

# READING THE METER

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

December 22, 2021

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## Forecast Meter

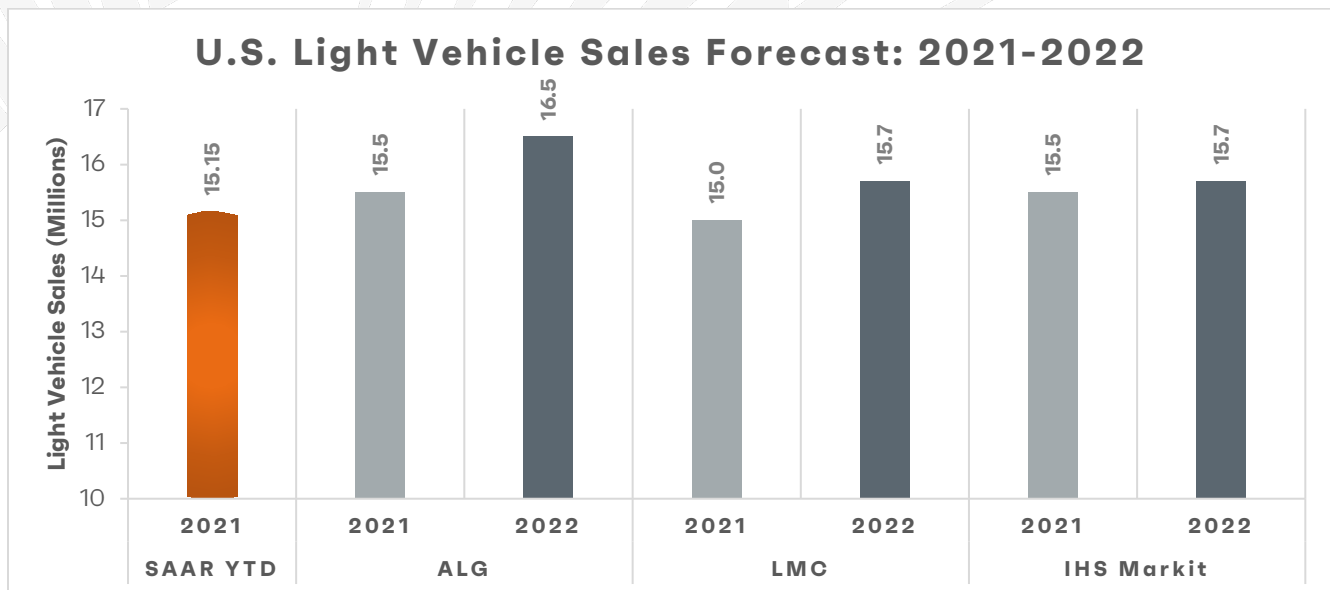
### Forecast Summary (Updated 12/22)

<b>2020-2021 Sales,<sup>1</sup> Extended Sales Forecast<sup>2</sup> and Production Forecasts<sup>3</sup></b>		
	<b>U.S. Sales &amp; Forecasts</b>	<b>North American Production</b>
<b>June '20</b>	1,103,791 (-24% YoY)	1,135,807 (-19.7% YoY)
<b>July '20</b>	1,227,091 (-12.1% YoY)	1,261,884 (+2.2% YoY)
<b>August '20</b>	1,325,144 (-19.1% YoY)	951,983 (-1.1% YoY)
<b>September '20</b>	1,344,310 (6.4% YoY)	1,395,830 (+2.1% YoY)
<b>October '20</b>	1,345,401 (0.9% YoY)	1,413,207 (+3.7% YoY)
<b>November '20</b>	1,193,180 (-15.4% YoY)	1,260,763 (-6.4% YoY)
<b>December '20</b>	1,608,875 (5.9% YoY)	1,115,542 (+2.8% YoY)
<b>January '21</b>	1,094,689 (-3.6% YoY)	1,175,940 (-14.0% YoY)
<b>February '21</b>	1,180,506 (-5.3% YoY)	1,120,200 (-22.9% YoY)
<b>March '21</b>	1,581,067 (+59.7% YoY)	1,376,904 (31% YoY)
<b>April '21</b>	1,512,186 (+111.4 YoY)	1,094,891 (-21% YoY)
<b>May '21</b>	1,577,941 (+41% YoY)	729,879 (+271% YoY)
<b>June '21</b>	1,296,517 (+17% YoY)	1,107,958 (-1.9% YoY)
<b>July '21</b>	1,288,494 (-7.9% YoY)	926,035 (3% YoY)
<b>August '21</b>	1,090,446 (-11% YoY)	1,113,327 (-19% YoY)
<b>September '21</b>	1,006,875 (-25% YoY)	907,470 (-33.4% YoY)
<b>October '21</b>	1,046,282 (-20% YoY)	1,140,383 (-22.1% YoY)
<b>November '21</b>	1,001,351, (-20% YoY)	1,168,245 (-9% YoY)
<b>1<sup>st</sup> Quarter '20</b>	3,476,512 (-12.7% YoY)	3,754,533 (-11.7% YoY)
<b>2<sup>nd</sup> Quarter '20</b>	2,948,410 (-33.3% YoY)	1,371,420 (-67.6% YoY)
<b>3<sup>rd</sup> Quarter '20</b>	3,904,539 (-9.2% YoY)	3,989,982 (-.5% YoY)
<b>4<sup>th</sup> Quarter '20</b>	4,159,622 (-2.1% YoY)	3,925,709 (-2.5% YoY)
<b>1<sup>st</sup> Quarter '21</b>	3,869,872 (+11.3 YoY)	3,688,512 (-4.7% YoY)
<b>2<sup>nd</sup> Quarter '21</b>	4,153,855 (+20.2% YoY)	3,309,000 (132% YoY)
<b>3<sup>rd</sup> Quarter '21</b>	13.3 SAAR (-14% YoY)	2,930,000 (-26.7% YoY)
<b>4<sup>th</sup> Quarter '21</b>	13 SAAR (forecast)	3,200,000 (-16% YoY) (forecast)
<b>2020 Calendar Year</b>	14,463,935 (-14.7% YoY)	13,210,000 (-23.1% YoY)
<b>2021 Full Year Estimate</b>	15 million units (4% YoY)	12,913,006 (-2% YoY) (forecast)

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

**Wards Intelligence Outlook (12/2)<sup>4</sup>:** “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)<sup>5</sup>:** “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 12/22)

**Wards Intelligence December Production Outlook (12/22)**<sup>6</sup>: “Total vehicle production in North America in Q1-2022 is projected to nearly match the same-period year-ago, likely a precursor to long-term growth. Combined production of light-vehicles and medium- and heavy-duty trucks is expected to total 3.70 million units in January-March 2022, a smidgeon below Q-2021’s 3.72 million units. Although improving, global supply-chain disruptions continue to create a high-risk environment for production planners, and the increase in cases of the Covid-19 Omicron variant, which some experts expect to accelerate after the December holiday season, poses the biggest potential headwind to automakers in Q1-2022. Compared to most other regions, the production cuts in North America due to the disruptions – semiconductor shortages in particular – greatly improved over the past couple months. Production in November finished 10,000 units below expectations, a relatively miniscule amount compared with the shortfalls throughout most of 2021. Furthermore, the production outlook in December is tracking nearly even with month-ago’s expectations for the period, while revisions to some big-truck totals initially estimated for October increased that month’s final tally some 4,900 units. In total, Q4-2021 is tracking to production of 3.32 million units, 15.7% below year-ago’s total, and a slight paring of 6,800 units from last month’s outlook for the period. Light-vehicle output is pegged at 3.20 million in Q4, 16.1% below like-2020, and a cut from prior expectations of 14,300 units.

“Light-vehicle production in 2021 is tracking to 12.889 million units, 0.5% below the prior year’s 12.951 million. Light-vehicle production was last lower in 2010 – 11.910 million units.”

**IHS Markit North American Outlook 2022 (12/15)**<sup>7</sup>: “The outlook for North America light vehicle production was reduced by 18,000 units for 2021 and was largely unchanged for 2022 (and was increased by 91,000 units for 2023). The forecast revisions for 2021 continue to be primarily driven by semiconductor challenges and other supply chain issues taking a greater toll on production in the region. On a positive note, mass downtime announcements have slowed dramatically 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. Despite improving momentum heading into 2022, the production outlook remains largely unchanged for 2022 at 15.2 million units. The December 2021 forecast continues to reflect weakness more heavily weighted in the first half as expectations are for the supply of semiconductors to improve throughout the year. While production is projected to improve relative to 2020 and 2021, output 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. Additional support for 2022 production comes from 29 all-new or localized vehicles being added to the region. Of note, production in 2023 was revised higher by 0.5% or 91,000 units with the increase associated with a stronger outlook for Tesla.

### Wards Intelligence Inventory

**Outlook (12/2)<sup>8</sup>:** “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.

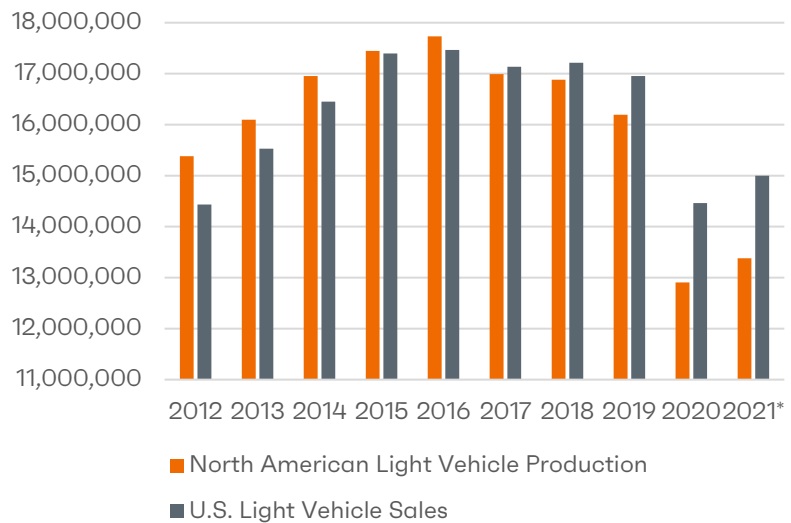
### IHS Global Outlook (9/22)<sup>9</sup>:

“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.”

North American Production And U.S. Light Vehicle Sales

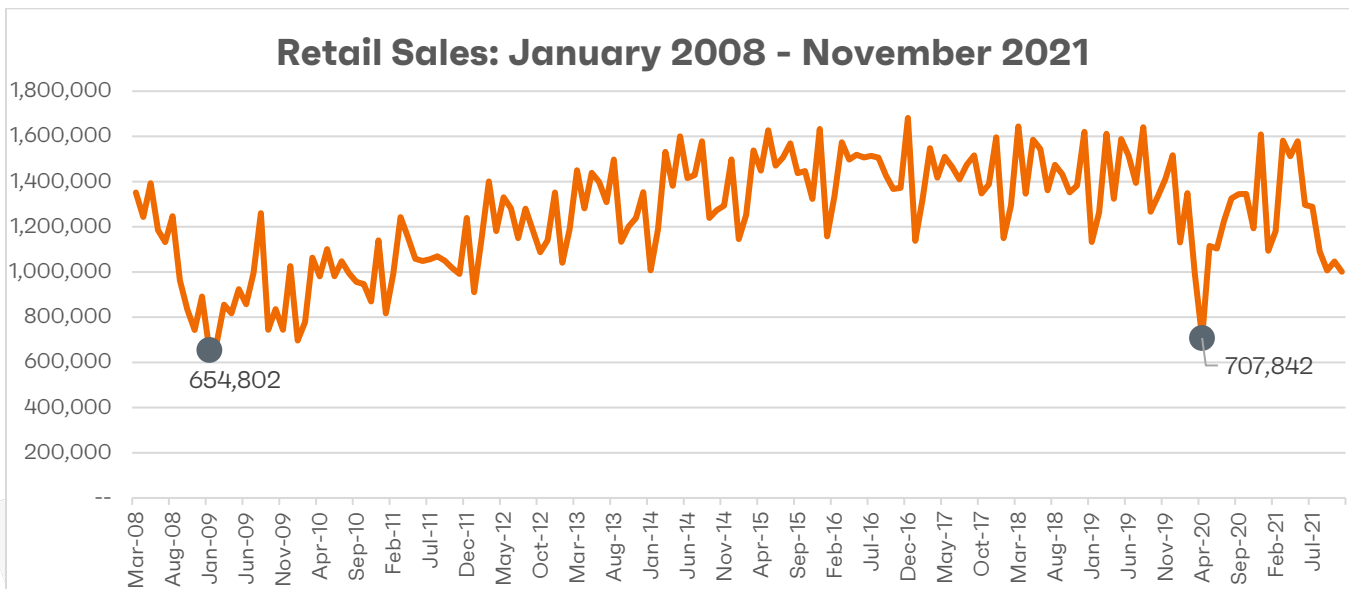


## Market Meter

### 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.



### **November Sales (Updated 12/2)**

**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.

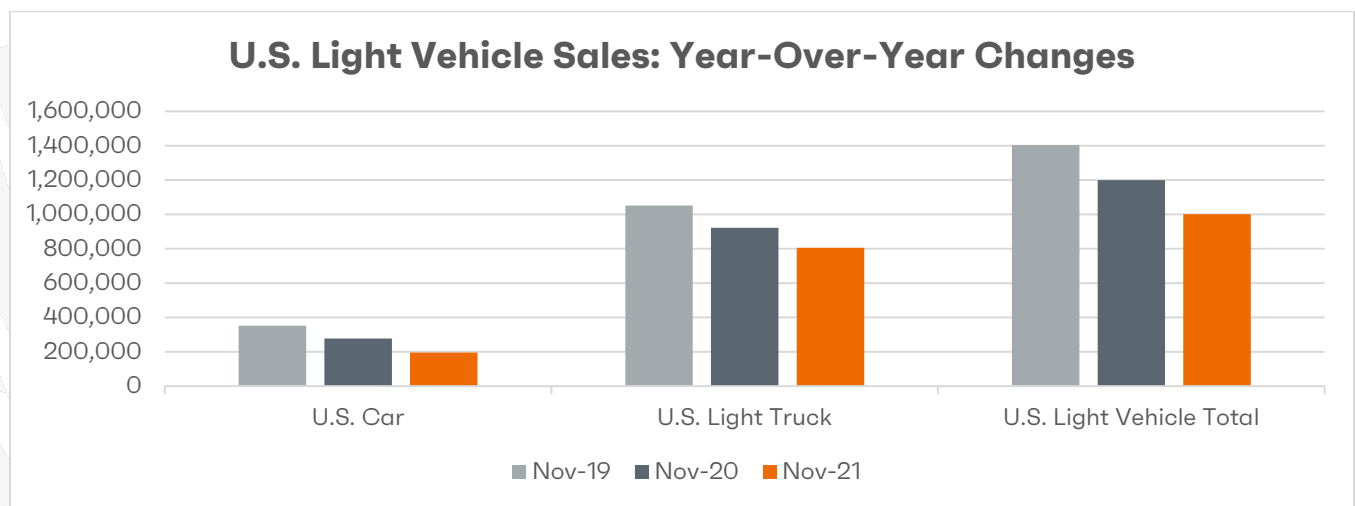
“It is possible there was some direct consumer pushback from rising prices. TrueCar’s initial estimate for the month pegged average transaction prices in November at \$41,139, a third-straight any-month record, and 8.6% above like-2020. Moreover, average incentive spending declined a whopping 50% year-over-year 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.”<sup>10</sup>



### **Fleet Sales (Updated 12/2)**

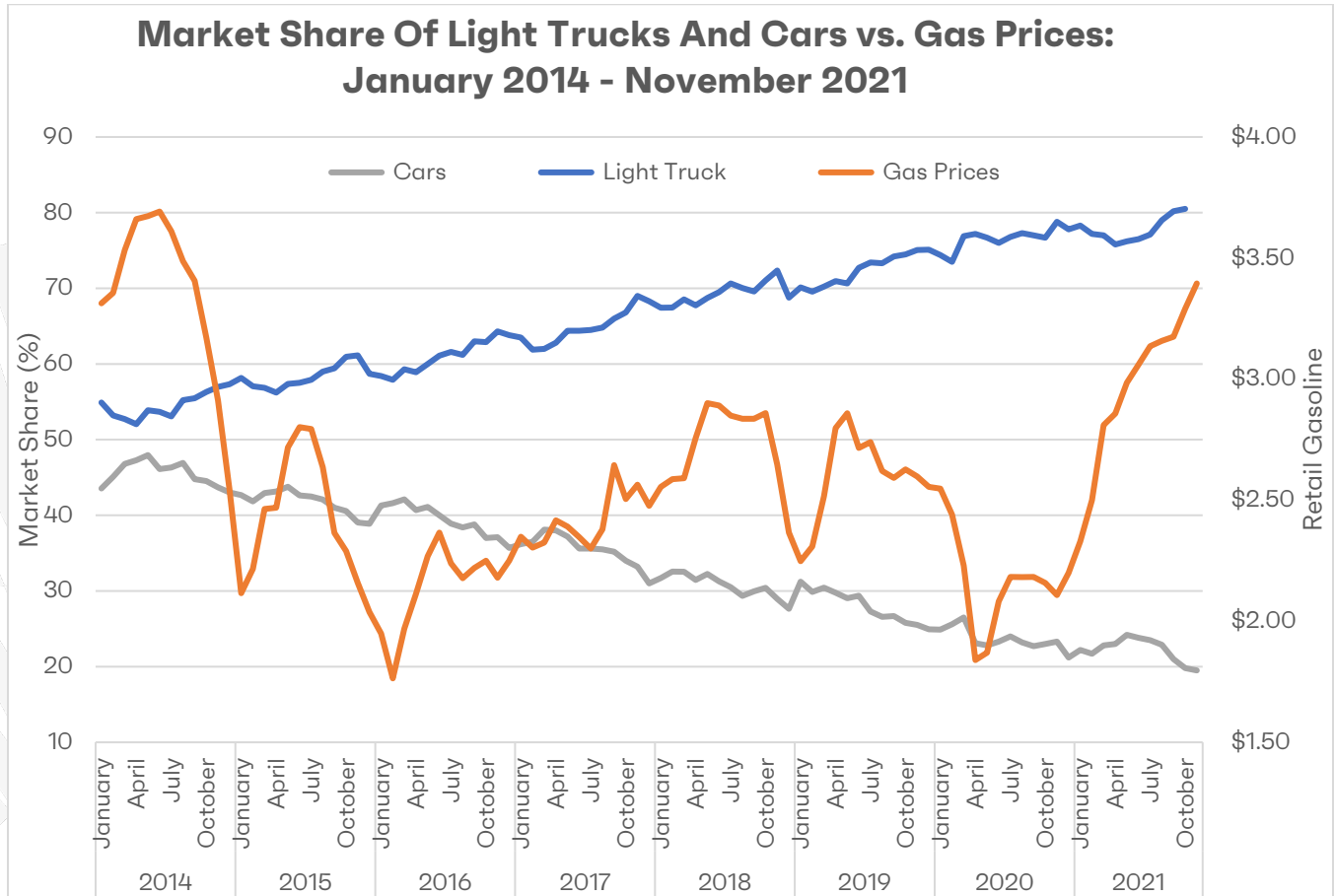
**TrueCar<sup>11</sup>:** “Fleet sales for November 2021 are expected to be down 13% from a year ago and down 1% from October 2021 when adjusted for the same number of selling days.”

**J.D. Power<sup>12</sup>:** “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.

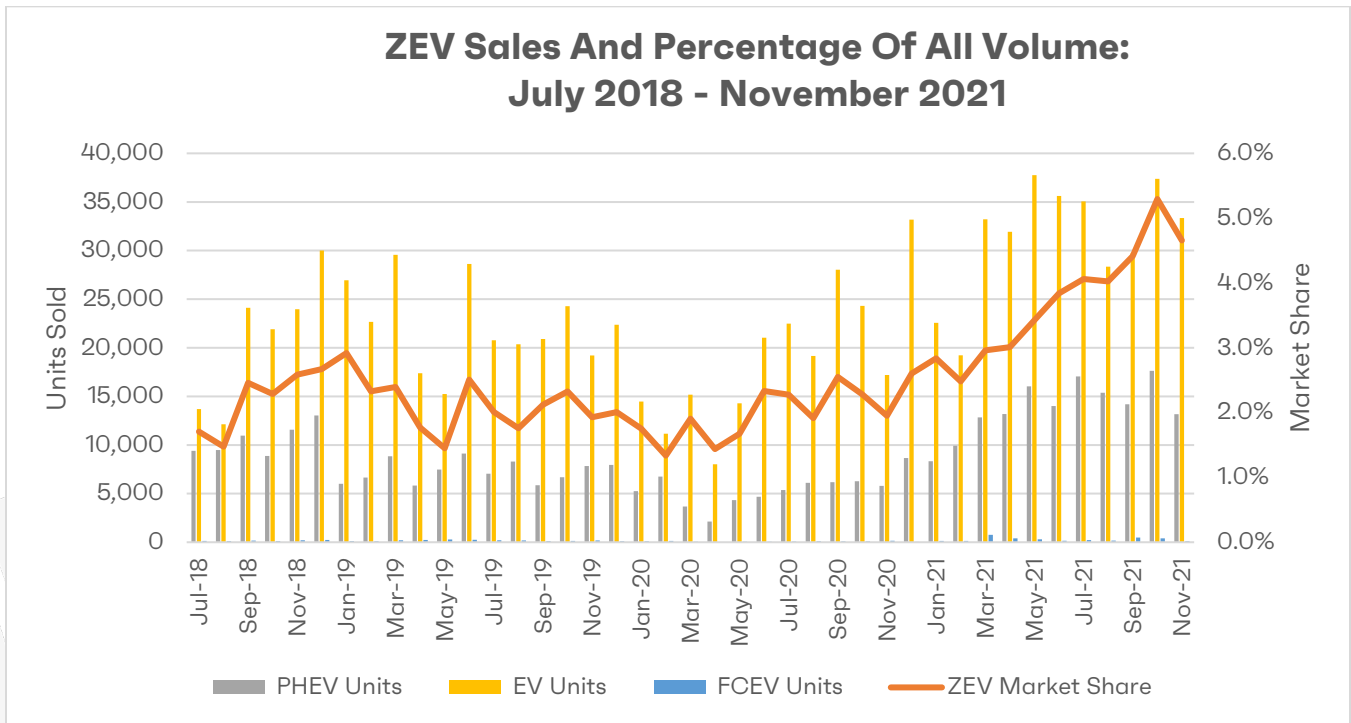
**Historic Perspective:** The upward trend in the popularity of light trucks over cars has been steady since 2013, when only 2% of annual market share separated the two segments<sup>13</sup> and gas was over \$3.00<sup>14</sup> a gallon. As fuel prices dropped below the \$3.00 mark in mid-September 2014, 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.<sup>15</sup>



## ZEV Powertrain Sales (Updated 12/2)

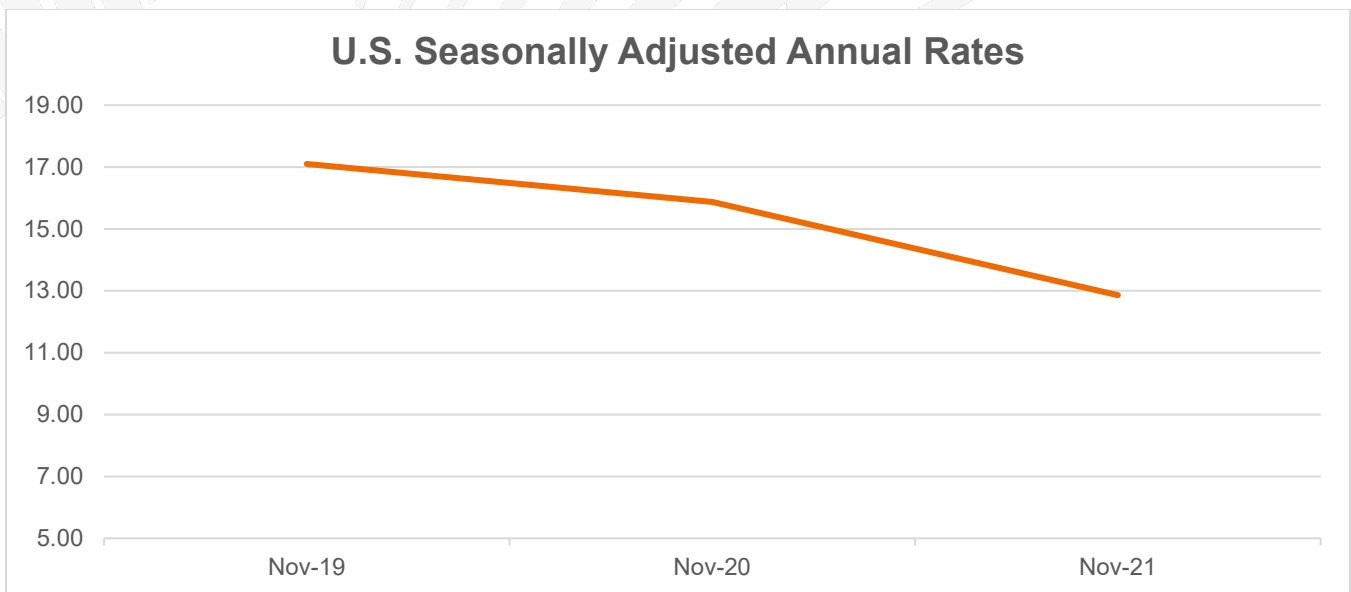
Sales of zero emission vehicles (BEV, PHEV, & Fuel Cell) accounted for 4.7% of total vehicle sales in November 2021, up 2.7 pp from a year ago and down .6 pp from October 2021. Sales of battery electric vehicles led the way for ZEVs, accounting for 3.3% of total sales, up 1.88 pp from November 2020. Plug-in hybrids accounted for 1.32%, nearly three times the amount from the same time last year.<sup>16</sup>





## 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.”<sup>17</sup>

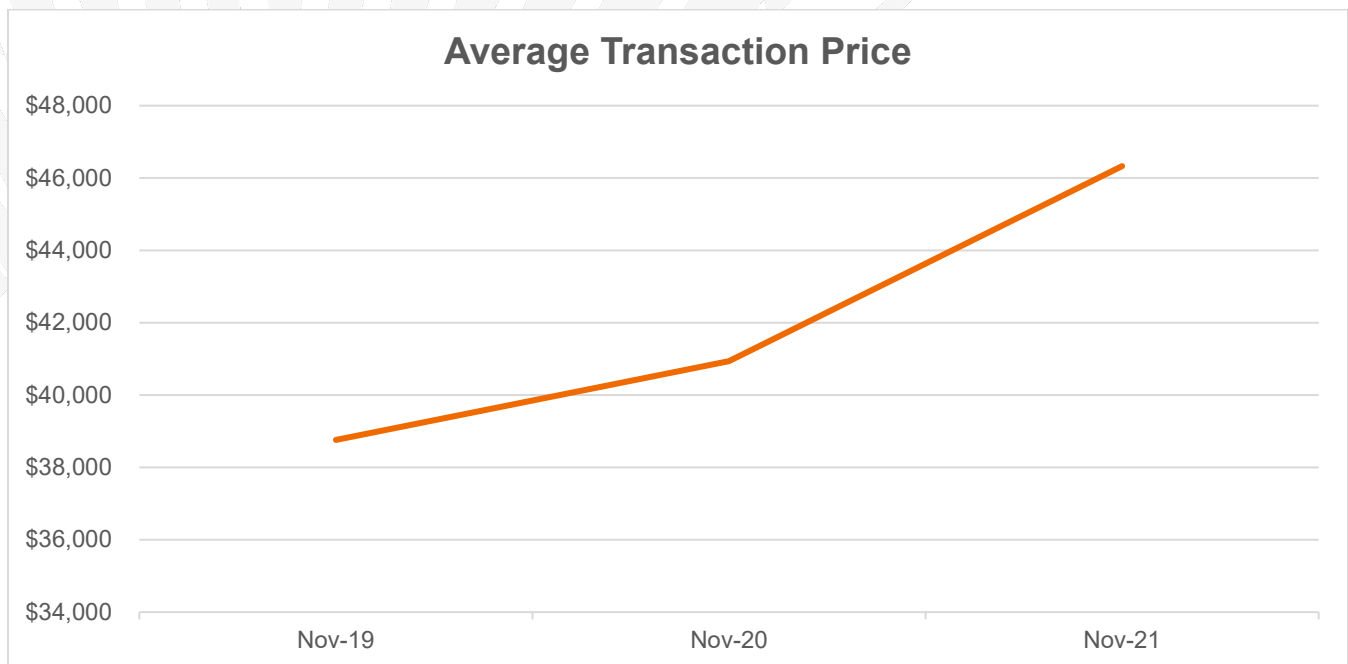


## Average Transaction Price (Updated 12/15)

**Kelley Blue Book (November):** “New-vehicle prices increased further into record territory in November, including a modest increase from the month prior. According to new data released today by Kelley Blue Book, average transaction prices (ATPs) are sharply elevated from last year, up more than 13% from November 2020. New-vehicle inventory levels remain tight, and with sufficient consumer demand, dealers have been able to hold prices at or above the manufacturer's suggested retail price (MSRP). In recent research from Cox Automotive, nearly 70% of franchised dealers indicated their new-vehicle prices are higher than pre-pandemic levels.”<sup>18</sup>

**Used Vehicle Prices Are Continuing To Increase, With Wholesale Vehicle Prices Increasing 43.5% Year-Over-Year.** “Used car prices are still going up. Wholesale vehicle prices, or what dealers pay, rose 3.9% in November, putting the year-over-year increase at 43.5%.”<sup>19</sup>

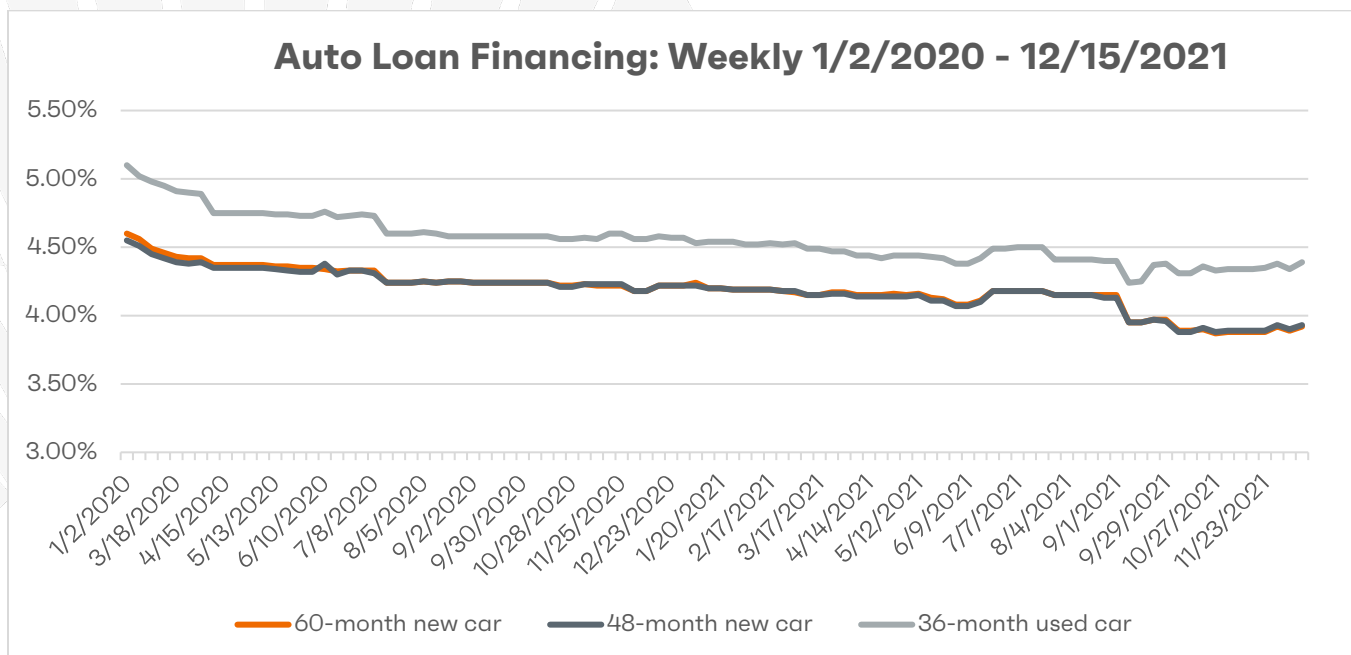
**J.D. Power<sup>20</sup>:** “Average transaction prices are expected to reach a November record of \$44,043, a sixth consecutive month above \$40,000, and 18.1% higher than November 2020 when prices hit \$37,284. This is partly due to record-low manufacturer incentives. The average manufacturer incentive 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%.”



## Auto Loan Financing (Updated 12/22)

**Interest Rates Rise Slightly:** Interest rates for new cars rose slightly (.03 pp) from their recent lows and now stand at 3.92%. Rates also rose .05 pp on the 36-month used car loan at 4.39%. Since the beginning of last year, rates are down 0.68 pp, and down 0.30 pp since the same time a year ago.<sup>21</sup>

Dates	60-month new car	48-month new car	36-month used car
1/2/2020	4.60%	4.55%	5.10%
12/16/2020	4.22%	4.22%	4.58%
12/9/2021	3.89%	3.90%	4.34%
12/15/2021	3.92%	3.93%	4.39%
One Week Change	0.03%	0.03%	0.05%
Two Week Change	0.00%	0.00%	0.01%
Change since 1/3/20	-0.68%	-0.62%	-0.71%
One Year Change	-0.30%	-0.29%	-0.19%

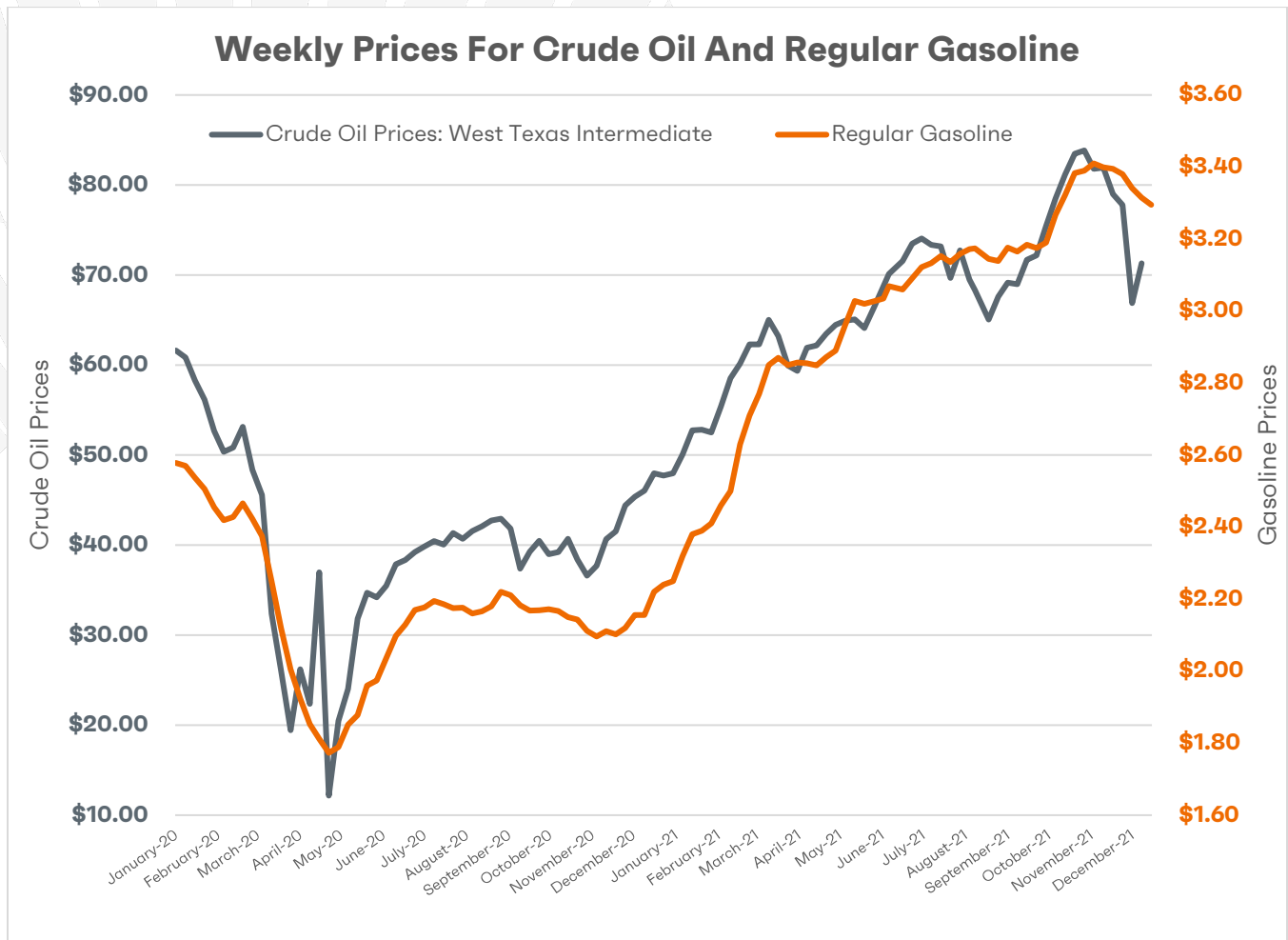


## Crude Oil and Gas Prices (Updated 12/22)

**EIA Outlook For Gasoline (12/8)<sup>22</sup>:** “U.S. regular gasoline retail prices averaged \$3.39 per gallon (gal) in November, a 10 cents/gal increase from October and \$1.29/gal higher than in November 2020. The November monthly average was the highest since September 2014. We forecast that retail gasoline prices will average \$3.13/gal in December before falling to \$3.01/gal in January and \$2.88/gal on average in 2022.”

**EIA Outlook For Oil (12/8)<sup>23</sup>:** “Brent crude oil spot prices averaged \$81 per barrel (b) in November, a \$3/b decrease from October 2021 but a \$38/b increase from November 2020. Crude oil prices have risen over the past year as result of steady draws on global oil inventories, which averaged 1.4 million barrels per day (b/d) during the first three quarters of 2021. Crude oil prices fell significantly on November 26, and the Brent spot price began December below \$70/b. The drop in prices followed the identification of the new COVID-19 Omicron variant, which raised the possibility that petroleum demand could decline in the near term. We expect Brent prices will average \$71/b in December and \$73/b in the first quarter of 2022 (1Q22). For 2022 as a whole, we expect that growth in production from OPEC+, of U.S. tight oil, and from other non-OPEC countries will outpace slowing growth in global oil consumption, especially in light of renewed concerns about COVID-19 variants. We expect Brent prices will remain near current levels in 2022, averaging \$70/b.”

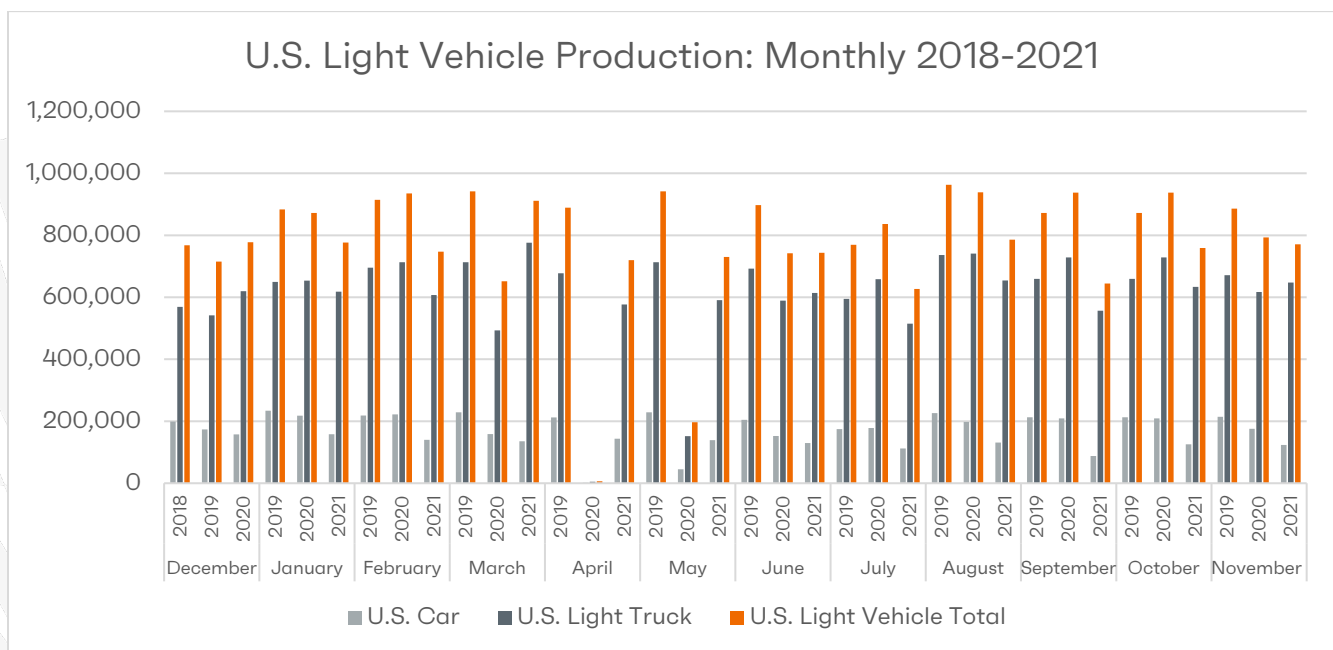
**Oil Rebounds Slightly As Gas Steadily Declines From Multiyear Highs:** Oil prices, as benchmarked at West Texas Intermediate, rose slightly to \$71.31 a barrel (12/10). Since election day, oil prices have climbed more than \$33 a barrel. Gas prices fell \$.02 to \$3.30, remaining near the highest level since October 2014. Gas is 28% higher than the beginning of 2020.<sup>24</sup>



## Production Meter

### U.S. Light Vehicle Production (Updated 12/22)

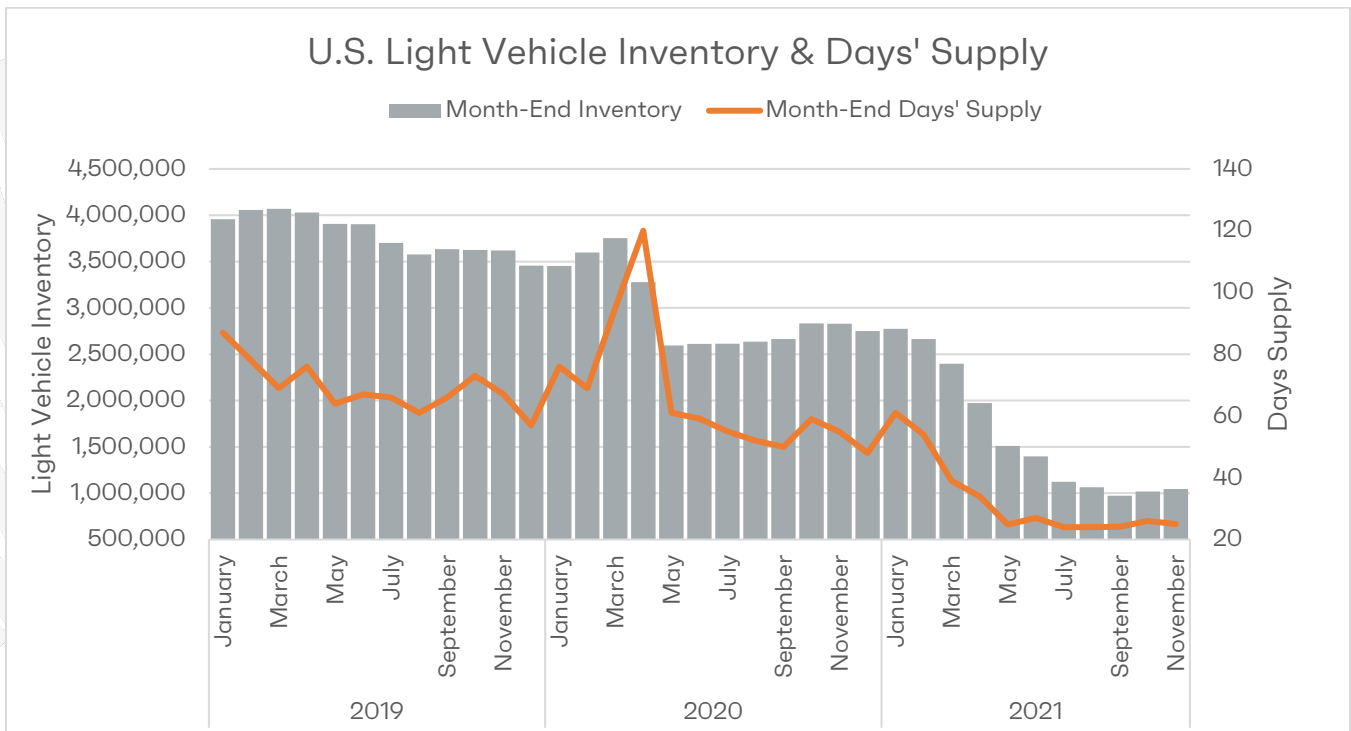
**U.S. Light vehicle production for November 2021 increased month-over-month by 1.6 percent, totaling 770,992 (123,528 cars, 647,464 light trucks), year-over-year, production is down 2.8% from 2020.** <sup>25</sup>



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

**WardsIntelligence Inventory Update (12/2)<sup>26</sup>:** “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)

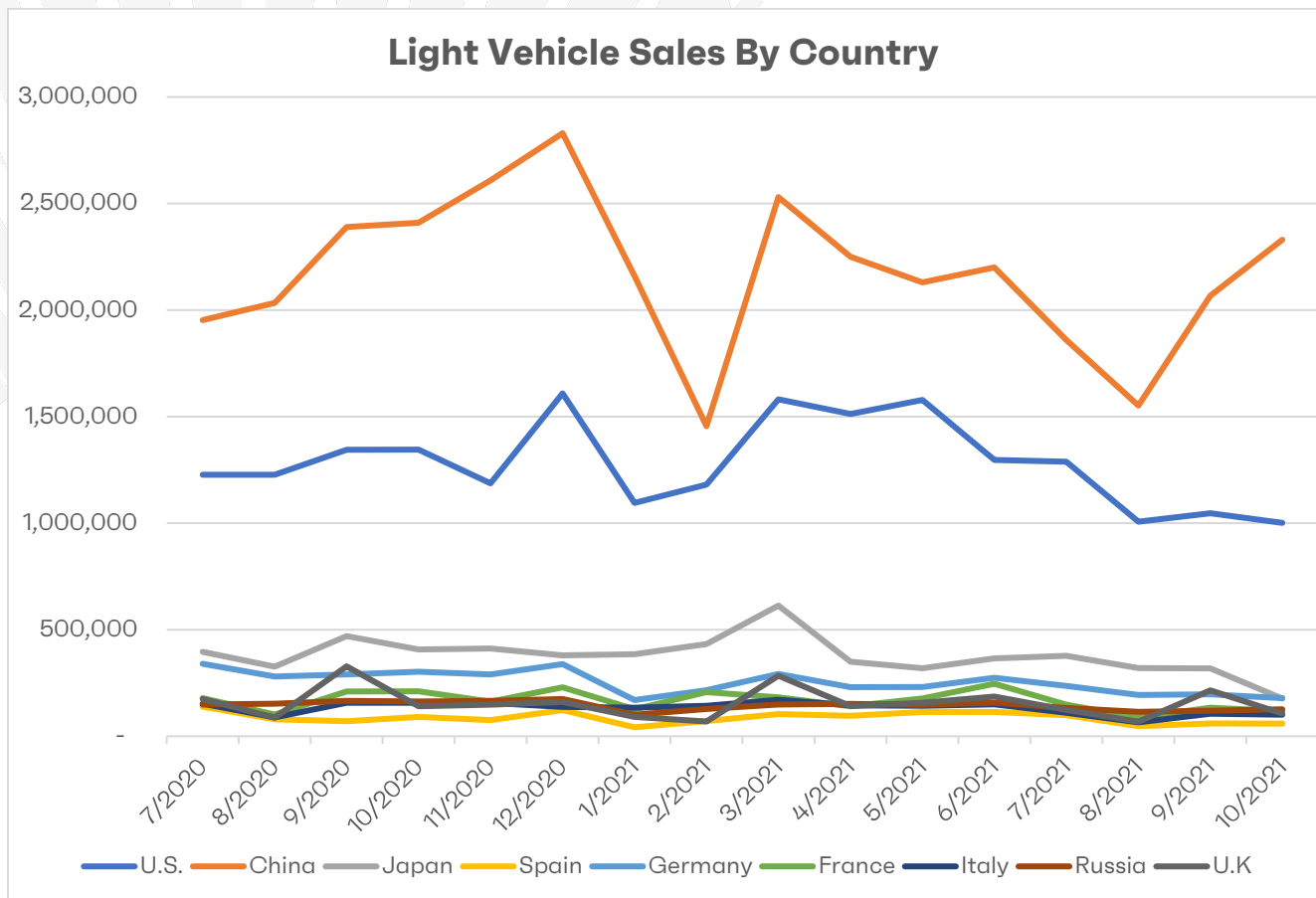
**Wards Intelligence Outlook:** “World vehicle sales in October were down 16.5% year-over-year to 6.63 million. Although October marked the fourth month of losses for 2021, year-to-date deliveries rose 9.3% to 69.81 million.

“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.”<sup>27</sup>

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



## Global Light Vehicle Production Outlook (Updated 12/15)

**IHS Markit Forecast:** “As another year marked by disruption draws to a close, supply chain conditions remain a key factor in governing an elusive production recovery which is necessary to support sales activity. Production revisions in the near-term have stabilized (and even improved) somewhat; however, there remains an increasing focus on the intermediate-term and the trajectory of the recovery in many markets requiring the support of incremental semiconductor capacity gains. The combination of robust chip demand from non-automotive sectors coupled with increasing automotive semiconductor content levels and requirements will keep pressure on the semiconductor supply chain in the near-to-intermediate term. The December 2021 forecast update includes a mix of near-term upgrades for 2021 to reflect stronger production results for Q4-2021 and some stabilization in semiconductor supply offset by reductions for 2022 (particularly Q4-2022) due to adjusted expectations regarding increased chip availability. The more noteworthy regional adjustments with the latest forecast update are detailed below:

**“Europe:** The outlook for Europe light vehicle production was increased modestly by 2,000 units for 2021 and reduced by 93,000 for 2022 (and reduced by 157,000 units for 2023). While recent production actuals in Europe have disappointed, there have been positive signals for November and December output, particularly from German automakers, and as a result, our forecast for 2021 is largely unchanged for the December 2021 update. Looking forward to 2022, the downward forecast revision was almost exclusively focused on Q4-2022 to reflect a somewhat longer duration of the core shortage of semiconductors. The cuts to Q4-2022 affect French automakers, in particular, as the seasonality of the previous forecast reflected further incremental improvement at the end of the year which was adjusted with the December 2021 update. The expectation for extended supply constraints drags into 2023, although a fair part of the downgrade applied to 2023 is the result of removing the Tesla Model 3 from the European production forecast (partially offset by higher volumes for the Model Y).

**“Greater China:** The outlook for Greater China light vehicle production was increased by 366,000 units and reduced by 211,000 units for 2021 and 2022, respectively (and increased by 279,000 units for 2023). After a challenging summer, semiconductor deliveries have improved, supporting recent outperformance for production in October. Given the stronger recent performance, we have upgraded our expectations for both November and December. While inventories remain at very low levels, potential electric power shortages in the winter introduce more uncertainties before as we approach 2022. Light vehicle production for mainland China in 2021 is expected to total 23.7 million units, reflecting a year-on-year increase of 1.4%, an improvement relative to our November forecast. Due to the fragile semiconductor supply chain and a potential pay-back effect from a strong Q4-2021, light vehicle production remains vulnerable to disruption in 2022. As a result, the production outlook was reduced for next year to reflect those uncertainties leading to more modest regional growth of 1.6%, with more meaningful growth deferred to 2023 and 2024.

**Japan/Korea:** Full-year 2021 Japan production volume was increased by 87,000 units relative to the November forecast as October production results and activity in November and December are



shaping up better than expected. Nevertheless, while semiconductor shortage issues have been easing somewhat, we continue to expect chip supply to remain challenged into 2022. Japan production volumes in the intermediate-term were largely unchanged with factors such as re-shoring of Lexus ES production being offset by export challenges with select legacy internal combustion engine vehicles given the accelerated spread of battery electric vehicles in Europe and the United States. Full-year 2021 South Korea production was reduced by 20,000 units relative to the previous forecast as recent production results reflected somewhat weaker performance. Due to ongoing concerns around available semiconductor capacity in the near-term, production for 2022 was reduced by 16,000 units relative to the November forecast. South Korea production in the intermediate-to-long term reflects volume adjustments associated with Hyundai Motor Group's evolving electrification strategy. Vehicles such as the Kia K3 and Pride are expected to shift to overseas plants and upcoming EVs based on the E-GMP K platform are expected to assume product positioning from vehicles like the Kia Soul and Stonic. As a result, long-term South Korea output was reduced accordingly through the forecast horizon."<sup>28</sup>

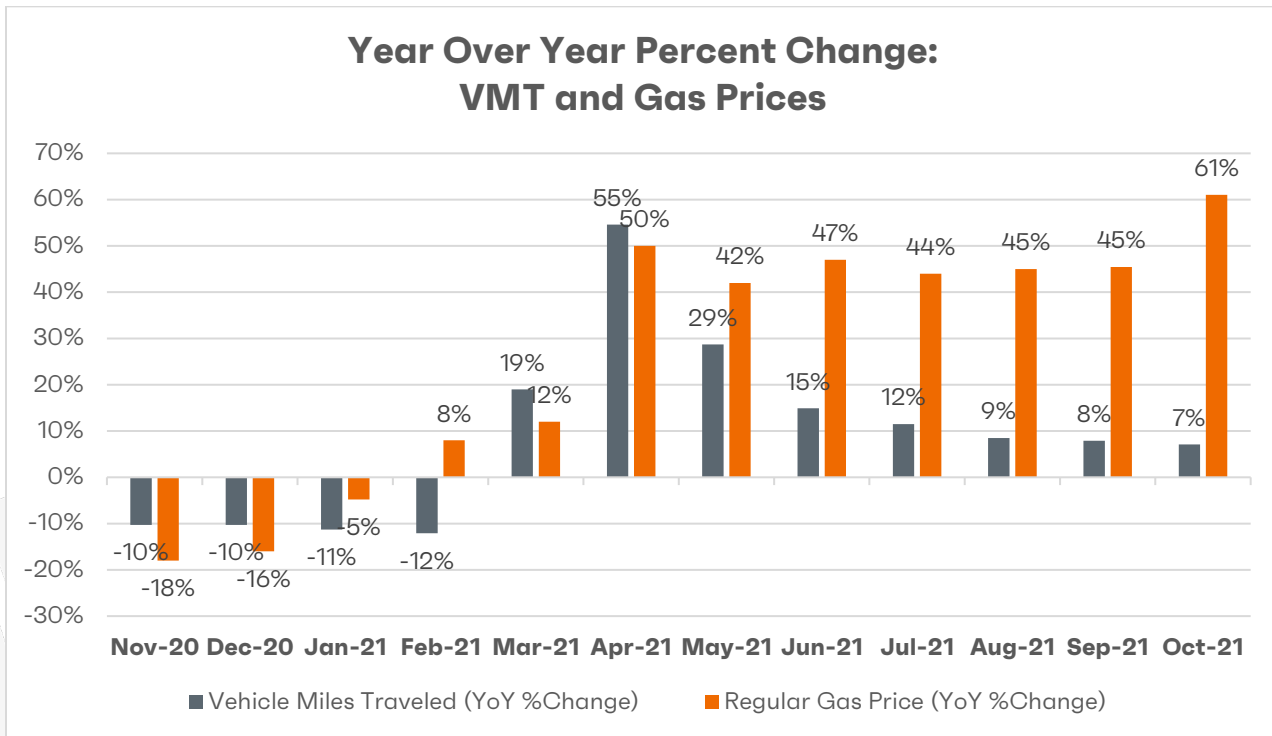
## Recovery Meter

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### Roadway Travel (Updated 12/22)

According to the U.S. Department of Transportation, seasonally-adjusted vehicle miles traveled in October rose 7.1% from the same time a year ago. The cumulative travel estimate for 2021 is 262.5 billion vehicle miles.<sup>29</sup>

- Travel on all roads and streets changed by 7.1% (18.4 billion vehicle miles) for October 2021 as compared with October 2020. Travel for the month is estimated to be 277.5 billion vehicle miles.
- The seasonally adjusted vehicle miles traveled for October 2021 is 266.8 billion miles, a 7.9% (19.6 billion vehicle miles) increase over October 2020. It also represents 0.5% increase (1.3 billion vehicle miles) compared with September 2021.
- Cumulative Travel for 2021 changed by 11.2% (262.5 billion vehicle miles). The cumulative estimate for the year is 2,613.1 billion vehicle miles of travel.



## Economic News (Updated 12/8)

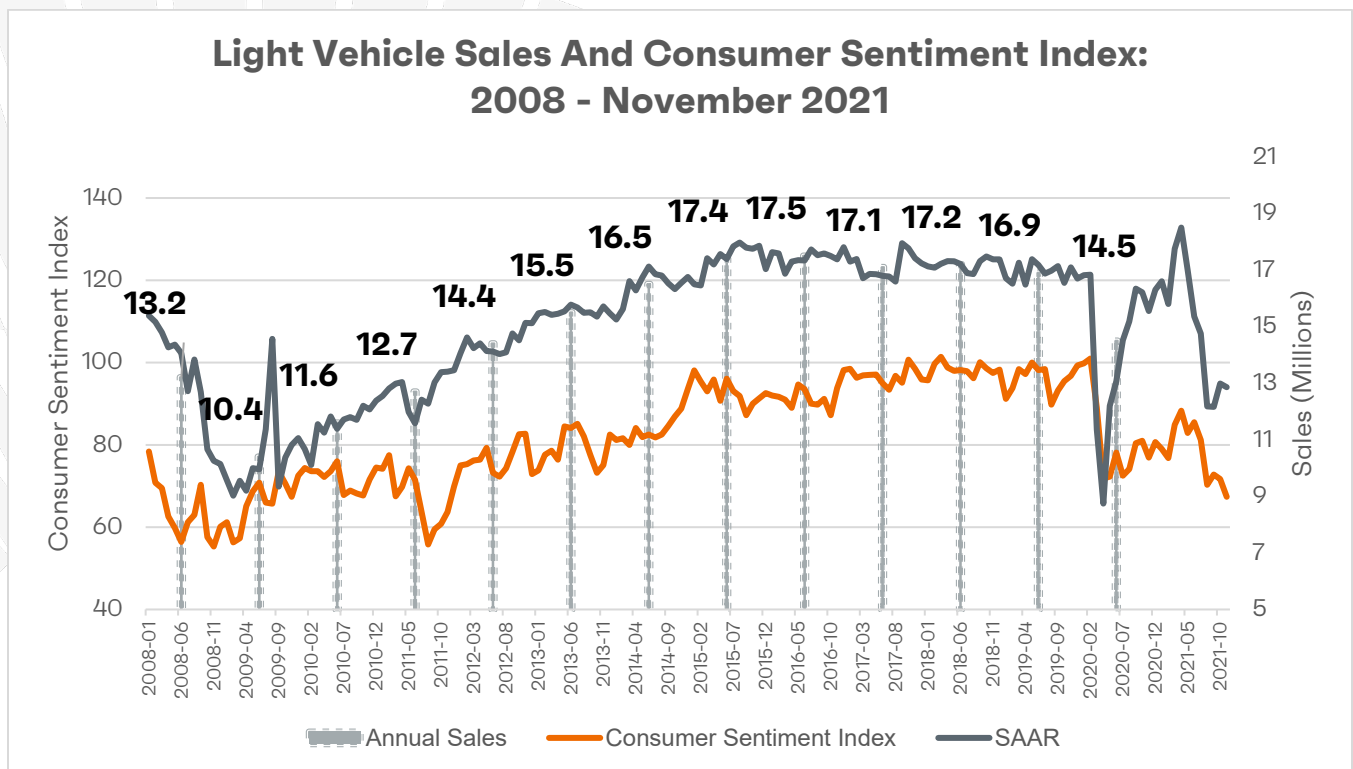
**While Manufacturing Gained 31,000 Jobs In November, The Gains Were Hampered By A Loss Of 10,000 By Motor Vehicles And Parts.** “Manufacturing increased employment by 31,000 jobs last month, split almost evenly between non-durable and durable goods industries. Non-durable goods added 16,000 jobs with durable goods boosting employment by 15,000, according to a breakdown by industry issued today by the U.S. Bureau of Labor Statistics. . . . Industries that lost jobs included motorized vehicles and parts, down 10,100 jobs.”<sup>30</sup>

**For November, The ISM Rose To 61.1%, Up From 60.8% In October.** “Manufacturing sped up in November on improvements in new orders, production and employment, the Institute for Supply Management said today. The Tempe, Ariz.-based group’s manufacturing index, known as the PMI, rose to 61.1 percent last month, up from 60.8 percent in October.”<sup>31</sup>

## Consumer Confidence and Sales (Updated 12/15)

“Sentiment posted a small overall gain in early December (+4.5%), although it was still nearly identical to the average reading in the prior four months (70.6). The more interesting result was the large disparity between monthly gain among households with incomes in the lowest third (+23.6%) of the income distribution compared with the modest losses among households in the middle (-3.8%) and top third (-4.3%). While small differences in the direction of change are rather common, it is quite unusual to record such a large change in the bottom third: a larger one-month percentage was recorded only

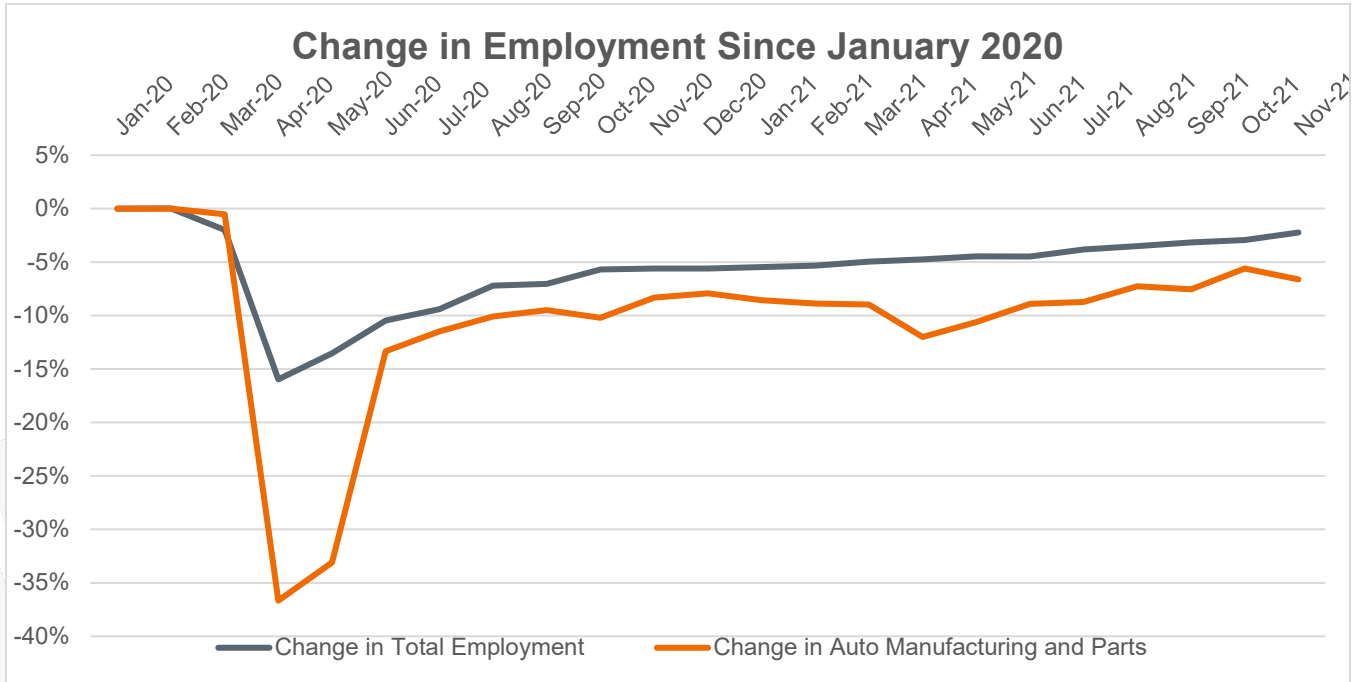
once before, a gain of 29.2% in June 1980. While it is usually assumed that such extreme changes represent an erroneous result due to small samples, in 1980 it was the households in the bottom income third that initially signaled the end of the first part of the double recession in 1980-82, with upper income households following in subsequent months. The core of the renewed optimism among the bottom third was the expectation of income increases of 2.9% during the year ahead; the last time a higher gain for this group was expected was in 1981. This suggests an emerging wage-price spiral that could propel inflation higher in the years ahead. When directly asked whether inflation or unemployment was the more serious problem facing the nation, 76% selected inflation while just 21% selected unemployment (the balance reported the problems were equal or they couldn't choose). The dominance of inflation over unemployment was true for all income, age, education, region, and political subgroups. While a shift in policy emphasis is necessary, it will be difficult to gauge the right balance between fiscal and monetary policies that both trims inflation and maintains the unemployment rate near its current lows.”<sup>32</sup>



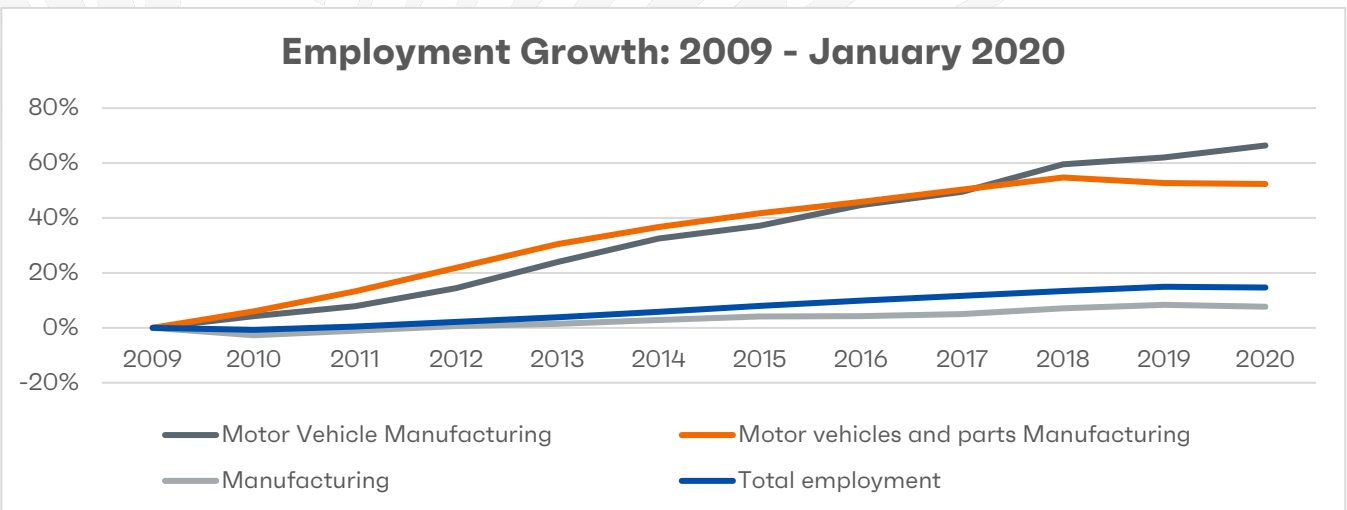
## Employment (Updated 12/8)

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 52,300 jobs since January 2020.<sup>33</sup>

- **Motor Vehicle And Parts Manufacturing Lost 10,100 Jobs In November.**<sup>34</sup>



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.<sup>35</sup> 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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