

On the collapse of supply chains and their impact on food security and the energy sector

By Kobby Barda

A recently published report by the Bruegel Research Institute included an index about the extent of the impact of the invasion of Ukraine in the wake of the collapse, related to the supply chains across countries as shown in figure 1.¹

Table 2: 20 countries most exposed to the food supply shock

Country	Import dependency ratio	Share of RU + UA in total cereal imports	Shortfall		
			Scenario 1	Scenario 2	Scenario 3
Tunisia	65,5	47,0	14,5	27,2	53,9
Belarus	2,9	73,1	11,5	25,1	44,7
Lebanon	99,0	46,9	11,4	23,1	44,5
Egypt	48,2	58,7	11,3	23,8	44,1
Turkey	0,8	67,9	10,1	22,9	40,4
Armenia	53,3	91,5	9,5	23,8	38,6
Israel	97,0	37,2	9,4	19,8	38,4
Sudan	23,6	88,5	9,3	23,3	37,9
Georgia	62,9	84,7	8,6	22,1	35,8
Azerbaijan	30,6	77,4	7,8	20,5	33,3
Spain	37,4	22,5	7,3	16,1	32,1
Netherlands	85,1	21,3	7,0	15,6	31,1
Indonesia	10,1	24,1	7,0	15,8	31,1
China	4,2	18,8	6,1	14,2	28,4
Mongolia	36,5	61,2	6,1	17,2	28,3
United Republic of Tanzania	3,9	51,2	6,1	16,5	28,3
Portugal	74,4	17,3	5,7	13,6	27,2
Yemen	96,0	31,2	5,6	14,4	26,8
Morocco	56,9	19,7	5,5	13,5	26,7
Uganda	5,2	33,5	5,4	14,3	26,1

Source: Bruegel

The three countries most dependent on the supply chain functioning for food security purposes are Lebanon (99%), Israel (97%), and Yemen (96%). The editors of the study also calculated the relative share of Russia and Ukraine out of the general share of imports. From it, they identified the countries most likely to be affected according to the three characteristic scenarios of varying degrees of severity. In the mentioned table, the countries at the top are Tunisia, Belarus, Lebanon, Egypt, Turkey, Armenia, and Israel. The impact of the current conflict will hit in full force in the fall after the harvest cycle of the summer months is not planted in Ukraine and/or because of severe export restrictions to Russia. But even now, in light of the crippling sanctions imposed on Russia by some governments around the Western world, insurance companies are not interested in covering ships, which is causing a cessation of maritime transport, as well as² ship captains denying entering into Russian-Ukrainian space.³ In

¹ PAULINE WEIL AND GEORG ZACHMANN, The impact of the war in Ukraine on food security, www.bruegel.org, March 21, 2022., Available at: <https://www.bruegel.org/2022/03/the-impact-of-the-war-in-ukraine-on-food-security/>, [Accessed on March 31, 2022].

² [tradewindsnews.com](https://www.tradewindsnews.com), Adam Corbett, *Marine insurance markets in chaos over Russian business* March 21, 2022. Available at <https://www.tradewindsnews.com/insurance/marine-insurance-markets-in-chaos-over-russian-business/2-1-1185208>, [Accessed at March 31, 2022].

³ John Konrad, *Seafarers Feel Unsafe Entering Russian Ports*, gcaptain.com, March 16, 2022, Available at: <https://gcaptain.com/ukraine-seafarers-return-home-to-fight/>, [Accessed at March 31, 2022].

addition, there are reports of workers refusing to refuel Russian ships,⁴ unload cargo, or even allow them access to ports around the world.⁵

However, this is not the only crisis that is dramatically hurting grain prices. The Chinese Minister of Agriculture foresees a negative year, especially in the grain crops, that claim that it is the worst in history.⁶ This is particularly bad news because the Chinese economy relies on the supply of animal proteins and fats, mainly on the pig farming or swine industry, to the Chinese population. In 2019, the African Swine Fever affected the pig farms, which resulted in the extinction of tens of millions of pigs because of their infection with the virus.⁷ To re-establish this crucial industry to the Chinese, they were forced to sign immediate and futures contracts for the supply of almost any type of grain available in the market so that the pigs could be fed "from scratch". This, in turn, caused a realignment of the entire trade balance in the world.⁸ The Chinese banned the export of chemical fertilizers needed for the agricultural improvement of crops in order to meet their ambitious grain production goals. There was hope that China would release the ban on fertilizers once the pig market was restored but unfortunately the second round of the African virus hit China, the ban was not released and fertilizer prices reached an all time high. According to a Bloomberg and Green Markets report, the jump went from about \$300 per ton of fertilizer at the peak of the Coronavirus in 2020, to \$1,000 or more after the African Swine Fever crisis banning the export of Chinese fertilizers. Now, after the sanctions imposed to the Russian fertilizer market, as of mid-March, prices soared to approximately \$1300 per ton of fertilizer (Fig.2).⁹

⁴ Mared Parry, Georgian captain refuses to refuel Russian ship: 'Go f**k yourself', independent.co.uk, Feb 28, 2022. Available at <https://www.independent.co.uk/tv/news/russia-putin-misled-advisors-ukraine-vid851150c>, [Accessed at March 31, 2022].

⁵ Bruce Golding, *New sanction to ban Russian-flagged ships from docking in US: report*, nypost.com, March 2, 2022. Available at: <https://nypost.com/2022/03/02/sanction-to-ban-russian-flagged-ships-from-us-docking-report/>, [Accessed at March 31, 2022].

⁶ Andrew Whitelaw, Chinese Agriculture Minister announces winter wheat crop could be the worst ever, armweekly.com.au, 26 Mar 2022. Available at: https://www.farmweekly.com.au/story/7671074/is-the-chinese-crop-the-worst-in-history/?fbclid=IwAR2dv-RFx8UaeB4ytpRWz4_0wB4sllxHLL1H8KKLUxxKDuZATvzsFOzl-q8, [Accessed at March 31, 2022].

⁷ Eric Ng, A miserable Year of the Pig for China's hogs is godsend for American farmers, South China Morning post, 16 August 2019, Available at <https://www.scmp.com/business/companies/article/3023181/miserable-year-pig-chinas-hogs-godsend-american-farmers>. [Accessed at March 31, 2022].

⁸ How African Swine Fever in China Is Shaking Up World Trade Flows, gro-intelligence.com, 28 NOVEMBER 2019, Available at <https://gro-intelligence.com/insights/how-african-swine-fever-in-china-is-shaking-up-world-trade-flows>, [Accessed at March 31, 2022].

⁹ Keith Good, Fertilizer Prices Hit New Highs, as Russian Invasion "Exacerbating a Food Shortage", Farm Policy News, March 19, 2022, Available at: <https://farmpolicynews.illinois.edu/2022/03/fertilizer-prices-hit-new-highs-as-russian-invasion-exacerbating-a-food-shortage/>, [Accessed at March 31, 2022].



Figure 2: Fertilizer Frenzy, Source Green Markets, Bloomberg

Besides the direct and indirect damage in the planting and harvesting process, transportation barriers also complicate the scenario, as well as the increase in global energy supply. In recent years, the United States has been considering to withdraw from the Bretton Wood System.¹⁰ A significant part of the decision to resign was the ability of the United States to improve the oil shale extraction process and create a competitive price of about \$50 per barrel.¹¹ That price allowed President Obama at the time, to sign a law that made it possible to repeal the oil export ban law, which was enacted after the 1970s oil crisis¹².

However, within the framework of the legislation signed by President Obama, the option remains for the incumbent president to ban exports again for oil in times of emergency, through a presidential decree and without the intervention of Congress. A series of events regarding Russia threaten to invade Ukraine eventually led to a jump in oil prices from \$76 at

¹⁰ In 1944, Franklin D Roosevelt invited the countries that would later be called the Western Bloc to an agreement in the pastoral town of Bretton Woods, New Hampshire. He offered an “incentive” for states to side with America the day after the war. Roosevelt knew and feared Stalin’s madness and therefore sought to propose a new model the like of which the world had not seen before. The United States—the only nation that would emerge from the war at the height of its power—would give all member countries the freedom to sail the oceans, their goods and services changing hands. No commission would be levied. Transferring goods to Belgium for refining, sending them for wrapping in Germany, and selling them in the US free of charge for security services: this was actually the first model of globalization, turning our world into a very small globe. It featured a new incentive, to open an American market, [through reduced tariffs](#). More can be read at: Kobby Barda, *America’s resignation from its role as global police*. foreignpolicynews.org. November 1, 2020. Available at: <https://foreignpolicynews.org/2020/11/01/americas-resignation-from-its-role-as-global-police/>, [Accessed at March 31, 2022].

¹¹ John Kemp, U.S. shale breakeven price revealed around \$50: Kemp, reuters.com, AUGUST 9, 2017. , Available at: <https://www.reuters.com/article/us-usa-shale-kemp/u-s-shale-breakeven-price-revealed-around-50-kemp-idUSKBN1AP25M>, [Accessed at March 31, 2022].

¹² GILLIAN RICH, Oil Export Ban Lifted as Obama Signs Spending Bill, investors.com, 18 December, 2015. Available at: <https://www.investors.com/news/oil-export-ban-lift-needs-obama-ok/>, [Accessed at March 31, 2022].

the end of 2021, to \$100 and more. The immediate impact of sanctions and the removal of Russia from the map of oil exporters to most Western industrialized countries, translates into rising prices that affect consumer's pocket and to the series of further price increases derived as a result of the increase in energy imports (Fig. 3).

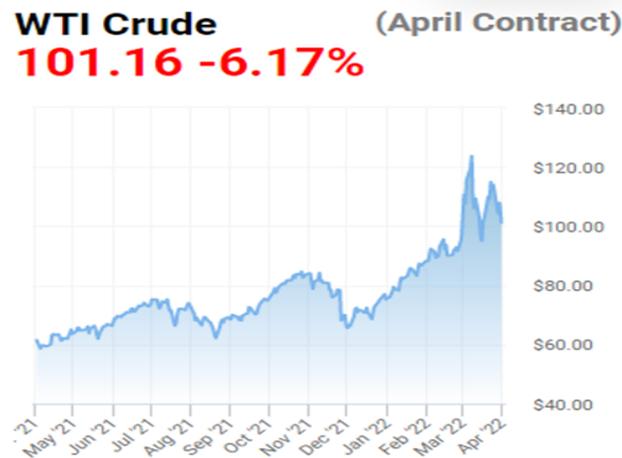
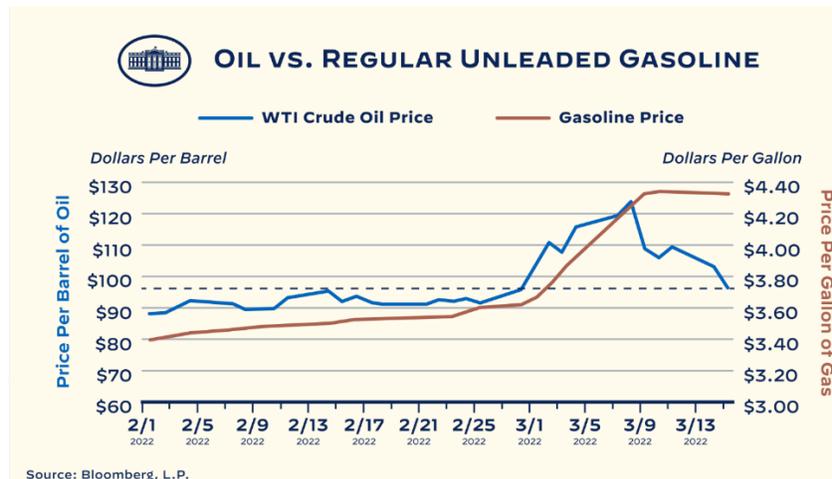


Figure 3: Crude price evolution within the last year.

President Joe Biden suffered a dramatic drop in approval ratings due to rising energy prices. For example, a poll conducted by the conservative Fox News and published on March 23, 2022, found that more than two-thirds of Americans (67%) blame President Biden for rising energy prices and Some 53 percent of registered voters polled said Biden has made the economy worse..¹³ President Biden, who is not indifferent to the results of the polls and is aware of the mid-term election campaign taking place in November of this year, tried to roll the blame to other players in the arena. On March 13, the US President tweeted "Oil prices are falling, and so are fuel prices. Last time oil was \$96 a barrel, fuel was \$6.23 a gallon. It's now \$3.14. Oil companies and gas should not cushion their profits at the expense of hard-working Americans." (See graph in figure 4)

¹³ Mark Lungariello, Biden gets low marks on inflation, gas prices in Fox News poll, nypost.com, March 24, 2022. Available at: <https://nypost.com/2022/03/24/biden-gets-low-marks-on-inflation-and-gas-prices-new-poll/>, [Accessed on March 31, 2022].



Oil Price: Feb-March 2022. Source: President's Biden Twitter account

It is important to recall that President Biden operates in the Democratic Party which advocates for a progressive and an environmental agenda. On his first day in office President Biden signed an executive order for stopping the work on the XL Keystone oil pipeline, which would transfer shale oil from Canada in the north, via North and South Dakota and other states to the Gulf of Mexico, was stopped during the Obama administration and renewed during the Trump period.¹⁴ All of this could push President Biden to sign an executive order to ban energy export, which would indeed lead to lower-price oil in the United States, but could simultaneously lead to a rise in oil prices above \$200 per barrel, according to the geopolitical strategist Peter Zeihan.¹⁵

When transportation rates meet the increase in grain prices derived from rising costs of energy products alongside an increase in wages, and in insurance rates due to a rise in stability margins, together can create significant social unrest in the Middle East and North Africa. In fact, rising grain prices were the main catalyst for the outbreak of the Arab Spring social unrest in countries where governments significantly subsidize the price of wheat, to allow the public to eat pita or bread at an affordable price. However, when wheat prices are rising sharply, governments, especially the poor ones, will have a hard time covering the gap generated (if there will even be enough wheat to supply the people) at a low price. This is the current situation and the forecasts ahead of next winter. Jackie Hugi describes in the *Maariv*, an Israeli newspaper, that the rise in prices: "Within a month, in Egypt alone, food prices rose by about 20 percent. The simple bread, for example, climbed from the price of 1 Egyptian lira to 1.25 lira, and a kilogram of rice, which cost 8 lira, is now sold at 11 or 12. Kilograms of pasta sold for 11

¹⁴ Nicholas Kusnetz, Biden Cancels Keystone XL, Halts Drilling in Arctic Refuge on Day One, Signaling a Larger Shift Away from Fossil Fuels, *insideclimatenews.org*, January 21, 2021. Available at: <https://insideclimatenews.org/news/21012021/biden-cancels-keystone-xl-and-halts-arctic-drilling-fossil-fuels/>, [Accessed at March 31, 2022].

¹⁵ Matthias Inbar, Geopolitical Strategist Peter Zeihan, the man who predicted Russia's invasion of Ukraine, I24 YOUTUBE CHANNEL, March 21, 2022. Available at: https://www.youtube.com/watch?v=MQL_KCvBkk4, [Accessed at March 31, 2022].

lira; it now costs 20 lira. All this a few days before Ramadan, which began in the first week of April, in which family consumption rises."¹⁶

In conclusion, the war in Ukraine has no end in sight currently, and we are at a time when the world is recovering from the COVID-19 pandemic and experiencing a crash in global supply and demand chains. We are entering an unstable interim period, which in the more distant future does not imply an immediate improvement, but rather a continued deterioration insocial, economic, political, and structural aspects which may further bring about great changes in the world as we know it during 2022.About the Author:

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¹⁶ Jacky Hugi, *War affects: The fear of bread riots in Egypt has become tangible*, Maariv, March 25, 2022. Available at: https://www.maariv.co.il/journalists/Article-906669?fbclid=IwAR3gRIs-R19vn8jdNhGnGIXTI_hSGjSp40zHLy-tzz95R7VptsVgIR-p9Eg (Hebrew Source).