

READING THE METER

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



ALLIANCE FOR AUTOMOTIVE INNOVATION

Contents – May 5, 2022

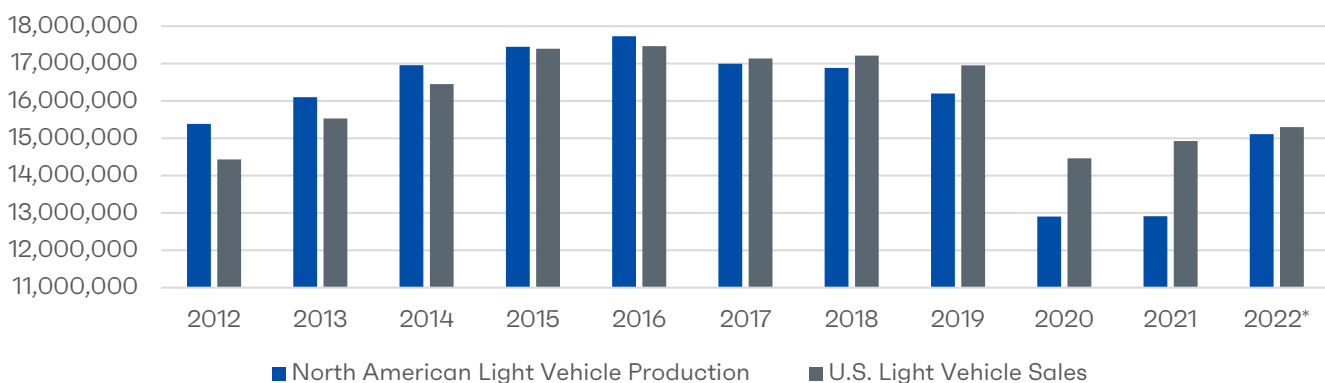
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Forecast Meter

Sales & Production Summary and Forecast (Updated 5/5)

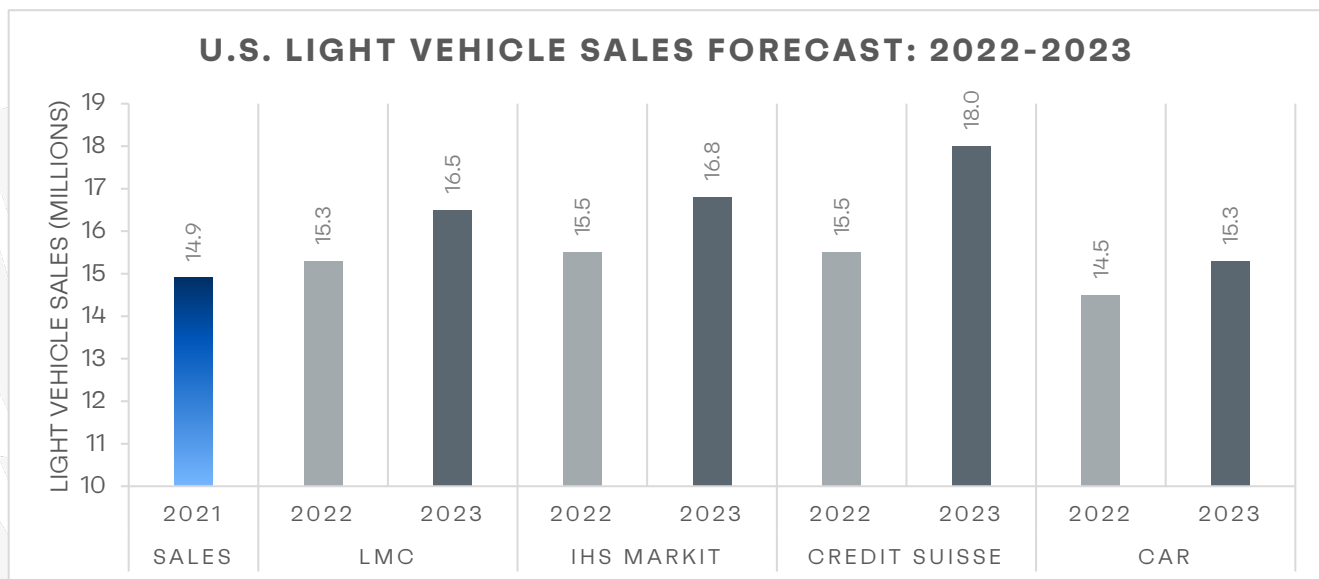
2021-2022 Sales, ¹ Extended Sales Forecast ² and Production Forecasts ³		
	U.S. Sales & Forecasts	North American Production
January '21	1,094,689 (-3.6% YoY)	1,175,940 (-14.0% YoY)
February '21	1,180,506 (-5.3% YoY)	1,120,200 (-22.9% YoY)
March '21	1,581,067 (+59.7% YoY)	1,376,904 (31% YoY)
April '21	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)	1,168,245 (-9% YoY)
December '21	1,194,313 (-22.9% YoY)	1,029,501 (-13.8% YoY)
January '22	991,156 (-10% YoY)	1,111,390 (-4% YoY)
February '22	1,052,524 (-11.8% YoY)	1,112,429 (-1% YoY)
March '22	1,246,336 (-22% YoY)	1,350,102 (-.1% YoY)
April '22	1,226,950 (-22% YoY)	
1st Quarter '22	14.01 million-unit SAAR	3,458,480 (-1.4% YoY)
2021 Full Year	14,926,933 (+3.1% YoY)	8,899,632 (+4% YoY)
2022 Full Year Estimate	15.3 million units	15,107,419 (+17% YoY)

North American Production And U.S. Light Vehicle Sales



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

Wards Intelligence Outlook (5/5)⁴: “Initial modeling for May suggests a slight increase in the seasonally adjusted annual rate from April’s 14.3 million units to 14.6 million, with a bump in June to 15.0 million. The second quarter is tracking to a 14.6 million-unit SAAR, up from Q1’s 14.1 million. Wards Intelligence/LMC Automotive still is forecasting 15.3 million units for enitre-2022 and 16.5 million in 2023.”



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

Wards Intelligence Inventory Outlook (5/5)⁵: “The current inventory outlook calls for a decline in May from April, then resuming sequential growth in June. It was during the year-ago quarter that inventory started the sharp downward slide mostly as a ramification of the semiconductor shortage, thus year-over-year comparisons will continue to look better – though the projection has sometime in the third quarter when inventory tops year-ago totals.”

Wards Intelligence Production Outlook (4/20)⁶: “Even though North America vehicle production in March finished above expectations, the outlook for the second quarter has been cut, thanks mainly to a higher level of uncertainty with the global supply chain.”

“But the cuts are not just because of increased disruption to the supply of raw materials and parts caused by Russia’s invasion of Ukraine or lockdowns in China due to rising Covid-19 cases, the overall economic picture looks dimmer – though not disastrous – for the remainder of the year. Chief among economic concerns is the prospect of inflation and rising interest rates putting a dent in consumer confidence and pocketbooks, which could hurt new-vehicle demand. One bright spot is March’s overbuild of 58,100 units from month-ago’s projection for the period. . . .

“Although the month is tracking to a hefty 119,300 units below its month-ago expectations, April’s estimated output of 1.168 million is 7.1% above the year-ago total. In fact, May is projected to rise 23.9% year-over-year and June is pegged to increase 21.2%. Underlying the huge May-June increases is that the impact of the semiconductor shortage, which had begun in the prior quarter, hit automakers full force in North America during Q2-2021, causing huge production stoppages in the period.

“Production in April-June is tracking to a total of 3.862 million units, reflecting a reduction of 239,000 units from month-ago’s outlook, but a 17.4% increase over year-ago’s 3.290 million. Light-vehicle output is tracking to a Q2 total of 3.723 million units, 18.2% above like-2021.

“Compared to Q2-2019, or the last pre-pandemic year, Q2 output is down 18.2%. Currently, it looks like sometime in 2023 before production returns to pre-2020-like levels.”

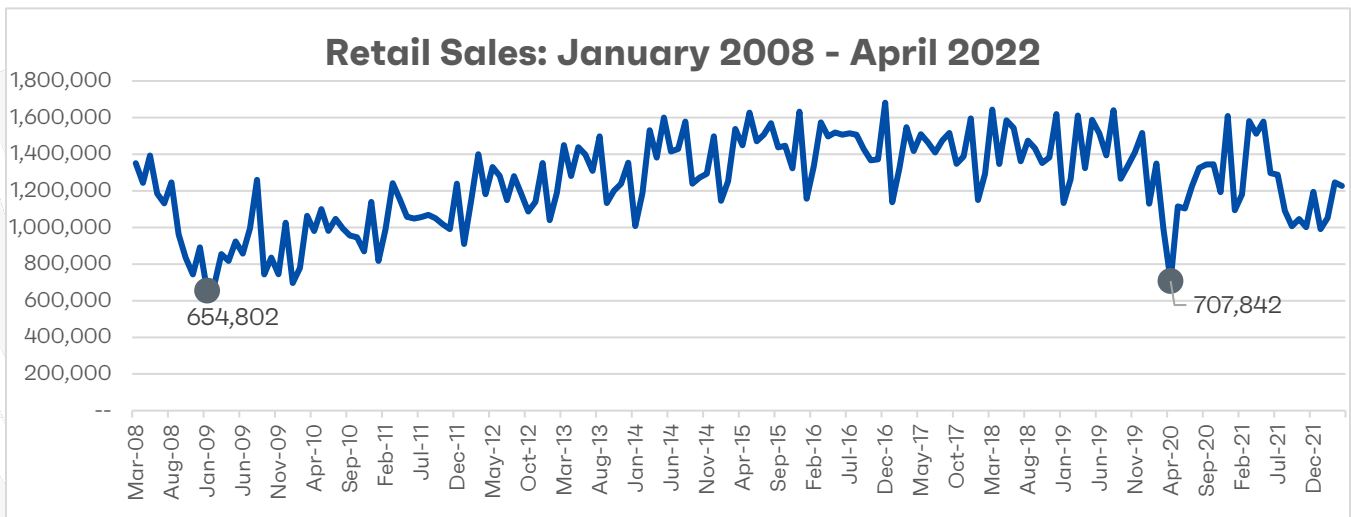
S&P Global Mobility Production Outlook (4/20) ⁷: “The outlook for North America light vehicle production was increased by 9,000 units and reduced by 177,000 units for 2022 and 2023, respectively (and reduced by 242,000 units for 2024). In spite of the backdrop of the Russia/Ukraine conflict and continued supply chain challenges, the outlook for North American light vehicle production in 2022 remains flat at 14.75 million units. Production in Q1-2022 came in a bit higher than forecast with 3.55 million units produced. However, production in Q2- 2022 was revised down approximately 78,000 units on continued supply chain struggles and concerns surrounding additional logistics issues at border crossings between the US and Mexico in Texas that may exacerbate already strained conditions in the near-term. Despite some of the negative sentiment associated with supply chain and logistics challenges, upside exists in the forecast depending on manufacturers ability to produce vehicles as demonstrated with the stronger results in Q1-2022. Production for 2023 was revised down by 1.1% to total 16.49 million units on the growing threat of demand destruction. Further, production in 2024 was reduced by 1.4% to total 17.24 million units. Latent demand is currently stronger than US sales results to date, yet pent-up demand remains under threat from inflationary pressures.”

Market Meter

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

Monthly Sales (Updated 5/5)

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



April Sales (Updated 5/5)

WardsIntelligence®: “U.S. light-vehicle sales picked up in April from Q1’s results, while also recording both the second highest annualized rate and raw volume since last summer.

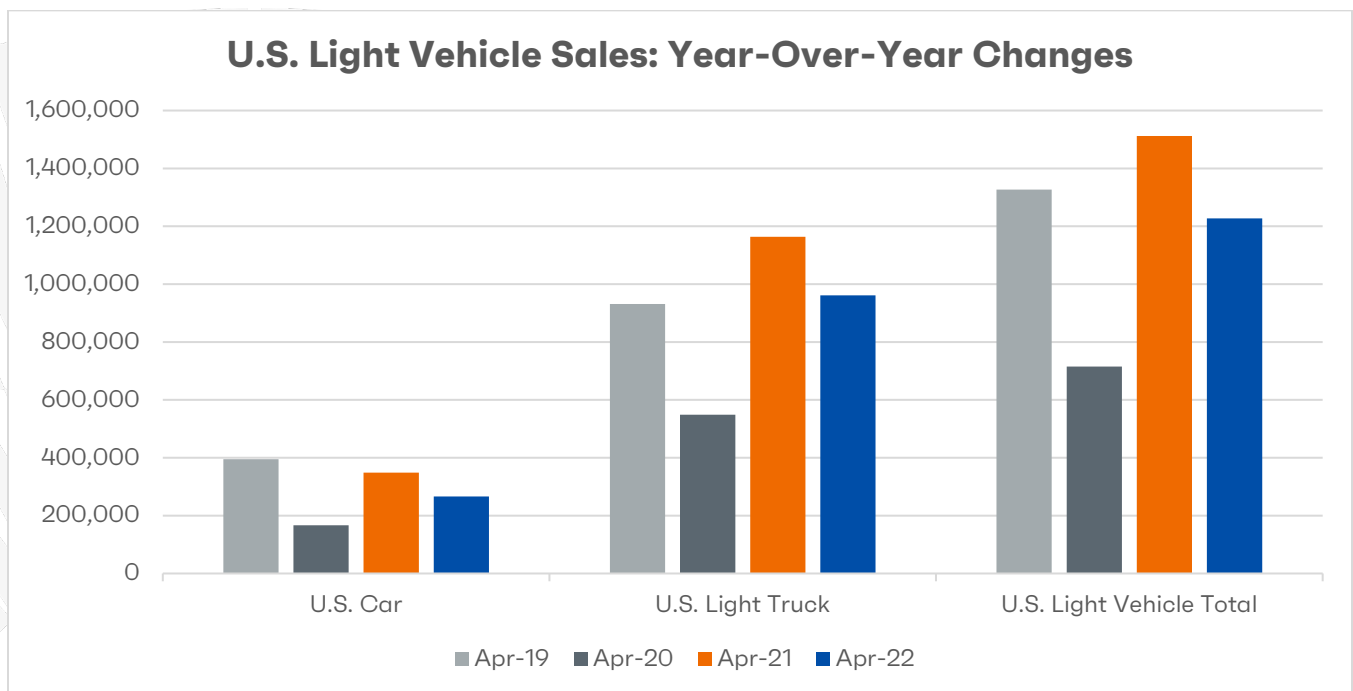
“April sales totaled a 14.3 million-unit seasonally adjusted annual rate, well above March’s 13.4 million, and – except for January’s 15.0 million, best since July 2021’s 14.7 million. April’s SAAR also makes a solid footing for Q2 to improve on Q1’s 14.0 million units.

“Still, thanks to a dearth of availability, sales remain underwhelming.

“Last month’s results could almost be called a cliff-drop from April 2021’s 18.3 million-unit SAAR, which was a 16-year any-month high, and the last month prior to a sharp decline in sales over the summer caused by the slashing of inventory due to global supply chain disruptions. The dried-up inventory led to a bottoming out of deliveries during a stretch from August to December when the SAAR averaged a paltry 12.8 million.

“April’s volume totaled 1.227 million units, 19.2% below like-2021’s 1.518 million. The total was 2.2% below March’s 1.249 million units but the second highest since July’s 1.281 million. April’s daily selling rate over the month’s 27 selling days was 45,443, 22.2% below same-month-2021’s 58,401 – 26 selling days.

“The final tally for April was below expectations for a 14.5 million-unit SAAR and appeared to be the result of retail volume finishing slightly weaker, probably due to underestimating the negative impact of rising prices exacerbated by the high mix in inventory of higher priced vehicles, higher fuel prices and some trepidation by consumers on the economic outlook. Fleet, which proportionately has more pent-up demand than retail from the pandemic impact of the past two years, remains at historic lows.”



Fleet Sales (Updated 5/5)

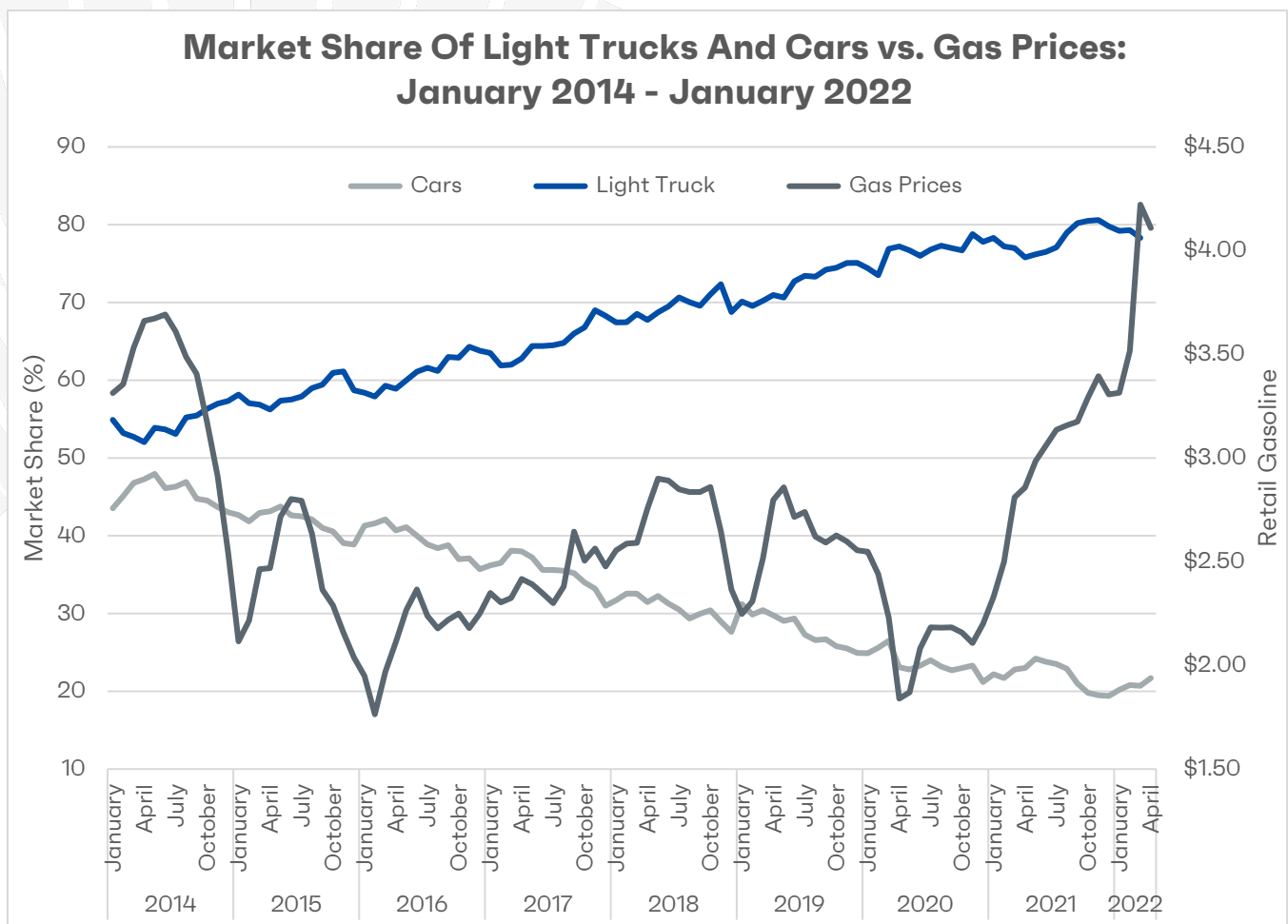
TrueCar⁹: “Fleet sales for April 2022 are expected to be down 24% from a year ago and up 19% from March 2022 when adjusted for the same number of selling days.

J.D. Power¹⁰: “Fleet sales are expected to total 165,100 units in April, down 2.0% from April 2021 on a selling day adjusted basis. Fleet volume is expected to account for 13% of total light-vehicle sales, up from 11% a year ago.”

Segments vs. Gas Prices (Updated 5/5)

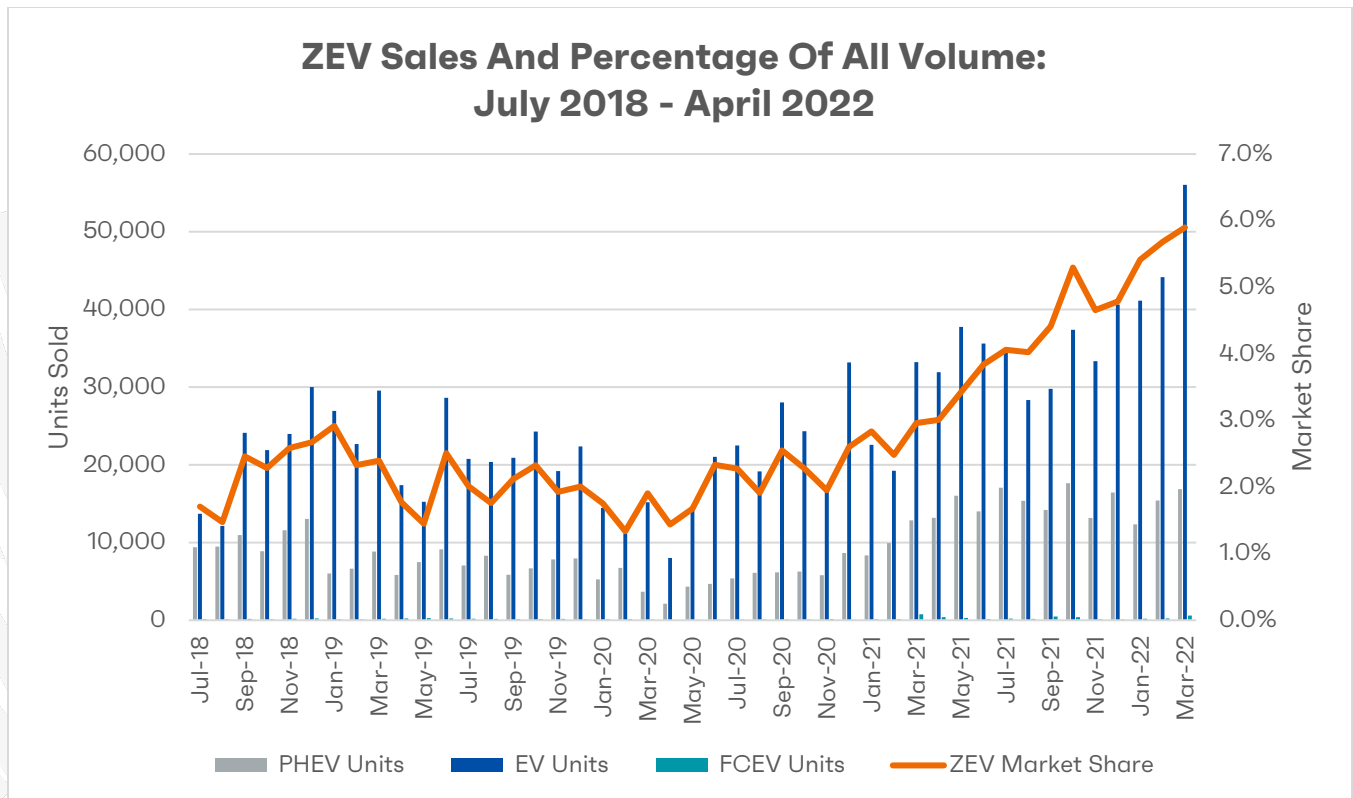
Monthly Sales For April: Light trucks accounted for 78.3% of sales in April, a 1.3 pp increase market share from a year ago. Compared to the same period in 2021, sales of cars are down more than 82,000, and down more than 129,000 from March 2019, when cars comprised 30% of the market as opposed to the 22% 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 segments¹¹ and gas was over \$3.00¹² 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.¹³



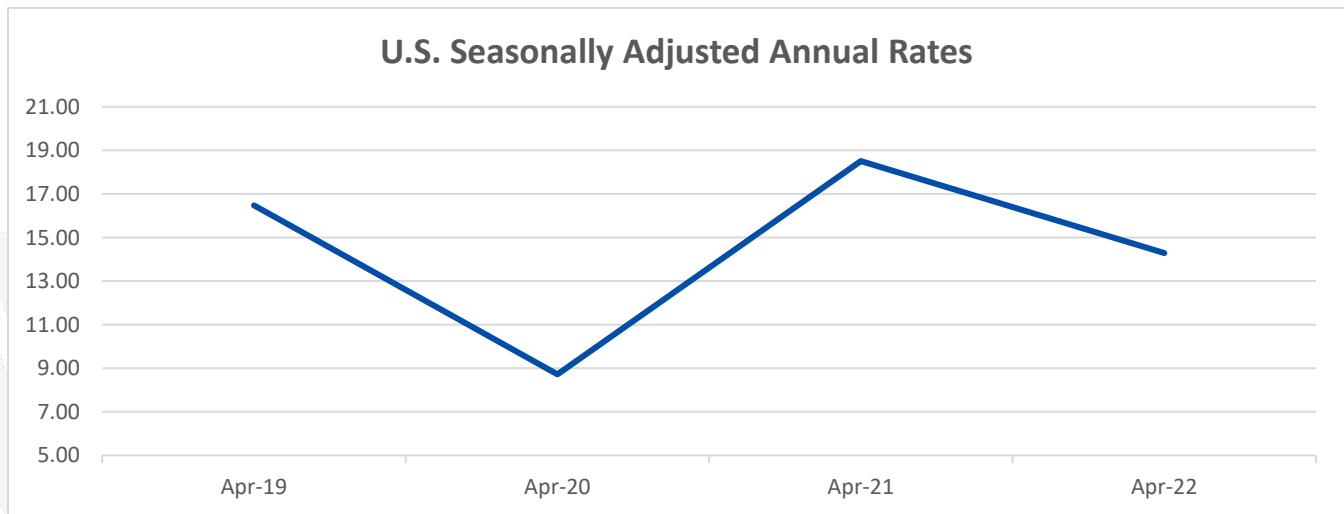
ZEV Powertrain Sales (Updated 5/5)

Sales of zero emission vehicles (BEV, PHEV, & Fuel Cell) accounted for 5.8% of total vehicle sales in April 2022 (71,714 units), up 2.8 pp from a year ago and down 0.1 pp from March 2022. Sales of battery electric vehicles led the way for ZEVs, accounting for 4.52% of total sales, up 2.4 pp from April 2021. Plug-in hybrids accounted for 1.31%, 0.44 pp higher than the same time last year.¹⁴



Seasonally Adjusted Annual Rates (Updated 5/5)

WardsIntelligence: “April sales totaled a 14.3 million-unit seasonally adjusted annual rate, well above March’s 13.4 million, and – except for January’s 15.0 million, best since July 2021’s 14.7 million. April’s SAAR also makes a solid footing for Q2 to improve on Q1’s 14.0 million units.”¹⁵

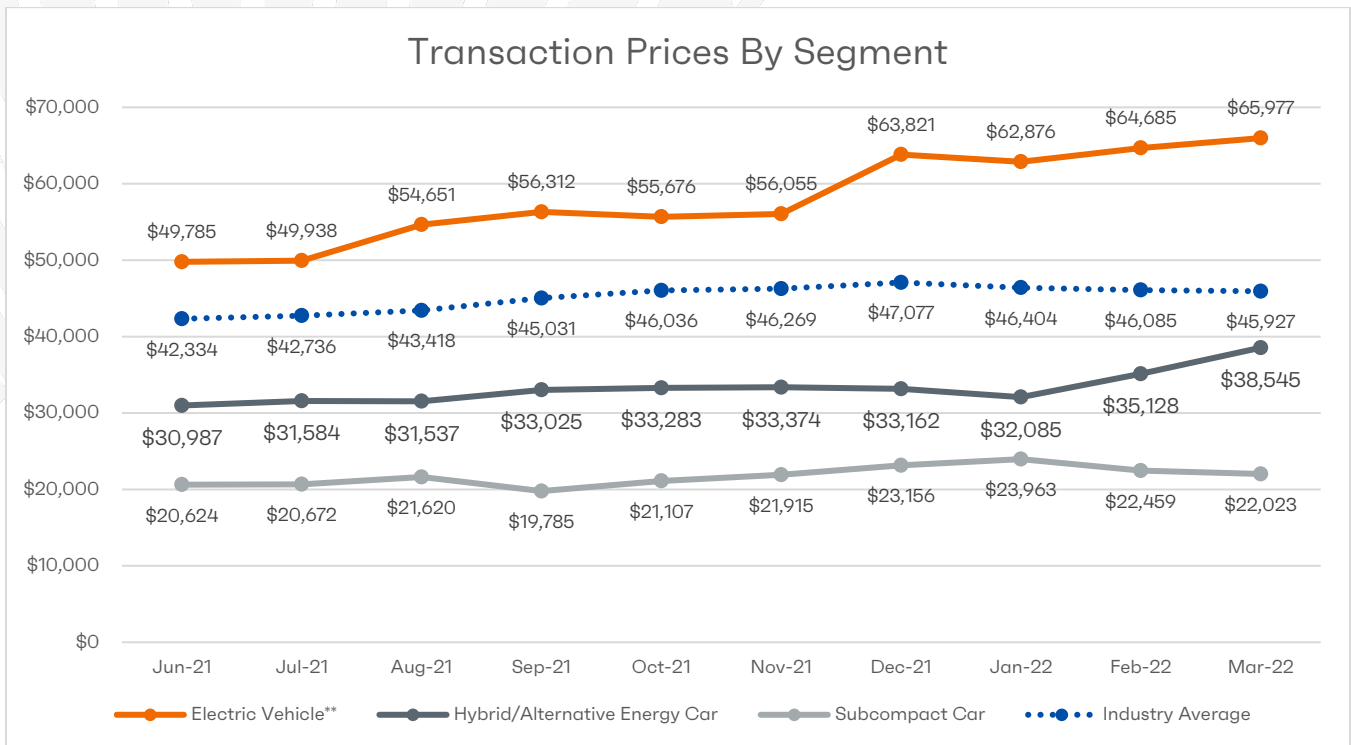
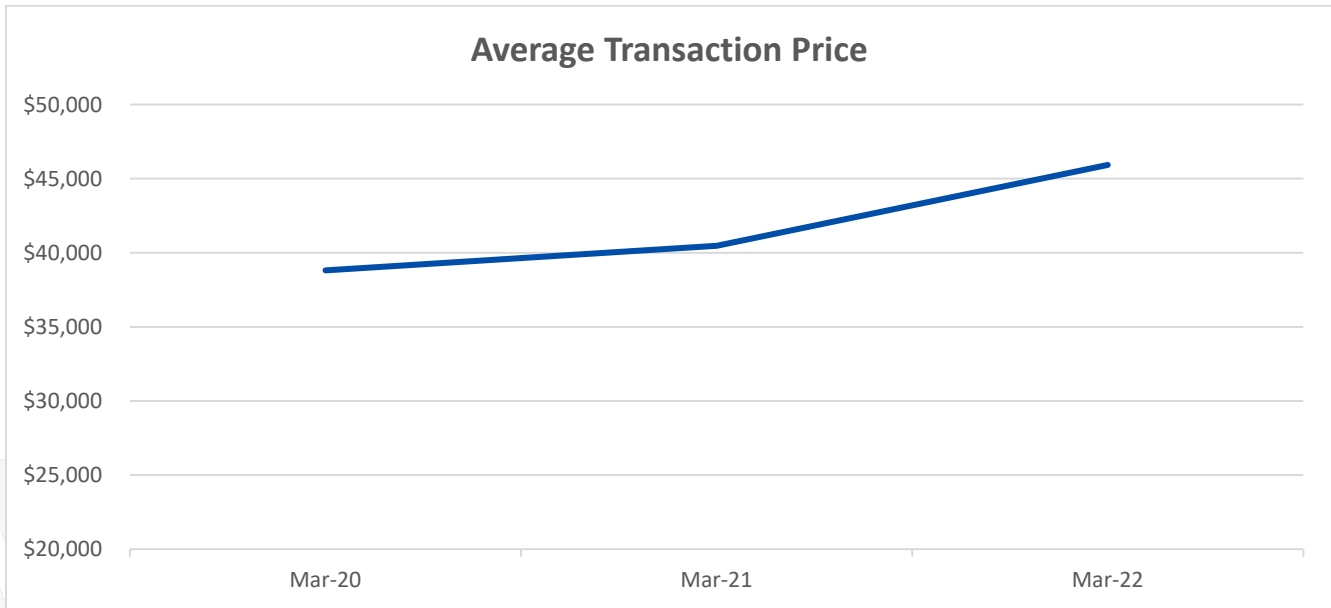


Average Transaction Price (Updated 5/5)

J.D. Power (Updated 5/5)¹⁶: “New-vehicle prices continue to set records, with the average transaction price expected to reach an April record of \$45,232—an 18.7% increase from a year ago and the second-highest level on record behind \$45,247 set in December 2021.

“The growth in transaction prices means that, while the sales pace is down 23.8% year over year, consumers will spend \$48.7 billion on new vehicles this month, the second-highest level ever for the month of April and down just 6.1% from April 2021.”

Kelley Blue Book (March): “New-vehicle average transaction prices (ATPs) decreased to \$45,927 in March 2022 after reaching a record high in December 2021, according to new data released by Kelley Blue Book, a Cox Automotive company. Prices fell 0.3% (\$156) month over month, but remain elevated compared to one year ago, up 12.9% (\$5,247) from March 2021.”¹⁷

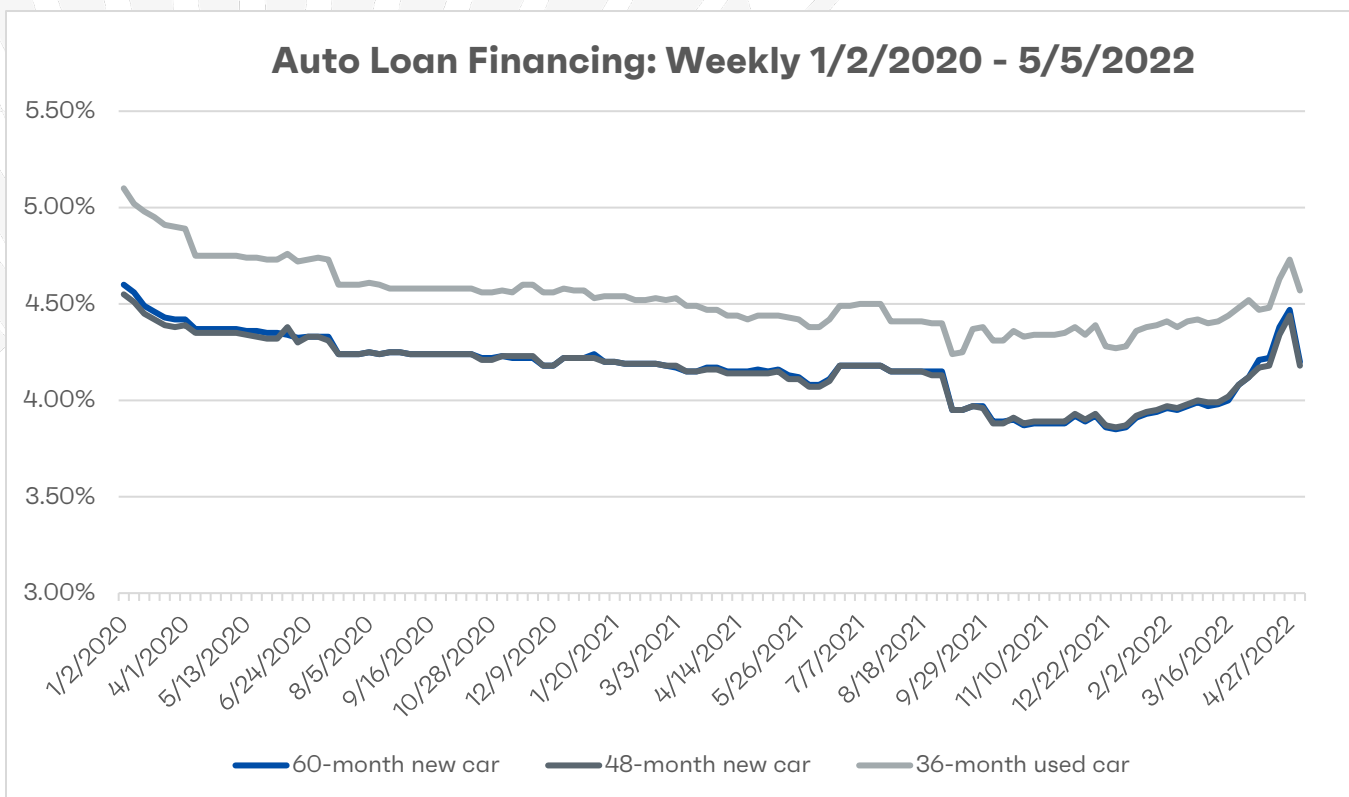


**Due to reporting errors with Tesla Motors, the Electric Vehicle ATP is likely higher than Kelley Blue Book estimates.

Auto Loan Financing (Updated 5/5)

Interest Rates Rise: Interest rates for new cars fell 0.27 pp and now stand at 4.20%. Rates also fell 0.16 pp on the 36-month used car loan and now stand at 4.57%. The 48-month new car loan dropped to 4.18. Since the beginning of 2020, 60-month rates are down 0.40 pp, and are up 0.05 pp since the same time a year ago.¹⁸

Dates	60-month new car	48-month new car	36-month used car
1/2/2020	4.60%	4.55%	5.10%
5/5/2021	4.15%	4.14%	4.44%
4/27/2022	4.47%	4.44%	4.73%
5/4/2022	4.20%	4.18%	4.57%
One Week Change	-0.27%	-0.26%	-0.16%
Two Week Change	-0.18%	-0.16%	-0.06%
Change since 1/3/20	-0.40%	-0.37%	-0.53%
One Year Change	0.05%	0.04%	0.13%

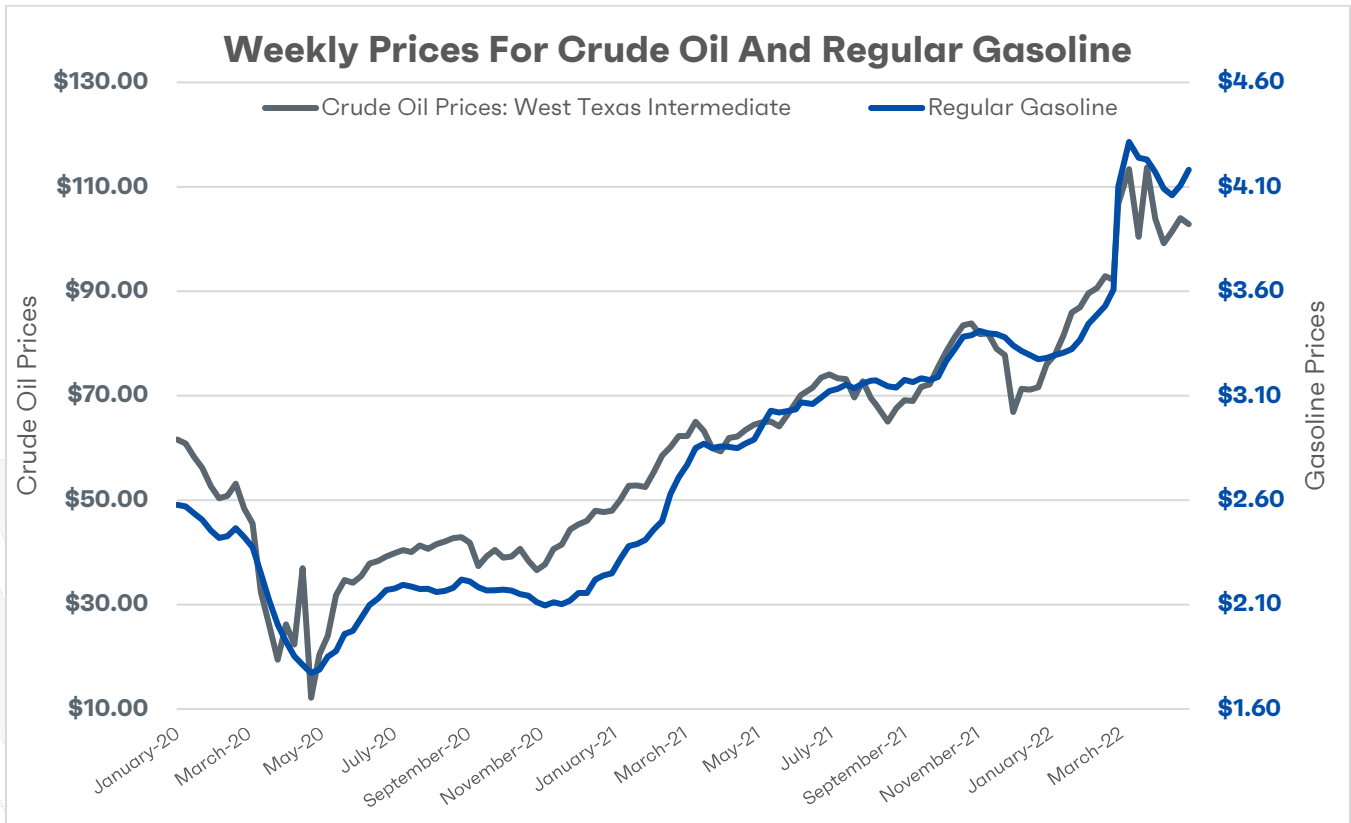


Crude Oil and Gas Prices (Updated 5/5)

EIA Outlook For Gasoline (4/20)¹⁹: “Gasoline prices: The front-month futures price of RBOB (the petroleum component of gasoline used in many parts of the country) settled at \$3.04 per gallon (gal) on April 7, down 5 cents/gal from March 1 (Figure 6). The RBOB–Brent crack spread (the difference between the price of RBOB and the price of Brent crude oil) settled at 65 cents/gal on April 7, up 6 cents/gal during the same period. The average RBOB–Brent crack spread in March was 62 cents/gal, 17 cents/gal higher than February. . . . We estimate U.S. gasoline consumption averaged 8.6 million barrels a day (b/d) in March, which is 0.7 million b/d (7%) lower than the 2015–19 average and slightly higher than in March 2021. We expect vehicle miles traveled to increase by 1 billion miles per day (12%) between March and July as the summer travel season begins. We estimate gasoline inventories decreased by 7.8 million barrels in March and were 2.6% below the five-year (2017–2021) average. However, expected production increases in response to higher crack spreads suggest U.S. inventories will increase above the five-year average by June and remain above average for the rest of 2022.

EIA Outlook For Oil (4/20)²⁰: “Prices: The front-month futures price for Brent crude oil settled at \$100.58 per barrel (b) on April 7, 2022, a decrease of \$4.39/b from the March 1, 2022, price of \$104.97/b. The front- month futures price for West Texas Intermediate (WTI) crude oil for delivery at Cushing, Oklahoma, decreased by \$7.38/b during the same period, settling at \$96.03/b on April 7.

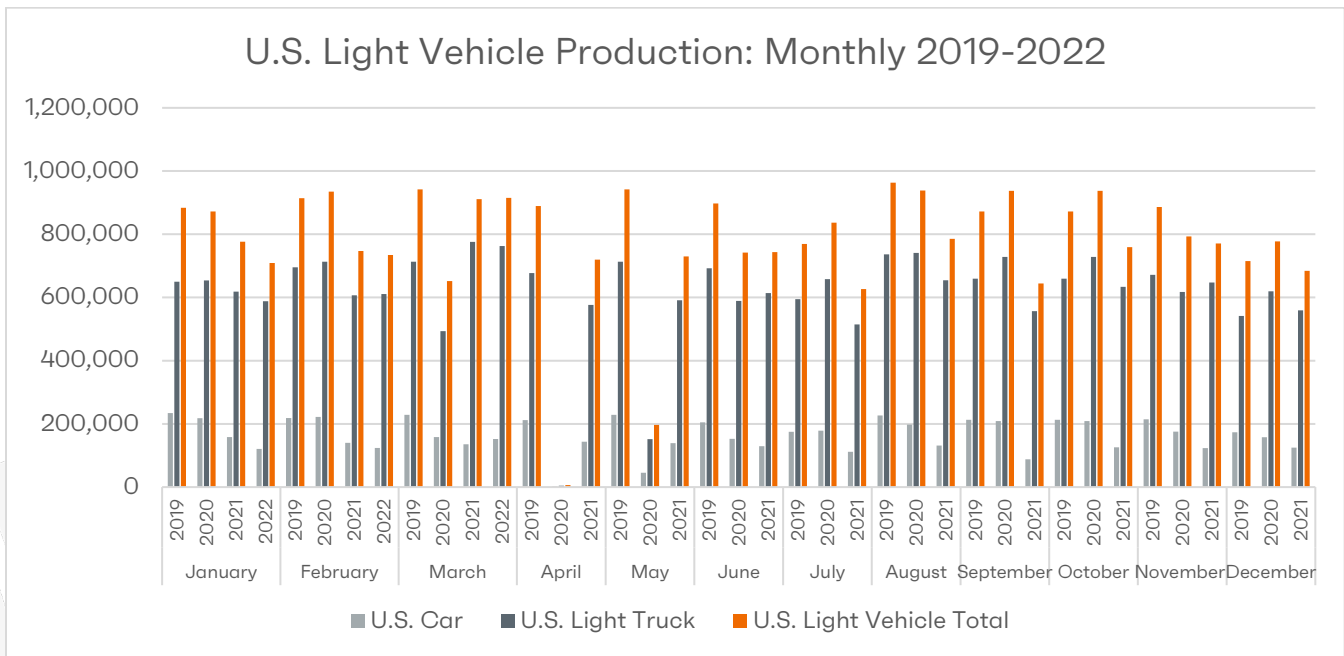
Gas And Oil Remain High: Oil prices, as benchmarked at West Texas Intermediate, fell \$1 to \$102.85 a barrel for the week of May 2. Since election day 2020, oil prices have climbed \$66 a barrel. Gas prices rose \$0.07 to \$4.18. Gas is 57.5% higher than the beginning of 2020.²¹



Production Meter

U.S. Light Vehicle Production (Updated 4/20)

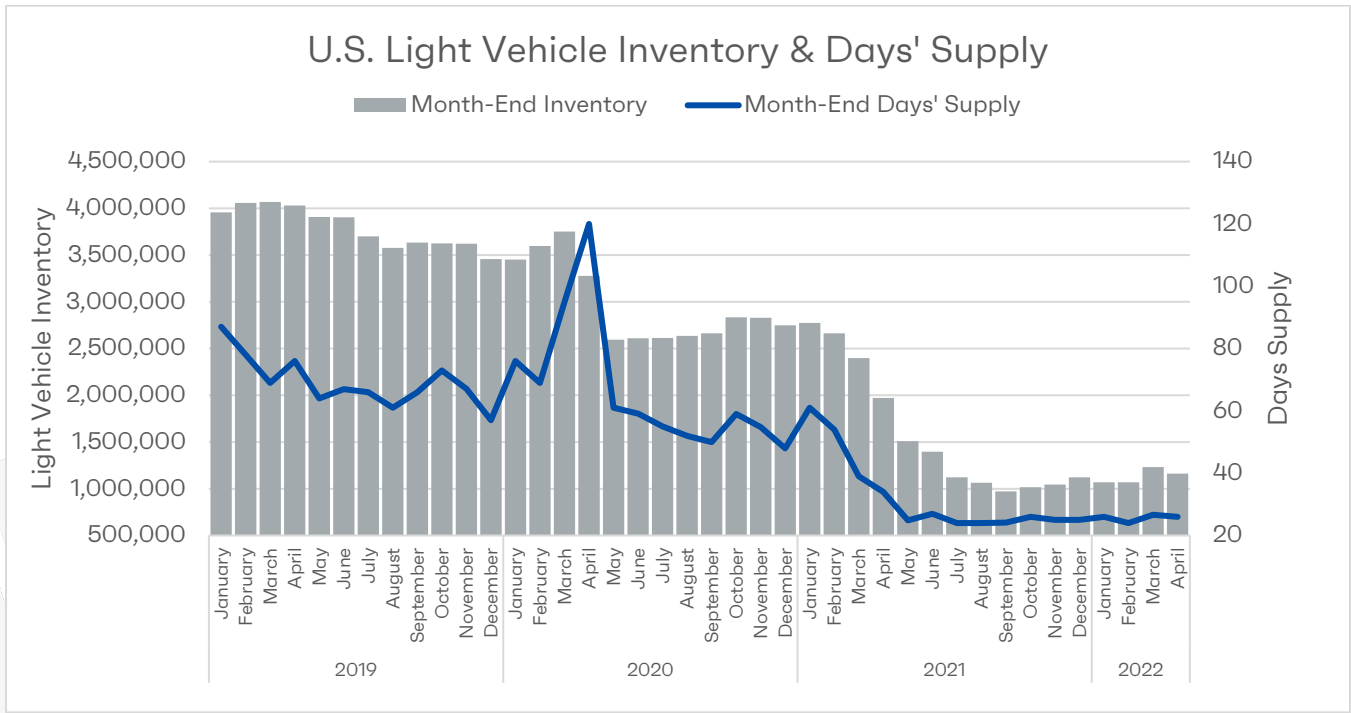
U.S. Light vehicle production for March 2022 increased month-over-month by 24.6 percent, totaling 942,111 (152,296 cars, 762,892 light trucks), year-over-year, production is down 1% from 2021. ²²



Wards Intelligence North America Production²³: “In March, 1.396 million light vehicles and medium-/heavy-duty trucks were built in North America, nearly even with same-month 2021’s 1.399 million. The last month to record year-over-year growth was May 2021. March light-vehicle production totaled 1.350 million units, a smidgeon below like-2021’s 1.352 million. . . . First-quarter production totaled 3.579 million units, 3.7% below Q1-2021’s 3.717 million.”

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

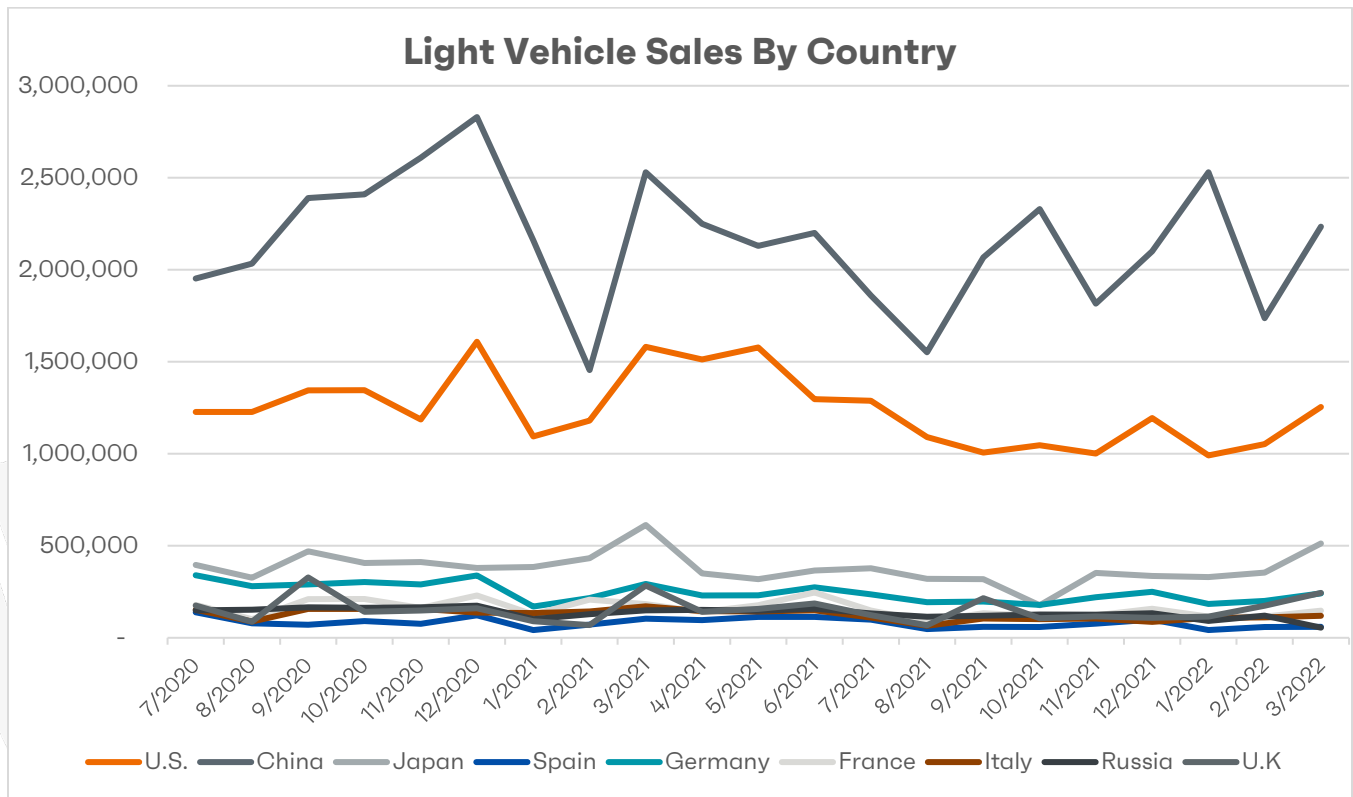
WardsIntelligence Inventory Update (5/5)²⁴: “U.S. light-vehicle inventory dropped 5.7% from the prior month in April, which was a larger decline than expected, though not enough to keep the gap between this year and last year from narrowing. April inventory totaled 1.162 million units, 41.1% below like-2021. The total fell from March’s 1.232 million, which was 48.7% below the same year-ago level. Inventory was expected to decline slightly from March due to seasonal factors. Most of the drop was centered in a 10.5% month-to-month decline in imports, while inventory of domestically made vehicles fell 4.6%. Days’ supply ended April at 26, down from the prior month’s 27 and like-2021’s 34. Historically, an increase in days’ supply from March to April is normal. Pre-pandemic, roughly a 70 days’ supply was normal for April.”



Global Meter

Global Light Vehicle Sales (Updated 5/5)

Wards Intelligence ²⁵: “Though global vehicle sales saw a brief recovery in February, this was not expected to last; Russia’s invasion of Ukraine added to the stress on vehicle sales already stemming from the microchip shortage. World vehicle sales sank 14.6% in March, totaling 7.51 million units in comparison with 8.79 million in like-2021. All regions posted declines for the month. . . . Wrapping up the first quarter with 20.45 million deliveries, global vehicle sales fell behind year-ago’s 21.96 million by 6.9%.”



Global Light Vehicle Production (Updated 4/20)

Wards Intelligence Outlook (3/17)²⁶: “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 (4/20)²⁷: “While the March 2022 forecast update reflected the impact of Russia’s invasion of Ukraine, the April update addresses some additional issues that have arisen, including a rather sluggish recovery in semiconductor supplies, the impact of further COVID lockdowns in China and the longer-term influence of high raw material prices that will put added pressure on new vehicle affordability. The April 2022 forecast update reflects noteworthy reductions for several markets, to varying degrees, with the most significant reductions focused on Europe and Greater China as well as 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 498,000 units and by 320,000 units for 2022 and 2023, respectively (and reduced by 422,000 units for 2024). While most markets are influenced in some way by the ongoing Russia/Ukraine conflict, Europe is undeniably the most severely impacted. Last month, we made material revisions to both Russia output directly, as well as broader European production (the latter significantly influenced by the disruption of critical component supplies from Ukraine). With the April update, we see European production remaining challenged as the region continues to navigate the Russia/Ukraine impact as well as ongoing supply chain issues. We have seen actual production results for several countries in Europe coming in considerably weaker for Q1-2022 and early indications are that the weakness is carrying into Q2-2022. As a result, the downward revisions were particularly focused on the first half of 2022 with more limited downgrades for the back half of the year. Looking beyond 2022, the European production outlook was reduced largely commensurate with reductions in the demand outlook for the region as the market is expected to face noteworthy challenges in navigating higher raw material and component prices and more challenging macro conditions which will contribute to additional demand destruction.

“Greater China: The outlook for Greater China light vehicle production was reduced by 396,000 units and by 222,000 units for 2022 and 2023, respectively (and reduced by 339,000 units for 2024). Heavily hit by strict COVID containment measures, particularly in Changchun and Shenyang in North China, light vehicle production in March declined by 8% a year-over-year. In April, the high infectious Omicron variant has spread to Shanghai and forced local government officials to implement comprehensive lockdowns. According to the zero-COVID policy, all manufacturing facilities in Shanghai have suspended operations and are expected to remain closed for all of April. Key automakers impacted include Shanghai-GM, Shanghai-Volkswagen and Tesla whose plants remain non-operative since the beginning of the month. As the influence of lockdowns expanded from vehicle production to parts production, component shortages are expected to interrupt auto production outside of Shanghai in the near-term, leading to further vehicle output impact in following months. Given the negative lingering impacts of growing COVID case counts and resultant lockdowns as well as the macro implications of the Russia/Ukraine conflict, further downward forecast adjustments were made, particularly through the intermediate-term.

“Japan/Korea: Full-year 2022 Japan production volume was reduced by 17,000 units relative to the March forecast. Domestic operations have been affected by supply chain disruptions associated with the Fukushima earthquake and the zero COVID-19 policy in China, in addition to ongoing semiconductor shortages. While full year 2023 Japan production was only modestly revised, production for 2024 was reduced by 91,000 units. Near-term production remains influenced by efforts to overcome supply chain challenges, yet vehicle production in the intermediate-term is expected to be negatively impacted by stagnant consumer demand due to macroeconomic deterioration as a result of the lingering effects of the Russia/Ukraine conflict. Full-year 2022 South Korea production was

reduced by 34,000 units relative to the previous forecast. The Russia/Ukraine conflict and lingering semiconductor availability challenges continue to influence production in the near-term. In addition, recent COVID-19 lockdowns in China have created challenges in securing wire harnesses, among other components, further impacting the production recovery in South Korea. In the long-term, South Korea production was reduced by an average of 1.3% per year. As the macro effects of the crisis between Russia and Ukraine are expected to be prolonged, demand and production have been adjusted accordingly.

“North America: The outlook for North America light vehicle production was increased by 9,000 units and reduced by 177,000 units for 2022 and 2023, respectively (and reduced by 242,000 units for 2024). In spite of the backdrop of the Russia/Ukraine conflict and continued supply chain challenges, the outlook for North American light vehicle production in 2022 remains flat at 14.75 million units. Production in Q1-2022 came in a bit higher than forecast with 3.55 million units produced. However, production in Q2- 2022 was revised down approximately 78,000 units on continued supply chain struggles and concerns surrounding additional logistics issues at border crossings between the US and Mexico in Texas that may exacerbate already strained conditions in the near-term. Despite some of the negative sentiment associated with supply chain and logistics challenges, upside exists in the forecast depending on manufacturers ability to produce vehicles as demonstrated with the stronger results in Q1-2022. Production for 2023 was revised down by 1.1% to total 16.49 million units on the growing threat of demand destruction. Further, production in 2024 was reduced by 1.4% to total 17.24 million units. Latent demand is currently stronger than US sales results to date, yet pent-up demand remains under threat from inflationary pressures.

“South America: The outlook for South America light vehicle production was reduced by 73,000 units and by 37,000 units for 2022 and 2023, respectively (and reduced by 36,000 units for 2024). The downgrade in production for 2022 was driven primarily by continued weakness in production results for Brazil as well as a downward revision for demand in the near-term. 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 on rising macro concerns resulting from the Russia/Ukraine conflict impacting demand and continued challenges regarding semiconductor availability. Of note, we continue to expect some restocking to occur throughout 2023; however, we will be closely monitoring demand, particularly in Brazil, for signs of further deterioration that could negatively impact the need for broader restocking.

“South Asia: The outlook for South Asia light vehicle production was reduced by 27,000 units and by 19,000 units for 2022 and 2023, respectively (and reduced by 107,000 units for 2024). The downgrade in outlook for 2022 was primarily focused on the ASEAN market amid ongoing semiconductor constraints and recent China COVID-19 lockdowns, as well as a fragile economic outlook resulting from the Russia/Ukraine conflict. Looking beyond 2022, the forecast has been negatively impacted by expected longer-term demand destruction (post-COVID pandemic and supply chain crisis) influenced by rising commodity prices and a deteriorating economic outlook. On the commodity front, India is

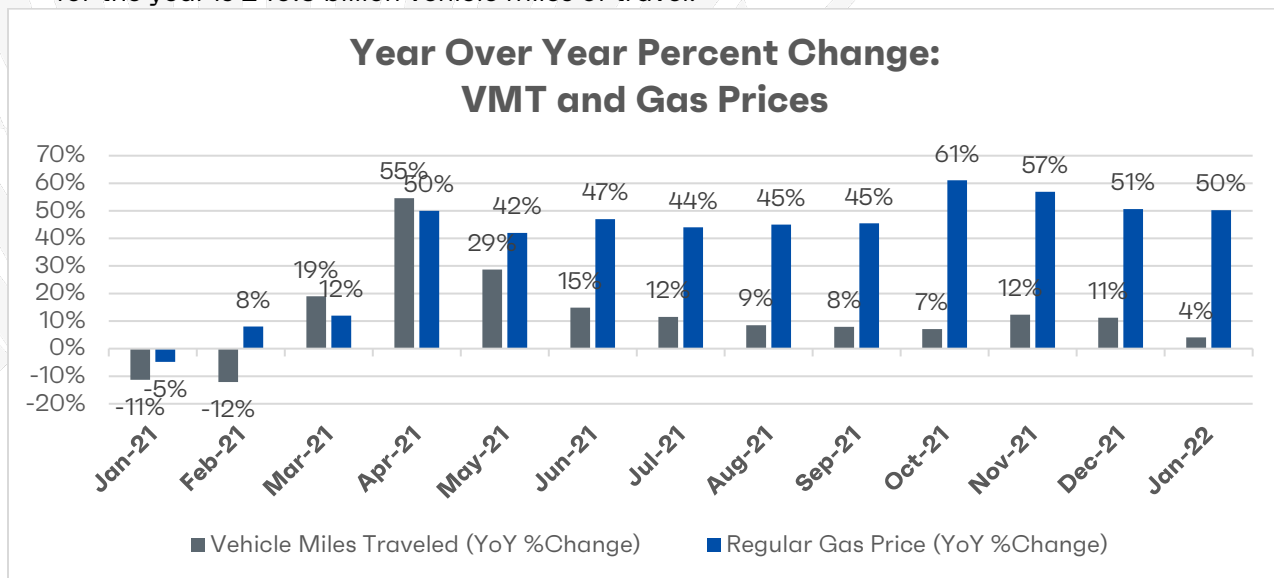
particularly vulnerable given its position as a net oil importer and relative sensitivity to capital outflows.”

Recovery Meter

Roadway Travel (Updated 4/6)

According to the U.S. Department of Transportation, seasonally-adjusted vehicle miles traveled in January rose 4.7% from the same time a year ago. The cumulative travel estimate for 2022 is 240.6 billion vehicle miles.²⁸

- Travel on all roads and streets changed by +4.1% (+9.5 billion vehicle miles) for January 2022 as compared with January 2021. Travel for the month is estimated to be 240.6 billion vehicle miles.
- The seasonally adjusted vehicle miles traveled for January 2022 is 274.4 a +4.7% (+12.3 billion vehicle miles) change over January 2021. billion vehicle miles) compared with December 2021.
- Cumulative Travel for 2022 changed by +4.1% (+9.5 billion vehicle miles). The cumulative estimate for the year is 240.6 billion vehicle miles of travel.



Economic News (Updated 4/6)

Manufacturing Gained 38,000 Jobs In March; Motor Vehicles And Parts Manufacturing Gained 6,400. “Manufacturing boosted employment by 38,000 jobs in March, the Bureau of Labor Statistics said today. Both durable and non-durable goods contributed to the monthly gain, according to a breakdown by sector issued by the bureau. Durable goods industries increased by 22,000 jobs and non-durable goods industries by 16,000. On the durable goods side, the increase was paced by

transportation equipment, up 10,800 jobs. That included a gain of 6,400 jobs in motor vehicles and parts.”²⁹

The ISM Index Fell To 57.1 In March. “The Institute for Supply Management said its manufacturing index, known as the PMI, slipped to 57.1 percent in March. That was down from 58.6 percent in February. Despite the softening, the index still indicated that manufacturing was running at a strong rate. A PMI level above 50 percent indicates an expanding manufacturing economy. Below 50 percent indicates economic contraction.”³⁰

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.”³¹

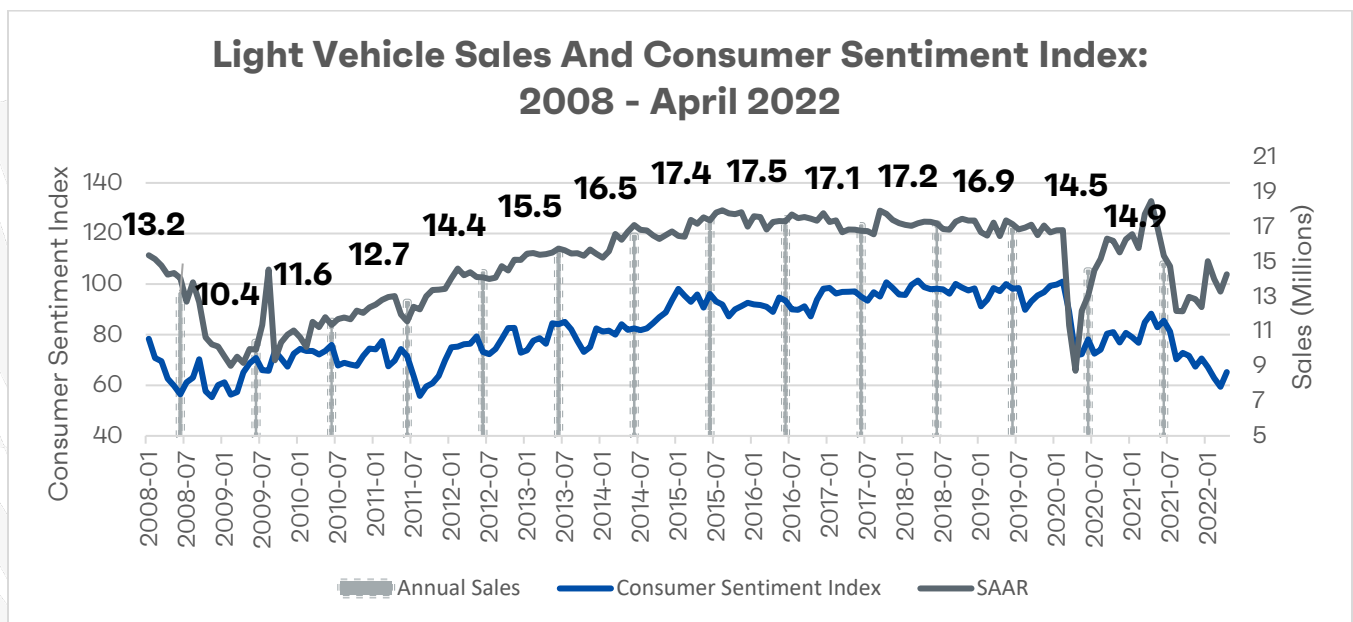
“Material inflation/headwinds risks from conflict broad in range as to variety and severity:

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.”³²

Consumer Confidence and Sales (Updated 5/5)

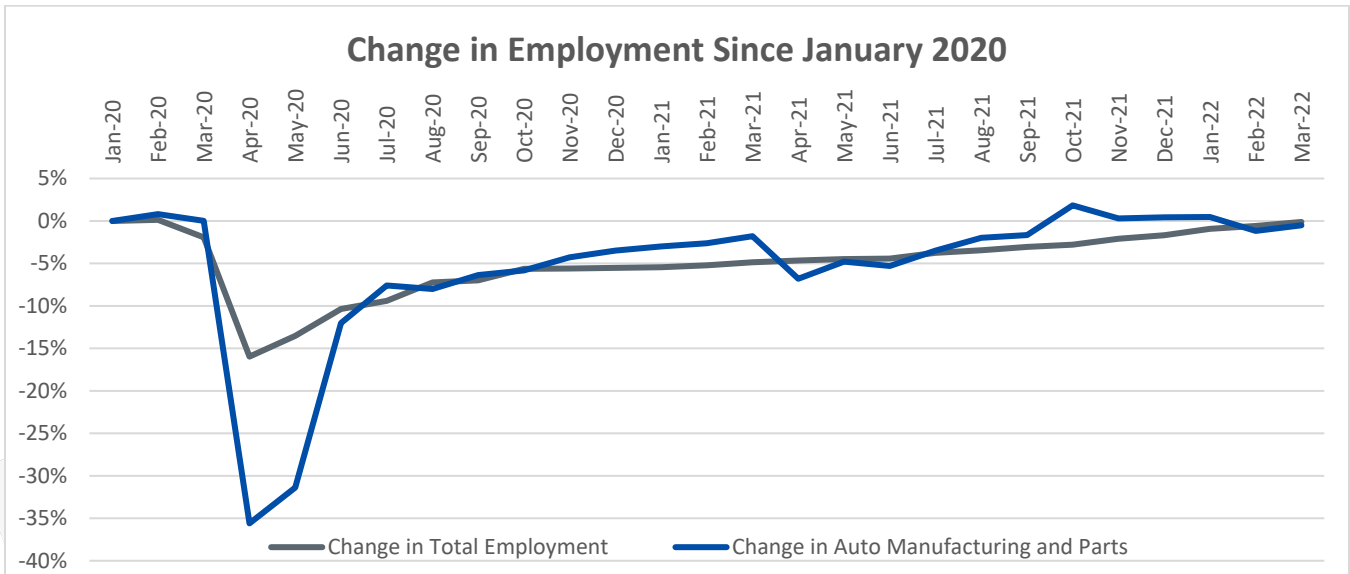
Surveys of Consumers Chief Economist, Richard Curtin³³: “The Index of Consumer Sentiment rose to 65.2 in April, a jump of 9.8% above March. Most of the surge was concentrated in expectations, with gains of 21.6% in the year-ahead outlook for the economy and an 18.3% jump in personal financial expectations. The cause was a sharp drop in gas price expectations, falling to just 0.4 cents from last month’s 49.6. The overall impact on sentiment trends, however, was quite small: other than the last two months, the Sentiment Index in April was still lower than in any prior month in the past decade. The 1st quarter decline in GDP was no surprise (see the chart). The downward slide in confidence represents the impact of uncertainty, which began with the pandemic and was reinforced by cross-currents, including the negative impact of inflation and higher interest rates, and the positive impact of a persistently strong labor market and rising wages. The global economy has added even more uncertainties about prospects for the U.S. economy, including the growing involvement in the military support for Ukraine, and renewed supply line disruptions from the covid crisis in China. Who would not

be apprehensive about future conditions, even if on balance they anticipated a continued expansion? Moreover, consumers have lost confidence in economic policies, with fiscal actions increasingly hampered by partisanship in the runup to the Congressional elections. Monetary policy now aims at tempering the strong labor market and trimming wage gains, the only factors that now support optimism. The goal of a soft landing will be more difficult to achieve given the uncertainties that now prevail, raising prospects for a halt, or even a temporary reversal, in the Fed's interest rate policies. The probability of consumers reaching a tipping point will increasingly depend on prospects for a strong labor market and continued wage gains. The cost of that renewed strength is an accelerating wage-price spiral.”



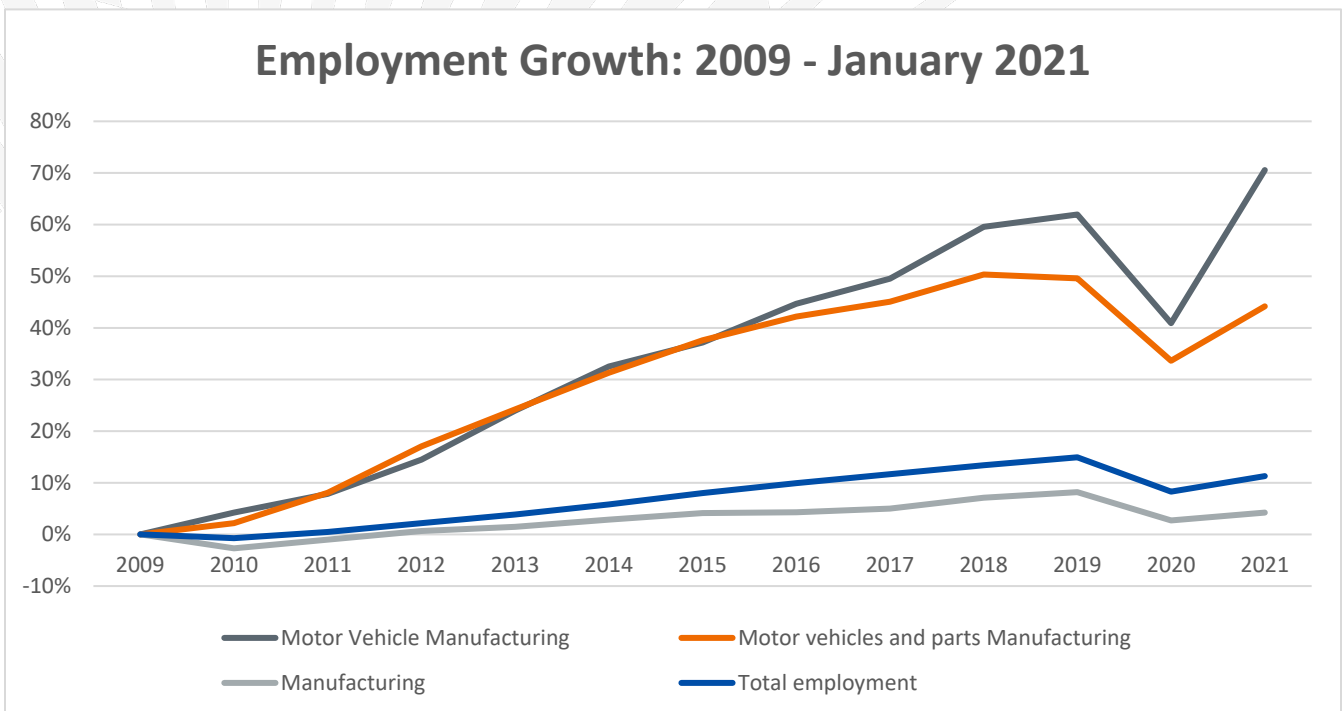
Employment (Updated 4/6)

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.³⁴



• **Motor Vehicle And Parts Manufacturing Gained 6,400 Jobs In January.** ³⁵

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. ³⁶ 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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