



HOULIHAN LOKEY

Oil & Gas

Industry Update | Q2 2018



Houlihan Lokey Oil & Gas Update

Dear Clients and Friends,

Houlihan Lokey is pleased to present its Oil & Gas industry update for Q2 2018.

We have included an overview of trends in the oil & 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,



A handwritten signature in black ink, appearing to read 'JP Hanson'.

JP Hanson
Managing Director
Head of the Oil & Gas Group
1001 Fannin St.
Houston, TX 77002
JHanson@HL.com
832.319.5115



A handwritten signature in black ink, appearing to read 'Robert Teigman'.

Robert Teigman
Director
Oil & Gas Valuation & Board Advisory
1001 Fannin St.
Houston, TX 77002
RTeigman@HL.com
832.319.5138

Additional Oil & Gas Group Contacts

Victor Barcot
Managing Director
VBarcot@HL.com
832.319.5149

Michael Roberts
Managing Director
MRoberts@HL.com
832.319.5141

Brett Lowrey
Managing Director
BLowrey@HL.com
214.220.8480

Mike Giffin
Managing Director
MGiffin@HL.com
214.220.8485

Kirk Tholen
Managing Director
KTholen@HL.com
832.319.5110

Daniel Crowley
Director
DCrowley@HL.com
212.497.7845

Josh Eaves
Director
JEaves@HL.com
212.497.4273

Russell Mason
Director
RMason@HL.com
214.665.8622

Manny Vedi
Associate
MVedi@HL.com
832.319.5135

Key Quarterly Trends

- The OPEC+ group agreed on June 22, 2018, to increase combined production by a nominal 1 million barrels per day; however, given offsetting production declines in Venezuela and Libya, plus the inability of several countries to increase daily production (including Iran due to sanctions), actual production is expected to increase by only 600,000-700,000 barrels per day, which is viewed positively by the market versus previous expectations
- Public equity capital availability for small- and even mid-caps has become more challenging recently as traditional public equity investors have reduced allocations (e.g., by mutual funds and other asset managers) to the upstream E&P sector
 - Public market E&P investor sentiment articulated as “return on capital” (both in terms of revenue and expenses), as opposed to growth at all costs
 - Public investor opinion that corporate-level M&A consolidation activity needs to increase in the near term as a means to gain economies of scale and to rationalize operating complexities and costs of independent upstream operators
 - An increase in M&A activity, which should result in rationalization of total operating costs and the number of operators as well as a corresponding increase in implied equity market cap of combined companies, will further entice public equity investment (theoretical hurdle at >\$1 billion)
 - In the meantime, this public capital markets dynamic presents certain private financing opportunities
- Permian midstream constraints have led to significant widening of the WTI Midland spot differential
 - Current WTI Midland spot differential of ~\$17.07/bbl⁽²⁾
 - While the differential has widened for spot prices, those operators with firm transportation and capacity dedication have protected the downside via contracted volumes
 - Current forecast shows Midland oil differentials remaining relatively wide until the second half of 2019 as incremental midstream capacity potentially comes online; in the interim, other basins are experiencing renewed interest (Eagle Ford, Bakken, Mid-Con)⁽¹⁾
- Similarly, Permian spot gas differentials at Waha remain at a ~\$0.43/MMbtu⁽²⁾ discount to Henry Hub
 - Increased production in the Permian of both gas targets and associated gas (including higher relative GOR than expected) has resulted in more gas production than existing infrastructure can transport, which impacts the Waha hub differential pricing as well as effectively puts a ceiling on broader domestic NYMEX
- AECO spot gas differential has witnessed significant volatility during the quarter and is currently \$1.56/MMbtu⁽²⁾
 - Pipeline outages, field maintenance, and carrier policy changes have caused volatile swings in Alberta natural gas prices
 - Policy change by TransCanada has given producers with firm service contracts priority over shippers that use the service intermittently
 - While disagreements between British Columbia and Alberta concerning the Trans Mountain pipeline may have been settled by the Canadian government’s buyout, the provinces remain at odds over tax incentives for a natural gas pipeline within British Columbia, which continues to affect the AECO hub
- U.S. LNG exports continue to ramp up and are currently ~85.7 Bcf in April 2018⁽²⁾
 - Increase of ~69% on a year-over-year basis
- Recent expansion of private equity income/yield funds with more flexible dividend structure to replace publicly traded MLPs with high distribution burdens
- The combination of increased production in key basins (Permian, SCOOP/STACK, Appalachia), which has outpaced infrastructure, and recent tax changes/incentives has resulted in a dramatic uptick in midstream M&A and capital markets opportunities and activity

(1) Sourced from equity research.

(2) Sourced from Bloomberg as of July 12, 2018.

Table of Contents

	Page
1. Houlihan Lokey Snapshot	4
2. Crude Oil	8
3. Natural Gas and NGLs	23
4. LNG	36
5. Refining	40
6. Public Equity Markets Overview	52
7. M&A and Financing Activity	54
8. Rigs	62

	Page
1. Houlihan Lokey Snapshot	4
2. Crude Oil	8
3. Natural Gas and NGLs	23
4. LNG	36
5. Refining	40
6. Public Equity Markets Overview	52
7. M&A and Financing Activity	54
8. Rigs	62



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

Corporate Finance

2017 M&A Advisory Rankings All U.S. Transactions

	Advisor	Deals
1	Houlihan Lokey	174
2	Goldman Sachs & Co	173
3	JP Morgan	164
4	Morgan Stanley	132
5	Barclays	106

Source: Thomson Reuters

No. 1 U.S. M&A Advisor

Top 10 Global M&A Advisor

Leading Capital Markets Advisor

Financial Restructuring

2017 Global Distressed Debt & Bankruptcy Restructuring Rankings

	Advisor	Deals
1	Houlihan Lokey	63
2	Rothschild & Co.	48
3	Lazard	36
4	PJT Partners LP	35
5	Moelis & Co.	22

Source: Thomson Reuters

No. 1 Global Investment
Banking Restructuring Advisor

1,000+ Transactions Completed
Valued at More Than
\$2.5 Trillion Collectively

Financial Advisory

1997 to 2017 Global M&A Fairness Advisory Rankings

	Advisor	Deals
1	Houlihan Lokey	1,001
2	JP Morgan	959
3	Bank of America Merrill Lynch	699
4	Duff & Phelps	672
5	Morgan Stanley	660

Source: Thomson Reuters. Announced or completed transactions.

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

1,000+ Annual Valuation
Engagements

Global Oil & Gas Footprint – Fully Integrated Team

Houlihan Lokey's Oil & Gas Group provides global coverage via 40+ dedicated financial professionals, including specialized bankers, A&D/technical advisory, valuation, and capital markets teams

JP Hanson
Global Head, Oil & Gas

New York	Houston		Dallas		Europe
Banking / Coverage	Banking / Coverage	Technical / A&D	Banking / Coverage	Valuation / Diligence / Dispute	Tom Seward Director
Dan Crowley Director	Victor Barcot Managing Director	Kirk Tholen Managing Director, Head of A&D	Brett Lowrey Managing Director	Mike Giffin Managing Director	Fredrik Sundberg Associate
Joshua Eaves Director	Michael Roberts Managing Director, Capital Markets	Robert Webster Director, Geosciences	Russell Mason Director	Drew Koecher Managing Director	Asia / Pacific
Michael Haney Sr. Vice President	Chris Sweet Director, Capital Markets	Jerry Eumont Director, Geologist	Justin Zammit Sr. Vice President	Daniel Beaulne Director	
Marcus Bellows Vice President	Robert Teigman Director, Oil & Gas Committee Advisory	Thomas Andreen Petroleum Engineer	Michael O'Hanlon Associate	Heather Bolner Vice President	MENA
Lucas Bartnick Associate	Mukul Hariharan Sr. Vice President	Richard Villanueva Engineering Analyst	Jim Georgeadis Vice President	Sam Rogers Vice President	
Ben Kim Financial Analyst	Manny Vedi Associate	Daniel O'Neil Petroleum Engineer	Corbon Heizer Financial Analyst	Ryan McWilliams Associate	Walid Chamma Associate
Valuation / Diligence	Paul Coraci Associate	Gregory Fagan Engineering Associate	Jay Vise Financial Analyst		
Neil Booth Director	Valuation / Diligence	Alex Medler Engineering Technician	Yoni Lipski Financial Analyst		
Scott McDonald Vice President	Brian Zimmerman Sr. Vice President	Melissa Higginson Engineering Associate	Michael Marsh Financial Analyst		
Andrew Sandberg Vice President	Brent Reynolds Sr. Vice President				

Cross-Product Industry Team



Trusted Advisor

- Currently retained on 15 oil & gas engagements
 - 13 relate to upstream/E&P companies
 - Nine relate to A&D, corporate M&A, and/or associated transaction opinions

Veteran Leadership Team

- O&G investment banking team is led by 14 highly experienced professionals
- A&D/technical team is led by an additional three technically focused industry professionals
 - Average of 25+ years of industry experience
- Specialization in petroleum engineering, geosciences, and other technical disciplines
- Special Committee Advisory/Valuation/TAS team is led by an additional five dedicated professionals

Selected Transactions⁽¹⁾

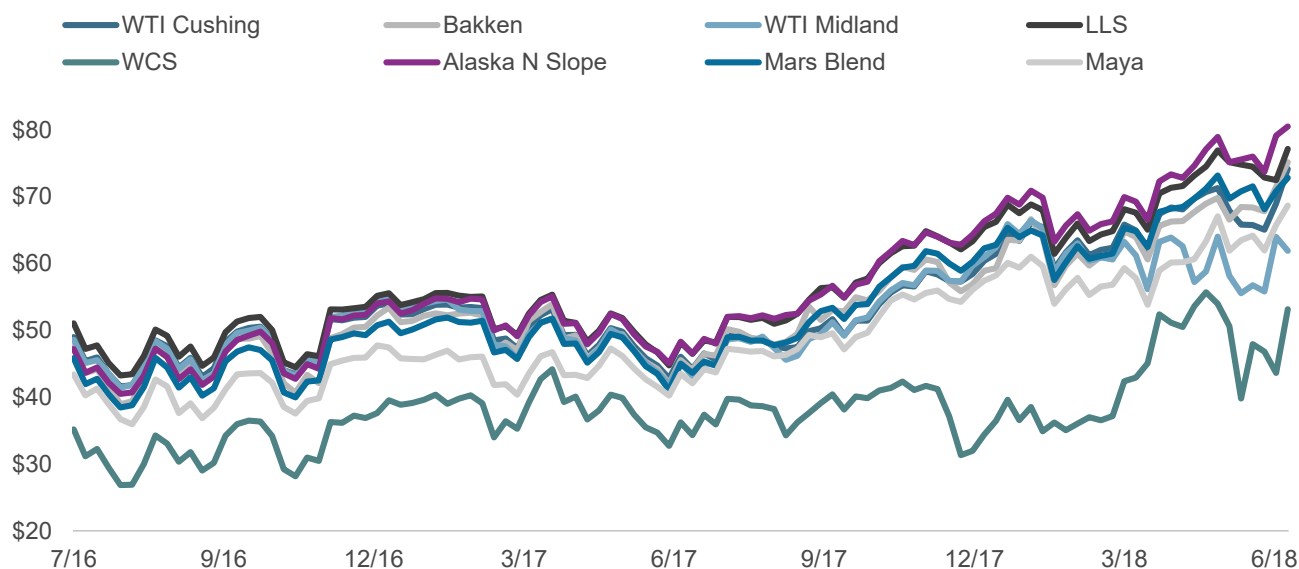
<p>Transaction Pending</p> <p>COX Cox Operating LLC</p> <p>has agreed to acquire</p> <p>EGC</p> <p>Company Advisor</p>	<p>Project Garnet</p> <p>is currently pursuing capital markets financing</p> <p>Company Advisor</p>	<p>Project Cascade</p> <p>is currently pursuing a sale of its oil & gas assets</p> <p>Sellside Advisor</p>	<p>Project Lion</p> <p>is currently pursuing joint venture capital and a sellside process for its Gulf Coast assets</p> <p>Capital Raise & Sellside Advisor</p>	<p>Project Gunnison</p> <p>is currently pursuing a corporate sales process in the Williston Basin</p> <p>Sellside Advisor & Fairness Opinion</p>	<p>eclipse</p> <p>has acquired ~44,500 net acres in Potter and Tioga Counties, PA from</p> <p>TRAVES PEAK RESOURCES, LLC</p> <p>Financial Advisor & Fairness Opinion</p>
<p>ALON USA PARTNERS</p> <p>has been acquired by a wholly-owned subsidiary of</p> <p>Dalek</p> <p>Sellside Advisor & Fairness Opinion</p>	<p>Cobalt International Energy</p> <p>has completed a Section 363 sale of the Company's assets and consummated a Chapter 11 restructuring</p> <p>Company Advisor</p>	<p>YATES PETROLEUM CORPORATION</p> <p>has been acquired by</p> <p>eog resources</p> <p>Fairness Opinion</p>	<p>OHA Holdings Limited</p> <p>has completed a transaction to assume full ownership of</p> <p>IRVING Irving Oil</p> <p>Fairness Opinion</p>	<p>CORE APPALACHIA</p> <p>a portfolio company of</p> <p>TRIVE CAPITAL</p> <p>Reserve-Based Lending Facility Refinancing</p> <p>\$500,000,000</p> <p>Exclusive Placement Agent</p>	<p>Berry Petroleum Company, LLC</p> <p>has completed the divestiture of its Hugoton assets</p> <p>Sellside Advisor</p>

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

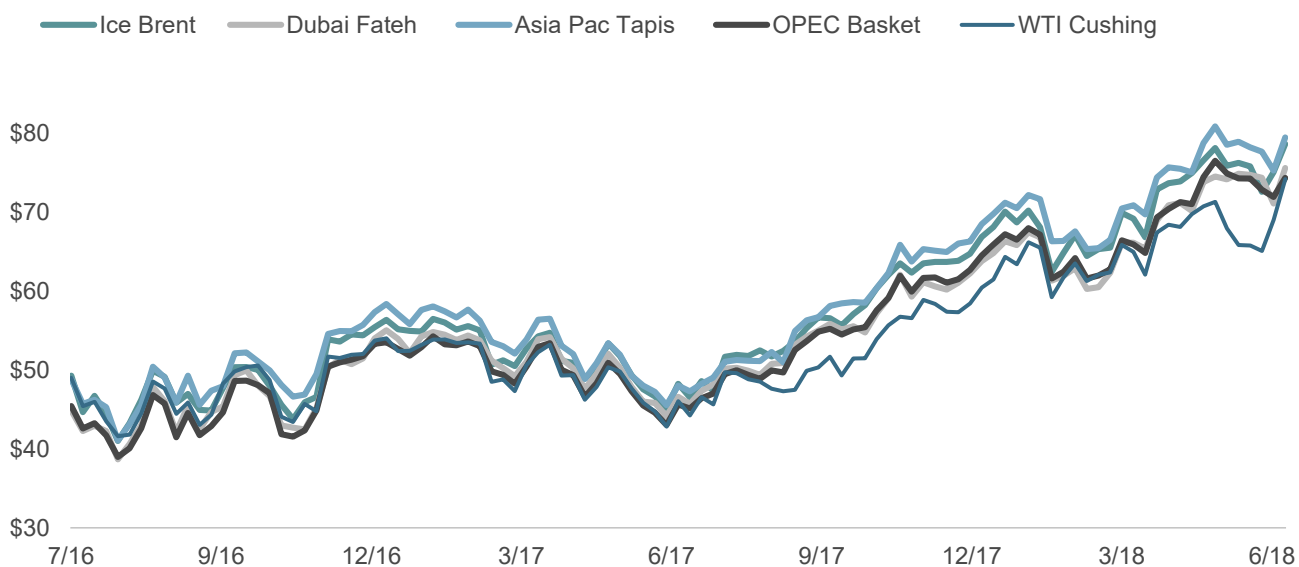
	Page
1. Houlihan Lokey Snapshot	4
2. Crude Oil	8
3. Natural Gas and NGLs	23
4. LNG	36
5. Refining	40
6. Public Equity Markets Overview	52
7. M&A and Financing Activity	54
8. Rigs	62

Spot Pricing

North American Spot Prices (\$/bbl)

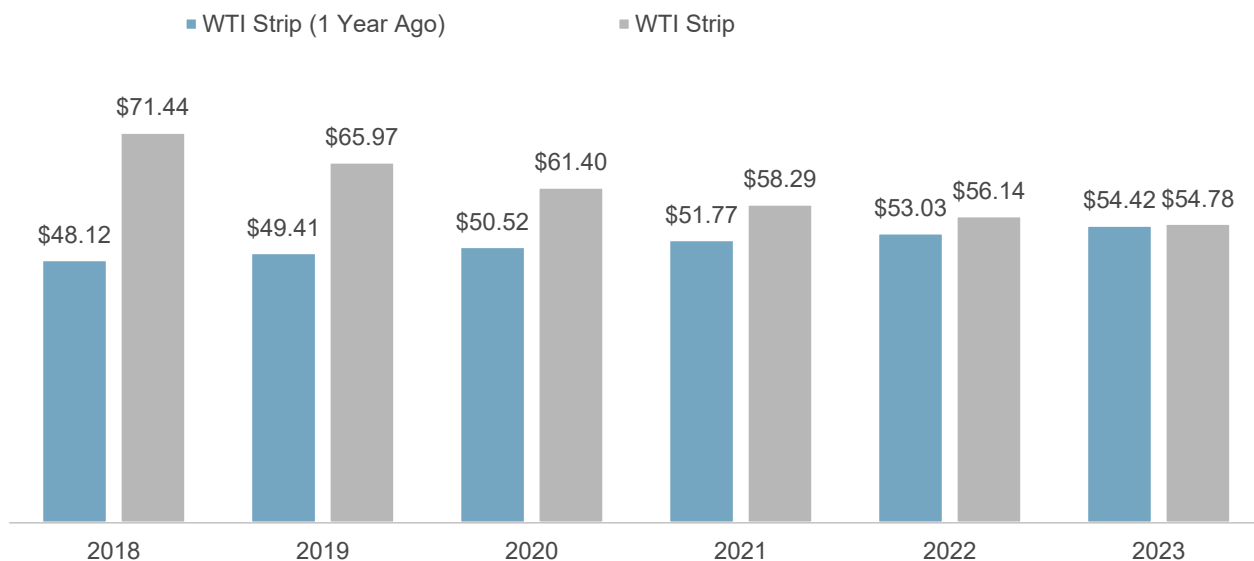


International Spot Prices (\$/bbl)

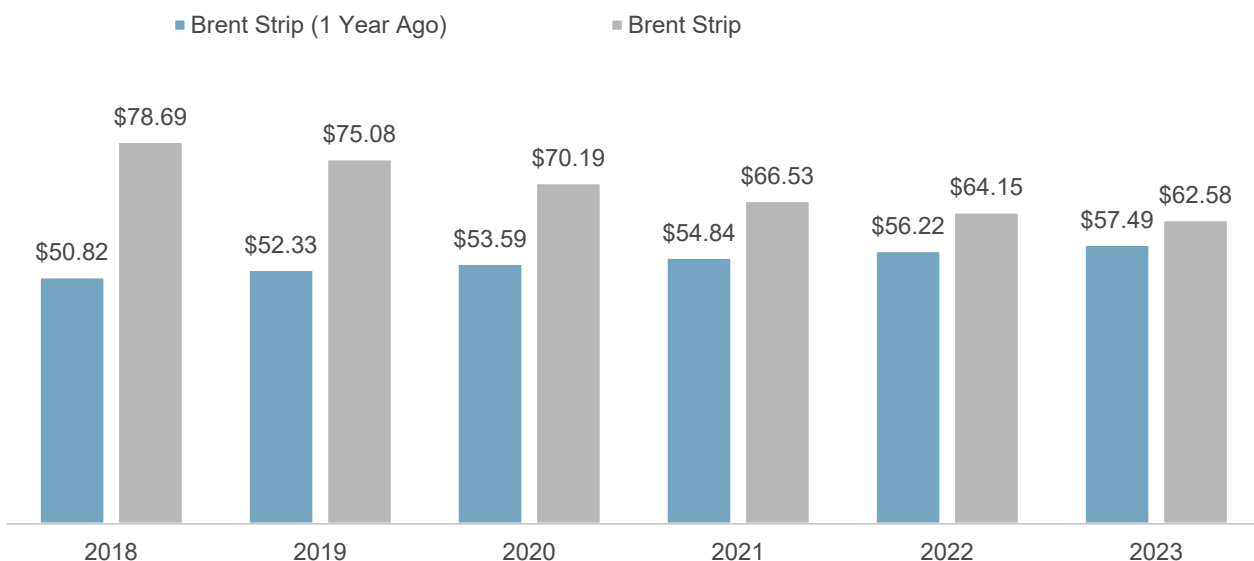


Strip Pricing

WTI Cushing Strip Pricing Comparison (\$/bbl)

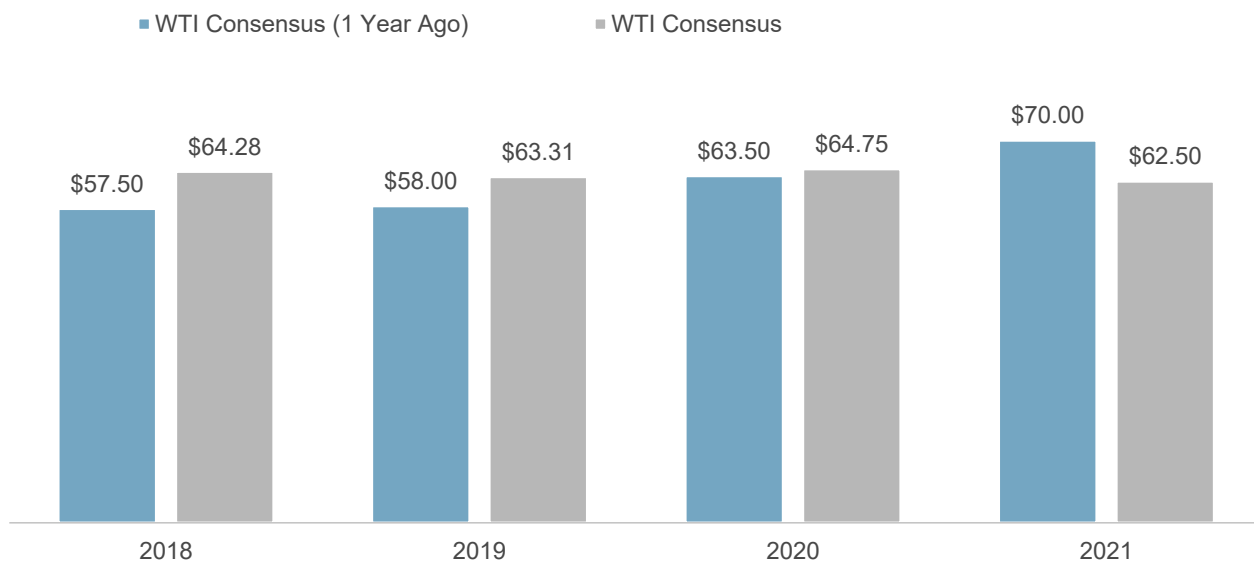


Brent Strip Pricing Comparison (\$/bbl)

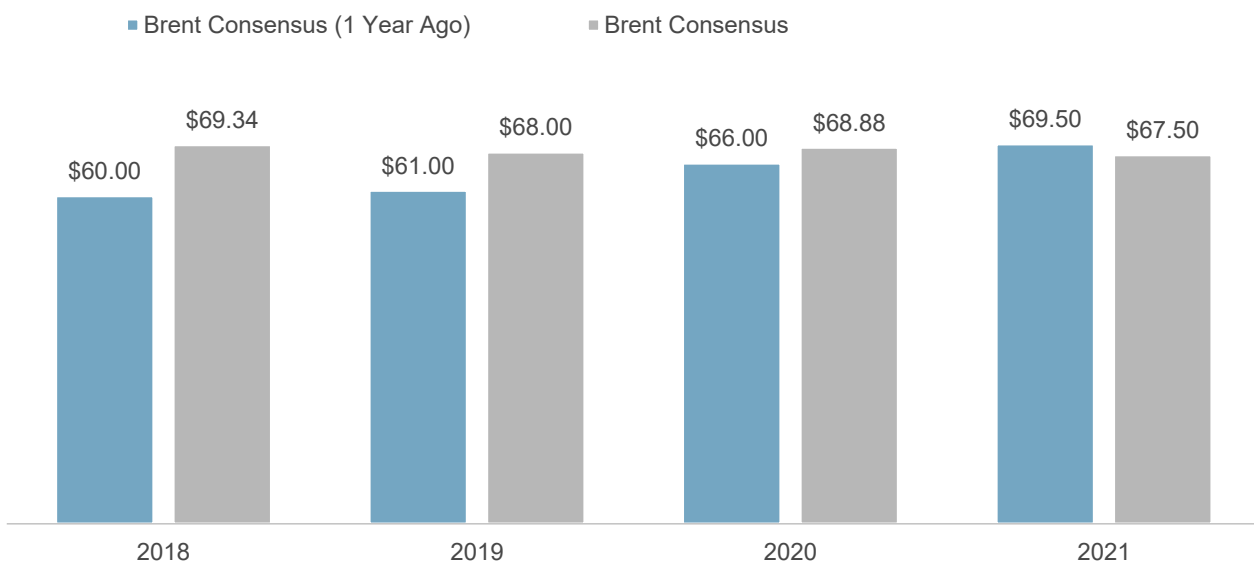


Consensus Pricing

WTI Cushing Consensus Pricing Comparison (\$/bbl)



Brent Consensus Pricing Comparison (\$/bbl)



Differentials

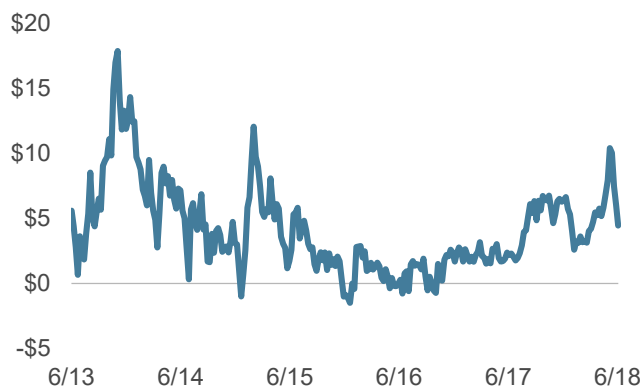
Regional Crude Oil Spot Pricing

Region	6/30/2018	6/30/2017	3/31/2018	YoY % Change	QoQ % Change
Brent	\$78.6	\$48.2	\$69.1	63.0%	13.7%
<i>Brent – WTI Cushing</i>	\$4.4	\$2.2	\$4.2		
WTI Cushing	\$74.2	\$46.0	\$64.9	61.1%	14.2%
<i>WTI Cushing – Brent</i>	(\$4.4)	(\$2.2)	(\$4.2)		
WTI Midland	\$61.9	\$45.1	\$61.2	37.3%	1.2%
<i>WTI Cushing – WTI Midland</i>	\$12.3	\$0.9	\$3.8		
Bakken	\$75.2	\$45.5	\$63.9	65.0%	17.5%
<i>WTI Cushing – Bakken</i>	(\$1.0)	\$0.5	\$1.0		
Eagle Ford Light	\$70.5	\$42.5	\$61.0	65.9%	15.6%
<i>WTI Cushing – Eagle Ford Light</i>	\$3.7	\$3.5	\$3.9		
WTS	\$61.9	\$44.8	\$61.2	38.0%	1.1%
<i>WTI Cushing – WTS</i>	\$12.3	\$1.2	\$3.7		
WCS	\$53.2	\$36.2	\$42.9	46.7%	23.8%
<i>WTI Cushing – WCS</i>	\$21.0	\$9.8	\$22.0		
Maya	\$68.7	\$43.5	\$57.8	57.8%	18.8%
<i>WTI Cushing – Maya</i>	\$5.5	\$2.5	\$7.1		
Mars	\$72.8	\$45.0	\$64.8	61.8%	12.3%
<i>WTI Cushing – Mars</i>	\$1.4	\$1.1	\$0.1		
LLS	\$77.2	\$48.2	\$67.6	60.1%	14.1%
<i>WTI Cushing – LLS</i>	(\$3.0)	(\$2.2)	(\$2.7)		
ANS	\$80.5	\$48.3	\$69.2	66.7%	16.3%
<i>Brent – ANS</i>	(\$1.9)	(\$0.1)	(\$0.1)		

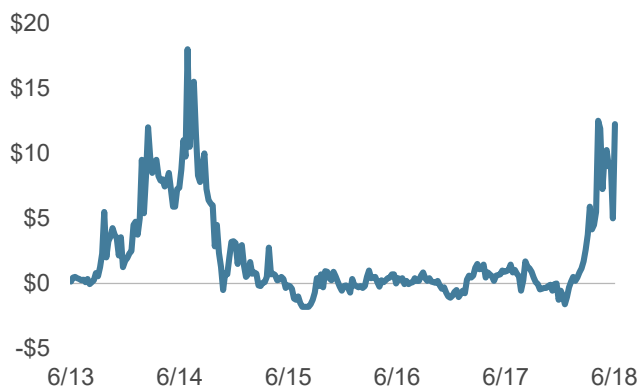
Note: All data as of June 30, 2018. Data collected on a daily basis.
Source: Bloomberg.

Differentials (\$/bbl)

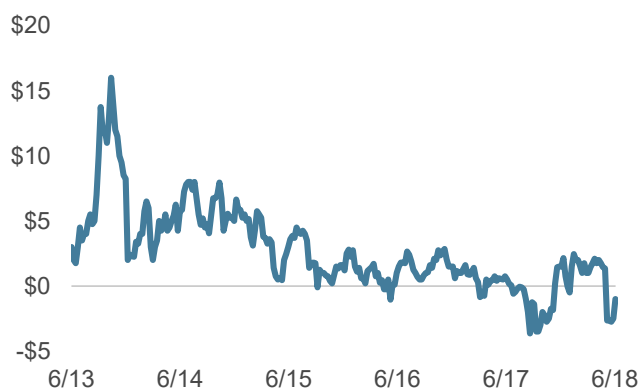
Brent – WTI Cushing



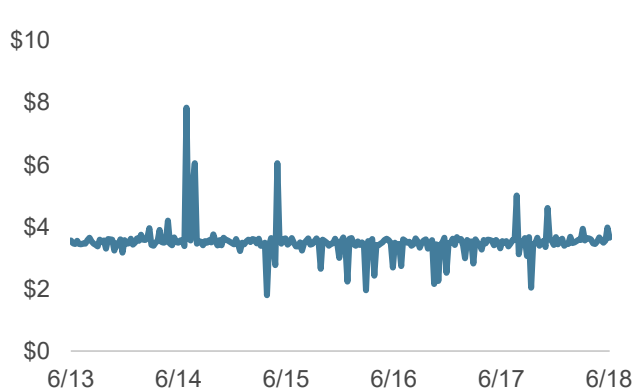
WTI Cushing – WTI Midland



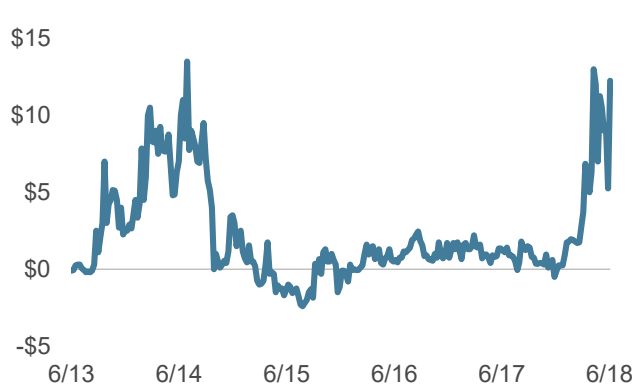
WTI Cushing – WTI Bakken Clearbrook



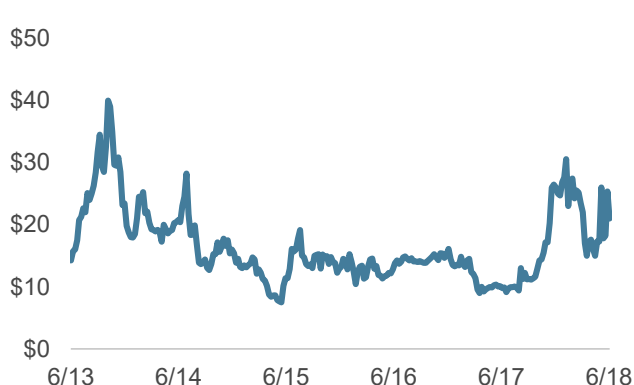
WTI Cushing – Eagle Ford Light



WTI Cushing – WTS

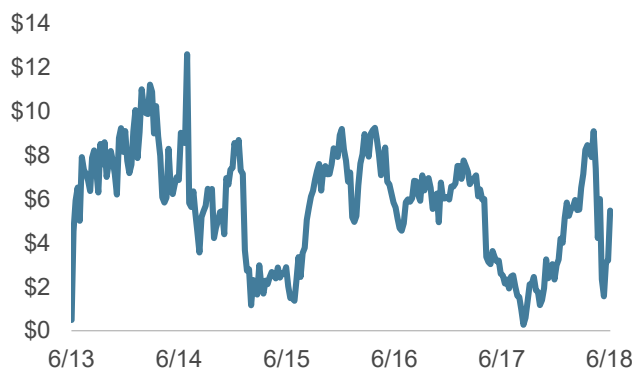


WTI Cushing – WCS

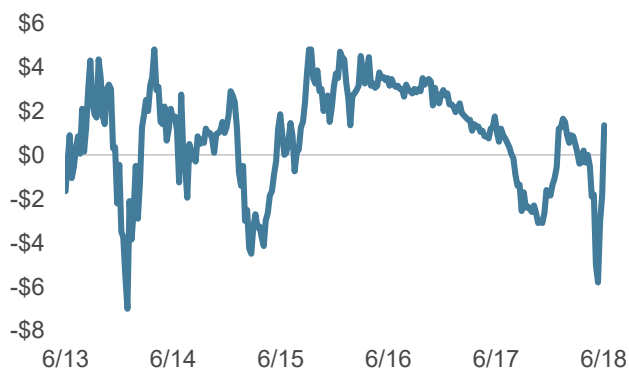


Differentials (\$/bbl) (cont.)

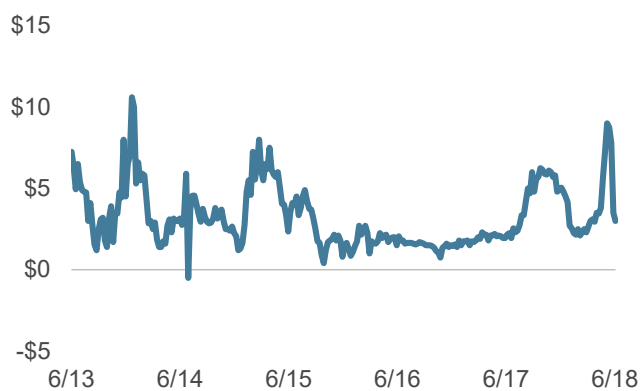
WTI Cushing – Maya



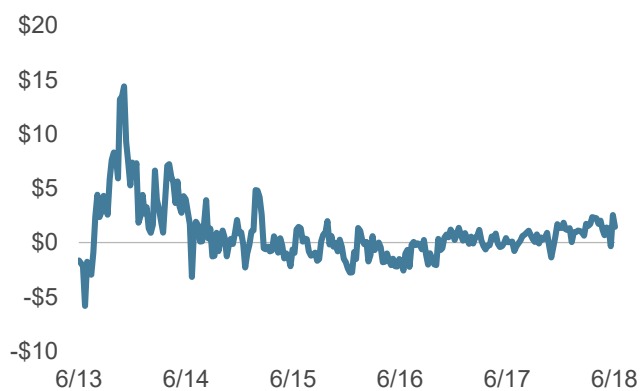
WTI Cushing – Mars



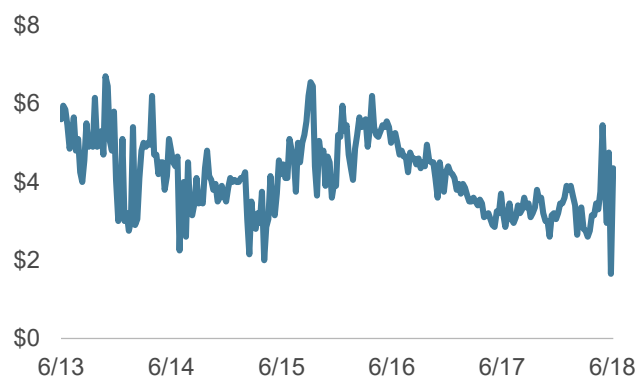
LLS – WTI Cushing



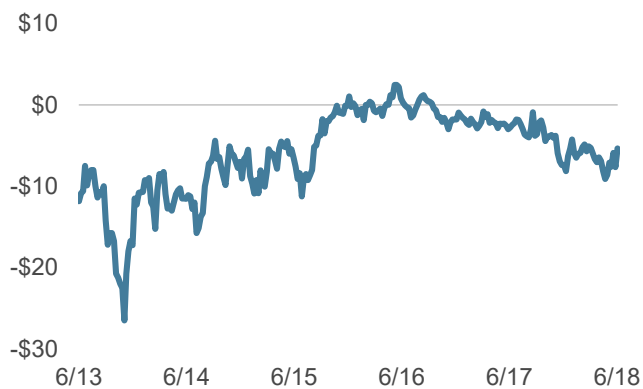
Brent – LLS



LLS – Mars

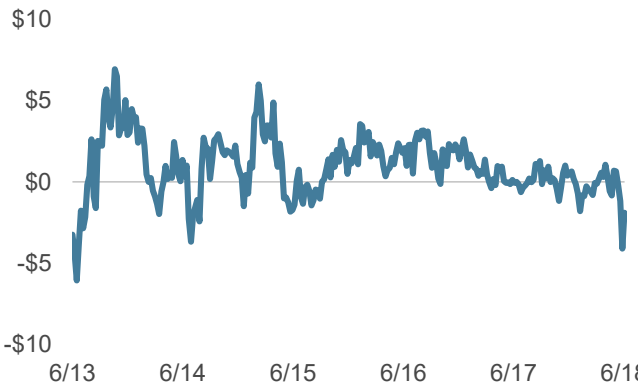


Bakken – ANS

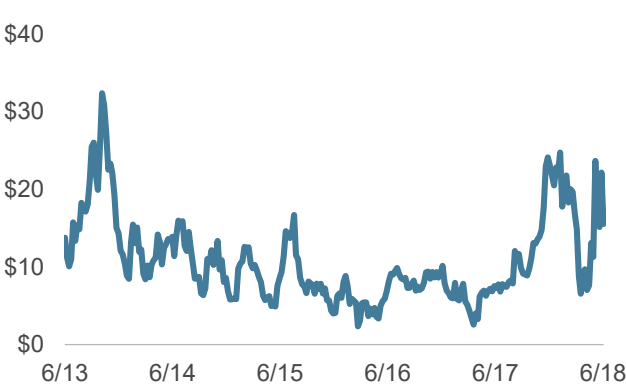


Differentials (\$/bbl) (cont.)

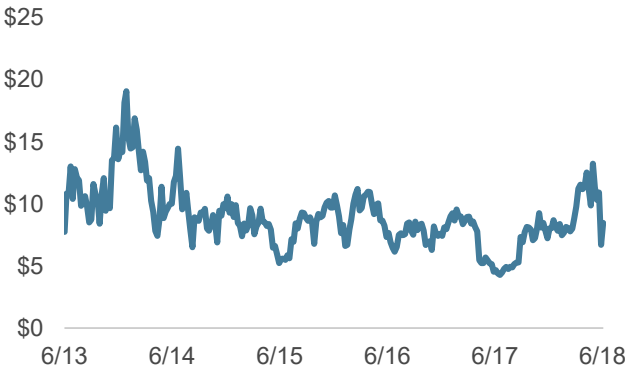
Brent – ANS



Maya – WCS



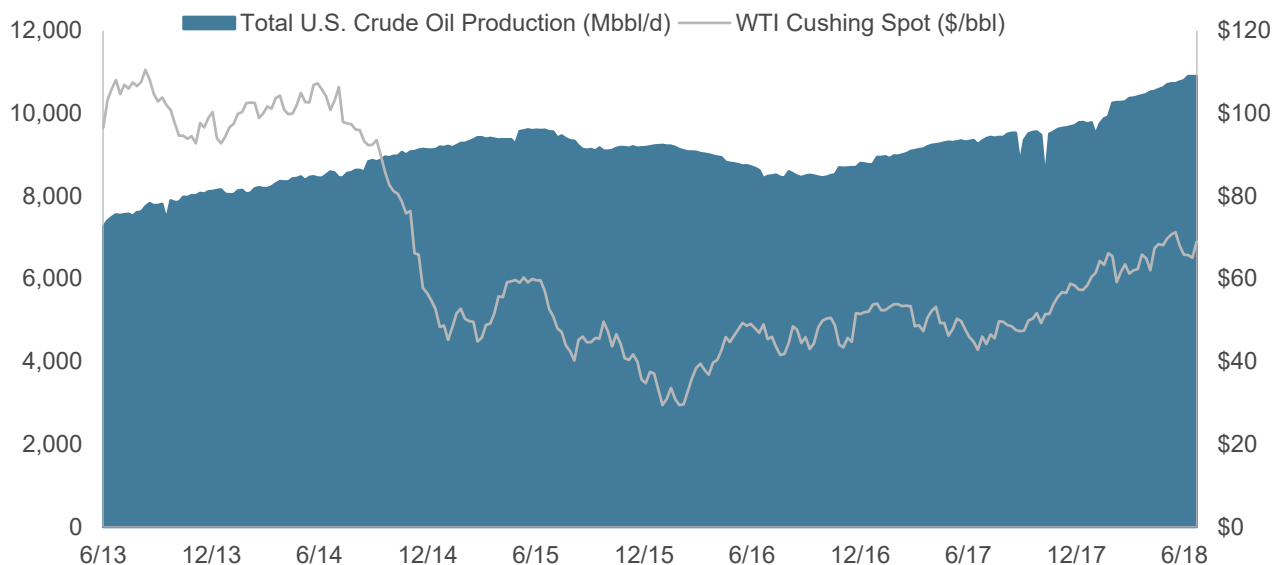
LLS – Maya



*Note: All data as of June 30, 2018. Data collected on a weekly basis.
Source: Bloomberg.*

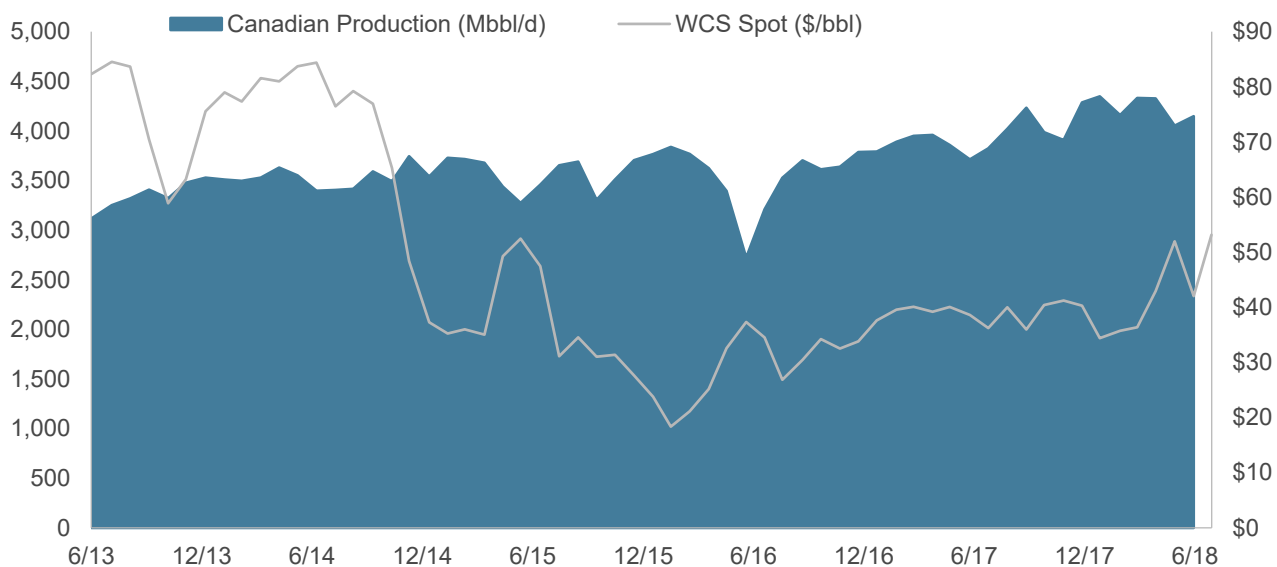
Production

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



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

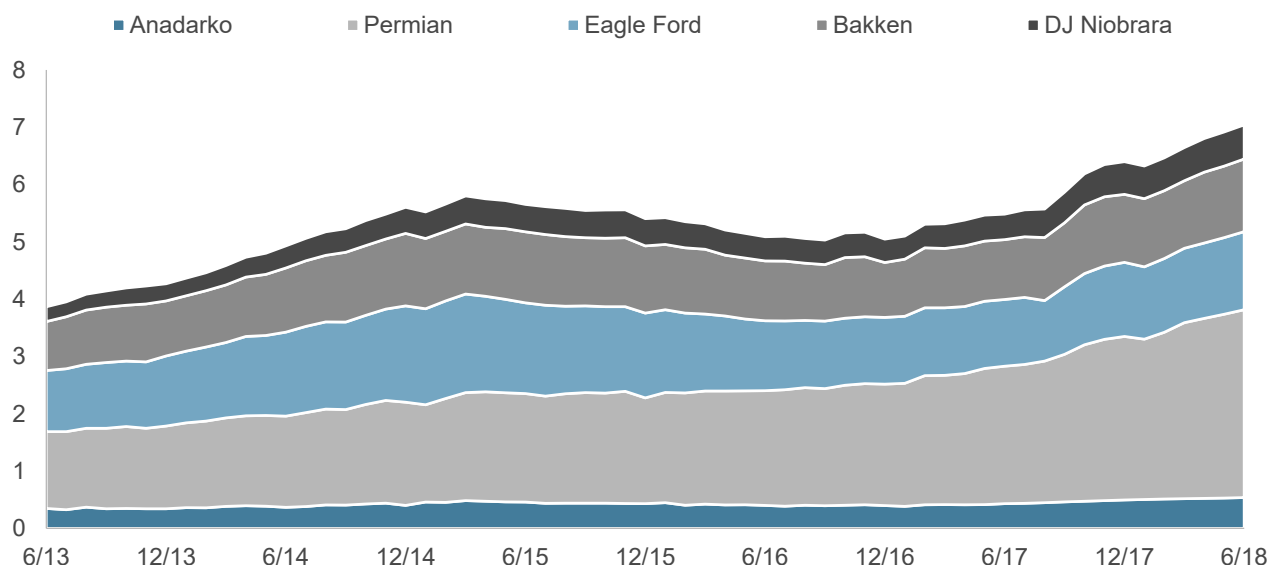
Canadian Production (Mbbbl/d) vs. WCS (\$/bbl)



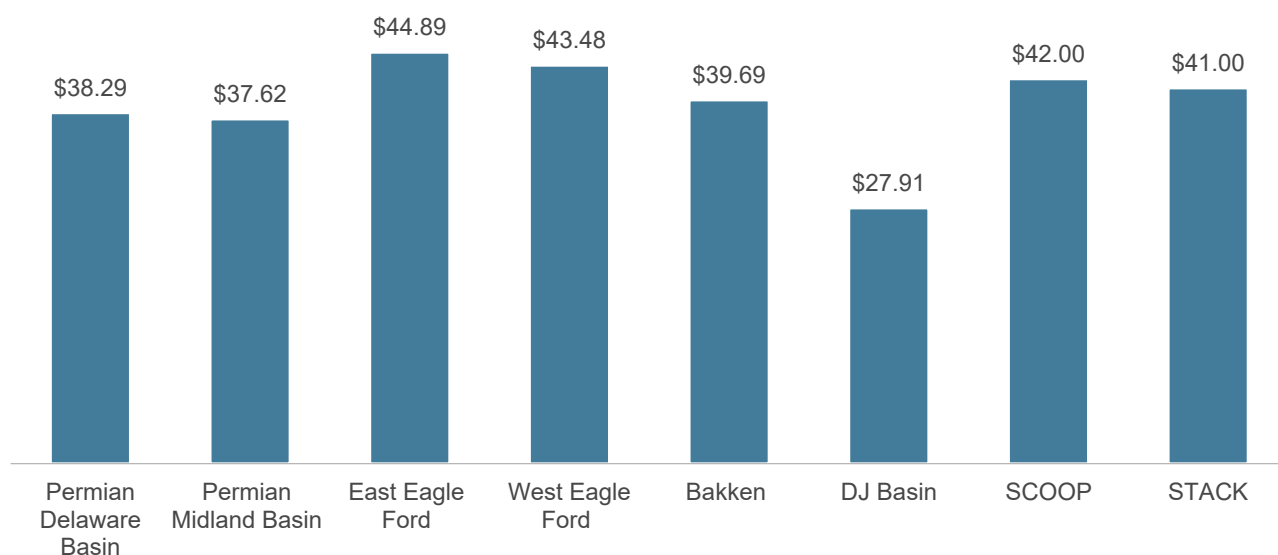
Note: Data collected on a monthly basis and is subject to a one-month lag for production.

Production (cont.)

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



Breakeven Pricing in Select Basins as of February 2018 (\$/bbl)



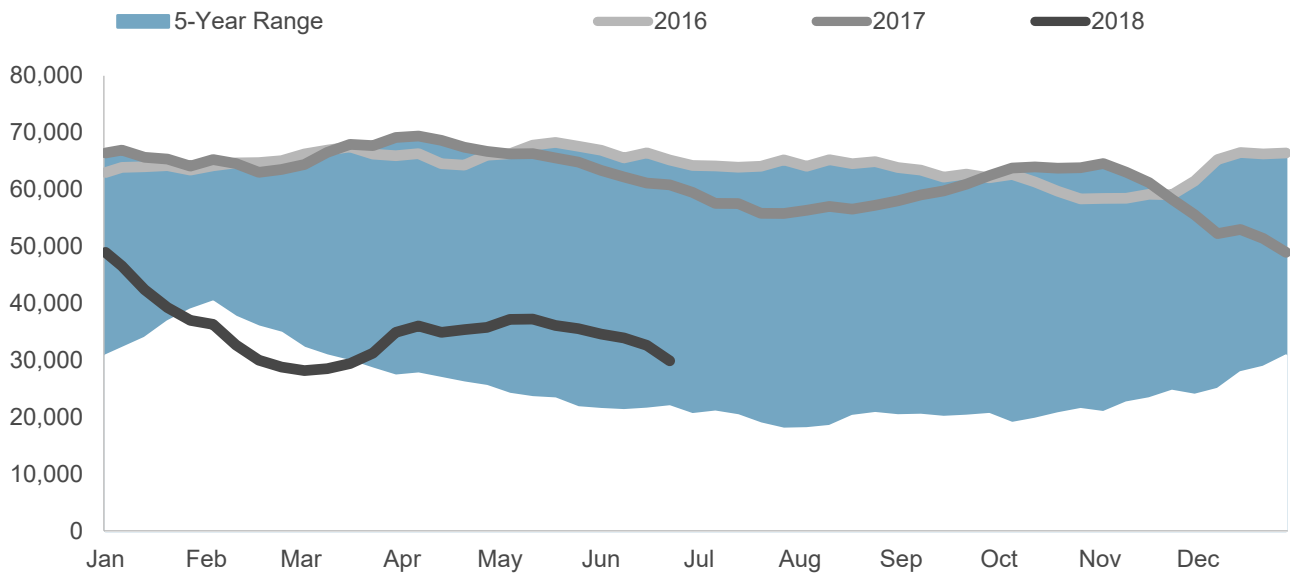
Note: All data as of June 30, 2018. Data collected on a monthly basis.

Source: Bloomberg, EIA, BTU Analytics, PLS.

(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 production for key regions.

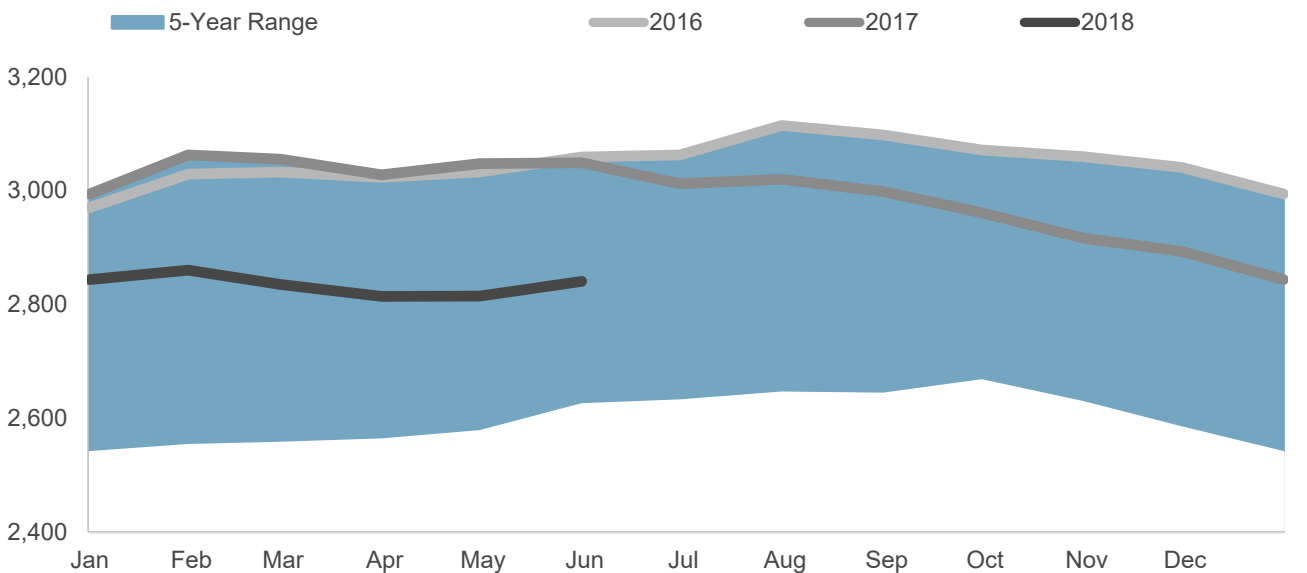
Inventory

U.S. Cushing Crude Inventory (Mbbl)



Note: Data collected on a weekly basis.

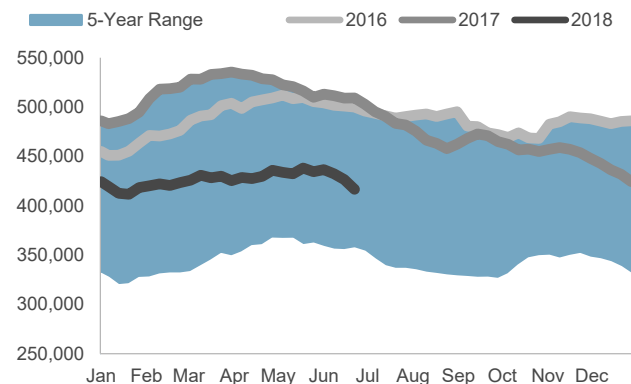
OECD Inventories (MMbbl)



Note: Data collected on a monthly basis.

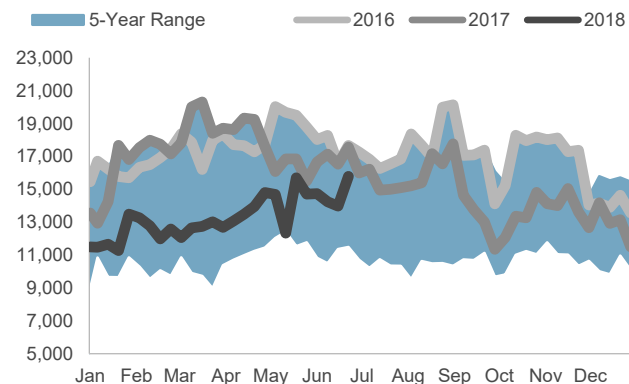
Inventory (Mbbbl)

Overall U.S. Crude Inventory

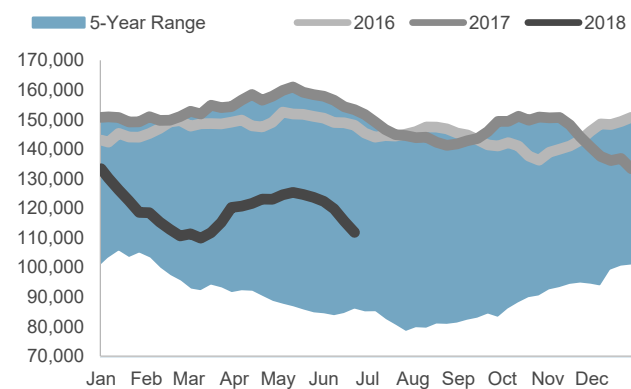


Note: Excludes strategic petroleum reserve (SPR).

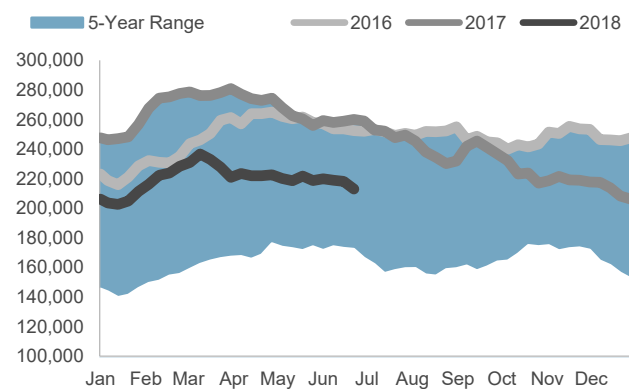
PADD I



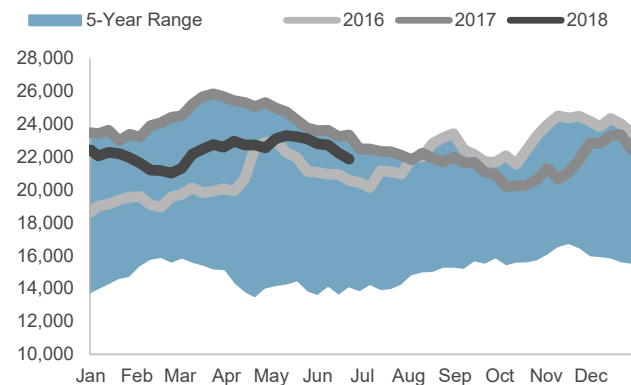
PADD II



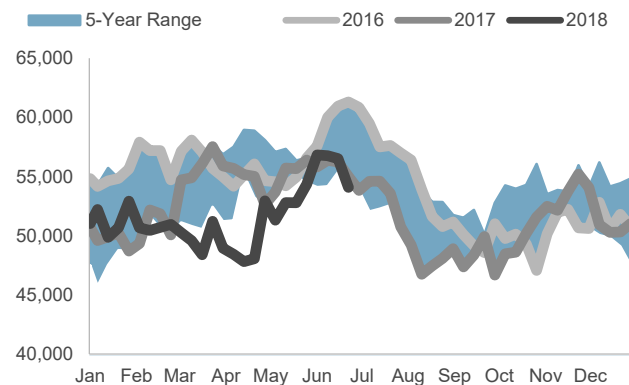
PADD III



PADD IV

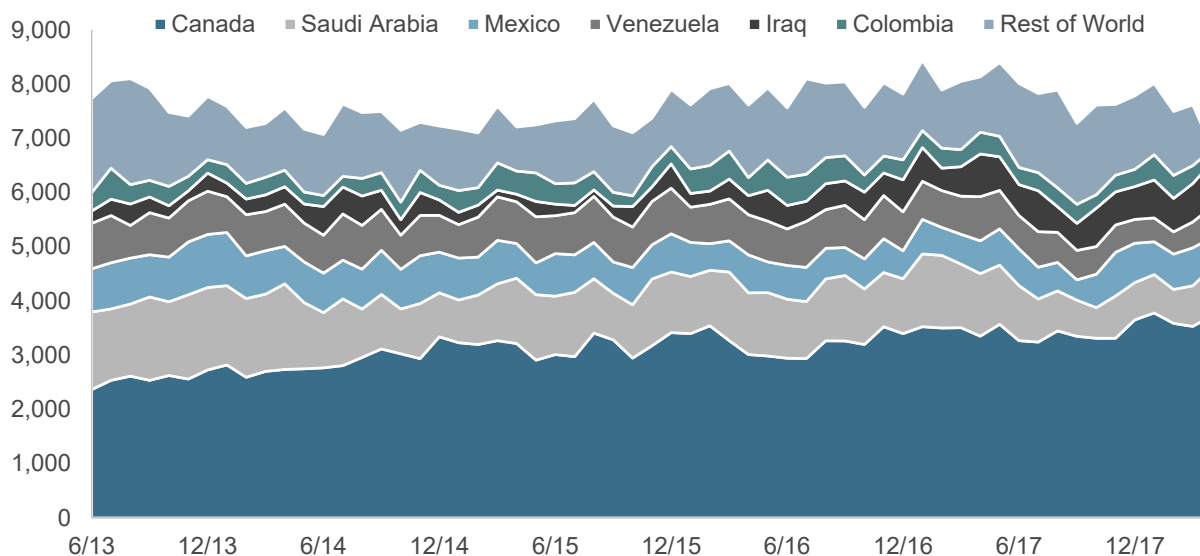


PADD V



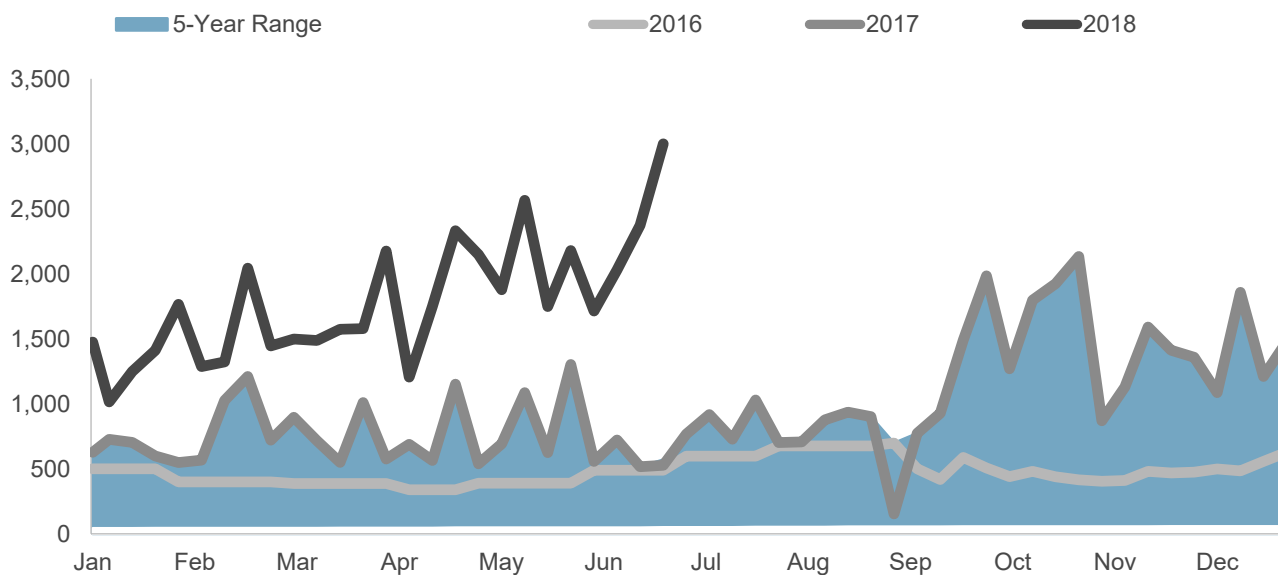
Trade

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



Note: Data collected on a monthly basis and is subject to a 2-4 month lag.

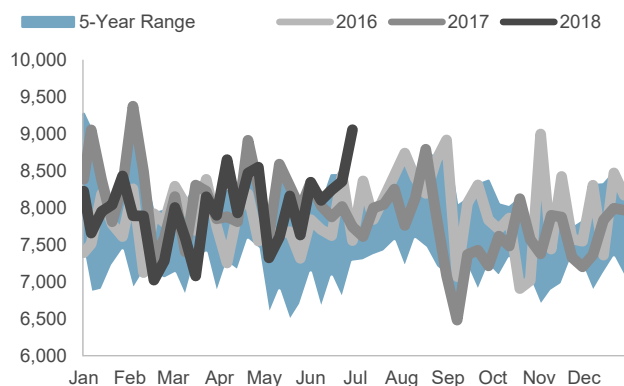
Total U.S. Crude Exports (Mbbl/d)



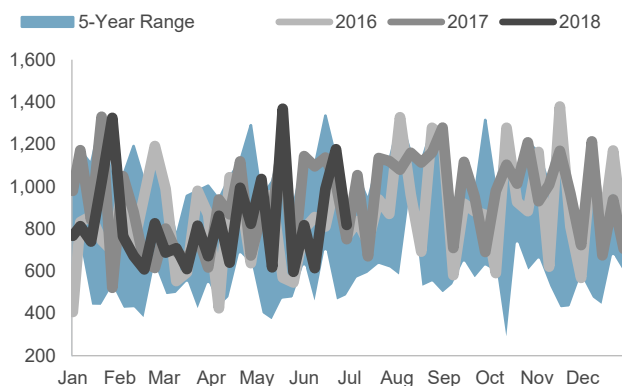
Note: Data collected on a weekly basis.

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

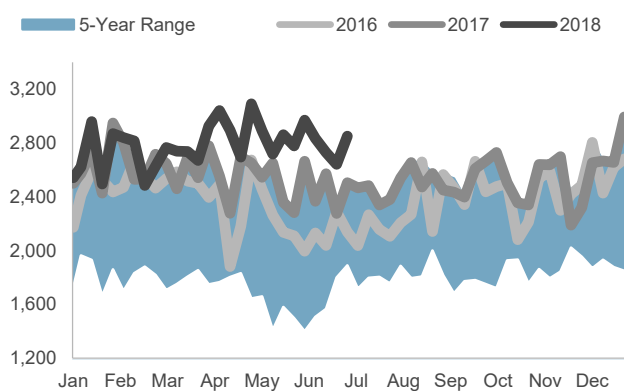
Overall U.S. Commercial Crude Imports



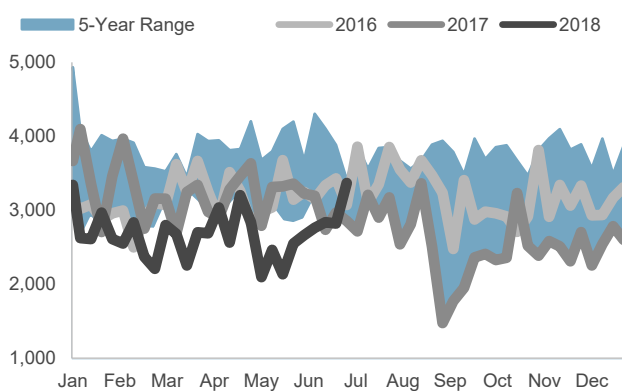
Destination – PADD I



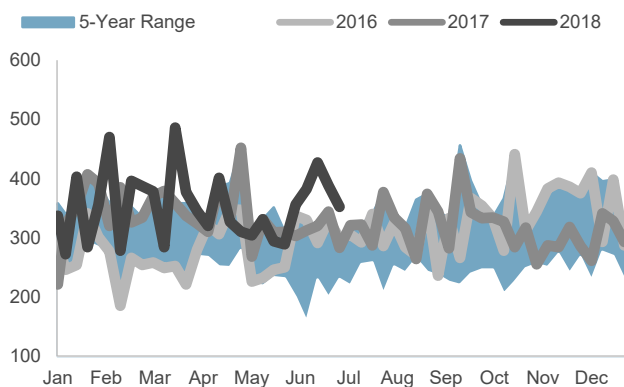
Destination – PADD II



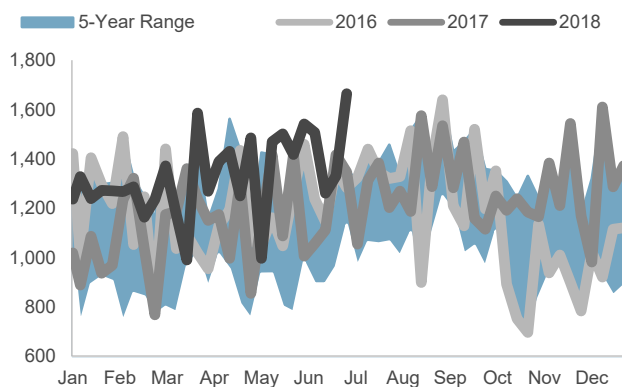
Destination – PADD III



Destination – PADD IV

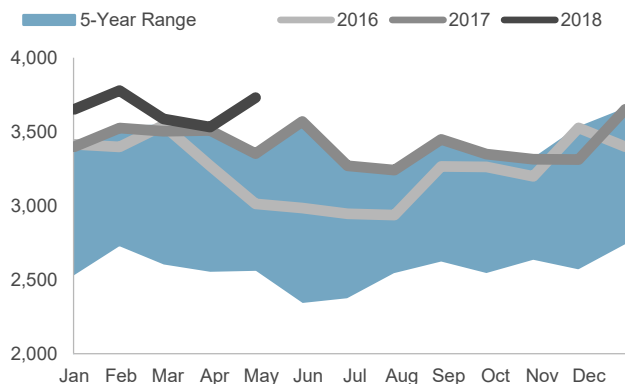


Destination – PADD V

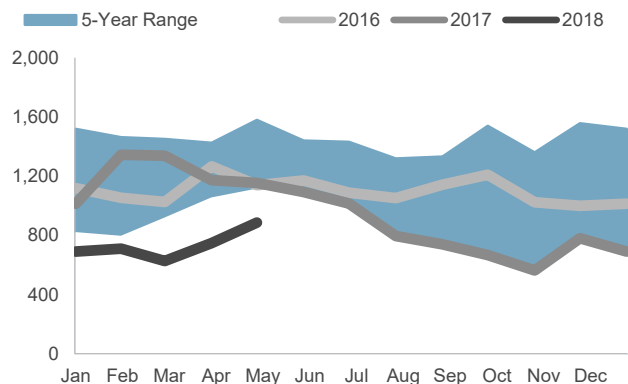


U.S. Imports by Country (Mbbbl/d)

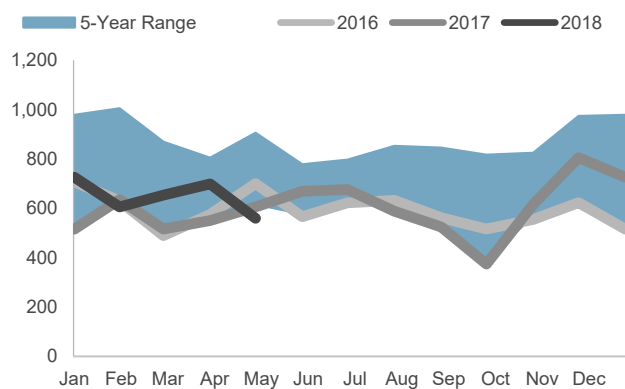
Canada



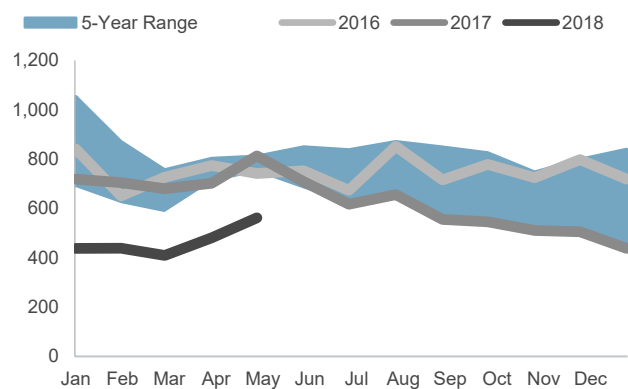
Saudi Arabia



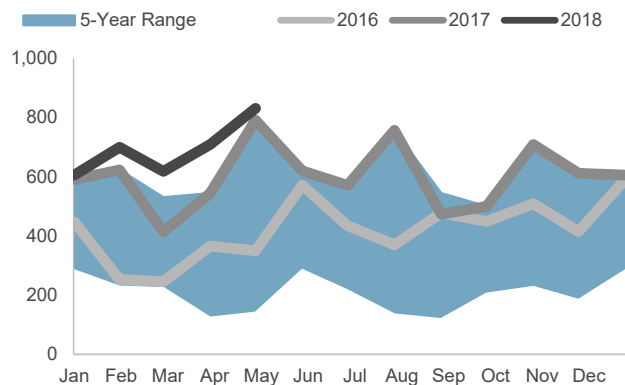
Mexico



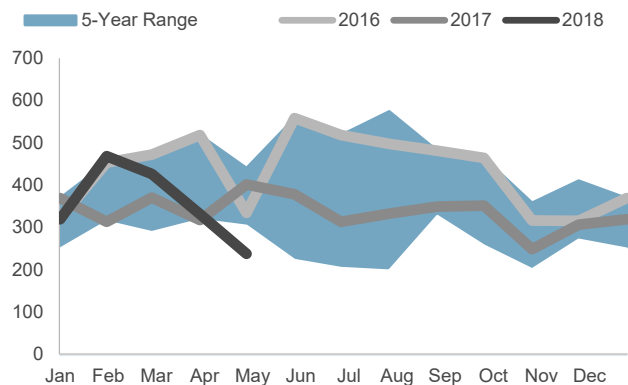
Venezuela



Iraq



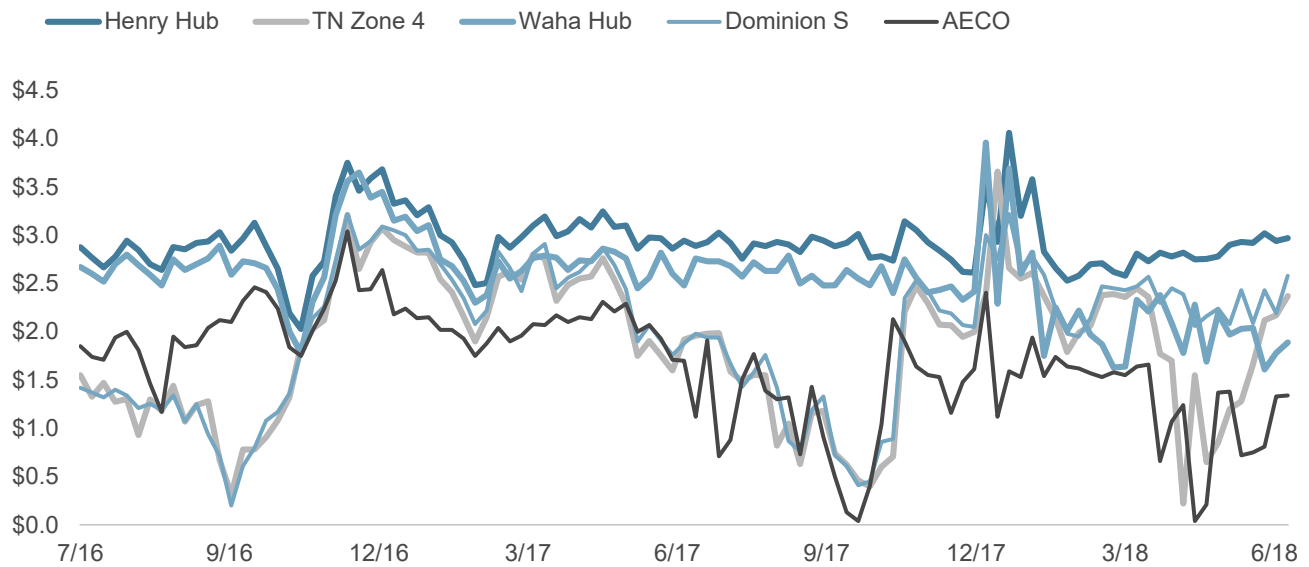
Colombia



	Page
1. Houlihan Lokey Snapshot	4
2. Crude Oil	8
3. Natural Gas and NGLs	23
4. LNG	36
5. Refining	40
6. Public Equity Markets Overview	52
7. M&A and Financing Activity	54
8. Rigs	62

Natural Gas Spot Pricing

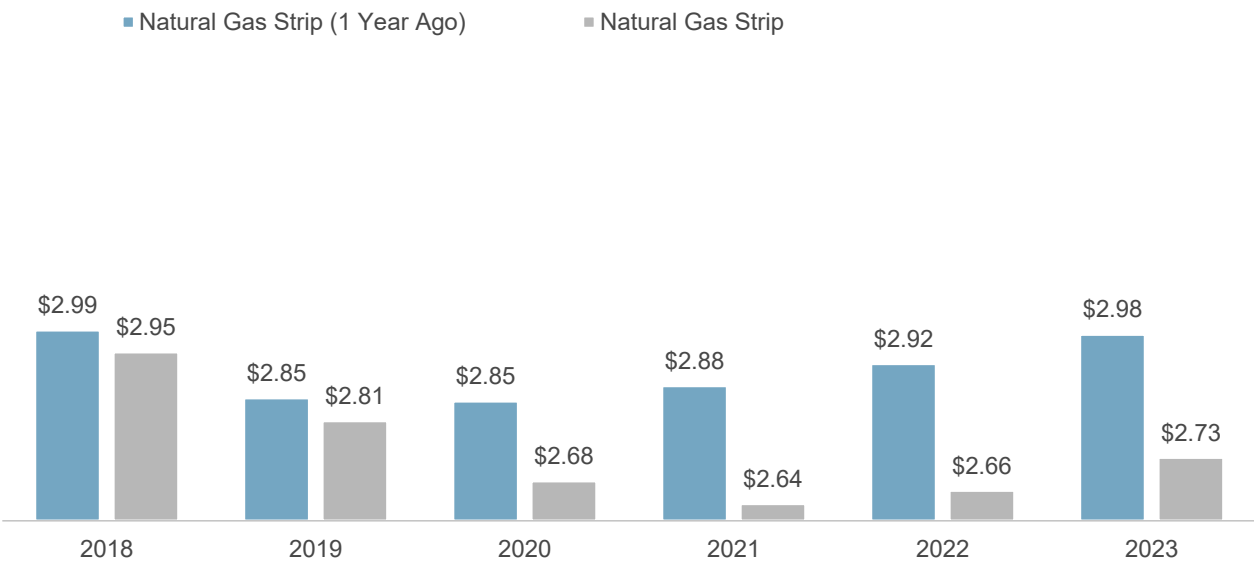
Pricing (\$/MMbtu)



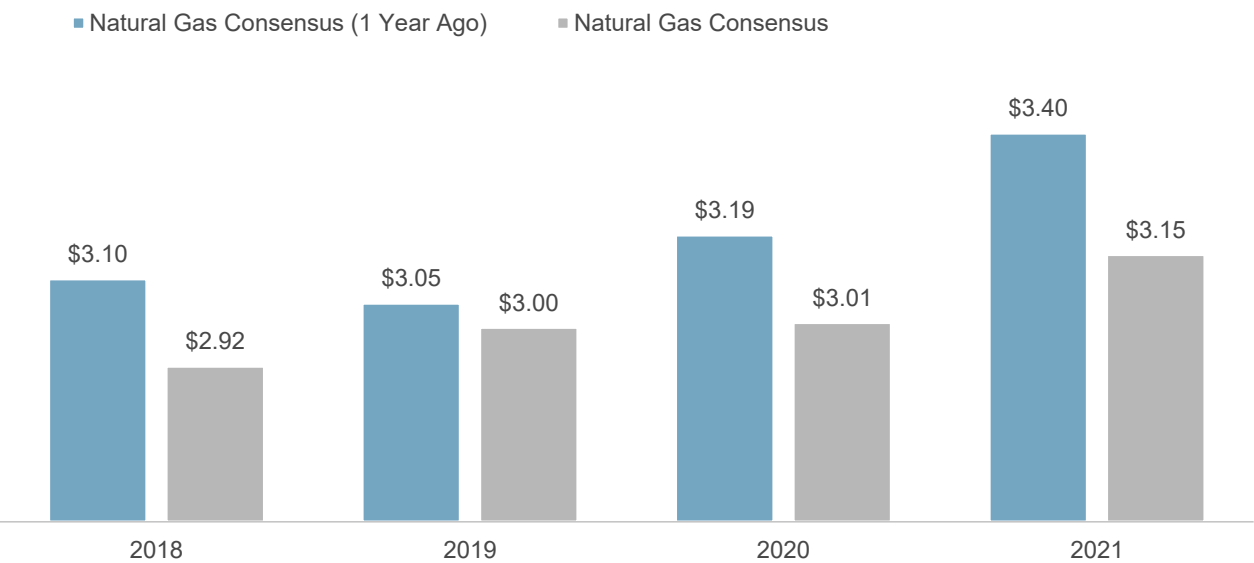
Note: All data as of June 30, 2018. Data collected on a weekly basis.
Source: Bloomberg.

Natural Gas Pricing

Strip Pricing Comparison (\$/MMbtu)



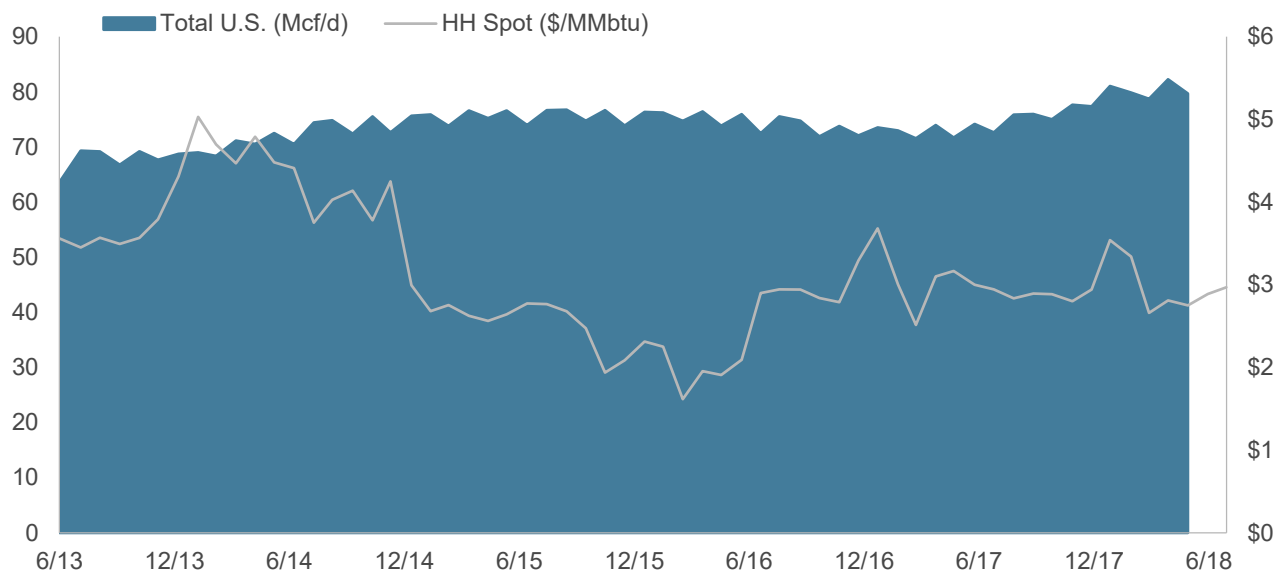
Consensus Pricing Comparison (\$/MMbtu)



*Note: All data as of June 30, 2018. Represents the average price for the remainder of 2018 and each year thereafter.
Source: Bloomberg.*

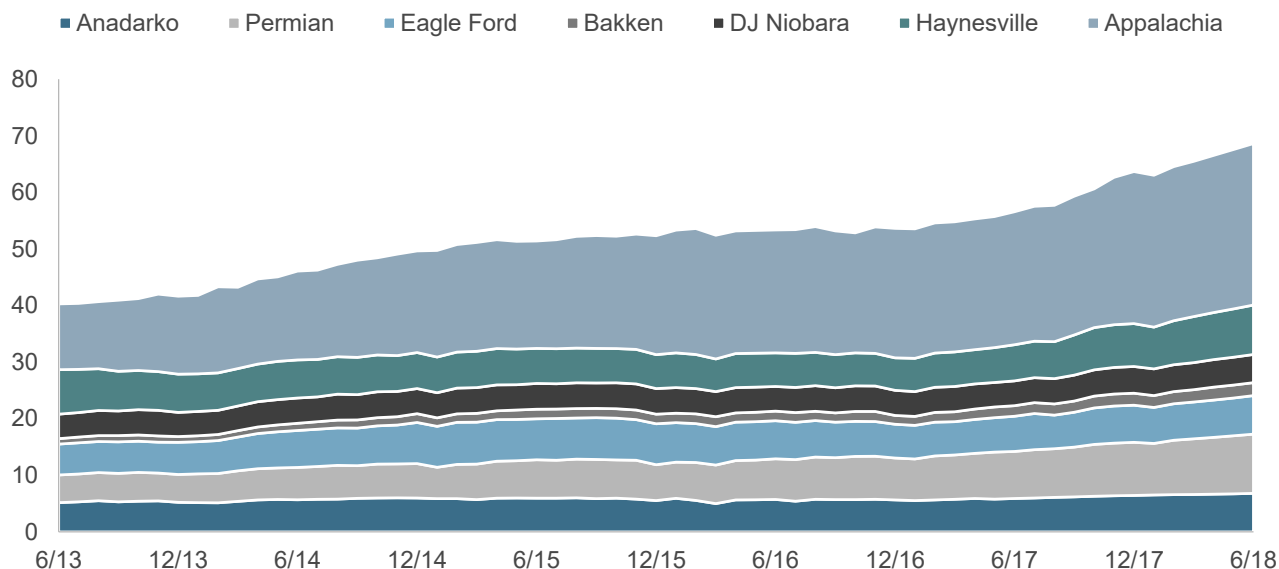
Natural Gas Production

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



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

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



Note: All data as of June 30, 2018. Data collected on a monthly basis.

Source: 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 production for key regions.

Differentials

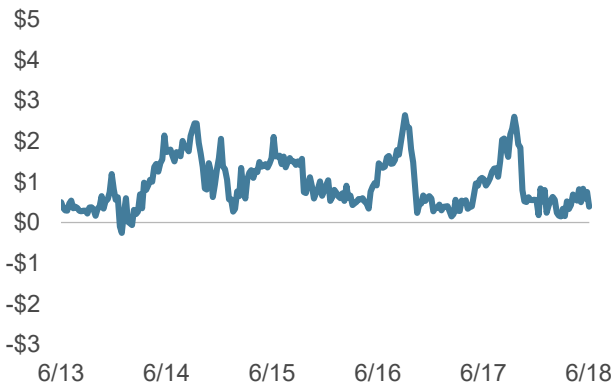
Regional Natural Gas Spot Pricing

Region	6/30/2018	6/30/2017	3/31/2018	YoY % Change	QoQ % Change
Henry Hub	\$3.0	\$2.9	\$2.8	0.9%	5.7%
<i>Benchmark</i>					
Dominion South	\$2.6	\$1.9	\$2.5	37.2%	4.5%
<i>Henry Hub – Dominion South</i>	\$0.4	\$1.1	\$0.3		
TN Zone 4	\$2.4	\$1.9	\$2.5	23.4%	-3.3%
<i>Henry Hub – TN Zone 4</i>	\$0.6	\$1.0	\$0.4		
AECO	\$1.3	\$1.7	\$1.6	-21.2%	-18.3%
<i>Henry Hub – AECO</i>	\$1.6	\$1.2	\$1.2		
Waha Hub	\$1.9	\$2.5	\$2.3	-23.8%	-18.9%
<i>Henry Hub – Waha</i>	\$1.1	\$0.5	\$0.5		

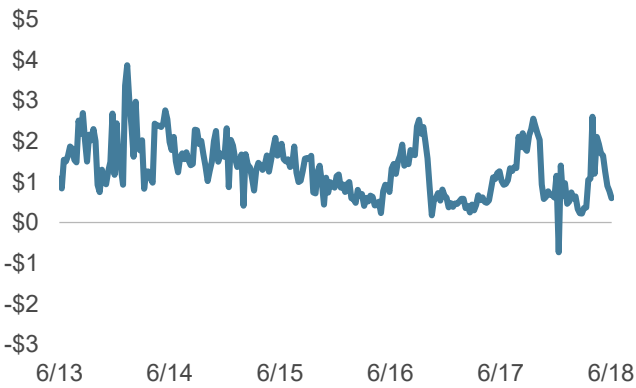
Note: All data as of June 30, 2018. Represents the average price for the remainder of 2018 and each year thereafter.
Source: Bloomberg.

Natural Gas – Differentials (\$/MMbtu)

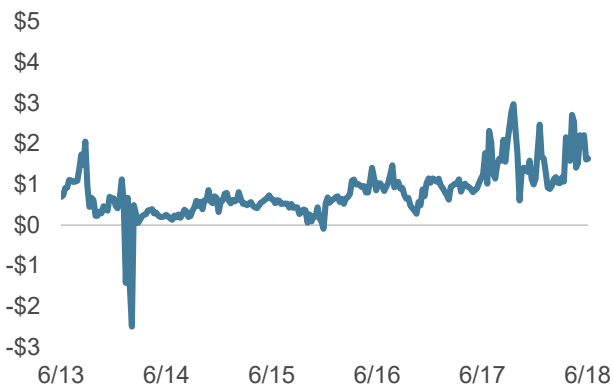
HH – Dominion South



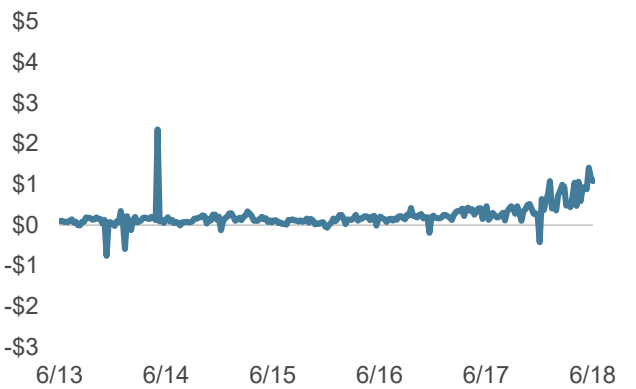
HH – TN Zone 4



HH – AECO



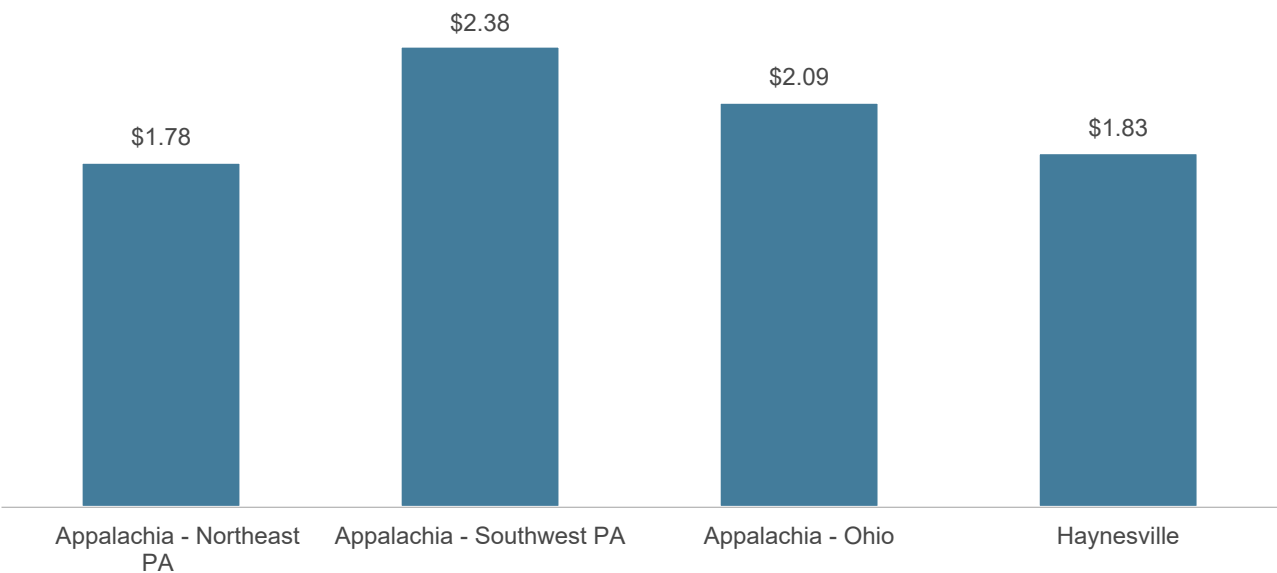
HH – Waha Hub



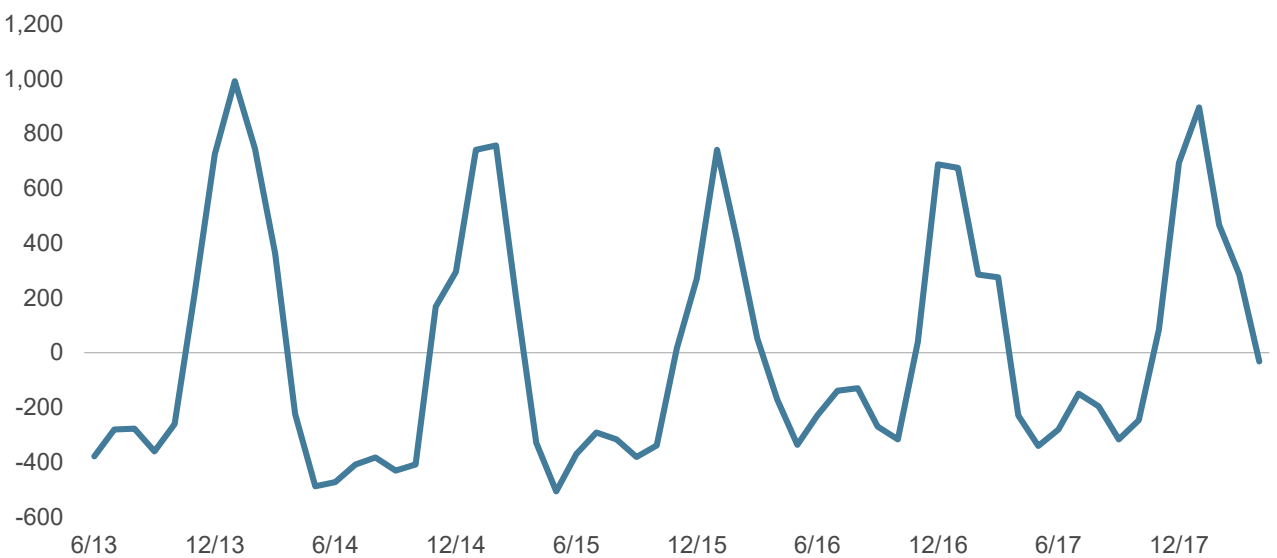
*Note: All data as of June 30, 2018. Data collected on a weekly basis.
Source: Bloomberg.*

Natural Gas

Breakeven Pricing in Select Basins (\$/MMbtu)



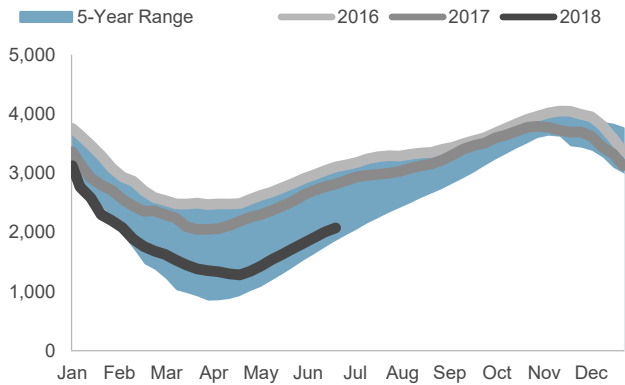
U.S. Natural Gas Withdrawal (Bcf)



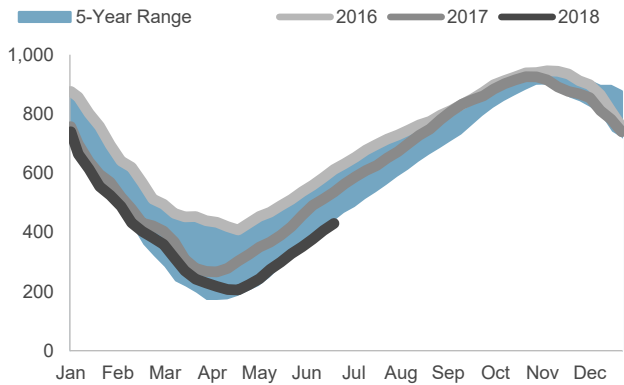
Note: Data collected on a monthly basis and is subject to irregular updates.

Natural Gas Storage (Bcf)

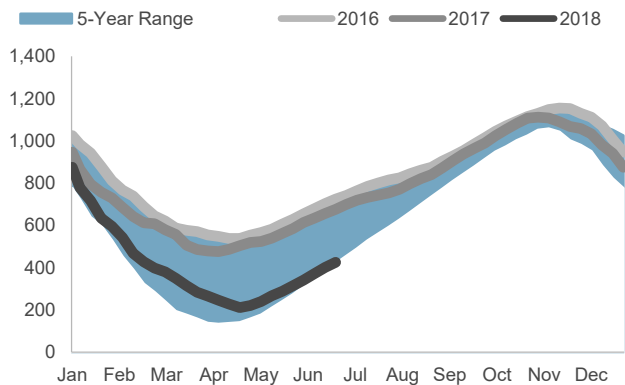
Total U.S.



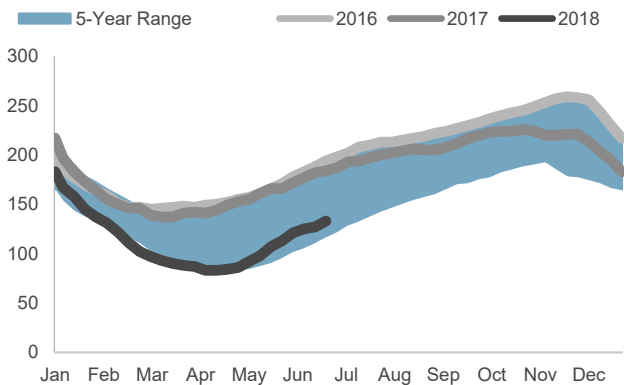
East



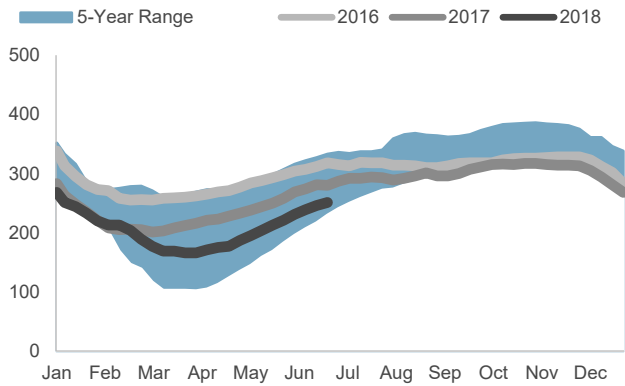
Midwest



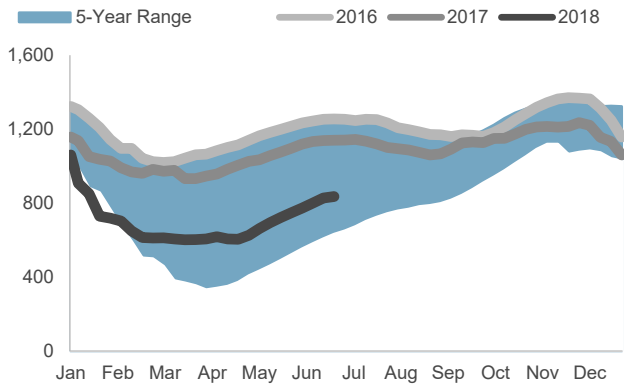
Mountain



Pacific



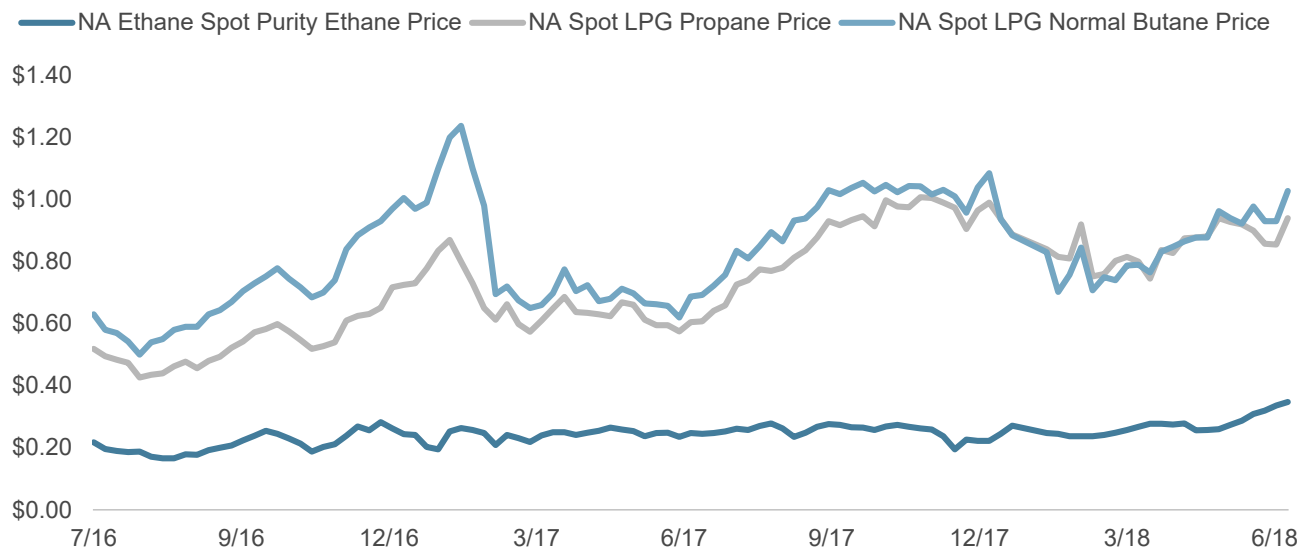
South Central



Note: All data as of June 30, 2018. Data collected on a weekly basis.
Source: Bloomberg.

NGLs Spot Pricing

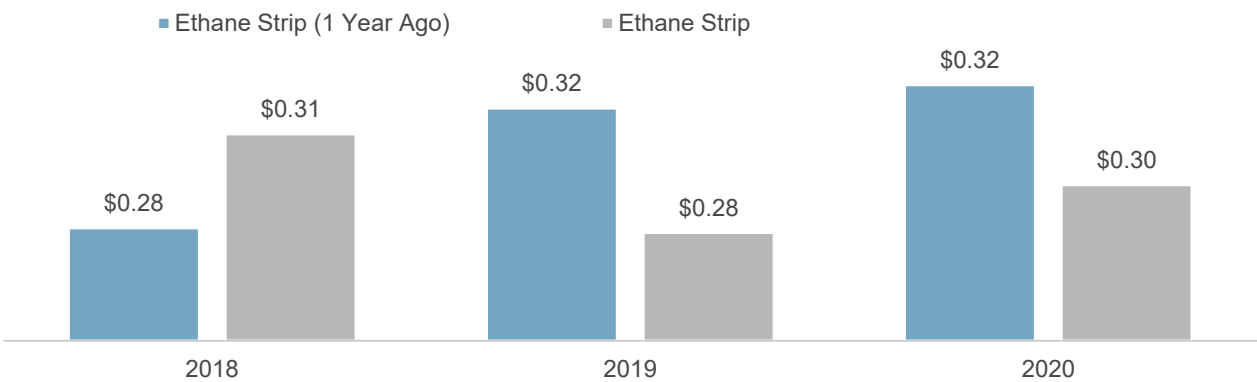
Pricing (\$/gal)



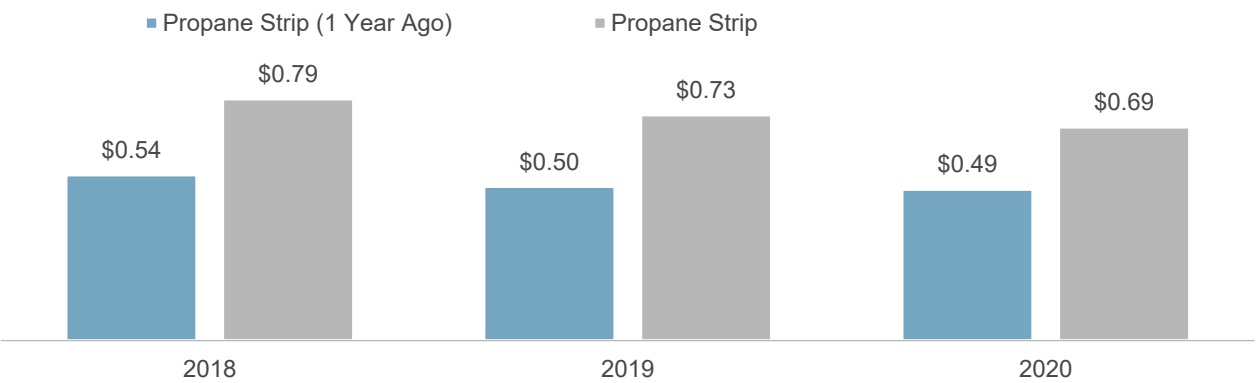
*Note: All data as of June 30, 2018. Data collected on a weekly basis.
Source: Bloomberg.*

NGLs Strip Pricing

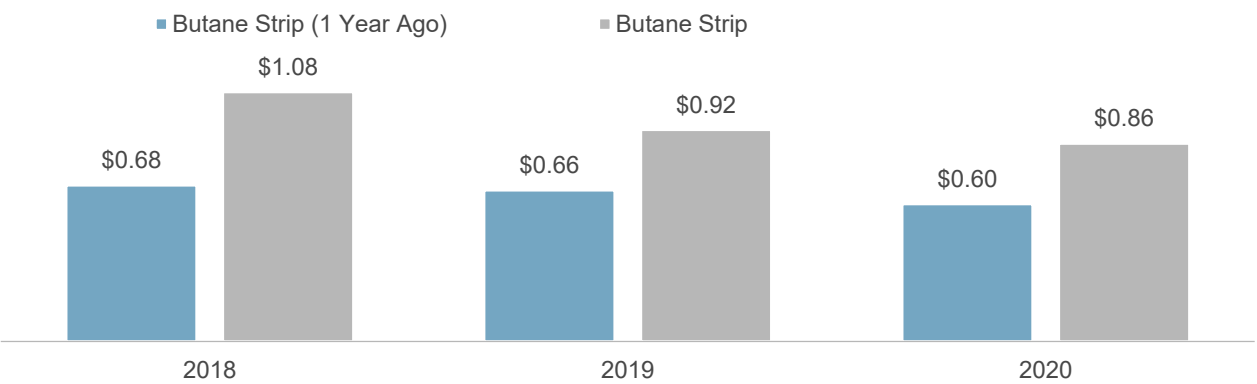
Ethane Strip Pricing Comparison (\$/gal)



Propane Strip Pricing Comparison (\$/gal)

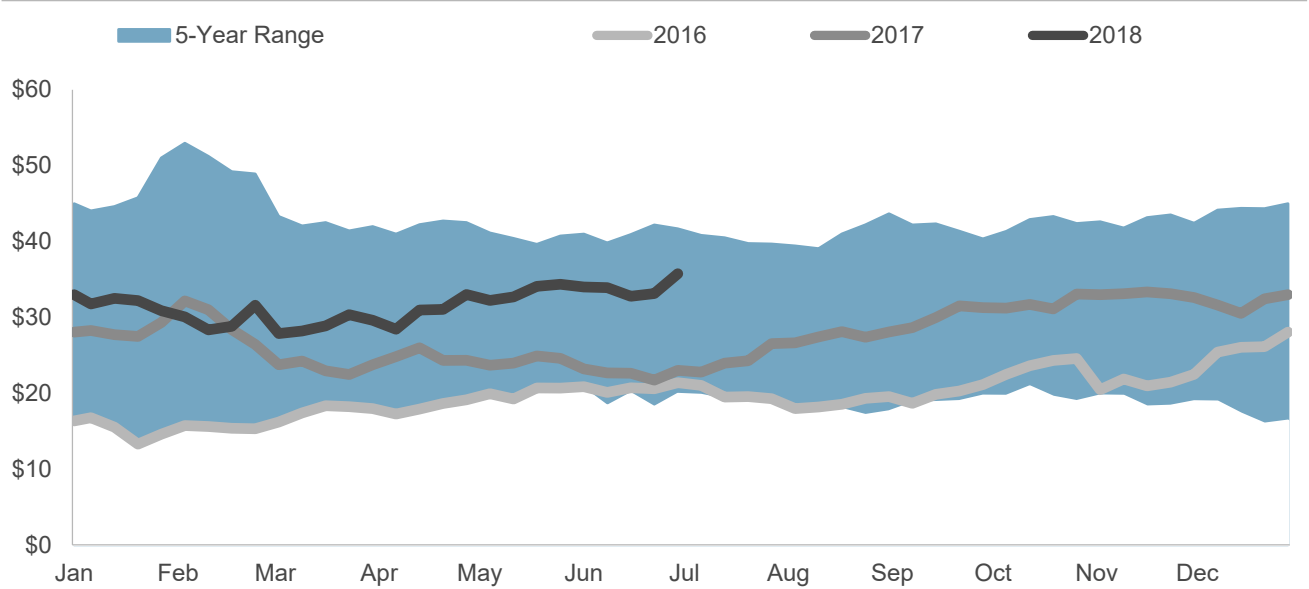


Butane Strip Pricing Comparison (\$/gal)



NGLs Frac Spreads

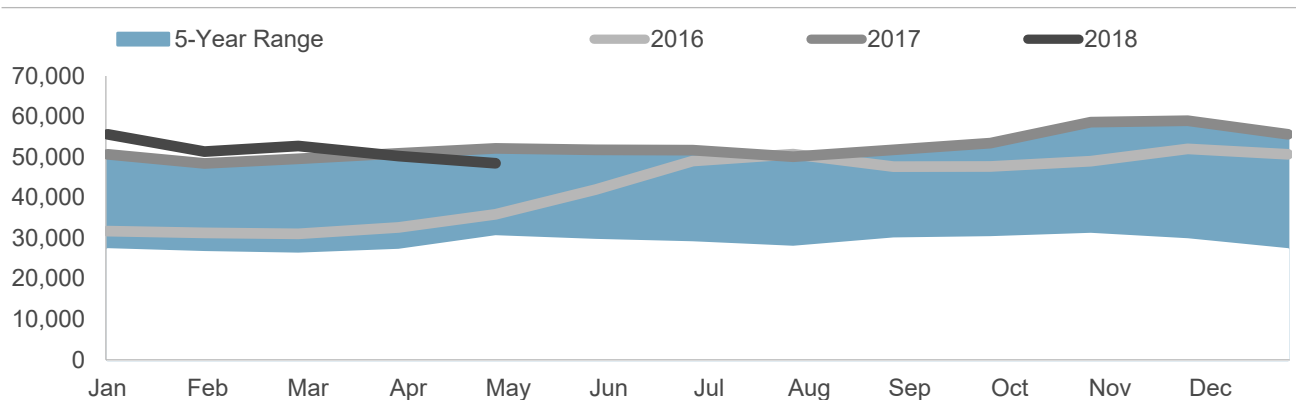
Mont Belvieu Frac Spread (\$/bbl)



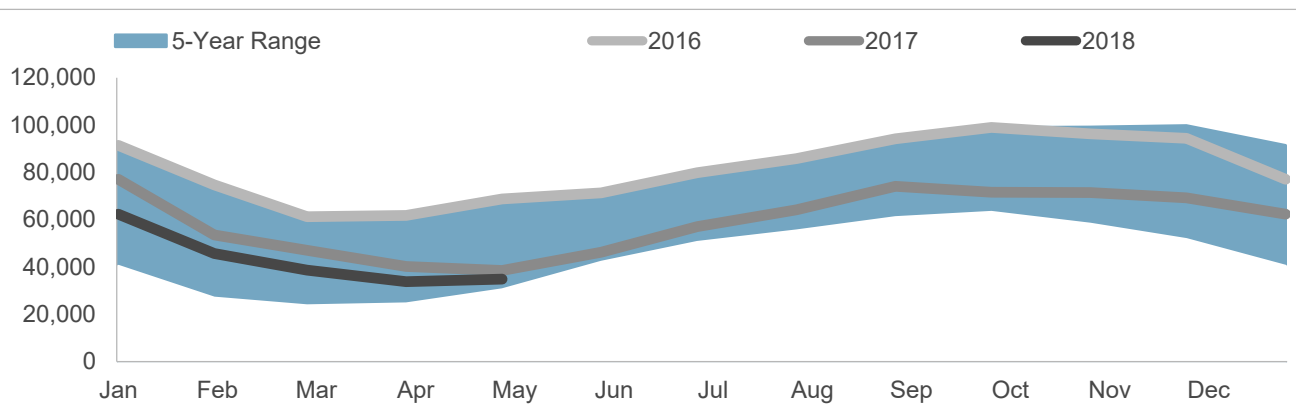
Note: All data as of June 30, 2018.
Source: Bloomberg.

NGLs Inventory

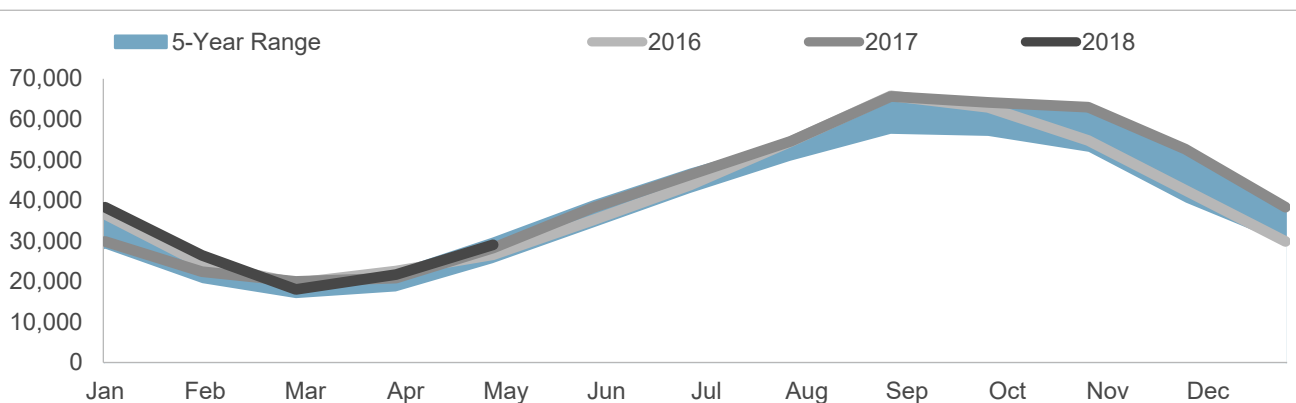
U.S. Ending Stocks Ethane (Mbbbls/d)



U.S. Ending Stocks Propane (Mbbbls/d)

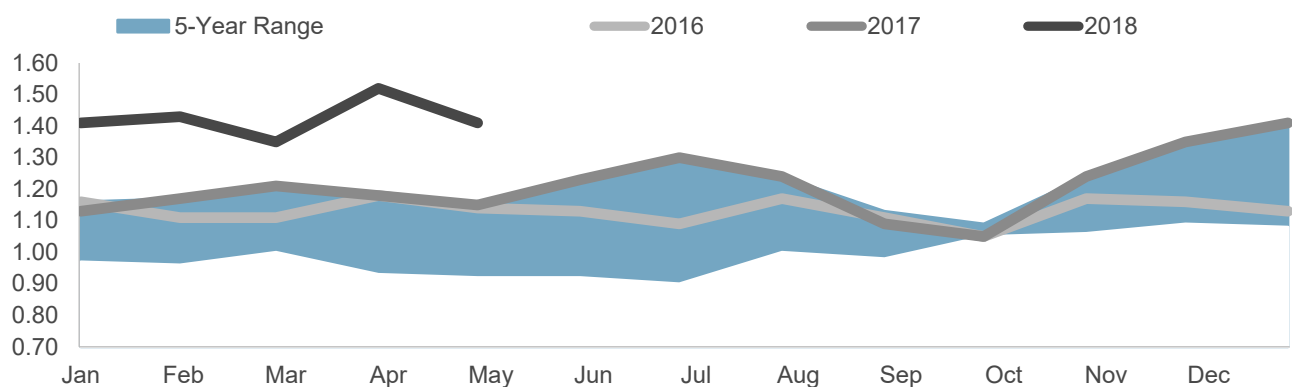


Normal Butane/Butylene (Mbbbls/d)

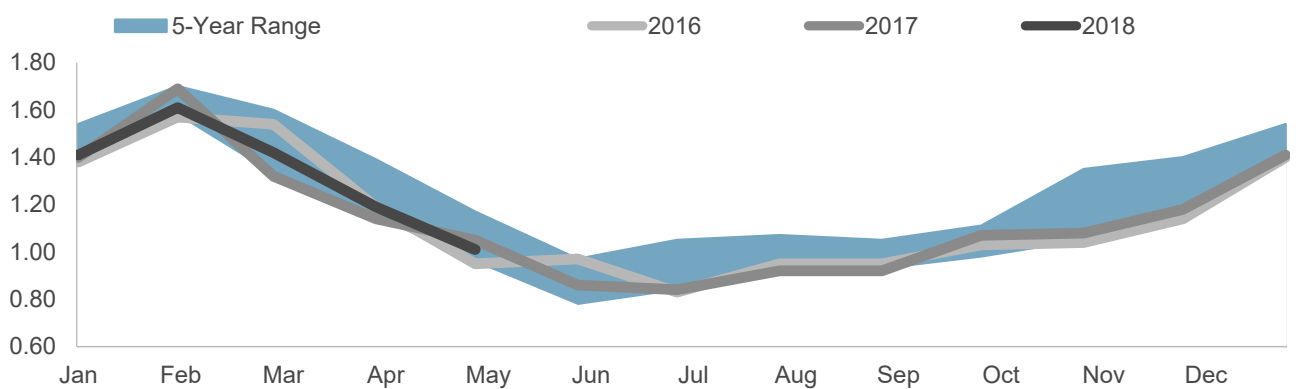


NGLs Consumption

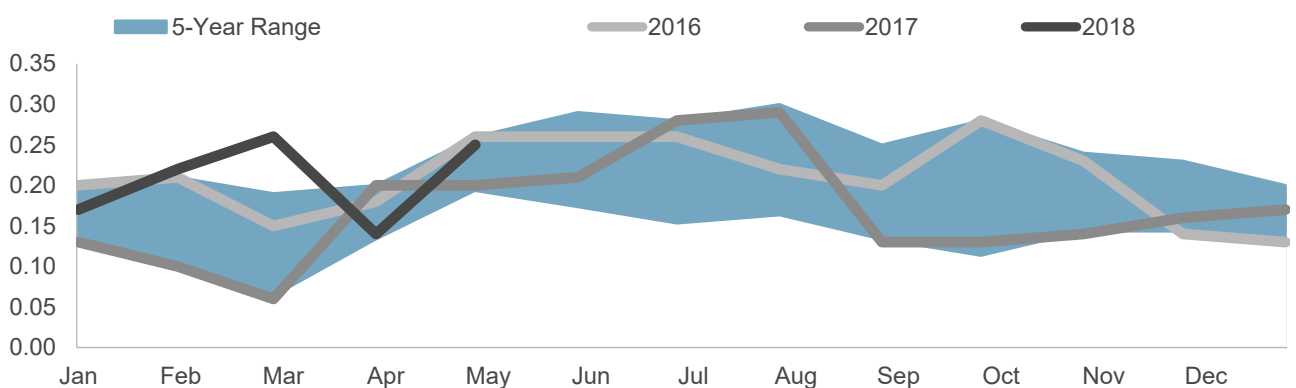
U.S. Ethane/Ethylene Consumption (MMboe/d)



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



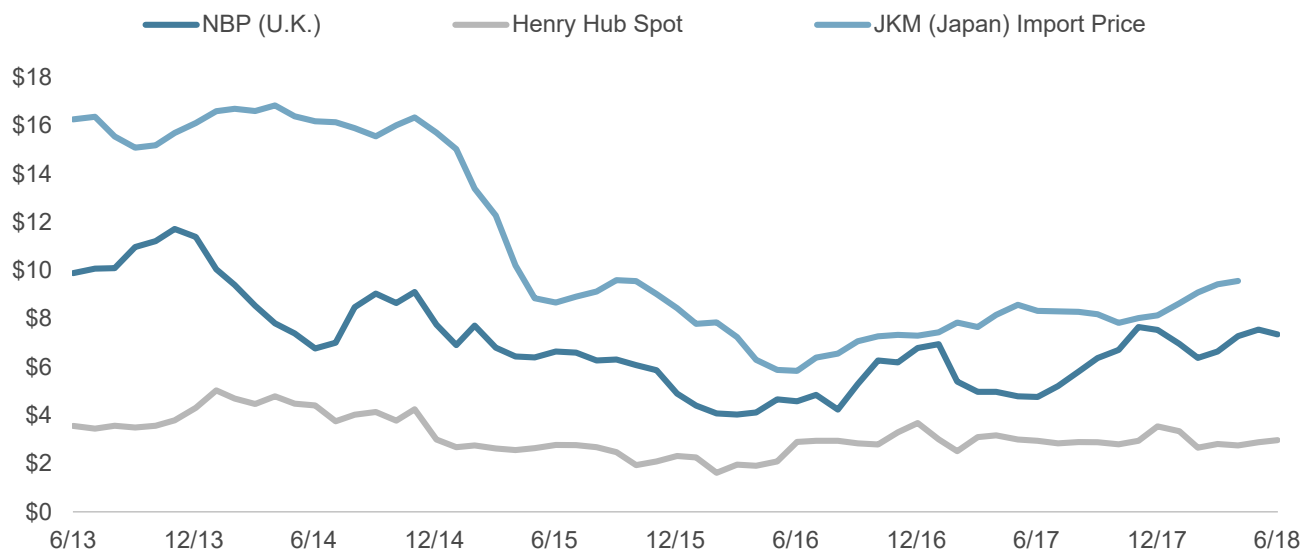
U.S. Butanes/Butylenes Consumption (MMboe/d)



	Page
1. Houlihan Lokey Snapshot	4
2. Crude Oil	8
3. Natural Gas and NGLs	23
4. LNG	36
5. Refining	40
6. Public Equity Markets Overview	52
7. M&A and Financing Activity	54
8. Rigs	62

Spot Pricing

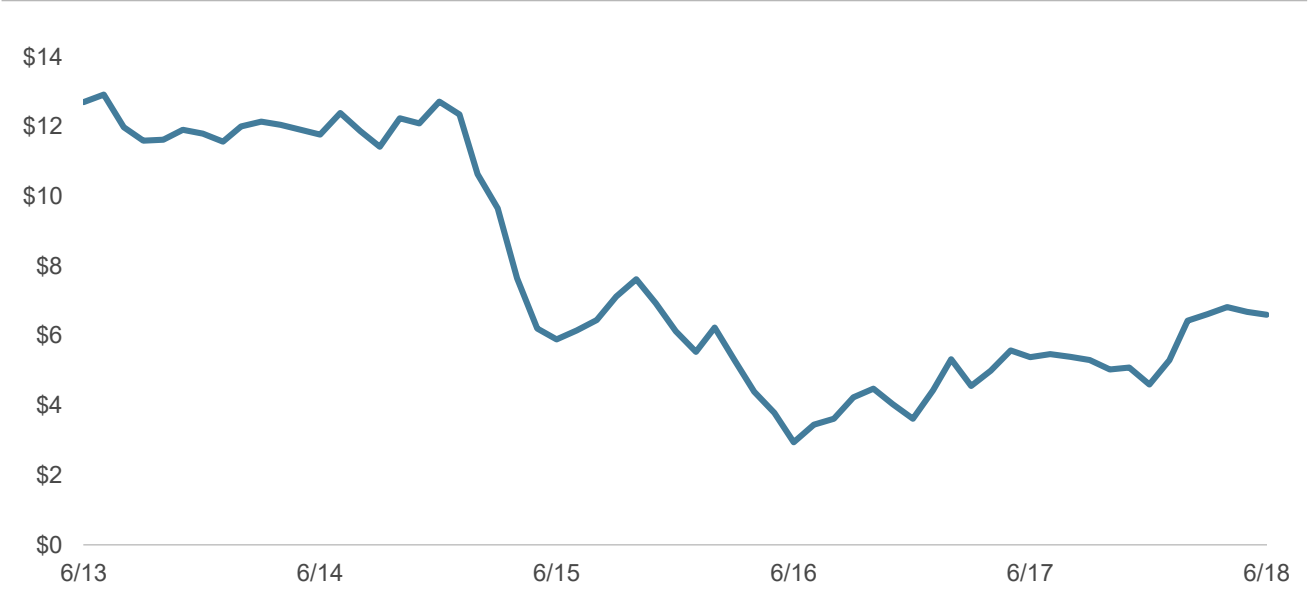
Spot Pricing (\$/MMbtu)



*Note: All data as of June 30, 2018. Data collected on a monthly basis.
Note: NBP (U.K.) refers to the ICE UK Natural Gas NBP Month 1 Futures.
Source: Bloomberg.*

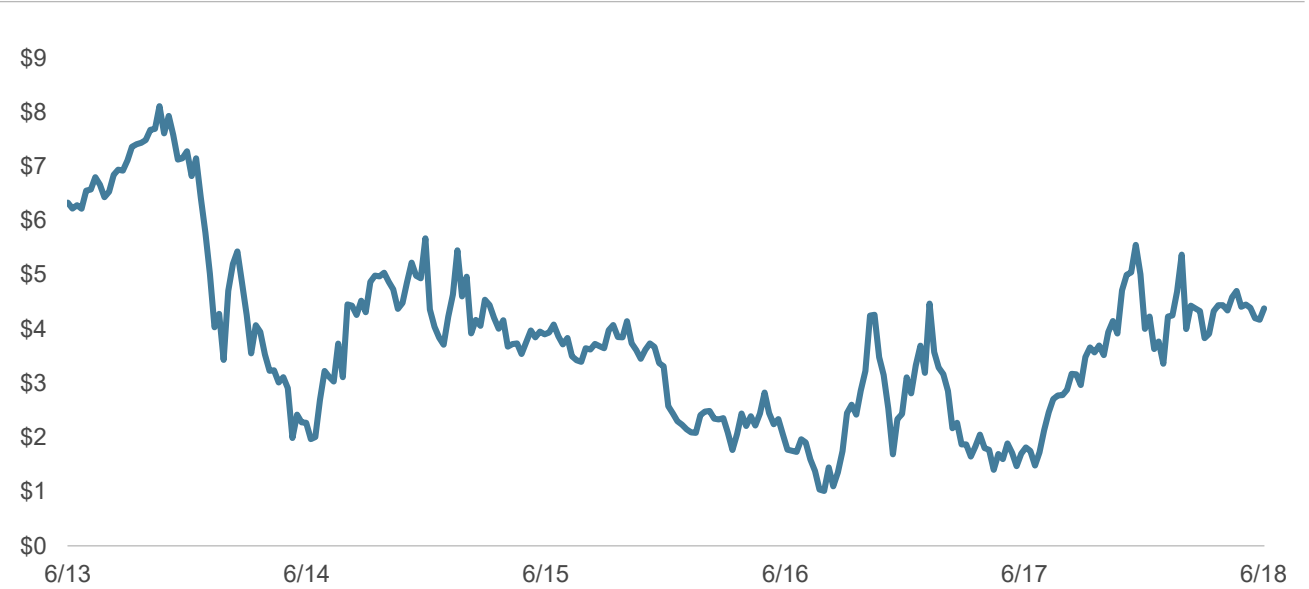
Differentials

JKM – Henry Hub (\$/MMbtu)



Note: Data collected on a monthly basis.

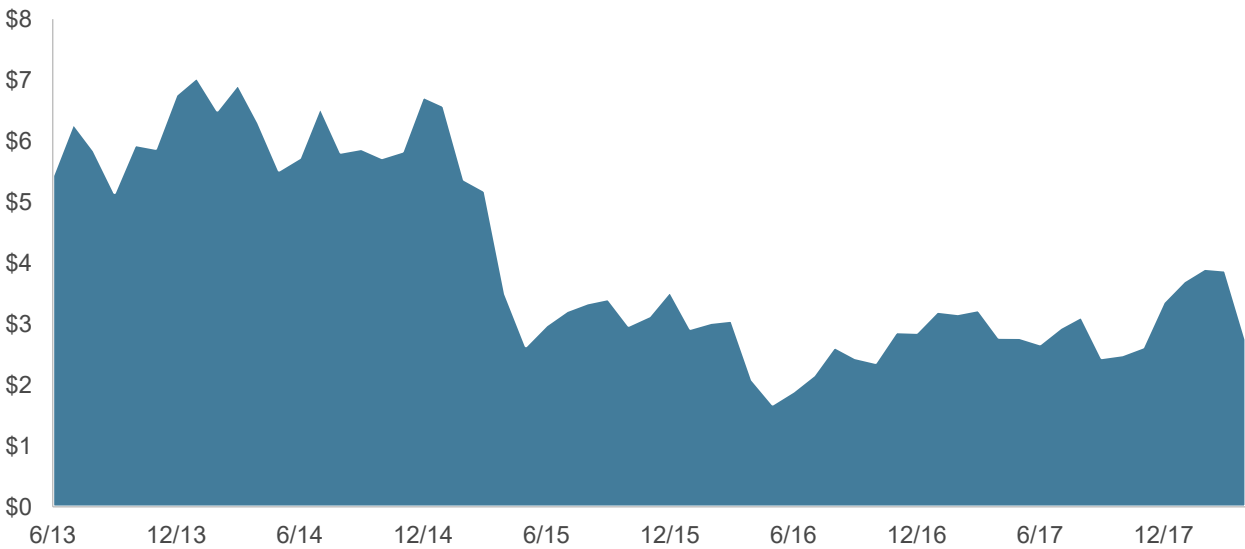
NBP – Henry Hub (\$/MMbtu)



Note: Data collected on a weekly basis.

Exports

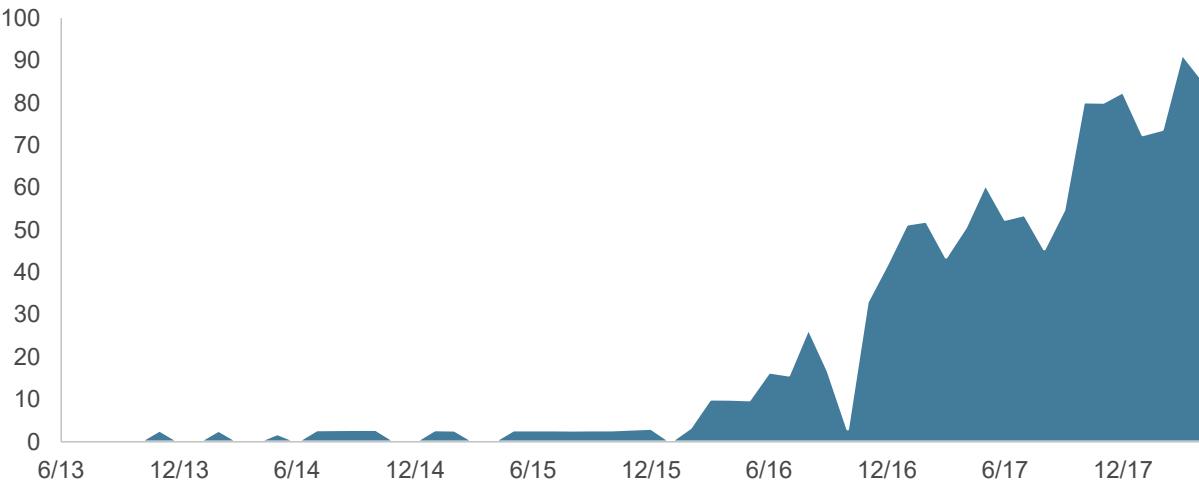
LNG Japan Import Value (US\$ in billions)



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

U.S. LNG Exports (Bcf)

■ US Liquefied Natural Gas Exports (Bcf)

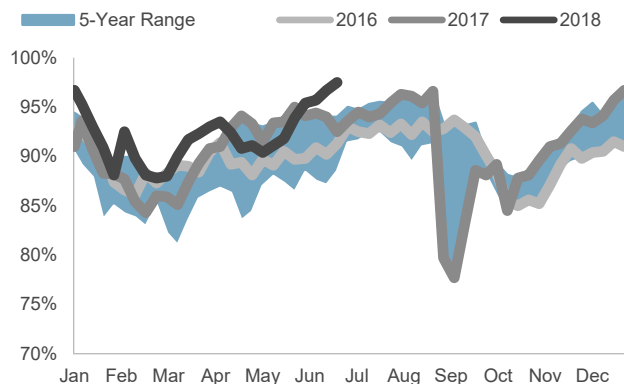


Note: Data collected on a monthly basis and is subject to a two-month lag.

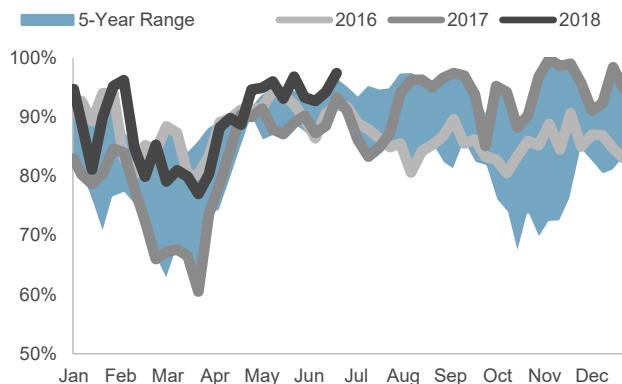
	Page
1. Houlihan Lokey Snapshot	4
2. Crude Oil	8
3. Natural Gas and NGLs	23
4. LNG	36
5. Refining	40
6. Public Equity Markets Overview	52
7. M&A and Financing Activity	54
8. Rigs	62

Refining – Utilization (%)

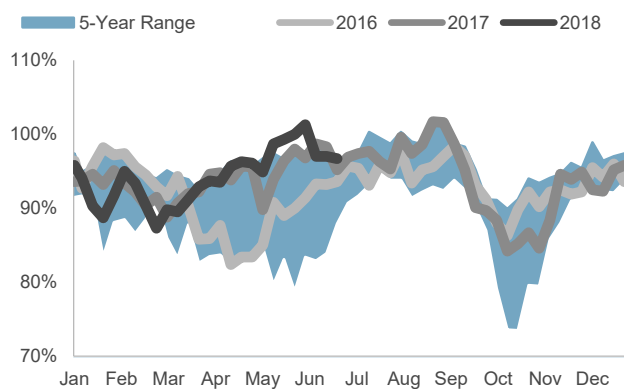
Total U.S.



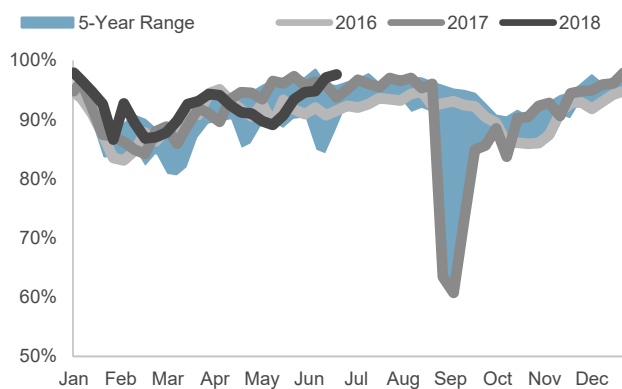
PADD I



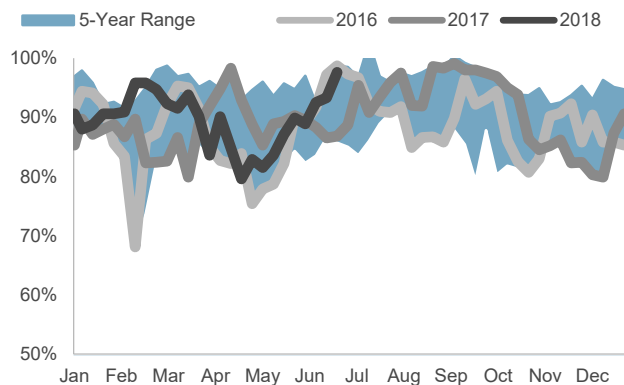
PADD II



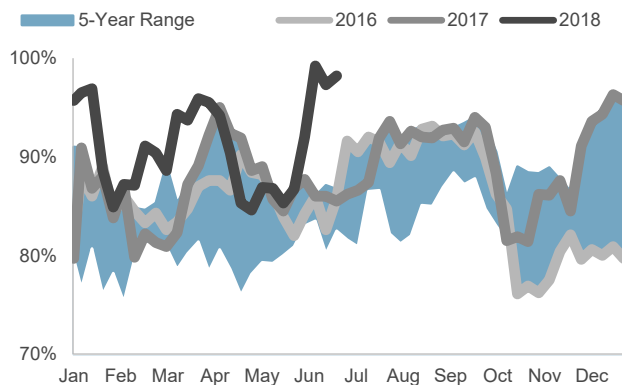
PADD III



PADD IV

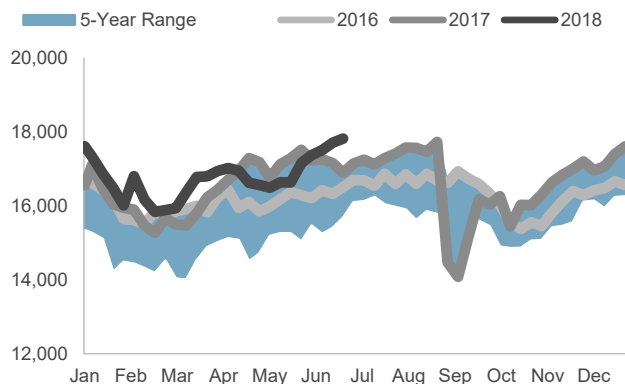


PADD V

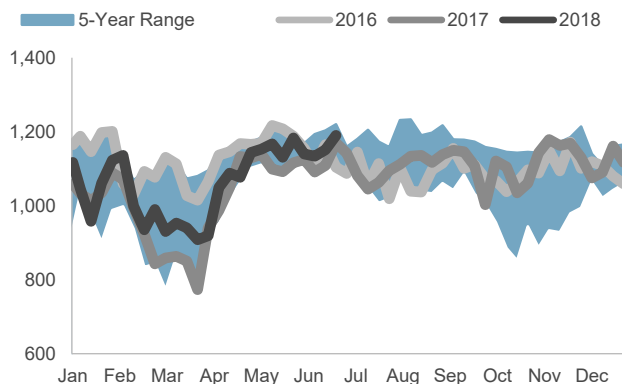


Refining – U.S. Crude Runs (Mbbbl/d)

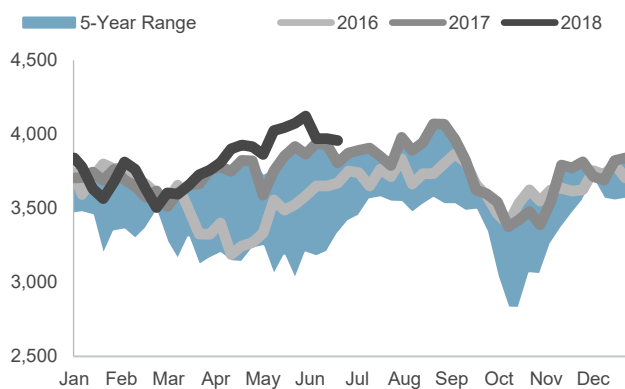
Total U.S.



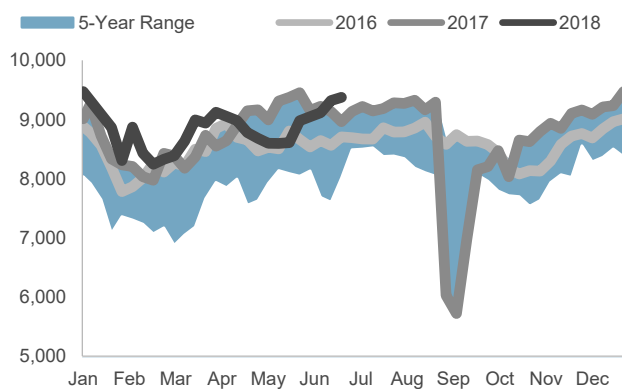
PADD I



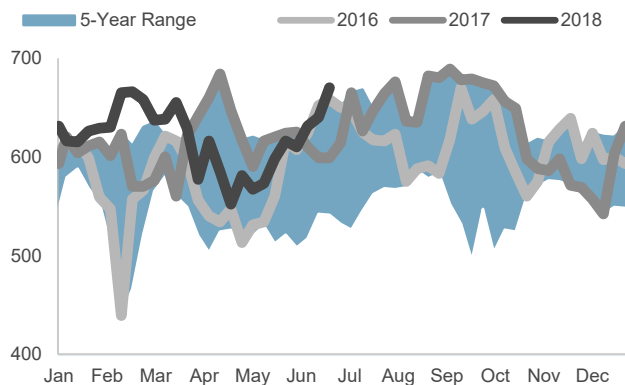
PADD II



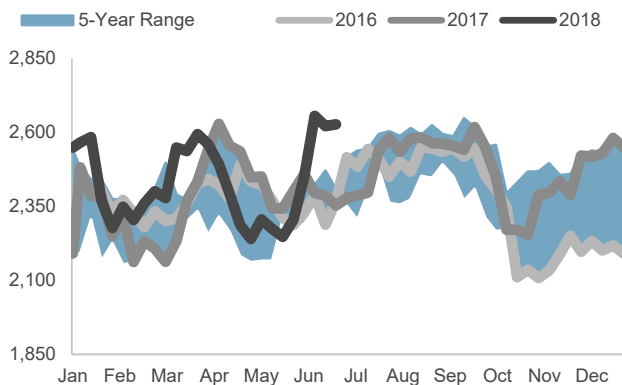
PADD III



PADD IV

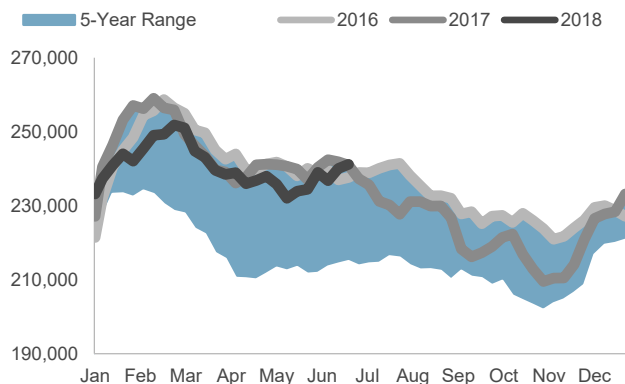


PADD V

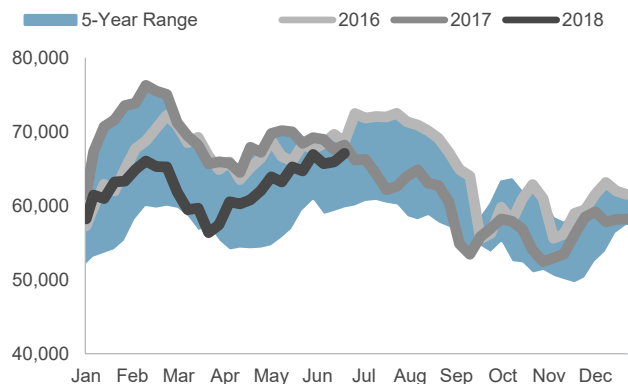


Refining – Motor Gasoline Inventory (Mbbl)

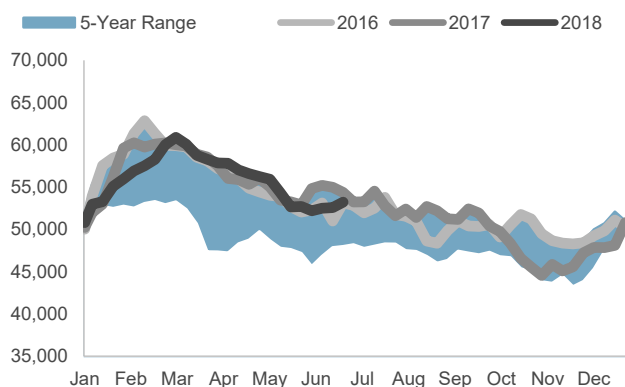
Total U.S.



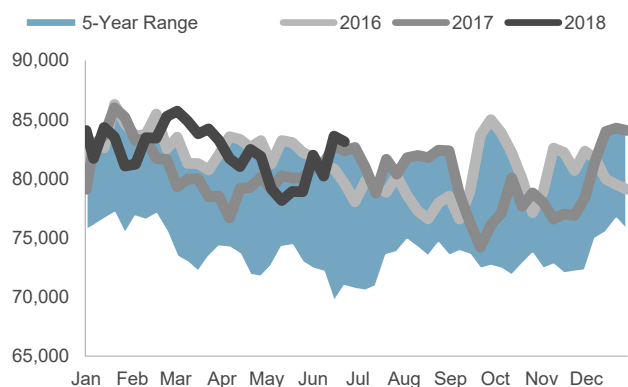
PADD I



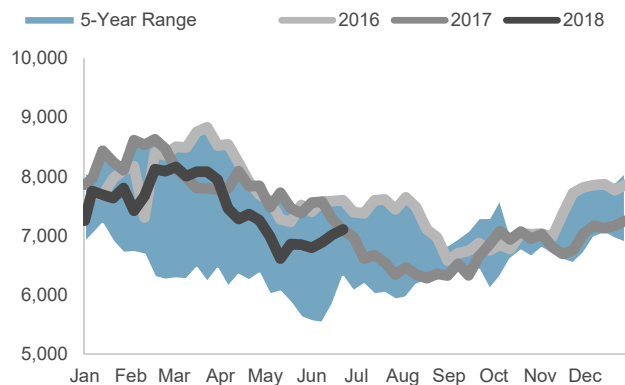
PADD II



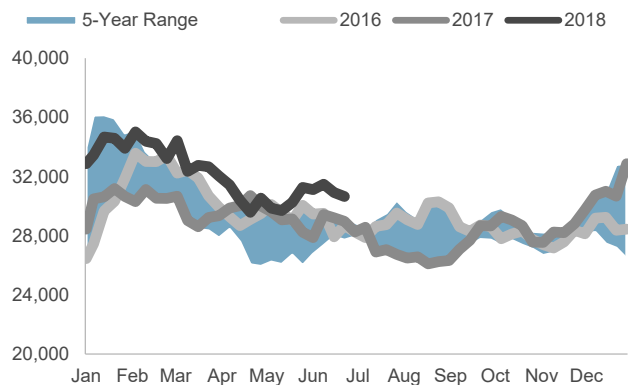
PADD III



PADD IV

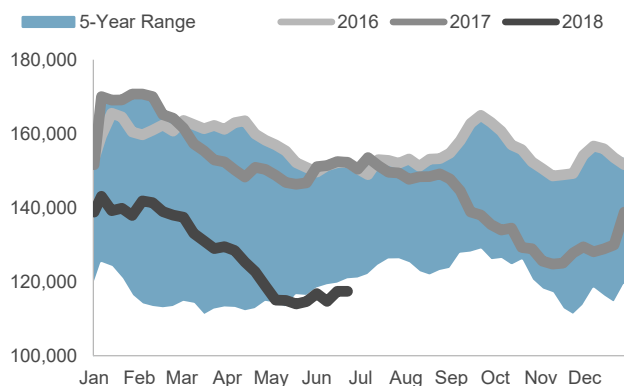


PADD V

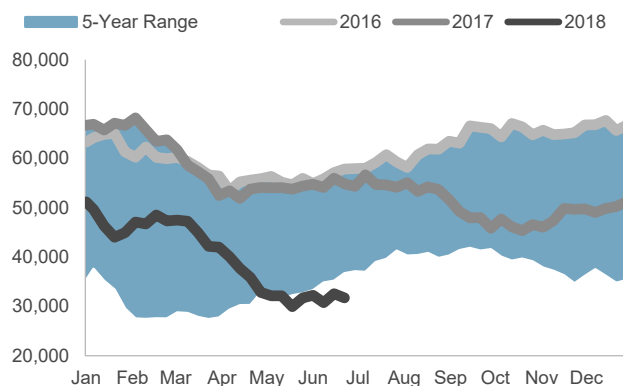


Refining – Distillate Fuel Oil Inventory (Mbbl)

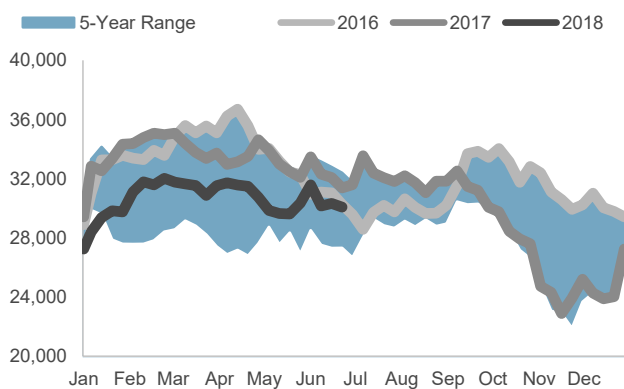
Total U.S.



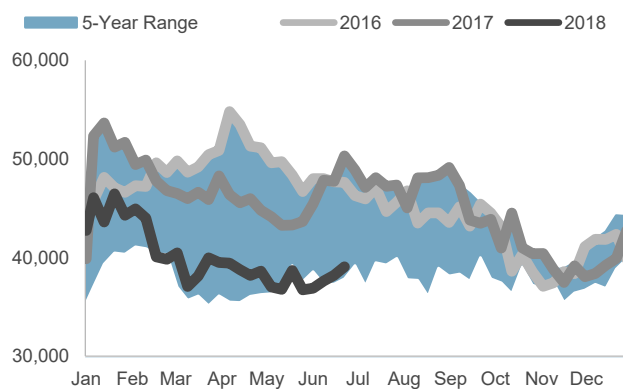
PADD I



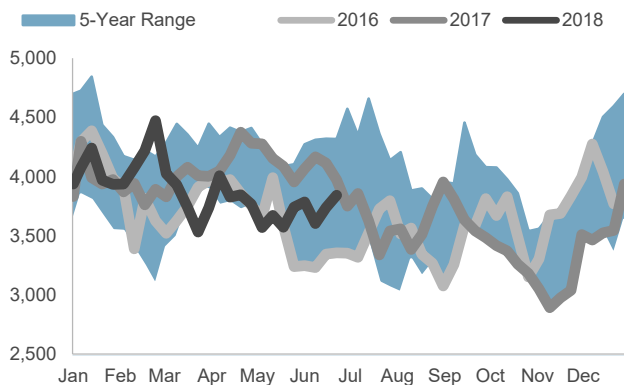
PADD II



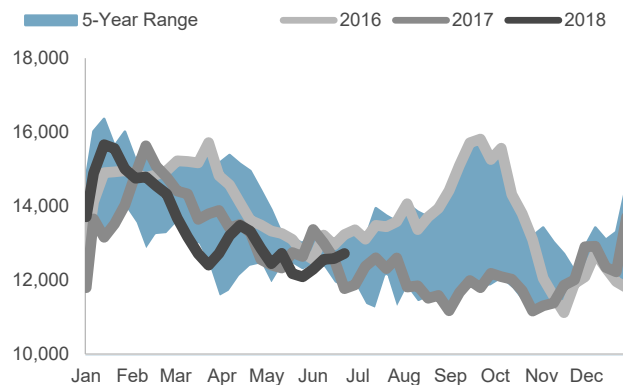
PADD III



PADD IV

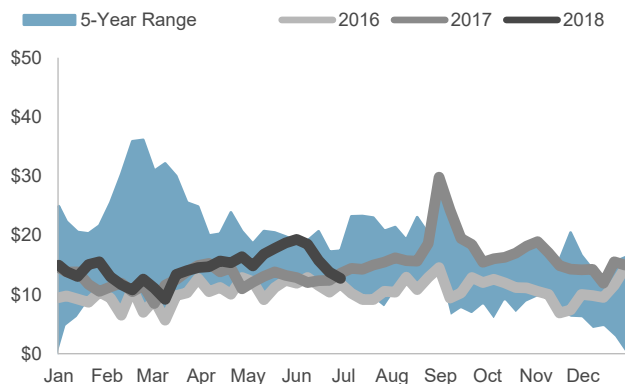


PADD V

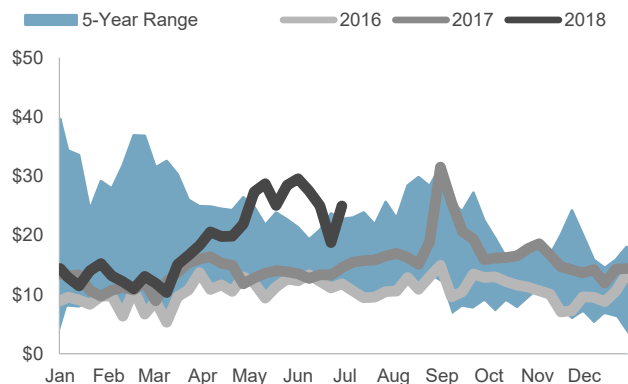


Refining – 3:2:1 Crack Spreads (\$/bbl)

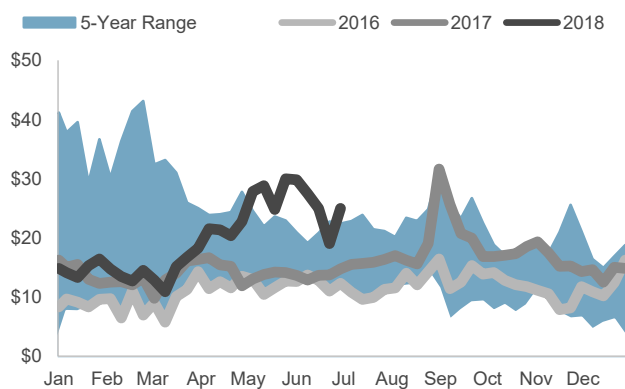
WTI Cushing (U.S. Gulf Coast)



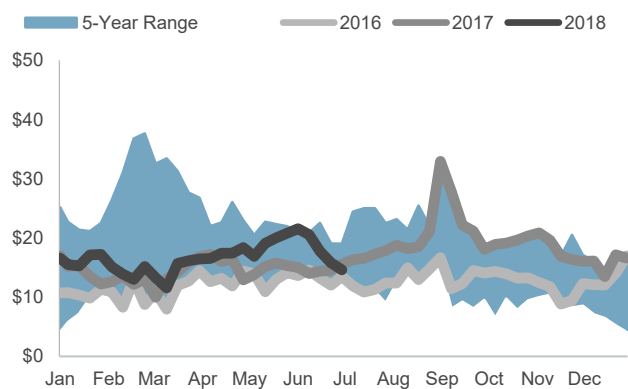
WTI Midland (U.S. Gulf Coast)



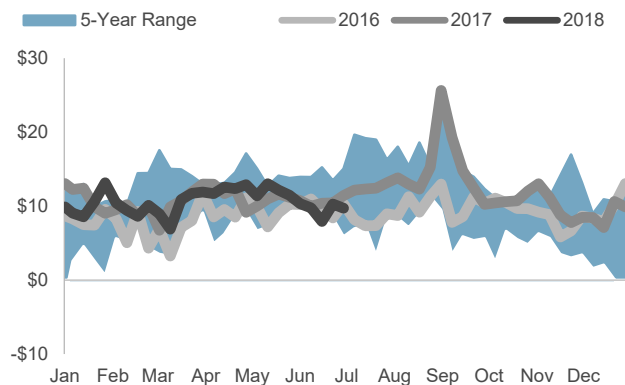
WTS Midland (U.S. Gulf Coast)



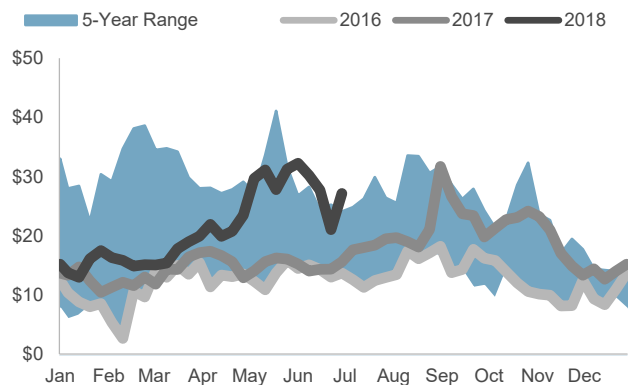
WTI Cushing ULSD (U.S. Gulf Coast)



LLS (U.S. Gulf Coast)

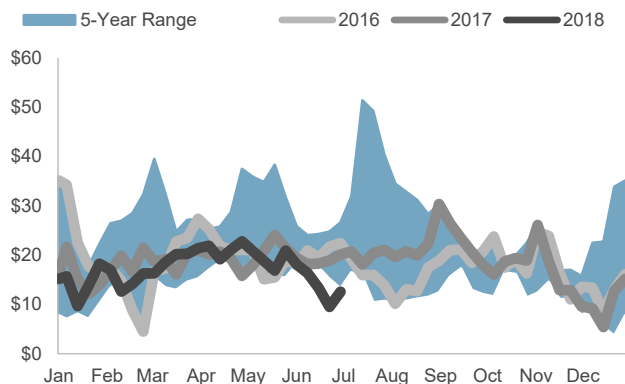


WTI Midland ULSD (U.S. Mid-Continent)

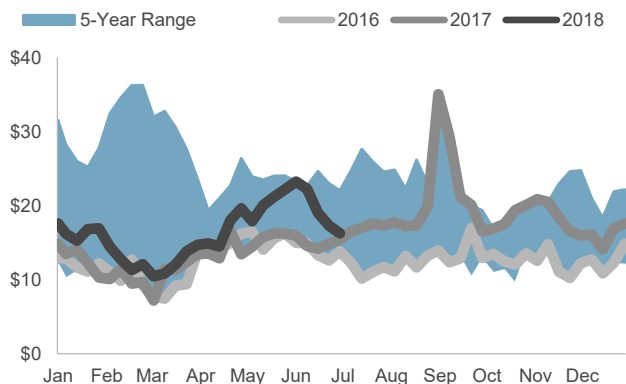


Refining – 3:2:1 Crack Spreads (\$/bbl) (cont.)

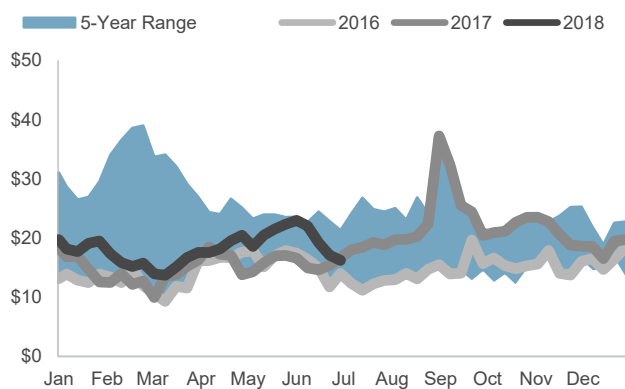
ANS (U.S. West Coast)



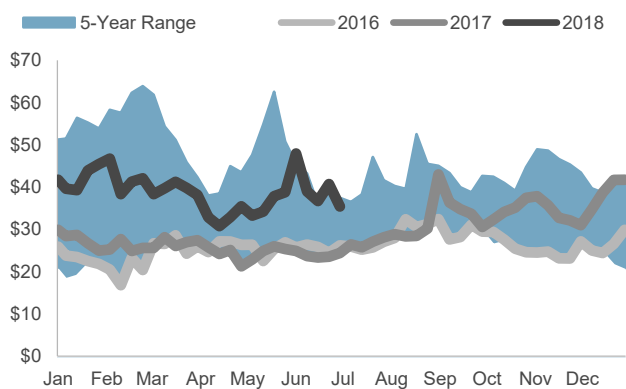
WTI Cushing (NYH RBOB gasoline)



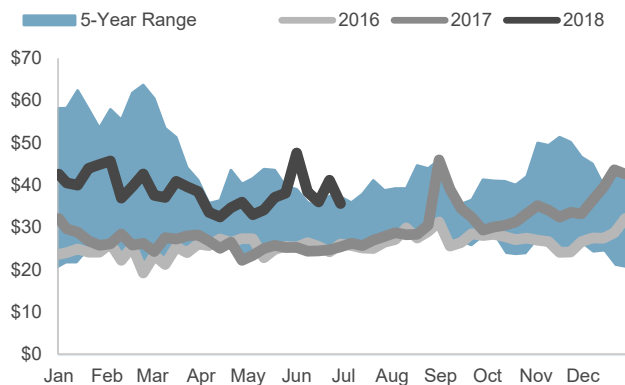
WTI Cushing ULSD (N.Y. Harbor)



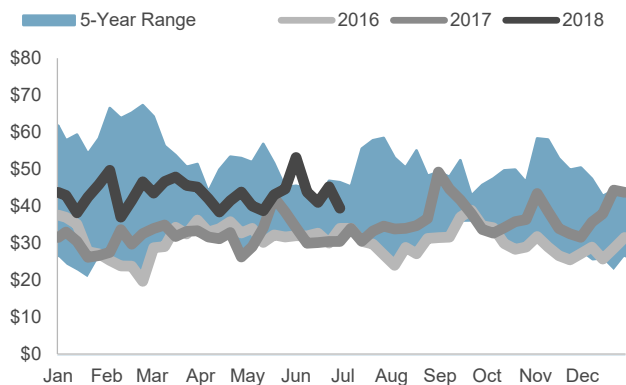
WCS (U.S. Mid-Continent)



WCS (U.S. Gulf Coast)

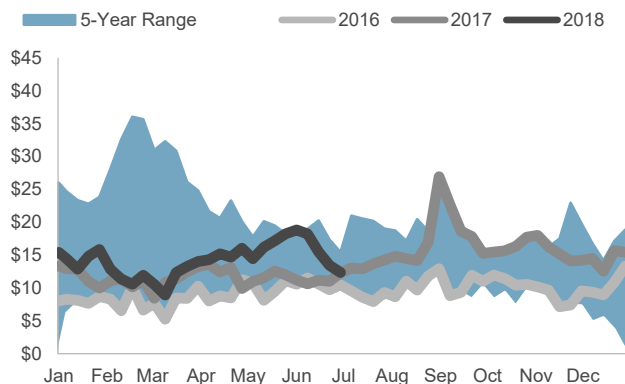


WCS (San Francisco)

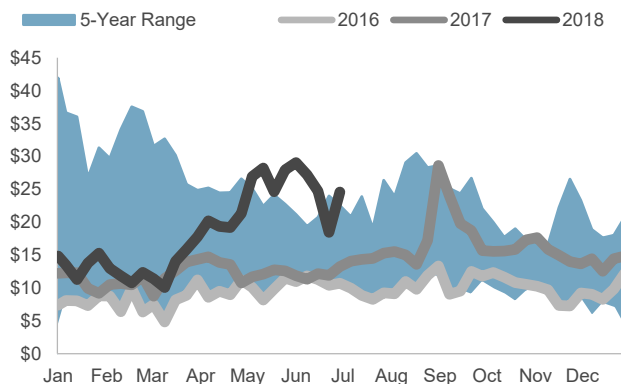


Refining – 2:1:1 Crack Spreads (\$/bbl)

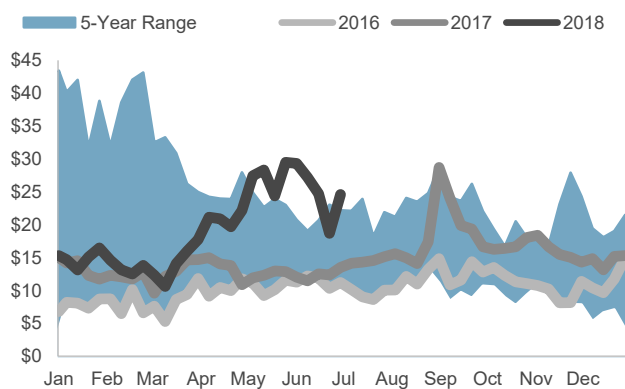
WTI Cushing (U.S. Gulf Coast)



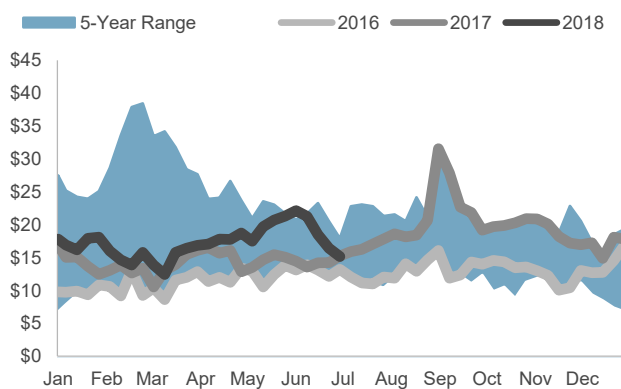
WTI Midland (U.S. Mid-Continent)



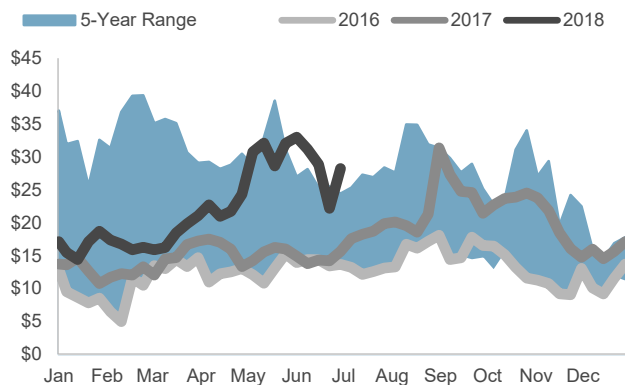
WTS Midland Crude (U.S. Gulf Coast)



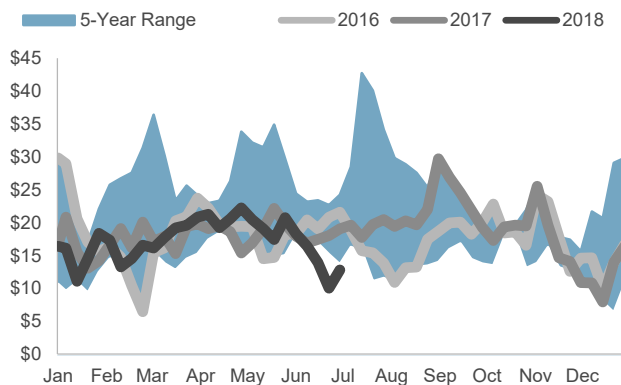
WTI Cushing ULSD (U.S. Gulf Coast)



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

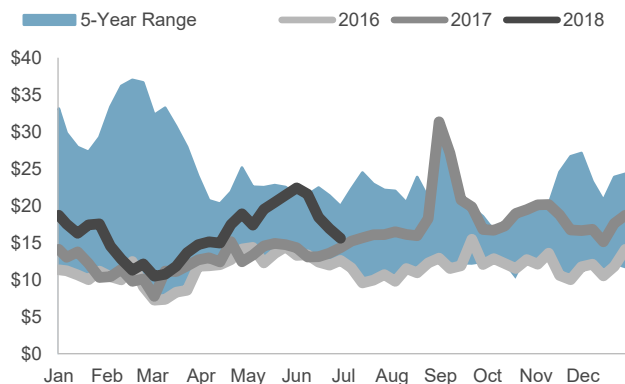


ANS (U.S. West Coast)

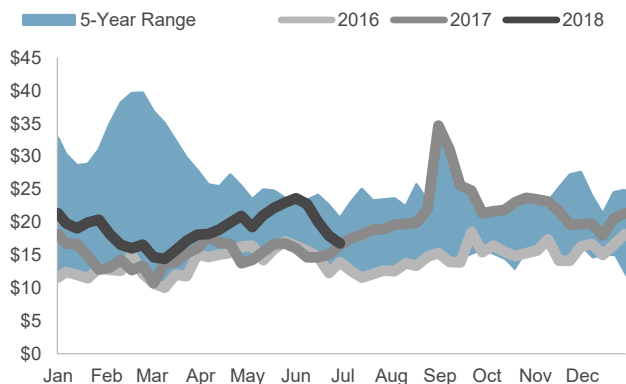


Refining – 2:1:1 Crack Spreads (\$/bbl) (cont.)

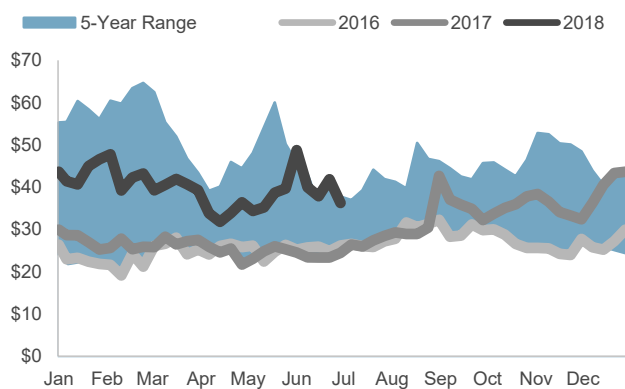
WTI Cushing (NYH RBOB Gasoline)



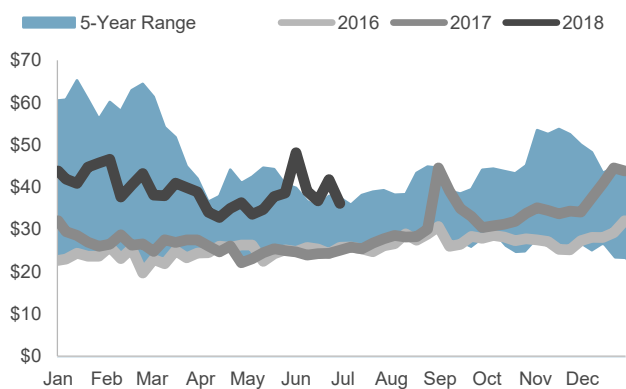
WTI Cushing ULSD (N.Y. Harbor)



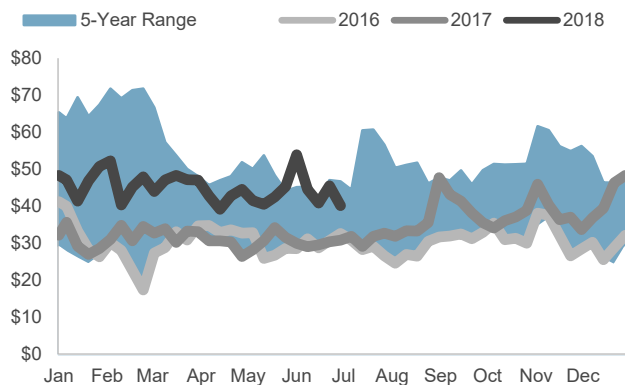
WCS (U.S. Mid-Continent)



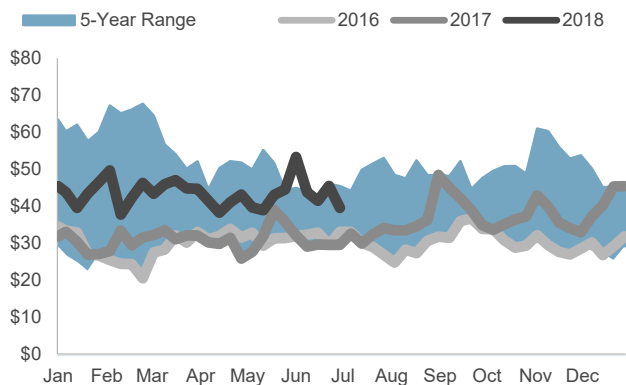
WCS (U.S. Gulf Coast)



WCS (U.S. West Coast)

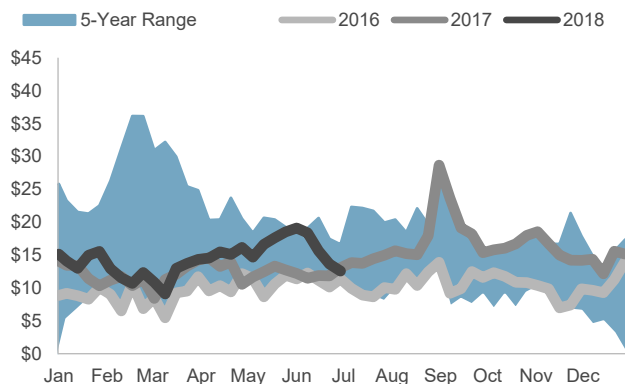


WCS (San Francisco)

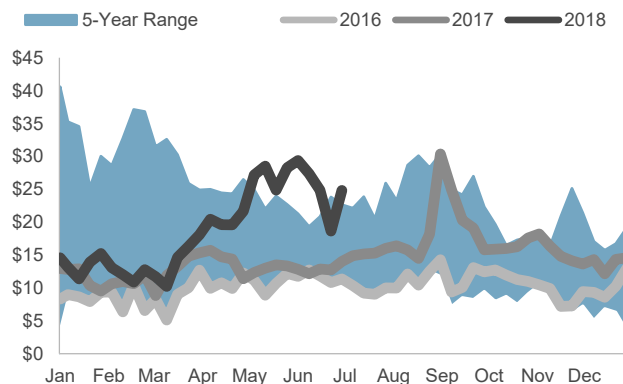


Refining – 5:3:2 Crack Spreads (\$/bbl)

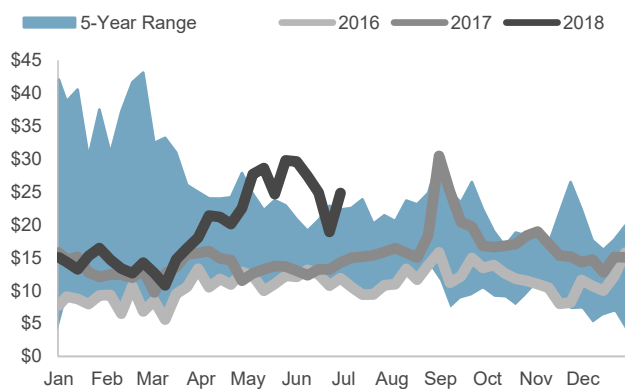
WTI Cushing (U.S. Gulf Coast)



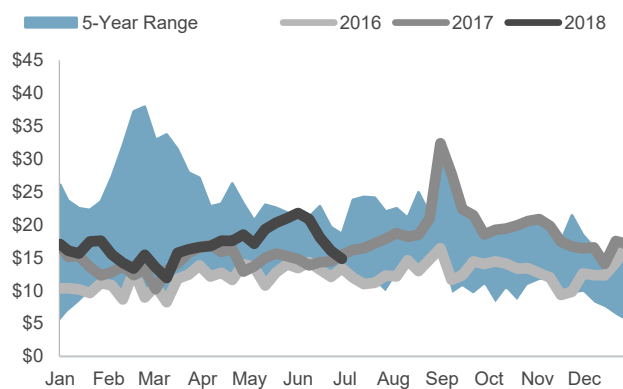
WTI Midland (U.S. Gulf Coast)



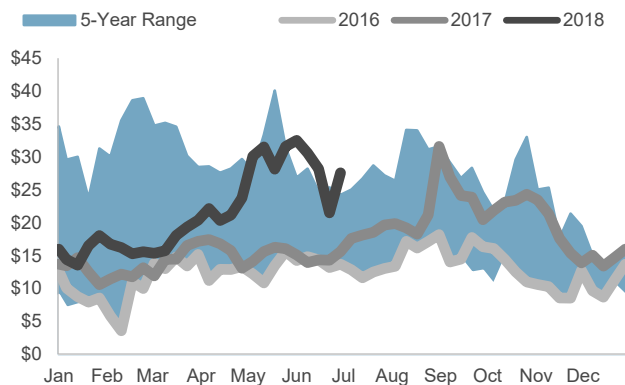
WTS (U.S. Gulf Coast)



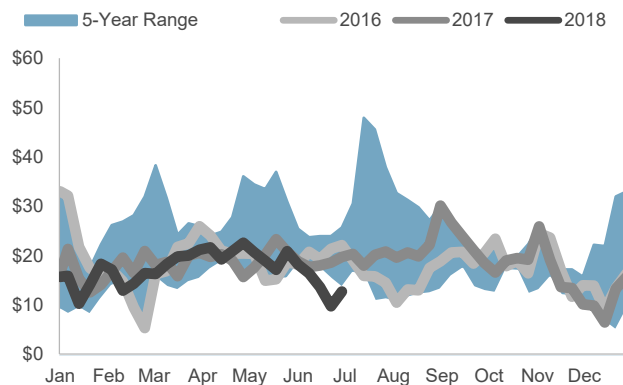
WTI Cushing ULSD (U.S. Gulf Coast)



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

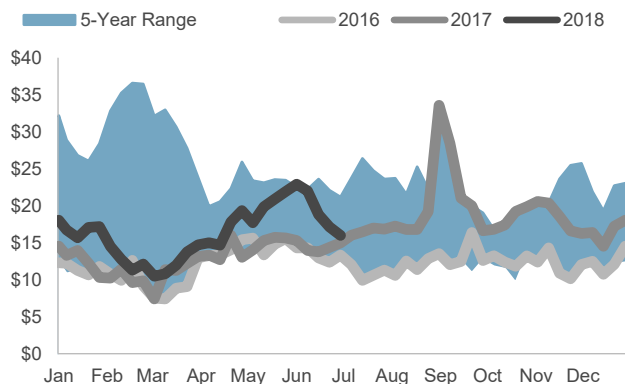


ANS (U.S. West Coast)

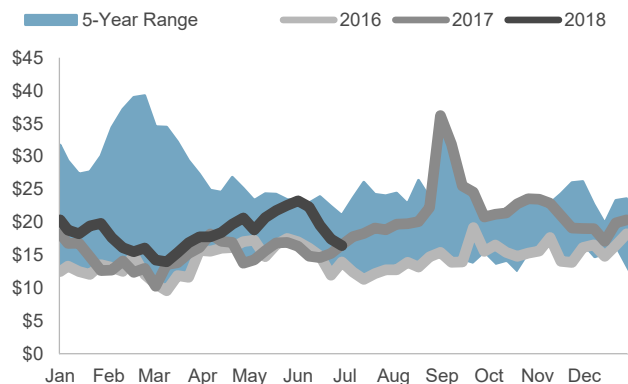


Refining – 5:3:2 Crack Spreads (\$/bbl) (cont.)

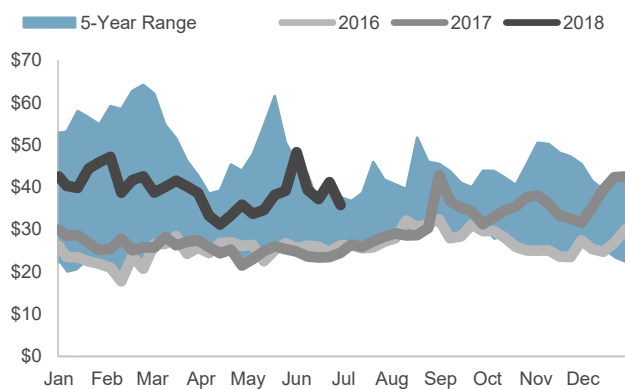
WTI Cushing (NYH RBOB Gasoline)



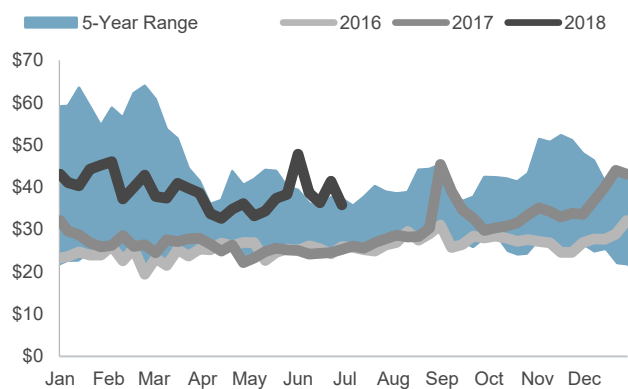
WTI Cushing ULSD (N.Y. Harbor)



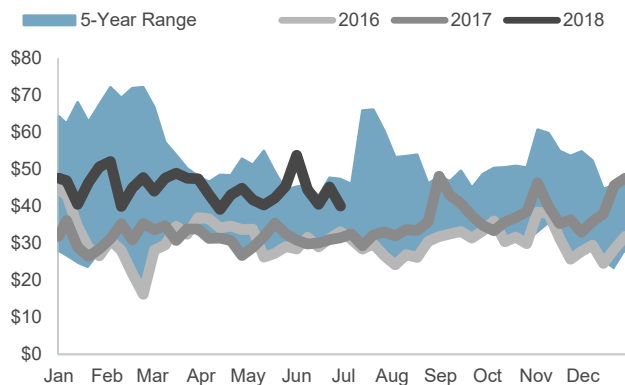
WCS (U.S. Mid-Continent)



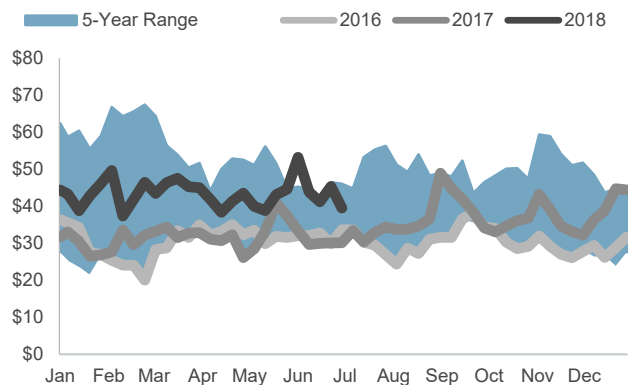
WCS (U.S. Gulf Coast)



WCS (U.S. West Coast)

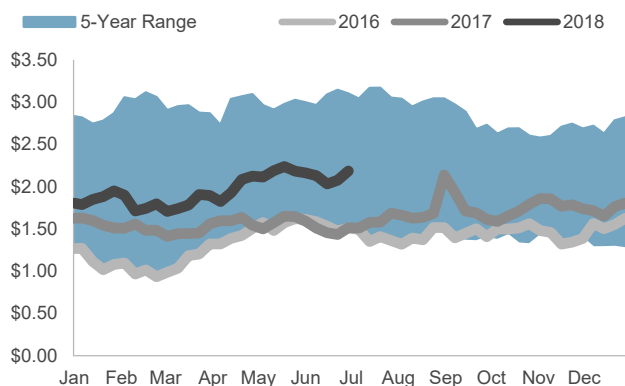


WCS (San Francisco)

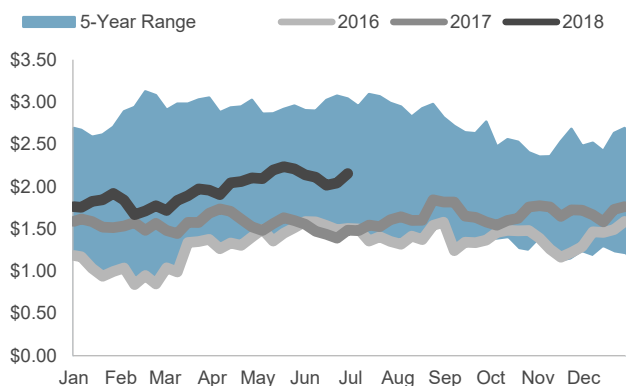


Refining – Product Prices (\$/gal)

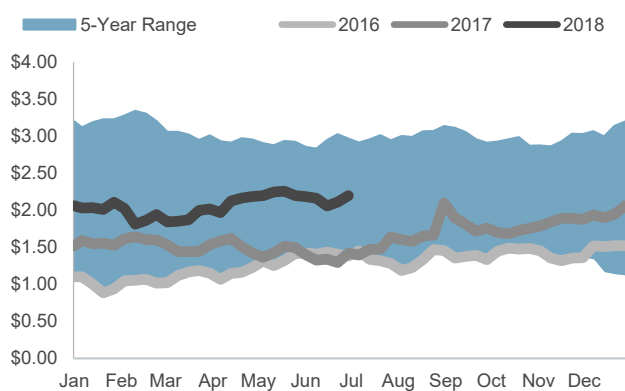
84 RBOB Gasoline (N.Y. Harbor)



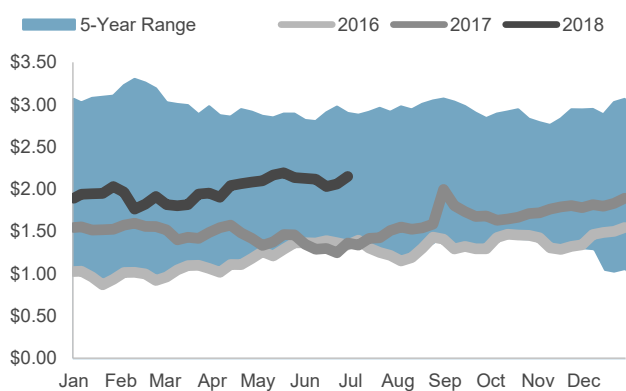
84 RBOB Gasoline (U.S. Gulf Coast)



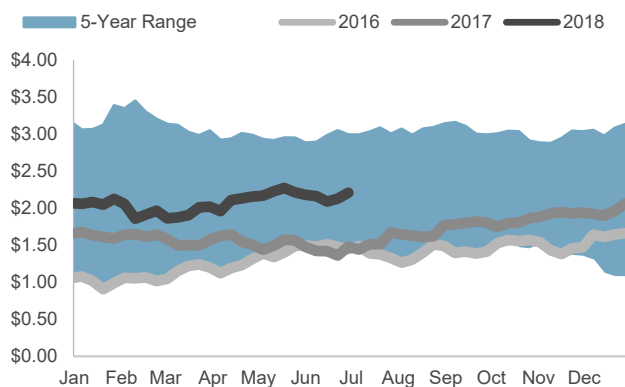
54-Grade Jet Fuel (N.Y. Harbor)



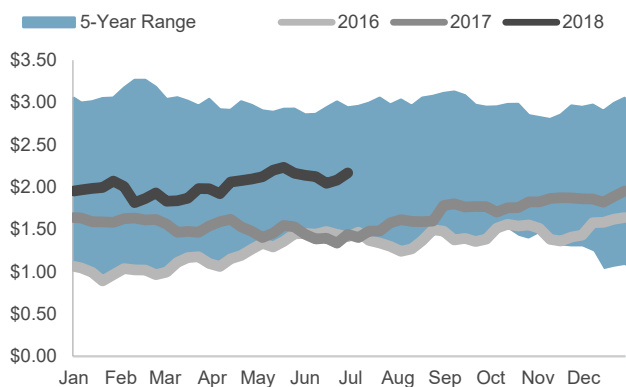
54-Grade Jet Fuel (U.S. Gulf Coast)



ULSD (N.Y. Harbor)



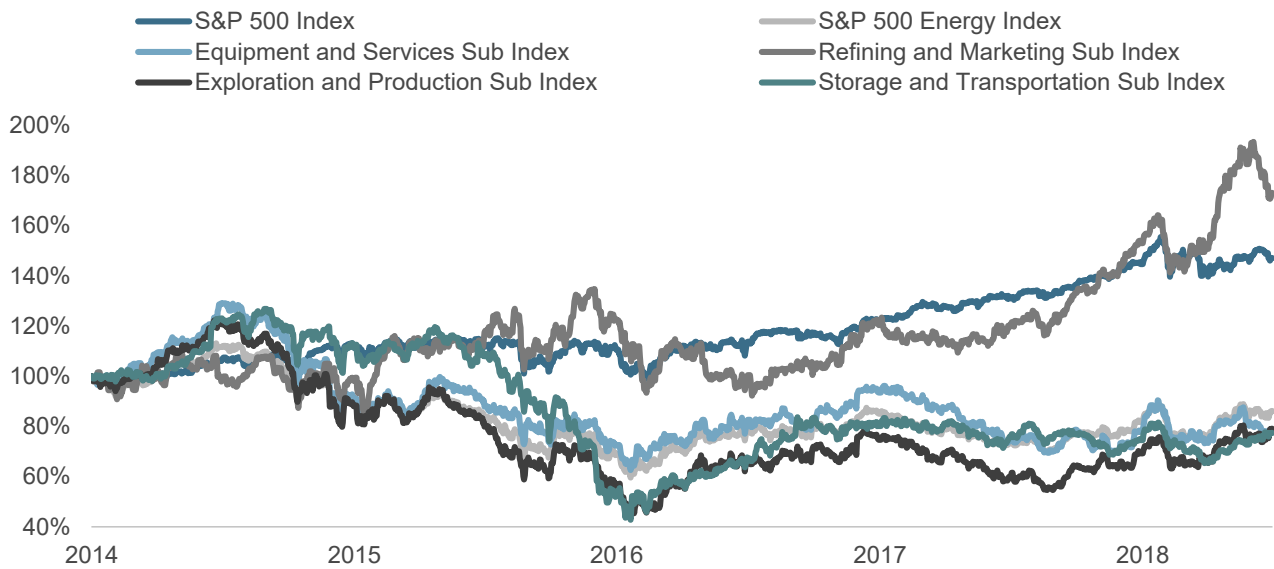
ULSD (U.S. Gulf Coast)



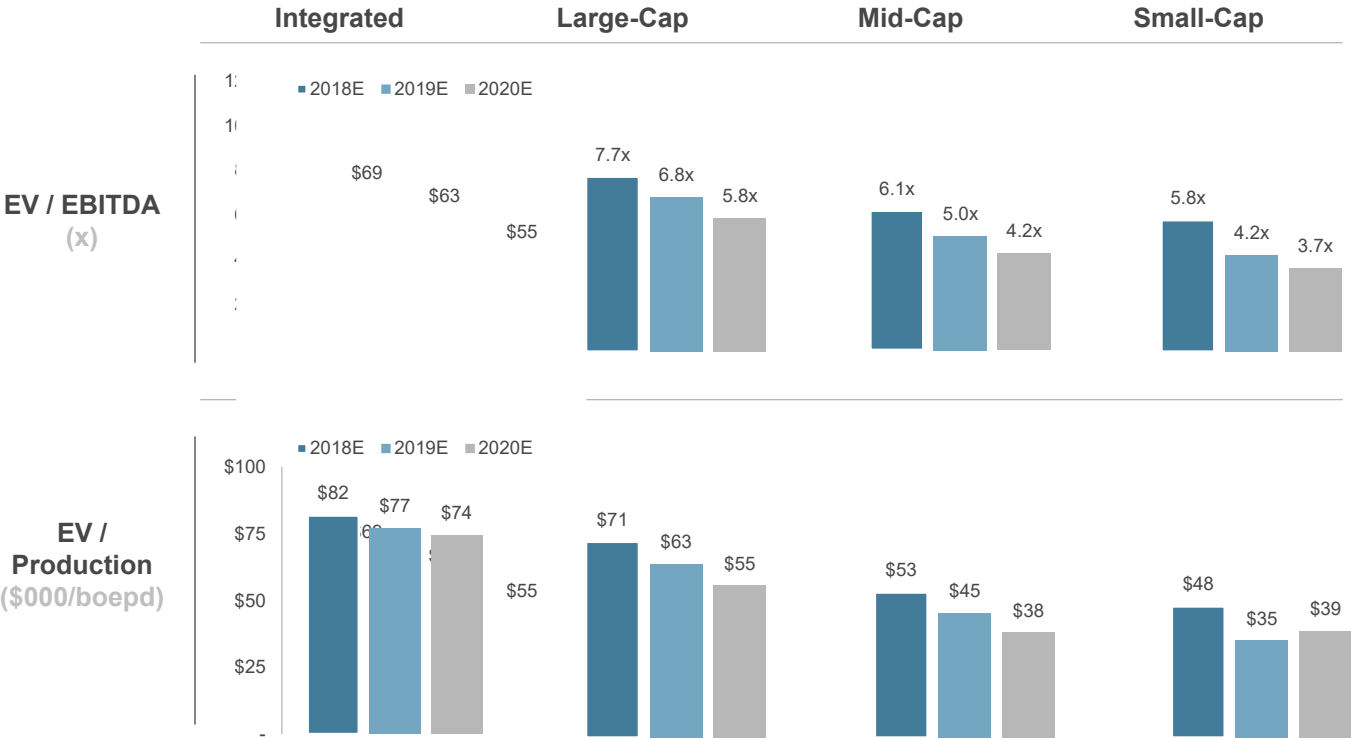
	Page
1. Houlihan Lokey Snapshot	4
2. Crude Oil	8
3. Natural Gas and NGLs	23
4. LNG	36
5. Refining	40
6. Public Equity Markets Overview	52
7. M&A and Financing Activity	54
8. Rigs	62

Public Markets Overview

12 Months Indexed Stock Price Performance (Dec 31, 2014 = 100%)



Public E&P Company Trading Metrics



Note: Trading multipliers are based on consensus future earnings per share as of June 30, 2018, and broker estimates as of June 30, 2018.

	Page
1. Houlihan Lokey Snapshot	4
2. Crude Oil	8
3. Natural Gas and NGLs	23
4. LNG	36
5. Refining	40
6. Public Equity Markets Overview	52
7. M&A and Financing Activity	54
8. Rigs	62

E&P

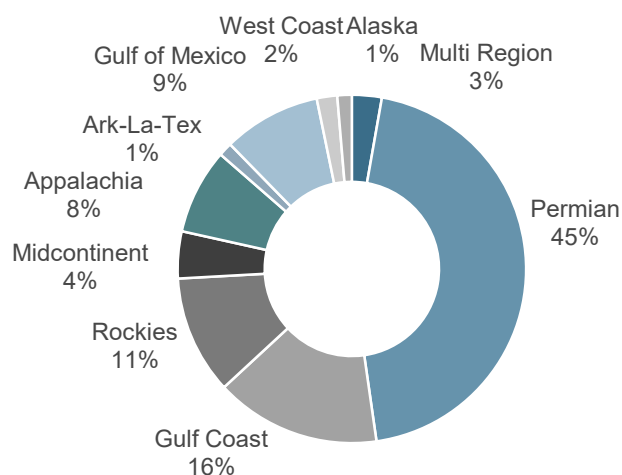
M&A (\$ in billions)

U.S. Region	2016	2017	June YTD		%Δ
			2017	2018	
Multi-Region	\$2.0	\$1.1	\$0.5	\$0.9	NMF
Permian	29.6	24.6	21.1	13.9	-34%
Gulf Coast	4.8	6.9	5.4	4.7	-13%
Rockies	7.4	11.9	4.7	3.4	-28%
Mid-Continent	10.1	7.5	1.9	1.3	-30%
Appalachia	7.4	11.9	10.7	2.4	-77%
Ark-La-Tex	8.3	0.8	0.1	0.4	NMF
Gulf of Mexico	2.4	2.6	0.0	2.8	NMF
West Coast	0.8	0.8	0.8	0.6	NMF
Alaska	0.2	0.4	0.0	0.4	NMF
Total	\$72.9	\$68.5	\$45.2	\$30.8	-32%

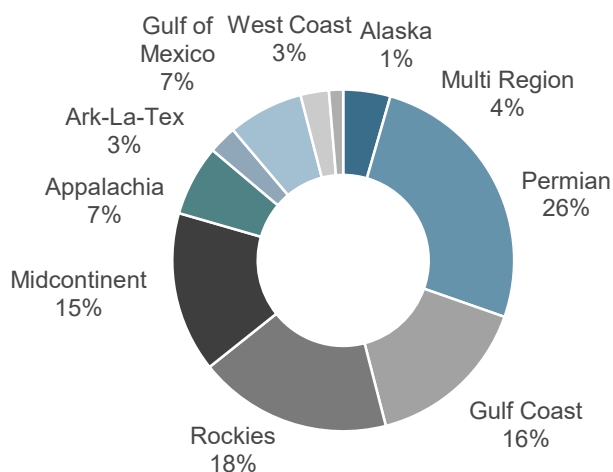
M&A (Deal Count)

U.S. Region	2016	2017	June YTD		%Δ
			2017	2018	
Multi-Region	26	27	14	10	NMF
Permian	110	131	81	58	NMF
Gulf Coast	66	74	31	35	13%
Rockies	77	76	30	41	37%
Mid-Continent	74	92	38	34	-11%
Appalachia	32	46	27	15	-44%
Ark-La-Tex	25	33	14	6	NMF
Gulf of Mexico	13	11	2	16	NMF
West Coast	6	11	9	6	-33%
Alaska	2	1	0	3	NMF
Total	431	502	246	224	-9%

M&A – 2018 (\$ in billions)



M&A – 2018 (Deal Count)

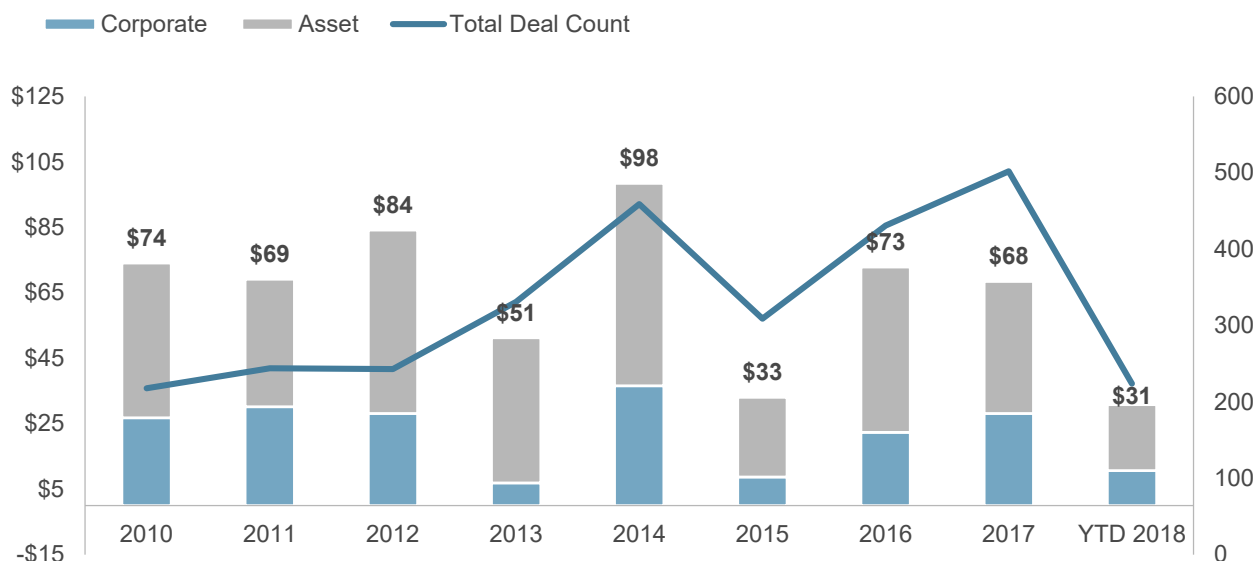


Note: All data as of June 30, 2018.

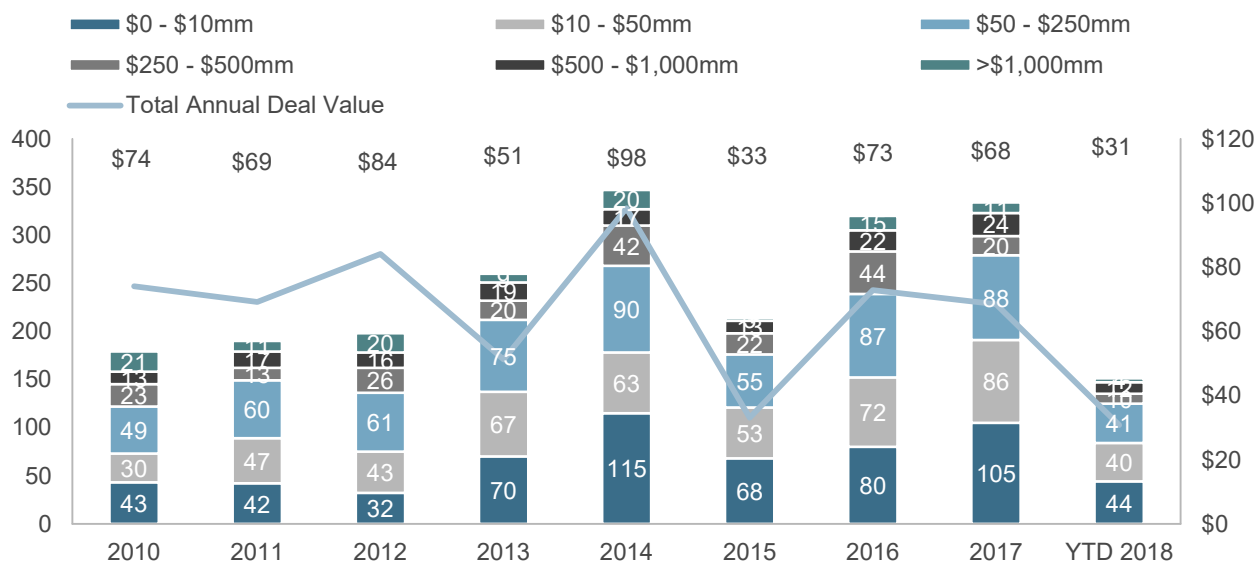
Source: PLS based on selection criteria of seller assets being located in the U.S.

Historical E&P Transaction Activity

U.S. Transactions Since 2010 (\$ in billions)



U.S. Transactions by Deal Size Since 2010⁽¹⁾ (\$ in billions)



Note: All data as of June 30, 2018.

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

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

OFS

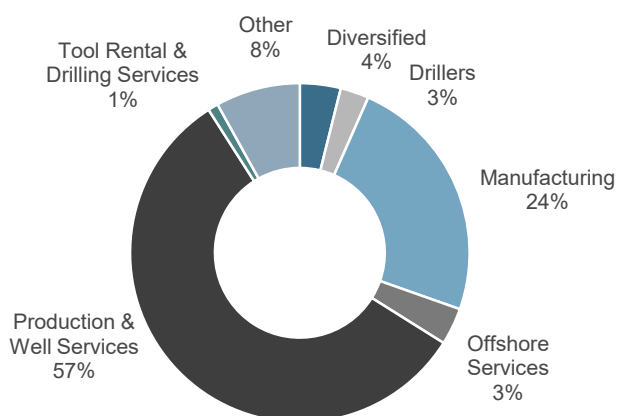
M&A (\$ in billions)

Segment	2016	2017	June YTD		%Δ
			2017	2018	
Diversified	33.1	4.6	0.7	0.4	-46%
Drillers	0.5	0.3	0.2	0.3	NMF
Manufacturing	0.5	2.5	1.6	2.2	39%
Offshore Services	0.1	1.7	1.7	0.3	-80%
Production & Well Services	1.2	9.8	6.1	5.4	-11%
Tool Rental & Drilling Services	0.0	1.0	0.1	0.1	1%
Other	0.2	1.0	0.9	0.8	-17%
Total	\$35.8	\$20.9	\$11.2	\$9.4	-16%

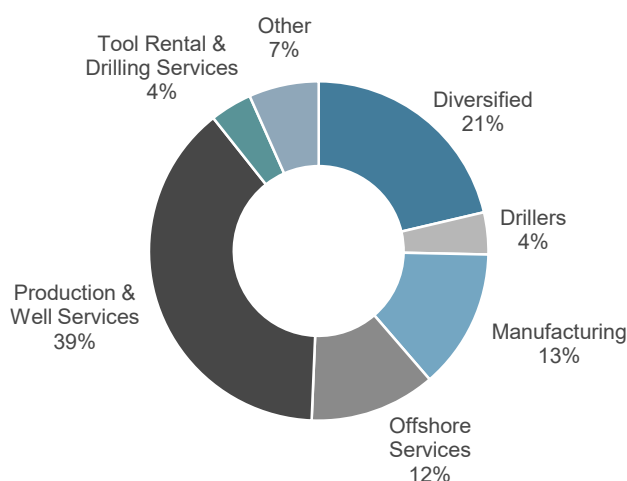
M&A (Deal Count)

Segment	2016	2017	June YTD		%Δ
			2017	2018	
Diversified	21	42	19	16	-16%
Drillers	6	7	2	3	NMF
Manufacturing	27	35	22	10	-55%
Offshore Services	5	12	9	9	0%
Production & Well Services	41	67	27	29	7%
Tool Rental & Drilling Services	9	15	6	3	NMF
Other	15	28	19	5	-74%
Total	124	206	104	75	-28%

M&A – 2018 (\$ in billions)



M&A – 2018 (Deal Count)



Note: All data as of June 30, 2018.

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

Downstream

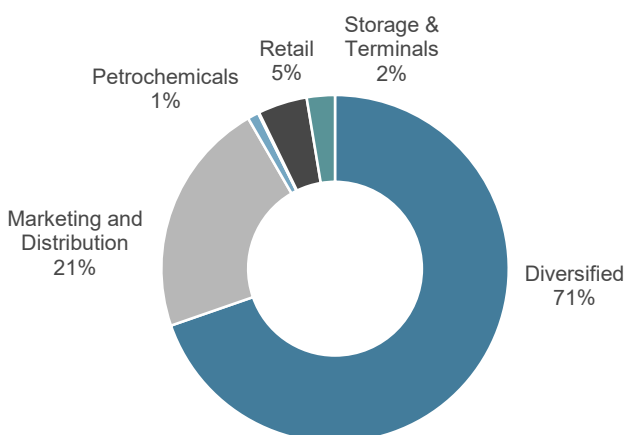
M&A (\$ in billions)

Segment	2016	2017	June YTD		%Δ
			2017	2018	
Biofuels	0.4	0.2	0.2	0.0	NMF
Diversified	6.8	10.7	9.4	33.9	260%
Marketing and Distribution	8.8	3.7	0.4	10.7	NMF
Petrochemicals	9.2	2.1	2.1	0.5	-76%
Refining	2.0	8.6	0.0	0.1	NMF
Retail	7.7	4.3	4.0	2.2	-45%
Storage & Terminals	2.1	10.3	4.7	1.3	-73%
Other	0.0	0.0	0.0	0.0	NMF
Total	\$37.0	\$39.8	\$20.8	\$48.7	134%

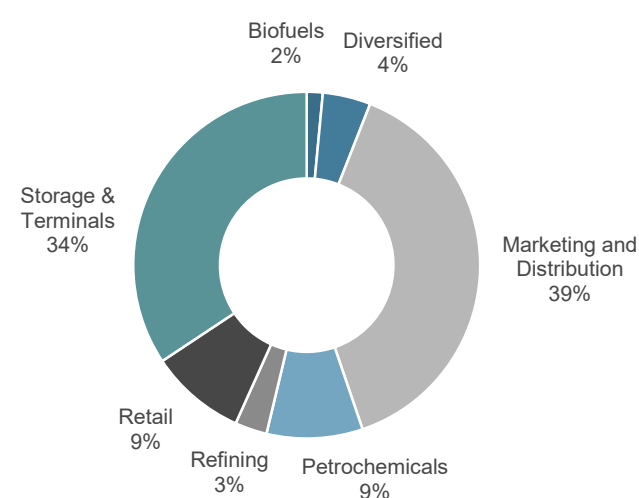
M&A (Deal Count)

Segment	2016	2017	June YTD		%Δ
			2017	2018	
Biofuels	7	2	1	1	0%
Diversified	5	8	6	3	-50%
Marketing and Distribution	38	38	17	26	53%
Petrochemicals	12	6	5	6	20%
Refining	17	7	2	2	0%
Retail	24	13	7	6	-14%
Storage & Terminals	17	36	15	23	53%
Other	0	0	0	0	NMF
Total	120	110	53	67	26%

M&A – 2018 (\$ in billions)



M&A – 2018 (Deal Count)



Note: All data as of June 30, 2018.

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

Midstream

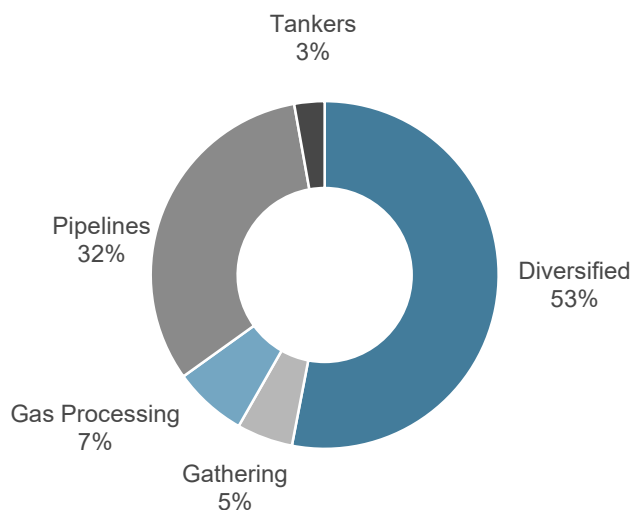
M&A (\$ in billions)

Segment	2016	2017	June YTD		%Δ
			2017	2018	
Diversified	25.5	56.8	38.5	29.5	-24%
Gathering	2.9	4.2	3.2	2.9	63%
Gas Processing	3.9	1.9	1.6	3.8	141%
Pipelines	118.4	7.9	3.1	17.8	473%
Tankers	0.7	0.2	0.1	1.6	NMF
Total	\$151.4	\$71.0	\$46.4	\$55.6	20%

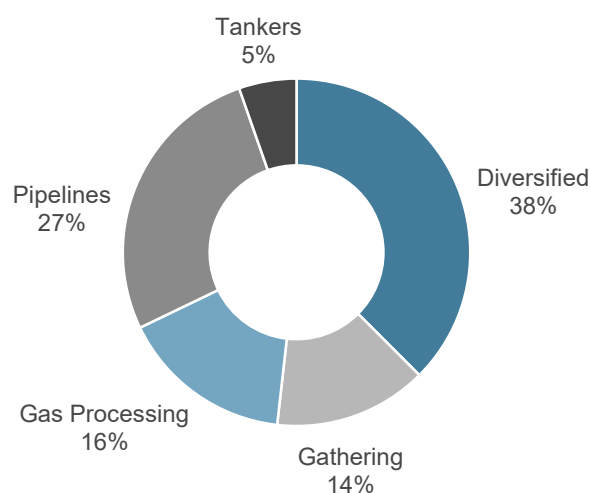
M&A (Deal Count)

Segment	2016	2017	June YTD		%Δ
			2017	2018	
Diversified	41	48	26	21	-19%
Gathering	15	20	9	8	-11%
Gas Processing	13	9	5	9	80%
Pipelines	31	31	9	15	67%
Tankers	7	5	3	3	0%
Total	107	113	52	56	8%

M&A – 2018 (\$ in billions)



M&A – 2018 (Deal Count)



Note: All data as of June 30, 2018.

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

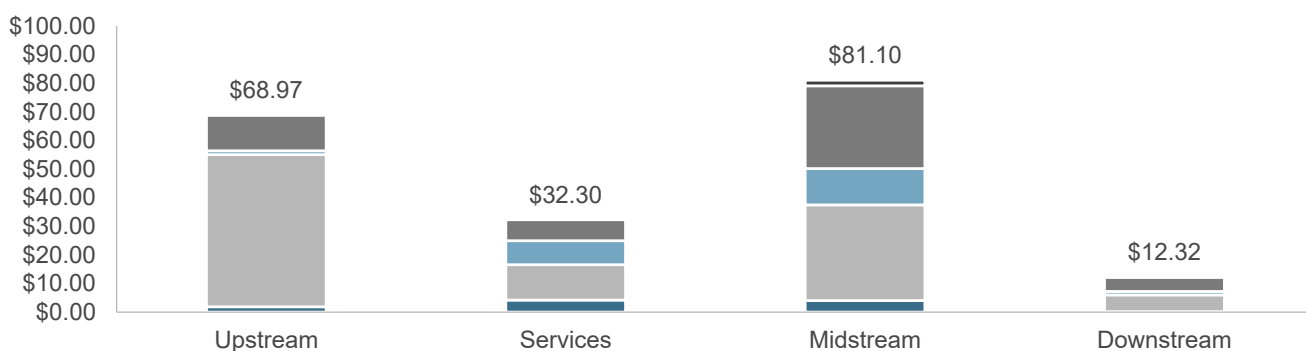
Financing by Instrument (\$ in billions)

Financing by Instrument (\$ in billions)

Capital	2016	2017	June YTD		%Δ
			2017	2018	
Upstream					
Equity	\$31.7	\$10.6	\$7.9	\$1.8	-77%
Credit Facility	18.1	31.9	11.6	53.2	357%
Loan	8.2	6.0	3.1	1.3	-57%
Bond	41.1	34.5	17.6	12.5	-29%
Other	0.1	0.5	0.4	0.1	-80%
Total	\$99.2	\$83.5	\$40.7	\$69.0	69%
Services					
Equity	\$4.1	\$5.2	\$4.0	\$4.2	6%
Credit Facility	11.8	29.3	15.7	12.4	-21%
Loan	4.9	13.8	6.3	8.4	34%
Bond	10.5	8.5	2.3	7.3	221%
Other	0.6	0.1	0.1	0.0	-100%
Total	\$32.0	\$56.8	\$28.3	\$32.3	14%
Midstream					
Equity	\$14.2	\$17.3	\$8.4	\$4.0	-52%
Credit Facility	26.5	53.4	14.3	33.5	134%
Loan	5.8	7.1	4.2	12.7	206%
Bond	27.7	38.0	19.6	28.9	47%
Other	13.8	12.9	6.0	2.0	-67%
Total	\$87.9	\$128.6	\$52.5	\$81.1	55%
Downstream					
Equity	\$1.0	\$0.3	\$0.0	\$0.2	NMF
Credit Facility	13.4	10.8	4.2	5.9	40%
Loan	5.4	2.6	2.6	1.2	-52%
Bond	8.3	3.7	2.4	5.0	108%
Other	0.9	0.0	0.0	0.1	NMF
Total	\$29.1	\$17.4	\$9.1	\$12.3	35%
Integrated					
Equity	\$2.0	\$2.3	\$2.3	\$0.0	-100%
Credit Facility	2.0	0.0	0.0	0.0	NMF
Loan	0.3	0.0	0.0	0.0	NMF
Bond	37.8	11.2	7.1	1.5	-80%
Other	0.0	0.0	0.0	0.0	NMF
Total	\$42.0	\$13.4	\$9.4	\$1.5	-85%
Grand Total	\$290.2	\$299.7	\$140.0	\$196.1	40%

Financing by Instrument – 2018 (\$ in billions)

■ Equity ■ Credit Facility ■ Loan ■ Bond ■ Other



Note: All data as of June 30, 2018.

Source: PLS.

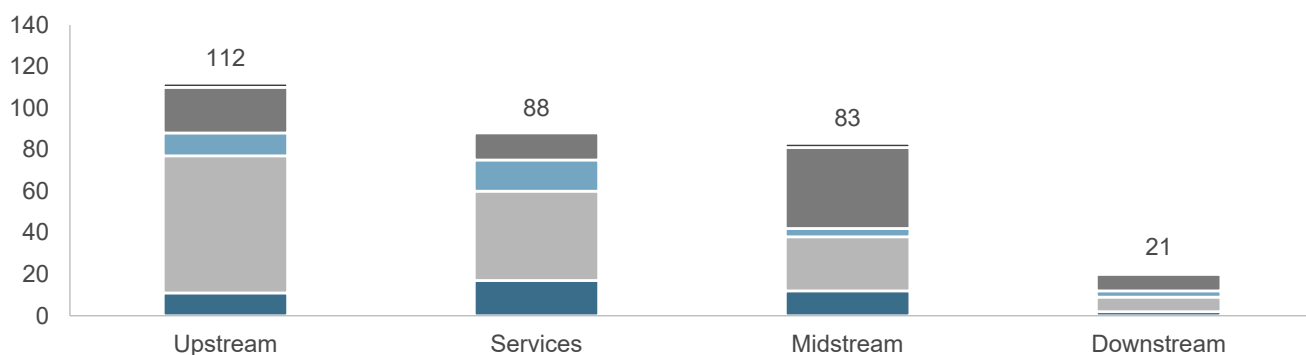
Financing by Instrument (Count)

Financing by Instrument (Count)

Capital	2016	2017	June YTD		%Δ
			2017	2018	
Upstream					
Equity	82	41	22	11	-50%
Credit Facility	39	40	18	66	267%
Loan	21	16	10	11	10%
Bond	63	55	22	22	0%
Other	3	8	6	2	-67%
Total	208	160	78	112	44%
Services					
Equity	26	22	17	17	0%
Credit Facility	26	62	24	43	79%
Loan	20	37	17	15	-12%
Bond	20	15	7	13	86%
Other	7	2	1	0	-100%
Total	99	138	66	88	33%
Midstream					
Equity	35	44	22	12	-45%
Credit Facility	35	42	15	26	73%
Loan	18	17	10	4	-60%
Bond	45	60	30	39	30%
Other	28	25	14	2	-86%
Total	161	188	91	83	-9%
Downstream					
Equity	10	3	0	2	NMF
Credit Facility	11	12	6	7	17%
Loan	18	3	3	3	0%
Bond	13	9	6	8	33%
Other	5	0	0	1	NMF
Total	57	27	15	21	40%
Integrated					
Equity	1	1	1	0	-100%
Credit Facility	4	0	0	0	NMF
Loan	1	0	0	0	NMF
Bond	32	17	11	2	-82%
Other	0	0	0	0	NMF
Total	38	18	12	2	-83%
Grand Total	563	531	262	306	17%

Financing by Instrument – 2018 (Deal Count)

■ Equity ■ Credit Facility ■ Loan ■ Bond ■ Other

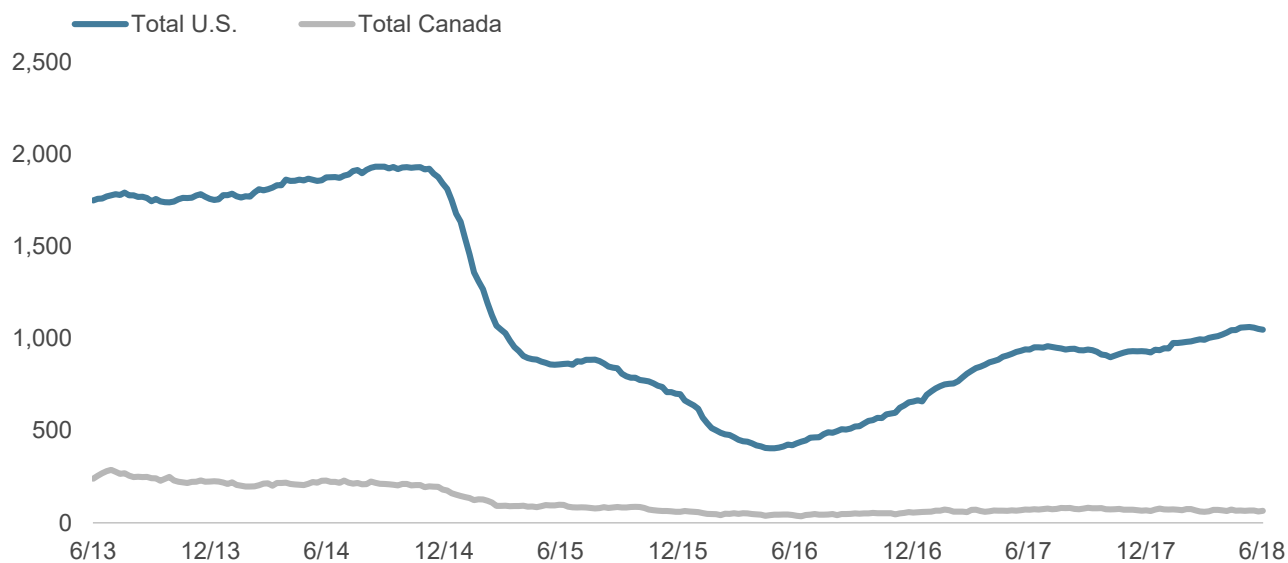


Note: All data as of June 30, 2018.
Source: PLS.

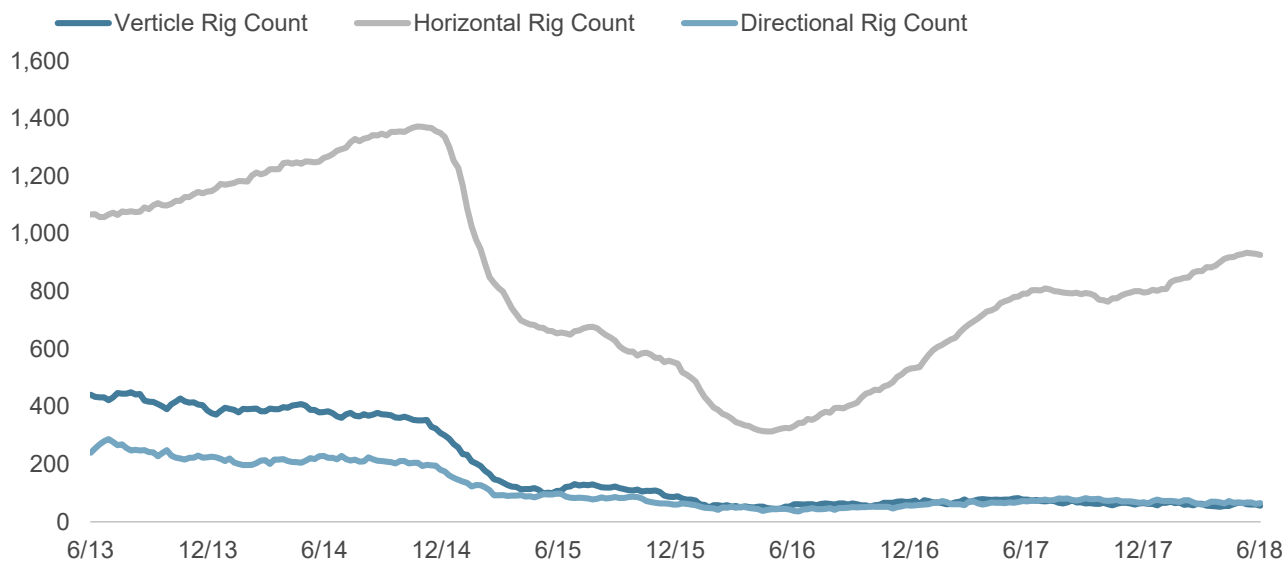
	Page
1. Houlihan Lokey Snapshot	4
2. Crude Oil	8
3. Natural Gas and NGLs	23
4. LNG	36
5. Refining	40
6. Public Equity Markets Overview	52
7. M&A and Financing Activity	54
8. Rigs	62

Rigs

Total U.S. vs. Canada Rigs

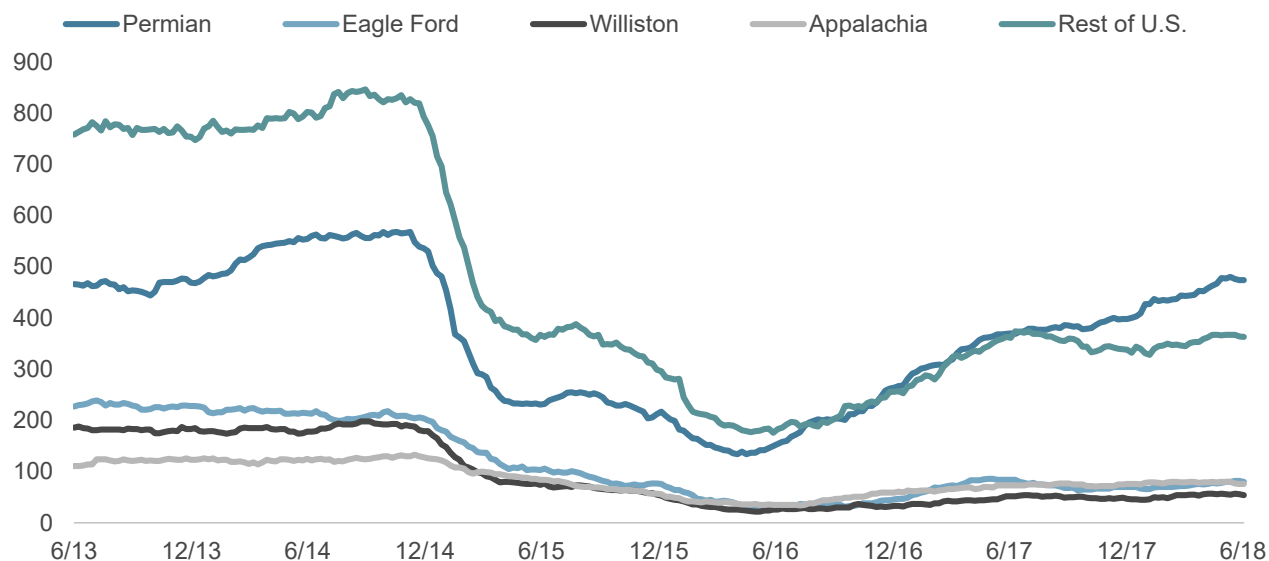


U.S. Rig Counts by Vertical, Horizontal, and Directional



Rigs (cont.)

U.S. Rigs by Basin

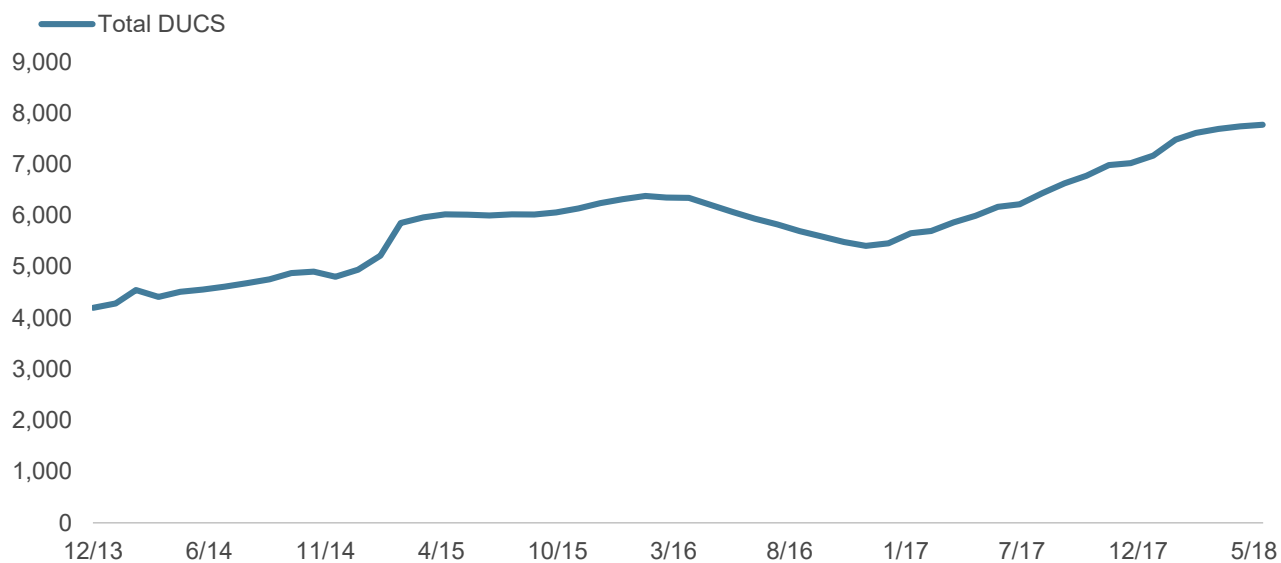


Change in Rig Counts

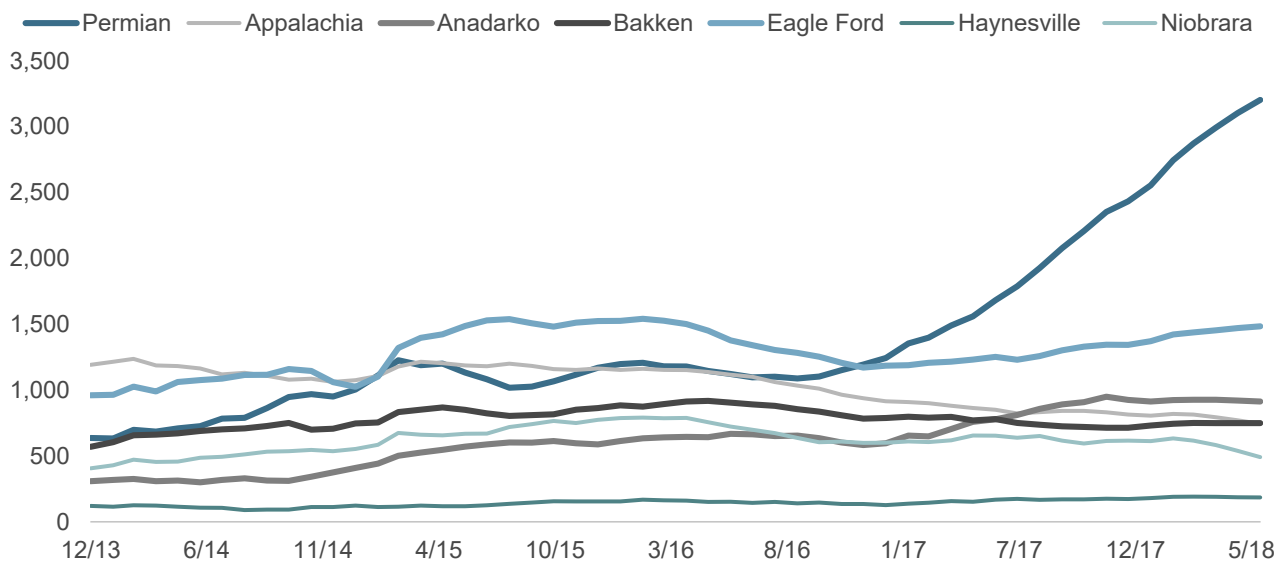
Region	6/30/2018	6/30/2017	3/31/2018	YoY % Change	QoQ % Change
Permian	474	370	443	28.1%	7.0%
Eagle Ford	80	84	72	-4.8%	11.1%
Williston	54	52	54	3.8%	0.0%
Marcellus	53	45	57	17.8%	-7.0%
Cana Woodford	74	59	63	25.4%	17.5%
DJ Niobrara	26	27	24	-3.7%	8.3%
Granite Walsh	16	12	12	33.3%	33.3%
Haynesville	50	41	52	22.0%	-3.8%
Utica	23	28	22	-17.9%	4.5%
Rest of U.S.	197	222	194	-11.3%	1.5%
Total	1,047	940	993	11.4%	5.4%

Rigs (cont.)

Total U.S. DUCs



Total DUCs by Basin



About Houlihan Lokey

Houlihan Lokey (NYSE:HLI) is a global investment bank with expertise in [mergers and acquisitions](#), [capital markets](#), [financial restructuring](#), [valuation](#), and [strategic consulting](#). The firm serves corporations, institutions, and governments worldwide with offices in the United States, Europe, the Middle East, and the Asia-Pacific region. Independent advice and intellectual rigor are hallmarks of the firm’s commitment to client success across its advisory services. Houlihan Lokey is [ranked](#) as the No. 1 M&A advisor for all U.S. transactions, the No. 1 global restructuring advisor, and the No. 1 global M&A fairness opinion advisor over the past 20 years, according to Thomson Reuters. For more information, please visit www.HL.com.

Locations

North America

- Atlanta
- Chicago
- Dallas
- Houston
- Los Angeles
- Miami
- Minneapolis
- New York
- San Francisco
- Washington, D.C.

Europe & Middle East

- Amsterdam
- Dubai
- Frankfurt
- London
- Madrid
- Milan
- Paris

Asia-Pacific

- Beijing
- Hong Kong
- Singapore
- Sydney
- Tokyo

HLI

LISTED

NYSE

Houlihan Lokey holds an indirect minority stake in Leonardo & Co. S.p.A., an investment bank with an office in Milan.

Industry Expertise

Product Expertise

- Mergers & Acquisitions
- Capital Markets
- Financial Restructuring
- Financial Advisory
- Strategic Consulting

Dedicated Industry Group

- Business Services
- Consumer, Food & Retail
- Data & Analytics
- Energy
- Financial Institutions
- Healthcare
- Industrials
- Real Estate, Lodging & Leisure
- Technology•Media•Telecom

Financial Sponsors

- Active Dialogue With a Diverse Group of 550+ Sponsors
- Private Equity Firms
- Hedge Funds
- Capital Alliances

Disclaimer

© 2018 Houlihan Lokey. All rights reserved. This material may not be reproduced in any format by any means or redistributed without the prior written consent of Houlihan Lokey.

Houlihan Lokey is a trade name for Houlihan Lokey, Inc., and its subsidiaries and affiliates, which include those in (i) the United States: Houlihan Lokey Capital, Inc., an SEC-registered broker-dealer and member of FINRA (www.finra.org) and SIPC (www.sipc.org) (investment banking services); Houlihan Lokey Financial Advisors, Inc. (financial advisory services); Houlihan Lokey Consulting, Inc. (strategic consulting services); and Houlihan Lokey Real Estate Group, Inc. (real estate advisory services); (ii) Europe: Houlihan Lokey EMEA, LLP, and Houlihan Lokey (Corporate Finance) Limited, authorized and regulated by the U.K. Financial Conduct Authority; Houlihan Lokey GmbH; Houlihan Lokey (Netherlands) B.V.; and Houlihan Lokey (España), S.A.; (iii) the United Arab Emirates, Dubai International Financial Centre (Dubai): Houlihan Lokey (MEA Financial Advisory) Limited, regulated by the Dubai Financial Services Authority for the provision of advising on financial products, arranging deals in investments, and arranging credit and advising on credit to professional clients only; (iv) Singapore: Houlihan Lokey (Singapore) Private Limited, an “exempt corporate finance adviser” able to provide exempt corporate finance advisory services to accredited investors only; (v) Hong Kong SAR: Houlihan Lokey (China) Limited, licensed in Hong Kong by the Securities and Futures Commission to conduct Type 1, 4, and 6 regulated activities to professional investors only; (vi) China: Houlihan Lokey Howard & Zukin Investment Consulting (Beijing) Co., Limited (financial advisory services); (vii) Japan: Houlihan Lokey K.K. (financial advisory services); and (viii) Australia: Houlihan Lokey (Australia) Pty Limited (ABN 74 601 825 227), a company incorporated in Australia and licensed by the [Australian Securities and Investments Commission](#) (AFSL number 474953) in respect of financial services provided to wholesale clients only. In the European Economic Area (EEA), Dubai, Singapore, Hong Kong, and Australia, this communication is directed to intended recipients, including actual or potential professional clients (EEA and Dubai), accredited investors (Singapore), professional investors (Hong Kong), and wholesale clients (Australia), respectively. Other persons, such as retail clients, are NOT the intended recipients of our communications or services and should not act upon this communication.

Houlihan Lokey gathers its data from sources it considers reliable; however, it does not guarantee the accuracy or completeness of the information provided within this presentation. The material presented reflects information known to the authors at the time this presentation was written, and this information is subject to change. Houlihan Lokey makes no representations or warranties, expressed or implied, regarding the accuracy of this material. The views expressed in this material accurately reflect the personal views of the authors regarding the subject securities and issuers and do not necessarily coincide with those of Houlihan Lokey. Officers, directors, and partners in the Houlihan Lokey group of companies may have positions in the securities of the companies discussed. This presentation does not constitute advice or a recommendation, offer, or solicitation with respect to the securities of any company discussed herein, is not intended to provide information upon which to base an investment decision, and should not be construed as such. Houlihan Lokey or its affiliates may from time to time provide investment banking or related services to these companies. Like all Houlihan Lokey employees, the authors of this presentation receive compensation that is affected by overall firm profitability.



HOULIHAN LOKEY

CORPORATE FINANCE
FINANCIAL ADVISORY SERVICES
FINANCIAL RESTRUCTURING
STRATEGIC CONSULTING

[HL.com](https://www.hl.com)