

Gas Prices in California: History & Policy

December 2022





Overview

In anticipation of legislative requests during the planned special session, the California Research Bureau developed this high-level review of data, policies and literature related to gas prices in CA.

Legislators are invited to publicly or confidentially request detailed information on these or other topics.

Data Review

- U.S. & CA Gas Prices
- U.S. & CA Gas Price Gap
- Crude Oil & Gas Prices
- Refinery Production & Capacity
- Refinery Profits

Policy Review

Literature Review

- Tax Rebates
- Windfall Profits Taxes
- Price Gouging

Appendices

- Appendix I: Acronyms and Definitions
- Appendix II: Data Dictionary with Cleaned Data
- Appendix III: Literature on Gas Prices
- Appendix IV: Literature on Tax Rebates & Inflation
- Appendix V: Literature on Windfall Taxes & Price Gouging
- Appendix VI: California Legislation Review
- Appendix VII: Multistate Legislation Review
- Appendix VIII: Federal Price Gouging Legislation Review





Gas Prices Reached Record Highs Remain Elevated

Following a surge in global crude oil prices, primarily related to disruptions caused by Russia’s invasion of Ukraine, refined petroleum prices surged across the United States, including California, in the summer of 2022.

The prior **U.S. record high** average, \$4.165, was set in July 2008. National averages exceeded that in March 2022 and continued to rise through mid-June, reaching a high of \$5.107 before declining through mid-September. Prices remain elevated, relative to historic norms.

California prices followed a similar pattern, breaking the old record of \$4.707, dating to October 2012, in late February and rising through mid-June, reaching a new high of \$6.364.

Prices began to diverge in September. While U.S. refined petroleum and crude oil prices leveled off, **California’s prices spiked**.

California’s average price for refined petroleum dropped to \$5.154 over the first week of September, the lowest price since early March. It then increased over the next month, reaching \$6.315, nearly returning to the summer’s record levels in the first week of October.

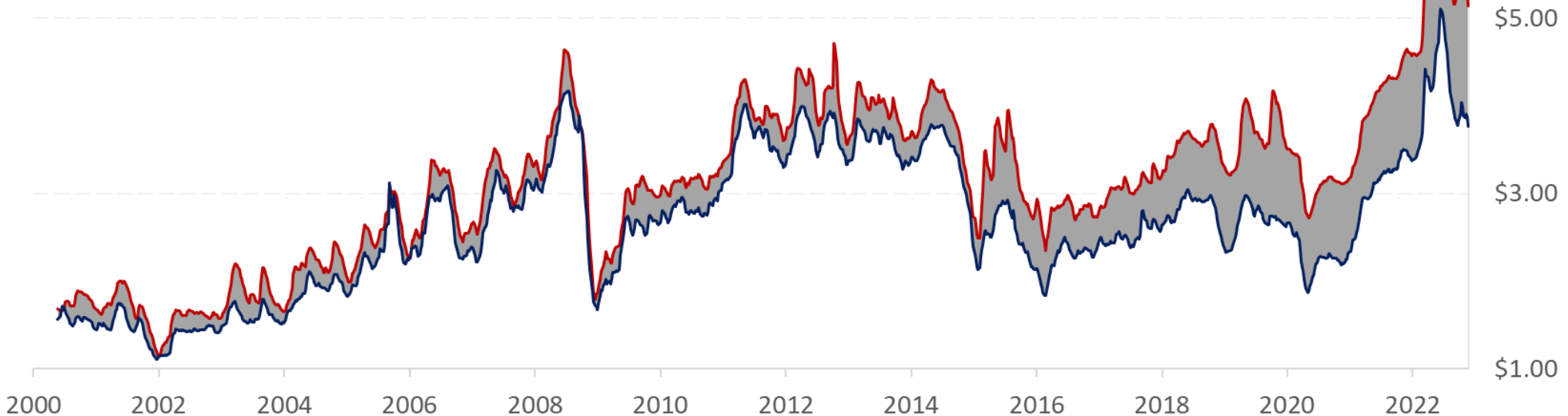
California’s prices have declined since, now the lowest since March.

Despite this decline, California’s prices remain high, relative to historic norms.

Additional literature on the topic is available in Appendix III.

California & U.S. Average Gas Prices by week

U.S. Energy Information Administration





California Prices Increase Faster than U.S.

California has consistently paid higher gas prices than most of the rest of the nation and the gap has grown significantly since 2015:

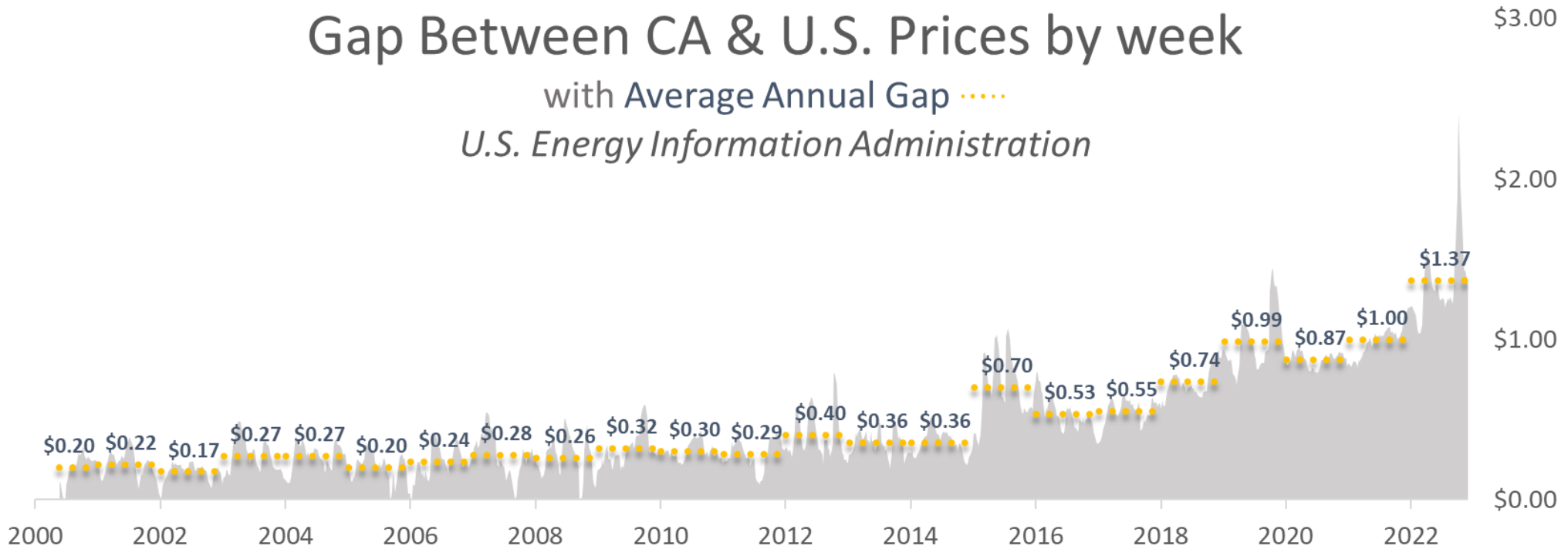
- Higher **taxes and fees**. California pays approximately \$0.30 more per gallon than the U.S. average in taxes and fees. ([API, 2022](#))
- **Environmental programs**. California's Cap & Trade (C&T) Program, Low Carbon Fuel Standard (LCFS), and CARBOB gasoline each add to the consumer cost for gasoline. The direct costs of C&T and LCFS are known, but variable, based on the current cost of credits. In 2021, [Stillwater Associates](#) estimated the costs at \$0.14 and \$0.23 per gallon, respectively. The relative cost of producing CARBOB gasoline remains an industry secret.

- California and the western U.S. constitute a **"fuel island,"** which contributes to price volatility. Among the western states, the only significant refineries are in California and Washington. California refineries supply most fuel to Nevada and Arizona, while Washington supplies Oregon. ([EIA](#))
- Higher **cost of business** in California. California has higher wages, real estate costs and other costs of doing business, which impact the cost of refining, distribution and retail operations.
- Additional unexplained differences, beginning in 2015, have been observed by [UC Berkeley economist Severin Borenstein](#), and the [California Energy Commission](#). (Beyond additional costs of carbon reduction programs that began to ramp up in 2015).

Gap Between CA & U.S. Prices by week

with Average Annual Gap

U.S. Energy Information Administration



Crude Oil Prices are the Primary Determinant of Gas Prices

Crude oil is the largest component of the cost of a gallon of gasoline, accounting for approximately 45% of the total cost in 2022, according to [California Energy Commission estimates](#).

Spikes and dips in gas and crude oil prices have tended to align, though they have varied significantly in relative magnitude. As UC Berkeley economist Severin Borenstein [wrote](#); “Being an energy economist isn’t as glamorous as it looks. ... A lot of ... time goes into repeating, ‘gasoline prices are up because world oil prices have increased.’”

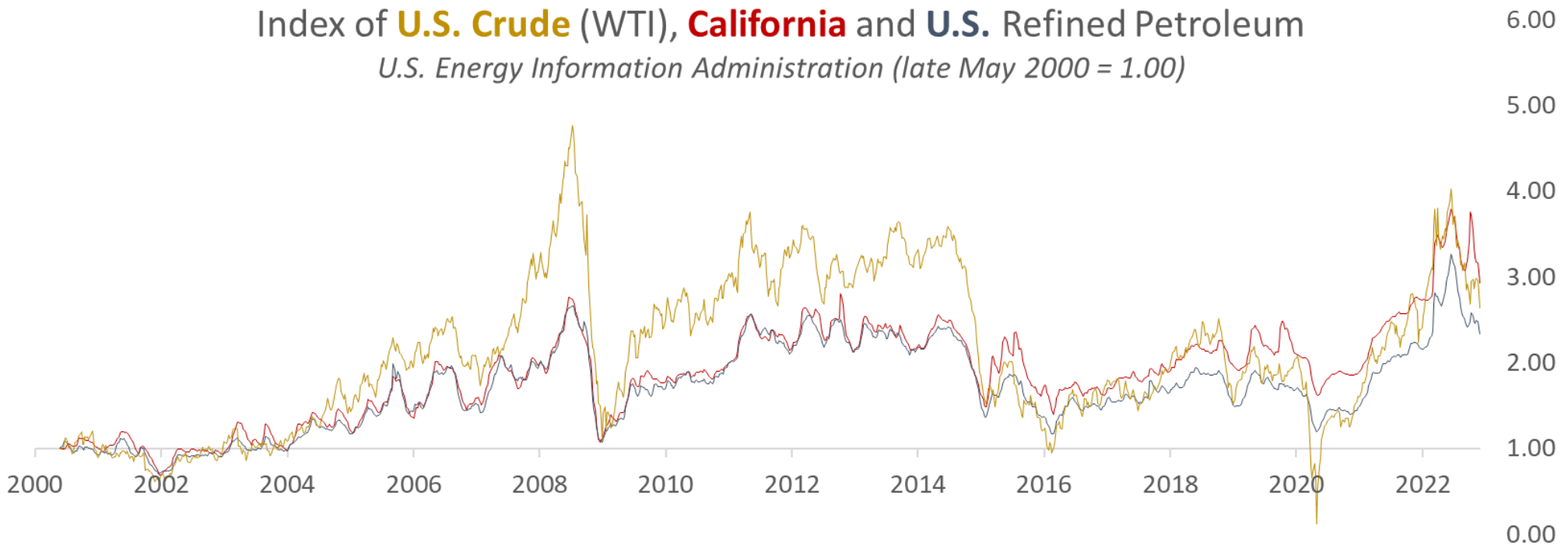
Crude oil is traded on a global market and all of the major sources are connected to infrastructure allowing it to be exported and sold on the global market. Similarly, the majority of California’s crude oil

is imported from foreign sources, as the share from California and Alaska continues to decline. ([CEC](#))

Creating a [stabilization function](#) in the gas excise tax (automatically increasing when prices are low and decreasing when they are high, maintaining the average intended revenue over time) could provide a partial hedge against volatile prices, without sacrificing infrastructure investment.

Additional literature on the topic is available in Appendix III.

Index of **U.S. Crude** (WTI), **California** and **U.S. Refined Petroleum**
U.S. Energy Information Administration (late May 2000 = 1.00)



Gas Production Declined Since 2017 Capacity Has Declined Since 2009

Average Weekly Refined **Petroleum Production** (combined CARB & non-California blends) declined modestly through 2013, increased through 2017 and declined since, including a crash in production in 2020 during the early pandemic and then a return to trend in 2021 and 2022.

The number of operating refineries declined from 21 in 2008 to 15 in 2022, yielding a decline of 15% in total **refining capacity**.

Total production is highly variable but has declined by similar amounts. **Refinery usage** (as a share of capacity) declined significantly during the early period of the pandemic but had returned to relatively normal levels (88.2%) by the spring of 2021, according to [the most recent report](#) from the California Energy

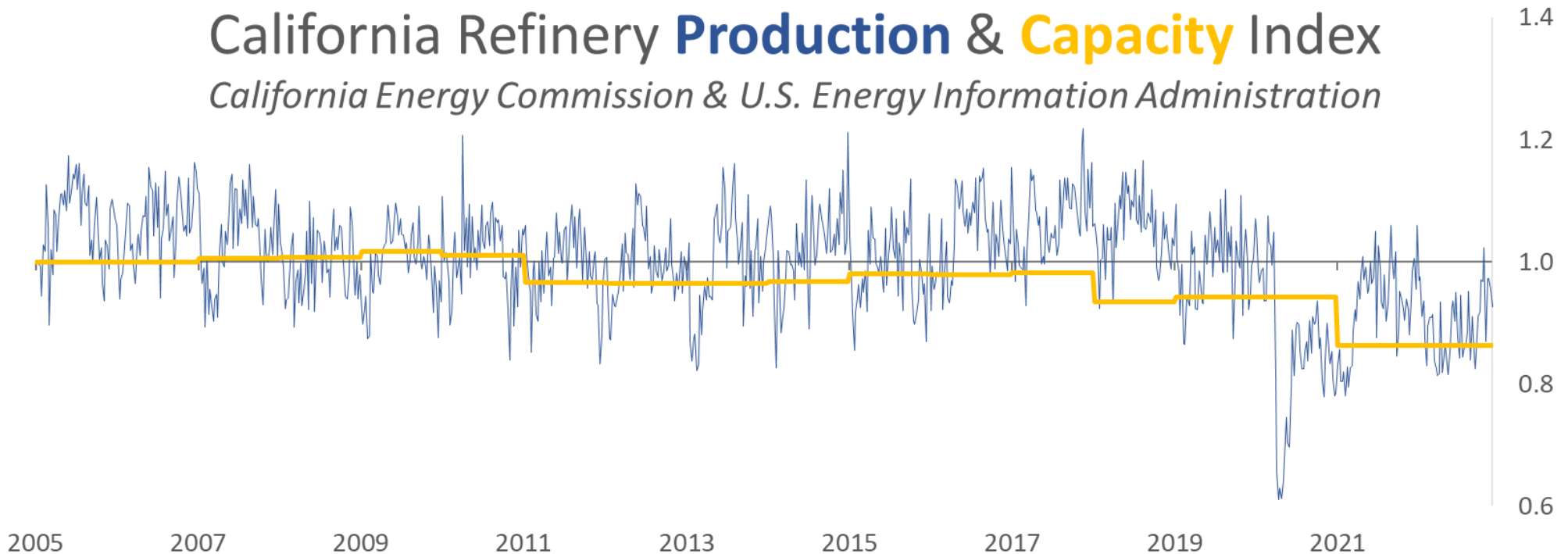
Commission.

The [California Energy Commission reported](#) several refinery issues in September, which appears to coincide with a decline in production of 3-8% during this period. (This data has very high variance, so it is impossible to precisely attribute changes to any specific cause.)

Additional literature on the topic is available in Appendix III.

California Refinery **Production** & **Capacity** Index

California Energy Commission & U.S. Energy Information Administration



Oil Corporation Profits Increased in 2021

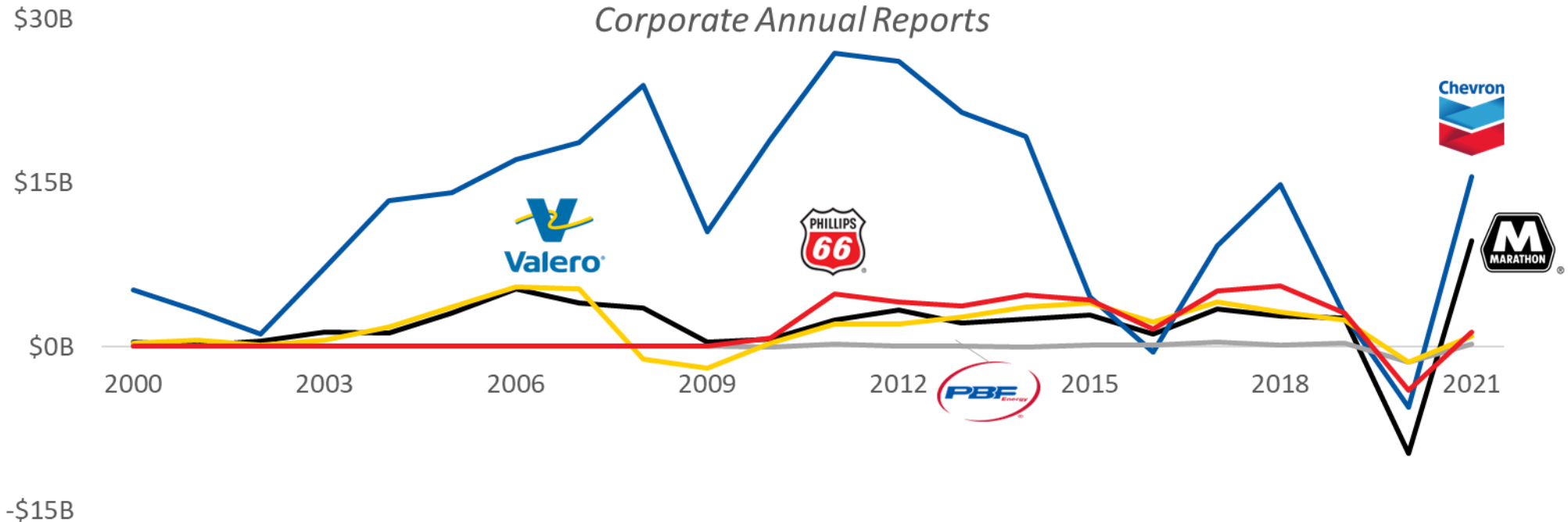
The world's largest oil corporations reported high profits in 2021 and in their 2022 quarterly reports, driving media and government interest as consumer gas prices increased.

Five corporations account for nearly all (97%) of **California's refining capacity**. Shell and Exxon Mobil sold their last refineries during the last decade and now contract with other corporations to refine the fuel sold in California. ([CEC](#))

Two of these corporations, Chevron and Marathon, saw **profits increase dramatically** in 2021. Valero, Phillips and PBF saw more modest profits, totaling a fraction of their 2020 losses. Even Marathon, despite its most profitable year since at least 2000, failed to cover its losses from 2020.

Additional literature on the topic is available in Appendix III.

Net Corporate Income of California's Refineries
Corporate Annual Reports



Lawmakers Seek Legislative Solutions When Prices Increase

Since the 1999-2000 session, California lawmakers have considered at least 78 bills and resolutions, of which, 14 were passed and chaptered.

Bill proposals appear to increase during sessions that align with spikes in gas prices.

Proposals range from taxes, including windfall profit taxes; price gouging; consumer tax relief; proposals to reduce demand; and efforts to regulate and/or increase transparency in the industries.

Bill categories most likely to be passed include investigations/studies (3); regulating refineries (2); reducing demand (2); and resolutions (6).

Details of proposed and enacted legislation from California is available in Appendix VI.

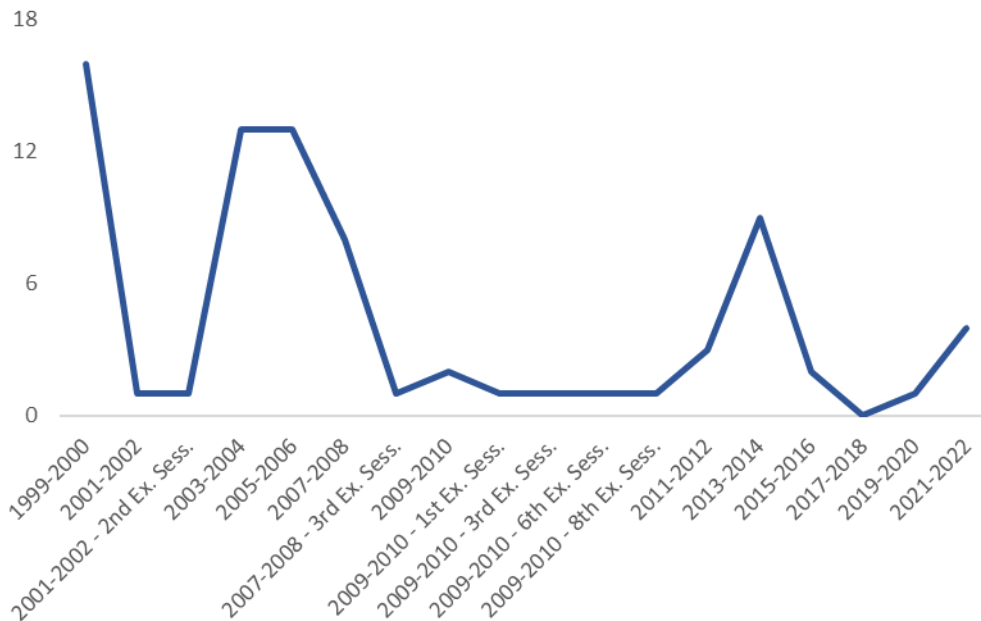
Our review identified at least 42 actions in other states to address gas prices. 3 passed, 2 are pending (NY) and 1 was an executive order (IL).

In addition to windfall profit tax proposals and other taxes, the most common approach considered has been to regulate prices similar to a utility, other regulations specific to prices and requirements for price transparency.

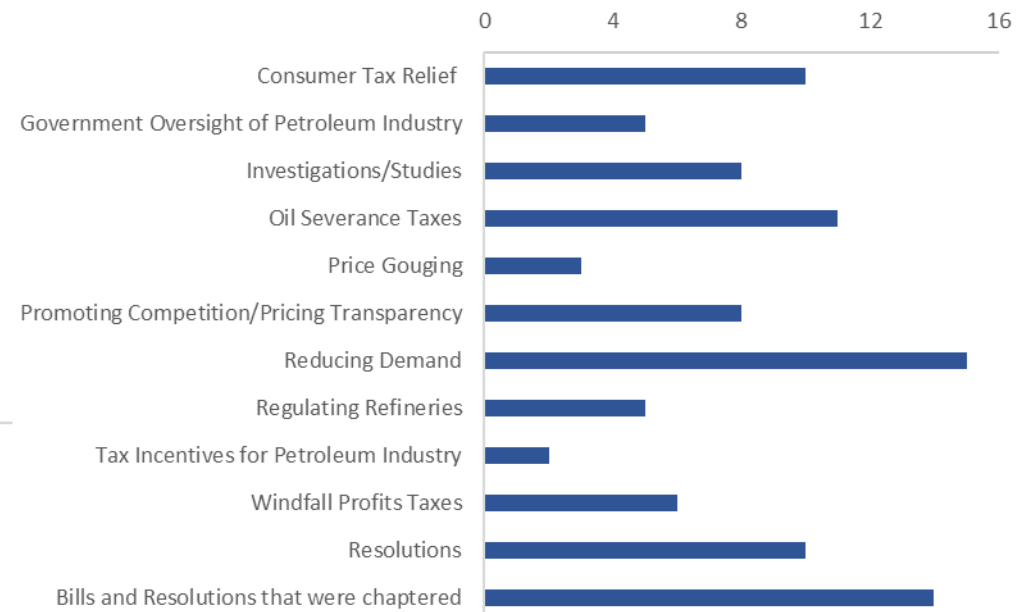
Other proposed approaches include tying taxes to oil prices; increasing price transparency; and requiring retailers to pass along price reductions to consumers.

Details of proposed and enacted legislation from other states is available in Appendix VII.

CA Bills and Resolutions on Gas Pricing/Petroleum Industry, 1999-2022



Total Proposals 1999 -Present, by Type





Tax Rebates Increase Spending and Risk Inflation

Government transfers, typically through tax rebates, are a common approach to economic challenges.

The Economic Growth and Tax Relief Reconciliation Act of 2001, Economic Stimulus Act of 2008 and Coronavirus Aid, Relief, and Economic Security Act (2020) and subsequent pandemic relief each provided significant broad-based payments to Americans.

There is a clear consensus in the literature that the 2001 and 2008 transfers led to **increased consumer spending**.

Research on **COVID-19 era transfers** has more diverse findings, especially showing varying impacts over time. For example, earlier transfers were largely saved or used to repay debt ([NBER](#)), though this likely contributed to more recent inflation as well.

The United States, with its higher levels of transfers, yielded **higher inflation than other nations**, despite relative isolation from Russian and Ukrainian markets. ([PEW](#))

As inflation increased in late 2021 and 2022, research shifted to estimating the relative impacts of transfers and **supply chain problems** with a consensus that

both factors impact inflation, but with a wide range of relative magnitude. Given the vicious cycle nature of inflation, it would seem likely that either factor might have significantly less impact in isolation.

It is likely that a **state-specific stimulus** would be too small to meaningfully impact aggregate demand, overall. However, there may be more inflation risk to goods and services purchased in localized markets, including personal services, housing and gasoline.

Additional literature on the topic is available in Appendix IV.

Windfall Profits Taxes Have Frequently Been Considered in Response to High Energy Prices

The desire to alleviate fuel price burdens has sparked interest in windfall profits taxes (a one-time surtax levied on a company or industry that have made unexpectedly high profits) in the energy sector.

Since September 26, 2022, five **European countries** enacted a windfall profit tax and 10 additional countries are considering it, see the [Tax Foundation](#) map below. The European Union [recently](#) agreed to implement its own tax.

Many of these taxes are not true windfall profits taxes, but rather temporary excise or income taxes, applied to the entirety of production or profits.

The **U.S. implemented** taxes during WWI, WWII and the 1970s oil crisis. Federal policies have typically fallen short of revenue expectations and the oil tax may have hurt domestic production and increased reliance on foreign oil. ([CRS](#))

At least 10 states (including CA) considered but have

not enacted policies since 2019, including a pending New York proposal.

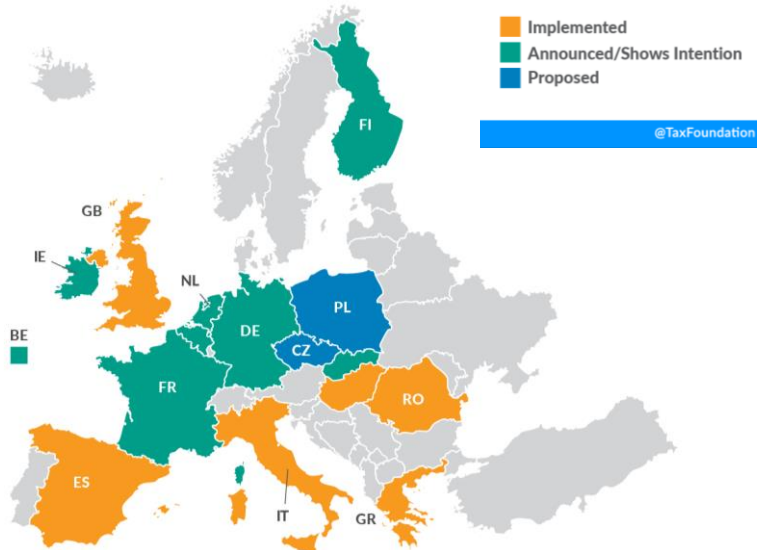
Policy considerations:

- The literature suggests excise-type taxes have more risk of decreasing production, while income-type taxes are more subject to accounting challenges
- Many oil companies no longer refine in California and most gas stations are small businesses (independent or franchised stations) leaving the corporation with little direct activity in California
- Allowing opportunities for investment that could improve prices while avoiding taxation
- Fairly determining “windfall profits” to avoid benefitting more historically profitable corporations

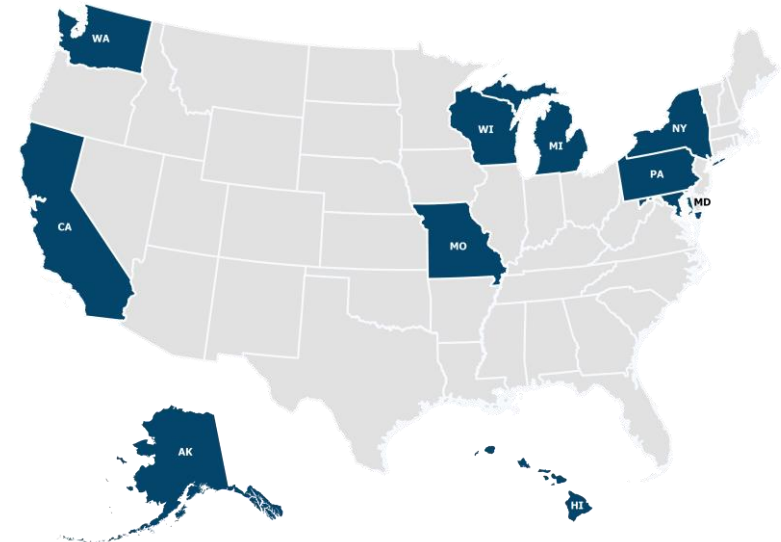
Additional literature on the topic is available in Appendix V.

Windfall Taxes in Europe

Legislative Status of Windfall Taxes in European Countries, as of September 26, 2022



Windfall Tax Proposals in U.S. States since 2000



CRB@library.ca.gov | (916) 603-7217

Edited by Devin Lavelle

Topical Research by Sumeet Bedi, John Cornelison, Sarah Harrington, Britnee Pannell, Maeve Roche, Monica Stam and Ngan Tran

Suggested Citation: “Lavelle, D.M., et al. (2022). Gas Prices in California. California Research Bureau. California State Library. https://www.library.ca.gov/wp-content/uploads/crb-reports/CRB_Gas_Prices_in_California.pdf”



Appendices

Appendix I: Acronyms and Definitions

[Appendix II](#): Data Dictionary with Cleaned Data

Appendix III: Literature on Gas Prices

Appendix IV: Literature on Tax Rebates & Inflation

Appendix V: Literature on Windfall Taxes & Price Gouging

Appendix VI: California Legislation Review

Appendix VII: Multistate Legislation Review

Appendix VIII: Federal Price Gouging Legislation Review

[Download Appendices III-VIII](#)



Appendix I: Acronyms & Definitions

Term	Definition
CARB	California Air and Resources Board
CARBOB	California Reformulated Gasoline Blendstocks for Oxygenate Blending
CEC	California Energy Commission
Crude Oil	A mixture of hydrocarbons that exists in liquid phase in natural underground reservoirs and remains liquid at atmospheric pressure after passing through surface separating facilities (EIA definition)
EIA	Energy Information Administration
Gasoline	Gasoline is a fuel made from crude oil and other petroleum liquids. Gasoline is mainly used as an engine fuel in vehicles. (EIA definition)
WTI	West Texas Intermediate: A crude stream produced in Texas and southern Oklahoma which serves as a reference for pricing other crude streams (EIA definition)

For additional terms, please see the [EIA Glossary](#)