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# Understanding the Price Cap on Russian Oil and Its Role in Depressing Russian Oil Revenues

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# Understanding the Price Cap on Russian Oil and Its Role in Depressing Russian Oil Revenues

Catherine Wolfram

The price cap on Russian oil is a novel approach to sanctions, and, like other new, complex policy tools, it has been occasionally misinterpreted. I address some of the main misunderstandings I have seen below, focusing on a recent Dallas Fed [working paper](#) by Killian, Rapson and Schipper (KRS), which assesses the impacts of various policies aimed at reducing Russia's oil revenues after its invasion of Ukraine, including the price cap. Based on my experience at the U.S. Treasury, where I was directly involved in developing and implementing the policies, I see that the paper incorrectly describes the policies and several key facts. I outline the main issues below. (I also passed on these comments to the authors before they released their paper but find their treatment of the issues in the paper that they posted unsatisfactory.)

The price cap is designed to keep Russian oil on the market while limiting the Kremlin's oil revenues (see [here](#) or [here](#) for a detailed description). The price cap applies to seaborne shipments of Russian crude oil and refined petroleum products that use services, including shipping, insurance, trade finance, flagging, and bunkering, from companies based in price cap coalition countries (sometimes called "Western services"). The cap has been \$60 per barrel for crude oil, with different caps for various types of petroleum products.

The KRS paper hypothesizes that the price cap was nonbinding and ineffectual. At the same time, Russian oil has sold at a considerable discount to global benchmark prices since the war began, so the paper needs an explanation for why that discount has persisted that doesn't rely on the price cap sanctions. It argues that all reductions in Russia's revenues are due to the EU embargo on Russian oil as that policy offered China and India increased bargaining power and forced tankers to travel further. I don't agree with that conclusion, which relies on incorrect analysis that I describe below.

For context, at the time of the invasion, Russia was the world's second largest oil producer, accounting for about 10 percent of world oil supply. I became convinced that the short-run demand elasticity for oil was around 0.1 at the time, so a good rule of thumb was that policy action that would have removed half of Russia's oil from the world markets would have increased prices by 50 percent. Given the global economic challenges in the aftermath of the pandemic, including ongoing supply chain disruptions and elevated inflationary pressures, there was considerable apprehension about the risk of a global recession. The potential that oil prices could reach \$150 per barrel posed a significant threat to economic stability and the possibility that this might happen for the types of reductions we could see from Russia is consistent with [existing evidence](#). Also, if oil demand happened to be less elastic—a not unlikely prospect given the tightness in world oil markets at the time—actions to reduce Russia's oil exports could have *increased* their revenues, at least in the short run. I personally found that prospect particularly galling: Russia could benefit from a war premium on oil from a war that they started.

To put my critiques of the KRS paper in context, it is important to understand two related policies implemented in oil markets in response to Russia's invasion:

- The EU's 6<sup>th</sup> sanctions package, which included an embargo on imports of Russian oil and petroleum products into the EU and prohibitions on services (including insurance, trade finance, flagging, brokering, etc.) provided by EU countries for seaborne transportation of Russian oil, and
- The price cap on Russian oil.

The first—the 6<sup>th</sup> sanctions package—[was announced by the EU on May 4, 2022](#), formalized in a sanctions package on June 3, 2022, and scheduled to be implemented on December 5, 2022 for crude oil and February 3, 2023 for petroleum products. It was widely believed that other countries would follow the EU's services ban, including the UK, which had already banned imports of Russian oil, and Norway, both also important homes to service providers in Russian oil trade. The price cap came into shape over the late spring and early summer of 2022. As outlined in numerous USG communications (see, e.g., [here](#) or [here](#)), the price cap had two objectives: to keep Russian oil on the market and to reduce Russia's revenues from oil exports. It worked by allowing for an exception to the services ban of the EU's 6<sup>th</sup> sanctions package. In other words, EU and other price cap coalition service providers would be allowed to handle Russian oil so long as Russia was paid less than the cap (eventually set at \$60/barrel for crude oil) for the oil they were servicing.

With that background, here are my main concerns with the KRS paper:

### **1. It understates the market perception of the risk of the EU 6<sup>th</sup> sanctions package.**

The paper interprets the fact that oil markets did not demonstrably react to the early June announcement that the EU's 6<sup>th</sup> sanction package was finalized to suggest that markets were not worried about the services restrictions contained in the package.

The paper states that, *"Moreover, there is no evidence that the oil market in 2022 was particularly concerned about a possible lack of access to maritime services [from the EU's 6<sup>th</sup> sanctions package] causing a shortage of oil and higher global oil prices. Had such concern existed, we would have seen a sharp response in the price of oil to the 6<sup>th</sup> EU sanctions package dated June, 3, 2022. Figure 4 [depicting an undefined smoothed world oil price series] shows that **no discernible response occurred.**"*

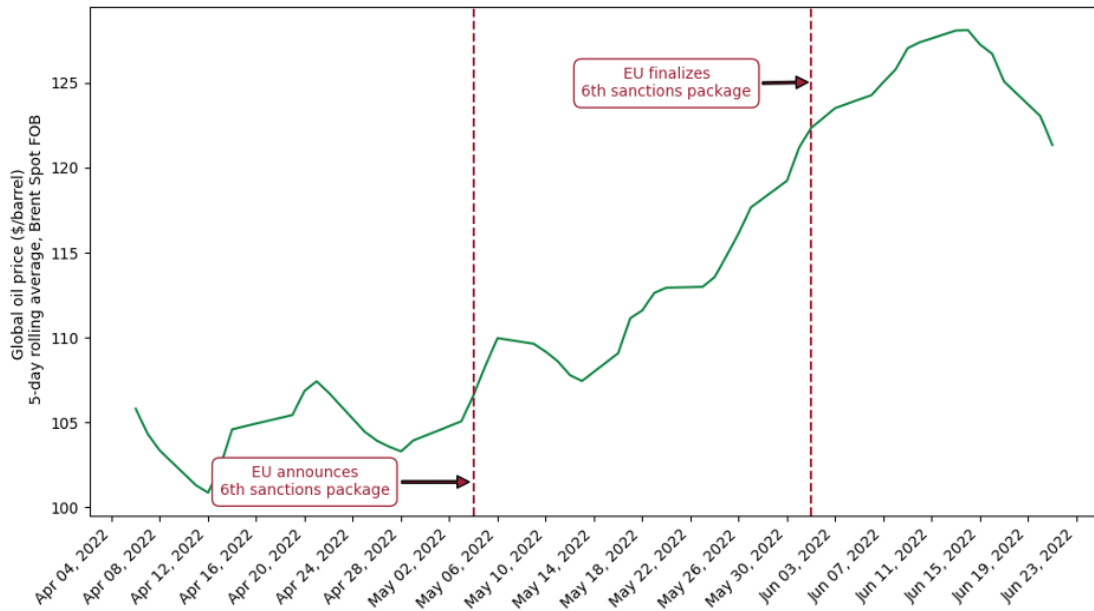
But they ignore the fact that the 6<sup>th</sup> package was announced [a month earlier](#) and that world oil prices **rose by over 20 percent** in the month between the announcement and the package's finalization, including by almost 5 percent on the day it was first announced (see Figure 1). While oil prices respond to many supply and demand factors, world demand for oil appeared to if anything wane over the same period. An index of other commodity prices fell by 10 percent (see Figure 2) and Figure 5 in the KRS paper shows that an index of global economic activity also fell between May and June. Further, when the 6<sup>th</sup> sanctions package was first announced in early May, there was real uncertainty about whether all 27 member states would approve it, uncertainty that was resolved over the next month and could have contributed to gradual oil price increases. Finally, prices for oil futures showed a very similar pattern, suggesting that the market was reacting to a structural change and not a transitory demand or supply shock.



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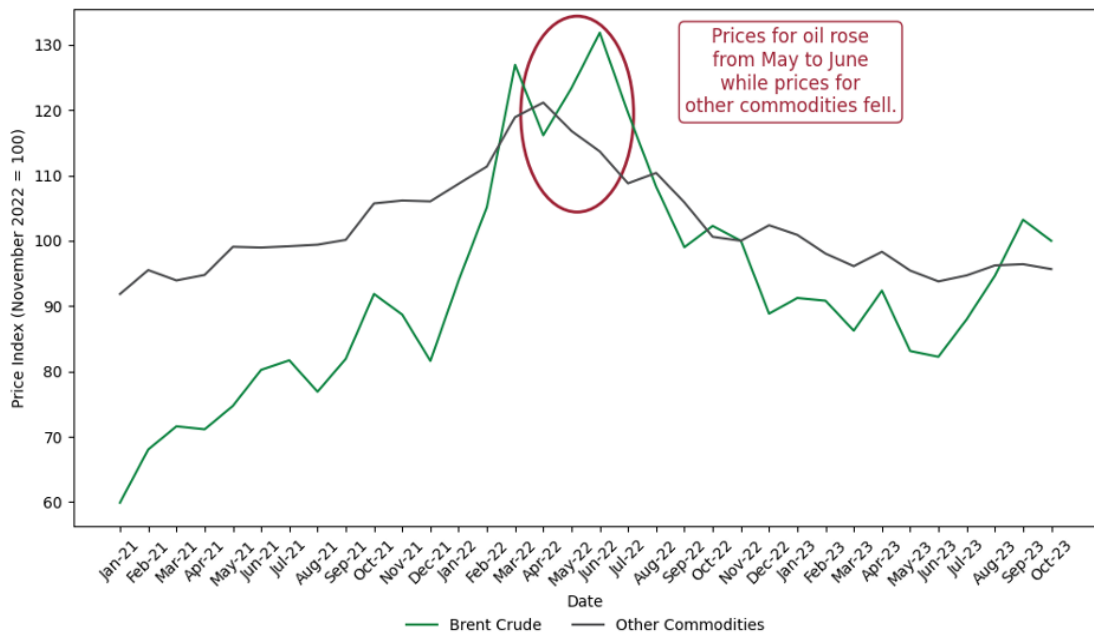
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Source: Thomson Reuters.

Figure 1. World oil price increased as the EU discussed and then finalized the 6<sup>th</sup> sanctions package.

Why do I lead with this critique? Because it is a basic fact that contradicts the KRS paper hypothesis. The paper argues that Western service provision was unimportant to Russian oil trade and that the only factors contributing to the wedge between Russian and global oil prices were the transportation costs to get oil to China and India and increased bargaining power on the part of those countries. On the flip side, service provision is essential to the enforcement of the price cap—it only applies to oil shipments using services from price cap coalition countries. The steep increase in oil prices after the EU's announcement suggests concern that the service ban would reduce supply.



Source: World Bank.

Figure 2. World oil price trends diverged from other commodities between May and June 2022.



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On the subject of the services ban, it's worth noting that the policy the KRS paper evaluates—an EU embargo without an associated services ban—was never on the table. The paper argues that it still may be interesting to study a hypothetical embargo-only policy, but my next three points suggest that the paper has not successfully disentangled the price cap from the import restriction. I view the price cap as a crucial addendum to the 6<sup>th</sup> sanctions package that ensured Russian oil could still use Western services to reach the market.

Relatedly, the KRS paper interprets the lack of an oil market reaction to the G7 leaders' announcement in late June of 2022 as evidence that the price cap was not expected to impact oil supply. But the market should not have been surprised by the G7 leaders' announcement. Colleagues and I [travelled to Europe](#) to discuss it in early June. We also had numerous meetings about the price cap proposal with market participants during the late spring and early summer. It would have been impractical and unwise to ask the G7 leaders to announce a brand-new policy designed to impact a major world market without any consultation with market participants. So, one would not expect a market reaction to the announcement.

## 2. The paper mischaracterizes the price cap.

The KRS paper's characterization of the price cap ignores the fact that it is a sanctions policy. The paper assumes that it is a perfectly enforced, econ-101 style price cap and implies that prices paid to Russia should always be exactly at the cap. Seeing that prices are both above and below the cap, the paper concludes it was ineffective.<sup>1</sup>

There are two things wrong with this characterization: as a sanctions policy, the price cap can both drive the price paid to Russia below the cap and still impact Russia's revenues when prices are above the cap. It does this by exposing service providers to a risk of being sanctioned (think of this as the risk of being required to pay some amount for each shipment of Russian oil they service). Providers will reflect a risk premium in the prices they charge for these services, which will in turn drive a wedge between the prices that buyers are willing to pay for the oil and what Russia receives for the oil. If the wedge is big (reflecting a lot of perceived risk—either high probability of detection, large penalty or, worse, both—to service providers) and buyers are reluctant to pay much for Russia's oil (e.g., because the Chinese have diversification goals and are reluctant to rely too heavily on Russia as a supplier), the price paid to Russia can go quite low. A [Bloomberg article](#) pegs the sanctions premium at \$7-9 per barrel in April 2024. That is real money that the price cap policy is removing from the Kremlin's coffers.

Insurance providers have been particularly vocal in their objections to the price cap, highlighting the risk premium point. They do not observe the price paid for the oil as a matter of standard business practices and are what Treasury [guidelines](#) describe as "Tier 3 Actors". In [recent testimony](#) in the UK, the industry described the price cap as "unenforceable," which I interpreted to mean, "this is a pain; we're being asked

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<sup>1</sup> The paper states: "When the Russian fob price is below the price cap, the price cap is non-binding and Western maritime services can be used irrespective of whether the price cap is enforced or not. When the Russian fob price exceeds the cap, this is evidence that either a) there are sufficient transportation services not requiring Western maritime services to deliver all (or at least most) Russian seaborne exports to the customers, or b) the price cap is not being enforced. In either of these cases, a very similar economic outcome would have been observed if policymakers decided to abandon the price cap going forward from that point."



to make judgements on something we have little visibility on and that put us at risk.” This explains why they would add a risk premium to Russian oil transactions.

Publicly reported prices for Russian oil are surprisingly opaque. For example, it’s unclear to what extent the reported prices reflect trades that should comply with the cap versus trades that are outside of it (because the shipments do not use services from price cap coalition countries) or how the reporting agencies are averaging across these two types of trades. This invalidates the KRS paper’s assertion that any departure from a reported price exactly at the cap suggests it is ineffective, and it emphasizes why wary service providers will still factor in a risk premium when reported prices fall below the price cap: they don’t know how prices for their individual shipments compare to the reported average. In a recent [Brookings paper](#), Simon Johnson and I discuss the lack of transparency in prices for Russian oil in greater detail.

### **3. The paper’s description of the role of Russia’s shadow fleet is inaccurate.**

One of my great disappointments has been seeing how quickly and relatively effortlessly Russia has been able to amass a fleet of oil tankers that can carry oil outside the price cap. These are part of the “shadow fleet,” which includes oil tankers that aren’t owned, insured, financed, etc. by price cap coalition countries and so are not legally subject to the price cap. The KRS paper notes the size of the shadow fleet almost a year after the price cap policy was implemented (and pick one of the larger numbers I’ve seen) and hold up the shadow fleet to support their claim that the price cap was never binding. The paper claims that the shadow fleet is so big “that only about 1 mb/day of Russian oil exports were ever at risk of being disrupted in the absence of the price cap.”

But, as Craig Kennedy carefully documents [in this Substack](#), the shadow fleet grew slowly and is still incomplete. It more than doubled in size in the first year of the price cap.

Also, the KRS paper only describes shadow fleet numbers for crude oil tankers and ignores petroleum products. Petroleum products are transported in more specialized ships (e.g., they are refrigerated) and those ships are more likely to be owned by oil majors, who will insist on insurance from price cap coalition countries. The [latest numbers I’ve seen](#) suggest that in June 2024, still only 40% of Russian petroleum products exports are carried by the shadow fleet. This is a big deal for Russia as historically about a third of their oil exports and almost half of their seaborne oil exports have been petroleum products (some of their crude oil is exported by pipeline, which has been more insulated from sanctions).

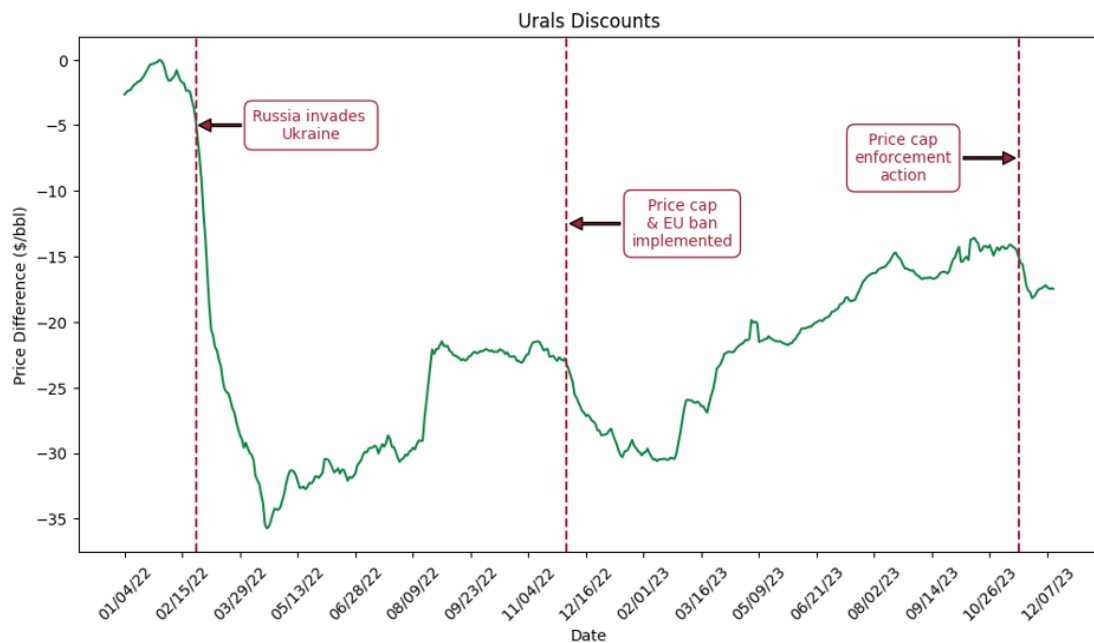
There is also the key question of why the Russians have spent billions of dollars amassing the shadow fleet ([estimated](#) at nearly \$8 billion) if the services ban plus price cap was nonbinding, as the KRS paper purports. The paper’s explanation for this relies on some combination of Russia mistakenly believing that the price cap would be binding and the argument that Russia already owned tankers.

As an aside (unrelated to KRS), the reason I’m disappointed in the growth of the shadow fleet is because it should have been operationally and legally straightforward to sanction sales of oil tankers to Russia. For political reasons that I wasn’t around to observe, no such sanction was introduced.



#### 4. The paper's explanation doesn't explain market movements over time.

Another issue with the KRS paper's hypothesis is that it does not explain why the discount for Russian oil has varied so much since the price cap was introduced. Their explanation relies on higher transportation costs and increased bargaining power for China and India post embargo. I could see that transportation costs would vary a bit, for example as a function of the fuel used for transportation, but I don't see why the embargo-driven bargaining power would wax and wane. In practice, the discount for Russian oil has varied since the price cap (see Figure 3 below). Simon Johnson and I suggest that some of that variation reflects changes in the risk premium. (A [WSJ article](#) has another version of this graph.)



Source: author analysis, Statista, investing.com, Bloomberg, and Datastream.

Figure 3. The Urals discount grew after the price cap was introduced and after increased enforcement.

Another test of the KRS paper's hypothesis versus one where the price cap plays an important role would be to look at what's happened to the discount Russia was forced to offer for its petroleum products. As I mentioned above, petroleum products rely on Western services more heavily than crude oil does. Also, China and India gained bargaining power in crude oil as they became Russia's primary outlets, but both China and India are net exporters of petroleum products, so Russia's exports of those products have gone to many different countries. This suggests that the same bargaining power explanation will not apply for petroleum products. It's not easy to find data on Russian petroleum product export prices, but the evidence I've seen (for instance, based on Bloomberg reports on Russian tax receipts) suggests that the discounts versus world prices have increased since the price cap was introduced in early 2023.

I have other issues with the KRS paper, including (a) the claim that insurance rates didn't increase in 2023 (leaving them free to focus on transportation costs as opposed to risk premia charged by service providers) seems to rely on one



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[250-word article](#) written in January 2023 which is contradicted by subsequent reporting (e.g., [here](#)), and (b) the assertion that oil prices in mid-2022 had little to do with fears about Russian supply is inconsistent with all the analyst conversations I had over that period.

Simon Johnson and I put out a [Brookings paper](#) recently demonstrating that the discount for Russian oil widened when authorities introduced and then increased enforcement of the price cap. The price cap has clearly been subverted by both the shadow fleet and faulty paperwork, and there are certainly options to increase its enforcement. Simon and I discuss some options and conclude with the hope that political will to expand enforcement will grow.

## About the Author



**Catherine Wolfram** is the William Barton Rogers Professor in Energy and a Professor of Applied Economics at the MIT Sloan School of Management. She previously served as the Cora Jane Flood Professor of Business Administration at the Haas School of Business at UC Berkeley.

From March 2021 to October 2022, she served as the Deputy Assistant Secretary for Climate and Energy Economics at the U.S. Treasury, while on leave from UC Berkeley.

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Wolfram has published extensively on the economics of energy markets. Her work has analyzed rural electrification programs in the developing world, energy efficiency programs in the US, the effects of environmental regulation on energy markets and the impact of privatization and restructuring in the US and UK. She is currently working on several projects at the intersection of climate, energy, and trade, including work on the impact of the EU carbon border adjustment mechanism (CBAM) on Mozambique, policy spillovers from the EU CBAM, border adjustments for methane emissions from the oil and gas sector, and the price cap on Russian oil.

She received a Ph.D. in Economics from MIT in 1996 and an A.B. from Harvard in 1989.



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