

McCULLOUGH RESEARCH

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PRINCIPAL

MEMORANDUM

Date: October 19, 2022

To: McCullough Research Clients

From: Robert McCullough
Joshua Crawford
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Subject: West Coast Gasoline Price Excursions in September 2022

Since 2012, gasoline prices in California, Oregon, and Washington have experienced periodic excursions – usually after press coverage identifying significant outages. Last month the West Coast experienced its second highest gasoline prices in history without a credible explanation – even though world oil prices were falling for much of September:

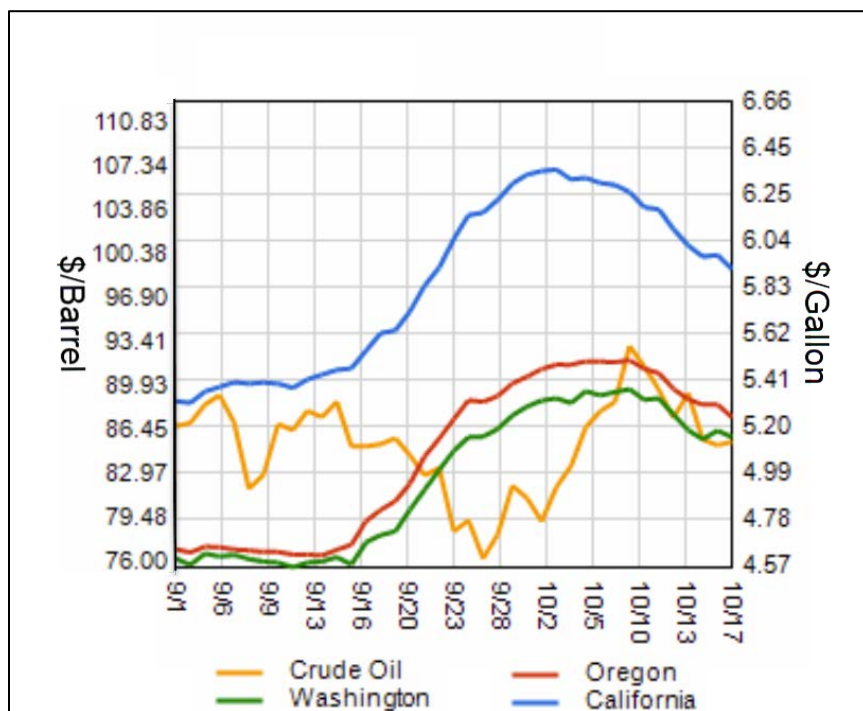


Figure 1 Source: Gasbuddy

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In the chart above, oil prices fell throughout most of the month (yellow line) while retail gasoline prices climbed in California, Oregon, and Washington. California prices, as usual, were significantly higher reflecting California's high tax rates on gasoline.

Curiously, this departure from input prices mirrors very closely the price spikes of October 2012 – almost exactly ten years ago. The facts are quite similar:

1. A rapid increase in retail prices;
2. No underlying increase in oil prices;
3. Questions by the California Energy Commission; and,
4. Doubtful explanations by the refiners.

An unusual feature of the West Coast gasoline market is that wholesale and retail prices are often based on the “prompt” month of the New York Mercantile Exchange (NYMEX) New York Harbor price. “Prompt” in this case means the forward price of gasoline for the following month. Many West Coast prices reflect the Oil Price Information Service (OPIS) index that calculates the NYMEX New York Harbor price plus a “basis differential”. The basis differential is calculated by OPIS based on daily trades.

If this sounds complex, it is. And, unfortunately, it is far from transparent. The OPIS basis differential calculations are proprietary and evidence exists which indicates that they may be subject to some of the same problems that have affected electricity and natural gas prices in past criminal investigations.

The following chart shows the relationship between oil prices, our estimate of the OPIS basis differential and California prices net of taxes.

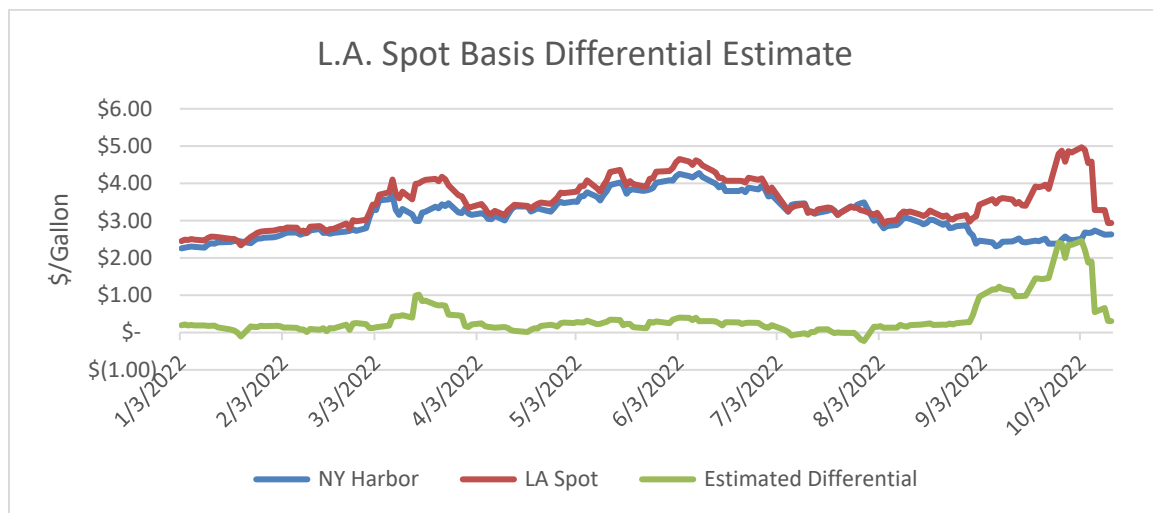


Figure 2 Source: EIA L.A. Spot and NY Harbor Prices

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The blue line represents the following month's price for gasoline at the New York Mercantile Exchange (NYMEX). The red line is the wholesale cost of gasoline at the pipeline in Los Angeles. The green line is our estimate of the OPIS basis differential cited in wholesale and retail gasoline contracts. As can be seen, the differential surged dramatically at the start of September and collapsed at the start of October.

As in October 2012, the California Energy Commission has responded to the inexplicable price increases by requesting answers from California's refineries. Their current questions are:

1. Why have gasoline prices risen so dramatically in the past 10 days despite a sharp downturn in global crude prices, no significant unplanned refinery outages in the state, and no increases in state taxes or fees?
2. If logistics or other obstacles have contributed to the price increases, what measures could the State of California take to address them without sacrificing environmental or public safety concerns?
3. Why did refiners allow inventory levels to drop when they have known for months, or in some cases years, that planned maintenance would occur at this time?¹

The responses from the California refineries have not been illuminating. Answers ranged from legally excusing themselves from answering, to detailing well known long-term logistics, to blaming regulators and politicians, and to scoffing at the questions since they just won a case regarding anti-trust.

Marathon took the legal approach, commenting: that "we are unable to provide a written public response that addresses these issues in detail, as doing so would disclose business sensitive information and could raise antitrust concerns".²

Chevron was similarly vague, citing the many factors influencing price, but decided to blame "policies that have reduced California's refining capacity".³ Chevron suggests the

¹ Refiner Letter, 9/30/2022, <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=22-IEPR-05#:~:text=Refiner%20Letter%20Sept%2030%202022>

² Marathon Response CEC Refinery Letter, 10/11/2022, <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=22-IEPR-05#:~:text=Refiner%20Letter%20Sept%2030%202022>

³ Chevron Response to CEC Inquiry 1007202, 10/11/2022, <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=22-IEPR-05#:~:text=Refiner%20Letter%20Sept%2030%202022>

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West Coast market is simply more expensive to refine gasoline in, due to things such as higher taxes and fees.

Both Phillips 66 and PFB had longer responses with much more detailed descriptions. They tried to convey the complexity of the gasoline market, particularly the California market.^{4,5} From increased import reliance, limited shipping, refiners going out of business, and post-COVID demand resurgence, the two refineries have painted the refining market in California as being insurmountably challenged. They believe that California's market operates on its own accord and that is so complicated and overburdened by restrictions and regulations, that it's a wonder anyone can refine a single drop. They claim to have no upstream or retail outlets, and so they cannot appreciably affect prices. Safety is also said to be of the utmost importance, thus the prioritization of maintenance and shutdowns, which have been planned for well ahead of time, regardless of the effect on prices. However, even these longer answers are unresponsive to the CEC's questions.

Valero's response was both haughty and dismissive, declaring that "ironically" on the same day they received the letter, they were also notified that a price conspiracy case against them was thrown out.⁶ They went on to declare the same legal approach as Marathon, citing anti-trust concerns, however, they offer some general information about their required maintenance event and their market preparations. They then proffer some conjectures as to why inventory levels may be low, blaming COVID and tight market logistics. They go on to accuse California of creating "a very hostile regulatory environment for refining." Valero suggests that California is intent on eliminating the refining sector and that it "has imposed some the most aggressive, and thus expensive and limiting, environmental regulatory requirements in the world". Ultimately, they did not really make any sort of clear statement about why the prices diverged from national prices in September and early October, 2022.

All of these responses are very unresponsive to the CEC's questions.

Evidence from the U.S. Energy Information Administration and the California Energy Commission directly contradicts press reports that the price increase was caused by scarcity. EIA data for the entire West Coast (including Hawaii and Alaska) shows no major disruption in production of gasoline:

⁴ CEC P66 Response letter Draft Final, 10/11/2022, <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=22-IEPR-05#:~:text=Refiner%20Letter%20Sept%2030%202022>

⁵ PBF Energy Wester Region LLC - Re California Gasoline Price Hike, 10/6/2022, <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=22-IEPR-05#:~:text=Refiner%20Letter%20Sept%2030%202022>

⁶ Valero Response letter to Chair Hochschild, 10/7/2022, <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=22-IEPR-05#:~:text=Refiner%20Letter%20Sept%2030%202022>

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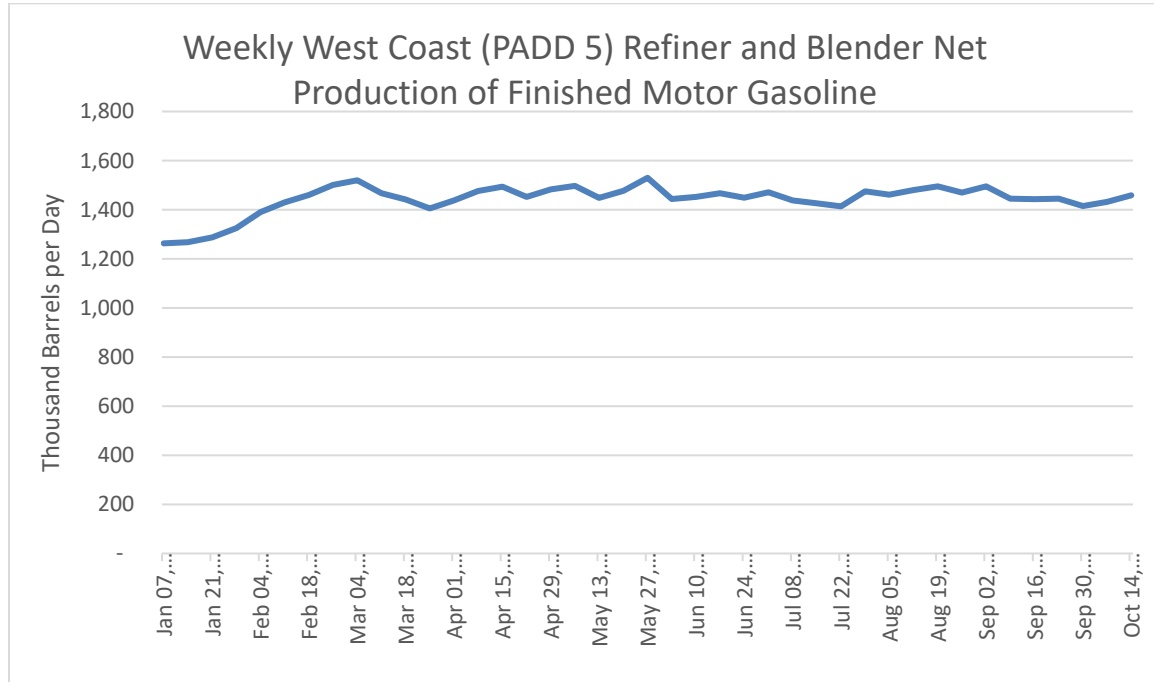


Figure 3 Source: U.S. Energy Information Administration (EIA) Weekly Production

CEC data for 2022 similarly shows no major disruptions in production:

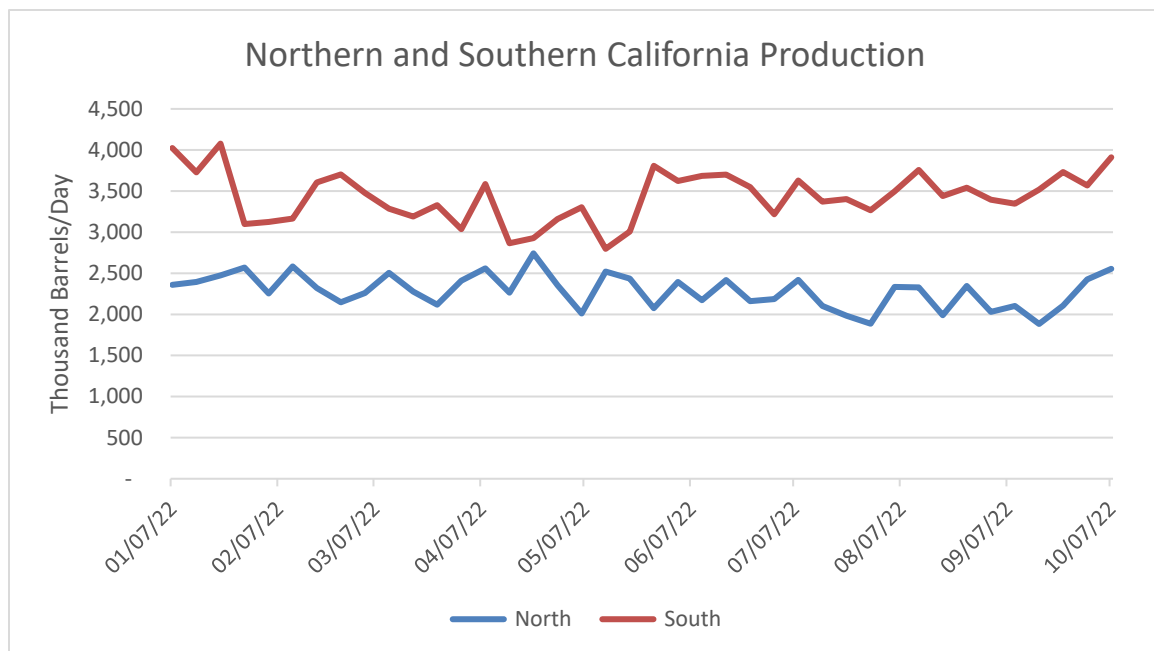


Figure 4 Source: California Energy Commission (CEC) Weekly Fuels Watch

Neither data set shows a sudden reduction in output – either on the West Coast in its entirety, or California.

While the refineries responses to the California Energy Commission’s questions were not helpful, other comments were.

The Oil Price Information Service provided two different answers recently – “Analysis: US West Coast Market Fundamentals Behind Spot Gasoline Price Surge” and “Refinery Maintenance Report”.^{7,8}

The OPIS analysis document argued that fundamentals – operating reductions at four refineries -- were the primary cause. Three of these reductions were “turnarounds” – annual maintenance shutdowns – at Valero’s Benicia, California refinery, Marathon’s Carson, California refinery, and Phillips 66’s Ferndale, Washington refinery. In addition, the analysis mentions a possible forced outage at Chevron’s Richmond, California refinery.

With the exception of the Phillips 66 refinery in Washington, actual evidence of an output reduction is hard to find.⁹

The roughly contemporaneous OPIS report indicated a very different answer. The report on refinery maintenance operations gives a different picture:

Chevron Richmond:	Significant flaring.
Phillips 66 Ferndale:	45 day planned turnaround.
Marathon Los Angeles:	Planned flaring – not clear if any impact on production.
Valero’s Benicia:	Intermittent flaring -- not clear if any impact on production.

The four refineries cited in the OPIS analysis constitute 32% of total refinery capacity in PADD 5. Obviously, if the reductions were significant, they would have shown up in the EIA’s weekly available capacity data:

⁷ Analysis: US West Coast Market Fundamentals Behind Spot Gasoline Price Surge, Bayan Raji, OPIS, October 3, 2022.

⁸ Refinery Maintenance Report (Updated), OPIS, September 26, 2022.

⁹ Phillips 66 has posted information about the turnaround on Facebook at <https://www.facebook.com/FerndaleRefineryPage>.

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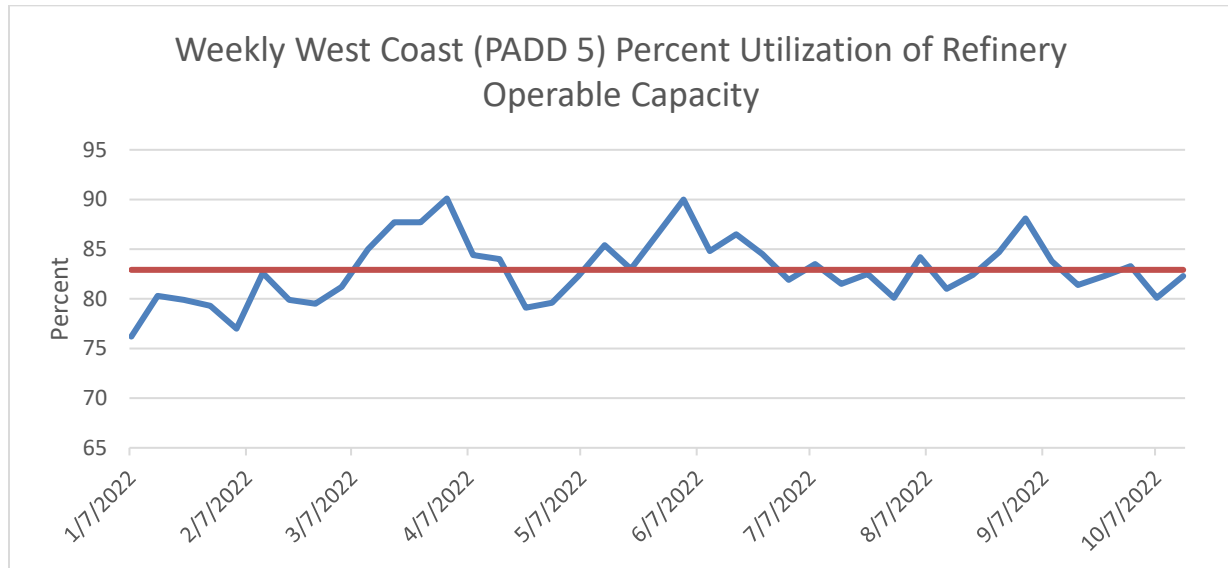


Figure 5 Source: U.S. Energy Information Administration (EIA) Refinery Operable Capacity

The red line shows year to date average capacity for PADD 5 from EIA data. Capacity utilization in September was roughly equal to the average to date in 2022.

As always during these price excursions, the argument that there existed a sudden unanticipated shortage appears weak. If the problem was annual turnarounds, the usual practice is to build inventory to cover sales during the shutdown period. This does not appear to be consistent with the data.

The alternative explanation of some form of market manipulation is at least as likely. The OPIS market index at Los Angeles is complex and opaque. There is no market surveillance from either FERC or the CFTC – agencies that would be exploring the data if it concerned either forward markets or electricity and natural gas spot transactions.

The best way to assure efficient markets is transparency and market surveillance. Until similar procedures are in place for gasoline and oil as have been in place for other energy markets, we will continue to see suspicious price spikes in western gasoline markets.