PETROLEUM WATCH
California Energy Commission
March 2016

Recent Petroleum News and Outside Analyses

Prices

- **Crude Oil Prices:** Prices have rebounded substantially since the January 26 lows. Nevertheless, prices remain 40 to 50 percent below year-ago levels. Brent and West Texas Intermediate (WTI) crude prices closed at $33.59 and $31.37, respectively.
- **California Gasoline Prices:** California gasoline prices continue to fall as inventory levels increased. Prices reached $2.30 during the week of February 22.
- **California Diesel Prices:** California diesel prices continued a steady decline, reaching $2.29 during the week of February 22.

Refining News

- **ExxonMobil Torrance Refinery**: The expected restart at the Torrance refinery is scheduled for sometime in the second quarter of 2016.
- **Tesoro Wilmington and Carson Refinery**: On February 2, Tesoro confirmed that planned maintenance is underway at both Los Angeles refineries. Tesoro declined to provide any details of the units involved or a time frame.
- **Tesoro Martinez Refinery:** On March 2, after completing maintenance, the Martinez refinery began the start-up process after facing a series of snags in January.
- **Phillips 66 Rodeo Refineries**: On February 12, 2016, the company experienced unplanned flaring. The facility was undergoing turnaround work at the time on two hydrocrackers and a reformer that was scheduled for a month's worth of work starting January 8, 2016.

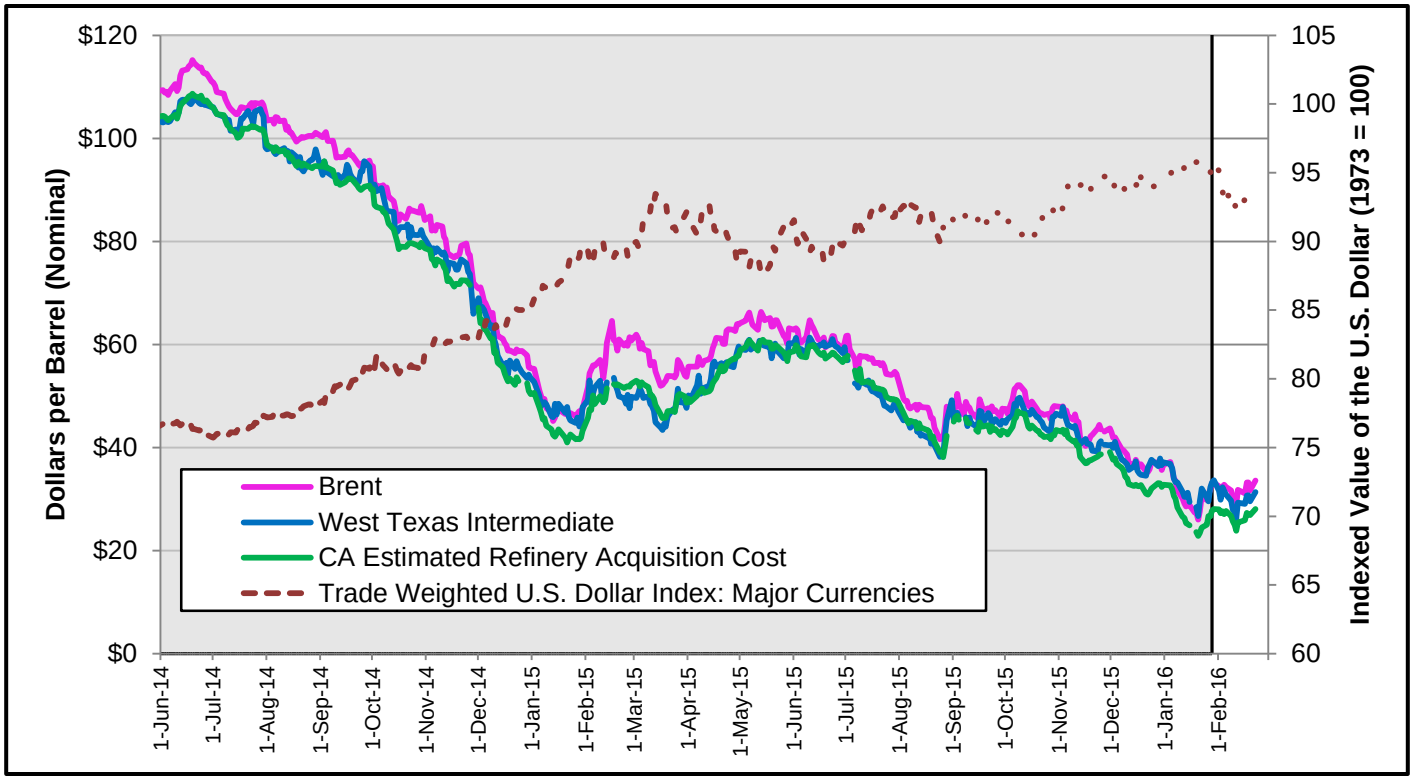
Market News

- **Mexico Opens Domestic Oil Market**: The planned opening of Mexico's domestic oil products market was moved forward from 2017 to April 2016. Mexico is a major buyer of oil products from the U.S. Gulf Coast and West Coast via pipelines, barges, and trucks. Opening this market could create competition for existing U.S. exports into Mexico.

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

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: Shaded areas on all graphs indicate previous report data. Unshaded areas indicated and new data since January's Petroleum Watch..

Crude oil prices increased at the end of February 2016, which was a volatile month (**Figure 1**). West Texas Intermediate (WTI) began falling from $33.66 on January 29, 2016, to $26.19 on February 11, 2016, the lowest price since May 2003. WTI prices rose back to $31.37 on February 22, 2016. At the same time, the California Estimated Refiner Acquisition Cost[2] (CA-RAC) of crude oil rose to $28.18 on February 22, 2016, a $0.11 increase over $28.07 on January 29, 2016.

Excess crude oil supply, particularly in the United States, has kept crude oil prices low. Excess crude inventories helped push down the monthly average WTI price by 6 percent to $29.90, while the monthly average Brent price rose 3 percent to $31.71, restoring Brent as the more expensive crude, following the recent inversion beginning in December.

Crude Oil Prices

February 2016 vs 2015
(Percent Change)

Brent	**45% lower**
WTI	**41% lower**
CA-RAC	**47% lower**

February 2016 Averages

Brent	**$31.71**
WTI	**$29.90**
CA-RAC	**$26.64**

February 22, 2016

Brent	**$33.59**
WTI	**$31.37**
CA-RAC	**$28.04**

1 Shaded areas on all graphs indicate previous report data. Unshaded areas indicated and new data since January's *Petroleum Watch.*

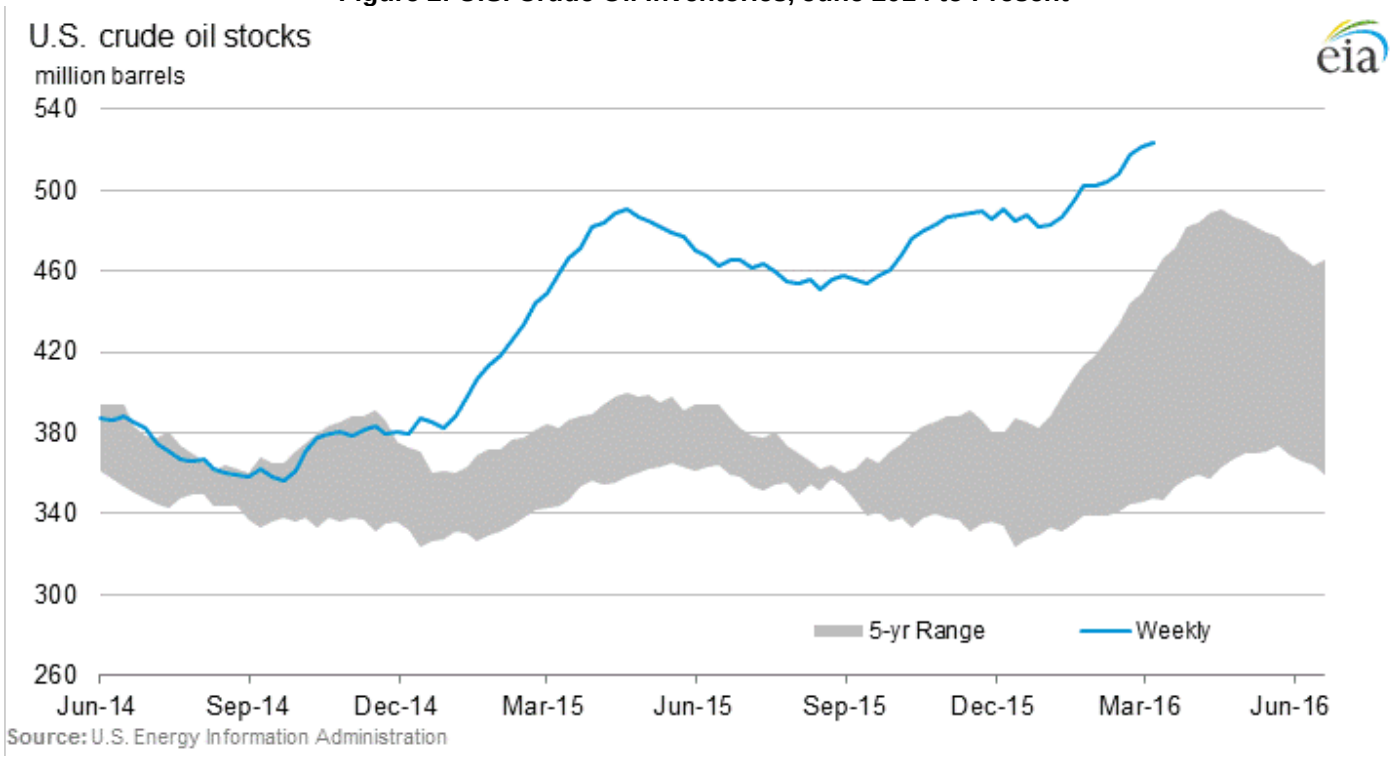
2 *California estimated refiner acquisition cost* is an estimate of the average price of crude oil paid by California refineries. Energy Commission staff estimates proportions of California crude, Alaskan crude, and foreign crude and multiplying them by the prices of San Joaquin Valley, Alaskan North Slope, and Brent crude oil, respectively.

Crude Oil Production and Storage

With crude oil prices well **below $40**, U.S. crude oil inventories have increased beyond the unusual highs of 2015 (**Figure 2**). Although U.S. Energy Information Administration (EIA) data show moderate declines in domestic crude oil production, production remains at a high level, keeping prices low and inventories high. Output from the Organization of the Petroleum Exporting Countries (OPEC) producers has leveled off but also remains at a high level. This combination of increasing domestic inventories and fairly flat global production is likely to prevent crude prices from rising much.

- U.S. crude oil production for February is estimated by EIA at 9.1 million barrels per day (bpd), as of mid-month. This is a 2 percent decline from year-ago production levels and is the first time since January 2009 that year-over-year production has declined for four weeks in a row. This is also a 5 percent decline from the weekly production high reached in summer 2015.
- Crude oil inventories in the United States increased during February, to 507.6 million barrels at month-end. This exceeds the 2015 high of 490 million barrels, which was reached in April during the refinery maintenance season.

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

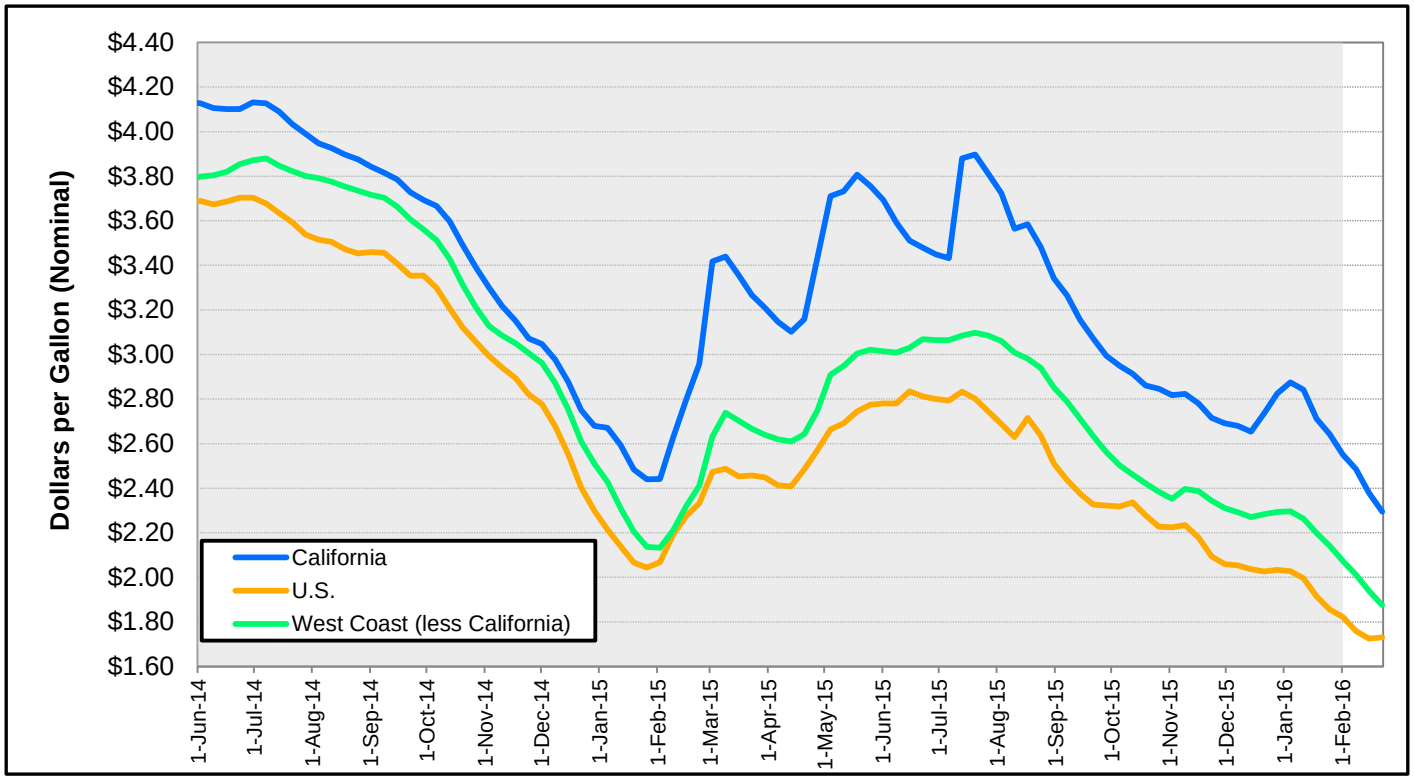


Source: U.S. EIA.

- According to the most recent data from the Organization of the Petroleum Exporting Countries (OPEC), Saudi Arabian crude output has leveled off at 10.1 million bpd in January; average Saudi production for 2015 was also 10.1 million bpd. Total OPEC production increased slightly to 32.3 million bpd in January. This is only 1.5 percent above the 2015 average. Growth of Saudi and total OPEC production has greatly slowed in recent months.

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 began February at the low price of $2.55 (**Figure 3**). This is likely due to oversupply of winter-blend gasoline (**Figure 8**). The upcoming switch to summer-blend gasoline in March contributed to a low of $2.30 during the week of February 22, a level not seen since February 2009. Prices increased to $2.38 the following week.

West Coast and U.S. gasoline prices began February at $2.07 and $1.82, respectively, and continued to decline. During the week of February 22, the difference between California and U.S. gasoline reached a low of $0.57. West Coast prices are decreasing quickly compared to U.S. gasoline prices, resulting in a difference between California and West Coast gasoline prices of $0.42 for the week of February 22, 2016.

Gasoline Prices

February 2015 vs 2016
(Percent Change)

California	**15% lower**
U.S.	**23% lower**
West Coast	**17% lower**

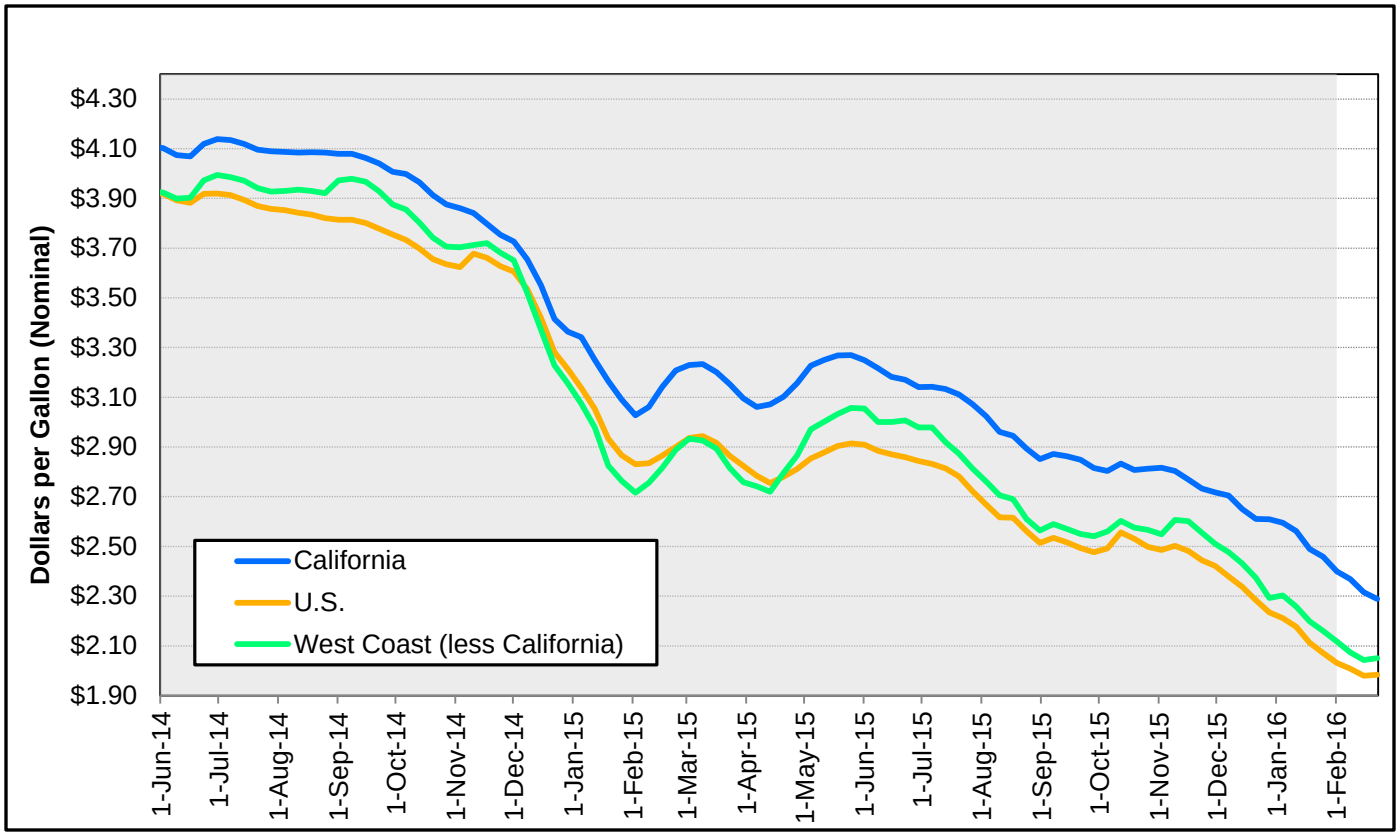
February 2015 Averages

California	**$2.38**
U.S.	**$1.75**
West Coast	**$1.92**

Week of February 22, 2015

California	**$2.30**
U.S.	**$1.73**
West Coast	**$1.88**

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



Source: U.S. EIA.

Like gasoline, diesel retail prices have declined. California diesel prices set a new low for the past five years at $2.29 during the week of February 22, down $0.17 from one month ago (**Figure 4**). Similarly, U.S. and West Coast prices both set new lows during the week of February 22 at $1.98 and $2.05, respectively. This is the first time since February 14, 2005, that U.S. diesel prices have been below $2 per gallon. The U.S. average retail diesel price had last approached, but not gone below, the $2 mark in early 2009.

The year-to-date (YTD) average difference between California and U.S. retail diesel prices is $0.38, and the YTD average difference between California and West Coast prices is $0.28. Diesel prices were less volatile than gasoline prices in 2015: the range in California diesel prices was $0.73, and the range for gasoline prices was exactly double that at $1.46.

Diesel Prices

February 2016 vs 2015
(Percent Change)

California	**25% lower**
U.S.	**30% lower**
West Coast	**26% lower**

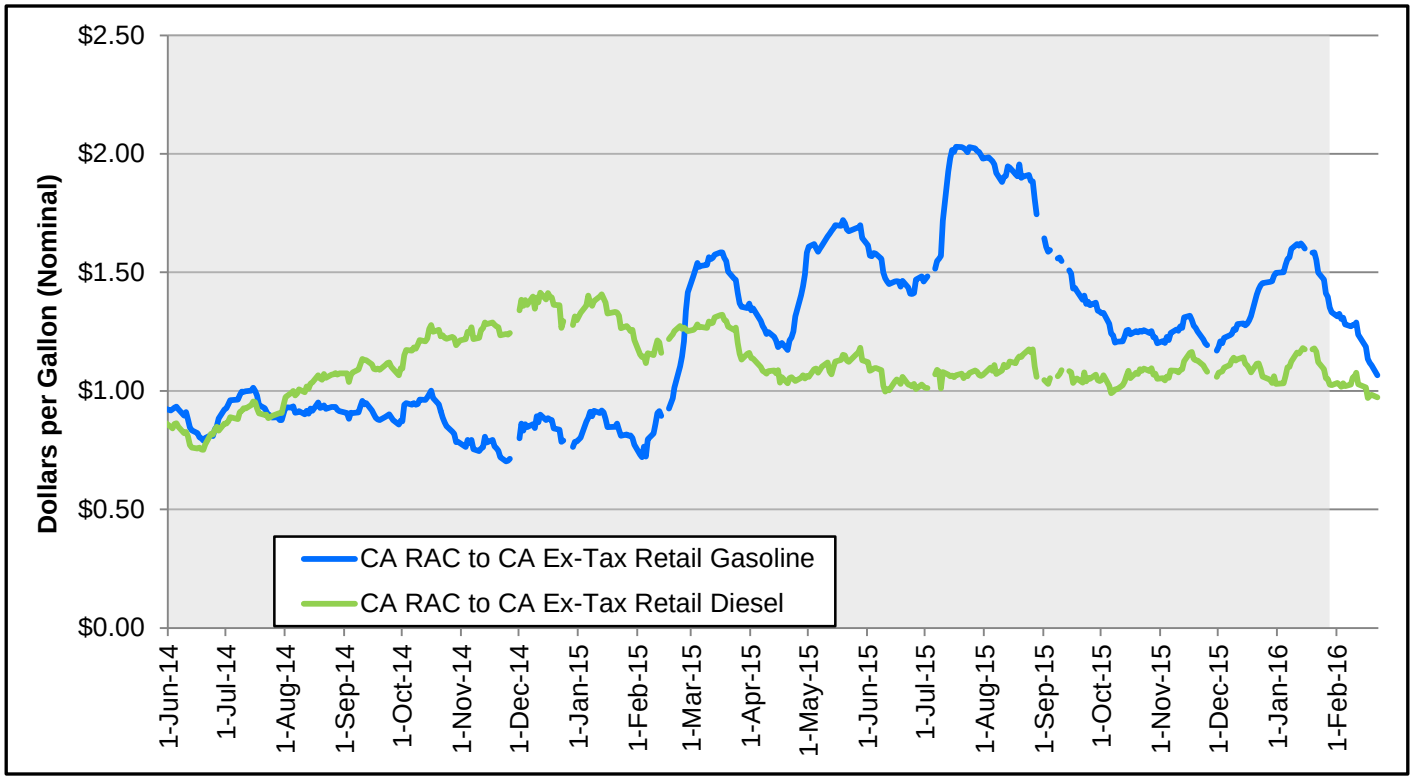
February 2016 Averages

California	**$2.34**
U.S.	**$2.00**
West Coast	**$2.08**

Week of February 22, 2016

California	**$2.29**
U.S.	**$1.98**
West Coast	**$2.05**

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



Source: U.S. EIA and OPIS

The California Refinery Acquisition Cost (CA-RAC)–to–ex-tax retail margins[3] all decreased in February. The average CA-RAC–to–ex-tax retail gasoline margin decreased $0.29 to $1.23, while the diesel margin decreased $0.02 to $1.02 (**Figure 5**).

The gasoline margin remains elevated one year after the explosion at ExxonMobil's Torrance refinery on February 18, 2015. The gasoline margin at $1.06 on February 22, 2016, is only $0.04 less than the $1.10 seen on February 23, 2015. However, the gasoline margin during the same period in 2014 rested at $0.57 on February 21, 2014. These margins suggest that retail gasoline prices still have not fallen to levels that reflect the historical crude costs for California refineries.

Historically, demand for both gasoline and diesel continues to decline until April when Californians ramp up for the summer driving season. Gasoline inventories still remain high in February, which should keep downward pressure on retail prices.

Crude to Retail Margins

February 2016 vs 2015
(Percent Change)

Gasoline	**29% higher**
Diesel	**15% lower**

February 2016 Averages

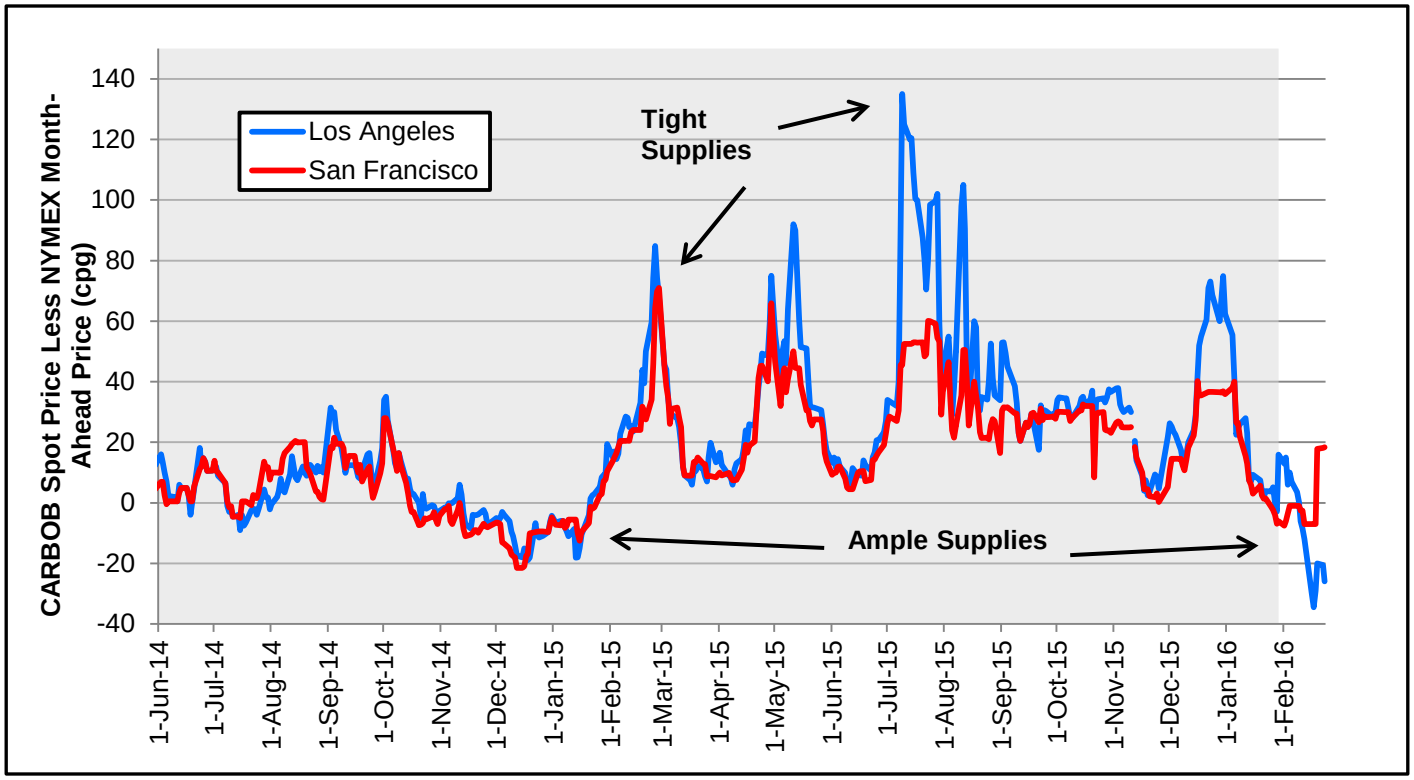
Gasoline	**$1.23**
Diesel	**$1.02**

February 22, 2016

Gasoline	**$1.06**
Diesel	**$0.97**

3 The *RAC-to-retail margin* refers to the difference between the retail price and the refiners' acquisition cost for crude oil. Thus, it includes all incremental costs of producing gasoline or diesel. *Ex-tax* refers to the removal of all taxes on the price of fuel, which is done to remove any distortions from taxes that may affect this calculation.

Figure 6: California Spot Gasoline to NYMEX Futures Price Spread



Source: U.S. EIA and OPIS

The spread between the Los Angeles (LA) spot gasoline price and the New York Mercantile (NYMEX) futures price decreased in February and reached its lowest in the past five years (**Figure 6**). The LA-less-NYMEX spread fell from $0.14 on February 2 to -$0.34 on February 17, but moved to -$0.20 on February 19. The monthly average for the LA-less-NYMEX spread decreased $0.23 from $0.15 in January to -$0.08 in February. This negative spread can be explained by the seasonal shift of gasoline from winter-grade to summer-grade. There is currently a glut of winter-grade gasoline that needs to be sold, and this pushed the spot price below the NYMEX price.

For the first three weeks in February, the San Francisco (SF) spot price averaged $0.04 below the NYMEX price. However, on February 19, the spread increased by $0.25. The SF-less-NYMEX spread increased from -$0.07 on February 1 to $0.18 on February 23. The monthly average for the SF-less-NYMEX spread decreased from $0.10 for January to $0.00 for February.

Gasoline Spot–Futures Spread

February 2016 vs 2015
(cents)

Los Angeles	**5¢ lower**
San Francisco	**31¢ lower**

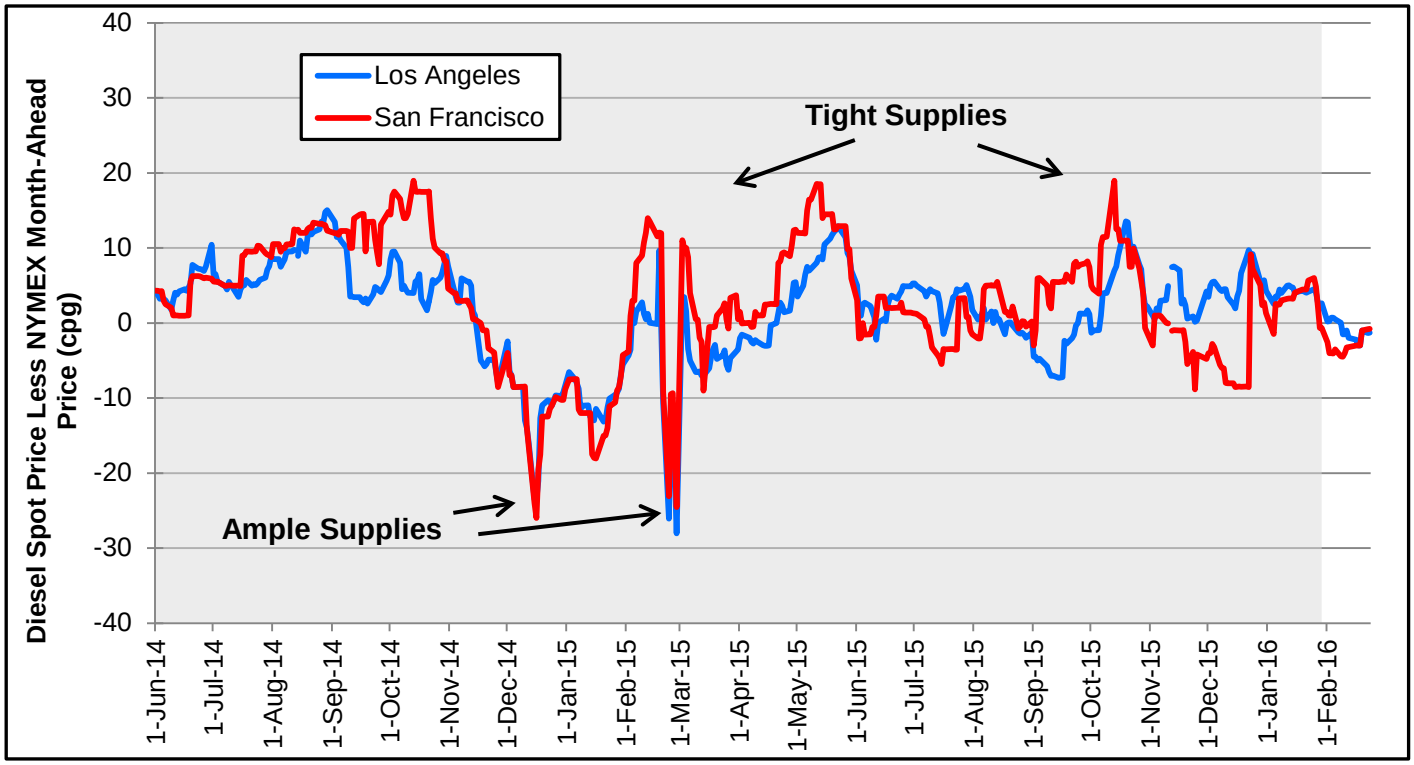
February 2016 Averages

Los Angeles	**-8¢**
San Francisco	**0¢**

February 23, 2016

Los Angeles	**-26¢**
San Francisco	**18¢**

Figure 7: California Spot Diesel to NYMEX Futures Price Spread



Source: U.S. EIA and OPIS

The LA-less-NYMEX spread for CARB diesel was small throughout February, starting at $0.00 on February 1 and reaching the widest at -$0.03 on February 17 before decreasing to -$0.01 on February 23. The monthly average for the LA-less-NYMEX differential is -$0.01, which is $0.05 lower than a month ago but $0.04 higher than a year ago (**Figure 7**).

The SF spot prices were consistently below NYMEX prices throughout February. The SF-less-NYMEX spread was -$0.03 on February 1 and reached the widest point at -$0.05 on February 9 before decreasing to -$0.01 on February 23. The monthly average for the SF-less-NYMEX differential is -$0.03, which is $0.06 lower than a month ago and $0.04 lower than a year ago.

Both of these negative spot market differentials imply that the California CARB diesel market has sufficient supplies. This is confirmed by Figure 11, which shows an increase in diesel production in February in addition to inventories already being at or near the high end of the five-year high-low band.

Diesel Spot–Futures Spread

February 2016 vs 2015
(cents)

Los Angeles	**4¢ higher**
San Francisco	**4¢ lower**

February 2016 Averages

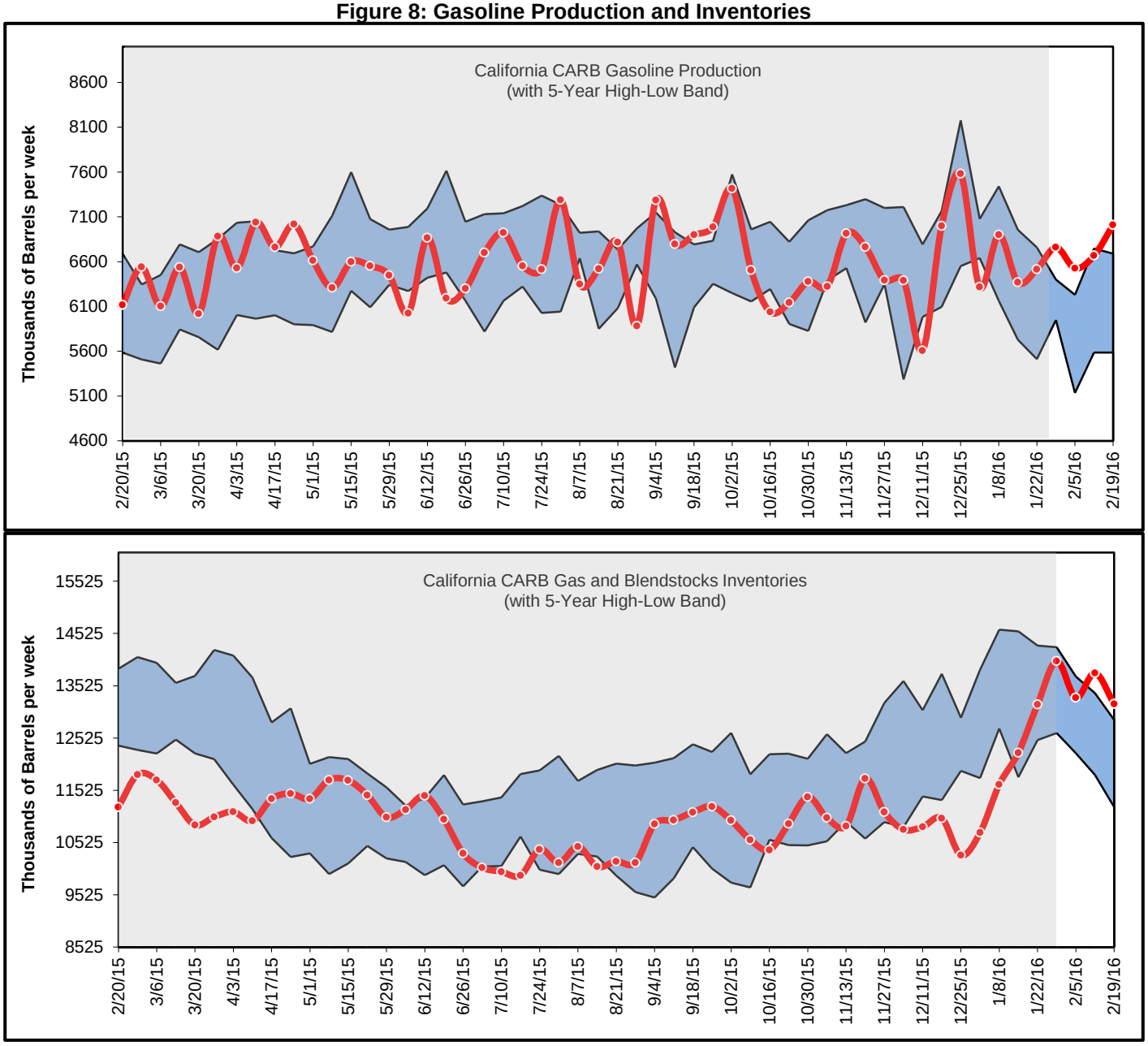
Los Angeles	**-1¢**
San Francisco	**-3¢**

February 23, 2016

Los Angeles	**-1¢**
San Francisco	**-1¢**

California Gasoline and Diesel Production and Inventories

Figure 8: Gasoline Production and Inventories

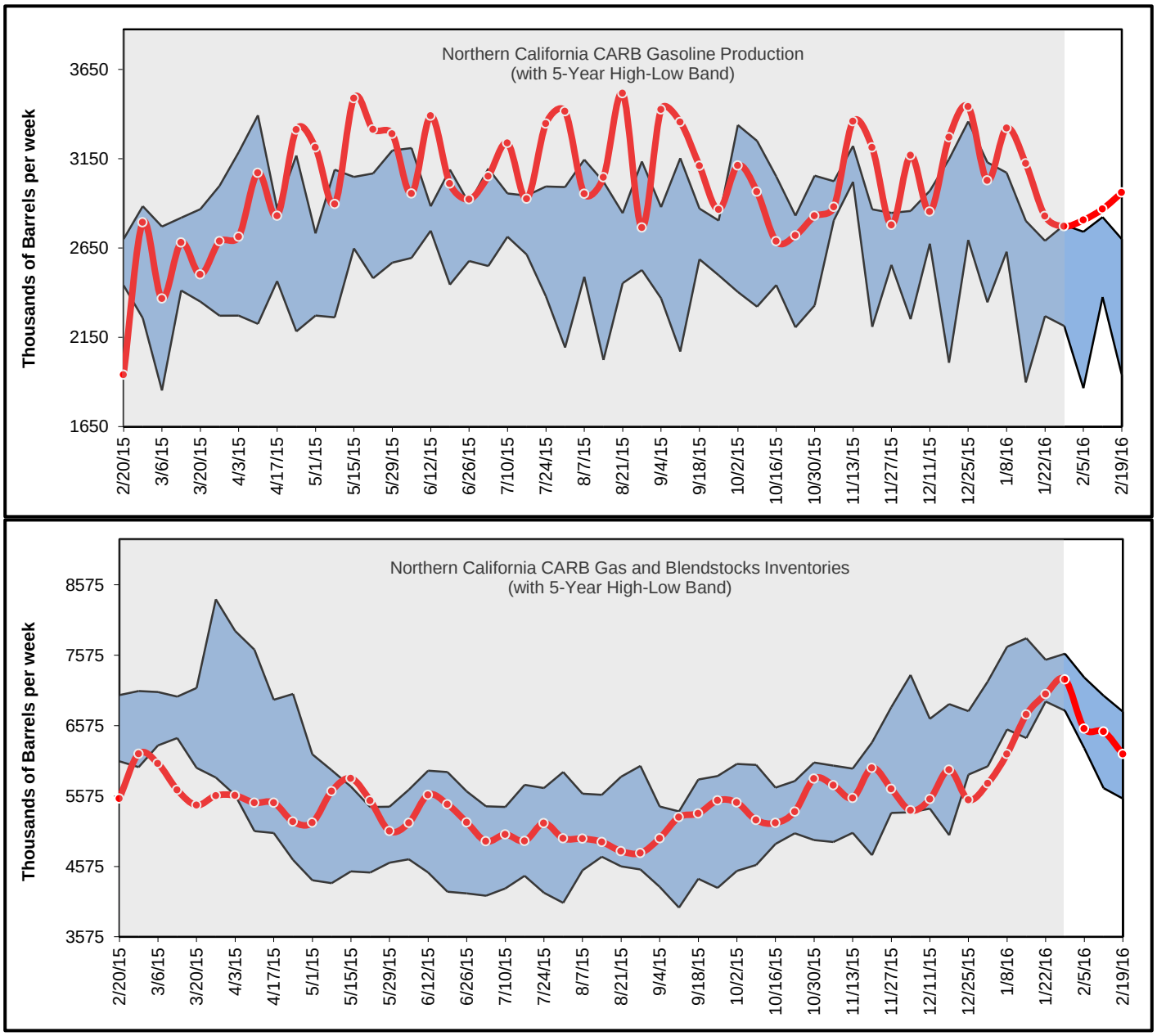


Source: PIIRA data

California gasoline production rose to 7.01 million barrels-per-week (bpw) for the week ending February 19, 2016, which is above the historical five-year band. For the first eight weeks of the year, gasoline production is averaging 6.63 million bpw, compared to 6.17 million bpw for 2015, an increase of 460,000 bpw (**Figure 8**).

Inventories, on the other hand, are down 820,000 barrels from 13.99 million barrels on January 29 to 13.17 million barrels on February 19. Nevertheless, gasoline inventory levels are above the five-year band and, for the week ending February 19, are 17.5 percent higher than a year ago.

Figure 9: Northern California Gasoline Production and Inventories

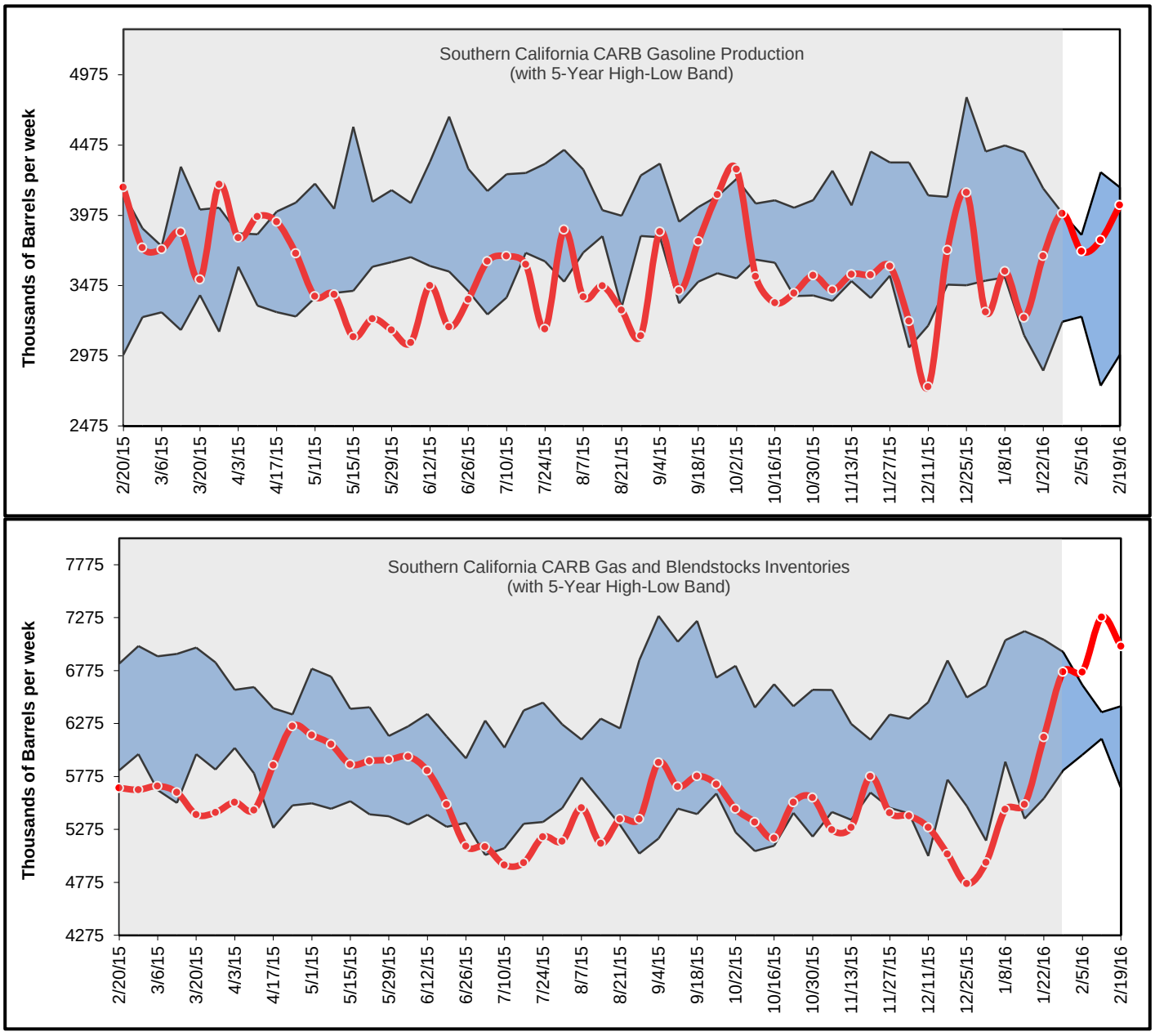


Source: PIIRA data

For the week ending February 19, 2016, Northern California gasoline production remained above the five-year band at 2.96 million bpw. In comparison to the same week last year, gasoline production increased 52.6 percent from just 1.94 million bpw (**Figure 9**).

Historically, inventory levels have a tendency to increase from December through January and decrease through February (**Figure 9**). Northern California gasoline inventory levels have followed this pattern, declining from 7.23 million bpw on January 29 to 6.17 million bpw on February 19, 2016.

Figure 10: Southern California Gasoline Production and Inventories

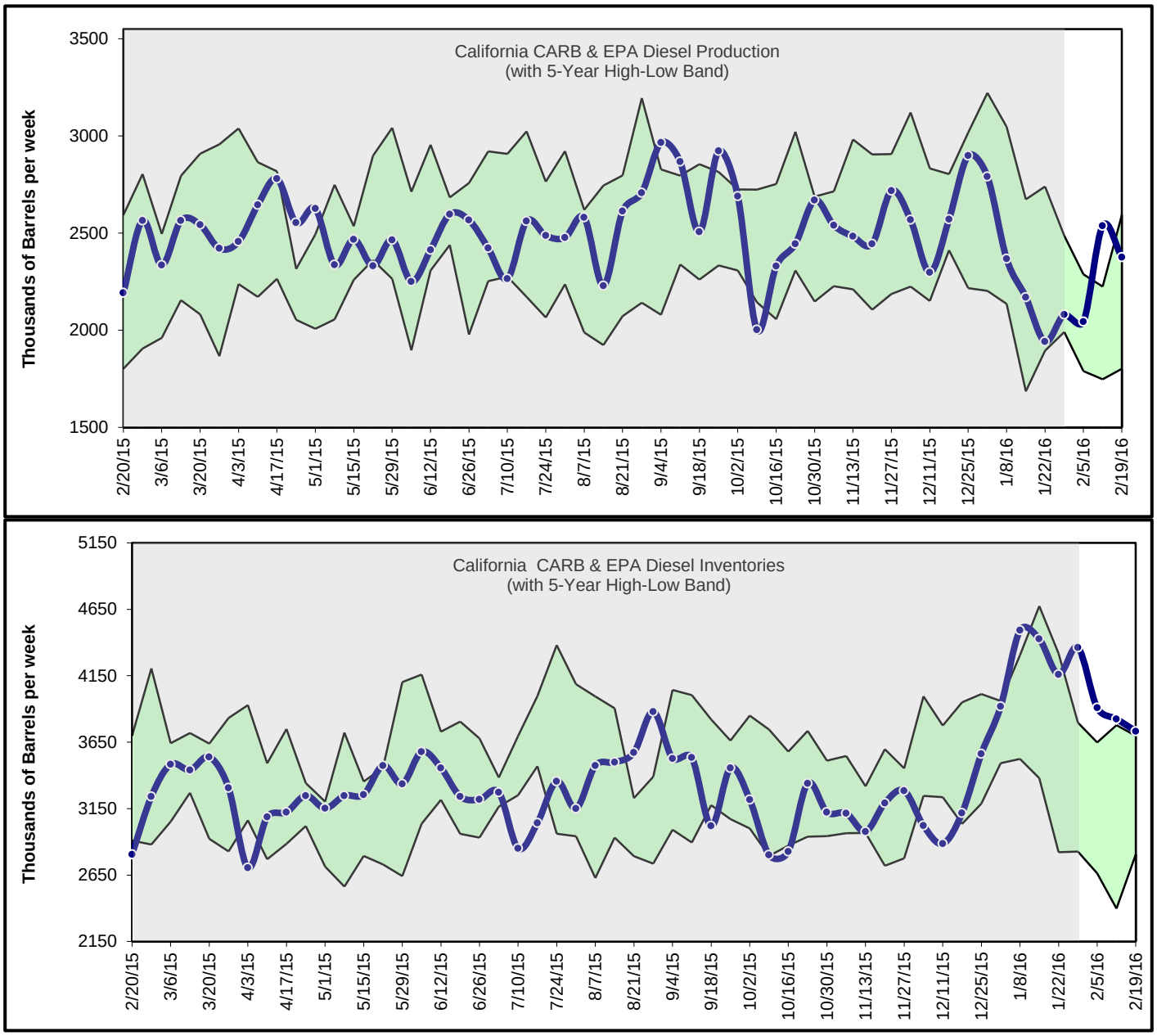


Source: PIIRA data

Southern California gasoline production for the week ending February 19, 2016, was 4.05 million bpw. This accounts for 58 percent of California gasoline production, down from 68 percent a year ago.

Inventory levels in Southern California increased 53.1 percent to a 12-month high of 7.28 million barrels on February 12, 2016, from 4.76 million barrels on December 25, 2015 (**Figure 10**). This is the highest recorded inventory level since 7.29 billion barrels was reached on September 3, 2010.

Figure 11: Diesel Production and Inventories



Source: PIIRA data

California diesel production increased 500,000 bpw from February 2, 2016, from 2.04 million bpw to 2.54 million bpw on February 19, 2016 (**Figure 11**). This is the highest production increase in a two-week span since August 2013, when production jumped 756,000 bpw.

Diesel inventories fell 630,000 barrels from 4.36 million to 3.73 million on January 29 and February 19, respectively. Nevertheless, inventory levels have remained above the five-year band for four consecutive weeks.