ALLIANCE FOR AUTOMOTIVE INNOVATION

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READING THE METER

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

December 2, 2021

Contents,

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Forecast Meter

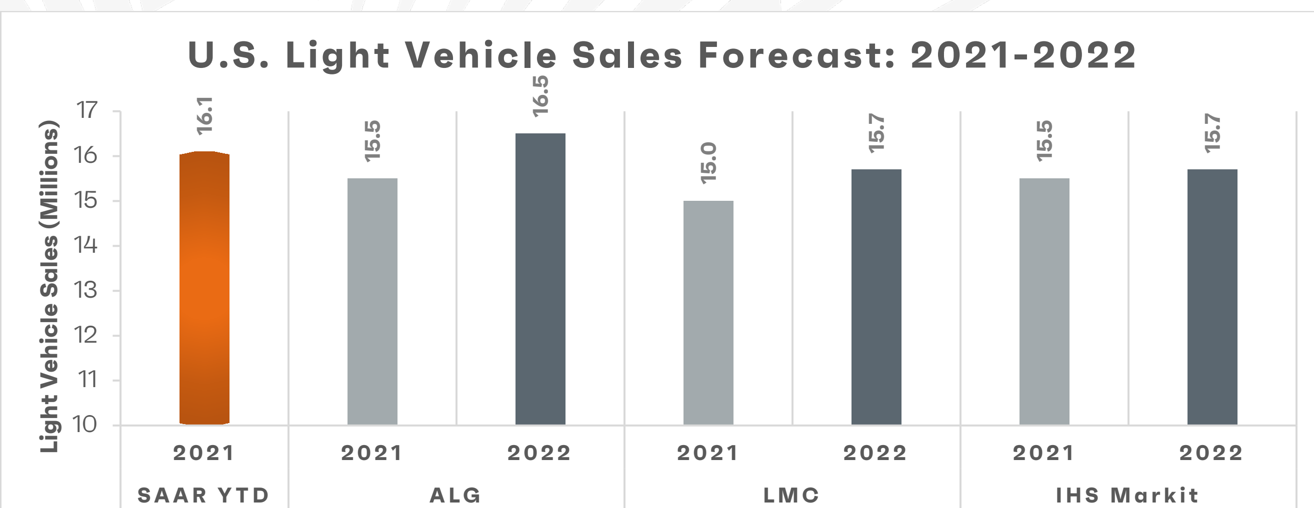
Forecast Summary (Updated 12/2)

2020-2021 Sales,[1] Extended Sales Forecast[2] and Production Forecasts[3]		
	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)	1,140,383 (-22.1% YoY)
November '21	1,001,351, (-20% YoY)	
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)	3,200,000 (-18% YoY) (forecast)
2020 Calendar Year	14,463,935 (-14.7% YoY)	13,210,000 (-23.1%)
2021 Full Year Estimate	15 million units (4% YoY)	13,380,000 (-.1% YoY)

U.S. Light Vehicle Sales Outlook (Updated 12/2)

Wards Intelligence Outlook (12/2)[4]: "After a sequential increase in inventory in October – the first since January - November light-vehicle sales were expected to record a second straight month-to-month rise after bottoming out in September. However, sales volume declined 4.1% from October to 1.00 million units and the seasonally adjusted annual rate dropped to 12.9 million units from 13.0 million. Initial modeling shows December recording a flat 12.9 million-unit SAAR with November, although volume would rise to above 1.2 million units. Improving the chances for growth in December's SAAR is Nov. 30 inventory rising 2.9% from the prior month to 1.05 million units. Showing there remains a long way to go for inventory to get in line with demand, November's total was 64% below like-2020's 2.9 million and a 71% decline from pre-pandemic same-month 2019's 3.6 million. However, some of November's unexpected weakness could be in the form of delayed purchases by consumers – perhaps more acutely feeling the sting of rising prices and hoping for better holiday deals in December – who could pull the trigger in December, juicing volume for the month. Some fleet deliveries planned for November also could have been put off one month. . . . The greatest risk to December sales, and early 2022, is the potential impact of rising Covid-19 cases, especially the Omicron variant. November's results could have been negatively impacted by a decline in consumer confidence, partly induced by increased infections, and that could carry into December."

J.D. Power October Forecast (11/24)[5]: "New-vehicle retail sales for November 2021 are expected to decline when compared with November 2020, according to a joint forecast from J.D. Power and LMC Automotive. Retail sales of new vehicles this month are expected to reach 933,700 units, a 12.6% decrease compared with November 2020 when adjusted for selling days. November 2021 has one more selling day than November 2020. Comparing the same sales volume without adjusting for the number of selling days translates to a decrease of 8.8% from 2020."



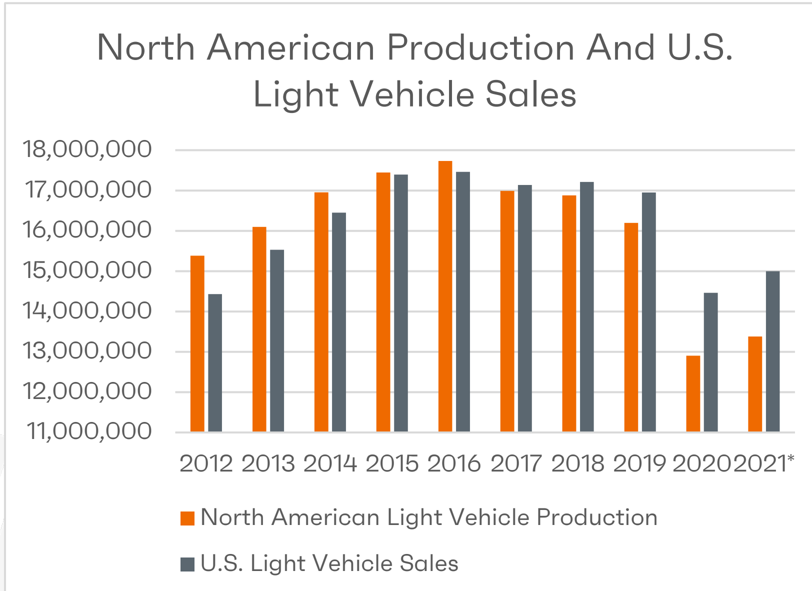
North American Production & Inventory Outlook (Updated 12/2)

Wards Intelligence Inventory Outlook (12/2)[6]: "Although inventory could decline in December from November due to widespread holiday-related shutdowns at plants feeding the U.S. market, boding well for continued improvement in vehicle availability heading into 2022 is - for the first time this year - more upside than downside to the production outlook for the U.S. market, as a revised assessment indicates some additional easing ahead in the global supply-chain disruptions that have plagued 2021.

Wards Intelligence Production Outlook (12/2)[7]: "Supply-chain issues are expected to still greatly hinder production throughout 2022, but the flow of materials, components and parts – including semiconductors – appears to be improving. Thanks to the let-up, Wards Intelligence/LMC Automotive revised its North America light-vehicle production forecast by adding 28,000 units to Q4-2021, which is pegged at 3.2 million. Additionally, 50,000 units were added to entire-2022, which is forecast to total 15.1 million. Not major increases but the revisions were the first upward adjustments in several months."

IHS Markit North American Outlook (11/18)[8]: "The outlook for North America light vehicle production was reduced by 45,000 units and by 70,000 units for 2021 and 2022, respectively (and reduced by 205,000 units for 2023). The forecast revisions for 2021 were primarily driven by semiconductor challenges and other supply chain, logistics and worker related issues taking a greater toll on production in the region. On a positive note, mass downtime announcements have slowed to a steady trickle with production in fourth quarter 2021 expected to mark an improvement over the second and third quarters, though remaining worse off than the first quarter. Production in 2022 was revised down by 70,000 units to 15.2 million units. The November 2021 forecast continues to reflect 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, production will remain constrained by not only the shortage of semiconductors and their long lead times, but other supply chain, logistics and worker related issues hampering a return to more normalized production levels. Additionally, production in 2023 was revised down 1.2% or 205,000 units to total 17.1 million units on concerns surrounding semiconductor capacity gains and that supply will remain a bit tighter than previously forecast."

Wards Intelligence Outlook For 2021 (11/24)[9]: "Production for entire-2021 is tracking to 13.38 million units, a smidgeon above 2020's 13.36 million. Excluding last year, it is the lowest calendar-year total since 12.2 million in 2010 – the first full year after the recession of 2008-2009. Light-vehicle output is projected to total 12.91 million units, 0.3% below 2020's 12.95 million, also an 11-year low – 11.91 million in 2010."



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 12/2)

Monthly Sales (Updated 12/2)

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.

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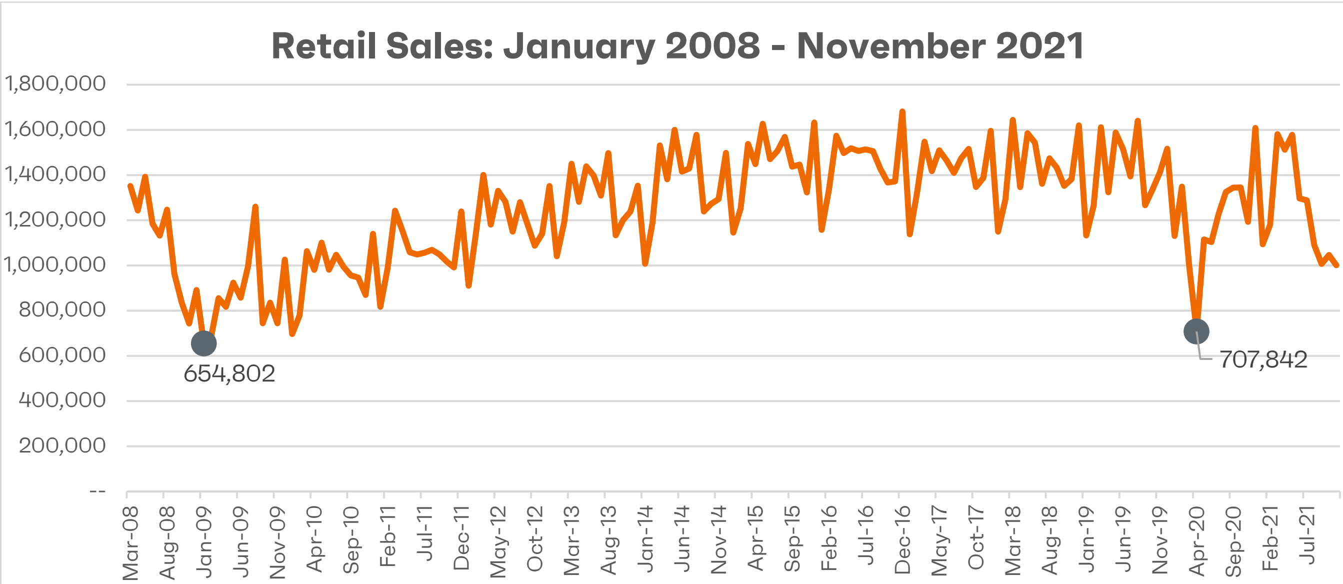


<u>November Sales (Updated 12/2)</u>

WardsIntelligence: “Just when it looked like sequential growth was beginning, U.S. light-vehicle sales – relative to expectations - flopped in November. November sales totaled a 12.9 million-unit seasonally adjusted annual rate, down slightly from the prior month’s 13.0 million, and well below the 13.6 million forecasted for the month.

“Worse still, raw volume declined from October - atypical most years due to seasonal patterns - and deliveries were expected to rise along with an upturn in inventory that began after sales bottomed out in September following a precipitous downward slide that began in the second quarter as supply-chain disruptions ultimately led to a dearth of vehicles on dealer lots.

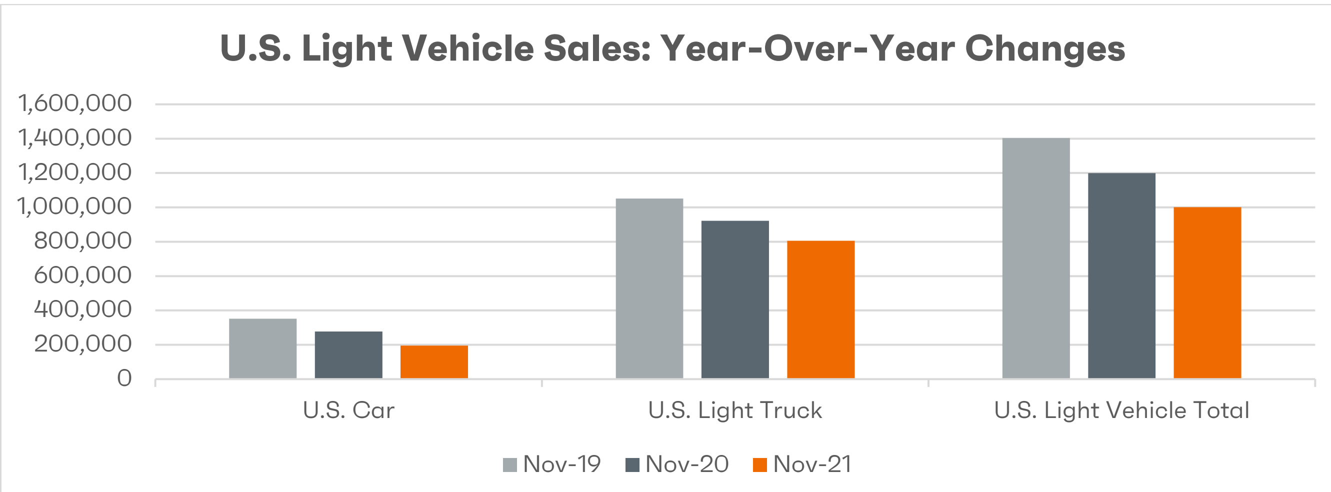
“November sales totaled 1.00 million units, down 4.1% from the prior month, and 16.5% below like-2020. Based on daily selling rates, November’s 41,723 DSR over 24 selling days was 20.0% below same-month 2020’s 52,136 – 23 selling days. A factor in the weaker-than-expected results could have been a decline in November in consumer confidence as measured by the Conference Board, which it attributed primarily to fears of inflation, as well as concerns about rising Covid-19 cases.

“It is possible there was some direct consumer pushback from rising prices. TrueCar’s initial estimate for the month pegged average transaction prices in November at $41,139, a third-straight any-month record, and 8.6% above like-2020. Moreover, average incentive spending declined a whopping 50% year-over-year in November, the biggest drop on record.

“Helping push up prices is the strong mix in inventory of high-priced vehicles. The combined mix of luxury-segment vehicles and non-luxury (but still pricey) fullsize trucks – pickups, SUVs, CUVs and vans – coming into both October and November was over 50% of the inventory mix. Historically, the aggregate mix of those vehicles is closer to 36%-37%. Sales of those vehicles in November accounted for 43.3% of the market, a slight decline from October's 44.0%, with both being modern records, if not all-time highs.

"Furthermore, besides the overall lack of inventory, the heavy mix of luxury vehicles and fullsize trucks highlights not just the lack of more affordable vehicles but lean availability of mainstream CUVs and cars that typically are most in demand.

"However, inventory overall appears to be improving, and there is pent-up demand building in both the retail and fleet sectors, so November's results likely are not a sign that sequential growth is stalling. Additionally, because there was not the usual onslaught of post-Thanksgiving holiday deals, some consumers could be holding off to see if incentives get more generous during the end-of-December holiday period."[11]



<u>Fleet Sales (Updated 12/2)</u>

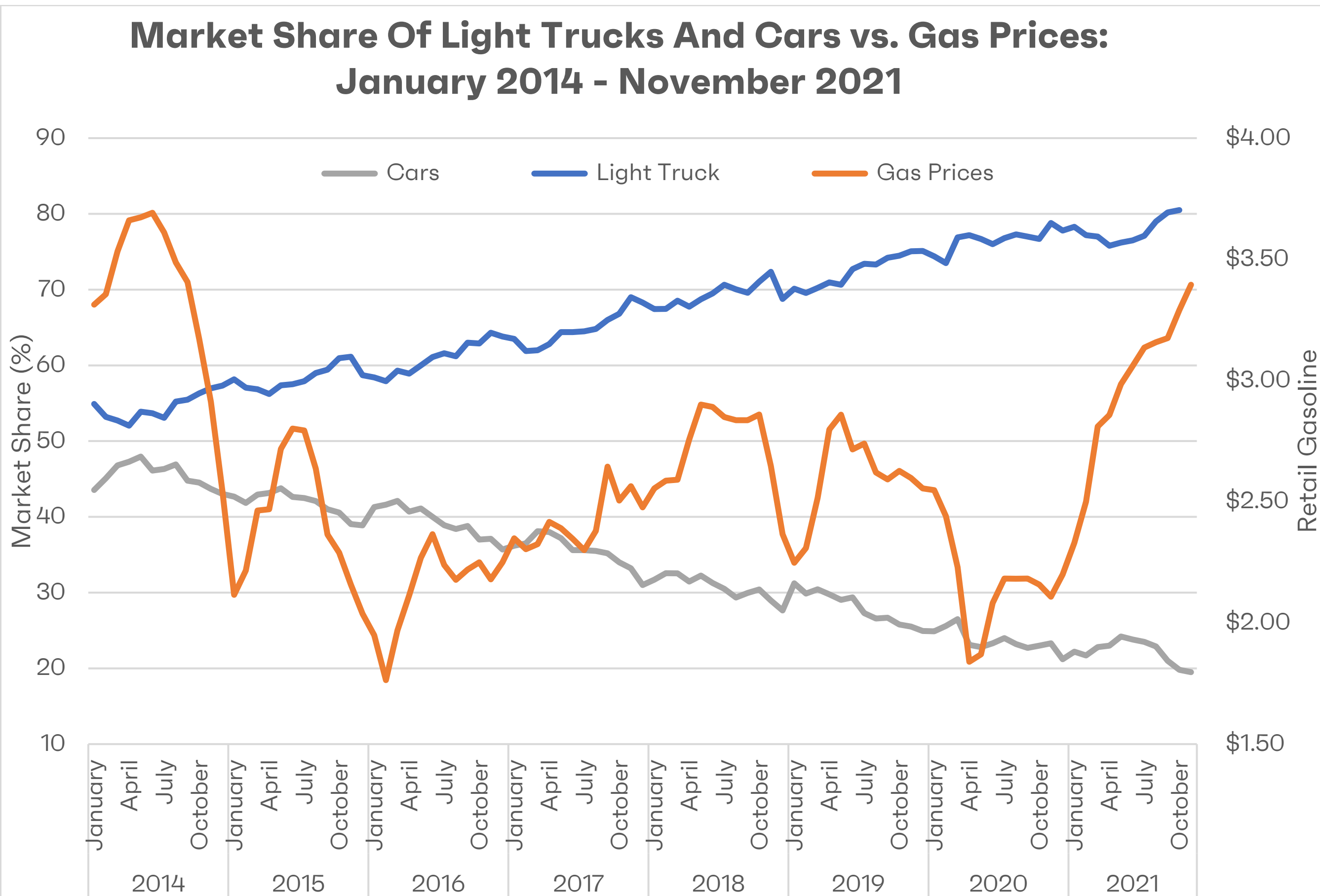
TrueCar[12]: "Fleet sales for November 2021 are expected to be down 13% from a year ago and down 1% from October 2021 when adjusted for the same number of selling days."

J.D. Power[13]: "Fleet sales are expected to total 128,000 units in November, down 28.3% from November 2020 on a selling day adjusted basis. Fleet volume is expected to account for 12% of total light-vehicle sales, down from 14% a year ago."

Segments vs. Gas Prices (Updated 12/2)

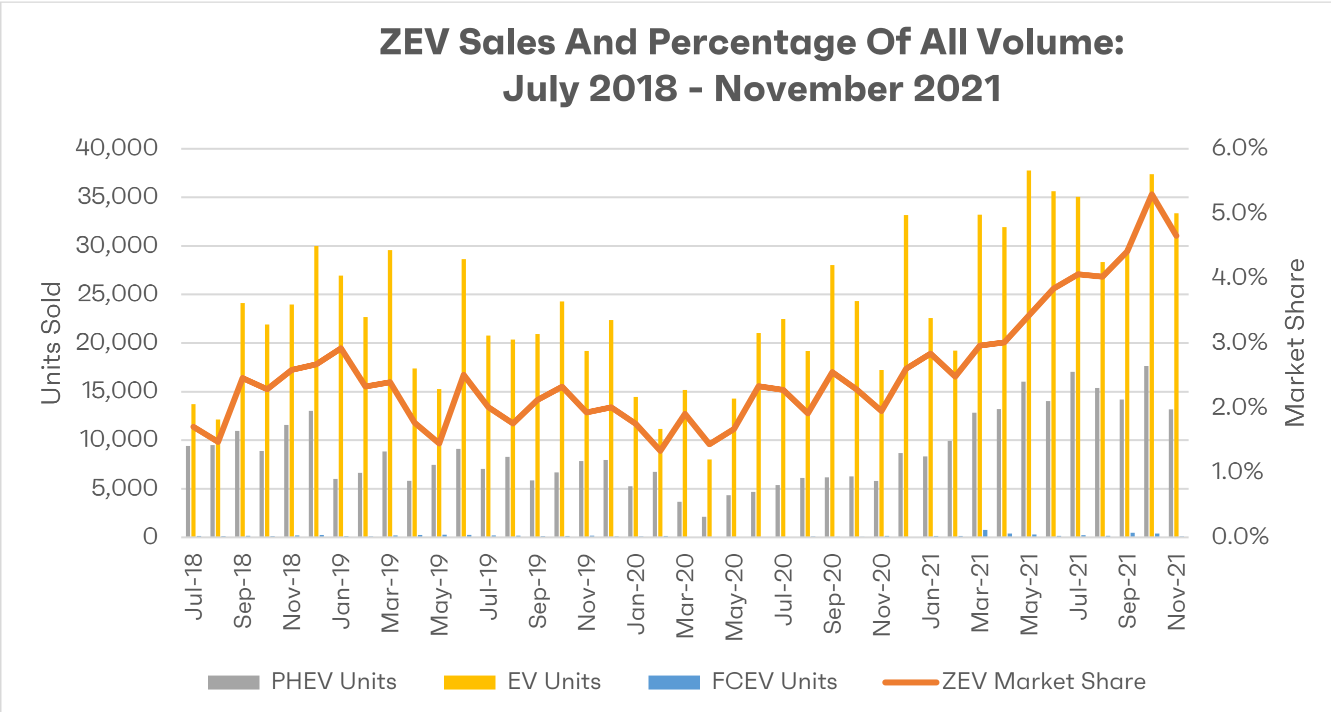
Monthly Sales For September: Light trucks accounted for 80.5% of sales in November, a 3.7 pp increase in market share from a year ago, and the highest level ever. Compared to the same period in 2020, sales of cars are down more than 82,000, and down more than 150,000 from November 2019, when cars comprised 25% of the market as opposed to the 19.5% 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[14] and gas was over $3.00[15] 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]



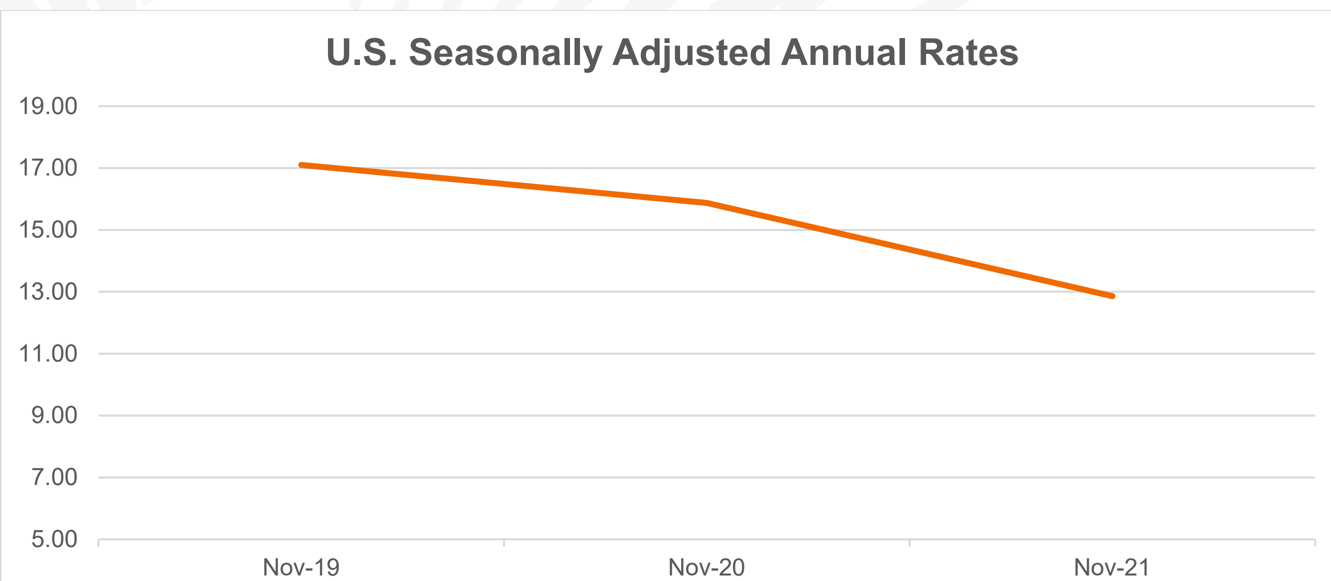
ZEV Powertrain Sales (Updated 12/2)

Sales of zero emission vehicles (BEV, PHEV, & Fuel Cell) accounted for 4.7% of total vehicle sales in November 2021, up 2.7 pp from a year ago and down .6 pp from October 2021. Sales of battery electric vehicles led the way for ZEVs, accounting for 3.3% of total sales, up 1.88 pp from November 2020. Plug-in hybrids accounted for 1.32%, nearly three times the amount from the same time last year.[17]



Seasonally Adjusted Annual Rates (Updated 12/2)

WardsIntelligence: "November sales totaled a 12.9 million-unit seasonally adjusted annual rate, down slightly from the prior month's 13.0 million, and well below the 13.6 million forecasted for the month."[18]



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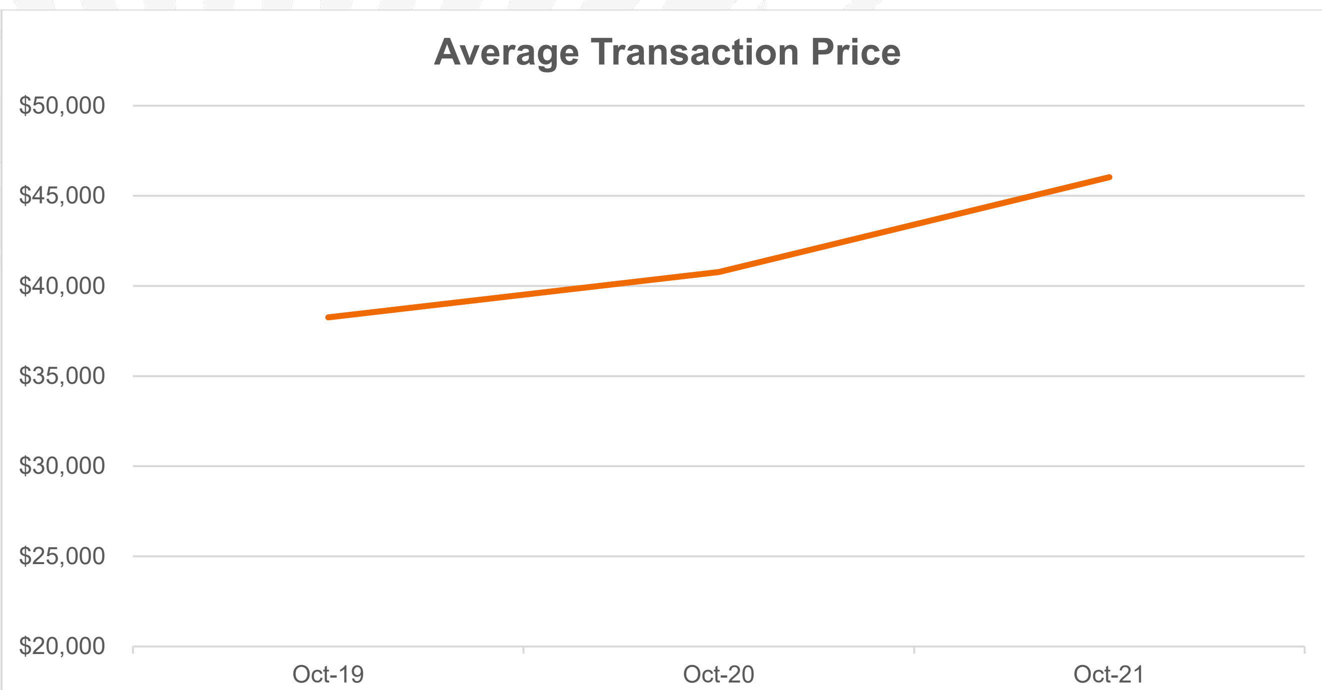
Average Transaction Price (Updated 12/2)

J.D. Power[19]: "Average transaction prices are expected to reach a November record of $44,043, a sixth consecutive month above $40,000, and 18.1% higher than November 2020 when prices hit $37,284. This is partly due to record-low manufacturer incentives. The average manufacturer incentive per vehicle is on pace to be a November low of $1,612, a decrease of $2,089 from a year ago. Expressed as a percentage of the average vehicle MSRP, incentives for November 2021 are trending toward a record-tying low of 3.6%, down nearly five percentage points from a year ago and the second time on record below 4.0%."

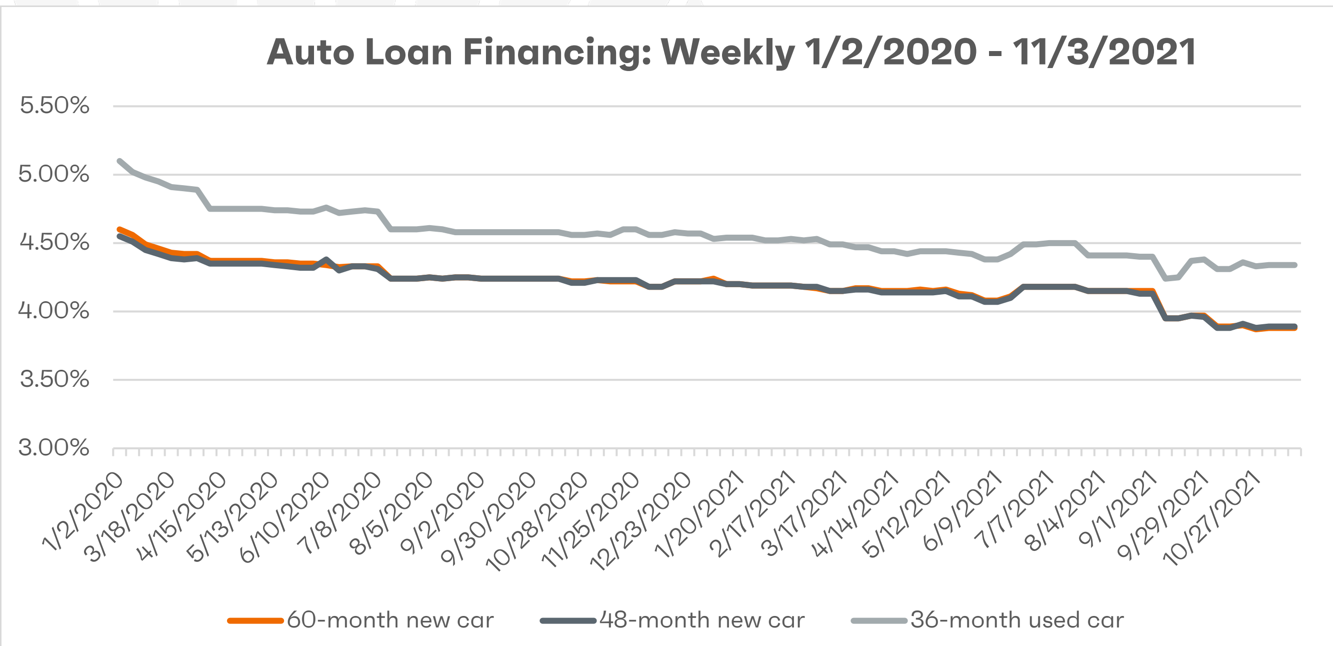
Kelley Blue Book (October): "New-vehicle prices jumped up for a seventh straight month and hit another all-time high in October 2021, surpassing $46,000 for the first time, according to a new report from Kelley Blue Book. At $46,036, the average transaction price (ATP) for a new vehicle was up 12.9% (or $5,266) from one year ago in October 2020 and up 2.0% (or $910) from September 2021. With tight supply and continued demand, new-vehicle prices remain elevated overall. Price gains in October were especially driven by higher luxury sales and a richer mix of large SUVs and pickup trucks. Luxury share rose to 16.3% of the total market in October, up from 15.2% a year ago. Luxury buyers paid an average of $61,020 for a new vehicle last month. The average new vehicle is now selling well above the manufacturer's suggested retail price (MSRP), with the ATP clocking in at 2% above MSRP in October. In other words, buyers were paying an average of $800 over sticker price last month. In October 2019, transaction prices were roughly $2,300 below MSRP."[20]



Auto Loan Financing (Updated 12/2)

Interest Rates Remain Near Year-Long Low: Interest rates for new cars rose slightly (.04%) from their recent lows and now stand at 3.92%. Rates also remained near a year-long low on the 36-month used car loan at 4.38%. Since the beginning of last year, rates are down 0.68%, and down 0.26% 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%
12/2/2020	4.18%	4.18%	4.56%
11/23/2021	3.88%	3.89%	4.35%
12/1/2021	3.92%	3.93%	4.38%
One Week Change	0.04%	0.04%	0.03%
Two Week Change	0.04%	0.04%	0.04%
Change since 1/3/20	-0.68%	-0.62%	-0.72%
One Year Change	-0.26%	-0.25%	-0.18%



Crude Oil and Gas Prices (Updated 12/2)

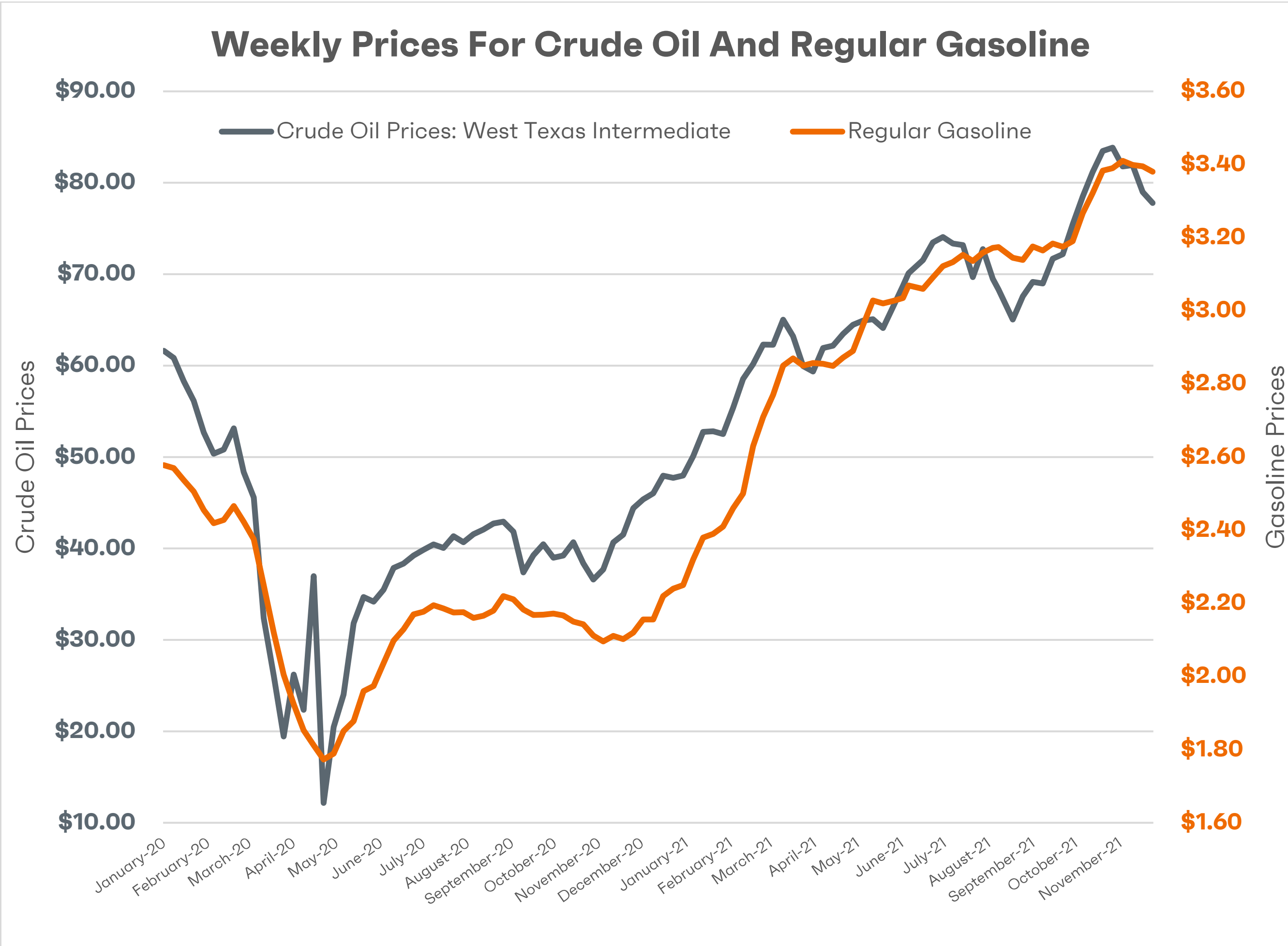
Biden Announced Plan To Release 50 Million Barrels Of Oil From Strategic Petroleum Reserve To Tamp Down High Gas Prices. "President Biden on Tuesday announced a plan to release oil from the Strategic Petroleum Reserve (SPR), in coordination with other countries, as part of efforts to tamp down high gas prices facing American consumers with the busy Thanksgiving holiday and travel season beginning. The Department of Energy will release 50 million barrels of oil from the SPR, of which

32 million will be an exchange of oil that will be returned in the years ahead, and 18 million will be the acceleration of a sale of oil previously authorized by Congress, according to the White House."[22]

EIA Outlook For Gasoline (11/11)[23]**:** "U.S. regular gasoline retail prices averaged $3.29 per gallon (gal) in October, up 12 cents/gal from September, and $1.13/gal higher than in October 2020. The October price was the highest monthly average since September 2014. We forecast that retail gasoline prices will average $3.32/gal in November before falling to $3.16/gal in December, which are 16 cents/gal and 11 cents/gal higher than our previous forecast, respectively."

EIA Outlook For Oil (11/11)[24]**:** "Brent crude oil spot prices averaged $84 per barrel (b) in October, up $9/b from September and up $43/b from October 2020. Crude oil prices have risen 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 OPEC+ announced in early October—and reaffirmed on November 4—that the group would keep current production targets unchanged. We expect Brent prices will remain near current levels for the rest of 2021, averaging $82/b in the fourth quarter of 2021. In 2022, we expect that growth in production from OPEC+, U.S. tight oil, and other non-OPEC countries will outpace slowing growth in global oil consumption and contribute to Brent prices declining from current levels to an annual average of $72/b."

Gas and Oil Remain Near Multi-Year Highs: Oil prices, as benchmarked at West Texas Intermediate, fell from its recent high mark to just under $78 a barrel, remaining near highs last seen in 2014. Since election day, oil prices have climbed more than $40 a barrel. Gas prices fell $.02 to $3.38, near the highest level since October 2014. Gas is 31% higher than the beginning of 2020.[25]

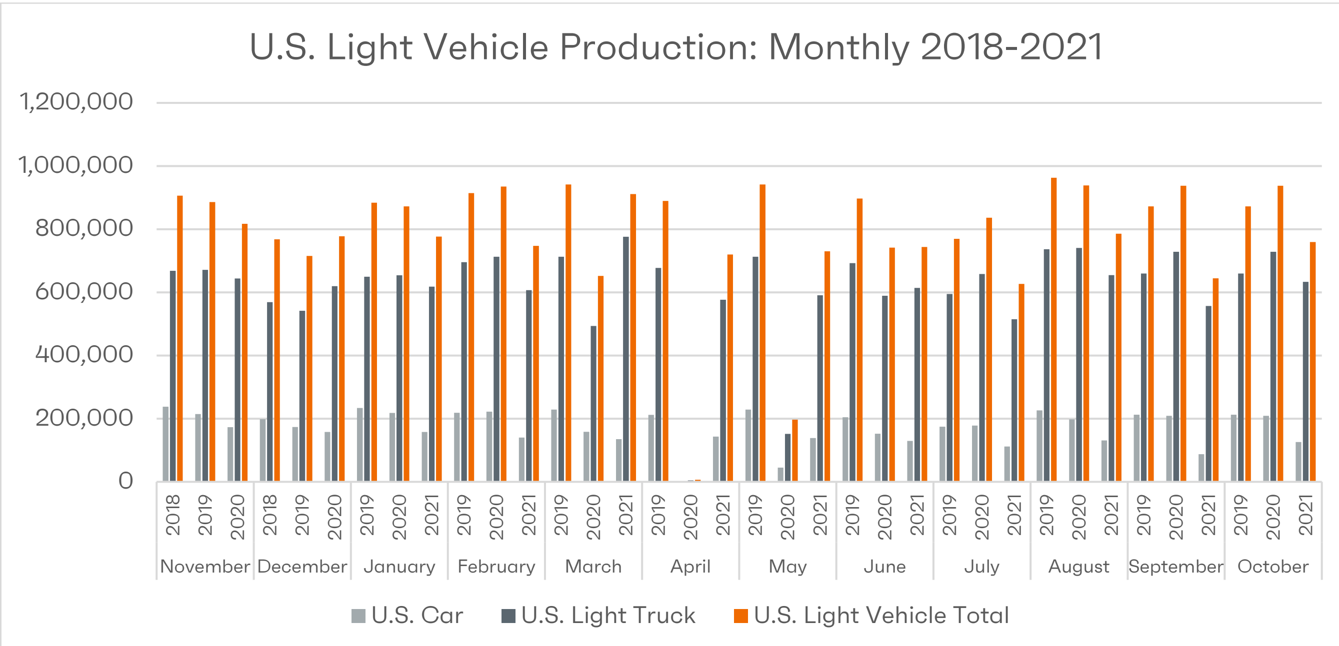


Production Meter

U.S. Light Vehicle Production (Updated 11/24)

Wards Intelligence (11/24)[26]: "North America vehicle production in October – including light vehicles and medium-/heavy-duty trucks – totaled 1.140 million units, 22.1% below like-2020, and 86,100 units below month-ago's expectations for the period. October's total was the lowest for the month since 2009's 1.03 million units. The shortfall, though not nearly as bad as some other months in 2021, continued the pattern that has prevailed throughout most of this year of output not meeting expectations – due mainly to the uncertainty of unscheduled and unknown production stoppages related to parts shortages, mostly caused by the global microchip shortage. . . . Although coming off a low base – September's total of 946,117 was a decades-long low for the period - North America production in October marked a 20.5% rise from the prior month. Production normally increases in October from September, but this year's gain was the biggest in 31 years."

U.S. Light vehicle production for October 2021 increased month-over-month by 18 percent, totaling 759,219 (125,783 cars, 633,436 light trucks), year-over-year, production is down 19% from 2020.



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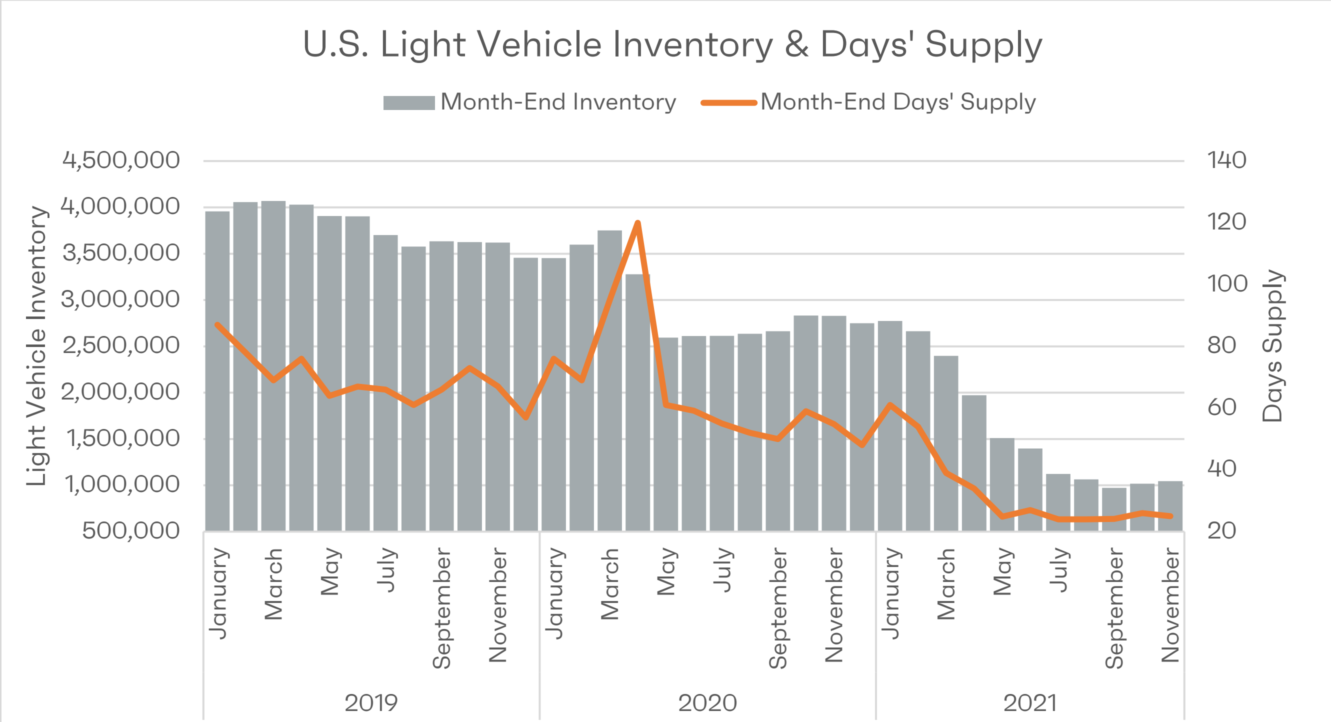
U.S. Light Vehicle Inventory and Days' Supply (Updated 12/2)

WardsIntelligence Inventory Update (12/2)[28]: "U.S. light-vehicle inventory rose for the second straight month from the prior period in November, a positive indicator that sales will start gaining steam early next year, if not in December, despite a setback last month.

"The increase was almost entirely due to domestically built trucks, as inventory of domestically built cars and import trucks both declined from the prior month. Import cars, which account for only 5% of total inventory, also increased. . . . Nov. 30 days' supply ended at 25, down from the prior month's 26, and well below like-2020's 55. Days' supply for domestically made vehicles was 26, down from same-month year-ago's 55. Import days' supply was 22, vs. same-month 2020's 54."



Global Meter

Global Light Vehicle Sales Outlook (Updated 12/2)

Wards Intelligence Outlook: "World vehicle sales in October were down 16.5% year-over-year to 6.63 million. Although October marked the fourth month of losses for 2021, year-to-date deliveries rose 9.3% to 69.81 million.

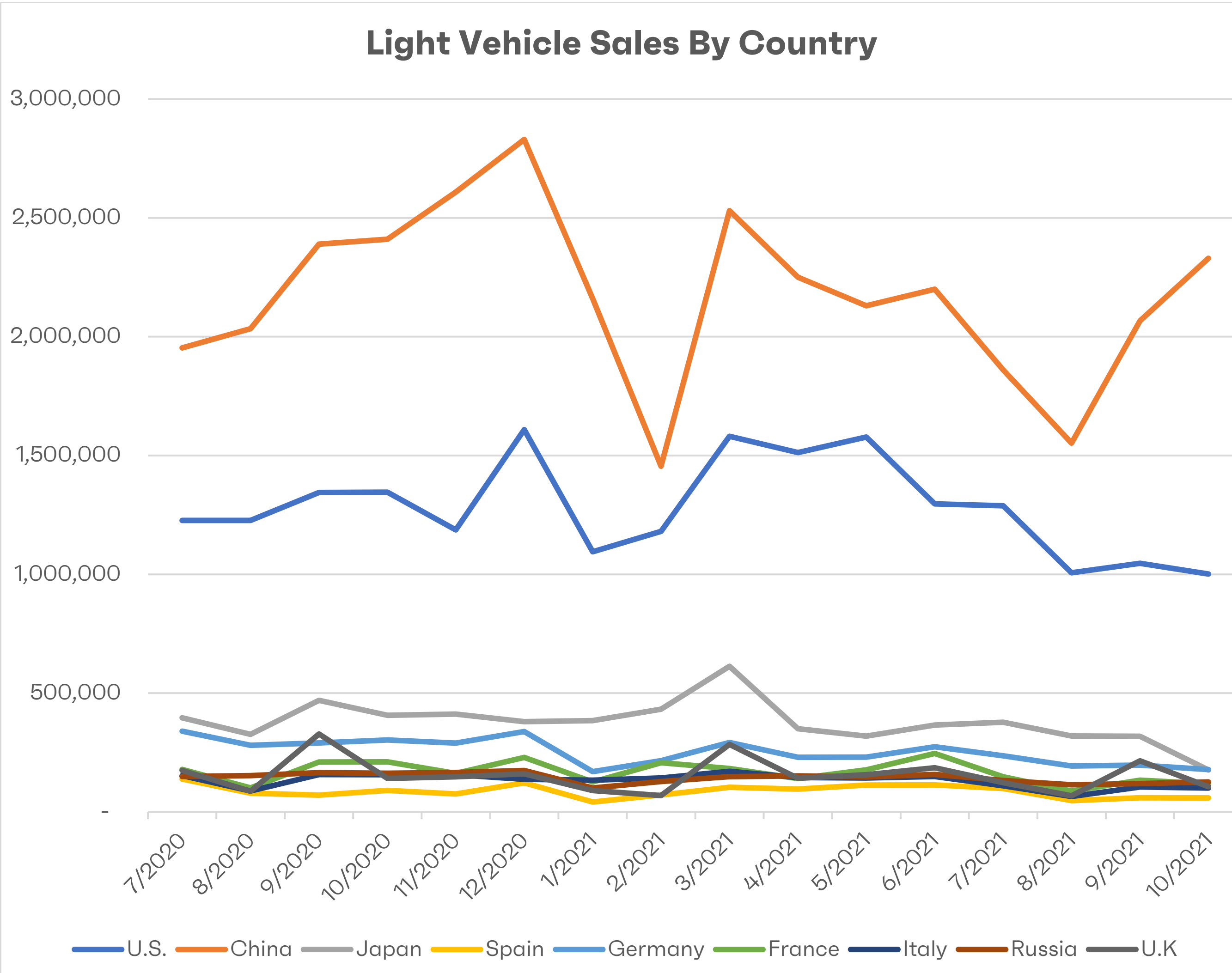
"All regions saw their monthly vehicle sales decline as the global microchip shortage and COVID-19 continued to negatively impact the market. Europe reported the biggest loss at 26.9% to 1.18 million, compared to 2020's 1.61 million. Russia (-18.1%), U.K. (-21.6%) and Spain (-23.4%) experienced declines in October. The drop in vehicle sales was even higher in France (-29.2%), Italy (-34.2%) and Germany (-34.4%).Year-to-date vehicle sales for Europe were up 5.4% to 14.1 million.

"The picture was similar in North America, where sales shrank 21.0% to 1.3 million for October. The U.S. saw a 22.5% decline in sales to 1.1 million units for the month from like-2020's 1.4 million. Canada fell 14.8% to 139,000, while Mexico experienced a 9.0% drop to 79,000 deliveries. The region's October market share slightly dropped to 19.7% from year-ago's 20.8%, while the 10-month total was up 9.4% to 15.44 million.

"In Asia Pacific, regional vehicle sales dropped 12.2% to 3.55 million compared to October 2020's 4.04 million. October marked the sixth consecutive month of losses for China, as vehicle sales dropped 8.5%

to 2.43 million compared to year-ago's 2.66 million. Year-to-date deliveries still were up 6.4% to 21.81 million. Japan (-31.3%, estimated), South Korea (-21.6%, estimated) and Thailand (-13.0%, estimated) experienced declines in October."[29]

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



Global Light Vehicle Production Outlook (Updated 11/11)

"With the semiconductor shortage causing the brunt of the losses, ongoing cuts due to global supply-chain disruptions have brought down the outlook for global light-vehicle production in 2021 close to the level of pandemic-impacted 2020. By region, the major areas of Europe and North America are heading toward year-over-year declines in 2021, while production-leader China, though forecast for an increase, is ending the year with a resurgence in losses related to the semiconductor shortage. The 2020 global production total of 74.6 million units was a 10-year low - barley edging out 2010's 74.4 million - and a whopping 15.9% drop from 2019's 88.7 million. Based on the current forecast from Wards Intelligence's partner LMC Automotive, the production losses in 2021 mostly are from supply-chain disruptions rooted in the pandemic, with the semiconductor shortage alone cutting an estimated 10 million units from what should have been a double-digit bounce-back from last year's debacle.

"Production in 2021 is forecast to total 75.4 million units, just 1.1% above 2020. Furthermore, production in 2022, though forecast to rise 11.6% year-over-year to 84.1 million units, still will remain below pre-Covid 2019's total. Longer term, production is forecast to rise above 2019's level in 2023 to 93.2 million units and record a new all-time high in 2024 of 99.7 million.

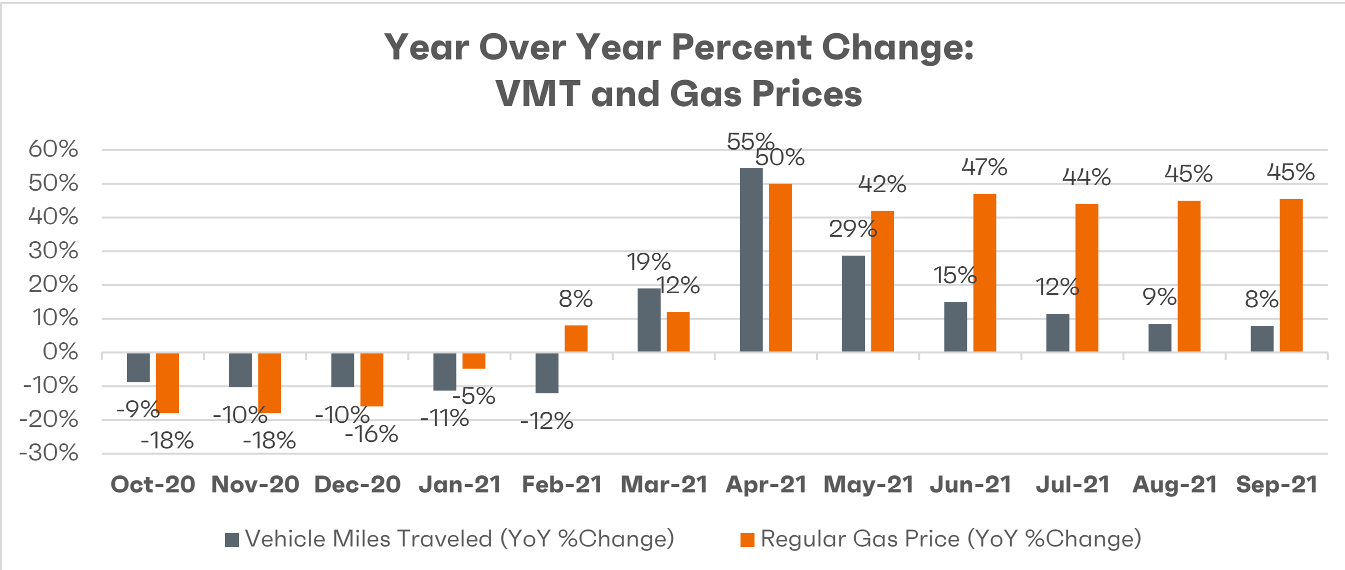
"Production in China, as well as the rest of the Asia-Pacific, is forecast to grow in 2021 from 2020. While the AP-less-China region is pegged for a solid 4.7% increase, China is on the books for a slight gain of 0.4%. Related mostly to a rise in Covid-19 cases, LMC projects production losses in China from the semiconductor shortage at 830,000 units in the fourth quarter, more than twice the Q3 losses of 350,000 and over 40% of its total losses in 2021 of 1.93 million."[30]

Recovery Meter

Roadway Travel (Updated 11/18)

According to the U.S. Department of Transportation, seasonally-adjusted vehicle miles traveled in September rose 7.9% from the same time a year ago. The cumulative travel estimate for 2021 is 2,335 billion vehicle miles.[31]

- Travel on all roads and streets changed by 7.9% (19.5 billion vehicle miles) for September 2021 as compared with September 2020. Travel for the month is estimated to be 266.7 billion vehicle miles.
- The seasonally adjusted vehicle miles traveled for September 2021 is 265.4 billion miles, a +7.7% (+19 billion vehicle miles) increase over September 2020. It also represents a 1.5% increase (3.9 billion vehicle miles)
- Cumulative Travel for 2021 changed by 11.7% (244.0 billion vehicle miles). The cumulative estimate for the year is 2,335.6 billion vehicle miles of travel.



Economic News (Updated 11/11)

Manufacturing Added 60,000 Jobs In October. "Jobs growth in manufacturing leaped in October as motor vehicles and parts manufacturers hired almost as many people as all other manufacturing sectors combined. According to the latest employment report from the Department of Labor, manufacturing added 60,000 jobs last month. The nonfarm economy added 531,000 jobs overall and the national unemployment rate edged down to 4.6% from 4.8%."[32]

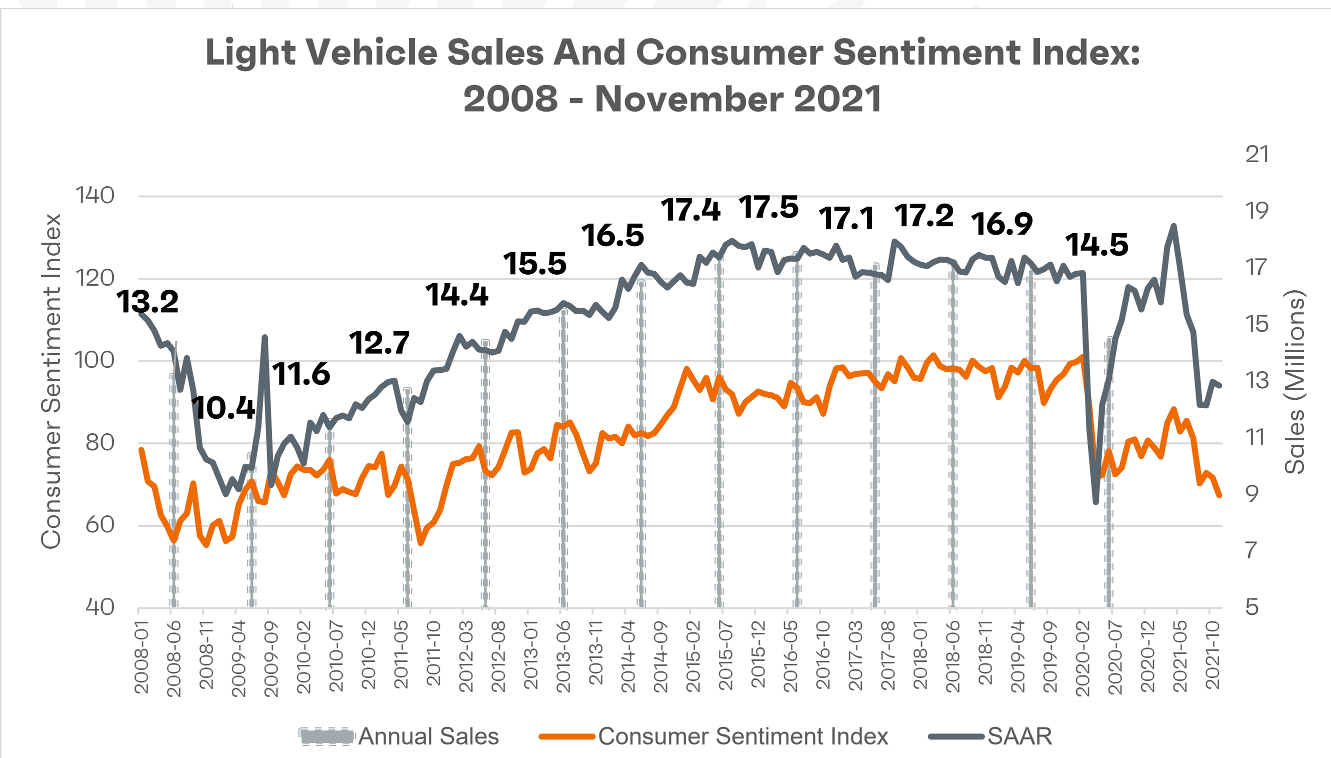
- **"Motor Vehicles And Parts Production Added 27,700 Jobs Alone Last Month, Making Up Almost Half Of All Manufacturing Jobs Created In October And About 70% Of The 41,000 New Posts Filled In Durable Goods Production."**[33]

For October, The ISM Fell To A 16-Month Low To 60.8% From 61.1 In September. "U.S. manufacturing activity slowed in October as a measure of new orders dropped to a 16-month low and factories continued to experience delays with deliveries of raw materials. The Institute for Supply Management (ISM) said on Monday its index of national factory activity slipped to a reading of 60.8 last month from 61.1 in September. [34]

The Index Of Prices For Raw Materials Accelerated To 85.7. "The survey's measure of prices paid by manufacturers accelerated to 85.7 from a reading of 81.2 in September. "

Consumer Confidence and Sales (Updated 12/2)

"Consumers expressed less optimism in the November 2021 survey than any other time in the past decade about prospects for their own finances as well as for the overall economy. The decline was due to a combination of rapidly escalating inflation combined with the absence of federal policies that would effectively redress the inflationary damage to household budgets. While pandemic induced supply-line shortages were the precipitating cause, the roots of inflation have grown and spread more broadly across the economy. One-in-four consumers cited inflationary erosions of their living standards in November. Rather than gradually easing along with diminished shortages, complaints about falling living standards doubled in the past six months and quintupled in the past year. Consumers anticipated declining inflation adjusted incomes (see the chart), and expected spending cutbacks due to rising inflation to slow the pace of growth in the national economy in the year ahead. With one important caveat: consumers have a strong desire to resume more normal holiday gatherings with family and friends, and to use their accumulated savings to fund their celebrations and gifts despite higher prices. While the holiday bye ends in January, the upward momentum in prices and wages will continue uninterrupted. Even when Biden's social infrastructure program is finally approved, it will not immediately ease inflation nor wage growth. The real transient issue is the rapidly closing window when effective policy actions can be accomplished by very modest nudges in interest rates and regulations. At present, consumers still expect inflation to revert to a much lower level over the next five years, but that anchor has begun to yield ground: long-term inflation expectations rose by 0.5 percentage points in the past year, to 3.0% in November. If expected long-term inflation continues to accelerate in the first half of 2022, it will make its containment more difficult, and even more so, if the rise continues into the last half of 2022. Moreover, a protracted inflationary period will bring a renewed urgency for expanding government relief payments from job losses to cover inflationary declines in living standards. There will be no more compelling precedent for consumers that the 5.9% inflationary adjustment in Social Security payments that will start in January 2022."[35]



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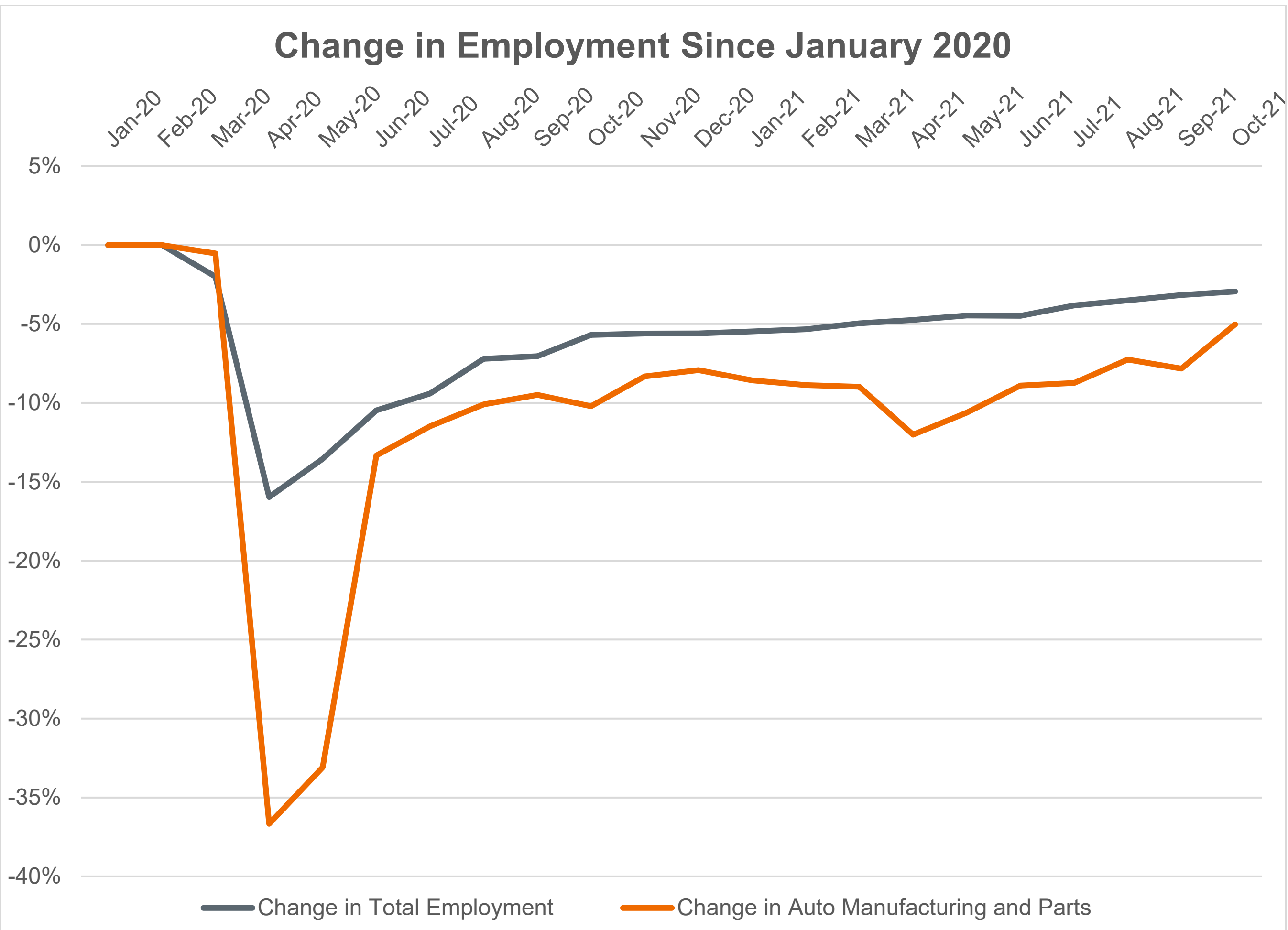
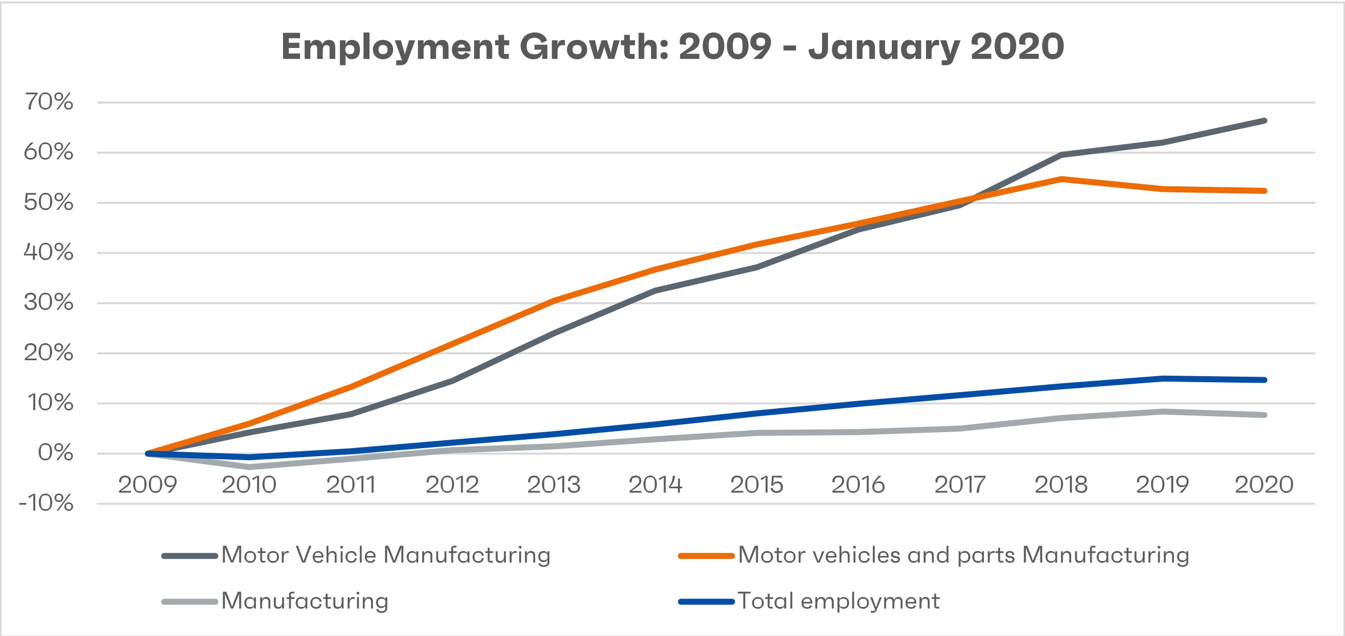
Employment (Updated 11/11)

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 36,500 jobs since January 2020.[36]

- **Motor Vehicle And Parts Manufacturing Gained 27,700 Jobs In October.**[37]



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.[38] 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.



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