U.S. Commodities Markets

War in Ukraine has Broad Implications for Commodities Markets

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The full-scale Russian invasion of Ukraine has broad and protracted implications for the global commodity markets. Russia is a top global supplier of agriculture, energy, and base/precious metals. The swift and punitive financial sanctions along with corporate "self-sanctioning" against Russian exports will create acute global short-, medium-, and longer-term supply implications and force the aggregate demand structure to recalibrate as prices move higher.

Absent from the broad commodity narrative is how Russian sanctions will impact or can impact U.S. supplies of physical commodities. This includes agriculture, crude oil, natural gas, and industrial metals. In a recent report, The Impacts of Russian Military Action on Wheat and Corn, we explained some of the implications that the Russian invasion can have on physical U.S. corn and milling wheat supplies.

While the broad narrative is focused on how Russian finance and banking sanctions will compress global commodity supplies and push prices higher, we believe that the physical supply impacts on the U.S. energy markets should be minimal and regional.

On March 8, 2022, President Biden announced a U.S. ban on Russian oil imports. Because the U.S. is a marginal importer of Russian crude and heavy oils, that are primarily used in PADD 1, the East Coast, and PADD 3, the Gulf Coast, refining activities, we believe these import disruptions will be regional. Specifically, we believe the import ban on Russian crude oil will reduce supplies in PADDs 1 and 3 which can force a redistribution of domestic oil supplies or import flows.

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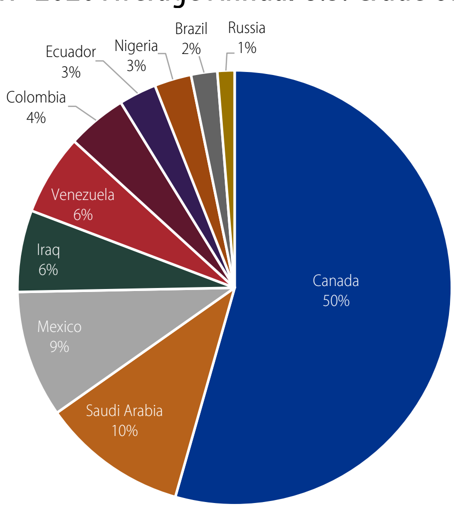
U.S. Energy Information Administration data from 2017 to 2020 illustrates that Russian crude imports were growing, but averaged just 1.1% of the total U.S. volume. During this period, monthly Russian crude imports to PADD 1 was 5.8% of the total imports or 1.5 mmbl. Monthly PADD 3 imports of Russian crude were 1.6% of total imports, or 1.0 mmbl.

2017-2020 Average Annual U.S. Crude Oil Imports



Source: U.S. Energy Information Administration and HilltopSecurities

While the U.S. is the world's largest user of crude oil, since 2017 China has become the largest importer of crude oil. Since 2016, Russian crude oil displaced Saudi crude to become China's largest supplier. This structural pivot is critical in helping assess the potential impacts of the domestic crude oil import paradigm. If China incrementally reduces Saudi crude imports at the expense of the less expensive yet politically costly Russian Urals crude, this redistribution could help fill supply gaps in PADDs 1 and 3.

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Despite the projected incremental loss of domestic physical crude supplies, the domestic price responses have been anything but minimal and regional. While the NYMEX WTI, gasoline and heating oil futures contracts are for domestic delivery, they are inextricably linked to global supply and demand. It was fear of a Russian driven global crude oil supply shock combined with the inability of OPEC+ to meet demand, that reverberated throughout the U.S. energy complex and pushed both physical and financial prices of crude oil, gasoline, and diesel to either record levels or close to record levels.

Despite Russia being the fourth largest exporter of natural gas, the U.S. does not have any direct physical import or export exposure to Russian gas. While the recent EU energy security discourse mentions the U.S. providing material LNG exports, it is important to note that: 1. The German led dialogue is focused on proposals to build new LNG import terminals. These are not "shovel ready" projects, and there is a multi-year timeline associated with the development. 2. Because U.S. LNG export capacity is capped, we don't believe that EU gas import demand can inflict short- or medium-term supply or price shocks to the U.S. gas complex.

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From aluminum to zinc, Russia is a major producer of precious and industrial metals. According to Bloomberg, the country produces 43% of the world's palladium, 14% of the platinum, 8% of the nickel and 4% of the copper. The world's largest producer of titanium is the Siberian based VSMPO-AVISMA and is controlled by an ally of President Putin. Of the above metals, the U.S. has the greatest direct economic exposure to palladium and platinum.

The largest use of palladium is in automobile catalytic converters and titanium is used in commercial and military aerospace. If imports of Russian palladium and/or titanium were to either slow or become weaponized the American automobile and aerospace industries would be directly impacted which could threaten domestic GDP. Historically, both the U.S. automobile and aerospace industries are material contributors to the nation's economy.

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While it is difficult to fully capture the domestic macro-economic impacts of a palladium or titanium supply shock, we believe that if supplies of were to fall domestic non-EV vehicle and commercial aerospace production could decline which could inflict negative economic reverberations throughout the domestic economy.

Futures Returns of Geopolitically Sensitive Commodities

Commodity	2019	2020	2021	YTD 2022	Feb. 23, 2022 to March 10, 2022	Importance To US Economy
Gold	19%	24%	-4%	9%	3%	✓
Palladium	59%	29%	-22%	53%	12%	✓ ✓
Copper	3%	26%	26%	153%	2%	✓ ✓ ✓
Aluminum	-2%	11%	42%	22%	3%	✓ ✓ ✓
Nickel	31%	19%	26%	131%	92%	✓ ✓
WTI Crude Oil	34%	-21%	55%	41%	18%	✓ ✓ ✓
Natural Gas	-26%	16%	47%	24%	2%	✓ ✓
RBOB Gasoline	30%	-17%	58%	42%	14%	✓ ✓ ✓
Heating Oil	20%	-27%	57%	42%	20%	✓ ✓ ✓
Chicago Wheat	11%	15%	20%	41%	18%	✓ ✓
Kansas Wheat	-1%	24%	33%	33%	13%	✓ ✓
Corn	3%	25%	23%	27%	10%	✓ ✓
Soybeans	7%	39%	1%	27%	1%	✓ ✓

Source: Bloomberg and HilltopSecurities

-27% 153%

✓ ✓ ✓ = Large
✓ ✓ = Medium
✓ = Moderate

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