

# What's Up with California's Gas Prices?

## CBE (October 2012)—Notes

- (1) *Gas prices inch down in California*; October 10, 2012 San Francisco Chronicle, David R. Baker (“California’s Democratic Sens. Dianne Feinstein and Barbara Boxer have called for federal investigations, questioning whether the state’s gasoline market has been manipulated”).
- (2) *California facing \$5 gasoline prompts Brown to relax standards*; October 8, 2012, Bloomberg News, Michael B. Marois and Lynn Doan; and *Regulatory Advisory—Requirements for gasoline Reid Vapor Pressure*; California Air Resources Board (CARB), October 7, 2012. In this document CARB opines that: “Due to the convergence of a number of recent events (e.g., refinery fire, electricity interruption, pipeline contamination) and planned shutdowns of several refineries and pipelines, the gasoline market in California is currently experiencing tight supplies. ...This has led to a sharp increase over the last few weeks in wholesale and retail prices for gasoline around the State.”
- (3) Statewide refinery production of CARB reformulated gasoline (RFG) was 254 million gallons/week (MGW) on Aug 3, 2012, before the Aug 6 Richmond refinery fire, and higher each following week through Oct 5 (256–285 MGW); it was 256 MGW on Sep 14, before the Sep 15 Wilmington refinery power outage flaring, and higher each following week through Oct 5, 2012 (262–278 MGW). It ranged from 253–285 MGW during Jul 27–Oct 5 2012, within the “normal range” during these weeks in 2008–2011 (246–291 MGW). These production data are from the California Energy Commission (CEC) *Weekly Fuels Watch Report* ([http://energyalmanac.ca.gov/petroleum/fuels\\_watch](http://energyalmanac.ca.gov/petroleum/fuels_watch)). The statewide average RFG prices also shown in Chart 1 are from the U.S. Energy Information Administration (EIA) *California gasoline and diesel retail prices* ([http://www.eia.gov/dnav/pet/pet\\_cons\\_prim\\_dcu\\_SCA\\_m.htm](http://www.eia.gov/dnav/pet/pet_cons_prim_dcu_SCA_m.htm)).
- (4) Weekly California RFG price margins (retail price–crude price) and RFG inventories (stocks) during July–October, 2006–2012 were analyzed by linear regression. RFG prices and stocks were from the EIA and CEC data referenced above; crude prices were Brent spot prices (FOB) from EIA ([www.eia.gov/dnav/pet/pet\\_pri\\_spt\\_s1\\_w.htm](http://www.eia.gov/dnav/pet/pet_pri_spt_s1_w.htm)). Higher marginal prices were strongly associated with lower inventories ( $p < 0.0001$ ), but stock levels alone did not predict price margins well ( $R^2 0.14$ ). The interpretation is that lower inventories predict the occurrence of higher marginal prices, but when inventories are lower another factor or factors may affect the extent of price increases. Chart 2 illustrates the extent of marginal price spikes when stocks are lower using all weekly data from January 1999–October 8, 2012. Stock levels are shown in this chart as a percentage of production (from CEC data referenced above) to illustrate stock and price data on the same scale.
- (5) For June–October 8, 2012 and those weeks in previous years, average California RFG stocks in 2012 were down by 6–22 million gallons/week (MGW) from 2005 and 2006, and weekly stocks in 2012 were lower than the 2005–2011 average in 9 weeks during that period (CEC data referenced above). Average California RFG demand for June–September, 2011 was down by 24 MGW from 2005 and 2006; and available data for 2012 show that June–July demand was down 24–25 MGW from 2005 and 2006 (EIA *California Prime Supplier Sales Volumes*; [www.eia.gov/dnav/pet/pet\\_cons\\_prim\\_dcu\\_sca\\_m.htm](http://www.eia.gov/dnav/pet/pet_cons_prim_dcu_sca_m.htm)). The total crude capacity of California refineries on January 1, 2011 and 2012 was up by 27–31 million gallons/week from 2005 and 2006 (*Oil & Gas Journal* Worldwide Refining Survey).
- (6) Monthly West Coast (PADD 5) RFG retail prices were analyzed with refiners’ actual crude costs, RFG production margins (production–demand), and RFG “supply shifts” (calculated as RFG imports+net receipts from other PADDs–exports–stocks) by partial least squares regression. Cost and price data were from EIA *California gasoline and diesel retail prices* referenced above, and *Crude oil composite acquisition cost by refiners* ([http://www.eia.gov/dnav/pet/pet\\_pri\\_rac2\\_dcu\\_r50\\_m.htm](http://www.eia.gov/dnav/pet/pet_pri_rac2_dcu_r50_m.htm)). RFG refinery and blender net production; demand (product supplied); imports; net receipts from other PADDs by pipeline, tanker and barge; exports; and ending stocks were from EIA *West Coast (PADD 5) Supply and Disposition* data ([http://www.eia.gov/dnav/pet/pet\\_sum\\_snd\\_d\\_r50\\_mbb1\\_m\\_cur.htm](http://www.eia.gov/dnav/pet/pet_sum_snd_d_r50_mbb1_m_cur.htm)). All data from January 2004–July 2012 were analyzed. RFG prices were strongly and positively associated with refiners’ crude costs ( $R^2 0.92$ , standardized coefficient 0.89). Production margins and supply shifts were not significant in predicting monthly gas prices (standardized coefficients spanned zero).
- (7) Chart 3 shows weekly California retail RFG prices and weekly global crude prices from the EIA California gasoline and diesel retail price and Brent crude spot price data referenced above for January 1995–October 8, 2012. As of October 8, 2012, ten-week average prices rose from the beginning of 1995 by \$2.28 for crude, from \$0.40–\$2.68 per gallon, and by \$2.92 for California RFG, from \$1.30–\$4.22/gallon.
- (8) See Williams et al. The technology path to deep greenhouse gas emissions cuts by 2050: the pivotal role of electricity. *Science* **2011**. DOI: 10.1126/science.1208365.
- (9) Martin I. Hoffert has noted that “developing carbon-neutral technologies also requires, at the very least, reversing perverse incentives, such as existing global subsidies to fossil fuels that are estimated to be 12 times higher than those to renewable energy.” Hoffert, M., I. Farewell to fossil fuels? *Science* **2010**. DOI: 10.1126/science.1195449.