PETROLEUM WATCH
California Energy Commission
July 2017

Recent Petroleum News and Outside Analyses

Prices

- **Crude Oil Prices:** Brent and West Texas Intermediate (WTI) crude prices closed at $47.08 and $46.02, respectively, on June 30 (**page 2**).
- **California Retail Gasoline Prices:** On the week of June 26, prices increased to $2.95, a decrease of $0.18 since the end of May. Through June, California prices averaged $0.67 higher than the national average (**page 4**).
- **California Retail Diesel Prices:** On the week of June 26, prices reached $2.86, a decrease of $0.07 from the end of May. Through June, California prices averaged $0.39 higher than the national average (**page 5**).

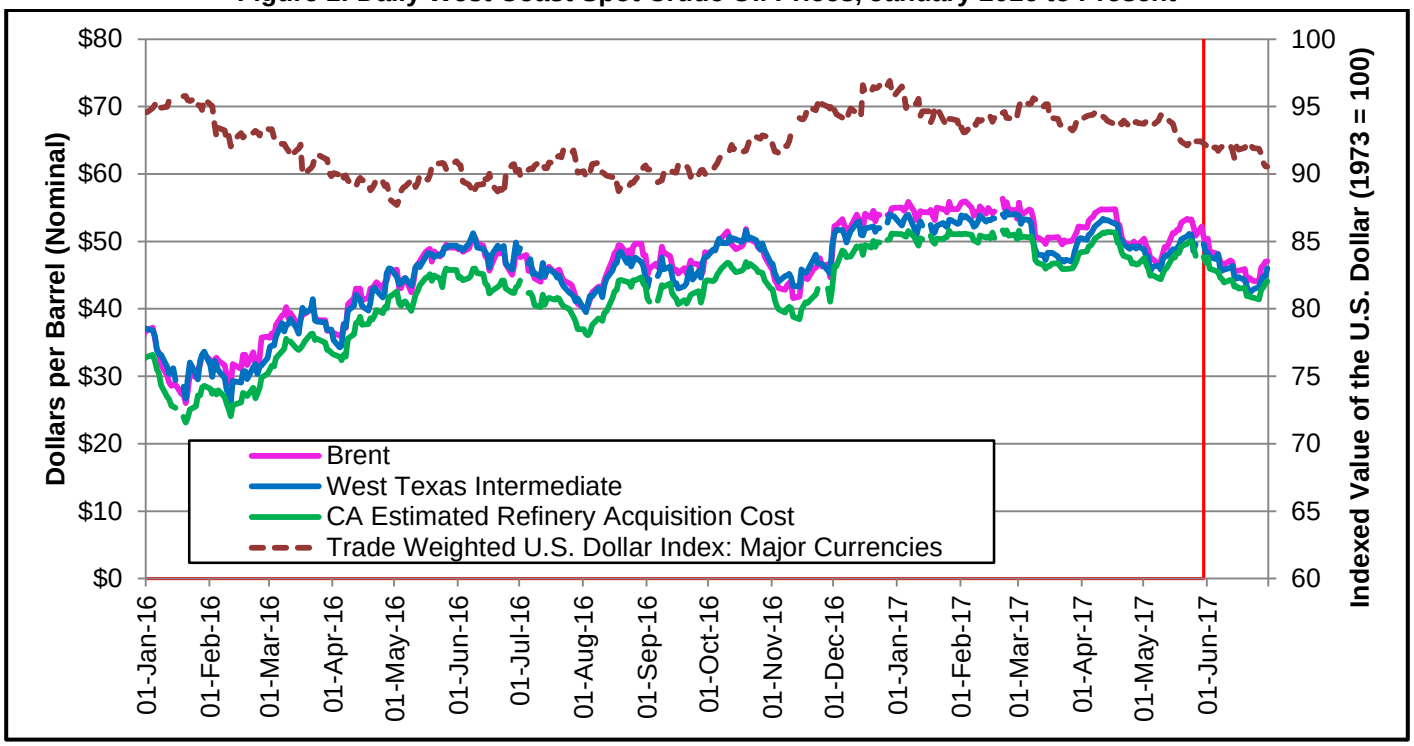
Refining News

- **Valero Benicia Refinery:** On June 8, the 144,000 barrel per day (bpd) Benicia refinery resumed normal operations after the refinery was forced offline May 5 due a power outage that affected multiple units.
- **Tesoro Golden Eagle:** On June 12, the 170,000 bpd Golden Eagle refinery initiated planned maintenance on a fluid catalytic cracking unit, alkylation, and reformer units. Maintenance is scheduled to be completed in late August.
- **PBF Torrance Refinery:** On June 28, the Torrance refinery restarted a 27,000 bpd delayed coker unit as part of planned maintenance that began April 7.
- **Tesoro Wilmington Refinery:** On May 27, the refinery restarted its 20,000 bpd reformer unit after undergoing planned maintenance since April 21.

Product of the Energy Assessments Division's Supply Analysis Office.

Crude Oil Prices

Figure 1: Daily West Coast Spot Crude Oil Prices, January 2016 to Present



Source: U.S. Energy Information Administration (EIA), Oil Price Information Service (OPIS), and Federal Reserve Bank of St. Louis.
Note: Red lines on all graphs indicate end of previous *Petroleum Watch* data. Areas to the right indicate new data since last month.

Crude oil spot prices declined throughout June. Brent crude oil began at a monthly high of $50.41 on June 1 and fell to the low of $43.98 on June 20, before rising to $47.08 on June 30 (**Figure 1**). The spot West Texas Intermediate (WTI) price followed a similar pattern. The WTI monthly high of $48.32 occurred on June 1 and the low of $42.48 on June 21, before rising to $46.02 on June 30. The California Estimated Refiner Acquisition Cost (CA-RAC)[1] started at a monthly high of $47.61 on June 1, dropping to $41.43 on June 26 then increased to $46.02 on June 30. In June, spot crude oil prices set an average monthly low for 2017.

Historically, crude prices move up during the summer on anticipation of increased driving. Organization of the Petroleum Exporting Countries' (OPEC) supply cuts brought Brent to above $50 at the beginning of 2017. But all crude prices are lower than levels seen last year (**sidebar**), indicating that the supply cut effects are being limited by rising crude production in the United States. While indicators such as falling crude oil inventory levels indicate increased demand, this demand increase appears to be offset by other downward price pressures (such as lower production costs, increased local production, and so forth).

Crude Oil Prices

June 2017 vs 2016
(Percent Change)

Brent	**4% lower**
WTI	**7% lower**
CA-RAC	**2% lower**

June 2017 Averages

Brent	**$46.37**
WTI	**$45.18**
CA-RAC	**$42.97**

June 30, 2017

Brent	**$47.08**
WTI	**$46.02**
CA-RAC	**$48.48**

1 California estimated refiner acquisition cost (CA-RAC) is a weighted average of the prices of California (San Joaquin Valley) crude, Alaskan crude, and foreign crude.

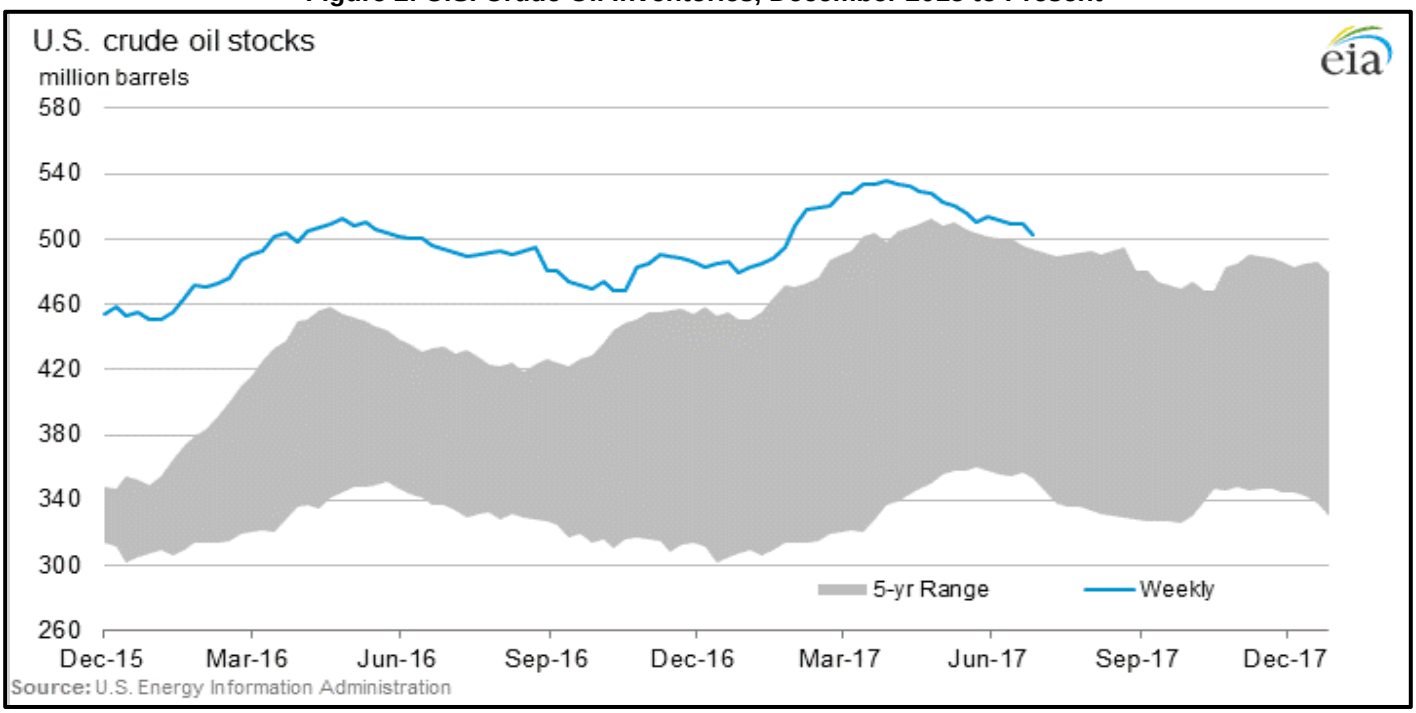
Crude Oil Production and Storage

U.S. crude oil inventories, refinery inputs, and imports have decreased since June's *Petroleum Watch* (**Figure 2**) as the United States stays balanced through strong and steady domestic crude oil production.

- U.S. crude oil production for June is estimated at 9.3 million bpd, the same level as reported in May. This is a 710,000 bpd increase from a year ago when production levels were 8.6 million bpd.
- Imports fell 390,000 bpd to an estimated 7.9 million bpd, down from 8.3 million bpd in May. When compared to import levels from June 2016, this is a decrease of 80,000 bpd.
- U.S. crude oil refinery inputs decreased by 170,000 bpd above May input levels, finishing June at 17.1 million bpd. Refinery inputs are 550,000 bpd higher than year-ago levels.
- Crude oil inventories in the United States decreased by 7.0 million barrels during June to 502.9 million barrels. Current inventories are 9.2 million barrels higher than one year ago.

Steady domestic crude oil production, coupled with falling imports, implies that the U.S. crude market is well-supplied. While refinery inputs decreased month-over-month, the strong year-over-year input levels, along with decreasing crude inventories, suggest that current demand is stronger than it was in 2016.

Figure 2: U.S. Crude Oil Inventories, December 2015 to Present



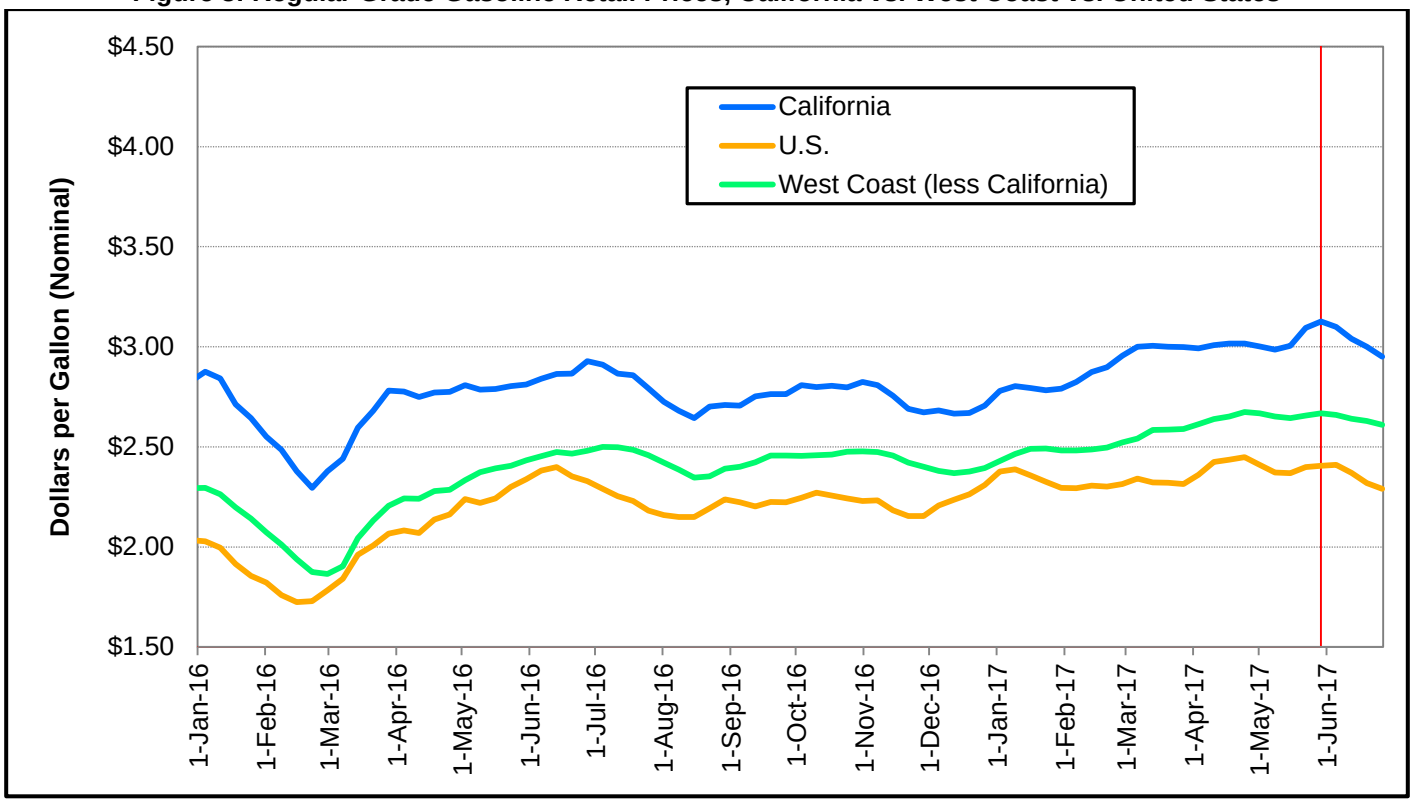
Source: U.S. EIA

- According to OPEC's June *Monthly Oil Market Report*, total OPEC production increased by 336,000 bpd to 32.1 million bpd. OPEC's target number for cutbacks set in November 2016 was 32.5 million bpd. OPEC revised its supply-and-demand balance forecast upward to 0.3 million bpd from 0.2 million bpd reported in the previous *OPEC Monthly Report*.[2]

2 OPEC June Monthly Report, page i, page 51:
http://www.opec.org/opec_web/static_files_project/media/downloads/publications/MOMR%20June%202017.pdf

Gasoline and Diesel Retail Prices

Figure 3: Regular Grade Gasoline Retail Prices, California vs. West Coast vs. United States



Source: U.S. EIA

Gasoline retail prices in California and the United States fell steadily throughout June, while West Coast (less CA) prices hovered around $2.64 (**Figure 3**). California and U.S. retail prices decreased by $0.18 and $0.12, respectively, from $3.13 and $2.41 on the week of May 29 to $2.95 and $2.29 on the week of June 26. Due to the price increases in late May, the average June differential between California to U.S. was $0.68, the highest since January 2016. The monthly average differential between California to West Coast retail prices remained at $0.39, the same as the cumulative average since January 2016. On average, California and West Coast retail gasoline prices were at least 5 percent above year-ago prices.

Gasoline production decreased during June, even as major refineries returned to normal operation after long-term planned and unplanned maintenance (**page 8**). This had little apparent effect on prices as gasoline inventories remained above or at the higher end of the five-year band.

Gasoline Prices

June 2017 vs 2016
(Percent Change)

California	**5% higher**
U.S.	**1% lower**
West Coast	**7% higher**

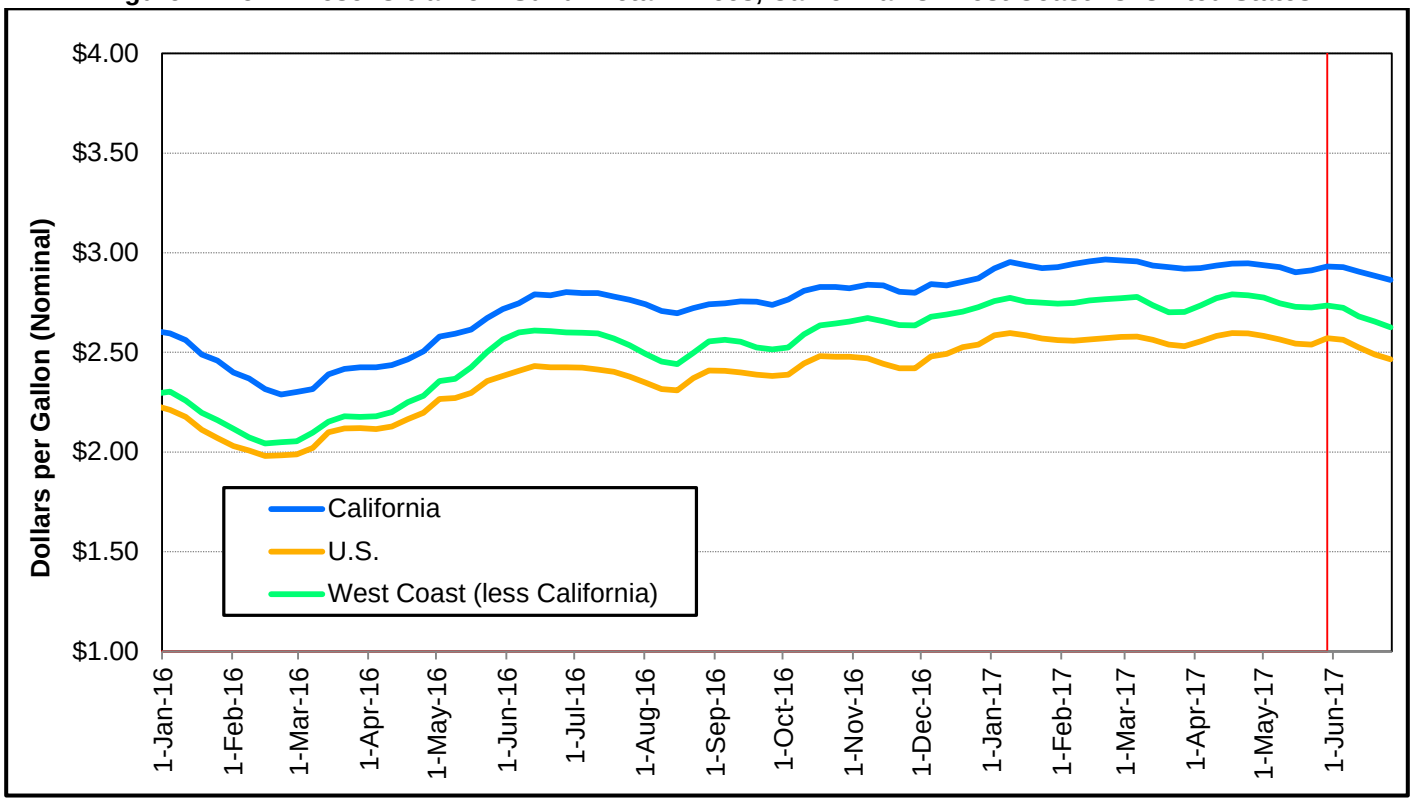
June 2017 Averages

California	**$3.02**
U.S.	**$2.35**
West Coast	**$2.64**

Week of June 26, 2017

California	**$2.95**
U.S.	**$2.29**
West Coast	**$2.61**

Figure 4: No. 2 Diesel Ultra-Low-Sulfur Retail Prices, California vs. West Coast vs. United States



Source: U.S. EIA

From May to June, diesel retail prices dropped $0.10 across the United States from $2.57 on May 29 to $2.47 on June 26. In California, the average retail diesel price was $2.93 on May 29 and dropped $0.07 to $2.86 on June 26 (**Figure 4**). On June 26, the California diesel price was at the lowest point of second quarter 2017 at $2.86. Lower production and inventories (**Figure 9)** would ordinarily put an upward pressure on prices, but California retail diesel prices have managed to slowly decrease before Independence Day.

U.S. and West Coast (less California) prices decreased $0.09 from June 5 to June 26. In the United States, the retail diesel price had not fallen under $2.50 a gallon of diesel since early December 2016 but ended June 26 at $2.47 a gallon. It has been a good summer for consumers as diesel prices throughout the West Coast are only 3 percent higher compared to the same time last year.

Diesel Prices

June 2017 vs 2016
(Percent Change)

California	**4% higher**
U.S.	**4% higher**
West Coast	**3% higher**

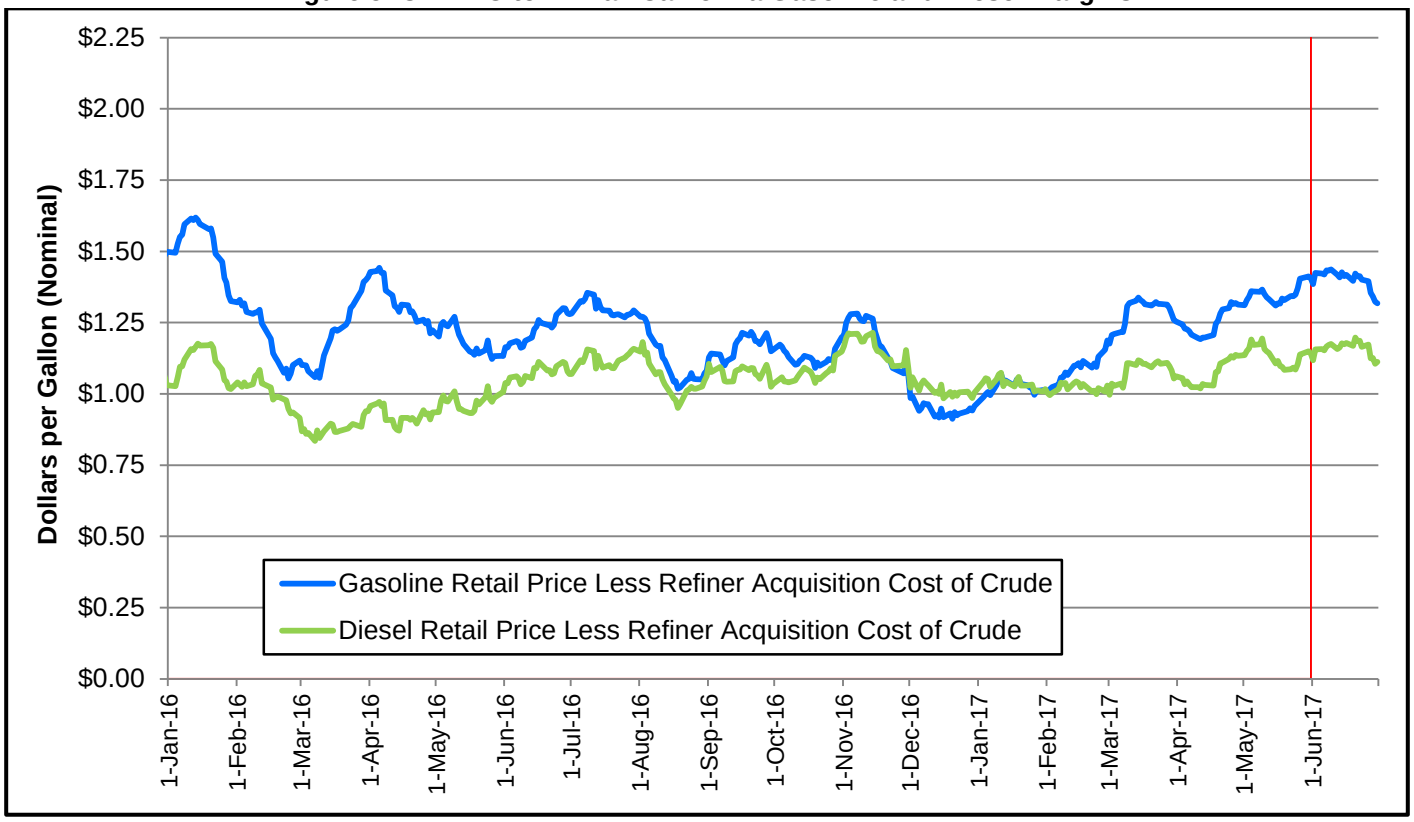
June 2017 Averages

California	**$2.90**
U.S.	**$2.51**
West Coast	**$2.67**

Week of June 26, 2017

California	**$2.86**
U.S.	**$2.47**
West Coast	**$2.63**

Figure 5: CA-RAC to Ex-Tax California Gasoline and Diesel Margins



Source: U.S. EIA and OPIS

Both the California Refinery Acquisition Cost (CA-RAC)-to-ex-tax retail[3] gasoline and diesel margins decreased in June (**Figure 5**). The California gasoline margin decreased $0.15 from $2.52 on June 1 to $2.37 on June 30, while the California diesel margin dropped $0.09, from $2.25 on June 1 to $2.16 on June 30.

According to EIA's most recent *Short Term Energy Outlook* forecast, U.S. gasoline prices will be higher this summer than summer 2016 as crude oil prices are forecasted to be higher.[4] While crude oil prices and the price of gasoline are highly correlated, a change in the margin indicates issues that occur between the oilfield and the gas/diesel pump. This June, Brent crude has been priced 4 percent lower than in June 2016 (**page 2**), while California gasoline is 5 percent higher than June 2016, combining for a 14 percent larger margin for this June.

While May had major refinery issues like Valero Benicia's power outage that pushed up retail prices, June lacked any major outages for the refineries in PADD 5. This allowed for an increase in production and inventory for both gasoline and diesel and explains the decreasing trend in margins.

Crude to Retail Margins

June 2017 vs 2016
(Percent Change)

Gasoline	**14% higher**
Diesel	**8% higher**

June 2017 Averages

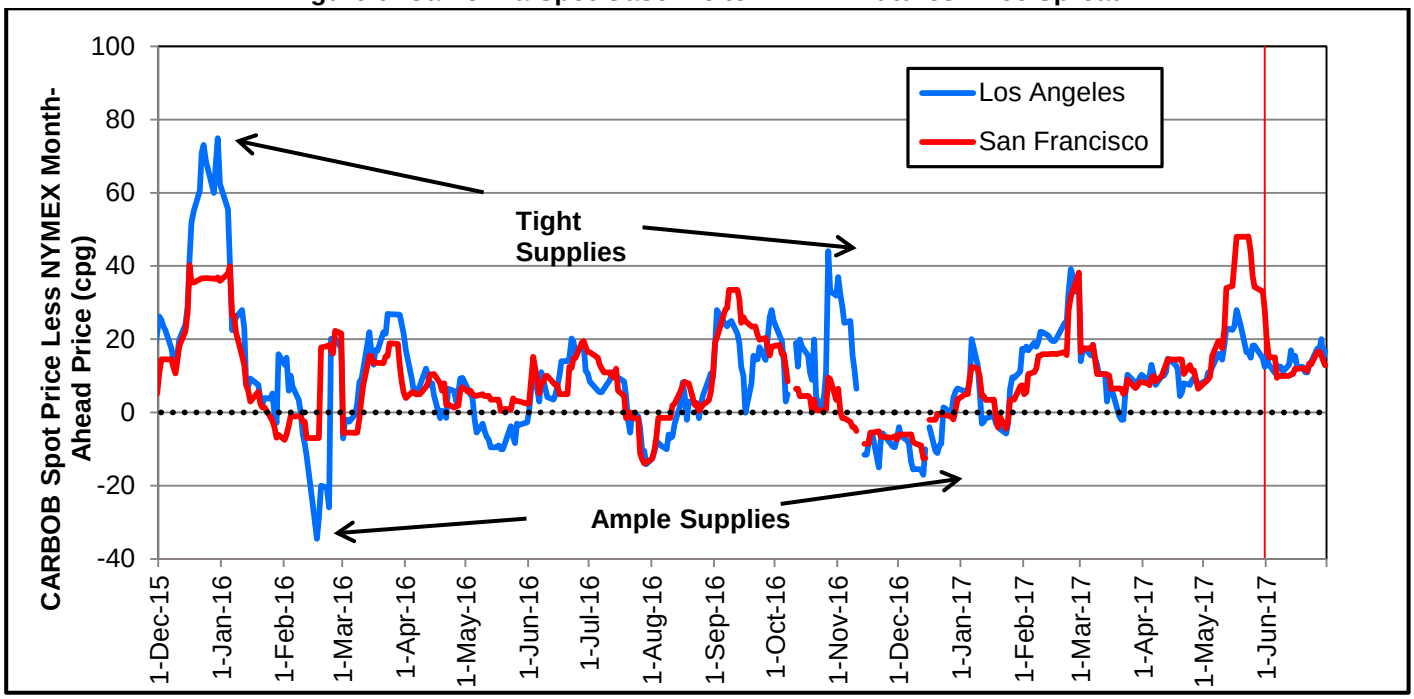
Gasoline	**$1.40**
Diesel	**$1.16**

June 30, 2017

Gasoline	**$1.32**
Diesel	**$1.11**

3 "Ex-tax" refers to the removal of all California taxes on the price of fuel, which is done to remove any distortions from taxes that may affect this calculation.
4 https://www.eia.gov/outlooks/steo/report/summerfuels.cfm.

Figure 6: California Spot Gasoline to NYMEX Futures Price Spread



Source: U.S. EIA and OPIS

The Los Angeles (LA) and San Francisco (SF) gasoline spot markets remained rather calm in June after a volatile May (**Figure 6**). The average LA-less-New York Mercantile Exchange (NYMEX) and SF-less-NYMEX spot gasoline price differentials in June were $0.14 and $0.13, respectively, a decrease of 18 percent and 57 percent from May. These averages are still higher than year-ago averages by 29 percent for the LA-less-NYMEX and 20 percent for the SF-less-NYMEX spread.

In both the LA and SF spot markets, gasoline was sold at a premium throughout June. The LA spot price started from $0.15 on June 1 and dropped to the monthly low of $0.11 on June 9 on strong inventory figures. A delay in the restart of PBF Torrance refinery upset this balance, pushing the premium up to the monthly high of $0.20 on June 28 before easing to $0.17 on June 30.

The SF gasoline spot price premium fell sharply from $0.48 to $0.28 during the last week of May, with news regarding a successful restart of the Valero Benicia refinery. The SF-less-NYMEX spot gasoline price differential continued to drop to $0.10 by the middle of June. In late June, planned maintenance at the Tesoro Golden Eagle refinery (**page 1**) pushed the premium to $0.17 by the last week of June.

Gasoline Spot–Futures Spread

June 2017 vs 2016

Los Angeles	3¢ higher
San Francisco	2¢ higher

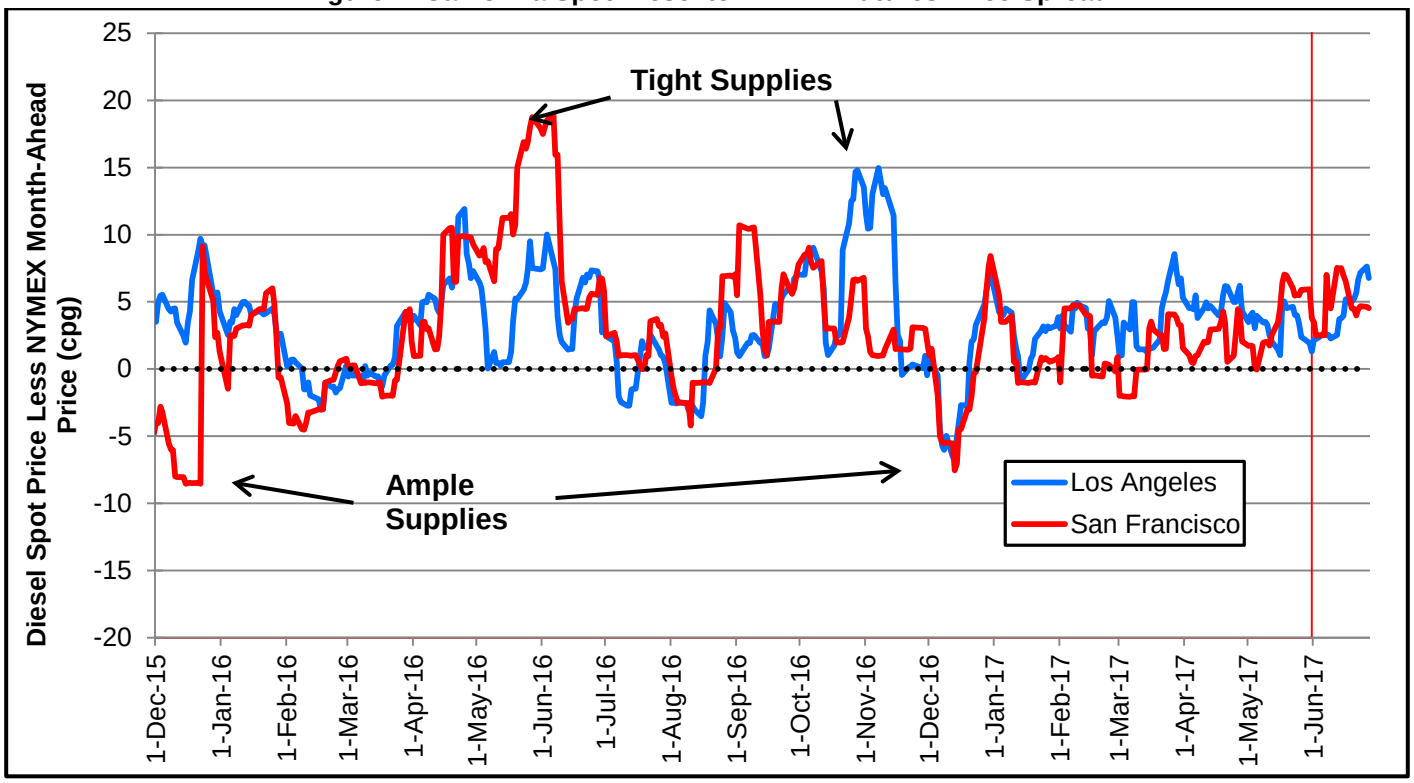
June 2017 Averages

Los Angeles	14¢
San Francisco	13¢

June 30, 2017

Los Angeles	17¢
San Francisco	13¢

Figure 7: California Spot Diesel to NYMEX Futures Price Spread



Source: U.S. EIA and OPIS

While California retail diesel prices have stayed relatively flat in June, LA-less-NYMEX and SF-less-NYMEX differentials have moved noticeably (**Figure 7**). The LA-less-NYMEX diesel spot market differentials increased from $0.02 on June 1 to $0.07 on June 27. June 26 marked the highest LA-less-NYMEX differential for the second quarter at $0.08. The LA diesel spot market remained above the NYMEX due to low California diesel production, which fell under the five-year band between June 2 and June 30 (**Figure 9**).

For the first half of 2017, the San Francisco less-NYMEX diesel spread has averaged $0.03 and recorded 15 days below NYMEX during that time. In June, the SF-less-NYMEX differential set a 2017 high on June 12, at $0.08, and averaged $0.05 for the rest of the month. Like LA, the San Francisco spread has been elevated in May and June due to production and inventory levels falling below the five-year band (**page 9**).

Diesel Spot–Futures Spread

June 2017 vs 2016

Los Angeles	1¢ lower
San Francisco	3¢ lower

June 2017 Averages

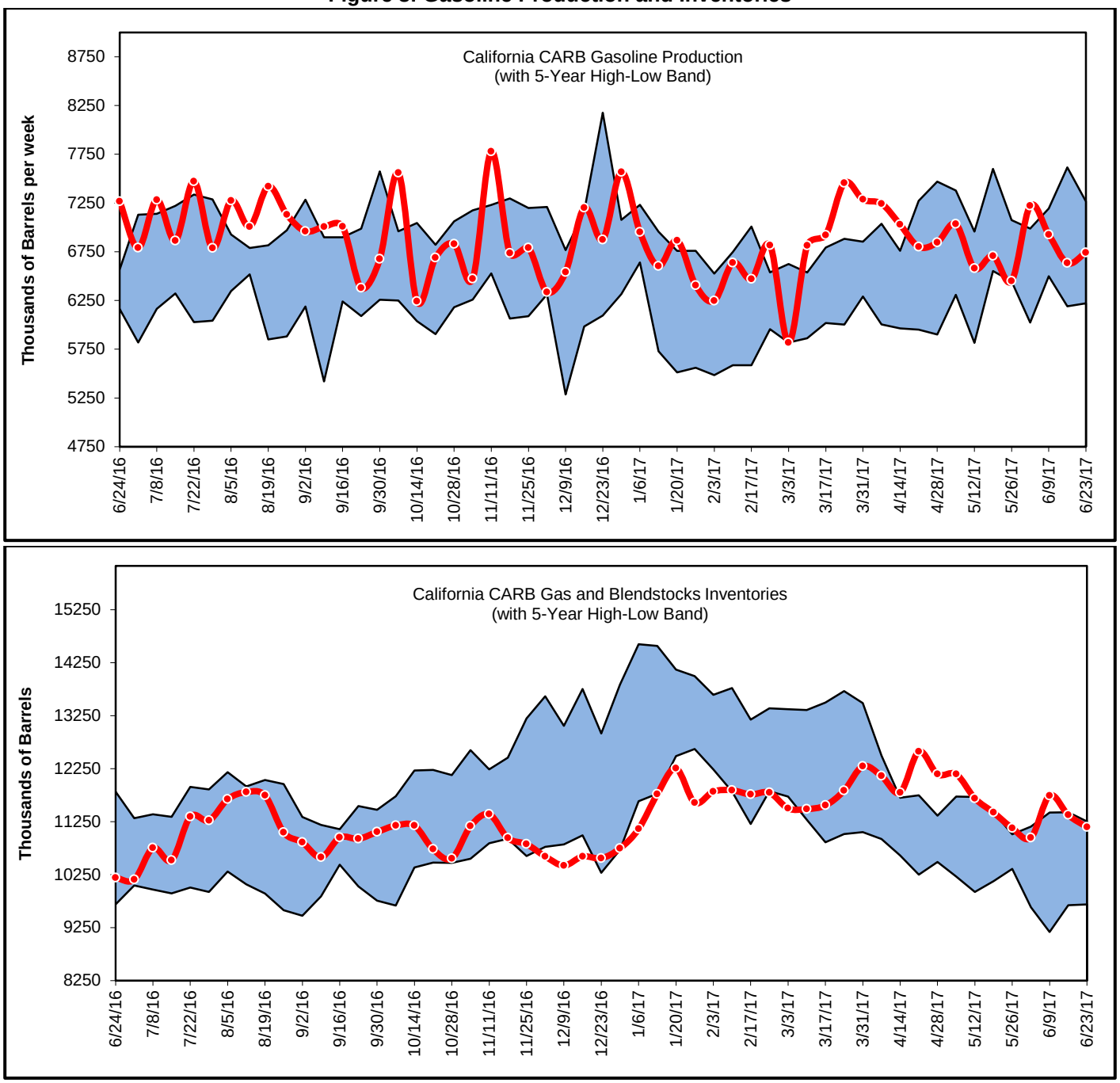
Los Angeles	4¢
San Francisco	5¢

June 30, 2017

Los Angeles	7¢
San Francisco	5¢

California Gasoline and Diesel Production and Inventories

Figure 8: Gasoline Production and Inventories

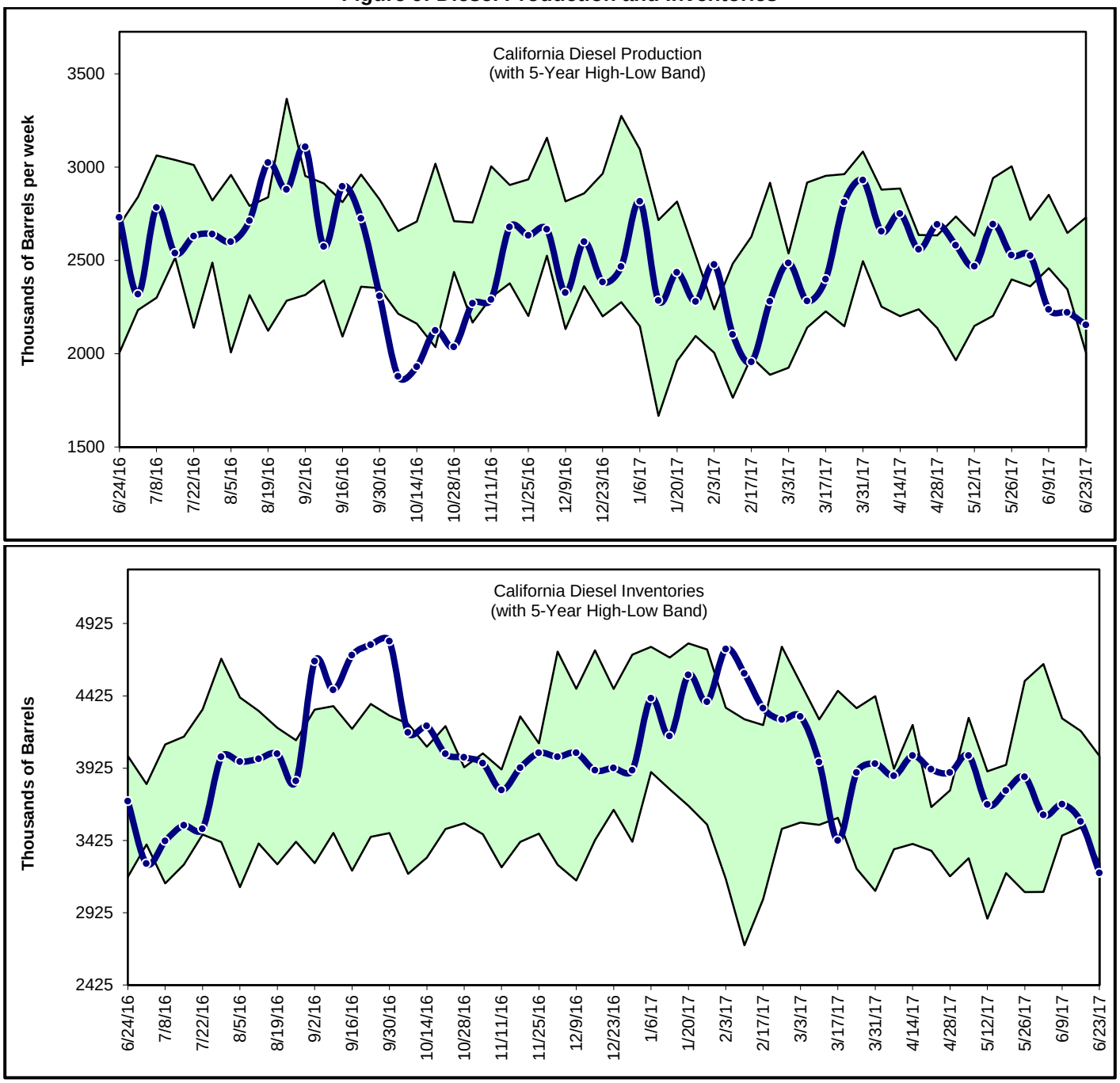


Source: PIIRA data

California gasoline production began June above the five-year band at 7.2 million barrels per week (bpw), before dropping to 6.6 million bpw on June 16 (**Figure 8**). Monthly production averaged at 6.9 million in June 2017, a 0.1 million bpw increase relative to 6.8 million bpw a year ago.

California gasoline inventories increased to 11.7 million barrels on June 9 but dropped the following weeks finishing June at 11.1 million barrels. Overall, June's gasoline inventories averaged 1.7 million barrels higher compared to the same time last year.

Figure 9: Diesel Production and Inventories



Source: PIIRA data

After spending a portion of June at the low end of the five-year production band, California diesel production reached 2.1 million barrels of production on June 23, which is the lowest California diesel production figure since February 2017 (**Figure 9**).

In June, California diesel inventories started at 3.6 million barrels on June 2, and with 11 percent reduction, concluded the month at 3.2 million barrels on June 23. The average diesel inventory for June was just barely below last year's average.