Where the Pump Price Comes From

Most of the Annual Increase Happened Before the Fuel Reached the Station

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Gasoline averaged $4.405 a gallon in the week of October 26, up $1.24 from a year earlier. Diesel reached $6.352, up $2.63. Meanwhile, wholesale gasoline has been falling for a month, with much less relief at the pump.

That combination invites an accusation of gouging. North Carolina suspended its 41-cent motor fuel excise tax on October 10; by October 21, the attorney general's office had received more than 470 complaints about stations failing to pass along the savings. In July, the Justice Department and Federal Trade Commission had already asked state attorneys general to examine retail gasoline pricing.

But the year's increase and October's slow decline are different problems. Crude oil explains nearly all the annual gasoline increase. Diesel also carries a much wider refining spread. Over the past month, however, wholesale gasoline fell 76 cents while the pump gave back only 20.

The distinction matters. Explaining why fuel became expensive does not explain why the savings are taking so long to reach drivers.

1 Follow the price through the supply chain

A pump price has three broad parts: crude oil; the spread between crude and wholesale finished fuel; and the gap between wholesale fuel and the retail price. That final piece includes taxes, transportation, storage, distribution, and the station's costs and earnings. Calling it the station's cut assigns one business responsibility for money collected throughout the chain. I will call it the **retail-wholesale gap**.

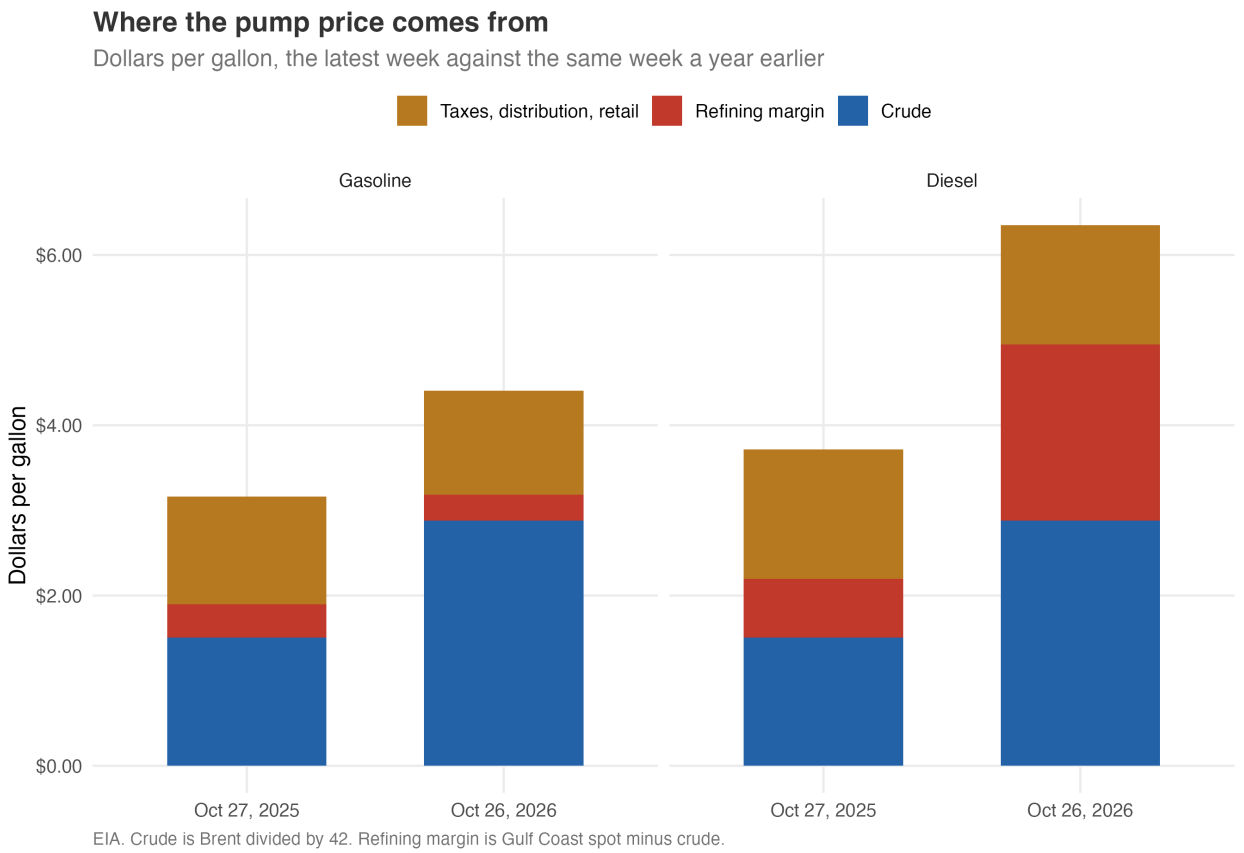


Figure 1: Pump price decomposition

The figures follow the broad accounting used by EIA, using Brent crude divided by 42 as a per-gallon crude benchmark and Gulf Coast spot prices as the wholesale benchmark. Each Monday's retail observation is paired with the preceding week's wholesale average, dated Friday. These are weekly averages, not Friday-only quotations.

This accounting shows where prices changed, not what anyone earned. Refineries make several products from one barrel, and stations buy delivered fuel rather than a Gulf Coast quotation. The gasoline comparison also pairs all-grades retail prices with regular conventional wholesale gasoline. Regular averaged $4.269 that week; using regular retail prices changes the annual narrowing of the gap by less than a cent.

2 Most of the annual increase came before the station

Figure 1. Crude accounts for the gasoline increase and about half of diesel's

Brent rose from $63.22 to $121.02 a barrel between the comparable weeks of October 2025 and October 2026. That $57.80 increase works out to $1.38 per gallon—more than the $1.24 increase in retail gasoline.

Figure 1 puts the two years side by side. Crude does not determine the pump price dollar for dollar, but on this benchmark its increase more than covers the gasoline increase. The remaining components together offset part of it.

Wholesale gasoline rose from $1.897 to $3.183. Subtracting those prices from their retail counterparts leaves a retail-wholesale gap of $1.267 last October and $1.222 now. The gap narrowed 4.5 cents while gasoline became $1.24 more expensive. Using regular gasoline at both ends, it narrowed 5.2 cents.

Diesel's increase came from two upstream components. Crude added $1.376 per gallon, and the spread between wholesale diesel and crude added another $1.378. The retail-wholesale gap declined 12 cents, leaving the $2.63 increase paid by highway diesel buyers. Wholesale diesel itself rose from $2.194 to $4.948: finished diesel became substantially more expensive relative to crude.

Switching the crude benchmark from Brent to WTI changes the division between crude and refining. It leaves the retail-wholesale gaps untouched because neither calculation uses crude. Both gaps narrowed over the year. That finding does not establish that retailer profits fell; answering that would require stations' purchase costs and operating expenses.

3 October tells a different story

Figure 2. Wholesale gasoline fell nearly four times as fast as the pump

Wholesale gasoline fell 76.2 cents between the weeks ending September 25 and October 23. Across the corresponding Mondays, September 28 to October 26, retail gasoline fell 19.8 cents. Drivers received about 26 cents of price relief for each dollar of wholesale decline.

Figure 2 shows the widening separation. In four weeks, the retail-wholesale gap grew from 65.8 cents to $1.222.

There is no contradiction between that widening and the annual decline. Last October's gap was relatively wide; late September's was unusually narrow. Today's gap is slightly below the first and well above the second. The starting date changes the question being answered.

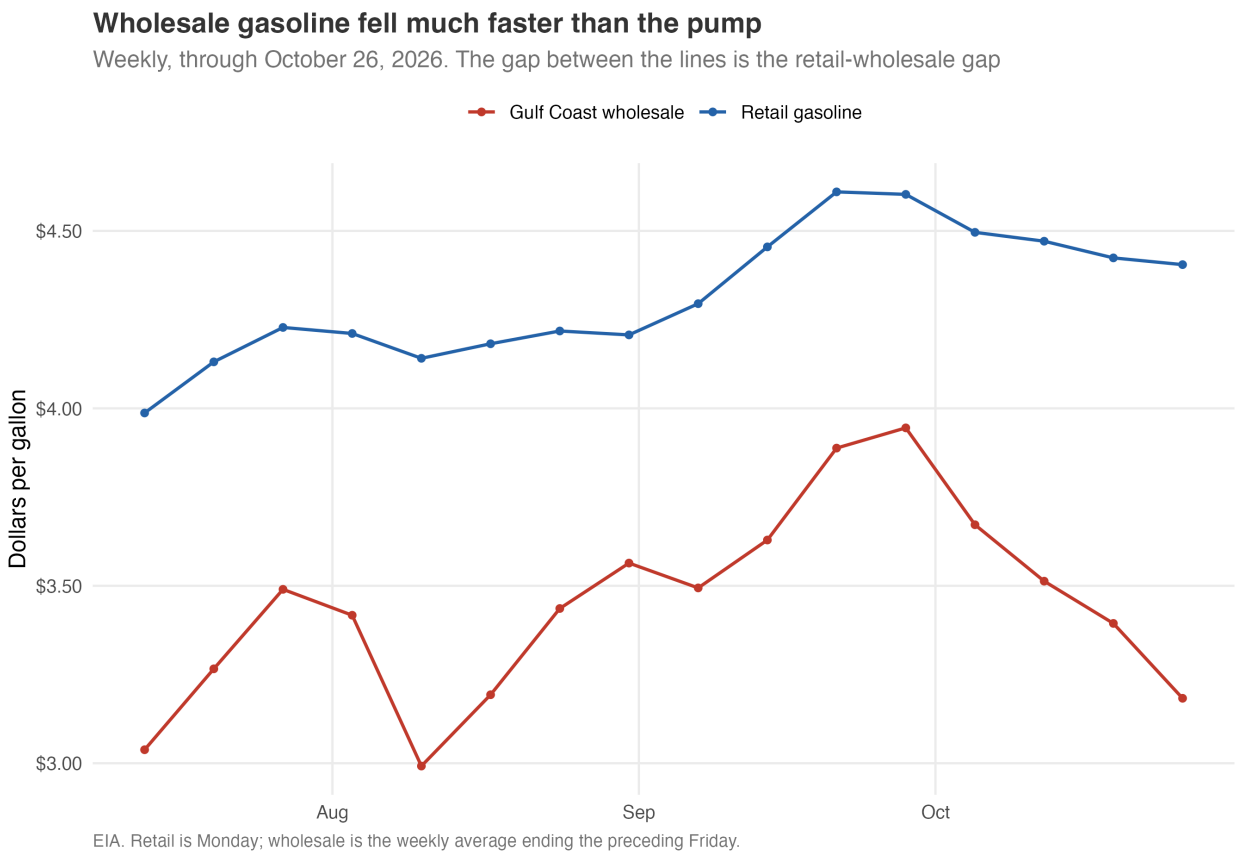


Figure 2: Current episode

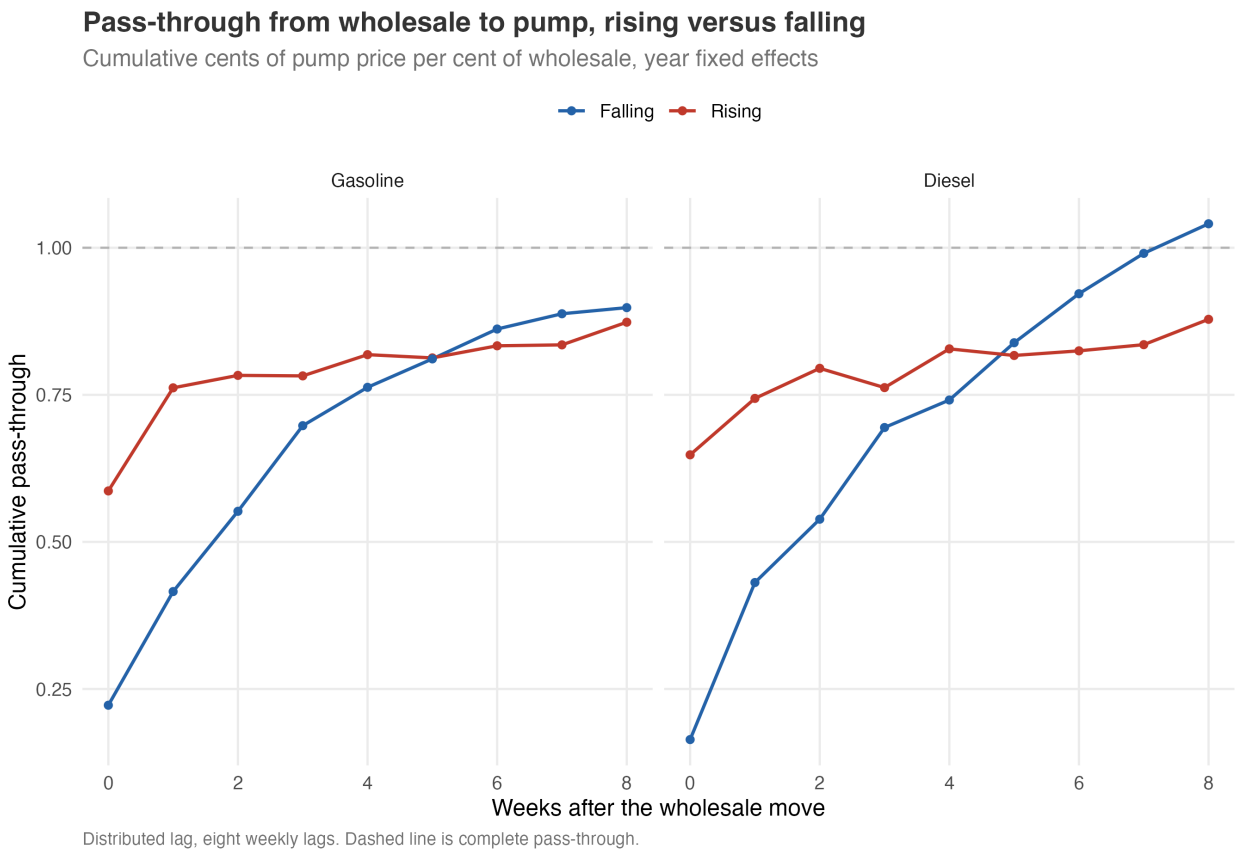


Figure 3: Pass-through rising versus falling

Nor is the full 56.4-cent widening necessarily an overcharge. That interpretation assumes the late-September gap was appropriate and should have stayed fixed. Retail prices may still be adjusting to earlier increases, local delivered costs may differ from the Gulf Coast benchmark, and tax changes affect the retail average independently. National averages show the delay clearly, but cannot tell us how much reflects each explanation.

4 Rockets and feathers—with a particularly slow feather

Figure 3. Pump prices follow wholesale increases faster than decreases, for about five weeks

Economists have studied this pattern for decades as "rockets and feathers." Borenstein, Cameron, and Gilbert found that retail gasoline responded faster to crude-price increases than to decreases, with the difference appearing at several stages of the supply chain.

Figure 3 traces the responses in weekly data since 2009. In the first week, about 59 cents of a dollar's wholesale increase reaches the gasoline pump, compared with 22 cents of a decrease. The estimated paths converge around week five.

The eight-week totals differ by only about two cents on the dollar, but the uncertainty around that difference is large enough to accommodate roughly a quarter in either direction. The estimates show a pronounced early delay; they do not establish that every dollar withheld initially is eventually returned.

Inventory and delivery schedules affect when cheaper fuel reaches a station. Competition also matters: drivers with nearby alternatives can put more pressure on a seller than customers with few convenient choices. Station-level research finds that location and local market conditions affect adjustment. None of these explanations makes waiting costless for buyers.

This October has been slow even against other large declines. Four earlier episodes since 2009 saw four-week wholesale drops of at least 60 cents: spring 2020, summer 2022, October 2023, and June 2026. Retail prices passed through 43% to 90% of those declines, with a median of 56%. October 2026's 26% is below all four.

At their median response, today's pump price would be about 23 cents lower. Four episodes are a thin basis for comparison, so that figure should be read as a historical benchmark, not an estimate of money consumers are owed.

5 What North Carolina can tell us

North Carolina's 41-cent tax suspension runs from October 10 through November 30 under Session Law 2026-62. It covers gasoline and diesel; the inspection tax remains. A tax holiday gives us a defined cost change on a known date, making it easier to study than a constantly moving crude price.

The difficulty is measuring North Carolina itself. EIA does not publish a separate weekly retail series for the state. Its Lower Atlantic region, PADD 1C, combines North Carolina with Florida, Georgia, South Carolina, Virginia, and West Virginia.

Removing Florida's estimated volume share raises North Carolina's weight in the remaining aggregate from 19.3% to 28.6%. Florida can then serve as one comparison market, with the Central Atlantic region, PADD 1B, as another. The weights use 2021 sales, the last full year of EIA's prime-supplier series.

If all 41 cents reached consumers, this adjusted regional average would fall 11.7 cents relative to otherwise comparable markets. Over the first three weeks, it fell 12.0 cents relative to Florida and 14.9 cents relative to PADD 1B. Those estimates imply 102% and 127% pass-through. Neither comparison showed evidence of a trend over the preceding twelve weeks.

The apparent precision is misleading, however. Regional price differences tend to persist from week to week, making three observations less informative than they look. Repeating the exercise at 37 earlier dates produces differences large enough to warrant caution: the Florida comparison has a p-value of 0.16 and the PADD 1B comparison 0.08. The largest comparison-period difference is about as large as the actual one.

The results are consistent with full average pass-through. They are not strong enough to establish it.

Earlier studies also caution against expecting one universal response. Doyle and Samphantharak estimated about 70% pass-through for the 2000 Illinois and Indiana suspensions. Marion and Muehlegger found full average transmission, varying with supply conditions. A 2026 Dallas Fed working paper estimated 64% for Georgia's holiday.

None of those estimates determines compliance in North Carolina. Even full statewide pass-through could coexist with individual stations failing to deliver the savings. Those are the cases the complaints may identify.

6 Diesel refining deserves closer attention

The diesel refining spread was $2.07 per gallon in the latest comparison, against a median of 35 cents in the weekly record since 2009. Only seven weeks were higher: one in May 2022 and six in August and September of this year.

That is the most conspicuous number in this accounting. It deserves closer examination than a claim that stations caused the annual increase.

Tight inventories explain part of it. Distillate days of supply stood at 25.8, at the first percentile of the record since 2006. Across 1,060 weeks, the estimated relationship associates a 10% decline in days of supply with about a 20% increase in the inflation-adjusted refining spread, after accounting for seasonality and a shift after 2022. Together, those variables explain about half the variation.

At the latest inventory level and season, the model predicts a spread of $1.11. Substituting the 2015–2021 average inventory coverage for this week—33.8 days—lowers the prediction to 69 cents.

That gives a useful, model-based breakdown of the $2.07: about 69 cents at the historical inventory benchmark, another 42 cents associated with today's tighter stocks, and roughly 95 cents unexplained. The unexplained portion is at the 98th percentile of its history.

An unusually large unexplained spread is a reason to investigate. It is not, by itself, evidence of gouging. Four considerations matter.

First, the spread is gross revenue over a crude benchmark, not profit. Refiners still pay for energy, catalysts, labor, maintenance, and renewable-fuel credits. They also produce gasoline, jet fuel, and other products from the same barrel. Diesel is only one part of the refinery's economics. Using WTI instead of Brent raises this week's spread from $2.07 to $2.40, entirely because of the crude benchmark; actual results depend on what crude a refiner buys.

Second, the model leaves out important influences. Export demand, maintenance, unexpected outages, crude quality, and product choices can all affect diesel spreads. The unexplained 95 cents includes whatever those factors contribute. It is nearly four times the model residuals' 25-cent standard deviation—unusual, but not self-explanatory.

Third, national concentration measures do not offer a simple explanation. In January 2024, U.S. refining capacity was 18.4 million barrels per day across 132 refineries. Marathon held about 16%, and the four largest companies together held roughly half. The reported concentration index is around 830, or approximately 770 when Valero's Canadian and British refineries are excluded. Both are well below the 2023 merger guidelines' 1,800 threshold for a highly concentrated market. National capacity shares alone cannot settle questions about competition in a particular fuel market, but they do caution against assuming that high spreads establish industry-wide market power.

Fourth, a similar gap opened in 2022 and subsequently reversed. Actual spreads averaged 1.41 times the model's inventory-based predictions in 2022 and 1.03 times in 2023. They then averaged 0.68 in 2024 and 0.73 in 2025—two years below the model's predictions. The 2026 average so far is 1.51. The current gap is large, but history gives us reason to ask whether it will persist.

7 What the gouging argument gets right—and misses

The word “gouging” combines concern about market power with a legal accusation. Those require more evidence than a high price or a wide spread. A national weekly series cannot establish either on its own.

Crude made the largest single annual move: $57.80 per barrel, or $1.38 per gallon. This analysis tracks that increase through fuel prices; it does not explain why crude rose.

Gasoline’s refining spread was comparatively ordinary, at 30 cents against a historical median near 24 cents. Diesel’s was exceptional, at $2.07, with about 95 cents beyond what the inventory model explains. That is where the largest unresolved question lies.

The retail-wholesale gaps narrowed over the year, by 4.5 cents for gasoline and 12 cents for diesel. Those results do not support blaming a widening downstream gap for the annual increase. October is another matter: gasoline’s gap widened 56 cents, and its 26% pass-through was the slowest among the five large declines examined.

North Carolina’s early results suggest substantial tax relief reached consumers on average, while leaving both the exact amount and individual stations’ conduct unresolved.

For fuel buyers, these distinctions matter. An explanation of the annual increase does not dismiss the cost of October’s delay. And evidence of slow retail adjustment does not explain the much larger increase in diesel’s wholesale price. Each question belongs at the part of the supply chain where the relevant change occurred.

8 What to watch next

Three developments will make the picture clearer. North Carolina’s holiday ends November 30, extending the available window from roughly three weeks to seven. More observations should help distinguish the tax effect from ordinary regional price movements.

For gasoline, watch whether the retail-wholesale gap narrows as wholesale prices stabilize. It widened sharply from an unusually low starting point; what happens next will tell us more than one month’s comparison.

For diesel, watch whether the refining spread falls as distillate inventories rebuild, as it did after 2022, or remains well above the model’s predictions.

Those are questions public data can help answer. To assess an individual seller requires delivered costs, taxes, prices, and competitive conditions in the market where the transaction occurred—information an investigator can seek and a national average cannot provide.

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