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From sanctions to price surges: The dynamics of Russia's import prices

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Abstract

We examine impact of economic sanctions on Russian import prices using detailed data on other countries' exports to Russia. We find that unit import prices of goods sanctioned by trading blocs such as the European Union have increased, often drastically, and even when imported to Russia from countries that have not formally imposed sanctions on Russia. For some countries, the unit export prices to Russia for non-sanctioned goods have also risen. These results strongly suggest that trade sanctions have been effective in limiting Russia's access to sanctioned goods.

Keywords: Sanctions, foreign trade, Russia
JEL codes: F12, F14, F51

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Non-technical summary

Focus
Since the invasion of Ukraine in February 2022, many countries have imposed economic sanctions on Russia. A key aim of these sanctions has been to restrict Russia's financial and technological capabilities for pursuing its war on Ukraine. An important tool has been the restriction of technology exports to Russia. Adding to the small body of studies on the impact of sanctions on the value of Russia's imports, we examine whether sanctions have affected the import prices of sanctioned products in Russia.

Contribution
The literature on the effects of trade sanctions on trade prices is still relatively new. We apply export data to examine the price effects to compare trends for exports to Russia against exports to other countries. We also control for the varying imposition times of sanctions and examine the temporal development of the price effect of sanctions.

Findings
Our results suggest that the sanctions have led to a substantial increase in the import prices Russians pay for sanctioned products. The result applies both to a global aggregate of import providers, as well as key imports from specific countries, most notably China. The unit prices of sanctioned products exported to Russia have increased by 40–60 % (and sometimes more) compared to other exports. We also find that the price effect has strenghtened over time. Our results suggest that sanctions have limited Russia's technological capabilities by making the importing of critical goods more expensive for Russia.

1. Introduction

While economic sanctions have long been utilized as a tool for applying pressure to alter the behavior of a country or corporation without resorting to military action (see Mulder, 2022), their application has surged to unprecedented levels in recent years. Russia's invasion of Ukraine, in particular, has prompted multiple rounds of sanctions by Western nations. Instead of the economic sanctions packages traditionally adopted (e.g. against Iran and North Korea) by the United Nations Security Council, the current sanctions against Russia have been enacted by coalitions of countries consisting primarily of European Union members, G7 nations, Australia, and other nations aligned with the West. Russia also stands out from previously sanctioned nations due to its relatively large economy and significant integration with the global economy prior to sanctions. These factors make the study of the latest sanctions against Russia policy-relevant and intriguing from the perspective of strategic interactions.

The large body of literature on the economic effects of sanctions has been augmented by a growing strand of literature on the economic effects of recent sanctions on Russia. We contribute to this literature in several ways. First, mostly owing to the paucity of data, there are almost no studies on the effect of sanctions on prices in international trade. Building on the handful of papers looking at Russia's import prices since the imposition of sanctions, we also consider more countries in greater detail than earlier studies. We compare the export prices of our selected countries to Russia to their export prices to other countries. These comparisons let us say with a high degree of confidence that sanctions have increased Russia's import prices (quite drastically in some cases).

Said otherwise, our goal in this study is to establish whether restrictions on exports to Russia by sanctioning countries have affected the prices of goods exported to Russia by non-sanctioning third countries. As the restrictions limit supply of sanctioned goods available to Russia, they boost the bargaining power of those countries that have not imposed restrictions. Therefore, they could charge higher prices for supplying sanctioned goods (their own and those of others) to Russia. In addition, sanctions that make international payments between Russia and other countries more difficult could also lead supplier countries to demand higher prices from Russian buyers. Finally, in line with Chupilkin et al. (2023), we find evidence of circumvention of sanctions via third countries, as well as a price premium for Russian customers due to higher transaction costs. The more Russia's import prices have risen, the better sanctions can be said to have worked.

Detailed post-invasion information on Russian foreign trade flows is scarce, so we rely on mirror data (data on exports to Russia) to approximate Russian import prices. The export prices are expressed in FOB terms (i.e. excluding transport costs). The quantity data on exports has several limitations. Depending on the country and the product, the data are typically recorded either by weight (e.g. kilograms, metric tons) or quantity (number of units). Moreover, the trade data classifications are internationally comparable only up to the Harmonized System 6-digit level (HS6) which can still be quite aggregated from the viewpoint of unit prices.

We examine whether sanctions have increased Russian import prices from several perspectives. First, we compare the development of prices of relatively similar sanctioned and non-sanctioned products from all countries to Russia in the pre- and post-invasion periods to determine whether prices of sanctioned goods have risen more than prices of non-sanctioned goods. The main limitation to this approach is that we only have comparable export-quantity data for some countries. An alternative approach is to compare the export prices of sanctioned products from individual non-sanctioning countries (particularly China) to Russia and other countries in order to determine whether export prices to Russia have risen more than export prices to other countries. We find this is indeed the case, which suggests that sanctions have been effective in limiting Russia's access to goods needed to carry on its war of aggression.

The paper is structured as follows. Section 2 provides a brief literature survey, and section 3 presents the data. We offer our main results in section 4, and give robustness checks in section 5. Section 6 concludes.

2. Literature survey

The use of economic sanctions as an instrument of foreign policy has proliferated in recent years. Both Masters (2024) and Syropoulos and Yotov (2024) provide overviews of the use and effects of economic sanctions. The United States was earlier the leading proponent for increasing the use of sanctions, but following Russia's full-on invasion of Ukraine in February 2022, the European Union, the United Kingdom, and others joined in introducing substantially more economic sanctions than before. The purpose of many of these newer sanctions is also somewhat different than earlier; they are today often directed against specific entities or persons, and in Russia's case, the country's ability to finance and wage war on its neighbors.

Russia drew international condemnation with the annexation of Crimea in 2014. The reaction grew with the establishment of a military presence in the Donbass and Luhansk regions, and the downing of Malaysia Airlines flight MH17 in July 2014. As a result of these aggressions and violations of international law, the EU and the US, along with many other countries, imposed sanctions on Russia. Many of the sanctions introduced concerned financial transactions with Russian entities, but they obviously also affected international trade. In a summary of research on the economic effects of sanctions, Korhonen (2019) notes that initial sanctions package likely led to a small decline in Russian GDP that was possible due to decreased investment in Russia and the financial frictions affecting trade.

Using a gravity model to assess the impact of sanctions on Russian trade, Crozet and Hinz (2020) estimate Russia lost $54 billion in exports (7 % of predicted) by end-2015, while sanctioning Western countries lost $42 billion – 90% of which was borne by the EU. Notably, most affected goods were never banned, suggesting financial constraints or risk aversion played some role. Russia also imposed counter-sanctions on Western food imports.

Bělin and Hanousek (2021) compare Western export bans on hydrocarbon tech with Russia's food import bans, finding the latter more effective due to the non-retroactive nature of Western sanctions.

Cheptea and Gaigné (2018) attribute less than half of the EU export drop to sanctions, with the rest due to ruble depreciation and reduced Russian purchasing power. Showing adaptation, EU agricultural exports have since rebounded.

Fritz et al. (2017) estimate that EU exports to Russia fell by $35 billion (11 %) between 2014 and 2016, mainly in agriculture. The broad-based declines suggest significant trade finance disruptions.

There is also a growing branch of literature on the effects on sanctions introduced since February 2022. In a review of recent research on sanctions, Simola (2023a) highlighted the works of Borin et al. (2022) and Chupilkin et al. (2023). Borin et al. find that Russian imports from sanctioning countries had dropped by 50 % by late 2022, while imports from non-sanctioning countries were up by 30 %, compared to a hypothetical no-war scenario. Chupilkin et al. also show that EU exports of sanctioned goods to Russia fell significantly, and provide evidence of rerouting through Central Asia to bypass sanctions. Korhonen and Simola (2024) show how exports of sanctioned goods to Russia fell overall. Sanctioning-country exports of these and other non-sanctioned goods fell drastically, but rose from non-sanctioning countries. The net effect was a decline in the availability of sanctioned goods in Russia. The extensive analysis by Egorov et al. (2025) finds a decline in import volumes despite rerouting, and notes also an increase in import prices for Russia due to sanctions.

Here, we examine how sanctions have affected Russia's import prices. This question has direct policy relevance. If, for example, we observe that value of exports of sanctioned goods to Russia has remained stable, for example, we could conclude that sanctions are not working. On the other hand, if prices of sanctioned goods increase, then we might infer the volume of sanctioned goods reaching Russia has declined. Give the scant amount of attention to this topic, we hope our contribution at least advances the discussion.

Several of the papers examining Russia's import prices since the introduction of economic sanctions deserve mention. In particular, Firanchuk (2024) shows that overall import prices from sanctioning countries have risen more than imports from non-sanctioning countries. However, import unit prices of goods sanctioned by the US from non-sanctioning countries have risen more than average import prices.

Close to our paper, Simola (2023b) provides a descriptive analysis and documents how the aggregate value of Russia's imports of sanctioned technology goods has decreased, even when taking into account possible sanctions evasion via third countries. Moreover, as unit prices have increased, the volume of imports has declined even more than in value terms. Emlinger and Lefebvre (2025) show how Russia's overall import prices have risen since the start of the full-scale war and introduction of sanctions. They suggest that prices have increased especially for sanctioned goods imported from non-sanctioning countries, and note that most of the increases have come from exporters' higher margins, and not such factors as higher transportation costs. Furthermore, Chupilkin et al. (2024) look at transaction-level data on Russian imports via intermediate countries. They confirm that unit prices of sanctioned goods have risen substantially – and more than unit prices of non-sanctioned goods. Corsetti et al. (2025) show that Turkish firms have increased their export prices to Russia since the imposition of sanctions.

All these results indicate that sanctions have been effective in limiting Russia's access to sanctioned goods. In the following sections, we present additional evidence that supports this view.

3. Data

We use monthly data on exports to Russia at the 6-digit level of HS classification – the most detailed level available that is internationally comparable. Our data extend from January 2018 to December 2024. We calculate the unit prices of products in each month by dividing the value of exports by the quantity of exports. For countries and goods where unit prices are unavailable, we utilize quantity data (typically expressed by weight or number of items).

To maximize data availability and comparability of unit prices, we focus on HS Chapter 84, "Machinery and mechanical appliances; electrical equipment." Products in this chapter have often been the focus of sanctions. Sanctioning countries accounted for the majority of Russian imports under this chapter prior to 2022.

We are particularly interested in the role of China. China has emerged as Russia's top trading partner in recent years, and now accounts for half of Russia's goods imports. China's share is even higher in imports of technology goods and sanctioned goods. Therefore, we focus only on such products for which we have data from

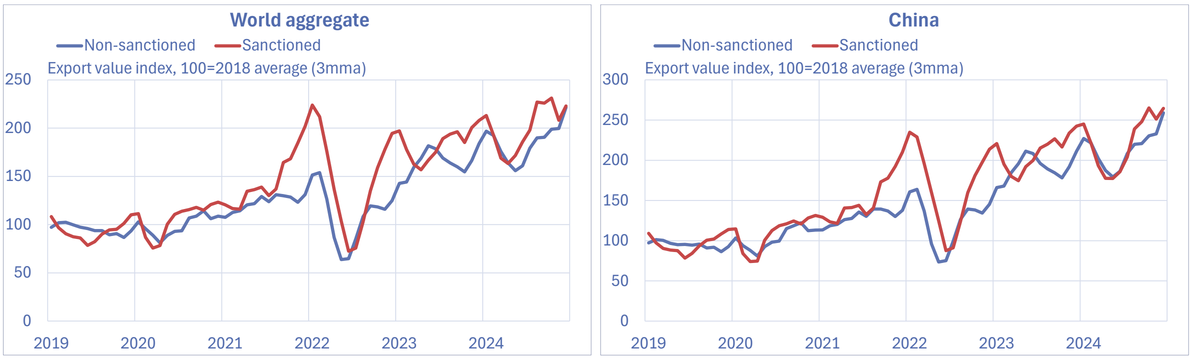
China. China mainly reports export quantities in number of items, so that is our preferred quantity measure for most estimations.

For estimations on global exports and Chinese exports, our sample covers 224 product lines of the total 516 product lines exported to Russia in 2024. Our sample includes 80 products classified as sanctioned high-priority items or dual-use goods. The rest of the sample consists of products not subject to sanctions.

As a robustness check, we perform similar estimations for Türkiye. For these estimations, we use quantities in kilograms instead number of items as the coverage is much more extensive in the case of Türkiye. For Türkiye, our sample covers 289 product lines including all products exported to Russia from Türkiye in 2024. The sample includes 99 products classified as sanctioned goods, while the rest are not subject to sanctions.

The development of total export values shows that Russia's invasion and following sanctions introduced a notable shock to the trade in the spring 2022 (Figure 1). The value of global exports to Russia contracted substantially, with sanctioned products experiencing a more pronounced drop than non-sanctioned products[1]. After a few months, the value of both sanctioned and non-sanctioned exports started to recover, although the recovery was more sluggish for sanctioned goods. It should be noted that the recovery partly reflects price increases. The developments for Chinese exports are quite similar to global trends.

Figure 1. 2019–2024 exports to Russia of non-sanctioned and sanctioned products classified under HS system Chapter 84 from all countries (panel A) and from China specifically (panel B).

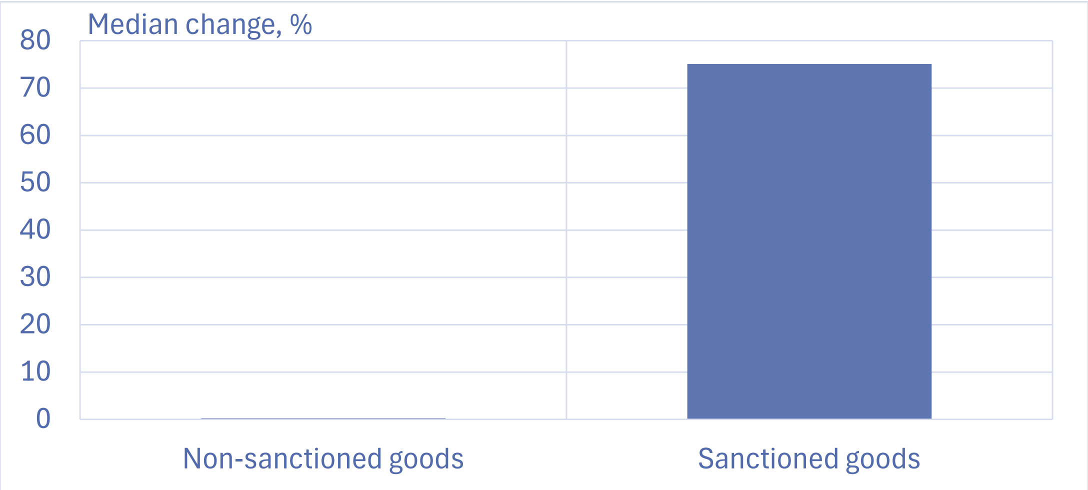


[1] This is also established in Korhonen and Simola (2024).

Note: "Sanctioned products" refers to products placed under sanctions at some point during 2022–2024. The figures have not been adjusted to take into account the staggered imposition of sanctions.
Source: Authors' calculations based on Global Trade Tracker data.

It is clear that the global export prices of sanctioned products to Russia have increased substantially more than the export prices of other products since the imposition of sanctions. Comparing the years 2021 and 2024, the median price change in exports to Russia was 75 % for sanctioned goods and 0.2 % for non-sanctioned goods (Figure 2).

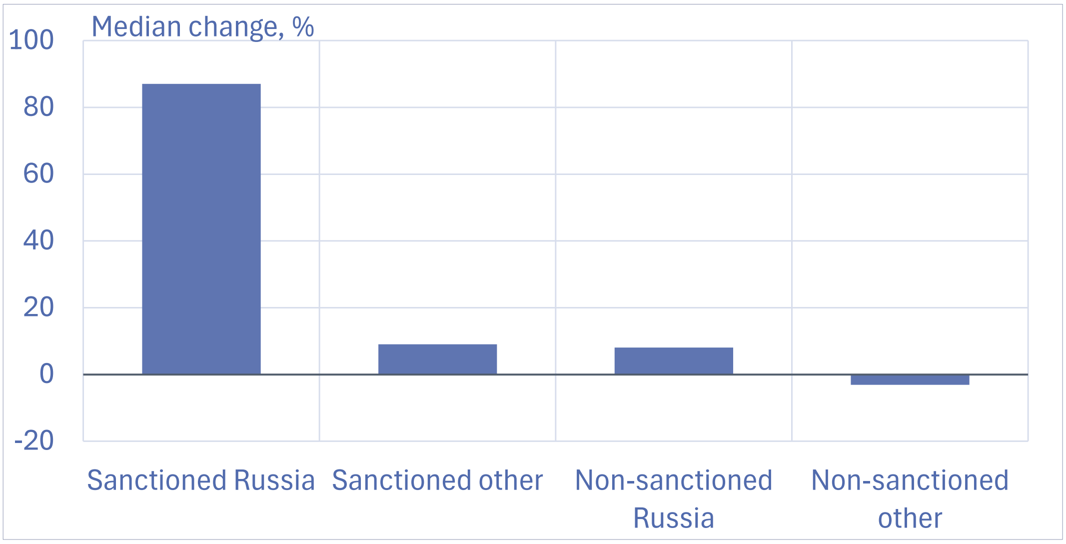
Figure 2. Median price change in world exports to Russia in 2021–2024.



Source: Authors' calculations on Global Trade Tracker data.

Prices of Chinese exports to Russia also increased substantially more than to other countries, particularly for sanctioned products. The median price change in Chinese exports of sanctioned products to Russia was 87 % between 2021 and 2024, while for other countries it was only 9 % (Figure 3). The trend is similar, but less pronounced, for non-sanctioned products.

Figure 3. Median price changes in Chinese exports during 2021–2024.



Source: Authors' calculations based on Global Trade Tracker data.

4. Empirical estimation

4.1. Global exports to Russia

Applying a difference-in-difference approach, we now examine whether Russia's import prices of sanctioned products have increased more than import prices of non-sanctioned products. We add up the exports of all countries for which data are available and calculate average export prices. Then we compare the price trends for sanctioned and non-sanctioned products following Russia's invasion of Ukraine in February 2022.

Our "world aggregate" comprises 14 countries (see Appendix) that report export quantities as number of items. The sample includes both sanctioning countries (e.g. US and Japan) and non-sanctioning countries (e.g. China and India), but we have no data for EU countries. Even so, countries in our sample accounted for 45 % of global exports in 2024. The baseline regression is:

$$\ln (P_{it}) = \text{SanctionTime} \times \text{SanctionProduct} + FE_i + FE_t \tag{1}$$

The dependent variable is the log of unit price of exports from all countries combined to Russia of product i in time t. The effect of sanctions is captured by an interaction term of time and product dummies. The time dummy is assigned value of 0 from January 2018 to February 2022 and value of 1 since March 2022. The product dummy is assigned value of 0 for non-sanctioned and value of 1 for sanctioned products. In addition, we control for product- and time-specific fixed effects.

Our estimation results suggest that Russia's import prices of sanctioned products have risen more than import prices of non-sanctioned products (Table 1). The prices of sanctioned products increase by 40 % more than prices of non-sanctioned products in the post-invasion period.[2] The result is statistically significant at the 1 % confidence level.

To account for the fact that export restrictions on various products were put in place at different times, we shift to the staggered setting proposed by Callaway and SantAnna (2021). Our sample includes products placed under sanctions in March 2022, April 2022, July 2022, October 2022, December 2022, and June 2023. The results are similar to those for the baseline specification. As might be expected, the coefficient of the interaction term is now larger, suggesting that the prices of sanctioned goods have increased by 55 % in the post-invasion period (Table 1). The result is still statistically significant at the 5 % confidence level.

Table 1. Regressions on world exports to Russia.

	Dependent variable: ln ($Price_{it}$)	
	Baseline	Staggered
SanctionTime x SanctionProduct	0.3395***(0.1038)	0.4367**(0.1657)
N	18,047	17,701
R2	0.84	

Note: Constant term, time- and product-specific fixed effects included. Standard errors clustered at the product level. For the staggered estimation, the control group is not yet treated.

Disentangling the time effects suggests that the price effect has strengthened over time. In the first months of sanctions, the coefficients are not statistically significant. In the latter part of the time period under consideration, the coefficient becomes larger and is statistically highly significant. The average treatment effect is 0.21 in 2022, 0.30 in 2023, and 0.71 in 2024. This suggests that in 2024 the export

[2] Note that the percentage change is calculated as [exp (coefficient)-1]*100.

prices of sanctioned products to Russia increased about two times faster than prices of non-sanctioned products. An event study setup provides similar results, with the post-treatment effect not statistically significant after 12 months, but becoming significant after 24 months (Table 2). The pre-treatment effect is not statistically significant in any time window.

Table 2. Event study results for global exports to Russia with various time windows.

	Pre-treatment ATT	Post-treatment ATT
6 months	0.0454 (0.0415)	0.2078 (0.1726)
12 months	0.0038 (0.0189)	0.2239 (0.1641)
18 months	0.0170 (0.0143)	0.2660 (0.1623)
24 months	0.0202 (0.0124)	0.3417** (0.1606)
33 months	0.0138 (0.0104)	0.4561*** (0.1657)

Our results are qualitatively similar to those of Egorov et al. (2025) and Chupilkin et al. (2024) based on Russian customs data. Our results also suggest that the price effect has become gradually stronger which is not examined explicitly in the previous research. The muted price effect in the earlier part of the post-treatment period could partly reflect the massive drop in export volumes to Russia immediately after the invasion in spring 2022 that dominates any price effects. In addition, it could reflect the gradual introduction of measures to improve sanction enforcement and prevent sanction circumvention. These measures can have increased the premium demanded from Russian customers for supplying these products.

4.2. Chinese exports to Russia

In the second specification, we focus on Chinese exports with a triple difference-in-difference approach. We collect data on Chinese exports to Russia and other countries (as an aggregate) and compare the evolution of export prices to Russia and other countries in sanctioned and non-sanctioned products after Russia's invasion in Ukraine. The baseline regression is:

$$\ln (P_{ijt}) = \text{Russia} \times \text{SanctionTime} \times \text{SanctionProduct} + FE_{it} + FE_{ij} \qquad (2)$$

We regress the log of the unit export price again with an interaction term. Now it is a triple interaction term with Russia as the destination, sanctioned products, and the time period after imposition of sanctions. We also control for product-time and country-product fixed effects.[3] Our results suggest that Chinese export prices of sanctioned products to Russia have increased much more compared to Chinese overall export prices. The positive effect is quantitatively quite large: 40–90 % depending on the specification, and statistically highly significant in various specifications including with different fixed effects (Table 3). These results indicate that the costs of acquiring sanctioned goods has increased for Russia since the imposition of sanctions.[4]

Table 3. Regressions on Chinese exports.

	ln ($Price_{it}$)	ln ($Price_{it}$)	ln ($Price_{it}$)
Russia x SanctionTime x SanctionProduct	0.6472*** (0.1010)	0.4532*** (0.0849)	0.3588*** (0.0790)
Product-time FE	X		X
Country-product FE		X	X
N	34,478	36,055	34,478
R^2	0.85	0.90	0.90

Note: Constant term included, but not reported. Standard errors clustered at the product level.

We also address the variation in imposition dates of the sanctions for Chinese exports. Results of the staggered estimations for Chinese exports to Russia are similar to the above results. The interaction term of interest is still positive and statistically significant at the 5 % confidence level (Table 4). Quantitatively, the coefficient is similar to that of the baseline estimations. For exports to countries other than Russia, however, the imposition of sanctions appears to have no statistically significant effect on prices and the coefficient is quite small.

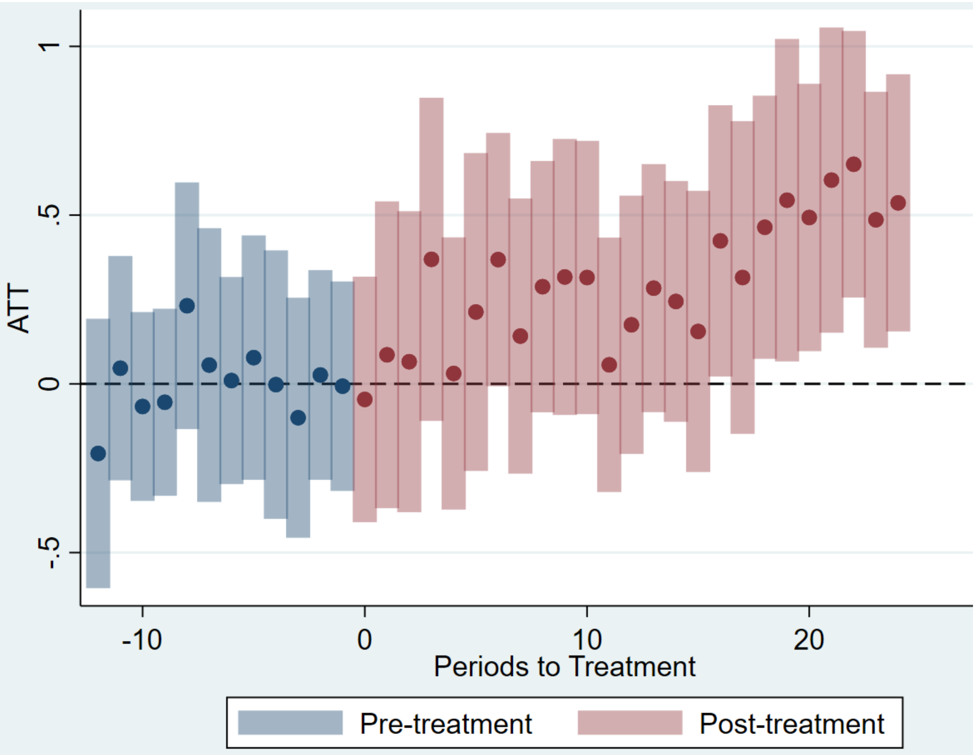
[3] We cannot include country-time fixed effects as we treat countries other than Russia as an aggregate.
[4] While we cannot rule out that the results partly reflect rerouting of more expensive European exports via China due to limited data, our aggregate-level estimations suggest this is not the case (at least for other sanctioning countries).

Table 4. Regressions with staggered imposition of sanctions for Chinese exports.

	ln (Price$_{it}$)	
	Russia	Other countries
SanctionTime x Sanction-Product	0.3765** (0.1654)	0.0510 (0.0758)
N	16,824	18,816

An event study set-up for Chinese exports to Russia provides results similar to those for global exports. Our estimations suggest that the export prices of sanctioned goods from China to Russia have increased more than prices of China's other exports since the imposition of sanctions. The effect is not statistically significant in the first months, but the coefficient becomes gradually larger and statistically significant in the latter part of the time period under estimation (Figure 4). Pre-treatment effects are quite small and not statistically significant even at the 10 % confidence level. For other countries than Russia, both pre-treatment and post-treatment results are never statistically significant and the coefficients are quite small in quantitative terms (and substantially smaller than in the case of Russia).

Figure 4. Event study results for Chinese exports to Russia.



Note: Periods to treatment are measured in months.

5. Robustness checks

In this section, we examine the robustness of the results for various additional specifications. We perform similar robustness checks both for our global and China-specific estimations, and examine to see whether the results are sensitive to different time periods, if they are country-specific, and what happens with change of prices as the dependent variable.

5.1. Global exports to Russia

First, we check whether the results are sensitive to time periods. We perform the regressions for Russia again, first excluding the year 2020 to mitigate for pandemic effects and then the year 2022 to eliminate the effect of the initial shock caused by Russia's invasion. Next, we perform the estimations using only the year 2019 or 2021 as the pre-treatment period and 2024 as the post-treatment period. All results are highly statistically significant, and the coefficients in most cases are slightly larger than in the baseline regression (Table 5). These results again suggest that the price effect of sanctions was more pronounced in the latter part of the sample period.

Table 5. Regressions on global exports to Russia with varying time periods.

	Dependent variable: ln ($Price_{it}$)			
	Ex 2020	Ex 2022	Only 2019 and 2024	Only 2021 and 2024
SanctionTime x SanctionProduct	0.3132*** (0.1042)	0.4468*** (0.1167)	0.5798*** (0.1476)	0.7857*** (0.1309)
N	15,535	15,445	5,217	5,267
R2	0.85	0.84	0.85	0.85

Note: Constant term, time- and product-specific fixed effects included. Standard errors clustered at the product level.

In order to strengthen the argument that the price increase of global exports of sanctioned products is a Russia-specific phenomenon, we perform a regression for a peer country as a type of placebo test. For comparison, we choose exports to Malaysia, another relatively large emerging economy. The coefficient of the interaction term in the case of Malaysia is quantitatively much smaller and not statistically significant even at the 10 % significance level (Table 6). Moreover, the coefficient is not statistically significant even in the staggered setting. This suggests that our finding regarding prices of sanctioned products is Russia-specific and not a wider phenomenon.

Table 6. Regressions on world exports to Malaysia.

	Dependent variable: ln ($Price_{it}$)	
	Baseline	Staggered
SanctionTime x SanctionProduct	0.1936 (0.1586)	-0.2945 (0.1694)
N	19,226	18,798
R2	0.74	0.74

Note: Constant term, time- and product-specific fixed effects included. Standard errors clustered at the product level.

We next examine to see whether the results are similar in terms of differences, which is a frequently used robustness check for estimations in levels. The dependent variable is now the 12-month change in the log of the unit price of exports from all countries combined to Russia of product i in time t. Otherwise, the specification is identical to the regression on price levels conducted earlier. We again find a statistically highly significant effect, implying that prices of sanctioned goods have increased much more for Russia than prices of other comparable technology goods (Table 7). For Malaysia, the effect is negligible and not statistically significant.

Table 7. Regressions on price changes of world exports to Russia and Malaysia.

	Dependent variable: Δln ($Price_{it}$)	
	Russia	Malaysia
SanctionTime x SanctionProduct	0.3172***(0.0617)	-0.0214 (0.0925)
N	14,692	15,641
R^2	0.03	0.03

Note: Constant term, time- and product-specific fixed effects included. Standard errors clustered at the product level.

5.2. Chinese exports to Russia

We perform similar robustness checks for the regressions on Chinese export prices. We start again with estimations restricted on various time periods. The results are similar as those for global exports (Table 8). The results are statistically highly significant in all specifications. The price effect again appears stronger in the latter part of the estimation period.

Table 8. Regressions on Chinese exports with varying time periods.

	Dependent variable: ln ($Price_{it}$)			
	Ex 2020	Ex 2022	Only 2019 and 2024	Only 2021 and 2024
SanctionTime x SanctionProduct	0.3415*** (0.0808)	0.5048*** (0.0877)	0.6586*** (0.1186)	0.6659*** (0.1087)
N	29,756	29,478	9,978	10,052
R^2	0.90	0.90	0.90	0.90

Note: Constant term, time- and product-specific fixed effects included. Standard errors clustered at the product level.

We change the dependent variable for 12-month change in the log of unit price of Chinese exports to Russia and other countries. Our results again suggest that the export prices of sanctioned products exported to Russia have increased more than prices of other products (Table 9). The result is also highly statistically significant for price changes.

Table 9. Regressions on price changes of Chinese exports.

	Δln ($Price_{it}$)	Δln ($Price_{it}$)	Δln ($Price_{it}$)
Russia x SanctionTime x SanctionProduct	0.2470*** (0.0354)	0.3284*** (0.0443)	0.2432*** (0.0562)
Product-time FE	X		X
Country-product FE		X	X
N	27,942	30,099	27,942
R2	0.52	0.02	0.52

Note: Constant term included in all specifications. Standard errors clustered at the product level.

Finally, we examine if the country-specific results only apply to China. We estimate similar regressions for Türkiye, another major import provider for Russia. Quantity is measured in kilograms as that is the quantity unit Türkiye reports for the vast majority of imported goods.

We find qualitatively similar results for Türkiye as for China (Table 10). The magnitude of the coefficients is slightly smaller for Türkiye, but still economically important. Depending on the specification, Turkish export prices of sanctioned goods to Russia are found to have increased by 25–55 % compared to other exports. Obviously, the coefficients are not directly comparable to results with China as we are using a different quantity measure in the Turkish case. Even so, these findings bolster our hypothesis of higher prices resulting from sanctions, irrespective of the measurement unit applied.

Table 10. Regressions on Turkish exports.

	ln ($Price_{it}$)	ln ($Price_{it}$)	ln ($Price_{it}$)
Russia x SanctionTime x SanctionProduct	0.4381*** (0.0580)	0.4385*** (0.0439)	0.2337*** (0.0533)
Product-time FE	X		X
Country-product FE		X	X
N	27,364	36,849	27,364
R^2	0.52	0.62	0.64

Note: Constant term included in all specifications. Standard errors clustered at the product level.

6. Conclusions

We have shown that Russia's import unit prices have risen, sometimes drastically, since the introduction of economic sanctions in response to the invasion of Ukraine. This applies especially to dual-use and high-tech goods that have been sanctioned by the European Union and other countries. This result is especially relevant for China, which has become Russia's most important trading partner. Turkish exports to Russia have also increased substantially in terms of unit prices and for goods that have not been sanctioned. As far as we know, these developments have not been previously reported in the literature. Moreover, these findings are unaffected after they have been subjected to a battery of robustness checks.

The results have economic implications. Consider, for example, ball bearings, a product included on the EU list of high priority items. The value of Chinese ball bearing (HS code 848210) exports to Russia was $26 million in 2021. In 2024, the value of Chinese ball-bearing exports to Russia had risen by 76 %, but the quantity of exports was 13 % lower. In other words, the unit price of ball bearings doubled between 2021 and 2024. An even more striking development is seen in prices of tapered roller bearings (848220), with the unit price nearly four times higher in 2024 than in 2021. Our general results, illustrated here with two simple examples, lead us to conclude that trade sanctions have been successful in their aim of limiting Russia's access to critical goods.

References

Bělin, Matěj and Jan Hanousek (2021). Which sanctions matter? Analysis of the EU/Russian sanctions of 2014. *Journal of Comparative Economics*, 49(1): 244-257.

Borin, Alessandro, Gabriele Cappadona, Francesco Paolo Conteduca, Benjamin Hilgenstock, Oleg Itskhoki, Michele Mancini, Maxim Mironov and Elina Ribakova (2023). The impact of EU sanctions on Russian imports. VoxEU Column, 29 May 2023.

Cheptea, Angela and Carl Gaigné (2018). Russian food embargo and the lost trade. SMART-LERECO Working Paper 18-05.

Chupilkin, Maxim, Beata Javorcik and Alexander Plekhanov (2023). The Eurasian Roundabout: Trade flows into Russia through the Caucasus and Central Asia. EBRD Working Paper No. 276.

Chupilkin, Maxim, Beata Javorcik, Aleksandra Peeva and Alexander Plekhanov (2024). Decision to leave: Economic sanctions and intermediated trade. Mimeo.

Corsetti, Giancarlo, Banu Demir and Beata Javorcik (2025). Trading Around Geopolitics. CESifo Working Paper No. 12021.

Crozet, Matthieu and Julian Hinz (2020). Friendly fire: The trade impact of the Russia sanctions and counter-sanctions. *Economic Policy*, 35(101): 97-146.

Egorov, Konstantin, Vasily Korovkin, Alexey Makarin and Dzhamilya Nigmatulina (2025). Trade Sanctions. MIT Sloan Research Paper Forthcoming.

Emlinger, Charlotte and Kevin Lefebvre (2025) Working Around Sanctions. What Cost to Russia? CEPII Policy Brief No. 50.

Firanchuk, Alexander (2024) Влияние санкций на цены российского импорта (Sanction Impact on Russian Import Prices). Mimeo, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=5006373.

Korhonen, Iikka (2019). Sanctions and counter-sanctions – What are their economic effects in Russia and elsewhere? BOFIT Policy Brief 2/2019.

Korhonen Iikka and Heli Simola (2024). High-priority battlefield items and television sets – How sanctions reduced Russians' access to goods. BOFIT Discussion Paper 3/2024.

Masters, Jonathan (2024) What Are Economic Sanctions? Council on Foreign Relations Backgrounder, https://www.cfr.org/backgrounder/what-are-economic-sanctions.

Mulder, Nicholas (2022). *The Economic Weapon: The Rise of Sanctions as a Tool of Modern War*. Yale University Press.

Simola, Heli (2023a). What the literature says about the effects of sanctions on Russia. BOFIT Policy Brief 8/2023.

Simola, Heli (2023b). Latest developments in Russian imports of sanctioned technology products. BOFIT Policy Brief 15/2023.

Syropoulos, Constantinos and Yoto V. Yotov (2024) Analyzing the effects of economic sanctions: Recent theory, data, and quantification. *Review of International Economics*, 32(19): 1-11.

Appendix

Table A1. List of countries included in the world aggregate.

Australia	Mexico
Canada	Singapore
Chile	Thailand
China	USA
Hong Kong	Vietnam
Japan	South Africa
Malaysia	

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