

## TABLES TURNED

Forty-two years ago, almost to the day, the world's largest industrialized countries met in Tokyo for an economic summit. This weekend, the leaders of the same countries met in Cornwall in southwestern England. As in 1979, the key topics at Cornwall were energy and inflation. However, the situations then and now could not be more different.

The 1979 meeting coincided with an OPEC conference. At the latter, the OPEC members wrestled with setting crude prices and production levels as prices rose sharply due mainly to the Iranian revolution. Still, the OPEC countries agreed to a fifty-percent price increase. This decision infuriated the leaders of the industrialized nations, but they were powerless to act. The oil price rise was not stopped until the US Federal Reserve, battling inflation, pushed interest rates up to record levels.

The 2021 summit took place under similar circumstances. Oil prices are up eighty-six percent from year-ago levels. Inflation has become a worry. The world's leading countries are also determined to reduce hydrocarbon consumption quickly. Those efforts could gravely damage the oil-exporting nations in the long term. At the same time, China, the largest economy not at the G7 meeting, is also confronting rising inflation. To combat it, China is releasing its strategic stocks of commodities. Sales from its extensive crude oil inventories will drive oil prices down sharply over the short term, causing immediate grief to oil producers.

The tables have been turned.

## Inflation Concerns

Reporter Gwynn Guilford said it all in the first line of her June 10 *Wall Street Journal* article: "The U.S. economy's rebound from the pandemic is driving the biggest surge in inflation in nearly 13 years, with consumer prices rising in May by 5% from a year ago."<sup>1</sup> One must go back to August 2008 to find a previous increase of this size.

The core US consumer price index (CPI), which excludes food and energy, rose by 3.8 percent in May from the year before. Food and energy, though, are two critical components of our economy. In 2008, for example, the consumer price rise was caused mainly by energy as crude prices flirted with \$130 per barrel.

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<sup>1</sup> Gwynn Guilford, "U.S. Inflation Is Highest in 3 Years as Prices Surge 5%," *The Wall Street Journal*, June 10, 2021 [<https://tinyurl.com/94dwn386>].

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The escalating prices have spurred widespread concerns among economists, the business sector, and the public. Federico Mandelman, an economist at the Atlanta Federal Reserve Bank, has likened the current situation to the end of World War II. In the summary of a recent paper, he lists three key findings:

1. The money supply has increased twenty-five percent in 2020, raising some inflationary concerns. This article derives lessons from the US experience during and after WWII.
2. The war effort caused the US debt-to-GDP ratio to increase from 40 percent to 110 percent, most of it financed by Fed treasury bond purchases. The money supply doubled as a result, but inflation was muted, with most households saving this windfall. Consumption demand was suppressed as factories were devoted to the rearmament effort, food was rationed, and private construction was halted.
3. Once the war ended, pent-up consumption demand led to the inflation rate spiking from 2 percent to 20 percent in 1946-47. However, it quickly stabilized in 1949, amid contractionary policies and well-anchored inflation expectations inherited from the Great Depression.<sup>2</sup>

Mandelman explains that inflation was suppressed during the war because the velocity of money circulation declined, just as it has recently.<sup>3</sup> He adds that survey data suggest that households “expect to consume little of the cushion of savings they managed to accumulate during the pandemic.” Furthermore, the pent-up demand will be strongest for durable goods, not services. For this reason, the inflationary effects will likely be smaller.<sup>4</sup>

Andy Haldane, the Bank of England’s chief economist, is less optimistic. Increasing demand has collided with a supply-side that is slowly reemerging from a year of forced inactivity. The cost of business inputs is rising in the United Kingdom at the fastest rate since 2008. This development may not be a concern, though, for the following reason:

Rises in the cost of business inputs, caused by a one-off bounce-back in demand and temporary bottlenecks in supply, are not by themselves a cause of acute inflationary concern. Rises in input costs may be absorbed in companies’ margins rather than being passed through to end consumers, or offset by squeezes in workers’ wages. In either case, the rise in inflation would be temporary and the challenge for central banks, governments, business and households much reduced.<sup>5</sup>

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<sup>2</sup> Federico S. Mandelman, “Money Aggregates, Debt, Pent-Up Demand, and Inflation: Evidence from WWII,” Federal Reserve Bank of Atlanta’s Policy Hub, No 4-2021, May 2021 [<https://tinyurl.com/2rmjkhva>].

<sup>33</sup> Economists use the formula  $MV=PT$  to describe the economy, where  $M$  is the money supply,  $V$  is the velocity of circulation (the number of times money changes hands),  $P$  is the average price level, and  $T$  is the volume of transactions of goods and services. See Adam Barone, “What is the Quantity Theory of Money?” Investopedia, May 21, 2021 [<https://tinyurl.com/dhdhajs>].

<sup>4</sup> Mandelman, p. 18.

<sup>5</sup> Andy Haldane, “The beast of inflation is stalking the land again,” New Statesman, June 2021 [<https://tinyurl.com/35sd486v>]. The European exchange rate mechanism predated the EU. Participating countries

However, Haldane frets that the situation may not be so benign for other reasons.

- Pricing power among companies may be boosted by increased demand.
- Supply bottlenecks could be sustained rather than temporary.
- Labor may now have new bargaining power.

All three forces point to higher inflation. Labor markets are tight across the board—from technicians to truck drivers. Furthermore, the globalization reversal cuts the input supply, especially in the UK, which left the European Union more than a year ago. Haldane is worried that “this is the most dangerous moment for monetary policy since inflation-targeting was first introduced into the UK in 1992 after the European Exchange Rate Mechanism debacle.”<sup>6</sup>

The possibility of central banks tightening the money supply increases as inflation concerns rise. Such an action would slow the recovery. Haldane is an important observer because he is a voting member of the Bank of England’s monetary policy committee. His views are also respected by the US Federal Reserve Board. Continued inflationary pressure, then, could lead to tighter money and slower economic growth.

Most projections of oil supply and demand balances do not anticipate a slowdown. The International Energy Agency’s June 2021 forecast expects robust economic growth in 2021 and 2022 to boost oil use. The agency makes no allowance for the possibility of monetary tightening.<sup>7</sup>

There are grounds to be less concerned about inflation, however. One is China, which has two strong reasons to restrain price increases. First, inflation has contributed to domestic unrest there in the past and may do so again. Second, higher prices for Chinese exports would depress demand and restrict the country’s economic growth. Chinese officials would prefer to avoid both effects.

Professor Isabella Weber of the Political Economy Research Institute at UMass writes that China may act to break inflation to forestall these problems.<sup>8</sup> Weber focuses on the commodity price increases: “In 2021, commodity prices have soared, triggered by supply-side bottlenecks and the global economic recovery. These price rises create the fear of inflation.” She explains that, in response, the Chinese government has announced “that it would strengthen targeted efforts to bring down the prices of iron ore, copper, steel, and other major commodities that had pushed China’s consumer prices to a 12-year high.”

After providing a brief history of China’s use of price controls, Weber makes this observation:

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*agreed to keep their currencies within a fixed range with other currencies. The UK was forced to exit the agreement in September 1992 to stop speculation against the pound.*

<sup>6</sup> We note that the debacle Haldane mentions occurred after two years of falling real GDP. The UK economy grew strongly after its Treasury began targeting inflation.

<sup>7</sup> See the IEA’s “Oil Market Report,” June 11, 2021 [<https://tinyurl.com/84pwaeff>], p. 6.

<sup>8</sup> Isabella M. Weber, “Will China Save the US from Inflation Fears?” Project Syndicate, June 10, 2021 [<https://tinyurl.com/rz32hmd8>]. We also note here that similar anti-inflationary actions by the G7 failed forty-two years ago.

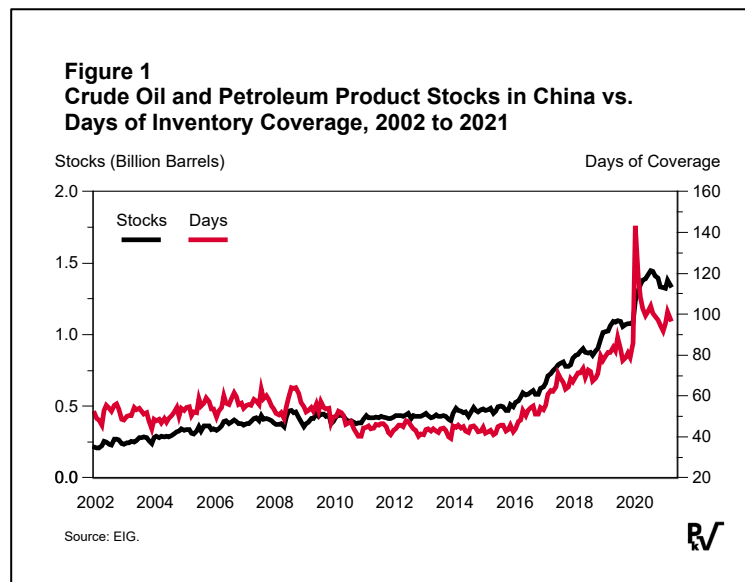
Today, China has largely withdrawn direct price controls. But the government continues to intervene in goods markets when it deems it necessary to stabilize specific prices, mainly through policies that increase supply or by cracking down on hoarding and speculation.

Last week, China moved precisely in the direction Weber predicted. As Argus Media reported on June 10, the country was calling for more “scientific” commodity pricing. Price reporting services were advised to establish a “‘more rigorous and scientific index compilation methodology’ for bulk commodities and improve price transparency.” China’s top securities regulator added that excess liquidity and gaps between supply and demand contributed to the consumer price increase.<sup>9</sup>

On June 8, *The Wall Street Journal* published a detailed review of the causes of commodity price rise and the Chinese response. It attributed much of the price increase to underinvestment.<sup>10</sup> The story is familiar. Bosworth and Lawrence, for instance, blamed underinvestment for the commodity price surge in the early 1970s in their 1982 book *Commodity Prices and the New Inflation*.<sup>11</sup> One of the anti-inflationary measures the authors discuss is accumulating commodity inventories that can be sold during periods of tightness to stabilize prices.

Soon someone may write that China used its strategic stocks of oil and other commodities to defeat or slow the price rises during this decade. In recent

years, China has accumulated large inventories of various commodities, especially oil. Figure 1 tracks the increase in Chinese oil stocks and the days of inventory coverage. At the end of April, the Energy Intelligence Group estimates that tanks and storage caverns in China contained 1.3 billion barrels of oil, enough to cover almost one hundred days of consumption.



<sup>9</sup> “China calls for more ‘scientific’ commodity pricing,” Argus Media, June 10, 2021.

<sup>10</sup> Chui-Wei Yap, “A Commodities Crunch Caused by Stingy Capital Spending Has No Quick Fix,” *The Wall Street Journal*, June 8, 2021 [<https://tinyurl.com/s3kacw9m>].

<sup>11</sup> Barry P. Bosworth and Robert A. Lawrence, *Commodity Prices and the New Inflation* (Washington, DC: The Brookings Institute, 1982), p. 70.

The oil industry has consistently opposed government use of strategic stocks to stabilize prices. Again and again, its representatives have reminded American politicians and the IEA that such stocks should not be used to moderate price increases, even extreme ones. These views, though, appear contrary to those of Chinese officials.

China may draw some of its stocks down while cutting import volumes to relieve pressure on world oil prices. It may also reduce its holdings of other goods to ease inflation.

China will likely take such steps to depress oil prices. Oil-exporting countries could counter by cutting production but would risk angering an essential current customer, one that could dramatically change policies in a way that reduces its future use.

## The 1979 Summit

Oil prices were rising rapidly at the time of the Tokyo economic summit in 1979. Spot prices went up by one hundred seventy percent from June 1978 to June 1979, according to data published by EIG.<sup>12</sup> (In contrast, the recent year-over-year increase is only around eighty percent.)

Oil-exporting countries had just met and agreed to a fifty percent boost in their official prices from levels established at the start of 1979. When they announced their decision, the OPEC members noted that they had set a maximum price of \$24 per barrel but acknowledged that world spot markets were pushing prices higher.<sup>13</sup>

In the press release, the members also scolded the industrialized world for its lack of attention to developing nations:

The conference expressed concern for the problems being faced by developing countries, especially in the light of the continued lack of readiness on the part of the industrialized countries to face up to their responsibilities toward the problems of the third world.

OPEC nations chastised international companies as well for pushing up prices:

The conference also takes this opportunity to warn the oil companies of the irresponsible practice of taking advantage of the present situation to reap unwarranted profits and call upon them to play a more constructive role in connection with guaranteeing supplies to developing countries, and to prevent price speculation.

On June 29, 1979, *The New York Times* reported the following from Tokyo:

The news that the Organization of Petroleum Exporting Countries had set a two-tier price system, with per-barrel costs ranging from \$18 to \$23.50, was received here last night while the government heads were banqueting as guests of the Japanese Emperor in the Pearl Room of his palace.

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<sup>12</sup> "Special Supplement," Petroleum Intelligence Weekly, February 2, 1981.

<sup>13</sup> "Text of OPEC's Communique," The New York Times, June 29, 1979 [<https://tinyurl.com/bhbxk68>].

The OPEC action, which drew an angry reaction from President Carter this morning, confirmed their sense of urgency about establishing a common consumers' stand to restrain world demand for oil and stabilize the market.<sup>14</sup>

The governments attending the Tokyo summit agreed to do something about oil consumption and energy. They decided on limits for oil use in every country. They also committed to increasing coal use, production, and trade if there were no environmental impact. The G7 countries concurred as well on pushing new energy forms and nuclear power.

The press release that came out of the Tokyo meeting took dead aim at OPEC:

Constructive North-South relations are essential to the health of the world economy. We for our part have consistently worked to bring developing countries more fully into the open world trading system and to adjust our economies to changing international circumstances. The problems we face are global. They can only be resolved through shared responsibility and partnership. But this partnership cannot depend solely on the efforts of the industrialized countries. **The OPEC countries have just as important a role to play. The latest decision substantially to increase oil prices will also severely increase the problems facing developing countries without oil resources as well as the difficulties for developed countries in helping them. The decision could even have a crippling effect on some of the developing countries** [emphasis added].<sup>15</sup>

Leonard Silk, a *New York Times*' economic columnist, captured the import of the G7 effort perfectly:

Frustrated and furious over their inability to prevent members of the Organization of Petroleum Exporting Countries from raising prices while refusing to expand supplies, the leaders of the seven major industrial countries may be tempted to shout from their Tokyo summit, like King Lear: "I will have such revenges on you, OPEC, that all the world shall—I will do such things—What they are yet I know not, but they shall be the terrors of the earth."<sup>16</sup>

Silk then noted that the industrialized nations had little power to address the oil problem short of war. He added, correctly, that they would do nothing unless Russia invaded the Middle East. He then added this prophetic comment:

Just about the only way for the United States and other Western countries to assure a major cut in oil imports would be to have a deep and long recession, as in 1974-75. That slump, the worst one of the postwar period, produced a glut in the world oil market and a decline in "real" oil prices (adjusted for inflation). But the industrial countries would consider a rerun of that slump a cure worse than the disease. A major task of the economic summit meeting in Tokyo will be to find agreement on a

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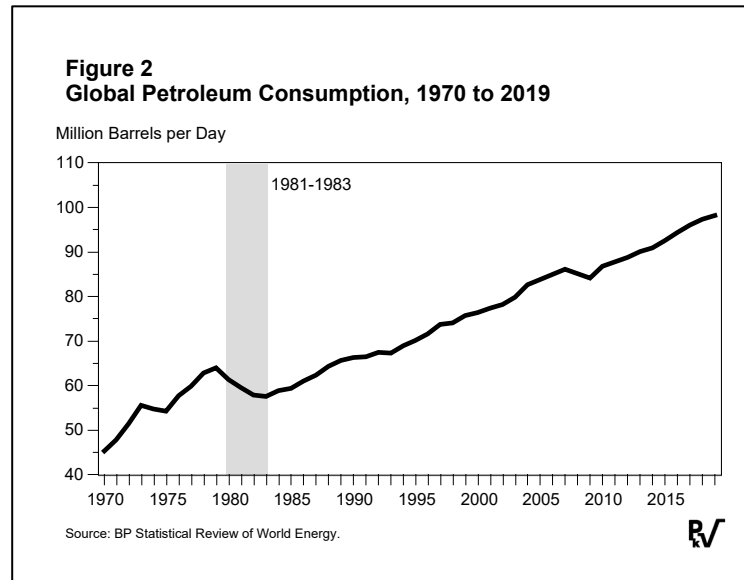
<sup>14</sup> Flora Lewis, "Summit in an Accord," *The New York Times*, June 29, 1979 [<https://tinyurl.com/yt22tjw>].

<sup>15</sup> "Text of Communiqué," *The New York Times*, June 30, 1979 [<https://tinyurl.com/9sjpvj37>].

<sup>16</sup> Leonard Silk, "A Tokyo Topic: Oil Frustration," *The New York Times*, June 27, 1979 [<https://tinyurl.com/84p5brtm>].

course for macroeconomic policy not so restrictive as to produce a world depression nor so expansive as to aggravate both inflation and the oil crisis.

That agreement did not materialize. Instead, the US Federal Reserve tightened the money supply aggressively to eliminate US inflation. The World Bank reports that global GDP in current prices shrank by one percent in 1982, its first decline in twenty years, after increasing by sixteen percent in 1979, twelve percent in 1980, and four percent in 1981. Global oil use diminished as well, as Figure 2 shows. The economic squeeze led to an oil price collapse in 1986.



Thus, the oil exporters prevailed in 1979, only to lose a few years later.

## The “Cornwall” Summit

The G7 met last week. Their primary topic was once again energy, but this time with a heavy focus on the environment. Rafiq Latta, an EIG writer, captured the changed circumstances almost perfectly:

All of a sudden, it feels like the 1970s in reverse. Oil producers and consumers are at loggerheads, with one side pushing hard on policies that upend and threaten the other. But this time, consumers are in the driving seat—and producers firmly on the defensive. Back in the 1970s, the Nixon/Kissinger-era oil crisis saw consumers facing asphyxiation of supply of the commodity most needed to run their economies. Today it is producers who face massive demand destruction under an accelerated energy transition. It’s playing out in much slower motion than the supply crises of 50 years ago, but existential threats still abound.

Put simply, oil is being driven by politics again—but this time, Opec is on the receiving end, and does not like it. Saudi Energy Minister Prince Abdulaziz bin Salman last week described the IEA report as “irresponsible,” while Qatari Energy Minister Saad

al-Kaabi said the “euphoria” around the energy transition had become “dangerous.”<sup>17</sup>

Latta’s article focuses on the impact of the IEA’s report *Net Zero by 2050*. The meeting of the G7 leaders in Cornwall, England, also poses a possible significant threat to the oil industry through their discussions of and decisions on global warming.<sup>18</sup>

In getting ready for the summit, the G7 members took several steps. At a May preparatory gathering, the group agreed to stop financing overseas coal projects. Other environmental actions are in the works. The G7 host country, the United Kingdom, plans to cut its greenhouse gas emissions by seventy-eight percent from 1990 levels by 2035. The EU is also working diligently to reduce carbon emissions. Among other strategies, it proposes putting tariffs on goods from nations that lag in meeting their Paris Agreement commitments.

However, as in 1979, the G7 countries are not doing enough for third-world nations. The developed nations had agreed to raise \$100 billion to finance climate reform in developing countries in 2015. *Time Magazine* reporter Ciara Nugent notes that they have been falling at least \$20 billion per year short of this goal.<sup>19</sup>

In the end, while all the hot air emanating from the G7 meeting has likely boosted global temperatures somewhat, the agreements made there will help accelerate the transition off fossil fuels.

Global oil use will probably decrease to ninety million barrels per day by 2025. This decline might occur because policies pushed at the Cornwall summit significantly shifted consumption patterns.

Recession, though, will more likely be the cause of less oil use. The meetings like the G7 were once called “economic summits” because their primary focus was global economic cooperation. Just as the 1979 Tokyo summit was followed by a decline in oil use due to recession, not the heads of states agreeing on energy policy reform, the Cornwall summit will probably be followed by reduced oil use because some economic factor, most likely inflation, led to recession.

The prospect for oil producers, particularly the OPEC members, appears bleak going forward, although they may have some time. Latta notes that national oil companies in Asia, Russia, and the Middle East can profit from further investment given the retreat from oil and gas by the large multinational oil companies in the US, Europe, and other OECD countries. Latta further sees opportunities for closer economic relationships between Asian nations and Middle Eastern producers.

Here, the old warning “be careful what you wish for” applies. The increased dependence of oil exporters on Asian buyers, especially China, leaves them open to being squeezed by one

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<sup>17</sup> Rafiq Latta, “The Big Picture: IEA, OPEC Trade Places,” *Energy Compass*, June 11, 2021 [<https://tinyurl.com/nak3jmcp>].

<sup>18</sup> Richard Pérez-Peña, “The G7 leaders get down to business, taking on climate change and the pandemic,” *The New York Times*, June 12, 2021 [<https://tinyurl.com/392nafmj>].

<sup>19</sup> Ciara Nugent, “The G7 Want to Save the World from Climate Change. But Are They Willing to Pay for It?” *Time*, June 10, 2021 [<https://tinyurl.com/2rcbkcyj>].



huge, aggressive monopsonistic buyer. For the last fifty years, oil-exporting nations have dealt with large, laissez-faire buyers. China is not one of these, as the Philippians learned when large fleets of Chinese fishing vessels anchored in Philippine waters. Oil exporters may discover that the Chinese are using their buying power to drive prices down.

## Markets

We offer four observations from the market data.

First, gasoline use has not recovered to pre-pandemic levels and will likely remain depressed all summer.

Second, the early arrival of warm weather is tightening natural gas markets. Prices could easily move to levels not seen for several years.

Third, distillate and diesel markets are poised to move to new highs. Trucking and shipping demands are pushing prices up, in part because gasoline demand remains low.

Fourth, hot money is exacerbating backwardation in WTI.

We focus first on gasoline markets. Excess returns to storage remain above levels observed in prior years, suggesting stocks are high. The consequence is low “crack spreads.” This should not surprise those who follow *Notes at the Margin*. In previous issues, we noted that relatively high excess returns to storage by historical standards precede low margins.

Friday, Reuters reported the Environmental Protection Agency might lower the renewable volume obligation (RVO) for gasoline. Renewable identification number (RIN) prices declined. Spot gasoline prices fell as well. The problem is that refiners are making too much gasoline for a market that has not yet recovered.

Natural gas excess returns are at the bottom of the normal range, indicating a very tight market. Hot temperatures (it will be over 95 degrees, 35 degrees Celsius, in Denver next week) create a strong demand for gas. Prices will respond.

Distillate markets are tight as well. In New York, excess returns are at the bottom of the normal range, as can be seen from the graph on page 12. The market tightness can be explained by the barrier to imports created by the RVO for distillate and the strength of demand for the fuel relative to gasoline. Distillate prices will likely continue to increase relative to gasoline over the summer as refinery throughputs are restrained by the stagnation in gasoline demand.

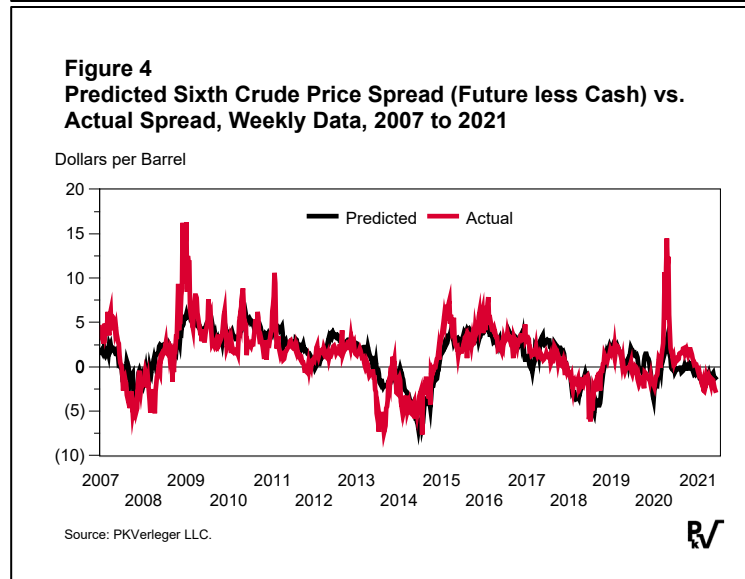
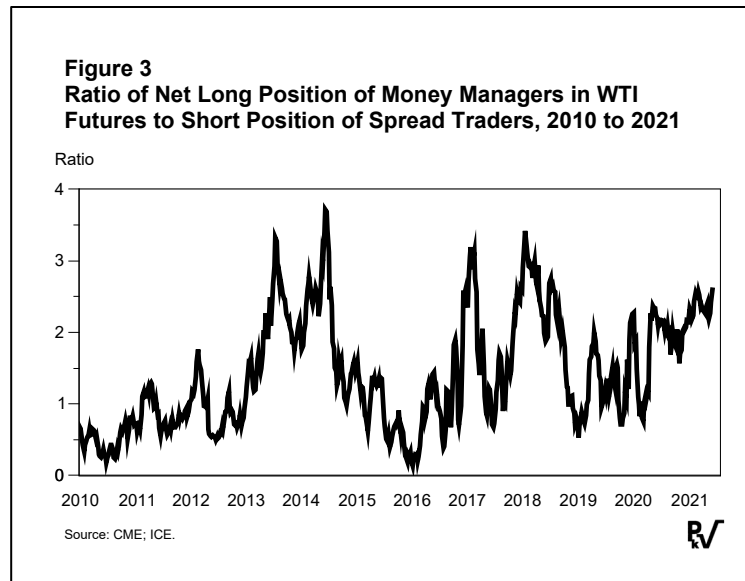
The low supplies relative to demand are apparent in the excess returns to storage table, Table 1 (page 11). At this time of year, excess returns for distillate and gasoil should be near ten percent. This year they are around zero. The second half of 2021 could be interesting.

Backwardation in crude markets is being driven by hot money. Speculators (money managers) outnumber hedgers. Their buying, concentrated in the first few futures contracts, boosts backwardation. We have worked to estimate the sixth future less cash spread using the model initially proposed by Holbrook Working and Gerald Brennan. As noted in previous

reports, the activities of speculators, whether money managers or others, clearly affect the spread.

Logically, spreads between cash and futures should move toward backwardation if speculators increase their interest in buying and producers hold back in shorting the market. One measure of this pressure is the ratio of the net long position of speculators (money managers) to the short position of swap dealers. The logic is simple. Money manager positions represent speculative longs. Swap dealers, on the other hand, are the intermediaries for producers seeking to hedge their future production. The swap dealers sell put options to the producers.

Figure 3 shows the ratio of the net long position of money managers to the short position of spread traders. The ratio is now at its highest point for 2021.

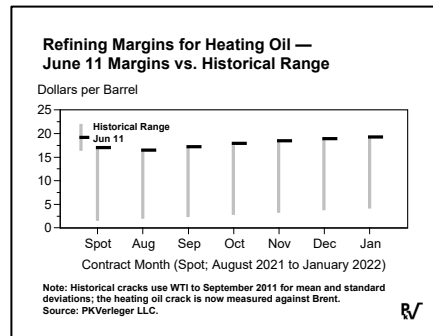
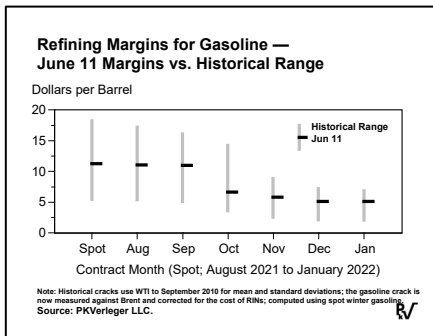
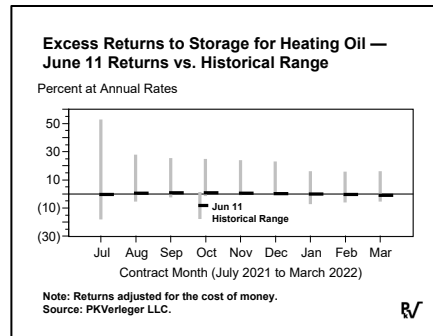
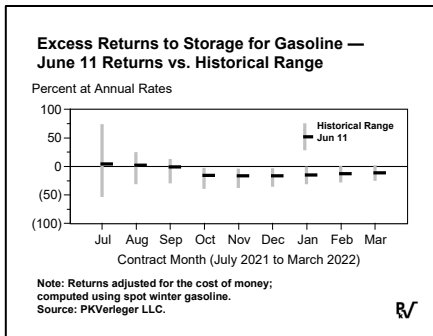
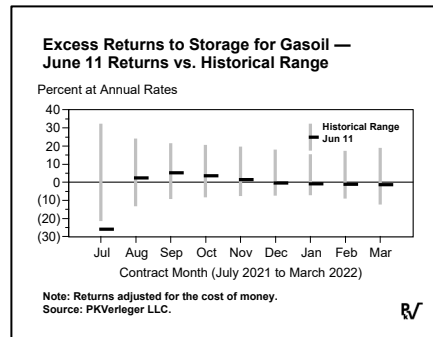
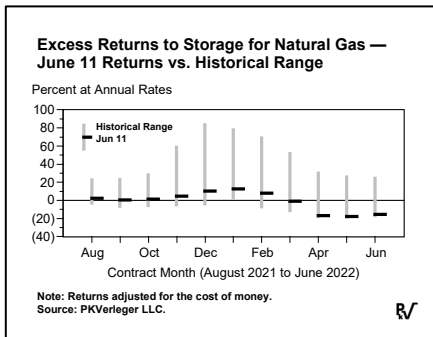
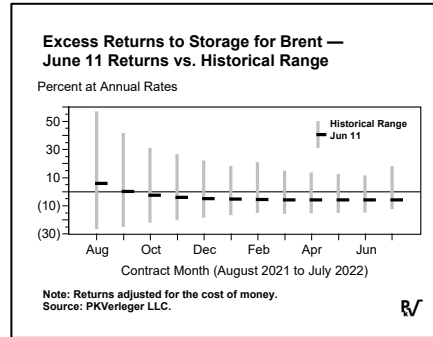
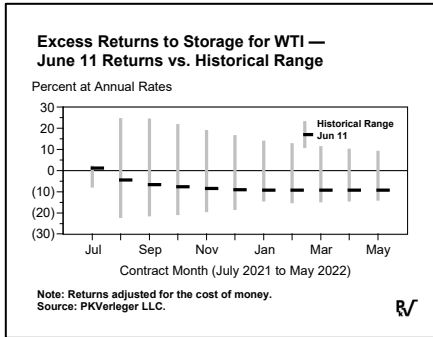


The ratio described above increases the explanatory power of the traditional supply of storage model. Figure 4 compares the actual sixth crude price spread to the predicted spread. The current model run suggests that speculators account for approximately three-quarters of the backwardation in WTI. This finding implies that any news that causes a quick speculative exit could reduce backwardation by \$3 per barrel as measured by the sixth future to cash spread.

**Table 1. Excess Returns to Storage on June 4 and June 11, 2021, for Two Crudes and Two Distillates (Percent at Annual Rates)**

	WTI Cushing – No Storage Costs on Jun 11	Brent at Sullom Voe – No Storage Costs on Jun 11	WTI Cushing – No Storage Costs on Jun 4	Brent at Sullom Voe – No Storage Costs on Jun 4		
Aug	-4.4	6.0	-2.8	10.5		
Sep	-6.6	0.3	-4.6	4.5		
Oct	-7.6	-2.6	-5.9	0.9		
Nov	-8.4	-4.0	-6.9	-1.1		
Dec	-9.0	-4.9	-7.8	-2.4		
Jan	-9.2	-5.3	-8.2	-3.2		
Feb	-9.2	-5.6	-8.4	-3.8		
Mar	-9.3	-5.7	-8.6	-4.1		
Apr	-9.2	-5.8	-8.6	-4.4		
May	-9.2	-5.8	-8.6	-4.6		
Jun	-9.0	-5.9	-8.6	-4.7		
Distillate Markets	New York Jun 11	ARA Jun 11	New York Jun 4	ARA Jun 4	New York Historical Average	ARA Historical Average
Jul	-0.4	-26.0	-0.3	6.3	3.9	5.1
Aug	0.5	2.5	0.3	2.8	5.3	5.1
Sep	0.9	5.2	0.6	5.4	6.4	5.7
Oct	0.9	3.6	0.6	4.1	7.4	6.3
Nov	0.7	1.4	0.5	2.1	7.7	5.6
Dec	0.4	-0.3	0.3	0.4	7.7	4.7
Jan	0.1	-0.8	0.1	-0.1	7.6	4.6

Source: PKVerleger LLC.



**Excess Returns to Storage for Crude, Products, and Natural Gas — Second Week of June vs. Prior Week and Second Week of June in Prior Years (Percent at Annual Rates)**

	Current	Last Week	2020	2019	2018	2017	2016
<u>Gasoline</u>							
August	2.4	0.1	21.0	-15.0	-7.4	-3.3	10.8
September	-1.1	-3.1	13.3	-17.5	-9.0	-4.5	7.3
October	-15.4	-16.4	-11.1	-34.4	-22.8	-21.9	-12.8
November	-16.1	-17.0	-12.2	-34.2	-21.7	-20.6	-13.7
December	-16.1	-17.0	-11.7	-31.4	-20.3	-19.1	-13.8
<u>Distillate</u>							
July	-0.4	-0.3	7.0	6.2	-2.3	4.3	4.6
August	0.5	0.3	16.1	3.8	-1.4	4.2	4.8
September	0.9	0.6	19.3	3.2	-0.8	5.0	5.9
October	0.9	0.6	20.5	3.1	-0.5	7.4	6.7
November	0.7	0.5	20.4	3.3	-0.4	7.7	7.2
<u>Gasoil</u>							
July	-26.0	6.3	41.2	2.1	-13.2	-0.4	0.5
August	2.5	2.8	31.0	1.6	-6.9	0.6	2.4
September	5.2	5.4	27.9	1.7	-4.4	1.8	3.9
October	3.6	4.1	25.3	2.2	-3.2	4.0	5.2
November	1.4	2.1	22.1	0.8	-3.6	3.6	5.3
<u>WTI</u>							
July	1.2	0.3	0.7	-2.2	-2.2	-1.1	0.9
August	-4.4	-2.8	6.3	0.2	-3.9	1.5	6.9
September	-6.6	-4.6	7.3	0.6	-5.9	2.5	8.5
October	-7.6	-5.9	7.2	0.2	-7.1	3.0	8.9
November	-8.4	-6.9	7.6	-0.3	-6.8	3.5	8.9
<u>Brent</u>							
August	6.0	10.5	1.4	-13.6	5.1	1.2	8.1
September	0.3	4.5	3.6	-16.0	1.2	10.8	8.8
October	-2.6	0.9	5.1	-15.1	-1.1	9.7	8.6
November	-4.0	-1.1	6.1	-13.8	-2.1	9.1	8.7
December	-4.9	-2.4	6.6	-12.7	-3.0	8.7	8.1
<u>Natural Gas</u>							
September	0.4	0.7	39.6	-5.8	-6.2	-0.1	12.1
October	1.4	2.2	50.2	3.3	-4.5	1.7	16.5
November	4.9	6.0	118.1	13.7	-1.0	6.0	30.1
December	10.2	12.3	183.7	32.3	5.4	15.2	46.9
January	12.7	15.0	153.3	40.7	9.1	21.5	48.4

Note: "Current" = June 11, 2021. All returns to storage are adjusted for the cost of money.

Source: PKVerleger LLC.

<b>Open Interest for Crude, Products, and Natural Gas — Second Week of June vs. Prior Week and Second Week of June in Prior Years (Number of Contracts)</b>							
	Current	Last Week	2020	2019	2018	2017	2016
<u>Gasoline</u>							
Total	448,014	423,950	363,965	379,134	471,530	404,072	405,655
July	120,841	156,089	66,611	87,034	91,640	80,765	102,077
August	114,371	83,262	76,996	85,413	108,191	95,943	71,224
September	70,392	59,437	54,485	63,393	72,095	70,809	63,774
October	38,490	32,225	37,559	46,023	57,879	45,071	43,943
<u>Distillate</u>							
Total	440,513	436,904	387,898	410,458	426,203	413,316	415,240
July	107,874	137,760	61,824	70,471	77,204	67,211	99,190
August	66,041	47,729	55,626	77,342	90,536	95,358	61,304
September	59,416	49,676	42,512	60,058	56,541	58,037	53,606
October	27,847	26,724	23,464	39,907	39,526	32,097	31,559
<u>Gasoil</u>							
Total	1,042,049	1,062,481	880,586	956,208	1,062,713	839,106	738,192
July	225,742	230,854	152,127	135,404	165,894	137,906	143,494
August	133,774	86,953	94,266	142,616	188,934	113,866	121,171
September	113,624	94,250	97,931	108,920	118,197	87,232	61,393
October	116,368	112,930	61,139	86,868	96,702	65,820	43,901
<u>WTI</u>							
Total	2,487,828	2,525,956	2,452,866	2,124,100	2,062,778	2,548,321	2,142,786
July	285,113	453,902	176,347	157,857	149,741	104,865	308,749
August	331,575	299,885	256,129	303,330	414,164	491,200	301,984
September	360,127	293,655	324,707	226,386	257,731	284,780	198,370
October	166,844	174,385	123,843	145,270	200,471	104,138	89,998
<u>Brent</u>							
Total	2,455,647	2,419,690	2,661,832	2,332,391	2,556,377	2,419,879	2,216,394
August	429,331	518,313	322,626	335,267	397,310	353,875	393,303
September	436,341	356,799	383,978	370,116	489,350	473,598	334,963
October	196,847	177,403	182,272	179,787	182,785	207,222	156,538
November	121,224	123,665	129,516	146,573	148,498	124,612	153,293
<u>Natural Gas</u>							
Total	1,284,188	1,237,141	1,268,386	1,331,583	1,515,795	1,421,477	1,058,587
July	189,507	293,689	172,028	195,110	134,747	141,820	228,927
August	138,026	102,702	172,362	251,625	177,363	227,329	119,026
September	188,123	149,163	181,036	189,362	164,805	181,116	153,778
October	143,718	139,076	114,160	148,314	168,056	177,414	116,473
Note: "Current" = June 11, 2021.							
Source: PKVerleger LLC.							

### Gasoline Cracks – Second Week of June vs. Prior Week, Prior Month, and Second Week of June in Prior Years (\$/bbl)

	Current	Last Week	Last Month	2020	2019	2018	2017	2016	30-Year Average
Spot	11.29	13.51	11.66	5.36	9.33	11.81	11.67	11.23	12.51
August	11.05	12.34	10.88	6.85	8.83	9.94	10.13	11.93	11.92
September	10.98	11.90	10.59	6.57	8.52	9.58	9.59	11.39	11.13
October	6.68	7.38	9.89	2.93	3.22	5.31	5.52	6.27	9.26
November	5.80	6.35	5.11	1.96	2.22	4.50	4.51	5.03	5.78
December	5.11	5.59	4.01	1.34	1.42	4.08	3.73	3.94	4.66
January	5.16	5.58	3.24	1.23	1.28	4.24	3.56	3.69	4.34
Average	8.01	8.95	7.91	3.75	4.97	7.07	6.96	7.64	8.52

Note: "Current" = June 11, 2021. Gasoline cracks measured against Brent from 2010 with RIN cost removed.

Source: PKVerleger LLC.

### Heating Oil Cracks – Second Week of June vs. Prior Week, Prior Month, and Second Week of June in Prior Years (\$/bbl)

	Current	Last Week	Last Month	2020	2019	2018	2017	2016	30-Year Average
Spot	17.05	18.39	16.78	7.33	13.26	15.40	13.46	13.58	10.13
August	16.51	17.24	16.74	8.47	15.09	14.34	12.86	13.42	10.20
September	17.21	17.75	17.09	9.17	16.38	14.89	13.00	13.45	10.54
October	17.92	18.38	17.60	9.78	17.25	15.50	13.16	13.66	11.03
November	18.50	18.91	18.10	10.22	17.86	15.95	13.36	13.95	11.54
December	18.95	19.38	18.55	10.53	18.30	16.36	13.53	14.14	12.10
January	19.32	19.78	18.93	10.85	18.63	16.81	13.72	14.43	12.54
Average	17.92	18.55	17.69	9.48	16.68	15.61	13.30	13.80	11.16

Note: "Current" = June 11, 2021. Heating oil cracks measured against Brent from 2011.

Source: PKVerleger LLC.