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An analysis on the effectiveness of economic sanctions on Russian oil, specifically the G7+ price cap and import embargo


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## Capstone Approval Page

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**Abstract**

Given the economic harm and disruption stemming from the illegal Russian invasion of Ukraine, this paper aims to analyze the effectiveness of economic sanctions on Russian oil, specifically the G7+ price cap and import embargo. Past literature on this topic focuses on the legal framework, economic data and policy process in isolation, whereas this paper unites these topics for a more holistic understanding and approach. The goals of the policies in question are to reduce Russian oil revenue and maintain global oil supply. Upon completing the research, it is clear that the sanction regime and policy is well written, but increasingly lacking in enforcement as time goes on. This results in lower efficacy meaning that in spite of high initial reductions to Russian profits, the impact is lessening since policy implementation on December 5, 2022. However, despite initial concerns, Russian oil production remains high and even though the price cap is being imposed imperfectly, it is working. The more Russia sells, the greater the influence of the policy. As time has passed, Russia has found ways to circumvent the sanctions, further revealing the lack of enforcement. Nevertheless, overall gains from oil sales are down, world oil demand is fulfilled, and the policy is negatively affecting Russian finances.

**Keywords**

| | |
|---|---|
| CREA | Centre for Research on Energy and Clean Air |
| Eastern Siberia-Pacific Ocean | ESPO |
| Economic Rent | Amount of earnings that exceeds that which is economically or socially necessary |

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|---|---|
| EU | European Union |
| G7+ | Group of Seven Plus the European Union |
| IEA | International Energy Agency |
| KSE | Kyiv School of Economics |
| MBPD | Million Barrels Per Day |
| Price Cap Coalition | Coalition |
| Protection and Indemnity | P&I |
| Special Economic Measures Act | SEMA |
| United States of America | U.S.A. |

## Introduction

The field of public policy is always open to new ideas and solutions to resolve problems of interest. An important element in this process is the so called "policy window," a set of circumstances that allow for innovation and implementation in a manner that is not possible under the status quo. This paper will explore a scenario where the policy window was thrust onto policy makers and the problem in question has global impact. Russia's illegal invasion of Ukraine on February 24, 2022, brought warfare back to Europe not seen since the end of World War II and re-introduced the familiar theme of armed conflict. The level and intensity of military action spurred Western countries to action with the aim of discouraging aggressive behaviour like this from a world power and to ensure that the Russian Federation would be punished for violating the international rules-based order. A common public policy option to use against foreign actors has historically been economic sanctions. With the Russian example, it was clear that its energy sector would be an ideal target. In the pre-war war period, 45% of Russia's state budget came from the sale of crude oil, petroleum products, and natural gas (Myllyvirta 2022). However, as the third largest oil producer in the world and second largest exporter (Johnson, Rachel & Wolfram 2023a; Yellen 2022a; International Energy Agency 2022b), a new policy tool was needed because an outright embargo would have had devastating effects on the global economy and destabilized the price of oil (Johnson, Rachel & Wolfram 2023c).

In response to this public policy dilemma, the Group of Seven and the European Union (G7+) designed an innovative sanction regime, a price cap on Russian oil exports accompanied with an import embargo (Rosenberg & Van Nostrand 2023). This diminished economic gains by lowering the price per barrel below the officially traded global price and reduced Russia's number of export partners in the West. The oil price cap has had wide reaching consequences

across the world, prompting a high degree of interest from the public. Therefore, an analysis on the effectiveness of economic sanctions on Russian oil, specifically the oil price cap and import embargo policies, will be conducted in this paper. Effectiveness will be determined by two metrics, an evaluation of Russian state oil revenue and output since the economic sanctions and whether or not global oils supply remained stable.

An important element of any policy is its creation and enactment. In the case of the oil price cap and embargo, it is necessary to first understand the legal framework. This will provide the basis and foundation of the policy tool being enforced. This paper will review the legislative framework in Canada, the United States of America (USA), and the European Union (EU) to compare and contrast how the sanctions were introduced. Specific attention will be drawn to the EU because in the pre-war era it was the largest consumer of Russian oil, importing nearly half of Russia's oil exports. This amounted to 0.7 million barrels of crude oil per day by pipeline and 1.5 million by sea (Johnson, Rachel & Wolfram 2023a). In fact, the pre-war era was defined by the EU being as reliant on Russia for imports as Russia was on exports (Hausmann, Schetter & Yildirim 2024).

As a result of the negative effects of the sanctions on its oil exports, Russia undertook efforts to substitute in new customers to replace the old ones to ensure that the state could continue to generate revenue. Therefore, another topic that will be explored is determining whether or not Russia has been able to compensate for lost revenue with the West by expanding in new markets. For example, China and India have begun to steadily increase their imports of Russian oil, with India being noteworthy since it was not previously a major buyer of Russian crude oil (Johnson, Rachel, and Wolfram 2023). If the sanctions are to be considered effective

and successful, simply realigning trading partners should not undermine the intended outcomes of the policy.

There are a few limitations that need to be stated that will affect the paper. For instance, in an effort to evade the sanctions, Russia has been developing a so called “shadow fleet,” which makes it difficult to completely track and explain flows of Russian oil (Stockbruegger 2023). Additionally, some of the relevant information is unavailable to the public because it is being gathered and used by intelligence agencies. Certain data is also being withheld by national governments which will also influence and limit the analysis in the paper (Starostina 2022).

Up until now, the currently available literature has focused on only certain aspects of the economic sanctions. For example, aggregating economic data, attempting to explain the sanction policy, or providing commentary on the situation. What this paper hopes to accomplish is combine all those pieces of information in one place so that they can be better contextualized and understood. The addition of a legal examination will add a deeper understanding and unique perspective regarding the effectiveness of the sanctions on Russian oil. A policy recommendation will also be included at the end of this paper to offer future measures that should be considered.

## Methodology

Several different approaches will be used during this paper to evaluate the effectiveness of Russian oil sanctions.

First, an overview of economic sanctions as a policy tool and an in-depth analysis of legislative mechanisms used to enforce the sanctions on Russian oil by the governments of

Canada, the U.S.A., and the EU will be done. By focusing in on specific bills and the clauses found within them, the foundation of the oil price cap and embargo will be established. In the Canadian example, any additional statutes or legal cases that serve to strengthen or define the sanction regime will be included. For the international legal acts, an examination into how they were passed will be explored. For example, were they passed through directives, executive orders, or an act of legislation? This approach will also help determine what entity is responsible for enforcement.

To evaluate the effectiveness of the sanctions on Russian oil, an analysis of the available peer reviewed literature will be conducted. Scholarly materials, including journal articles and books, from a variety of authors, Western and non-Western alike, will be studied. Due to the fact the sanctions were only brought in on December 5, 2022, there is not yet a large pool of peer reviewed sources available. However, there is a lot of coverage from reputable news agencies, like Reuters, Bloomberg, and the Financial Times, alongside the information posted by governments across the G7+. This paper will prioritize information published by the governments of Canada, the U.S.A., and the EU. The opinions and findings of all these sources will be examined and contrasted.

While this is not strictly an economic paper, some data sets and figures are necessary to properly evaluate the effectiveness of Russian sanctions on oil. This information will serve as a concrete and tangible tool to contrast Russia's economic position before, and during the ongoing oil price cap. Independent research publications like the International Energy Agency (IEA), the Centre for Research on Energy and Clean Air (CREA), and Kyiv School of Economics (KSE) provide accurate and reliable figures that can trusted. Monitoring Russia's exports, including

where shipments are going and from what port they are leaving, and the average price per barrel of Ural crude, the benchmark for Russian oil prices and main export blend (Stockbruegger 2022; IEA 2022a; EIA 2024), will reveal any patterns or changes. Emphasis will be placed on any drastic changes, for example if a country that previously conducted minimal trade with Russia has had any increases in trade.

## Background on Sanctions and the Price Cap

The most instantaneous policy action that can be taken by a state in response to an international confrontation is to impose economic sanctions (Hausmann, Schetter & Yildirim 2024). The efficacy of the action is augmented if the world's strongest economies all participate. The economic sanctions in question are considered to be among the most exhaustive in contemporary history and early estimates forecasted a double-digit contraction in Russia's GDP. However, GDP declined only -1.21% in 2022 and grew by 3.6% in 2023 (IMF 2024). However, given the structure of the price cap and sanctions, the efficacy cannot be derived from only GDP (Hausmann, Schetter, & Yildirim 2024). Additionally, the sanctions are mostly targeting capital goods, which suggests that more time is required for the full impact to be felt and GDP to be affected (IMF 2024; Hausmann, Schetter, & Yildirim 2024). While the drop was not as significant as estimated, the impact of the price cap and import embargo should not be underestimated. In fact, this is the first time that the international community consolidated its efforts to sanction a significant global exporter of a major commodity, like oil, by introducing a price cap instead of a complete embargo (Stockbruegger 2023). Given the importance of a policy response like this, a deeper examination of the sanction regime will be conducted.

Classic public policy options concerning economic sanctions have ranged on a spectrum spanning a targeted approach all the way to an outright embargo. Historically, the effectiveness of sanctions has been examined using two criteria: the extent of deprivation to which the target is subjected, and the modifications observed in its political behaviour (Galtung 1967). In the contemporary example of the oil price cap and embargo by the G7+ on Russian oil, more precise outcomes can be evaluated. Two effects to consider in this example, that can be scrutinized separately from one another, are the economic damage and political impact being inflicted (Kirkham 2023). This paper will focus in on those two effects because they align with the policy objectives and the end goals of the G7+. The end goals of the G7+, therefore of the price cap and embargo, are to diminish the capabilities of the Russian army and reduce the likelihood that any similar actions will be taken in the future (Johnson, Rachel & Wolfram 2023c). Due to Russia's position as a primary supplier of oil, the policy response needs to maintain the stock of Russian oil on the market while shrinking state revenue (Rosenberg & Van Nostrand 2023). An embargo would be incredibly destabilizing and increase inflation. In fact, an embargo blocking only 2 million barrels per day (mbpd) from global supply could increase oil prices by $20 per barrel. By the end of 2022, this would be more than a 20% surge from the average prices in 2021 (Bloomberg 2022a). It is worth noting that in all situations, economic sanctions will put both the sanctioning party and the sanction target in a worse economic position.

Since the oil price cap is one of the central themes of this paper, additional details of its structure are worth clarifying. According to the literature, the optimal sanction should (1) maximize Russia's economic pain, while at the same time (2) minimise that of the G7+, and (3) keep the distribution of economic gains and losses among the G7+ as small as possible (Schropp & Tsigas 2023). To that end, a full-on embargo is not likely the best policy option and could

possibly grow Russian revenue even more (Johnson, Rachel & Wolfram 2023c). The current sanction regime in place against Russia is an extension of the original sanctions imposed following the illegal annexation of Crimea in 2014 (Garashchuk, Isla Castillo, & Podadero Rivera 2022). At that point in time the measures were not nearly as punishing, but there were still negative economic effects on both sides, the EU and Russia. The Russian response to the sanctions in 2014 was characteristic of its typical behaviour. In most cases Russia does not seem to act first or proactively in implementing sanctions against other countries, but rather aggressively counters its opponents (Butler 2023). The counter sanctions can have an obvious and negative impact on its intended target's economy. This can lead to heightened public doubt of the policy, in the example of the price cap, and that it may bring more harm than is worth suffering (Nguyen & Do 2021). This seems to be the standard course of action from Russia regardless of any self-inflicted harm in which it may result. Some have even argued that the original 2014 sanctions and threats from the West discouraging additional Russian aggression in the region were not sufficient or strong enough to encourage behavioral change (Hausmann 2022).

For several reasons, a price cap targeting oil is the ideal policy tool to influence the government of Russia for several reasons. Oil is Russia's number one source of foreign exchange, be it US Dollars or Chinese Yen. In fact, in 2021, 55% of Russia's exports were invoiced in USD (Korhonen & Simola 2022). By reducing Russian foreign exchange stock, three possible outcomes can be achieved. First, it would be more difficult for Russia to guard its own exchange rates on the global market. Diminished stocks of foreign currency affect Russia's purchasing power to acquire more weapons, and lower federal government earnings making it more challenging to pay soldiers and sustain public spending levels (Johnson, Rachel & Wolfram

2023c). Nevertheless, some have argued that in the context of a war time economy foreign exchange stocks are less vital than during normal economic times (Demertzis et al. 2022). Russia is a leading supplier to the world market, constituting around 8% of world oil supply and 12% of total exports (bp 2023). The essential dependence of the Russian national budget on oil revenues presents an obvious and potent "economic weapon" to be used by the G7+ to constrain Russia (Johnson, Rachel & Wolfram 2023c; Hausmann, Schetter & Yildrim 2024). Applying this information through a common economic practice, tax incidence analysis, reveals that a tax, or a cap in this case, will inevitably impact supply and demand. Furthermore, the side that has less elasticity will bear the consequences of the cap. In this example, the demand for oil elasticity is higher than short-term Russian producer elasticity, implying Russia will bear most of the economic burden (Hausmann 2022). However, due to the significant amount of Russian oil exports on the global market, going after Russian oil can be a double-edged sword. As a consequence, there is risk in pursuing this policy option. Despite all the potential hazards of sanctioning the oil of one of the dominant energy producers and suppliers in the word, Russia remains highly dependent on global trade and is integrated in the global supply chain (Korhonen & Simola 2022). The specific figures and data relevant to exports and market value will be analyzed later in the paper.

After a review of the background and nature of the price cap and embargo, a clear explanation of what they are exactly is necessary. Effective December 5, 2022, the G7+, or Price Cap Coalition (Coalition), set the cap at $60 USD per barrel of Russian crude oil and brought in an embargo against any imports (Canada 2023; Rosenberg & Van Nostrand 2023; European Union 2022a). This amount is meant to be reviewed periodically by the Coalition to ensure effectiveness (Reuters 2022). Additionally, the price cap is only applicable to oil transported by

sea, not by pipelines (Reuters 2022). The policy was formulated this way because most Russian oil is transported by ship and the Coalition countries collectively control most of the services involved with transportation, which include ships and insurance (Reuters 2022). In July 2022, 62% of ships carrying Russian oil were owned by EU companies alone and 73% of the ships were insured by Coalition countries (Myllyvirta 2022). Overall, the influence of the Coalition comes from its market dominance in the service sector, not as a bloc of importers of oil. Therefore, the Coalition is better understood as a group of service providers, not importers (Johnson, Rachel & Wolfram 2023c). The price cap functions by providing Coalition services, but only on oil purchased at or beneath the price cap (Johnson, Rachel, & Wolfram 2023a). There are some exemptions regarding pipelines and the import embargo in the EU that will be discussed later, specifically during the analysis of pertinent legislation. It should be noted that other petroleum restrictions and caps were introduced on December 5, but this paper will focus on only those pertaining to crude oil.

## Legal Context

After establishing an understanding of the price cap on a macro level, the next step is to identify the legislation that enforces and codifies it into law. In Canada, international economic sanctions are built upon and enabled by the *Special Economic Measures Act* (SC 1992, c 17) (SEMA). SEMA was originally passed through parliament in 1992. The bill outlines its intended use in section 3.1, “to take economic measures” where “a grave breach of international peace and security has occurred,” and “gross and systematic human rights violations have been committed in a foreign state.” This power extends from the Governor in Council to the Minister of Foreign Affairs who is responsible for the administration and enforcement of SEMA, as seen in section

6(1). This is in line with the bill's nature as a Statute of Canada, as demonstrated by the SC in the title. The Minister is also given the authority to issue permits under this Act that can make exceptions to certain rules, as long as they are "consistent with this Act and any order or regulations made under this Act," section 5. Where a violation occurs, offence and punishment, along with search and seizure, are permitted in sections 8 and 9. Importantly, for any legal action stemming from an offence of the act, the consent of the Attorney General of Canada is required, section 12. However, there have been some criticisms of the Act, mostly concerning its power to sustain prosecutions of violators of sanctions (Nesbitt 2017). This is particularly important in the case of the price cap because if offenders of the Act are not penalized, compliance will not likely be the universal response. The Act is uncommon in security legislation in Canada because it primarily serves to target foreign states and transnational businesses, whereas individuals and/or terrorist groups are tried under the Criminal Code (Nesbit 2017).

While SEMA is the bedrock of Canadian economic sanctions, precise policy objectives addressing specific countries are introduced as regulations. The oil price cap is outlined in the *Special Economic Measures (Russia) Regulations* (SOR/2014-58). These Regulations were originally focused on the Russian Federation and its destabilizing activity in Ukraine in 2014 but were updated in 2022 in response to the full-scale invasion. Modifying regulations is a quicker process and does not need a vote in parliament. Section 3.12 of the Regulations makes it clear, shipping of crude oil, "marine transportation," from Russia is not allowed by any Canadian or Canadian entity unless it is below the G7+ price cap. Importantly, the $60 USD price is not explicitly mentioned, but section 3.12 (1)(c) links the price to the G7+ Coalition Price Cap List maintained by the Department of Foreign Affairs, Trade and Development. The current price cap of Russian crude at $60 USD is described on the department's website (Canada 2023). This

flexible policy design ensures that the Canadian Government does not need to change the Regulation if there is ever a change in price and places emphasis on collaboration with the Coalition. Anticipating that some exceptions would be required, another set of regulations that were also an extension of the original sanctions in 2014, were updated: the *Special Economic Measures (Russia) Permit Authorization Order (*SOR/2014-59). Its function is to allow the Governor General in Council, on the recommendation of the Minister of Foreign Affairs, to permit individuals or entities to carry out activities prohibited by the regulations. It should be noted that certain exceptions are already granted in the *Special Economic Measures (Russia) Regulations.* Section 3.12 (4) states that goods imported into certain EU member states, if allowed by certain EU legislation, are exempt. Overall, the legislation supporting Canada's economic sanction policy is in line with policy outcomes.

Having reviewed the legal structure of the Coalition price cap in Canada, any case law that provides an example of enforcement will be investigated. Given the ongoing conflict in Ukraine, and recent updates to the regulations, there is not much case law as of yet. However, there are two examples, one provincial and one federal, that provide some insight. *Angophora Holdings Limited v. Ovsyankin* (2022 ABKB 711) is a case from the province of Alberta. While it does not directly concern the price cap, it highlights some weaknesses with enforcement of the regulations in Canada. The case outlines the forced selling of physical assets, properties, that may benefit a Russian entity, Gazprombank JSC. Ultimately, the applicant Andrei Ovsyankin was unable to stop the sale of the properties being forced through by Angophora, even though the court found that "the distribution of proceeds by any Canadian person or entity may risk offending Sections 3 and 5 of the Russian sanctions." Paragraphs 42 and 43 clarify that Angophora is controlled or acting on behalf of a designated target of sanctions. Paragraph 43

goes on to say that the policy goals of the Russian sanctions are supported, but more work and evidence are required to influence this case. From the federal courts comes the case, *Portnov v. Canada* (2019 FC 1648). Mr. Portnov, a politician from Ukraine, was sanctioned in 2014 by the Ukrainian government for corruption and embezzlement allegations. Since then, he remains sanctioned in Canada despite being removed from similar lists in the EU in 2015. The Canadian courts dismissed his request for a judicial review and removal from a list of sanctioned individuals. In both these cases, the judges applied the regulations in a broad fashion, citing EU and American precedent, but chose not to intervene as the answer of the courts. Additional guidance and clarity were necessary for the courts to act.

In the U.S.A., the price cap was not introduced through its House of Representatives and brought in with a piece of political party legislation. The origin point is an Executive Order from the Office of the President, a unique feature of the American political system that cannot be emulated in Canadian or EU governance. President Joseph R. Biden issued *Executive Order 14071*, on April 6, 2022, which prohibited new investment and certain services to the Russian Federation. Section 5 makes it clear that The Secretary of the Treasury, in consultation with the Secretary of State, is able to build on the Order and create regulations necessary to fulfill the purposes of the Order. In this case, *Executive Order 14071* and SEMA are similar in that they both facilitate additional measures that take the form of regulations. *Determination Pursuant to Sections 1(a)(ii), 1(b) and 5 of Executive Order 14071* is the government response to imposing the price cap. Though it does not mention the $60 USD price cap for crude, it does define prices for refined oil, $45 for low grade and $100 for premium. These two categories are not within the scope of this paper, but the Determination shows the U.S.A.'s commitment to following the price cap Coalition at the agreed upon $60 USD (Rosenberg & Van Nostrand 2023). To address the

sea shipping limitations, present in the Canadian regulations, *Determination Pursuant to Section 1(a)(ii) of Executive Order 14071* was issued by the Department of the Treasury. Restrictions on American shipping and insurance were written into law and can only occur they are under the Coalition price cap. Just like the Canadian Regulations, provisions for certain licenses for Russian oil imports of some EU countries, in line with EU rules, are allowed.

The previously reviewed Canadian legislative framework provided a domestic perspective on the price cap and policy implementation. The next step is to examine perhaps the most relevant international legislation, how the EU approached this problem. As was previously referenced, the EU is Russia's single most important trading partner, and the EU was the biggest importer of Russian oil. The pertinent legislation had to pass through the EU parliament to take effect. *Council Decision 512/2014* is where the price cap is written in law. Precisely, article 4p, section 6(a), which mentions the purchase price of crude oil per barrel not exceeding Annex XI, which establishes the price at $60 USD, effective December 5, 2022. Foreseeing potential changes to this price, section 9(a) elaborates that the Annex XI price will be amended based on what the Coalition decides. The American Determinant also includes a price in the sanctioning document but does not have a full schedule for prices of commodities. Unlike the two previously reviewed legislations, this Decision specifically includes text referencing the necessity to maintain "critical energy supply" to the EU, including the transportation of oil in article 4a, section 3(a). *Council Regulation (EU) 833/2014* followed the original Decision and is referenced in Section 3.12 (4) *Special Economic Measures (Russia) Regulations* and in a guidance document issued by the Department of the Treasury (Department of the Treasury 2023). This regulation addresses the exception to the crude oil transported via pipeline to the EU, that is also reflected in the Canadian and American legislation, in article 3m, sections 4 to 8. By allowing

pipeline access, the EU will not face a critical shortage of oil. Maritime transportation concerning Russian ships and crude oil is restricted in Article 3ea, section 1a and Article 3m respectively. Another amendment was made, resulting in *Council Regulation (EU) 2022/2474.* A noteworthy addition to the sanction regime is found in line 17, which makes it clear the EU members with exceptions for importing crude oil are not allowed to then resell for profit. The exceptions only exist to preserve a stable energy supply, not to make economic gains.

Upon evaluating the main pieces of legislation that bring the price cap policy to action, it is clear that the goals of an embargo on imports, sustaining global oil supply, and lowering Russian state revenues have been considered. The economic damage inflicted can be seen in the steep decline in Table 5. It should be noted that initially there was slightly increased global inflation, but it has come down since the first six months (Bloomberg 2022a). The price cap, as enforced by Coalition countries, applies to the point of "first landed sale," which means that all sales while on water are subject to the price cap (Reuters 2022). Importantly, the price cap does not include shipping and insurance costs, just the purchase of the oil (Department of the Treasury 2023). Additionally, the price cap is fixed, meaning it will not change on its own and can only be done if the Coalition comes together to renegotiate (Shalal, Browning, Gardner 2022). Even though any crude oil transported by pipelines is exempt from the price cap (Rosenberg & Van Nostrand 2023; Durovic 2023), this does not weaken the sanctions. There have been some negative perspectives on the sanctions. Critics have argued there are "too many loopholes" for Russian oil to evade sanctions (Myllyvirta 2022). Despite the flaws, Deputy Prime Minister of Russia Alexander Novak found the price cap "unacceptable." He is quoted saying "if the price cap is introduced and we can't redirect the oil to other markets, we will cut our production by as much as needed." (Cranny & Herron 2022).

## Effect of Sanctions on Crude Oil Transportation

Now that the specifics of the price cap policy have been explained, along with the legislation that enables it, an investigation into how it works in practice will be done. A more concise and detailed overview of the role shipping and insurance play in the transportation of crude oil will also be conducted. Up to this point their importance has been stated, but not elaborated on in any detail. The important seaports and discussion on pipelines are also included in this section. As previously mentioned, economic data describing Russia's financial position will be presented to shows what influence the price cap and embargo have had. Importantly, the price cap is only effective if Russia exports oil. Therefore, Coalition countries need to engage in oil trade with Russia to make the policy actionable (Stockbruegger 2022).

One of the most important services that allows for the transportation of oil by ship is Protection and Indemnity (P&I) insurance (United Kingdom 2022). Prior to the invasion of Ukraine in 2022, Coalition states provided approximately 90% of the insurance Russia needed in order to transport its crude oil by ship (CREA 2024a). Additionally, in an even greater show of market power, more than 90% of oil tankers in the world are insured with the International Group of P&I Clubs, which includes all the Coalition members plus a few more countries (Demertzis et al. 2023; Kimball 2013). P&I insurance is vital because oil tanker owners of any nation will not transport Russian crude if they are unable to access high-quality, third-party insurance (Wessel 2022). One of the key reasons why reputable P&I insurance is so valuable is because virtually all the prominent ports and canals in the world only allow ships with adequate insurance coverage access (Rosenberg & Van Nostrand 2023). Insurance is critical in the shipping industry because of the risk and high economic cost of environmental damage and

third-party damages (Kimball 2013). Furthermore, Greece, a Coalition member, alone is the largest tanker owning country (Stockbruegger 2023). If any importer or exporter of Russian crude wants to conduct business, they are forced into the price cap. Since Russia needs revenues to sustain its war in Ukraine, it needs to sell oil.

There is also the additional constraint of onshore storage for oil and refined product. Currently, Russia has very little capacity to do so, meaning all of its production can only go to domestic consumption and export (Johnson, Rachel & Wolfram 2023c). While Russia technically has some small capacity of onshore storage, the majority of space was already occupied when the invasion began in 2022. The option to store "on the sea" is possible, but it is expensive, requires insurance, and reduces the quantity of ships available for export (Johnson, Rachel & Wolfram 2023a). However, if a transaction of Russian oil does not use Coalition services it can avoid the price cap. For example, a Chinese ship with Russian insurance transporting oil that was paid for in rubles to a Chinese refinery would be exempt from the price cap policy (Johnson, Rachel & Wolfram 2023c). Alternatively, if that entire example was identical except for a Coalition insurance provider being used instead of a Russian one, the price cap would need to be followed or the insurance company would be violating the law (United Kingdom 2022). Locating alternative sources of insurance is challenging and expensive. For this reason, Coalition countries are still important for the supply chain of Russian oil (Demertzis et al. 2023).

The dominance of shipping and insurance in relation to crude oil export been described in detail. To reinforce the argument for the price cap policy, an inquiry into the ports and pipelines permitting oil transportation will be done in this section. Though there are some who have

expressed concern about Russia evading sanctions on crude oil with its pipeline network, the pipelines are already operating at full capacity (CREA 2024a). Indeed, in 2021 the Russian pipeline to the far East, Eastern Siberia-Pacific Ocean (ESPO) Pipeline, transported 1.6 mbpd, almost, all of its capacity (Johnson, Rachel & Wolfram 2023a). This pipeline primarily moves oil to China. In its current state, the crude oil export infrastructure mainly serves the West. Unfortunately for Russia, the West is in the Coalition and the ESPO pipeline and the port servicing China's oil exports, Kozmino, lack the capability to increase volume (Hilgenstock et al. 2023). Unlike petroleum product, crude oil can be transported by pipeline and by sea. Furthermore, none of the pipelines that connect to Europe are in a position where it is possible to redirect the flow another direction (Demertzis et al. 2022). Notwithstanding, there is still crude being shipped via pipeline to Hungary, Czechia, and Slovakia, EU states with no sea access (Durovic 2023). The movement of Russian oil is being facilitated by the "Druzhba" pipeline, specifically the southern section "Druzhba 2." (Katinas 2024). This pipeline is in a precarious position given that Druzhba 2 actually passes though Ukrainian territory and could be a potential target during the course of the war. These exceptions were referenced in the breakdown of the legislative pieces and are in place to ensure that supply oil remains consistent and fixed. For all these reasons, Russia is not able to transition away from ships to pipelines as the primary tool for exporting oil.

Prior to the invasion in 2022, there were many short-haul tankers bringing oil and oil product to Europe (IEA 2022c). On a global scale, the U.S. estimates that in 2022, oil tankers ferried around 70%, 5.6 mbpd, of Russia's crude oil to market, with the remainder going by pipeline, half to China and half to the EU (Wessel 2022). The ships that used to be bound for Europe left from three ports: the Black Sea, the Baltic Sea, and Murmansk in the North (Johnson,

Rachel & Wolfram 2023a). Two Baltic Sea ports, Primorsk and Ust-Luga, were made available for shipping after the Coalition embargo and are now shipping to India (Hilgenstock et al. 2023), but additional details will be reviewed later in the paper. Some concerns have risen that the price cap is not being enforced at the port of Kozmino. There have been reports that in Q1 of 2023 crude oil was selling at $73 USD per barrel and 96% of the volume sold exceeded the $60 USD per barrel. This is in contrast with the Black Sea ports which are abiding by the price cap (Hilgenstock et al. 2023). China appears to be dodging sanctions though Kozmino, which is integral for oil supply from Russia, and is paying prices not in line with the sanctions. Kozmino is responsible for around 20-25% of crude oil transported by ship and has gone from $81.74 per barrel at the time the sanctions came into effect to $70.20 in January 2023, $72.37 in February, and $72.75 in March (Hilgentock et al 2023). Overall, the average price paid since the imposition of the price cap has averaged $84 USD per barrel, seemingly comparable to world price (Babina et. al 2023). Sovcomflot, a non-Coalition service provider, is carrying nearly 50% of the oil from Kozmino, which leaves the other 50% that should be vulnerable to the price cap (Babina et. al 2023). As previously stated, the price cap only works if Russia is exporting with Coalition services. However, this data suggests that enforcement has been lacking with a significant trading partner of Russia's, China.

Given that the Coalition countries have banned nearly all oil imports from Russia, they are not benefiting from the price cap. However, the "direct beneficiaries" are primarily purchasers in the developing world and emerging market economies that are currently importing Russian oil at lower prices (Rosenberg & Van Nostrand 2023). The reduced price is referred to as the "Urals discount," the difference between the world price and the price cap (Johnson, Rachel & Wolfram 2023c; Johnson, Rachel, & Wolfram 2023a). The discount also emerged

from the taboo of working with Russia post-Ukraine invasion and some clients ceasing to continue business. This unique opportunity places the buyers of Russian oil in a better position relative to the exporter to make economic gains in the forms of "free profit" or "arbitrage opportunity," (Johnson, Rachel & Wolfram 2023c). The price cap policy shifts revenue from Russia to its buyers, and the lower prices help to encourage compliance. This novel aspect of the policy helps ensure oil stays on the market and is self-reinforcing. With prices artificially restricted, lowering gains from trade, Russia is incentivized to boost production to counter the loss of revenue from the price cap (Johnson, Rachel, & Wolfram 2023a).

Experts have claimed that as time has passed, particularly by the close of 2022, the Ural discount has decreased (Babina et. al 2023). The Pacific Ocean ports like Kozmino are used as evidence. As was explained above, the ports going to China are not representative of the former ports going to Europe that are abiding by the price cap and receiving discounts on Russian oil. One of the primary reasons for this is that Chinese demand is not linked to European demand, so any changes do not affect the other, whereas the Baltic ports are now mainly supporting shipping to India. Due to the price cap policy and significantly longer voyage to India compared to Europe, from an average 3000 nautical miles up to 5000 nautical miles for crude oil, Russia is offering steeper discounts (Hilgenstock et al. 2023). With this deeper understanding of the movement of Russian oil, more precise economic data can be interpreted to evaluate the effectiveness of the policy.

## **Economic Data Analysis**

To begin, Russia is an inframarginal producer of oil. This signifies that its marginal costs associated with exporting oil, including extraction and shipping, are substantially lower than the

market price (Johnson, Rachel, & Wolfram 2023c). The price cap policy was developed with this in mind because as long the cap is satisfactorily higher than the marginal cost to guarantee economic gains, it will use Coalition members services (Hausmann 2022). Some estimates place Russia's true cost of oil lower than $10 USD or as high as $40 USD; a more reasonable number is somewhere in the range of $10 - $20 USD (Johnson, Rachel, & Wolfram 2023c; Johnson, Rachel, & Wolfram 2023a; Hausmann 2022). The higher estimate of up to $40 USD considers future development costs, like new oil field discovery. The median range is considerably lower than the price cap at $60 USD, allowing Russia to gain considerable economic rent from Coalition transactions (Hausmann, Schetter, & Yildirm 2024).

As previously discussed, the EU and Russia share deep economic ties between each other, more so than any other constituent member of the G7+. For this reason, an overview of the trade relationship prior to the invasion of Ukraine will help to provide deeper understanding. Prior to the conflict in 2022, European states were the biggest purchasers of Russian oil (Hilgenstock et al. 2023). In 2021, the EU purchased around 1.2 million barrels of oil product, with nearly all of it coming by sea. This shows that the EU was responsible for importing nearly 50% of Russian oil exports (Johnson, Rachel & Wolfram 2023a). That sum represents 25% of oil purchases of the EU in 2021. In contrast, EU exports to Russia constituted 40% of total Russian imports with only 2% of total exports going from the EU to Russia (Hausmann, Schetter & Yildirim 2024). This trade dynamic favours the EU, giving it the necessary position and leverage in the trading relationship to curtail Russian exports while having a marginal impact on their own. On the other hand, the EU is exposed based on its oil needs being serviced by Russia. Done properly, the price cap can negate Russian market power (Johnson, Rachel, & Wolfram 2023a).

The joint sanctioning of the G7+ works to maximize harm on the Russian economy while shielding their own.

Through economics, it is possible to draw some conclusions about Russian supply and what it signifies. Russia's producer supply curve is inelastic and downward sloping, which suggests that it can be beneficial to increase output even if the price of oil has gone down (Johnson, Rachel, & Wolfram 2023a). This comes from two recognizable effects described by Johson, Rachel and Wolfram: "want cash now," and "smoothing." The first effect describes an oil producer extracting as much oil as needed to maintain current consumption levels. The second effect refers to the phenomenon of an oil producer increasing production that is offset by less production that did not occur earlier in time, drawing on a form of oil savings. In the Russian example, the first effect is more probable given Russia's demonstrated dependence on oil revenues in the year preceding the war. In 2021, exports of oil totaled 7.5 mbpd, with crude making up 4.7 million barrels (Johnson, Rachel, & Wolfram 2023a). Including goods and services, exports totaled $540 billion USD, with crude oil and energy constituting almost 50% of exports (Korhonen & Simola 2022). In production terms this amounted to nearly 10.5 mbpd, exporting 8 mbpd and refined petroleum products, giving Russia the title of the world's single largest exporter of oil and product (Bloomberg 2022b). February-March 2022, Russian exports overall declined by 18% compared to the beginning of the war when they were at record highs. The exception to the trend is crude oil exports, which grew to 19%, revealing a general increase to oil exports by 2% (Myllvirta 2022). This was the highest level since April 2020, with oil transport growing by 0.6 mbpd to 8.1 mbpd. Increased exports resulted in profits of $12.7 billion USD, up by $1 billion USD. Despite these impressive figures, revenues were in fact 43% lower than last year, showing the price cap and embargo policy at play (IEA 2023). By 2023Q1, the

EU went from making up 50% of Russian exports down to 19%, primarily through the Druzhba 2 pipeline, with China at 45% and India at 33% (Hilgenstock et al. 2023). This phenomenon can be seen in Table 3.

Concerning the price of oil itself, the first three months of 2023, revealed the price of Ural crude was normally $20-27 USD lower than the world price (Stockbruegger 2023). During this same time, earnings fell by 29% from crude and oil and products and 75% of the loss appears to come from the sanctions. This is based on the fact that lower volumes decreased earnings by $6.1 billion USD and the Ural discount removed another $5.2 billion USD (Hilgenstock et al. 2023). Since the beginning of the war, the lowest price Ural's crude was sold for was in January 2023 at $45 USD per barrel, well below the price cap. This caused January's earnings to fall 35% because revenue from oil and gas fell to $6.22 billion USD and the Russian government assumed a price of $70 USD per barrel (Prokopenko 2023). However, since then it steadily rose to a high of $83 USD per barrel, ultimately settling at $74 in July 2024 (CREA 2024a). The changes in revenues and losses are shown in Tables 4 and 5. Despite the fluctuations over time, research from the CREA reveals that the Coalition countries have continued to provide their services, violating the sanctions and exposing an enforcement flaw. One way that this is possible is if owners of oil tankers or insurers are acquiring false attestation documents that show the price is lower than the price cap. Ongoing service provision is illustrated in Table 2.

Having examined some of the economic figures associated with the price cap and exports, their impact on the Russian finances should also be considered. In 2021, before the war and subsequent sanctions, Russia's external account surplus was over $120 billion USD. This

rose to $198.4 billion USD by January-September 2023. Using 2022 prices and applying them to 2021 export volumes of major good, Russia's export earnings are estimated to have increased by approximately $120 billion USD due to increases in prices (Demertzis et al. 2022). Around 40% of the amount comes from natural resources, like oil and natural gas. The two leading causes of this are high commodity prices and lower imports from the West. The resiliency of the Russian ruble has also left the impression the price cap policy and embargo are not working. The ruble fell to 140 to USD compared to 70-75 after the price cap was introduced, only to return to pre-war levels by April 2022 (Demertzis et al. 2022). The revival of the ruble does not indicate that the sanctions are not having an effect (Guriev 2022). This would suggest that the sanctions are able to act in the way they in which they were intended. If one looks at the national budget, there are more indicators to compare against the price cap. The first four months of 2023, Russia's state budget deficit grew to $44 billion USD. This figure is 17% above the annual target for the entire year and is attributed to 36% lower than expected crude oil and product revenue in May (Korsunskaya & Marrow 2023). Compared to a year ago when there was budget surplus of $25 billion USD, in January 2023, public spending increased by 58% while state revenues fell by one third (Prokopenko 2023).

After reviewing the data from the beginning of the war in Ukraine, it is clear that the price cap policy and embargo have had an effect. To complete this section, the most current figures available will be included. According to the IMF, Russian GDP growth is expected to fall from 3.6% in 2023 to 3.2% in 2024. Future estimates place GDP at even lower levels, increasing by only 1.2% beyond 2025. General government gross debt is projected to be 20.8%, increasing even more annually past 2025 (IMF 2024). This follows the trend that was explained in the previous paragraph. As of July 2024, the price of Ural crude is $74 USD per barrel, higher than

the price cap, and Coalition countries are shipping and insuring 64% of oil products transfers and 17% of crude oil, as seen in Table 2 (CREA 2024a). This is in clear violation of the sanctions and shows the failure of the Coalition to follow its own rules, inadvertently helping the Russian economy recover (Ilas & Katinas 2023). Despite the steep drop in crude oil shipments from 76% in January 2022 to 17%, the Coalition continues to be in the preferential position relative to Russian dependency and could enforce the price cap (CREA 2024a; Ilas & Katinas 2023). To use economic terms to summarize the situation, the estimated welfare loss is larger to Russia, therefore more harmful, than to the Coalition members due to the trade and shipping imbalance between the two (Hausmann, Schetter, & Yildirim 2024).

## Influence of China and India in Offsetting Sanction Losses

After the EU ceased importing Russian oil, it created a potential problem for Russia. As shown, it was the most important market prior to the war, so Russia looked to Asia (Babina et al. 2023). In response, Russia began to increase trade with China and India, among others, to offset its losses. This can be observed in Table 1. These actions resulted in the changeover of European countries being the largest purchaser of oil to China and India (Hilgenstock et al. 2023). The nature of the price cap policy is to encourage Russia to make its oil available on the global market while reducing earnings, so other countries increasing imports is not a deviation from the original intentions (Johnson, Rachel & Wolfram 2023c). The argument and public concern that any shipments from Russia are violating the sanctions and new customers should not be replacing the old ones is incorrect, and the Russian response was both expected and part of the calculation (Johnson, Rachel & Wolfram 2023a). There have also been claims that China and Russia are abiding by the price cap when purchasing crude oil (Rosenberg & Van Nostrand

2023). The validity of that claim will be explored. It should also be stated that if a third country, neither a Coalition member or Russia, imports crude oil, refines it and sells it to Coalition countries, this does not go against the price cap or embargo (Stockbruegger 2023).

Since 2013, economic ties between Russia and the West have only been worsening culminating in the 2014 and 2022 sanctions. On the other hand, the economic relationship with China has intensified and expanded. In an effort to dodge economic sanctions, Russia has been increasing already high overseas exports of crude oil to China. Because China has great capacity and capability to refine oil, it does not import much oil product, preferring crude oil (Hilgenstock et al. 2023). By changing which markets it participated in, Russia was able to quickly divert its oil to China and India changing the paradigm. Through its efforts, China, India, and Turkey made up two thirds of exports in 2022Q4 compared to lower than one third in 2022Q1 (Hilgenstock et al. 2023). Increased exports would elevate China and India even further in 2023Q1, where they represented almost 75% of all Russian crude oil exports. However, Russia is in the weaker position, because it is more dependent on China than China is on Russia (Korhonen & Simola 2022). At its peak level of imports, China imported $106 mbpd in July 2022, 176 thousand tonnes a day. However, the record level of volume was achieved March 2023 at $80 mbpd, 212 thousand tonnes a day (CREA 2024a). The differences reveal that the price cap is manipulating prices to a certain extent on a macro level, but as was discussed in the shipping section, the Pacific port of Kozmino which exports oil to China, is consistently higher than the cap. Initially, the imposition of the price cap only lowered the price by $10 -12 USD per barrel, eventually increasing back to the world rate, around $20 higher than the price cap (Hilgentock et al. 2023; Baina et al. 2023).

As of July 2024, China is importing 118 thousand tonnes a day, which is equal to $50 mbpd (CREA 2024a). In fact, based on CREA data, visible in Tables 1 and 3, prices and volume are trending downwards from a month ago, when it was $67 mbpd and 170 thousand tonnes. This will impact Russia's capacity to generate revenue. There have been some suggestions that this is happening because of higher prices and the lack of the Ural discount at Kozmino (Myllyvirta et al. 2024). By the end of June 2024, China purchased 47% of total Russian crude oil exports (Katinas 2024). A change to the trade dynamic occurred in 2023, when Russia exported 2.2 mbpd, 24% greater than in 2022. The increase made Russia China's biggest supplier of crude, the first time since 2018 (EIA 2024). While the efficacy of sanctions appears to be weakening, the problem appears to be related to enforcement. Even though in the long term some changes to crude oil exports are evident, they could be more pronounced if the price cap was actually being implemented. However, even if China and India are not abiding by the price cap, its overall influence serves to restrict Russia's gains from oil trade (Wolfram, Johnso, & Rachel 2022).

After Russia's illegal invasion, India has emerged as one of its most vital crude oil importers. In contrast to the trade relationship with China that was already consistent and strong, before the war India barely imported any crude oil from Russia. Exports to India increased by 134% from December 2022 to December 2023 and 46% of crude oil exports went to India (Myllvirta et al. 2023). The crude purchased by India is coming from the Baltic Sea ports, and volumes shipped are lower than at Kozmino (Hilgenstock et al. 2023). The capacity required to fulfill Indian purchases was created when the EU embargo was put in place. Unlike China, India is taking advantage of the price cap and getting the Ural discount from Russia (Johnson, Rachel & Wolfram 2023c; Vakulenko 2023). To maintain high export volumes, like Russia had with

Europe, a discount averaging $17 USD per barrel less than Europe paid was necessary to sustain similar trade (Babina et al. 2023). However, it should be mentioned that the buyer of oil is responsible for transportation costs, and the distance from the Baltic Sea to India is lowering the discount somewhat. This is a good example of the price cap and embargo influencing the market, because if not for these policies, India would not import Russian crude at increased levels. Ever since transactions between India and Russia exploded in May 2022, reaching heights of 40 million euros a day, up from the low 2-5 million recorded pre price cap, India has shown itself a true economic partner to Russia (Myllyvirta 2022; CREA 2024b). This change can be viewed graphically in Tables 1 and 3.

By 2023, around 90% of India's oil consumption came from overseas, with 34% coming from Russia. The growth in Russian oil purchases has been good for the economy and savings on discounted crude resulted in $181 billion in oil imports, 27% of India's total imports (The Economist 2024). However, by the end of June 2024 nearly 80% of imports, $2.8 billion USD, comes from crude oil. During this same time India accounted for 35% of Russian crude oil exports (Katinas 2024). The discount India receives because of the price cap and embargo has decreased by 20% at the start of 2023 down to 5% in December 2024. One of the reasons for the smaller discount is because sanctions have limited the amount of tankers Russia has available (Stognei 2023). Sanction avoiding measures will be expanded upon later on in the paper. Seaborne oil looks to remain India's primary source of oil because the logistics and feasibility of building a pipeline though Pakistan to connect with Iran and Turkmenistan are not favourable (Bhandari 2022). Without a pipeline, and so long as India is able to purchase Russian crude at a discount, it will remain a loyal customer. All of these imports are valuable because India is able to sell refined oil, like diesel, back to Europe and earn a profit (Jack & Gavin 2023). In 2023,

European countries imported approximately 225,000 barrels per day of diesel and Indian petrol, a major increase of the total from the last five years of 120,000 barrels per day. (The Economist 2023). This creates a cycle where Coalition countries are indirectly supporting Russia, but since the goal of the price cap is to keep oil on the market it should not be viewed as ineffective. As a result of the policy and India pursuing its own national interests, in June 2024, India is the largest maritime importer of Russian crude oil. An increase of 6% to imports, to 1,999 thousand barrels per day puts it ahead of China at 1,080 thousand barrels per day, down 12% from last month (Dodonov 2024).

## Circumventing Sanctions and the "Shadow Fleet"

Despite damage from the imposition of the $60 USD price, Russia has found several different ways to evade the economic sanctions. These include refining crude oil in third party countries and then exporting as new product, mixing Ural crude with other types of oil to disguise their own, and conducting multiple transfers from ship to ship to confuse the origin point of the oil (Myllyvirta 2022).Although the price cap policy was designed to allow Russian oil to stay on the market, there was also an element of control that was derived from the Coalition's dominance in the shipping and insurance space. This advantage has had its weakness exposed. The so called "shadow fleet" that transports oil and product does not use Western ships and most importantly, has no P&I insurance.  Additionally, the Russian government perceived and saw the impact of the sanctions on its revenue. In response, it changed the tax code in Russia to counteract the reduced earnings to maintain its fiscal position.

Even though it was considered during the development of the policy, third-party countries have been able to avoid the sanctions. Certain non-EU member countries took

advantage of this gap in the price. Specifically, Serbia earned massive profits by selling Russian oil to EU. The Omišalj pipeline, coming from Croatia, used to carry oil to Serbia, but the oil itself comes by sea (Durovic 2023). India was already mentioned, but the lesson is clear: the Coalition needs to make sure that it is following its own price cap. There is no problem to have Russia export, it just needs to go through the proper filters. The lack of secondary sanctions on foreign buyers, non-Coalition, has even been recognized by Russia itself and may be guiding its energy policy (Bubnova 2022).

Right from the beginning of the price cap and embargo regime, there was a recognition that a shadow fleet of tankers could undermine the Coalition efforts, and that work needs to be done to prevent that outcome (Johnson, Rachel & Wolfram 2023a). The original shadow fleet was created in response to embargos on Iranian and Venezuelan oil and included more than 440 oil tankers, including 12% very large tankers (Stockbruegger 2022). After Russia invaded Ukraine and the sanctions were brought in, it set about enlarging the fleet. One year after the invasion, the fleet grew to 600 tankers and other types of ships, but 400, 20% of the world's crude ships, had "disappeared" and were untraceable (Braw 2024). By virtue of the secrecy of the shadow fleet, numbers vary. Another source claims the fleet is smaller, increasing to 208 in June 2024 (Dodonov et al.). According to the CREA, in January 2022, 77% of Russian crude oil ships were covered by the price cap. That number fell to 17% by July 2024, see Table 2. The Kyiv School of Economics alleges that 0 crude tankers and 19% of oil product ships from the Pacific Ocean ports, which go to China, were insured with P&I in June 2024. Whereas at the Baltic Sea ports, to India, 9% of crude ships and 73% of oil product ships were insured. This data follows a pattern where the crude ships seem to be more easily replaced by the shadow fleet than oil product ships, as seen in Table 2 (CREA 2024a). This implies that the 635.08 thousand

tonnes of crude oil Russia exports are escaping the sanctions (CREA 2024b). Greater enforcement is urgently needed to make the price cap effective. The shadow fleet is difficult to track and has become a key component of Russian exports (Stockbrueger 2023). These tankers and vessels are well-aged, between 15-20 years old, poorly maintained, and are potential environment hazards (Braw 2024; Katinas 2024; De la Rue, Anderson, & Hare 2024). Given that 89% of Russian crude was transported by the shadow fleet in June 2024, this is a serious global issue (Dodonov 2024).

As a consequence of declining revenues, the Russian government examined the behavior of its own companies. It appears that they uncovered the same conclusion the Western experts did. Russian oil companies were overpricing shipping fees to make oil prices look lower and avoid paying taxes and generate profits abroad (Vakulenko 2023). In an effort to combat this deviancy and the Ural discount, the government introduced changes to the taxation system to capture an additional $8 billion USD (Stognei 2023). The government will leave only $15 USD per barrel for producer profit and collect the rest as tax (Ilas & Thierot 2023). Additional measures are required to prevent Russia from recovering its lost profits since the sanctions were brought in (Ilas & Katinas 2023).

## Conclusion and Policy Recommendations

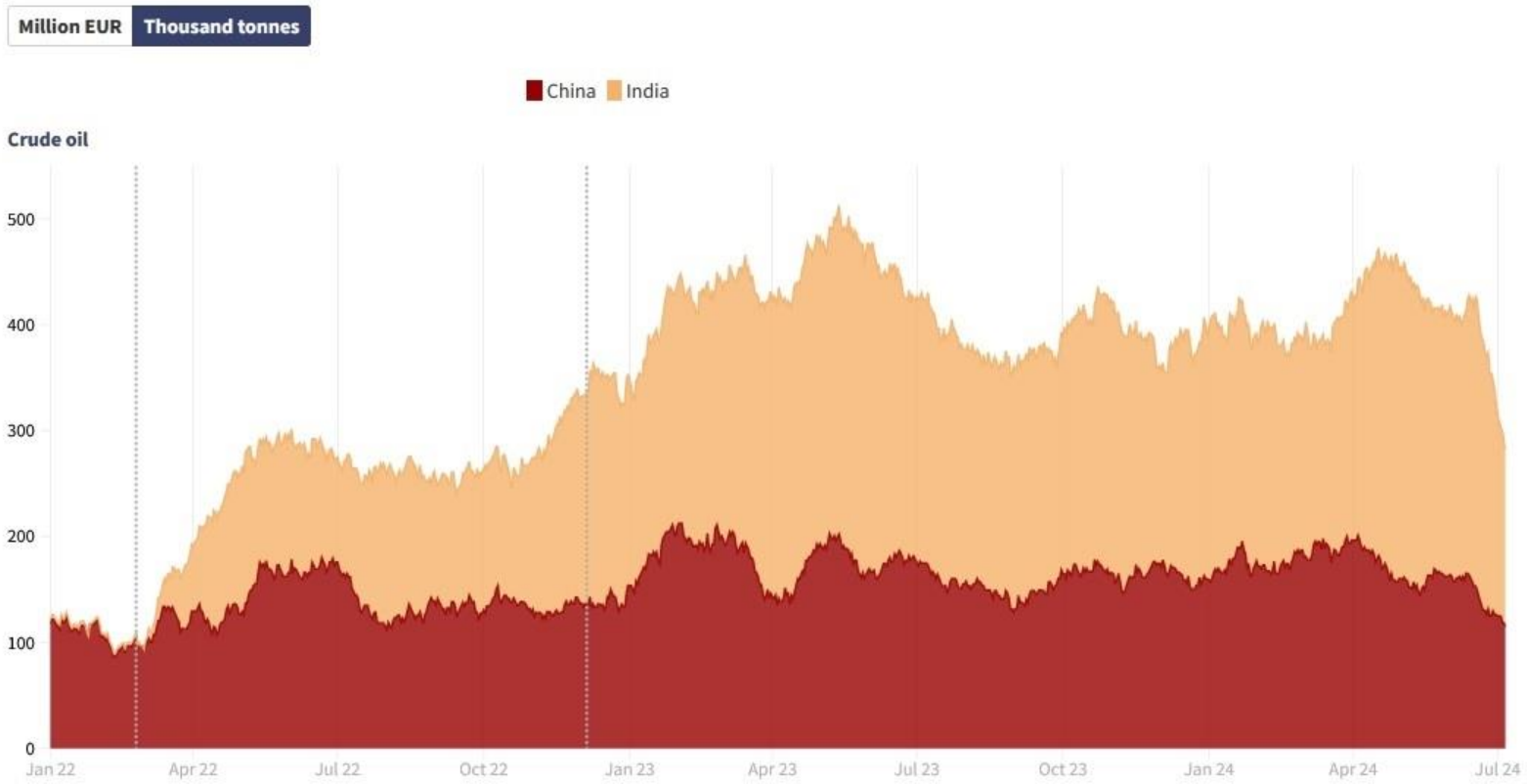
After examining the price cap and embargo policy there are several recommendations to improve its effectiveness. In spite of a commitment by the Price Cap Coalition to regularly review the price cap of $60 USD, no review has ever occurred; this should be corrected (CREA 2024a). Furthermore, more rigorous rules and regulations on blending, shipments, and refining in third countries would also improve the policy (Myllyvirta 2022). Supplementary clarity on the legislative tools for prosecution would also be beneficial. Though well written, the legislation

needs to be actionable. Most critical of all is enforcement, because for the price cap to work properly, the Coalition needs to ensure it applies to the most transactions possible.

The original inquiry, an analysis on the effectiveness of economic sanctions on Russian oil, specifically the oil price cap and import embargo introduced by the G7+, has been explored. Russian state oil revenue since the economic sanctions initially fell, despite increased oil output. Table 5 reveals that oil gains have in fact gone down with time under the price cap and embargo regime. However, Russia has had time to find solutions and work arounds to regain some lost profits. Notwithstanding, long term projections reveal a decline in oil revenue which will ultimately push Russia to make challenging spending and policy choices, either decreasing spending for the military or social programs. Both options will have negative outcomes (Korsunskaya & Marrow 2023). Coalition dominance of maritime trade has weakened from its highs, but it is still influential enough to have effect. Greater enforcement of the rules would push Russia back to Western service providers so all the original leverage could return. In the end, global oils supply remained stable, and the worst economic scenario was avoided. Unfortunately, the desired behavioural change to end the war in in Ukraine has not manifested. The economic hardship has not been severe enough to push the Russian government to change course in Ukraine. Some from the public have passed judgment and decided that the price cap and other sanctions have not been effective and there has been no economic damage to Russia (Demertzis et al. 2022). That is incorrect. The sanctions have been effective and produced results. They could be even greater if the Coalition stuck to its guns and held the economic front.

# Annexes

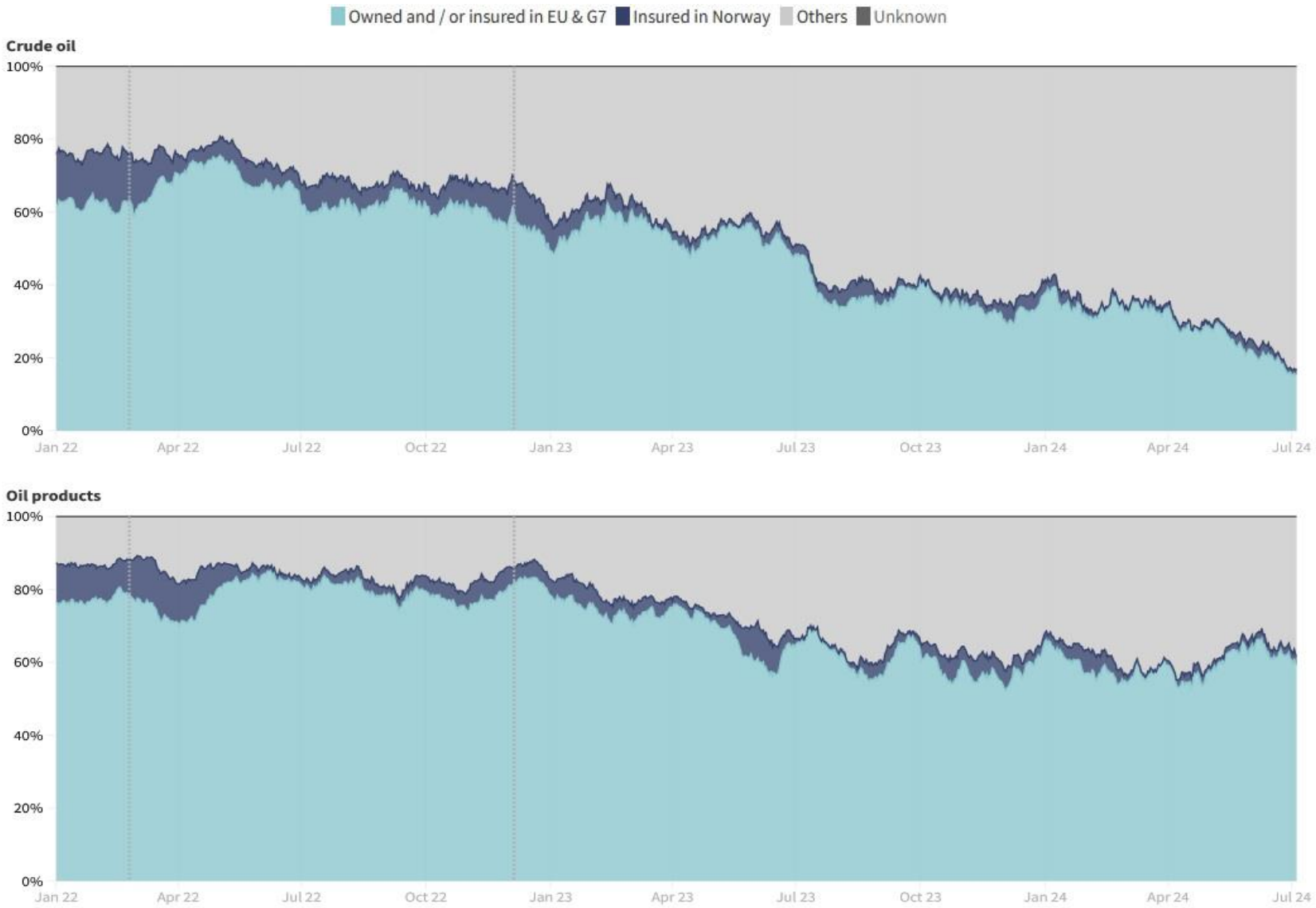
*Table 1 Fossil fuel shipment departures from Russia by Destination*




*Source: CREA 2024a • Dotted lines represent the beginning of the war and of EU's oil ban & the wider price cap respectively.*

# Annexes

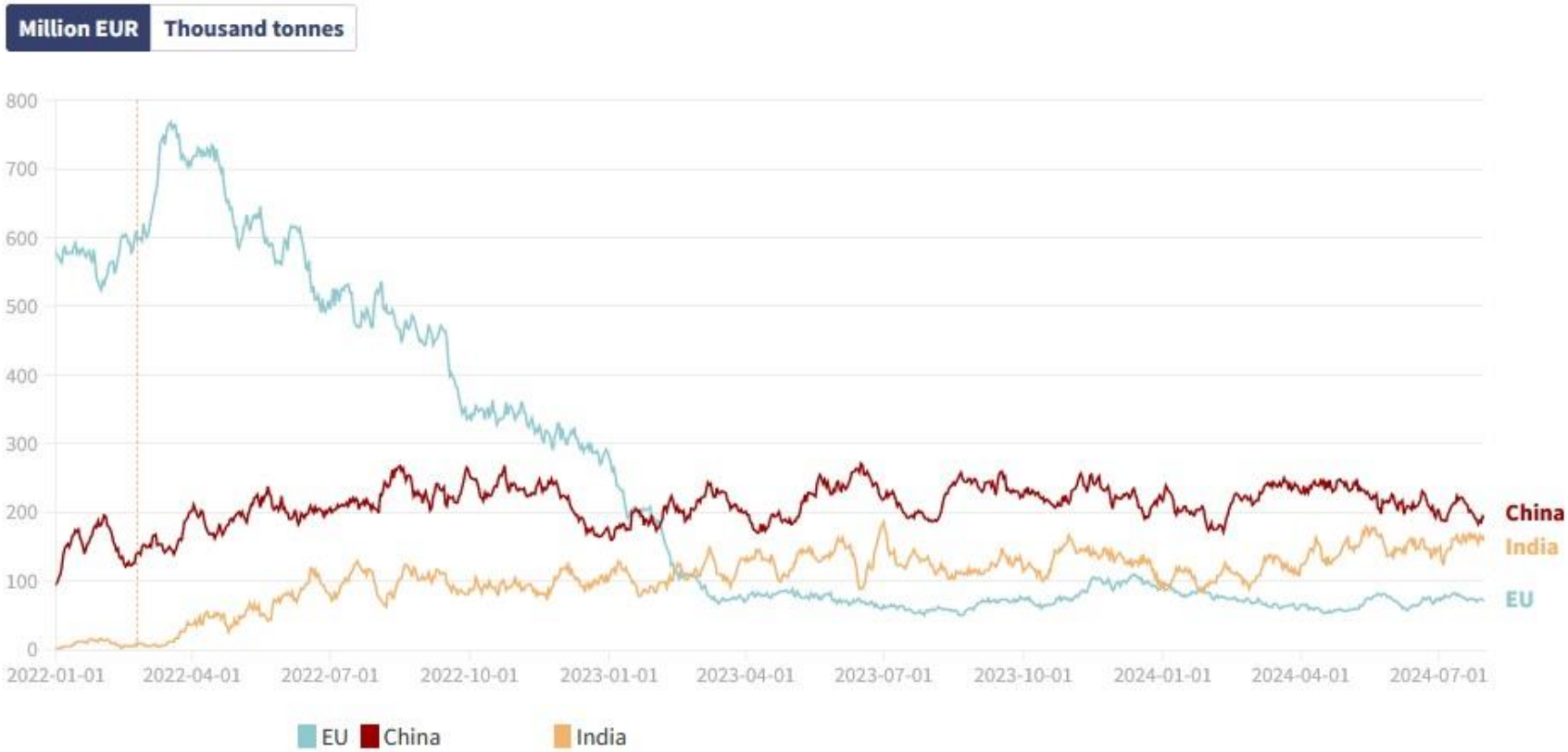
*Table 2 Fossil fuel shipment departures from Russia by Insurer*




*Source: CREA 2024a • Dotted lines represent the beginning of the war and of EU's oil ban & the wider price cap respectively.*

# Annexes

*Table 3 Daily Oil and Fossil Gas Flows by Destination*



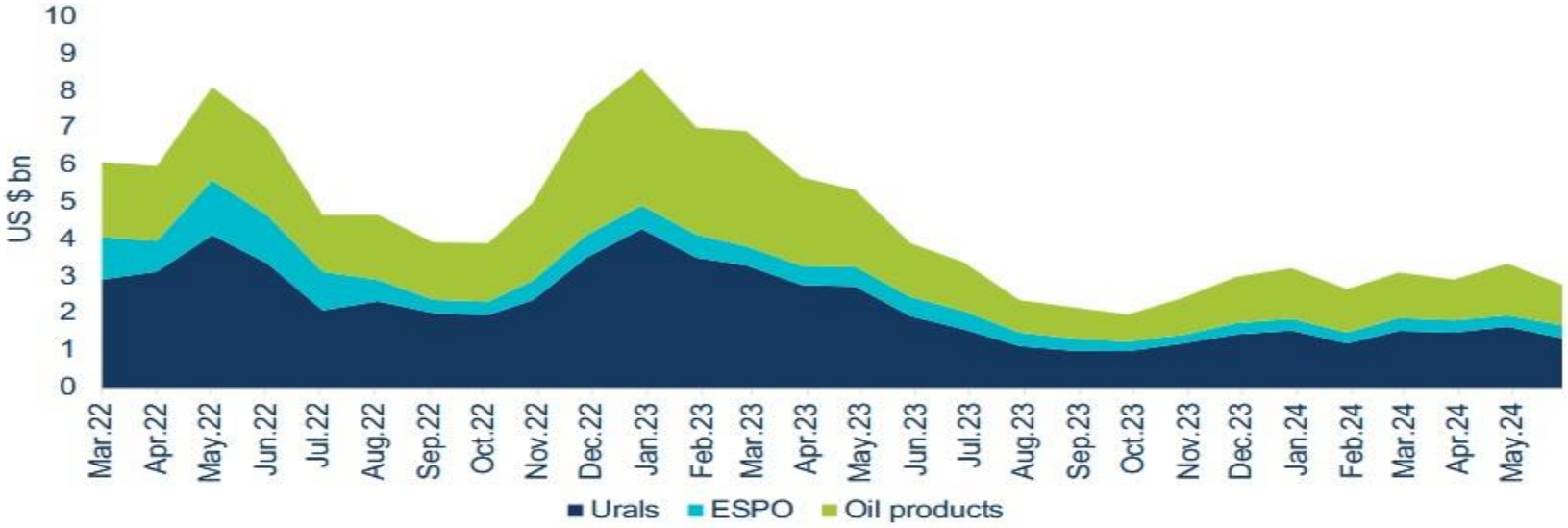

*Source: CREA 2024b • The dotted line represents the beginning of the Russian invasion.*

# Annexes

*Table 4 Russian Oil Exports and Revenues, kb/d, US$ bn*


*Source: Dodonov et al. 2024*

*Table 5 Russian Oil Exports Losses since March 2022, $ bn*




*Source: Dodonov et al. 2024*

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