

To what extent the non-extension of the Black Sea grain deal is disrupting global and Arab wheat markets

AHMED AL MAHRUQUI*, CHOKRI THABET*, MOHAMED ABDELBASSET CHEMINGUI**

> DOI: 10.30682/nm2502b JEL codes: F59, Q17

Abstract

The ongoing conflict between Russia and Ukraine has significantly affected the global wheat market, particularly impacting Arab countries that heavily rely on wheat imports. This paper examines the conflict's effects on wheat production and exports, highlighting disruptions in Ukraine and the resulting price volatility. Together, Russia and Ukraine account for a large share of global wheat exports, but the conflict has led to a decline in Ukrainian exports, mitigated somewhat by the Black Sea agreement which allowed for continued exports despite Russian sanctions. As major exporters like the U.S., Canada, and Australia step in, competition has intensified, leading to fluctuating prices. This volatility threatens food security and fiscal stability in Arab nations, especially those with limited or no wheat subsidies. The study suggests that the nonrenewal of the Black Sea agreement could raise global wheat prices by 3-4% on average, though the overall impact is expected to be short-lived due to the market's resilience. The findings emphasize the need for proactive import planning and highlight the importance of agricultural policies and trade finance in shaping wheat market dynamics.

Keywords: Food security, Wheat, International trade, Arab countries.

1. Context and objectives

Wheat is one of the most crucial cereals grown worldwide, ranking third in terms of production (WEF, 2022)¹. On average, one quarter of global wheat production is exported worldwide. However, and since decades, the global market of wheat has been characterized by volatility often limited but sometimes very high reflecting unusual conjunctures and crises. The global population continues to grow, and this increase is accompanied by rising food demand, particularly in developing countries where agricultural production does not keep pace with population growth. This situation makes the food system dependent on the international market, which has become increasingly unstable with significant price volatility (Harbouze *et al.*, 2024). In general, wheat price volatility often reflects uncertainty over the continuing flow of suppli-

^{*} University of Sousse, Institut Supérieur Agronomique de Chott Meriem (ISA-CM), Tunis, Tunisia.

^{**} United Nations Economic and Social Commission for West Asia (UNESCWA), Beirut, Lebanon. Corresponding author: cthabet@gmail.com

¹ https://www.weforum.org/agenda/2022/08/top-10-countries-produce-most-wheat/.

ers, which itself depends on a number of factors, mostly current production and available stocks (IFPRI, 2023). However, it could be also the direct effects of severe supply chains disruption mainly due to conflicts and weather conditions.

The Russia-Ukraine war triggered a wave of shocks in international energy and agricultural markets due to the significant role these two countries play in these strategic sectors. Together, Russia and Ukraine account for one-third of global wheat exports, 80% of sunflower oil exports, and 20% of barley and maize exports (Abis and Demurtas, 2023). However, the price volatility observed in the first months following the outbreak of the conflict was not driven by a decline in global production. Instead, it stemmed from difficulties in shipping Ukrainian and Russian cereals across borders, compounded by speculation and public interventions aimed at capitalizing on the crisis. This is evidenced by the fact that prices quickly returned to pre-crisis levels-or even lower-immediately after the grain deal between Ukraine and Russia was brokered by the UN and the Turkish government. One year after the agreement was signed, the situation has reverted to its pre-deal state as Russia has refused to renew the agreement. This has reignited speculation, particularly during a critical period when exporting countries are finalizing new deals. These developments have once again heightened uncertainty about the future trends in global wheat prices, raising questions about whether prices will continue to rise or decline, and under what conditions such shifts might occur.

The purpose of this paper is an attempt to investigate the sources of the volatility of world wheat prices and to determine the winners and those who suffer from this volatility. It starts by looking at the major players in the global wheat trade market prior to the conflict. Subsequently, it analyses the impact of the war on Ukraine's and Russia's wheat sectors compared with the situation prevailing the conflict. Third, it looks to the winners and losers from the crisis before and after the implementation of the Black Sea Grain Initiative (BSGI), which was signed in July 2022 between Russia and Ukraine under the auspice of Turkey and the UN but unfortunately not renewed since July 18, 2023. Finally, the paper provides the results of some simulations regarding the short-term trends of global wheat prices under alternative scenarios on the perspectives of exporting wheat from both Ukraine and Russia.

2. Overview of world wheat market

2.1. Recent World Wheat price volatility

In May 2022, three months after the start of the Ukraine-Russia war, global wheat prices reached all-time highs of 522\$ per ton (CIF) and 444\$/ ton (FOB) (Figure 1). However, two months later, world prices fell significantly even before the conclusion of the wheat deal on exporting Ukrainian wheat. This tendency confirms once again the importance of the anticipation effect and that the rush of importing countries to secure wheat was accelerated during the first two months after the war. However, data shows that no major shortage of wheat supply was observed since February 2022 but just a re-shifting of directions of trade in favour of most of exporting countries, except Russia and Ukraine.

2.2. World Wheat market: major players in the pre-conflict phase

The key wheat producers are China, India, the European Union, the United States, Russia, and Ukraine with a total share in global production of 69.8% in 2021 compared to 70.9% in 2008 (Figure 2).

Similarly to production, the EU, Russia, United States, Australia, Canada, Ukraine, and Argentina form the bulk of global export of wheat. Between 2010 and 2021, they accounted for more than 90% of global wheat export. Both of the Black Sea region countries, Russia and Ukraine made up about 26 percent of the 198 million tons globally exported wheat in 2021 (figure 3). The Arab region, EU27, Africa, Indonesia, China, and Turkey are heavily reliant on wheat imports, making them the most vulnerable to fluctuations in global wheat prices (figure 4). The European Union is one of the world's top producers, exporters, and importers of wheat. France, Romania, Germany, and Poland make up about 73% of the wheat exported by the EU to the rest of the



Figure 1 - Recent trend in global wheat prices, CIF and FOB basis.

Source: Global Price FOB, IMF commodity prices. Global Price CIF, World Bank Commodity Price Data (the Pink Sheet) Russia and Ukraine, FAO, FPMA Tool, available at https://fpma.fao.org/giews/fpmat4/#/dashboard/tool/international.

world. Dependency on extra-EU wheat import is falling since 2010, only Slovenia is reliant on wheat imports from extra-EU partners, followed by Ireland and Croatia. Most of the EU's member countries continue to rely on imports from their union's partners.

To a large extent, the development of the EU's wheat export potential is attributed to the financial support provided through the Common Agricultural Policy since its adoption in 1962.

The Arab region is the largest regional import-

er of wheat, consistently absorbing a significant share of global exports. In 2021, approximately 19% of the world's wheat exports were directed to the Arab region. On average, Arab countries received 21.5% of total global wheat exports during the period 2016-2020, reflecting a decline of about 2.7 percentage points compared to the 2011-2015 period (Figure 4).

In 2021, the top regional wheat buyers exhibited varying degrees of reliance on their main suppliers. The Arab region primarily depends



Figure 2 - Top wheat producers, as a share of global production.

Source: FAOSTAT, 2023. Available at https://www.fao.org/faostat/en/#data





Figure 3 - Main wheat suppliers, shares of global exports.

Source: FAOSTAT, 2023. Available at https://www. fao.org/faostat/en/#data.



Figure 4 - Main wheat buyers, shares of global.

Source: FAOSTAT, 2023. Available at https://www. fao.org/faostat/en/#data.





Source: FAOSTAT, 2023. Available at https://www.fao.org/faostat/en/#data.

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Figure 6 - Russia and Ukraine wheat production and exports, 2010-2022.

Source: FAOSTAT, 2023. Available at https://www.fao.org/faostat/en/#data.

on three key sources: the European Union (EU), Russia, and Ukraine. Similarly, Sub-Saharan Africa relies on the EU and Russia, albeit to a lesser extent on Ukraine (Figure 5).

3. War and wheat: Ukraine and Russia's wheat trade reshaped

Given their position in the wheat market, evidenced by their increasing market shares, production, and export volumes (Figure 6), Ukraine-Russia conflict undoubtedly influenced global wheat supply and prices. When considering export-to-production ratio, Ukraine outperforms Russia, highlighting the significance of Ukraine's wheat sector and its contribution to global markets. Closure of all Ukrainian Black Sea ports, which account for roughly 90% of Ukraine's wheat exports (World Bank, May 2022) surely posed challenges to wheat exports to partner countries. Nonetheless, Ukraine's borders with neighbouring countries such as Poland, Hungary, Romania, and Slovakia serve as important transit points for trade in goods, including wheat. Even after the Black Sea Grain Initiative, which was specifically established to open Ukrainian sea ports, lower food prices, and ensure shipments to the rest of the world, particularly poor and developing countries in Asia and Africa, figure shows that the country's exports remain very low compared to total world exports.

To facilitate exports of Ukrainian wheat, the

Means	Reporter	Qty in tons	Values	Qty in tons	Values
oj transport		2021	2021	2022	2022
Rail	Hungary			153,579	\$ 39,457,284
	Poland			335,499	\$ 76,649,615
	Romania			101,195	\$ 26,547,299
	Slovakia			45,741	\$ 11,391,056
Road	Hungary	65	\$ 25,301	35,180	\$ 9,341,769
	Poland	3,118	\$ 1,042,017	187,332	\$ 44,083,666
	Romania			217,848	\$ 54,107,128
	Slovakia			26,616	\$ 7,562,982

Table 1 - Neighboring Eastern European countries' wheat import from Ukraine, 2021 vs 2022.

N.B. (..) means no imports were recorded.

Source: Eurostat, 2023. Available at https://ec.europa.eu/eurostat/web/main/data/database.



Figure 7 - Wheat exports by main origin in volume (in millions MT), 2021 vs 2022.

Source: COMTRADE monthly data for Wheat and Meslin (HS 1001). Available at https://comtradeplus.un.org/ TradeFlow.



Figure 8 - Wheat exports by main origin in values (in billion US\$), 2021 vs 2022.

Source: COMTRADE monthly data for Wheat and Meslin (HS 1001). Available at https://comtradeplus.un.org/ TradeFlow.

EU decided in June 2022, few days before the dead sea agreement, to remove all tariffs and quotas on grain imports from Ukraine. As a result, and according to the available data, the Eastern European countries, traditionally net grain exporters, imported unprecedented amounts of wheat by road and rail in 2022 (Table 1). While in 2021, only Hungary and Poland imported very small volume of wheat from Ukraine. In

2022, the picture changed completely, and the four neighbouring countries, namely Hungary, Poland, Romania and Slovakia, imported around 1.1 Millions MT compared to only 3183 Metric Tons one year before, which represented around 3% of total wheat exports of Ukraine in 2022.

Monthly wheat maritime export data from WTO Global Trade Data Portal² shows that Ukraine exports ceased between March and July 2022, then

² This dashboard, developed jointly by the International Grains Council (IGC) and the World Trade Organization, offers a tool for monitoring short-term trends in international wheat maritime trade flows in response to changing market conditions and enables the analysis of longer-term trends. Available at https://globaltradedata.wto.org/real-time-data-based-on-non-wto-data-sources. Since Arab region is not exclusively mentioned, data for Western Asia (Bahrain, Iraq, Jordan, Kuwait, Lebanon, Oman, Qatar, Saudi Arabia, Syria, United Arab Emirates, Yemen, Georgia, Israel, and Türkiye) can somehow reflect trade with Arab countries which constitute the biggest part of the Western Asia region. As for Northern Africa, it includes African-Arab countries (Algeria, Egypt, Libya, Morocco, Sudan, and Tunisia).



Figure 9 - Ukraine (left) and Russia (right) monthly wheat maritime exports to selected areas, 2021-2023.

Source: WTO, Global Trade Data Portal, 2023. Available at https://globaltradedata.wto.org/real-time-data-based-on-non-wto-data-sources.

began to increase again in August with the resume of trade under the initiative but remain lower than pre-war levels. The graph shows that wheat exports to the European Union have increased since the initiative compared to pre-war levels while its exports to Northern Africa have decreased. Russia's wheat maritime exports on the other hand were more diverse pre-war than post-war, but exports to Western Asia and Northern Africa were still the highest among other regions during both periods. During the first few months of the war, its exports certainly decreased but the country still exported wheat (Figure 9). According to UNCTAD report³, the least-developed countries received the smallest share of wheat export from Ukraine under the initiative (20%), with developing countries receiving the lion's share (45%), and developed countries receiving 34%. In terms of income levels, high-income countries had the highest share (37%), followed by low-income countries (10%) and lower-middle-income countries (33%). At first glance, European wheat exports have increased since the start of the war. Northern Africa is the biggest importer during the period July 21-May 23. The highest quantity ex-



Figure 10 - Monthly European Union wheat maritime exports to selected areas.

Source: WTO, Global Trade Data Portal, 2023.

³ https://unctad.org/system/files/official-document/osginf2023d3_en.pdf.

ported was during Aug-22, the month where the first wheat trade was launched under the BGSI initiative (Figure 10).

4. The determinants of world wheat prices

There are four major direct factors that affect world prices of wheat namely: yield and global production, global consumption, global trade, and transactions costs (transport and insurance fees). However, agricultural policies are also an important incentive but also distorting factor widely used in the world but mainly in the EU and USA. They affect all channels of the global supply chains starting from production, consumption, and transport. The EU and USA's agricultural policies played a significant role in blocking any significant progress on multilateral liberalization of agricultural trade under the Doha round and even the full implementation of the partial agreement reached in 2015 on reducing distortive subsidies. Accordingly, the global wheat market still largely impacted by these supporting policies. In addition, international embargo on trade with and from specific countries, such as the case of Russia, is also disturbing international trade of key commodities such wheat, oil and gas. Below we briefly highlighted the role of these factors in global wheat market.

Distortive trade policies

Since decades, most developing countries over the world started the implementation of sectoral support programs in favour of their agricultural sectors. The most important programs were designed and implemented by the USA and the EU. While the original farm bills were enacted during the 1930, the first Common Agricultural Policies of the European countries was enacted in 1962. The 2018 Farm Bill was projected to cost about \$428 billion over the five years of the bill's life, which represent around 50% of total agricultural GDP in 2018-2022, which is too high by international standard. There are three major groups of entitlement programs under the bill namely commodity, crop insurance and nutrition assistance. The new adopted CAP 2023-2027 will cost 307 Billion of Euro, 264 from the EU resources and 39 from public expenditures.

CAP resources represented around 34% of Agricultural GDP in the EU, which is lower than the USA, but still too high compared to public support of agricultural sector in developing countries which is always below 1 to 2%.

The debate on the distorting effects of agricultural policies in the USA and EU is not new and several studies pointed out the adverse effects on competitiveness of agricultural sectors in developing countries largely impacted by artificial and low world prices of major crops such as wheat. While negotiations under the WTO since its creation in 1995 did not stopped on unlocking the uncompetitive of the agricultural world markets and its negative effects on farmers' incomes in developing countries, progress towards reaching an ambitious agreement under the Doha round on putting agricultural trade under WTO's rules still not be achieved despite intermediary agreements on export subsidies and switch of support funds among boxes. Moreover, it is highly believed that any increase in world wheat prices is a positive channel for reducing financial burdens on the EU's budget.

Volatile transport and insurance costs

In general, transport and insurance cost represent an important factor of world prices through its effects on countries' competitiveness in the global markets. According UNCTAD (2022), the grain shipments over longer distances are leading to higher food prices. It shows that grain prices and shipping costs have been on the rise since 2020, but the war in Ukraine has exacerbated this trend and reversed a temporary decline in shipping prices. The report says between February and May 2022, the price paid for the transport of dry bulk goods such as grains increased by nearly 60%. The report estimates that the accompanying increase of grain prices and freight rates would lead to a 3.7% increase in consumer food prices globally in 2022, of course for countries without inforce consumer subsidies programs.

These costs are intensified by the trade sanctions imposed by the EU and USA on Russian exports. While officially, sanctions imposed by the EU and others excluded the agricultural sector, adverse effects posed some challenges to trade with Russia. For instance, sanctions on bank-



Figure 11 - Average wheat yields of selected areas, 2010-2023.

Data Source: USDA FSA PSD Database and aei.ag calculations.

ing and individuals has made trade with Russia more costly and risky.

Wheat's yields and increasing gaps between global production and consumption

Recent decades have seen wheat yields stagnate globally. Despite that current rates of yield increase, associated with genetic improvement, but they are still not sufficient to meet the increase in wheat grain demand expected by 2050 particularly considering the expected demand growth in Asia and Africa. For 2023/24 global wheat production is forecasted at a record 800.2 million metric tons (MMT). This upward revision is a result of larger crops for Russia, India, the European Union (EU), and Ukraine. At the same time, the 2023/24 global wheat consumption is estimated to increase by 3.5 MMT to 793.1 MMT, driven by higher feed and residual consumption. Thus, the gap between production and consumption still positive but decreasing which give a small flexibility in countries with significant storage capacities such as EU, USA and India. The declining surplus of wheat production is a key factor affecting the vulnerability of global wheat market which makes it very sensitive to any change affecting the global supply of wheat.

Figure 12 - Global wheat consumption and production, 2010-2023.



Data Source: USDA FSA PSD Database and aei.ag calculations.

5. How the non extension of the cereals' deal may affect the global wheat market world prices: an application of partial spatial equilibrium model on wheat market

The invasion in February 2022 led to a complete halt of maritime grain shipments from Ukraine crisis, through facilitating the shipment of Ukrainian cereals, indirect discussions began between Russia and Ukraine in April under the support of Turkey and the UN. An agreement was signed in Istanbul on 22 July 2022, for a period of 120 days. The original agreement was set to expire on 19 November 2022. On 17 November 2022, the UN and Ukraine announced that the agreement had been extended for a further 120 days then for another 60 days. In May 2023, the deal was once again extended for 60 days, expiring on 18 July. By July 17, 2023, no new agreement to renew the deal had been reached, causing the deal to expire. Using a spatial partial equilibrium model, the future of the global market of wheat is evaluated under two scenarios assuming the non-renewal of the black see agreement. The features of the model, the tested scenarios and major results are explained in the next sections

5.1. The model

The model used in this study is a nonlinear mathematical programming model under nonlinear constraints. More specifically the model is a partial equilibrium which reproduces the economic equilibrium based not only on the prices and the quantities produced, consumed, and traded for each country and region individually considered in the model, but also on the trade flows for each couple of countries and regions between them. Indeed, when we are interested to a particular product with a relatively small contribution to the national GDP. It's not justified to use general equilibrium models because their main advantages are to capture the interactions among different economic institutions, sectors and factors of production. Sectoral models are more appropriate for analysing policies affecting a particular sector, such as the wheat sector. In addition, a sectoral or partial model is the most

appropriate tool given its capacity to take into account the interactions between the markets for the concerned product in the countries and regions of the world.

Unlike the non-spatial partial economic equilibrium model, a model like the one used in this study for the analysis of discriminatory trade policies, is able to integrate the different features of trade policies in addition to other policies affecting both production and consumption. Furthermore, by analysing the policies affecting a given product and sector we can evaluate the prospects and features of trade flows among countries and regions but also the impacts on domestic production and consumption and their respective prices.

The model used here considers only one product, wheat. At the production stage, wheat is considered as an aggregate product covering both soft and durum wheat. In the consumption stage, we consider the different uses of soft and durum wheat products as wheat equivalent quantities. Moreover, the wheat product is considered as a perfect homogeneous product. Due to its nature, exchange rates are fixed by assumptions (all the levels they had during the reference baseline). Except for the distortions due to the explicit policies considered in the model, we assume that conditions of perfect competition exist in the markets which take place whether within each country or for each pair of countries. Transport and insurance costs are also fixed by assumption based on the observed trend for the year 2021 and 2022 and forecasts for 2023 and 2024.

The model is directly based on the prototype proposed by Takayama and Judge (1971) that has been applied to different sectors and countries. It's also based on the model version developed by Anania and Chemingui (1997) for the analysis of Euro-Med trade integration for the case of wheat. The model maximizes an article objective function of non-linear quasi-welfare subject to linear and nonlinear constraints. It considers individually 18 countries and regions including 5 Arab countries. The list covers also major exporters and importers of Wheat in the world including both Ukraine and Russia. The countries and regions considered are the following: Morocco, Algeria, Tunisia, Egypt, Jordan, EU 27, USA, Canada, Argentina, Australia, China, Russia, Ukraine, Inia, Pakistan, Rest of Asia, Rest of Africa, and rest of the world.

The model is calibrated using data for the year 2021, which represent the year preceding the start of the war between Ukraine and Russia and therefore it reflects a situation of equilibrium or reference scenario of the wheat market. The major information source for the model's database is FAO (2023b). The second source of information used for the model is the International Grains Council, specifically for data unavailable in the FAO database. Accordingly, the data source for production and consumption values of wheat by country and region, as well as producer prices, was the FAO. Consumer prices, on the other hand, were drawn from various sources, primarily the retail price of bread in different countries as documented in the International Grains Council publications (IGC, 2023). These bread prices provided insights into inter-country price variations and facilitated the estimation of consumer prices for wheat-based products.

Price elasticities of production and consumption functions were derived from estimates by Chemingui and Anania (1997), Piggot and Fisher (1993), Tyagi (1993), and Iqbal and Babcock (2016). Regarding transportation and handling costs between countries (from border to border), a key assumption was that these costs are symmetric. The matrix of transportation costs between countries was obtained from the International Grains Council.

5.2. Scenarios

The reference scenario

The model is calibrated and solved for the period 2021-2024. The baseline scenario assumes the continuity, business as usual, for the wheat sector and most important policies affecting production, consumption, and trade for each country and region. The calibration is based on available data for 2021, 2022 and 2023 as well as latest forecasts for the years 2023 and 2024. However, the baseline scenario assumes the renewal of the black see agreement on Ukrainian exports for Wheat. The baseline scenario therefore allows us to analyse the outlook for the wheat sector in the absence of other external or exogenous shocks in the form of new trade agreements or revised policies affecting both production and consumption of wheat over the world. Thus, it reflects the scenario of normal and continued development of the wheat sector in each country and region individually considered in the model.

Alternative scenarios

Compared to the reference scenario, which stipulates the renewal of the Black Sea agreement on Ukrainian crops exports, two alternative scenarios were tested. The first assumes the non-renewal of the agreement which directly leads to the blocking of grains export from Ukraine through the black sea, As a result, Ukrainian exporters will use alternative routes to reach their major customers without any flexibility from the EU countries regarding tariffs concessions and preferential access that could be granted to Ukraine during the time of the crisis. Thus, the majority of exports will be carried out through multi-mode transport channels (road, railways, river) that are used as a transit routes facilitating the Ukraine's exports outside the EU countries

Several assessments have shown that the alternative export routes are costly for Ukraine's exports, which will reduce their competitiveness on world markets. Available information confirms that an increase in transport costs of Ukrainian cereals may reach between 20 to 50% compared with the cost of shipping through the black sea. The second scenario assumes a non re-renewal of the black sea agreement but with a complete opening of the European market to Ukrainian exports which could partially compete with the European producers and consequently benefit from certain support instruments of the CAP even an indirect way.

Impacts

The impacts of the first scenario show increase of producer prices both in importing and exporting countries that do not subsidize their exports or their producers or consumers. For the EU, the producer price increases significantly compared to the reference scenario to reach 6% in 2023 and 8% in 2024. At the same time, consumption falls but exports increase to all destinations considered in the model. Due to the rigidities in the supply functions to reflect the projected yields in 2023 and 2024, the increase in producer prices will generate a small increase in production which will not exceed 2% in 2023 and 3% in 2024. For the USA, the impact of the first scenario is a sharp increase in the producer price of wheat driven by an increase in foreign demand and a stagnation of domestic production and consumption in the USA. The result is an increase of the UAS's exports of wheat by respectively 5 and 6% in 2023 and 2024. A significant share of the USA's increase of wheat exports is through using existing stocks, which are taken into account in the model.

The changes in market shares of major wheat exporters due to the first scenario is reflected by an increase of total exports of all of them, except Ukraine and Russia. Consequently, and as expected, the immediate effect is a significant increase of world prices of wheat as well as consumer prices in most countries around the world. Exports from Ukraine and Russia are increas-

ingly used to regulate stocks or in some case to immediately satisfy shortages in many poor and less developing countries mainly in Africa and the Arab region, However, and compared to the reference scenario, total world exports under the first scenario will represent around 95% of total exports in the reference scenario. The deficit or gap in wheat supply is largely covered by national stocks but also through a significant reduction of domestic consumption of wheat and its derivatives in many countries around the world and particularly in the poorest among them. The drop in domestic consumption in most developing countries are even intensified by the significant devaluation of national currencies. These impacts are further intensified by the declining fiscal spaces for many developing counties that make the implementation of adjustment and support mechanisms for the most vulnerable populations a difficult task.

For the five Arab countries considered in the model, the impacts are also different and depend largely on the economic policies followed by each of them. Thus, Algeria and Tunisia will have



Figure 13 - Impacts on Producer prices.

Figure 14 - Impacts on Consumer Prices.



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Figure 17 - Impacts on Imports.

the greatest impact in terms of food subsidies which will increase by 8% and 11% in value in USD and by more than 12 and 15% in local currencies to reflect even small devaluations of their national currencies. However, neither consumers nor producers will be directly impacted due to current price-setting policies in the wheat sector in both countries. However, the Tunisian policy of setting production prices for wheat below world levels does little to encourage farmers to extend the production of wheat. For Morocco, Egypt and Jordan, the situation is rather different given the large cuts in food subsidies implemented at different phases of economic reform programs with the IMF. Thus, Morocco should benefit from higher producer prices to increase its production respectively by 5.1% and 5.9% in 2023 and 2024 compared to 4.8% and 5.3% in Egypt and only 1.8% and 2.1% compared to Jordan.

In the second scenario, the increase in the EU's



Figure 18 - Impacts on World Prices of Wheat.

wheat exports is largely due to the surge in imports from Ukraine, which will affect negatively producer prices in all EU's member countries. For the Arab countries, the impacts will once again be negative but at a less pronounced level than the first scenario since the EU will partially finance the drop in world prices through its CAP to protect the income of its farmers due to the competitive wheats imported from Ukraine. Figures 13-17 shows the impacts on the five Arab countries in terms of producer and consumer prices. Production and consumption, and imports.

Finally, work prices of wheat are expected to increase due to the non extending of the black sea deal but in average speaking the expected changes are not too costly for most countries (Figure 16). Despite the armed conflict between Russia and Ukraine and the disturbance of the wheat supply chain, the magnitude of price increase is largely correlated to the available stocks across the word and the policies in managing these stocks. However, the conflict may affect largely the world prices in the future if stock levels decline significantly and world production, outside Ukraine and Russia, decline significantly.

6. Conclusions

The ongoing conflict between Russia and Ukraine has had far-reaching implications across various sectors, mainly agriculture. One of the most affected commodities is wheat, as both countries are significant players in the global wheat market. This paper aims to outline the key impacts of the Russia-Ukraine conflict on the global wheat market with a special focus on a panel of Arab countries.

Russia and Ukraine are major exporters of wheat, together accounting for a substantial portion of global wheat exports. The conflict has disrupted wheat production and exports in Ukraine. This disruption has created uncertainty and volatility in the global wheat supply chain. Due to the conflict. Ukraine's wheat exports have experienced a decline in 2022 but not at a large scale thanks to the black sea agreement on facilitating Ukraine's exports in parallel with sanctions imposed by major developed countries on transport and insurance service providers involved in exporting grains from Russia. This has put pressure on importing nations, leading to volatile prices with several up and down tendencies during the year 2022 and since July 2023. The uncertainty surrounding the conflict and the non-extension of the black sea has contributed to price volatility in the global wheat market. Available data shows that the Russia-Ukraine conflict has had effects on the global wheat market, with disruptions in supply chains, reduced exports from Ukraine and Russia, increased dependency on other exporters, price volatility, and shifting trade patterns. In fact, as wheat exports from Ukraine and Russia dwindle, other major wheat-exporting countries, such as the United States, Canada, and Australia, are being relied upon more heavily to meet global demand. This increased dependency on a smaller pool of exporters has led to heightened competition and price fluctuations in the global wheat market.

As the conflict continues, monitoring the evolving dynamics of the wheat market and its broader economic and geopolitical implications remains crucial for both policymakers and stakeholders in the agricultural industry. The impacts of the two tested alternative scenarios on the non-extension of the black sea deal on Ukraine's grain exports confirms the concerns about global wheat prices. However, despite the redirection of the Ukrainian exports routes simultaneously with a high volatility of monthly and even daily world prices, the average yearly impacts are likely to be short-lived. The resilience of the global wheat market, combined with historical precedents of market adaptation, further supports the fact that the overall effect on global wheat prices will be minimal. As a result, stakeholders in the wheat supply chain can remain relatively optimistic about the stability of the market in the wake of the non extension of the black sea agreement but under some features and assumptions.

All Arab countries are highly sensitive to fluctuations in wheat prices due to their heavy reliance on wheat imports to meet domestic consumption needs. Volatile wheat prices can have profound economic, social, and political consequences in the non rich-oil importing countries through affecting food security, fiscal stability and overall well-being. Sudden spikes in wheat prices can strain government resources in countries that still heavily subsidizing wheat consumptions. However, in the Arab countries where subsidies on wheat are completely or largely removed, vulnerable populations who spend a large portion of their income on basic food items will be the highly affected. For these countries, volatile wheat prices can lead to inflationary pressures, as the cost of bread and other wheat-based products rises. This in turn, can erode purchasing power and reduce disposable income for consumers. In other Arab countries, where wheat and other basic food items still heavily subsidized, governments will face increasing fiscal burdens to maintain these subsidies when global prices surge. This can strain national budgets and divert resources away from other critical areas like healthcare, education, and infrastructure.

The two tested scenarios of the non-renewal of the Black Sea Agreement on the Ukrainian exports of wheat simultaneously with the maintenance of barriers on Russian exports is likely to impact negatively the world wheat prices. However, these effects will depend on three important conditions: the flexibility of EU countries to facilitate the transit of Ukrainian export of wheat, the capacity of the Russian to successfully export its cereals, and the evolution of transport costs for both Russian and Ukrainian wheat exports. The expected increase in global wheat prices is estimated to range between 3 and 4% on average.

For the panel of considered Arab countries, the real challenges are not only those due to the volatility of world prices of wheat, which has been always the case, but on another key factor that needs to be considered in the national reform agendas. The list includes among other, national production, consumption subsidies but also exchange rate regimes and trade finance instruments.

The main lesson learned from this evaluation is that despite the volatility of world wheat prices observed in 2023, which continued in 2024, for multiple reasons other than the shortage on the world market, the average price levels will however be of an additional order which does not exceed 4% on average for the 2023 and 2024. Arab countries are therefore strongly advised to carefully plan the timing of import contracts to avoid price spikes which are directly correlated with certain factors totally exogenous to the grain production sector throughout the world.

Finally, extensive literature showed that the global agricultural landscape is largely shaped by various policies and initiative aimed to support farmers across the world. In the USA and the EU, two major economic players, trade finances and direct extensive farmers' support programs play pivotal roles in influencing wheat prices worldwide. Their effects on world prices of wheat are believed to be much higher than any other disrupt affecting the world wheat market. Trade finances are a critical instrument of trade, providing the necessary funds for exporting countries to facilitate the movement of goods across borders. In the context of the USA and EU, robust trade finance

mechanisms have allowed both of them to maintain a steady flow of wheat exports. This consistent supply exerts downward pressure on global wheat prices, benefiting importing nations. However, it can also lead to market saturation, potentially suppressing prices to levels that may not be sustainable for producers in other exporting countries. However, in 2022 and 2023, trade finances have been used largely by major international development banks such as the World Bank and the European Bank for Investment to divert imports of wheat from Russia to other origins mainly EU, USA and Ukraine.

References

- Abis S., Demurtas L., 2023. Food security: the Mediterranean region's desynchronize agenda. *New Medit*, 22(2): 3-11. https://doi.org/10.30682/ nm2302a.
- Anania G., McCalla A.F., 1991. Does Arbitraging Matter? Spatial Trade Models and Discriminatory Trade Policies. American Journal of Agricultural Economics, February 1991.
- Babcock B.A., Iqbal M.Z., 2016. Global Growing Area Elasticities of Key Agricultural Commodities Estimated Using Dynamic Heterogeneous Panel Methods. Working paper, American Economic Association.
- Breisinger C., Glauber J. Kurdi S., Laborde D., Siddig K., 2023. The Russia-Ukraine war: Implications for global and regional food security and potential policy responses. Global Food Security, 36, March 2023.
- Chemingui M., Anania G., 1995. Un Modèle pour l'analyse des perspectives des relations commerciales agricoles entre l'Union Européenne et les pays tiers méditerranéens. European Commission, Bruxelles.

- Devadoss S., Ridley W., 2023. Impacts of the Russian invasion of Ukraine on the global wheat market. World Development, 173, January 2024.
- European Commission, 2023. *Eurostat*, https://ec.eu-ropa.eu/eurostat/web/main/data/database.
- FAO, 2023a. FPMA Tool, https://fpma.fao.org/giews/ fpmat4/#/dashboard/tool/international.
- FAO, 2023b. FAOSTAT, https://www.fao.org/faostat/ en/#data.
- Harbouze R., Elame F., Mohamed T.L., 2024. Analysis of the Moroccan Agri-Food System Through National Accounting "2015 Social Accounting Matrix": The Role of the Wheat Sector in the Agri-Food Complex. *New Medit*, 3 (23): 79-90. https:// Doi.Org/10.30682/Nm2403f.
- IFPRI, 2023. Global Food Policy Report 2023: Rethinking food crisis responses. Washington, D.C.
- IMF, 2023. *IMF Primary Commodity Prices*, https://www.imf.org/en/Research/commodity-prices.
- International Grains Council, 2023. Supply & Demand, https://www.igc.int/en/markets/marketinfo-sd.aspx.
- Piggott R., Fisher B., 1993. Australia. In: Blandford D., Carter C.A., Piggott R. (eds), North-South Grain Markets and Trade Policies. Boulder: Westview Press.
- Robu R.G., Alexoaei A.P., Cojanu V., Miron D., 2024. The cereal network: a baseline approach to current configurations of trade communities. Agricultural and Food Economics, vol. 12.
- Steinbach S., 2023. The Russia-Ukraine war and global trade reallocations. Economics Letters, 226, May 2023.
- Takayama T., Judge G.G., 1971. Spatial and Temporal Price and Allocation Models. Amsterdam: North Holland.
- UNCTAD, 2023. *COMTRADE monthly data for Wheat and Meslin (HS 1001)*, https://comtradeplus.un.org/TradeFlow.
- UNCTAD, 2023. *Linear Shipping Index*, https://unc-tad.org.