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Navigating Trade Restrictions

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Abstract

This report focuses on Russia's adaptation in its commodity exports during 2023, amidst ongoing international sanctions. It examines the shifts in export and maritime shipping patterns, emphasizing coal, crude oil, and liquefied natural gas, and their redirection towards alternative, non-sanctioning markets. The analysis details Russia's efforts to maintain its commodity exports by leveraging new maritime routes and - possibly - spoofing Automatic Identification System (AIS) signals to avoid detection of ship-to-ship transfers of oil.

Keywords: commodity exports, maritime shipping, ship-to-ship oil transfers

JEL classification: F14, F51, Q4

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GENERAL ECONOMIC SITUATION

According to newly released official data, in Q3 2023 real GDP growth reached 5.5% on an annual basis, bringing growth for the first nine months of the year to 3% (which is marginally higher than the preliminary official estimate of 2.9%). On a quarterly basis, growth remained broadly unchanged: 0.89% in Q3 on a quarter-on-quarter seasonally adjusted (qoq SA) basis, compared with 0.93% qoq SA in Q2, according to independent estimates.[1] Across sectors, the main drivers of economic growth in Q3 were wholesale and retail trade (+17.1% year on year), public administration (+10.8%), construction (+10%) and manufacturing (+9.9%). On the other hand, among the main drags on growth were mining (-1.2%) and healthcare and social protection (-0.9%).

Military production accounted for some 60% of manufacturing growth in the first nine months of 2023. According to the estimates by BOFIT,[2] the output volume of war-related industries has grown by about 35%, compared to the months immediately preceding the war (while the aggregate trend for other industries has remained flat). In the first nine months of 2023, the combined share of such industries reached nearly 20% of manufacturing value added (compared to 14% in 2018).[3] Within war-related manufacturing industries, the largest contribution has come from the manufacture of fabricated metal products – a relatively low-technology industrial branch that is less reliant on imports and is thus less affected by Western sanctions. Adding other economic activities directly linked to the war effort (such as construction works in the Russian provinces bordering Ukraine,[4] as well as the public administration related to defence), BOFIT estimates that war-related branches accounted for about 40% of Russia's GDP growth of 1.6% in H1 2023.[5]

Despite drastic monetary policy tightening recently, inflation has continued to pick up, climbing to 7.5% in November. In annualised terms (based on the seasonally adjusted trends in September-November), it reached 11% according to Bloomberg Economics – far above the 4% inflation target. High – and rising – inflation prompted another hike in the policy interest rate on 15 December of 1 percentage point (pp), to 16%.[6] All in all, the policy rate has been raised by a total of 8.5 pp since June, with the central bank's governor Elvira Nabiullina suggesting that the tightening cycle is 'probably' nearing its end (albeit with no reversal in sight).[7] Of particular concern to the authorities has been the rapid growth of subsidised mortgages at the preferential interest rate of 8%, which has been largely inelastic to the recent interest rate hikes and has arguably contributed to the formation of a 'bubble' in the primary real

1 https://www.kommersant.ru/doc/6397842?from=main

2 Simola (2023). The proxy for 'war-related industries' includes the manufacturing of fabricated metal products (including arms and ammunition), manufacturing of computers, electronic and optical equipment (including essential inputs for the military industry) and manufacturing of other transport equipment (including military fighting vehicles).

3 The year 2018 is the last for which the weights of individual industries in value added are reported by Rosstat.

4 Belgorod, Bryansk, Krasnodar, Kursk, Rostov and Voronezh, as well as the occupied Crimea and Sevastopol.

5 ibid.

6 https://www.cbr.ru/press/pr/?file=15122023_133000key.htm

7 https://www.kommersant.ru/doc/6409285

estate market.[8] In order to curb the expansion of subsidised mortgages, the downpayment requirement has been progressively tightened: from 15% to 20% on 1 October and then to 30% on 15 December; meanwhile, its maximum amount in the 'capital regions' has been halved.[9]

The remainder of this report is organised as follows. First, we highlight recent developments in Russia's commodity exports, shining a light on the developments surrounding coal, crude oil and other oil products, as well as natural gas. The next section takes a step back and analyses general development in Russia's maritime trade, highlighting changes in port origins and destination countries in response to Western sanctions. The concluding section explores reports of ship-to-ship transfers of oil and sanctions-circumvention practices.

RECENT DEVELOPMENTS IN RUSSIAN COMMODITY EXPORTS

Coal

The value of Russian coal exports declined over the summer to USD 1.6bn in July 2023, marking the lowest value for coal sales to Comtrade-reporting countries and China since the outbreak of the war.[10] The value of exports from Russia to China, as reported by Chinese customs, dropped below the USD 1.0bn threshold in October, coinciding with a fall in bulk ship movements to China and India. Egypt, which had seen a peak in coal shipments earlier in the year, is now experiencing fewer maritime shipments carrying coal from Russia. Other coal hubs, like Vietnam and Taiwan, are currently exhibiting no distinct trend. Coal imports into Japan from Russia, as reported to Comtrade, showed a moderate increase by weight in July; however, recent ship movements indicate no lasting increase in coal imports to Japan for the second half of the year, and suggest that the 'partner' country may maintain its drastically reduced level of coal imports from Russia.

Crude oil

In July 2023, Russia's crude oil sales amounted to USD 8.1bn, reflecting a decline in oil revenue, likely influenced by changes to oil prices. While ship movements do not indicate any significant downturn in the quantity of crude oil exported over the whole year, there was a consistent fall in the number of oil tankers leaving Russian ports between April and October. The decline appears to have been linked to a reversal in trends, particularly concerning ships bound for Egypt, where Port Said potentially serves as a hub for Russian oil. Such developments would not be apparent in Russia's oil revenue, as Egypt does not report to Comtrade and the destinations of these shipments remain unclear. After reaching a peak crude oil tonnage of approximately 4m tonnes in April 2023, this trade route now appears to be contracting. As Egypt is unlikely to be consuming all the oil being imported, the decrease could suggest a turning point in demand from a third-party country, such as India.

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8 Between January 2021 and November 2023, real estate prices grew by 61.5% on the primary and by 49.5% on the secondary market, according to Sberindex data; this is far above the growth in consumer price inflation.

9 https://www.rbc.ru/finances/15/12/2023/657c9d839a79476659eeccb7. 'Capital regions' include Moscow and Moscow region, and St Petersburg and Leningrad region.

10 Note that trade data for many countries (depending on the reporting country) through UN Comtrade are only available with a considerable lag of multiple months. Eurostat COMEXT data are available with a shorter lag, yet EU countries most often report to UN Comtrade at the same time. We use COMEXT data where they provide more recent data.

Oil products

Revenue from the export of oil products to those countries that report to Comtrade has been declining: in June 2023, it amounted to USD 2.4bn, as against almost USD 4.2bn in June 2022. The volume of oil products shipped has likewise been declining throughout 2023, especially to ports within the European Union.

Russia’s reported revenue from selling oil products to the European Union has declined sharply over the past year, plummeting from USD 2.9bn in June 2022 to USD 50m in June 2023. On the other hand, according to Chinese customs statistics, Russian revenue from oil products exported to China increased from USD 407m in October 2022 to USD 545m in October 2023. The year-on-year drop was particularly pronounced over the summer months, given that the value of the trade in oil products from Russia to China increased from USD 159m in June 2022 to USD 771m in June 2023. A similar trend can be seen in Türkiye, another country that has benefited from the rerouting of oil products. Additional revenue for Russia seems to have been generated from sales to Brazil, where the value of traded oil products surged from a negligible amount in June 2022 to over USD 0.4bn in June 2023. The heightened level of observed shipments potentially carrying oil products from Russia to Brazil mirrors this development and suggests that this trade has been maintained beyond summer 2023.

Liquefied natural gas

Totalling USD 2.3bn, export revenue from liquefied natural gas (LNG) in June 2023 was at its lowest value for two years. By contrast, it reached USD 4bn in June 2022. In contrast to oil products, the volume of LNG shipped to the European Union has declined less significantly. Nevertheless, the total value of exports to the EU in June 2023 (USD 0.8bn) stood at less than a third of the June 2022 level (USD 2.7bn). According to COMEXT data, the level remained broadly the same for the rest of 2023, with monthly flows valuing around EUR 860m. The biggest EU importers in 2023 were Hungary (20% of total EU imports), next to Spain (14%) and France (12%). Germany accounted for only 0.008%.

Ship movements suggest that total Russian LNG exports may have returned to an upward trajectory after the summer. This could be related to LNG exports to China, with revenue from that destination increasing from USD 0.7bn in June 2022 to USD 1.1bn in June 2023. For October 2023, Chinese customs report a slightly lower value of USD 0.8bn for LNG imports from Russia. Japan, another significant natural gas trading partner for Russia, last reported imports worth USD 0.3bn in June 2023. Movements of natural gas-transporting vessels from Russia do not suggest any significant deviation from this level in the months up until October 2023.

CHANGES IN SHIPPING PATTERNS SINCE THE BEGINNING OF THE WAR

Since the imposition of sanctions in response to Russia's invasion of Ukraine, the country's maritime export patterns have shifted significantly. At least partially due to the restrictions imposed by Western countries, particularly the European Union, Russia's Baltic Sea ports are reported to have seen declines in loadings.[11] By contrast, it is reported that its Asian and Arctic ports have witnessed an uptick in usage for resource exports.[12]

Shipping data only partially support these findings. Figure 1 reports the pre-invasion importance of ports in terms of the number of annual port calls, as well as the change in the number of port calls between the first 11 months of 2021 and the corresponding period of 2023.[13] The country's busiest ports, with thousands of port calls – Saint Petersburg on the Baltic Sea (-55%), Novorossiysk on the Black Sea (-10%) and Vladivostok on the Pacific Ocean (-61%) – all saw a significant decline in activity.[14] Only a few ports experienced an increase in activity – and all those were starting out from a low level in 2021. For example, the port of Gelendzhik on the Black Sea witnessed an increase of almost 95% (from only 260 port calls in 2021), while loadings in the Arctic port of Severodvinsk increased by 76% (from 50 to 88).

Figure 1 / Map of Russian ports, with the number of port calls in 2021 and the change between Jan-Nov 2021 and Jan-Nov 2023

Source: Own computation based on data from Fleetmon.

[11] See e.g. https://www.bloomberg.com/news/articles/2023-07-25/russia-s-crude-flows-from-western-ports-slump-to-seven-month-low.

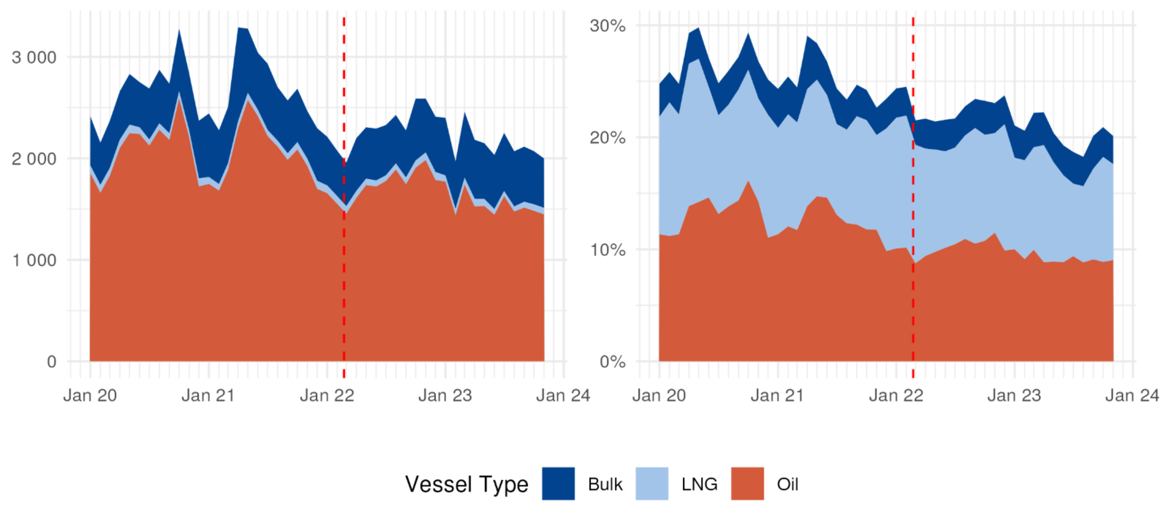
[12] Compare, e.g., https://www.spglobal.com/commodityinsights/en/market-insights/latest-news/oil/112923-russias-arctic-oil-exports-surge-but-risks-still-hamper-new-trade-route and https://www.bloomberg.com/news/articles/2023-07-24/russia-s-northern-sea-route-gets-busy-with-oil-traffic-to-china.

[13] Note that the data are restricted to the months of January through November of the respective years, as data for December 2023 are still incomplete at the time of writing.

[14] Note that Vladivostok is reported to have opened as a domestic trading hub for Chinese vessels for the first time in 163 years – as, for example, reported in https://www.globaltimes.cn/page/202305/1291710.shtml – potentially making this figure inaccurate.

The composition of vessel types provides further clues as to how maritime trade has changed since February 2022. The left-hand panel of Figure 2 reports the total number of port calls by bulk carriers, LNG vessels and oil carriers. The figure shows a marked decrease in the number of ships, especially oil carriers, from a high of 2,671 port calls in June 2021 to just 1,713 in June 2022 and 1,442 in June 2023. The right-hand panel of Figure 2 displays Russia's relative share of global port calls by vessel type, reflecting a measure of its importance in global trade of the respective industries. Since Russia's invasion of Ukraine, a decreasing share of global oil carriers, bulk carriers and LNG vessels has called at ports in the country: the number fell from a high of 16% of global port calls by oil carriers in October 2020 to about 9% on average in 2023. A similar picture emerges for both LNG vessels and the global bulk carrier fleet: Russia has accounted for a smaller share of port calls ever since February 2022.

Figure 2 / Total number (left panel) and global share (right panel) of calls to Russian ports, by vessel type carrying natural resources



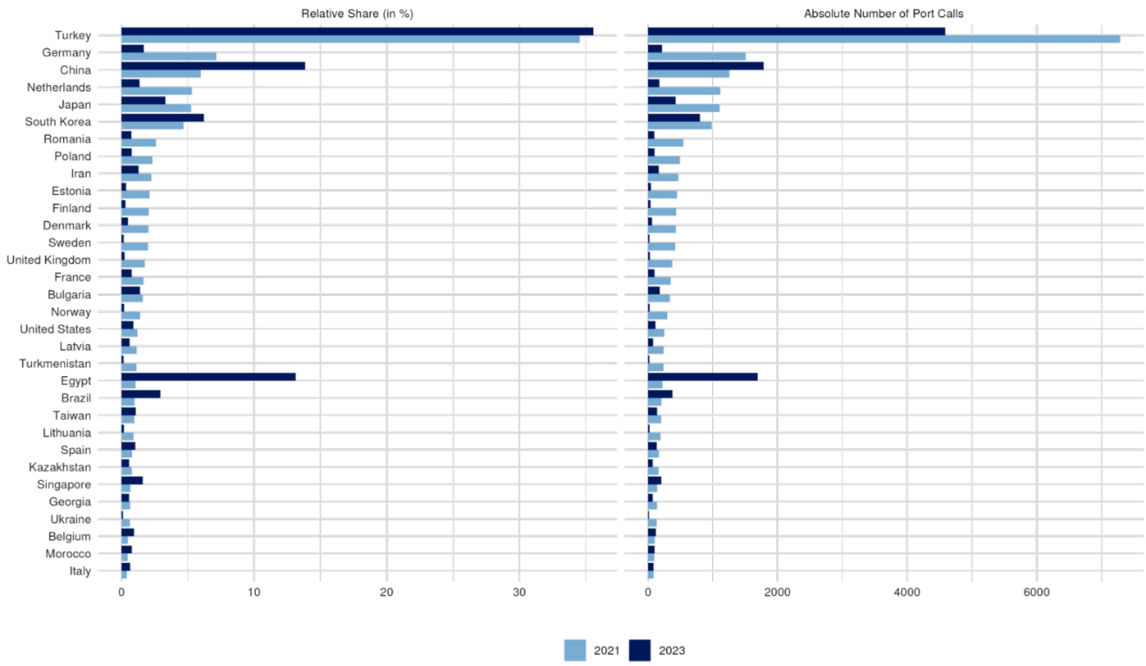
Source: Own computation based on data from Fleetmon.

Figures 3 and 4 report the destinations of all commercial ships (Figure 3) and of tankers (Figure 4) after leaving Russian ports. Both figures compare the numbers for the first 11 months of 2021 against those reported over the same months of 2023. They demonstrate three empirical facts: (i) Russia's overall maritime trade has decreased markedly; (ii) trade with Western countries has effectively collapsed, both for oil-carrying vessels and also for other vessel types; and (iii) other countries have entered the picture, reporting dramatic increases in their trading activity with Russia.

The number of calls to Turkish ports for ships departing from Russia is a case in point, illustrating finding (i). Although the overall number of calls has fallen significantly (from almost 7,300 port calls in the first 11 months of 2021 to 4,560 in the same period of 2023), still around 30% of ships departing from Russia have their next port of call in Türkiye, mirroring the pre-war situation. However, countries that have imposed sanctions – such as Germany or other EU nations – have seen a sharp drop in port calls from ships whose previous port of call had been in Russia. Germany was once the second most-visited country by such ships, but in the first 11 months of 2023 it received only 1.6% of ships. Meanwhile, China, Egypt and Brazil have become much more prominent as destinations, and have witnessed a substantial upswing in the number of ships arriving directly from Russian ports: in the first 11 months of

2023, Egypt recorded over seven times more arrivals than in the same period of 2021. Although in 2023 fewer ships from Russia headed to South Korea than in 2021, a steeper decline in the other trading partners elevates South Korea to an important destination for ships leaving Russia: more than 6% of ships depart Russian ports for South Korea.

Figure 3 / Destinations of ships after leaving a Russian port (all ship types), Jan-Nov 2021 and Jan-Nov 2023



Source: Own computation, data from Fleetmon.

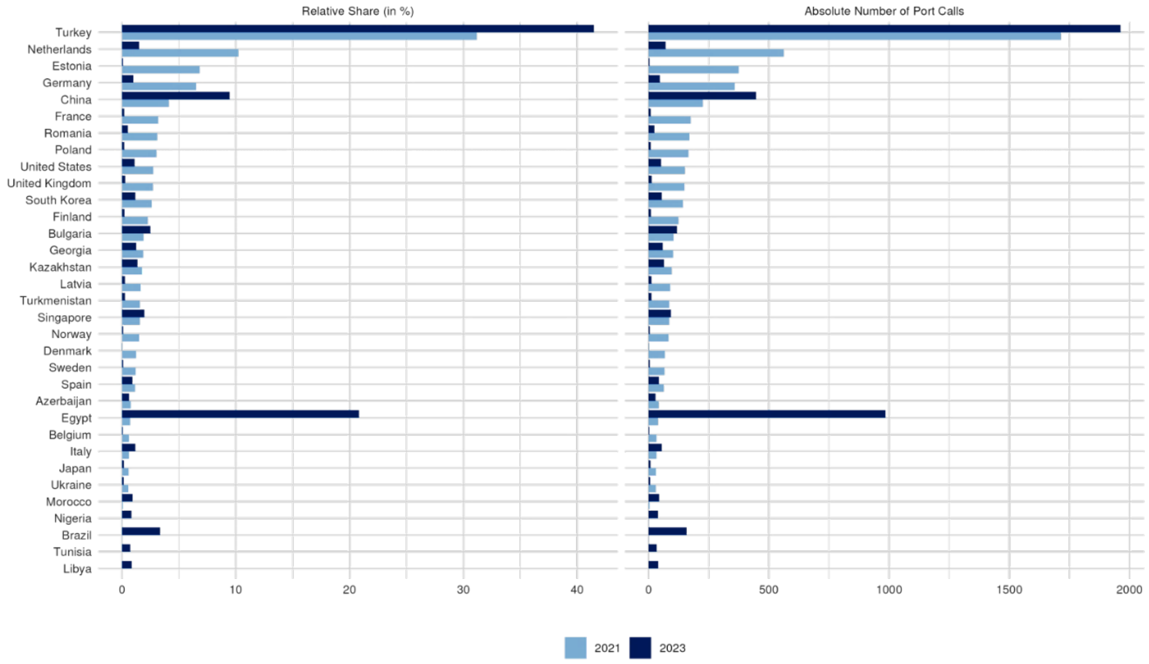
The picture is similar for oil tankers (Figure 4). Here, Türkiye's share of port calls increased slightly both in relative and in absolute terms. Again (and unsurprisingly), the number of stops in Western countries collapsed almost entirely, with few tankers calling at ports in sanctioning countries. On the other hand, other countries entered the picture: China, for instance, increased its share in the destinations of tankers originating from Russia from about 7% to almost 10%. And several countries went from practically zero stops to a significant share of port calls: Brazil, Morocco, Tunisia, and even Libya and Nigeria saw hundreds of port calls by tankers presumably carrying Russian oil. Especially port calls in the latter two countries hint at potential sanctions-circumvention practices, as Russian oil could subsequently be mixed with – or even sold as – Libyan or Nigerian oil.[15]

An extreme outlier is Egypt, which is presumably also a hub for the transshipment of exports of Russian oil, concealing its origin. The remarkable increase in the number of tankers travelling from Russia to Egypt – especially Port Said – saw port calls rising from less than 1% of all tankers setting sail from Russia in the

[15] See earlier reporting on Russian oil being refined in Italy, to be sold subsequently as Italian oil products: https://www.wsj.com/video/series/in-depth-features/russian-oil-is-fueling-american-cars-via-sanctions-loophole/FB87120B-1DA2-40EA-A518-61CC9E2B409F. This practice was banned in December 2022, but third countries have seen similar practices, as reported for India, for example: https://www.nytimes.com/interactive/2023/06/22/business/india-russia-oil.html.

first 11 months of 2021 to over 20% in the corresponding period of 2023. Note also that India – according to Reuters, the biggest importer of seaborne Russian crude oil[16] – is not listed in Figure 4, as we do not observe many tankers going directly to India after having called at a Russian port.[17]

Figure 4 / Destinations of tankers after leaving a Russian port, Jan-Nov 2021 and Jan-Nov 2023



Source: Own computation, data from Fleetmon.

In December 2022, EU and G7 countries imposed a price cap on Russian oil. One of the goals of this was arguably to maintain Russian oil in the market and prevent a global price surge. The movement of tankers from Russia since the cap's implementation indicates that oil exports have remained active, with a reduction of less than 20% over 2021. By year-end 2023, over 4,500 tankers will have departed from Russian ports.

CIRCUMVENTION THROUGH SHIP-TO-SHIP OIL TRANSFERS AND OTHER PRACTICES

The implementation of embargoes and price caps on oil shipments in response to Russia's invasion of Ukraine has led to a surge in illegal maritime activities. According to guidance from the US Department of the Treasury's Office of Foreign Assets Control (OFAC) (2020),[18] there are several possible clandestine shipping practices, including physically altering a vessel's identification, falsifying the cargo and vessel manifests, voyage irregularities, false flags and flag hopping, or the complex ownership or management of companies involved in the trade. A 2020 publication by the UK Treasury's Office of

[16] Russian oil shaves India's import costs by about $2.7 bln | Reuters

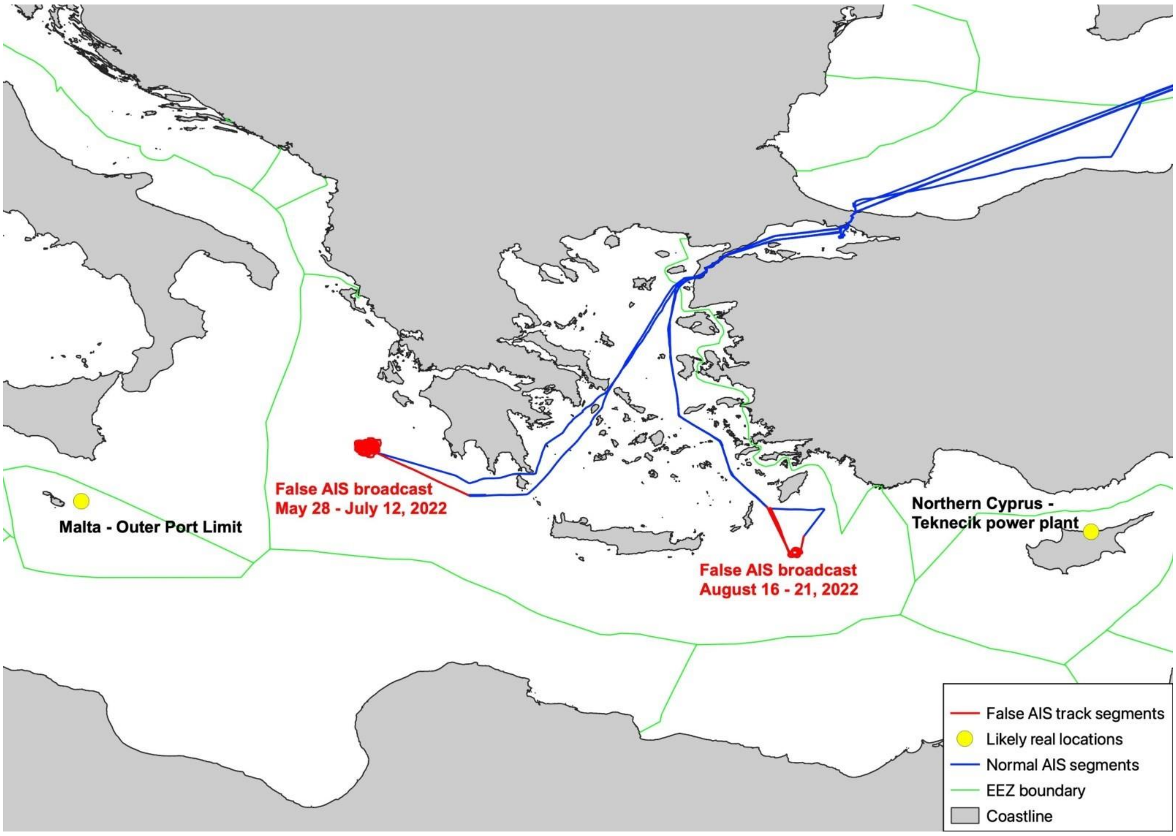
[17] See also https://energyandcleanair.org/october-2023-monthly-analysis-on-russian-fossil-fuel-exports-and-sanctions/.

[18] See https://ofac.treasury.gov/media/37751/download?inline.

Financial Sanctions Implementation (OFSI)[19] also lists risks linked to cyber activity, crypto assets and other abuses of the financial system. Both guidelines and the evidence from the past year regarding Russia's oil shipments highlight the misuse of Automated Identification Systems (AIS) and ship-to-ship (STS) transfers.[20] While it is not possible to detect such transfers in the available data on port calls, other reporting has shed light on this practice in the context of the sanctions against Russia.

An AIS transmits a ship's position, so that other ships are aware of where it is. The International Maritime Organization and other bodies require large ships, including many commercial fishing vessels, to broadcast their positions using AIS to avoid collisions.[21] Moreover, vessel positions can be obtained from radar images captured by the European Space Agency's Sentinel-1 (S1) satellites. A mismatch in these two systems can detect the manipulation of AIS, exemplified by the tanker *Kapitan Schemilkin* reporting false coordinates around Malta and Cyprus, as shown in Figure 5.[22]

Figure 5 / AIS tracking of the tanker *Kapitan Schemilkin* (July and August 2022)



Source: SkyTruth, https://skytruth.org/2022/12/russian-tanker-falsifies-ais-data-hides-likely-activity-around-malta-and-cyprus/.

19 See https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/948299/OFSI_Guidance_-_Maritime_.pdf

20 See https://www.ft.com/content/90dcc9b7-3371-411e-9d80-a2be0b4c10ca

21 See https://globalfishingwatch.org/faqs/what-is-ais/

22 The case was reported in the *Financial Times* and picked up in numerous other outlets: https://www.ft.com/content/90dcc9b7-3371-411e-9d80-a2be0b4c10ca

One reason for manipulating AIS could be to conceal clandestine STS transfers – transfers of cargo between vessels positioned alongside one another at sea, either while anchored or while under way. STS transfers are used to facilitate the illicit transfer of coal, crude oil and oil products in order to evade sanctions.[23] There may even be a 'chain' of such transfers, which further reduces the chances of the origin being detected: in February 2023, for example, the Singapore-flagged tanker *Maersk Magellan* took delivery from a Vietnam-flagged tanker *Elephant* of a cargo of diesel fuel that had previously been offloaded from a Cameroon-flagged tanker named *Nobel*, which had strong and recent ties to Russia.[24]

In response to these practices, the European Commission included countermeasures in its eleventh package of sanctions against Russia in June 2023, namely:

› 'Prohibition to access EU ports for vessels if a vessel does not notify the competent authority at least 48 hours in advance about a ship-to-ship transfer occurring within the Exclusive Economic Zone of a Member State or within 12 nautical miles from the baseline of that Member State's coast' and

› 'Prohibition to access EU ports for vessels which manipulate or turn off their navigation tracking system when transporting Russian oil subject to the oil import ban or G7 price cap'.[25]

Other illicit practices have emerged in response to policies targeting oil shipments from Russia. The implementation of a USD 60 per barrel price cap on seaborne Russian crude in December 2022 led Russia to utilise what has come to be known as a 'shadow fleet'. Countries outside the G7 (such as India and China) can keep buying Russian crude, but have to pay less than USD 60 per barrel if they want to use G7-registered ships. Consequently, aging vessels have commonly been introduced in order to ship oil. For instance, an originally Greek-run ship *Astro Sculptor* was sold to a Chinese company, renamed *Amber 6* and began operating under the Liberian flag. Most exports of seaborne Russian crude in November 2023 were on UAE- and Chinese-registered vessels.[26]

LITERATURE

Simola, H. (2023), The role of war-related industries in Russia's recent economic recovery, BOFIT Policy Brief 16/2023, 13 December, https://publications.bof.fi/handle/10024/53201

23 See https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/948299/OFSI_Guidance_-_Maritime_.pdf.

24 A detailed description can be found here: https://www.gtreview.com/news/europe/eu-still-exposed-to-ship-to-ship-transfers-despite-russian-sanctions-crackdown/.

25 See https://ec.europa.eu/commission/presscorner/detail/en/ip_23_3429.

26 See https://www.euronews.com/business/2023/11/16/how-a-dark-fleet-of-ships-is-helping-russia-evade-oil-sanctions and https://www.bruegel.org/analysis/oil-price-cap-and-embargo-russia-work-imperfectly-and-defects-must-be-fixed for details.

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