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What oil companies learned about gasoline from a disaster

The “Katrina Syndrome”: Low Supplies=High Profits in 2007



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Introduction: Who's Watching the Refineries?

The oil industry is reporting second-quarter profits this week, and has signaled that refining profits will again be at record or near-record levels. Two consecutive years of soaring prices in spring and summer have equaled the price effects of Hurricane Katrina without any natural disaster.

The Foundation for Taxpayer and Consumer Rights asked independent oil analyst Tim Hamilton of McCleary, Washington, to examine the price increases nationally and in California, in relation to the simultaneous declines in the price of crude oil.

Specifically, Mr. Hamilton was asked: **“Why did the price at the pump in the U.S. and California not follow downward changes in the price of crude oil?”**

In answering this question, Hamilton found that oil companies and their refineries failed to raise gasoline inventories during the off-season. Longer than usual maintenance shutdowns, mechanical failures, fires other incidents also spiked gasoline prices and compounded effects of the lack of inventory. These events disconnected the price of gasoline from the price of crude oil.

State and federal oversight of refiners' supply and maintenance decisions, and of the causes and length of shutdowns, was absent.

Hamilton first compared the average price of gasoline in the U.S., California, and other states in the West with the spot price of the benchmark West Texas Intermediate (WTI) crude oil, from the first week of January in 2006 until July 2, 2007. The primary data source was the federal Energy Information Administration (EIA).

Hamilton found that this year's gasoline price spike in May, especially in the West, followed a discretionary refinery production drop that rivaled the effects of Hurricane Katrina in 2005. He concluded that the spot price of crude oil did not set gasoline prices. Rather, the level of refined motor fuel inventories maintained by the industry within each region of the country provided the greatest impact on prices at the pump.

In the West, for example, stronger inventories of diesel this spring kept diesel prices relatively level, while refineries' failure to build inventories of gasoline made prices spike sharply. Gasoline buyers in California alone paid at least \$1 billion extra, almost entirely in refining profit, compared to diesel in the first six months of 2007.

The oil industry sets and controls the inventory of refined products in the U.S. without active government oversight. Absent collusion between individual refineries, antitrust and other laws protecting consumers do not typically apply to the inventory practices of the industry. The lack of a competitive market means that “market forces” do not operate to correct refineries' profit-taking. Until either state or federal action is taken to raise low-season production and oversee the conditions that produced this year's long refinery outages, Hamilton expects the industry to continue its control over supplies to reduce levels of inventory each spring, encouraging additional price spikes.

1. Pump Prices rise as crude prices decline

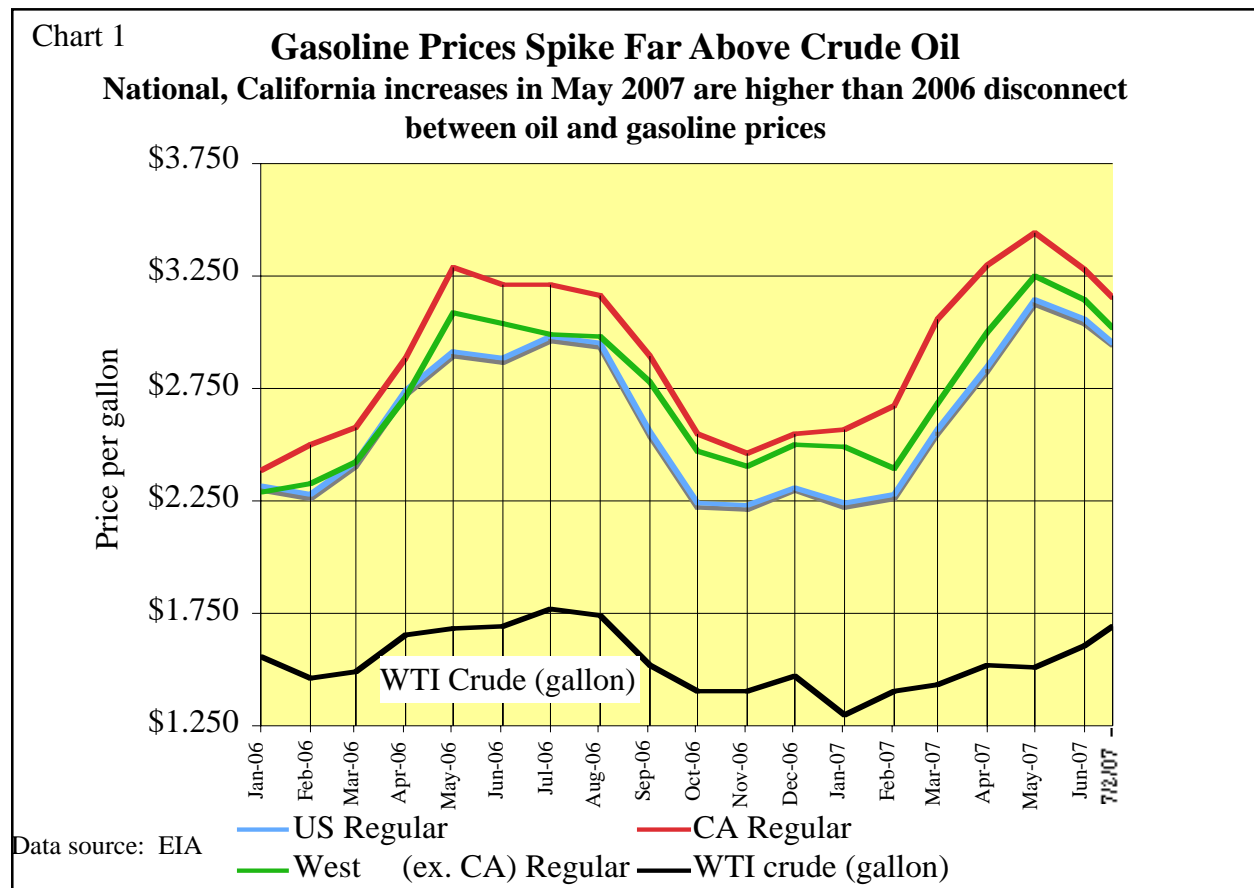
The price of crude oil set record highs in the summer of 2006. In July, the U.S. benchmark West Texas Intermediate (WTI) set a new record averaging \$74.41 per barrel, or \$1.77 per gallon of crude oil. Likewise, the monthly average retail price of regular unleaded gasoline in the U.S. that month was a record breaking \$2.98. In California, the monthly average price of regular unleaded exceeded \$3.21 (see Table 1 at end of this report).

The price of crude began to decline in the fall of 2006. By January 2007, the average monthly spot market price of WTI dropped almost \$20.00 per barrel to \$54.51, a 27% reduction. Per gallon, crude oil dropped 47 cents to \$1.30. During the entire first quarter of 2007, crude oil prices were down \$5.24 per barrel on average from the same quarter of the previous year.

As the price of crude oil declined at the end of summer in 2006, the monthly average price at the pump initially started down in a similar fashion. The average retail price of regular unleaded gasoline in the U.S. fell from \$2.95 per gallon in August to \$2.23 in November 2006, and remained relatively stable through February 2007, when it averaged \$2.28 nationally—\$2.67 in California.

If, as the oil industry often claims, pump prices generally track the price of crude oil, motorists would have expected the stable prices at the pump seen in the winter of 2006/2007 to continue into the spring with crude prices creeping up 7% from February (\$1.41/gallon of crude) to May (\$1.51/gallon). If gas prices followed the crude oil trend into the spring, drivers across the country might have seen pump prices increase from \$2.28/gallon in February to \$2.44/gallon in May. Instead, national pump prices skyrocketed to \$3.15 in May, a staggering 87 cents per gallon, or 38% increase, during this period when crude prices rose only 7%.

Comparing May 2006 data with May 2007 further illustrates the fallacy that pump prices are primarily tied to crude oil prices. Crude prices, above \$70 per barrel, or \$1.69 per gallon, in May of 2006 fell by 18 cents per gallon by May 2007. On the other hand, pump price of refined gasoline in the US rose by 24 cents per gallon from May 2006 to May 2007. (Chart 1, Table 1). This 42 cent increase in the *difference* between crude oil and gasoline pump prices was primarily captured by the industry as record-high refinery margins—as high as \$39 a barrel, according to news reports.*



* David Baker, San Francisco Chronicle, March 9, 2007 “Refining Profit Margins Double In West”

2. Low inventory levels of gasoline pushed prices.

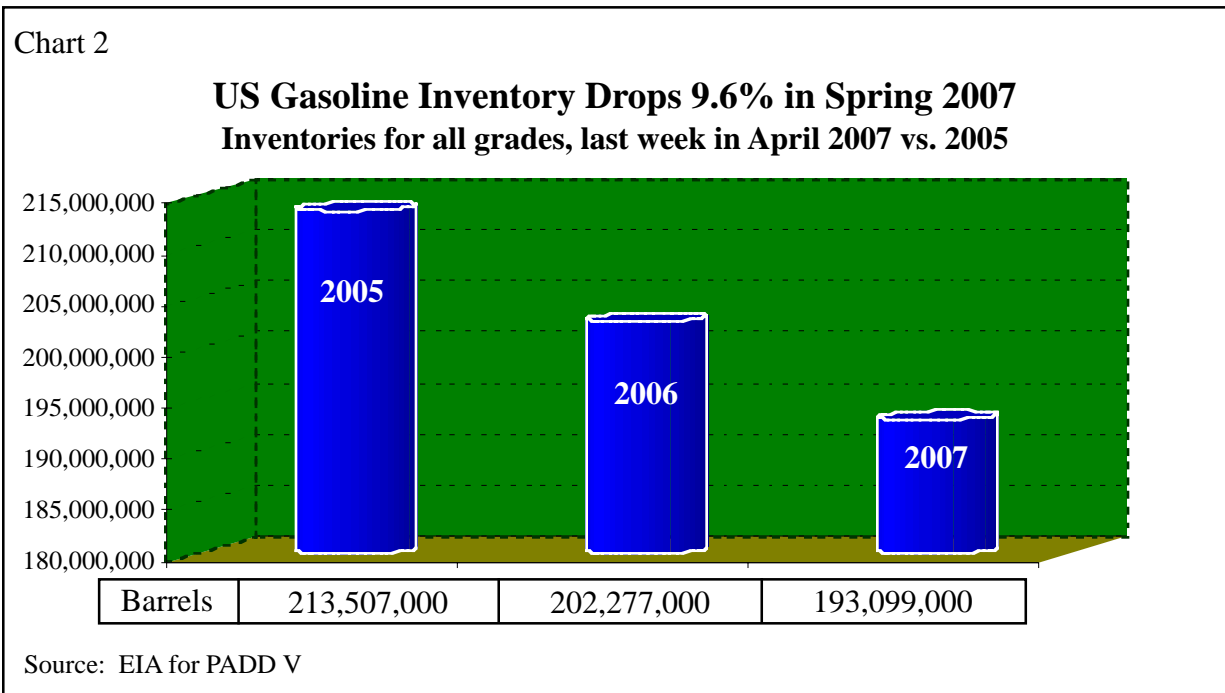
Since regulatory decontrol of the refining industry in the 1980's, the industry has basically set fuel production rates and inventory levels at its discretion.

Historically, the industry refined more gasoline and diesel during the winter than was sold at the pump and the large storage tanks at truck loading terminals filled up. When consumption increased in the spring and summer, the predictable increase in demand was served without a price spike by using fuel inventory built up in the tanks during the winter. Inventory was also adequate to largely compensate for unexpected disruptions, mechanical or weather-related, at refineries.

The industry has in the last few years lowered gasoline inventory levels in the winter and early spring. Inventory levels are drawn down as the industry chooses to “run off the bottom of the tanks”.

The oil industry is fully aware that lower levels of inventory set the stage for gasoline price spikes in the event consumption increases or production somehow decreases, especially during peak demand periods.

In April of 2007, inventories of gasoline controlled by the industry were dramatically lower than in either of the two previous years. (Chart 2) The drop from 2005 to 2007 was 9.6%. With the supply of gasoline provided by the industry dropping below the level needed to fulfill demand, prices spiked to another record high.

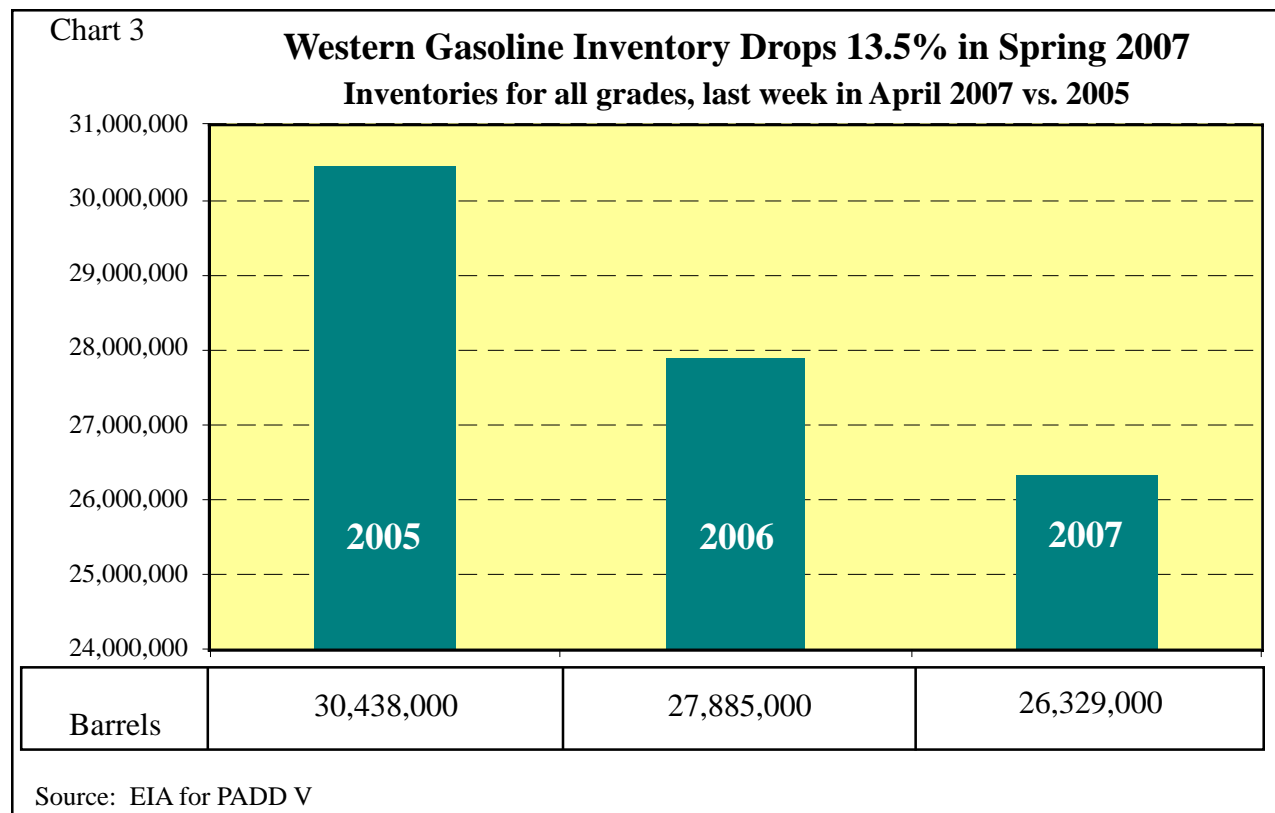


3. The industry utilizes refinery production to control inventory levels

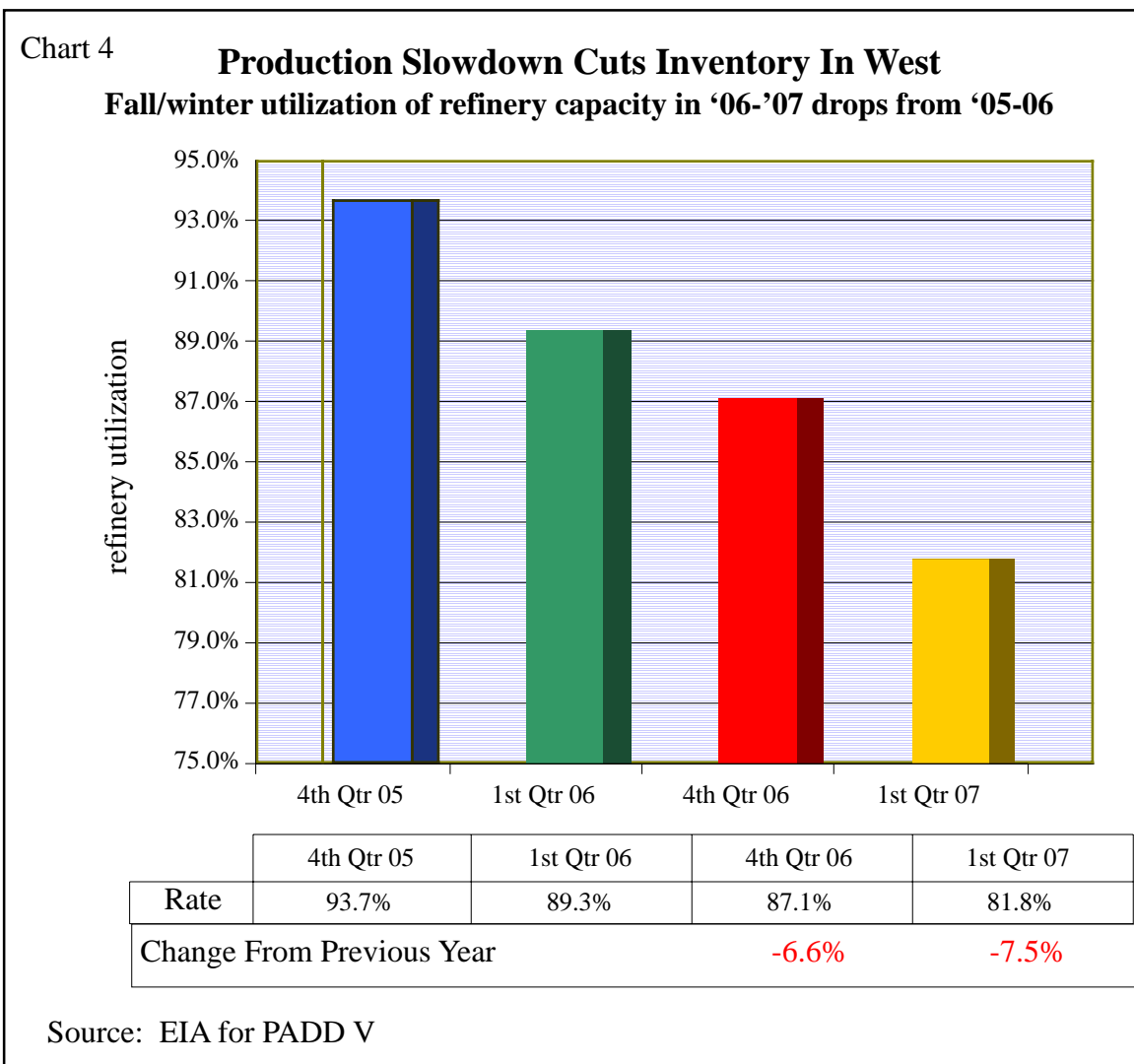
The companies owning refineries have significant discretionary control over how much gasoline is refined each year. In the long term, companies decide whether to build or upgrade production capacity. In the short term, they decide how and when to conduct planned maintenance or “turn-arounds” that limit production. Finally, during periods of normal operation, companies use their discretion to limit or increase the flow of crude into the refinery and the volume of gasoline and other refined products coming out to storage terminals. Pipeline breaks, fires and nature-related problems also occur, and their effect is related to the age and maintenance of refineries, both of which are under the companies’ control.

In recent years, unplanned refinery outages that would have gone unnoticed in earlier years are blamed as the causes of gasoline price spikes. However, the underlying cause is the companies’ decision not to maintain supplies sufficient to compensate for refinery downtime.

A review of the refined gasoline inventory in the West this spring (Chart 3) provides a stark insight into the industry’s ability to utilize discretionary decisions in refinery operations to affect the availability of supply. From 2005 to 2007, gasoline inventory fell 13.5%.



In the fall of 2006, refinery utilization fell to 87.1% of capacity, down from 93.7% the previous year. In the first quarter of this year utilization fell to 81.8% of the region's potential, down



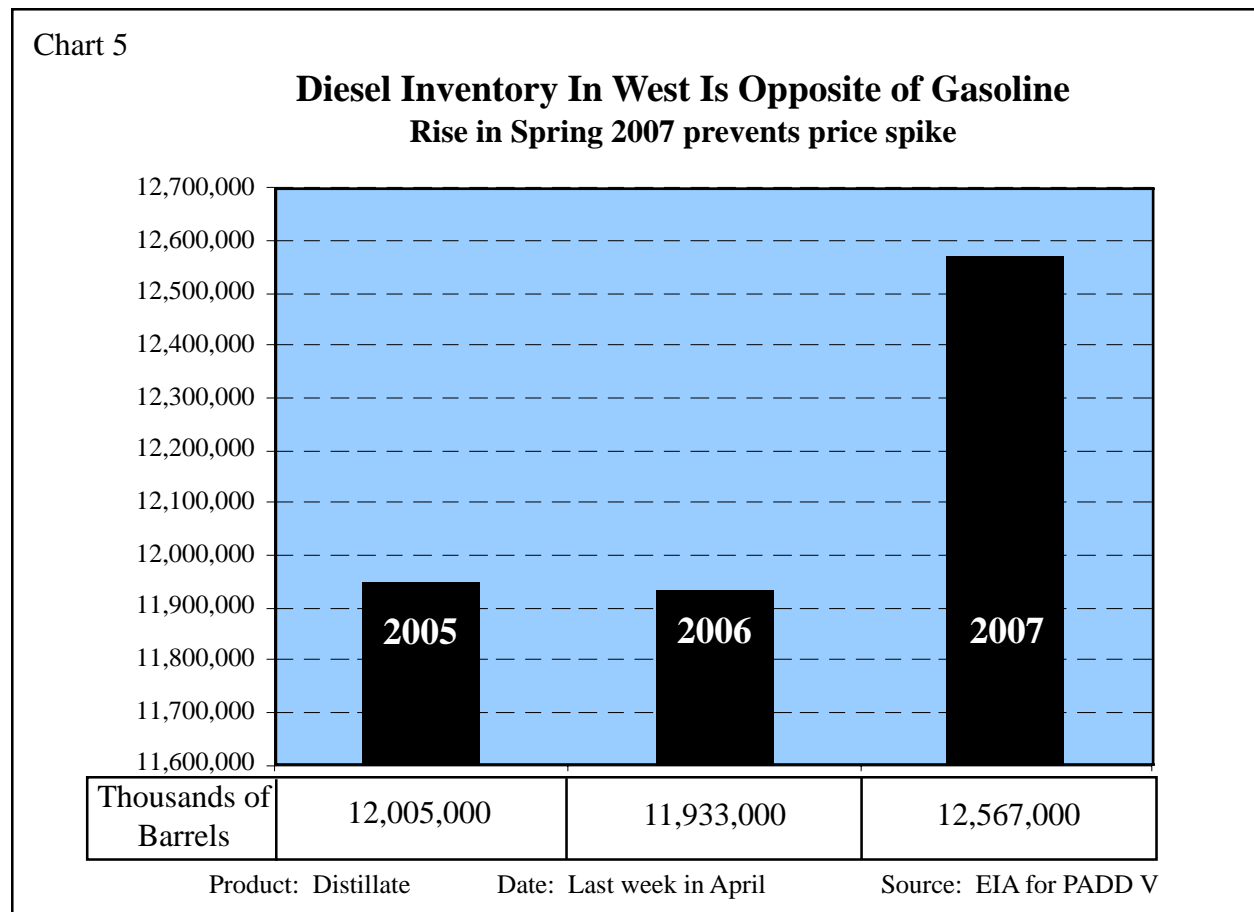
from 89.3% at the beginning of 2006. (Chart 4)

These largely discretionary cutbacks rival those caused by Hurricane Katrina. In the 4th quarter of 2005, the EIA reported the average monthly PADD 3 (Gulf) refinery utilization was down to 79.3%. The industry's 81.8% utilization rate in the West at the beginning of this year was nearly equivalent to the utilization rate in the wake of Hurricane Katrina, arguably the worst natural disaster in the history of the oil industry in the United States. As a result, gasoline prices spiked even higher than after Katrina.

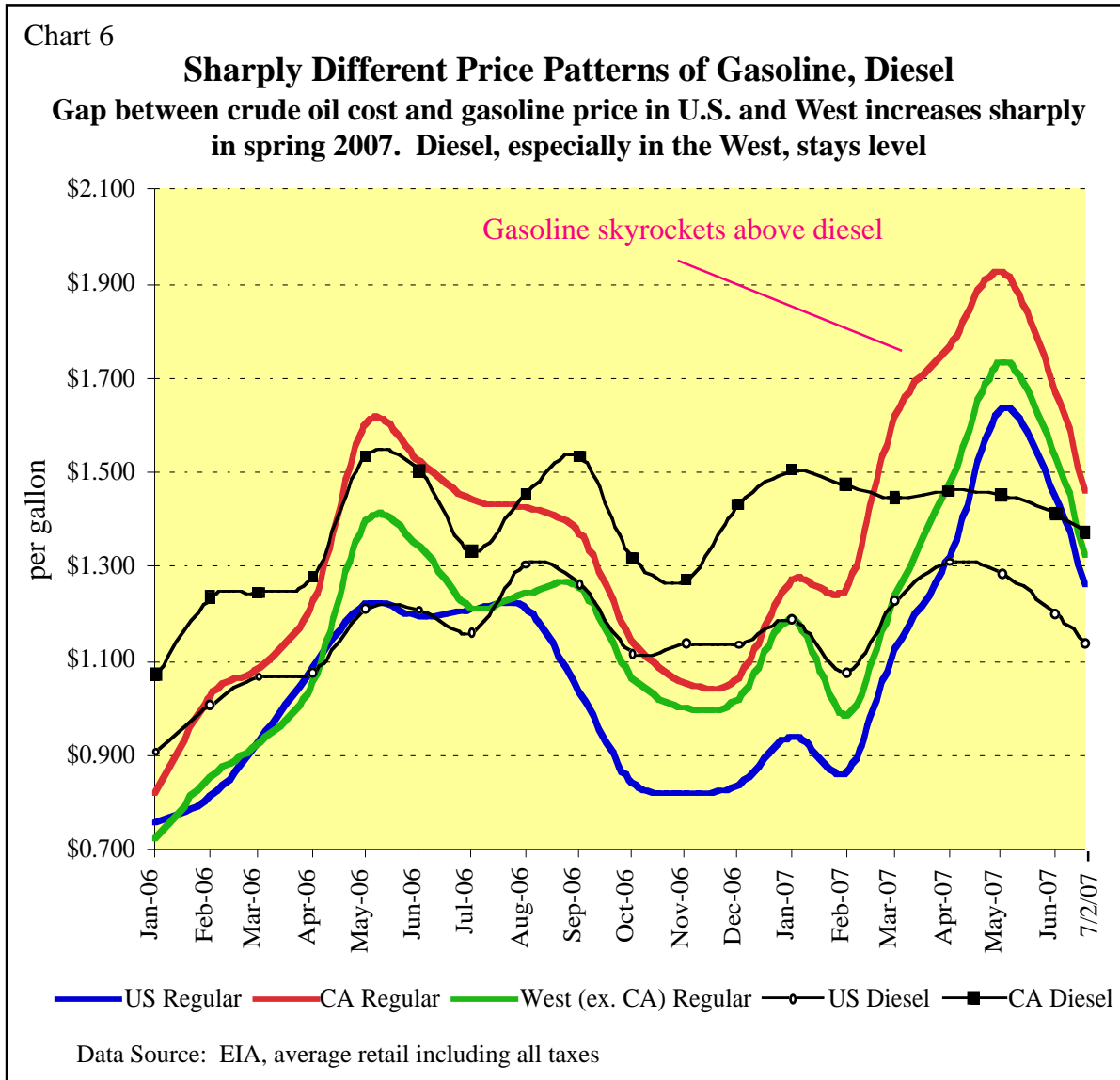
4. Comparing gasoline and diesel: inventory and price

Since gasoline and diesel are both motor fuels and refined from the same barrel of oil in the same refinery, tracking the price of each and the inventory levels for each fuel provides insight into the impact of inventory levels for each finished product.

As discussed earlier, the inventory levels of gasoline in the U.S. and especially the West were drawn down in the early spring of 2007. Subsequently, pump prices spiked dramatically. At the same time, diesel inventories were substantially higher this year in the West than the levels of the previous two years (Chart 5). The price of diesel, backed up by adequate inventory levels, did not spike nearly as high in the West as gasoline.

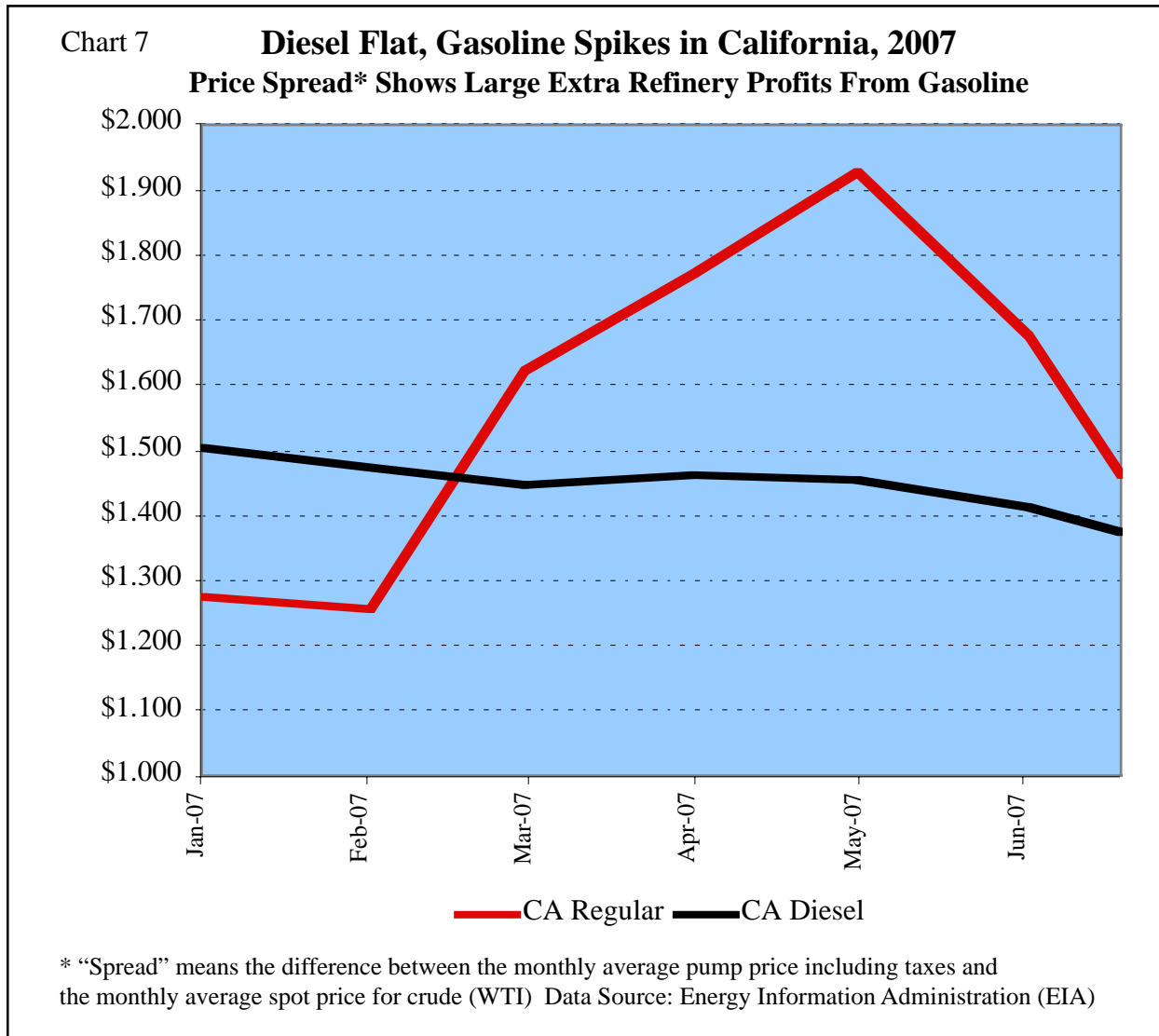


From January to May of 2007, the average price of crude oil increased approximately 21 cents per gallon. During the same period, the average monthly price of diesel in California increased 16 cents per gallon and unleaded gasoline in California increased nearly 87 cents (Table 1, Chart 6). While both came from the same barrel of oil, gasoline spiked 71 cents per gallon higher than diesel.



(In January of 2006, diesel inventories were low as the industry retooled U.S. refineries to produce ultra-low sulphur diesel without building inventory beforehand. As a result, in 2006 diesel in many areas of the U.S. often sold at a much higher pump price than gasoline.)

The difference in cost between crude oil and a gallon of fuel, the best indicator of refinery profits, showed a nearly 43-cent spread between gasoline and diesel in April. (Chart 7) If regular gasoline prices had stayed closer to diesel prices in the entire first six months of 2007, California motorists would have spent \$1 billion less in those months—about \$170 million per month in savings.



Conclusion

Oil industry data shows that price spikes faced by motorists are not tied or even much related to the price of crude oil. Instead, oil refiners have learned a lesson from Hurricane Katrina, which temporarily hampered gasoline refining in its wake. Companies learned that by reducing the refined gasoline they produce, they can dramatically push up price. Which, as the data shows, is exactly what led up to the massive spring price hikes faced all around the country

in 2007.

Without new state or federal oversight oil industry refining practices and the regulation of gasoline supplies, resulting in increased pre-spring and summer inventory levels, consumers can expect dramatic price spikes to be an annual event, with higher prices lingering through summer.

Prices shown are monthly averages for retail regular unleaded and on-road diesel and the spot price of West Texas Intermediary (WTI) with the exception of the last entry date. Source: EIA

Table 1- Prices

Date	US Regular	CA Regular	West (ex. CA) Regular	US Diesel	CA Diesel	WTI crude (gallon)	WTI crude (barrel)
Jan-06	\$2.316	\$2.379	\$2.29	\$2.467	\$2.630	\$1.56	\$65.49
Feb-06	\$2.280	\$2.495	\$2.32	\$2.475	\$2.703	\$1.47	\$61.63
Mar-06	\$2.425	\$2.579	\$2.42	\$2.559	\$2.738	\$1.49	\$62.69
Apr-06	\$2.742	\$2.880	\$2.71	\$2.728	\$2.932	\$1.65	\$69.44
May-06	\$2.907	\$3.291	\$3.09	\$2.897	\$3.222	\$1.69	\$70.84
Jun-06	\$2.885	\$3.214	\$3.03	\$2.898	\$3.192	\$1.69	\$70.95
Jul-06	\$2.981	\$3.214	\$2.99	\$2.934	\$3.104	\$1.77	\$74.41
Aug-06	\$2.952	\$3.166	\$2.98	\$3.045	\$3.193	\$1.74	\$73.04
Sep-06	\$2.555	\$2.892	\$2.78	\$2.783	\$3.053	\$1.52	\$63.80
Oct-06	\$2.245	\$2.548	\$2.47	\$2.519	\$2.721	\$1.40	\$58.89
Nov-06	\$2.229	\$2.462	\$2.41	\$2.545	\$2.679	\$1.41	\$59.08
Dec-06	\$2.313	\$2.542	\$2.50	\$2.610	\$2.906	\$1.48	\$61.96
Jan-07	\$2.240	\$2.571	\$2.49	\$2.485	\$2.803	\$1.30	\$54.51
Feb-07	\$2.278	\$2.668	\$2.40	\$2.488	\$2.886	\$1.41	\$59.28
Mar-07	\$2.563	\$3.060	\$2.68	\$2.667	\$2.885	\$1.44	\$60.44
Apr-07	\$2.845	\$3.292	\$3.00	\$2.834	\$2.985	\$1.52	\$63.98
May-07	\$3.146	\$3.439	\$3.25	\$2.796	\$2.964	\$1.51	\$63.45
Jun-07	\$3.056	\$3.281	\$3.140	\$2.808	\$3.019	\$1.61	\$67.49
2-Jul-07	\$2.956	\$3.157	\$3.018	\$2.829	\$3.067	\$1.69	\$71.11

Table 2- Calculating the difference between the monthly* average price of regular unleaded and the spot price of WTI crude

Date	US Regular	CA Regular	West (ex. CA) Regular	US Diesel	CA Diesel
Jan-06	\$0.757	\$0.820	\$0.73	\$0.908	\$1.071
Feb-06	\$0.813	\$1.028	\$0.86	\$1.008	\$1.236
Mar-06	\$0.932	\$1.086	\$0.93	\$1.066	\$1.245
Apr-06	\$1.089	\$1.227	\$1.06	\$1.075	\$1.279
May-06	\$1.220	\$1.604	\$1.40	\$1.210	\$1.535
Jun-06	\$1.196	\$1.525	\$1.34	\$1.209	\$1.503
Jul-06	\$1.209	\$1.442	\$1.21	\$1.162	\$1.332
Aug-06	\$1.213	\$1.427	\$1.24	\$1.306	\$1.454
Sep-06	\$1.036	\$1.373	\$1.26	\$1.264	\$1.534
Oct-06	\$0.843	\$1.146	\$1.07	\$1.117	\$1.319
Nov-06	\$0.822	\$1.055	\$1.00	\$1.138	\$1.272
Dec-06	\$0.838	\$1.067	\$1.02	\$1.135	\$1.431
Jan-07	\$0.942	\$1.273	\$1.19	\$1.187	\$1.505
Feb-07	\$0.867	\$1.257	\$0.99	\$1.077	\$1.475
Mar-07	\$1.124	\$1.621	\$1.24	\$1.228	\$1.446
Apr-07	\$1.322	\$1.769	\$1.48	\$1.311	\$1.462
May-07	\$1.635	\$1.928	\$1.74	\$1.285	\$1.453
Jun-07	\$1.449	\$1.674	\$1.53	\$1.201	\$1.412
7/2/07	\$1.263	\$1.464	\$1.32	\$1.136	\$1.374

* Exception is the ending data point of 7/2/07

Data source: EIA