

Transatlantic Trade Politics Network Policy Brief

**The War in Ukraine, Agricultural Value Chains and
EU Policy Responses**

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The War in Ukraine, Agricultural Value Chains and EU Policy Responses²

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An Important Role of the Black Sea Region in the Global Commodity Markets

The war in Ukraine has spurred considerable disruptions in the global supply of agricultural, food and energy commodities, leading to significant escalations in prices, especially during the first months following the invasion (Behnassi and Haiba, 2022). In a world still recovering from the COVID-19 pandemic, these additional pressures and uncertainties exacerbate an environment already grappling with heightened food insecurity, poverty, and malnutrition (Dasgupta and Robinson, 2022; Laborde et al., 2021).

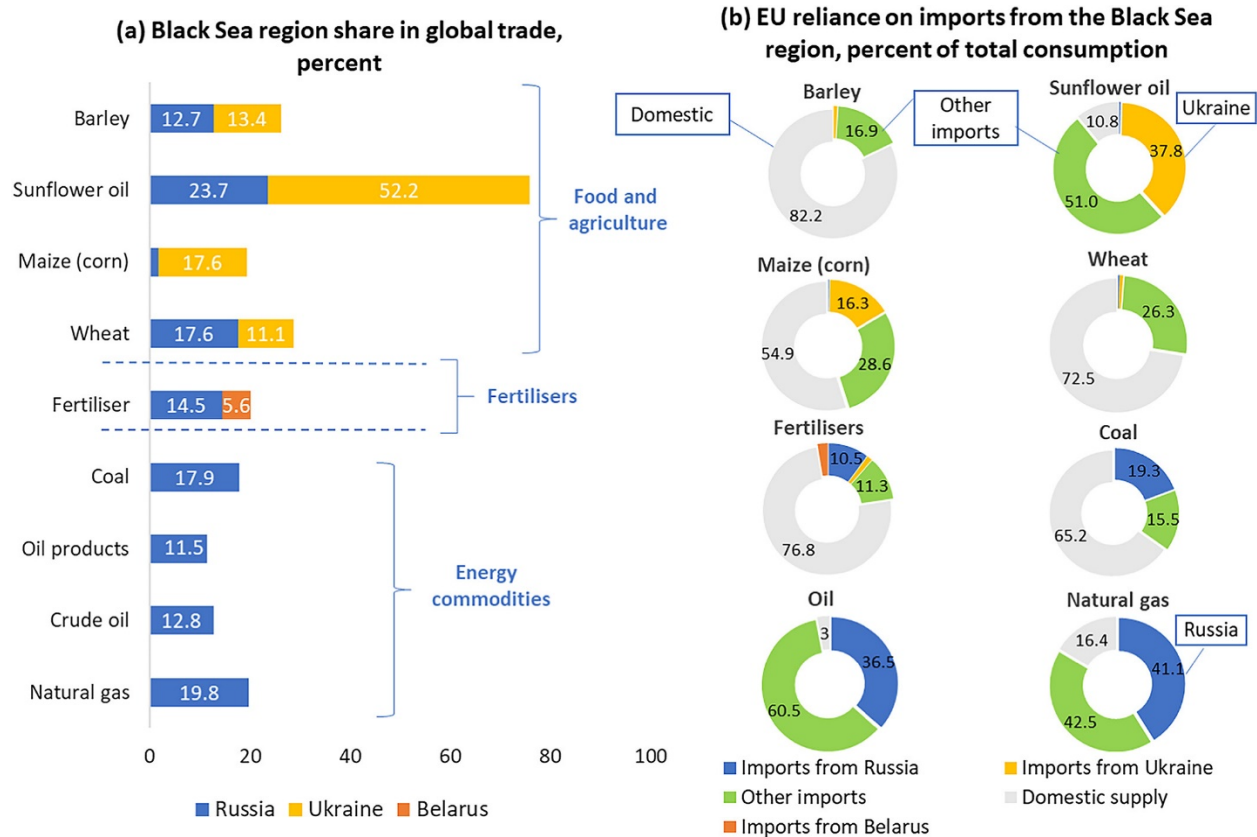
Countries in the Black Sea region (Belarus, Russia and Ukraine) have become key global suppliers of grains, oilseeds and vegetable oils over the last three decades. Russia and Ukraine rank in the top seven global producers and exporters of wheat, corn and barley (Figure 1a). The majority of these products are shipped to North Africa and the Middle East, as well as China and the European Union (EU) (Figure 1b). Ukraine is also a major supplier of sunflower oil, accounting for over half of global production, and supplying almost 38 per cent of the EU's total

Russia and Belarus are the world's second and third-largest producers of potash fertilizer, respectively. Brazil, for example, the world's largest soybean producer, buys approximately half of its potash fertilizers from these two countries. The majority of Brazil's soybeans are sold to China, which utilizes much of the crop to feed livestock. As a result, a disruption in fertilizer supplies impacts meat prices in China and around the world. The EU has banned all imports of potash from Belarus as of March 4, 2022 (Euractiv, 2022).

In addition, Russia is a major producer and supplier of fossil fuels, such as crude oil and natural gas. In 2019, Russia accounted for 18 percent of global exports of coal and 13 percent of crude petroleum (the second biggest exporter of this commodity). Russia is also a major exporter of refined petroleum products and natural gas, accounting for respectively 12 and 20 percent of global exports. Petroleum is a vital component of the transportation sector, while natural gas accounts for over half of the cost of producing ammonia fertilizer; and prices of both energy commodities have increased due to the war.

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Figure 1: Black Sea region share in global trade.



Source: Chepeliev et al. (2023a).

Notes: Estimates of the global trade shares for food and agriculture correspond to the trade volumes in 2019; fertilizers trade is based on the value flows in 2019; trade in energy commodities represents volume shares for the 2021 reference year.

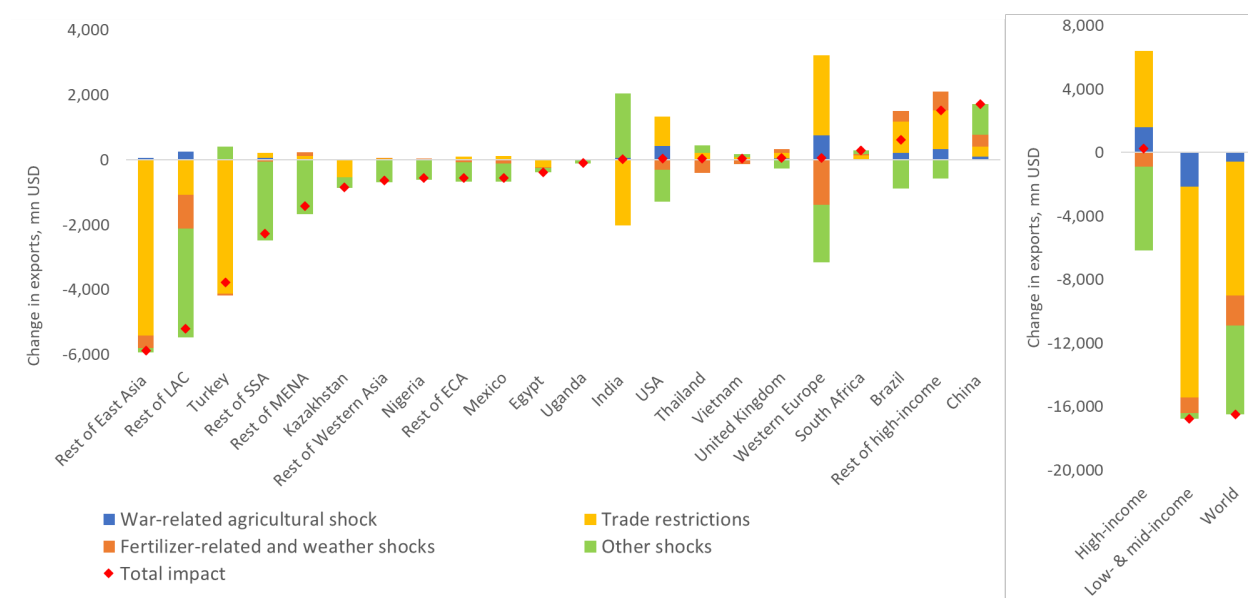
Apart from the direct commodity market disruptions, the impacts of sanctions against Russia, domestic policies that countries around the world have implemented in pursuit of food security after the war started and adverse weather events have further exacerbated the adverse implications of the war in Ukraine.

In a world of highly integrated global value chains, the interdependencies across countries and commodity markets play a major role in both transmitting the negative shocks as well as spreading the benefits of the policy responses. It is important to properly account for these complex interactions when capturing the implications of market disruptions, such as the war in Ukraine, and understanding the impacts of potential policy measures.

The War-related Agricultural Shock Has Been Exacerbated by Indirect Effects

In a series of recent studies (Chepeliev et al., 2022; Chepeliev et al., 2023a; Chepeliev et al., 2023b), we developed a comprehensive computational framework to explore a set of policy scenarios that combine the impact of the war, sanctions and other disruptions, such as adverse weather events and export restrictions. The developed approach allows us to disentangle the impacts of various sets of shocks distinguishing between channels of impacts. The war in Ukraine, when combined with other disruptions in the commodity markets, leads to an overall reduction in agricultural trade. As estimated by the implemented modeling framework, global exports of grains and crops decline by around 1.2 percent, while exports of processed food drop by 0.4 percent. At the same time, rising agricultural commodity prices create incentives for agricultural exporters to expand production and replace some of the exports from the Black Sea region (Figure 2).

Figure 2: Change in agricultural and food exports across countries and regions, million \$2014.



Notes: Selected agricultural exporters are reported as individual countries or regions on the figure. Reporting of changes across composite aggregates on the right panel includes all countries/regions in the world. See Chepeliev et al. (2023a) for additional details on the methodological framework.

When decomposed across drivers of the trade impacts, the results suggest that at the global level, the contribution of agricultural trade restrictions and that of other shocks, such as energy price increases (indicated in yellow and green in Figure 2 respectively), is substantially more significant than the direct war-related agricultural shock (Figure 2). The latter substantially reduced exports from Ukraine (indicated by blue bars in Figure 2), however, these reductions are offset to a large extent by increasing exports from other countries, in particular, high-income regions. Agricultural export-restricting policies implemented by many developing countries in an attempt to ensure domestic food security, on the other hand, have a substantially higher

magnitude of impacts on global trade and are only partly offset by increasing exports from non-restricting countries (indicated by yellow bars on Figure 2). Increasing energy prices, fertilizer-related and weather shocks further adversely contribute to the global agricultural trade. When all these impact channels are combined, our results suggest that the direct disruption of the agricultural supply from Ukraine contributes less than 4% of the total reduction in global agricultural and food exports, while agricultural and fertilizer trade restrictions account for around 51%, followed by the energy-related shocks and sanctions (other shocks) (34%), and fertilizer-related and weather shocks (11%) (Figure 2).

When estimated changes in the trade value flows are translated to the calories supplied via international trade channels, the impact of the imposed trade restrictions is around 7–8 times larger than the impact of the agricultural supply shock in Ukraine. At the same time, while food supply disruptions in Ukraine have less adverse implications on global food exports compared to the applied trade restrictions, the geography of Ukraine's exports of grains and crops includes many low-income countries. Agricultural importers in Sub-Saharan Africa, such as Cameroon, Uganda, Yemen, Senegal, Niger and Tanzania, are the most vulnerable under the ongoing crises. These countries substantially rely on grain imports from the Black Sea region (Chepeliev et al., 2022) and they are also ranked among the bottom 25 least food-secure countries in the world according to the Global Food Security Index 2022 developed by The Economist.

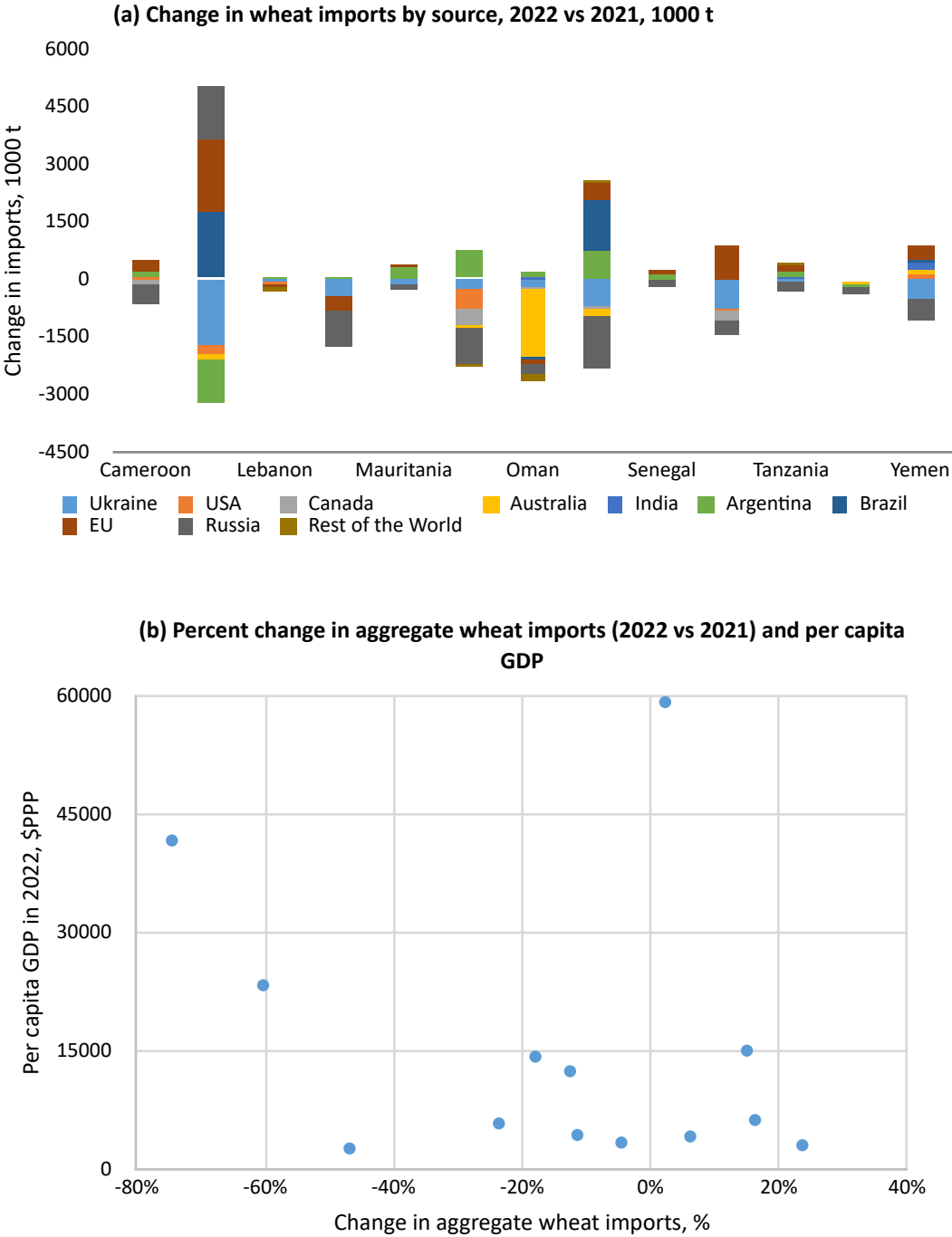
Trade and Agricultural Market Adjustments Have Helped to Smooth Out the Shock of the War

While direct disruptions to the supply of key agricultural commodities from Ukraine have been substantial, many countries managed to alleviate the adverse implications through adjustments in the sourcing of their imports. Take, for example, wheat, which exports from Ukraine have declined by around 42% in 2022 compared to 2021 (FAO, 2023). Many of the major importers of Ukrainian wheat managed at least partly to compensate for the lost source of supply (Figure 3a). For instance, Egypt, while losing substantial volumes of wheat imported from Ukraine increased its sourcing from Brazil, the EU and Russia expanding its total wheat imports by 15% (Figure 3b). In the case of Saudi Arabia, reductions in wheat imports from Ukraine and Russia have been offset by an expansion in sourcing from Brazil and Argentina, while in the case of Yemen, Tunisia and Cameroon, a substitution towards wheat imports from the EU has been observed (Figure 3b). In addition, the two most impacted countries (from the analyzed group) that experienced over 50% declines in wheat imports – Oman and Libya – are relatively resilient economies from the food security perspective, as both have per capita GDP above \$20,000 PPP (Figure 3b).

Food price inflation, however, is another important food security aspect of the war in Ukraine that has put a major burden on households worldwide. While many countries managed to adjust their trade patterns by importing wheat and other food commodities from alternative sources, such adjustments have not been cost-free and put a disproportionate toll on the lower-income households who allocate a substantial share of their income to food consumption. In the case of Egypt, for example, – a country that managed to successfully adjust its wheat supply routes

(Figure 3a) – food inflation during 2022 has reached 31% and many poor households had to reduce the consumption of unsubsidized foods, such as meat, fish and dairy, leading to a reduction in the quality of diets (Abay et al., 2023).

Figure 3: Trade response to Ukrainian wheat import losses in selected countries.



Source: Developed by the author based on FAO (<https://www.fao.org/faostat/en/>) and World Bank (<https://data.worldbank.org/indicator/NY.GDP.PCAP.PP.CD>) data.

EU Policy Efforts Have Helped Ukrainian Agricultural Exports But More Could Be Done

The Russian invasion of Ukraine has taken a major toll on Ukrainian agriculture. Only during the first year of the war, it has been estimated that the total agricultural losses, including the foregone revenue and increasing production costs, amounted to over 34 billion USD (Martyshchuk et al., 2023). After the beginning of the war, Ukraine's Black Sea ports have been blocked or occupied not allowing for any shipments to go out. The Black Sea grain initiative brokered by the United Nations and Türkiye in August 2022 had a positive impact on expanding grain exports but after the Russian withdrawal from the deal in July 2023, the maritime route of grain exports became blocked again.

The share of Ukraine's exports of goods to the EU has increased from 24% in 2012 to around 40% in recent years. Such an expansion in trade has been facilitated by the EU-Ukraine Association Agreement from November 2014 and the Deep and Comprehensive Free Trade Area (DCFTA) which has been provisionally applied since January 2016. The agreement has eliminated the majority of tariffs on trade in goods, improving the competitiveness of Ukrainian businesses in the EU and vice versa. However, some of the key agricultural exports from Ukraine, including wheat, corn, honey, sugar, meat and dairy products, have been subject to tariff rate quotas, when a specific volume of imports is allowed at a low (or zero-tariff) rate, while anything above this volume is subject to a much higher (often restrictive) import tariff.

To support the exports from Ukraine, in May 2022, the EU launched the so-called Solidarity Lanes initiative. The agreement establishes alternative logistical routes for Ukrainian producers – by trucks and railroad, as well as through ports at the Danube River – including agricultural exporters. In addition, all imports from Ukraine have been granted duty-free access. As a result, between May 2022 and January 2024, Solidarity Lanes allowed Ukraine to export around 64 million tonnes of grains, oilseeds and related products (EC, 2024), substantially supporting Ukraine's agricultural exporters during the war times. Such a policy move, however, has not been without complications. Stakeholders in five EU countries – Poland, Romania, Hungary, Slovakia, and Bulgaria – argued that agricultural imports from Ukraine have been suppressing domestic prices and adversely impacting farmers. The EU attempted to compensate farmers but this was not sufficient and selected countries, pressured by the farmers' protests, have introduced unilateral bans on the imports of Ukrainian grains, challenging the EU-wide solidarity with Ukraine. While selected EU countries, the European Commission and the Ukrainian government are looking for a solution to this issue, one point seems obvious. Any major disruptions of the agricultural supply from Ukraine, while they might come at a moderate cost to selected groups in the EU, put a disproportionate toll on the global agricultural markets, hurting lower-income consumers in the import-dependent countries, as well as Ukrainian producers, while benefitting Russia and its political interests.

Key Takeaways

Several crucial policy insights follow from the analysis. *First*, when analyzing the impacts of agricultural market disruptions, such as from the war in Ukraine, it is important to consider a broad context of the ongoing policies, climate impacts and market disruptions. In many cases, the latter substantially exacerbates the direct impacts of the disruption.

Second, with rapidly increasing food prices, some countries have started imposing agricultural trade restrictions to protect domestic consumers. Such actions should be avoided, as they only further jeopardize global food security. Emergency restrictions, if deemed necessary, should be targeted, transparent, proportionate, temporary, and in alignment with the World Trade Organization rules. They should also account for the impact on other countries, especially the least developed.

Third, while direct disruptions to the supply of key agricultural commodities from Ukraine have been substantial, many countries managed to avoid major food security implications through adjustments in the sourcing of their imports. In this regard global value chains and agricultural trade served as an important adaptation mechanism.

Fourth, while trade reallocation helped to partly resolve the food supply constraints, the consequences of the war in Ukraine have put disproportionate pressure on lower-income households in developing countries, who spend a large share of their budget on food and energy. Buffering the impacts on poor households via targeted support measures, such as direct lump-sum payments, is a crucial step to ease the burden on the most vulnerable.

Finally, as the war continues and Ukraine's Black Sea routes are threatened, transportation of Ukraine's essential agricultural commodities substantially relies on collaboration with the European Union. Any major disruptions of these supply chains, while they might come at a moderate cost to selected groups in the EU, primarily disrupt global agricultural markets, hurting lower-income consumers in the import-dependent countries, as well as Ukrainian producers, while benefitting Russia and its political interests. Considering Ukraine's strong aspirations for EU membership, it is inevitable that acceptable ways of integrating Ukraine's agriculture into the European markets would need to be developed. While this might be a challenging task requiring compromises on both sides, now is a pivotal moment to comprehensively address this question and develop the policy solutions that would resolve both the short-term challenges, as well as support the long-term integration of Ukraine into the European agricultural markets.

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