
From “Resource Wars” to “Resources in Wars”

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The geopolitical perspective on “resource conflicts” focuses on the way in which key assets, such as oil, serve as a motivation for war when governments struggle over their control. This article argues that this particular approach is often too narrow-minded to accurately explain interstate conflict, since there are usually other key factors associated with war. Instead, it is necessary to shift the focus inward, on where the resources are located, and outward, to the places to which they are connected. In this way, we can consider resource-related interstate conflicts in terms of the resulting supply-chain disruptions that they cause. Using the recent Russian invasion of Ukraine as a case study, this paper concludes that while Russia likely included control over natural resources within a broader rationale for invasion, now a major resource-related concern related is widespread disturbance in global commodities, including food systems. Therefore, what we now see in eastern Europe is not so much about war caused by desire for resources, but rather the effect on access to resources that the war creates. In short, the implication is that the framework of resource conflicts needs to be expanded.

INTRODUCTION

While there are clear geopolitical and humanitarian consequences to the ongoing war in Ukraine, the conflict also leads to significant implications for natural resources. The literature on “resource wars” goes back a few

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decades, and mainly focuses on the way that resources, whether abundant or scarce, serve as the impetus for deepening conflict. Often it concentrates on internal conflicts and civil wars, which in recent times account for the vast majority of conflicts. In addition, the literature pays much greater attention to the onset and continuance of a war. However, since late February this major conflict between Russia and Ukraine, two natural resource-rich states, reveals broader knock-on effects for supply chains and commodities markets connected to food. The theory of natural resource conflicts, largely inward focused, should be flipped to consider its outward reverberations.

UNDERSTANDING RESOURCE WARS

The “resource wars” concept primarily characterizes the interaction between natural resources and conflict. In further detail, they are defined as follows: “Resource wars are violent conflicts that are largely driven by competition for control over vital or valuable natural materials, such as oil, water, land, timber, animals (or animal products), gold, silver, gems, and other key minerals.”¹ These confrontations can be intrastate or interstate in nature. Notably, “a desire to gain control over a valuable resource supply, or the wealth it generates, is a dominant factor leading to war,” though there are other elements too, such as ethnic differences and historical injustices.²

Past research largely focused on the connection between natural resources and internal conflicts, rather than those involving two or more states.³ Part of this may be the reality that in recent decades, intrastate (non-international) conflicts are most closely associated with natural resources. The United Nations Environment Programme states that “since 1990 at least eighteen violent conflicts have been ignited by the exploitation of natural resources.”⁴ And the relevance of natural resources is so great that “over the past sixty years at least forty percent of all intrastate conflicts can be associated with natural resources.”⁵ This situation, in which internal wars receive the greatest attention, serves as an opportunity for further scholarship, with Koubi et al. noting that “the nexus of resources and international conflict is a fruitful area for future research.”⁶

What historical cases exist of interstate resource wars (or at least conflicts where access to resources played a major part)? Centuries ago, colonial expansion could be seen as resource wars—consider, for example, Spain’s conquest of the Incan empire or subjugation of the Maya peoples. The Spaniards plundered gold and silver and brought it to Europe to fund development and conflicts on that continent. The 19th century “scramble for Africa” by European powers is another example—“Africa was full of raw

materials that could be exploited to fuel the industrial revolution”.⁷ Other lesser-known interstate resource conflicts include the war between Peru, Chile, and Bolivia from 1879–1884 over land area rich in minerals such as sodium nitrate (used in explosives),⁸ and the Chaco War from 1932–1935, in which Bolivia and Paraguay fought for territory containing oil reserves.⁹ Further, Japan’s expansion prior to World War II centered around resource considerations. Japan annexed Korea in 1910 for strategic reasons, as well as for its wealth of coal and iron,¹⁰ while the invasion of the Chinese province of Manchuria in 1931 was in part based on “seeking materials to fuel its growing industries.”¹¹ A burgeoning population “propel[ed] the country’s leaders to look beyond the nation’s shores to meet domestic needs, including raw materials and space to settle for the growing populace.”¹² More recently, we see Iraq’s invasion of Kuwait in 1990 as largely based on the acquisition of oil reserves. In the early 2000s, civil war and an abundance of mineral resources in the Democratic Republic of the Congo (DRC) attracted neighboring states seeking spoils. All of this is to say that, while cases do exist, history is not teeming with interstate examples of conflicts focused on resources.

Turning to the most recent case of the war in Ukraine, we can see that natural resources are relevant, not just in terms of access (that is too unidimensional); instead, we need to consider the global disruption caused by diminished access to these resources.

Commodities and the Russia-Ukraine War

While Vladimir Putin provided a litany of cultural and historical reasons to justify Russia’s invasion of Ukraine, there is reason to believe that resource-related elements also motivated his decision, similar to the annexation of Crimea.¹³ There is disagreement as to the relevance of natural resources. On the one hand, a RAND blog article notes that “Ukrainian gas fields appear too small to justify the costs of the invasion, too hard to keep, and almost impossible for Russia to exploit.”¹⁴ Due to the massive amounts of fossil fuels Russia possesses, the addition of Ukraine’s resources would not be as significant as one would think. And what degree of reliance did Russia have on Ukraine for some of its resources? Only 1.35 percent (in value) of Russia’s imports came from Ukraine in 2020, and it exported only 1.91 percent. The two countries are more integrated and vital to global commodities markets than they are to each other. Writing in *The Guardian*, Harvey agrees, stating that the war is about territory and the old Soviet empire rather than resources.¹⁵ On the other hand, it is hard to completely

discount the role of strategic calculations based on natural resources. As Kirby points out, Ukraine is a “strategic commodities powerhouse.”¹⁶ From the perspective of Ukraine, the loss of gas reserves around Crimea was significant, affecting Ukraine’s potential to achieve greater energy independence from Russia.¹⁷ Now, the contested eastern regions of the country also contain more than 45 percent of Ukraine’s coal.¹⁸ And there is no doubt that, as Muggah writes in *Foreign Policy*, “Ukraine’s extraordinary riches in energy, minerals, and agriculture are a prize for the Kremlin.”¹⁹ Overall, while Russia does not really need Ukraine in terms of resources, control of Crimea and Ukraine blocks a rival that could supply energy to Europe.²⁰

Regardless of Putin’s motivations, the spillover effects in commodities markets need to be considered. The Russia-Ukraine war lays bare some of the intricate ways that distant countries rely on resources and products. The conflict, for example, exposes how dependent Europe is on Russia for energy; it receives over a third of its natural gas from Russia.²¹ Although most trade between Europe and Asia takes places by sea, Russian rail also links the two regions and will be disrupted;²² this means that over a million product-filled containers may need to be rerouted.²³ Furthermore, half the world’s supply of neon gas is sourced from Ukraine, and it is an essential input for semiconductor chip manufacturing.²⁴ Car companies such as VW and BMW are impacted too, with shortages of Ukrainian-made wire harnesses (used in the miles of cables and lines in each car) leading to shutdowns of major manufacturing plants in Germany.²⁵

Globally, the current shock to the commodities markets represents the industry’s largest disruption since the oil crisis in the early 1970s.²⁶ Considered in aggregate, commodity prices have risen 26 percent this year.²⁷ This is due to the size and importance of the conflict (a ground war in Europe), the deep interconnection of national economies, and the importance of the key actors involved: Ukraine and Russia. In addition, the current situation demonstrates humanity’s deep dependence on mined and farmed resources. Economic appetite for resources is not on pause, and though “a world facing a physical shortage of raw materials dug up from the ground, seems like a throwback to an earlier age...that is exactly the predicament that lies ahead.”²⁸

Further complications exist: with the complex web of global supply chains, it is not just resources or product availability, but their movement and transportation over long distances that is important. Immediately after the outbreak of war, Bloomberg noted that “the risk of logistical turmoil is also increasing.”²⁹ This hazard has turned into a full-blown reality. In many cases, the inputs necessary to create products are missing because

of supply chain disruptions. For example, to produce all types of food, fertilizer is essential (and part of humankind’s ongoing—and unsustainable—dependence on fossil fuel-driven agriculture). Globally, Russia ranks first in nitrogen-based fertilizers, and second in those using potassium and phosphorus.³⁰ The reduction in fertilizer on the markets led to increased prices, even rising two times or more in some cases.³¹

The ongoing conflict in mainland Europe demonstrates that we may need to expand the types of materials considered to be conflict-related resources. Minerals that are typically recognized and monitored during times of conflict include tungsten, tantalum, tin, and gold—referred to as 3TG. Other valuable point-source assets are associated with conflict, including oil, diamonds, and even timber. Previous scholarship considered how these materials served as a motivation for conflict, or their use as a source of income deepened human suffering. However, the outward ripples of the war in Europe also reveal other commodities’ relation to conflict, from nickel to wheat. The disruption of supply chains reverberates in such a way that more people are affected in more places. Beyond extensive coverage in the news, the price of bread at the store, and gas for our cars makes this conflict all too real. The following section considers this in detail.

Commodities and Other Recent Conflicts

One might wonder why recent interstate wars sometimes involved a superpower but did not result in such massive effects on commodities. Looking back at these other conflicts, why were they not as disruptive? At least one of the countries involved was smaller or not as highly integrated into the global economy. Take Ethiopia and Eritrea, for example, which fought each other from 1998 to 2000. Their economies were not large enough to make a difference on a global scale, today accounting for .1% and .01% of the world economy respectively.^{32, 33} While the United States, a superpower, invaded Afghanistan and Iraq, each of these countries were not as integrated into the global economy. Afghanistan’s total exports in 2002 totaled USD 1.76 billion, and while Iraq may have had “the second biggest known oil reserves in the world” according to a 2003 Guardian article,³⁴ its 2002 exports accounted for only 2.44% of all crude petroleum.³⁵ Russia’s 2008 invasion of Georgia, currently ranked 113th in the world by GDP,³⁶ did not result in the international condemnation that Putin faces today for similar reasons.

Why is the Ukraine-Russia war wreaking havoc with the availability and prices of commodities? Ukraine is sometimes referred to as the “bread-

basket of Europe,”³⁷ exports critical “metals such as nickel, copper, and iron,” and is “largely involved in the export and manufacture of other essential raw materials like neon, palladium, and platinum.”³⁸ Meanwhile, although Russia is the largest nuclear state it is, at its core, really an exporter of natural resources—one of the leading exporters of commodities worldwide.³⁹ In 2020, petroleum and minerals made up 48.7 percent of exports, and precious metals and gems another 10.1 percent.⁴⁰ Of Russia’s cereals exports, 28.1 percent (valued at USD 3.2 billion) went to Egypt, 16.3 percent to Turkey (USD 1.9 billion), and 5.1 percent to Saudi Arabia, and 4.8 percent to Nigeria.⁴¹ Beyond this, “Russia is a key supplier of a type of nickel used to make steel and electric-vehicle batteries” and possesses notable supplies of aluminum, and its palladium and platinum are essential for catalytic converters.⁴² Russia’s choice or inability to export some of its products is only compounded by the political and moral imperative of the international community (in most cases) to sanction the country.

Food and Environment

The war in Ukraine reveals the outward environmental effects of contemporary armed conflict, when considered through the supply chain of food and resources necessary for agricultural production. As explained in the *Harvard Business Review*, “Russia and Ukraine are also big exporters of grains such as corn, barley, and wheat, as well as fertilizer.”⁴³ Food is a major humanitarian concern. The effect of the war on food security and humanitarian aid provided around the world is striking. In just over three and a half weeks, “wheat prices...increased by 21 percent, barley by 33 percent and some fertilizers by 40 percent.”⁴⁴ Beyond wheat, soybeans are just under their peak price set in August 2012. And for “sunflower oil, the closure of Ukrainian ports cuts off flows from a country that accounts for roughly a half of all exports of the key cooking oil.”⁴⁵ More than half of the World Food Programme’s (WFP) stocks of wheat come from Ukraine. The world’s food situation is already dire, and in 2019, 820 million, or more than ten percent, of the world’s population were food insecure.⁴⁶ Now, as a *New York Times* reporter explained, the head of WFP told him that the organization is “taking from the hungry to give to the starving.”⁴⁷ The countries that will be most affected are 1) those that are the poorest—their governments and citizens do not have the economic strength to easily purchase more expensive food—and 2) those that, in regions like North Africa and the Middle East, rely heavily on a country like Ukraine.⁴⁸

We will also likely see environmental implications. In the same way

that eco-oriented concerns played second fiddle to issues surrounding COVID-19, so too will they become subordinate in terms of war and food security. In the United States, President Biden already tapped the country’s strategic petroleum reserve and hopes to allow—even require—more oil production by petroleum companies on federal lands to reduce domestic gas prices.⁴⁹ Another relatively quick response by governments may be their shift of financial resources. WFP refers to food insecurity being increased when governments divert spending towards war.⁵⁰ In the same vein, to support or purchase food security, governments may need to take from other programs, whether those for education, health, or the environment. Over the longer-term, it would likewise be understandable if countries currently facing food shortages found other ways to grow produce at home by expanding agriculture, even into previously protected areas. In some cases, greater pressure on sourcing foodstuffs may lead to reliance on countries with more harmful agricultural practices or greater production inefficiencies; for example, if Turkey replaces Ukrainian wheat by growing its own, there would be a drop from 3.72 tons per hectare to 2.74.⁵¹ Or certain products may need to travel longer distances, resulting in a greater transportation-related environmental footprint. While the war reduces imports of Russian fossil fuels to Europe and the United States—and on the surface, this now appears better for the environment—these fossil fuels are not all being replaced by renewables. Over the longer-term countries like Germany may increase its use of solar, but global energy markets cannot react that quickly. Thus, at present, petroleum from Russia may be made up, where possible, by reactivated coal plants or gas from Qatar or Algeria.⁵²

It is even possible that there will be conflict spillover related to food, though this relationship may be indirect, or secondary to other factors. Analysis shows that social unrest is sometimes tied to food insecurity resulting from higher prices.⁵³ As the *Economist* points out, “in poorer countries where food and fuel are a larger part of people’s spending, the backlash could be even more violent: food-price spikes in 2007-08 led to riots in 48 countries, and there are already signs of panic and unrest today.”⁵⁴ The Global Conflict Risk Index looks at key structural conditions within countries to determine the risk of violent conflict over the next few years. For 2014, the index provided a “food insecurity indicator” based on “combining price level, price volatility, dietary requirements, and nourishment.” The highest-ranked countries were Haiti, Zambia, Tanzania, Central African Republic, Chad, and Rwanda.⁵⁵ WFP listed current emergencies in Ukraine, Afghanistan, northern Ethiopia, Yemen, South Sudan,

northeastern Nigeria, Syria, the DRC, and the Sahel.⁵⁶ Meanwhile, the Economist Impact's annual "Global Food Security Index" rankings account for food's affordability, availability, quality and safety, and climate and natural resources, and as of 2021, the countries most likely to be affected by diminished grain exports from Ukraine (e.g. Turkey, Egypt, and Saudi Arabia) are all included in the category of "good performance".⁵⁷ All in all, the lack of an overlap among these countries leads to the interpretation that food might play an ancillary role in conflict within them.

Implications for Future Conflicts

What does the current war in Ukraine reveal about future conflicts' ramifications for supply chain disturbances, including for the global food supply? In the International Crisis Group's "10 Conflicts to Watch in 2022" list, published in December 2021, it rightly placed Ukraine at the top, followed by Ethiopia and Afghanistan, but then highlighted tensions between the United States and China and the United States and Iran. Admittedly, as *The Economist* notes, "full-scale interstate warfare between great powers remains improbable."⁵⁸ And yet in its article, "The growing danger of great-power conflict," the magazine warns that "China...and Russia are entering into a renewal of great-power competition with the West."⁵⁹

What would the consequences of a conflict between Pakistan and India be? Pakistan's most lucrative exports are cotton and apparel, while India is a major exporter of pharmaceuticals. In comparison, hostilities between China and Taiwan—should the U.S. respond with force—would probably lead to costs unimaginably large. Taiwan is best known for producing microchips and semiconductors, with over sixty-four percent of its 2020 exports in electronics and machinery and appliances.⁶⁰ We have seen how shortages in these items have caused manufacturing complications through the COVID-19 era. The disruption due to broken supply chains for these components during a war would likely be far greater, and the domino effects for other commodities and products, including food, are difficult to foresee. China's peacetime impact on food security can already be dramatic; as of December 2021, it had "managed to stockpile more than half of the globe's maize and other grains, leading to steep price increases across the planet and dropping more countries into famine."⁶¹ It is no doubt conceivable that there would be an even greater effect in a time of conflict.

Redefining Resource Wars

What broader conclusions can be drawn from this example that would apply to other interstate conflicts in the future? First, it is the high level of unpredictability, in that we do not really know all that will happen; there are uncertainties and unpredictable chain reactions in creating and distributing products. Second, the larger the economies involved in conflict, and the more integrated they are in the global economy, the more people will be affected around the world. Third, those who are more vulnerable are more likely to be harmed, since price shocks and shortages are difficult to overcome with coping strategies. Fourth, these issues will take time to resolve. Supply chains take a long time to build—and therefore are complicated to unwind and recreate. Take the example of a medical gown supplier in the United States who took one whole year just to figure out the necessary materials and sourcing.⁶²

It is also worth expanding the scope of what conflicts are considered to be resource-related. It is less about “resource wars” in terms of causing conflict, and more the “resources in wars,” or “war and resources.” In other words, while scholars typically think of resource wars as the *cause* of conflict, or at least a contributing or deepening factor. We can shift and broaden the definition to include the downstream effects of conflict. While resource wars are in part fought over access to materials, the war in Ukraine shows even more how wide-ranging is the influence on all types of commodities. A war of this type, though concentrated in eastern Europe, is truly global in its range of consequences. From wheat, to oil, to fertilizers—food and agriculture around the planet is impacted. Instead of resources being acquired and sold to fund conflict, which is the basis for the dominant understanding of resource wars, future explanations should account for concerns about the loss of access to resources when supply chains are disrupted; this is the way that the vast majority of countries experience resource-related wars.

What can be done to mitigate food supply chain disruptions from armed conflict moving forward? Firstly, it is important to have a deeper recognition of this vulnerability—conflict’s indirect consequences on food worldwide can be significant and sometimes unpredictable. Secondly, it is necessary to build redundancy in supply chains. Although this might not be as efficient given reliance on “just-in-time” inventory and shipping and will create superfluous lines of resources, it may become increasingly necessary for the sake of security. Looking ahead, there is a deepening global division in values between societies that are oriented towards democracy

with fundamental values of openness and those that are more authoritarian in nature.⁶³ Therefore, each side will need to create its own parallel chains for resources. If these opposing ideologies are not in a hot war, the best way to remain insulated from parallel conflict-related shocks is to guarantee that they have their own access to reliable supplies of commodities. *f*

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