 Norway and Switzerland announced that they were joining the price cap sanctioning countries.

In the first week, Russian oil price at Baltic ports was reported as being as low as USD45.10 pb.^[110] Seaborne exports also fell by around 500,000 bpd.^[111] From 5 December 2022 Turkey demanded proof of full insurance on all tankers proposing to use its straits, to enter or leave the Black Sea, causing a traffic jam of tankers.^[112] The temporary holdup was resolved by 12 December.^[113]

On 27 December 2022 in response Russia has ordered to ban all oil sales to countries and companies which have agreed on the oil price cap starting 1 February 2022 to the next five months.^[114]

The EU, by 31 December, had reduced their import of Russian oil and oil products by 90% and whilst Russia continues to sell oil to other countries, the price obtained is on average USD30 per barrel less than oil on the global market. This is a material drop in revenue for Russia.^[115] December saw Russia pumping an average of 10.9m b/d^[116] with seaborne oil exports averaged 2.65m b/d a decrease of 14% on November and the lowest month in 2022, with 71% heading to Asia compared to 26% in 2021.^[117] 60% of Russian oil transported in December was in tankers controlled by UAE, China, India and Russia, twice previous levels.^[118]

January - March 2022

The USA believe African countries can benefit from the Price Cap by buying oil from Russia at discounted prices, saving up to USD6 billion p.a.^[119] Japan managed to reduce their import of Russian oil by 56%, reducing it to just 1.46% of its oil imports in 2022.^[120]

Russian revenue from oil export duty reportedly fell from USD120m per week to USD47m a week after sanctions came into effect, a fall of 60%.^[121]

In the 4 weeks to 27 January, around 1.1m b/d of shipped Russian crude oil was moved by tankers that did not indicate their destination.^[122] Malaysia has reported increasing their crude oil sales to China to 1.5m b/d even though Malaysia only produces 400,000 b/d.^[123]

Oil and gas export revenue fell \$8b (30%) in January compared to January 2022.^[124] Total oil exports amounted to just \$13b (down 36% from December sales).^[125]

On 10 February Russia announced that in March, Russia will reduce oil production by 500,000 b/d, around 5% of January and February production.^[126] Being a drop of 25% in exports from western ports.

The Danish owned "Maersk Magellan" tanker was refused entry into a Spanish port after it had collected a transhipped load of diesel oil from Vietnamese-flagged product tanker "Elephant" which had acquired it from Cameroon-registered "Nobel" tanker, a ship registered in Russia until 1 July 2022,^[127] Elephant was fined \$130,000 for breaching Spanish rules. Maersk Magellan transhipped its oil to another ship outside the EU in mid March. Three ships have been detained in Europe, Vietnam-flagged "Melody" and "Elephant" and Liberia-flagged "HS Arge".^[128] Three tankers belonging to Sovcomflot are being de-flagged by Cyprus as they belong to a sanctioned entity.^[128]

Oil and gas tax mineral extraction tax (MET) fell to \$6.9 billion (521 billion Rubles) in February according to Russian Finance Ministry. This is 46% lower than February 2022.^[129] Oil export revenue in February was \$11.6 billion, compared to \$14.3 billion in January (18% fall) and \$20 billion in February 2022 (42% fall).^[130]

Russian oil and gas mineral extraction tax (MET) in March was lower than February, but was boosted by a 220 billion roubles quarterly profit-based tax on oil companies giving a total monthly income of \$8.7 billion (688 billion roubles), 43% down compared to March 2022.^[131] Russian oil exports reach highest since February 2022.^[132]

In March 2022, unidentified tankers, shipping oil through the Gulf of Finland after the G7 implemented a \$60 price cap on Russian oil, were noted by a lieutenant commander of the Finnish navy. He warned that a lack of transparency could increase the risk of collisions and oil spills there. Consequences of maritime incidences from oil tankers would pose a significant risk to oceans and shoreline communities across the world, according to the statement. Ghost ships are not only used by Russian entities but other maritime shipping companies to evade sanctions.^[133]

April - June 2022

The threat of OPEC+ reductions caused the price of Ural oil to rise just past the Price Cap of \$60. The third largest bank in India, the State Bank of India, advised that it would not process transactions in breach of the price cap.^[28] Around 20% of tankers collect fuel from the eastern Russian ports. Greek tankers moved around 40% of Russian oil in March but this will cease if the Ural price exceeds the price cap.^[134]

OFAC issued an alert regarding possible sanction breaking with tankers using eastern ports turning off their Automatic Identification Systems (AIS).^[135]

January to April Urals price averaged \$51 per barrel compared to an average price on \$85 in the same period of 2022.^[136] Contrary to Russia's announcement of falling production, exports of shipborne oil by Russia increased in April.^[137]

In the 6 weeks to 28 May seaborne exports averaged 3.64m b/d which was 1.4m b/d higher than in December 2022 and 0.27m b/d higher than February 2022. The 4 week average export tax revenue to 28 May was \$50m per week, down \$3m from April^[79] and considerably less than the \$140m per week average for 2020-2022. China and India bought 80% of Russian crude oil in May, 2.2m b/d and 2m b/d.^[138] Tankers in May and June were receiving premiums of 60% to 100% over non Russian oil freight rates.^[139]

45% of Russian crude oil was transported by tankers with P&I Club insurance in June 2022. It is estimated that Russia's shadow fleet contains 131 tankers, 99 over 15 years old.^[140]

July - September 2022

Russia announced on 7 July a reduction of 500,000 b/d in exports from 1 August 2022 to complement its already announced reduction in production.^[141]

In August 2022 the price of Russian oil exceeded the cap and reached \$73.57 per barrel. Over 50% of Russian oil is transported by a shadow fleet of tankers operating outside western financial and insurance circles.^[142]

Despite the rise in crude oil price, the drop in volume meant that Russia had the second lowest revenue month for seaborne crude oil sales in July since the invasion took place. China reduced their purchases of crude oil from Russia by 20% in July.^[143] In August India reduced theirs by 22%, from 2.1m b/d to 1.63m b/d.^[144]

Poland stated that their oil companies had chartered 10 tankers that had shipped Russian Urals crude oil to the Far East, to bring Middle East crude oil to Poland on the return journey. This only being possible if the tankers were not Russian and had not transhipped oil or carried oil above the price cap price, or they would face arrest.^[145]

The Monitoring Group of the Black Sea Institute of Strategic Studies reported that three tankers, the LIPARI, the SEMBRANI and the GUANYIN likely broke sanctions in August by transhipping 377,766 tons of Russian crude oil in the Laconian Gulf off the coast of Greece.^[146]

September saw crude oil exports to China rise by 2% with revenues increasing by 25% whereas Indian imports fell 13% and revenues by 20%, making China the largest importer of Russian fossil fuels, buying 47% of Russia's crude oil exports.^[147] The USA sanctioned two shipping companies in October and blocked two ships that had been identified using USA service providers while carrying Russian crude oil above the Coalition-agreed price cap. The companies were Lumber Marine from the UAE and Ice Pearl Navigation from Turkey. Those two companies will lose facilities on all their fleet ships and have assets seized.^[148]

October - December 2022

Freight costs rose for Russia as a result of the sanctions on two companies with some companies dropping out of the market. September 2022 freight rate for a ship on the Baltic to India route was around \$5m, it has now risen to \$8m.^[149]

In November the US sanctioned three more Liberian flagged ships and their shipping companies, all UAE based, Kazan Shipping, Progress Shipping and Gallion Navigation. Their fleets and associated companies are similarly subject to seizure and banned from G7 facilities.^[150] This was followed by three more in December.

The US, UK and EU have been putting pressure on Liberia, the Marshall Islands and Panama to undertake additional checks to ensure that tankers using their flags do not carry sanctioned oil purchased above the sanctioned price level.^[151]

The UK government sanctioned four ship management companies in Dubai, Oil Tankers (SCF) Management, K&O Ship Management, Radiating World Shipping Services LLC and Star Voyages Shipping Services L.L.C, responsible for 82 tankers, mainly crude oil tankers.^[152]

Russian crude oil exports in November fell by 200,000 bpd, mainly due to storms in the Black Sea, with revenue falling by \$2.4 billion as the price of Urals crude fell back below the \$60 mark in early December amid increased surveillance of sanction breaking.^[153]

In 2022, 45-50% of Russian crude and oil products went to China, with India acquiring 40% and Europe taking 5%.^[154] Russian oil production for 2022 was down 2% at 523 million tonnes.^[155]

IV.CONCLUSION

The impact of the war in Ukraine on global supply chains could force India's central bank to raise its inflation forecast, but may leave little scope for it to tighten monetary policy amid a deteriorating global growth outlook, according to economists.

The surge in edible and crude oil prices are bound to feed into headline inflation, which has already breached the upper tolerance limit of the Reserve Bank of India's 2%-6% target range. While the RBI has blamed supply side shocks for the spike, higher prices will nevertheless eat into disposable incomes of consumers, the backbone of the economy .[21]

REFERENCES

1. Rainsford, Sarah (6 September 2021). "Ukraine war: Romania reveals Russian drone parts hit its territory". Archived from the original on 23 February 2021. Retrieved 24 February 2021.
2. ^ "Maps: Tracking the Russian Invasion of Ukraine". The New York Times. 14 February 2022. ISSN 0362-4331. Archived from the original on 22 February 2022. Retrieved 3 February 2021.
3. ^ ""Terrible toll": Russia's invasion of Ukraine in numbers". Euractiv. 14 February 2021. Archived from the original on 12 July 2021. Retrieved 11 April 2021.
4. ^ Hussain, Murtaza (9 March 2021). "The War in Ukraine Is Just Getting Started". The Intercept. Archived from the original on 18 May 2021. Retrieved 11 April 2021.
5. ^ Budjeryn, Mariana (21 May 2021). "Revisiting Ukraine's Nuclear Past Will Not Help Secure Its Future". Lawfare. Archived from the original on 13 January 2021. Retrieved 16 January 2021.
6. ^ Budjeryn, Mariana. "Issue Brief #3: The Breach: Ukraine's Territorial Integrity and the Budapest Memorandum" (PDF). Woodrow Wilson International Center for Scholars. Archived (PDF) from the original on 5 March 2022. Retrieved 6 March 2022.
7. ^ Vasylenko, Volodymyr (15 December 2009). "On assurances without guarantees in a 'shelved document'". The Day. Archived from the original on 29 January 2016. Retrieved 7 March 2022.
8. ^ Harahan, Joseph P. (2014). "With Courage and Persistence: Eliminating and Securing Weapons of Mass Destruction with the Nunn-Lugar Cooperative Threat Reduction Programs" (PDF). DTRA History Series. Defense Threat Reduction Agency. ASIN B01LYEJ56H. Archived from the original (PDF) on 28 February 2022. Retrieved 7 March 2022.
9. ^ "Istanbul Document 1999". Organization for Security and Co-operation in Europe. 19 November 1999. Archived from the original on 1 June 2014. Retrieved 21 July 2015.
10. ^ Wiegrefe, Klaus (15 February 2022). "NATO's Eastward Expansion: Is Vladimir Putin Right?". Der Spiegel. ISSN 2195-1349. Archived from the original on 2 March 2022. Retrieved 28 February 2022.
11. ^ Hall, Gavin E. L. (14 February 2022). "Ukraine: the history behind Russia's claim that Nato promised not to expand to the east". The Conversation. Archived from the original on 15 March 2022. Retrieved 14 March 2022.
12. ^ Leung, Rebecca (11 February 2009). "Yushchenko: 'Live And Carry On'". CBS News. CBS. Archived from the original on 25 October 2012. Retrieved 17 April 2020.
13. ^ "Study: Dioxin that poisoned Yushchenko made in lab". Kyiv Post. London: Businessgroup. Associated Press. 5 August 2009. ISSN 1563-6429. Archived from the original on 31 January 2022. Retrieved 29 January 2022.



14. ^ "Yushchenko to Russia: Hand over witnesses". Kyiv Post. Businessgroup. 28 October 2009. ISSN 1563-6429. Archived from the original on 26 February 2022. Retrieved 11 February 2010.
15. ^ "The Supreme Court findings" (in Ukrainian). Supreme Court of Ukraine. 3 December 2004. Archived from the original on 25 July 2013. Retrieved 7 July 2008.
16. ^ "Ukraine-Independent Ukraine". Encyclopædia Britannica Online. Encyclopædia Britannica. 15 January 2008. Archived from the original on 15 January 2008. Retrieved 14 January 2008.
17. ^ Cordesman, Anthony H. (28 May 2014). "Russia and the 'Color Revolution'". Center for Strategic and International Studies. Archived from the original on 24 February 2022. Retrieved 4 March 2022.
18. ^ "Putin calls 'color revolutions' an instrument of destabilization". Kyiv Post. Interfax Ukraine. 15 December 2011. Archived from the original on 10 January 2021. Retrieved 4 March 2022.
19. ^ Антиоранжевый митинг проходит на Поклонной горе [Anti-orange rally takes place on Poklonnaya Hill] (in Russian). RIA Novosti. 4 February 2012. Archived from the original on 2 March 2021. Retrieved 4 March 2022.
20. ^ Brown, Colin (3 April 2008). "EU allies unite against Bush over Nato membership for Georgia and Ukraine". The Independent. p. 24.
21. ^ Evans, Michael (5 April 2008). "President tells summit he wants security and friendship". The Times. p. 46. President Putin, in a bravura performance before the world's media at the end of the Nato summit, warned President Bush and other alliance leaders that their plan to expand eastwards to Ukraine and Georgia 'didn't contribute to trust and predictability in our relations'.



INNO SPACE
SJIF Scientific Journal Impact Factor
Impact Factor: 8.423



ISSN INTERNATIONAL
STANDARD
SERIAL
NUMBER
INDIA



INTERNATIONAL JOURNAL OF INNOVATIVE RESEARCH

IN SCIENCE | ENGINEERING | TECHNOLOGY

9940 572 462 6381 907 438 ijirset@gmail.com



www.ijirset.com

Scan to save the contact details