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ECONOMIC Synopses

The Russian Invasion, Oil and Gasoline Prices, and Recession

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The unprecedented COVID-19 pandemic and recovery and the subsequent Russian invasion of Ukraine have whipsawed the global economy. (See the timeline.) In response to the invasion, international organizations, countries, and many private firms restricted trade and financial transactions with the Russian economy. Many of these sanctions struck directly or indirectly at Russian commodity exports, particularly oil, but also at other exports, such as palladium and wheat.[1]

> The Russian invasion of Ukraine has substantially increased commodity prices, increasing risk to global economic activity.

Commodity exports are very important to the Russian economy and also contribute importantly to the world economy. Russia is the world's largest oil exporter, and energy exports (i.e., oil, gas, and coal) constituted 10% of Russian gross domestic product in 2020.

While the war's impact on the global economy will be difficult to fully grasp for some time, patterns in the prices of important commodities can shed light on some of the effects. Because financial markets are forward looking, asset prices change constantly as expectations about future fundamentals vary. Therefore, asset prices are very helpful to quickly gauge the impact of events through the lens of market expectations.

Figure 1 illustrates the time series of the daily futures price of Brent crude oil and the weekly price of U.S. regular gasoline. To facilitate the calculation of percentage changes, the price series in the figure have been normalized by dividing by their value on the first business day of January. Both prices rose sharply from the beginning of the year, with the oil price rising over 65% at its peak and the weekly retail U.S. gasoline price rising over 30% at its peak. Note that fears of a conflict caused the futures price of oil to start rising almost two months before the start of the war. Such oil price hikes are of concern because oil price increases may have been important causes of recessions, including the recessions of 1973-1975, 1980, 1990, and even of 2007-09, by depressing consumption in certain sectors, as argued by James Hamilton in a series of papers.[2]

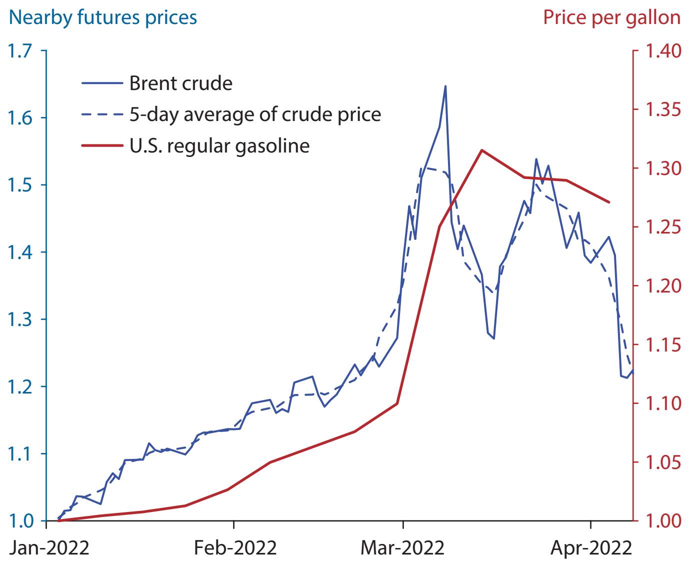
These oil price changes are very large by recent historical standards. As shown in Figure 2, since 2003, there have been only two other similar two-month periods of oil price changes of more than 50%. The first was a 50% plunge in October 2008, during the Financial Crisis, while the second was a 69% jump in April-May 2020, as the economy recovered from the initial, severe COVID-19 lockdowns. The three vertical lines in the figure identify these episodes.

Prices in several other commodity markets have mirrored or even exceeded the post-invasion oil price increase.

Timeline: Invasion of Ukraine

Date	Event
November 2021	Western intelligence services report unusual Russian troop movements near Ukraine.
January 2022	The U.S. government evacuates the families of U.S. embassy staff in Ukraine, and NATO puts troops on standby.
Mid-February 2022	Fighting in separatist regions escalates.
February 24, 2022	Russian President Putin declared "special military operations" in Ukraine.
February 24-28, 2022	Initial Russian territorial gains.
March 2022	Fighting stabilizes into a near-stalemate.
April 2022	Some Russian units begin to withdraw from the Kyiv area.

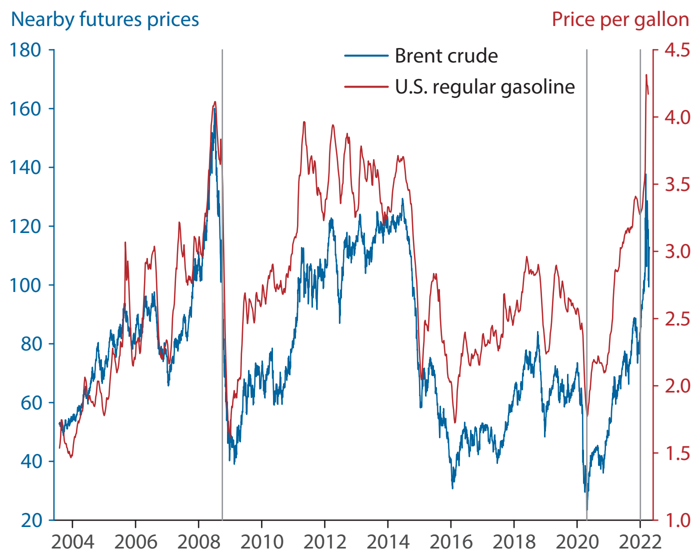
Figure 1
Oil and U.S. Gas Prices, 2022



NOTE: The figure shows daily Chicago Board of Trade nearby Brent crude futures contracts prices from January 3 through April 5, 2022, and the weekly (Monday) price of U.S. regular gasoline for the same dates from FRED®. The price series in the figure have been normalized by dividing by their value on the first business day of January.

SOURCE: Tick Data, and FRED®, Federal Reserve Bank of St. Louis.

Figure 2
Oil and U.S. Gas Prices, 2004-2022



NOTE: The figure shows daily Chicago Board of Trade nearby Brent crude futures contracts prices from August 1, 2003, through April 5, 2022, and the weekly (Monday) price of U.S. regular gasoline for the same dates from FRED®. The vertical lines denote the three largest 44-day percentage changes in crude oil prices during the sample. There were 44 business days between January 1 and March 4, 2022.

SOURCE: Tick Data, and FRED®, Federal Reserve Bank of St. Louis.

For example, the futures prices of palladium and wheat also increased by more than 70% from the beginning of 2022 to their peaks in early March 2022. As with the oil market, the prices of palladium and wheat began to rise well before the actual outbreak of hostilities. The price of wheat is normally less volatile than those of oil or palladium; a 50% price rise in wheat is unprecedented in the past 20 years. The fact that both Russia and Ukraine are normally important wheat exporters—comprising about 25% of exported wheat in 2019—contributed to this unprecedented spike in wheat prices.

It is not obvious why many commodity prices peaked around March 3-9 and then retraced some gains. One possibility is that by the second week of March, market participants began to factor in the likely recessionary consequences of the previous months' price hikes. That is, markets began to consider that a diminution of future demand would at least partially counteract disruptions in the supply of commodities. Another possibility is that markets came to judge that sanctions against Russian commodity exports would be less widespread than previously thought.

In summary, the invasion of Ukraine has substantially increased prices in important commodity markets, including those for gold, palladium, and wheat. Prices began rising many weeks before actual hostilities, peaked around March 7-9, 2022, then retraced part of the increases in the following three weeks. Despite these partial retracements, the disrupted supply and high prices of many important commodities create significant risk to real activity. The recent inversion of the U.S. yield curve—another historically consistent predictor of recession—and the market-predicted tightening of U.S. monetary policy compound the concerns fostered by the Russian invasion. ■

Notes

[1] Palladium is a metal used in electronics, jewelry, dentistry, and catalytic converters.

[2] Examples include the following:

Hamilton, J.D. "This is What Happened to the Oil Price-Macroeconomy Relationship." *Journal of Monetary Economics*, 1996, *38*(2), pp. 215-20.

Hamilton, J.D. "Oil Prices and the Economic Recession of 2007-08." VoxEU, 2009.

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