

EXECUTIVE SUMMARY

Iranian oil supply uncertainty has recently dominated global oil market news, but a key figure from the United States should trump that concern: 2.0 million barrels per day (MBD) of new U.S. production. This is the amount by which total U.S. supply – crude oil, natural gas liquids and other liquids supplies together – increased in April compared with the same month last year. Other U.S. records in April were:

- Crude oil production of 10.5 million barrels per day (MBD), plus 5.4 MBD of natural gas liquids and other liquid supplies; and,
- Petroleum exports of more than 7.0 MBD, helping the U.S. petroleum trade balance shrink by 880 thousand barrels per day (KBD) below that of April 2017.

Underlying U.S. economic and energy demand growth also remained strong. U.S. petroleum demand was over 20.3 MBD in April – the strongest demand for the month since 2007. Refineries struggled to keep up, as distillation unit outages grew to 1.1 MBD by the end of the month. Consequently, U.S. petroleum inventories grew in April, but did so by the smallest percentage for the month of April since 1995.

April highlights

(click hyperlinks to advance to any section)

Demand

- [U.S. petroleum has sustained its highest levels in 11 years.](#)
 - ◇ [Motor gasoline demand for first four months of 2018 was 2nd highest on record.](#)
 - ◇ [Distillate fuel rose un-seasonally to 4.2 MBD.](#)
 - ◇ [Jet fuel demand achieved its strongest April on record.](#)
 - ◇ [Residual fuel oil has followed a familiar seasonal pattern.](#)
 - ◇ [Refinery and petrochemical feedstock monthly demand declined due to outages.](#)

Prices & Macroeconomy

- [Strong global demand raised international oil prices by more than domestic ones.](#)
- [Strong economic growth; signs of price inflation.](#)

Supply

- [Record 10.5 MBD U.S. oil production; drilling has continued to accelerate.](#)

International trade

- [The U.S. petroleum trade balance shrank by 380 KBD for the month of April.](#)
- [U.S. petroleum exports set new record above 7.0 MBD in April.](#)

Industry operations

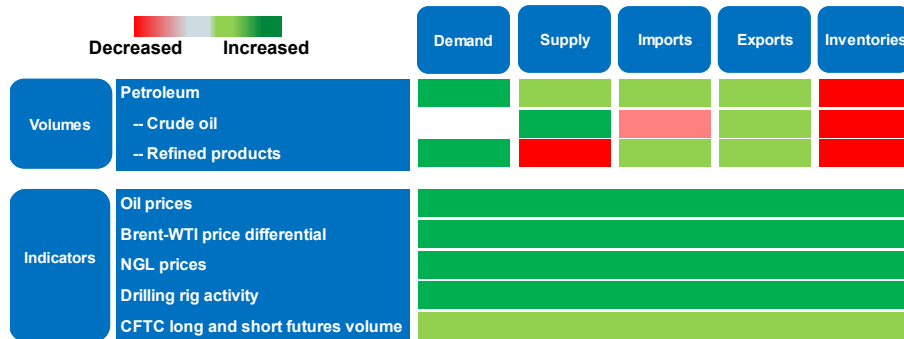
- [Record year-to-date processing, but outages slowed distillation inputs in April.](#)

Inventories

- [U.S. petroleum inventories: smallest April monthly percentage since 1995.](#)

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

Heat map of year-to-year percentage changes



* Boldest colored increases and decreases reflect monthly changes vs. 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 April 2018, compared with April 2017

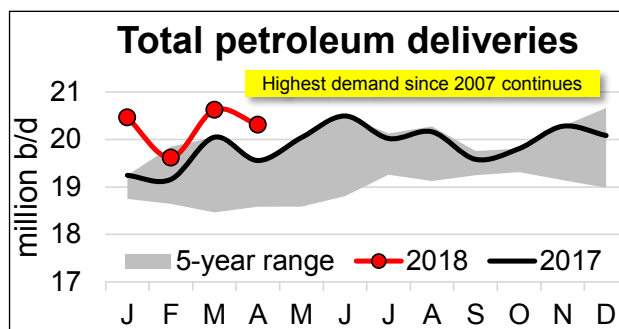
- Prices rose as U.S. demand continued to outpace supply and inventories fell
 - Brent crude oil prices rose by more than West Texas Intermediate (WTI)
- With distillation unit capacity outages, refining inputs and production fell
- Drilling rig activity responded to higher prices

Details by section

Demand

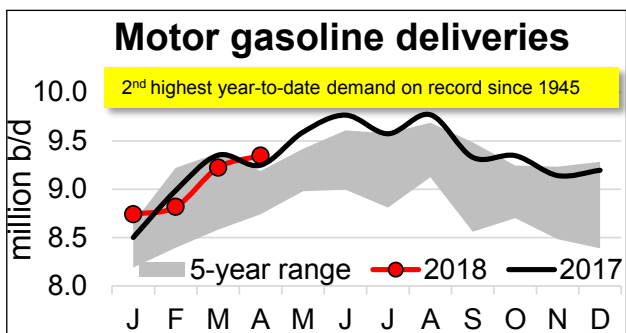
U.S. petroleum demand has sustained its highest levels in 11 years

U.S. petroleum demand, as measured by total domestic petroleum deliveries, was 20.3 MBD in April, which was a seasonal decrease of 1.5 percent from March but 3.8 percent above April 2017. This was the strongest April monthly demand since 2007. The trend reflects that February's final data were 600 KBD lower than expected. For the first four months of the year, U.S. petroleum demand averaged 750 KBD above that of the same period in 2017 despite higher prices, which is consistent with solid U.S. economic activity.



Reformulated-type gasoline, which is consumed primarily in urban areas, was flat with growth of 0.1 percent y/y in April to 3.1 MBD. By contrast, conventional gasoline is used more in rural areas and rose by 1.5 percent y/y in April to 6.2 MBD.

Gasoline and crude oil prices generally move in tandem. WTI crude oil averaged \$66.25 per barrel in April, up by \$3.52 per barrel from March and \$15.19 per barrel above April 2017. The average price of regular-grade gasoline was \$2.873 per gallon in April, which was an increase of 16.4 cents per gallon (6.1 percent) from March and 34.5 cents per gallon (13.6 percent) versus April 2017.



Gasoline

Motor gasoline demand for first four months of 2018 was 2nd highest on record

Consumer gasoline demand, as measured by total motor gasoline deliveries, of 9.3 MBD in April was up by 1.3 percent from March and 1.1 percent versus April 2017. The first four months of the year achieved the second highest year-to-date demand (9.1 MBD) on record.

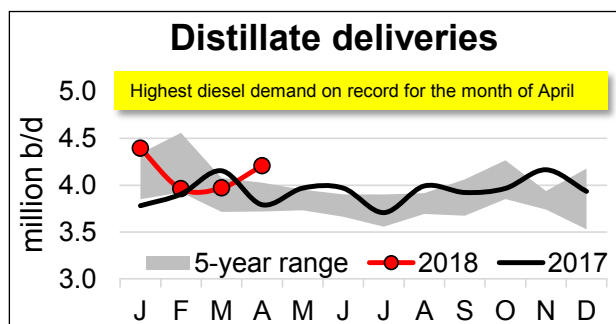
Distillate Fuel Oil

Distillate demand rose un-seasonally to 4.2 MBD

In April, distillate deliveries of 4.2 MBD rose by 6.0 percent from March and 11.0 percent compared with April 2017. This data point was surprising, since it runs counter to typical seasonality between March and April. This was only fifth time on record since 1945 that distillate demand in April was greater than that from March.

About 94 percent of distillate demand in April was for ultra-low sulfur distillate (ULSD), which increased by 8.4 percent m/m and 9.6 percent y/y. The growth suggested strong road freight transportation activity, which according to the Bureau of Labor Statistics' Producer Price Index for truck transportation of freight rose in April by 0.2 percent m/m and 5.8 percent y/y.

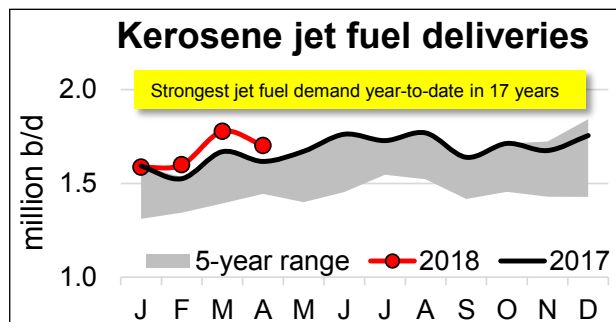
The remaining 6 percent of distillate deliveries was for high sulfur distillate fuel (HSD), which is a heating fuel in the residential and commercial sectors and a marine fuel when blended to upgrade heavy fuel oil. As warmer weather emerged across much of the United States, HSD deliveries fell to 241 KBD in April, which was a 23.0 percent fall from March but still 32.4 percent above the level from April 2017. These estimates are consistent with those for changes in heating degree days. In its [Short-Term Energy Outlook](#), the EIA estimated that heating degree days in across the U.S. in April fell by 35 percent m/m but were up by more than 60 percent y/y.



Kerosene Jet Fuel

Jet fuel demand achieved its strongest April on record

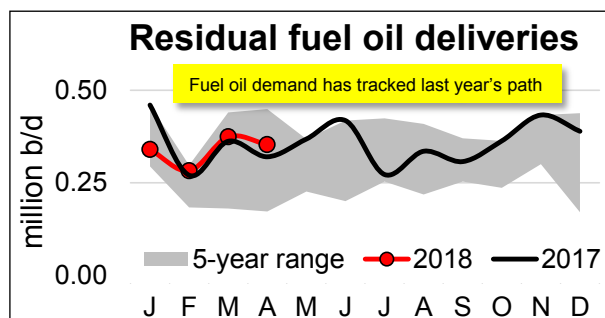
Kerosene jet fuel deliveries in April fell by 4.2 percent from March but were up by and 5.3 percent compared with April 2017 at 1.7 MBD – the highest monthly demand for April on record. This demand is consistent with indicators that air travel demand has remained strong. The [International Air Transport Association \(IATA\)](#) reported U.S. domestic passenger demand increased by 5.7 percent y/y in March, but the stimulation of demand due to lower fares should be expected to moderate since fuel costs have risen.



Residual Fuel Oil

Residual fuel oil has followed a familiar season pattern

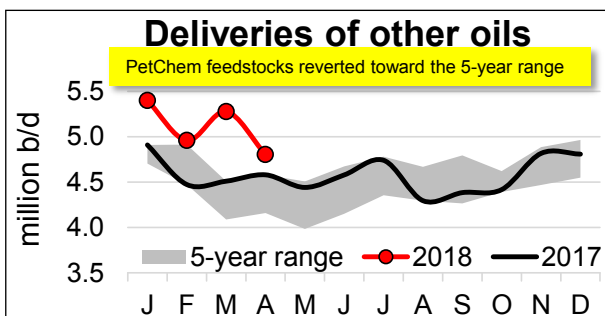
Residual fuel oil is used in electric power production, space heating, vessel bunkering and other industrial applications. Residual fuel oil demand fell to 353 KBD in April, which was a decrease of 5.6 percent versus March but an increase of 10.3 percent versus April 2017. The annual increase was consistent with the aforementioned changes in heating degree days compared with last year.



Other Oils

Refinery and petrochemical feedstock demand declined monthly with outages

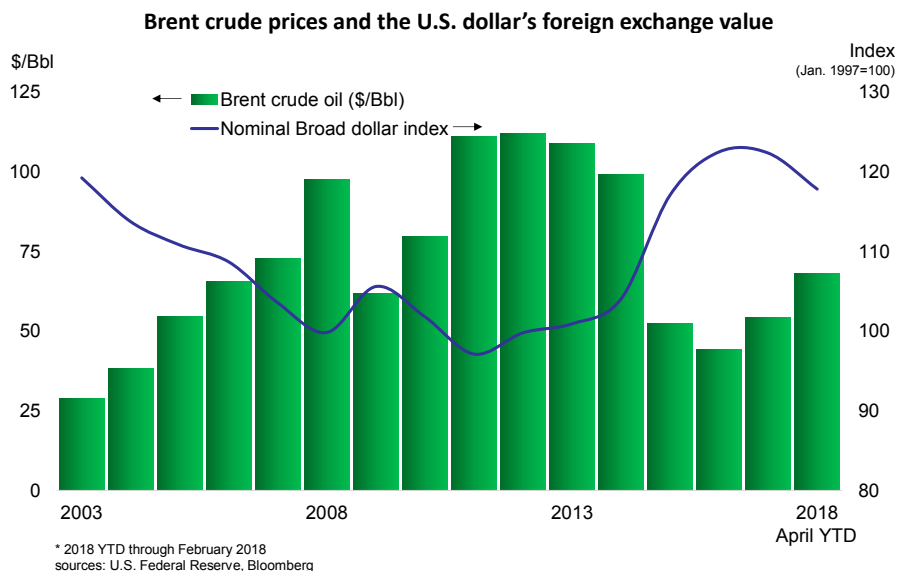
Liquid petrochemical feedstocks, naphtha and gasoil – “other oils” – demand in April of 4.8 MBD decreased by 9.9 percent from March but was up by 7.0 percent compared with April 2017, which still suggests a continuation of solid refining and petrochemical activity but with an evident impact from refinery crude distillation unit outages in April. The American Chemistry Council's [Chemical Activity Barometer](#) was up by 3.8 percent y/y in April, which was a slowing from 4.2 percent y/y in March.



Prices

Strong global demand raised international oil prices by more than domestic ones

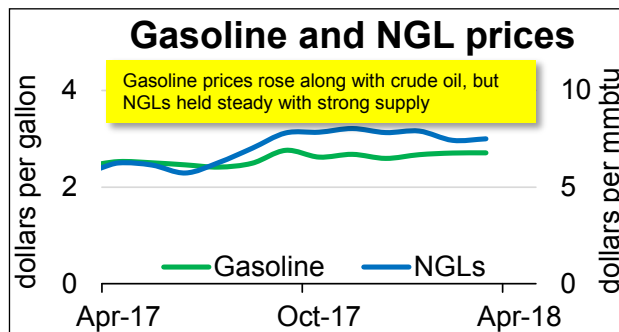
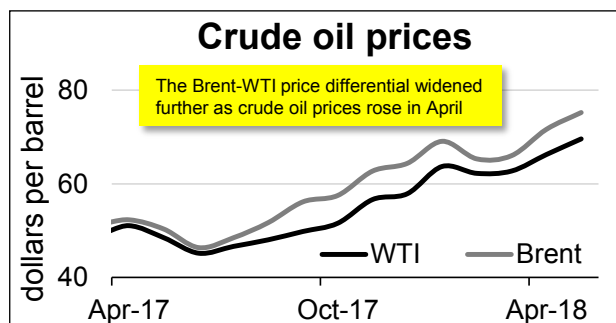
Domestic WTI crude oil prices averaged \$66.25 per barrel in April, up by 5.6 percent from March and 29.7 percent versus April 2017. Meanwhile, international Brent crude oil prices continued to increase by more – 8.5 percent m/m in April to \$71.63 per barrel, which reinforces global economic and oil demand strength.



WTI crude oil traded as an average discount of \$5.38 per barrel below Brent in April, which was the second consecutive monthly increase in the price differential and returned it to the same level as in January. As U.S. production has expanded rapidly, infrastructure constraints continued to suppress WTI prices. By comparison, Light Louisiana Sweet crude oil had weaker constraints and traded at a discount to Brent of \$2.23 per barrel in April.

Changes in the U.S. dollar's foreign exchange value are another factor for crude oil prices. In the first four months of the year, the Federal Reserve's broad dollar index fell by 6.2 percent y/y.

Separately, composite natural gas liquids (NGL) prices averaged \$7.58 per million BTU (MMBtu) in April, up by 1 percent from March as a 7.7 percent m/m decline in ethane prices largely offset higher prices for propane, butane and natural gasoline. Propane prices rose with the relief of bottlenecks as the [Mariner East 1 NGL pipeline](#) re-opened. The relative stability of NGL prices despite growing demand and rising crude oil prices was consistent with continued supply growth and infrastructure constraints.



Macroeconomy

Strong economic growth; signs of price inflation

As April yielded solid leading economic indicators— including the business climate, consumer sentiment and employment conditions— the backdrop for petroleum demand remained strong.

Global economic growth started 2018 on a strong note. Based on country growth rates reported by the IMF, global GDP growth in 2017 was 2.9 percent y/y on a market exchange rate basis (on par with the average for the past 20 years) and could expand by another 2.9 percent y/y in 2018. The Bureau of Economic Analysis reported U.S. GDP growth for Q1 2018 of 2.3 percent at a seasonally adjusted annualized rate (saar), which appeared to be a slowing versus the Q4 2017 pace of 2.9 percent saar. However, the Q1 2018 level was in fact 2.9 percent above that of Q1 2017, so the start to the year was consistent with strong petroleum demand growth. The Bloomberg consensus expects U.S. real GDP growth to accelerate to 2.9 percent through the first half of 2018 (an increase of 0.1 percent versus last month's survey) and ease to 2.8 percent y/y in the second half of the year.

Leading economic indicators have continued to suggest expanding business conditions. The [Institute for Supply Management's Purchasing Managers Index \(PMI\)](#) registered 57.3 in April, a decrease of 2 percentage points from the March. Any value above 50.0 suggests an expansion. New orders, production activity, employment and inventories expanded. Suppliers also continued to struggle to meet demand. Growth occurred across 17 of the 18 manufacturing sectors surveyed.

Separately, the [University of Michigan's consumer sentiment index](#) rose in April to 98.8, up by 1.8 percent from March, and appeared to hold steady in preliminary results for May. The most notable change has been an increase in price inflation expectations.

U.S. non-farm payrolls grew by 164,000 in April, and the unemployment rate fell to 3.9 percent, according to the Bureau of Labor Statistics (BLS). A four-week average of initial claims for unemployment insurance fell by 1.2 percent m/m in April.

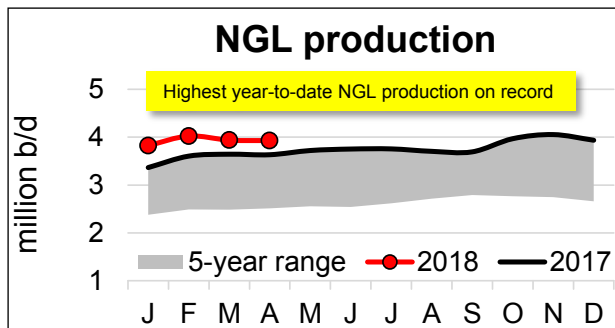
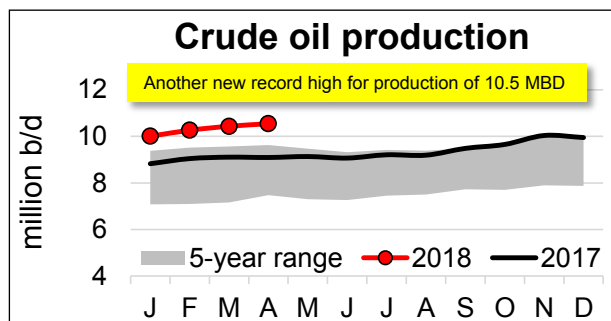
Supply

Record 10.5 MBD U.S. oil production; drilling has continued to accelerate

U.S. crude oil production rose to a record 10.5 MBD in April. This was an increase of 1.0 percent versus March and 15.5 percent from April 2017. Regionally, the growth was mainly attributable to Texas, New Mexico, North Dakota and Louisiana.

Natural gas liquids (NGL) production, a co-product of natural gas production, held steady at 3.9 MBD in April; this was an increase of 8.1 percent compared with April 2017. According to the EIA's Short-Term Energy Outlook (STEO), released April 10, 2018, U.S. dry natural gas production averaged 79.9 billion cubic feet per day (Bcf/d) in April, which was up 11.5 percent versus April 2017.

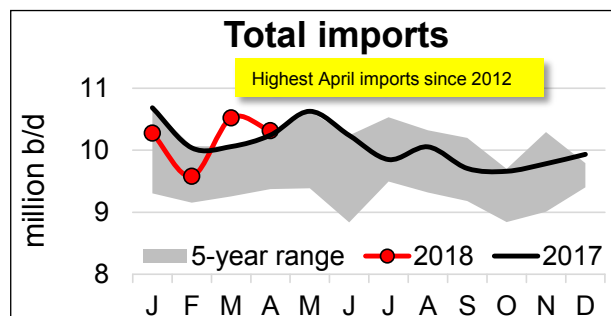
Oil and natural gas production follows with a lag between most drilling and production. According to Baker-Hughes, Inc., the U.S. rig count rose to 1,045 as of May 11, up by 12.5 percent year-to-date. The U.S. should be poised for continued production growth.



International trade

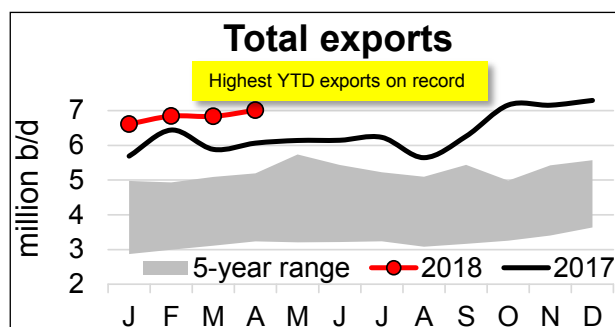
U.S. petroleum trade balance shrank by 380 KBD for the month of April

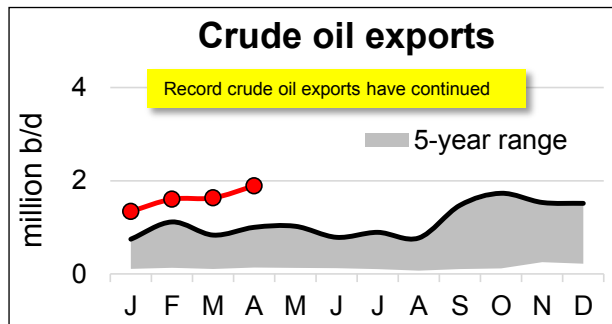
Crude oil and refined product imports were 10.3 MBD in April, which was a decrease of 1.9 percent from March but an increase of 0.7 percent compared with April 2017. Within the total, crude oil imports fell by 0.3 percent y/y, while refined product imports rose by 4.5 percent y/y. Canadian imports made up 36.7 percent of total petroleum imports in April and increased by 12.8 percent y/y to 3.8 MBD.



U.S. petroleum exports set new record above 7.0 MBD in April

In April, the U.S. set a new record for petroleum exports in excess of 7.0 MBD, which was an increase of 2.6 percent from March and 15.6 percent compared with April 2017. Crude oil exports of 1.9 MBD in April continued to rise and were about 900 KBD above those of April 2017. Refined product exports changed relatively little, with a decrease of 1.6 percent from March but an increase of 1.1 percent versus April 2017. On net, the rise in exports and fall in imports led the U.S. petroleum trade balance to narrow by 380 KBD for the month of April.

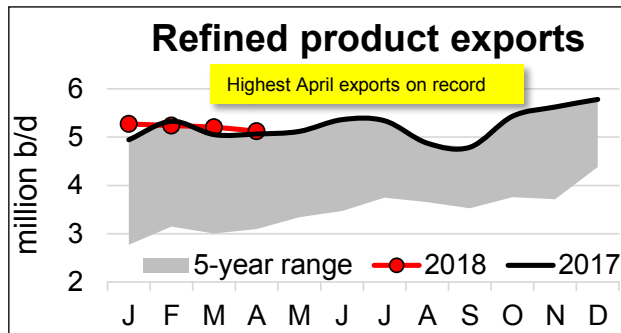




The refinery utilization rate in April was 91.7 percent, 0.2 percentage points above that of March but 1.0 percentage points below that of April 2017. According to Bloomberg, refinery crude distillation unit outages rose to 1.1 MBD in April, up by 440 KBD from March.

Inventories

U.S. petroleum inventories: smallest April monthly increase since 1995

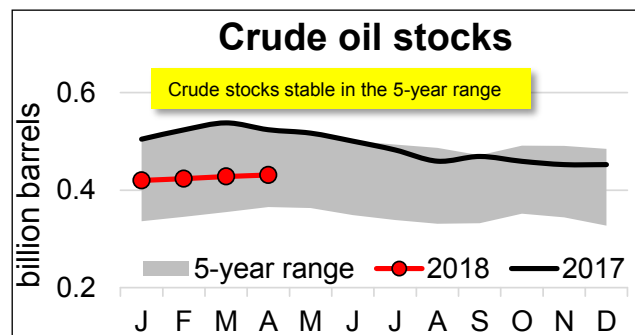
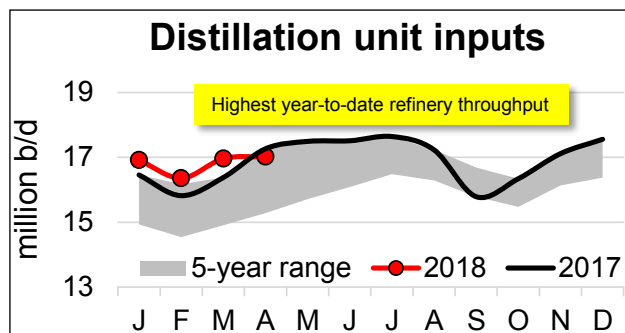
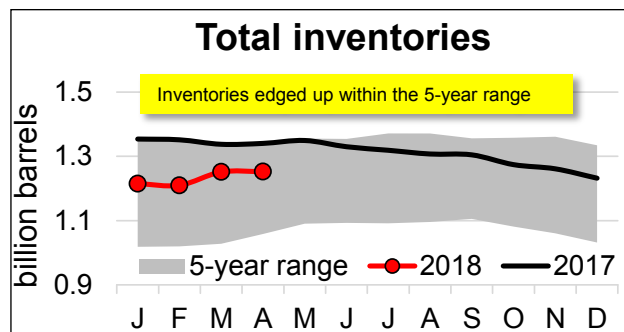


In April, total crude and refined product inventories held steady at 1.25 billion barrels; this was an increase of 0.1 percent from March but a decrease of 6.5 percent compared with April 2017. Inventories usually build in April, and the April increase was the smallest percentage since 1995. Within the total, crude oil stocks were up by 0.7 percent m/m but down by 17.7 percent versus April 2017. Total product inventories were little changed, down 0.3 percent m/m but up by 0.6 percent y/y.

Industry operations

Record year-to-date processing, but outages slowed distillation inputs in April

In April, total refinery gross inputs rose by 0.4 percent m/m to 17.0 MBD but were down by 1.4 percent versus April 2017 – this was the strongest year-to-date refinery throughput on record. Production of gasoline (up 1.7 percent m/m), distillate (up 8.5 percent m/m) and residual fuel oil (up 13.8 percent m/m) led the increases.



The API **Monthly Statistical Report** is available via IHS Global (www.global.ihs.com). For more information, go to <http://www.api.org/statistics> or contact IHS at 1-800-854-7179.

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

Disposition and Supply	April			Year-to-Date		
	2018 ²	2017	% Change	2018 ³	2017	% Change
Disposition:						
Total motor gasoline.....	9,346	9,248	1.1	9,074	9,021	0.6
Finished reformulated.....	3,128	3,124	0.1	2,991	2,939	1.8
Finished conventional.....	6,218	6,124	1.5	6,083	6,082	0.0
Kerosene-jet.....	1,702	1,617	5.3	1,696	1,603	5.8
Distillate fuel oil.....	4,208	3,791	11.0	4,101	3,909	4.9
≤ 500 ppm sulfur.....	3,967	3,609	9.9	3,862	3,681	4.9
≤ 15 ppm sulfur.....	3,954	3,609	9.6	3,845	3,674	4.7
> 500 ppm sulfur.....	241	182	32.4	239	228	4.8
Residual fuel oil.....	353	320	10.3	362	355	2.0
All other oils (including crude losses)	4,804	4,489	7.0	5,176	4,586	12.9
Reclassified ⁴	(105)	91	na	36	na	na
Total domestic product supplied.....	20,308	19,556	3.8	20,379	19,510	4.5
Exports.....	7,012	6,066	15.6	6,957	6,010	15.7
Total disposition.....	27,320	25,622	6.6	27,335	25,520	7.1
Supply:						
Domestic liquids production						
Crude oil (including condensate).....	10,543	9,132	15.5	10,264	9,038	13.6
Natural gas liquids.....	3,928	3,633	8.1	3,961	3,560	11.3
Other supply ⁵	1,469	1,155	27.2	1,245	1,181	5.4
Total domestic supply.....	15,940	13,920	14.5	15,470	13,780	12.3
Imports:						
Crude oil (excluding SPR imports).....	8,108	8,131	(0.3)	7,875	8,132	(3.2)
From Canada.....	3,781	3,352	12.8	3,633	3,473	4.6
All other.....	4,327	4,779	(9.5)	4,242	4,659	(9.0)
Products.....	2,208	2,113	4.5	2,298	2,131	7.9
Total motor gasoline (incl. blend.comp)....	807	802	0.6	539	624	(13.6)
All other.....	1,401	1,311	6.9	1,759	1,506	16.8
Total imports.....	10,316	10,244	0.7	10,173	10,262	(0.9)
Total supply.....	26,256	24,164	8.7	25,643	24,042	6.7
Stock change, all oils.....	(1,064)	(1,458)	na	(1,692)	(1,478)	na
Refinery Operations:						
Input to crude distillation units.....	17,023	17,265	(1.4)	17,106	16,491	3.7
Gasoline production.....	10,034	9,897	1.4	9,802	9,650	1.6
Kerosene-jet production.....	1,780	1,734	2.7	1,730	1,658	4.3
Distillate fuel production.....	5,106	5,036	1.4	4,857	4,823	0.7
Residual fuel production.....	455	405	12.3	445	447	(0.3)
Operable capacity.....	18,567	18,621	(0.3)	18,709	18,620	0.5
Refinery utilization ⁶	91.7%	92.7%	na	91.4%	88.6%	na
Crude oil runs.....	16,738	16,970	(1.4)	16,749	16,177	3.5

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)

	April 2018	March 2018	April 2017	% Change From	
				Month Ago	Year Ago
Stocks (at month-end, in millions of barrels):					
Crude oil (excluding lease & SPR stocks).....	431.0	427.8	523.8	0.7	(17.7)
Unfinished oils.....	92.1	94.5	90.4	(2.5)	1.8
Total motor gasoline.....	237.3	241.2	243.8	(1.6)	(2.7)
Finished reformulated.....	0.1	0.0	0.0	4.2	16.3
Finished conventional.....	22.2	24.0	21.8	(7.5)	1.7
Blending components.....	215.0	217.2	221.9	(1.0)	(3.1)
Kerosene-jet.....	40.8	40.8	44.5	0.0	(8.4)
Distillate fuel oil.....	116.9	131.1	154.6	(10.8)	(24.4)
≤ 500 ppm sulfur.....	107.2	120.0	144.7	(10.7)	(25.9)
≤ 15 ppm sulfur.....	103.5	115.6	138.3	(10.5)	(25.2)
> 500 ppm sulfur.....	9.7	11.1	10.0	(12.6)	(2.6)
Residual fuel oil.....	33.3	34.3	39.8	(2.9)	(16.4)
All other oils.....	301.3	281.8 R	243.3	6.9	23.8
Total all oils.....	1,252.7	1251.5 R	1,340.4	0.1	(6.5)