

Diego S. Cardoso, University of Illinois Urbana-Champaign
Stephen Salant, University of Michigan
Julien Daubanes, Technical University of Denmark
March 2025

Should the \$60 Price Cap on Russian Oil Exports be Lowered?

Western governments have imposed a \$60 price cap on Russian seaborne oil exports using Western services. To evade the policy, Russia has developed a “shadow fleet” which uses no such services. In this policy brief, we claim that the resulting segmentation of Russian oil exports dramatically modifies the conventional analysis of a price cap. Our research shows that lowering the cap would not hurt Russia as intended unless a robust expansion in non-Russian oil supply was to limit the induced increase in the world oil price. If this price increase is not limited, lowering the cap could even moderately increase Russian profits because shadow fleet sales would be more profitable. By contrast, policies that reduce some shadow fleet capacity would reduce Russian profits if undertaken while Russia still relies on some Western services.

In response to Russia's invasion of Ukraine in February 2022, the EU, the U.S., and other G7 countries (hereafter the West) ceased their imports of Russian oil, leading Russia to export more to India, Turkey, and China instead. In addition, the West imposed sanctions on oil exports from Russia, whose profits are instrumental in supporting its war.

Since more than 80 percent of Russia's seaborne oil exports relied on the provision of Western services (CREA, 2023) (financial, operational, and commercial) the EU suggested banning the use of these Western services for all Russian seaborne exports. However, governments feared that this would cause a spike in the world oil price. As an alternative, the U.S. suggested a price cap, which the West ultimately imposed in December 2022, limiting Russian revenues from oil shipped using Western services to \$60 per barrel.

Oil transported without Western services is exempt from the cap. Therefore, Russia has gradually assembled a "shadow fleet" that uses non-Western services in order to sell oil at prices above the cap.

The price cap on Russian oil is a new, insofar untested economic sanction, currently a subject of active public discussion, with experts recommending potential adjustments and application to more countries, and policymakers currently considering to tighten the price cap – see for example the January 2025 call by Sweden, Denmark, Finland, Latvia, Lithuania and Estonia to lower the price cap below \$60. The policy quickly piqued the interest of economists – see for example Spiro, Wachtmeister, and Gars' (2024) comprehensive review of policy options to limit Russia's ability to finance the war.

In their pioneering contribution to the literature, Johnson, Rachel, and Wolfram (2025) provide a rich analysis of the effects of the price cap, albeit under the assumption that the shadow fleet has a fixed capacity. In a recent working paper (Cardoso, Salant, and Daubanes, 2025), we present a new dynamic economic model that accounts for

the expansion of the Russian shadow fleet. The model is calibrated to reproduce observed facts and used to simulate the effects of (1) various levels of the price cap, including the extreme case of a complete ban, (2) enforcement stringency, and (3) policies targeting the shadow fleet.

Perhaps surprisingly, our analysis shows that, in the absence of any increase in non-Russian oil supply, lowering the level of the price cap below \$60 would benefit Russia. This includes lowering the cap to levels so low (below \$34) that the policy amounts to a ban as Russia would prefer not to use Western services at all at these cap levels. More generally, the model reveals that a lower cap would have two opposite effects on Russia: On the one hand, it would reduce Russia's profit (i.e., revenues net of production costs) from sales at the cap. On the other hand, since a lower cap would reduce Russia's oil exports, it would increase the oil price and, therefore, Russia's profit from sales through its shadow fleet. Our analysis yields a testable and intuitive condition under which the latter effect dominates the former, making a lower cap counterproductive. This condition depends on the shadow fleet capacity relative to Russian sales at the ceiling price.

Application of this condition shows that when sanctions were imposed, Russia's shadow fleet capacity was already sufficiently high for Russia to benefit from a reduction in the price ceiling. Russia would even have benefited from a reduction in the cap if the West had prevented any expansion in Russia's shadow fleet beyond its initial level. With no such limitation, Russia would continue to expand its fleet size regardless of the size of the cap reduction. This leads us to conclude that Russia would also benefit if an unanticipated reduction in the cap (or a complete ban) occurred subsequently.

It should be noted that in the absence of a non-Russian supply response, caps at different levels quantitatively impact Russian total profits in a similar way. For example, the \$60 cap reduces Russian profits by about 25 percent compared to a

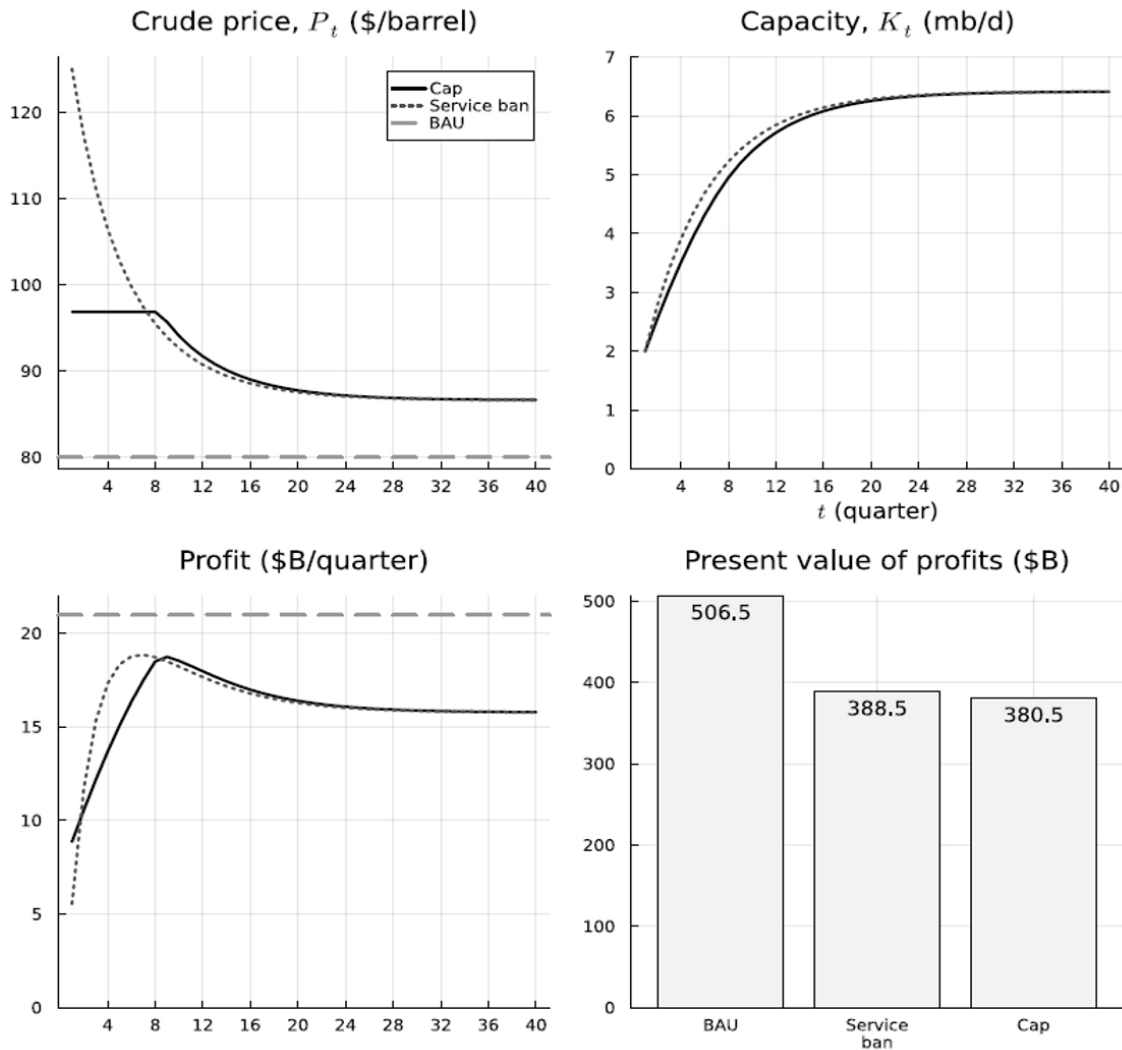


scenario without sanctions, and a complete ban would have impacted Russia only slightly less.

The following figure shows a comparison of prices, shadow fleet capacity, and profits under a price cap sanction (solid lines), a service ban (dotted lines), and the absence of sanctions (grey dashed lines). The simulations assume no supply

response from non-Russian producers (none occurred when the cap was first implemented). A lower cap cuts Russian exports and raises the global oil price, increasing Russian profits from its fleet sales. A non-Russian supply response would dampen this oil price spike and would, therefore, diminish the resulting revenue increase from Russian fleet sales.

Figure 1. Outcomes under different sanction scenarios



Source: Authors' calculations.

Russia sometimes uses Western services to ship oil at a price above the cap, taking the risk that its shipments get sanctioned. Increasing the probability that cheating is punished lowers the price Russia expects to receive, with consequences identical to a reduction in the cap level.

By contrast, policies that reduce some capacity of the shadow fleet ("sidelining" some of its tankers) may harm Russia, even though they prompt Russia to rebuild its fleet rapidly. This happens, for example, if sidelining part of the fleet occurs while oil is also being sold at the ceiling, so that ceiling sales replace the lost fleet sales and there is no increase in the world oil price.



Conclusion

To conclude, we consider a variety of oil-market sanctions that have been imposed on Russia to reduce the total export profits it uses to finance the war in Ukraine. As seen, tightening these sanctions is more effective if the induced increase in the world price can be significantly mitigated (if not entirely eliminated); otherwise, increased revenues from shadow fleet sales will weaken or undermine the intended effect of the tighter sanctions.

In one case we considered, no supplementary intervention is required for the sanction to be effective. Reducing Russia's shadow fleet capacity when Russia is still selling at the ceiling price will induce an equal and offsetting increase in Russian sales at the ceiling, resulting in no increase in the world price.

However, other sanctions – lowering the ceiling, increasing its enforcement, or even reducing the shadow fleet capacity after Russian sales at the ceiling have ceased – will induce an increase in the world price sufficient to undermine the sanctions' intended effect unless accompanied by a

simultaneous expansion of non-Russian supply (presumably from the U.S. or OPEC) to dampen the increase in the world price. Supplemented in this way, the potency of each of these sanctions would be restored.

Overall, our results call attention to the need for complementary energy policies that would facilitate the response of non-Russian oil production to higher global prices.

References

- Cardoso, D. S., S. W. Salant, and J. Daubanes. (2025). The Dynamics of Evasion: The Price Cap on Russian Oil Exports and the Amassing of the Shadow Fleet. *MIT CEEPR Working Paper 2025-05*.
- Centre for Research on Energy and Clean Air. (2023). December 2023 Monthly Analysis on Russian Fossil Fuel Exports and Sanctions.
- Johnson, S., L. Rachel, and C. Wolfram. (2025). A Theory of Price Caps on Non-Renewable Resources. *NBER Working Paper No. 31347*.
- Spiro, D., H. Wachtmeister, and J. Gars. (2024). Assessing the Impact of Oil Sanctions on Russia. *SSRN Working Paper*.





Diego S. Cardoso

University of Illinois Urbana-Champaign
dcardoso@illinois.edu

Diego S. Cardoso is an Assistant Professor at the University of Illinois Urbana-Champaign (Department of Agricultural and Consumer Economics). He received his PhD from Cornell University's Dyson School of Applied Economics and Management. His research focuses on designing and evaluating policies related to the energy transition, climate, and the use of natural resources. He is also interested in the intersection of applied welfare analysis and risk modeling for benefit-cost analysis.



Stephen Salant

University of Michigan
ssalant@umich.edu

Stephen Salant (BA, Columbia; PhD, University of Pennsylvania) is an applied microtheorist specializing in natural resource economics. In the 1970s, he worked at the Bureau of Labor Statistics, Federal Reserve Board, and Federal Trade Commission. Before joining the University of Michigan as a full professor (1986-2015), he served

as the first co-editor of *The Rand Journal of Economics*. His other research on the oil market and on price ceilings include extensions of the Hotelling model to account for (1) cartel/oligopolistic industry structures, (2) arbitrary spatial configurations of extractors and their customers and (3) the fact that an oil well, once drilled, produces oil over many years. He has also shown that price ceilings (or pegs) defended by bufferstock sales inevitably cause speculative attacks—an insight quickly developed in the international finance literature.



Julien Daubanes

Technical University of Denmark
jxada@dtu.dk

Julien Daubanes is an Associate Professor at the Technical University of Denmark (Department of Technology, Management and Economics). He is also an External Researcher at MIT (CEEPR), and a CESifo Research Fellow. He received his Ph.D. from the Toulouse School of Economics.

His research focuses on environmental economics, studying how energy markets respond to climate policy, as well as corporate voluntary actions, including green finance.

Julien Daubanes is also a Co-Editor at Resource and Energy Economics.

freepolicybriefs.com

The Forum for Research on Eastern Europe and Emerging Economies is a network of academic experts on economic issues in Eastern Europe and the former Soviet Union at BEROE (Minsk), BICEPS (Riga), CEFIR (Moscow), CenEA (Szczecin), ISET-PI (Tbilisi), KSE (Kyiv) and SITE (Stockholm). The weekly FREE Network Policy Brief Series provides research-based analyses of economic policy issues relevant to Eastern Europe and emerging markets. Opinions expressed in policy briefs and other publications are those of the authors; they do not necessarily reflect those of the FREE Network and its research institutes.