

# READING THE METER

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



ALLIANCE FOR AUTOMOTIVE INNOVATION

## Contents – March 24, 2022

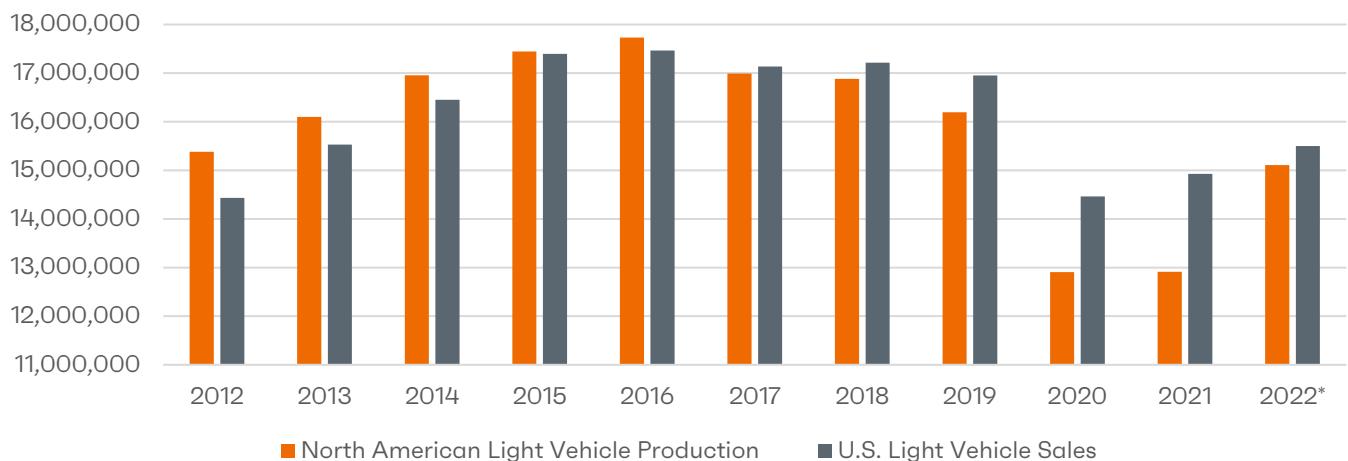
Forecast Meter.....	2
Sales & Production Summary and Forecast (Updated 3/3) .....	2
U.S. Light Vehicle Sales Outlook (Updated 3/24).....	3
North American Production & Inventory Outlook (Updated 3/24) .....	4
Market Meter .....	5
U.S. Light Vehicle Sales (Updated 3/3).....	5
Segments vs. Gas Prices (Updated 3/3) .....	6
ZEV Powertrain Sales (Updated 3/3).....	7
Seasonally Adjusted Annual Rates (Updated 3/3).....	8
Average Transaction Price (Updated 3/10) .....	9
Auto Loan Financing (Updated 3/24).....	10
Crude Oil and Gas Prices (Updated 3/24) .....	11
Production Meter .....	13
U.S. Light Vehicle Production (Updated 3/24) .....	13
U.S. Light Vehicle Inventory and Days' Supply (Updated 3/3).....	13
Global Meter.....	14
Global Light Vehicle Sales (Updated 3/3) .....	14
Global Light Vehicle Production (Updated 3/17).....	15
Recovery Meter.....	18
Roadway Travel (Updated 2/24) .....	18
Economic News (Updated 3/10).....	19
Consumer Confidence and Sales (Updated 3/17).....	20
Employment (Updated 3/10) .....	21
Sources.....	22

## Forecast Meter

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

2021-2022 Sales, <sup>1</sup> Extended Sales Forecast <sup>2</sup> and Production Forecasts <sup>3</sup>		
	U.S. Sales & Forecasts	North American Production
<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>December '21</b>	1,194,313 (-22.9% YoY)	1,029,501 (-13.8% YoY)
<b>January '22</b>	991,156 (-10% YoY)	1,111,390 (-4% YoY) (forecast)
<b>February '22</b>	1,052,524 (-11.8% YoY)	
<b>1<sup>st</sup> Quarter '22</b>	14.8 million-unit SAAR (forecast)	3,584,445 (-0.4% YoY) (forecast)
<b>2021 Full Year</b>	14,926,933 (+3.1% YoY)	8,899,632 (+4% YoY)
<b>2022 Full Year Estimate</b>	15.5 million units	15,107,419 (+17% YoY)

### North American Production And U.S. Light Vehicle Sales



## U.S. Light Vehicle Sales Outlook (Updated 3/24)

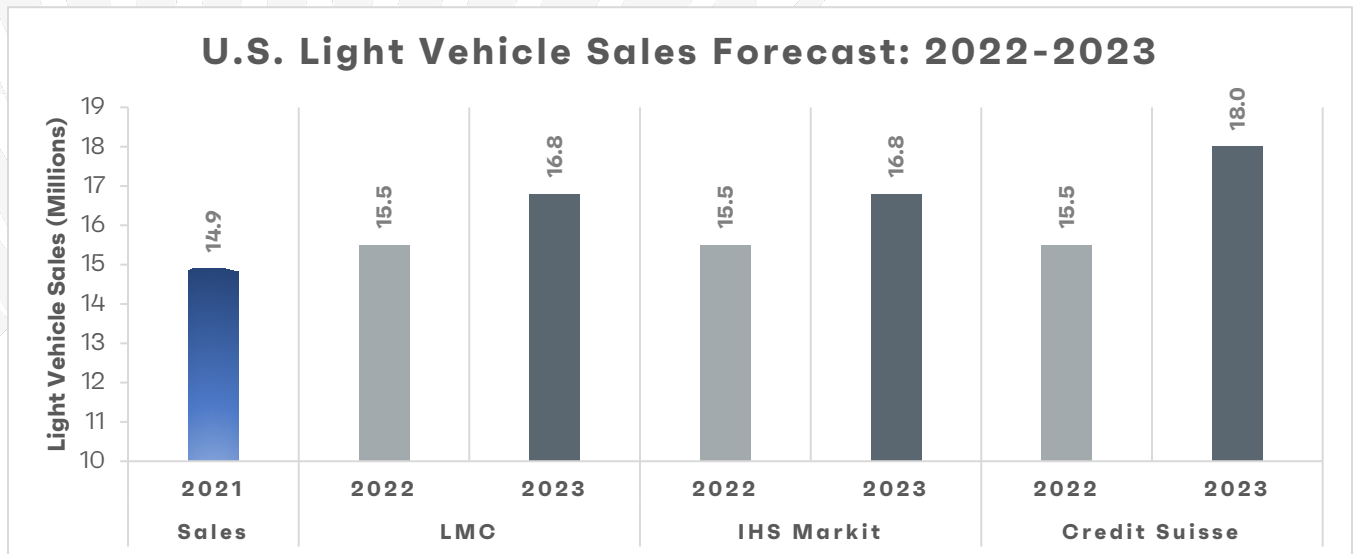
**Wards Intelligence February Outlook (3/24)**<sup>4</sup>: “U.S. light-vehicle sales in March will weaken on an annualized basis for the second straight month, but raw volume will post its highest total since July, based on Wards Intelligence’s forecast for the month.

“March’s seasonally adjusted annual rate is expected to total 13.4 million units, down from February’s 14.0 million and January’s 15.0 million. The first quarter SAAR will finish at 14.1 million, well above the prior quarter’s 12.9 million and highest quarterly total since Q2-2021’s 16.9 million.

“However, sales overall remain weak, especially compared with year-ago results: March 2021’s SAAR was 17.6 million units, and the first quarter totaled 16.8 million.

“WI partner LMC Automotive is forecasting sales in entire-2022 of 15.5 million units, revised down from month-ago’s expectations of 15.9 million. . . .

“March’s volume is forecast to total 1.26 million units, 19.7% above the prior month but 21.4% below year-ago’s 1.597 million. The daily selling rate over the month’s 27 selling days is 46,519, 24.3% below like-2021’s 61,429 – 26 selling days.”



## North American Production & Inventory Outlook (Updated 3/24)

**Wards Intelligence Inventory Outlook (3/24)**<sup>5</sup>: “Inventory is expected to rise from the prior month’s 1.07 million units to 1.20 million. If that holds firm – and that depends not only on how accurate the sales outlook is but how close to expectations production for the U.S. totals in March – it will be the highest level since June’s 1.39 million units. However, that still leaves inventory down 50% from March 2021.”

**S&P Global Mobility Outlook 2022 (3/17)**<sup>6</sup>: “The outlook for North America light vehicle production was reduced by 480,000 units and by 549,000 units for 2022 and 2023, respectively (and reduced by 249,000 units for 2024). Amid the backdrop of the Russia/Ukraine conflict, the March 2022 forecast update for North America reflects broad based reductions spanning virtually every automaker amid the potential for the conflict and subsequent sanctions to impact the production of semiconductors in the second half of 2022. Further, lingering supply chain, labor and logistics challenges remain material concerns. Production cuts are most pronounced spanning the five quarters from second quarter 2022 through second quarter 2023 with 912,000 units being cut from the forecast over that period due to expectations of continued supply chain issues. Disruptions are expected to continue well into 2023 with production revised down 3.2% to total 16.7 million units. Production in 2024 was revised down 1.4% to total 17.5 million units with downside pressure amid elevated oil prices and ongoing inflation concerns. Long-term implications of the Russia/Ukraine conflict were incorporated across the forecast horizon with production between 2025 and 2028 being revised down an average of 2.1% per year with larger reductions occurring in 2025 and 2026.”

**Wards Intelligence Production Outlook (3/3)**<sup>7</sup>: “As has been the case since last spring, the uncertainty around the flow of microchips continues to destabilize production plans. Even though manufacturers are accounting for known chip shortages in their production schedules, unexpected disruptions in the supply chain seem to pop up every month, further cutting output below capacity.

“North America plants, which source close to 80% of the vehicles sold in the U.S., built 77,800 fewer vehicles than expected in January, and estimated output for February has been cut 51,500 units – nearly all of that attributed to unexpected disruptions to the supply chain.

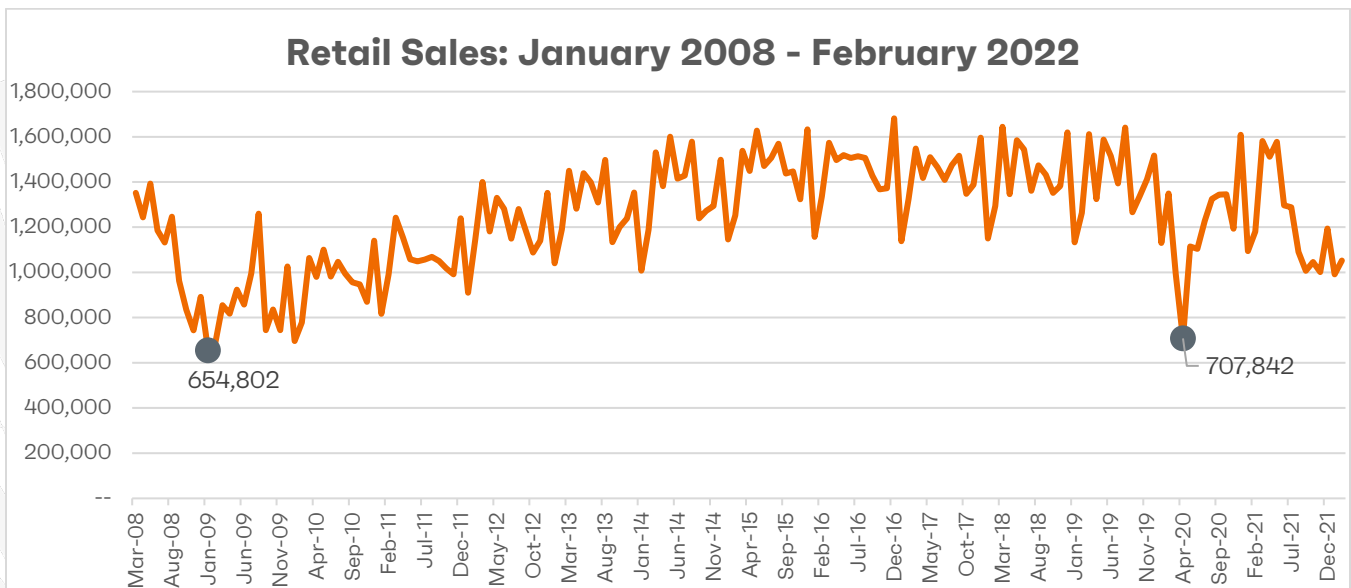
“Furthermore, the Russia-Ukraine conflict could add more unexpected disruptions to the March outlook, although it’s more likely in Q2 before it significantly impacts the U.S. light-vehicle market – if it does.”

## Market Meter

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

#### Monthly Sales (Updated 3/3)

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



#### February Sales (Updated 3/3)

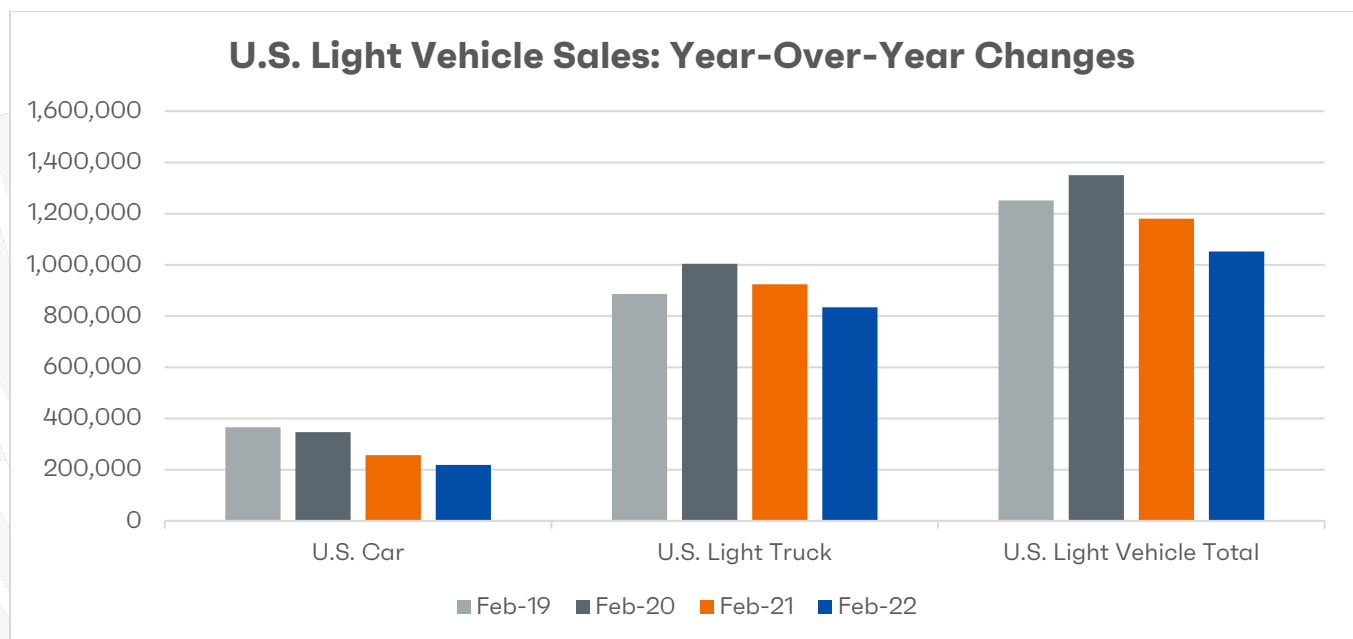
**WardsIntelligence**<sup>®</sup>: “With sales finishing relatively close to expectations, Russia’s invasion of Ukraine in its early days had little impact on U.S. light-vehicle sales in February.

“Sales were dampened slightly due to unplanned production slowdowns at some automakers, seemingly rooted in unexpected disruptions in the flow of semiconductors. Also, temporary blockades at the U.S.-Canada border by truckers protesting vaccine mandates halted parts shipments to several plants in Ontario and in the U.S. during the month. Thus, to a small degree, both occurrences further exacerbated the negative impact of already-depleted inventory levels.

“February’s seasonally adjusted annual rate of 14.1 million units, though a decline from January’s 7-month-high 15.0 million and far below like-2021’s 15.9 million, was enough to keep first-quarter 2022 on a trajectory to finish above both Q4-2021’s 12.8 million and Q3-2021’s 13.4 million.

The combined January-February SAAR of 14.5 million units has Q1 heading to the highest quarterly total since Q2-2021's 16.9 million. Still, the 2-month SAAR is well below the 17 million-plus units the industry likely would be running at if automakers had enough inventory and is far short of year-ago's 16.3 million.

"February's raw volume totaled 1.05 million units for a daily selling rate of 43,855, 11.8% below like-2021's 49,741 but a 6.2% gain from January's 41,728 – all three periods had 24 selling days. A volume increase from January is a normal seasonal pattern in the U.S., though (pre-Covid) the gain is usually more than twice this year's rise."



### **Fleet Sales (Updated 3/3)**

**TrueCar<sup>9</sup>:** "Fleet sales for February 2022 are expected to be up 3% from a year ago and up 30% from January 2022 when adjusted for the same number of selling days."

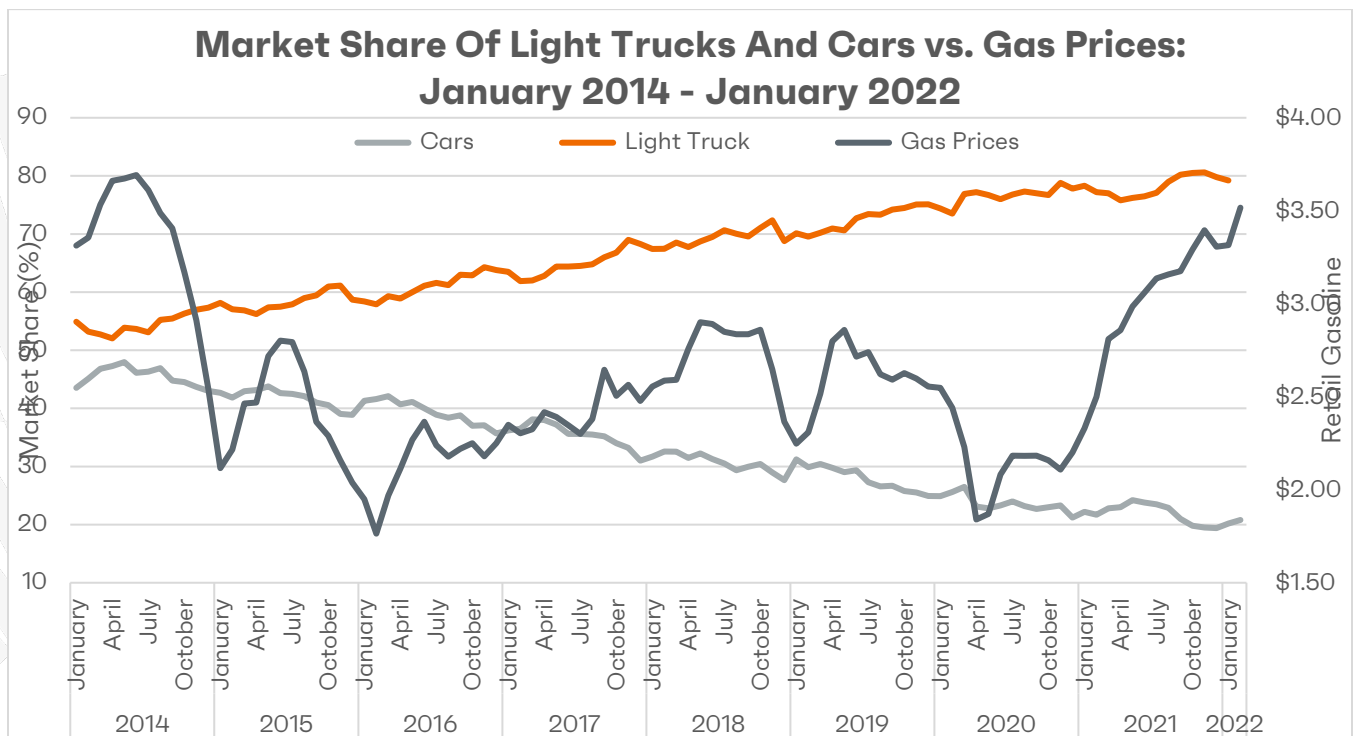
**J.D. Power<sup>10</sup>:** "Fleet sales are expected to total 135,100 units in February, down 36.2% from February 2021 on a selling day adjusted basis. Fleet volume is expected to account for 13% of total light-vehicle sales, down from 18% a year ago."

### **Segments vs. Gas Prices (Updated 3/3)**

**Monthly Sales For September:** Light trucks accounted for 79.2% of sales in February, a 0.9 pp Increase in market share from a year ago. Compared to the same period in 2021, sales of cars are

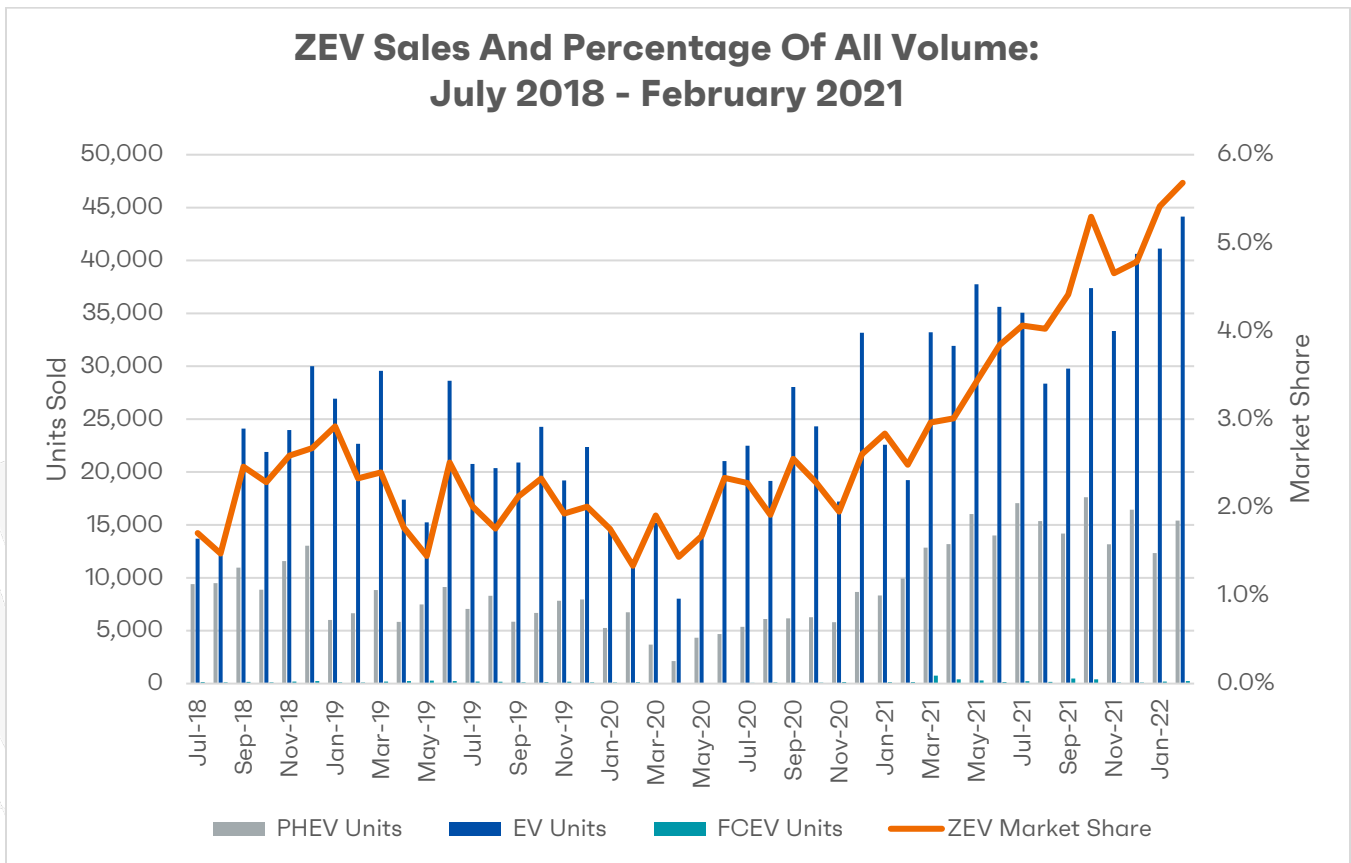
down more than 37,000, and down more than 146,000 from January 2019, when cars comprised 29% of the market as opposed to the 20.8% of the market passenger cars have now.

**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>11</sup> and gas was over \$3.00<sup>12</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 \$2.61 a gallon (through January 2022) 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>13</sup>



## ZEV Powertrain Sales (Updated 3/3)

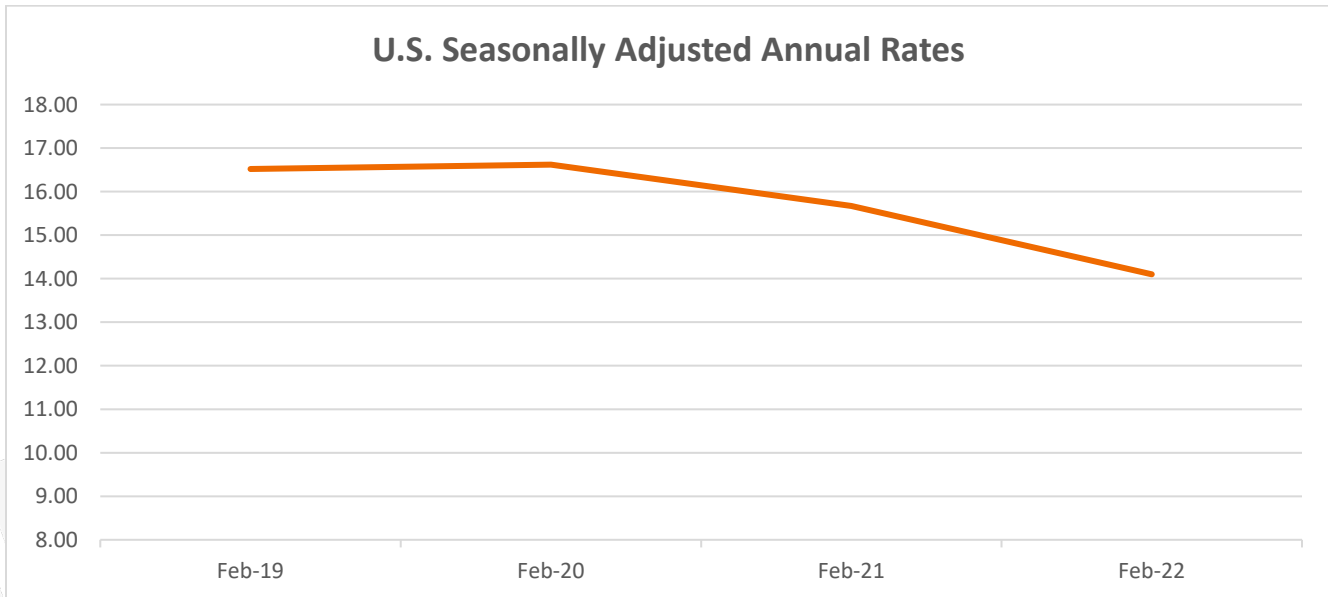
Sales of zero emission vehicles (BEV, PHEV, & Fuel Cell) accounted for 5.7% of total vehicle sales in February 2022 (59,795 units, the highest volume ever), up 3.2 pp from a year ago and up 0.3 pp from January 2022. Sales of battery electric vehicles led the way for ZEVs, accounting for 4.19% of total sales, up 2.56 pp from February 2021. Plug-in hybrids accounted for 1.46%, 0.62 pp higher than the same time last year.<sup>14</sup>



## Seasonally Adjusted Annual Rates (Updated 3/3)

**WardsIntelligence:** “February’s seasonally adjusted annual rate of 14.1 million units, though a decline from January’s 7-month-high 15.0 million and far below like-2021’s 15.9 million, was enough to keep first-quarter 2022 on a trajectory to finish above both Q4-2021’s 12.8 million and Q3-2021’s 13.4 million. The combined January-February SAAR of 14.5 million units has Q1 heading to the highest quarterly total since Q2-2021’s 16.9 million. Still, the 2-month SAAR is well below the 17 million-plus units the industry likely would be running at if automakers had enough inventory and is far short of year-ago’s 16.3 million.”<sup>15</sup>

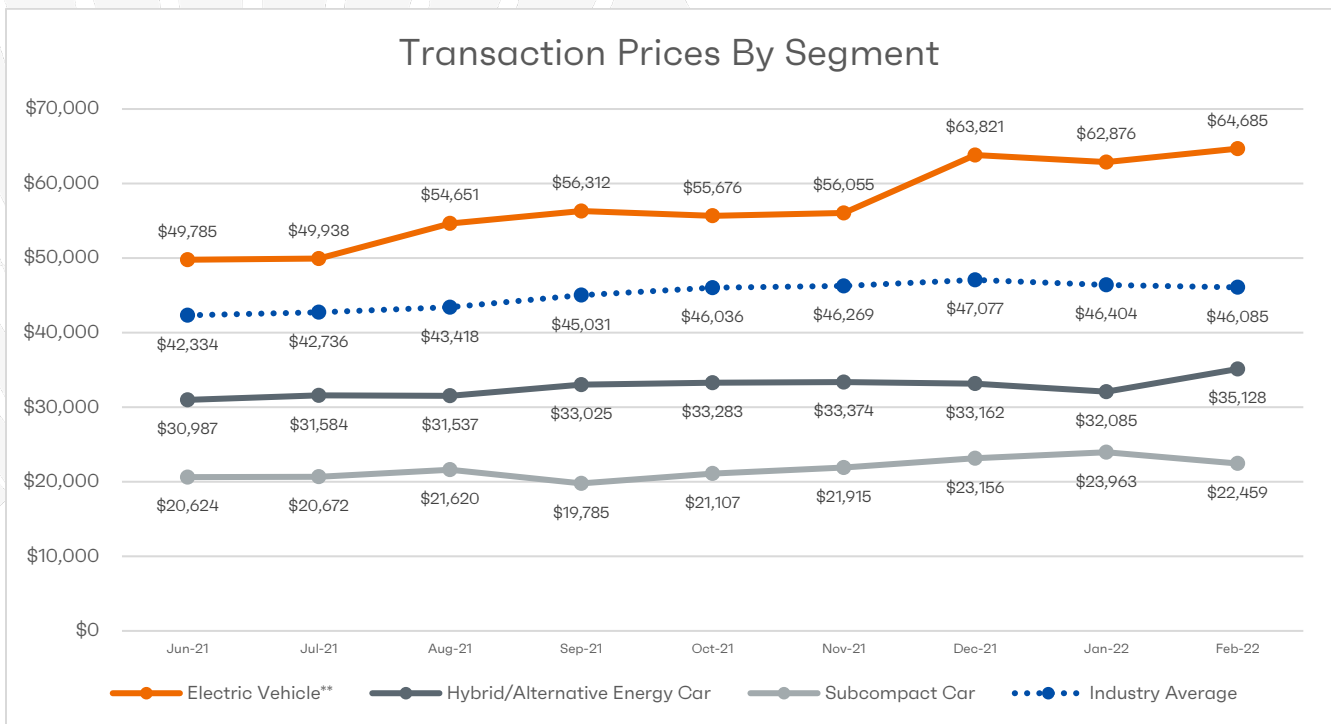
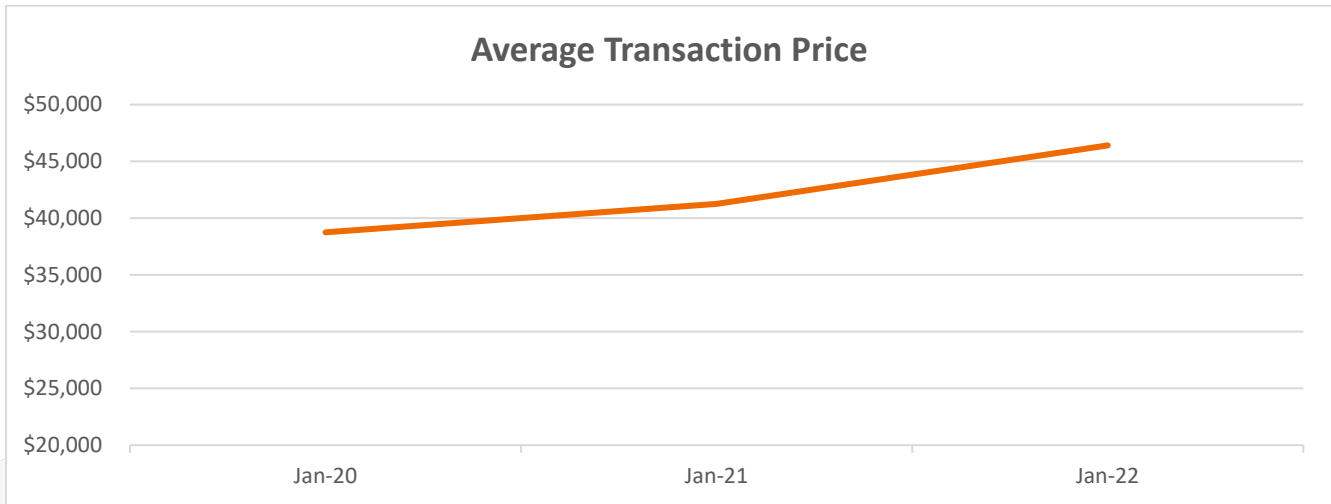




## Average Transaction Price (Updated 3/10)

**J.D. Power (Updated 3/3)<sup>16</sup>:** “New-vehicle prices continue to maintain record levels as average transaction prices are expected to reach a February record of \$44,460, an 18.5% increase from a year ago. Supply shortages are continuing to constrain incentive offers from manufacturers. For February, incentive spend per vehicle expressed as a percentage of the average vehicle MSRP is trending toward a record low of 2.8%, down 5.0 percentage points from February 2021 and the second consecutive month below 3.0%. From an absolute value standpoint, average manufacturer incentive spend per vehicle is on pace to reach \$1,246, a decrease of \$2,143 from a year ago.

**Kelley Blue Book (February):** “New-vehicle average transaction prices (ATPs) decreased to \$46,085 in February 2022 after reaching a record high in December 2021, according to new data released by Kelley Blue Book, a Cox Automotive company. Prices fell 0.5% (\$253) month over month due to fewer luxury vehicles being sold in February, but prices remain elevated compared to one year ago, up 11.4% (\$4,719) from February 2021.”<sup>17</sup>

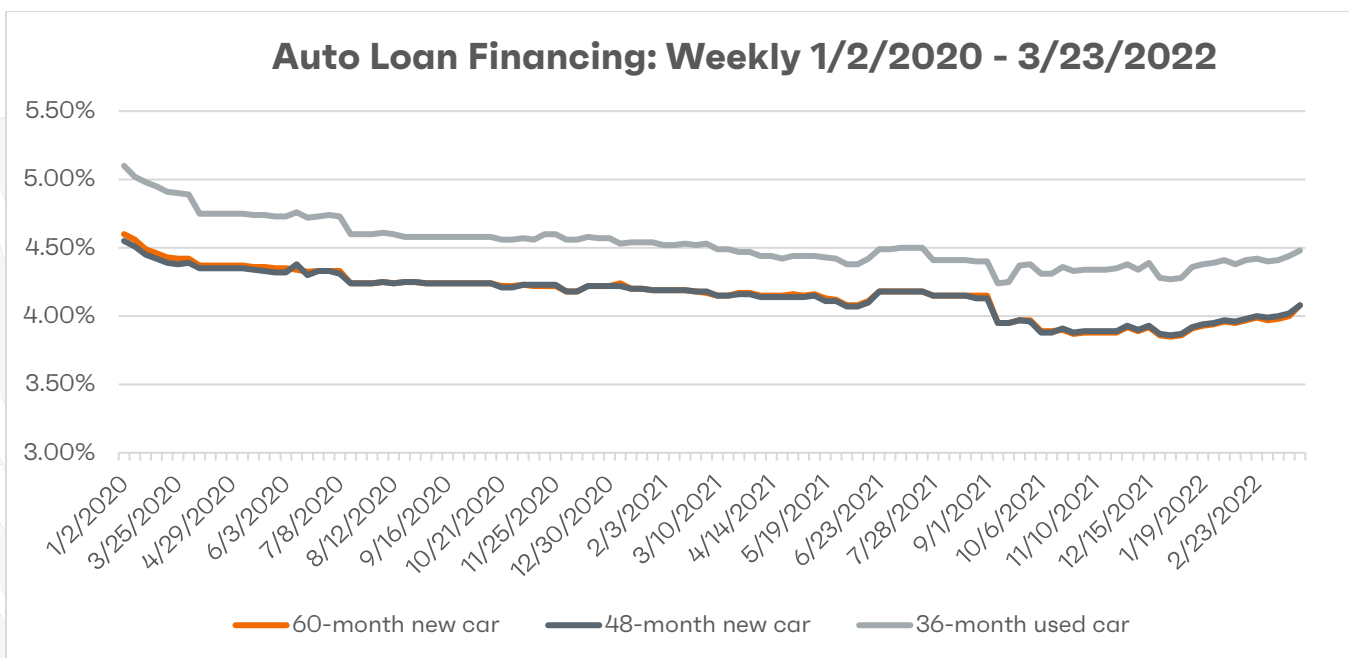


\*\*Due to reporting errors with Tesla Motors, the Electric Vehicle ATP is likely higher than Kelley Blue Book estimates.

## Auto Loan Financing (Updated 3/24)

**Interest Rates Rise:** Interest rates for new cars rose 0.08 pp and now stand at 4.08%. Rates also rose 0.04 pp on the 36-month used car loan and now stand at 4.48%. The 48-month new car loan also rose to 4.08. Since the beginning of 2020, 60-month rates are down 0.52 pp, and down 0.09 pp since the same time a year ago.<sup>18</sup>

Dates	60-month new car	48-month new car	36-month used car
1/2/2020	4.60%	4.55%	5.10%
3/24/2021	4.17%	4.16%	4.47%
3/16/2022	4.00%	4.02%	4.44%
3/23/2022	4.08%	4.08%	4.48%
One Week Change	0.08%	0.06%	0.04%
Two Week Change	0.10%	-0.91%	0.07%
Change since 1/3/20	-0.52%	-0.47%	-0.62%
One Year Change	-0.09%	-0.08%	0.01%



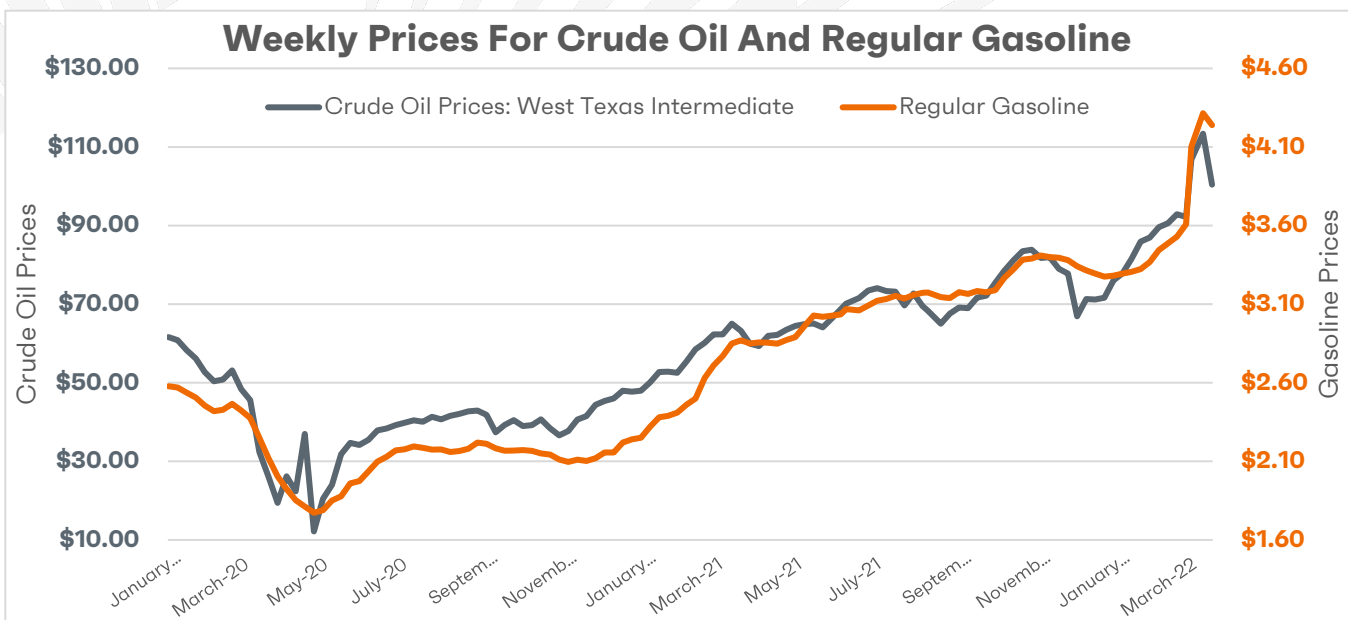
## Crude Oil and Gas Prices (Updated 3/24)

**EIA Outlook For Gasoline (3/8)**<sup>19</sup>: “U.S. regular gasoline retail prices averaged \$3.52 per gallon (gal) in February, up 20 cents/gal from January and up \$1.02/gal from February 2021. Retail diesel prices averaged \$4.03/gal in February—the highest average price (not adjusted for inflation) for any month since March 2013. Product prices have risen compared with year-ago levels because of rising crude oil prices and high refining margins. We expect crude oil price increases will push the U.S. average gasoline price to \$4.10/gal on average in 2Q22, which would be the first time that gasoline prices (not adjusted for inflation) have reached at least \$4/gal in any month since July 2008. We expect diesel prices will average \$4.43/gal during 2Q22. Gasoline and diesel prices are closely tied to crude oil prices. We forecast gasoline prices will average \$3.71/gal in 2H22, and we forecast diesel prices will average \$4.04/gal over the same period. However, actual prices could be significantly affected by the same factors that affect crude oil prices.”

**EIA Outlook For Oil (3/8)**<sup>20</sup>: “Brent crude oil spot prices averaged \$97 per barrel (b) in February, an \$11/b increase from January. Daily spot prices for Brent closed at almost \$124/b in the first week of March as the further invasion of Ukraine by Russia and subsequent sanctions on Russia and other actions created significant market uncertainties about the potential for oil supply disruptions. These events are occurring against a backdrop of low oil inventories and persistent upward oil price pressures. Global oil inventories have fallen steadily since mid-2020, and inventory draws averaged 1.8 million barrels per day (b/d) from the third quarter of 2020 (3Q20) through the end of 2021. We estimate that oil inventories fell further in the first two months of 2022 and that commercial inventories in the OECD ended February at 2.64 billion barrels, which is the lowest level since mid-2014.

We expect the Brent price will average \$117/b in March, \$116/b in 2Q22, and \$102/b in the second half of 2022 (2H22). We expect the average price to fall to \$89/b in 2023. However, this price forecast is highly uncertain. Actual price outcomes will be dependent on the degree to which existing sanctions imposed on Russia, any potential future sanctions, and independent corporate actions affect Russia’s oil production or the sale of Russia’s oil in the global market. In addition, the degree to which other oil producers respond to current oil prices, as well as the effects macroeconomic developments might have on global oil demand, will be important for oil price formation in the coming months. Although we reduced Russia’s oil production in our forecast, we still expect that global oil inventories will build at an average rate of 0.5 million b/d from 2Q22 through the end of 2023, which we expect will put downward pressure on crude oil prices. However, if production disruptions—in Russia or elsewhere—are more than we forecast, resulting crude oil prices would be higher than our forecast.

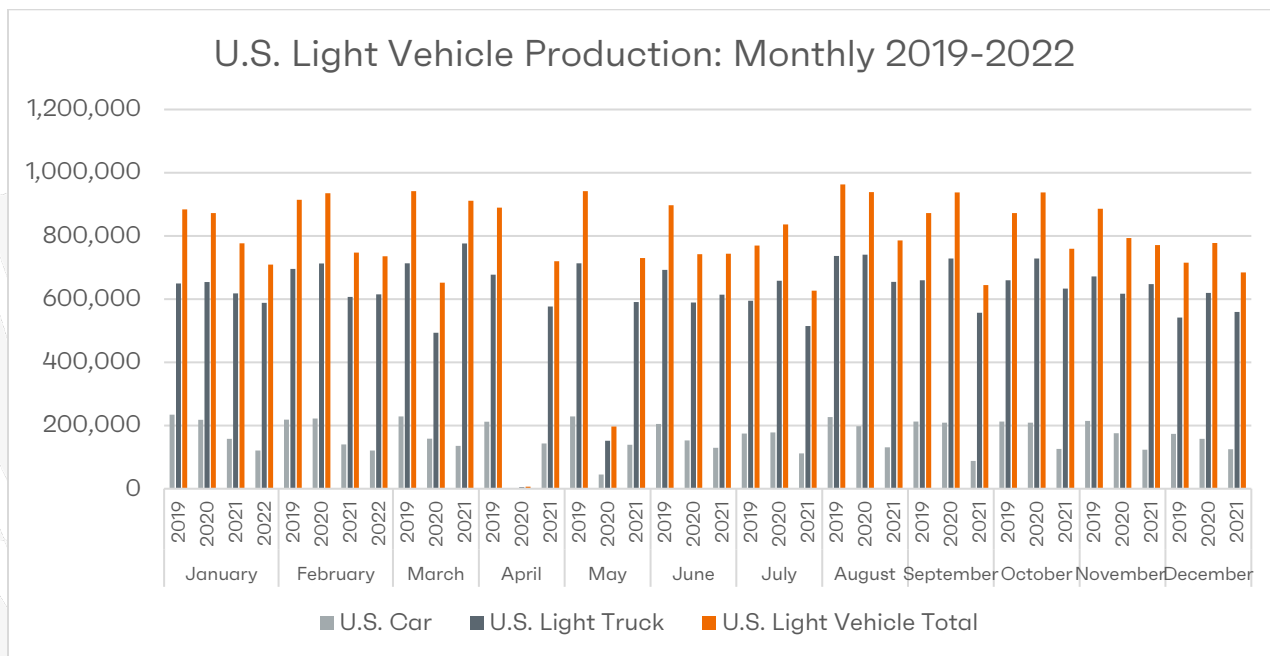
**Gas And Oil Continues To Rise:** Oil prices, as benchmarked at West Texas Intermediate, fell \$13 to \$100.43 a barrel. Since election day 2020, oil prices have climbed \$64 a barrel. Gas prices fell nearly \$0.08 to \$4.24. Gas is 64% higher than the beginning of 2020.<sup>21</sup>



## Production Meter

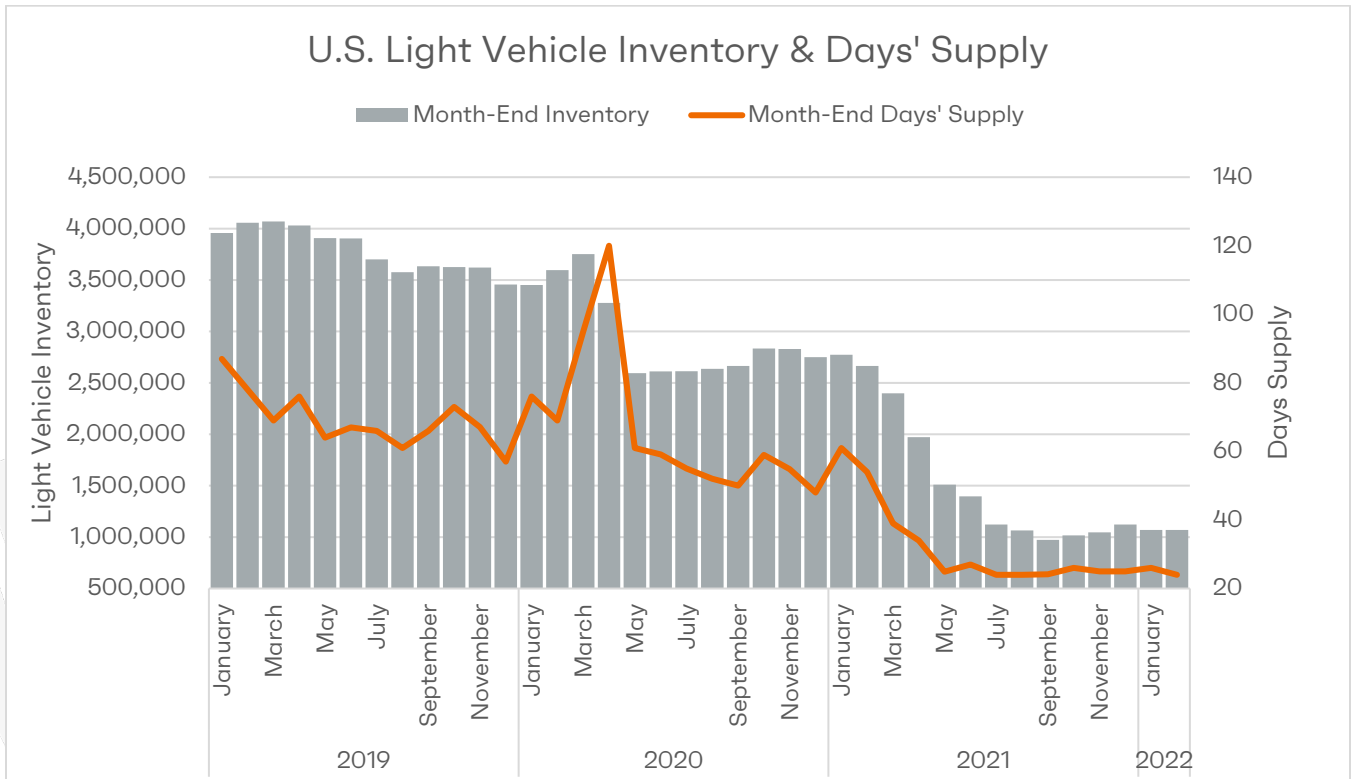
### U.S. Light Vehicle Production (Updated 3/24)

U.S. Light vehicle production for February 2022 increased month-over-month by 1.4 percent, totaling 735,670 (120,767 cars, 614,903 light trucks), year-over-year, production is down 2.5% from 2021. <sup>22</sup>



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

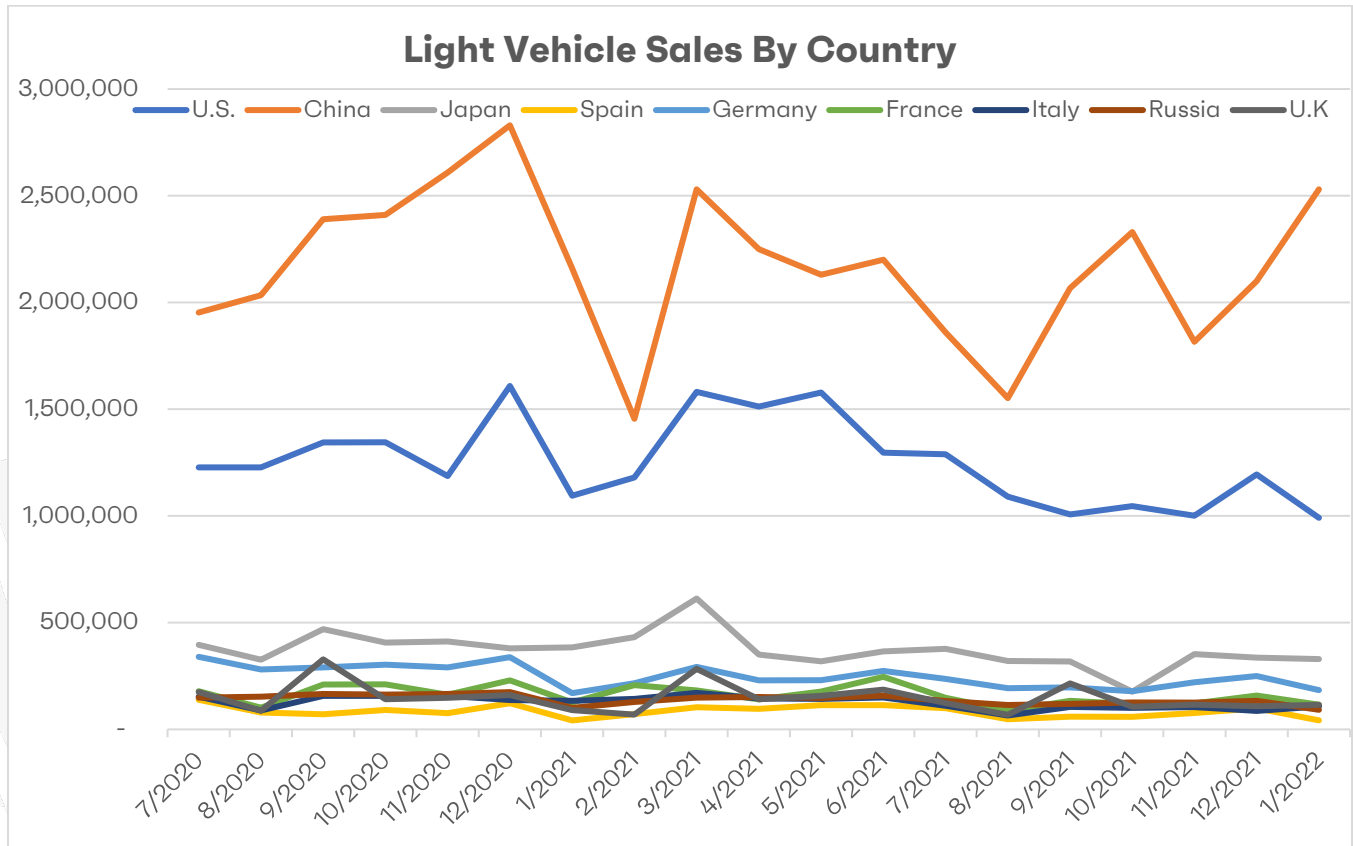
**WardsIntelligence Inventory Update (3/3)**<sup>23</sup>: “U.S. light-vehicle inventory at the end of February was relatively flat with January, which puts a damper on the sales outlook for March. Inventory typically rises from January to February, and the diversion from the seasonal trend can be pegged to the ongoing chaos in the supply chain – a situation that generally is improving but could worsen due to Russia’s invasion of Ukraine. . . . Inventory ended February at 1.07 million units, 60% below like-2021. Days’ supply was 24, a slight decline from January’s 26, but well below same-month 2021’s 54. Pre-Covid, or prior to 2020, February’s days’ supply typically averaged 73. Based on expected production for the U.S., and the initial sales outlook, inventory should rise slightly in March, although current geopolitical tensions could put a damper on that possibility.”



## Global Meter

### Global Light Vehicle Sales (Updated 3/3)

**Wards Intelligence<sup>24</sup>:** “Kicking off the new year on a disappointing note, global vehicle sales totaled 6.85 million in January, 3.8% behind like-2021’s 7.12 million. Whereas last year the global microchip shortage hadn’t taken full effect, and sales had begun to recover from the initial hit of the pandemic, January 2022 faced both spiking COVID cases as well as ongoing inventory issues. . . . Though 2022 got off to a rough start in January, the rest of the year holds hope for a recuperation from the past two years’ setbacks.”



## Global Light Vehicle Production (Updated 3/17)

**Wards Intelligence Outlook (3/17)<sup>25</sup>:** “With the impact from the Russia-Ukraine war on global supply chains worsening, and the general economic outlook looking less rosy, Wards Intelligence partner LMC Automotive revised its expectations from two weeks ago and cut forecast 2022 light-vehicle production 1.4 million units to 83.9 million. The global light-vehicle forecast for 2023 was chopped 1.6 million units to 91.1 million. Regionally, Europe is expected to be hit the hardest, with Asia and North America totals also impacted. Production in Europe for 2022 is forecast to total 17.7 million units, Asia is pegged for 46.2 million and North America has been reduced to 14.9 million. In 2023, production in Europe is forecast to rise to 18.7 million units, Asia increases to 49.7 million and North America totals 16.3 million.”

**S&P Global Mobility Forecast (3/17)<sup>26</sup>:** “Russia’s invasion of Ukraine on 24 February 2022, the ongoing conflict and the resulting economic sanctions imposed on Russia have materially altered the outlook for the Auto industry. The unfolding human tragedy is already having a serious effect on the global economy with rising oil and gas prices having an instant impact on consumers. To be sure, supply chain disruptions, labor shortages and logistics issues remain lingering challenges, but geo-political forces have taken hold of the broader narrative for the Auto industry. There is an immediate

direct impact on vehicle sales and production within Russia and the Ukraine; however, another meaningful impact rests with the disruption of critical component supplies from both countries, with wire harnesses produced in Ukrainian facilities providing the most immediate disruption to vehicle production in areas throughout Europe. Further, we expect longer lasting macro impacts to vehicle demand associated with a protracted Russia/Ukraine conflict and the continuation of significant Russia sanctions influencing the broader economic landscape. The March 2022 forecast update reflects noteworthy reductions across several markets, to varying degrees, with the most significant reductions focused on Europe and intermediate/longer-term revisions made across various other markets. Given the ongoing uncertainty, a scenarios-based approach to planning is advised to help navigate dynamic market conditions. The more noteworthy regional adjustments with the latest forecast update are detailed below:

**“Europe:** The outlook for Europe light vehicle production was reduced by 1,720,000 units and by 1,499,000 units for 2022 and 2023, respectively (and reduced by 1,690,000 units for 2024). While most markets are influenced in some way by the ongoing Russia/Ukraine conflict, Europe is undeniably the most severely impacted. Russia is the most directly affected with production now forecasted to drop by 54% relative to 2021 and remain in the 600,000-unit range per year through the forecast horizon as crippling sanctions are expected to remain in place and prevent many foreign automakers from producing and selling vehicles in the country. Beyond the direct impact to Russia production, the Russia/Ukraine conflict also significantly affects the broader European region due to the disruption of critical component supplies from both countries, with wire harnesses produced in Ukrainian facilities providing the most immediate disruption to vehicle production in areas throughout Europe. German automakers are particularly impacted in the near-term given the degree of supply chain reliance on the Ukraine. In addition to the direct impacts of the Russia/Ukraine conflict, the continuation of significant Russia sanctions is expected to affect the broader economic landscape and influence sales and production in the intermediate to long-term.

**“Greater China:** The outlook for Greater China light vehicle production was reduced by 193,000 units and by 276,000 units for 2022 and 2023, respectively (and reduced by 307,000 units for 2024). Notwithstanding a relatively strong start to the year with production in January, headwinds are starting to form with industrial output in Greater China expected to be impacted in the coming months with uneven semiconductor supplies and now the Russia/Ukraine conflict poised to impact supplies particularly in the second half of the year. Another wildcard impacting production in Greater China is the potential for a new wave of COVID infections. As an example, in order to maintain China’s zero-COVID strategy, both production and commercial activities have been constrained in Shenzhen and Changchun recently. Further, comprehensive social containment measures are expected causing wider operational impacts limiting vehicle production. As a result, Greater China light vehicle production was reduced in the near-term and the impacts of the Russia/Ukraine conflict are expected to have broader macro implications through the forecast horizon.

**“Japan/Korea:** Full-year 2022 Japan production volume was reduced by 194,000 units relative to the February forecast. In the first quarter of 2022, Japan has faced challenges to increase production due



to lack of multiple components including semiconductors. In addition, Toyota has suffered production disruptions due to issues at a Tier 1 supplier. Further, on March 11, Toyota announced it would revise its production plan downward in the second quarter by about 10% relative to its original plan in order to secure product quality and employees' safety as well as to prepare for more stable production starting in the 2nd half of 2022. S&P Global has reflected this revision into our latest forecast as the initial assessment. Through the forecast horizon, Japan production volume was cut by around 2.4% per year, affected by the longer-term impacts of the Russia/Ukraine situation. Specifically, export models were largely reduced such as the Mitsubishi RVR and the Toyota Land Cruiser series to Russia and the Subaru Forester, the Nissan Rogue and the Lexus NX/RX to the EU and North America. We also forecast some Toyota battery electric vehicle production will be localized in the United States from Japan, which has a negative impact on domestic production volumes in the long-term. Full-year 2022 South Korea production was reduced by 31,000 units relative to the previous forecast. As the Russia/Ukraine conflict continues, it is expected that the supply of neon and palladium along with other semiconductor related materials could be affected due to the conflict and the significant economic sanctions are expected to contribute to broader macroeconomic headwinds. Accordingly, South Korea's production in the short term was reduced by 1.1% per year on average. In the long-term, South Korea production was reduced by an average of 1.7% per year. As the crisis between Russia and Ukraine could be prolonged, exports to this region are expected to decline. In addition, OEMs are expected to have slightly leaner vehicle inventory than previous levels and focus on efficient supply strategies going forward.

**“North America:** The outlook for North America light vehicle production was reduced by 480,000 units and by 549,000 units for 2022 and 2023, respectively (and reduced by 249,000 units for 2024). Amid the backdrop of the Russia/Ukraine conflict, the March 2022 forecast update for North America reflects broad based reductions spanning virtually every automaker amid the potential for the conflict and subsequent sanctions to impact the production of semiconductors in the second half of 2022. Further, lingering supply chain, labor and logistics challenges remain material concerns. Production cuts are most pronounced spanning the five quarters from second quarter 2022 through second quarter 2023 with 912,000 units being cut from the forecast over that period due to expectations of continued supply chain issues. Disruptions are expected to continue well into 2023 with production revised down 3.2% to total 16.7 million units. Production in 2024 was revised down 1.4% to total 17.5 million units with downside pressure amid elevated oil prices and ongoing inflation concerns. Long-term implications of the Russia/Ukraine conflict were incorporated across the forecast horizon with production between 2025 and 2028 being revised down an average of 2.1% per year with larger reductions occurring in 2025 and 2026.

**“South America:** The outlook for South America light vehicle production was reduced by 29,000 units and by 36,000 units for 2022 and 2023, respectively (and reduced by 55,000 units for 2024). The downgrade in production for 2022 was driven primarily by continued weakness in production results for Brazil. While Argentina continues to exhibit a level of production stability, that is not enough to offset the weakness associated with the Brazil market. The outlook for 2023 and 2024 was

downgraded marginally on rising supply chain concerns resulting from the Russia/Ukraine conflict. Of note, only primarily indirect effects from deteriorating macro conditions are reflected in the forecast as more direct component supply impacts have not yet been clearly identified.

**“South Asia:** The outlook for South Asia light vehicle production was reduced by 50,000 units and by 94,000 units for 2022 and 2023, respectively (and reduced by 98,000 units for 2024). The downgrade in outlook for 2022 was primarily focused on the ASEAN market amid ongoing semiconductor constraints and potential chip supply chain disruptions due to the Russian invasion of Ukraine as well as the resulting economic consequences. Looking beyond 2022, the forecast has been negatively impacted due to rising uncertainty from the Russia/Ukraine conflict, rising commodity prices and deteriorating economic outlook. On the commodity front, India is particularly vulnerable given its position as a net oil importer and relative sensitivity to capital outflows.”

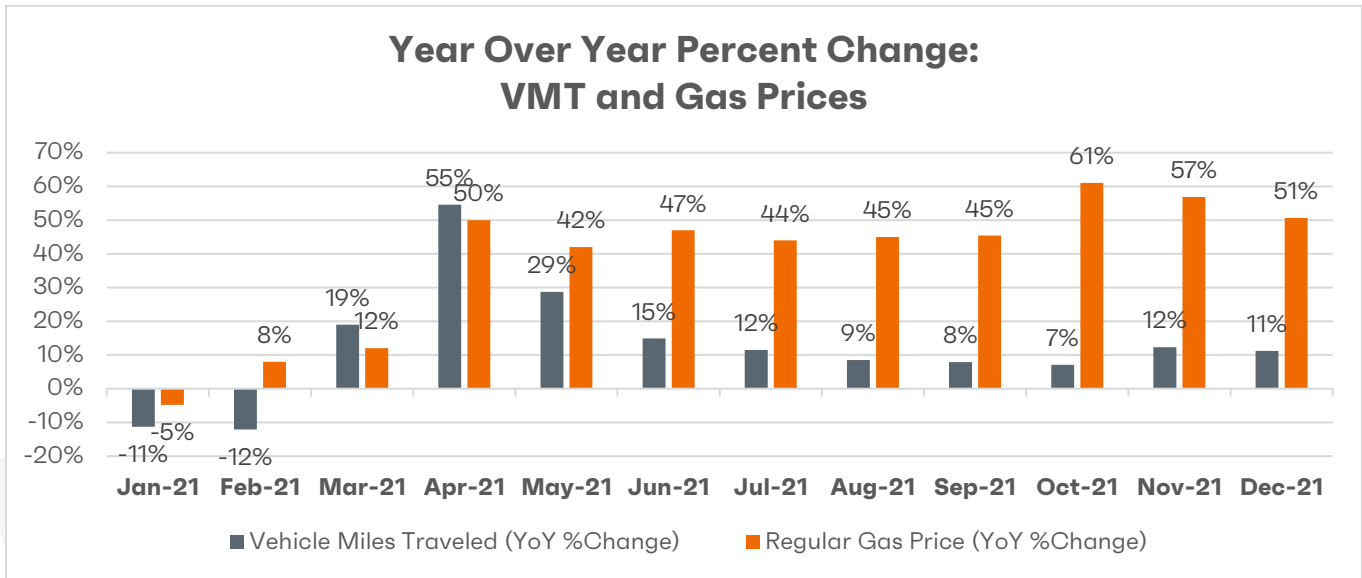
## Recovery Meter

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### Roadway Travel (Updated 2/24)

According to the U.S. Department of Transportation, seasonally-adjusted vehicle miles traveled in December rose 10.7% from the same time a year ago. The cumulative travel estimate for 2021 is 3,228.8 billion vehicle miles.<sup>27</sup>

- Travel on all roads and streets changed by +11.2% (+26.9 billion vehicle miles) for December 2021 as compared with December 2020. Travel for the month is estimated to be 268.4 billion vehicle miles.
- The seasonally adjusted vehicle miles traveled for December 2021 is 278.3 billion miles, a 10.7% (26.9 billion vehicle miles) change over December 2020. It also represents a -0.4% change (-1.1 billion vehicle miles) compared with November 2021
- Cumulative Travel for 2021 changed by +11.2% (+325.2 billion vehicle miles). The cumulative estimate for the year is 3,228.8 billion vehicle miles of travel.



## Economic News (Updated 3/10)

**Manufacturing Gained 36,000 Jobs In February, While Motor Vehicles And Parts Manufacturing Lost 18,000.** “Manufacturing added 36,000 jobs last month, with the majority in durable goods, according to a breakdown by industry issued today by the U.S. Bureau of Labor Statistics. The gains were held back by a decline of 18,000 jobs in motor vehicles and parts. The auto industry has experienced temporary plant shutdowns stemming from a global shortage of semiconductors. Vehicle production is down because of the shortage.”<sup>28</sup>

**The ISM Index Rose To 58.6 In February.** “Expansion in the manufacturing economy improved in February with contributions from new orders and production, the Institute for Supply Management said today. The Tempe, Ariz.-based group’s manufacturing index, known as the PMI accelerated to 58.6 percent last month, up from 57.6 percent in January.”<sup>29</sup>

**The Consumer Price Index Increased 7.9%, A Forty-Year High; Vehicle Costs Showed Signs Of Easing.** “The consumer price index, which measures a wide-ranging basket of goods and services, increased 7.9% over the past 12 months, a fresh 40-year high for the closely followed gauge, according to the Labor Department’s Bureau of Labor Statistics. The February acceleration was the fastest pace since January 1982, back when the U.S. economy confronted the twin threat of higher inflation and reduced economic growth. On a month-over-month basis, the CPI gain was 0.8%. Economists surveyed by Dow Jones had expected headline inflation to increase 7.8% for the year and 0.7% for the month. . . . Vehicle costs have been a powerful inflationary force but showed signs of easing in February. Used car and truck prices actually declined 0.2%, their first negative showing since September 2021, but are still up 41.2% over the past year. New car prices rose 0.3% for the month and 12.4% over the 12-month period.”<sup>30</sup>

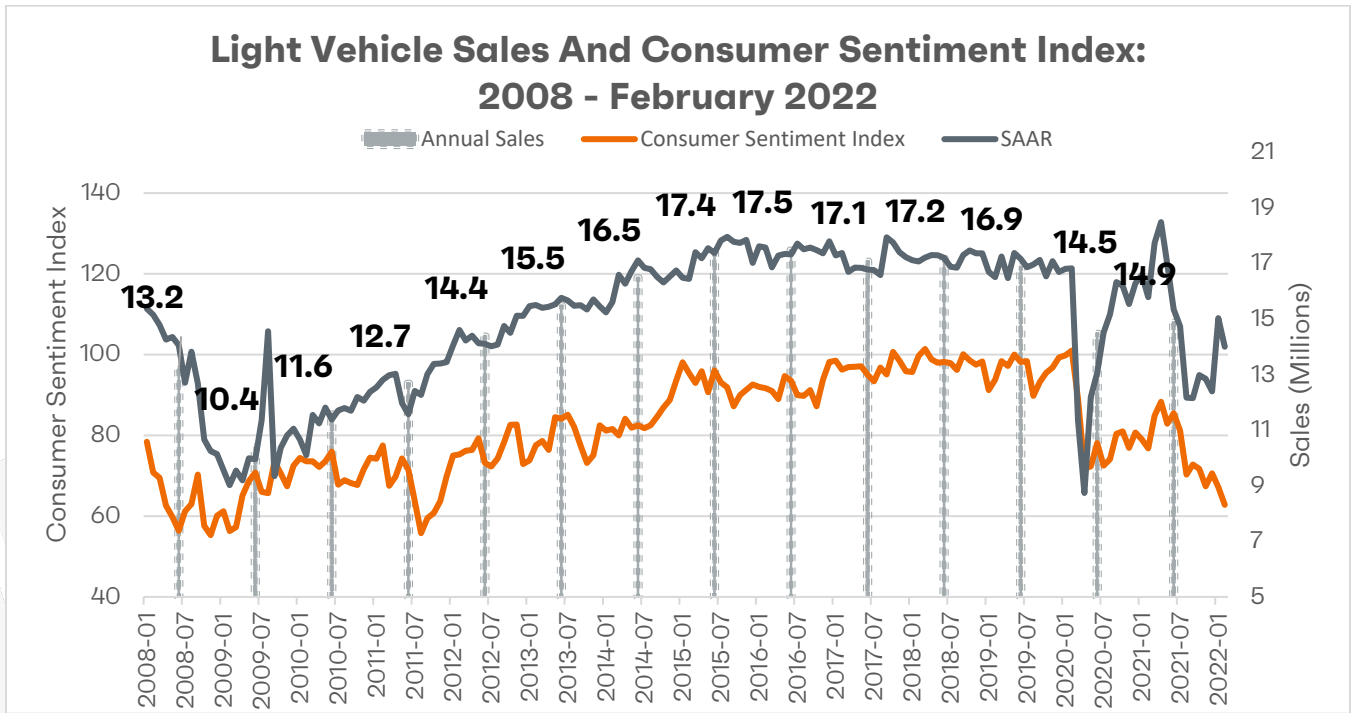
**“Material inflation/headwinds risks from conflict broad in range as to variety and severity:**

Although material cost headwinds were expected in 2022, the Russia/Ukraine conflict will likely further exacerbate those headwinds. As of now, we see primary materials/input headwinds related to: aluminum, precious metals palladium/platinum, nickel, resins/oil, steel, and semiconductors. Should spot prices hold, we could see materials adding ~\$400-500 of incremental cost per ICE vehicle (vs. year-end levels), and ~\$1,100-1,200 of incremental content for EVs. For context, for Ford/GM the typical variable profit per vehicle in NA is currently likely ~\$9-10k.”<sup>31</sup>

## Consumer Confidence and Sales (Updated 3/17)

**Surveys of Consumers Chief Economist, Richard Curtin<sup>32</sup>:** “Consumer Sentiment continued to decline due to falling inflation-adjusted incomes, recently accelerated by rising fuel prices as a result of the Russian invasion of Ukraine. The year-ahead expected inflation rate rose to its highest level since 1981, and expected gas prices posted their largest monthly upward surge in decades. Personal finances were expected to worsen in the year ahead by the largest proportion since the surveys started in the mid-1940s. Consumers held very negative prospects for the economy, with the sole exception of the job market. Consumers were slightly more likely to anticipate declines rather than increases in the national unemployment rate. This underlying strength in jobs comes at the cost of pushing inflation even higher due to unrelenting pressures on aggregate demand and supply lines. The persistent strength in demand was a critical factor that shaped the last inflationary age from 1965 to 1982, with stagflation peaking only near its end. Current expectations are consistent with heightened pressures on wages to meet the continued growth in demand. Like the game of musical chairs, everyone continues racing around the circle of rising prices and higher wages. Although everyone knows the game will end, everyone still wants to obtain the highest income possible before they exit. The game is moderated by fiscal and monetary policies, which now favor increased federal spending and full employment over price stability, enabling ever more rounds of the game.

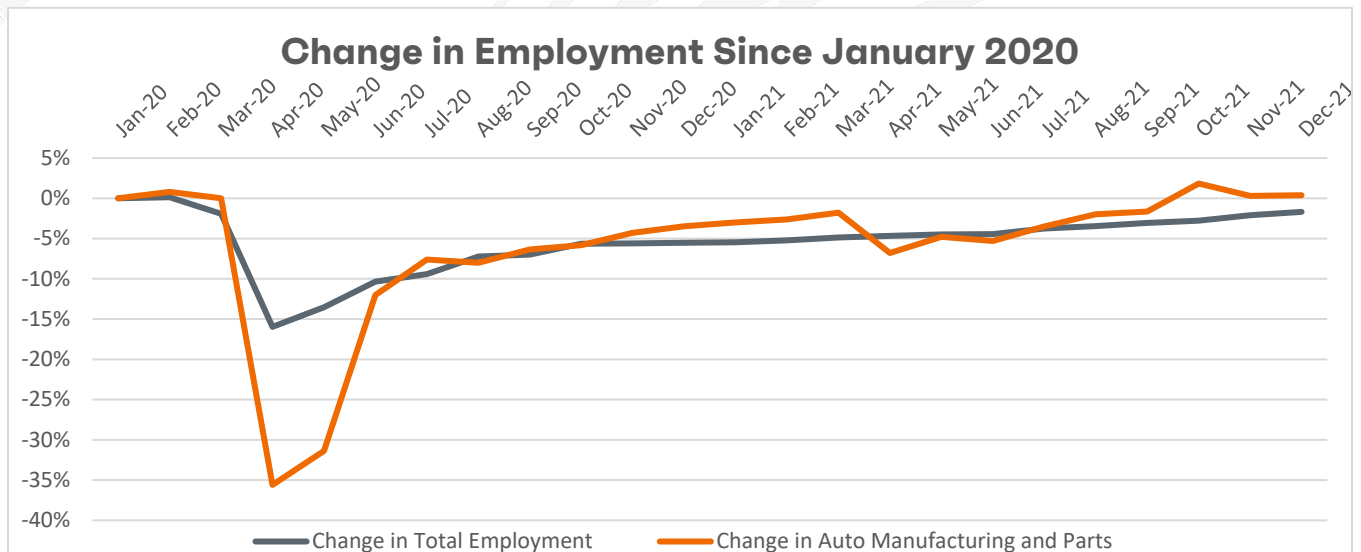
“The greatest source of uncertainty is undoubtedly inflation and the potential impact of the Russian invasion of Ukraine. In the March survey, 24% of all respondents spontaneously mentioned the Ukraine invasion in response to questions about the economic outlook. The impact of this recognition was associated with a drop of 13.2 Index points in the Index of Consumer Expectations across all households. The difference was much larger for those who held higher inflation expectations: the difference was 33.5 Index-points on the Expectations Index for those who expected under 5% compared with over 5%.”



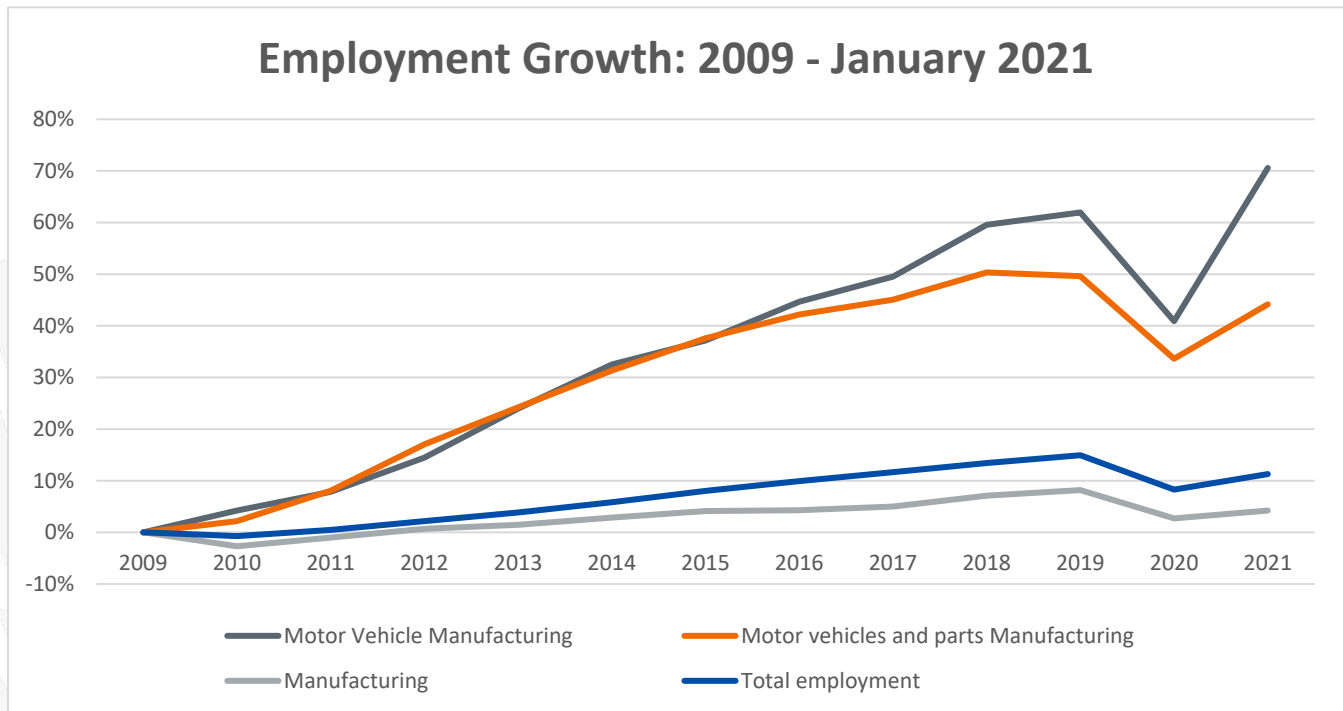
## Employment (Updated 3/10)

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.<sup>33</sup>

- **Motor Vehicle And Parts Manufacturing Lost 18,000 Jobs In February.**<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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