

EXECUTIVE SUMMARY

Some headlines are timeless: [The Washington Capitals, after years of frustration, win the Stanley Cup](#)

The Capitals' Stanley Cup championship was an awesome example of perseverance and overcoming adversity. Not so long ago, many people also thought it was impossible that U.S. could overcome its decline in natural gas and oil production. But the U.S. set new production records in May at 10.6 million barrels per day (MBD), plus another record 4.1 MBD in natural gas liquids (NGLs). Total U.S. supply in May, including crude oil, NGLs and other liquid fuels, was up by more than 2.0 MBD from a year ago. This increase should have met nearly all global oil demand growth so far in 2018. And with drilling activity that continued to rise in May, the U.S. has been poised for even further production growth.

With so much new supply, why have prices risen? The primary reason has been strong economic and oil demand growth. Through the first five months of the year, U.S. petroleum demand has remained 650 thousand barrels per day (KBD) above the same period in 2017. U.S. refineries operated at their highest average capacity utilization rate (91.4 percent) since 2003. Additionally, refined product imports over the same period increased to their highest level (2.2 MBD) since 2011.

U.S. petroleum inventories normally accumulate during the month of May, but that didn't happen this year for only the third time since 1956. Some people might attempt to blame U.S. crude oil exports, but that blame would be misplaced. U.S. crude oil inventories accumulated in May on par with their median rate (0.3 percent) since 1956, so it was mainly about the strong demand for refined products. And that's a great problem to have because it means that consumers and businesses have thrived with solid employment conditions, wage growth and sentiment that has enabled their livelihoods and supplied the fuels and materials that enhance modern society.

May highlights

(Click hyperlinks to advance to any section)

Demand

[U.S. petroleum demand growth was solid but moderated.](#)

- [Motor gasoline demand for first five months of 2018 became the highest on record.](#)
- [Distillate demand growth remained solid.](#)
- [Jet fuel demand growth accelerated to its strongest May ever.](#)
- [Residual fuel oil rose along with shipping.](#)
- [Refinery and petrochemical feedstock demand growth slowed in May.](#)

Prices & Macroeconomy

- [Strong global demand raised international oil prices by more than domestic ones.](#)
- [Solid economic growth, but weakened expectations.](#)

Supply: [Record 10.6 MBD U.S. oil production; drilling continued to accelerate.](#)

International trade: [The U.S. petroleum trade balance YTD was at its lowest in more than 50 years.](#)

Industry operations: [Record refinery throughput through the first five months of the year.](#)

Inventories: [U.S. petroleum inventories failed to grow in May for the first time since 1987.](#)

Monthly Statistical Report on U.S. oil – May 2018

Heat map of year-to-year percentage changes



* Boldest colored increases and decreases reflect monthly changes v.s. prior year that are in the top or bottom quartile for the past five years
sources: API Monthly Statistical Report, EIA, CFTC, Baker Hughes

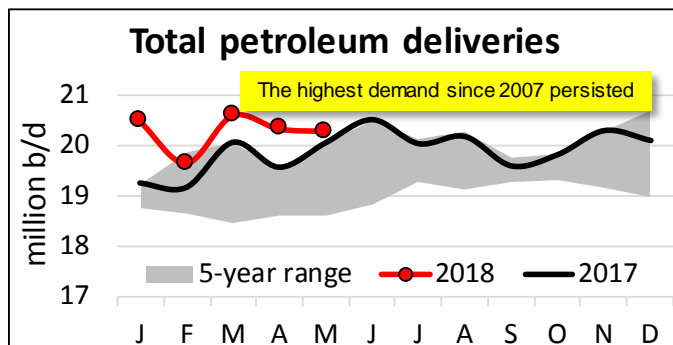
Highlights for May 2018, compared with May 2017

- Tightened market with inventories down year-over-year
- The U.S. petroleum net trade balance narrowed as exports grew and imports fell
- Drilling activity continued to rise, which positioned the U.S. for further supply growth

Details by section

Demand

U.S. petroleum demand growth was solid but moderated

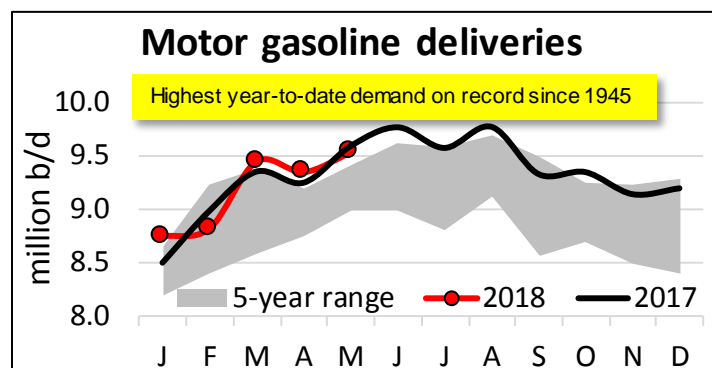


U.S. petroleum demand, as measured by total domestic petroleum deliveries, was 20.3 MBD in May, which was a monthly decrease of 0.2 percent from April but a 1.1 percent increase from May 2017. This was the strongest May monthly demand since 2007, but notably moderated in growth and converged towards the five-year range. Specifically, total petroleum demand in May was 220 KBD above that of May 2017. By comparison, over the first five months of the year, U.S. petroleum demand

averaged 650 KBD above that of the same period in 2017. These results have remained consistent with solid U.S. economic activity.

Gasoline

Motor gasoline demand for first five months of 2018 became the highest on record



Despite higher prices in 2018, U.S. gasoline demand has had a banner year so far. Consumer gasoline demand, as measured by total motor gasoline deliveries, year-to-date through May was the highest on record since 1945 (9.2 MBD). In May, gasoline demand was 9.5 MBD; this was an increase

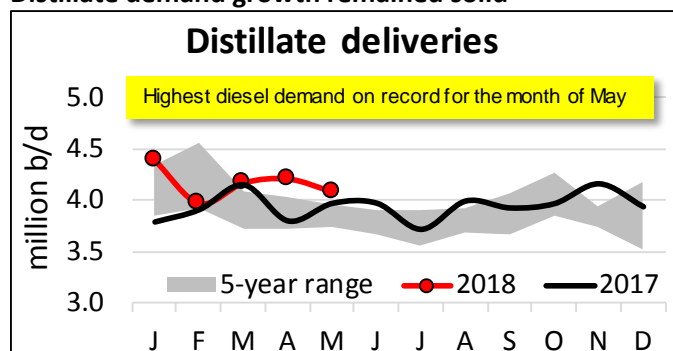
of 2.0 percent from April, but a decrease of 0.6 percent compared with May 2017.

Reformulated-type gasoline, which is consumed primarily in urban areas, grew by 0.3 percent y/y in May to 3.3 MBD. By contrast, conventional gasoline is used more in rural areas and fell by 1.1 percent y/y in May to 6.2 MBD.

Gasoline and crude oil prices generally move in tandem. WTI crude oil averaged \$69.98 per barrel in May, up by \$3.73 per barrel from April and \$21.50 per barrel above May 2017. The average price of regular-grade gasoline was \$2.987 per gallon in May, which was an increase of 11.4 cents per gallon (4.0 percent) from April and 48.4 cents per gallon (19.3 percent) versus May 2017.

Distillate Fuel Oil

Distillate demand growth remained solid



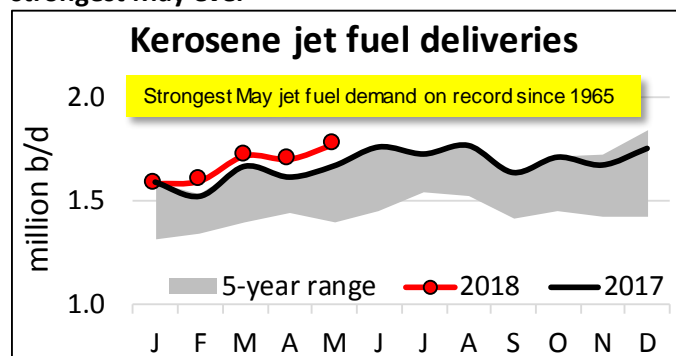
Demand for distillates, which was up by 5.2 percent y/y through the first five months of the year, has continued to experience solid growth but moderated toward the 5-year range. In May, distillate deliveries of 4.1 MBD decreased by 3.1 percent from April but increased by 2.8 percent compared with May 2017.

About 96 percent of distillate demand in May was for ultra-low sulfur distillate (ULSD), which decreased by 0.7 percent m/m but increased by 1.4 percent y/y. The growth suggested solid road freight transportation activity, which according to the Bureau of Labor Statistics' Producer Price Index for freight trucking rose in May by 0.8 percent m/m and 7.2 percent y/y.

The remaining 4 percent of distillate deliveries was for high sulfur distillate fuel (HSD), which is a heating fuel in the residential and commercial sectors and a marine fuel when blended to upgrade heavy fuel oil. As warmer weather emerged across much of the United States, HSD deliveries fell to 138 KBD in May, which was a 42.7 percent fall from April but still 45.3 percent above the level from May 2017. These estimates are consistent with the EIA's reporting of heating degree days. In its [Short-Term Energy Outlook](#), the EIA estimated that heating degree days across the U.S. in May were down by 76 percent m/m and 36 percent y/y.

Kerosene Jet Fuel

Jet fuel demand growth accelerated to its strongest May ever

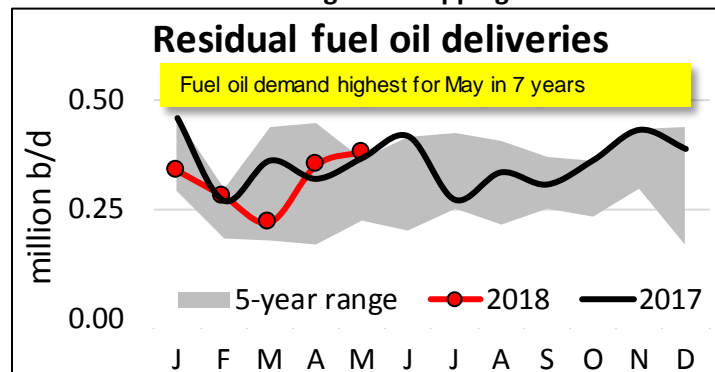


Kerosene jet fuel deliveries in May increased by 4.2 percent from April and 6.1 percent compared with May 2017 at 1.8 MBD – the strongest monthly demand for May on record since 1965.

The [International Air Transport Association \(IATA\)](#) reported U.S. domestic passenger demand increased by 5.3 percent y/y in April, which was another sign of strong economic growth.

Residual Fuel Oil

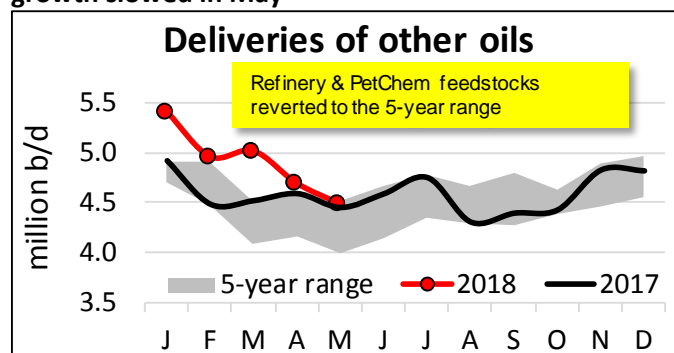
Residual fuel oil rose along with shipping



Residual fuel oil is used in electric power production, space heating, vessel bunkering and other industrial applications. Residual fuel oil demand rose to 383 KBD in May, which was an increase of 8.5 percent versus April and 4.1 percent versus May 2017. Residual fuel oil demand rose despite the seasonal drop in heating degree days. However, it appeared to be consistent with a strong increase in shipping activity, as the Baltic Dry index was up by 33% y/y in May.

Other Oils

Refinery and petrochemical feedstock demand growth slowed in May



Refining and petrochemical demand for liquid feedstocks, naphtha and gasoil ("other oils"), has moderated. In May, the demand was 4.6 MBD, which was a decrease of 4.3 percent from April but an increase of 2.5 percent versus May 2017. This

has continued to reflect solid refining and petrochemical activity. The American Chemistry Council's [Chemical Activity Barometer](#) was flat in May versus April but increased by 3.8 percent y/y.

Prices

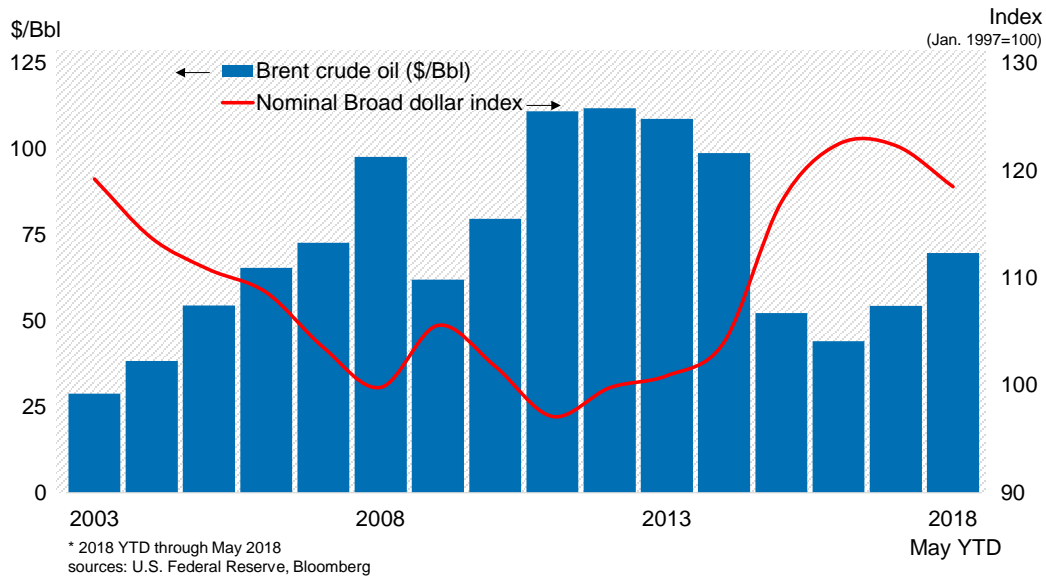
Strong global demand continued to raise international oil prices by more than domestic ones

Domestic WTI crude oil prices averaged \$69.98 per barrel in May, up by 5.6 percent from April and 44.3 percent versus May 2017. Meanwhile, international Brent crude oil prices increased by more – 6.3 percent m/m in May to \$76.65 per barrel—which reinforced how strong global economic and oil demand has remained.

As U.S. production has expanded rapidly, WTI crude oil traded as an average discount of \$6.67 per barrel below Brent in May, which was the third consecutive monthly increase in the price differential and pushed it above the recent peak of \$6.50 per barrel in December.

Changes in the U.S. dollar's foreign exchange value are another factor for crude oil prices. As of May, the Federal Reserve's broad dollar index was down by 1.9 percent y/y, which in general has tended towards higher prices.

Brent crude prices and the U.S. dollar's foreign exchange value



- As of May 2018, the dollar's exchange value fell by 1.9 percent compared with May 2017

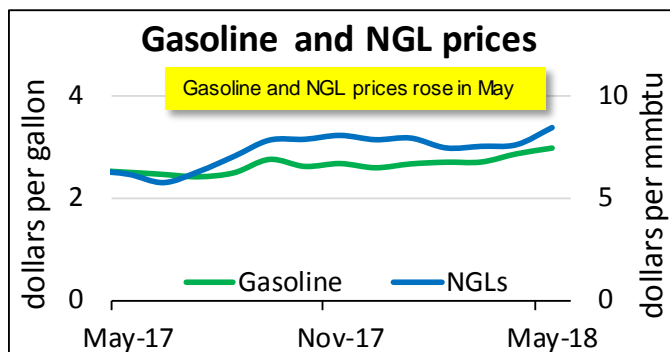
Another positive has been the relative stability of ethane prices despite growing demand and rising crude oil prices. Composite natural gas liquids (NGL) prices averaged \$8.41 per million BTU (MMBtu) in May, which was an increase of 10.9 percent from April and 37.0 percent versus May 2017. However, ethane prices – which are pivotal to the U.S. petrochemical and manufacturing growth – decreased by 3.9 percent in May. Among the other NGLs, the prices for propane and butane prices increased by about 15 percent m/m, and field natural gasoline prices increased by 9.0 percent m/m.

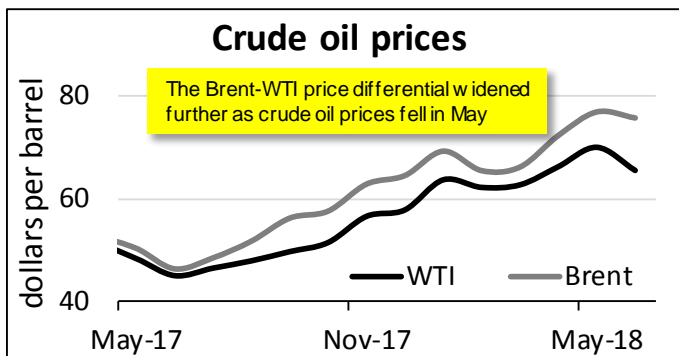
Macroeconomy

Solid economic growth, but weakened expectations

May continued to yield solid leading economic indicators, including the business climate, consumer sentiment and employment conditions, so the backdrop for petroleum demand remained strong.

Global economic growth has remained solid so far 2018. Based on country growth rates in the Bloomberg consensus as of May, global GDP growth in 2018 could be 3.2 y/y on a market exchange rate basis, which would be the strongest rate since 2011. The Bureau of Economic Analysis reported U.S. GDP growth for Q1 2018 of 2.1 percent at a seasonally adjusted annualized rate (saar) (a downward revision from 2.3 percent saar), but still was up by 2.8 percent versus Q1 2017. The Bloomberg consensus expects U.S. real GDP growth to hold steady near 2.8 percent y/y through the second half of 2018, but slow over the next two years. Please see the latest [API Industry Outlook presentation](#) for more.





Leading economic indicators have continued to suggest expanding business conditions. The [Institute for Supply Management's Purchasing Managers Index \(PMI\)](#) registered 58.7 in May, an increase of 1.4 percentage points from April. Any value above 50.0 suggests an expansion. New orders, production activity, employment, supplier deliveries, and the backlog of orders expanded. Growth occurred across all 18 manufacturing sectors surveyed.

Separately, the [University of Michigan's consumer sentiment index](#) decreased to 98.0 in May, down by 0.8 points from April. This level remained relatively strong despite a rise in price inflation and weakened consumer expectations about income gains. University of Michigan Director Richard Curtin suggested that, after a prolonged period of low price inflation, consumers' judgment about the impact of price inflation as well as their behavioral reaction to indications of price inflation appear to have changed versus a decade ago.

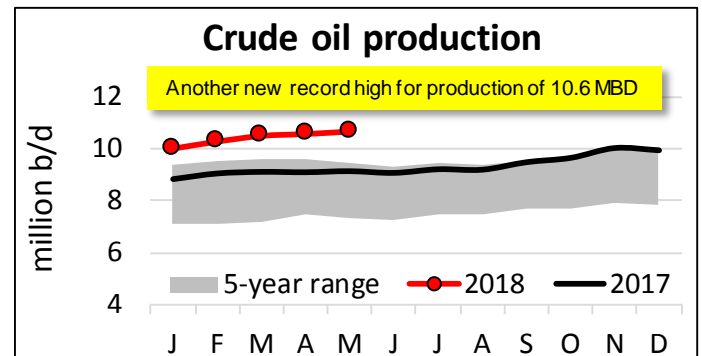
Labor markets have remained tight. U.S. non-farm payrolls grew by 223,000 in May, and the unemployment rate fell to 3.8 percent, according to the [Bureau of Labor Statistics \(BLS\)](#).

Supply

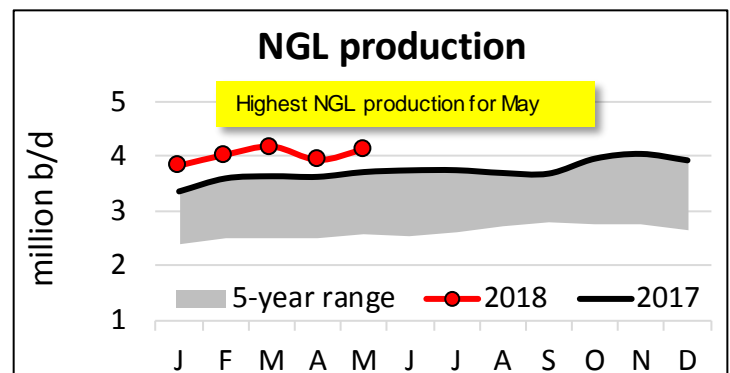
Record 10.6 MBD U.S. oil production; drilling continued to accelerate

U.S. crude oil production rose to a record 10.6 MBD in May, which was an increase of nearly 100 KBD above April. It also was 1.5 MBD over May 2017 and the second largest annual oil production increase in U.S. history (December 2014, 1.6 MBD y/y). Regionally, more than 60 percent of the increase

has come from Texas. Colorado, New Mexico, North Dakota, Oklahoma, and Wyoming together contributed another 39 percent of the annual growth.



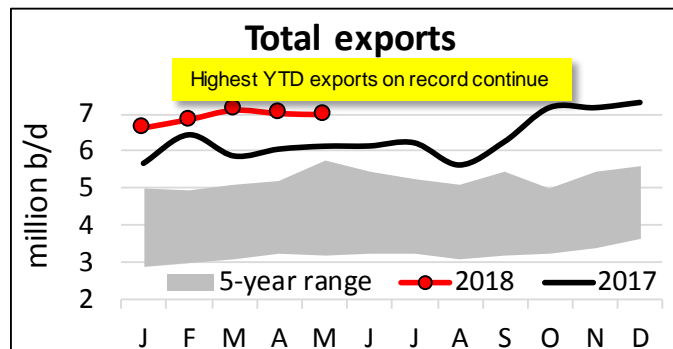
Natural gas liquids (NGL) production, a co-product of natural gas production, was 4.1 MBD in April; this was an increase of 10.9 percent compared with May 2017. According to the EIA's Short-Term Energy Outlook (STEO), released June 12, 2018, U.S. dry natural gas production averaged 81.3 billion cubic feet per day (Bcf/d) in May, which was up by 13.3 percent from May 2017; this growth accelerated from 12.8 percent y/y in April.



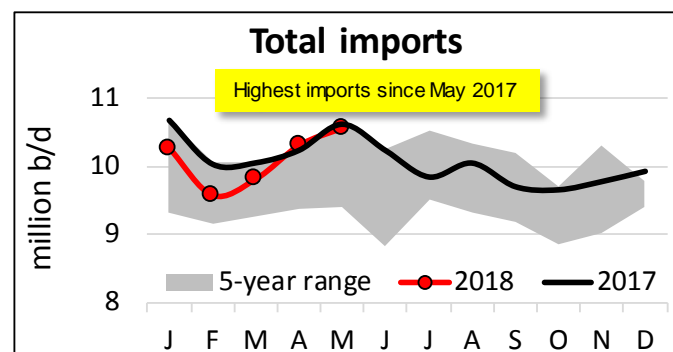
Oil and natural gas production follows with a lag between most drilling and production. According to Baker Hughes, Inc., the U.S. rig count rose to 1,059 by the end of May, up by 14.6 percent year-to-date. This should continue to position the U.S. for further production growth.

International trade

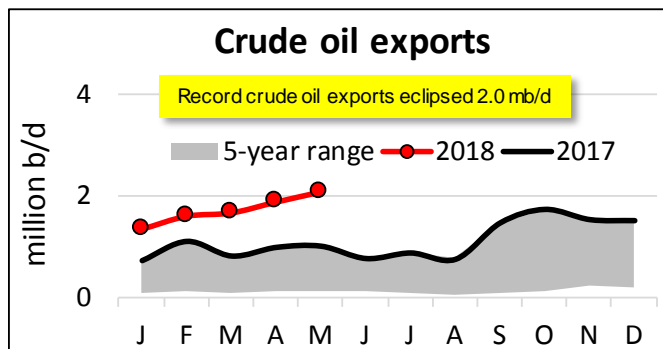
U.S. petroleum trade balance year-to-date was at its lowest in more than 50 years



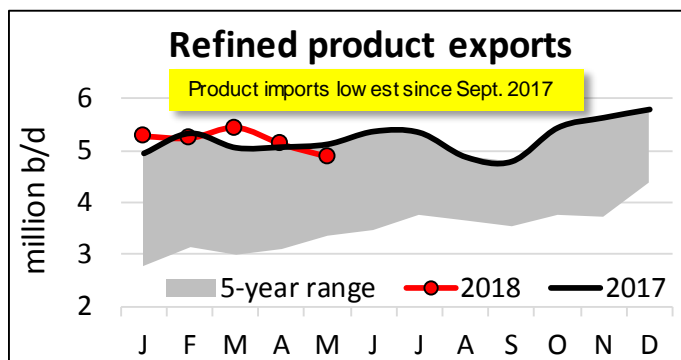
Crude oil and refined product imports were 10.6 MBD in May. This was an increase of 2.5 percent from April, but a decrease of 0.5 percent compared with May 2017. Within the total, crude oil imports fell by 5.4 percent y/y, while refined product imports rose by 17.8 percent y/y. Canadian imports made up 35.3 percent of total petroleum imports in May and increased by 160 KBD to 3.7 MBD.



By comparison, total U.S. petroleum exports in May were 7.0 MBD, basically unchanged from April but an increase of 840 KBD compared with May 2017. The increase was attributable to crude oil exports, which rose to 2.1 MBD in May, up by 1.1 MBD from a year ago. Refined product exports fell by 230 KBD or 4.5 percent compared both with April and May 2017.

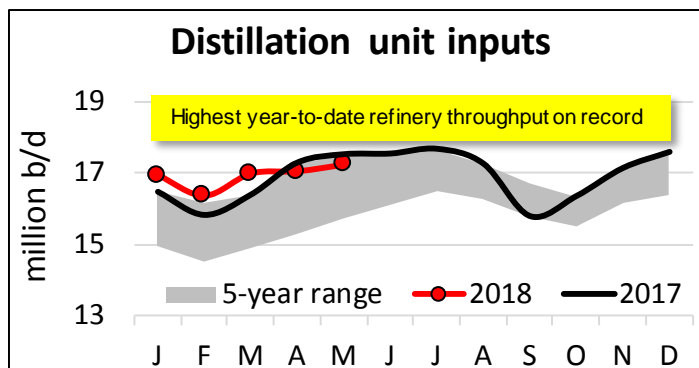


Year-to-date through May, the U.S. petroleum trade balance averaged 3.3 MBD of net imports, which was the lowest level of net imports (that is, the most favorable U.S. petroleum trade balance) in more than 50 years.

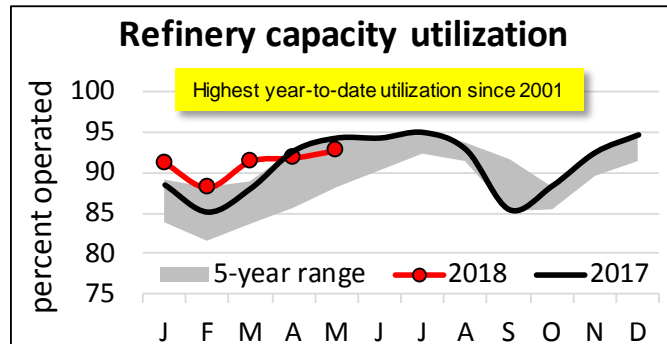


Industry operations

Record refinery throughput through the first five months of the year



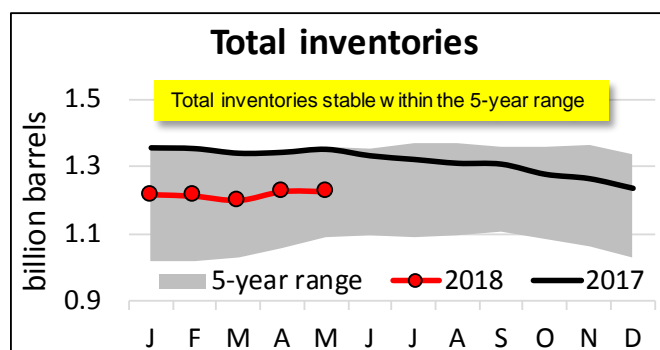
U.S. refineries have continued to run about as hard as they could. Year-to-date through May, refinery throughput was at its greatest level on record. For the month of May, however, total refinery gross inputs rose by 1.1 percent m/m to 17.2 MBD but were down by 1.7 percent versus May 2017. Jet fuel production of 1.8 MBD was up from last month and year, but gasoline, distillate and residual fuel oil production each were down on monthly and annual bases.



The refinery utilization rate in May was 92.6 percent, 0.9 percentage points above that of April but 1.7 points below that of May 2017. According to Bloomberg, refinery crude distillation unit outages fell to 0.4 MBD at the end of May from 1.1 MBD at the end of April.

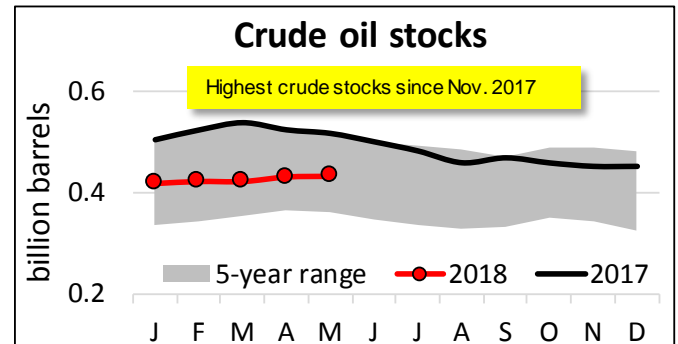
Inventories

U.S. petroleum inventories failed to grow in May for the first time since 1987



As is evident from the heatmap at the introduction, petroleum inventories in May were below last year's levels.

In May, total crude and refined product inventories of 1.25 billion barrels were same as they were in April but remained down by 9.2 percent compared with May 2017. In 59 of the past 62 years on record, U.S. petroleum inventories increased between April and May. Since 1956, petroleum inventories have risen by an average of 2.4 percent m/m (and median 2.3 percent m/m) for the month of May. This year is the first one since 1987 in which inventories have not risen.



Importantly, crude oil inventories rose by 0.3 percent m/m in May, which is on par with the median increase in U.S. crude oil inventories since 1956. Consequently, what has happened so far in 2018 is that refined product inventories have not accumulated as they typically have, which may speak to the strength of U.S. economic and fuels demand growth.

ESTIMATED UNITED STATES PETROLEUM BALANCE¹
(Daily average in thousands of 42 gallon barrels)

Disposition and Supply	May			Year-to-Date		
	2018 ²	2017	% Change	2018 ³	2017	% Change
Disposition:						
Total motor gasoline.....	9,529	9,590	(0.6)	9,176	9,138	0.4
Finished reformulated.....	3,298	3,289	0.3	3,059	3,011	1.6
Finished conventional.....	6,231	6,301	(1.1)	6,117	6,127	(0.2)
Kerosene-jet.....	1,773	1,671	6.1	1,673	1,617	3.5
Distillate fuel oil.....	4,079	3,969	2.8	4,126	3,921	5.2
≤ 500 ppm sulfur.....	3,941	3,874	1.7	3,903	3,721	4.9
≤ 15 ppm sulfur.....	3,926	3,872	1.4	3,886	3,714	4.6
> 500 ppm sulfur.....	138	95	45.3	223	200	11.5
Residual fuel oil.....	383	368	4.1	327	358	(8.7)
All other oils (including crude losses)	4,598	4,486	2.5	4,931	4,566	8.0
Reclassified ⁴	(104)	(43)	na	36	19	na
Total domestic product supplied.....	20,258	20,039	1.1	20,269	19,618	3.3
Exports.....	6,985	6,142	13.7	6,977	6,037	15.6
Total disposition.....	27,243	26,181	4.1	27,245	25,656	6.2
Supply:						
Domestic liquids production						
Crude oil (including condensate).....	10,634	9,177	15.9	10,258	9,067	13.1
Natural gas liquids.....	4,126	3,721	10.9	4,010	3,593	11.6
Other supply ⁵	1,788	1,192	50.1	1,282	1,184	8.3
Total domestic supply.....	16,548	14,090	17.5	15,550	13,843	12.3
Imports:						
Crude oil (excluding SPR imports).....	7,945	8,397	(5.4)	7,806	8,186	(4.6)
From Canada.....	3,730	3,569	4.5	3,667	3,492	5.0
All other.....	4,215	4,829	(12.7)	4,140	4,694	(11.8)
Products.....	2,627	2,231	17.8	2,184	2,151	1.6
Total motor gasoline (incl. blend.comp)....	812	763	6.4	569	653	(12.9)
All other.....	1,815	1,467	23.7	1,616	1,498	7.8
Total imports.....	10,572	10,628	(0.5)	9,991	10,337	(3.4)
Total supply.....	27,120	24,718	9.7	25,541	24,181	5.6
Stock change, all oils.....	(123)	(1,463)	na	(1,642)	(1,475)	na
Refinery Operations:						
Input to crude distillation units.....	17,202	17,494	(1.7)	16,976	16,697	1.7
Gasoline production.....	9,977	10,126	(1.5)	9,877	9,748	1.3
Kerosene-jet production.....	1,806	1,713	5.4	1,751	1,669	4.9
Distillate fuel production.....	5,104	5,230	(2.4)	4,931	4,907	0.5
Residual fuel production.....	390	423	(7.8)	435	442	(1.6)
Operable capacity.....	18,567	18,557	0.1	18,568	18,607	(0.2)
Refinery utilization ⁶	92.6%	94.3%	na	91.4%	89.7%	na
Crude oil runs.....	16,854	17,212	(2.1)	16,655	16,390	1.6

1. Total supply, i.e., production plus imports adjusted for net stock change is equal to total disposition from primary storage. Total disposition from primary storage less exports equals total domestic products supplied. Information contained in this report is derived from information published in the API *Weekly Statistical Bulletin* and is based on historical analysis of the industry. All data reflect the most current information available to the API and include all previously published revisions.

2. Based on API estimated data converted to a monthly basis.

3. Data for most current two months are API estimates. Other data come from U.S. Energy Information Administration (including any adjustments).

4. An adjustment to avoid double counting resulting from differences in product classifications among different refineries and blenders.

5. Includes unaccounted-for crude oil, withdrawals from the SPR when they occur, processing gain, field production of other hydrocarbons and alcohol, and downstream blending of ethanol.

6. Represents "Input to crude oil distillation units" as a percent of "Operable capacity".

R: Revised. na: Not available.

ESTIMATED UNITED STATES PETROLEUM BALANCE¹
(Daily average in thousands of 42 gallon barrels)

	May 2018	April 2018	May 2017	% Change From	
				Month Ago	Year Ago
Stocks (at month-end, in millions of barrels):					
Crude oil (excluding lease & SPR stocks).....	432.8	431.5	516.9	0.3	(16.3)
Unfinished oils.....	92.8	92.1	93.2	0.8	(0.5)
Total motor gasoline.....	236.7	237.3	242.2	(0.3)	(2.3)
Finished reformulated.....	0.1	0.1	0.0	0.0	19.0
Finished conventional.....	22.8	22.2	22.0	2.7	3.7
Blending components.....	213.8	215.0	220.1	(0.6)	(2.9)
Kerosene-jet.....	41.7	40.8	44.5	2.2	(6.2)
Distillate fuel oil.....	114.7	118.5	153.8	(3.2)	(25.4)
≤ 500 ppm sulfur.....	105.7	108.8	144.1	(2.8)	(26.7)
≤ 15 ppm sulfur.....	102.0	105.0	137.6	(2.9)	(25.9)
> 500 ppm sulfur.....	9.0	9.7	9.7		(6.9)
Residual fuel oil.....	32.6	33.3	40.0	(2.1)	(18.4)
All other oils.....	269.5	267.1 R	258.9	0.9	4.1
Total all oils.....	1,220.8	1220.6 R	1,349.4	0.0	(9.5)