



HOULIHAN LOKEY

Oil and Gas

INDUSTRY UPDATE | Q2 2022



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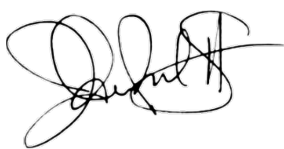
Houlihan Lokey Oil and Gas Update

Dear Clients and Friends,

Houlihan Lokey is pleased to present its Oil and Gas Industry Update for Q2 2022.

We have included an overview of trends in the oil and gas industry, commodity pricing, public capital markets, M&A, A&D, and financing activity along with key data to help you stay ahead in our dynamic and constantly evolving industry. We hope you find this quarterly update to be informative and that it serves as a valuable resource to you in staying abreast of the market. If there is additional content you would find useful for future updates, please don't hesitate to call or email us with your suggestions. We look forward to staying in touch with you.

Regards,



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Key Quarterly Trends

Oil Supply/Demand Dynamics

- WTI oil prices continue to be volatile as market participants weigh the probability (and depth) of a global recession as well as the impact on demand vs. tight global supply/inventories.
 - WTI oil prices have currently moderated to ~\$94/bbl vs. ~\$106/bbl at the end of Q1 2022.
 - The WTI–Brent differential has widened to ~\$6.00/bbl vs. an average of \$2.85/bbl during 2021, as U.S. production has increased relative to ROW.
 - OECD inventory levels are well below historical five-year trend levels, particularly as OECD countries have released barrels from storage (e.g., U.S. SPR) in an effort to tame escalating gasoline prices.
 - OPEC+ has consistently noted its limited spare capacity and approved a relatively small 100,000 bbl/d increase in production in September, far less than the nearly 650,000 barrels a day that the group agreed to add in July and August.
 - Depressed oil prices during the last down cycle and the upstream sector's broad current focus on returning capital to shareholders have contributed to an environment of underinvestment in global development.
 - Global demand for crude and refined products remains strong and, absent periods of COVID-caused shutdowns in China, demand is trending to exceed pre-COVID levels.
- Russian oil supply vs. demand dynamics continue to have a material effect on global crude prices.
 - In 2021, Russia exported to Europe alone an average of ~3.1 MMbbls/d of crude oil, natural gas liquids, and refinery feedstocks, plus ~1.3 MMbbls/d in diesel and other petroleum products.
 - On June 3, 2022, the European Union adopted sanctions that will ban seaborne imports of Russian crude oil as of December 5, 2022, and ban petroleum product imports as of February 5, 2023, with certain exceptions.
 - Even prior to the mandate, numerous Western countries, oil and gas operators, and trading houses have been self-sanctioning Russian crude exports and the producing operators.
 - Global crude flows have shifted to those in support vs. those against sanctions; China and India have emerged as key destinations for Russian crude, muting the intended effect of the Western sanctions.

Natural Gas Supply/Demand Dynamics

- Even prior to the Russian invasion of Ukraine, European natural gas supply was tight to undersupplied relative to demand.
- The Russia-Ukraine war has further dramatically exacerbated global natural gas prices as supply has become a Russian weapon.
 - The TTF⁽¹⁾–Henry Hub differential was ~\$52/MMbtu on July 27 vs. an average of ~\$12/MMbtu and ~\$1/MMbtu in 2021 and 2020, respectively.
- The EU has been focused on increasing its natural gas inventories in advance of winter demand.
 - EU gas storage was ~71.5% full as of August 6, 2022.⁽²⁾
 - However, these volumes are expected to decline, as Gazprom has reduced Nord Stream volumes to ~20% of capacity. Prior to the conflict, with Nord Stream at 100% capacity, Russia accounted for ~40% of the EU's gas supply.
 - In order to reduce its member states' reliance on Russian energy, in July 2022, the EU unveiled a European Gas Demand Reduction Plan to cut members' gas use from August 2022 through March 2023 by 15% vs. their 2017-2021 average consumption levels.
 - It is unclear how achievable this reduction plan will prove to be; in the interim, in a recent Financial Times poll, U.K. and EU support for natural gas received >90% of the consumer vote.

(1) Refers to Title Transfer Facility.

(2) Source: GIE Aggregated Gas Storage Inventory.

Key Quarterly Trends (cont.)

Natural Gas Supply/Demand Dynamics (cont.)

- Significant TTF and JKM⁽³⁾ vs. HH differentials have incentivized U.S. LNG exporters to max out current capacity and consider establishing new export terminals, which typically take five or more years to construct post permitting and FID.
 - As of July 2022, U.S. LNG liquefaction capacity averaged 11.4 Bcf/d, with a shorter-term peak capacity of 13.9 Bcf/d.⁽⁴⁾
 - Freeport LNG is expected to at least partially resume exports from its ~2 Bcf/d facility in mid-November. The facility's closure on June 8, 2022, due to an inbound pipeline rupture, has contributed to falling U.S. LNG exports even as summer European demand soared, which created dislocation between domestic and European prices.
 - The next U.S. export terminal expected to come online is Golden Pass LNG in Port Arthur, Texas, with an in-service target of 2024. This terminal is a joint venture between Exxon Mobil Corp. and Qatar Energy and would bring U.S. LNG peak processing capacity to 16.3 Bcf/d.⁽⁵⁾
- Senator Joe Manchin's surprise agreement to back the Inflation Reduction Act has not only garnered support for the Mountain Valley Pipeline in his home state of West Virginia but also expedited approval for pipeline and other infrastructure nationwide.
 - Lobbying for certain LNG projects and Appalachian Basin midstream infrastructure has been invigorated by the successful passing of the Inflation Reduction Act and the geopolitical importance of LNG exports.
 - The 2 Bcf/d Mountain Valley pipeline was originally expected to be completed by 2018, but environmental groups have delayed the project by successfully challenging a series of federal permits in court.

M&A&D Markets

- M&A activity decreased in Q2 2022 compared with Q1 2022.
 - The decrease in activity was due in large part to commodity price volatility and forward strip backwardation, which has made it difficult for buyers to have confidence in valuation and forward hedges, while sellers are looking to transact as close to the strip as possible. The result is an understandable significant bid/ask spread among buyers and sellers as the "hold case" appears increasingly attractive.
 - Other contributing factors included sellers' large out-of-the-money hedge positions (negatively impacting net proceeds) and relatively low public equity valuations, among other factors.
 - That being said, buyer interest remains high across U.S. basins.
 - M&A&D activity is anticipated to increase as commodity prices stabilize and unfavorable hedge positions roll off.

Selected Upstream Metrics

(\$ in billions)

	Q2-22	Q1-22	% Change
A&D⁶			
Amount	\$6.1	\$6.0	1%
Transactions	73	72	1%
M&A⁶			
Amount	\$6.0	\$8.2	-26%
Transactions	6	6	0%

(3) Refers to Japan Korea Marker.

(4) Source: EIA.

(5) Bloomberg.

(6) Transactions of more than \$100 million.

Key Quarterly Trends (cont.)

Debt Capital Markets

- E&P HY market activity has declined YTD 2022 compared with YTD 2021.
 - ~\$5.3 billion of HY issuances YTD 2022 vs. ~\$20.6 billion YTD 2021 (issuance volume is down ~79%).
- There has been a strong increase in alternative capital activity relating to, among others, asset-backed securitizations (ABS), volumetric production payments (VPPs), unitranche loans, and drilling joint ventures.
- Sellers have increasingly explored alternative capital solutions when unable to close an asset sale.

Equity Capital Markets

- As of August 5, 2022, the S&P E&P Index was the best-performing sector YTD, up 32.0% vs. (13.0%) for the broader S&P 500.
- The \$1.3 billion Grey Rock Energy Partners/ENPC SPAC transaction demonstrated an alternative to the traditional IPO process.

Other Trends

- Operators are experiencing material cost inflation and supply shortages, especially with respect to steel and labor, which are limiting the ability to grow production.
- Robust commodity prices have driven many E&Ps to record earnings and cash-flow levels.
- Public E&Ps continue to exercise capital discipline and direct a substantial portion of free cash flow to debt paydowns and dividends/share buybacks.
 - Total Debt/Equity of the S&P Oil & Gas 500 Exploration & Production Index declined to ~40% in Q2 2022 vs. ~55% in Q2 2021.
- Certain private equity sponsors and their LPs are showing renewed enthusiasm for E&P investments given the attractive return potential and as a hedge against inflation.

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Houlihan Lokey is the trusted advisor to more top decision-makers than any other independent global investment bank.

Energy and Power M&A

2021 M&A Advisory Rankings All U.S. Energy & Power Transactions		
	Advisor	Deals
1	Houlihan Lokey	27
2	Citi	24
3	JP Morgan	23
4	Goldman Sachs	19
5	BofA Securities	17

Source: Refinitiv.

No. 1 M&A Advisor for All U.S. Energy and Power Transactions

Corporate Finance

2021 Investment Banking Rankings All Global Transactions		
	Advisor	Deals
1	Houlihan Lokey	549
2	Goldman Sachs	511
3	JP Morgan	508
4	Rothschild	437
5	Morgan Stanley	393

Source: Refinitiv. Excludes accounting firms and brokers.

No. 1 M&A Advisor for All U.S. Transactions
Leading Capital Markets Advisor

Financial and Valuation Advisory

2002 to 2021 Global M&A Fairness Advisory Rankings		
	Advisor	Deals
1	Houlihan Lokey	952
2	JP Morgan	890
3	Duff & Phelps, A Kroll Business	882
4	Morgan Stanley	602
5	BofA Securities	531

Source: Refinitiv. Announced or completed transactions.

No. 1 Global M&A Fairness Opinion Advisor Over the Past 20 Years

1,000+ Annual Valuation Engagements

Financial Restructuring

2021 Global Distressed Debt & Bankruptcy Restructuring Rankings		
	Advisor	Deals
1	Houlihan Lokey	63
2	Rothschild	38
3	Moelis	34
4	PJT Partners	33
5	Lazard	24

Source: Refinitiv.

No. 1 Global Investment Banking Restructuring Advisor

1,500+ Transactions Completed, Valued at More Than \$3.0 Trillion Collectively

Global Oil and Gas Footprint: Fully Integrated Team

Houlihan Lokey's Oil & Gas Group provides global coverage via more than 70 dedicated financial professionals, including specialized bankers, A&D/technical advisory, valuation, and capital markets teams.

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Patrick Yang
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Director

Arun Reddy
Managing
Director

Walid Chamma
Senior Vice
President

Kurt Davis
Senior Vice
President

Ramzi Flayhan
Associate

Cross-Product Industry Team

Technical/A&D

- More than \$50 billion in combined transactions
- Specialists in:
 - Technical advisory
 - Asset dispositions/swaps
 - Equity/working interest sales
 - JV structuring/partner identification

Mergers and Acquisitions

- No. 1 U.S. M&A advisor*
- Corporate M&A/spinoff advisory, structuring, negotiation, and execution
- Extensive reach in market trends and relationships
- Specialize in tailored processes to maximize value for our clients



Recapitalization/Restructuring

- No. 1 recapitalization/restructuring advisor*
- We have been engaged in the most notable energy recapitalizations/restructurings of the recent and prior commodity downturn cycles

Financial Advisory

- No. 1 global M&A fairness opinion advisor over the past 20 years**
- 1,000+ annual valuation engagements
- Transaction advisory services, including ability to bundle due diligence and quality of earnings services

Capital Markets

- ~\$15 billion of capital raised and/or advised on in 2021
- Market leader in custom/bespoke structure
- Deep expertise in driving optimal positioning, structure/terms, and syndication

Trusted Advisor

- During the past several years, Houlihan Lokey's fully integrated, cross-product Oil & Gas Group has advised on numerous capital-raise, M&A, corporate finance, and recapitalization assignments in the E&P industry.

Veteran Leadership Team

- The Oil & Gas investment banking team is a cross-product, global, industry-dedicated team of more than 70 highly experienced professionals.
- Diverse set of backgrounds, including E&P companies, midstream companies, other investment banks, investment funds, and research/brokerage shops.
- The A&D/technical group is led by a team of technically focused professionals from the industry, with an average of more than 25 years of industry experience.

*Source: Refinitiv.

**Source: Refinitiv. Announced or completed transactions.

Selected Transactions⁽¹⁾

<p>has combined in an all-stock merger with</p> <p>Financial Advisor</p>	<p>has divested substantially all of its oil and gas assets to</p> <p>Sellside Advisor</p>	<p>has sold substantially all of its assets to</p> <p>Company Advisor</p>	<p>has been acquired by</p> <p>Financial Advisor & Fairness Opinion</p>	<p>has been acquired by</p> <p>Financial Advisor & Fairness Opinion</p>	<p>has been acquired by</p> <p>Sellside Advisor</p>
<p>has sold a 37.5% wellbore interest in certain Legacy PDP assets to</p> <p>Sellside Advisor</p>	<p>has acquired the assets of</p> <p>Buyside Advisor</p>	<p>a portfolio company of</p> <p>Reserve-Based Lending Facility Refinancing</p> <p>\$500,000,000</p> <p>Exclusive Placement Agent</p>	<p>has acquired</p> <p>Company Advisor</p>	<p>has completed a "merger-of-equals" with</p> <p>Sellside Advisor and Fairness Opinion</p>	<p>has completed the refinancing of Senior Secured Notes through a combined issuance of Term Loan B and new Senior Secured Notes</p> <p>\$1,870,000,000</p> <p>Joint Lead Arranger & Joint Lead Manager</p>

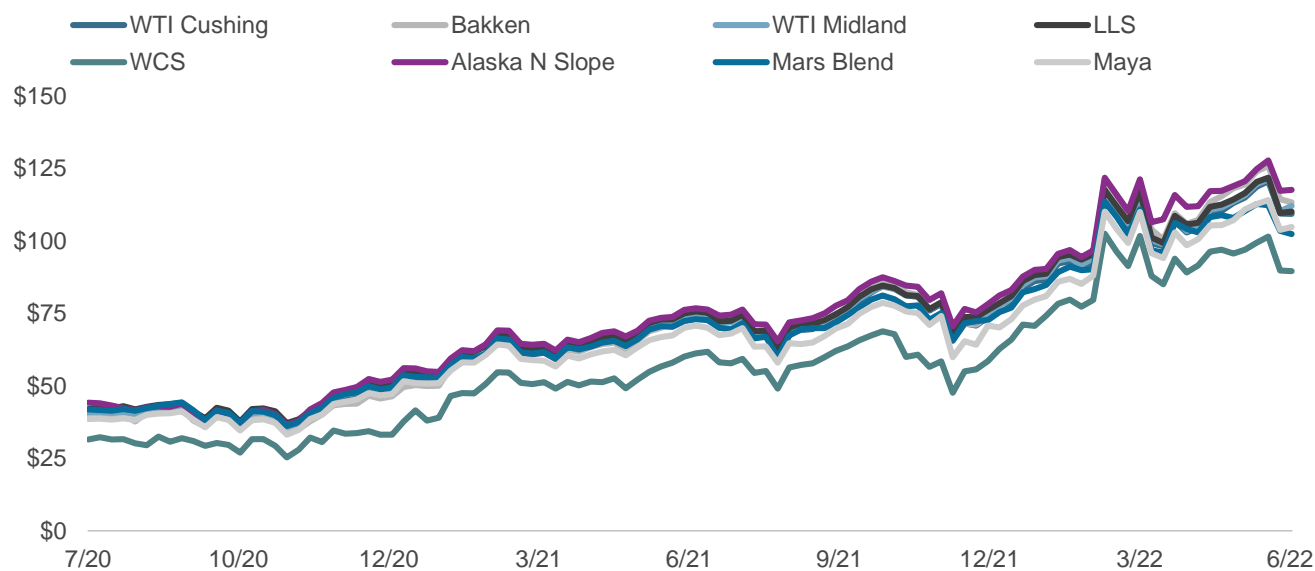
Tombstones included herein represent transactions closed from 2018 forward.

(1) Please reach out to Manny Vedi at 832.319.5135 or MVEDi@HL.com for additional Oil & Gas Group qualifications.

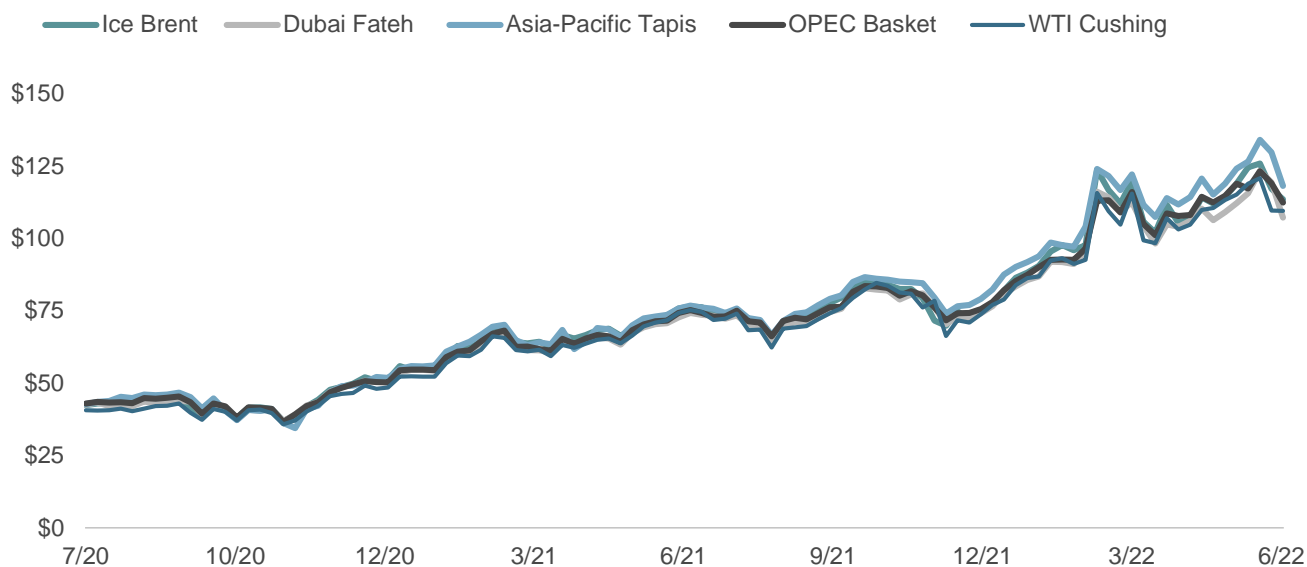
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Spot Pricing

North American Spot Prices (\$/bbl)

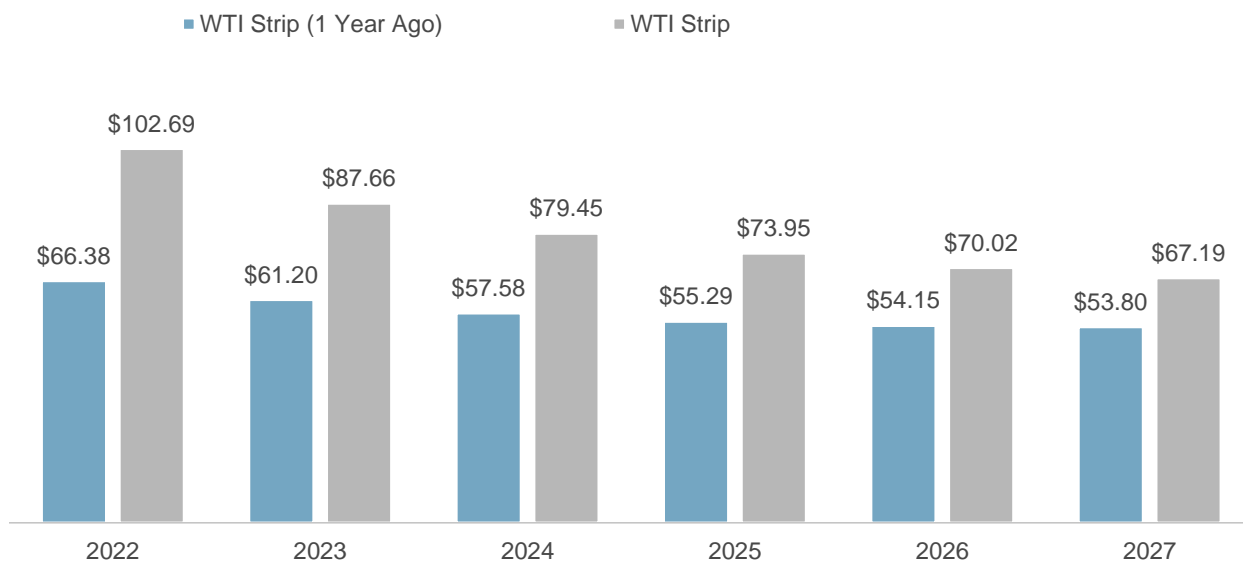


International Spot Prices (\$/bbl)

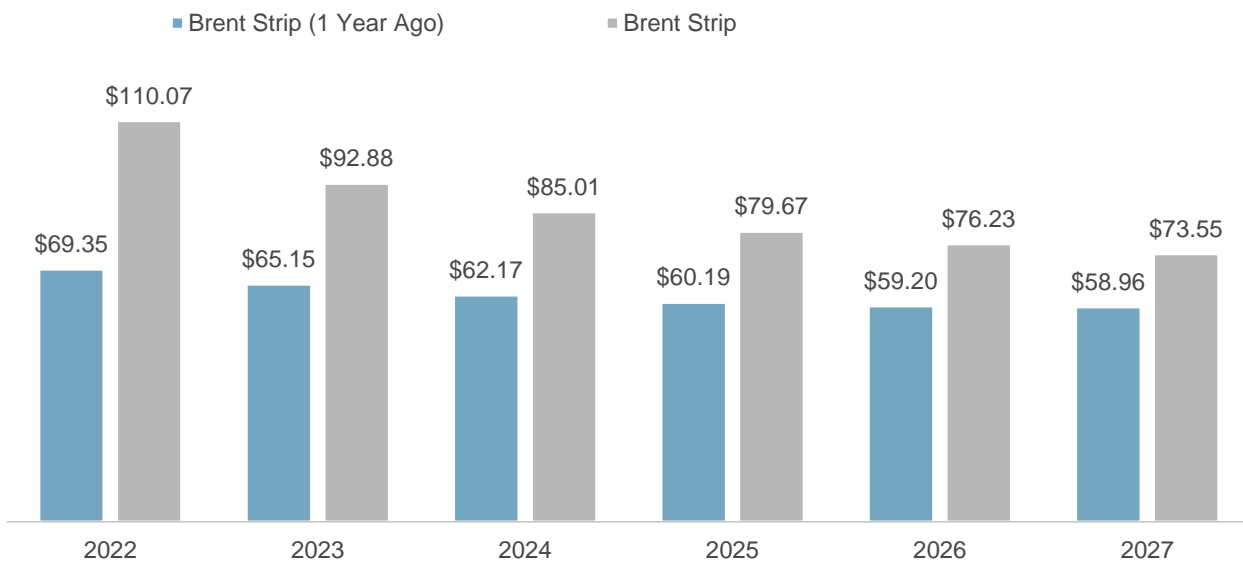


Strip Pricing

WTI Cushing Strip Pricing Comparison (\$/bbl)

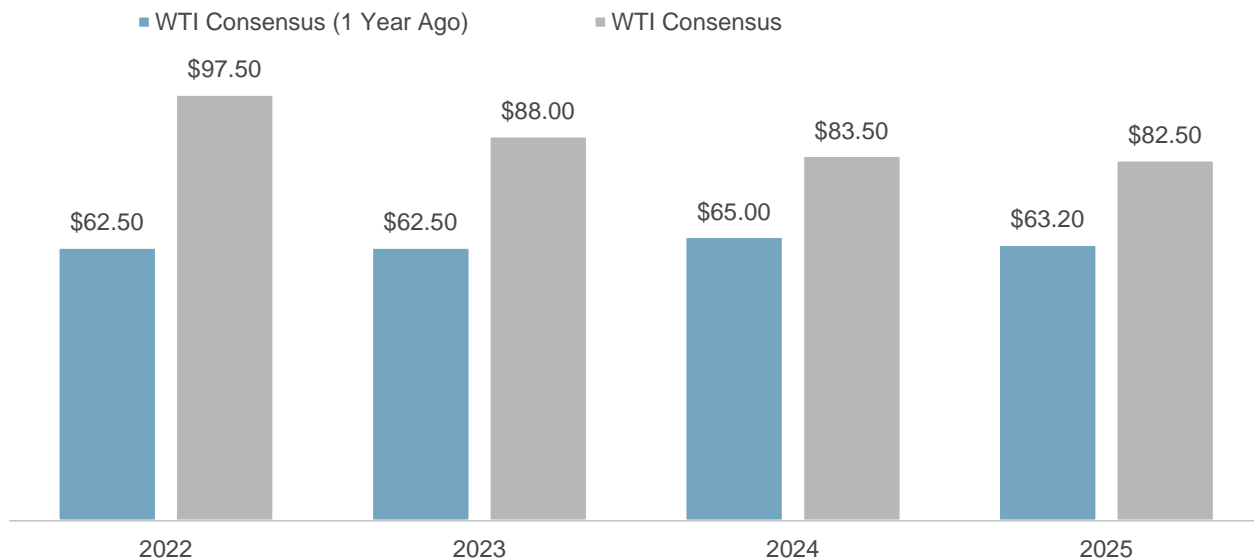


Brent Strip Pricing Comparison (\$/bbl)

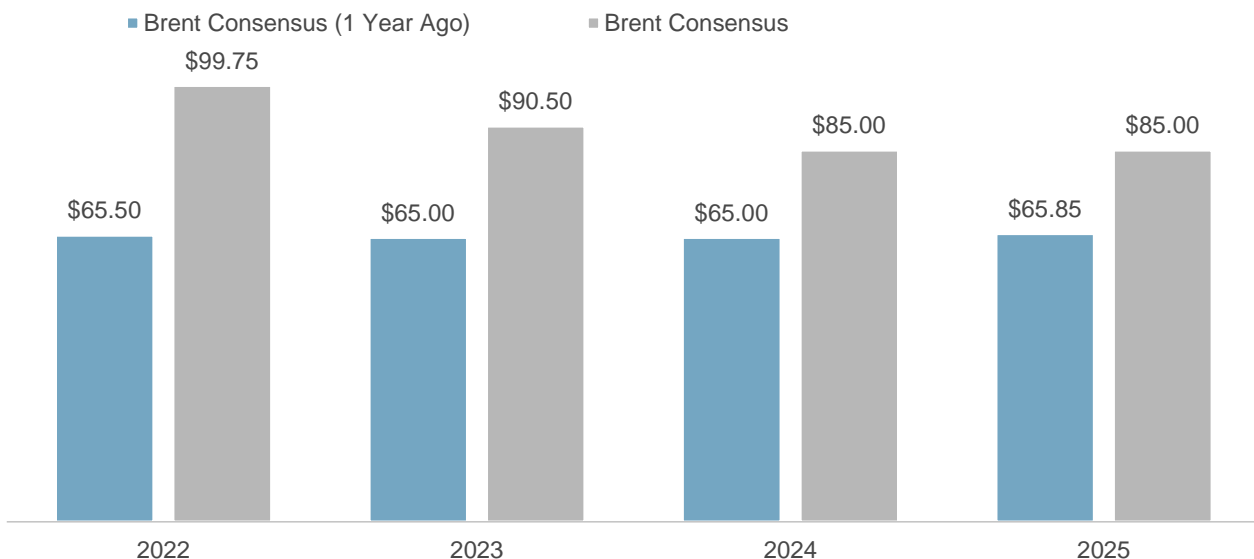


Consensus Pricing

WTI Cushing Consensus Pricing Comparison (\$/bbl)



Brent Consensus Pricing Comparison (\$/bbl)



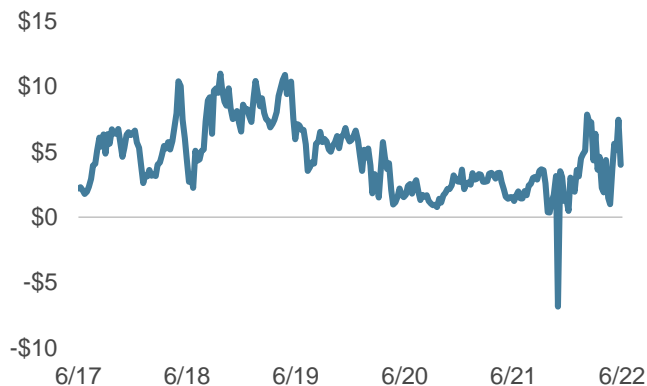
Differentials

Regional Crude Oil Spot Pricing (\$/bbl)

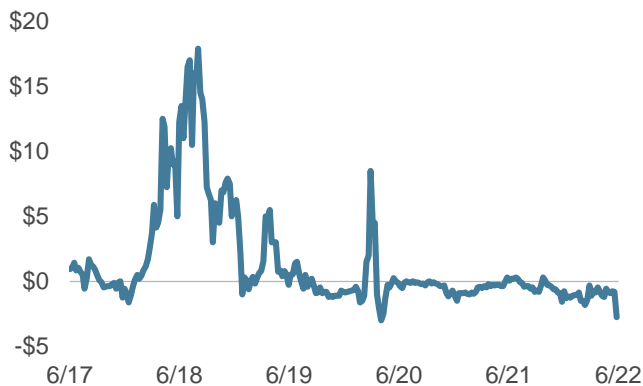
Region	6/30/2022	6/30/2021	3/31/2022	YoY % Change	QoQ % Change
Brent	\$115.0	\$75.1	\$106.6	53.1%	7.9%
<i>Brent—WTI Cushing</i>	\$9.3	\$1.7	\$6.3		
WTI Cushing	\$105.8	\$73.5	\$100.3	43.9%	5.5%
<i>WTI Cushing—Brent</i>	(\$9.3)	(\$1.7)	(\$6.3)		
WTI Midland	\$107.1	\$73.4	\$101.3	45.8%	5.7%
<i>WTI Cushing—WTI Midland</i>	(\$1.3)	\$0.0	(\$1.0)		
Bakken	\$110.5	\$74.1	\$104.8	49.2%	5.5%
<i>WTI Cushing—Bakken</i>	(\$4.8)	(\$0.6)	(\$4.5)		
Eagle Ford Light	\$102.2	\$70.0	\$96.8	46.2%	5.7%
<i>WTI Cushing—Eagle Ford Light</i>	\$3.5	\$3.5	\$3.5		
WTS	\$107.6	\$73.1	\$99.0	47.1%	8.6%
<i>WTI Cushing—WTS</i>	(\$1.8)	\$0.3	\$1.3		
WCS	\$87.6	\$59.5	\$89.5	47.2%	-2.1%
<i>WTI Cushing—WCS</i>	\$18.2	\$14.0	\$10.8		
Maya	\$102.4	\$69.2	\$96.3	47.8%	6.3%
<i>Maya—WCS</i>	\$14.8	\$9.7	\$6.8		
Mars	\$100.9	\$71.6	\$97.5	40.9%	3.5%
<i>WTI Cushing—Mars</i>	\$4.9	\$1.8	\$2.8		
LLS	\$107.3	\$74.2	\$102.1	44.6%	5.1%
<i>LLS—Maya</i>	\$4.9	\$4.9	\$5.8		
ANS	\$114.3	\$75.6	\$106.8	51.2%	7.0%
<i>Brent—ANS</i>	\$0.8	(\$0.4)	(\$0.2)		

Differentials (\$/bbl)

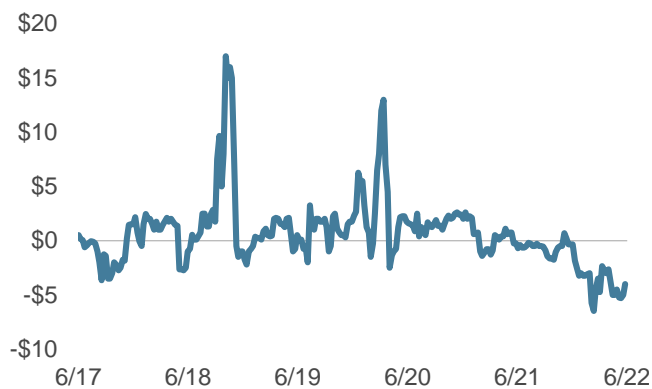
Brent—WTI Cushing



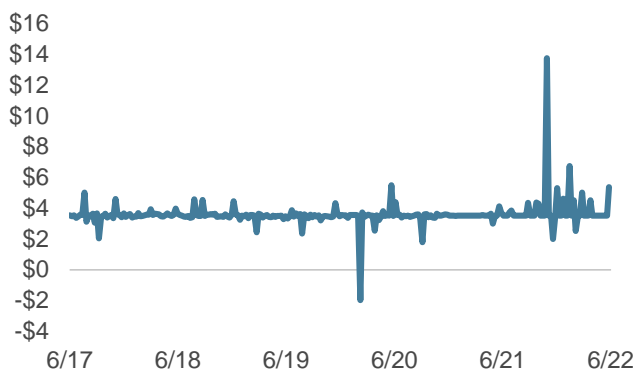
WTI Cushing—WTI Midland



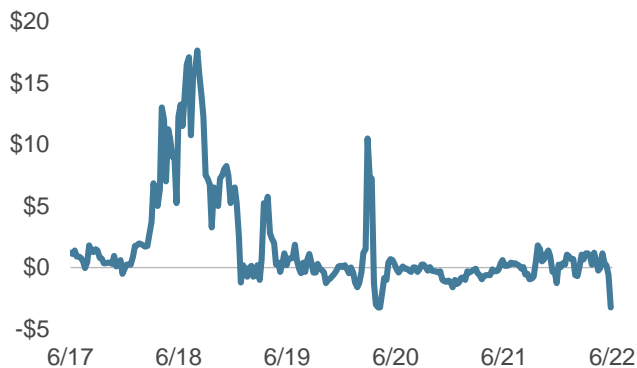
WTI Cushing—WTI Bakken Clearbrook



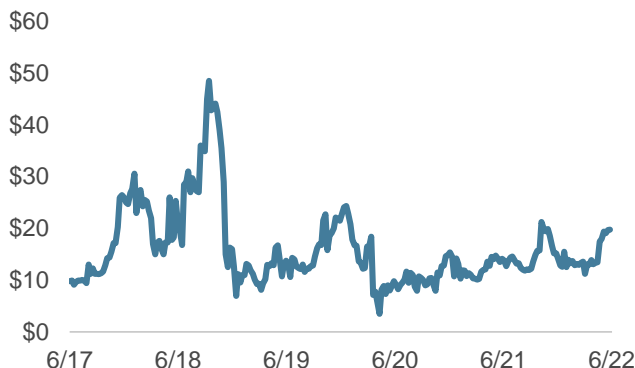
WTI Cushing—Eagle Ford Light



WTI Cushing—WTS

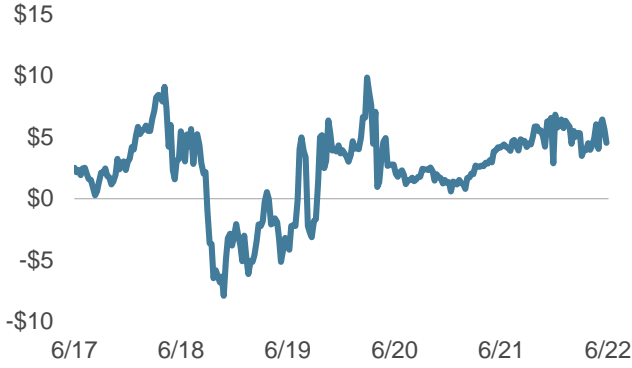


WTI Cushing—WCS

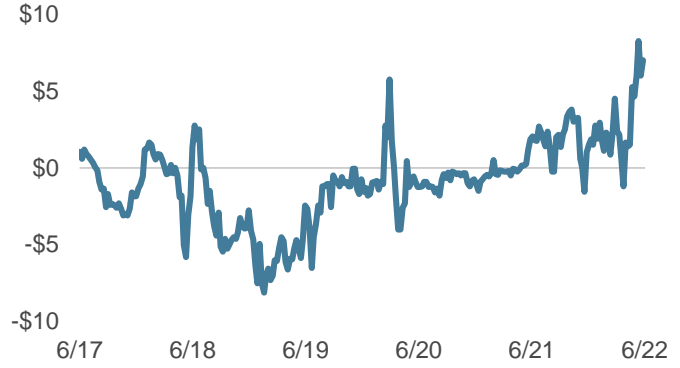


Differentials (\$/bbl) (cont.)

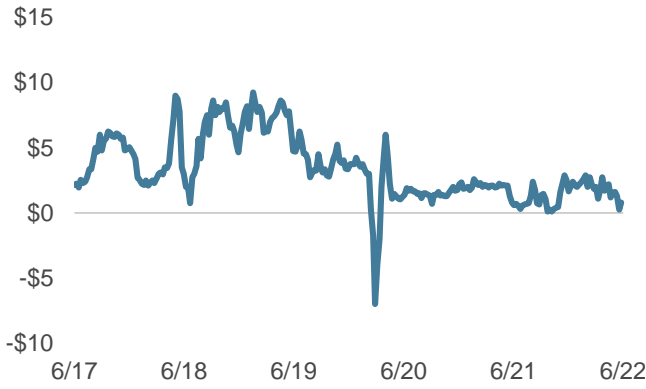
WTI Cushing—Maya



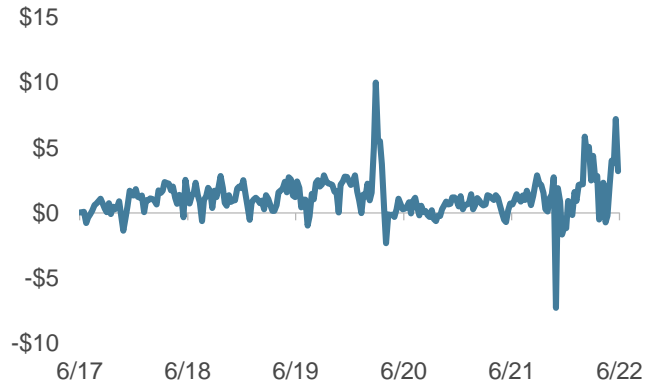
WTI Cushing—Mars



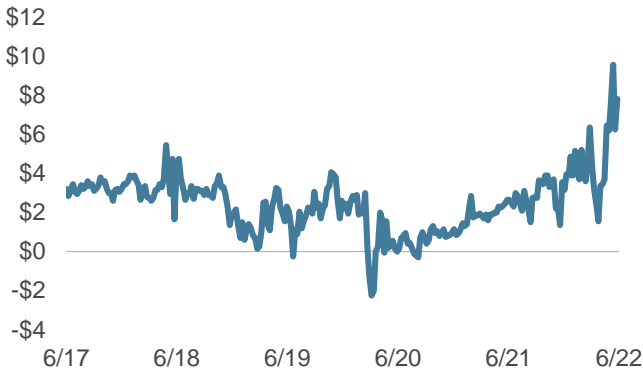
LLS—WTI Cushing



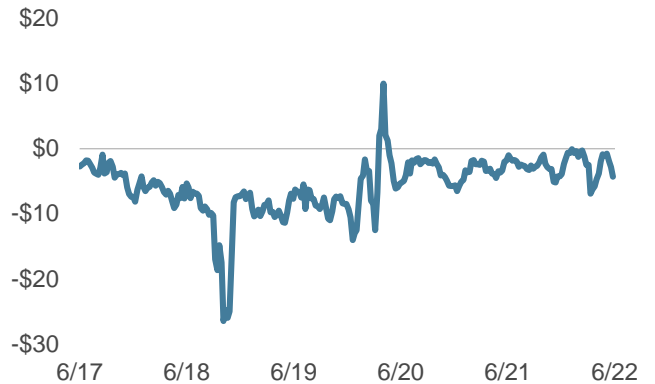
Brent—LLS



LLS—Mars

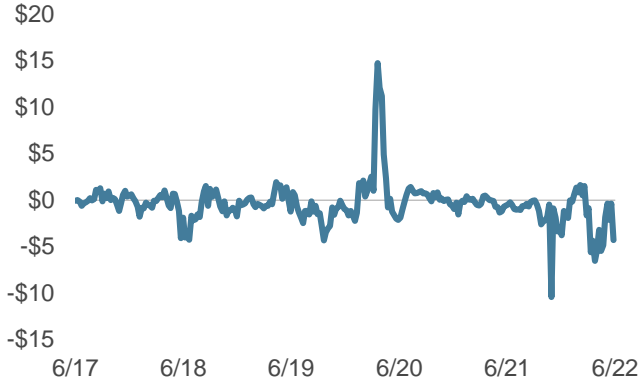


Bakken—ANS

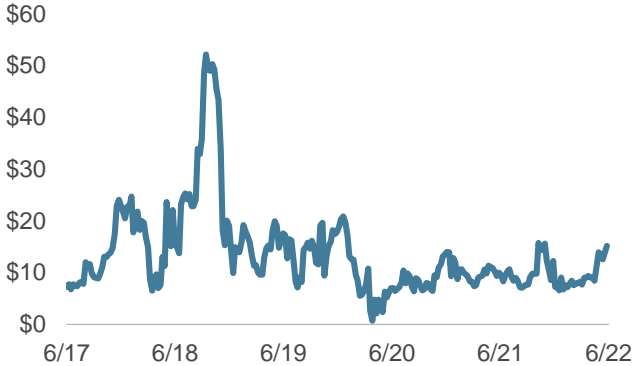


Differentials (\$/bbl) (cont.)

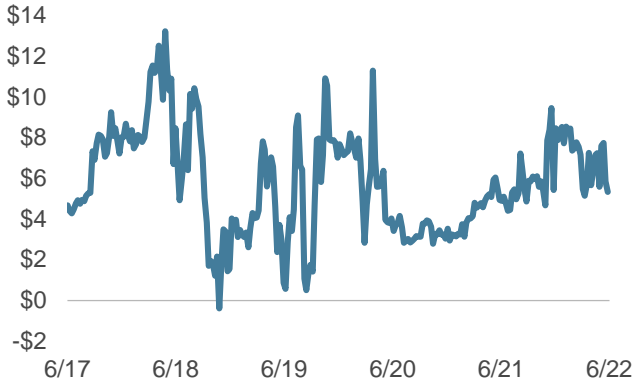
Brent—ANS



Maya—WCS



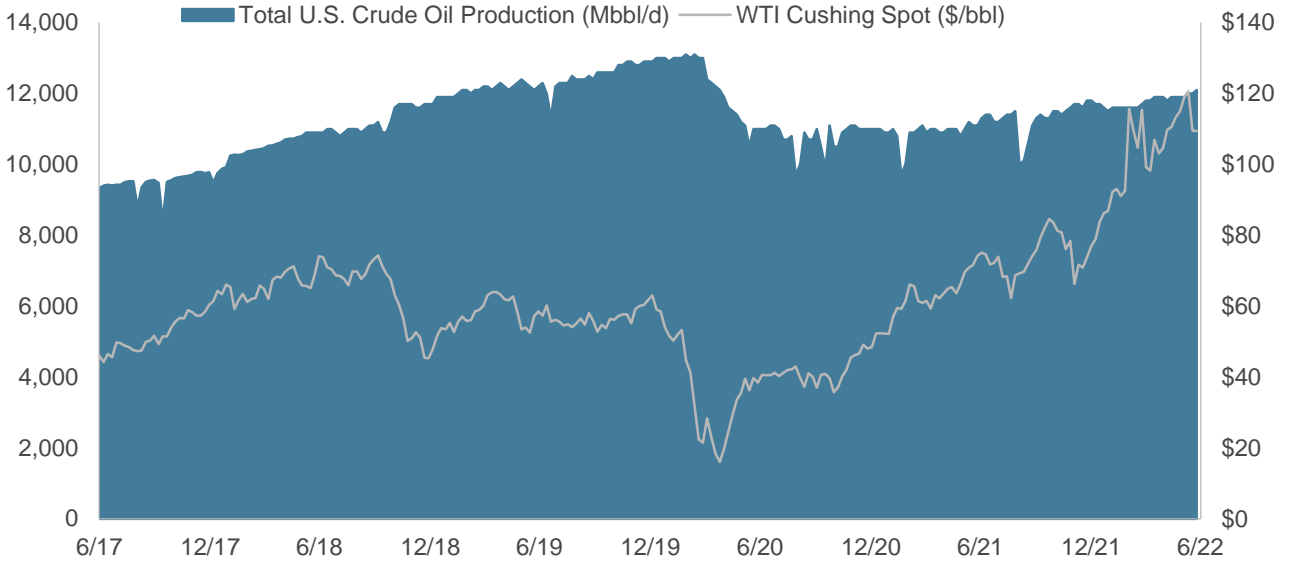
LLS—Maya



Notes: All data as of June 30, 2022. Data collected on a weekly basis. Source: Bloomberg.

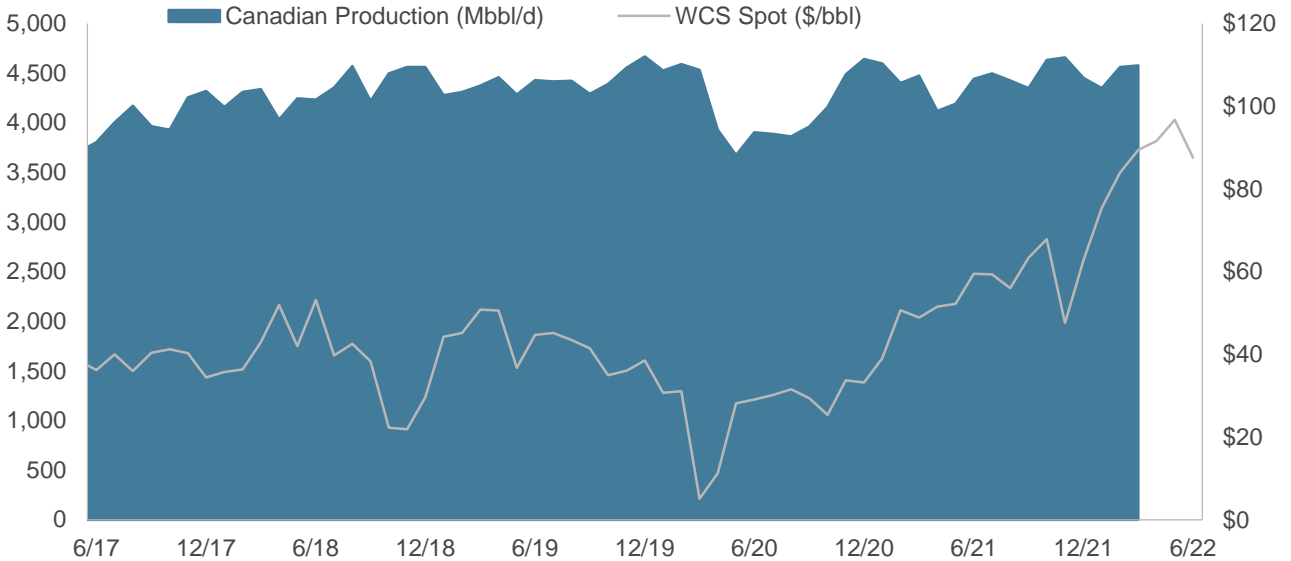
Production

U.S. Production (Mbb/d) vs. WTI (\$/bbl)



Note: Data collected on a weekly basis and subject to a one-week lag for production.

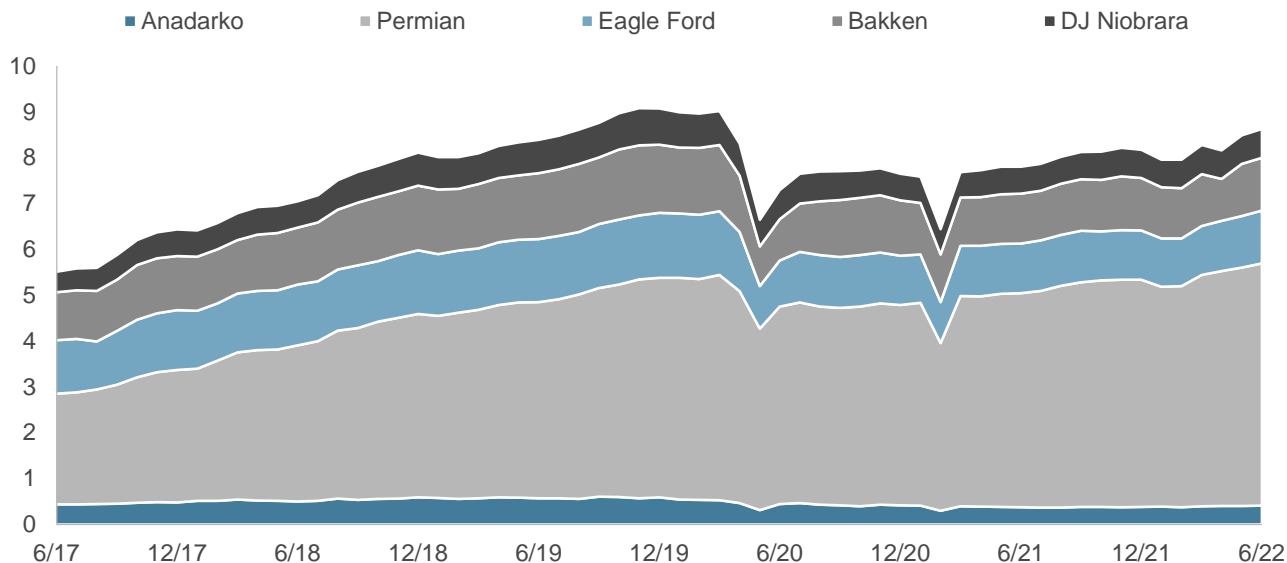
Canadian Production (Mbb/d) vs. WCS (\$/bbl)



Note: Data collected on a monthly basis and subject to a one-month lag for production.

Production (cont.)

Production in Select Regions (MMbbl/d)⁽¹⁾



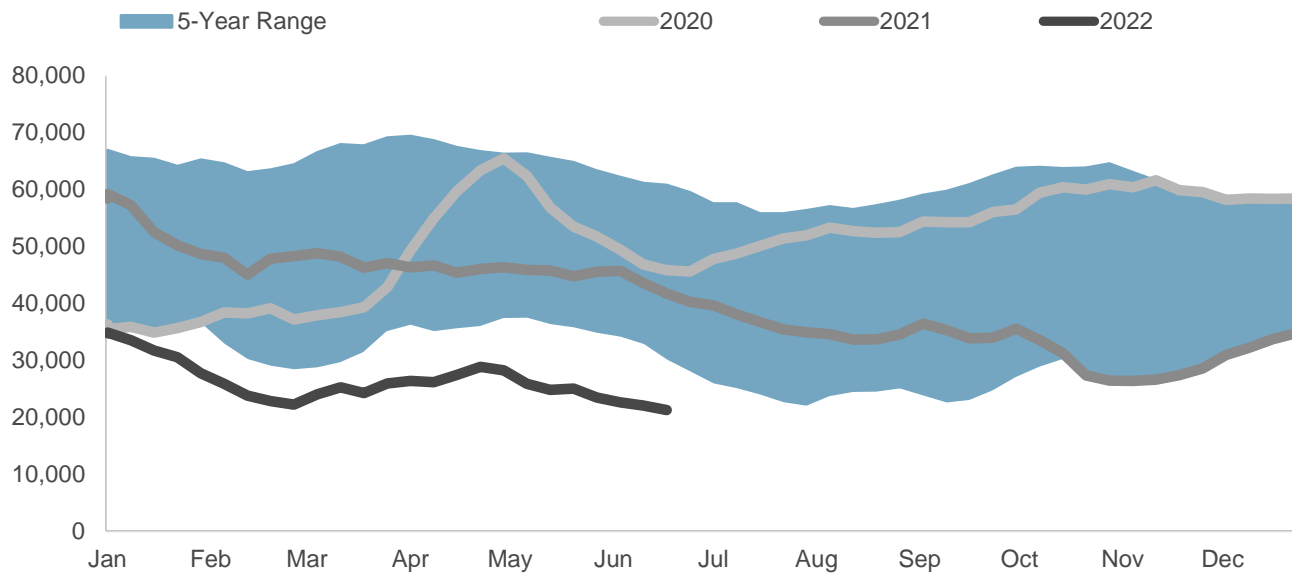
Notes: All data as of June 30, 2022. Data collected on a monthly basis.

Sources: Bloomberg, EIA.

(1) EIA's drilling productivity report uses recent data on the total number of drilling rigs in operation, along with estimates of drilling productivity and estimated changes in production from existing wells, to provide estimated changes in production for key regions.

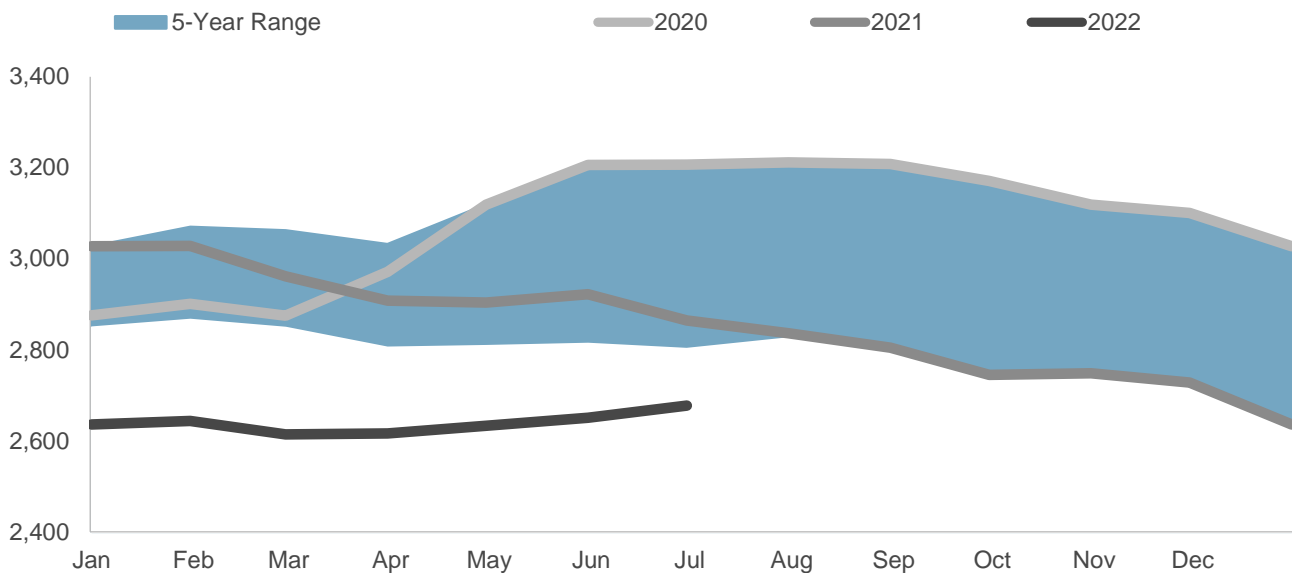
Inventory

U.S. Cushing Crude Inventory (Mbbl)



Note: Data collected on a weekly basis.

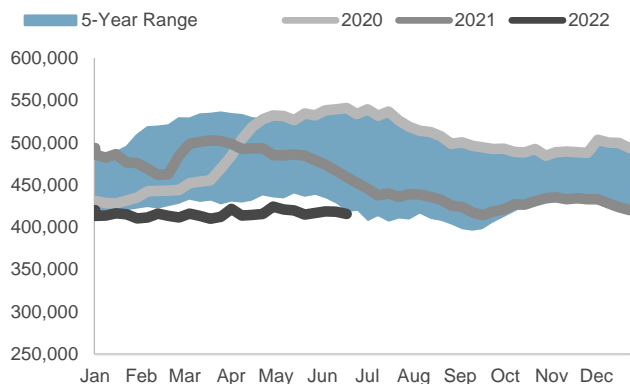
OECD Commercial Inventories (MMbbl)



Note: Data collected on a monthly basis.

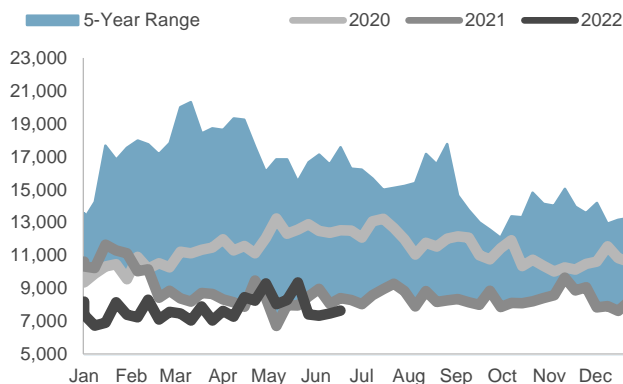
Inventory (Mbbbl)

Overall U.S. Crude Inventory

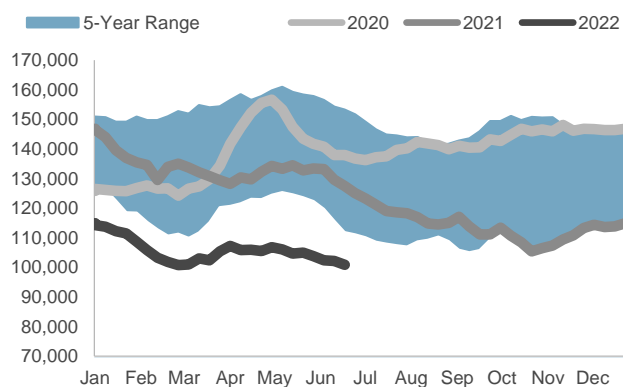


Note: Excludes strategic petroleum reserve (SPR).

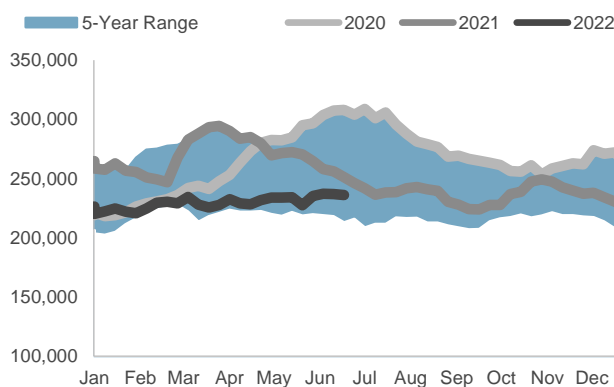
PADD I



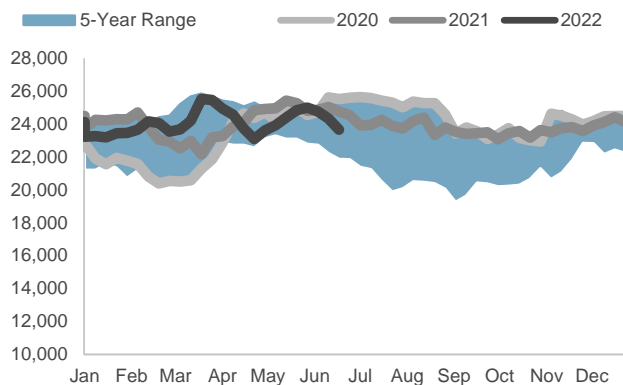
PADD II



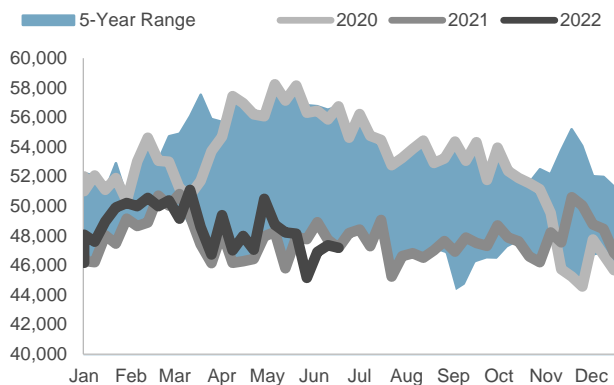
PADD III



PADD IV

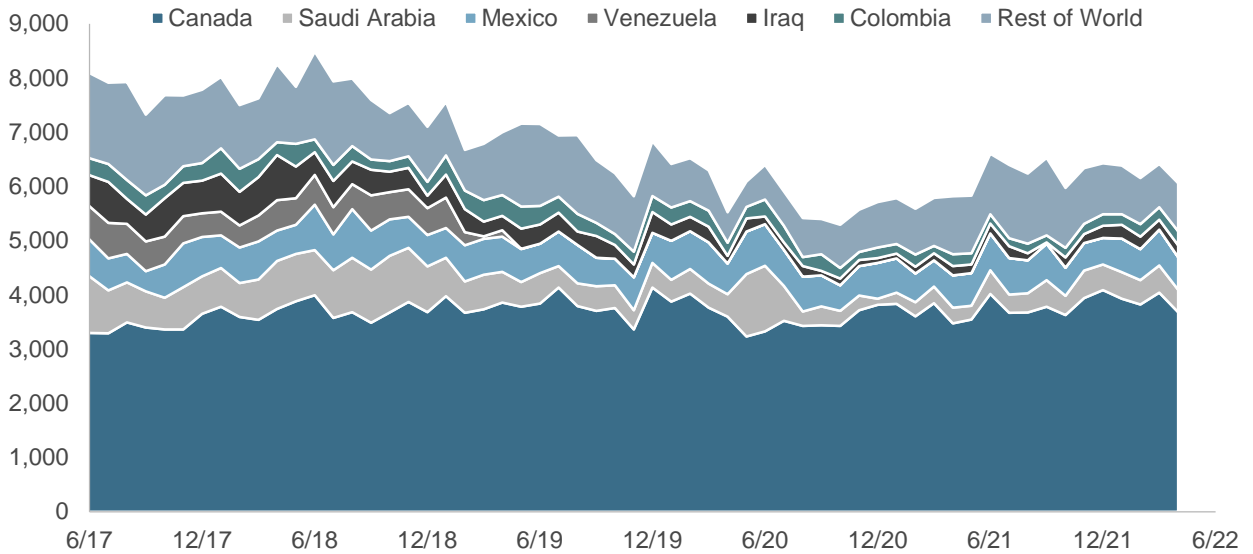


PADD V



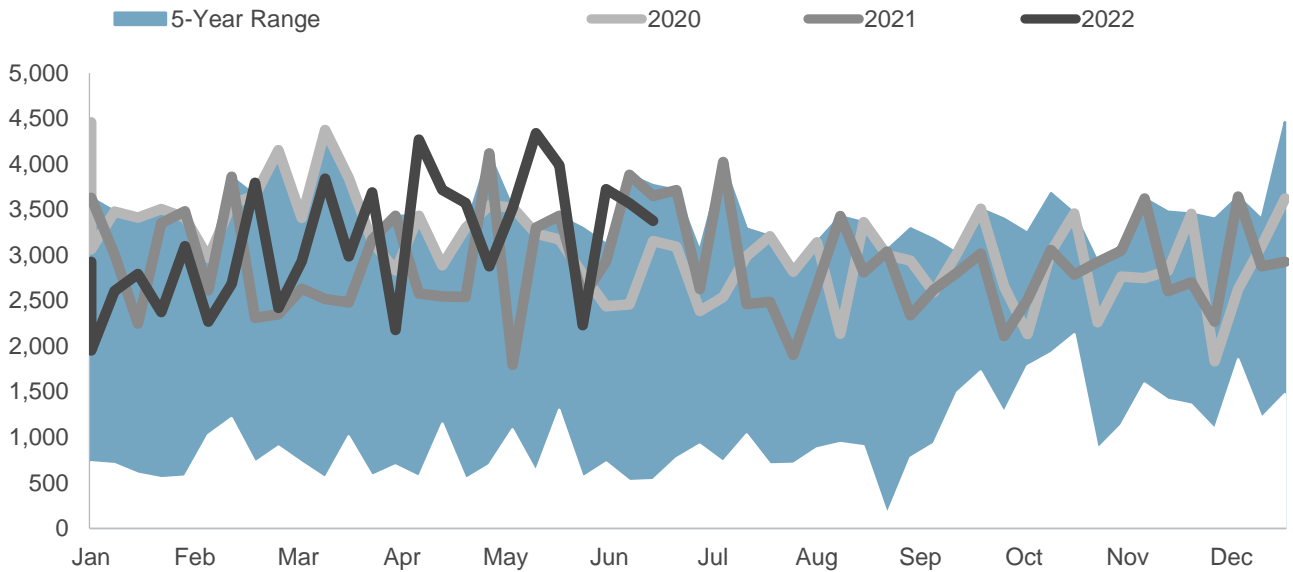
Trade

U.S. Crude Imports by Country (Mbb/d)



Note: Data collected on a monthly basis and subject to a two- to four-month lag.

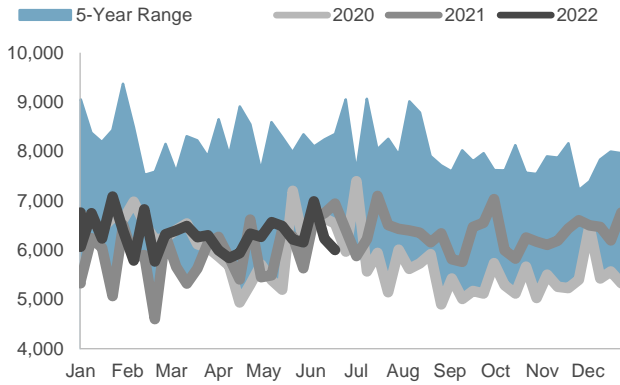
Total U.S. Crude Exports (Mbb/d)



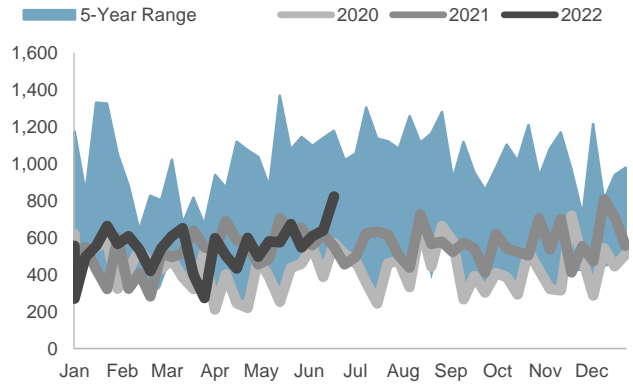
Note: Data collected on a weekly basis.

U.S. Commercial Crude Imports by Destination (Mbb/d)

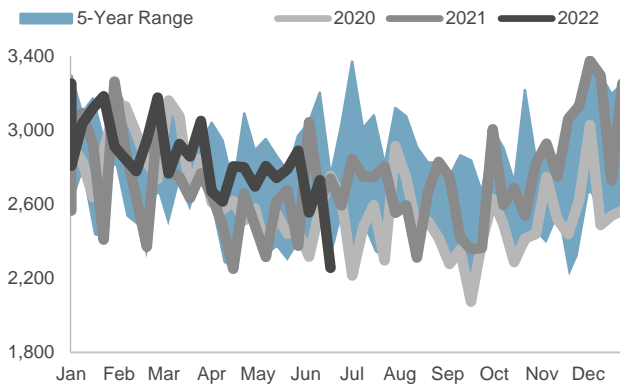
Overall U.S. Commercial Crude Imports



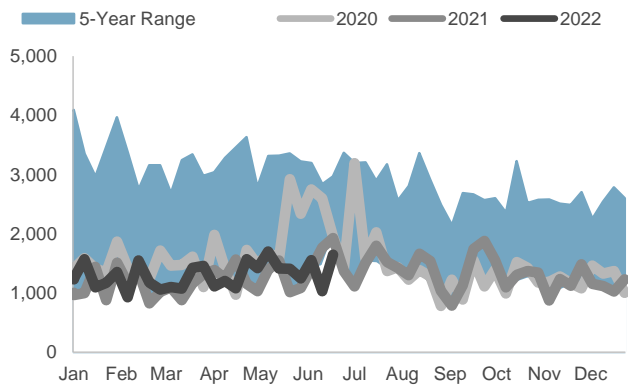
Destination—PADD I



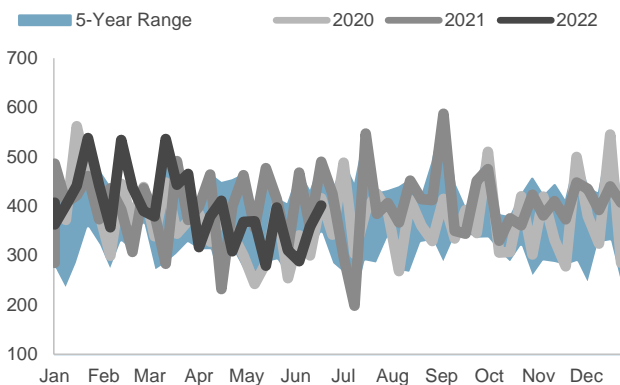
Destination—PADD II



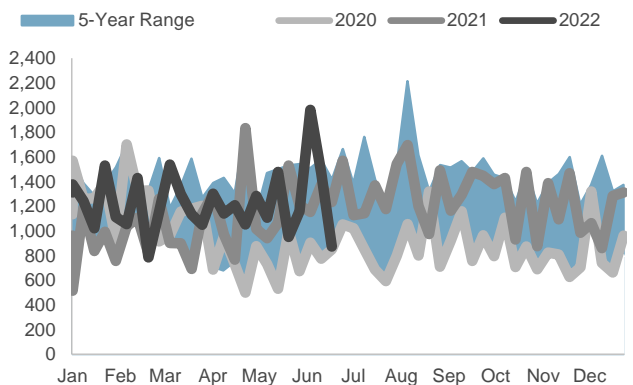
Destination—PADD III



Destination—PADD IV

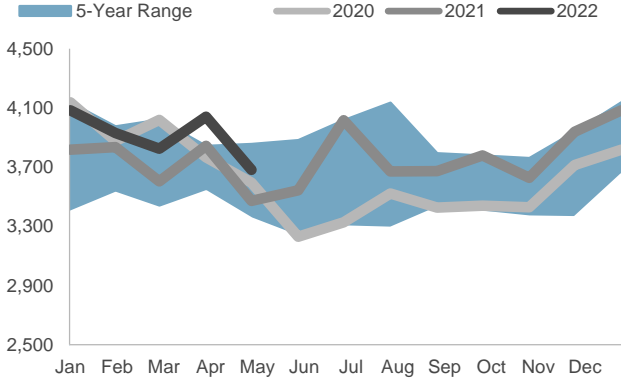


Destination—PADD V

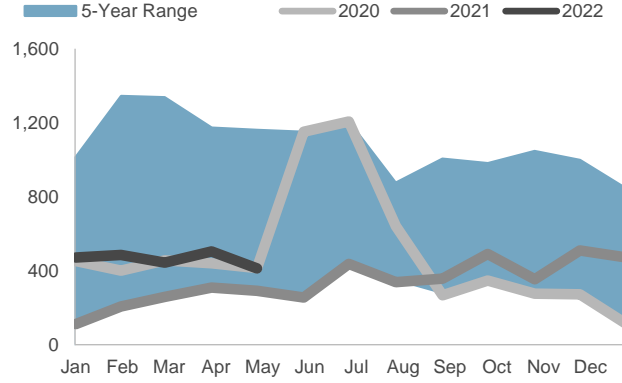


U.S. Imports by Country (Mbbbl/d)

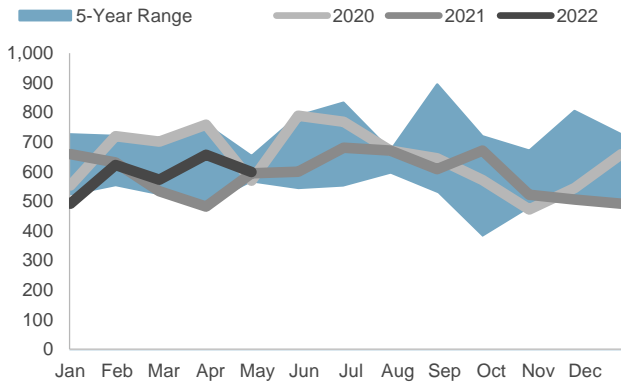
Canada



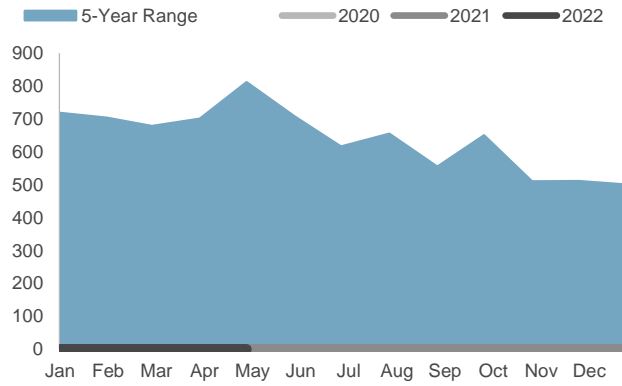
Saudi Arabia



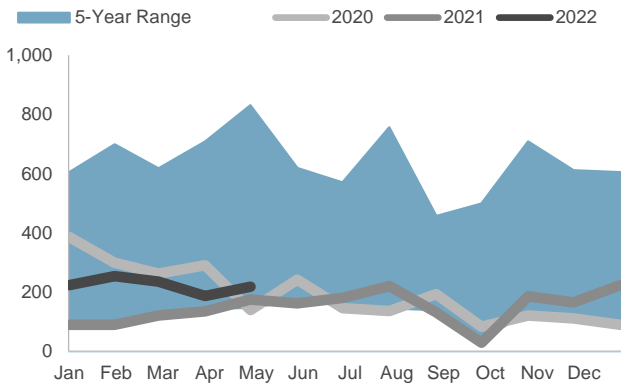
Mexico



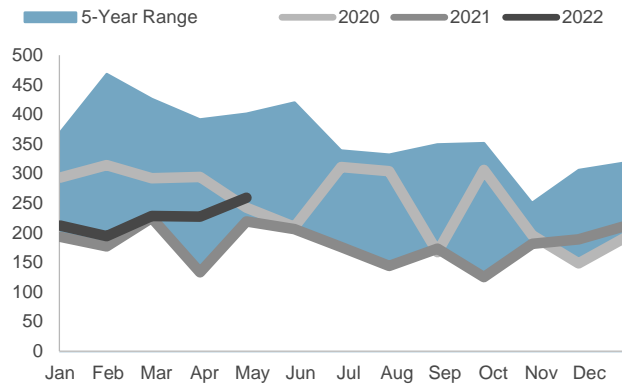
Venezuela



Iraq



Colombia



Notes: All data as of June 30, 2022. Data collected on a monthly basis and subject to a two-month lag. Source: Bloomberg.

OPEC Production Capacity

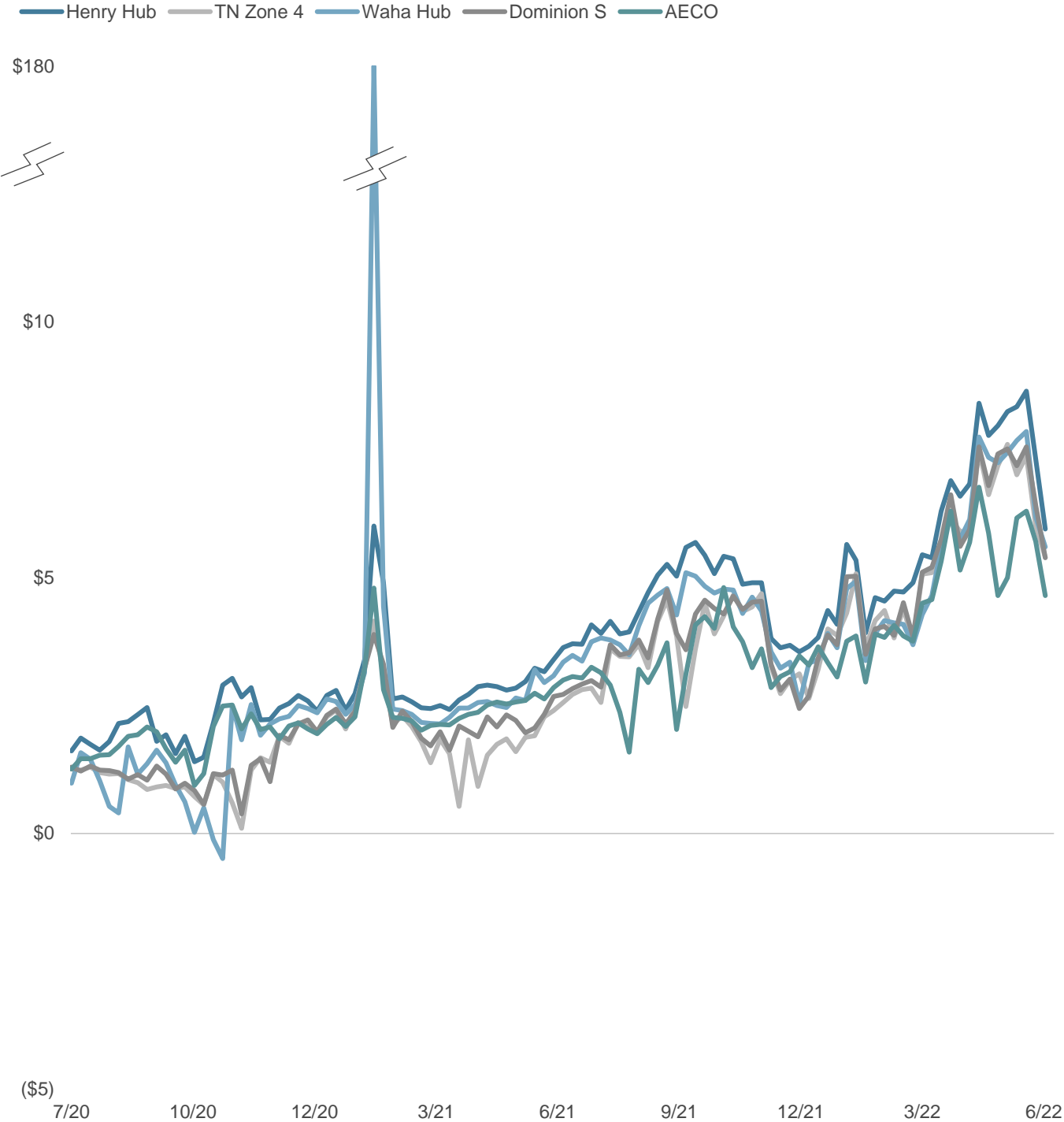
OPEC Spare Production Capacity Over Time



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Natural Gas Spot Pricing

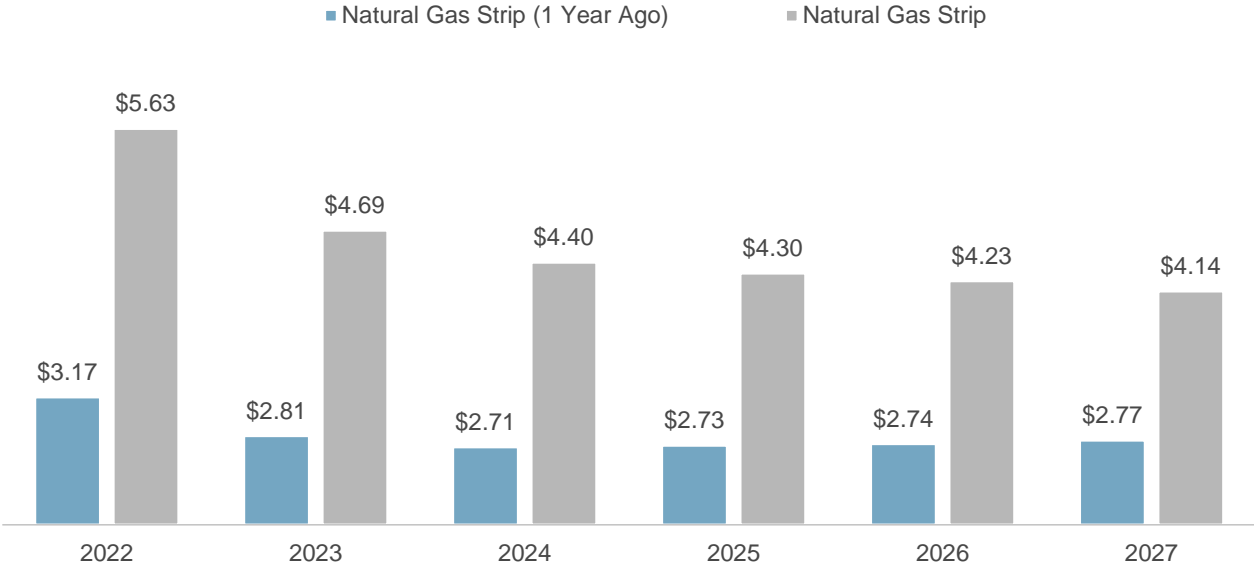
Pricing (\$/MMbtu)



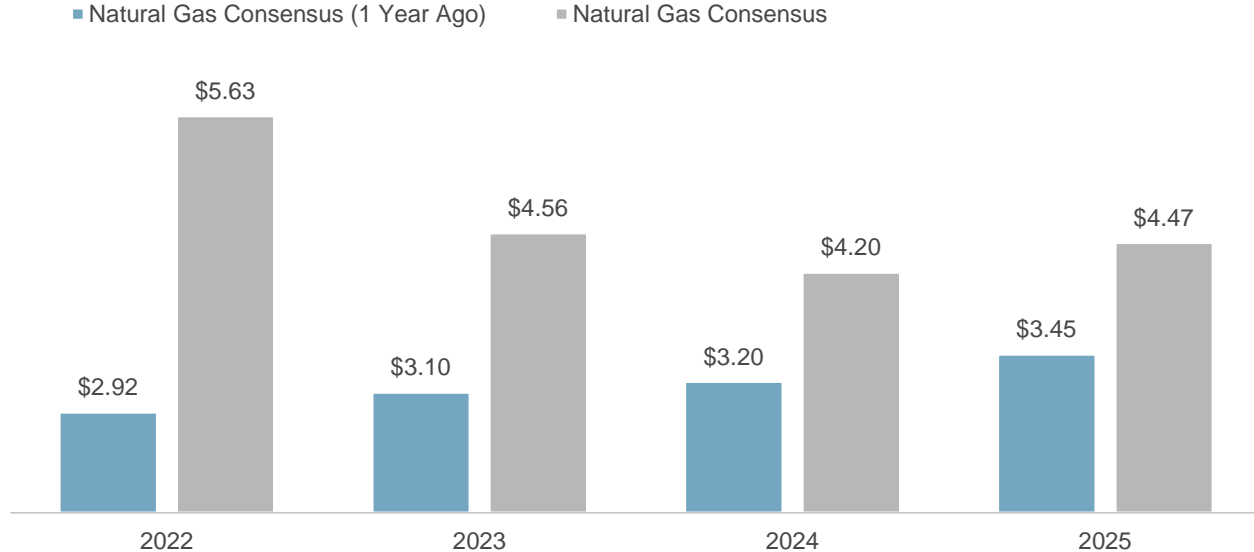
Notes: All data as of June 30, 2022. Data collected on a weekly basis. Source: Bloomberg.

Natural Gas Pricing

Strip Pricing Comparison (\$/MMbtu)



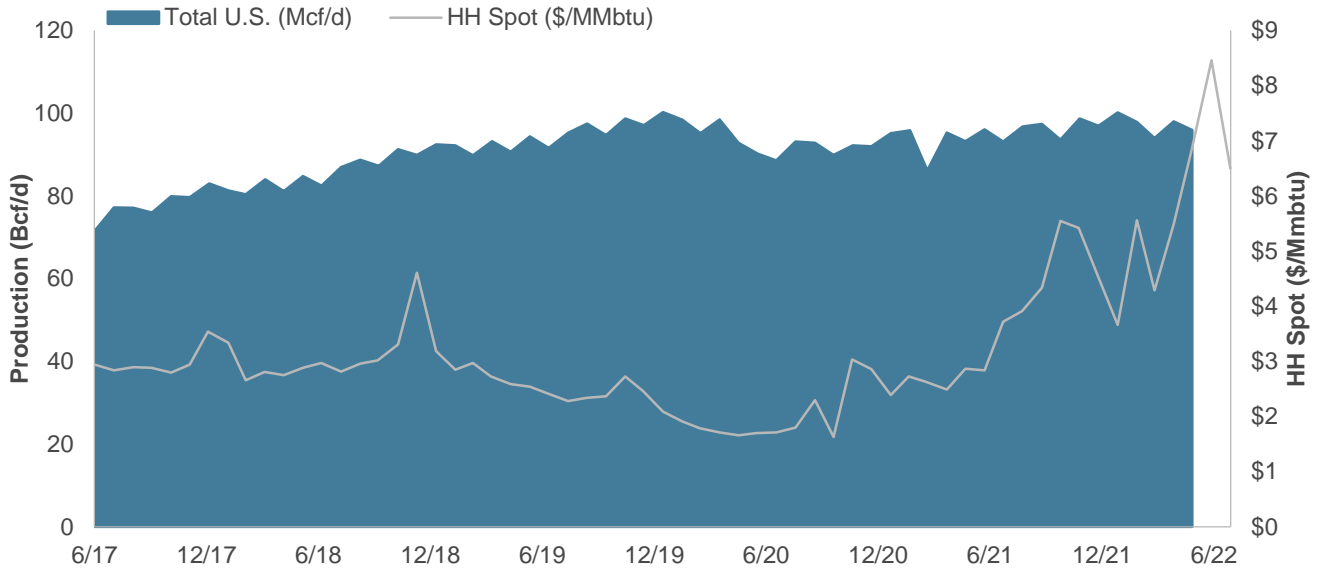
Consensus Pricing Comparison (\$/MMbtu)



Notes: All data as of June 30, 2022. Represents the average price for each year. Source: Bloomberg.

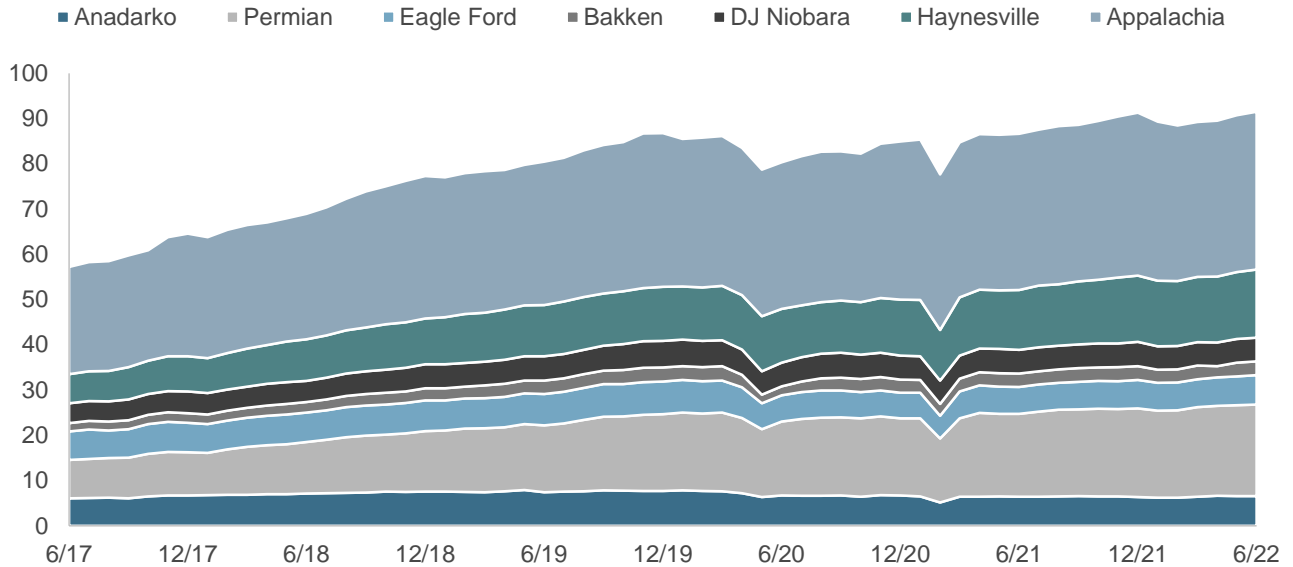
Natural Gas Production

Total U.S. Dry Natural Gas Production (Bcf/d)



Note: Data collected on a monthly basis and subject to a two-month lag for production.

Select Dry Natural Gas Production by Regions (Bcf/d)⁽¹⁾



Notes: All data as of June 30, 2022. Data collected on a monthly basis.

Sources: Bloomberg, EIA.

(1) EIA's drilling productivity report uses recent data on the total number of drilling rigs in operation, along with estimates of drilling productivity and estimated changes in production from existing wells, to provide estimated changes in production for key regions.

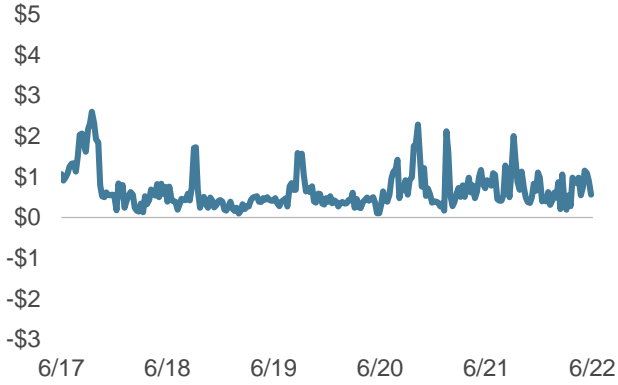
Differentials

Regional Natural Gas Spot Pricing (\$/MMbtu)

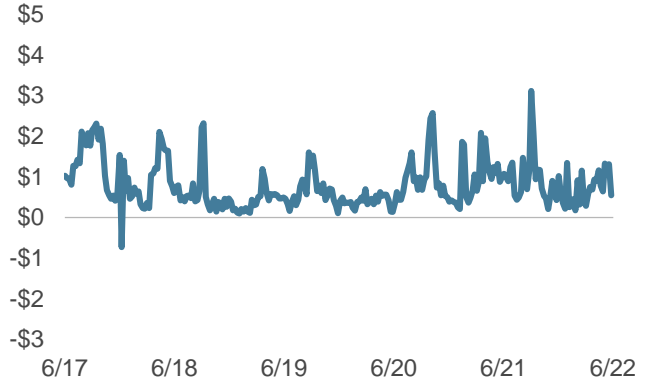
Region	6/30/2022	6/30/2021	3/31/2022	YoY % Change	QoQ % Change
Henry Hub	\$6.5	\$3.7	\$5.5	74.7%	18.4%
<i>Benchmark</i>					
Dominion South	\$5.6	\$2.8	\$5.3	97.1%	6.2%
<i>Henry Hub—Dominion South</i>	\$0.9	\$0.9	\$0.2		
TN Zone 4	\$5.5	\$2.6	\$5.3	110.8%	4.4%
<i>Henry Hub—TN Zone 4</i>	\$1.0	\$1.1	\$0.2		
AECO	\$4.5	\$3.5	\$4.5	30.4%	0.9%
<i>Henry Hub—AECO</i>	\$2.0	\$0.3	\$1.0		
Waha Hub	\$6.0	\$3.5	\$5.0	69.2%	21.4%
<i>Henry Hub—Waha</i>	\$0.5	\$0.2	\$0.5		

Natural Gas—Differentials (\$/MMbtu)

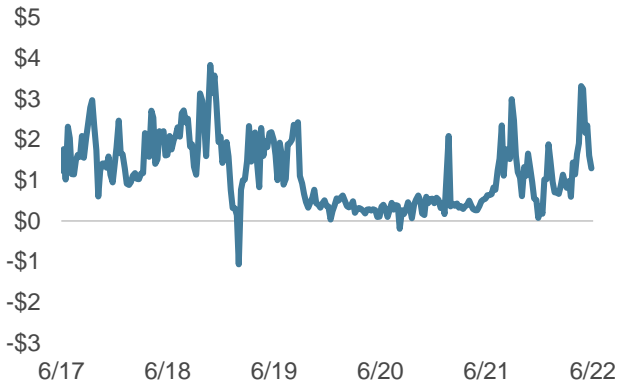
HH—Dominion South



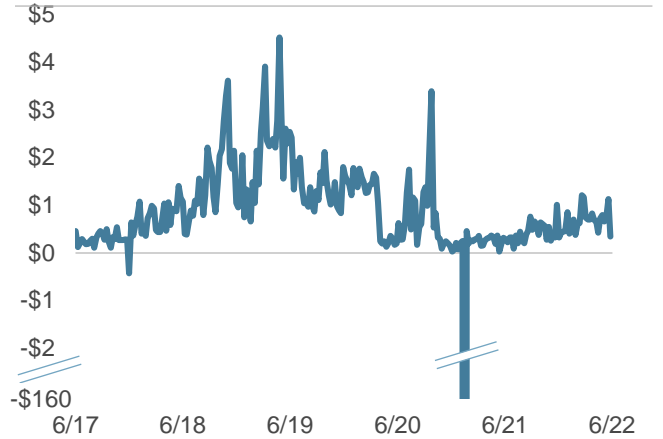
HH—TN Zone 4



HH—AECO



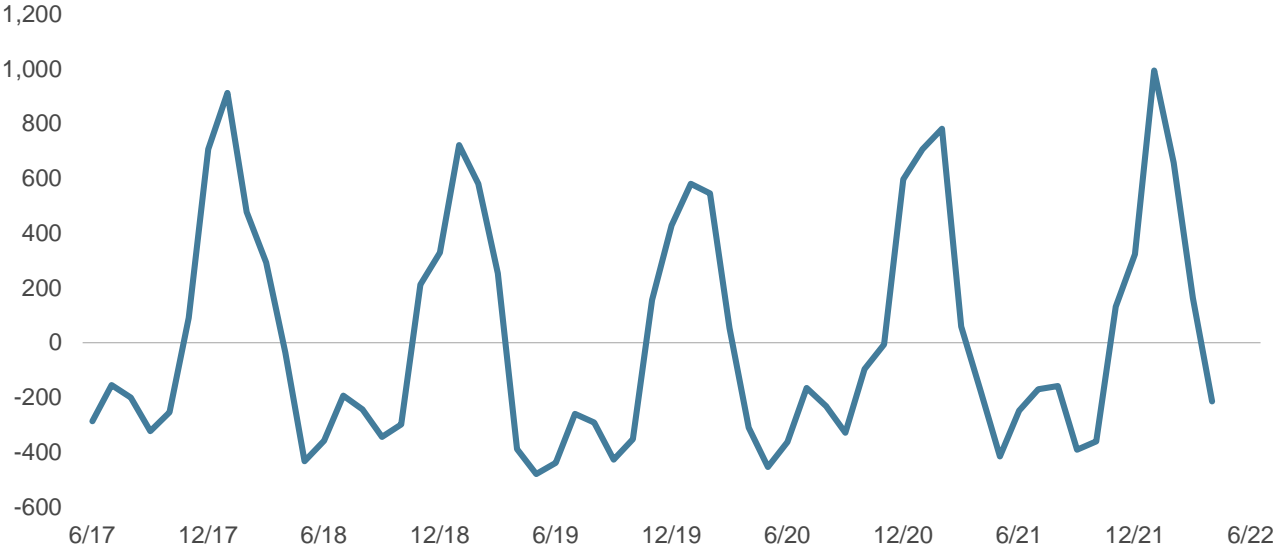
HH—Waha Hub



Note: Low of -\$154.6 on February 12, 2021, associated with winter storms.

Natural Gas

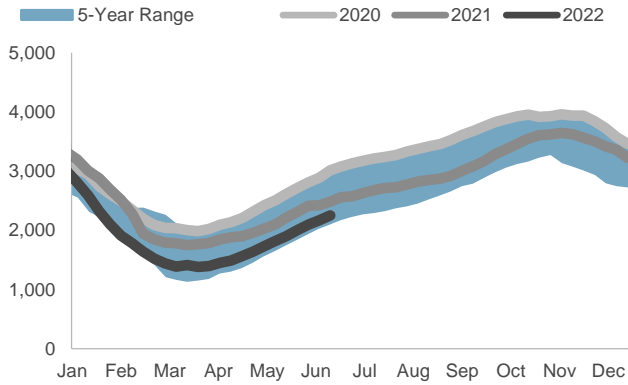
U.S. Natural Gas Withdrawal (Bcf)



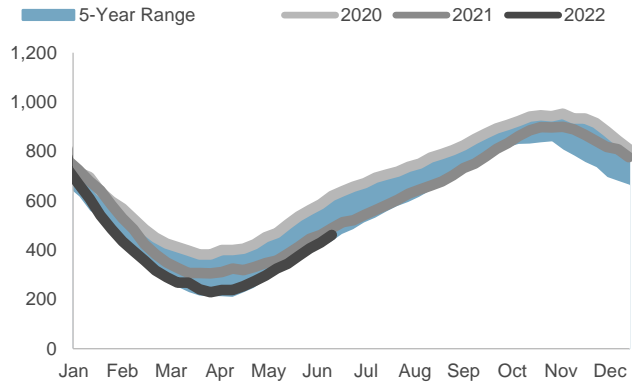
Note: Data collected on a monthly basis and subject to irregular updates.

Natural Gas Storage (Bcf)

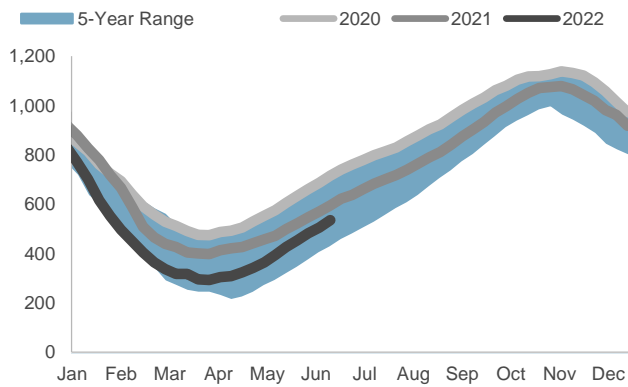
Total U.S.



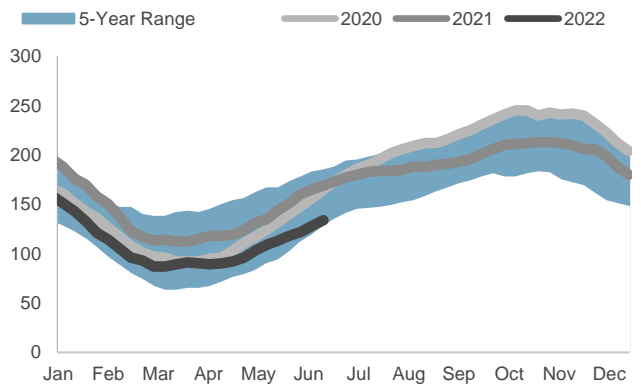
East



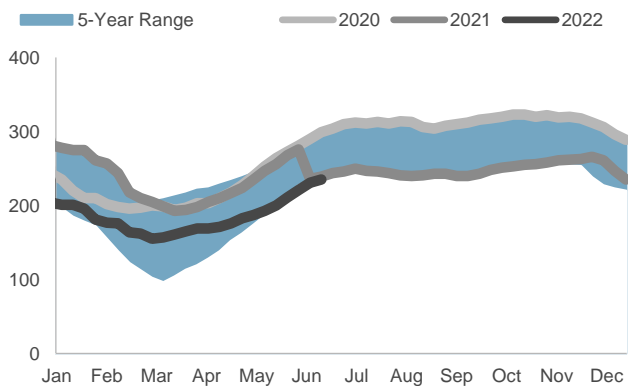
Midwest



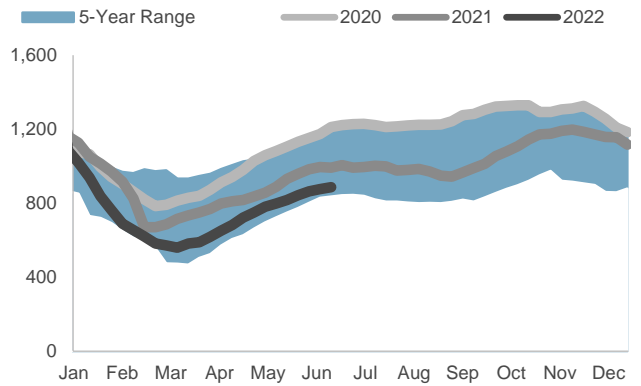
Mountain



Pacific



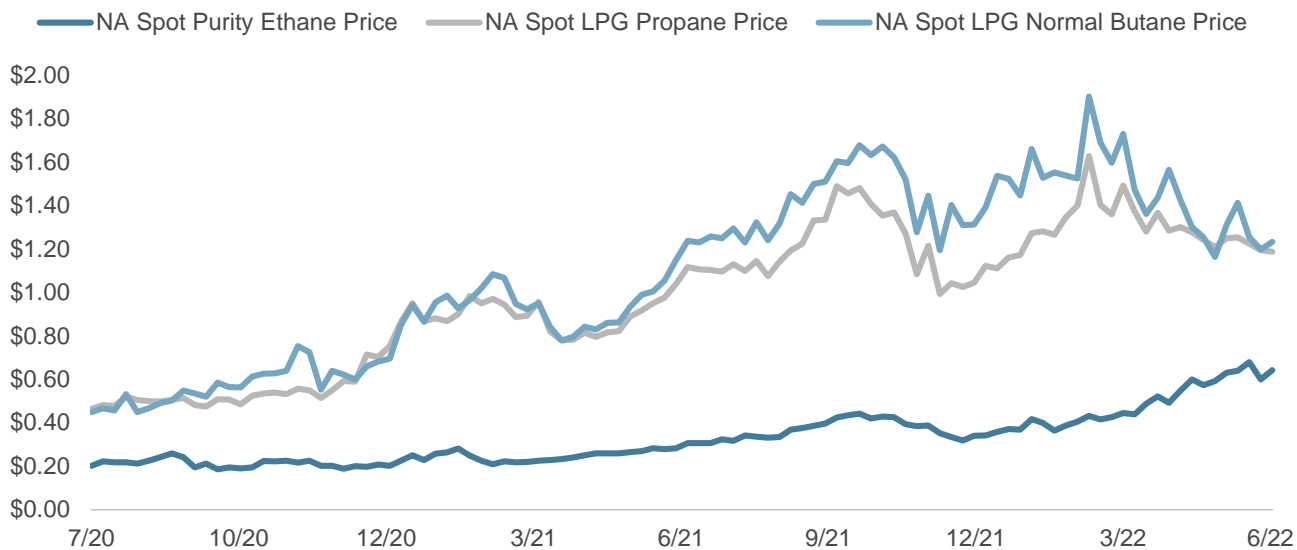
South Central



Notes: All data as of June 30, 2022. Data collected on a weekly basis. Source: Bloomberg.

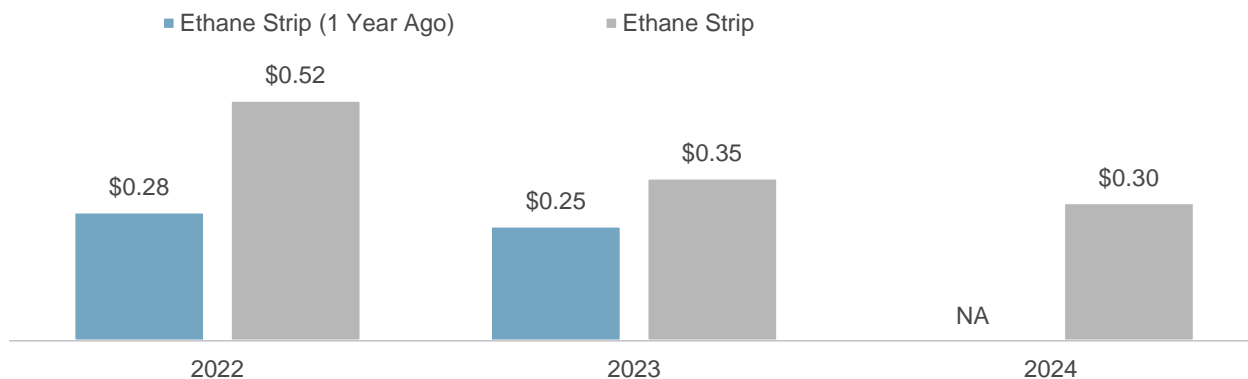
NGLs Spot Pricing

Pricing (\$/gal)

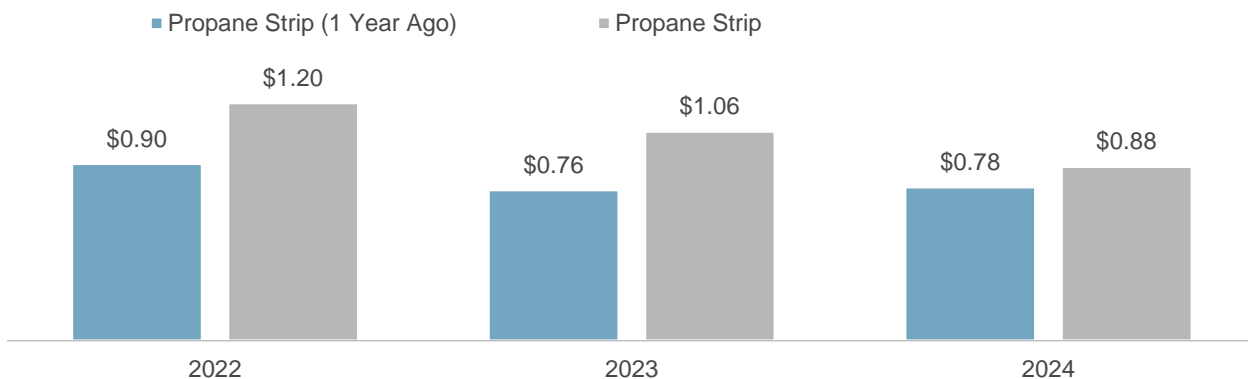


NGLs Strip Pricing

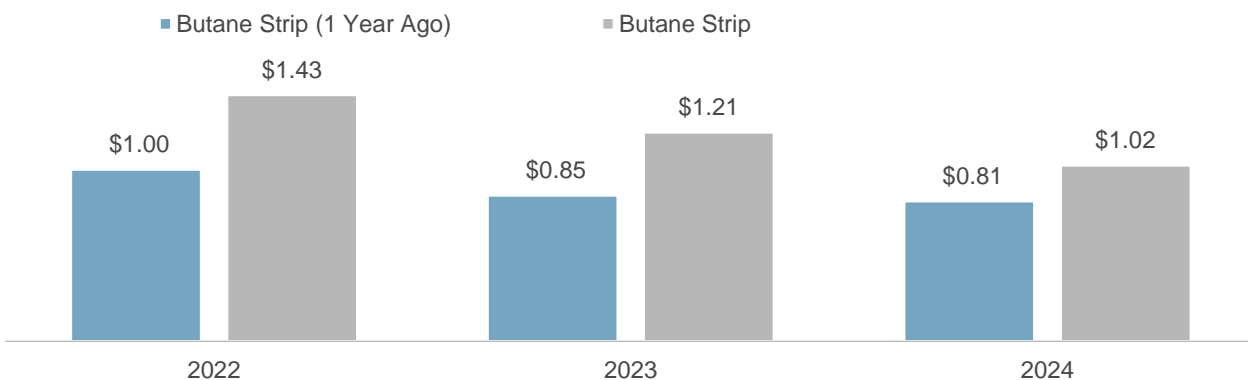
Ethane Strip Pricing Comparison (\$/gal)



Propane Strip Pricing Comparison (\$/gal)

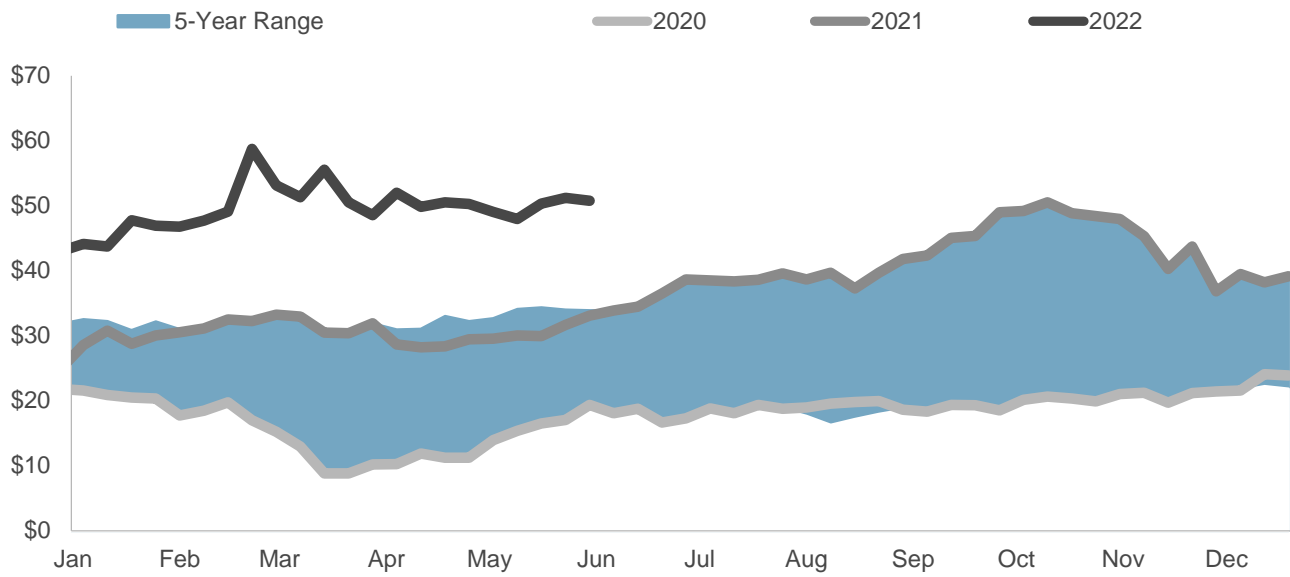


Butane Strip Pricing Comparison (\$/gal)



NGLs Frac Spreads

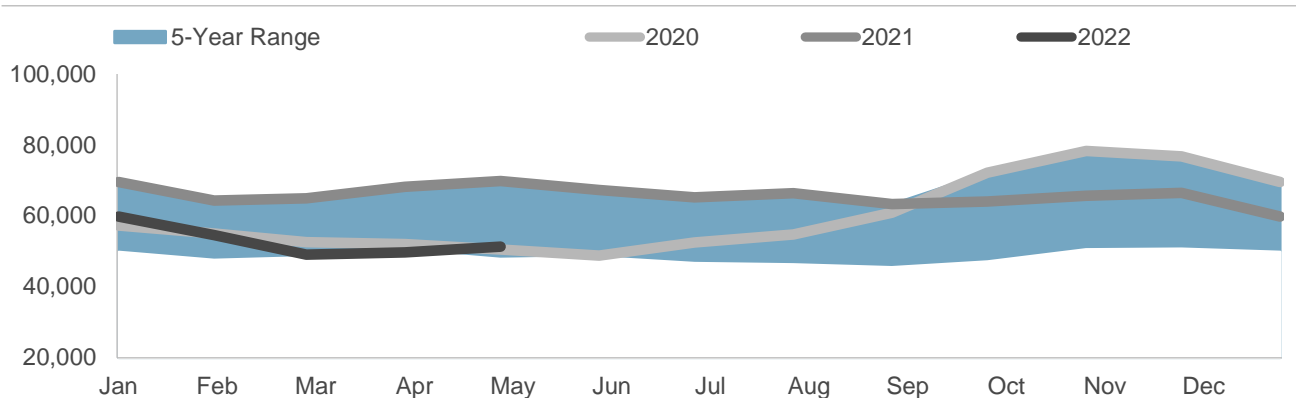
Mont Belvieu Frac Spread (\$/bbl)



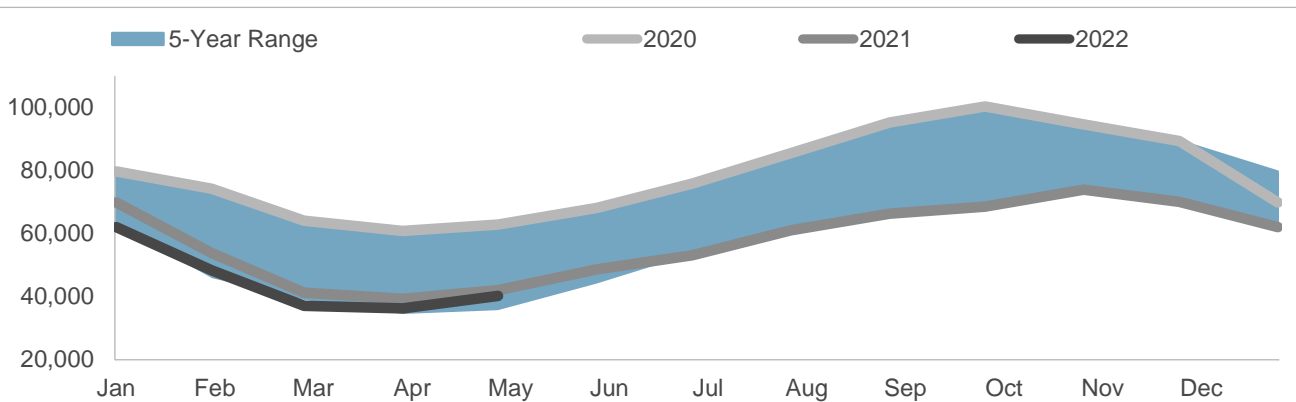
Note: All data as of June 30, 2022.
Source: Bloomberg.

NGLs Inventory

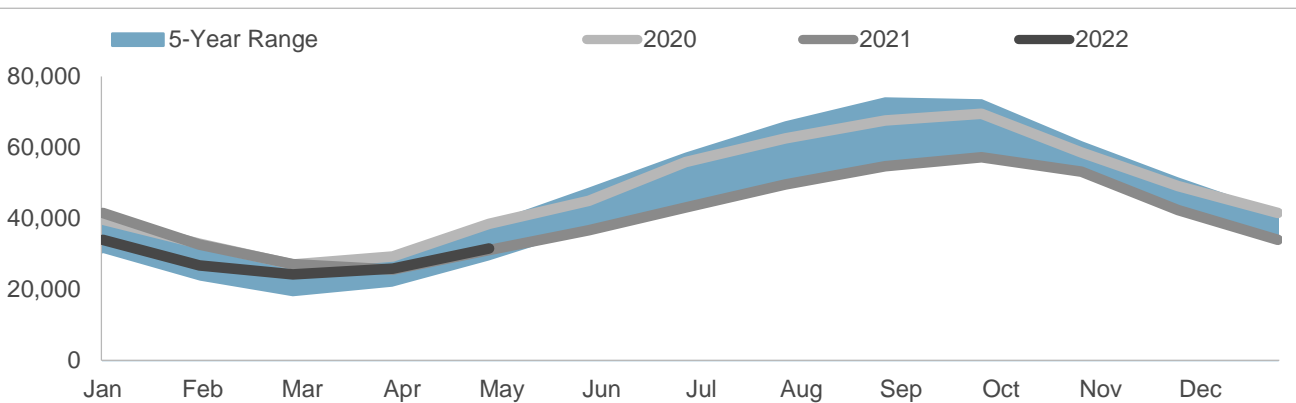
U.S. Ending Stocks Ethane (Mbbbls)



U.S. Ending Stocks Propane (Mbbbls)



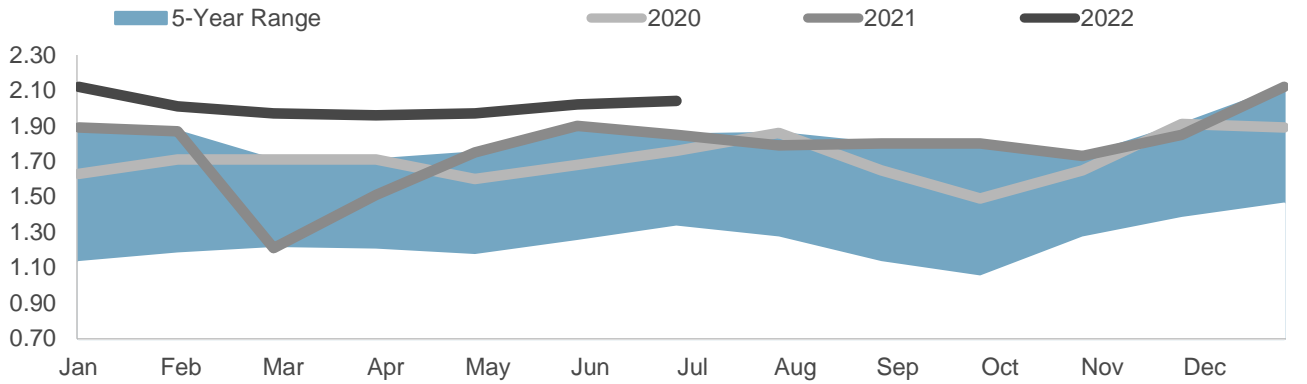
Normal Butane/Butylene (Mbbbls)



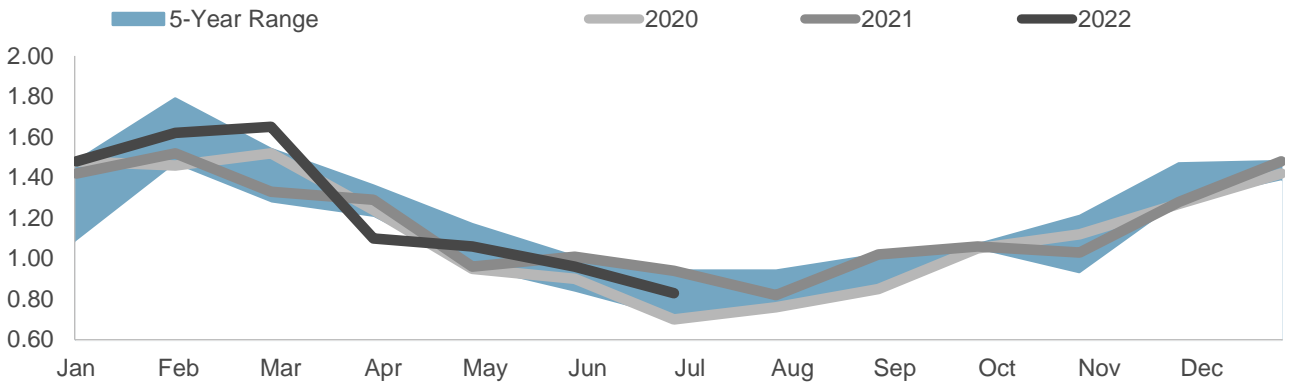
Notes: All data as of June 30, 2022. Data collected on a monthly basis and subject to a two-month lag. Source: Bloomberg.

NGLs Consumption

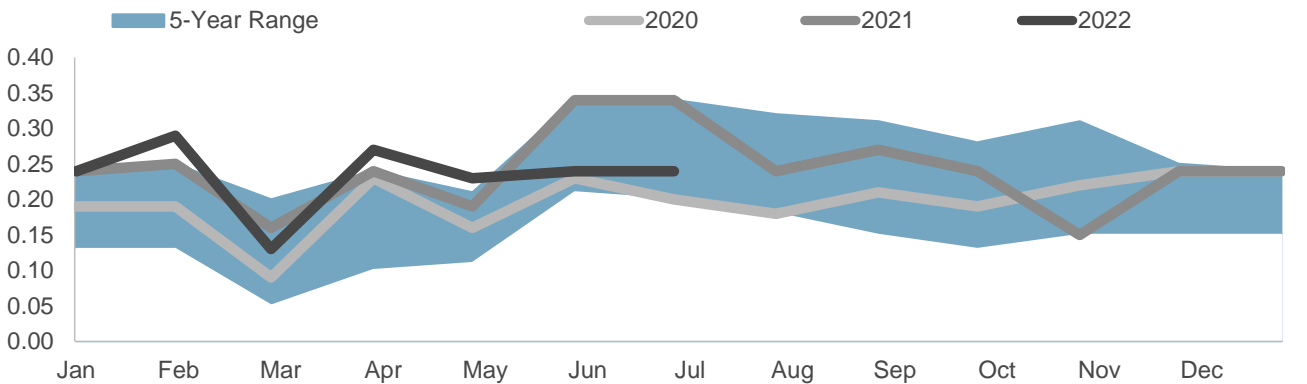
U.S. Ethane/Ethylene Consumption (MMboe/d)



U.S. Propane/Propylene Consumption (MMboe/d)



U.S. Butane/Butylene Consumption (MMboe/d)

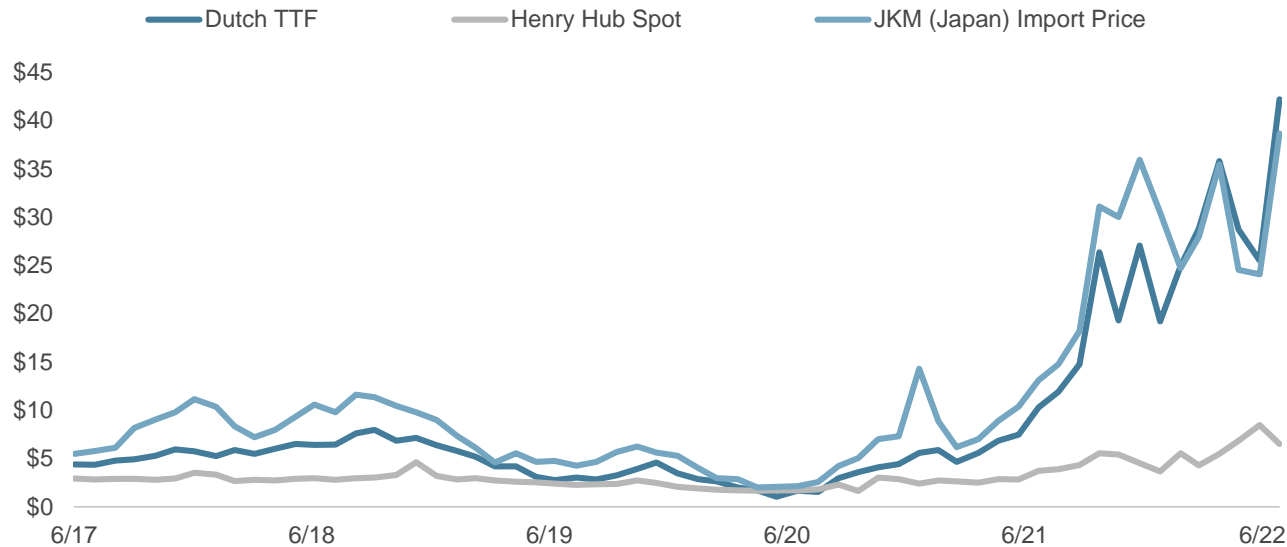


Notes: All data as of June 30, 2022. Data collected on a monthly basis and subject to a two-month lag. Source: Bloomberg.

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Spot Pricing

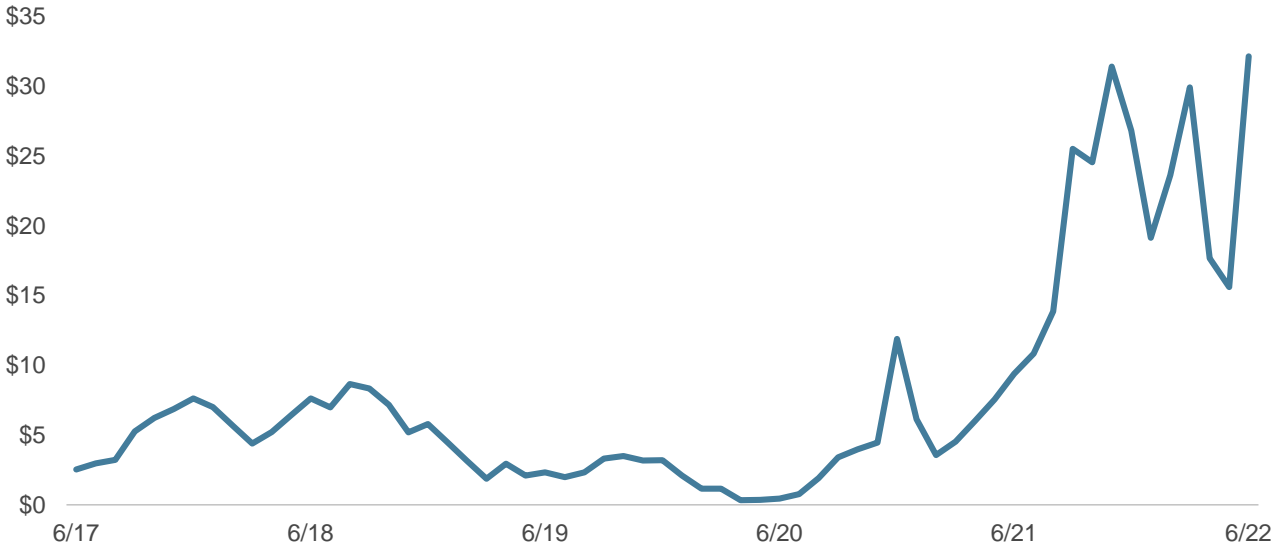
Spot Pricing (\$/MMbtu)



Notes: All data as of June 30, 2022. Data collected on a monthly basis.
JKM refers to Japan Korea Marker.
Dutch TTF refers to Dutch Title Transfer Facility.
Source: Bloomberg.

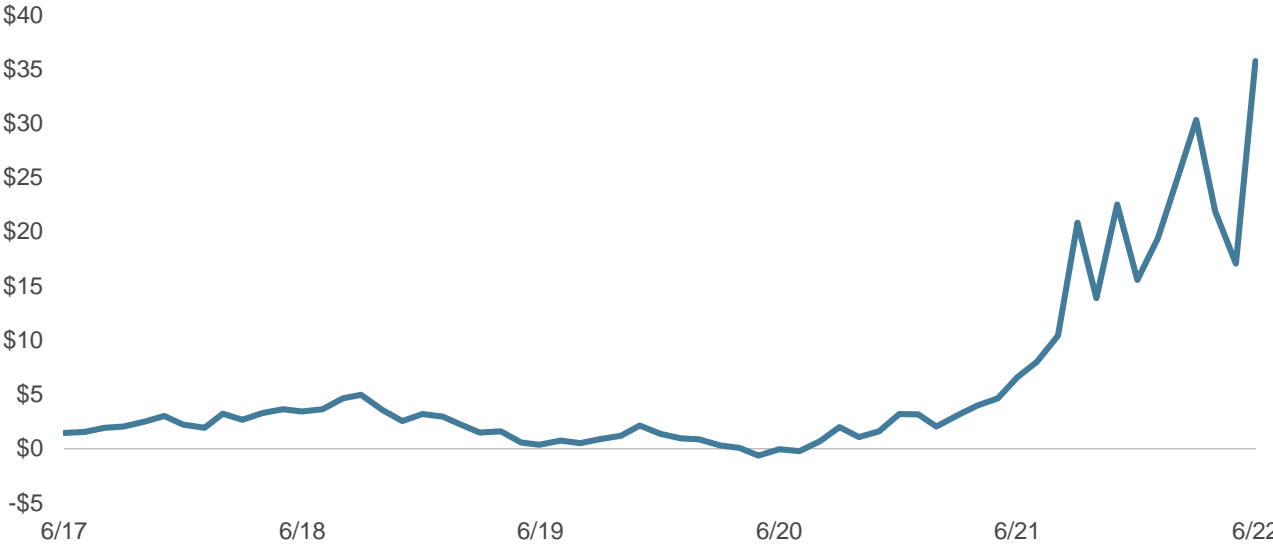
Differentials

JKM—Henry Hub (\$/MMbtu)



Note: Data collected on a monthly basis.

Dutch TTF—Henry Hub (\$/MMbtu)

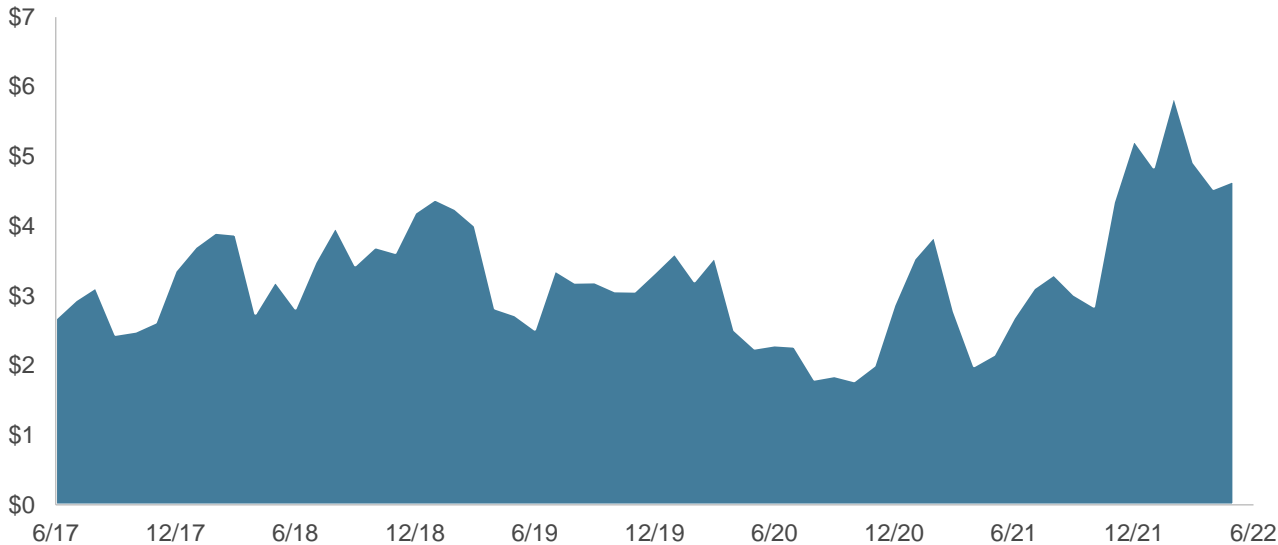


Note: Data collected on a weekly basis.

Note: All data as of June 30, 2022.
 JKM refers to Japan Korea Marker.
 Dutch TTF refers to Dutch Title Transfer Facility.
 Source: Bloomberg.

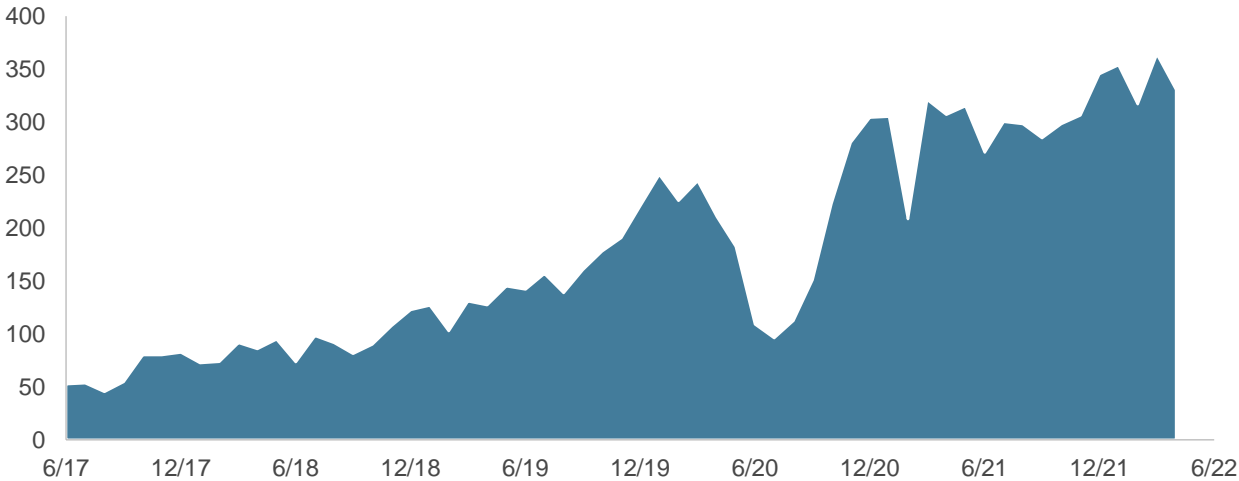
Exports

LNG Japan Import Value (US\$ in billions)



Note: Data collected on a monthly basis and subject to a one-month lag.

U.S. LNG Exports (Bcf/month)

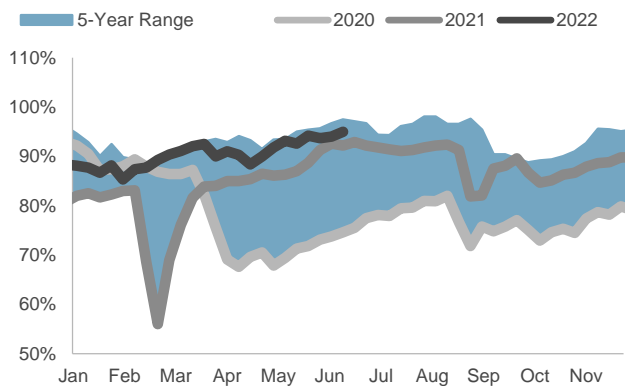


Note: Data collected on a monthly basis and subject to a two-month lag.

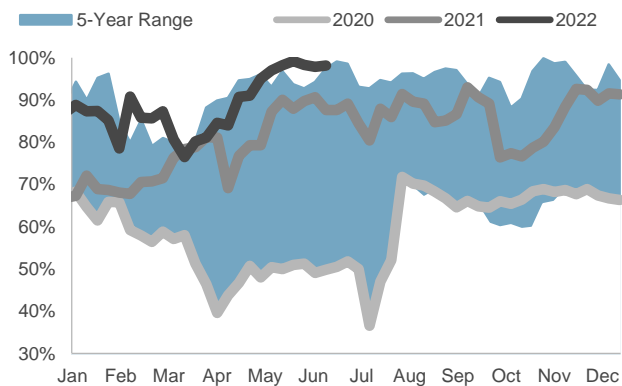
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Refining—Utilization (%)

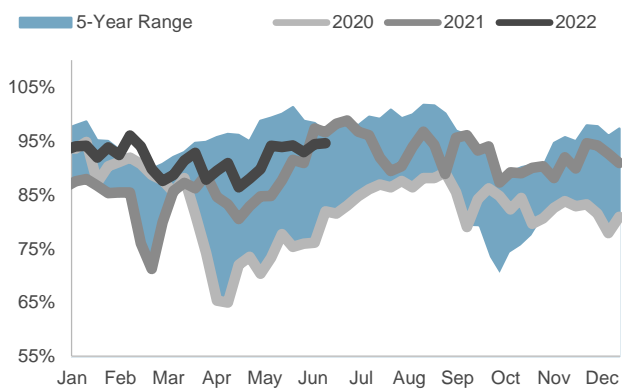
Total U.S.



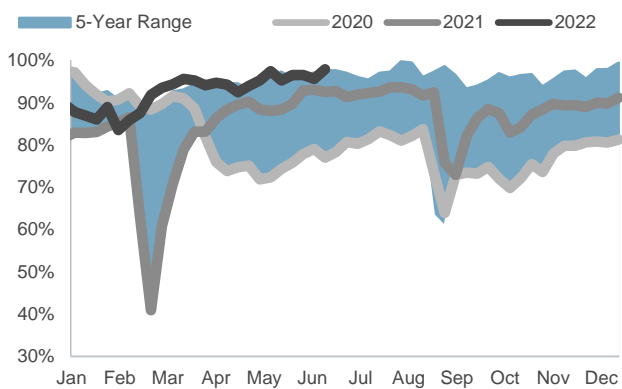
PADD I



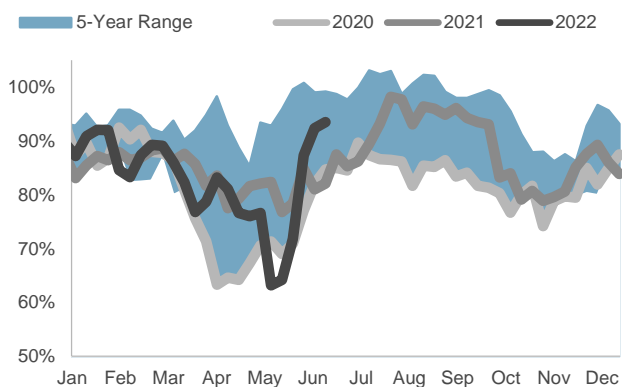
PADD II



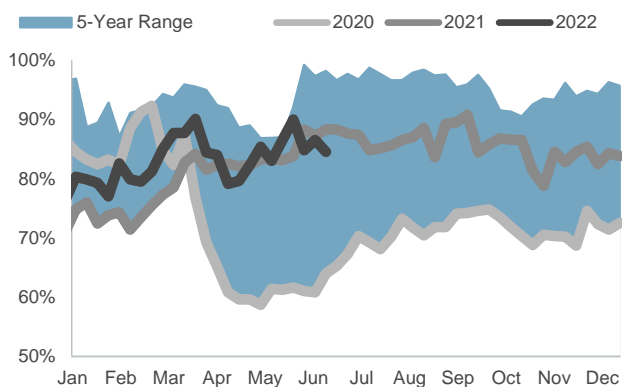
PADD III



PADD IV



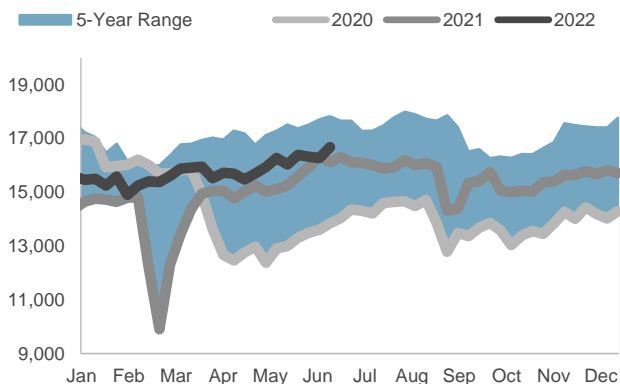
PADD V



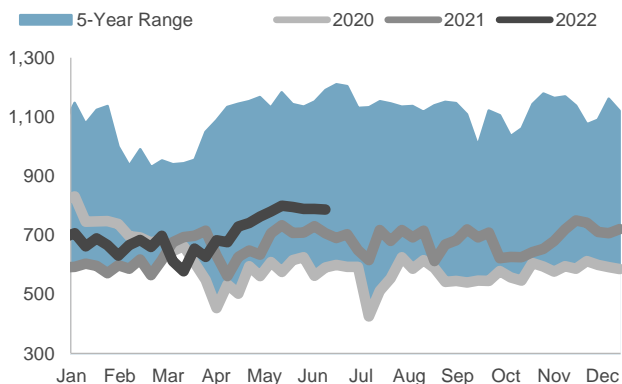
Notes: All data as of June 30, 2022. Data collected on a weekly basis.
Source: Bloomberg.

Refining—U.S. Crude Runs (Mbb/d)

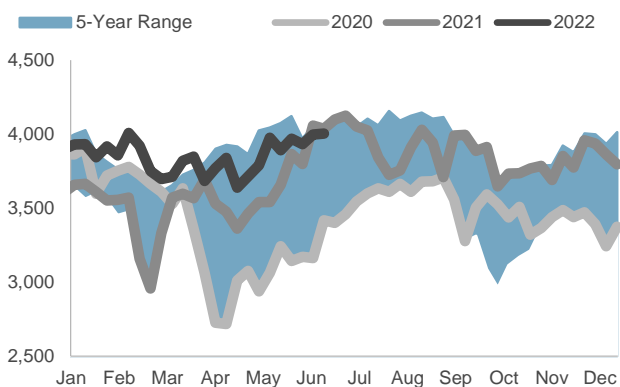
Total U.S.



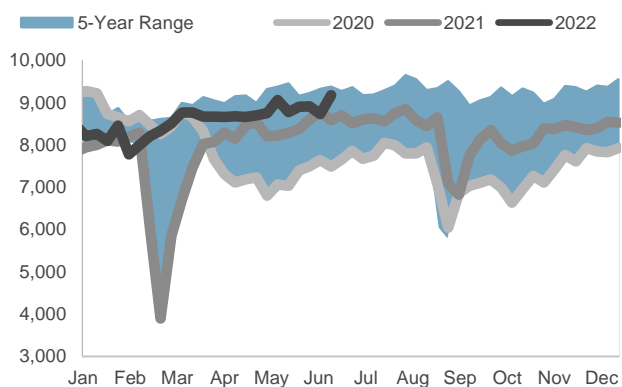
PADD I



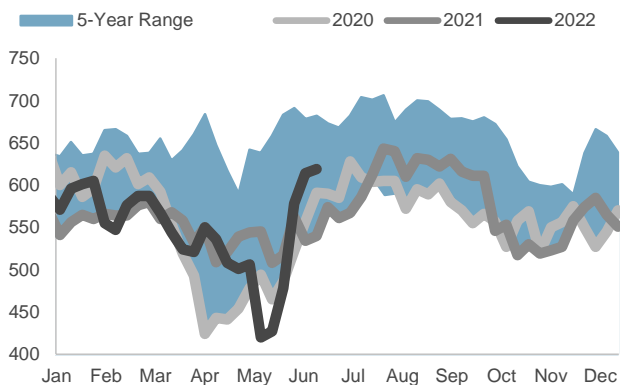
PADD II



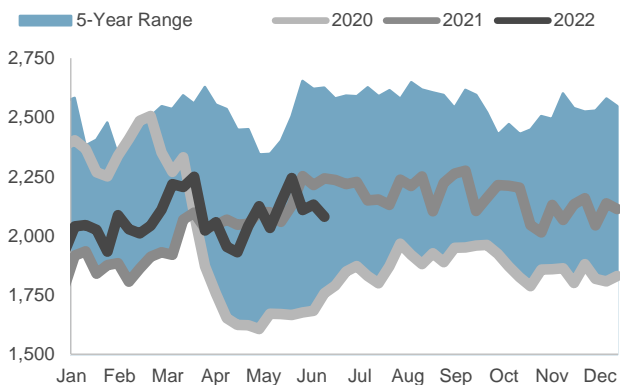
PADD III



PADD IV



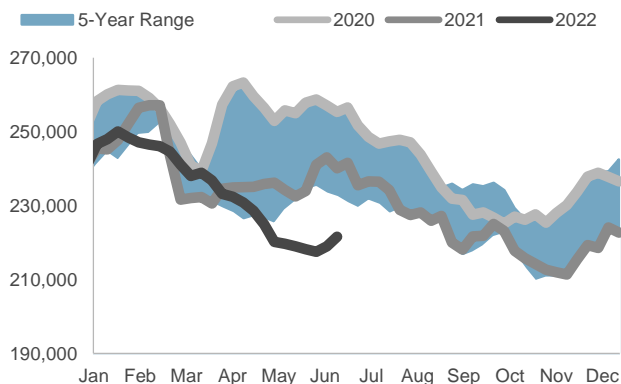
PADD V



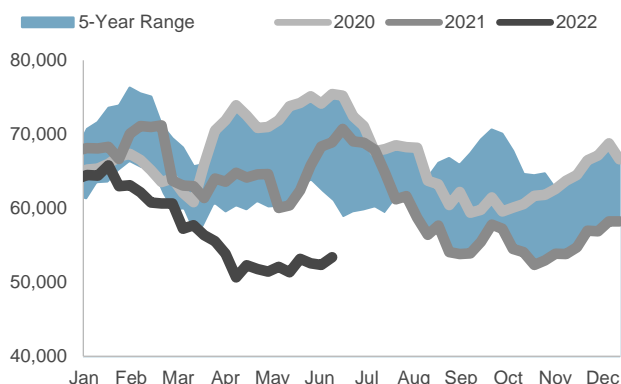
Notes: All data as of June 30, 2022. Data collected on a weekly basis.
Source: Bloomberg.

Refining—Motor Gasoline Inventory (Mbbl)

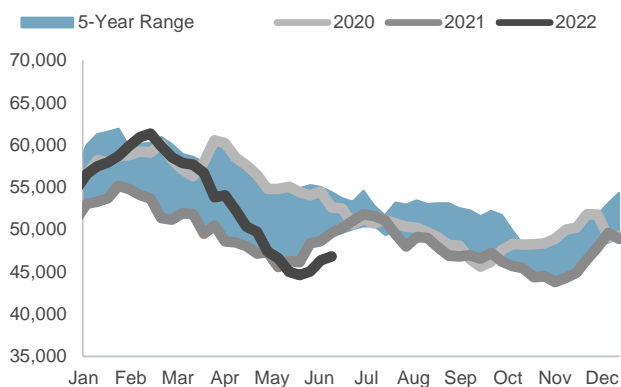
Total U.S.



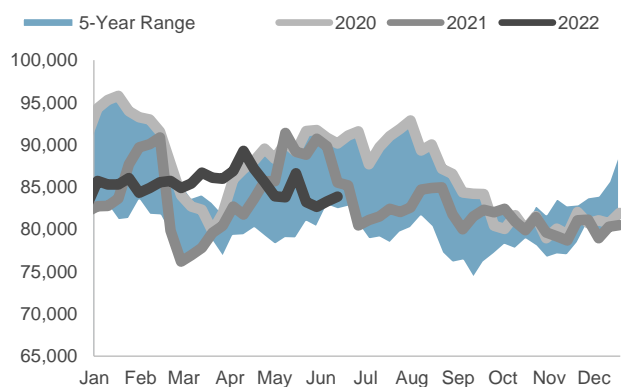
PADD I



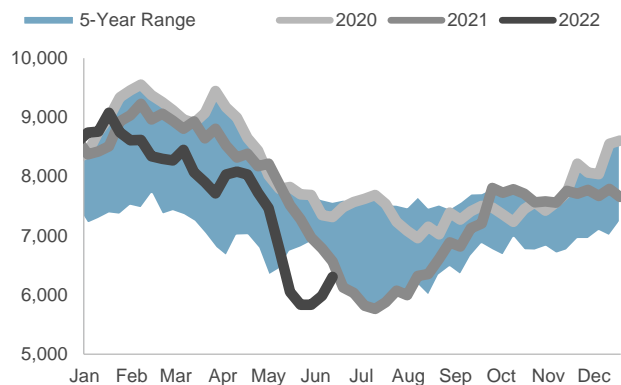
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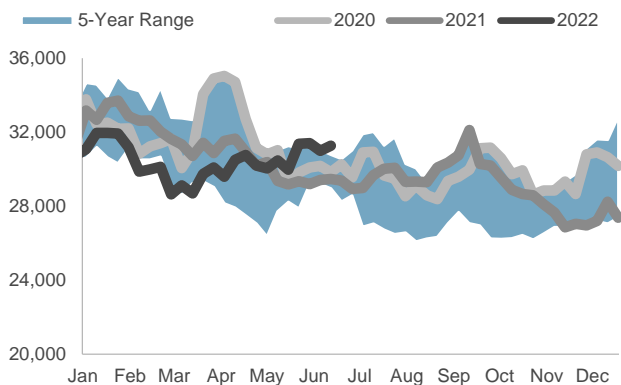
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PADD IV

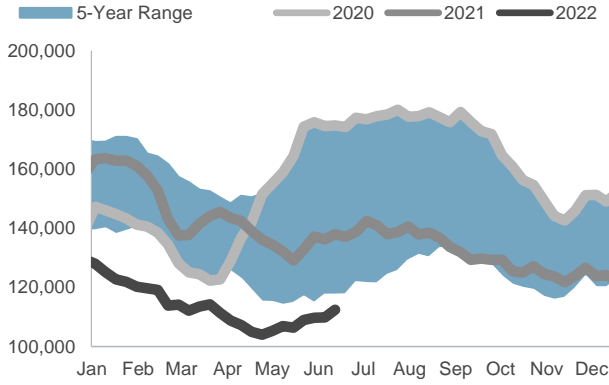


PADD V

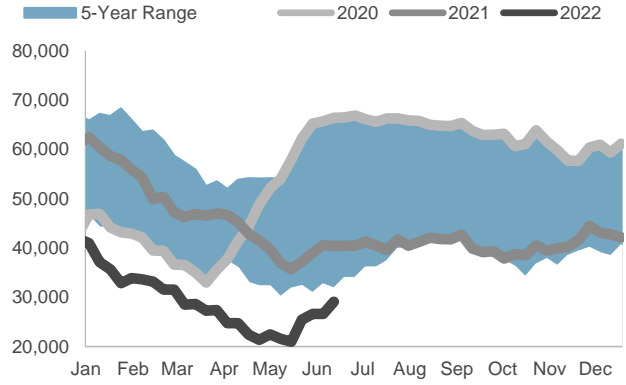


Refining—Distillate Fuel Oil Inventory (Mbbl)

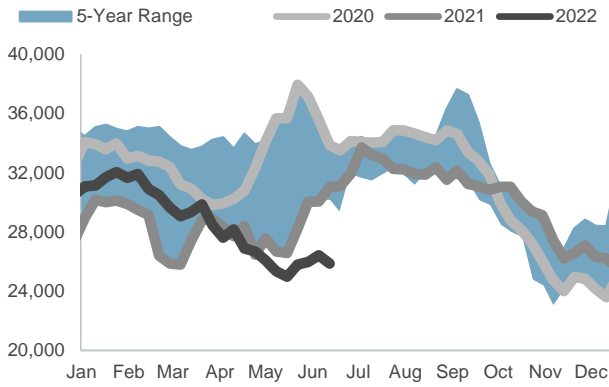
Total U.S.



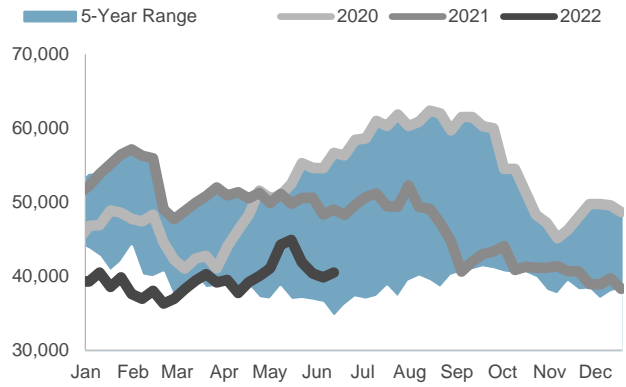
PADD I



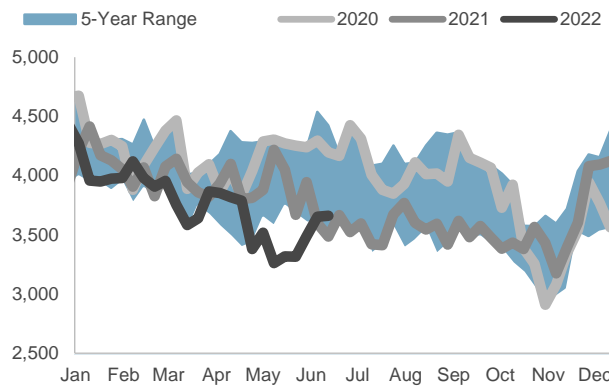
PADD II



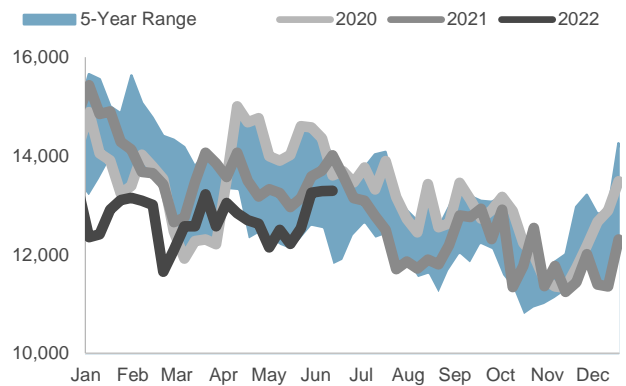
PADD III



PADD IV



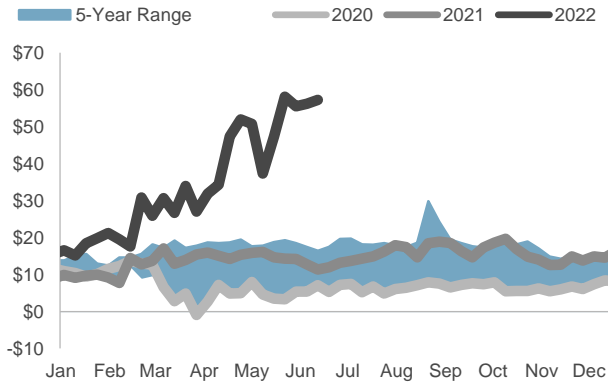
PADD V



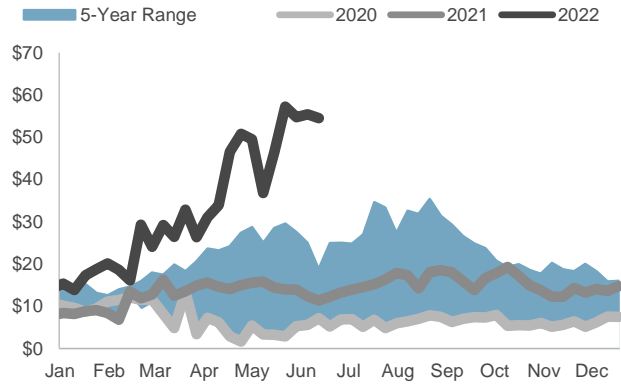
Notes: All data as of June 30, 2022. Data collected on a weekly basis.
Source: Bloomberg.

Refining—3:2:1 Crack Spreads (\$/bbl)

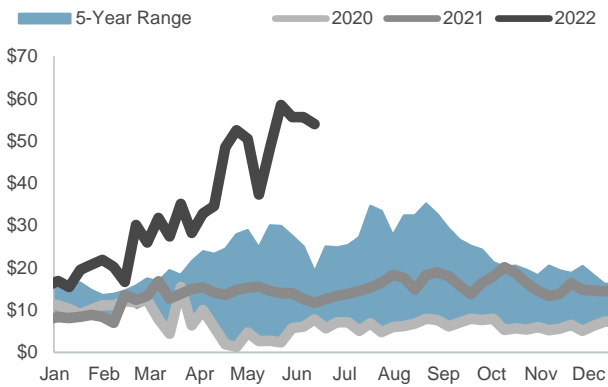
WTI Cushing (U.S. Gulf Coast)



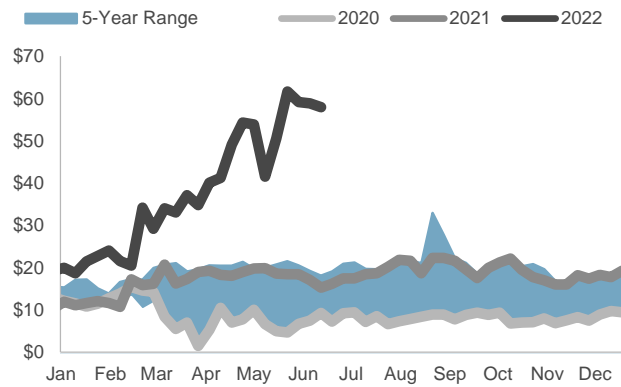
WTI Midland (U.S. Gulf Coast)



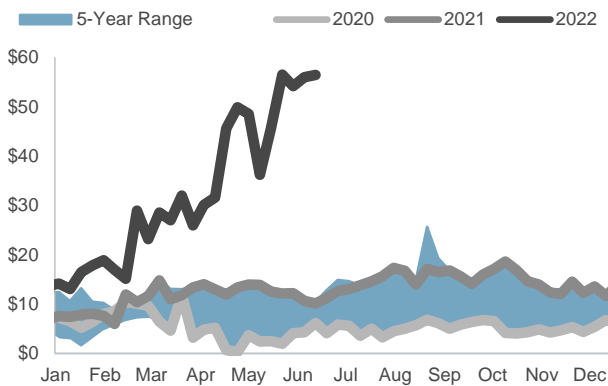
WTS Midland (U.S. Gulf Coast)



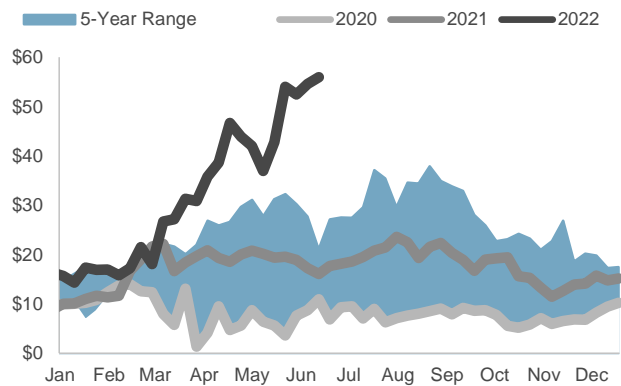
WTI Cushing ULSD (U.S. Gulf Coast)



LLS (U.S. Gulf Coast)



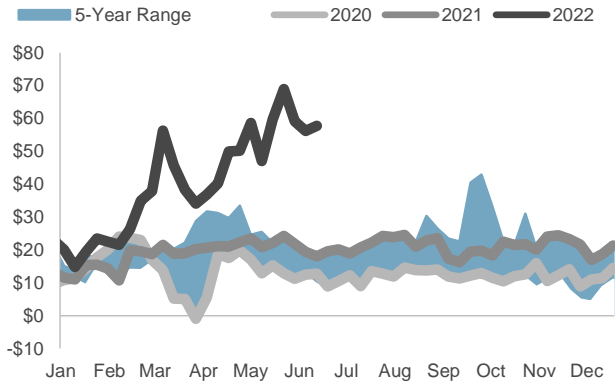
WTI Midland ULSD (U.S. Mid-Continent)



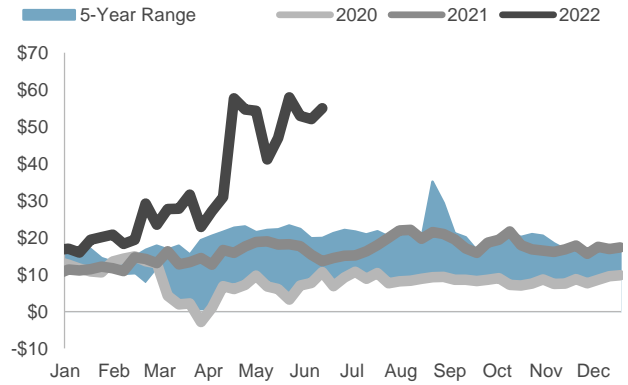
Notes: All data as of June 30, 2022. Data collected on a weekly basis.
Source: Bloomberg.

Refining—3:2:1 Crack Spreads (\$/bbl) (cont.)

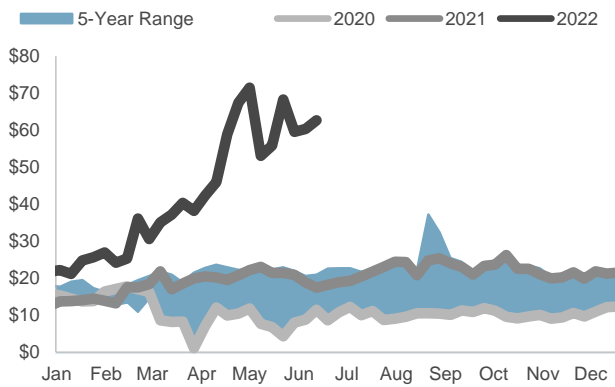
ANS (U.S. West Coast)



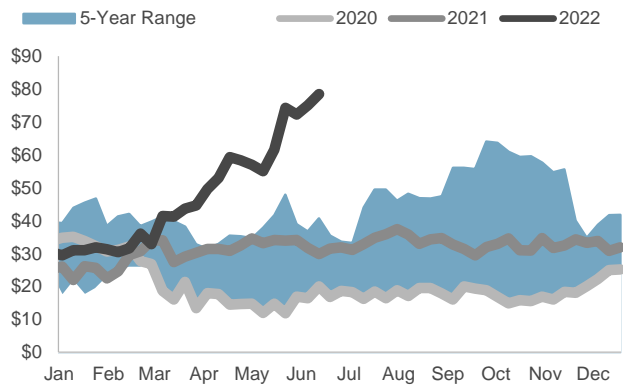
WTI Cushing (NYH RBOB Gasoline)



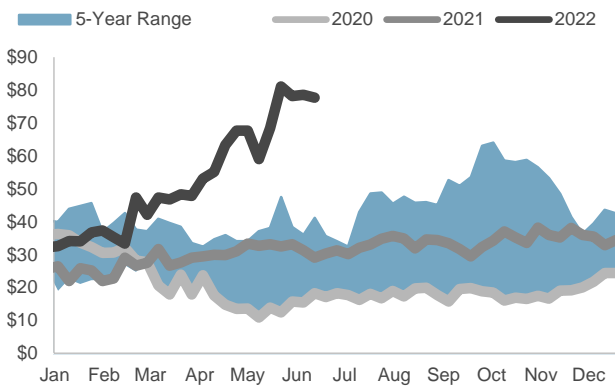
WTI Cushing ULSD (NY Harbor)



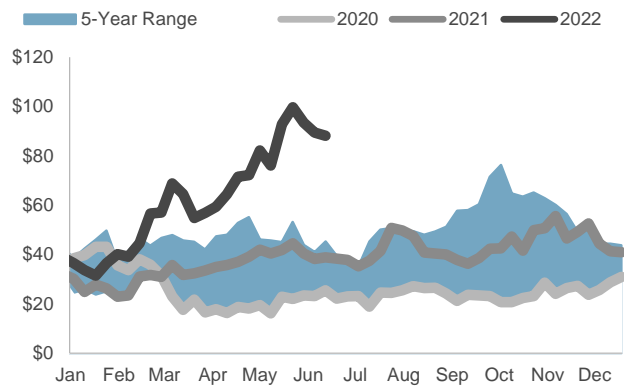
WCS (U.S. Mid-Continent)



WCS (U.S. Gulf Coast)



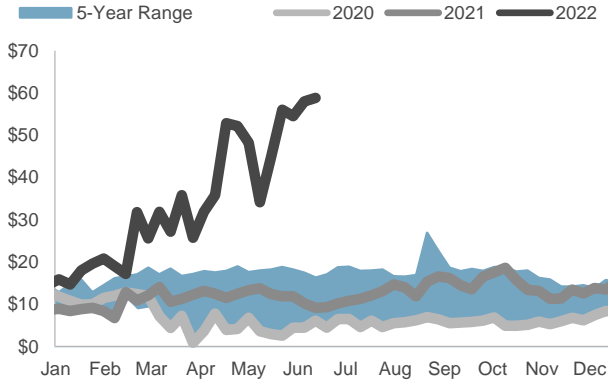
WCS (San Francisco)



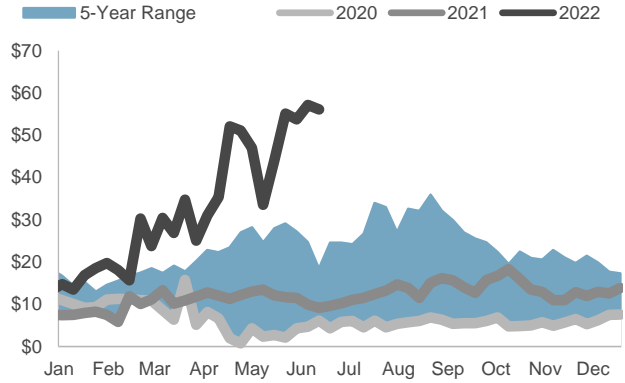
Notes: All data as of June 30, 2022. Data collected on a weekly basis.
Source: Bloomberg.

Refining—2:1:1 Crack Spreads (\$/bbl)

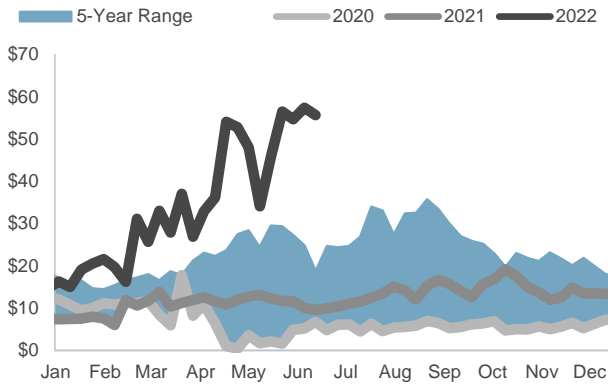
WTI Cushing (U.S. Gulf Coast)



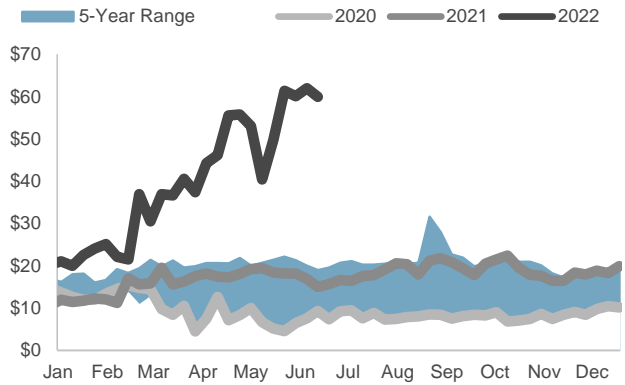
WTI Midland (U.S. Mid-Continent)



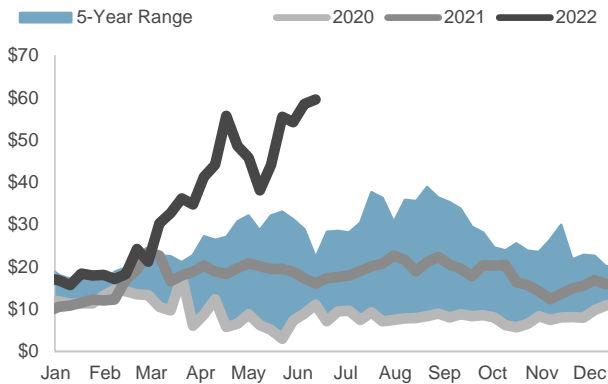
WTS Midland Crude (U.S. Gulf Coast)



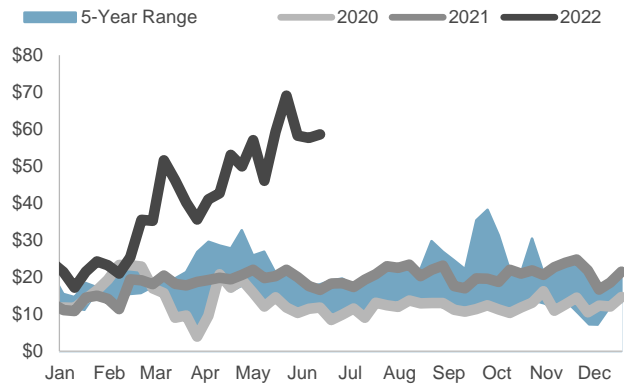
WTI Cushing ULSD (U.S. Gulf Coast)



WTI Midland ULSD (U.S. Mid-Continent)



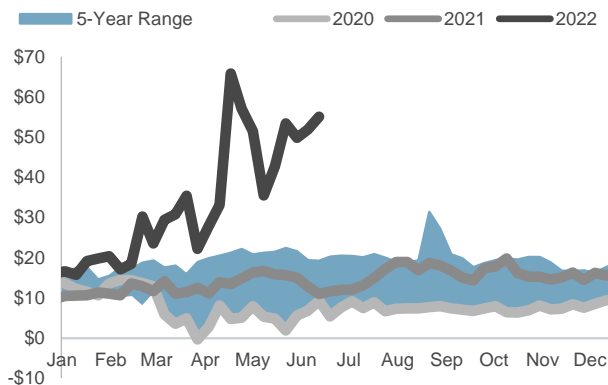
ANS (U.S. West Coast)



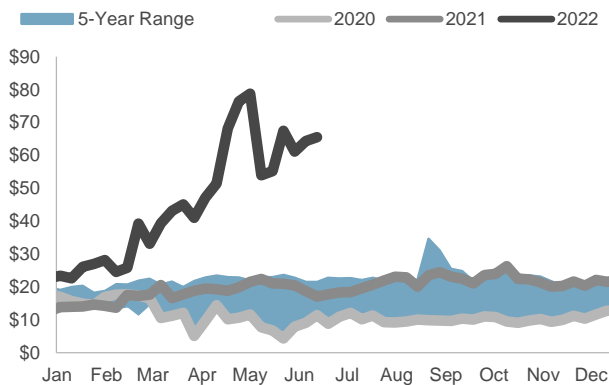
Notes: All data as of June 30, 2022. Data collected on a weekly basis.
Source: Bloomberg.

Refining—2:1:1 Crack Spreads (\$/bbl) (cont.)

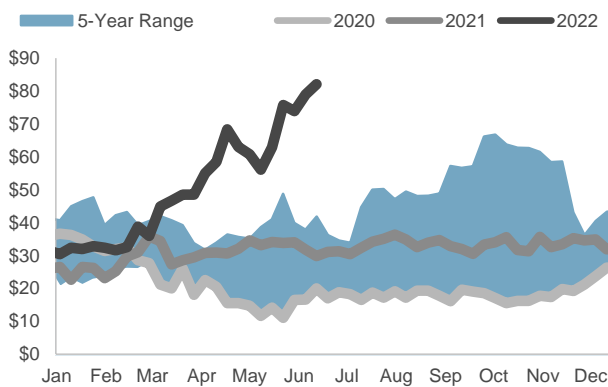
WTI Cushing (NYH RBOB Gasoline)



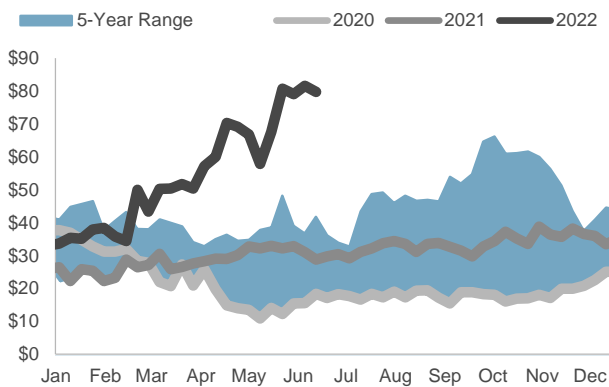
WTI Cushing ULSD (NY Harbor)



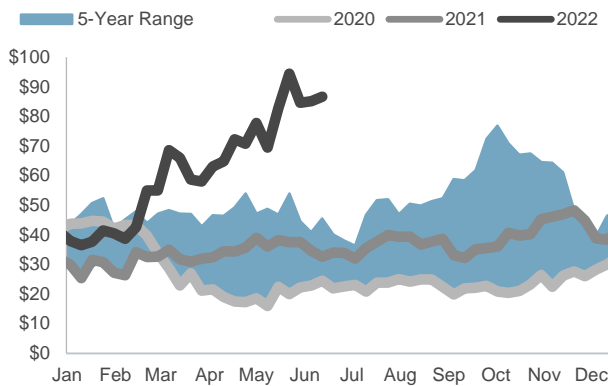
WCS (U.S. Mid-Continent)



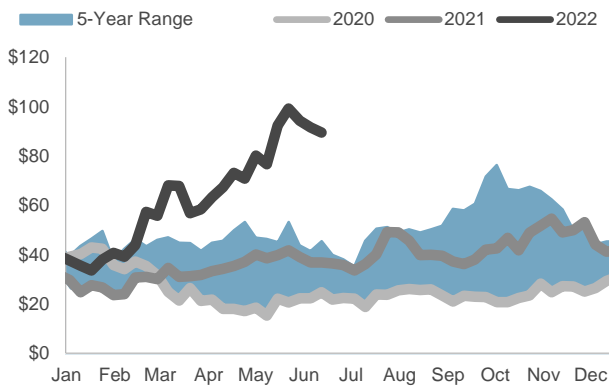
WCS (U.S. Gulf Coast)



WCS (U.S. West Coast)



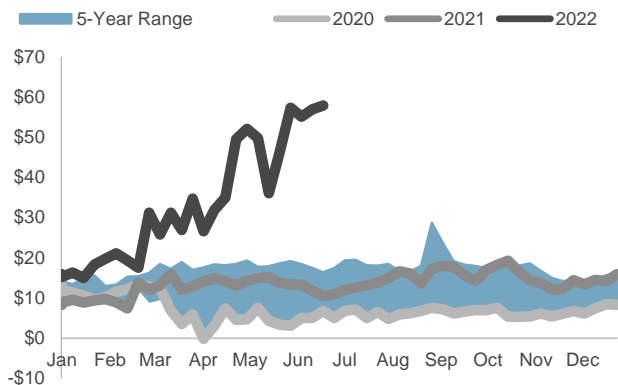
WCS (San Francisco)



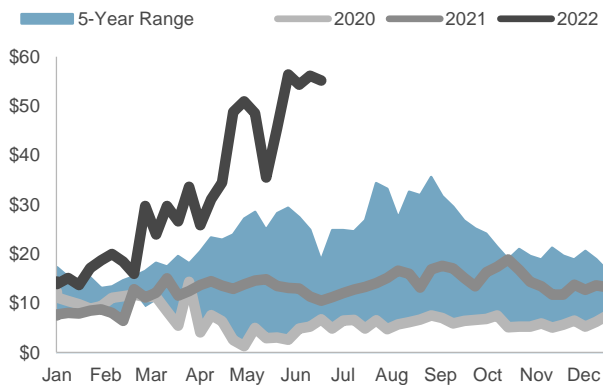
Notes: All data as of June 30, 2022. Data collected on a weekly basis.
Source: Bloomberg.

Refining—5:3:2 Crack Spreads (\$/bbl)

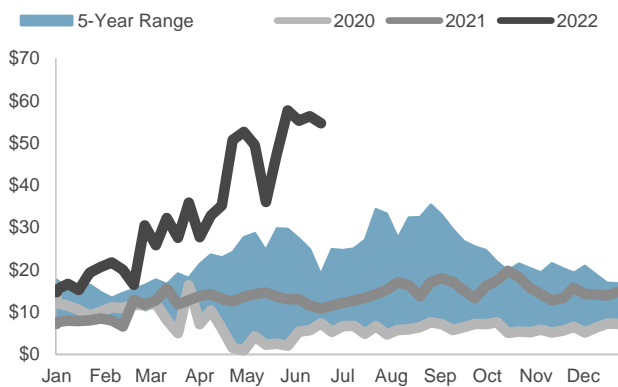
WTI Cushing (U.S. Gulf Coast)



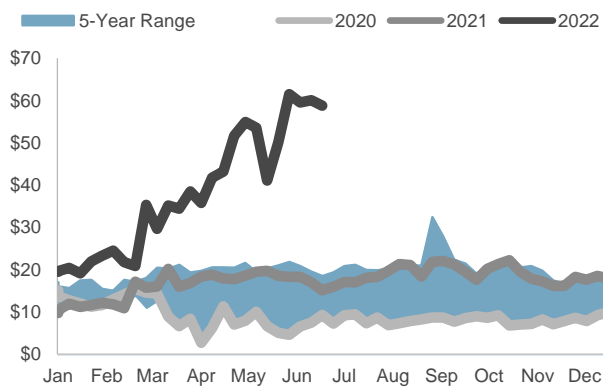
WTI Midland (U.S. Gulf Coast)



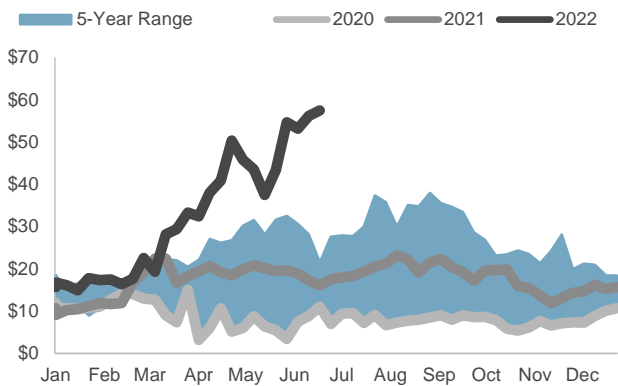
WTS (U.S. Gulf Coast)



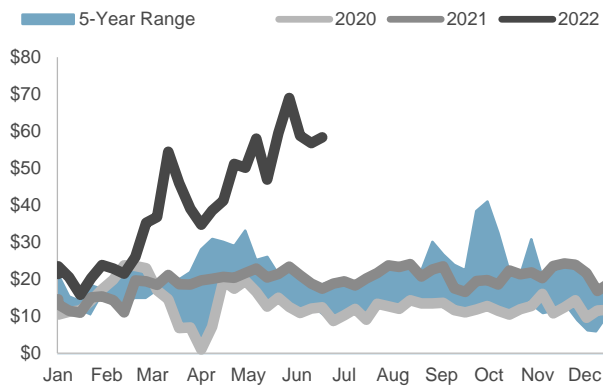
WTI Cushing ULSD (U.S. Gulf Coast)



WTI Midland ULSD (U.S. Mid-Continent)



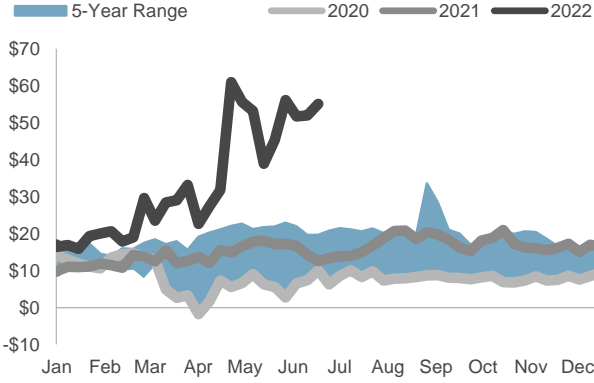
ANS (U.S. West Coast)



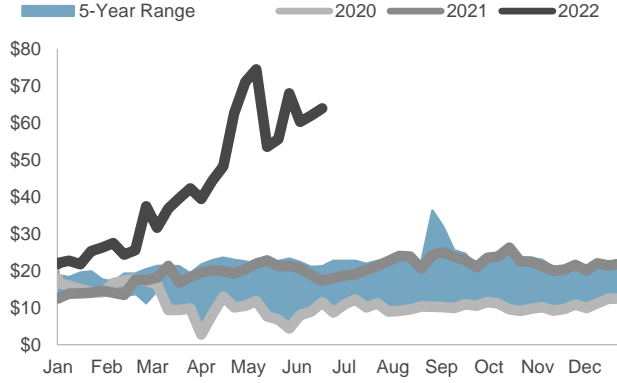
Notes: All data as of June 30, 2022. Data collected on a weekly basis.
Source: Bloomberg.

Refining—5:3:2 Crack Spreads (\$/bbl) (cont.)

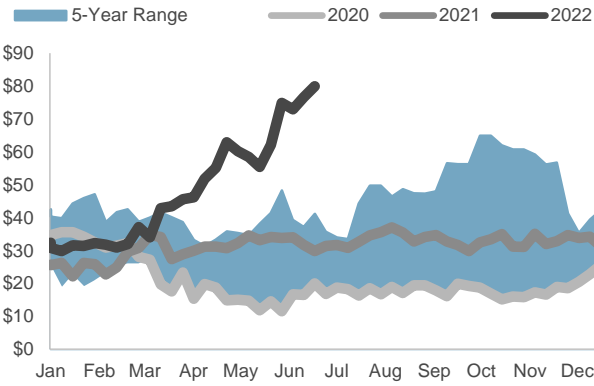
WTI Cushing (NYH RBOB Gasoline)



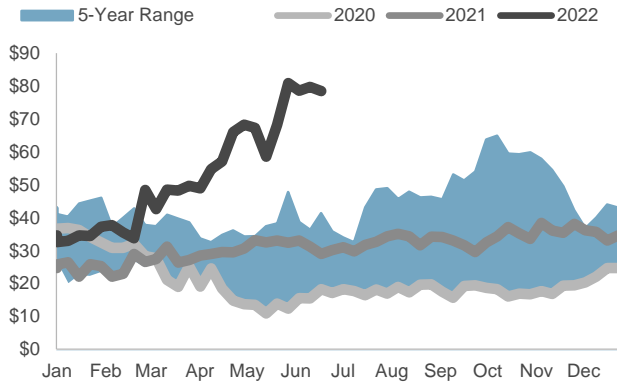
WTI Cushing ULSD (NY Harbor)



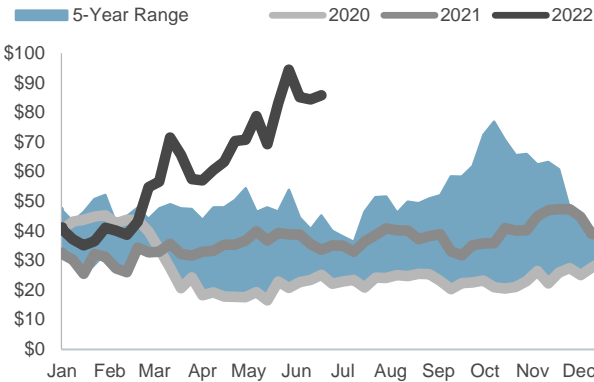
WCS (U.S. Mid-Continent)



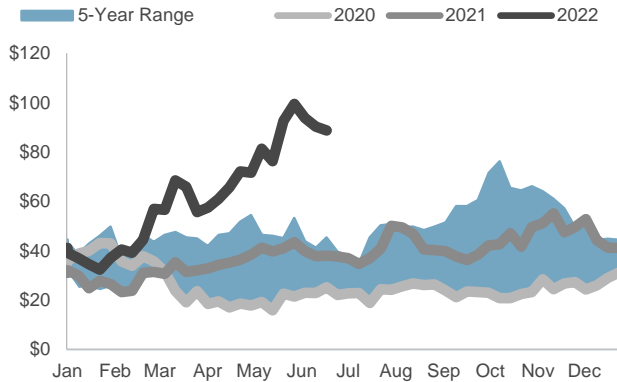
WCS (U.S. Gulf Coast)



WCS (U.S. West Coast)



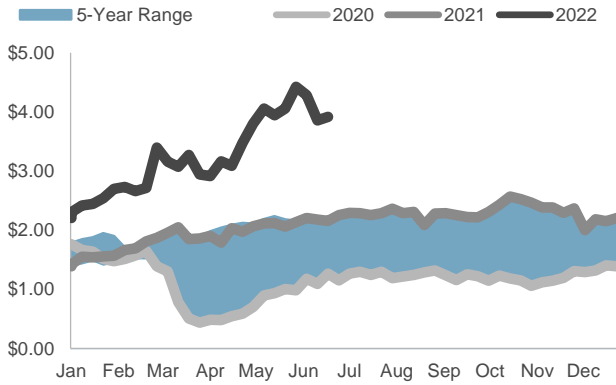
WCS (San Francisco)



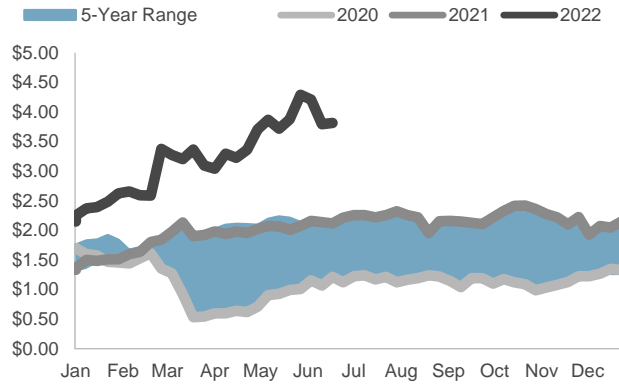
Notes: All data as of June 30, 2022. Data collected on a weekly basis.
Source: Bloomberg.

Refining—Product Prices (\$/gal)

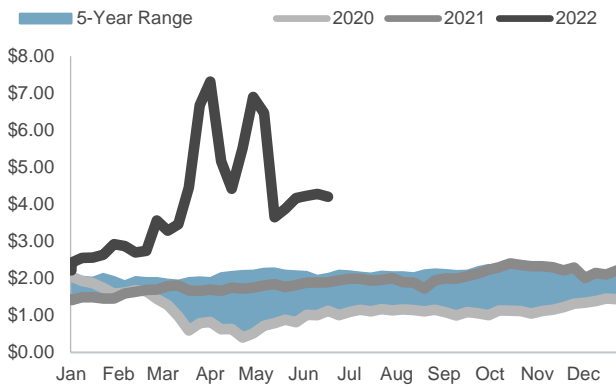
84 RBOB Gasoline (NY Harbor)



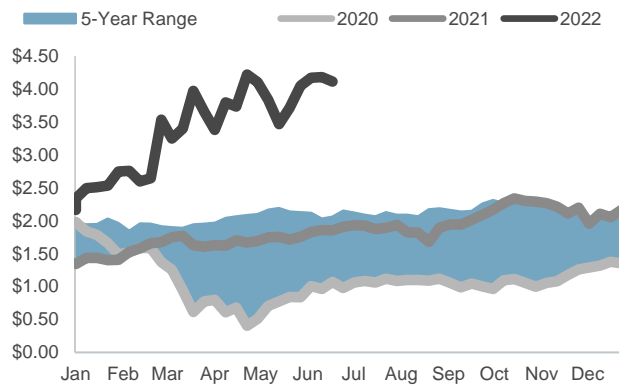
84 RBOB Gasoline (U.S. Gulf Coast)



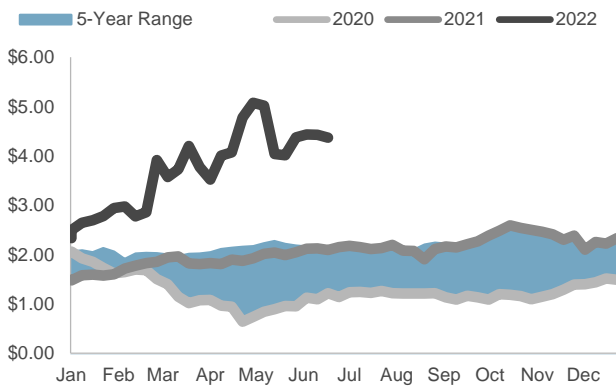
54-Grade Jet Fuel (NY Harbor)



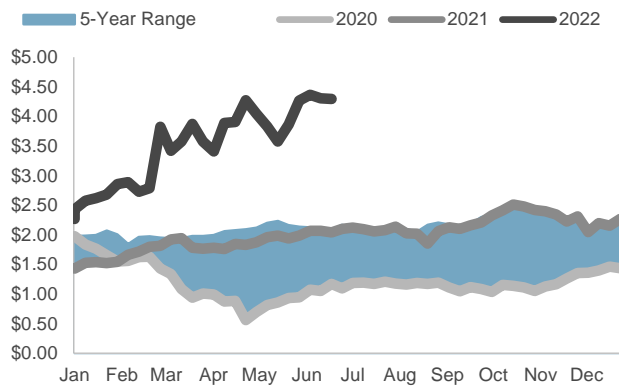
54-Grade Jet Fuel (U.S. Gulf Coast)



ULSD (NY Harbor)



ULSD (U.S. Gulf Coast)

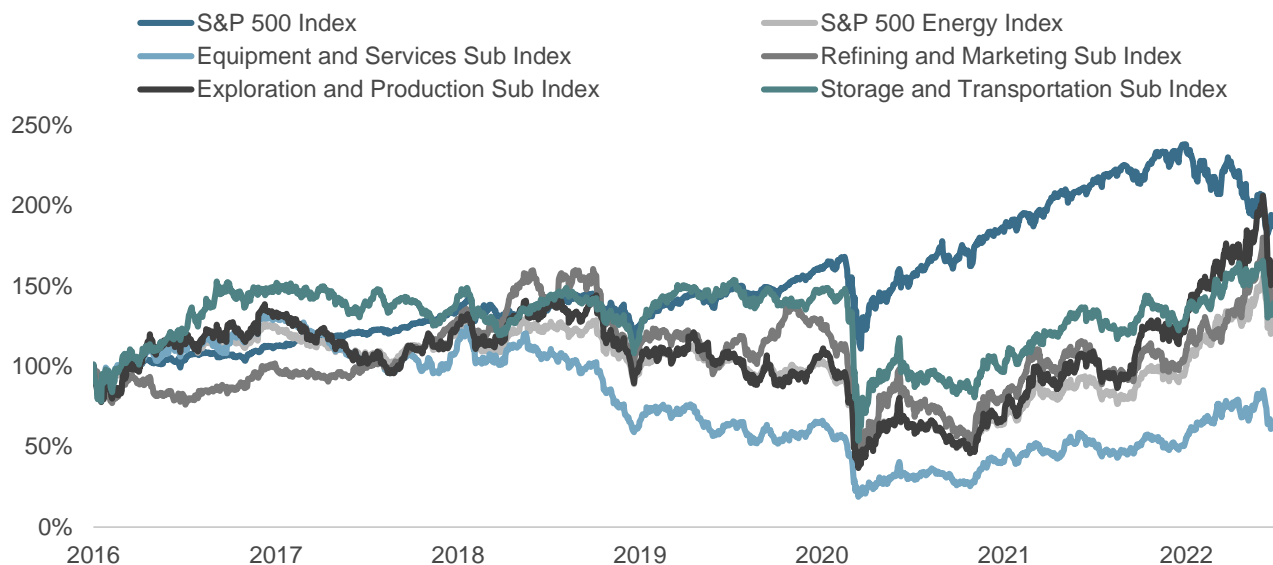


Notes: All data as of June 30, 2022. Data collected on a weekly basis.
Source: Bloomberg.

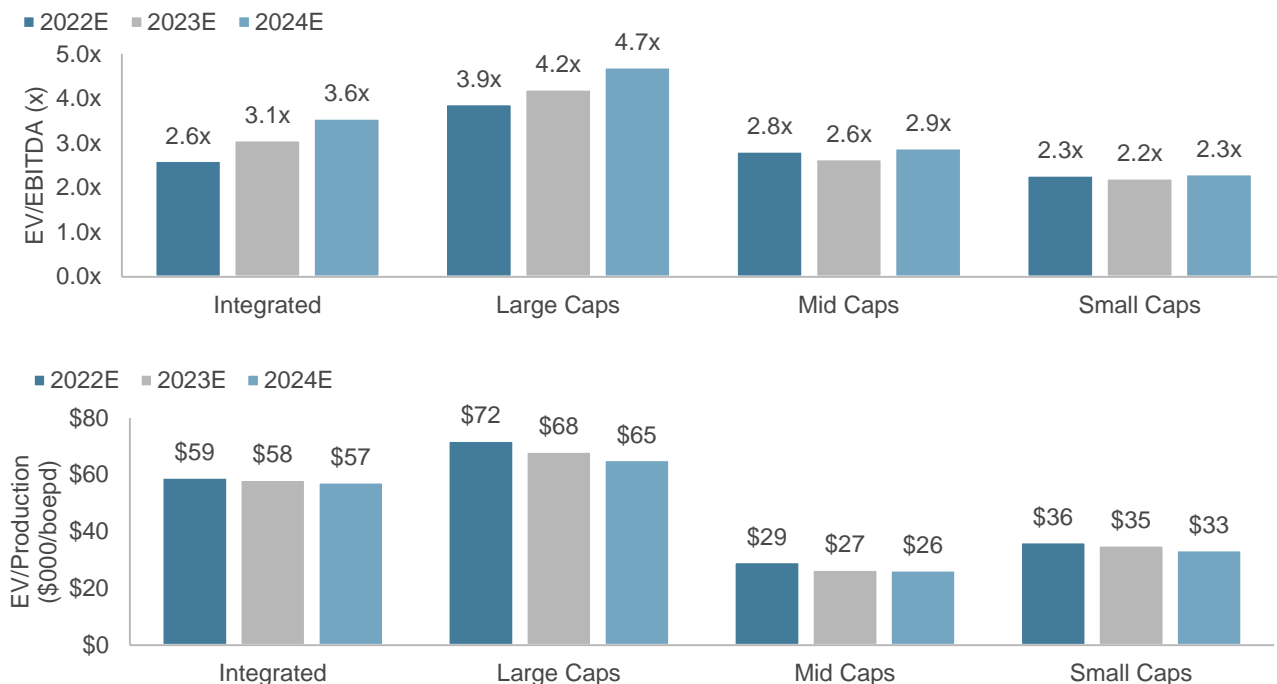
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Public Markets Overview

Indexed Stock Price Performance (January 1, 2016 = 100%)



Public E&P Company Trading Metrics



Note: Trading multiples are based on share price and market data listed as of June 30, 2022, and broker consensus future earnings estimates from S&P Capital IQ as of June 30, 2022.
Source: S&P Capital IQ.

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E&P

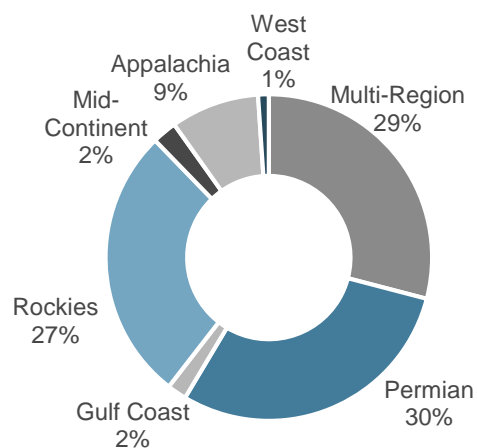
M&A (\$ in billions)

U.S. Region	2020	2021	YTD June		%Δ
			2021	2022	
Multi-Region	\$21.5	\$15.8	\$14.0	\$9.2	-34%
Permian	24.2	26.5	9.8	9.3	-5%
Gulf Coast	0.4	2.4	0.9	0.6	NMF
Rockies	0.8	7.7	6.0	8.6	43%
Mid-Continent	0.6	1.1	0.2	0.8	NMF
Appalachia	3.3	4.0	3.3	2.8	-15%
Ark-La-Tex	0.4	8.1	3.1	0.1	-96%
Gulf of Mexico	1.0	1.2	1.0	0.1	-91%
West Coast	0.0	0.2	0.1	0.3	NMF
Alaska	0.0	0.0	0.0	0.0	NMF
Total	\$52.4	\$66.9	\$38.5	\$31.9	-17%

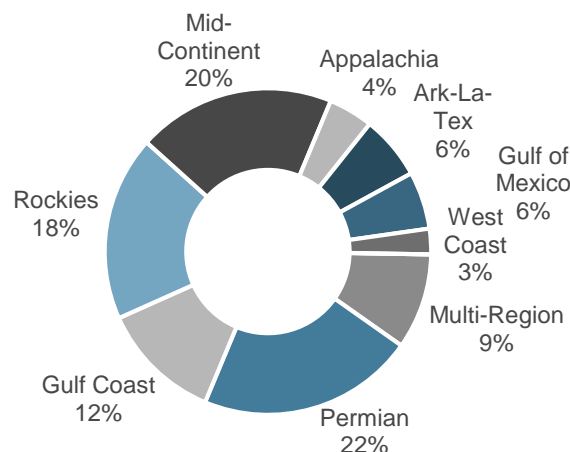
M&A (Deal Count)

U.S. Region	2020	2021	YTD June		%Δ
			2021	2022	
Multi-Region	45	43	23	15	-35%
Permian	120	141	77	34	-56%
Gulf Coast	53	52	27	19	-30%
Rockies	46	67	38	29	-24%
Mid-Continent	67	102	54	31	-43%
Appalachia	39	28	18	7	-61%
Ark-La-Tex	20	32	17	10	-41%
Gulf of Mexico	8	10	5	9	80%
West Coast	9	6	1	4	NMF
Alaska	6	5	3	0	-100%
Total	413	486	263	158	-40%

M&A—2022 (\$ in billions)



M&A—2022 (Deal Count)

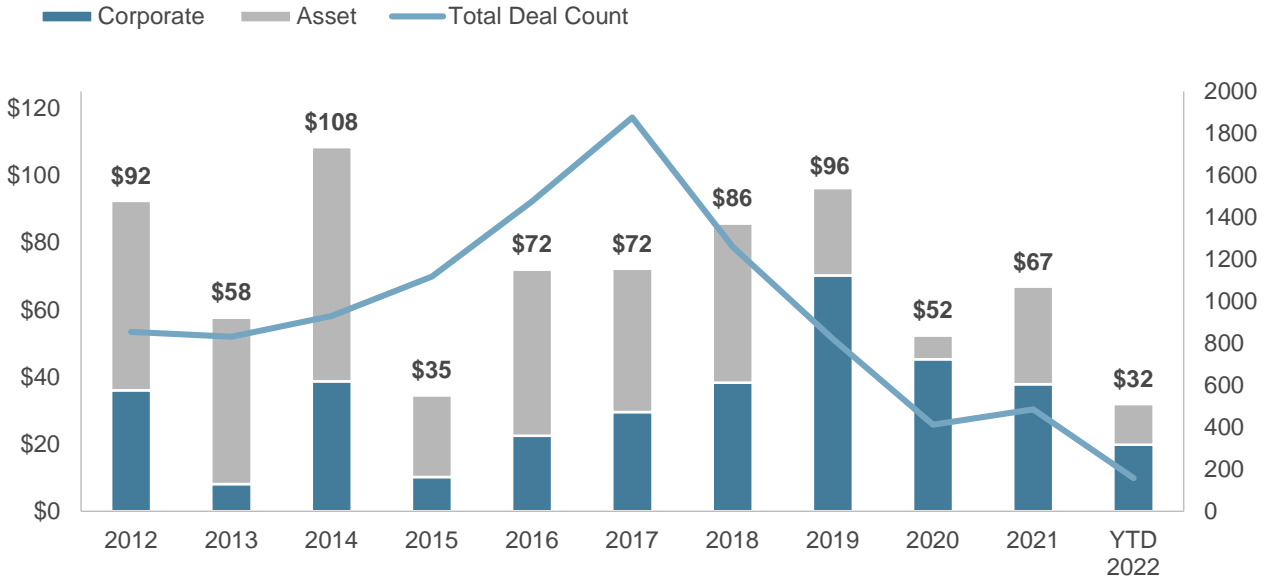


Note: All data as of June 30, 2022.

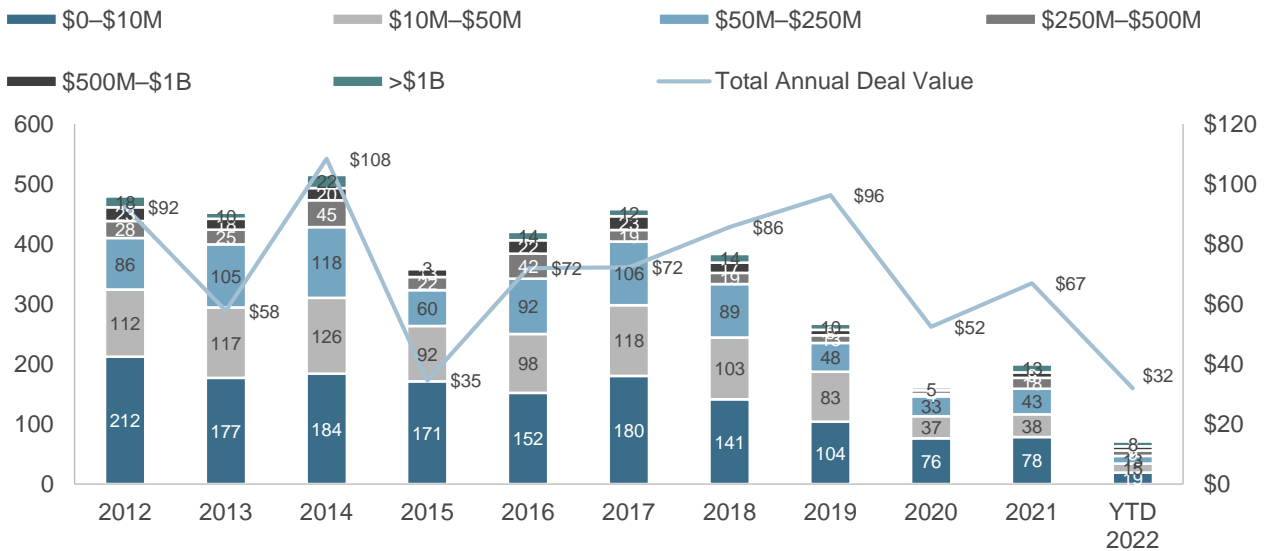
Source: Enverus based on selection criteria of seller assets being located in the U.S. Current year may not include values for all announced transactions or findings. Historical amounts may be adjusted as additional information is available.

Historical E&P Transaction Activity

U.S. Transactions Since 2012 (\$ in billions)



U.S. Transactions by Deal Size Since 2012⁽¹⁾ (\$ in billions)



Note: All data as of June 30, 2022.

(1) Deal count excludes transactions without a publicly disclosed deal value.

YTD refers to year-to-date.

Source: Enverus based on selection criteria of seller assets being located in the U.S.

OFS

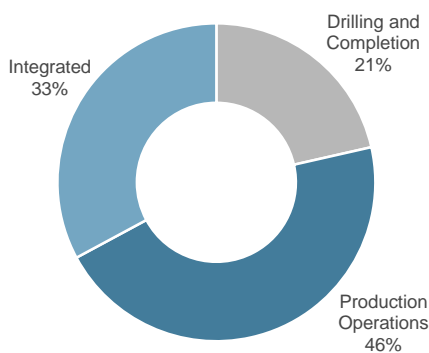
M&A (\$ in billions)

Segment	2020	2021	YTD June		%Δ
			2021	2022	
Drilling and Completion	\$0.2	\$0.8	\$0.1	\$0.1	62%
Production Operations	0.7	0.7	0.1	0.2	53%
Information Services	0.0	0.0	0.0	0.0	NMF
Integrated	0.0	0.8	0.3	0.2	-46%
Other	0.0	0.0	0.0	0.0	NMF
Total	\$0.8	\$2.3	\$0.5	0.5	-4%

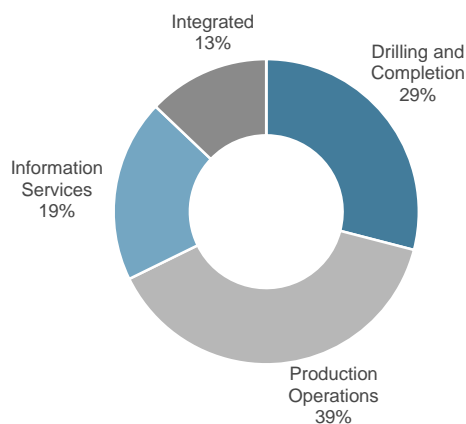
M&A (Deal Count)

Segment	2020	2021	YTD June		%Δ
			2021	2022	
Drilling and Completion	16	13	4	9	125%
Production Operations	33	34	15	12	-20%
Information Services	6	13	5	6	20%
Integrated	4	9	1	4	NMF
Other	0	0	0	0	NMF
Total	59	69	25	31	24%

M&A—2022 (\$ in billions)



M&A—2022 (Deal Count)



Note: All data as of June 30, 2022.

Source: Enverus based on selection criteria of seller headquarters being located in the U.S.

Downstream

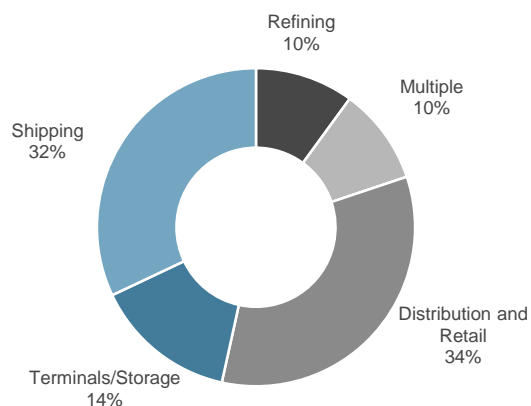
M&A (\$ in billions)

Segment	2020	2021	YTD June		%Δ
			2021	2022	
Refining	\$0.3	\$0.1	\$0.0	\$0.2	NMF
Multiple	0.7	4.4	0.6	0.2	-58%
Distribution and Retail	22.9	6.2	5.2	0.8	-84%
Terminals/Storage	4.2	1.5	1.1	0.4	-68%
Shipping	0.5	0.1	0.0	0.8	NMF
Total	\$28.7	\$12.2	\$6.9	\$2.5	-64%

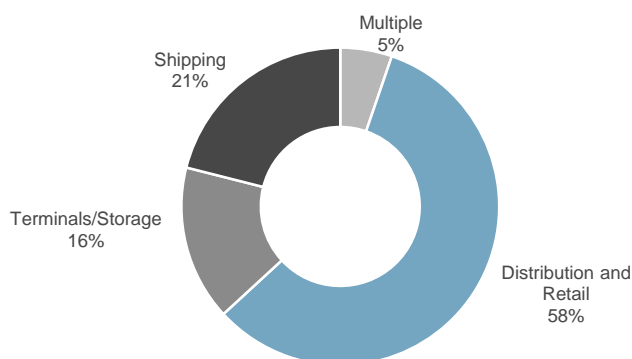
M&A (Deal Count)

Segment	2020	2021	YTD June		%Δ
			2021	2022	
Refining	2	1	0	1	NMF
Multiple	4	8	1	1	NMF
Distribution and Retail	49	75	23	26	13%
Terminals/Storage	12	12	6	4	-33%
Shipping	4	4	2	7	250%
Total	71	100	32	39	22%

M&A—2022 (\$ in billions)



M&A—2022 (Deal Count)



Note: All data as of June 30, 2022.

Source: Enverus based on selection criteria of seller headquarters being located in the U.S.

Midstream

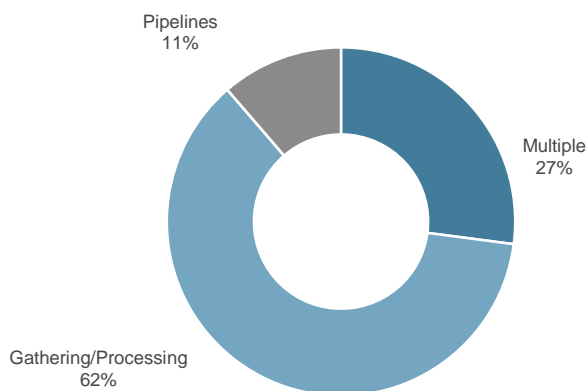
M&A (\$ in billions)

Segment	2020	2021	YTD June		%Δ
			2021	2022	
Multiple	15.2	30.8	19.5	4.3	-78%
Gathering/Processing	1.6	2.9	0.8	9.7	NMF
Gas Processing	0.0	0.0	0.0	0.0	NMF
Pipelines	3.5	1.6	0.4	1.8	NMF
Oil Tankers	0.1	1.0	1.0	0.0	-100%
Storage	0.4	0.9	0.9	0.0	-100%
Total	\$20.8	\$37.2	\$22.5	\$15.7	-30%

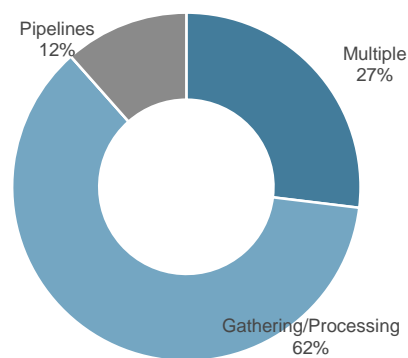
M&A (Deal Count)

Segment	2020	2021	YTD June		%Δ
			2021	2022	
Multiple	9	16	11	7	-36%
Gathering/Processing	16	17	9	16	78%
Gas Processing	0	0	0	0	NMF
Pipelines	11	11	3	3	0%
Oil Tankers	3	2	2	0	-100%
Storage	4	2	2	0	-100%
Total	43	48	27	26	-4%

M&A—2022 (\$ in billions)



M&A—2022 (Deal Count)



Note: All data as of June 30, 2022.

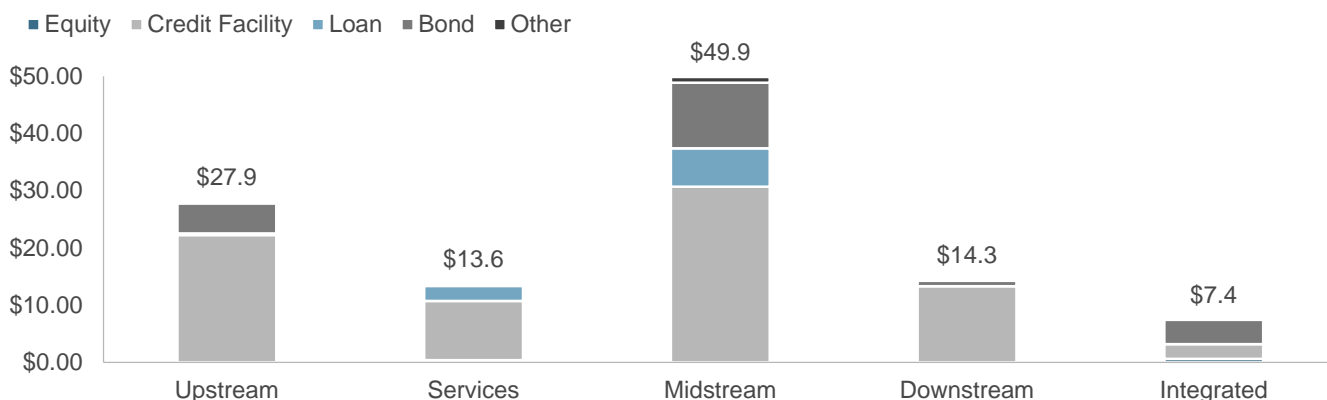
Source: Enverus based on selection criteria of seller headquarters being located in the U.S.

Financing by Instrument

Financing by Instrument (\$ in billions)

Capital	2020	2021	YTD June		%Δ
			2021	2022	
Upstream					
Equity	\$1.1	\$1.4	\$0.8	\$0.0	-100%
Credit Facility	46.1	45.0	17.4	22.3	28%
Loan	12.7	2.5	0.7	0.3	-63%
Bond	32.9	30.3	20.6	5.3	-74%
Other	0.1	0.5	0.4	0.1	-77%
Total	\$92.9	\$79.6	\$39.9	\$27.9	-30%
Services					
Equity	\$0.0	\$0.5	\$0.2	\$0.3	64%
Credit Facility	18.6	7.5	2.9	10.4	258%
Loan	5.8	6.4	3.3	2.6	-20%
Bond	6.6	7.3	2.4	0.2	-91%
Other	0.2	0.6	0.6	0.0	-96%
Total	\$31.1	\$22.3	\$9.4	\$13.6	45%
Midstream					
Equity	\$2.9	\$1.2	\$1.1	\$0.0	-100%
Credit Facility	28.4	41.0	16.8	30.7	82%
Loan	6.1	2.4	0.9	6.8	685%
Bond	43.9	29.4	16.4	11.5	-30%
Other	2.6	1.7	1.4	1.0	-28%
Total	\$84.0	\$75.7	\$36.5	\$49.9	37%
Downstream					
Equity	\$0.0	\$0.1	\$0.1	\$0.0	-100%
Credit Facility	8.7	4.7	3.3	13.3	309%
Loan	1.3	0.9	0.4	0.0	-100%
Bond	15.6	6.4	3.2	1.0	-69%
Other	0.0	0.0	0.0	0.0	NMF
Total	\$25.6	\$12.1	\$6.9	\$14.3	106%
Integrated					
Equity	\$1.1	\$0.8	\$0.0	\$0.6	NMF
Credit Facility	0.9	1.9	1.9	2.6	37%
Loan	0.7	1.4	0.2	0.0	-100%
Bond	73.1	13.7	6.7	4.3	-37%
Other	1.5	0.2	0.0	0.0	NMF
Total	\$77.3	\$18.0	\$8.8	\$7.4	-16%
Grand Total	\$310.9	\$207.9	\$101.5	\$113.1	11%

Financing by Instrument—YTD 2022 (\$ in billions)



Notes: All data as of June 30, 2022. Current year may not include values for all announced transactions or findings.

Historical amounts may be adjusted as additional information is available.

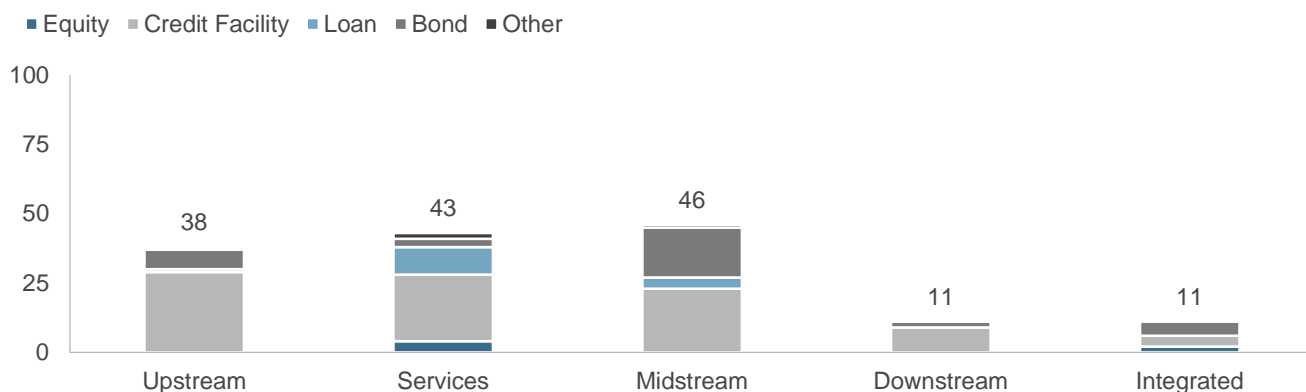
Source: Enverus.

Financing by Instrument (cont.)

Financing by Instrument (Count)

Capital	2020	2021	YTD June		%Δ
			2021	2022	
Upstream					
Equity	12	14	9	0	-100%
Credit Facility	69	48	15	29	93%
Loan	28	9	5	1	-80%
Bond	47	49	34	7	-79%
Other	2	7	5	1	-80%
Total	158	127	68	38	-44%
Services					
Equity	2	9	5	4	-20%
Credit Facility	62	40	9	24	167%
Loan	33	23	7	10	43%
Bond	16	16	8	3	-63%
Other	6	10	7	2	-71%
Total	119	98	36	43	19%
Midstream					
Equity	6	5	3	0	-100%
Credit Facility	25	38	13	23	77%
Loan	12	6	3	4	33%
Bond	59	41	18	18	0%
Other	6	10	5	1	-80%
Total	108	100	42	46	10%
Downstream					
Equity	0	1	1	0	-100%
Credit Facility	9	9	4	9	125%
Loan	4	6	3	0	-100%
Bond	25	9	5	2	-60%
Other	1	0	0	0	NMF
Total	39	25	13	11	-15%
Integrated					
Equity	2	1	0	2	NMF
Credit Facility	2	3	3	4	NMF
Loan	2	3	2	0	NMF
Bond	65	18	9	5	-44%
Other	2	1	0	0	NMF
Total	73	26	14	11	-21%
Grand Total	497	376	173	149	-14%

Financing by Instrument—YTD 2022 (Deal Count)

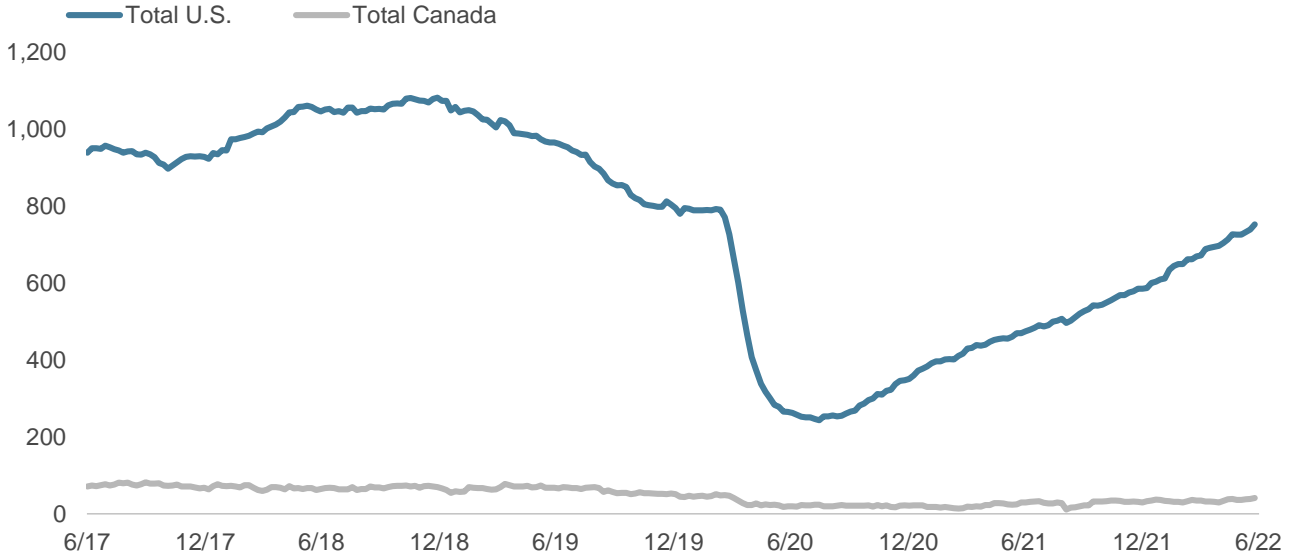


Notes: All data as of June 30, 2022. Current year may not include values for all announced transactions or findings. Historical amounts may be adjusted as additional information is available. Source: Enverus.

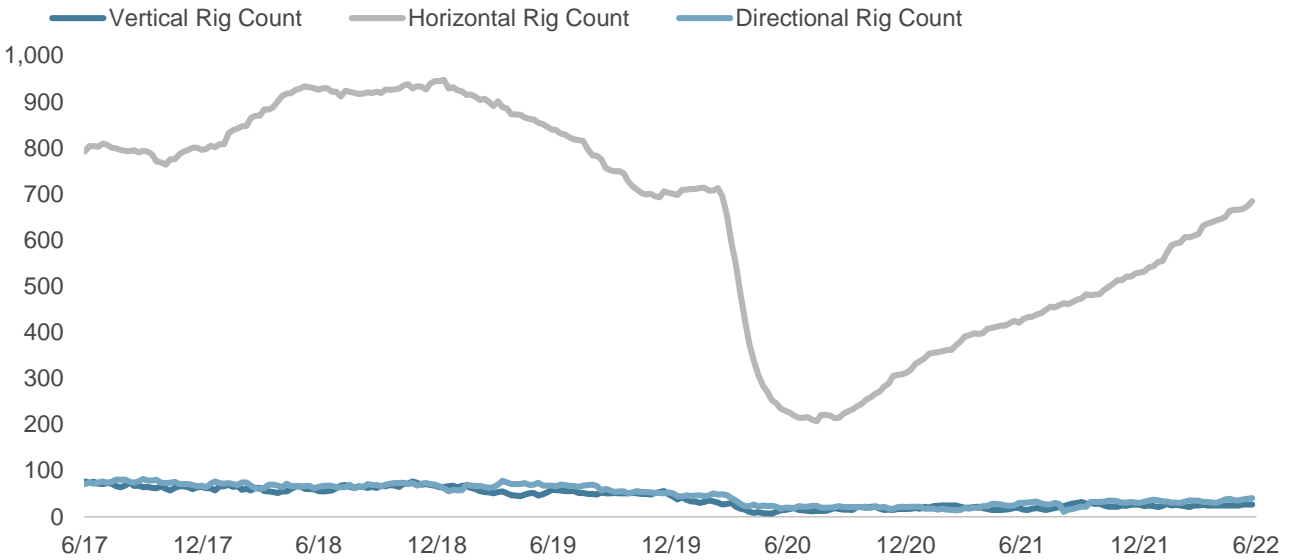
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Rigs

Total U.S. vs. Canada Rigs

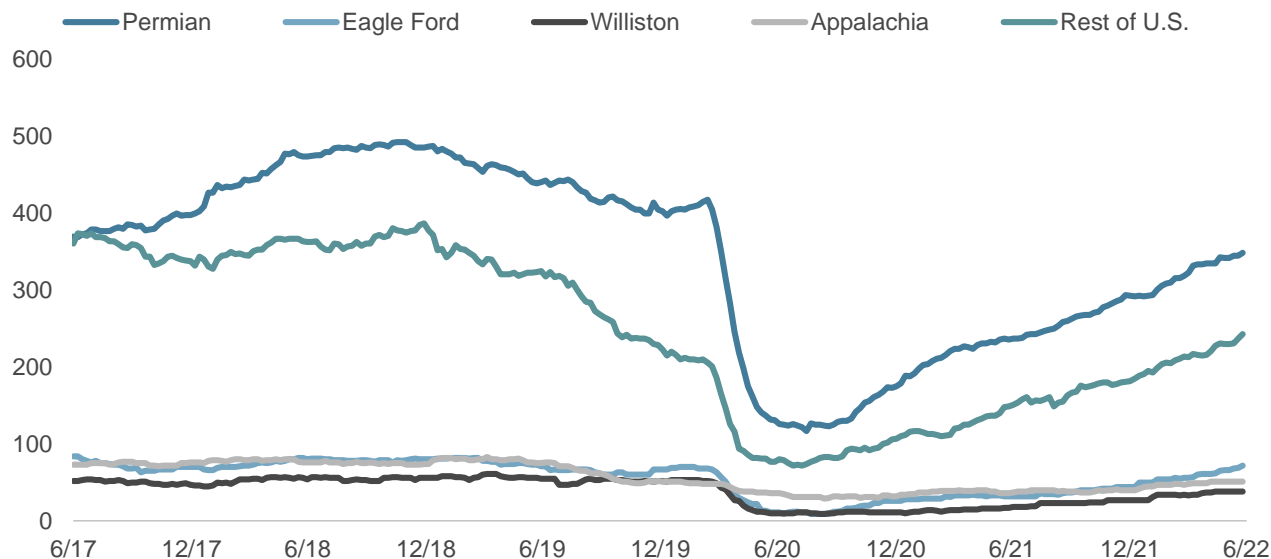


U.S. Rig Counts by Vertical, Horizontal, and Directional



Rigs (cont.)

U.S. Rigs by Regions

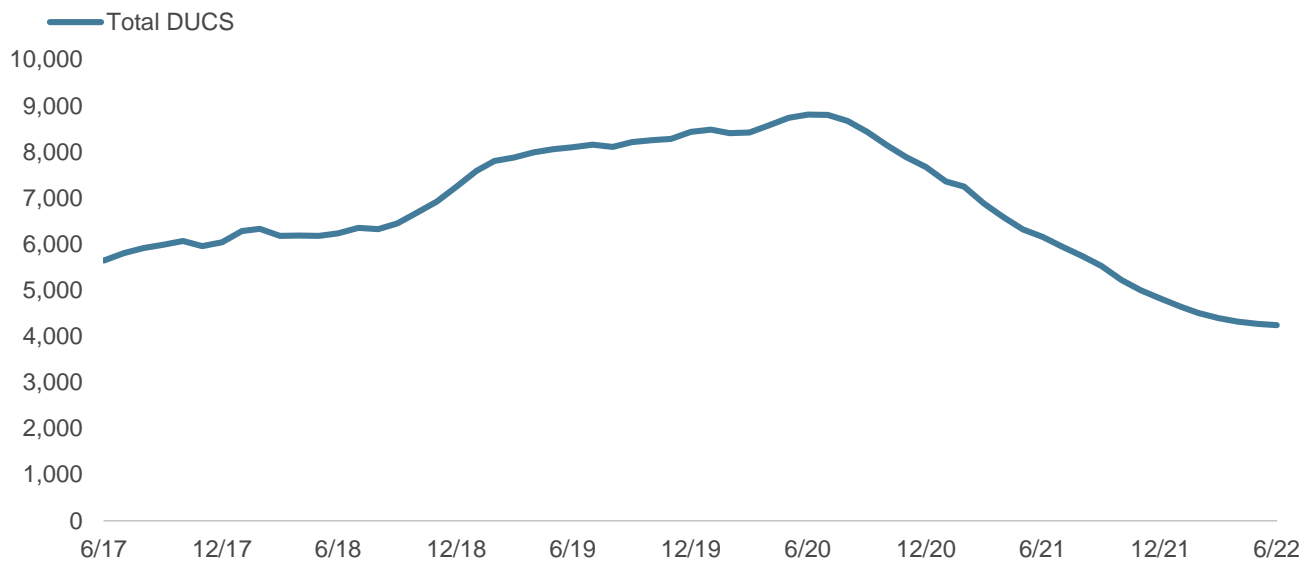


Change in Rig Counts

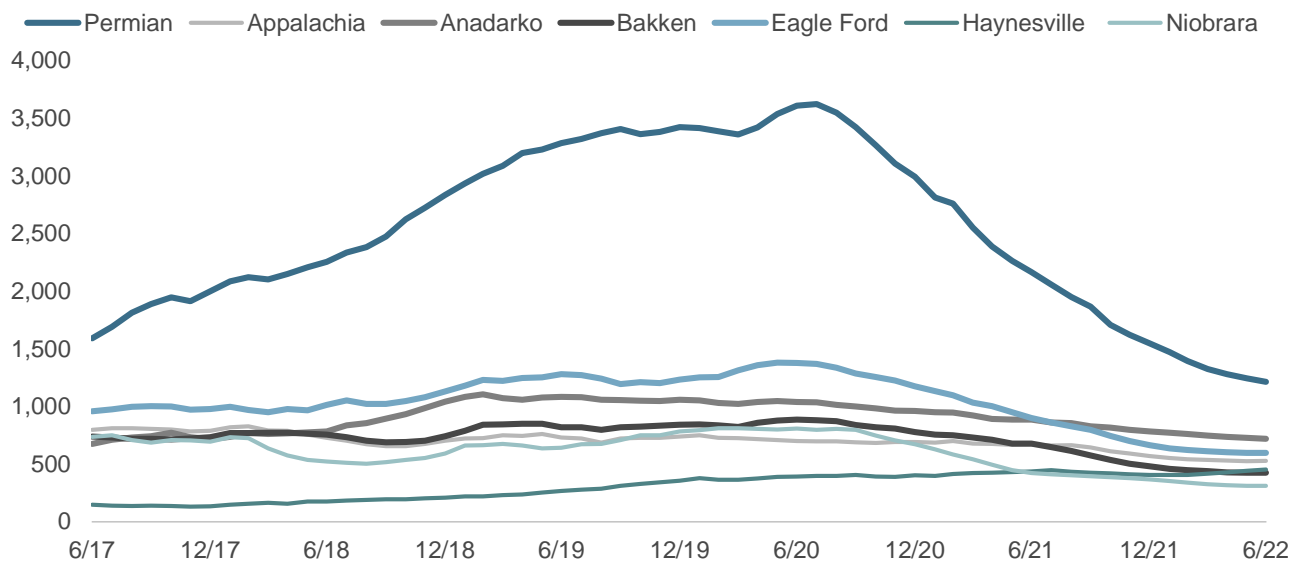
Region	6/30/2022	6/30/2021	3/31/2022	YoY % Change	QoQ % Change
Permian	349	236	319	47.9%	9.4%
Eagle Ford	72	32	56	125.0%	28.6%
Williston	38	17	34	123.5%	11.8%
Marcellus	39	27	36	44.4%	8.3%
Cana Woodford	32	17	24	88.2%	33.3%
DJ Niobrara	16	9	14	77.8%	14.3%
Granite Walsh	2	2	4	0.0%	-50.0%
Haynesville	69	49	67	40.8%	3.0%
Utica	12	9	11	33.3%	9.1%
Rest of U.S.	124	72	105	72.2%	18.1%
Total	753	470	670	60.2%	12.4%

Rigs (cont.)

Total U.S. DUCs



Total DUCs by Basin



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