PETROLEUM WATCH
California Energy Commission
September 2016

Recent Petroleum News and Outside Analyses

Prices

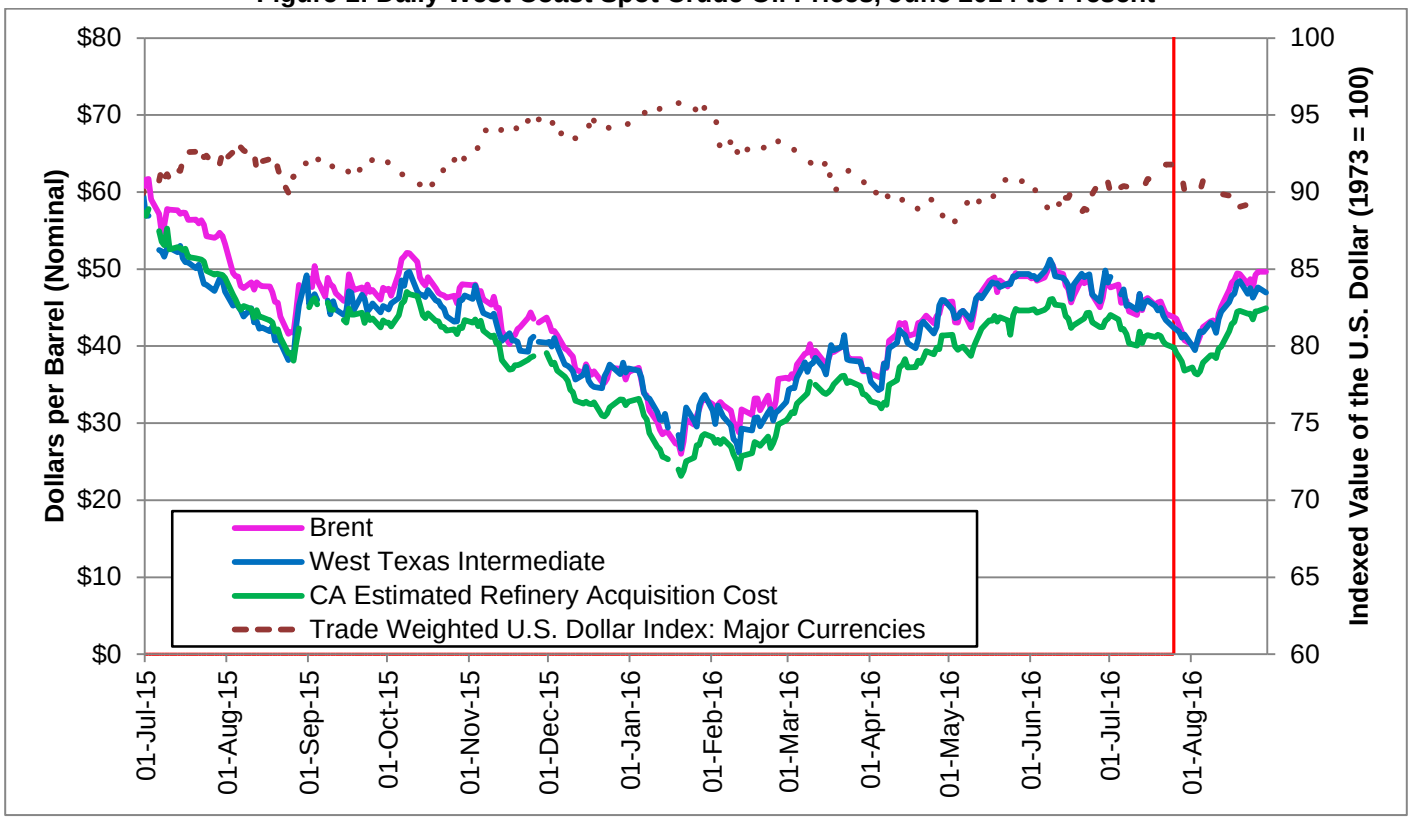
- **Crude Oil Prices:** Prices have reversed the recent downtrend: Brent and West Texas Intermediate (WTI) crude prices closed at $49.66 and $46.97 on August 29, respectively, near the levels of the early June peak. Prices are similar to year-ago levels.
- **California Retail Gasoline Prices:** On August 29, prices had reached $2.71, a drop of $0.08 since the end of July. Through August 29, California prices averaged $0.51 higher than the national average.
- **California Retail Diesel Prices:** On August 29, prices had reached $2.74, a decrease of $0.02 from the end of July. Through August 29, California prices averaged $0.37 higher than the national average.
- In August, **the price of diesel averaged $0.03 above the price of gasoline**. This is the first month with a positive difference since the February 2015 explosion at the Torrance refinery. Under more typical market conditions that prevailed in January 2015, diesel sold at a premium of $0.66 to gasoline.

Refining News

Nothing to Report

Crude Oil Prices

Figure 1: Daily West Coast Spot Crude Oil Prices, June 2014 to Present



Source: U.S. Energy Information Administration (U.S. 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.

During late July and early August, crude oil prices continued to decline, with both Brent and West Texas Intermediate (WTI) reaching a low of $40 on August 2 (**Figure 1**). Since then prices have rebounded, with Brent reaching $50 on August 29 and WTI staying a bit lower at $47.

Crude oil prices remain well above the January lows of $26 to $27 and are at roughly the same levels as a year ago, as seen in the table at right. This is a big change since last month and is the steadiest that crude prices have been in two years. Throughout this period, the average price paid by California refiners has remained about $4 lower than either the Brent or WTI prices.[1]

Crude Oil Prices

August 2016 vs 2015
(Percent Change)

Brent	**2% lower**
WTI	**4% higher**
CA-RAC[1]	**4% lower**

August 2016 Averages

Brent	**$45.64**
WTI	**$44.65**
CA-RAC	**$41.11**

August 29, 2016

Brent	**$49.66**
WTI	**$46.97**
CA-RAC	**$44.93**

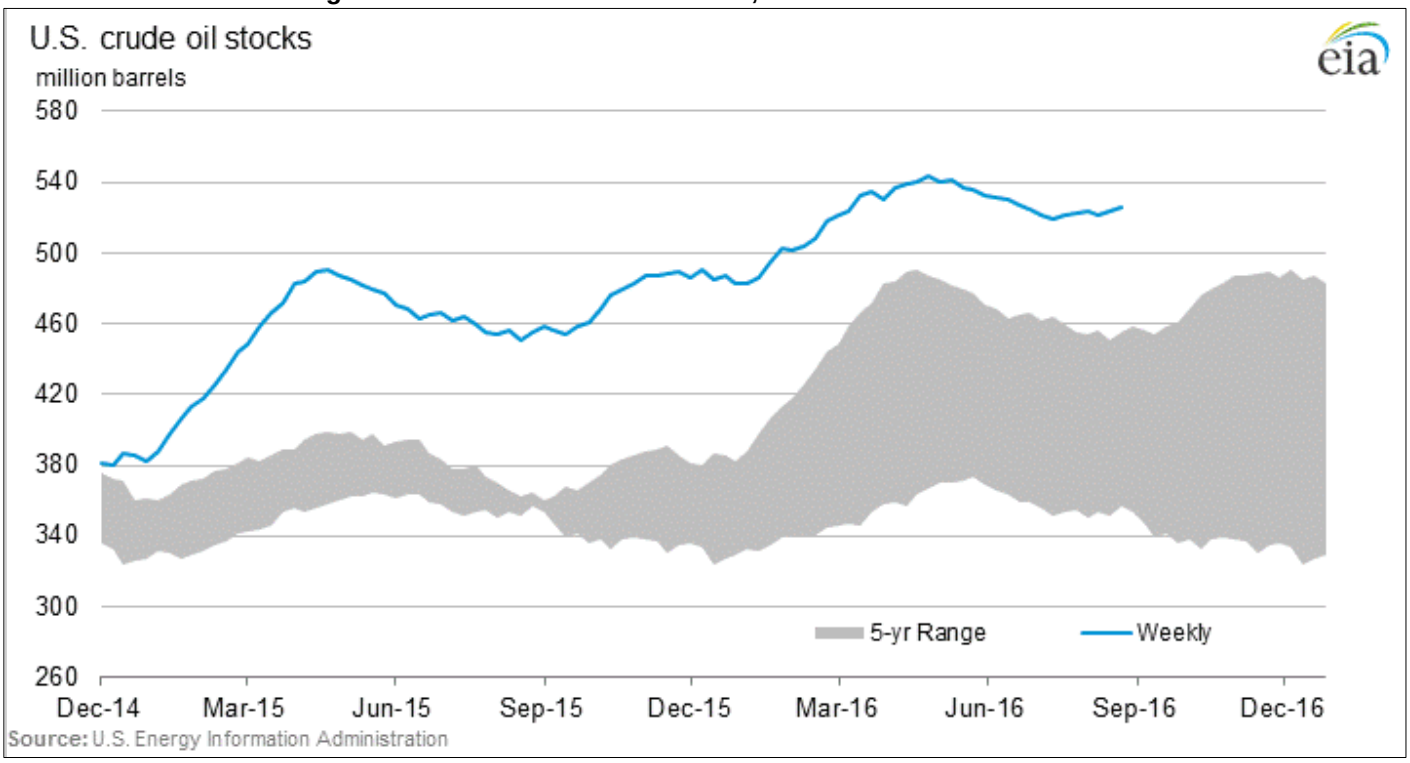
1 California estimated refiner acquisition cost is an estimate of the average price of crude oil paid by California refineries. Energy Commission staff estimate a weighted average of the prices of California (San Joaquin Valley) crude, Alaskan crude, and foreign crude.

Crude Oil Production and Storage

U.S. crude oil inventories have increased slightly over the past month (**Figure 2**). Although domestic production and refinery inputs were unchanged, crude imports increased to cause a rise in inventories. Output from the Organization of the Petroleum Exporting Countries (OPEC) increased during July, which is somewhat surprising considering the widely reported rhetoric from OPEC members about freezing production.

- U.S. crude oil production for July is estimated by the U.S. Energy Information Administration (EIA) at 8.5 million barrels per day (bpd), unchanged from July levels. This is an 800,000 bpd decline from year-ago production levels. Imports, on the other hand, have increased: in August they are estimated at 8.5 million bpd, up from 8.2 million bpd in July. Compared to year-ago imports, this is an increase of 900,000 bpd, which more than offsets the decline in U.S. production.
- Crude oil inventories in the United States rose by 5 million barrels during August to 526 million barrels. Inventories remain below the late April peak, although the gap between year-ago and current inventories widened by 9 million barrels because in 2015 inventories fell during the same period.
- U.S. crude oil refinery inputs are unchanged from last month and a year ago at 16.7 million bpd. Inputs remained steady throughout August.

Figure 2: U.S. Crude Oil Inventories, December 2014 to Present

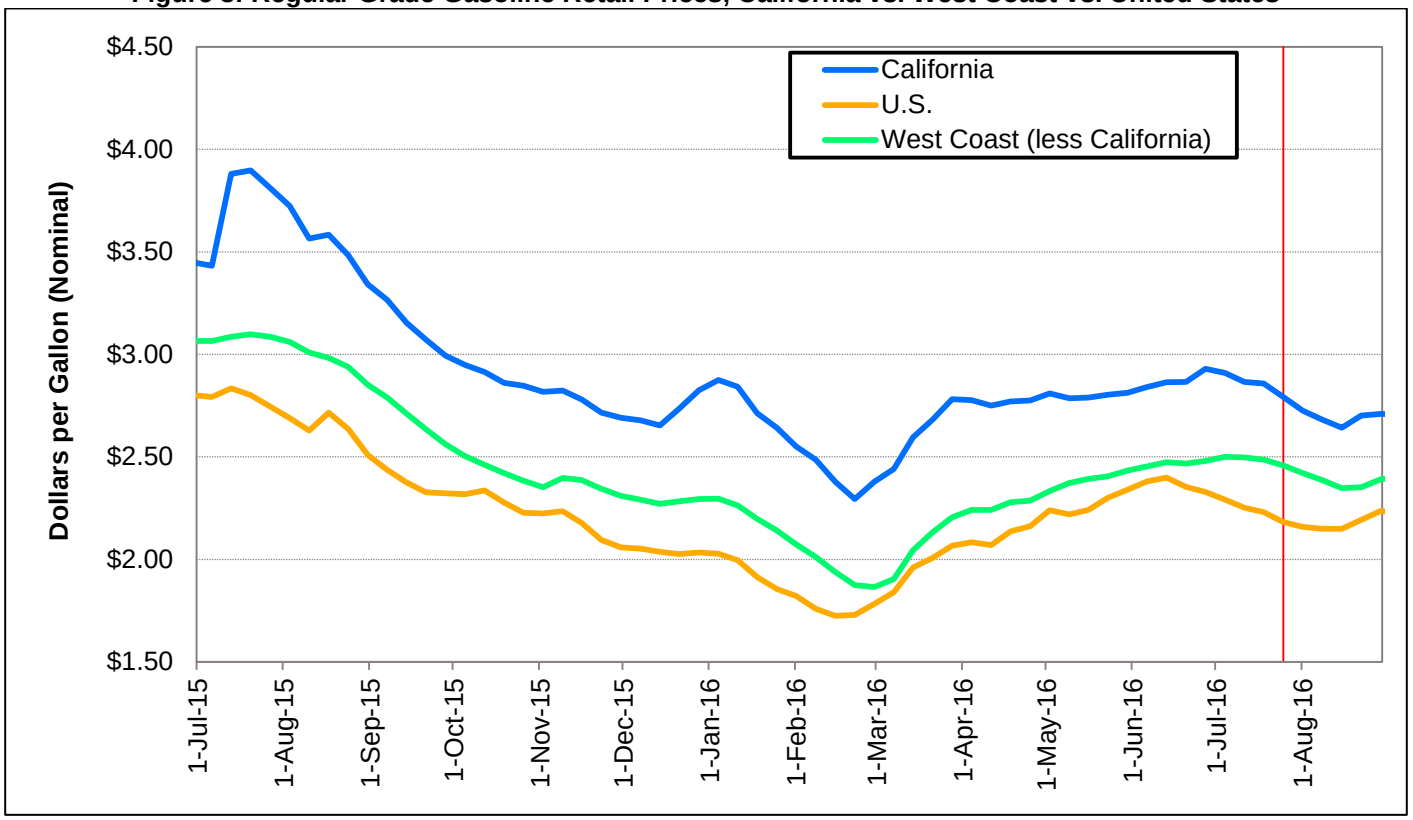


Source: U.S. EIA

- According to OPEC data, Saudi Arabian crude output increased from the first quarter average of 10.3 million bpd to 10.5 million bpd in July. Similarly, total July OPEC production increased from the first quarter average of 32.8 million bpd to 33.1 million bpd in July. Saudi Arabia accounts for the largest share of the increase, more than making up for falling production in Nigeria and Venezuela.

Gasoline and Diesel Retail Prices

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



Source: U.S. EIA

California gasoline prices continued a decline that began in July, bottomed at $2.64 during the week of August 15, and then rebounded slightly to $2.71 on August 29 (**Figure 3**). Through August 29, the monthly average retail price fell to $2.69, $0.17 lower than the July average.

U.S. prices followed the same pattern as California prices but did not fall as much at the beginning of the month. Through the week of July 25, California prices averaged $0.51 higher than the average U.S. price, much lower than the July 2015 average of $0.90.

Gasoline Prices

August 2016 vs 2015
(Percent Change)

California	**24% lower**
U.S.	**17% lower**
West Coast	**20% lower**

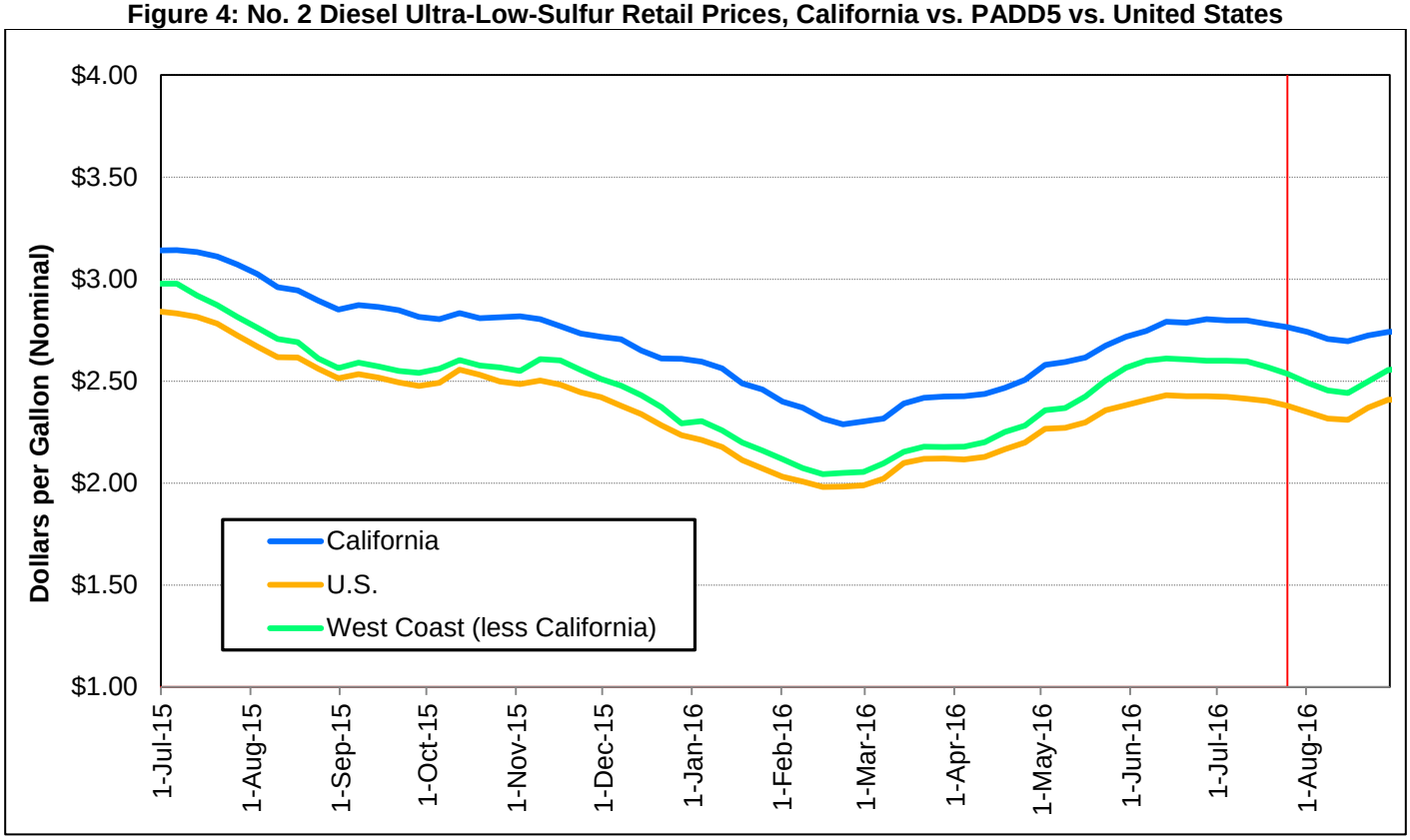
August 2016 Averages

California	**$2.69**
U.S.	**$2.18**
West Coast	**$2.38**

Week of August 29, 2016

California	**$2.71**
U.S.	**$2.24**
West Coast	**$2.22**

Figure 4: No. 2 Diesel Ultra-Low-Sulfur Retail Prices, California vs. PADD5 vs. United States



Source: U.S. EIA

California's diesel prices showed a similar pattern to gasoline but did not fall as much at the beginning of August (**Figure 4**). The monthly average price through August 29 fell to $2.72 from the July average of $2.79.

California prices ended July at $2.76, fell only $0.06, and rebounded to just $2.74. U.S. prices showed a bit more movement, starting at $2.38, falling $0.07, and rebounding to $2.41. Through August 29, California prices averaged $0.37 higher than average U.S. prices, $0.03 more than the 2015 average.

In August, the price of diesel averaged $0.03 above the price of gasoline. This is the first month with a positive difference since the February 2015 explosion at the Torrance refinery, which reduced in-state gasoline refining capacity.

Diesel Prices

August 2016 vs 2015
(Percent Change)

California	**7% lower**
U.S.	**9% lower**
West Coast	**7% lower**

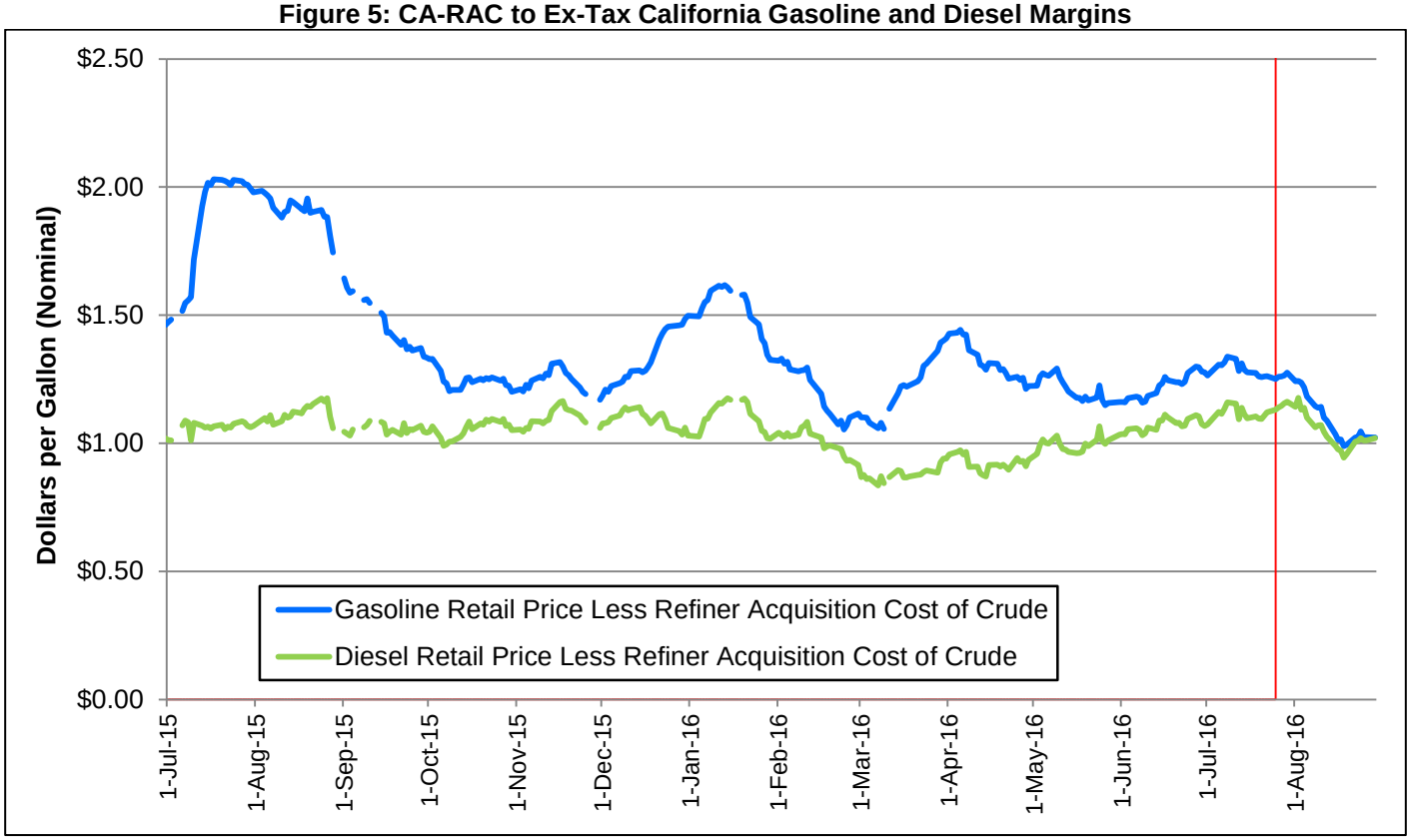
August 2016 Averages

California	**$2.72**
U.S.	**$2.35**
West Coast	**$2.49**

Week of August 29, 2016

California	**$2.74**
U.S.	**$2.41**
West Coast	**$2.56**

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



Source: U.S. EIA and OPIS

The difference between the ex-tax California retail gasoline price and the California refiner acquisition cost of crude—which includes the cost of refining, wholesaling, and retailing—fell during most of the past month. It bottomed at $0.99 on August 18, which was a new low for the year, and then rose slightly to $1.02 (**Figure 5**).

The difference between the ex-tax California retail diesel price and the California refiner acquisition cost of crude declined until reaching $0.94 on August 18, before climbing back to $1.02 on August 29. Diesel prices have not strayed more than $0.18 from $1.00 for the past 14 months, as seen in **Figure 5**.

Last month, it appeared that California gasoline markets had become as stable as diesel markets, and this month, it appears that gasoline margins have shrunk to the same level as diesel margins. This means that refiners, wholesalers, and retailers are earning the same revenue per gallon from each product.

Crude to Retail Margins

August 2016 vs 2015
(Percent Change)

Gasoline	**43% lower**
Diesel	**7% lower**

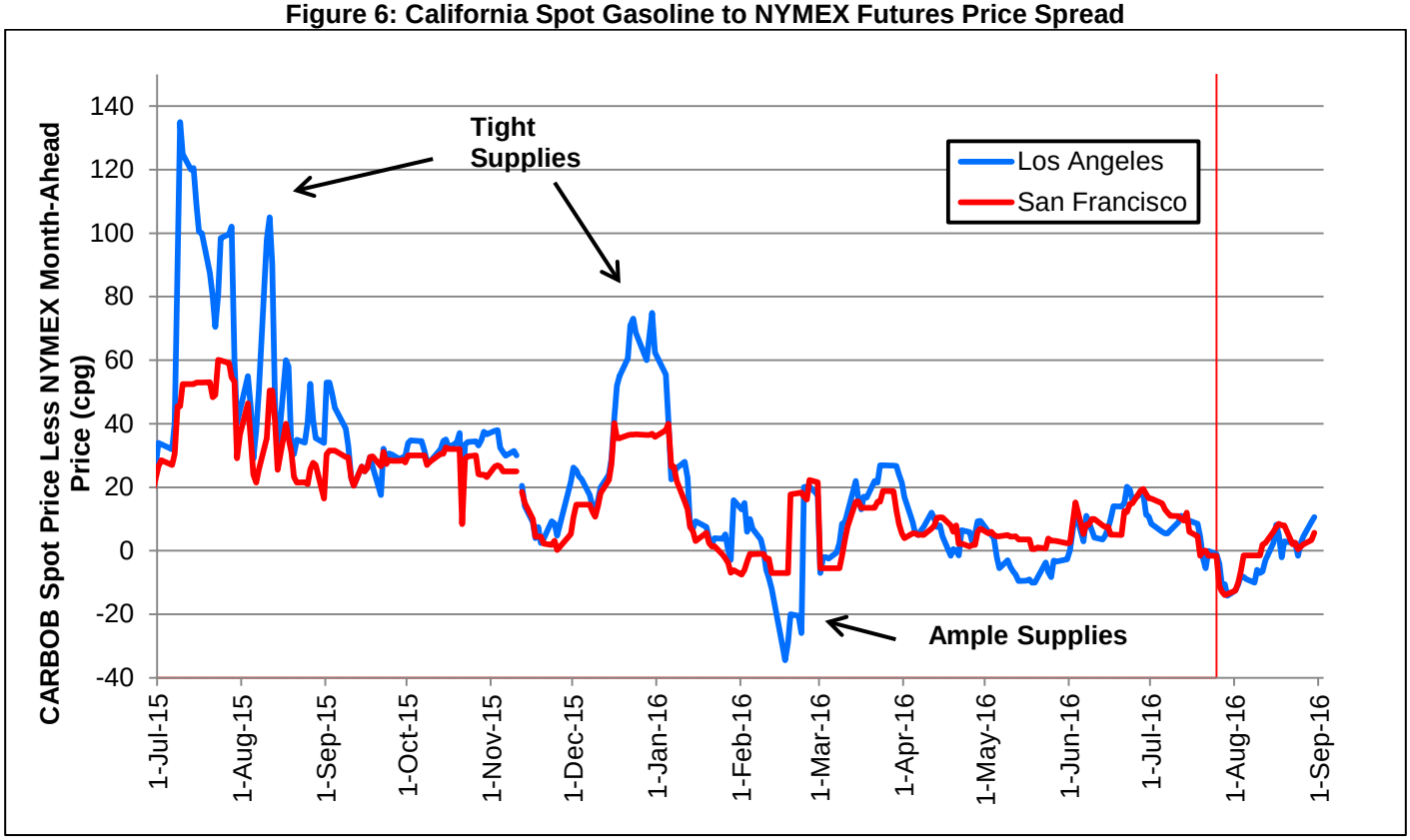
August 2016 Averages

Gasoline	**$1.09**
Diesel	**$1.04**

August 29, 2016

Gasoline	**$1.02**
Diesel	**$1.02**

Figure 6: California Spot Gasoline to NYMEX Futures Price Spread



Source: U.S. EIA and OPIS

At the end of July, the Los Angeles (LA) spot less NYMEX futures dropped to a low of –$0.14. Throughout August, the spread moved higher, reaching $0.09 on August 29. The San Francisco (SF) spot less NYMEX futures spread also bottomed at –$0.14 at the end of July. The SF-NYMEX spread then peaked at $0.08 at midmonth before falling to $0.03 (**Figure 6**).

The monthly average for the LA-less-NYMEX spread decreased from $0.05 in July to –$0.02 in August. The SF-less-NYMEX spread also dropped, from $0.06 in July to $0.01 in August.

Both the LA-less-NYMEX and SF-less-NYMEX spreads remain low and close together compared to year-ago levels. The impact of the Torrance outage, which ended on May 10, 2016, seems a distant memory.

Gasoline Spot–Futures Spread

August 2016 vs 2015

Los Angeles	**51¢ lower**
San Francisco	**30¢ lower**

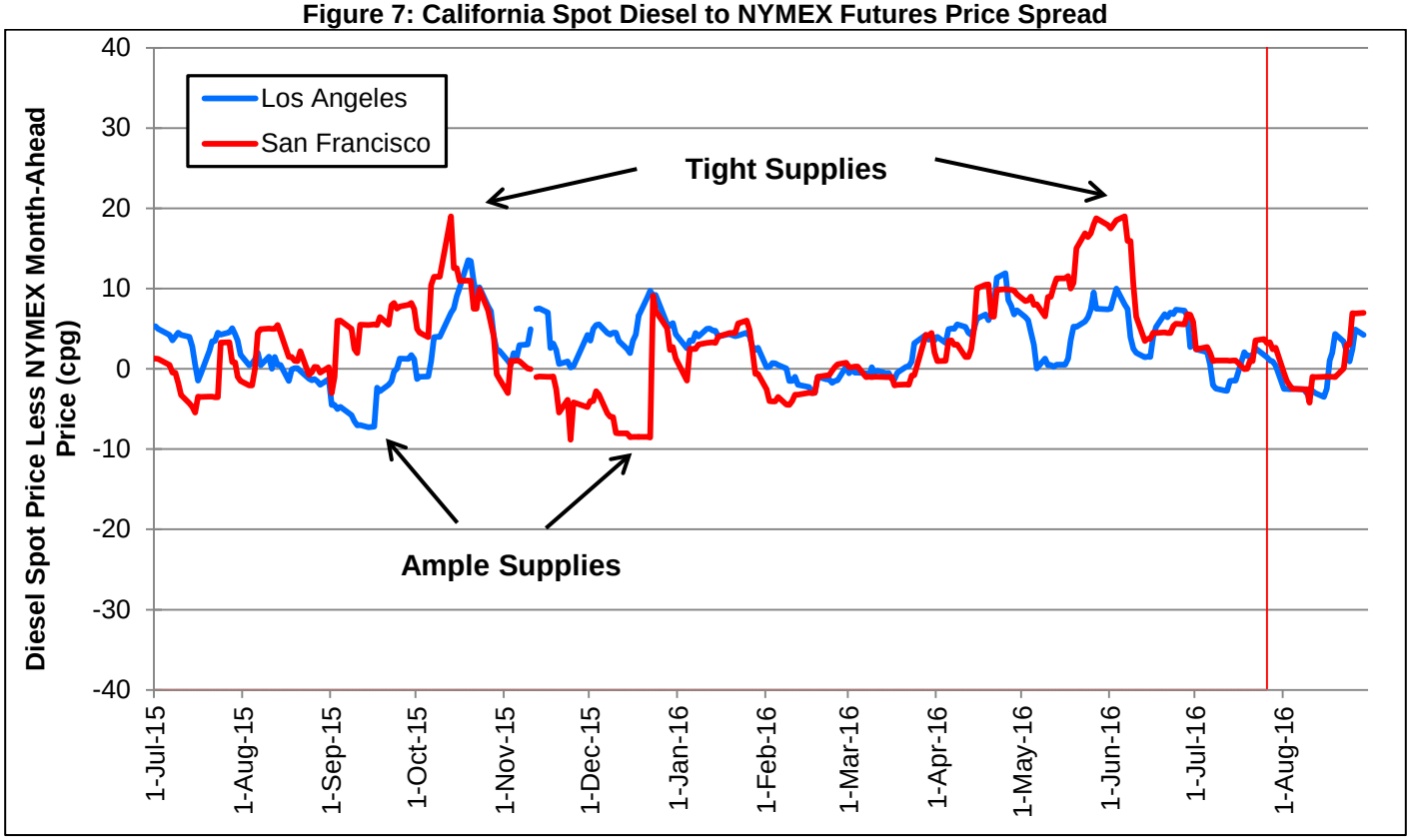
August 2016 Averages

Los Angeles	**–2¢**
San Francisco	**1¢**

August 29, 2016

Los Angeles	**9¢**
San Francisco	**3¢**

Figure 7: California Spot Diesel to NYMEX Futures Price Spread



Source: U.S. EIA and OPIS

The LA-less-NYMEX spread began in August at –$0.03 and climbed to $0.04 in the second half of the month. Similarly, the SF-less-NYMEX spread began the month at –$0.01 and climbed to $0.07 on August 29 (**Figure 7**).

The monthly average LA-less-NYMEX spread stayed at zero in August, which is also unchanged from a year ago. The monthly average SF-less-NYMEX spread fell from $0.02 to zero over the same period and is $0.02 lower than a year ago.

Diesel Spot–Futures Spread

August 2016 vs 2015

Los Angeles	**identical**
San Francisco	**2¢ lower**

August 2016 Averages

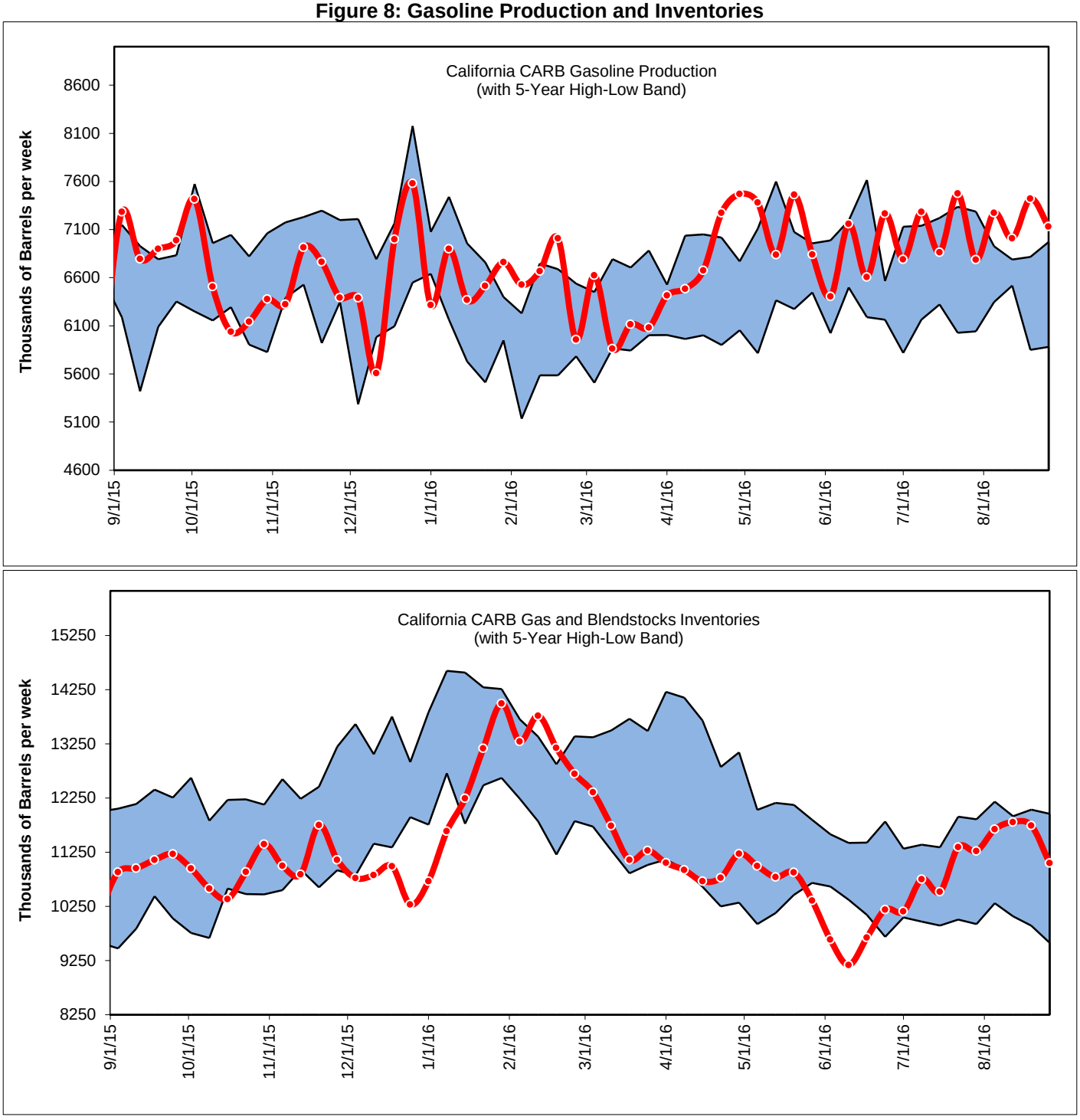
Los Angeles	**0¢**
San Francisco	**1¢**

August 29, 2016

Los Angeles	**4¢**
San Francisco	**7¢**

California Gasoline and Diesel Production and Inventories

Figure 8: Gasoline Production and Inventories

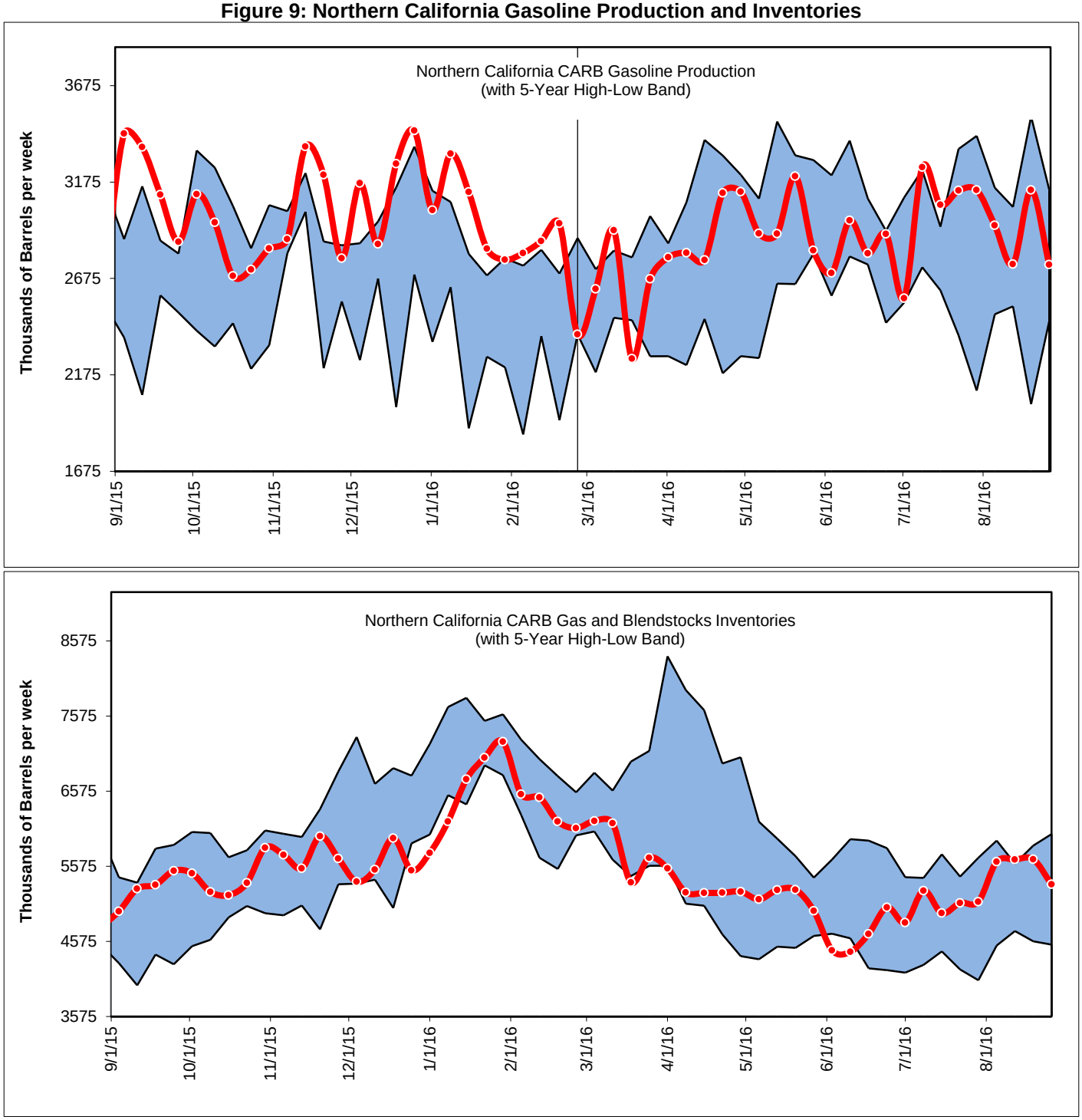


Source: PIIRA data

During the weeks following July 29, California gasoline production exceeded five-year highs while continuing weekly oscillations (**Figure 8**). This continues a pattern that began in June, but the peaks are below the July 22 high, and the troughs are above the July 29 low. This pattern occurs to weaker, irregular degrees in both Northern and Southern California.

California gasoline inventories increased over the same period but dropped sharply during the week of August 26. The drop occurred throughout California.

Figure 9: Northern California Gasoline Production and Inventories

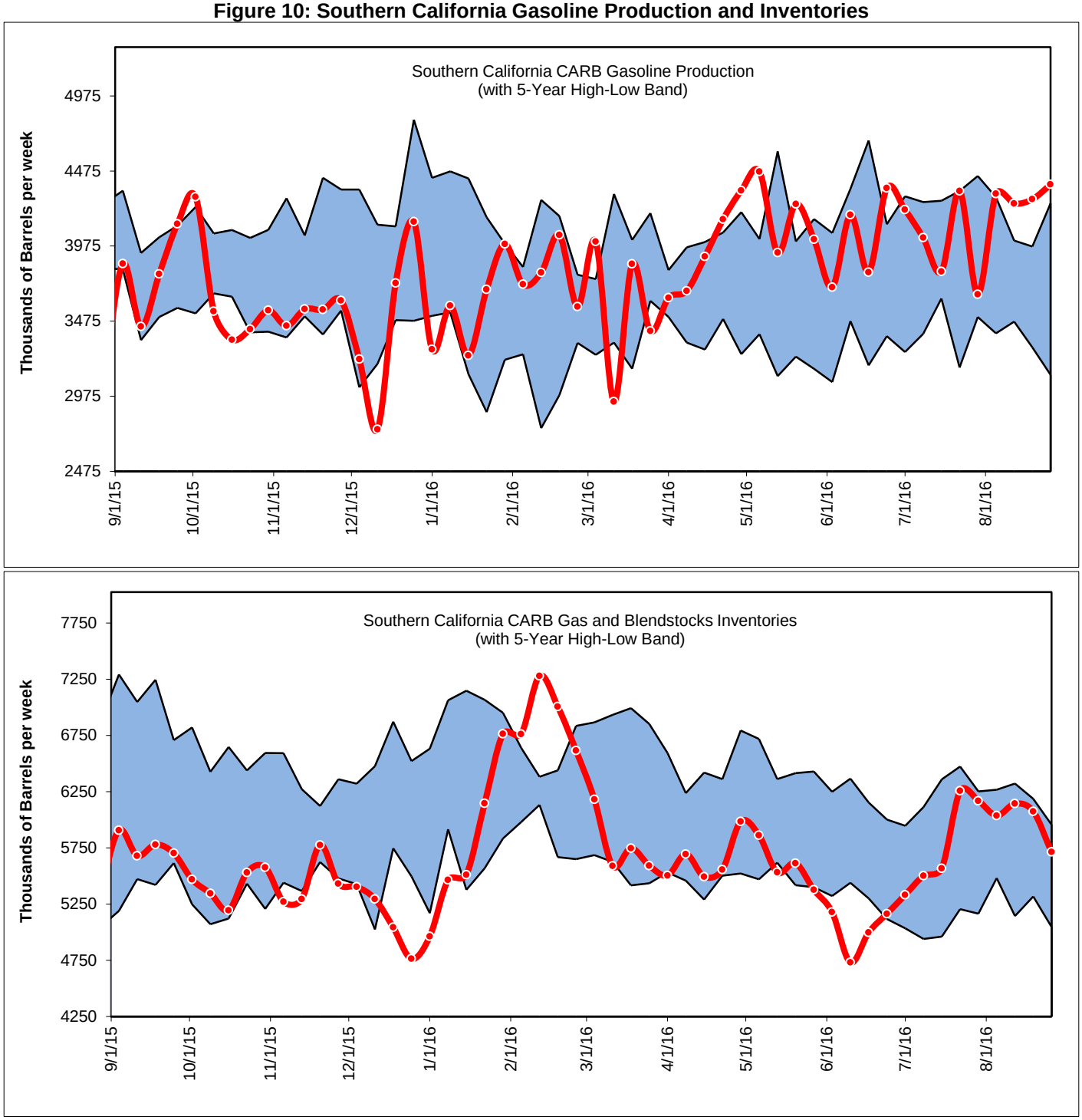


Source: PIIRA data

From July 29 to August 26, Northern California gasoline production zig-zagged just below the five-year highs (**Figure 9**). In the past six months, production has been somewhat lower than in the prior six months (see vertical line in **Figure 9**), which could be due to a decline in production associated with the restart of the Torrance refinery in Southern California.

Like last month, Northern California gasoline inventories followed the statewide pattern seen in **Figure 8**.

Figure 10: Southern California Gasoline Production and Inventories

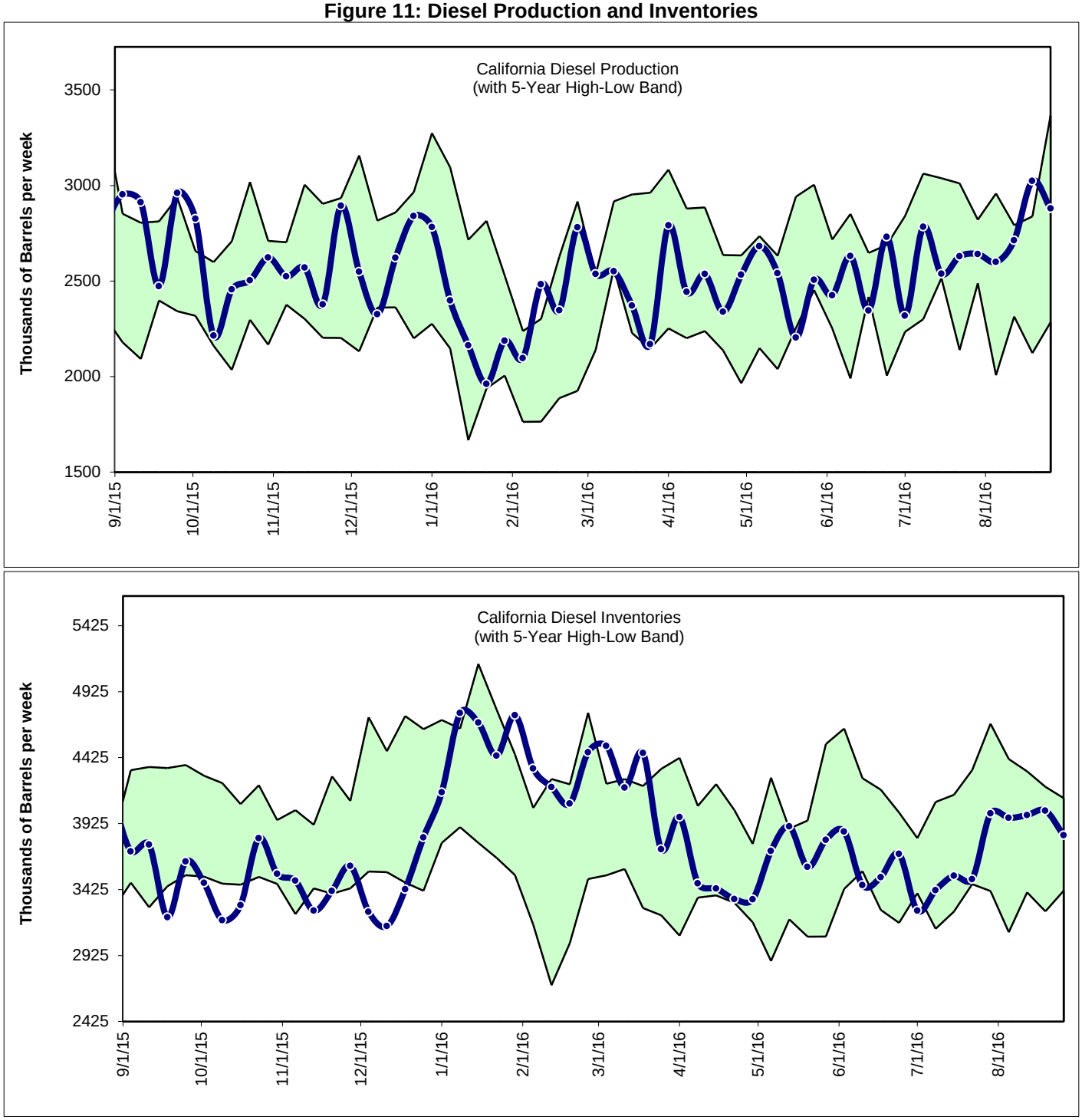


Source: PIIRA data

Since August 5, Southern California gasoline production has been steady and has remained above the five-year highs (see **Figure 10**).

Inventory levels declined gradually from July 22 through August 19 and then dropped sharply for the week of August 26.

Figure 11: Diesel Production and Inventories



Source: PIIRA data

California diesel production has generally increased since July 29 but reversed direction for the week of August 26 (**Figure 11**). Although production moved above the five-year band for the week of August 19, it moved back within during the following week.

California diesel inventories have been broken the pattern of lower peaks and lower troughs by moving higher during the week of July 29 and staying flat until the week of August 26, when inventories fell slightly. Although both production and inventories fell, they remain near the top of the five-year band and are unlikely the cause of the spike in the diesel spreads seen in **Figure 7**.