

# The Crisis in Ukraine

Implications of the war for  
global trade and development



## About the WTO

The World Trade Organization is the international body dealing with the global rules of trade between nations. Its main function is to ensure that trade flows as smoothly, predictably and freely as possible, with a level playing field for all its members.

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# Executive summary

**The crisis in Ukraine has created a humanitarian crisis of immense proportions and has also dealt a severe blow to the global economy.** The brunt of the suffering and destruction are being felt by the people of Ukraine themselves but the costs in terms of reduced trade and output are likely to be felt by people around the world through higher food and energy prices and reduced availability of goods exported by Russia and Ukraine. Poorer countries are at high risk from the war, since they tend to spend a larger fraction of their incomes on food compared to richer countries. This could impact political stability.

**From a macroeconomic perspective, higher prices for food and energy will reduce real incomes and depress global import demand.** Sanctions will impose economic costs on not only Russia directly but also on its trading partners. Besides Russia and Ukraine, depressed gross domestic product (GDP) will probably be seen mostly in Europe given the region's geographic proximity and its dependence on Russian energy. Trade costs will rise in the near term due to sanctions, export restrictions, higher energy costs and transport disruptions. As a result, the impact the war will have on world trade in 2022 could be greater than the impact on global GDP.

**While shares of Russia and Ukraine in world trade and output are relatively small, they are important suppliers of essential products, notably food and energy.** Both countries accounted for 2.5 per cent in world merchandise trade and 1.9 per cent in world GDP in 2021. Yet they supplied around 25 per cent of wheat, 15 per cent of barley and 45 per cent of sunflower products exports in 2019.<sup>1</sup> Russia alone accounted for 9.4 per cent of world trade in fuels, including a 20 per cent share in natural gas exports. Many countries are highly dependent on food imports from Russia and Ukraine. For example, more than half of wheat imports in Egypt, the Lebanese Republic and Tunisia come from Russia and Ukraine. Other countries are more dependent on imports of fuels from Russia, such as Finland (63 per cent) and Turkey (35 per cent).

**Russia and Ukraine are also key providers of inputs into industrial value chains.** Russia is one of the main suppliers globally of palladium and rhodium, key inputs in the production of catalytic converters

in the automotive sector and the manufacture of semiconductors. Semiconductor production also depends to a substantial extent on neon supplied by Ukraine, which further provides a number of low-tech products to the European automobile value chain, such as wire harnesses. Prolonged disruptions in the supply of these goods could harm the recovery of automobile manufacturing.

**Sanctions are already having a strong impact on Russia's economy, with possible medium to long-term consequences.** Disconnecting Russian banks from the SWIFT settlement system and blocking Russia's use of foreign exchange reserves have triggered a sharp depreciation of the rouble, reducing real incomes in the country. Many international firms are also abandoning the Russian market. Oil and gas exports have yet to be strongly affected by the sanctions, but the crisis could accelerate the global transition towards greener energy sources.

**Longstanding economic relationships have been disrupted by the war and by the sanctions imposed in its wake.** WTO economists have simulated various scenarios to illustrate the channels through which trade could be affected and to explore possible short-run and long-run effects. Global trade growth is projected to slow by up to 2.2 percentage points in 2022. Longer term impacts could also be large and consequential. There is a risk that trade could become more fragmented in terms of blocs based on geopolitics. Even if no formal blocs emerge, private actors might choose to minimize risk by reorienting supply chains. This could reduce global GDP in the long run by about 5 per cent, notably by restricting competition and stifling innovation.

**The WTO has an important role to play in mitigating the negative effects of the crisis and in rebuilding a post-war global economy.** Keeping markets open will be critical to ensure that economic opportunities remain open to all countries. This will be especially true in the post-war period, when businesses and families will need to repair their balance sheets and rebuild their lives. Through its importance for international trade and its monitoring, convening and other functions, the WTO is central to ensuring that international trade continues to serve billions of people across the world.

## Strategic context

**The war in Ukraine is costly and dangerous for the world. It adds new shocks to a still-fragile global economy, alongside continuing impacts from the COVID-19 pandemic.** For

Ukraine, the human and economic costs associated with the war are enormous and growing. According to a report by the United Nations Development Programme (UNDP, 2022), the Ukraine Government estimates physical assets worth at least US\$ 100 billion have been destroyed. The UNDP (2022) estimates that the war has caused 50 per cent of Ukrainian businesses to shut down completely, while the remaining 50 per cent are forced to operate well below capacity. The UNDP (2022) estimates that should the war deepen and endure, up to 90 per cent of the population of Ukraine could be facing poverty and vulnerability to poverty.

**Even before the war, the post-pandemic recovery was divergent.** Rich and some emerging economies were converging with pre-pandemic output trends, thanks to abundant fiscal capacity and access to vaccines, while poorer countries had registered bigger growth shortfalls, with many facing debt distress. The trade shocks ignited by the war will be felt everywhere, but they risk exacerbating this divergence in economic, social and development prospects. **Attaining the Sustainable Development Goals will take longer, cost more and be harder to achieve.**<sup>2</sup>

**The WTO's economists' initial projections for Ukraine indicate that its GDP could decline by as much as 25 per cent compared to the**

**pre-war outlook, depending on the extent of destruction.**<sup>3</sup> Beyond the daily loss of its physical capital stock, Ukraine is seeing growing gaps in its balance of payments and declines in tax revenues. The International Monetary Fund (IMF) estimates that Ukraine's gross external financing needs would amount to US\$ 4.8 billion. In addition, the Centre for Global Development estimates the cost of supporting Ukrainian refugees (i.e. with housing, food, medical expenses, schooling, etc.) to be around US\$ 30 billion a year for welcoming nations.<sup>4</sup>

**For dozens of developing and least-developed countries, millions of people are in danger of hunger and malnutrition.** There is a risk of cascading export restrictions that make food price increases worse, as happened in 2007-2008, and then again in 2010-2011. International cooperation on trade can help to mitigate risks of poverty, hunger and malnutrition, and possible socio-political unrest.

**It is important for the international trade and development community to better understand, analyse and monitor the nature, magnitude and spill-over effects of the war on trade and development for developing countries and vulnerable segments, and to assist countries in coordinating trade policy responses.** Only with a clear understanding of these impacts, will it be possible to create robust supply chains, to limit further trade and development losses and to avert deepening inequalities between developed and developing countries.

## Endnotes

<sup>1</sup> Unless otherwise mentioned, all trade data in this note are based on UN Comtrade data for 2019 to avoid distortionary effects of the COVID-19 pandemic.

<sup>2</sup> See <https://unctad.org/news/ukraine-war-risks-further-cuts-development-finance>.

<sup>3</sup> Other calculations by IMF staff based on real GDP contractions in other war-torn countries such as Iraq, the Syrian Arab Republic and Yemen projects annual output contraction to be 25-35 per cent.

<sup>4</sup> See <https://www.cgdev.org/article/new-analysis-hosting-ukrainian-refugees-could-cost-nations-around-world-estimated-30-billion>.

# 1 Analytical assessment of the trade and economic effects

## Global macroeconomic and trade effects

GDP forecasts for 2022 are certain to be downgraded in light of the Russia–Ukraine war. Output in the war zone will be directly reduced, while economic sanctions will impose costs on both Russia and its trading partners. Higher prices for food and energy will depress real incomes and reduce consumption and investment worldwide, which will, in turn, lower global import demand. A handful of food and energy exporters may benefit from these price movements, but for most countries and for the global economy they are a net negative.

The IMF's most recent forecast from last January predicted that global GDP would increase by 4.4 per cent at purchasing power parity in 2022 (IMF, 2022), but a recent estimate from Capital Economics on 16 March had global output growing just 3.2 per cent this year.<sup>1</sup> There is an unusually high degree of uncertainty associated with this projection, which is based on limited data and strong assumptions. As a result, it should be interpreted with caution.

Using a global economic simulation model, WTO Secretariat staff project that the crisis and related policies could lower global GDP growth by 0.7–1.3 percentage points, bringing growth to somewhere between 3.1 per cent and 3.7 per cent. The model also projects that global trade growth this year could be cut almost in half, from the 4.7 per cent the WTO forecasted last October<sup>2</sup> to between 2.4 per cent and 3 per cent.

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**Higher prices for food and energy will depress real incomes and reduce consumption and investment worldwide, lowering global import demand.**

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Some regions will be more strongly affected by the war than others. Europe, being the main destination region for both Russian and Ukrainian exports, is likely to experience the brunt of the economic impact.<sup>3</sup> Reduced shipments of grains and other foodstuffs will also boost prices of agricultural goods, with negative consequences for food security in poorer regions.

Beyond these first-order effects, economic sanctions could cause major economies to move toward 'decoupling' based on geopolitical considerations, with the goal of achieving greater self-sufficiency in production and trade. This second-order effect would ultimately be a lose-lose proposition, as it would lower long-run economic growth by restricting competition and stifling innovation.

## Breaking down the trade impact by trading partner, region and product

Russia and Ukraine play a relatively minor role in the global economy, with exceptions in certain key sectors. Russia's share in world merchandise exports in 2021 was 2.2 per cent, while its share in world GDP was 1.7 per cent. Meanwhile, Ukraine accounted for 0.3 per cent of world exports and 0.2 per cent of world GDP. Both countries trade predominantly with Europe and Asia (see Figures 1 and 2).

### *The agricultural and fuel sectors: threats and impacts to global food and energy security*

Russia and Ukraine are both large agricultural exporters, especially of grains (wheat, maize, barley) and sunflower products (see Figure 3). Exports from Black Sea ports have been severely disrupted. Africa and the Middle East are the most vulnerable regions, as they import over 50 per cent of their cereal needs from Ukraine and/or Russia.

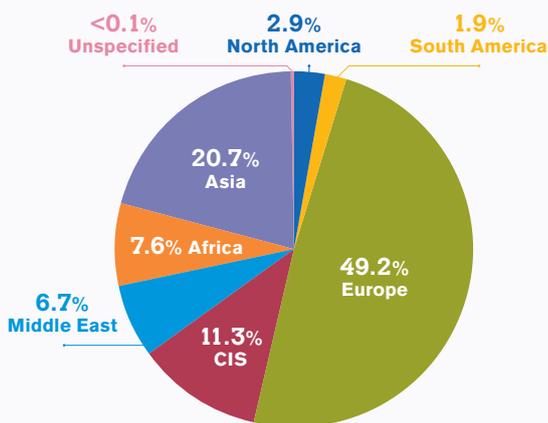
In total, 35 countries in Africa import food and 22 import fertilizer from Ukraine, Russia or both. Some depend heavily on both countries for key staples such as wheat (see Box 1). Ukraine's ports are closed due to the war, preventing existing grain supplies from being exported, and in the absence of a swift ceasefire that permits farmers to return to fields, the disruption to spring sowing will lower future production significantly.

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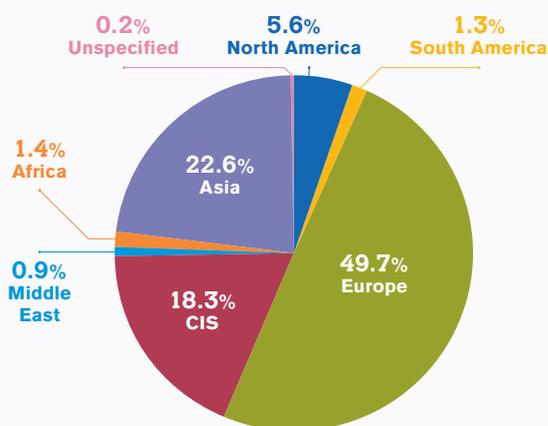
FIGURE 1

**Merchandise exports and imports of Ukraine by region, 2021**

Exports:



Imports:

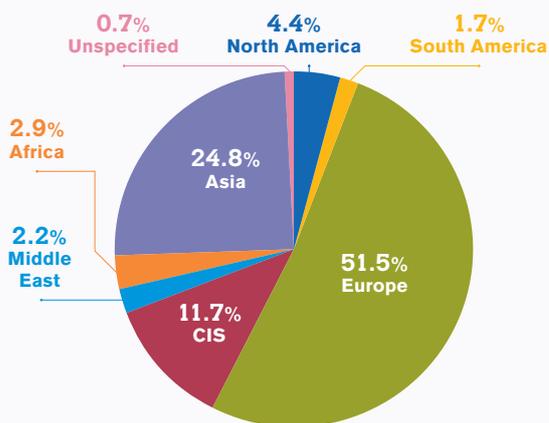


Source: WTO Secretariat calculations based on national customs statistics accessed through Trade Data Monitor.

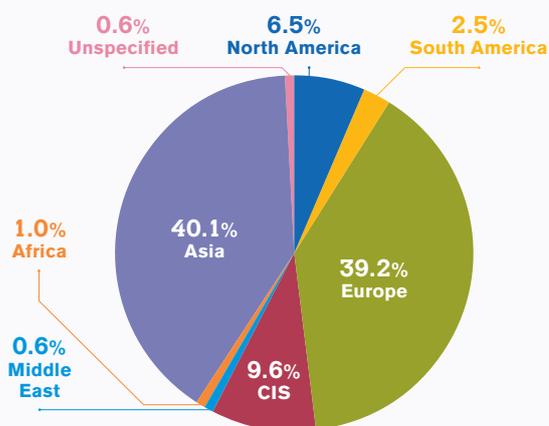
FIGURE 2

**Merchandise exports and imports of Russia by region, 2021**

Exports:



Imports:

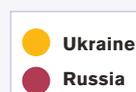


Source: WTO Secretariat calculations based on national customs statistics accessed through Trade Data Monitor.

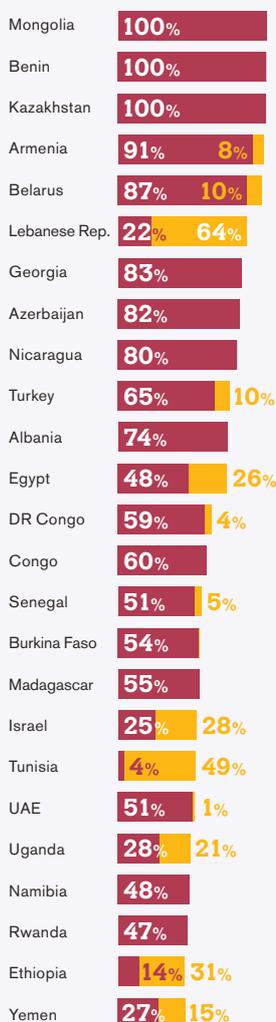
FIGURE 3

Share of Russian and Ukrainian imports in total imports of selected commodities in the agricultural and fuel sectors, 2019

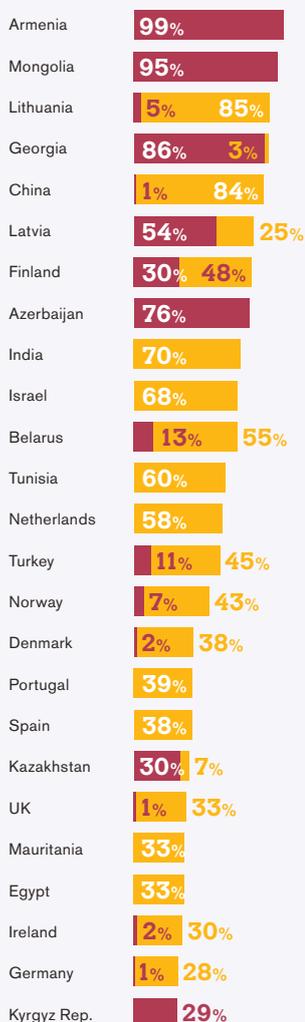
(Percentage share)



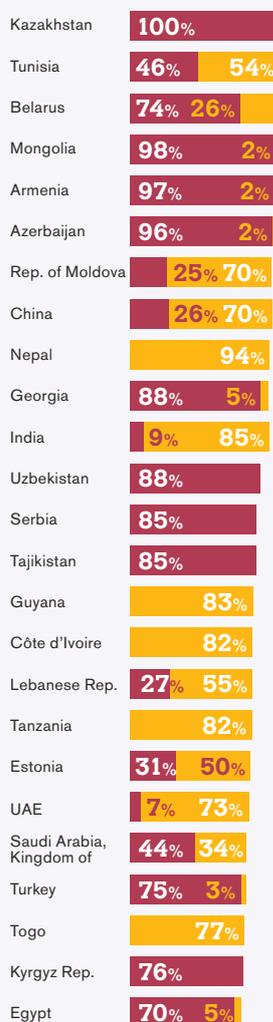
Wheat:



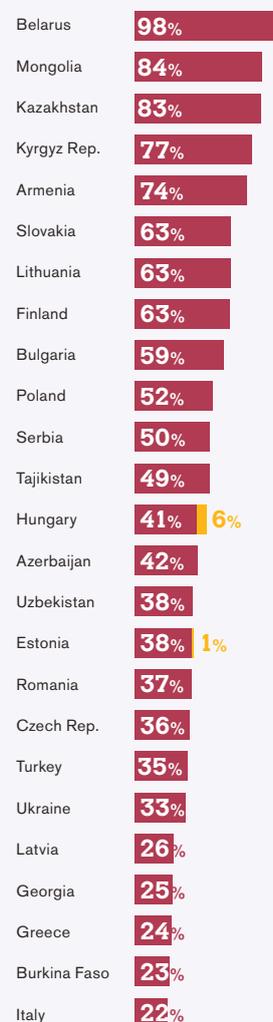
Maize (corn):



Sunflower oil:



Fuels:



Source: WTO Secretariat calculations based on UN Comtrade data for 2019.

Current price hikes (25-30 per cent for wheat, 35 per cent for soybeans) will hurt net food importing countries, particularly low-income ones. Food and energy account for a large share of the consumption basket of developing economies, and in particular poorer households within them. The current crisis is likely to exacerbate international food insecurity at a time when food prices are already historically high due to the COVID-19 pandemic and other factors.<sup>4</sup> According to the Food and Agriculture Organization of the United Nations (FAO, 2021), low-income food deficit countries already saw their food bill rise 20 per cent in 2021,

**Reduced availability of fertilizers would impact farmers through smaller crop yields and lower quality output, not just in Ukraine but worldwide.**

## BOX 1



Wheat harvest, Krasne, Ukraine.

### Countries depending heavily on wheat from Russia and Ukraine

In 2019, the combined share of Russian and Ukrainian wheat in total wheat imports was:



87%

Lebanese Republic



73%

Egypt



53%

Tunisia



52%

United Arab Emirates

Ukraine alone accounted for 49 per cent of Tunisia's wheat imports and 31 per cent of Ethiopia's.

a US\$ 120 billion increase including US\$ 52 billion for Sub-Saharan Africa. The cost of providing food aid to people affected by the crisis and natural disasters has increased with the price of food, and the World Food Programme has appealed for additional financial support.

Other crops such as corn and barley are predominantly used for animal feed, and so have less immediate food security implications. However, higher prices for these grains would eventually lead to higher livestock and meat prices in rich countries. There could be further spill-over effects in other animal and vegetable products, possibly even beer.

**Prices will also increase for crops that are not exported by Russia and Ukraine but that can serve as substitutes, as countries attempt to fill the gap in cereal imports with alternatives.**

Prices will also increase for crops that are not exported by Russia and Ukraine but that can serve as substitutes, as countries attempt to fill the gap in cereal imports with alternatives. The price of rice has increased by 12 per cent since the beginning of the year while the price of oats has risen by 8 per cent. This effect on the broader agricultural sector is aggravated as the price of fertilizer is also surging because Russia is the largest supplier with a market share of around 15 per cent.

Russia has announced that it will suspend fertilizer exports, but it is not clear whether the ban covers all countries or just those actively opposing the war in Ukraine. Reduced availability of fertilizers would impact farmers through smaller crop yields and lower quality output, not just in Ukraine but worldwide. Importantly, fertilizer prices in early 2022 were already high, the result of high energy prices (natural gas in particular plays a pivotal role in the production of nitrogenous fertilizers) and supply chain disruptions (including export restrictions by some key exporters).<sup>5</sup>

High food prices will further be reinforced by rising energy prices, which raise transport costs. The price of Brent crude oil rose from around US\$ 78 per barrel at the start of 2022 to US\$ 130 per barrel on 8 March before falling back to US\$ 110 per barrel in mid-March.

Russia accounts for 9.4 per cent of world trade in fuels, including a 20 per cent share of world natural gas exports. Several European countries stand out as being highly dependent on Russian fuel exports (see Figure 3), including Finland (63 per cent) and Turkey (35 per cent).

Large European economies are exposed to a lesser yet still significant degree:

- Italy 22 per cent
- Germany 17 per cent
- France 12 per cent
- United Kingdom 12 per cent

In sum, disruptions of food markets are already having a significant impact on global food security, particularly through prices for grains and oilseeds. As seen with the Arab Spring and food riots elsewhere, food price increases can create deeper political instability. The supply situation will need to be monitored carefully to avoid a wider tragedy.

### *Manufacturing: risks to industrial supply chains*

In addition to the agricultural and energy sectors, Russia and Ukraine also provide certain key inputs to industrial value chains. Russia accounts for 4.6 per cent of global iron and steel exports. Ukraine is responsible for 2.2 per cent of steel shipments globally, but they are more dominant in some markets (see Figure 4).

Trade between Russia and Ukraine had already fallen significantly since 2014, as Ukraine shifted to European value chains in sectors such as energy, agriculture, aviation and automobiles (Hartog *et al.*, 2020). According to Reuters, automobile companies have invested more than US\$ 600 million in 38 plants in Ukraine (Amann and Care, 2022). These companies mostly produce relatively simple inputs like wire harnesses, which hold together electric cabling in cars.

Value chain integration makes both Ukraine and its trading partners vulnerable to shocks. Most Ukrainian factories have shut down since the start of the crisis

and pre-crisis transportation has been disrupted. Many cargo ships have diverted from Ukrainian ports to other destinations (Constanța, Romania; Tripoli, Lebanese Republic; Piraeus, Greece) due to increased risk. While the ensuing interruption in the supply of inputs from Ukraine has led to a temporary idling of several car plants in Germany, it is likely that manufacturers can adapt relatively quickly by shifting production to plants outside the affected region.<sup>6</sup>

The situation is likely different for raw materials exports and, in particular, metals (palladium, rhodium) or chemical gases (neon, krypton) used in the automotive and semiconductor industries. Palladium and rhodium are needed to produce catalytic converters. Russia is the largest producer of palladium, supplying 26 per cent of global import demand in 2019, with higher shares in the United States (43 per cent), Japan (45 per cent) and the Republic of Korea (38 per cent, see Figure 4). Other automobile producing countries are also exposed, including China (29 per cent) and Germany (26 per cent).

Russia is also a key producer of rhodium, meeting 7 per cent of global demand with high shares for Italy (34 per cent), the Republic of Korea (23 per cent) and Switzerland (20 per cent). Ukraine supplies more than 90 per cent of US semiconductor-grade neon, critical for lasers used in chipmaking (Yoon, 2022). The gas, a byproduct of Russian steel manufacturing, is purified in Ukraine.

Disruptions in the supply of these inputs could hit car producers at a time when the industry is just recovering from a shortage of semiconductors. In response to the Crimea crisis of 2014, companies began to diversify sourcing and to increase stockpiles. In addition, replacements for these gases can be used in certain instances. However, industry experts suggest that disruptions will show before alternative suppliers can ramp up production sufficiently to fill a gap in exports from Russia and Ukraine (Nuttall, 2022).

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**Ukraine supplies more than 90 per cent of US semiconductor-grade neon, critical for lasers used in chipmaking.**

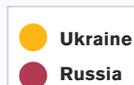
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### *Detailed exposure across countries and products and alternative suppliers*

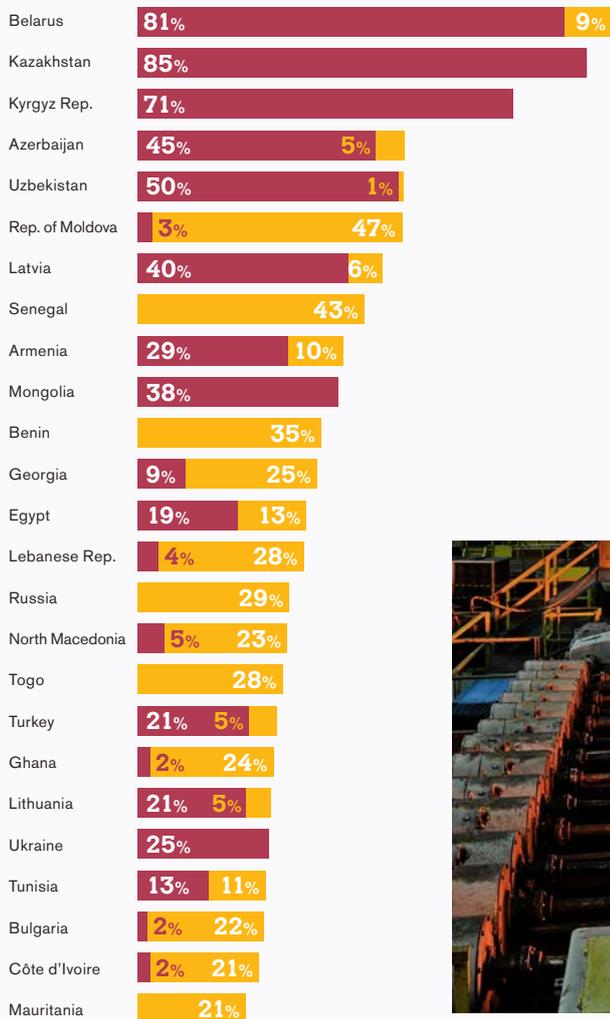
In order to map the potential impacts to individual countries and products more broadly, import shares are visualized in a heatmap (see Figure 5). The horizontal axis shows economies organized by region, while the vertical axis shows product categories. The colour variation represents the percentage share of products

FIGURE 4

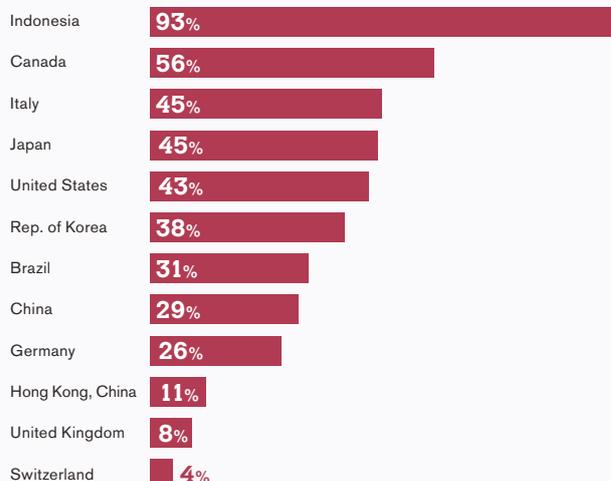
### Share of Russian and Ukrainian imports in total imports of selected commodities in the manufacturing sector, 2019



#### Iron and steel:



#### Palladium:

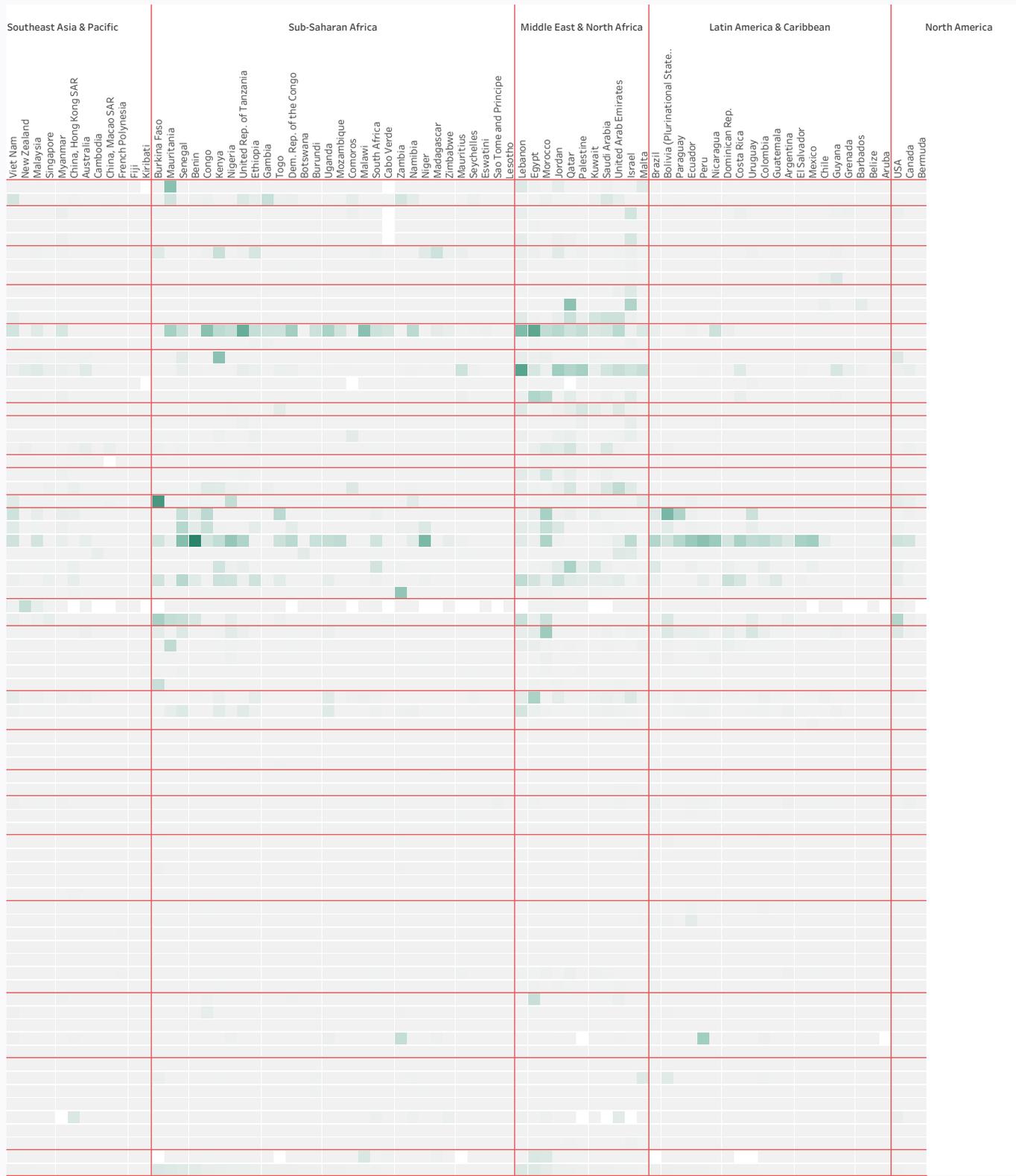


Source: WTO Secretariat calculations based on UN Comtrade data for 2019.

imported from Russia and Ukraine by individual economies. The darker the colour, the higher the share of imports from Russia and Ukraine. Besides confirming the overall picture discussed above, the heatmap provides further details on how a country and industry may depend on Russia and Ukraine. For instance, the chart provides the following additional insights:

- Potential direct impacts are greatest in agricultural products and resource-based products, less so in manufactured goods.
- This is also true for Central Asian and Eastern European economies. However, their dependence is much broader and much larger in these sectors.
- Supply shortages of cereals, vegetable oils and fertilizers might affect economies across many regions.
- Against the overall pattern, certain economies may face problems in specific products with high dependency on Russia and Ukraine (i.e. railway equipment for Mongolia, fish for Burkina Faso, wood for China, etc.).





Source: UN Comtrade. The designations employed and the presentation of material in Figure 5 do not imply the expression of any opinion whatsoever on the part of the WTO concerning the legal status of any country, area or territory or of its authorities, or concerning the delimitation of its frontiers.

WTO research is currently attempting to identify products as potential bottlenecks in global supply chains. These products are exported by only a small number of countries or have extremely high geographic market concentration (e.g. certain semiconductors, mobile phones, soy beans).

Among these products, Russia or Ukraine are major suppliers only for rhodium and crude sunflower oil. This means that for other products over the medium-term alternative suppliers should be able to fill in gaps in the market caused by decreased supply from Russia and Ukraine. However, adaptation takes time, and short-term supply disruptions could force some countries to do without these products for a time or be forced to pay exorbitant prices (see Table 1).

As mentioned above, an issue with alternative suppliers, especially for food items, is that Russia is also a major supplier of fertilizer, with potentially large ramifications for crop yields globally. In addition, the foreseeable substitution of other cereals for wheat drives up prices across the board, so that farmers have less of an incentive to switch crops. For more processed goods, such as wire harnesses, it is easier to relocate production, since multinationals have plants outside the affected region that can increase production.



Farmland in western Ukraine.

TABLE 1

**Examples of alternative suppliers for selected products based on their current export market shares**

<b>Product (market share)</b>	<b>Alternative supplier</b>
<p><b>Wheat</b> (25 per cent combined global market share for Russia and Ukraine)</p>	<ul style="list-style-type: none"> <li>▪ United States</li> <li>▪ Canada</li> <li>▪ France</li> <li>▪ As well as regional hubs such as Australia and Argentina</li> </ul>
<p><b>Sunflower products</b> (45 per cent combined global market share, including a 73 per cent share for crude sunflower oil)</p>	<ul style="list-style-type: none"> <li>▪ No other large exporters exist with market shares to rival Russia and Ukraine</li> <li>▪ The next biggest exporters are Romania, Bulgaria, Hungary and France (all with market shares close to 5 per cent)</li> <li>▪ Sunflower products are exported by more than 140 countries, albeit in small quantities</li> </ul>
<p><b>Fertilizer</b> (20% combined global market share including Belarus)</p>	<ul style="list-style-type: none"> <li>▪ Major alternative suppliers include China and Canada</li> <li>▪ Morocco, Germany, Kingdom of Saudi Arabia and Egypt are also important regional producers</li> </ul>
<p><b>Palladium</b> (26 per cent combined global market share)</p>	<ul style="list-style-type: none"> <li>▪ Main alternative suppliers include South Africa and United States</li> </ul>

**Economic impact of sanctions on Russia**

Financial sanctions, such as blocking Russian use of foreign exchange reserves and disconnecting certain Russian banks from the SWIFT settlement system, have already produced a sharp depreciation of the rouble, reducing its purchasing power. Many international firms are retreating from the Russian market, while bans on trading in Russian sovereign debt have left the country isolated from international capital markets. According to

private sector forecasts, Russia's economy will contract significantly this year (by at least -7 per cent according to J.P. Morgan<sup>7</sup>) putting a significant burden of the sanctions on private households in Russia.

A number of countries have started to implement bans on Russian oil and gas exports. The ultimate impact of these measures is unclear, given the fungible nature of these commodities in global markets. They may lead to a reshuffling of supplies in the short run, with a limited impact on global output. Over the long term, reduced energy exports from Russia could be offset by oil production in other countries and greater reliance on renewable energy.

Some Russian banks and companies involved in the oil trade (e.g. Sberbank, Gazprom) have yet to be banned from the SWIFT system. In theory, these firms can still process payments relating to energy exports, but many international traders may still be reluctant to deal with them. Russian companies could also use China's Cross-Border Interbank Payment System (CIPS), but this only applies to renminbi-denominated transactions. Individuals (not corporations or banks) may be able to use exchange houses, but this is extremely costly and not adapted to large transactions. Finally, Russia could resort to barter trade with some trading partners, but this would be extremely costly and highly inefficient.

Although fuels themselves have not been touched significantly by sanctions, drilling technology has been targeted, which could raise the cost of production of Russian energy. Increases in Russian oil and natural gas prices are expected to raise euro-zone inflation by 1.5 per cent in 2022 and shave up to 1 per cent off GDP growth.<sup>8</sup> Replacing Russian oil and natural gas supplies with alternative energy sources may not be possible in the short run, but the crisis may provide additional impetus to speed up the green transition to reduced reliance on fossil fuels.

With regard to commercial sanctions, a number of countries have proposed removing Russia's most-favoured-nation (MFN) status. It is not yet clear what this would mean in terms of applied tariff rates levied at the border. Currently, the United States only applies a 'general' non-MFN duty rate to the Democratic People's Republic of Korea, at 37 per cent (against an average MFN rate of 4 per cent).

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## Many international firms are retreating from the Russian market, while bans on trading in Russian sovereign debt have left the country isolated from international capital markets.

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### Effects of the crisis on world trade and output from simulations

WTO economists have run simulations assessing the global economic and trade effects of the crisis and sanctions as well as possible longer-term effects.<sup>9</sup> Five scenarios are explored (see Chapter 2 for a description):

- (1) direct effects of the war on Ukraine itself
- (2) impact of various sanctions on Russia
- (3) impact of a reduction in aggregate demand around the world
- (4) possible imposition of export restrictions on wheat and cereals
- (5) long-term impact of a possible disintegration of the global economy into two blocs ('decoupling')

The simulations suggest that the economies involved will experience much larger impacts than the rest of the world as a result of destroyed infrastructure (Ukraine), reduced production and transport disruptions (Russia, Ukraine), as well as macroeconomic, financial and trade impacts of sanctions (Russia). There are potential longer-run challenges to global growth and cooperation, as there is an increased potential for the world to 'decouple' – break more clearly into competing spheres with much less economic and political cooperation resulting in lower long-term growth, which is explored in Scenario 5.

Direct effects of the crisis and related sanctions may reduce global GDP growth by up to 0.7 percentage points. These effects could be almost twice as large (reduction of GDP growth by 1.3 percentage points) once aggregate demand effects are taken into account, through reduced consumption and investment stemming from increased uncertainty and consumer price inflation (food and energy). This would bring down global GDP growth to somewhere between 3.1 per cent and 3.7 per cent, compared to the IMF's original prediction of 4.4 per cent for 2022 (IMF, 2022).

## Direct effects of the crisis and related sanctions may reduce global GDP growth by up to 0.7 percentage points.

In the simulation, the reduction of global trade (up to 2.2 per cent) would be larger than that of GDP because sanctions are directly targeted at international flows, and because relative price changes (international prices rising faster than domestic ones) may lead to some reallocation of consumption away from traded manufactured goods towards services. As a result, and as stated earlier, this would mean that the WTO trade forecast from last October of 4.7 per cent growth in merchandise trade volumes for 2022 could be cut almost in half to an approximate 2.4-3 per cent.

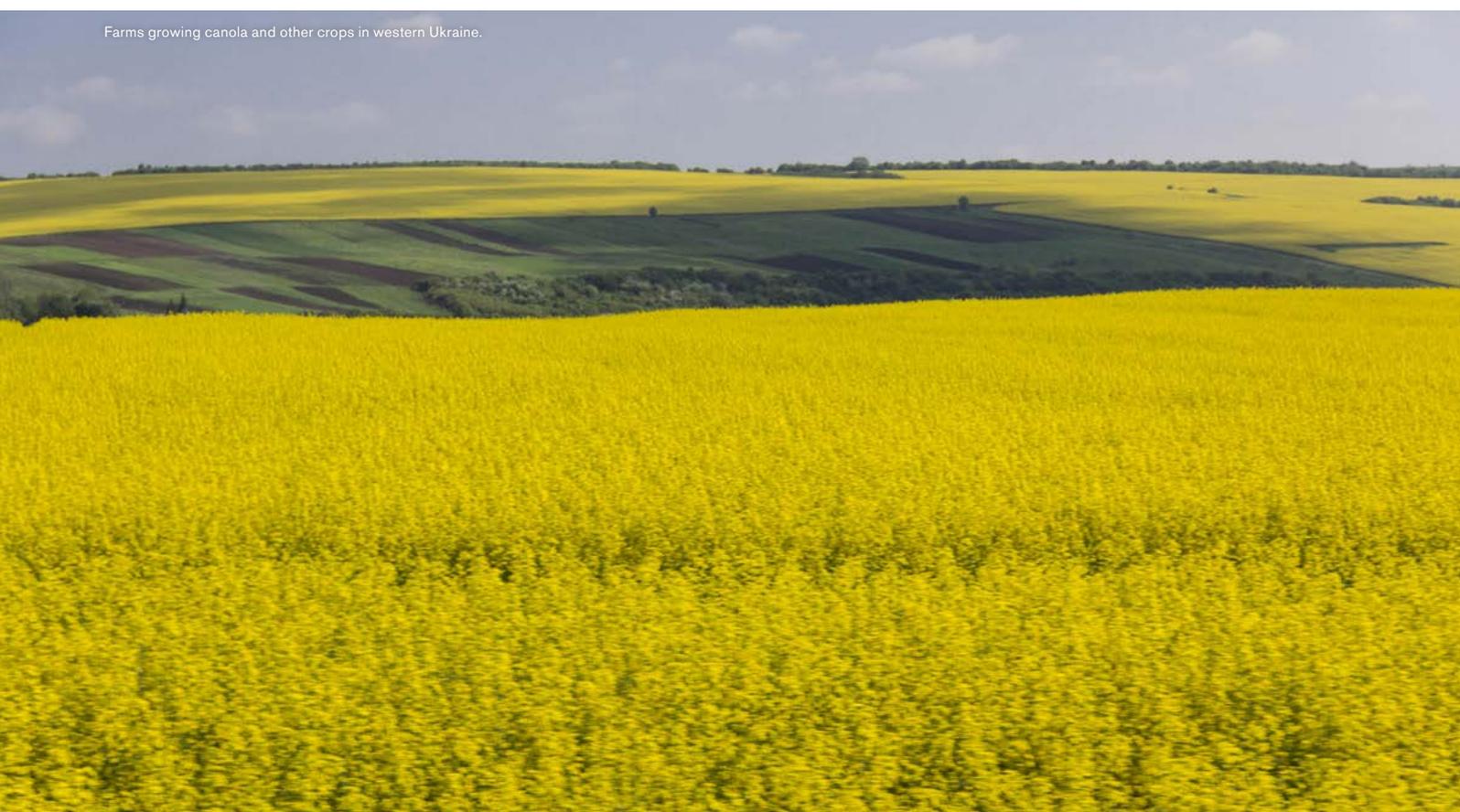
Some other key results from the simulations (further discussed in Chapter 2) are as follows:

- Projections for Ukraine indicate that its GDP could decline by as much as 25 per cent compared to the pre-crisis outlook, depending on the extent of wartime destruction. For Russia, the sanctions already in place look set to shrink GDP by about 5 per cent this year.

- Sanctions also come at a cost to those putting them in place. As a result, the European Union is projected to face GDP reductions of about 1.5 per cent and other Western countries of around 1 per cent.
- Even countries and regions not directly involved (i.e. not part of the war or imposing sanctions) could see their GDP reduced by 1-1.3 per cent (e.g. via increases in the risk premium and a reduction in business and consumer confidence).
- Given the importance of Russia and Ukraine as food exporters, the specific analysis of wheat shows that various export restrictions are projected to have an important effect on the global market, but in particular in certain importing regions, with countries in Sub-Saharan Africa possibly facing up to 50-85 per cent higher prices. A further cascading of export restrictions is projected to massively amplify such price volatility.
- In case of a longer-term disintegration of the global economy into two economic blocs ('decoupling'), global GDP would suffer by about 5 per cent in the long run, with larger losses being incurred by emerging economies.

The simulations should not be interpreted as forecasts but rather as an attempt to understand the impact the crisis in Ukraine has through different mechanisms. Implementing these scenarios requires a number of assumptions and, while conservative assumptions have been applied, these remain inherently uncertain and

Farms growing canola and other crops in western Ukraine.



further sensitivity analyses could be carried out going forward. As such, results should be seen as indicative only. In particular, Scenario 5 on decoupling has been for illustrative purposes only of the increasing costs to the world if discord and disintegration became more entrenched in the longer term. Thus, the actual costs of further decoupling are likely to be much higher, for at least three reasons:

- In the real world, a breakdown of global trade cooperation would go in disorderly ways and come with large transition costs, related to, for example, workers having to move between sectors, countries facing balance of payments crises and exchange rates collapsing, among other things. Such a hysteresis may leave permanent scars in the long run.
- The longer-term scenario considered here splits the world into two hypothetical blocs with only low trade barriers remaining within each bloc. This means that trade between blocs would be replaced by trade within blocs in this scenario. This would be an unlikely outcome for decoupling in the real world and thus actual costs would be much larger. There could be even more blocs as some countries might find it inconvenient to belong to either bloc while others may want to belong to more than one bloc. It could be a lot more complicated than indicated above, in which case, the costs would be exponentially higher.
- The model only considers the conventional specialization and technology spill-over benefits of trade. There are other benefits, such as scale economies, that would be foregone and are not taken into account here.

Our short-term results are consistent with those of other organizations. The Organisation for Economic Co-operation and Development (OECD, 2022), for example, projects a global GDP reduction of about 1 per cent – which is in the same range as the findings from the WTO Global Trade Model. More details on results obtained as well as on the scenarios and rationale for the underlying assumptions are provided in Chapter 2.

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## Projections for Ukraine indicate that its GDP could decline by as much as 25 per cent compared to the pre-crisis outlook, depending on the extent of wartime destruction.

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### Endnotes

- <sup>1</sup> See <https://www.capitaleconomics.com/clients/publications/global-economics/global-economics-update/world-gdp-forecast-revised-down-due-to-ukraine-war>.
- <sup>2</sup> See [https://www.wto.org/english/news\\_e/pres21\\_e/pr889\\_e.htm](https://www.wto.org/english/news_e/pres21_e/pr889_e.htm).
- <sup>3</sup> The ECB Chief Economist had initially suggested a 0.2-0.3 per cent negative effect on euro-zone growth, but some private institutions (such as Coface for example) are now suggesting a 1 per cent reduction in GDP growth, relative to the 4 per cent forecasted for 2022.
- <sup>4</sup> The US soft red winter (SRW) wheat export prices peaked at US\$ 395/tonne on 24 February and dropped down to US\$ 365/tonne on 25 February. Prices were around US\$ 330-350/tonne since the beginning of the year before the crisis, following a constant increase between July and November 2021 from US\$ 250/tonne up to US\$ 360/tonne.
- <sup>5</sup> For example, the export ban on phosphate put in place by China in October 2021, followed by Russia for ammonium nitrate since early February 2022.
- <sup>6</sup> One example for fast adaptation is Leoni, a major supplier of wire harnesses, which was able to restart production in Ukraine, albeit at a reduced capacity of 40 per cent. In addition, it has relocated production to its plants in Egypt, Morocco, Romania, Serbia, Slovakia and Tunisia (Eddy, 2022).
- <sup>7</sup> See <https://www.jpmorgan.com/insights/research/russia-ukraine-crisis-market-impact>.
- <sup>8</sup> See [https://www.wto.org/english/news\\_e/pres21\\_e/pr889\\_e.htm](https://www.wto.org/english/news_e/pres21_e/pr889_e.htm).
- <sup>9</sup> Simulations from the WTO Global Trade Model are presented as cumulative deviations from a hypothetical baseline equilibrium.

# 2 Scenario analysis of the income and trade effects of the Russia–Ukraine war

## Description of the five scenarios

The WTO Global Trade Model was used to generate projections on the possible global economic and trade impacts of the crisis in Ukraine.<sup>1</sup> Five scenarios were created based on the measures taken in response. A distinction was made between the expected effects in the short run and the possible effects in the long run.

The five scenarios describe different mechanisms through which global trade will be affected in the short run by the war and the sanction measures taken against Russia (see Table 2). The first three scenarios distinguish between the direct effects of the war on the Ukrainian economy (Scenario 1), the impact of the different sanctions (Scenario 2) and the impact of a reduction in aggregate demand around the world and falling consumer and business confidence (Scenario 3).

On account of the important role of Russia and Ukraine in the food sector and the already observed substantial increase in food prices, the possibility of cascading export restrictions is also modelled. These restrictions, similar to the ones observed in the world food price crisis in 2008, place additional strong upward pressure on food prices (Scenario 4).

Finally, to illustrate the risks from more permanent disintegration, the dynamic, long-run Scenario 5 is developed, which concludes in the formation of two economic blocs as described in Góes and Bekkers (2022).

## Simulation results

The simulation results are first summarized with the main findings, starting with the repercussions for global output and trade. The regional short-run effects are discussed, then the potential long-run effects. Results are reported relative to a baseline in the absence of the war.

*Global trade growth is projected to slow down substantially because of the direct and indirect effects of the war*

Figure 6 displays the projected percentage change in global real GDP and global real exports relative to the baseline. It shows that the direct effect of the war in Ukraine for the global economy is limited on account of its relatively small economy. However, when the effects of all the sanctions are included (Scenario 2(c)), the losses would increase to about 0.7 per cent of global GDP. This loss is the result of rising trade costs leading to reduced exports and rising energy and intermediate input prices, which in turn lead to a reduction in real income.

If, in addition to the direct effects of the war in Ukraine and the sanctions on Russia, there were also a reduction in consumption and investment in other regions, the GDP loss would double to about 1.3 per cent (Scenario 3). However, the size of this loss is still difficult to assess at the moment. A global reduction in consumption and investment demand would be caused by three phenomena: a loss of business and consumer confidence; contractionary monetary policies; and a rise in risk premia.<sup>2</sup>

The reduction in global trade is projected to be larger than the projected reduction in GDP. This is because most of the sanctions relate directly to trade flows and thus affect international trade flows more than domestic production. Altogether, the simulations project an adverse real trade effect of 2.2 per cent (Scenario 3), relative to the baseline. Combining this effect with the WTO trade forecast from October 2021 means that trade would still grow in 2022, given that baseline growth for this year was predicted at the time to be 4.7 per cent.<sup>3</sup>

TABLE 2

## Overview of simulated shocks

Impacted regions	Scenario	Description	Technical implementation	Size of the shock
<b>Ukraine:</b> Impact of the war	1	Destruction of production factors (land, capital) and reduced labour supply	Drop in the supply of land, capital and labour	-25%
		Rising transaction costs because of port disruptions and closures	Rising trade costs in Ukraine	25%
<b>Russia:</b> Sanctions by regions (Canada, European Free Trade Association, European Union, Japan, Rep. of Korea, United Kingdom, United States)	2(a)	Sanctions already announced/implemented	Various increases in trade costs	
		SWIFT sanctions on bank transactions	Rising transaction costs	10%
		Export restrictions on dual use and technological goods	Export tax on electronic equipment	100%
		Boycotts by western companies	Export tax on manufacturing and services	50%
		Rising transport costs, closure of airspace and boycotts by shipping companies	Productivity drop in the transportation sector	-50%
	Rising transport costs between East Asia and Europe	Productivity drop in the transportation sector	-5%	
2(b)	Increase of most-favoured-nation tariffs to higher tariff rates	Rising tariffs on Russian imports of merchandise goods (not fossil fuels)	32%	
2(c)	Sanctions by central banks and resulting financial distress in Russia	Drop in domestic absorption	-5%	
<b>All regions (except for Russia and Ukraine):</b> Global macroeconomic repercussions	3	Falling consumer and business confidence because of uncertainty	Drop in domestic absorption	
			Advanced economies	-0.50%
		Emerging economies	-1	
<b>All regions:</b> Food export restrictions and release of food stockpiles	4	Imposition of export restrictions on food by Russia and Ukraine (4(a)) and also by developing countries (4(b))	Rising export taxes on wheat and other cereals	75%
<b>All regions:</b> Long-run decoupling	5	Decoupling between two economic blocs	Rising tariffs between Western and Eastern bloc*	100%

\* The (artificial) classification of countries into two economic blocs is based on scores of foreign policy similarity with the United States and China, respectively, as described in Góes and Bekkers (2022).

Note: The drop in domestic absorption is modelled through a reduction in capacity utilization. The increase in MFN tariffs is based on average non-cooperative tariffs in Nicita *et al.* (2018) also employed in Bekkers and Teh (2019).

The OECD (2022) projects a reduction in global GDP growth of about 1 per cent, based on the macroeconomic NiGEM model of the National Institute of Economic and Social Research, which is similar to the range predicted with the WTO Global Trade Model. They impose shocks to exogenous commodity prices, a depreciation of the rouble, rising risk premia and a collapse of domestic demand in Russia and Ukraine.

In the WTO Global Trade Model, shocks are imposed on trade costs, production capacity (factor supply) and domestic absorption, whereas commodity prices and (real) exchange rates are endogenous. The OECD also projects a massive macroeconomic shock in Ukraine, with a 40 per cent reduction in domestic demand (OECD, 2022).

*Ukraine is projected to be the most heavily affected country in terms of GDP loss, whereas sanctions are projected to have a larger impact on Russia than on the countries imposing them, and developing countries will mostly be hit through indirect effects*

Figure 7 shows the projected reductions in real GDP for Ukraine, Russia, the European Union and the regions imposing the sanctions. It is clear from Figure 7 that the projected reduction in GDP in Ukraine is an order of magnitude larger than in the other regions.

Although it is difficult to predict the reduction in supply in Ukraine, the region is expected to be affected the most by far. The war has led to the closure and destruction of factories, triggering a huge adverse supply shock. Transportation has also been greatly interrupted through the closure and disruption of ports and harbours. The reduction in real GDP is projected to be 25 per cent.

Figure 8 shows that the direct effect on other regions not directly involved (i.e. not part of the war nor imposing sanctions) is relatively small. It ranges between -0.3 per cent for the Middle East and Northern Africa and Asia, and from -0.1 per cent to -0.2 per cent for Sub-Saharan Africa and Latin America and the Caribbean.

However, the indirect effect is relatively larger for the other regions. This is because the expectation is that other regions are more heavily affected indirectly through an increase in the risk premium and a reduction in business and consumer confidence.

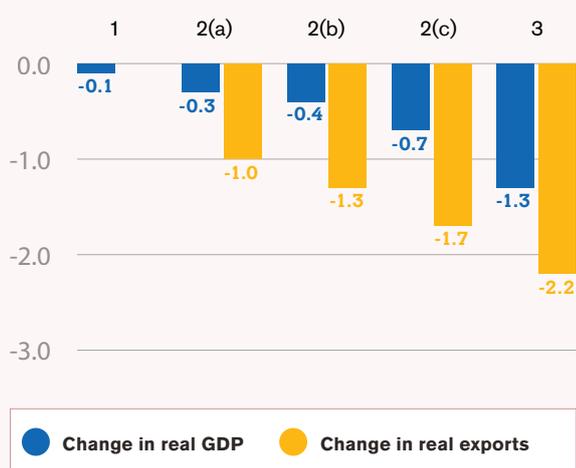
*Sanctions causing distress in the financial sector are projected to have the largest impact on Russia, whereas increases in tariffs on non-fossil fuel merchandise goods (dropping the MFN status) would have a more limited impact*

Figure 7 also shows that the package of sanctions (presented as one set of measures in Scenario 2(a)) has a considerable impact, projected to decrease real GDP in Russia by 1.9 per cent. Scenario 2(b) shows that the loss in Russian income because of the increase in MFN tariffs on manufacturing goods would be limited, with losses increasing from 1.9 per cent to 2 per cent. The effect is limited because other sanctions (i.e. the increase in transaction costs because of the SWIFT

FIGURE 6

### Projected change in global real GDP and global real exports for different scenarios

(Percentage deviation from baseline)



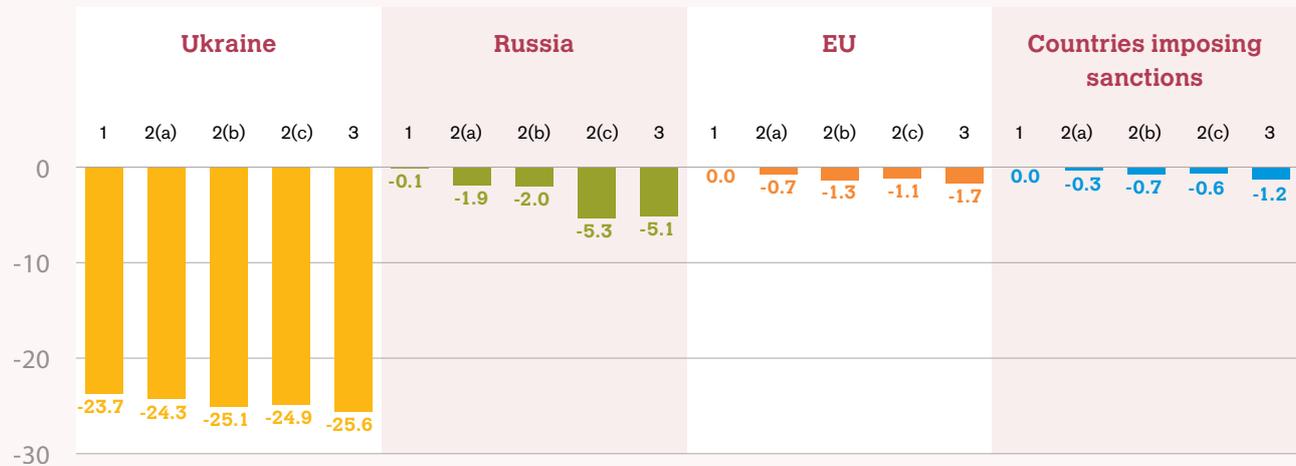
Source: WTO Secretariat.

Note: The scenarios are defined as follows: 1. Impact of the war; 2(a). Sanctions implemented by end of February; 2(b). Tariff rates above MFN; 2(c). Sanctions by central banks; 3. Global macroeconomic repercussions for consumer and business confidence (see Table 2 for details).

FIGURE 7

### Projected change in real GDP in regions involved for different scenarios

(Percentage deviation from baseline projections)



Source: WTO Secretariat.

Note: The scenarios are defined as follows: 1. Impact of the war; 2(a). Sanctions implemented by end of February; 2(b). Tariff rates above MFN; 2(c). Sanctions by central banks; 3. Global macroeconomic repercussions for consumer and business confidence (see Table 2 for details).

FIGURE 8

### Projected change in real GDP in other regions for different scenarios

(Percentage deviation from baseline projections)



Source: WTO Secretariat.

Note: The scenarios are defined as follows: 1. Impact of the war; 2(a). Sanctions implemented by end of February; 2(b). Tariff rates above MFN; 2(c). Sanctions by central banks; 3. Global macroeconomic repercussions for consumer and business confidence (see Table 2 for details). LAC – Latin America and the Caribbean; MENA – Middle East and Northern Africa; SSA – Sub-Saharan Africa.

measures) are already projected to reduce Russian imports substantially.

Finally, Figure 7 makes clear that the largest simulated effect is expected to come from the fallout in demand because of financial disruption as a result of the sanctions (Scenario 2(c)) with a projected GDP loss of 5.3 per cent, which is twice as high as without the fall in demand. However, the size of this effect is still highly uncertain.

The projected impact of most sanctions on Western economies is smaller than for Russia, though nevertheless sizeable in the short run. Focusing on the European Union, most of the real income losses are projected to come from the increases in trade costs with Russia and the associated losses of export sales (Scenario 2(a), -0.7 per cent). Rising import tariffs (Scenario 2(b)) would raise the projected losses to 1.3 per cent.<sup>4</sup>

*On account of the important role of Russia and Ukraine in the provision of food to specific regions, in particular Africa, the war will trigger rising food prices, and export restrictions would put strong upward pressure on food prices*

Figure 9 shows the share of wheat imported from Russia and Ukraine in total consumption of wheat for various regions, illustrating that the share of household consumption of wheat imported from Russia and Ukraine is highest in the Middle East and Northern Africa (MENA), and Sub-Saharan Africa (both least developed and other regions).<sup>5</sup>

Figure 10 shows the projected increase in the consumer price of wheat globally and for selected regions most dependent on imports of food from Russia and Ukraine under the different scenarios.<sup>6</sup> It is clear from Figure 10 that the direct effect of the war has a limited impact on global wheat prices, whereas sanctions against Russia are projected to have a larger impact on global consumer prices of wheat.

For the selected regions, export restrictions imposed by Russia and Ukraine have a much greater effect, whereas possible export restrictions in other developing regions have a more limited effect.<sup>7</sup> Export restrictions by other large producers of wheat (Canada, European Union, United States) would have a much bigger impact and could lead to a doubling of wheat prices (not displayed in the figures).

A study by the FAO (2022) conducting simulations concludes that international feed and food prices could increase by 8-22 per cent because of a “sudden and steep reduction in grain and sunflower seed exports”. Hence, the projected increase in food prices in this assessment note is in the same range as in the FAO study.

The addition of export restrictions by Russia and Ukraine, which are already in place, could raise food prices beyond the range projected by the FAO. In the medium-run, the price increases could therefore be more moderate, as regions switch to other supply sources.<sup>8</sup> However, the export restrictions could also be even greater than currently modelled, which would lead to more dramatic price increases.

Three policy implications arise from the simulation results on the effects of wheat prices. First, it is important that countries heavily dependent on imports of wheat (and other food items) from Russia and Ukraine are able to switch to other sources of supply and to receive support to do so.

Second, export restrictions exacerbate the projected food price increases. Such policies as well as hoarding also complicate the move to other sources of supply. Third, regions with sufficient stocks of food such as wheat could stabilize food prices in the most vulnerable regions by releasing some of their stocks.

*In the case of a more permanent disintegration of the world economy into two blocs, all economies would suffer losses, but the costs would fall hardest on emerging economies and less developed economies*

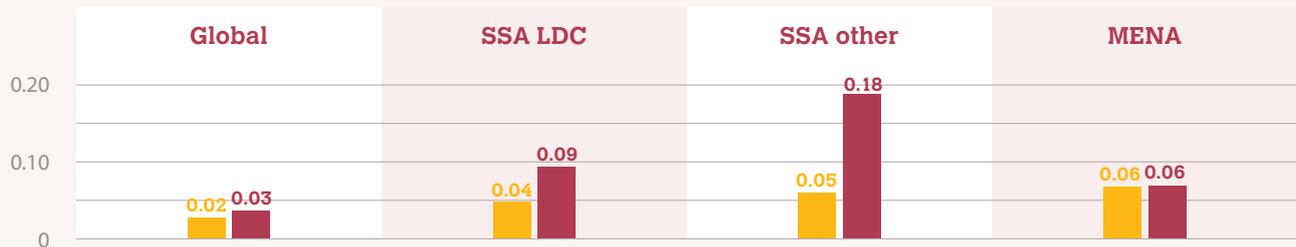
Figure 11 shows the projected long run (i.e. a 10 to 20-year period) impact on real GDP of a dynamic, long-run scenario in a model with technology spill-overs from trade based on Góes and Bekkers (2022) and following their artificial classification of economic blocs. In Scenario 5, the global economy would disintegrate into two global blocs.

Such an outcome would be costly for essentially all economies, with global GDP about 5 per cent lower in the long run. The effects would not be felt equally, with emerging economies incurring the greatest losses. This is because the positive technology spill-overs from trade are larger from high-productivity countries to low-productivity countries than the other way around.

FIGURE 9

Share of private household consumption of wheat originating from Russia and Ukraine in 2021 in selected regions

(Percentage share)



Source: WTO Secretariat.

Note: LDC – least developed country; MENA – Middle East and Northern Africa; SSA – Sub-Saharan Africa.

FIGURE 10

Projected increase in consumer price of wheat globally and in selected regions

(Percentage change from baseline)



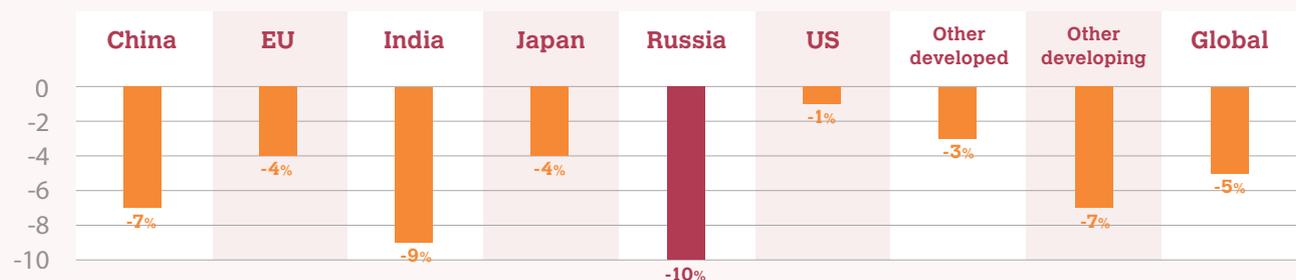
Source: WTO Secretariat.

Note: The scenarios are defined as follows: 1. Impact of the war; 2(a). Sanctions implemented by end of February; 2(b). Tariff rates above MFN; 2(c). Sanctions by central banks; 3(c). Global macroeconomic repercussions for consumer and business confidence; 4(a). Exports restrictions on food by Russia and Ukraine; 4(b). Export restrictions on food by other developing countries (see Table 2 for details). LDC – least-developed country; MENA – Middle East and Northern Africa; SSA – Sub-Saharan Africa.

FIGURE 11

Long-run real GDP effects of decoupling scenario in the global economy

(Percentage deviation from baseline projections)



Source: WTO Secretariat. Two global blocs as defined in Góes and Bekkers (2022).



Tugboat assists a cargo ship into the Port of Odessa, Ukraine.

The following sections provide a further motivation for the modelled shocks in the five scenarios.

## Scenario 1

### Ukraine: Impact of the war

#### *Destruction of production factors (land, capital)*

In reaction to the current situation, immediate measures have been undertaken by several multinational firms that operate in Ukraine. Carlsberg, Japan Tobacco and a Coca-Cola bottler were among the firms which shut factories in Ukraine on 24 February, following the onset of the war, while UPS and FedEx suspended services in and out of the country.

Many other producers have followed suit. Japanese auto supplier Sumitomo Electric Industries, which employs around 6,000 people in Ukraine to make wire harnesses, suspended operations at its factories in Ukraine in late February and is considering to potentially source supplies from other places.<sup>9</sup>

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**As of 9 April, 4,503,954 refugees had fled Ukraine.**

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#### *Reduced labour supply*

The war in Ukraine has caused the greatest humanitarian crisis in Europe since the Second World War. In the five weeks since the beginning of the war, more than 4.5 million refugees have been forced to flee Ukraine, and an additional 6.5 million people have been displaced internally within the country.<sup>10</sup> Over 12.6 million people have been affected in the areas hardest hit by the war within Ukraine.

At the time of running the simulations, production in a significant area of Ukraine stopped following the closure of important multinational firms and experienced a massive flow of people leaving the country. Hence, a reduction of factors supply of 25 per cent can be assumed.<sup>11</sup>

#### *Rising trade costs*

Ukraine's ports will stay closed until the end of the war.<sup>12</sup> Europe's big ocean carriers have suspended orders for Ukrainian shipments, and they avoid the nation's main ports, diverting cargo to other destinations.<sup>13</sup> Bookings to and from Odesa are suspended, and cargo destined to Ukraine is expected to be redirected to the ports of Constanța (Romania), Tripoli (Lebanese Republic) or Piraeus (Greece). To reflect disruption to transport, a 25 per cent increase in iceberg trade costs is modelled.

## Scenario 2

### Russia: Sanctions by a number of regions

#### *SWIFT sanctions on bank transactions*

A number of regions have excluded seven Russian banks from SWIFT. This will shut out these banks from the international financial system, which will harm their ability to operate globally. The impact on the Russian economy is expected to be very significant, particularly in the short term.

More than half of Russian credit organizations are represented in SWIFT. They are major financial institutions, carrying out more than 80 per cent of settlements. Since it is too early to determine the exact impact the sanctions could have on transaction costs, these are set conservatively at 10 per cent.

#### *Export restrictions on dual use and technological goods*

The United States announced new licence requirements, which entered into force on 24 February, for the export to Russia of sophisticated technologies – primarily those connected with the defence, aerospace and maritime sectors (e.g. semiconductors, microelectronics, telecommunications items, lasers, sensors, navigation equipment, avionics, marine equipment, aircraft components).

A review policy of denial will be applied to most licence applications from exporters, which means export approvals will be given only in exceptional cases, such as for civil telecommunications infrastructure and for items that ensure the safety of civil flights or maritime safety, meet humanitarian needs, enable government-to-government activities and support certain operations of partner country companies in Russia.

In addition, the US Government has imposed corresponding restrictions on the export of technology produced outside the United States using US-origin software or equipment (e.g. foreign direct product rules). Such export control sanctions are the largest ever imposed on a state. Since the export restrictions are comprehensive, they are modelled with a 100 per cent increase in export taxes.

### *Boycott by western companies*

The list of global brands disappearing from Russian outlets keeps growing as some of the world's biggest businesses, from energy to consumer goods and electronics, suspend operations in the country.<sup>14</sup> Brands include Sony PlayStations, Uniqlo attire, McDonald's, Coca-Cola and Starbucks.

Russia's largest foreign investor, the oil and gas giant BP, led the way with its surprise announcement on 27 February that it would exit its 20 per cent stake in the state-controlled Rosneft. Visa, Mastercard and American Express have also suspended their operations in Russia.

Most of the world's biggest carmakers, including General Motors, Ford Motor, Volkswagen, Stellantis and Toyota Motor, have all announced they would halt shipments to Russia or leave plants idle in the country. The boycott is modelled with a 50 per cent export tax in both manufacturing and services.

### *Rising transport costs between East Asia and Europe, the closure of airspace*

Airlines are braced for potentially lengthy blockages of key east-west flight corridors after the European Union and Russia issued tit-for-tat airspace bans. Canada and the United States have also taken similar action in response to the war in Ukraine.

The International Air Transport Association warns that European countries will be affected by the crisis in Ukraine, especially the neighbouring countries. Russia was the 11<sup>th</sup> largest market for air transport services according to passenger numbers, while Ukraine ranked 48. With sanctions imposed, the largest country in the world can expect plunging figures in all industries, including travel and tourism.<sup>15</sup>

Average flight times on six key trade routes from Asia to Northern Europe have increased by an average of 3.4 per cent (range of 0.6-6.9 per cent) in the five days to 28 February compared to 1 December through 22 February 22 period).<sup>16</sup> Rising transport costs are modelled with a productivity drop in the transportation sector of 50 per cent between Russia and the regions imposing the sanctions and 5 per cent between Europe and Eastern Asia.

### *Increase of most-favoured-nation tariffs to higher tariff rates*

The European Union said it was looking into suspending MFN treatment for Russia at the WTO over the war in Ukraine. It agreed on this measure with 13 other WTO members.<sup>17</sup> This would allow these countries to hike tariffs or to set quotas on Russian imports. Tariffs are assumed to increase by 32 per cent, based on the global average tariff increase, in case tariffs move to a non-cooperative level (Nicita *et al.*, 2018).

### *Sanctions already announced*

On 28 February, the Council of the European Union agreed to further sanctions against Russia following the joint statement with Canada, the United Kingdom and the United States. Targeted measures against individuals from Belarus identified as facilitators for Russian military intervention were also adopted.

Central banks in Western economies have frozen US\$ 600 billion of foreign exchange reserves, which has contributed to a sharp depreciation of the rouble. The resulting financial distress in the Russian economy is modelled by a 5 per cent reduction in domestic absorption.

## **Scenario 3**

### **All regions (except for Russia and Ukraine): Global macroeconomic repercussions**

The interlinkage of the economies in Russia and Ukraine with the rest of the world in general, and Europe in particular, for gas, oil, wheat, other grains and commodities

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**About 70 per cent of EU imports from Russia comprised oil and gas, with agriculture and raw materials, chemicals, iron and steel accounting for much of the rest.**

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leads to significant uncertainties among producers and consumers. About 70 per cent of EU imports from Russia comprised oil and gas, with agriculture and raw materials, chemicals, iron and steel accounting for much of the rest. High energy prices contribute to increased costs of virtually all goods and services, further fuelling inflation expectations and slowing growth.

## **Scenario 4**

### **All regions: Food export restrictions and release of food stockpiles**

Ukraine has banned exports of some agricultural commodities (rye, barley, millet, sugar) and has introduced export licences for its key export goods such as wheat, corn and sunflower oil. Russia imposed export prohibitions for food products such as raw sugar, wheat, meslin, rye, barley and corn.

With the exception of sugar, this export ban also includes members<sup>18</sup> of the Eurasian Economic Union, with which Russia shares free customs zones. However, the Russian deputy prime minister for agriculture and industry declared that grain exports within the quota under individual licences would continue to be allowed.

Some countries announced trade-related restrictions on food, as a result of domestic considerations in the context of the crisis in Ukraine. For example, Argentina, Hungary, Indonesia, the Republic of Moldova, Serbia and Turkey announced export restrictions on products such as wheat, maize, sunflower oil, margarine, flour and soybean oil to all trade partners. Egypt has implemented a production licence scheme for wheat producers, which implies that farmers will have to sell a quota of their wheat to the government.

## **Scenario 5**

### **All regions: Long-run decoupling**

With broad decoupling with tariff increases between economic blocs but decreases within, Scenario 5 essentially follows Góes and Bekkers (2022) and simulates the disintegration of the global economy into two separate economic blocs. The disintegration is implemented by increasing iceberg trade costs between the two blocs to prohibitive levels.



Fertile fields near Yuzhnets, western Ukraine.

## Endnotes

- <sup>1</sup> The WTO Global Trade Model is a computable general equilibrium model, focused on the real side of the global economy, modelling global trade relations. Very similar to new quantitative trade models, its advantage is the precise modelling of trade relations at a sectoral level, considering intermediate linkages. To focus on short-run effects, the substitution elasticities of trade between different source countries is reduced to 0.5.
- <sup>2</sup> These channels are not modelled explicitly but captured by a reduction in domestic absorption (consumption plus investment), leading to lower capacity utilization.
- <sup>3</sup> See [https://www.wto.org/english/news\\_e/pres21\\_e/pr889\\_e.htm](https://www.wto.org/english/news_e/pres21_e/pr889_e.htm).
- <sup>4</sup> The simulations focus on the short run, assuming that there is limited scope for substitution between different sources of supply.
- <sup>5</sup> This figure combines information on wheat import shares from Trade Data Monitor for 2021, with the share of private household consumption of wheat imported from data projected to 2021 based originally on the GTAP Data Base, Version 10, for 2014.
- <sup>6</sup> The simulations in this section are based on wheat import shares employing import shares of wheat close to actual import shares.
- <sup>7</sup> The exact status of export restrictions from Russia and Ukraine is not clear. Russia has imposed an export ban on many food items, such as wheat, but exports under existing quota would still be possible. Ukraine has banned exports of many food items, but wheat would only be subject to restrictions.
- <sup>8</sup> As mentioned above, a short-run perspective is chosen with an elasticity of substitution between imports of 0.5.
- <sup>9</sup> See Gronholt-pedersen and Shabong (2022).
- <sup>10</sup> See <https://data2.unhcr.org/en/situations/ukraine>.
- <sup>11</sup> The OECD (2022) also models a 40 per cent reduction in ex ante domestic demand in Ukraine for 2022. This is based on GDP declines of 25-40 per cent, which have resulted from conflicts in countries such as Iraq, the Syrian Arab Republic and Yemen.
- <sup>12</sup> See Saul (2022).
- <sup>13</sup> See Murray (2022).
- <sup>14</sup> See <https://www.bloomberg.com/news/articles/2022-03-07/from-netflix-to-samsung-the-exodus-from-russia-becomes-a-rout>.
- <sup>15</sup> See <https://statistics.schengenvisainfo.com>.
- <sup>16</sup> See <https://www.flexport.com>.
- <sup>17</sup> Albania, Australia, Canada, Iceland, Japan, North Macedonia, Republic of Moldova, Montenegro, New Zealand, Norway, Republic of Korea, United Kingdom and United States.
- <sup>18</sup> Armenia, Belarus, Kazakhstan, Kyrgyz Republic and Russia.

# 3 Multilateral system: mitigating the effects of the crisis and preparing for a post-war global economy

**First, the war in Ukraine is impacting the whole world. As such, it is not a local war with local effects only. It therefore needs to be viewed and treated in the context of global trade and development.** This is likely to result in a move for reshoring, near-shoring and for ‘friend-shoring’ – either making strategically important goods at home or procuring them from allies. This will have implications for global trade and development.

**At the highest level, international organizations have the convening power and diplomatic tools to continue to advocate for peace, the rule of law and respect of international law, including respect for trade rules and regulations and development goals.** The international community needs to continue pressing for peace to be restored, for key facilities to be recreated and for open, free and transparent trade (with few restrictions) and development to continue.

**Trade remains an engine of growth. It allows innovation to prosper and competition to thrive, to the benefits of people all across the world.** But trade itself can best thrive in a transparent, rules-based multilateral global economy. The WTO has served as the guardian of the rules-based multilateral trading system and thereby has helped to lift hundreds of millions out of poverty. Through its different functions, it can play an important part in cushioning the effects of the war on other economies and in rebuilding the global economy.

**The multilateral trading system has key roles to play in providing stable and predictable trading conditions and encouraging transparency in international markets.** The WTO Trade Monitoring Exercise, which started amid the financial crisis in 2008 and 2009, has played a valuable role in fostering restraint in the use of protectionist measures – which

has helped trade rebound so strongly after crashing at the beginning of the pandemic. Monitoring trade measures taken in relation to the current crisis will help members to adjust.

## The WTO plays an important role in monitoring and providing transparency

The crisis in Ukraine is jeopardizing the food supply to some of the most vulnerable parts of the world, threatening the food security for millions of people. Food prices are already increasing and projections by the FAO and the WTO Secretariat suggest that further increases can be expected.

One of the key lessons of the world food price crisis in 2007 and 2008 was that export restrictions in such a setting would exacerbate the threat to food security. The evidence shows that export restrictions are contagious and cascade through the system. An export restriction in one country will cause export restrictions in other countries, which eventually results in every country facing shortages in goods they cannot supply themselves.

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The WTO can play an important role in making such restrictive policies transparent and can provide a forum to discuss their consequences in a multilateral setting. The WTO Trade Monitoring Exercise, which started almost 15 years ago, has been instrumental in keeping such ultimately self-defeating policies at bay. This is particularly important in times of crises when the domestic pressure to implement such policies is high and, at the same time, their negative spill-over effects are likely to be large.

## **Ensuring that trade flows smoothly and predictably is crucial to mitigate the impacts of the crisis**

Importers will need to respond to the crisis by adapting their sourcing patterns or by adjusting production technologies. Suppliers will need to relocate production and to ramp up production in plants outside the affected areas. Transport firms will need to adjust routes rapidly and to ensure that increases in production can quickly reach countries where demand is greatest.

The WTO, through its various agreements, has been working consistently to ensure that these actors face as few barriers as possible for such adjustments. Around 75 per cent of global trade takes place under WTO rules and the WTO, and its predecessor the General Agreement on Tariffs and Trade, have been instrumental in lowering tariffs and other trade barriers while providing stability and predictability in trade relations.

The WTO's Trade Facilitation Agreement, for instance, which entered into force in 2017, has helped to simplify customs procedures and to increase trade efficiency worldwide. The WTO Secretariat, together with its partners, also provides training and technical assistance to help to ensure rapid and effective implementation of the agreement.

## **The WTO provides an important forum where countries can convene and rebuild trust**

Continued dialogue on trade policy will be crucial in order to restore peace, recreate key facilities and allow trade to continue to play its central role in fostering development. Geopolitical tensions can be a threat to the principles underpinning the current trading system, which has enabled countries to reap the benefits from

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specialization, economies of scale and innovation spill-over effects. A return to a world of geopolitical blocs would be very costly for the global economy, in particular for the least-developed regions.

Therefore, it is crucial that the multilateral trading system continues to play its role in guaranteeing the smooth flow of goods of services through all its functions. In particular, the WTO can be an important forum where members convene and can start to (re-)build trust in the global economy. As such, the WTO can also help members to strengthen global supply chains, especially for least-developed countries (LDCs), landlocked developing countries (LLDCs) and small island developing states (SIDS) and to identify ways to bring down trade costs.

International organizations can help to limit harmful impacts of these developments by facilitating the flow of information and providing market transparency. For instance, on 21 March 2022 the WTO convened the Global Supply Chains Forum, which brought together key leaders in the market to ensure that information on bottlenecks is shared as rapidly as possible.<sup>1</sup>

## **The WTO can play an important role in negotiations**

The WTO Secretariat is well placed to provide continuous robust monitoring and analytical work to help its members in identifying the challenges arising from the war, and its impact on trade and development. Importantly, the Secretariat's work can inform negotiators and policymakers on the need for accelerating the process of completing vital negotiations, such as those in agriculture.

### **Endnote**

<sup>1</sup> See [https://www.wto.org/english/news\\_e/events\\_e/gscforum2022\\_e.htm](https://www.wto.org/english/news_e/events_e/gscforum2022_e.htm).

# 4 Way forward and policy recommendations

With regard to trade, multilateral organizations can work closer together to prevent a wider decoupling in the international economy. In the 1930s, the division of the world economy into rival economic blocs led neither to prosperity nor peace. That experience is at the foundation of the rules-based multilateral trading system.

The crisis in Ukraine will have implications for global growth, trade and development. In addition to reshoring and near-shoring, there will also be a move to 'friend-shoring', where strategically important goods are made at home or procured from allies.

A widespread push to reconsolidate global supply chains based on geopolitical considerations would come at immense cost for all economies in terms of diminished growth, higher transaction costs and reduced innovation. The blow to growth prospects would be particularly large for the many developing countries, especially LDCs, that are not aligned with any bloc and do not want to have to 'choose' between alternative markets and systems.

There may be more concerns about the supply of food and agriculture products – similar to the shortages of medical products witnessed early in the COVID-19 pandemic, and now again by the effects of the war on food and energy markets. But the fact remains that resilience will ultimately be best served by fostering deeper and more diverse international markets, anchored in open and predictable trade rules.

Concentrating sourcing and production at home would create new vulnerabilities to localized natural disasters or disease outbreaks. When hurricanes hit, crops fail or factories are forced to shut down, trade is a critical means of adaptation. And if demand for certain products surges unexpectedly, even purely domestic supply chains will struggle to respond.

Multilateral organizations can work closer in bringing LDCs, LLDCs and SIDS into the mainstream of regional and global value chains so that they can simultaneously deepen and diversify markets while driving growth and job creation where they are most needed. International

organizations can help to identify ways to bring down trade costs and connect businesses, especially small and medium-sized enterprises, to markets.

In response to the supply chain disruptions that were affecting global trade even before the crisis in Ukraine, the WTO is working with key market players in the global supply chain to ensure that problems and bottlenecks are identified and addressed as quickly as possible. International cooperation on trade has a key role to play in addressing rising food prices and the risk of a hunger crisis. Skyrocketing wheat prices have already led some governments to introduce export controls.

In the near term, coordination would help governments to avoid a repeat of the cascading export restrictions that exacerbated price increases in the food price crisis of 2008. At that time, prices and shortage fears eased when countries including Ukraine released grains and stocks onto international markets.

Today, it is crucial that major producers and exporters of wheat, barley, maize, oats, and other staples keep trade flowing, and share information about supply shortages and trade restrictions. Targeted support to poor consumers and countries is recommended by international organizations and experts.

Multilateralism will be necessary to solve the global commons problems all countries are grappling with, from climate change to pandemic disease. Multilateral cooperation is key, for all governments to get together and respond to these challenges in a stronger fashion.

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A loaded cargo ship docks at the Port of Odessa, Ukraine.

## ABBREVIATIONS

<b>CIS</b>	Commonwealth of Independent States
<b>FAO</b>	Food and Agriculture Organization of the United Nations
<b>GDP</b>	gross domestic product
<b>IMF</b>	International Monetary Fund
<b>LDC</b>	least-developed country
<b>LLDC</b>	landlocked developing country
<b>MENA</b>	Middle East and Northern Africa
<b>MFN</b>	most-favoured-nation
<b>OECD</b>	Organisation for Economic Co-operation and Development
<b>SIDS</b>	small island developing states

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**This note examines the implications of the crisis in Ukraine for global trade and development. It highlights the importance of the supplies of food, energy and certain industrial inputs from Russia and Ukraine, and explores how the war is causing severe risks to food and energy security as well as exacerbating supply chain difficulties. Simulations from the WTO Global Trade Model indicate that global GDP and trade growth could be reduced by up to 1.3 and 2.2 percentage points, respectively, with effects concentrated in Europe and Africa.**

**This note further shows that if the war were to cause a disintegration of the global economy into separate blocs, the income losses would be severe, especially for emerging and developing economies. This highlights the importance of the rules-based multilateral trading system, not least because the WTO provides functions that can help to cushion the impact of the crisis.**