READING THE METER

A look inside a cleaner, safer, smarter auto industry.

ALLIANCE FOR AUTOMOTIVE INNOVATION

Contents – October 3, 2024

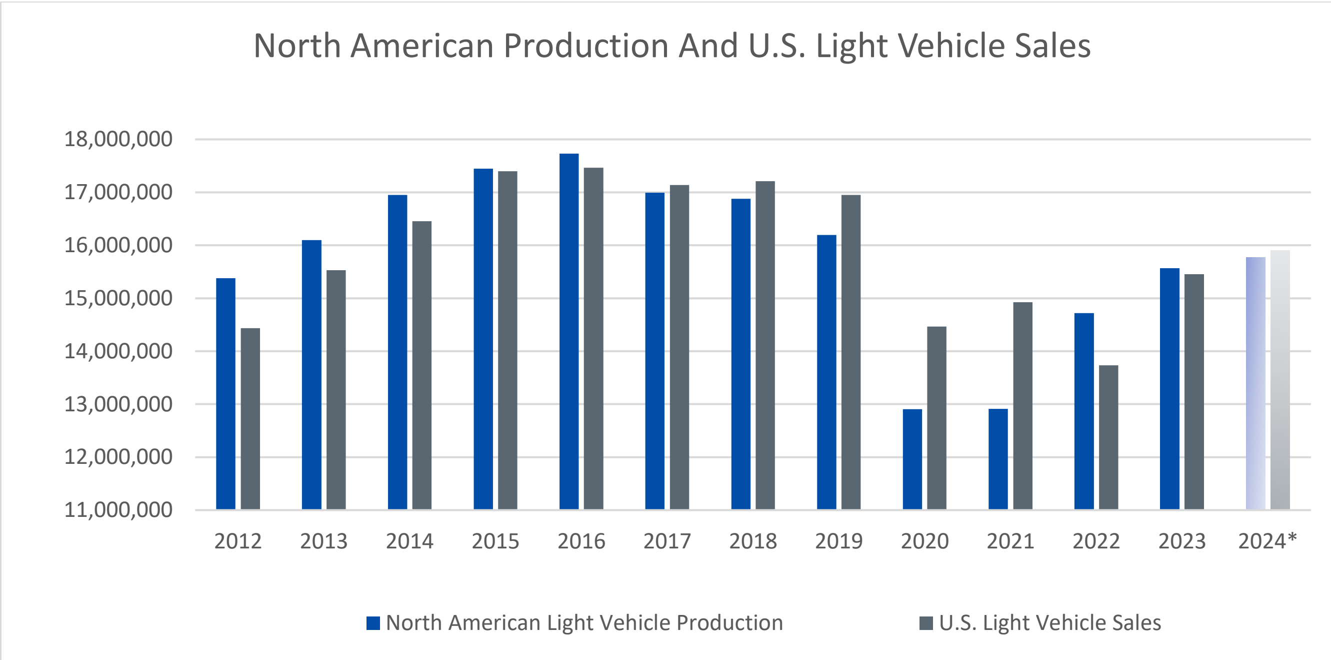
ALLIANCE FOR AUTOMOTIVE INNOVATION

Cleaner. Safer. Smarter.

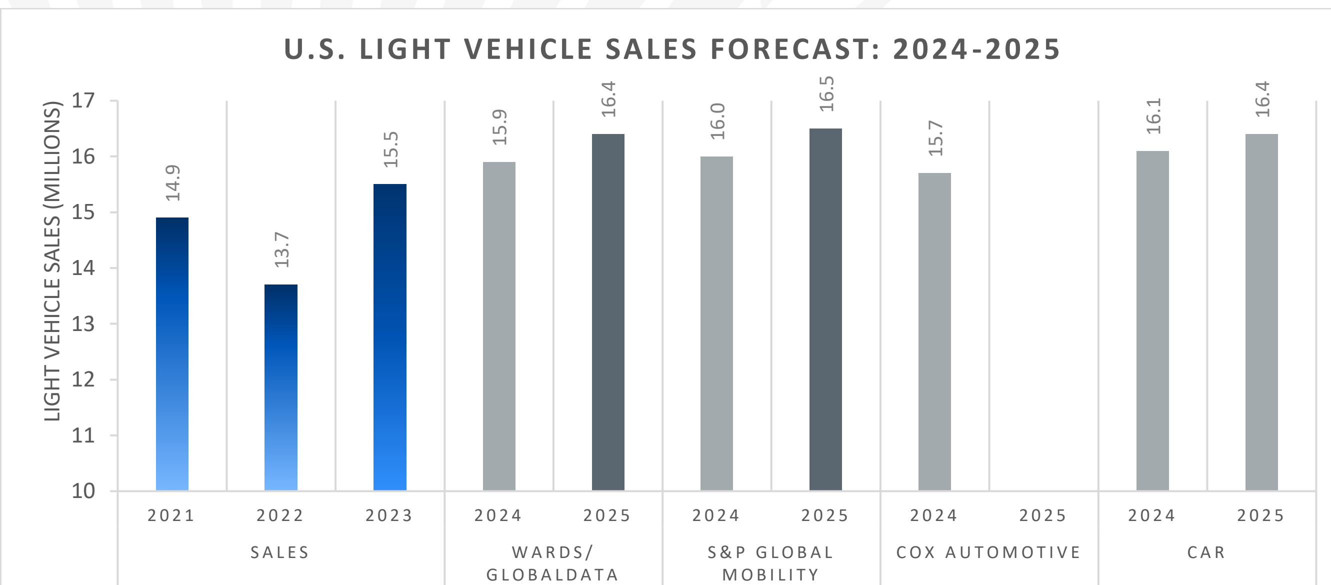
Forecast Meter

Sales & Production Summary and Forecast (Updated 10/3)

2023-2024 Sales,[1] Extended Sales Forecast[2] and Production Forecasts[3]		
	U.S. Sales & Forecasts	**North American Production**
January '23	1,033,002 (+4.2% YoY)	1,195,548 (+12.9% YoY)
February '23	1,136,332 (+8.7% YoY)	1,257,482 (+15% YoY)
March '23	1,365,966 (+8.6% YoY)	1,442,991 (+6.7% YoY)
April '23	1,347,159 (+13.1% YoY)	1,281,626 (+8.6% YoY)
May '23	1,362,019 (+18.0% YoY)	1,462,273 (+25.5% YoY)
June '23	1,370,976 (+19.9% YoY)	1,387,090 (+13.8% YoY)
July '23	1,299,199 (+19.9% YoY)	1,173,342 (+15.6 YoY)
August '23	1,328,526 (+12.8% YoY)	1,467,284 (+4.5% YoY)
September '23	1,331,952 (+13.9% YoY)	1,353,072 (+7.6% YoY)
October '23	1,200,286 (+5.7% YoY)	1,388,720 (+4.5% YoY)
November '23	1,218,647 (+7.3% YoY)	1,372,253 (+8.1 YoY)
December '23	1,433,266 (+17.3 YoY)	1,082,176 (-2.3% YoY)
January '24	1,076,047 (-1.3% YoY)	1,327,765 (+7.8% YoY)
February '24	1,247,516 (+5.2% YoY)	1,358,836 (+10% YoY)
March '24	1,438,012 (+4.6% YoY)	1,414,502 (-5.7% YoY)
April '24	1,313,512 (+0.6% YoY)	1,473,567 (+15.9% YoY)
May '24	1,429,028 (+0.8% YoY)	1,485,373 (-1.7% YoY)
June '24	1,321,932 (-3.4% YoY)	1,346,584 (-6.1% YoY)
July '24	1,273,115 (-2.0% YoY)	1,117,833 (-4.4% YoY)
August '24	1,419,245 (+3.8% YoY)	1,428,177 (+32.6% YoY)
September '24	1,169,908 (-1.4% YoY)	
2023 Full Year	15,457,447 (+12.4% YoY)	16,144,461 (+9.3% YoY) (U.S. 10,611,580)
2024 Estimate	15.9 M	15.77 (U.S. 10.8M)



U.S. Light Vehicle Sales Outlook (Updated 10/3)



Wards Intelligence Outlook (10/3)[4]: "Fourth-quarter sales are forecast to resume growth, rising 6.8% year-over-year to 4.16 million units, meaning entire-2024 will end at 15.9 million, a 2.3% increase from 2023. The Q4 seasonally adjusted annual rate equates to 16.4 million units, well above the 15.6 million recorded in both Q3 and October-December 2023.

"However, headwinds related mainly to affordability are putting heavy downside risk to the Q4 outlook. There could be some offset to the affordability challenge with the Federal Reserve's interest rate cut, which could start to ease monthly payments on loans, and automakers could continue to raise retail incentives in Q4.

North American Production & Inventory Outlook (Updated 10/3)

Wards Intelligence Inventory Outlook (10/3)[5]: "Inventory is forecast to rise month-to-month in both October – 2.92 million units - and November (2.94 million). As is normal, inventory will fall in December from November, with the forecast pegged at 2.78 million, 20.0% above the year-ago total.

"With demand weakened heading into the fourth quarter, the more stock dealers have on their lots to turnover, the more likely retail incentives in various forms will increase.

"One caveat: As often happened historically in October, there could be some additional sticker-shock this month as prices on most '25 models will be higher than their '24-model versions. That could lead to further production cuts in Q4 to control inventory in the face of further sales declines, or it could bring back more of the end-of-year holiday deals consumers were used to in the years prior to the pandemic in 2020 - there would be a combination of both, so the real question will be how much of one over the other.

"Another potential risk to Q4 is the dock worker strike, which started Oct. 1, affecting 36 eastern ports from Maine to Texas. Among others, the port shutdowns could hold up shipments of imported light vehicles from the likes of BMW, Mercedes, Jaguar Land Rover, Volvo and Volkswagen Group (VW-Audi-Porsche), as well as parts used in assembling vehicles in North America.

"The shutdowns probably need to last longer than a week to have a significant negative impact on overall inventory, though individual dealers or geographic areas could experience shortages sooner. It's also possible production slowdowns due to parts shortages at some North America vehicle plants could occur inside of a week."

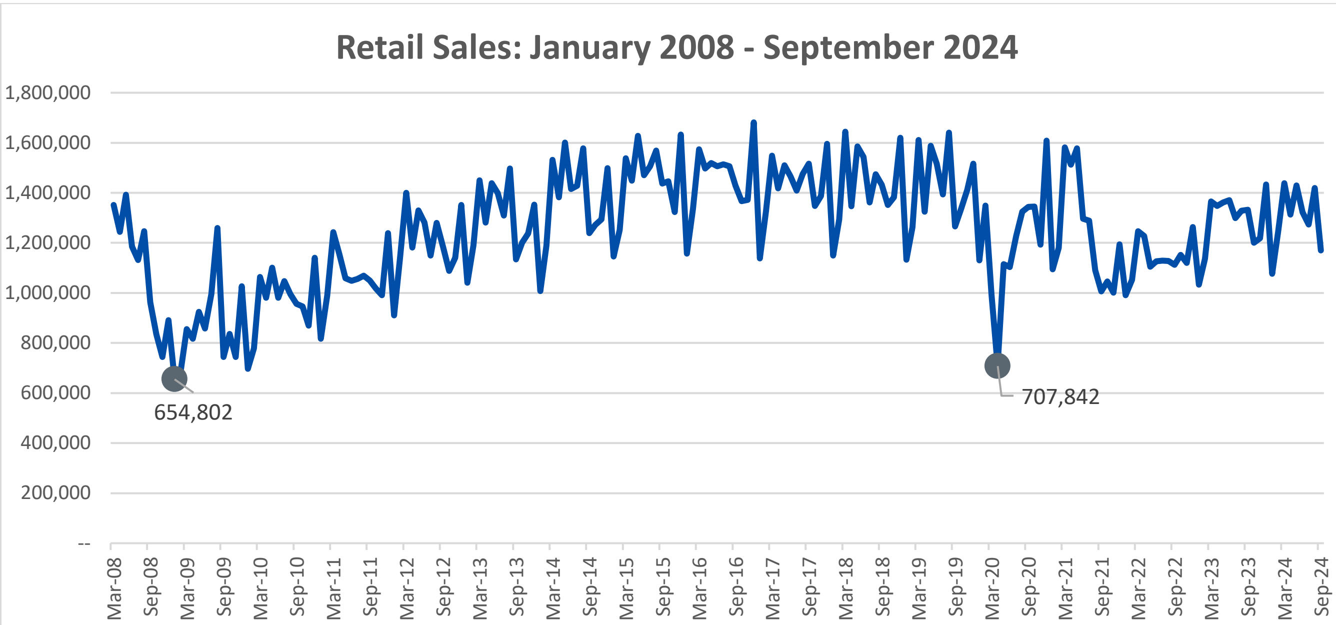
Wards Intelligence Production Outlook (9/9)[6]: "Production for entire-2024 is forecast to total 15.77 million units, up just 1.1% from 2023, a marked slowdown from 2023's 9.6% gain."

S&P Global Mobility Outlook (9/26)[7]: "North America: The outlook for North America light vehicle production was reduced by 120,000 units and by 429,000 units for 2024 and 2025, respectively (and reduced by 714,000 units for 2026). Over 1.26 million units were cut from the short-term forecast spanning 2024 through 2026 with three driving factors behind the steep reductions. First, the outlook for US light vehicle sales was cut 717,000 units spanning the same period which also secondarily fuels the need for additional inventory correction over the next 12 months. Finally, a total of 20 vehicle timing actions along with program cancellations and resourcing decisions account for a loss of 730,000 units or around 57.8% of the overall reduction between 2024 and 2026. The outlook for 2025 production in North American was revised down 2.7% to total 15.41 million units which results in production for 2025 now being projected to decline year-over-year for a second straight year. Steeper cuts affect the outlook in 2026 with production in North America revised down 4.4% to total 15.69 million units. The outlook in 2026 is most dramatically affected by program-related actions with 82.4% or 589,000 units of the reduction being attributable to such product related actions as timing revisions, cancellations and resourcing, including for dedicated BEV nameplates.

U.S. Light Vehicle Sales (Updated 10/3)

Monthly Sales (Updated 10/3)

This chart helps to put into context the monthly retail sales due to the COVID pandemic and showing the relative drop in sales compared to the 2008 financial crisis.



September Sales (Updated 10/3)

WardsIntelligence[8]**:** "U.S. light-vehicle sales finished September with the seasonally adjusted annual rate totaling 15.8 million units, an increase from the prior month's 15.3 million and like-2023's 15.7 million, but below expectations and continuing the recent trend of little or no growth.

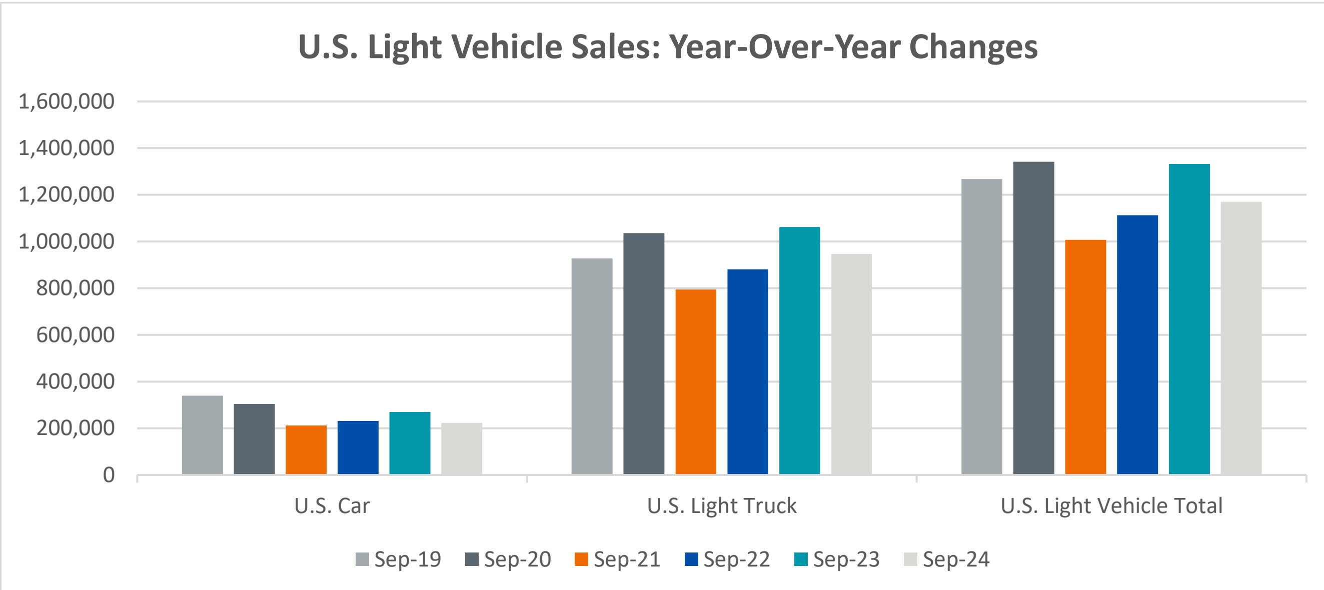
"Demand undoubtably was hurt by Hurricane Helene, which after hitting land on the West Coast of Florida on Sept. 26, cut a path north through the heart of the Southeastern U.S.

"How much volume was lost due to Helene is uncertain - best current guess is it reduced the SAAR 100,000 to 200,000 units. On a selling-day basis, volume fell 1.4% to 50,866 units – 23 selling days – from September 2023's 51,576 – 26 selling days. There should be some makeup for the losses in October.

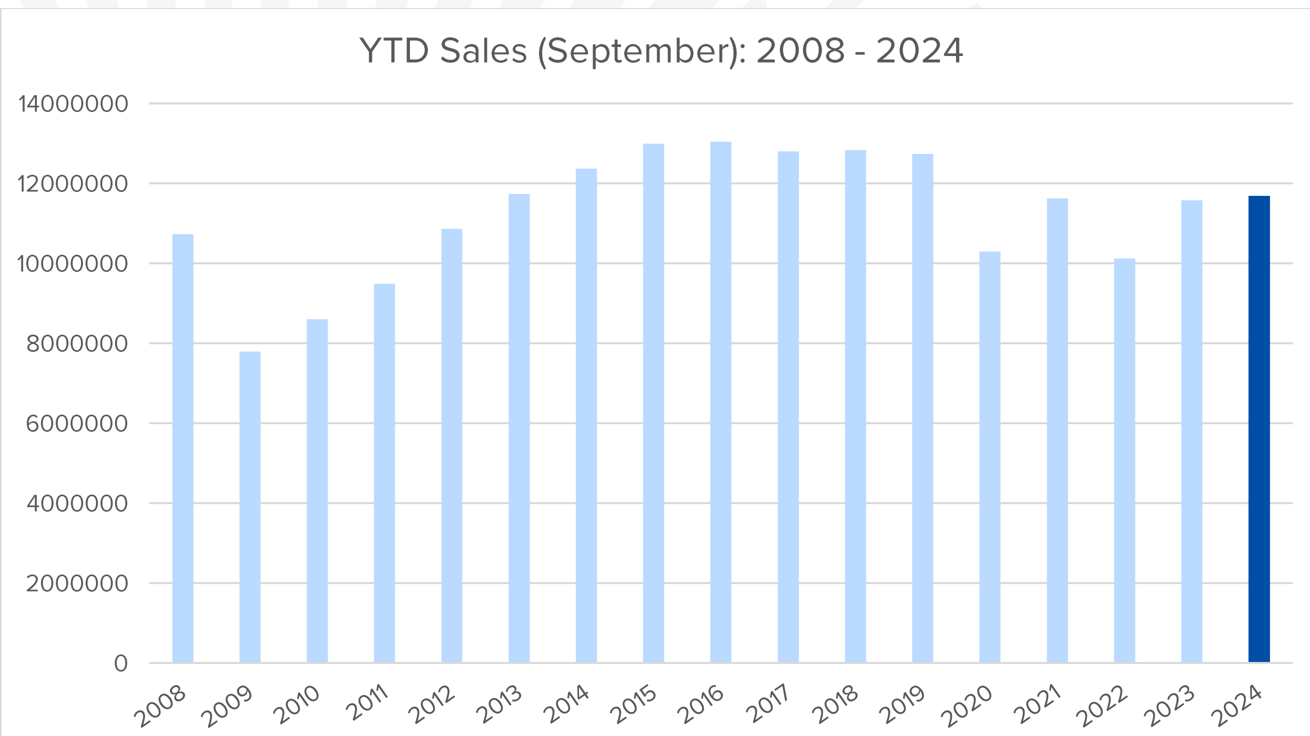
"Because of three fewer selling days this year, raw volume in September was down a heftier 12.8% to 1.17 million units from 1.341 million.

"The third quarter totaled 3.88 million units, 1.9% below like-2023's 3.96 million. The Q3 results followed a 0.5% decline in Q2 and a 4.9% increase in Q1. Calendar year-to-date deliveries through September totaled 11.69 million, less than 1% above like-2023's 11.61 million.

“The Q3 SAAR totaled 15.6 million units, same as the year-ago period and down from Q2’s 15.7 million. Taking into account that Q2-2024’s SAAR was equal to the same year-ago period, sales on an annualized basis had no growth over the past six months.”



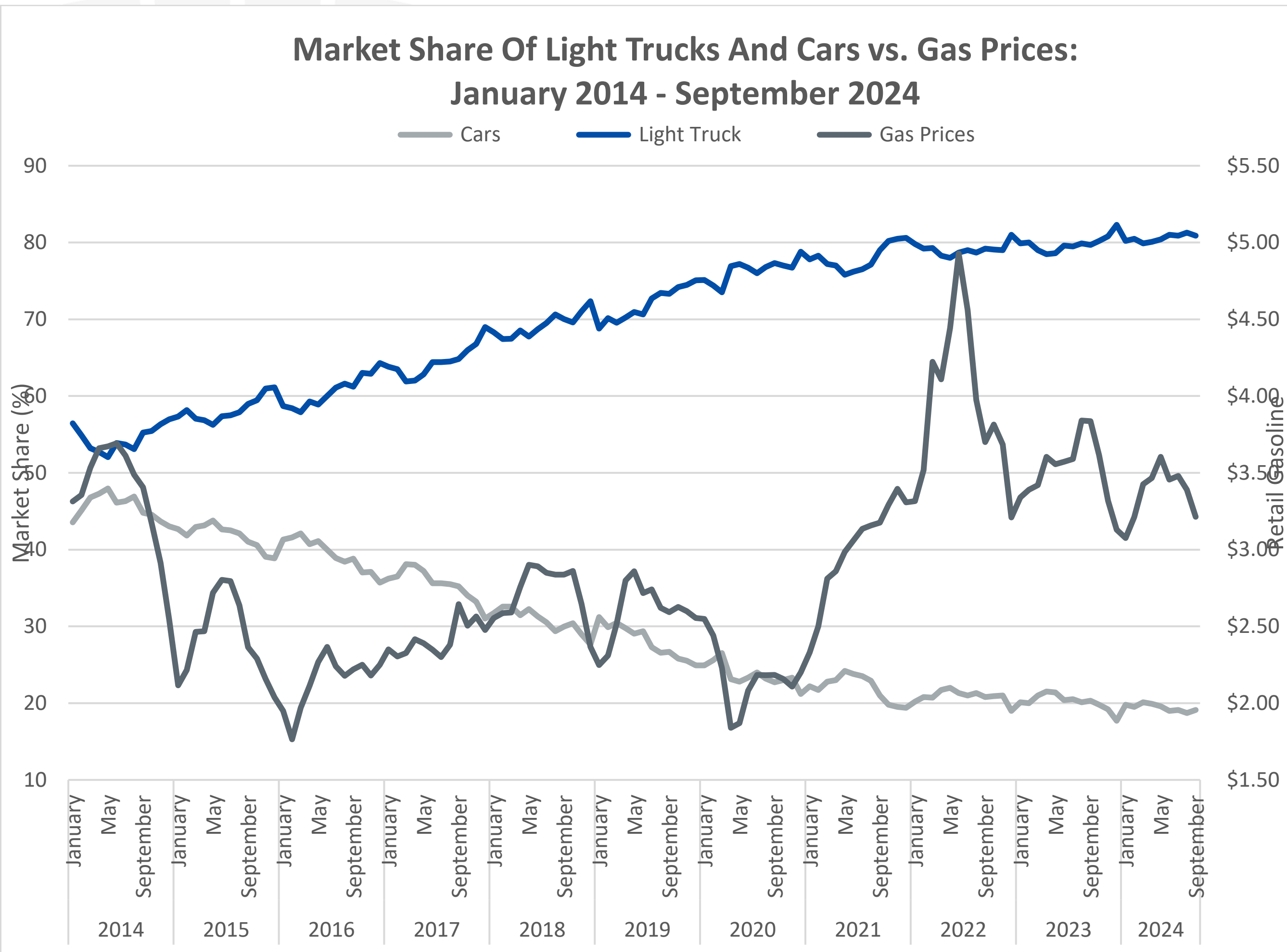
Calendar-year 2024 sales through September totaled 11.69 million units, 0.7% above like-2023’s 11.6 million.



Segments vs. Gas Prices (Updated 10/3)

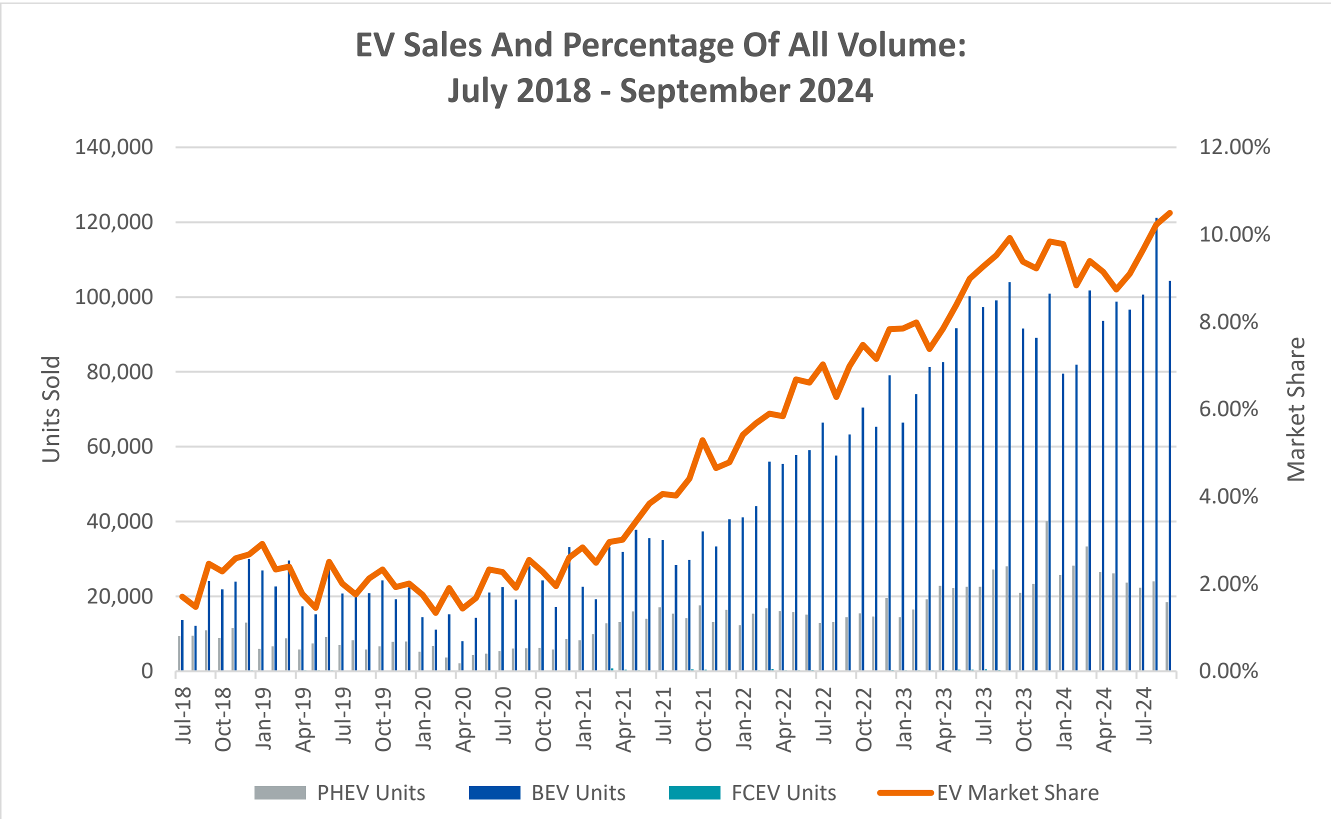
Monthly Sales For September: Light trucks accounted for 81 percent of sales in September, up slightly from the market share a year ago. Compared to the same period in 2023, sales of cars are down by 47,000 units, and down more than 115,000 from September 2019, when cars comprised 27% of the market as opposed to the 19 percent of the market passenger cars have now.

Historic Perspective: The upward trend in the popularity of light trucks over cars has been steady since 2013, when only 2% of annual market share separated the two segments.[9] and gas was over $3.00.[10] a gallon. As fuel prices dropped below the $3.00 mark in mid-September 2014, light truck sales began to take off. Gas prices since have averaged only $2.92 a gallon (through July 2024) and when combined with increased fuel economy for light trucks, an increase of 4 mpg since 2013, the perfect conditions existed to continue fueling light truck market growth.[11]



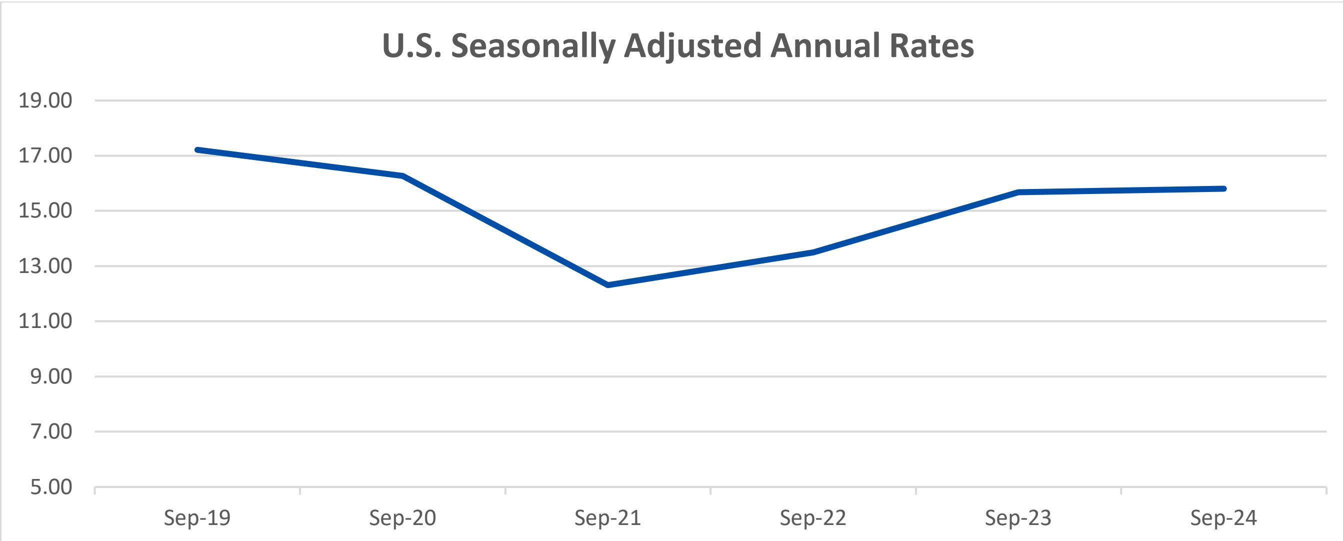
EV Powertrain Sales (Updated 10/3)

Sales of electric vehicles (BEV, PHEV, & Fuel Cell) accounted for 10.5 percent of total vehicle sales in September 2024 (122,805), per Wards estimates. Market share increased 0.26 percentage points (pp) from August 2024. September's EV market share is up 0.6 pp from a year ago. Sales of battery electric vehicles led the way for EVs, accounting for 8.9 percent of total sales, up 1.1 pp from September 2023. Plug-in hybrids accounted for 1.6 percent, down 0.5 pp from the same time last year.[12]



Seasonally Adjusted Annual Rates (Updated 10/3)

WardsIntelligence[13]: "U.S. light-vehicle sales finished September with the seasonally adjusted annual rate totaling 15.8 million units, an increase from the prior month's 15.3 million and like-2023's 15.7 million, but below expectations and continuing the recent trend of little or no growth."



Average Transaction Price (Updated 10/3)

J.D. Power (Updated 10/3)[14]: "The average new-vehicle retail transaction price has fallen from a year ago due to higher manufacturer incentives, larger retailer discounts and increased availability of lower-priced vehicles. Transaction prices are trending towards $44,467—down $1,296 or 2.8%—from September 2023."

"Manufacturer discounts are continuing to rise. The average incentive spend per vehicle has grown 63.2% from September 2023 and is currently on track to reach $3,047. Expressed as a percentage of MSRP, incentive spending is currently at 6.2%, an increase of 2.4 percentage points from a year ago. Spending has decreased by $21 per unit from August 2024."

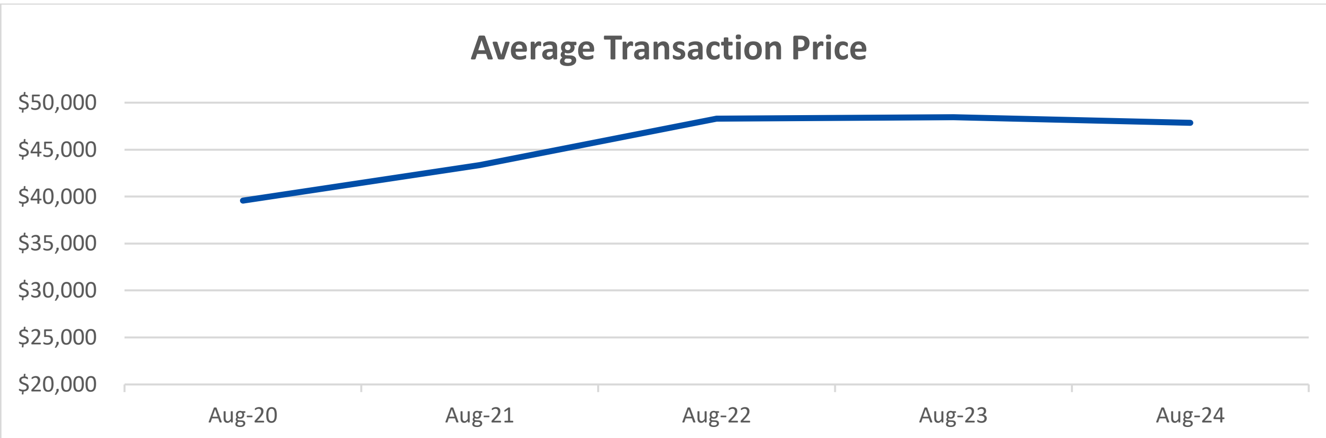
Kelley Blue Book (July) (Updated 8/22)[15]: "For the 11th straight month, the average transaction price (ATP) for a new vehicle in the U.S. was lower year over year, according to data released today by Kelley Blue Book, as higher inventories continue to add price pressure to the market. At $47,870, the new-vehicle ATP in August was also lower by 0.6% compared to the revised July ATP of $48,166.

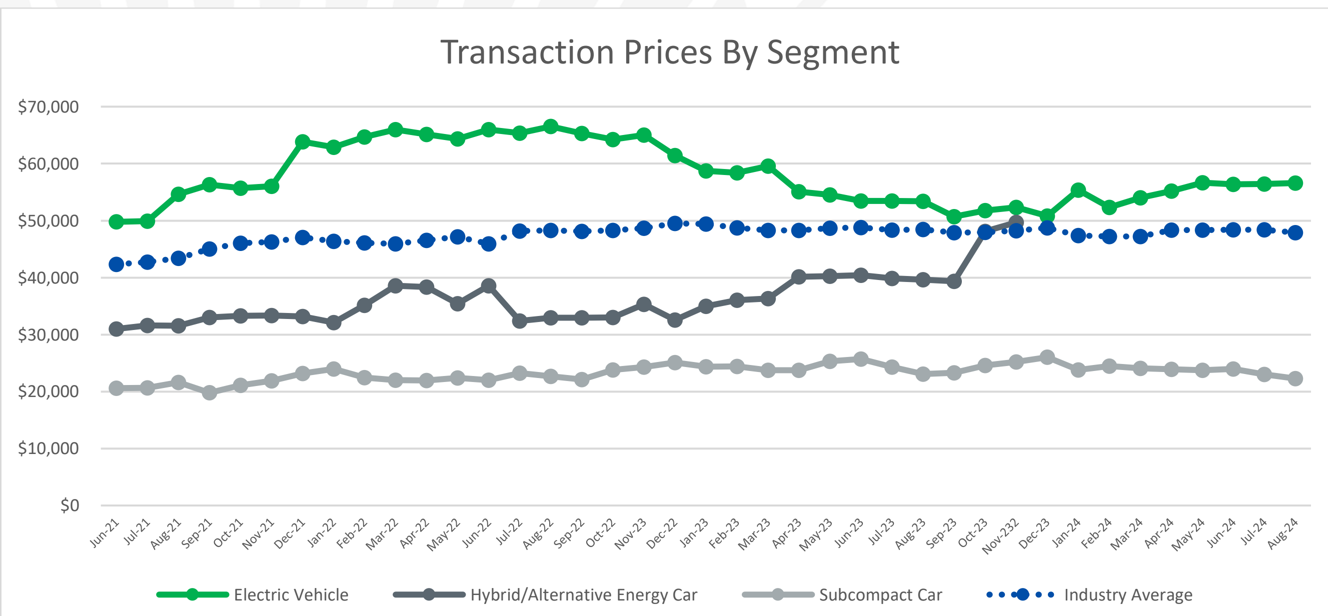
"Incentive levels increased month over month and year over year in August, according to data from Kelley Blue Book. The average incentive package in August equaled 7.2% of ATP, up from 7.0% in July to the highest level since the first half of 2021. A year ago, incentive spending was 4.8% of ATP. In the past decade, incentive spending peaked at 10.8% of ATP in December 2019.

"With new-vehicle inventory in early August higher by more than 40% year over year, consumers enjoyed more choices last month and, in many cases, notably higher incentive levels.

"On average, trucks and SUVs carried higher incentives last month than cars and vans. Compact SUVs, the market's most popular segment by volume, had average incentives at 9.2% of ATP, with an average transaction price of $36,506 in August. Incentives in the full-size pickup truck segment averaged 8.4% of ATP in August, up from 8.2% in July and 6.1% in August 2023. Full-size pickup ATPs in August increased slightly month over month to $65,531. High-end luxury cars had the highest incentives last month, with incentives at 10% of ATP, while vans, sports cars and small/midsize pickups had some of the lowest incentives.

EV incentives in August continue to trend well above industry averages. Last month, EV incentives averaged 13.3% of ATP, higher than July and at the highest point of 2024. On average, EV incentives last month were more than 80% higher than traditional ICE product. The average transaction price for an EV in July, at $56,575, was marginally higher than the revised July ATP of $56,435 but lower year over year by more than 1.2%, suggesting the EV price declines are slowing. A year ago, in August 2023, EV ATPs were lower year over year by nearly 13%."



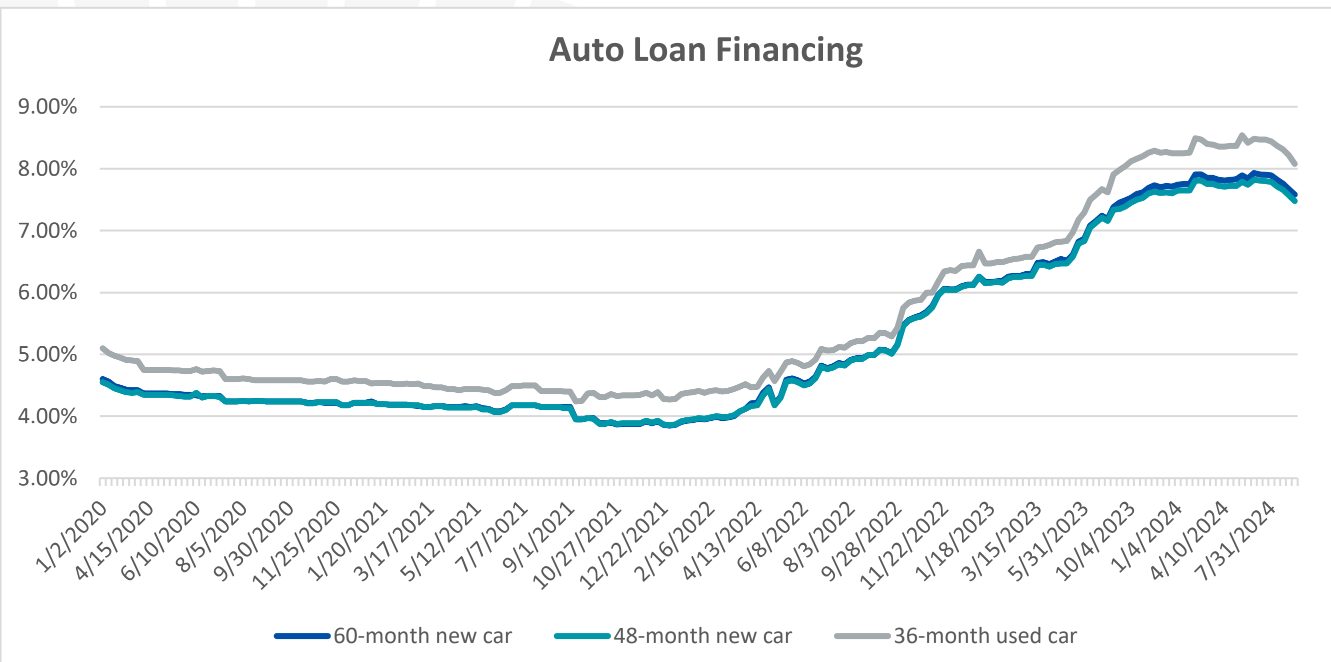


Auto Loan Financing (Updated 10/3)

Interest Rates (updated 10/3): Interest rates dipped slightly on the 60-month, 48-month and the 36-month used car loans over the past two weeks. Rates now stand at 7.58%, 7.48%, and 8.08%, respectively. Since the beginning of 2020, 60-month rates are up 2.98 pp, and are up 0.05 pp since the same time a year ago.[16]

JD Power (10/3)[17]: "Average monthly finance payments this month are on pace to be $734, up $11 from September 2023. The average interest rate for new-vehicle loans is expected to be 6.84%, down 46 basis points from a year ago."

Dates	60-month new car	48-month new car	36-month used car
1/2/2020	4.60%	4.55%	5.10%
10/4/2023	7.53%	7.45%	8.12%
9/18/2024	7.67%	7.57%	8.22%
10/2/2024	7.58%	7.48%	8.08%
Two Week Change	-0.09%	-0.09%	-0.14%
Change since 1/3/20	2.98%	2.93%	2.98%
One Year Change	0.05%	0.03%	-0.04%

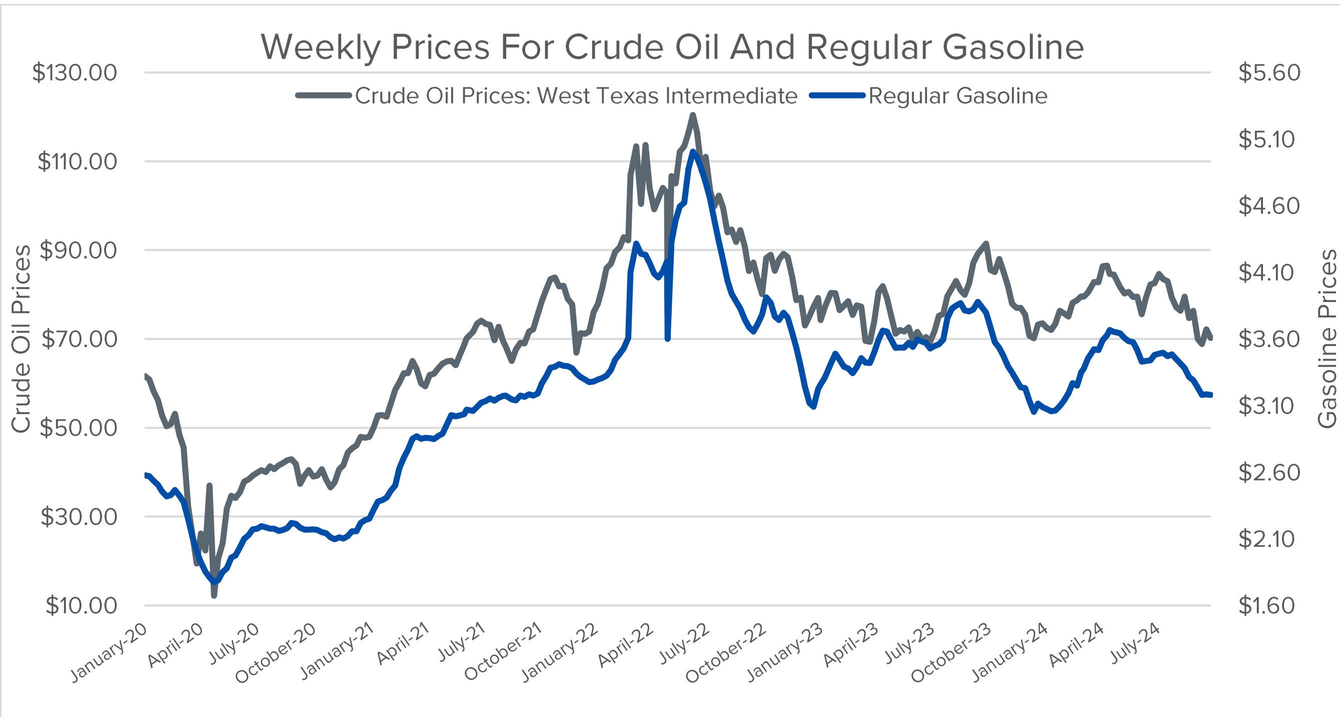


Crude Oil and Gas Prices (Updated 10/3)

Gas And Oil Remain Elevated (10/3): Oil prices, as benchmarked at West Texas Intermediate were $70.22, up $16.14 from the beginning of September. Since election day 2020, oil prices are $34 a barrel higher. Gas is down slightly from a week ago at $3.18. Gas is 23% higher than the beginning of 2020 and has not been below $3 a gallon since May 2021.[18]

EIA Outlook For Oil (8/7):[19]. "Crude oil prices. Although crude oil prices have fallen recently, we continue to expect crude oil prices will rise in the second half of 2024 (2H24). The Brent crude oil spot price ended July at $81 per barrel (b), compared with an average for the month of $85/b. We expect the Brent price will return to between $85/b and $90/b by the end of the year. Rising crude oil prices in our forecast are the result of falling global oil inventories. We estimate global oil inventories decreased by 0.4 million barrels per day (b/d) in 1H24 and will fall by 0.8 million b/d in 2H24. Inventory withdrawals stem in part from ongoing OPEC+ production cuts. Although we expect crude oil prices to rise in the coming months, our forecast for the annual average Brent crude oil price in 2025 is down from a forecast of $88/b in our July STEO, owing mostly to reduced oil consumption."

EIA Outlook For Gasoline (7/9)[20]**:** "We forecast regular-grade gasoline prices will average around $3.50 per gallon in 2025 and gasoline consumption will average 8.9 million b/d. Continued increases in vehicle efficiency mean U.S. drivers will drive more miles in 2025 than before, but we expect 1% less U.S. gasoline consumption than in 2023 and 5% less than the record set in 2018."



Production Meter

U.S. Light Vehicle Inventory and Days' Supply (Updated10/3)

WardsIntelligence Inventory Update (10/3)[21]**:** "U.S. light-vehicle inventory increased 4.4% from the prior month to 2.82 million units, 36.5% above like-2023 and highest for the month since 3.64 million in 2019.

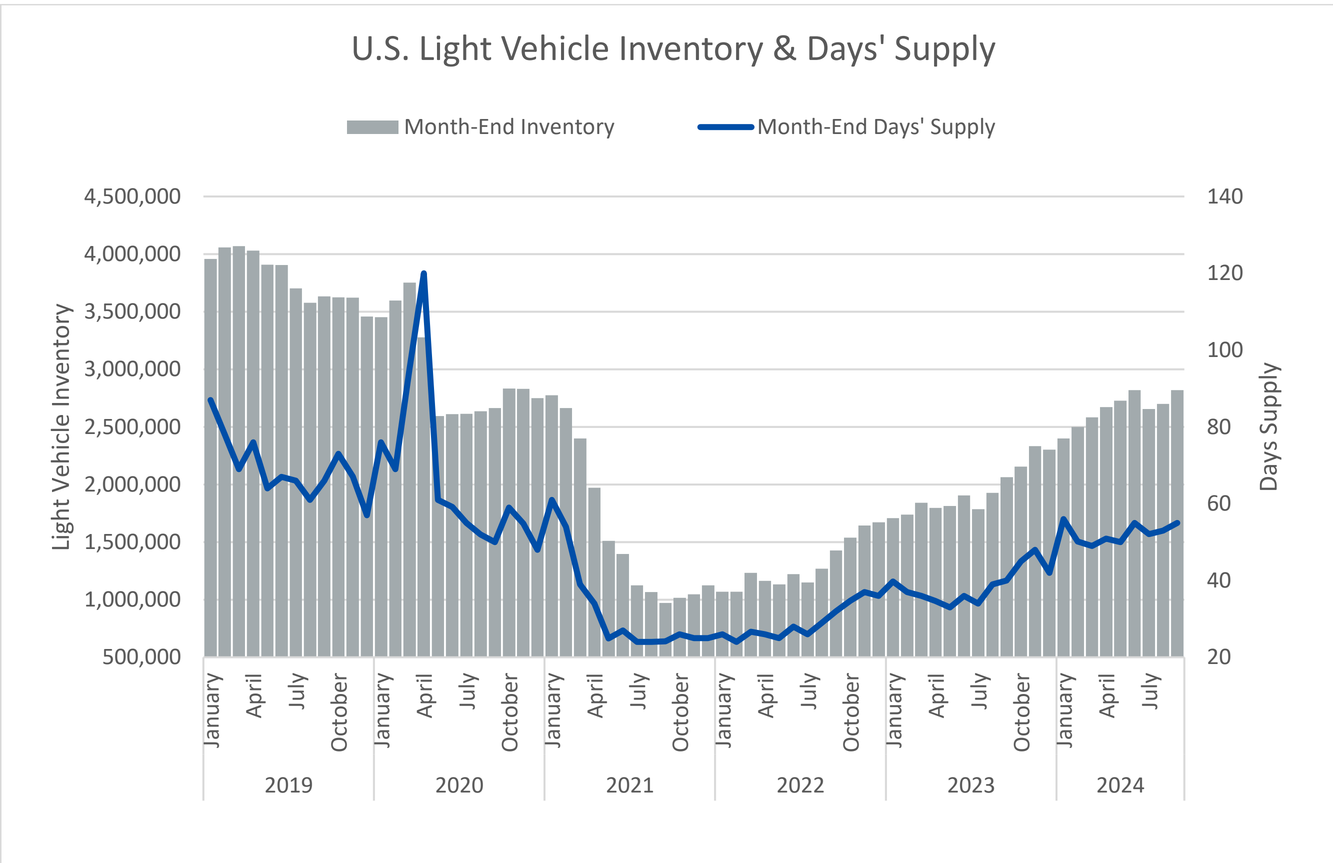
"In fact, September's total was the highest for any month since 2.88 million in November 2020.

"Sept. 30 days' supply totaled 55, up from the prior month's 53 and like-2023's 40.

“How many vehicles on dealer lots in the states impacted by Hurricane Helene were damaged to the point of being deemed unsaleable is unknown and are not necessarily reflected in the inventory totals reported to Wards Intelligence by automakers. Helene hit land Sept. 26, causing massive flooding and power outages throughout much of the Southeastern U.S.

“A month-to-month increase in September is a typical seasonal trend, as automakers start beefing up for the fourth quarter when vehicles for the upcoming model year – ’25 models in this case - become widely available.

“However, automakers have been slowing production for the U.S. market to keep inventory from getting too far out of balance with weaker-than-expected demand.



North American Production (Updated 9/26)

Wards Intelligence[22]: “Production slowdowns are the buzzword as North America manufacturers underbuilt to plan in August and output in Wards Intelligence’s Tracker has been reduced for each month from September through December.

"The reductions are mainly from attempts to keep inventory in check because sales are running below expectations. However, 11,000 of September's 46,000-unit reduction was due to estimated losses from unexpected plant shutdowns for inventory control and parts shortages, including 6,000 at General Motors and 5,000 at Stellantis. None of the lost output is expected to be recouped.

"Production of light vehicles and medium-/heavy-duty trucks in August totaled 1.474 million units, 2.7% below same-month 2023's 1.516 million. August's total was 52,900 below month-ago's projections for the period and marked the fourth straight month of year-over-year declines. Calendar year-to-date production through August totaled 10.924 million, 0.1% above 8-month 2023's 10.911 million.

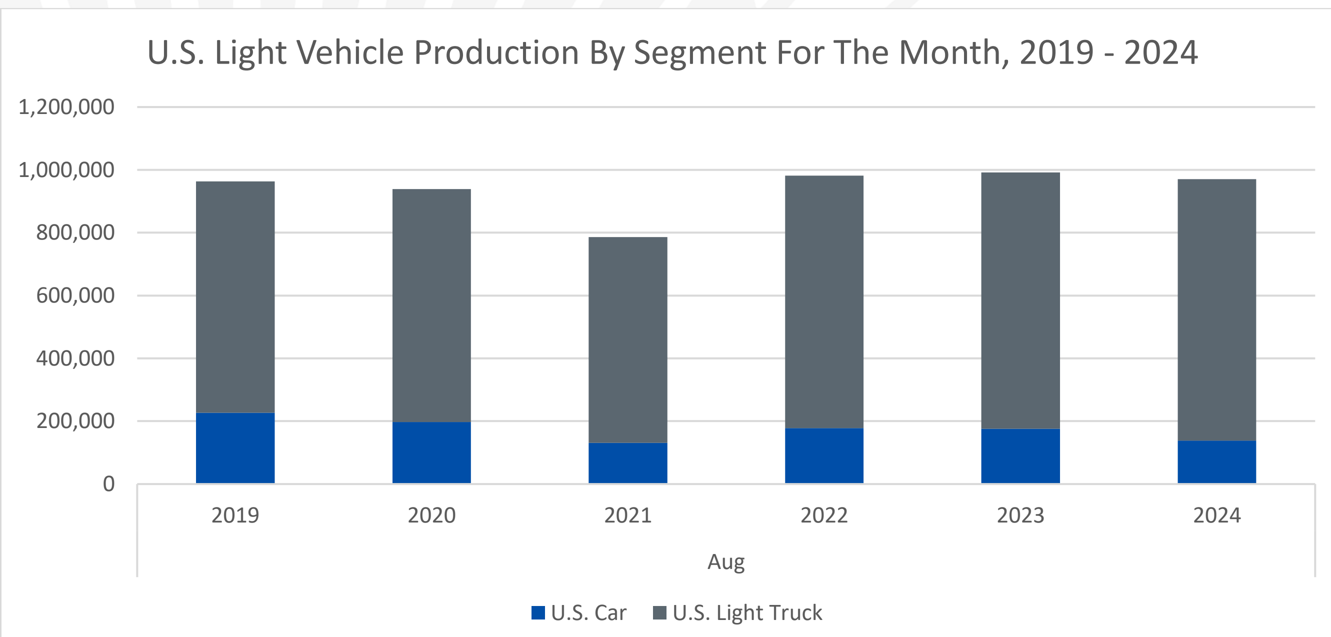
"The August underbuild, as well as the cut in expected output in September, brought down forecasted output for the third-quarter to 3.960 million units, 2.8% below like-2023.

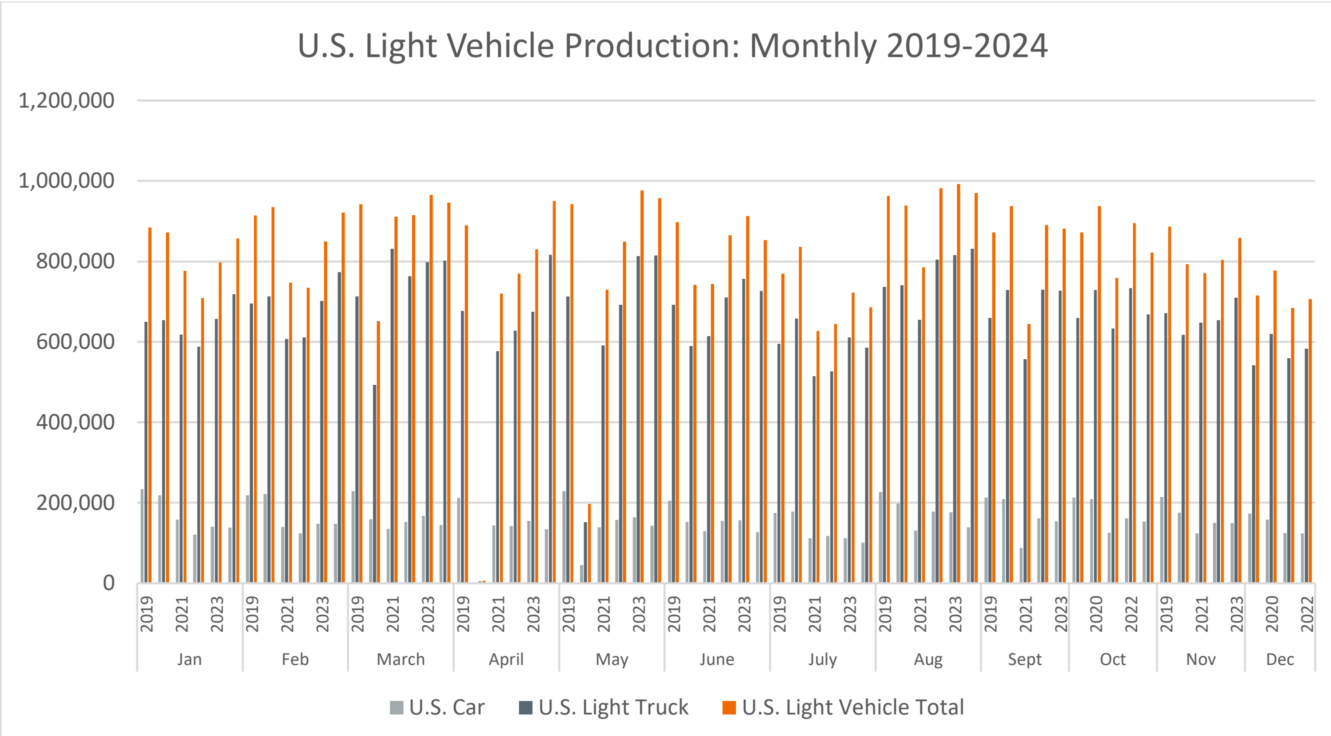
"Excluding medium/heavy trucks, light-vehicle production in August totaled 1.428 million units, 2.3% below the year-ago month. Third-quarter light-vehicle output is tracking to 3.817 million, 2.8% below year-ago, while Q4 production is pegged at 3.782 million, 1.3% above like-2023."

U.S. Light Vehicle Production (Updated 9/26)

U.S. Monthly Production (Upodated 9/26)

U.S. Light vehicle production for Augutst 2024 was up 41 percent month-over-month, totaling 969,968 vehicles (138,594 cars, 831,374 light trucks), year-over-year, production is down 2 percent from 2023.[23]





Global Meter

Global Light Vehicle Sales (Updated 10/3)

Wards Intelligence [24]: "Global sales of all vehicles – light vehicles and medium- and heavy-duty trucks – declined year-over-year for the second straight month in August.

"Including estimates for some markets, global sales totaled 7.135 million units in August, 6.4% below like-2023's 7.622 million.

"Further weakening demand in the Asia-Pacific region, where volume fell 12.3% year-over-year to 3.52 million units, was the biggest overall drag to August's results.

"As in July, the AP decline was spearheaded by a downturn in the world's largest market, China, which recorded a drop of 15.5% in August, its third straight decline. China's share of global sales fell to 31.3% in August from the year-ago period's 34.7%.

"However, unlike July when its volume in the rest of the region increased, demand in AP-less-China declined in August – 6.0% - thanks in large part to downturns in the AP's second and third largest markets, India and Japan, respectively. August sales in India declined 6.4% year-over-year, the first drop since June 2023. Conversely, Japan's 3.0% decline in August reversed an increase in July and was the market's seventh downturn during the first eight months of 2024.

“August’s global results also were punctuated by Europe’s 9.7% year-over-year decline, the region’s first since September 2022. Nearly every country in Europe recorded a shortfall with the year-ago month. Exceptions were Russia (up 16.9%), Ukraine (33.4%), Netherlands (4.2%), Serbia (7.8%) and Slovenia (11.7%).

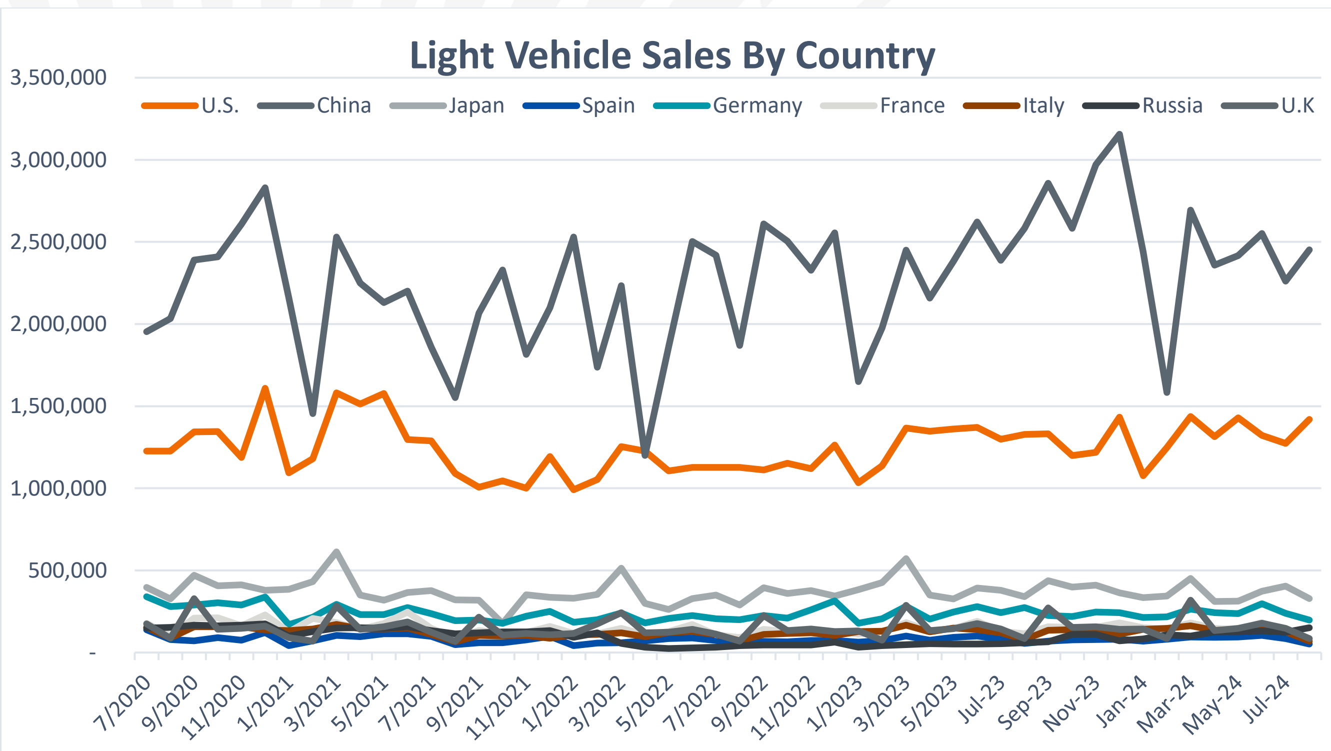
“The biggest market in Europe, Germany, recorded a whopping 29.0% drop from August 2023, pulling down its calendar year-to-date increase to less than 1%. But other major markets in the region, such as U.K., France and Italy, also recorded declines, with France and Italy’s downturns in the double digits.

“Despite downturns in July and August, calendar year-to-date sales through the first eight months of 2024 remain above year-ago. Calendar-year deliveries through August totaled 60.189 million units, up 1.4% above like-2023’s 59.329 million.

“Excluding medium-/heavy-duty trucks, light-vehicle sales in August totaled 6.982 million units, 4.8% below like-2023’s 7.335 million. Calendar year-to-date light-vehicle sales through August totaled 58.208 million units, up 2.0% from like-2023’s 57.082 million.

“Wards Intelligence partner GlobalData pegged August’s annualized rate for light vehicles at 89.3 million units, same as July. GlobalData expects volume in September to decline again from the year-ago period, but the annualized rate is tracking to a gain from August to 91 million.

“Still, GlobalData revised its global outlook for entire-2024 down for the fourth time this year. Light-vehicle sales are forecast to end 2023 at 88.5 million units, citing elevated pricing and geopolitical risks as major headwinds.



ALLIANCE FOR AUTOMOTIVE INNOVATION
Cleaner. Safer. Smarter.

Global Light Vehicle Production (Updated 9/26)

S&P Global Mobility Forecast (9/26)[25]: "The global auto industry remains focused on the delicate balance of managing production and associated inventories amidst volatile launch schedules and regional demand dynamics that include slowing growth in select regions and uncertainties around battery electric vehicle adoption. The production outlook reflects these ongoing challenges with this month's forecast update particularly focused on noteworthy downward revisions for North America factoring in a reduced demand outlook for the United States and meaningful production impacts due to vehicle timing actions. Also, continued underwhelming support from expanded policy action in China as well as an uncertain macroeconomic environment result in downgrades for that key market. Propulsion mix developments continue to vary by region as some markets face slower EV adoption growth rates while other areas continue to see rather encouraging results. The September forecast update reflects a mix of downgrades of varying magnitudes in the near-to-intermediate term, with adjustments spread across several regions. Downward revisions are primarily focused on North America, Greater China and South Asia, among others, as those markets navigate dynamic demand fundamentals, inventory management and volatile vehicle launch activity. The more noteworthy regional adjustments with the latest forecast update are detailed below:

"Europe: The outlook for Europe light vehicle production was reduced by 14,000 units for 2024 and essentially unchanged for 2025 (and increased by 38,000 units for 2026). The near-term outlook for the region was only modestly revised with the latest forecast update. The European market continues to navigate still recovering, yet rather uninspiring, demand fundamentals amidst a continued focus on inventory management and mixed BEV adoption results (particularly when not supported by government sponsored incentives). Specifically regarding 2024, the outlook for Western and Central Europe, including Turkey, was cut by 14,000 units. The downgrade was attributed to weaker actualized production; however, some volume is expected to be partially recovered within Q3-2024. From an automaker perspective, Volkswagen was reduced primarily due to worse-than-expected actual production, offsetting positive revisions in prior months. Stronger actuals for the German premium manufacturers and Toyota counterbalanced some of the other output revisions for 2024. Looking ahead to 2025 and 2026, the revisions are fairly limited, with a mix of upgrades and downgrades amongst various countries in the broader region. A modest overall upgrade in 2026 supports a slightly improved demand outlook for the market, primarily associated with Russia.

"Greater China: The outlook for Greater China light vehicle production was reduced by 19,000 units and by 205,000 for 2024 and 2025, respectively (and reduced by 286,000 units for 2026). Despite two waves of incentives and subsidies to support demand and promote the scrappage of ICE vehicles, domestic demand remains fairly subdued. According to CPCA, passenger vehicle retail sales in July dropped 5.7% year-on-year. With the recently enhanced stimulus program, August passenger vehicle sales improved modestly sequentially to down 3.8% year-over-year. Amid aggressive price competition, consumers are more hesitant to buy and expect further discounting by automakers in the coming months. As a result, a fundamental demand resurgence is not expected in the near future. In the meantime, given the relative sales stagnation and conventional seasonality, mainland China light vehicle production declined by 4.7% and 3.0% year-over-year in July and August, respectively. Given the rather uncertain macro environment and underwhelming results from the scrapping policy, the outlook for 2024 was revised down modestly to 29.3 million units, representing 0.8% growth year-over-year. The outlook for 2025 and 2026 were reduced more meaningfully considering a still expected payback effect related to the scrapping policy (even with its reduced effectiveness) and a weaker market recovery amid macroeconomic headwinds.

"Japan/Korea: Full-year 2025 Japan production was reduced by 29,000 units relative to last month's forecast. The downward revision is primarily associated with the risk of Daihatsu being unable to comply with new regulations from November 2024 onward and having to halt parts of production. Full-year 2026 Japan production was increased by 39,000 units. The ICE and FHEV models such as the Toyota ES and the Corolla Cross continue to gain momentum in the global market as global BEV development slows. GM Korea's production fell more than expected due to partial strikes that occurred while wage negotiations in August continued until finally reaching an agreement. Accordingly, 2024 was downgraded by 42,000 units to 4.11 million units. For 2025, to manage production due to somewhat stagnant demand in the US and Europe, South Korea's production was reduced by 31,000 units to 4.08 million units (with no material change for 2026). In the long-term, annual output was reduced by approximately 40,000 units with the removal of the Hyundai Ioniq 4, PBV-M, and Genesis G70, and associated volume fluctuation due to timing changes of all Genesis models.

"North America: The outlook for North America light vehicle production was reduced by 120,000 units and by 429,000 units for 2024 and 2025, respectively (and reduced by 714,000 units for 2026). Over 1.26 million units were cut from the short-term forecast spanning 2024 through 2026 with three driving factors behind the steep reductions. First, the outlook for US light vehicle sales was cut 717,000 units spanning the same period which also secondarily fuels the need for additional inventory correction over the next 12 months. Finally, a total of 20 vehicle timing actions along with program cancellations and resourcing decisions account for a loss of 730,000 units or around 57.8% of the overall reduction between 2024 and 2026. The outlook for 2025 production in North American was revised down 2.7% to total 15.41 million units which results in production for 2025 now being projected to decline year-over-year for a second straight year. Steeper cuts affect the outlook in 2026 with production in North America revised down 4.4% to total 15.69 million units. The outlook in 2026 is most dramatically affected by program-related actions with 82.4% or 589,000 units of the reduction being attributable to such product related actions as timing revisions, cancellations and resourcing, including for dedicated BEV nameplates.

"South America: The outlook for South America light vehicle production was increased by 30,000 units and by 79,000 units for 2024 and 2025, respectively (and increased by 58,000 units for 2026). In the extreme near-term, the outlook has been upgraded reflecting stronger actualized production, particularly for Brazil, and an upgraded demand outlook for both Brazil and Argentina, although we remain somewhat guarded from a production perspective given seasonality effects and the general need for ongoing inventory management. For 2025 and 2026, production volumes were upgraded primarily due to improved demand expectations for Argentina as well as a stronger production outlook for key Fiat and Hyundai models (principally the Fiat Strada pickup and Hyundai HB20).

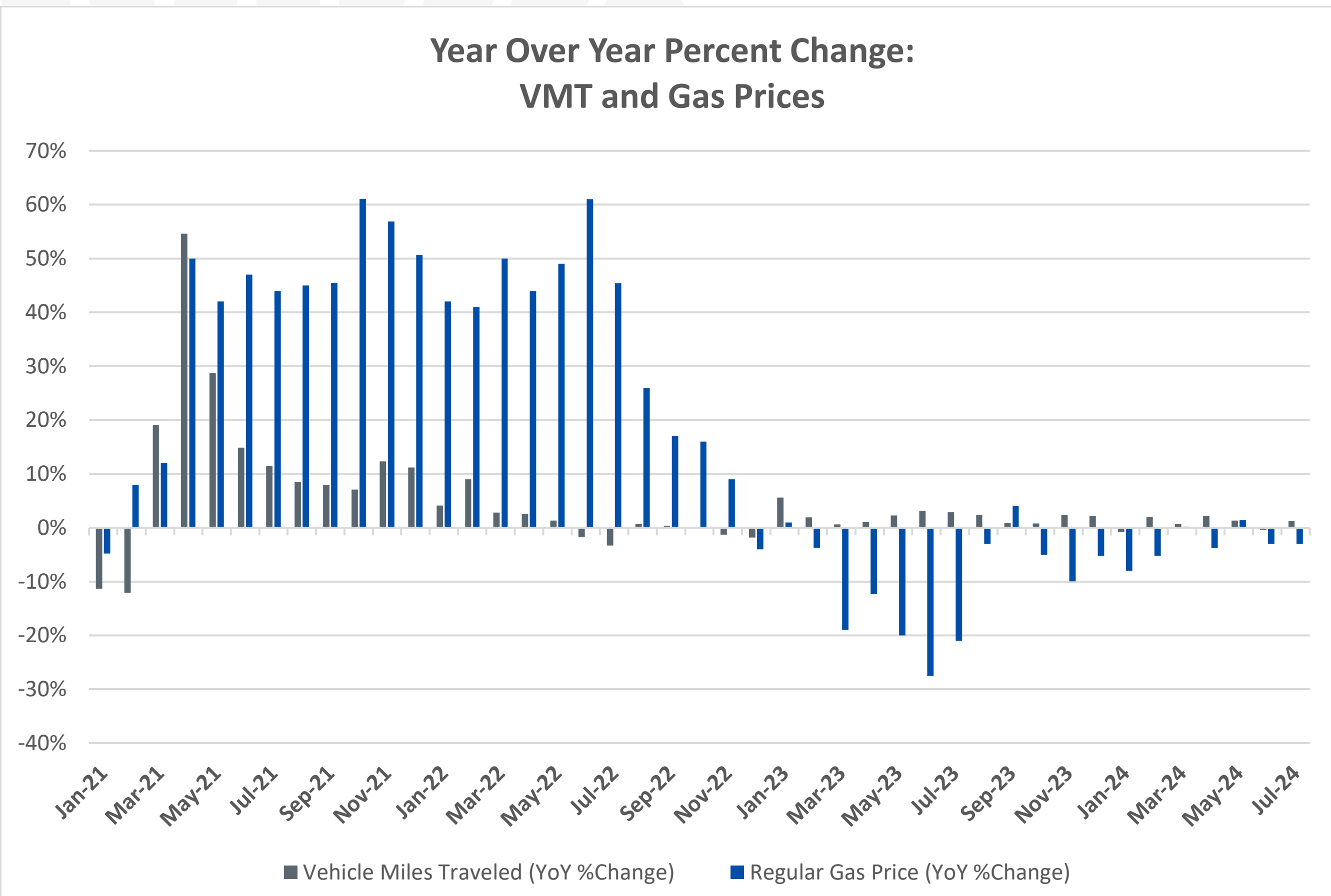
"South Asia: The outlook for South Asia light vehicle production was reduced by 50,000 units and by 139,000 units for 2024 and 2025, respectively (and reduced by 117,000 units for 2026). South Asia's light vehicle production forecast for 2024 was reduced by 36,000 units due to ongoing weakness associated with the ASEAN market given stricter auto loan approvals amidst general market headwinds. The challenges in ASEAN continue to be primarily focused on Thailand and Indonesia. Thailand's auto market has been significantly impacted by stricter auto loan policies, exacerbating the challenges posed by ongoing economic headwinds. Meanwhile, Indonesia's auto production sector has been adversely affected by weaker household spending, elevated interest rates and a slowdown in exports. Regarding the Indian subcontinent, production was reduced by 14,000 units for 2024 to reflect slightly weaker recent actual production and other short-term adjustments. More meaningful downward revisions incorporated for India in 2025 and beyond in part reflect the ongoing influence of the weaker rupee and elevated interest rates as well as a shift in automaker sales reporting from wholesale to retail suggesting companies will seek to reduce excess inventory and streamline inventory management from dealers to the production line.

Recovery Meter

Roadway Travel (Updated 9/9)

According to the U.S. Department of Transportation, seasonally-adjusted vehicle miles traveled in July increased .6 percent from the same time a year ago. The cumulative travel estimate for 2024 is 1,898 billion vehicle miles.[26]

- Travel on all roads and streets changed by +1.2% (+3.5 billion vehicle miles) for July 2024 as compared with July 2023. Travel for the month is estimated to be 293.3 billion vehicle miles.
- The seasonally adjusted vehicle miles traveled for July 2024 is 274.3 billion miles, a +0.6% (+1.6 billion vehicle miles) change over July 2023. It also represents a 0.04% change (0.1 billion vehicle miles) compared with June 2024.
- Cumulative Travel for 2024 changed by +0.9% (+16.6 billion vehicle miles). The cumulative estimate for the year is 1,898.0 billion vehicle miles of travel.

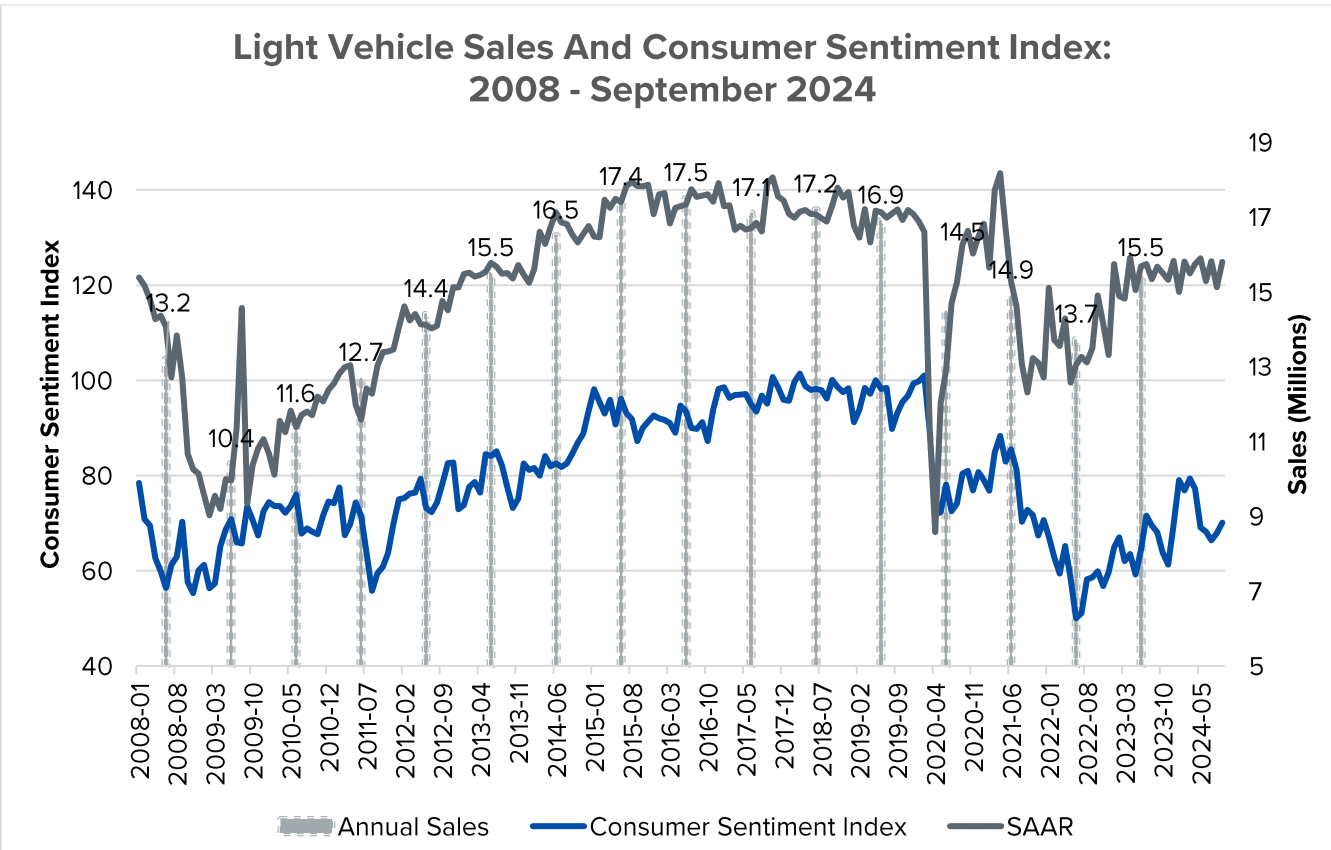


ALLIANCE FOR AUTOMOTIVE INNOVATION

Cleaner. Safer. Smarter.

Consumer Confidence and Sales (Updated 10/3)

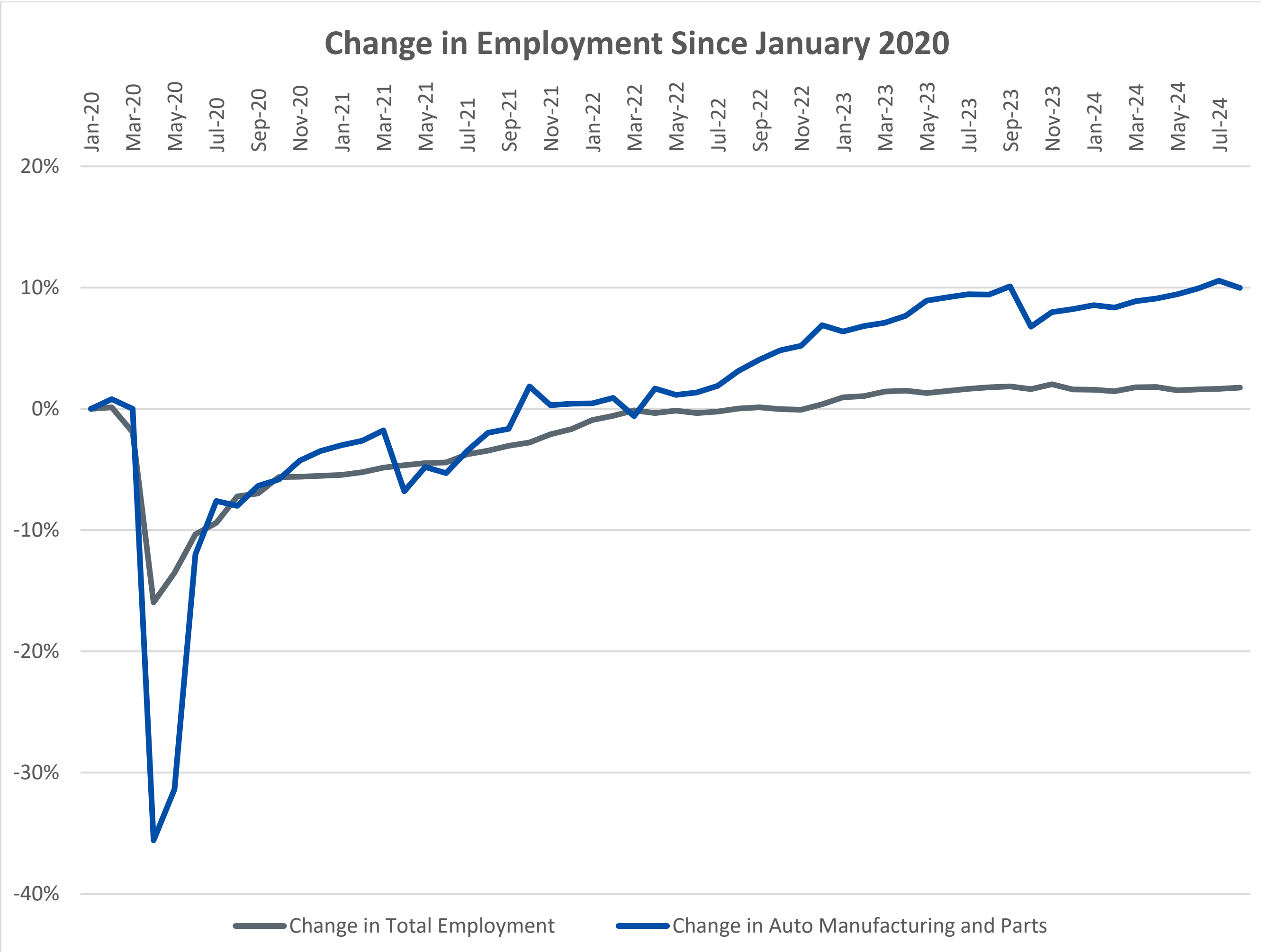
Surveys of Consumers Director Joanne Hsu[27]: "Consumer sentiment extended its early-month climb, ultimately rising more than 3% above August. This increase was seen across all education groups and political affiliations. Furthermore, all five index components gained, led by a 6% surge in one-year business expectations. The expectations index is now 13% above a year ago and reflects greater optimism across a broad swath of the population. While sentiment remains below its historical average in part due to frustration over high prices, consumers are fully aware that inflation has continued to slow. Sentiment appears to be building some momentum as consumers' expectations for the economy brighten. At the same time, many consumers continue to report that their expectations hinge on the results of the upcoming election. Relative to August, consumers across political parties are increasingly expecting a Harris presidency, though about two-thirds of Republicans still expect Trump to win.



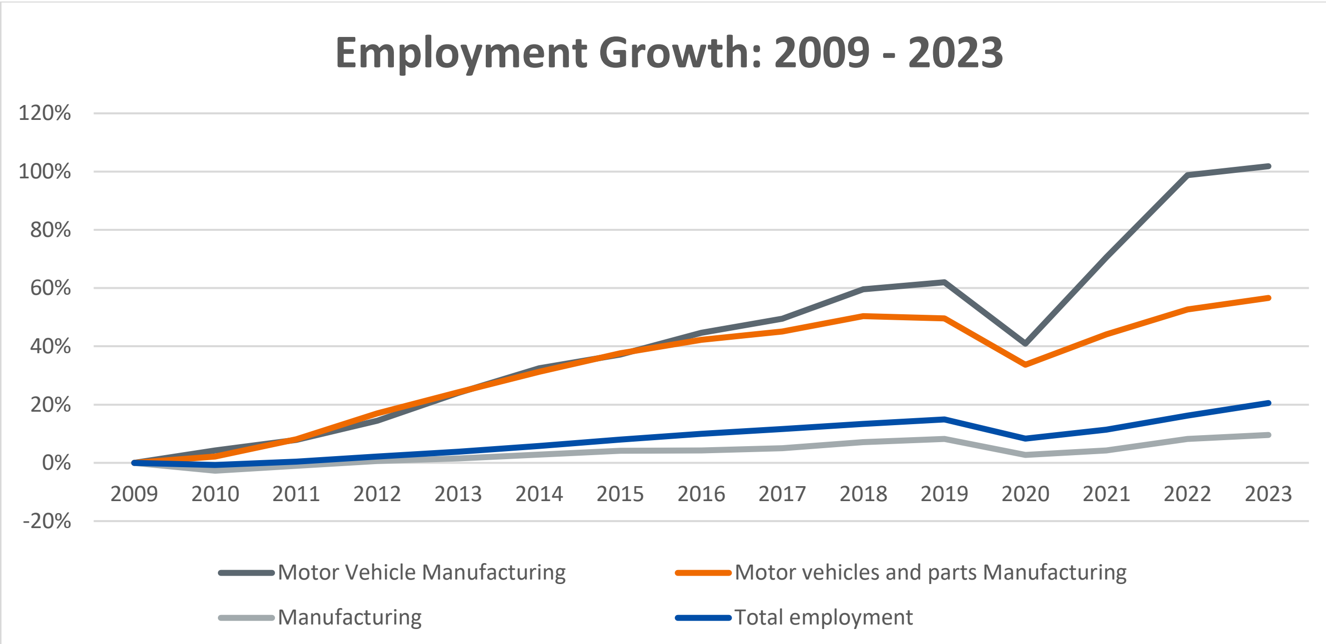
Employment (Updated 9/9)

Motor Vehicle And Parts Manufacturing Lost 5,900 Jobs in August.

After a loss of nearly 350,000 employees (about 35% of the workforce) in the height of the pandemic, employment in the Automobile Manufacturing and Parts sectors raced back but is now fighting losses due to supply chain disruptions with semiconductors.[28]



After the recession in 2009, the auto industry was credited with being on the leading edge of the recovery, which began a ripple effect through other parts of the country.[29] Additionally, the chart below shows how the recovery of jobs in motor vehicle manufacturing alone and motor vehicle and parts manufacturing far outpaced the recovery of manufacturing and total jobs.



Sources

[1] WardsIntelligence, U.S. Light Vehicle Sales, January 2021 – June 2023
[2] WardsIntelligence, North America Production, January 2021 – June 2023
[3] WardsIntelligence, North America Platform by Plant Production Forecast, Q1
[4] Haig Stoddard, "September U.S. Light-Vehicle Inventory Rises as the Industry Looks for Demand to Improve in Q4," WardsIntelligence, 10/2/2024
[5] Haig Stoddard, "September U.S. Light-Vehicle Inventory Rises as the Industry Looks for Demand to Improve in Q4," WardsIntelligence, 10/2/2024
[6] Haig Stoddard, "Rising U.S. Light-Vehicle Inventory in August, Sluggish Demand Spur Production Slowdowns," WardsIntelligence, 9/5/2024
[6] WardsIntelligence, "North America Production, December," 2019, 2020, 2021, 2022
[7] S&P Global Mobility, email, "S&P Global Mobility Monthly Automotive Update – August 2024," 8/19/2024
[8] Haig Stoddard, "September U.S. Light-Vehicle Sales up Slightly on SAAR basis," WardsIntelligence, 10/1/2024
[9] WardsIntelligence, U.S. Light Vehicle Sales, January 2013 – August 2024
[10] U.S. Energy Information Administration, Weekly Retail Gasoline and Diesel Prices, Regular price per gallon, including taxes
[11] WardsIntelligence, Fuel Economy Index, December 2013 & 2019
[12] WardsIntelligence, U.S. Light Vehicle Sales, August 2022 - 2024
[13] Haig Stoddard, "September U.S. Light-Vehicle Sales up Slightly on SAAR basis," WardsIntelligence, 10/1/2024
[14] J.D. Power, Press Release, "September Sales Decline Due to Timing of Labor Day Weekend But Combined August-September Results Show Retail Growth," 9/26/2024
[15] Kelley Blue Book, Press Release, "New-Vehicle Sales Incentives Climb Higher in July, According to Kelley Blue Book Estimates," 8/13/2024
[16] Bankrate, "Current Car Loan Interest Rates," Accessed 7/22/2024
[17] J.D. Power, Press Release, "September Sales Decline Due to Timing of Labor Day Weekend But Combined August-September Results Show Retail Growth," 9/26/2024
[18] U.S. Energy Information Administration, Regular Gasoline, www.eia.gov, Accessed 9/9/2024; U.S. Energy Information Administration, Weekly Cushing, OK WTI Spot Price, www.eia.gov, Accessed 9/9/2024
[19] EIA, "Short-Term Energy Outlook," 7/9/2024
[20] EIA, "Short-Term Energy Outlook," 7/9/2024
[21] Haig Stoddard, "September U.S. Light-Vehicle Inventory Rises as the Industry Looks for Demand to Improve in Q4," WardsIntelligence, 10/2/2024
[22] Haig Stoddard, "August North America Production Continues String of Underbuilds," WardsIntelligence, 9/19/2024
[23] WardsIntelligence, "North America Production, August ," 2019, 2020, 2021, 2022, 2023, 2024
[24] Haig Stoddard, "Global Vehicle Sales Rise Third Straight Month in May," *WardsIntelligence*, 6/27/2024
[25] S&P Global Mobility, email, "S&P Global Mobility Monthly Automotive Update – September 2024," 9/16/2024

[26] U.S Department of Transportation, https://www.fhwa.dot.gov/policyinformation/travel_monitoring/21septvt/, Accessed 5/3//2024
[27] University of Michigan, Survey of Consumers, http://www.sca.isr.umich.edu/, Accessed 7/9/2024
[28] Bureau of Labor Statistics, Current Employment Statistics, Accessed 7/9/2024
[29] Jerry Hirsch, "Auto Industry Has Soared Since 2010, Leading Economic Recovery," *Los Angeles Times*, 1/3/14