

READING THE METER

A Look Inside A Cleaner, Safer, Smarter Auto Industry.

November 5, 2021

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Forecast Meter

Forecast Summary (Updated 11/5)

2020-2021 Sales,¹ Extended Sales Forecast² and Production Forecasts³		
	U.S. Sales & Forecasts	North American Production
June '20	1,103,791 (-24% YoY)	1,135,807 (-19.7% YoY)
July '20	1,227,091 (-12.1% YoY)	1,261,884 (+2.2% YoY)
August '20	1,325,144 (-19.1% YoY)	951,983 (-1.1% YoY)
September '20	1,344,310 (6.4% YoY)	1,395,830 (+2.1% YoY)
October '20	1,345,401 (0.9% YoY)	1,413,207 (+3.7% YoY)
November '20	1,193,180 (-15.4% YoY)	1,260,763 (-6.4% YoY)
December '20	1,608,875 (5.9% YoY)	1,115,542 (+2.8% YoY)
January '21	1,094,689 (-3.6% YoY)	1,175,940 (-14.0% YoY)
February '21	1,180,506 (-5.3% YoY)	1,120,200 (-22.9% YoY)
March '21	1,581,067 (+59.7% YoY)	1,376,904 (31% YoY)
April '21	1,512,186 (+111.4 YoY)	1,094,891 (-21% YoY)
May '21	1,577,941 (+41% YoY)	729,879 (+271% YoY)
June '21	1,296,517 (+17% YoY)	1,107,958 (-1.9% YoY)
July '21	1,288,494 (-7.9% YoY)	926,035 (3% YoY)
August '21	1,090,446 (-11% YoY)	1,113,327 (-19% YoY)
September '21	1,006,875 (-25% YoY)	907,470 (-33.4% YoY)
October '21	1,046,282 (-20% YoY)	1,185,772 (-16% YoY) (forecast)
1st Quarter '20	3,476,512 (-12.7% YoY)	3,754,533 (-11.7% YoY)
2nd Quarter '20	2,948,410 (-33.3% YoY)	1,371,420 (-67.6% YoY)
3rd Quarter '20	3,904,539 (-9.2% YoY)	3,989,982 (-.5% YoY)
4th Quarter '20	4,159,622 (-2.1% YoY)	3,925,709 (-2.5% YoY)
1st Quarter '21	3,869,872 (+11.3 YoY)	3,688,512 (-4.7% YoY)
2nd Quarter '21	4,153,855 (+20.2% YoY)	3,309,000 (132% YoY)
3rd Quarter '21	13.3 SAAR (-14% YoY)	2,930,000 (-26.7% YoY)
4th Quarter '21	13 SAAR (forecast)	3,440,000 (-10.1% YoY) (forecast)
2020 Calendar Year	14,463,935 (-14.7% YoY)	12,905,447 (-23.1%)
2021 Full Year Estimate	15 million units (4% YoY)	13,130,000 (1.4% YoY)

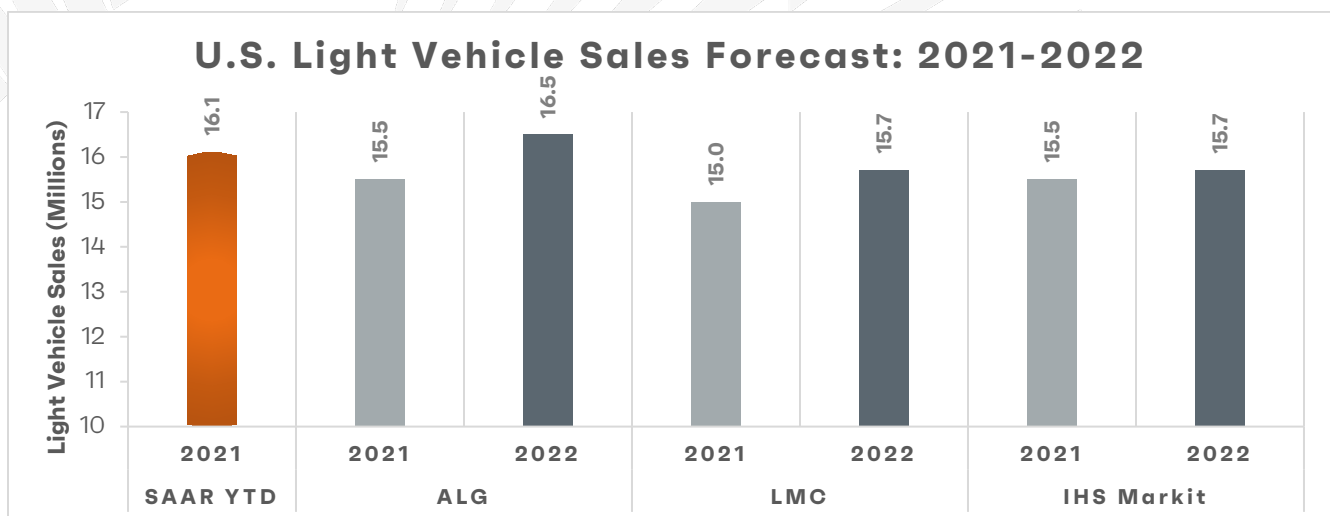
U.S. Light Vehicle Sales Outlook (Updated 11/5)

Wards Intelligence Outlook (11/5)⁴: “There finally are some solid, though tenuous, signs that the global supply-chain disruptions might be starting to improve, at least to the point the U.S. market could be on the verge of resuming consistent, albeit slow, growth. The indicators - sequential increases in sales and inventory, as well as expected improvement in production for the U.S. market - could easily reverse course in November, but, if the production outlook holds up, could be the start of the final road back to pre-Covid sales levels.

“The first ray of light was October U.S. light-vehicle sales increasing on a seasonally adjusted basis from the prior month for the first time since April. Second, Oct. 31 inventory, up 4.6% from September, marked the first sequential increase after eight consecutive declines. . . .

“The next indicator to watch for will be if sales in November increase on a seasonally adjusted basis from October. Initial modeling indicates November declines from October’s 13.0 million-unit seasonally adjusted annual rate. However, there is upside to sales in November. Production, and thus availability, appears to be improving since September and dealers are selling a high percentage of vehicles as soon as they hit the lot, which also means they never get counted in month-end inventory. Also, automakers are delivering more of the unfinished vehicles that have been sitting in lots for weeks (maybe months) waiting to be shipped after the missing microchip(s) becomes available – those vehicles were not included in inventory totals reported to WI.

“Sales for entire-2021 are forecast to total 15.0 million units, which places the Q4 SAAR at 13.0 million, and, if the forecast holds firm, means November-December combined won’t improve on October. However, WI considers there to be more upside than downside to the Q4 outlook. November’s 24 selling days are three fewer than October, so the month’s raw sales volume might not increase month-to-month even if the SAAR does.”



J.D. Power October Forecast (10/27)⁵: “New-vehicle retail sales for the month of October 2021 are expected to decline when compared with October 2020 and October 2019, according to a joint

forecast from J.D. Power and LMC Automotive. Retail sales of new vehicles this month are expected to reach 943,500 units, a 17.4% decrease compared with October 2020, and a 15.4% decrease compared with October 2019 when adjusted for selling days. October 2021 has one fewer selling day than October 2020 but the same number of selling days as October 2019. Comparing the same sales volume without adjusting for the number of selling days translates to a decrease of 20.4% from 2020 and a 15.4% decrease from 2019.”

North American Production & Inventory Outlook (Updated 11/5)

Wards Intelligence Inventory Outlook (11/5)⁶: “Inventory is expected to increase again this month from the prior month but decline in December. It’s typical for inventory to fall from November to December because of the lengthy holiday shutdowns scheduled at most plants. That, combined with demand at year’s end usually rising from November, will conspire to cut inventory in December, even if supply-chain disruptions continue to ease.

“Oct. 31 inventory of North America-built vehicles rose 8.0% from September to 824,811 units, 62.4% below like-2020. Days’ supply rose to 27 from the prior month’s 25 but was well below same-month 2020’s 58.

“Import inventory declined 7.9% month-to-month to 192,227 units in October and was 69.7% below like-2020. Days’ supply increased to 23 from the prior month’s 21 but was below October 2020’s 60.”

Wards Intelligence Production Outlook (10/27)⁷: “With global supply bottlenecks refusing to ease up, expectations for Q4 North America vehicle production have been lowered, while the final total for the third quarter was 196,000 units below month-ago’s estimate.

“Production of light vehicles and medium-/heavy-duty trucks in Q4 are tracking to a total of 3.56 million units, 9.7% below like-2020’s 3.94 million. The year-ago October-December period, which was the last quarter before the microchip shortage began to significantly add to the supply-chain disruptions, also was the last quarter to record a year-over-year gain.

“The Q4 outlook is 349,900 units below month-ago’s expectations for the period.

“Light-vehicle output in Q4 is pegged at 3.44 million units, 10.1% below like-2020, and a reduction of 348,200 units from the previous update for the period.”

Wards Intelligence Outlook For 2021 (10/27)⁸: “Production for entire-2021 is tracking to 13.61 million units, 1.9% above 2020, and a meager increase considering the amount of production cut last year by slowdowns directly related to the Covid-19 pandemic. Excluding 2020, production in 2021 will be lowest for any calendar year since 13.48 million in 2011. Light-vehicle output for entire-2021 is projected at 13.13 million units, 1.4% above 2020’s 12.95 million, which – excluding 2020’s 12.96 million – was the lowest since 2011’s 13.09 million.”

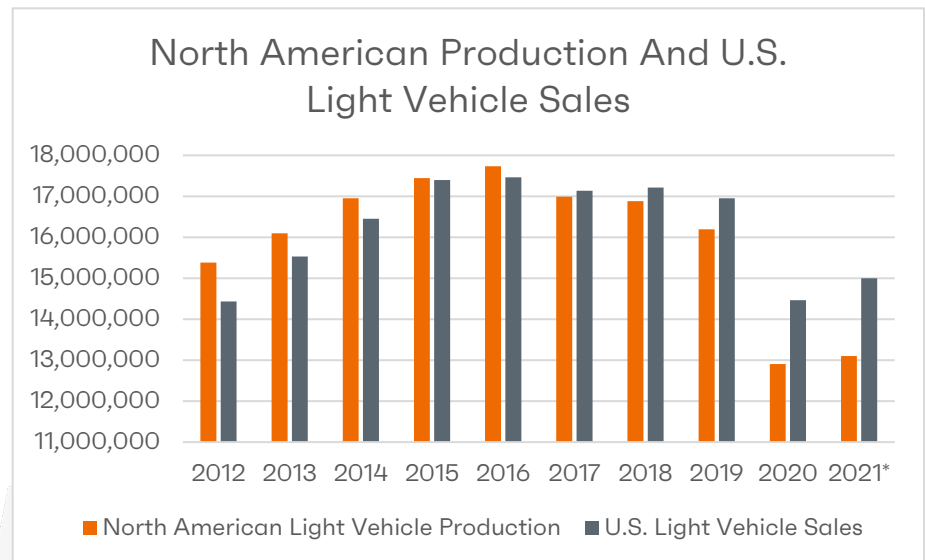
IHS Markit North American Outlook (10/27)⁹: “The outlook for North America light vehicle production was reduced by 120,000 units and increased by 5,000 units for 2021 and 2022, respectively (and increased by 94,000 units for 2023). The forecast revisions for 2021 were primarily driven by semiconductor challenges taking a greater toll on production at Toyota and Honda than previously expected. Conversely, Ford continued to show marked

improvements, which are expected to continue into the fourth quarter. Production in 2022 remains largely unchanged following the significant reductions implemented for the September 2021 forecast release. The October 2021 forecast continues to reflect those reductions more heavily weighted in the first half as expectations are for the supply of semiconductors to improve steadily throughout the year. While production is projected to improve over the low bases of 13.0 million in 2020 and 2021, it will remain constrained not only by the shortage of semiconductors and their long lead times, but other supply chain, logistics and labor related issues hampering a return to more normalized production levels. Nevertheless, opportunities remain for manufacturers to outperform the reduced volumes in 2022 based on their ability to secure the needed components and resources to maintain vehicle production. This is expected to vary by manufacturer with volatility and visibility into weekly planning and scheduling expected to remain problematic over the coming months.”

IHS Global Outlook (9/22)¹⁰: “The IHS Markit light vehicle production forecast has been cut by 6.2% or 5.02M units in 2021, and by 9.3% or 8.45M units in 2022, to stand at 75.8M units and 82.6M units, respectively. For 2023 we have reduced the forecast by 1.05M units or 1.1% to 92.0M units; this is a front-loaded adjustment and from the second quarter we expect output levels will be able to accelerate as supply chains return to normal. If this is the case then strong pent-up demand and the pressure to rebuild stock levels is expected to support elevated levels of production in 2024 and 2025, with 2024 now forecast to hit 97.3M units, up 3.2% compared to the previous forecast and 2025 forecast at 98.9M units an increase of 2.4%.

“This is the largest single adjustment to the outlook in what has been a turbulent past nine months.

“We estimate that 1.44 million units of production were lost in Q1 and a further 2.60 million units in Q2; currently Q3 losses are running at 3.1 million units and rising. The outlook for Q4 now reflects heightened risk as challenges to the supply chain - primarily semiconductors - remain entrenched.”

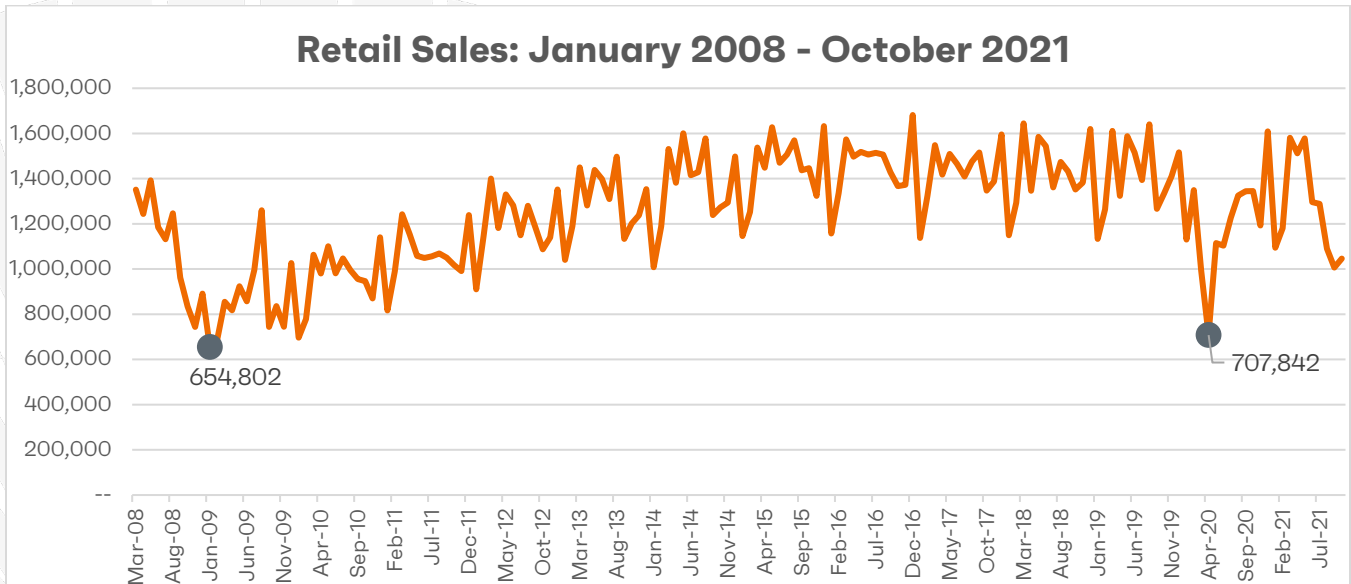


Market Meter

U.S. Light Vehicle Sales (Updated 11/5)

Monthly Sales (Updated 11/5)

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 11/5)

WardsIntelligence: “U.S. light-vehicle sales turned up in October on a seasonally adjusted annualized basis for the first time since beginning a precipitous drop in May, even finishing the month on a strong note to beat expectations.

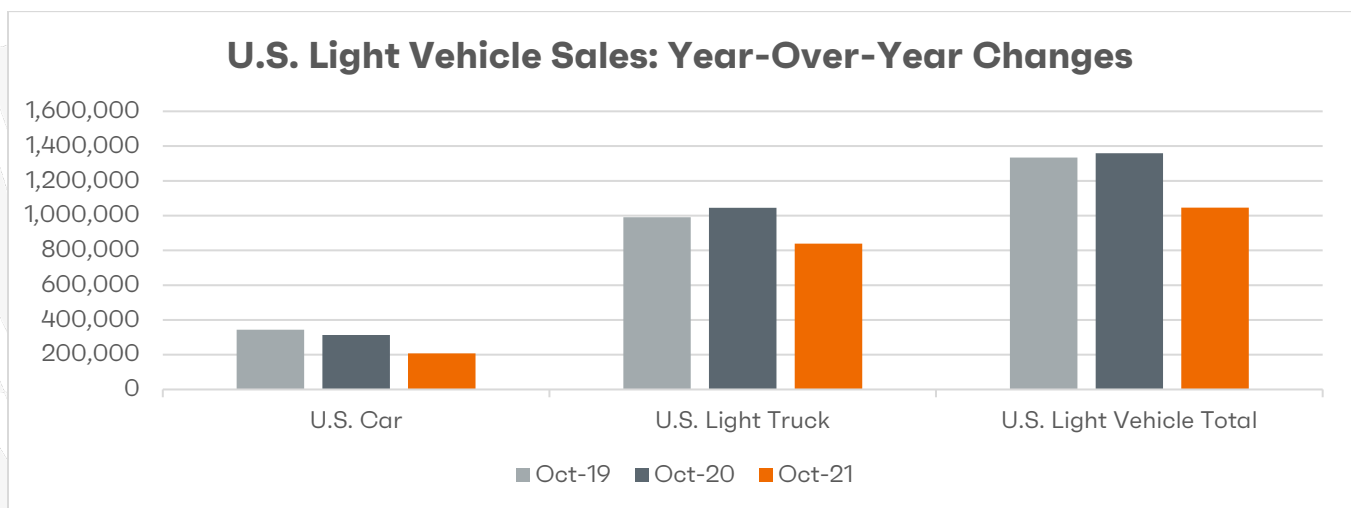
“October sales totaled a 13.0 million-unit seasonally adjusted annual rate, still weak results - and well below actual demand - but up from the prior month’s 12.2 million, which had marked the fifth straight month-to-month decline and was 33% below the most recent peak of 18.3 million in April.

“The month-to-month gain occurred despite inventory at the end of September dropping to 972,000 units, the first time in decades the total fell below one million, and roughly one-fourth the total averaged over the five years prior to the onset of the pandemic in 2020. Sales averaged more than 17

million units annually over those five years – 2015-2019 - and volume this year would have matched that period if enough inventory had been on hand.

“Raw sales volume increased 3.6% month-to-month – the first increase since May – to 1.046 million units, though that was thanks to October’s extended sales period, which included deliveries on Nov. 1, because of the way the industry treats any month that ends on a weekend. Measured by daily selling rates, sales fell 4.1% to 38,751 over October’s 27 selling days from September’s 40,407 – 25 selling days.

“In comparison to same-month 2020, October’s SAAR was well below year-ago’s 16.4 million units, while the DSR fell 20.2% from last year’s 48,533 - 28 selling days – and total volume of 1.046 million was down 23.0% from 1.359 million. Sales in October were expected to improve on September’s SAAR but apparently picked up some steam at the end of the month.”¹¹



Fleet Sales (Updated 11/5)

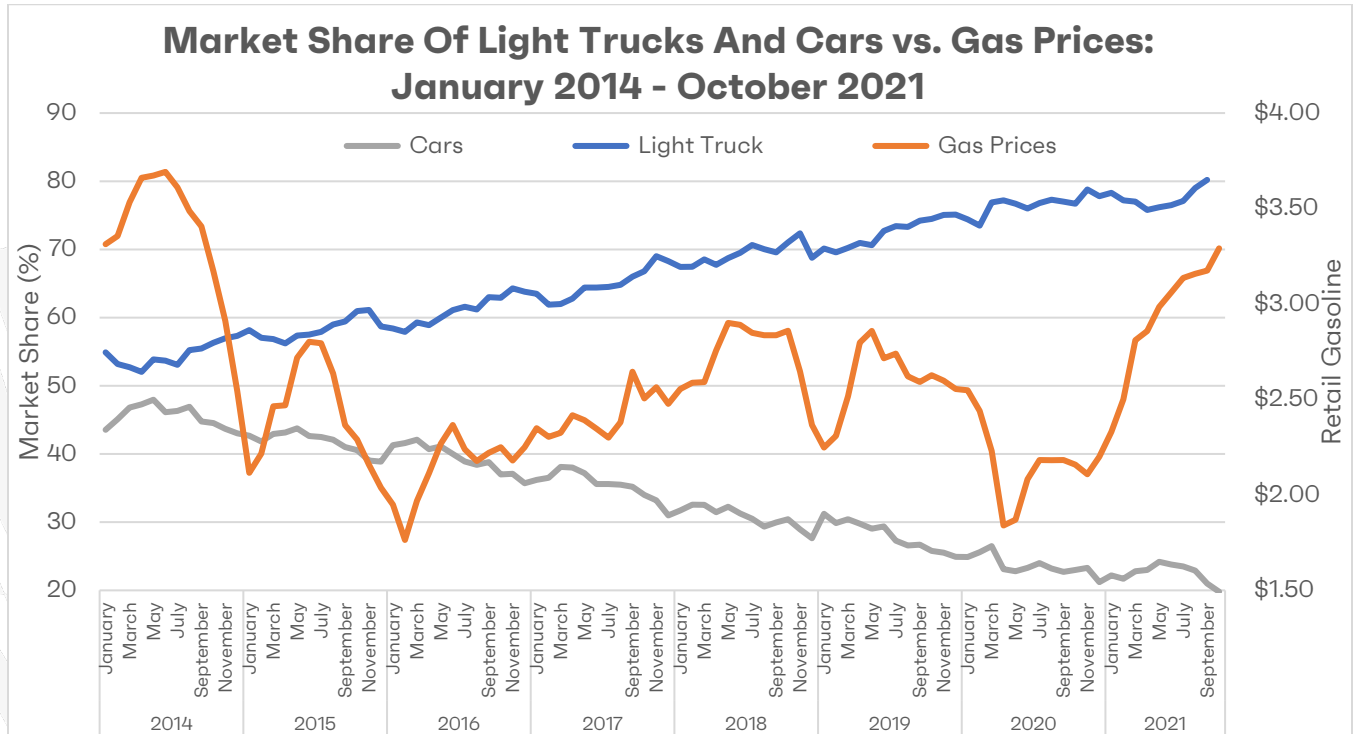
TrueCar¹²: “Fleet sales for October 2021 are expected to be down 14% from a year ago and down 5% from September 2021 when adjusted for the same number of selling days.”

J.D. Power¹³: “Fleet sales are expected to total 142,000 units in October, down 15.2% from October 2020 and down 35.8% from October 2019 on a selling day adjusted basis. Fleet volume is expected to account for 13% of total light-vehicle sales, flat from 13% a year ago.”

Segments vs. Gas Prices (Updated 11/5)

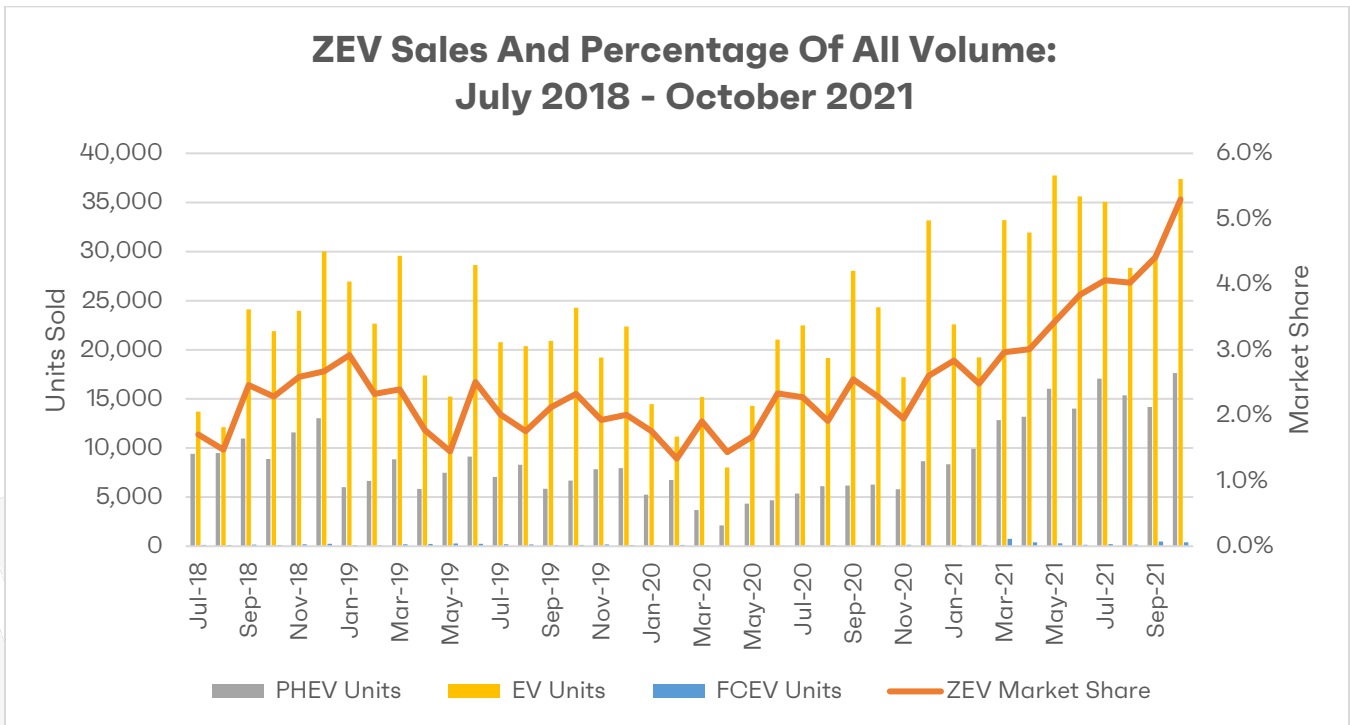
Monthly Sales For September: Light trucks accounted for 80% of sales in October, a 3.3 pp increase in market share from a year ago, and the highest level ever. Compared to 2020, sales of cars are down more than 106,000, and down more than 136,000 from October 2019, when cars comprised 26% of the market as opposed to the 20% 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 segments¹⁴ and gas was over \$3.00¹⁵ 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 \$2.57 a gallon (through August 2021) 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.¹⁶



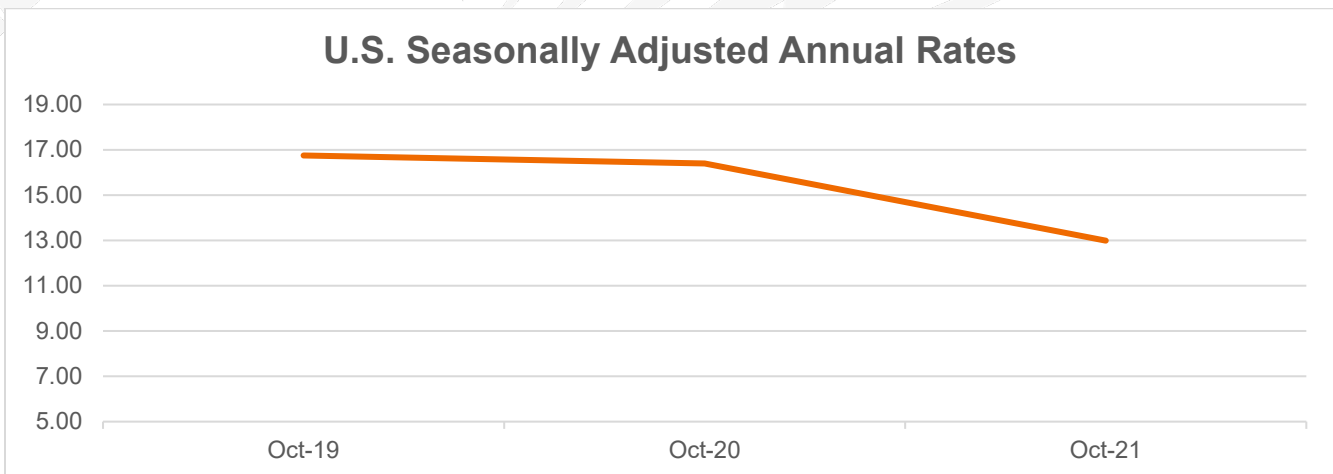
ZEV Powertrain Sales (Updated 11/5)

Sales of zero emission vehicles (BEV, PHEV, & Fuel Cell) accounted for 5.3% of total vehicle sales in October 2021, up 3 pp from a year ago and up .9 from September 2021. Sales of battery electric vehicles led the way for ZEVs, accounting for 3.6% of total sales, up 1.2 pp from October 2020. Plug-in hybrids accounted for 1.68%, more than three times the amount from the same time last year.¹⁷



Seasonally Adjusted Annual Rates (Updated 11/5)

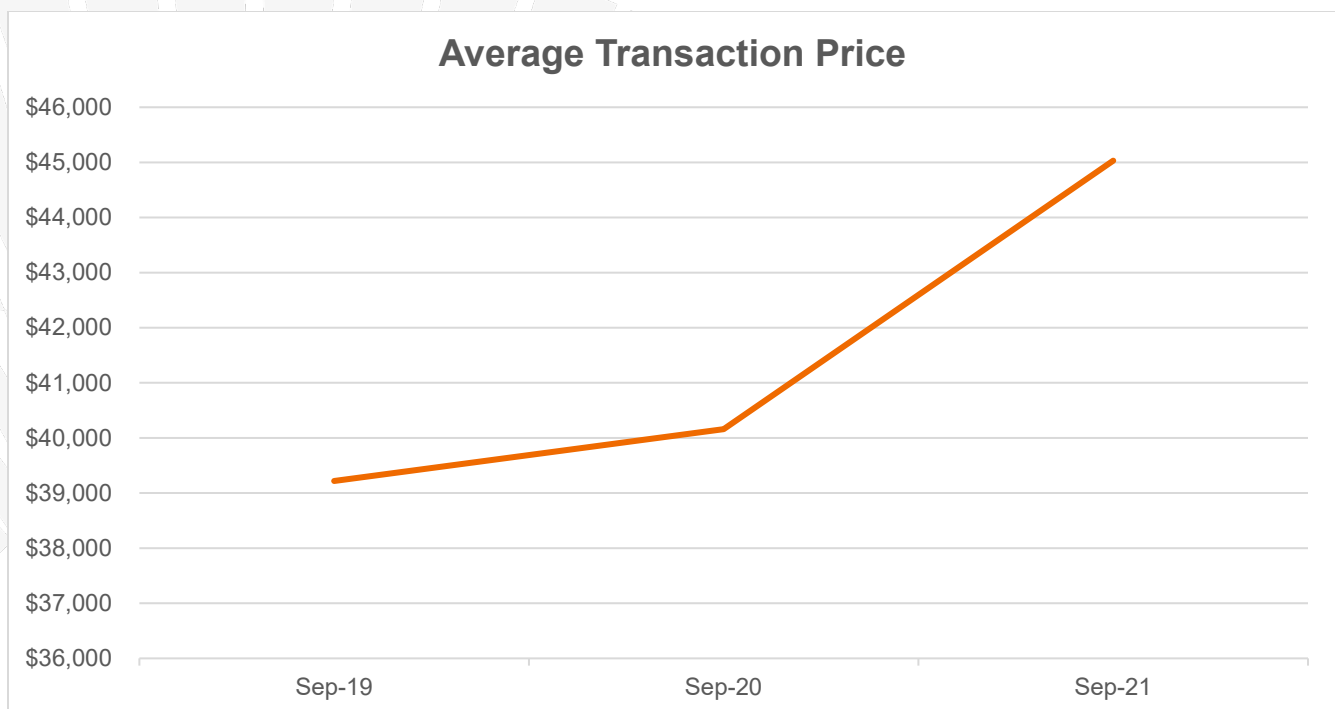
WardsIntelligence: “In comparison to same-month 2020, October’s SAAR was well below year-ago’s 16.4 million units, while the DSR fell 20.2% from last year’s 48,533 - 28 selling days – and total volume of 1.046 million was down 23.0% from 1.359 million. Sales in October were expected to improve on September’s SAAR but apparently picked up some steam at the end of the month.”¹⁸



Average Transaction Price (Updated 11/5)

J.D. Power¹⁹: “In October 2021, average transaction prices are expected reach a record high of \$43,999, the fifth consecutive month above \$40,000. For context, average transaction prices are trending to be 19.3% higher than in October 2020 when prices hit \$36,887. This is partially due to the near evaporation of manufacturer incentives. The average manufacturer incentive per vehicle is on pace to be a record low of \$1,628, a decrease of \$1,871 from a year ago. Expressed as a percentage of the average vehicle MSRP, incentives for October 2021 are trending toward a record low of 3.7%, down nearly 4.7 percentage points from a year ago and the first time on record below 4.0%.”

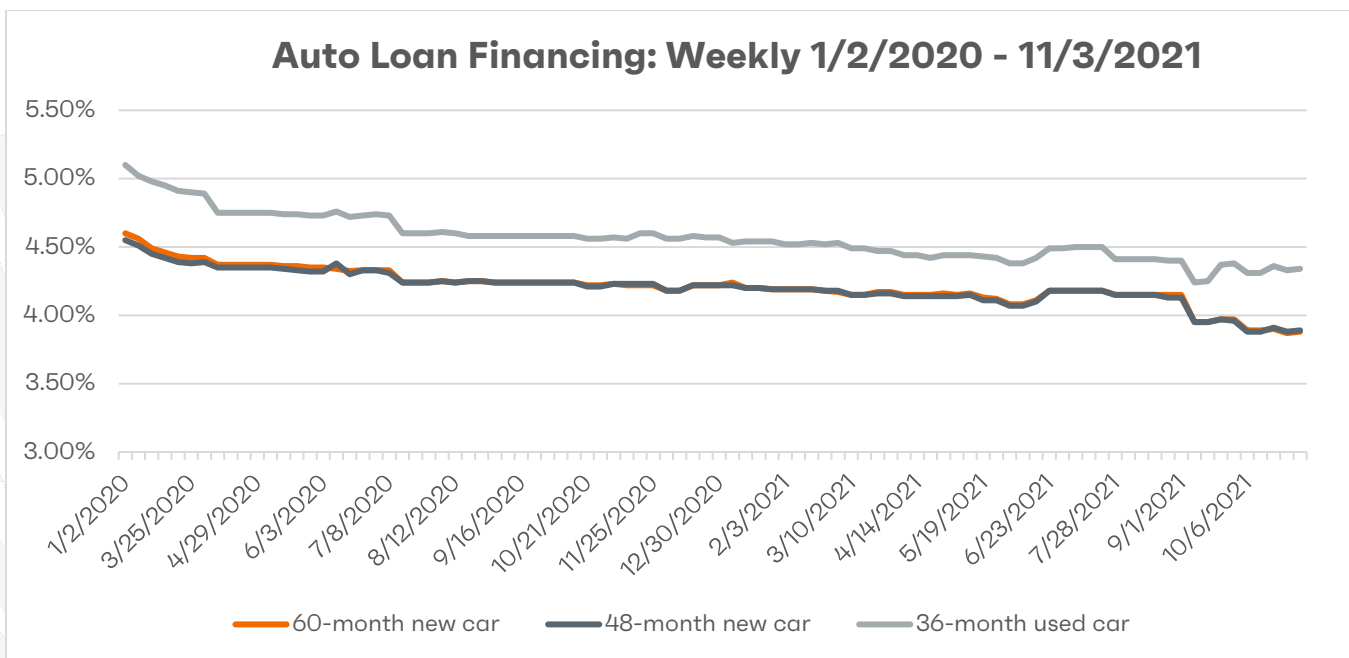
Kelley Blue Book (September): “New-vehicle prices hit another all-time high in September 2021, marking the sixth straight record-setting month and surpassing \$45,000 for the first time, according to a new report from Kelley Blue Book. At \$45,031, the average transaction price (ATP) for a new vehicle was up 12.1% (or \$4,872) from one year ago in September 2020 and up 3.7% (or \$1,613) from August 2021.”²⁰



Auto Loan Financing (Updated 11/5)

Interest Rates Remain Near Year-Long Low: Interest rates for new cars are currently at the lowest level in more than a year at 3.88%. Rates also remained near a year-long low on the 36-month used car loan at 4.34%. Since the beginning of last year, rates are down 0.72%, and down 0.35% since the same time a year ago.²¹

Dates	60-month new car	48-month new car	36-month used car
1/2/2020	4.60%	4.55%	5.10%
11/4/2020	4.23%	4.23%	4.57%
10/27/2021	3.87%	3.88%	4.33%
11/3/2021	3.88%	3.89%	4.34%
One Week Change	0.01%	0.01%	0.01%
Two Week Change	-0.02%	-0.02%	-0.02%
Change since 1/3/20	-0.72%	-0.66%	-0.76%
One Year Change	-0.35%	-0.34%	-0.23%



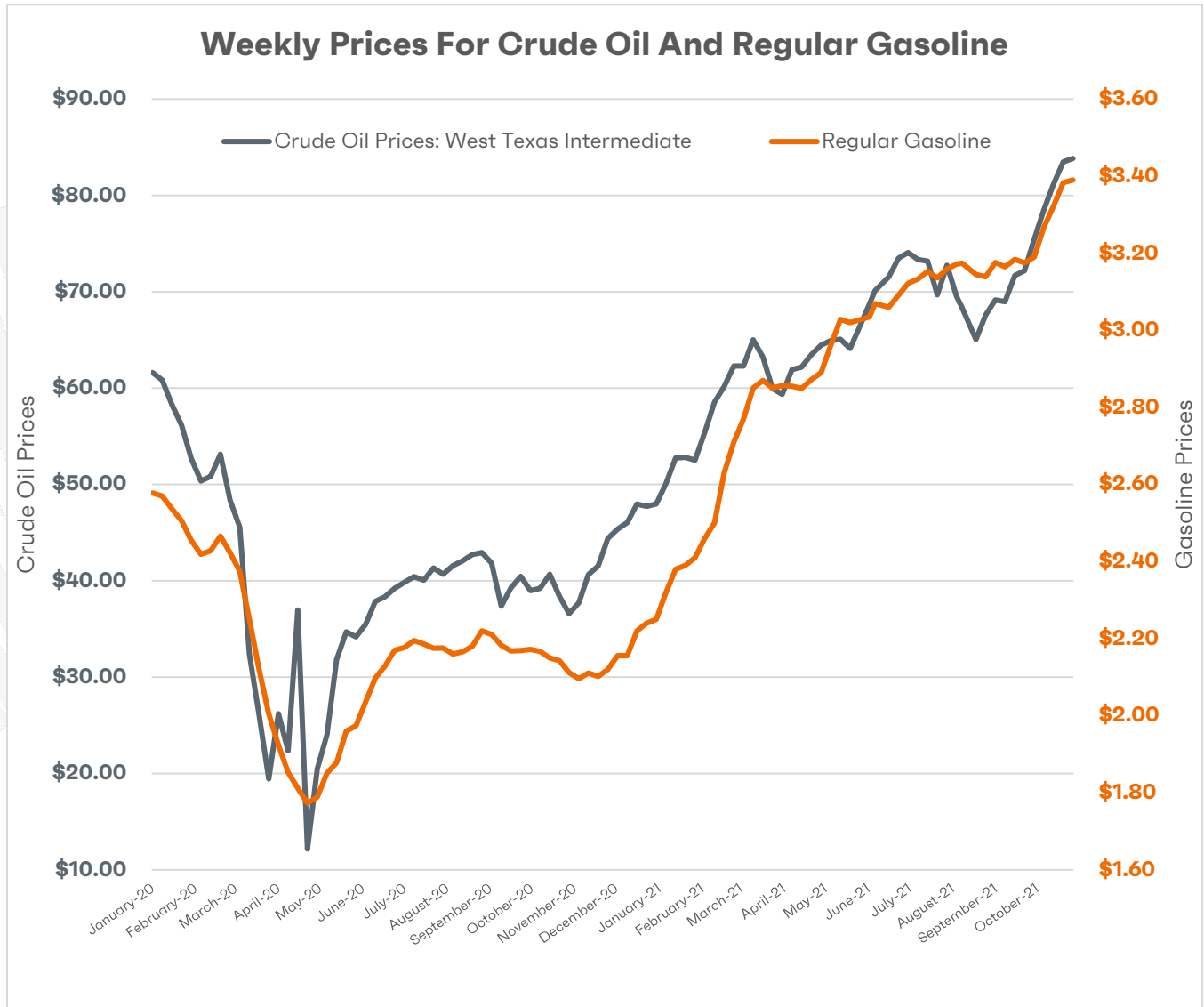
Crude Oil and Gas Prices (Updated 11/5)

EIA Outlook For Gasoline (10/27)²²: “U.S. regular gasoline retail prices averaged \$3.18 per gallon (gal) in September, up 2 cents/gal from August and almost \$1/gal higher than in September 2020. Recent gasoline price increases reflect increasing crude oil prices outweighing falling gasoline wholesale margins. We forecast that retail gasoline prices will average \$3.21/gal in October before falling to \$3.05/gal in December.”

EIA Outlook For Oil (10/27)²³: “Brent crude oil spot prices averaged \$74 per barrel (b) in September, up \$4/b from August and up \$34/b from September 2020. Brent spot prices have risen from their September average to more than \$80/b in early October. Oil prices have increased over the past year as result of steady draws on global oil inventories, which averaged 1.9 million barrels per day (b/d) during the first three quarters of 2021. In addition to sustained inventory draws, prices increased after

the October 4 announcement by OPEC+ that the group would keep current production targets unchanged.”

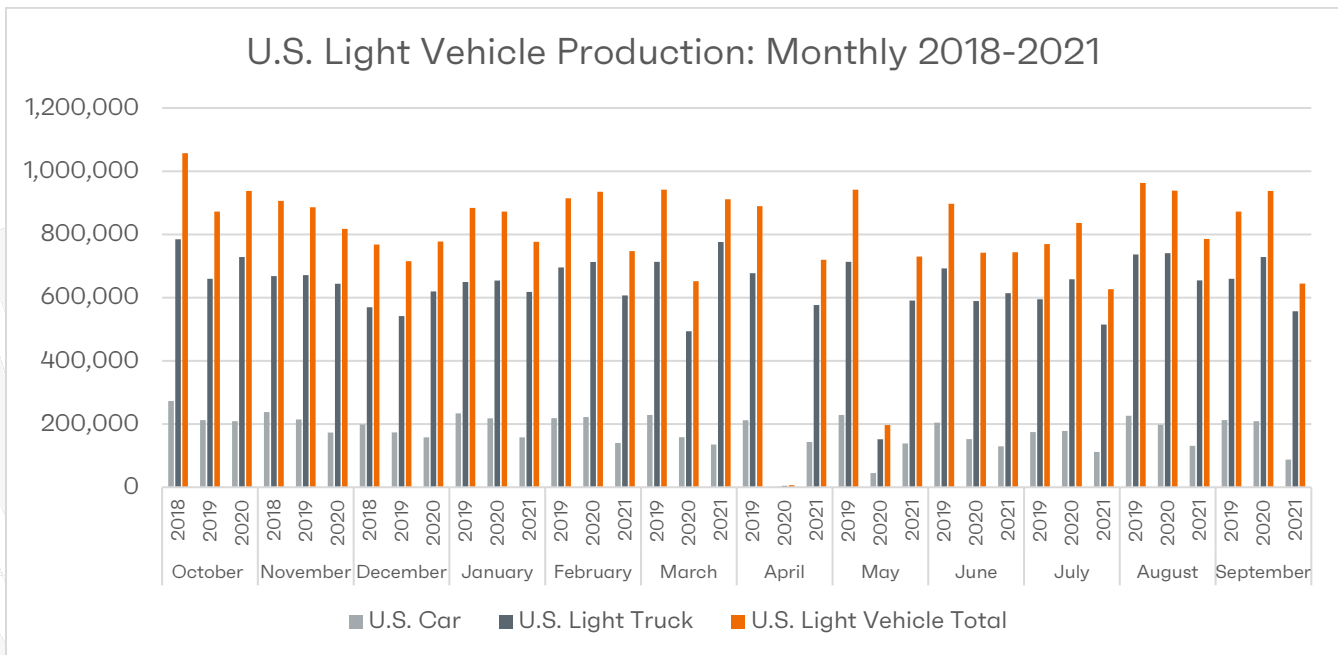
Gas and Oil Hit New Multi-Year Highs: Oil prices, as benchmarked at West Texas Intermediate, have raised to nearly \$84 a barrel, highest since 2014. Since election day, oil prices have climbed nearly \$47 a barrel. Gas prices rose to \$3.39, highest since October 2014. Gas is 31% higher than the beginning of 2020.²⁴



Production Meter

U.S. Light Vehicle Production (Updated 10/27)

U.S. Light vehicle production for September 2021 fell month-over-month, totaling 644,520 (87,777 cars, 556,743 light trucks) down 17% from August and 29% from the same period in 2020.



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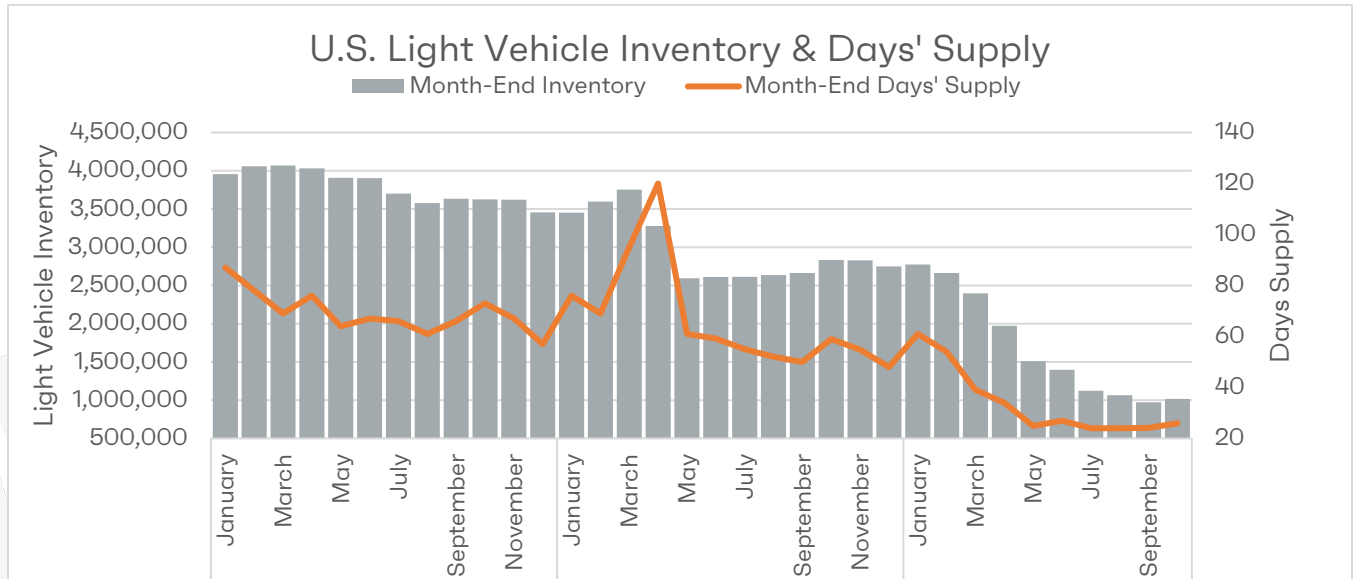
U.S. Light Vehicle Inventory and Days' Supply (Updated 11/5)

WardsIntelligence Inventory Update (10/6)²⁶: “Oct. 31 inventory, up 4.6% from September, marked the first sequential increase after eight consecutive declines. Inventory, which remains at historic lows and well below the levels most manufacturers currently desire to meet demand, totaled 1.02 million units heading into November, up from the prior month’s 973,000 units, and 64.0% below like-2020’s 2.83 million. Days’ supply increased to 26 from September’s 24 and was well below October 2020’s 58 and the historically typical range for the month of between 70 and 75....

“Inventory is expected to increase again this month from the prior month but decline in December. It’s typical for inventory to fall from November to December because of the lengthy holiday shutdowns scheduled at most plants. That, combined with demand at year’s end usually rising from November, will conspire to cut inventory in December, even if supply-chain disruptions continue to ease.

“Oct. 31 inventory of North America-built vehicles rose 8.0% from September to 824,811 units, 62.4% below like-2020. Days’ supply rose to 27 from the prior month’s 25 but was well below same-month

2020's 58. Import inventory declined 7.9% month-to-month to 192,227 units in October and was 69.7% below like-2020. Days' supply increased to 23 from the prior month's 21 but was below October 2020's 60."



Global Meter

Global Light Vehicle Sales Outlook (Updated 11/5)

Wards Intelligence Outlook: “World vehicle sales in September declined 20.4% year-over-year to 6.43 million. September marked the third consecutive month of losses as the ongoing global chip shortage continues to strain the auto industry.

“All regions reported losses for the month, with Europe facing the biggest drop at 24.6% to 1.36 million, compared to 2020’s 1.80 million. The region’s market share slightly dropped to 21.1% from year-ago’s 22.3%. Spain (-17.7%), France (-19.5%) and Russia (-22.0%) saw declines in vehicle sales for September. The downturn was even sharper for Germany (-24.9%), Italy (-30.5%) and the U.K. (-34.9%).

“Year-to-date vehicle sales for Europe were up 9.9% to 12.87 million.

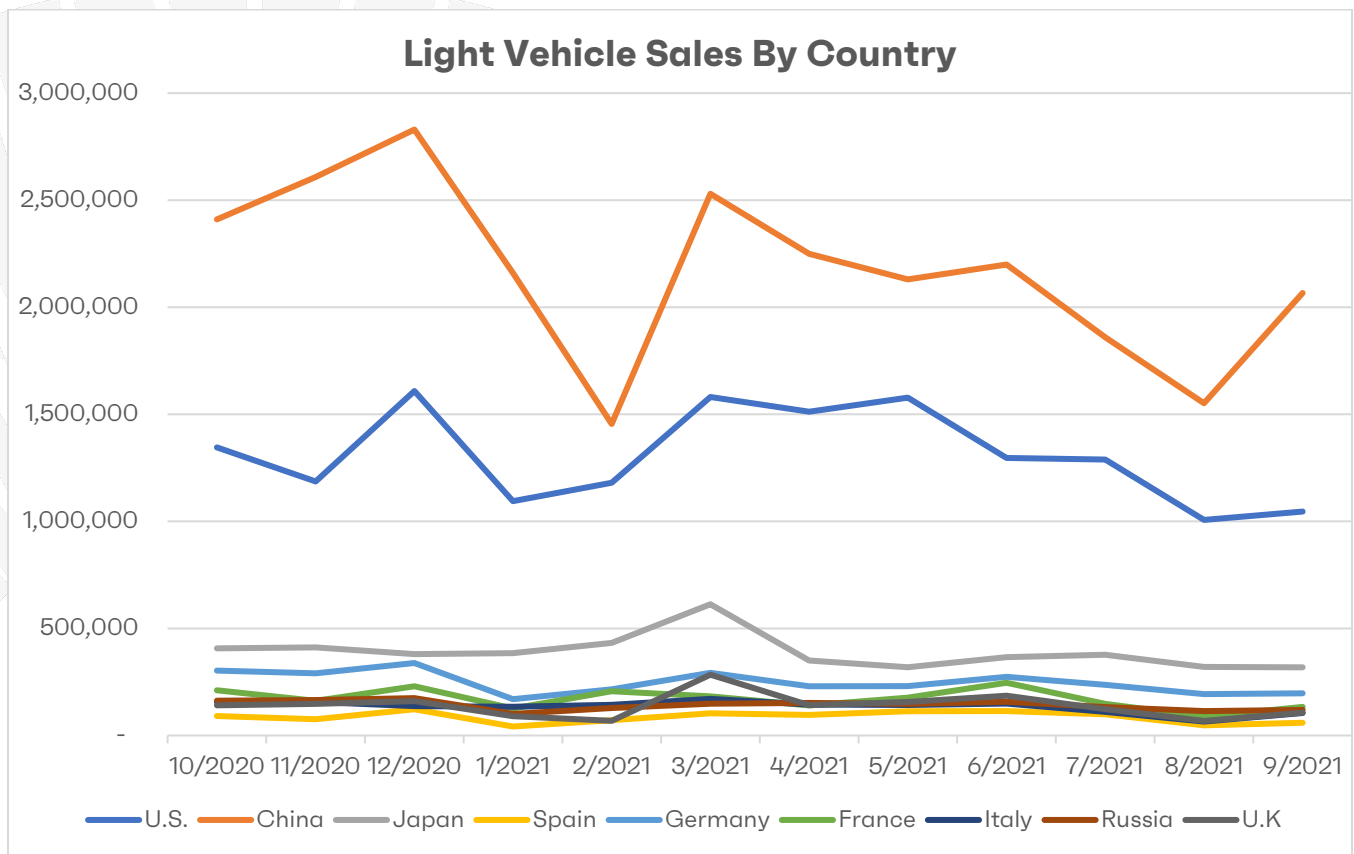
“Vehicle sales in North America experienced a 22.3% year-over-year decline to 1.28 million in September. All countries reported losses, with the U.S. facing the biggest drop at 24.4% to 1.04 million deliveries, mainly caused from the supply-chain disruptions. Canada fell 15.1% to 153,000, while Mexico saw a modest decline of 1.0% to 79,000 deliveries. The region’s 9-month total was up 13.4% to 14.13 million. The situation was similar for Asia Pacific as regional sales shrank 20.1% to 3.22 million compared to last year’s 4.03 million.

“September marked the fifth consecutive month of losses for China, as vehicle sales fell 19.3% to 2.15 million compared to last year’s 2.67 million. Year-to-date deliveries improved 8.6% to 19.37 million.

“Japan (-32.2%, estimated), South Korea (-20.8%, estimated) and Thailand (-19.1%, estimated) experienced declines in September. Monthly vehicle sales registrations also shrank for India (-36.6%) to 223,000 units. The picture was different in Australia (+20.8%) and New Zealand (+51.5%), as both countries experienced gains in September with 83,000 and 17,000 deliveries, respectively.

“In South America regional vehicle sales fell 13.4% to 271,000. The drop was driven from monthly losses in Brazil (-25.3%) as most countries saw modest improvements. Chile (+33.6%), Colombia (+23.8) and Uruguay (+25.2%) reported year-over-year gains for September, while sales in Argentina were down 10.3%.”²⁷

Sales in select countries around the globe, raw volume by month:

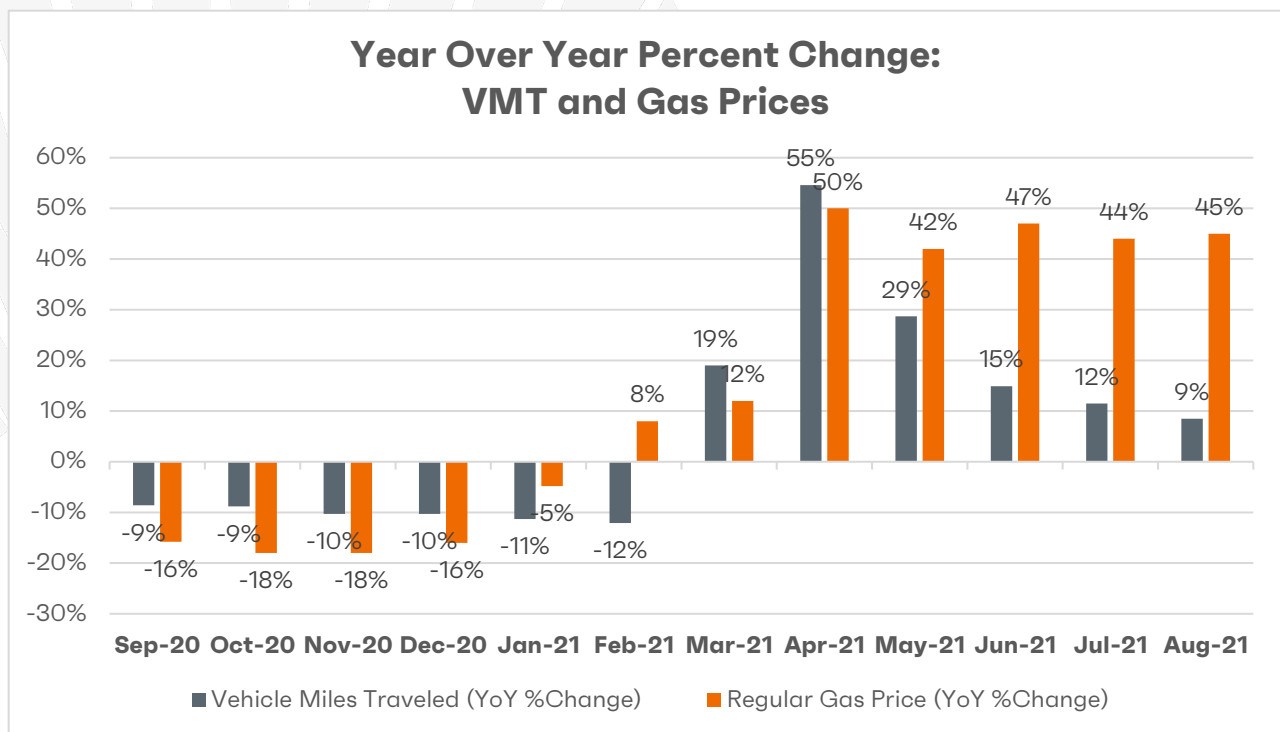


Recovery Meter

Roadway Travel (Updated 10/27)

According to the U.S. Department of Transportation, seasonally-adjusted vehicle miles traveled in August rose 8.5% from the same time a year ago. The cumulative travel estimate for 2021 is 224.4 billion vehicle miles.²⁸

- Travel on all roads and streets changed by 8.3% (21.0 billion vehicle miles) for August 2021 as compared with August 2020. Travel for the month is estimated to be 273.8 billion vehicle miles.
- The seasonally adjusted vehicle miles traveled for August 2021 is 261.1 billion miles, an +8.5% (+20.4 billion vehicle miles) increase over August 2020. It also represents -2% decline (-5.2 billion vehicle miles) compared with July 2021.
- Cumulative Travel for 2021 changed by 12.2% (224.4 billion vehicle miles). The cumulative estimate for the year is 2,068.8 billion vehicle miles of travel.



Economic News (Updated 10/27)

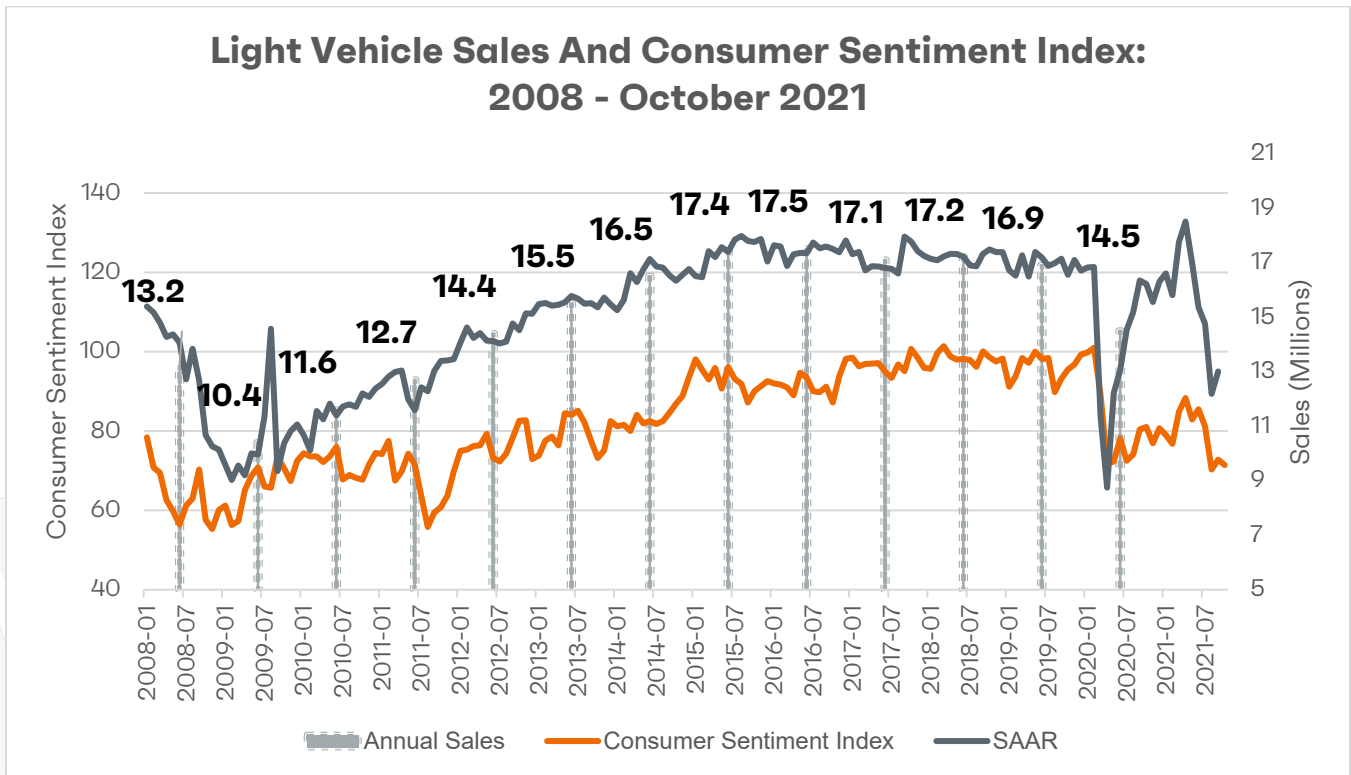
Durable Manufacturing Added 16,000 Jobs In September, But Further Gains Were Offset By A Drop In Motor Vehicles And Parts Employment By 6,000 “Durable goods manufacturing netted 16,000 new employees. About half of them, 8,200 by the Bureau’s estimate, went to work for fabricated metal products companies. A further 6,000 joined machinery workforces, and roughly 2,000 joined wood products and electronics companies each. Those gains were offset by a drop of 6,000 workers in motor vehicles and parts manufacturing, the largest industry in the durable goods manufacturing sector.”²⁹

For September, The ISM Ticked Up To 61.1% From 59.9 In August. “The Institute for Supply Management’s U.S. manufacturing index rose to 61.1% in September from 59.9% in the prior month, the trade group said Friday. The reading was the highest since May.”³⁰

The Index Of Prices For Raw Materials Rose To 81.2 After Falling To An Eight-Month Low. “That was underscored by a rebound in the survey’s measure of prices paid by manufacturers to a reading of 81.2 from an eight-month low of 79.4 in August.”³¹

Consumer Confidence and Sales (Updated 10/27)

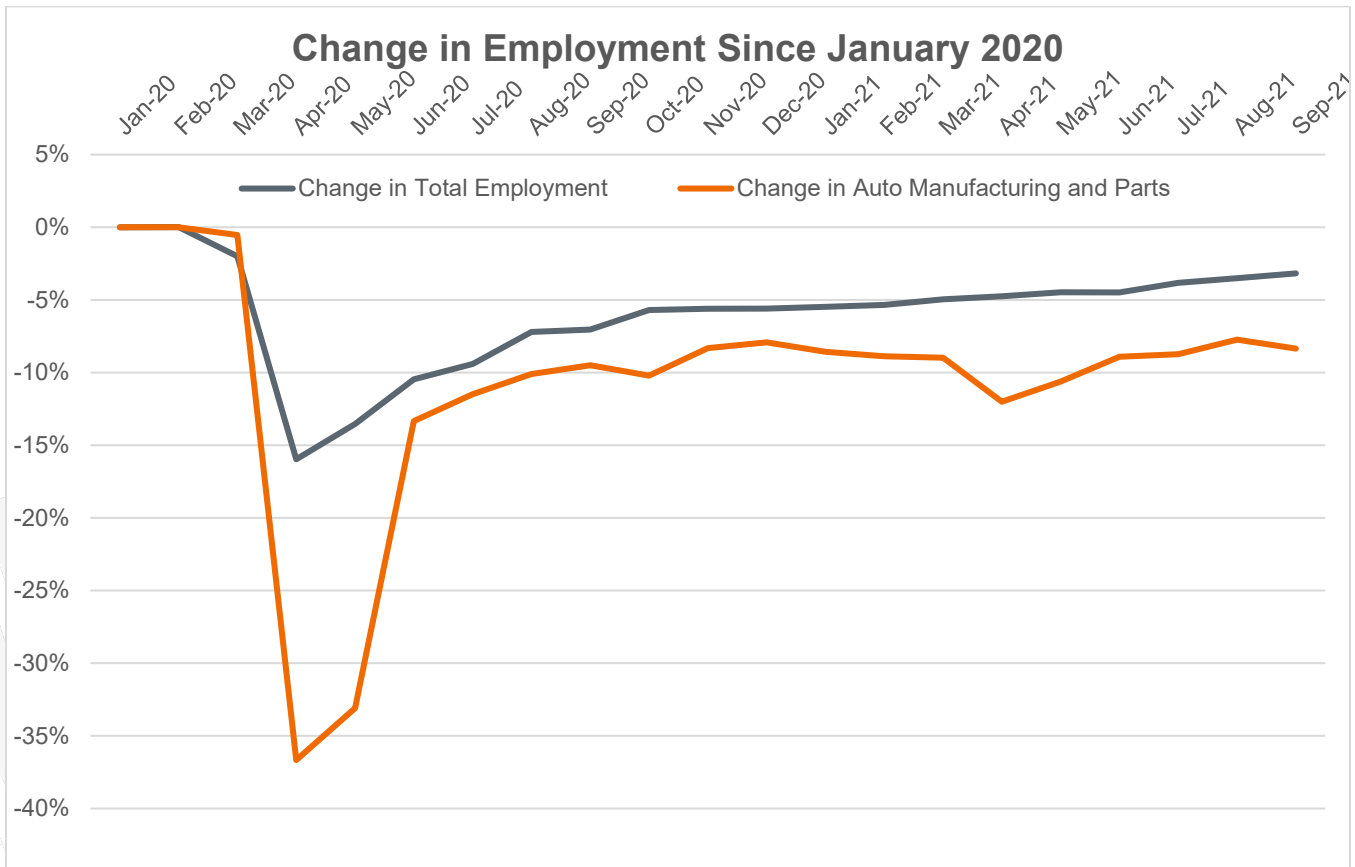
“Consumer sentiment has remained for the past three months at the lows first recorded in response to last year’s shutdown of the economy. The Delta variant, supply chain shortages, and reduced labor force participation rates will continue to dim the pace of consumer spending into 2022. There is another, less tangible factor that has contributed to the slump in optimism: confidence in government economic policies has significantly declined during the past six months. To be sure, the DC logjam, including the debates on the debt ceiling and the \$3.5 trillion social infrastructure program did not help, but the staged drama was largely ignored by most consumers. Consumers in the past were more attentive to the debates about extending the debt ceiling, passing major spending programs, or the face-off at the “fiscal cliff” (which may again happen in December). Unlike past debates, just 3% of consumers mentioned these policy debates when asked about recent news they had heard. Consumers presumably thought that these policies were important, but they largely ignored the dire partisan claims of an ensuing calamity. Consumers have much more basic concerns over policy. The adage “never let a crisis go to waste” mirrors the range and scale of Biden’s progressive proposals, but consumers see it as too risky a strategy. When asked about their confidence in economic policies, favorable evaluations fell to 19% in early October from Biden’s honeymoon high of 31% in April, while unfavorable policy evaluations rose to 48% in early October from 32% in April (see the chart). The decline in confidence in economic policies was recorded across all age, income, and education subgroups as well as among Democrats, Independents, and Republicans.”³²



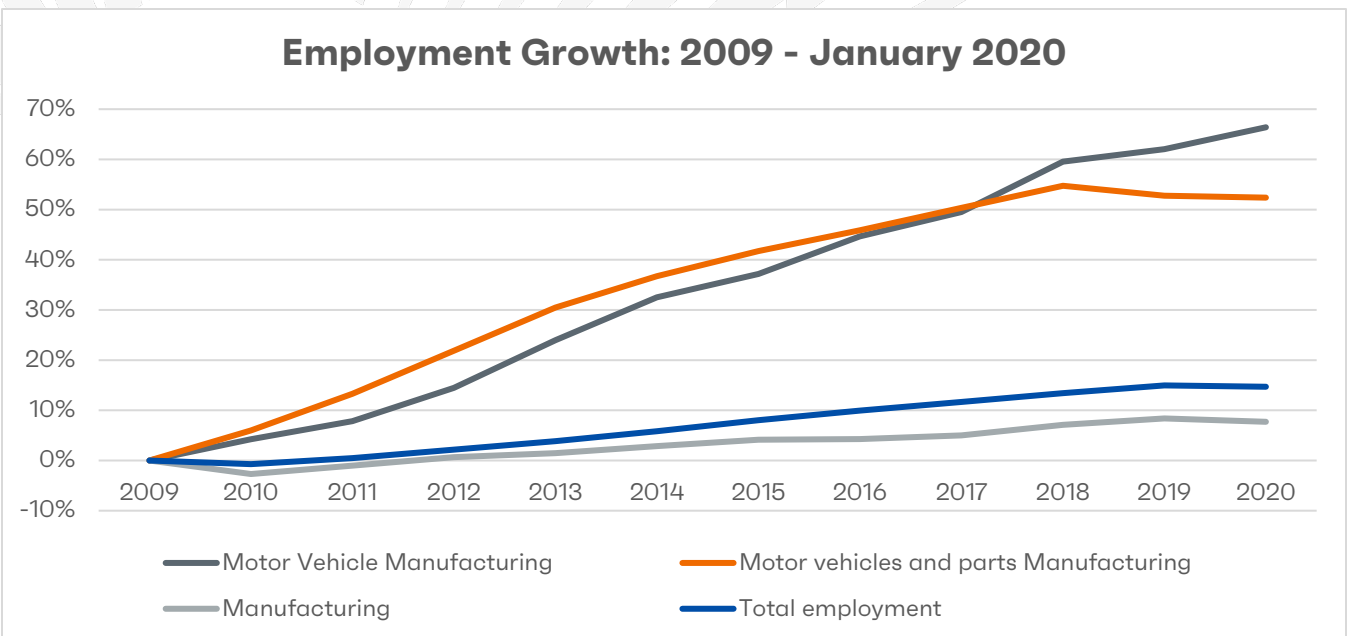
Employment (Updated 10/27)

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. Employment in motor vehicles and parts is down 69,400 jobs since January 2020.³³

- **Motor Vehicle And Parts Manufacturing Lost 6,100 Jobs In September.**³⁴



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.³⁵ 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, April," 5/1/20; WardsIntelligence, "U.S. Light Vehicle Sales, May 2020," 6/2/20; WardsIntelligence, "U.S. Light Vehicle Sales, June 2020," 7/1/20; WardsIntelligence, "U.S. Light Vehicle Sales, July 2020," 8/3/20; WardsIntelligence, "U.S. Light Vehicle Sales, August 2020," 9/1/20; WardsIntelligence, "U.S. Light Vehicle Sales, September 2020," 10/1/20; WardsIntelligence, "U.S. Light Vehicle Sales, October 2020," 11/3/2020; WardsIntelligence, "U.S. Light Vehicle Sales, November 2020," 12/1/2020; "U.S. Light Vehicle Sales, December 2020," 1/5/2021
- ² Haig Stoddard, "COVID-19 Impact Will Tank March, Second-Quarter U.S. Light-Vehicle Sales," *WardsIntelligence*, 3/25/20; Haig Stoddard, "March 25 COVID-19 Update: 2020 North America Production, U.S. Sales Forecasts," *WardsIntelligence*, 3/30/20; Haig Stoddard, "U.S. Light-Vehicle Sales Start on the Road Back in May," *WardsIntelligence*, 5/21/20
- ³ Haig Stoddard, "COVID-19's Toll on North America Vehicle Production in March, Q2," *WardsIntelligence*, 3/30/20; Haig Stoddard, "North America Platform by Plant Production Forecast - 2020-2022," *WardsIntelligence*, 1/8/21
- ⁴ Haig Stoddard, "U.S. Light-Vehicle Sales Improve in October from September," *WardsIntelligence*, 11/2/21
- ⁵ J.D. Power, Press Release, "Inventory Constraints Still Inhibiting New-Vehicle Sales As Prices and Profits Increase to Record Highs," 10/27/21
- ⁶ Haig Stoddard, "October U.S. Light-Vehicle Inventory Rises 4.6% from September; First Gain in Eight Months," *Wards Intelligence*, 11/3/21
- ⁷ Haig Stoddard, "Supply Bottlenecks Continue Assault on North America Production," *Wards Intelligence*, 10/20/30
- ⁸ Haig Stoddard, "Supply Bottlenecks Continue Assault on North America Production," *Wards Intelligence*, 10/20/30
- ⁹ IHS Markit, email, "IHS Markit Monthly Automotive Update - October 2021," 10/15/21
- ¹⁰ Mark Fulthorpe, "Major Revision For Global Light Vehicle Forecast, Production Impacted Well Into 2022," *IHS Markit*, 9/16/21
- ¹¹ Haig Stoddard, "U.S. Light-Vehicle Sales Improve in October from September," *WardsIntelligence*, 11/2/21
- ¹² TrueCar, Press Release, "TrueCar Forecasts a Continued Decline in Industry Sales for October 2021 Amid Vehicle Shortages," 10/27/21
- ¹³ J.D. Power, Press Release, "Inventory Constraints Still Inhibiting New-Vehicle Sales As Prices and Profits Increase to Record Highs," 10/27/21
- ¹⁴ WardsIntelligence, U.S. Light Vehicle Sales, January 2013 – October 2021
- ¹⁵ U.S. Energy Information Administration, Weekly Retail Gasoline and Diesel Prices, Regular price per gallon, including taxes
- ¹⁶ WardsIntelligence, Fuel Economy Index, December 2013 & 2019
- ¹⁷ WardsIntelligence, U.S. Light Vehicle Sales, October 2020; U.S. Light Vehicle Sales, October, 2021
- ¹⁸ Haig Stoddard, "U.S. Light-Vehicle Sales Improve in October from September," *WardsIntelligence*, 11/2/21
- ¹⁹ J.D. Power, Press Release, "Inventory Constraints Still Inhibiting New-Vehicle Sales As Prices and Profits Increase to Record Highs," 10/27/21
- ²⁰ Kelley Blue Book, Press Release, "Average New-Vehicle Transaction Prices Top \$45,000 for First Time, According to Kelley Blue Book," 10/13/21
- ²¹ Bankrate, "[Current Car Loan Interest Rates](#)," Accessed 10/27/21; Internet Archive, Bankrate, "Current Car Loan Interest Rates, cached image from 12/4/19
- ²² EIA, "[Short-Term Energy Outlook](#)," 10/27/21
- ²³ EIA, "[Short-Term Energy Outlook](#)," 10/27/21
- ²⁴ U.S. Energy Information Administration, Regular Gasoline, www.eia.gov, Accessed 11/5/21; U.S. Energy Information Administration, Weekly Cushing, OK WTI Spot Price, www.eia.gov, Accessed 11/5/2021
- ²⁵ WardsIntelligence, "North America Production, November 2019," 12/18/19; WardsIntelligence, "North America Production, November 2020," 12/17/20
- ²⁶ Haig Stoddard, "October U.S. Light-Vehicle Inventory Rises 4.6% from September," *WardsIntelligence*, 11/3/21
- ²⁷ Olympia Fotiadi Mouzala, "World Sales Down 20.4% in September," *WardsIntelligence*, 11/1/21
- ²⁸ U.S Department of Transportation, https://www.fhwa.dot.gov/policyinformation/travel_monitoring/20novtyt/, Accessed 10/27/2021

-
- ²⁹ Ryan Secad, "September Sees Slightly Slower Manufacturing Jobs Growth," *Industry Week*, 10/8/2021
- ³⁰ Greg Robb, "ISM Manufacturing Index Stays Strong In September Despite Supply-Chain Stress," *Market Watch*, 10/1/2021
- ³¹ "U.S. manufacturing expands further in September; shortages, prices rising-ISM," *Reuters*, 10/1/2021
- ³² Surveys of Consumers, University of Michigan, <http://www.sca.isr.umich.edu/>, 10/27//21
- ³³ Bureau of Labor Statistics, Current Employment Statistics, Accessed 10/27/2021
- ³⁴ Bureau of Labor Statistics, Table B-1. Employees on nonfarm payrolls by industry sector and selected industry detail, September 2021
- ³⁵ Jerry Hirsch, "[Auto Industry Has Soared Since 2010, Leading Economic Recovery](#)," *Los Angeles Times*, 1/3/14