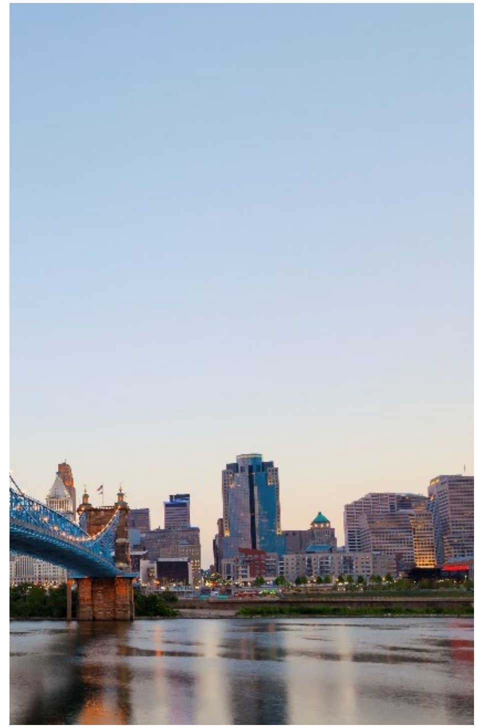

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A PERFECT STORM IN ENERGY MARKETS?

Energy Markets Update – March 2020

OIL MARKETS IN TURMOIL

Dec. 31, 2019 **COVID-19**

China reported the first case of COVID-19. Since that time, markets have experienced significant turmoil in response to global economic slowdown expectations.

Mar. 2, 2020 **OPEC RESPONSE**

OPEC and certain non-OPEC countries (collectively known as OPEC+) met in Vienna but failed to reach an agreement on production cuts. Prior to the meeting, the market had anticipated additional production cuts, along with an extension of those previously agreed to cuts, which expire at the end of March.

The group was unable to reach an agreement due to Russia's actions to stall a decision.

Notably, Russia refused to agree to additional production cuts, a decision that could be aimed at adding pressure to the U.S. shale producers and capturing additional market share.

Mar. 6, 2020 **PRICE WAR ENSUES**

Meeting for a second time during the week, Russia refuses deeper production cuts or an extension of those currently in place.

Subsequently, Saudi Arabia announced cuts to its pricing for crude oil and indicated it would boost production, effectively entering a price war with Russia.

Mar. 9, 2020 **OIL PRICES COLLAPSE**

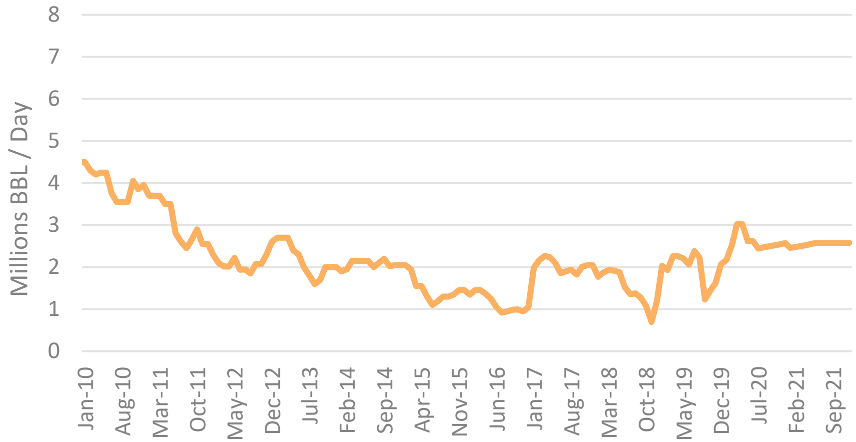
In response to these events and concerns that energy markets could suffer from a demand shock driven in part by the Coronavirus, oil prices plunged 25% to close at approximately $31/barrel. This represented the **largest one-day decline since 1991**.

The implications of sharply lower oil prices are potentially far reaching for the global economy. Energy companies could cut production, leading to layoffs and banks holding loans to energy companies could be negatively impacted.

DEMAND & SUPPLY SHOCKS – A PERFECT STORM FOR OIL

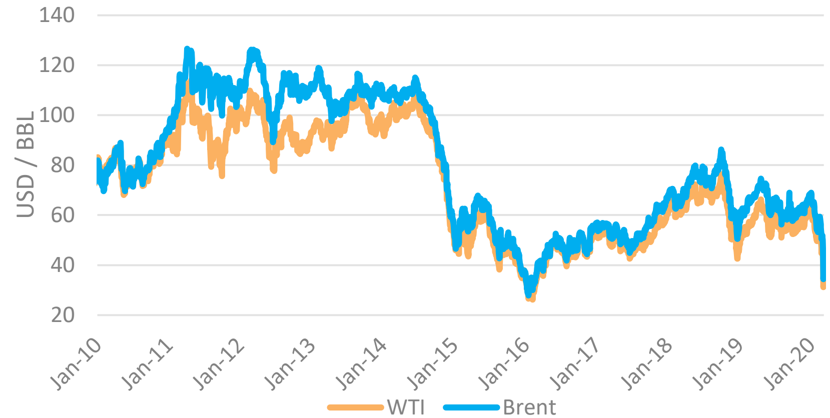
MARKETS EXPECTED DEEPER OPEC CUTS UNTIL THE MARCH 9th DECISION…

EXCESS OPEC SUPPLY & EIA FORCAST EXPECTATIONS /
As of February 11, 2020



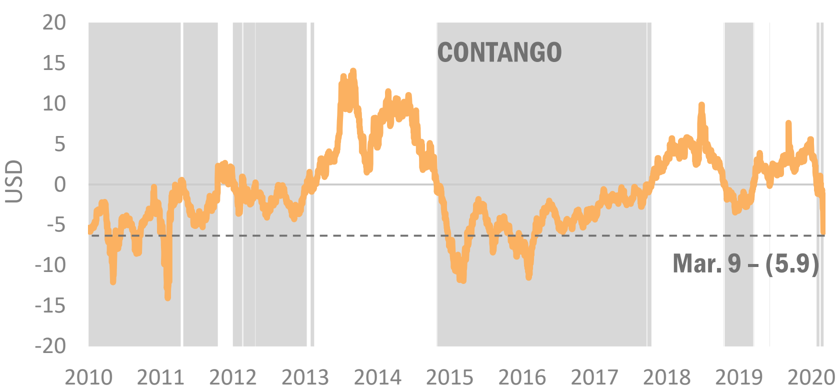
…RESULTING IN A -25% SINGLE DAY DECLINE, AND -49% YEAR TO DATE

WTI & BRENT CRUDE FRONT MONTH PRICE /
As of March 9, 2020



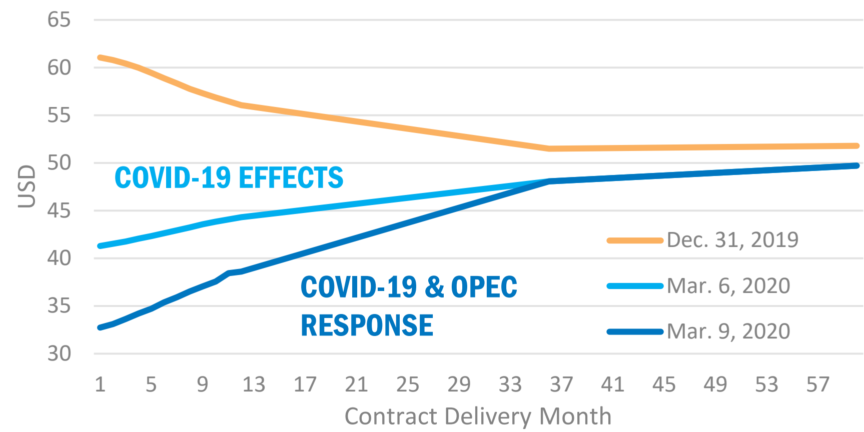
OIL BEGAN TRADING IN CONTANGO IN FEBRUARY, EXPECTING SOME RELIEF FOR FUTURE PRICING…

1ST MONTH - 12TH MONTH CRUDE FUTURE CONTRACT SPREAD /
As of March 8, 2020



…BUT THE RECENT PRICE WAR HAS ONLY DEEPENED PRICING EXPECTATIONS

CRUDE FUTURES CURVE /
As of March 9, 2020

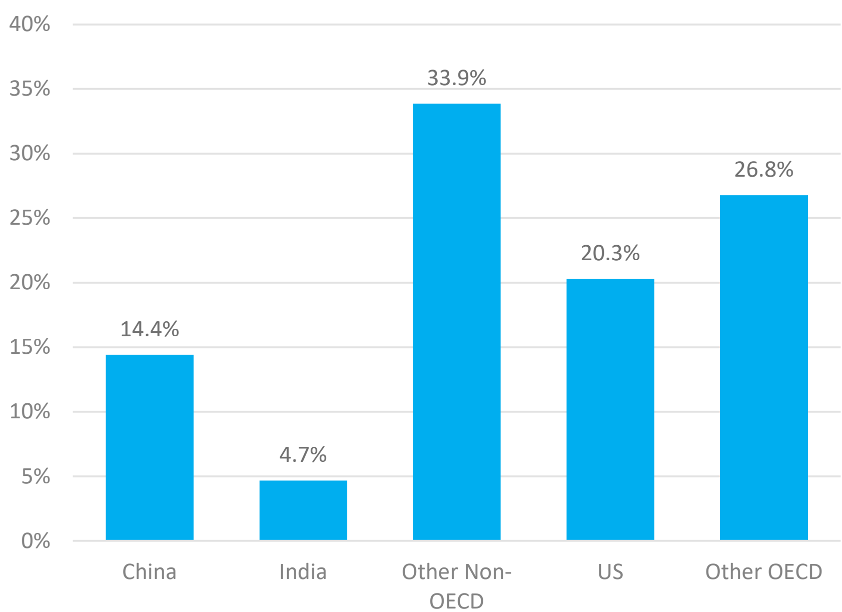


Data Sources: Energy Information Agency

CHINA IS ONE OF THE PRIMARY CONSUMERS OF LIQUID FUELS...

In 2019, China consumed nearly 15% of global liquid fuels for use in their industrial and manufacturing processes and transportation end use.

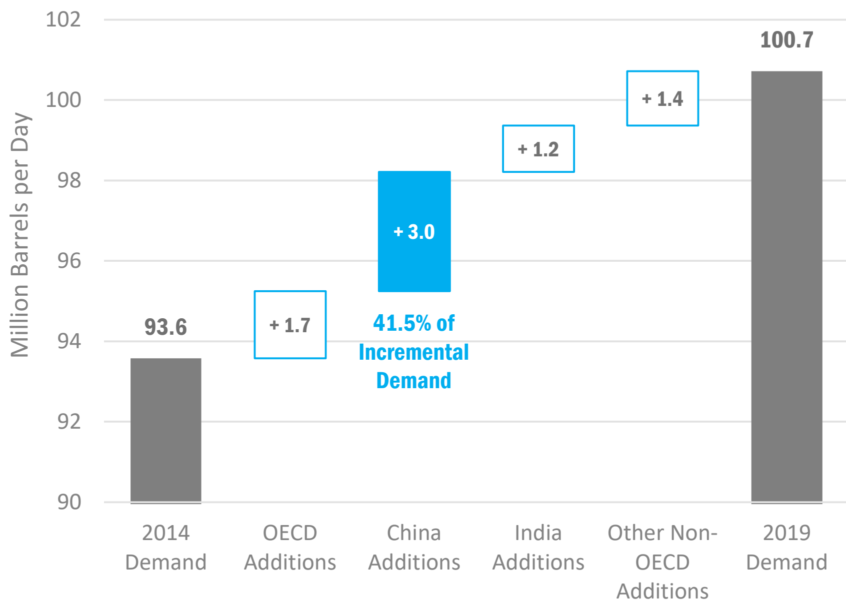
PERCENT OF GLOBAL LIQUID FUEL CONSUMPTION /
Year Ending December 31, 2019



...AND HAS BEEN THE PRIMARY DRIVER OF CONSUMPTION GROWTH

Further, China has grown its fuel consumption considerably over the past five years, with the expectation this trend continues. A disruption in China's fuel consumption can and has had an outsized impact on energy commodity prices.

CONTRIBUTION TO LIQUID FUEL CONSUMPTION GROWTH /
Year Ending Dec. 31, 2014 to Year Ending Dec. 31, 2019

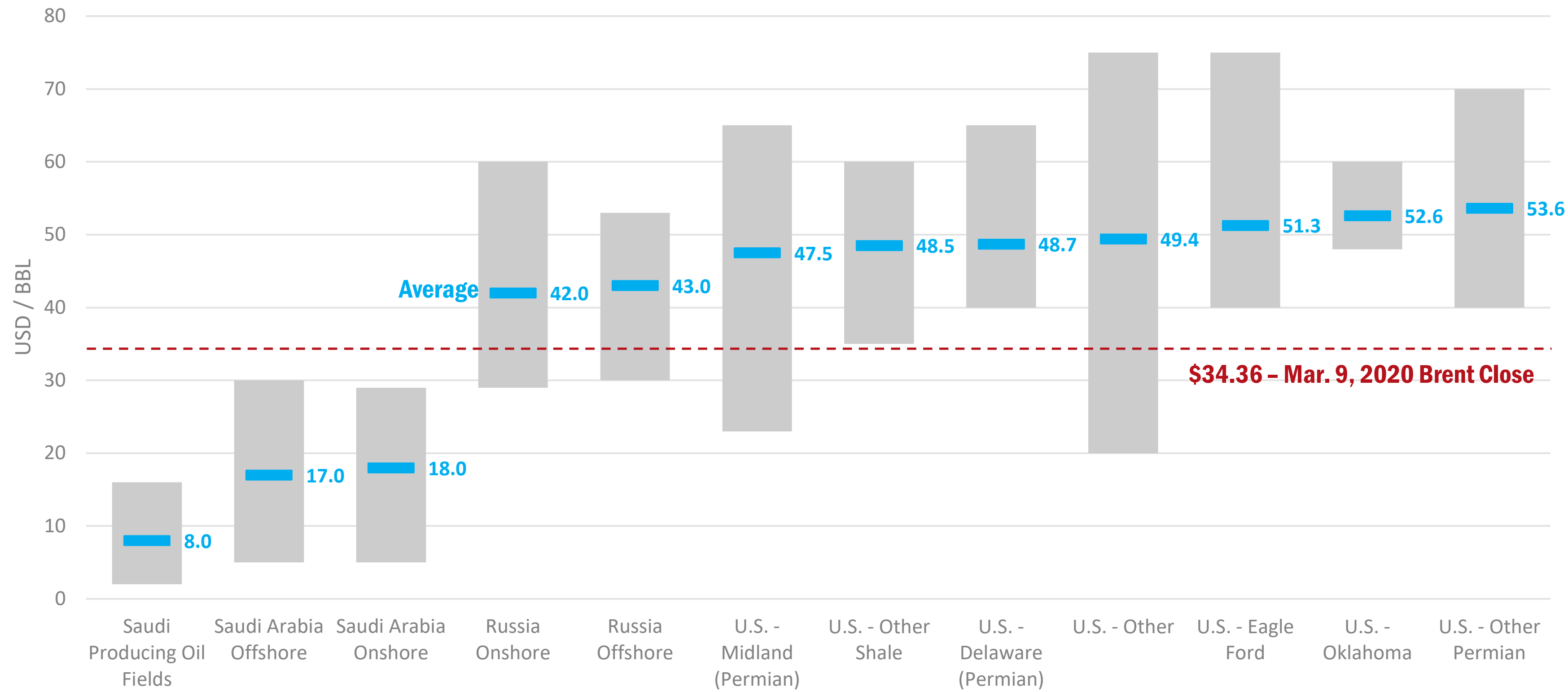


Data Sources: Energy Information Agency

CURRENT PRICE LEVELS UNSUSTAINABLE IN THE LONG TERM

- Current oil prices are not sustainable for new projects within the US, and most other geographies.
- Saudi Arabia has the lowest cost of crude oil extraction, but this does not consider the commonly quoted breakeven figure that the country would need to balance its budget.
- In the short term, it may be important to consider drilled but uncompleted wells in the U.S. that may have a lower breakeven point when sunk costs are disregarded.

BREAKEVEN PRICE PER BARREL FOR CRUDE PRODUCTION /



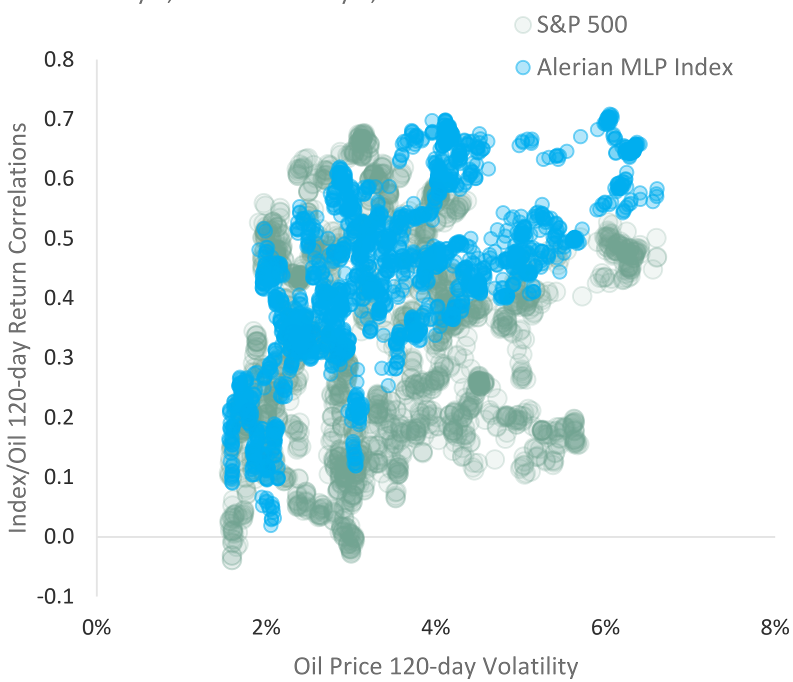
Notes: Saudi Arabian and Russian breakeven rates were calculated by IHS Markit for Brent production in 2018. The results of this analysis was included in the Saudi Aramco prospectus. The calculation considers post-tax price per barrel required to achieve a 10% rate of return through 2030. U.S. breakeven rates consider WTI production and were collected by the Federal Reserve Bank of Dallas through a 2019 survey of 82 exploration and production company executives, responding to the question "In the top two areas in which your firm is active: What WTI oil price does your firm need to profitably drill a new well?"

Data Sources: IHS Markit; Federal Reserve of Dallas

OIL VOLATILITY BLEEDS INTO MIDSTREAM...

While midstream is a "volume business" that paid based on the throughput of their infrastructure, it has historically traded in line with oil in times of excessive volatility – a relationship that is not present in broader equity markets.

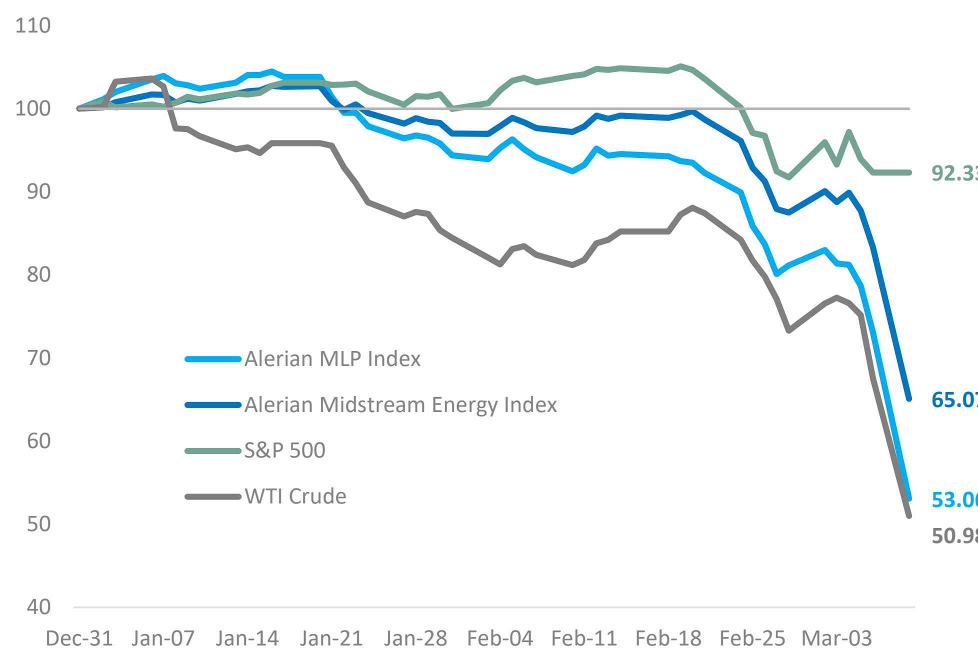
OIL PRICE VOLATILITY V. INDEX/OIL RETURN CORRELATIONS /
As of January 1, 2011 - February 7, 2020



...AND WAS SEEN IN THE RECENT COLLAPSE

Midstream was already off to slow start this year, particularly MLPs. With the collapse in oil prices, MLPs and C-corps experienced a sell off on general sentiment around the commodity and potential declines in future throughput.

INDEXED RETURNS OF MIDSTREAM & CRUDE /
As of March 9, 2020, Indexed to 100 on December 31, 2019



Data Sources: Alerian; Bloomberg LP

VALUATIONS

- Expect mark-downs in asset values in private energy funds for First Quarter 2020
- Managers use a number of inputs into their valuation process. Apart from commodity prices, these include reserves, production rates, operating costs, and estimated capital expenditures.
- Estimates and assumptions apply a discount rate commensurate with production profile. A discount rate of 10% will typically be used for proved reserves.
- Managers also calculate values based on the three-year NYMEX (New York Mercantile Exchange) strip. In this case, the NYMEX forward curves for oil and gas prices as of the end of the current quarter are applied to the production forecast for the next three years.
- "Resource Funds" – Those that own and operate oil and gas properties are more exposed to commodity price movements
- Energy services companies may be particularly vulnerable to cutbacks in drilling activity

MITIGATING FACTORS

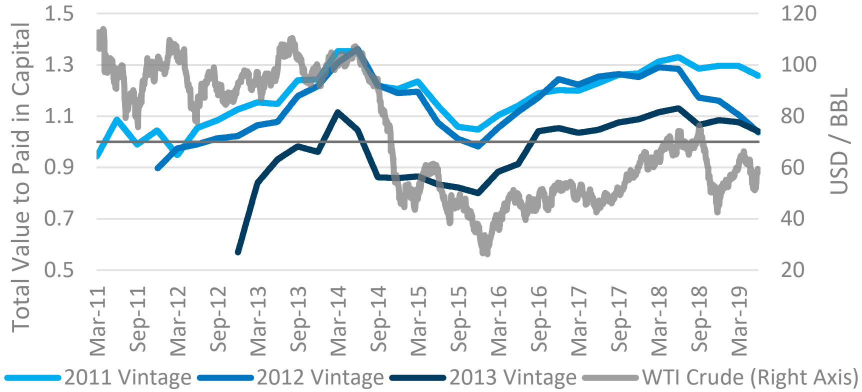
- Many of FEG's private energy managers maintain hedges on crude and natural gas production
- Many underlying portfolio companies have limited leverage

PRIVATE ENERGY FUNDS THROUGH PRIOR DOWNTURN

MARKS ON CURRENT INVESTMENTS

Funds raised before 2014 saw markdowns immediately following the collapse in oil prices and subsequently followed prices upwards. Private managers typically use forward curves within their valuations.

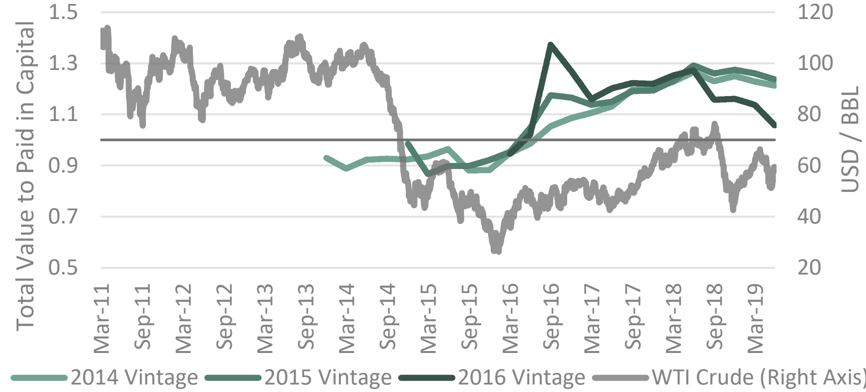
PRIVATE ENERGY TVPI MARKS & WTI CRUDE PRICES /
As of June 30, 2019



MARKS ON CAPITAL INVESTED THROUGH THE DOWNTURN

While initially slow to mark up assets, fund performance improved coming out of the trough in commodity prices.

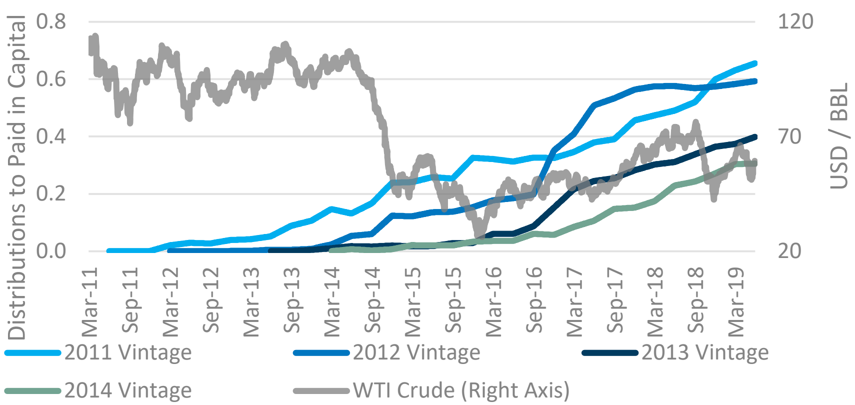
PRIVATE ENERGY TVPI MARKS & WTI CRUDE PRICES /
As of June 30, 2019



DISTRIBUTIONS ON CURRENT INVESTMENTS

During the last collapse in oil prices, distributions slowed, but gradually increased as prices improved .

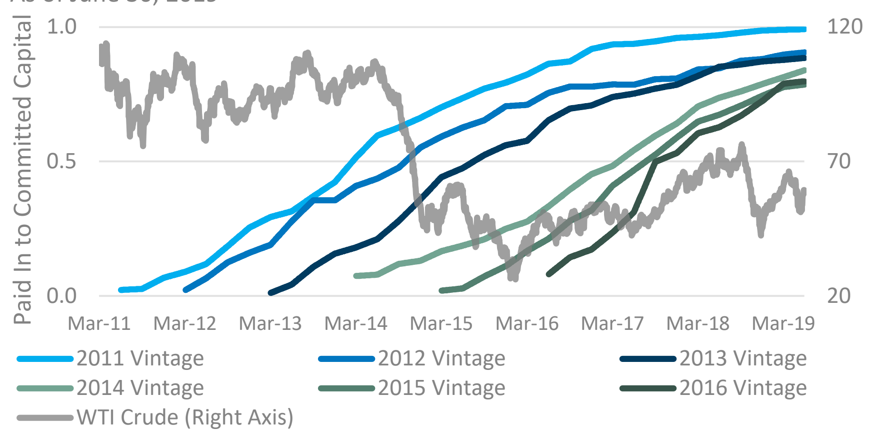
PRIVATE ENERGY DPI & WTI CRUDE PRICES /
As of June 30, 2019



CALLED CAPITAL ON CURRENT AND NEW COMMITMENTS

Funds following the initial decline increased pacing, drawing down committed capital faster than earlier vintages.

PRIVATE ENERGY PAID IN CAPITAL TO COMMITTED & WTI CRUDE PRICES /
As of June 30, 2019



Data Sources: ThomsonOne; Bloomberg, LP

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The Alerian US Midstream Energy Index is comprised of energy infrastructure companies whose constituents earn the majority of their cash flow from midstream activities involving energy commodities. This index is based on market capitalization and float adjusted and assumes the reinvestment of distributions. For more information see www.alerian.com.



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