ALLIANCE FOR AUTOMOTIVE INNOVATION

Cleaner. Safer. Smarter.

READING THE METER

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

July 7, 2021

Contents

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Forecast Meter

Forecast Summary (Updated 7/7)

2020-2021 Sales,[1] Extended Sales Forecast[2] and Production Forecasts[3]		
	U.S. Sales & Forecasts	**North American Production**
June '20	1,103,791 (-24% YoY)	743,216 (-17% YoY)
July '20	1,227,091 (-12.1% YoY)	1,261,884 (+2.2% YoY)
August '20	1,325,144 (-19.1% YoY)	951,983 (-1.1% YoY)
September '20	1,344,310 (6.4% YoY)	1,395,830 (+2.1% YoY)
October '20	1,345,401 (0.9% YoY)	1.413.207 (+3.7% YoY)
November '20	1,193,180 (-15.4% YoY)	1,260,763 (-6.4% YoY)
December '20	1.608.875 (5.9% YoY)	1,115,542 (+2.8% YoY)
January '21	1,094,689 (-3.6% YoY)	1,175,940 (-14.0% YoY)
February '21	1,180,506 (-5.3% YoY)	1,120,200 (-22.9% YoY)
March '21	1,581,067 (+59.7% YoY)	1,376,904 (31% YoY)
April '21	1,512,186 (+111.4 YoY)	1,094,891 (-21% YoY)
May '21	1,577,941 (+41% YoY)	729,879 (+271% YoY)
June '21	1,296,517 (+17% YoY)	868,300 (forecast)
July '21		859,400 (forecast)
1st Quarter '20	3,476,512 (-12.7% YoY)	3,754,533 (-11.7% YoY)
2nd Quarter '20	2,948,410 (-33.3% YoY)	1,371,420 (-67.6% YoY)
3rd Quarter'20	3,904,539 (-9.2% YoY)	3,989,982 (-.5% YoY)
4th Quarter'20	4,159,622 (-2.1% YoY)	3,789,512 (-2.5% YoY)
1st Quarter '21	3,869,872 (+11.3 YoY)	3,688,512 (-4.7% YoY)
2020 Calendar Year	14,463,935 (-14.7% YoY)	12,905,447 (-23.1%)
2021 Full Year Estimate	16.9 million units (17% YoY)	15.8 million units (22.7% YoY)

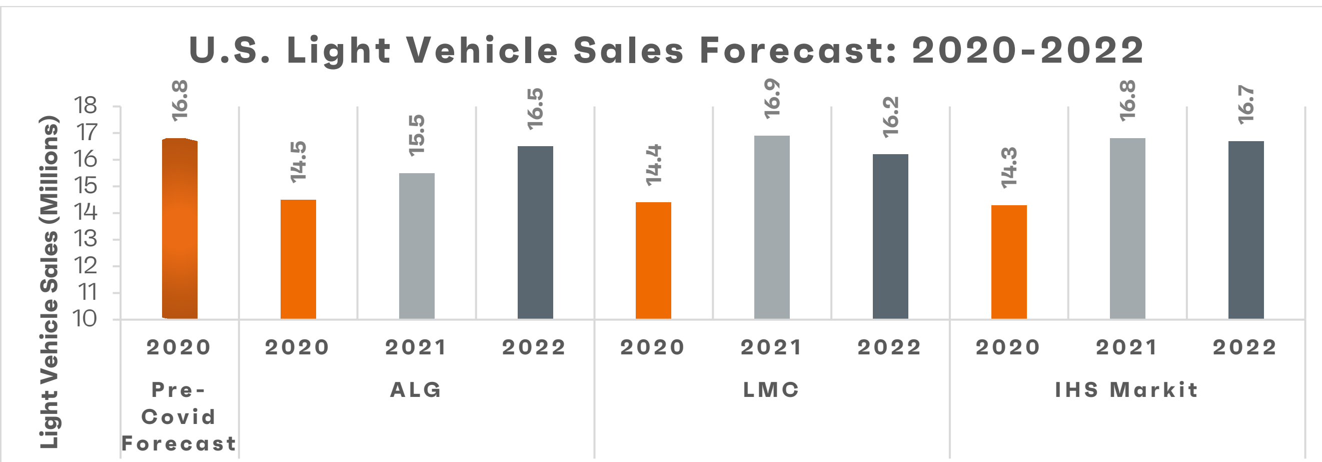
U.S. Light Vehicle Sales Outlook (Updated 7/7)

Wards Intelligence Outlook[4]: "U.S. light-vehicle inventory fell 7.5% in June from May, portending sales will not improve – and likely weaken – on last month's 15.4 million-unit seasonally adjusted annual rate anytime soon. . . . Based on last month's inventory drop, sales in July will be hardpressed to match June's annualized level, and, because inventory is expected to fall further this month, could be followed by a sequential decline in August – a sub-15-million-unit SAAR is possible.

"If the chip shortage does not worsen, availability should improve enough during August for sales to begin resuming an upward trendline on an annualized basis in September. The revised sales outlook for Q3 is a 15.0 million-unit SAAR, followed by 18.5 million in Q4. The revised LMC Automotive/Wards Intelligence forecast for entire-2021 is 16.9 million units."

J.D. Power June Outlook[5]: ""Looking forward to June, with sales continuing to outpace production in aggregate, falling inventory levels may start to put pressure on the current sales pace. However, based on what we have seen so far, retailers may continue to adapt by turning inventory more quickly to maintain sales velocity. However, regardless of inventory position, manufacturers and retailers will continue to benefit from strong consumer demand and a higher profit per unit sold."

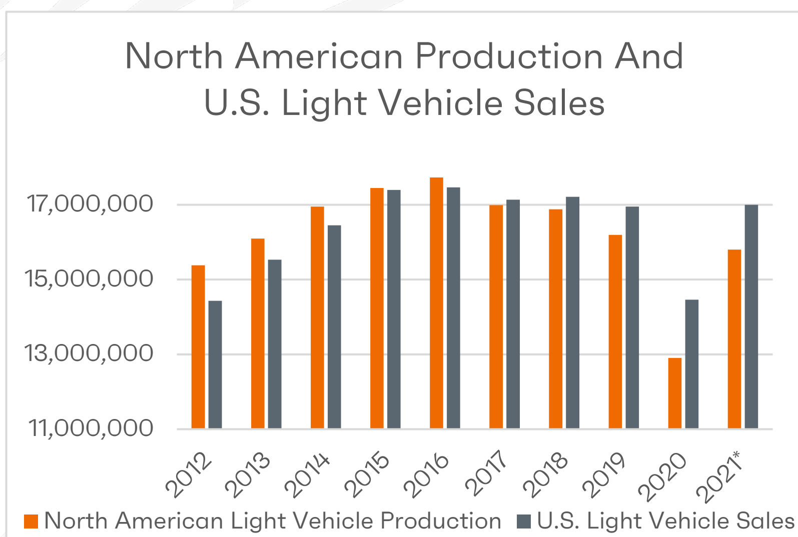
Ward Intelligence 2021 Outlook[6]: "Wards Intelligence forecast partner LMC Automotive is forecasting sales to end 2021 at 17.0 million units – much lower than actual demand. If the June outlook holds firm, Q2 will total a 17.2 million-unit SAAR, compared with 16.9 million in Q1. The first-half annualized rate will finish at 17.1 million units and will have to total 16.9 million during July-December to meet 2021's forecasted volume."



North American Production Outlook (Updated 6/23)

Wards Intelligence Outlook[7]: "Third-quarter North America production will rise to a 5-year high this year, based on the Wards Intelligence Production Tracker's first look at the period.

"However, the increase remains shrouded in risk thanks to the ongoing global semiconductor shortage, which caused more cuts to the second quarter estimate. The good news is this round of reductions related to the micro supply was the least severe in several months. . . . Excluding the big trucks, light-vehicle



production is expected to total 4.25 million units in Q3, 6.2% above like-2020, and 6.9% above July-September 2019.

“Lifting production to the long-time high is a combination of strong demand in the U.S. and a dearth of inventory. In fact, although production capacity constraints related to the chip issue still are expected during the period, light-vehicle capacity utilization will reach a 5-year Q3 high, rising to 93.1% from like-2020’s 89.8%.

“The need for inventory build-up has caused the cancellation of several summer shutdowns. But, mostly due to the chip shortage and some necessary retooling shutdowns or maintenance, not all plants are foregoing summer downtime. The lack-of-inventory problem would not even be close to resolved if all plants could remain open the entire summer, but it means production aimed at inventory build-up will continue further into 2022.

“Of course, the amount of production for inventory build-up is predicated on demand meeting forecasted levels. WI’s forecast partner LMC Automotive expects light-vehicle sales in North America of 19.9 million units in 2021 and 20.3 million in 2022, with about 75% locally sourced. If the sales outlook holds firm – and the biggest risk to it is more unexpected supply disruptions further limiting inventory – 2022 will outdo the last pre-pandemic year of 2019 when deliveries totaled 20.2 million units.

“As it did in the first quarter, the chip shortage, as well as other disruptions to the supply chain, tamped down capacity utilization in the second quarter. April-June production capacity utilization is estimated at 75.3% for light vehicles. Except for last year’s pandemic-skewed 31.5%, it was the lowest for the period since 72.0% in 2011.

“Second-quarter production for all vehicles is tracking to 3.47 million units, 144% above year-ago’s Covid-19-impacted total of 1.43 million, and 20.7% below like-2019’s 4.40 million. Losses in first-half 2021 attributed to the supply chain disruptions total 1.1 million units.

“Light-vehicle production in Q2 is pegged at 3.36 million units, 145% above year-ago, but 20.7% below like-2019.”

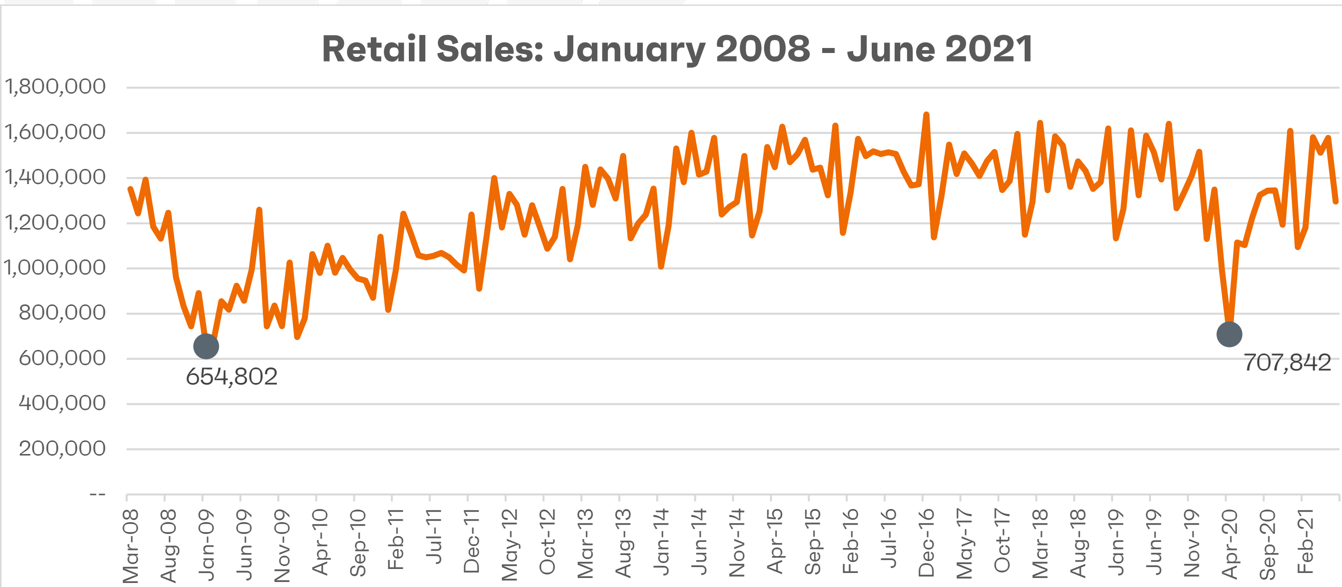
IHS Markit May Update: “The outlook for North America light vehicle production was reduced by 291,000 units and increased by 86,000 units for 2021 and 2022, respectively (and increased by 101,000 units for 2023). The production outlook for 2021 was reduced amid the ongoing semiconductor shortage and other supply chain and logistical issues. Ford continues to experience greater exposure to the semiconductor shortage with continued downtime extensions along with planned downtime that extends into September 2021 that results in a reduction of 190,000 units for the year. Stellantis quietly continues to extend downtime relating to the semiconductor shortage resulting in production being reduced by 90,000 units for 2021. Solid economic fundamentals along with robust demand for autos and the current inventory situation all support far higher levels of production in 2022, but production is expected to remain constrained with mostly baseline production levels to total 17.1 million units. Looking further to the future, As OEMs continue to aggressively pursue a shift towards EVs over the next decade, the June forecast provides a framework to achieve such goals. Although headwinds remain during the transition period, there is a rapid uptick in EV production in North America, notably post 2025. Nevertheless, a delicate balancing act remains throughout the 2020s as OEMs work to shift buyers to EVs and away from ICE models, and a rebalancing of market share may occur during this transition period."[8]

Market Meter

U.S. Light Vehicle Sales (Updated 7/7)

Monthly Sales (Updated 7/7)

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.



June Sales (Updated 7/7)

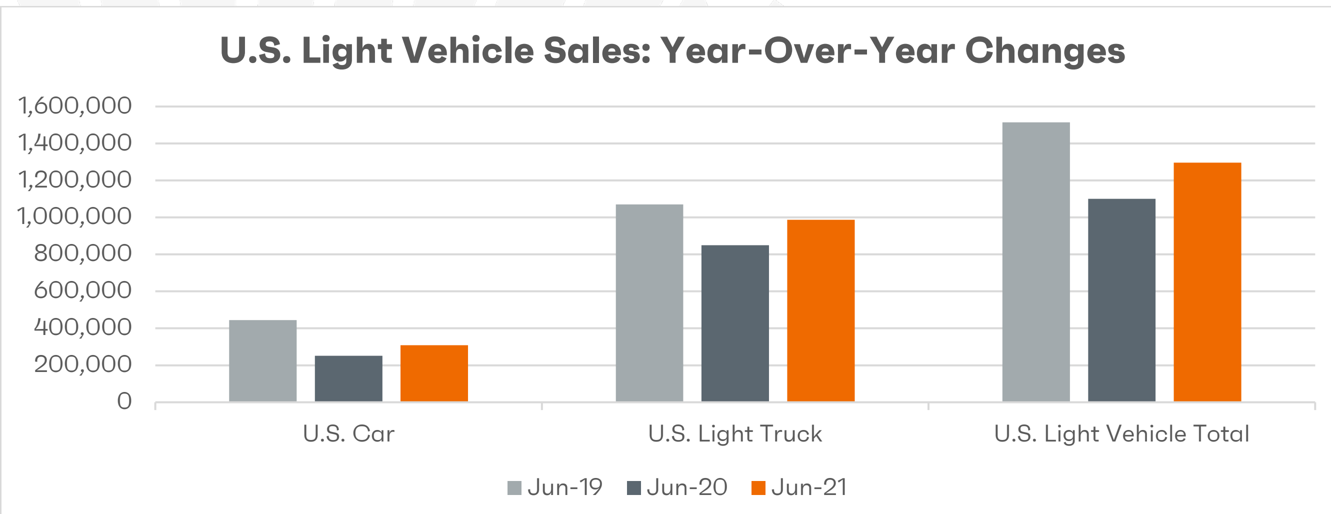
WardsIntelligence: "As expected, U.S. light-vehicle sales sharply fell a second straight month in June, even finishing slightly lower than forecast after mostly topping projections during the first five months of 2021. In a market where enough product availability could mean annualized sales of 18 million units, June sales totaled a 15.4 million-unit seasonally adjusted annual rate, a steep drop from May's revised 17.1 million and the combined March-April peak of 18.3 million. Lack of inventory has culled volume from total sales since the beginning of the year, but June's results marked the second straight month sales significantly dropped below current demand, albeit even more severe than May's falloff.

"June's SAAR was well above like-2020's pandemic-skewed 13.0 million units, but prior to the year-ago total, lowest for the month since 14.1 million in 2012. In fact, excluding 2020, it was the lowest SAAR for any month since 15.3 million units in January 2014. The deep sales drawdown due to waning inventory is expected to continue well into the summer before it starts to improve.

"Second-quarter 2021 totaled a 17.0 million-unit SAAR, a slight improvement on Q1's 16.9 million, and nearly even with same-period 2019's pre-pandemic 17.1 million. The first-half SAAR totaled 17.0 million, compared with like-2020's 13.0 million.

"June's raw volume totaled 1.297 million units and was 17.8% above like-2020's pandemic-impacted 1.101 million. The daily selling rate equates to 51,864, compared with June 2020's 44,039 – 25 selling days both periods.

"After posting year-over-year declines every month since 2012, car penetration increased for the second straight period in June, rising to 23.8% from like-2020's 22.8%. The year-long inventory-drain to traditionally strong segments, such as CUVs, pickups and SUVs, is dragging down deliveries of those vehicles enough so that penetration is being boosted for weaker sellers."[9]



<u>Fleet Sales (Updated 6/3)</u>

Wards Intelligence: "Estimated fleet volume in May, although up 95% from year-ago's pandemic downward-skewed total, accounted for just 10% of the month's volume after averaging 16% in the first four months of 2021 and well below its pre-pandemic mark of close to 20%."[10]

Segments vs. Gas Prices (Updated 7/7)

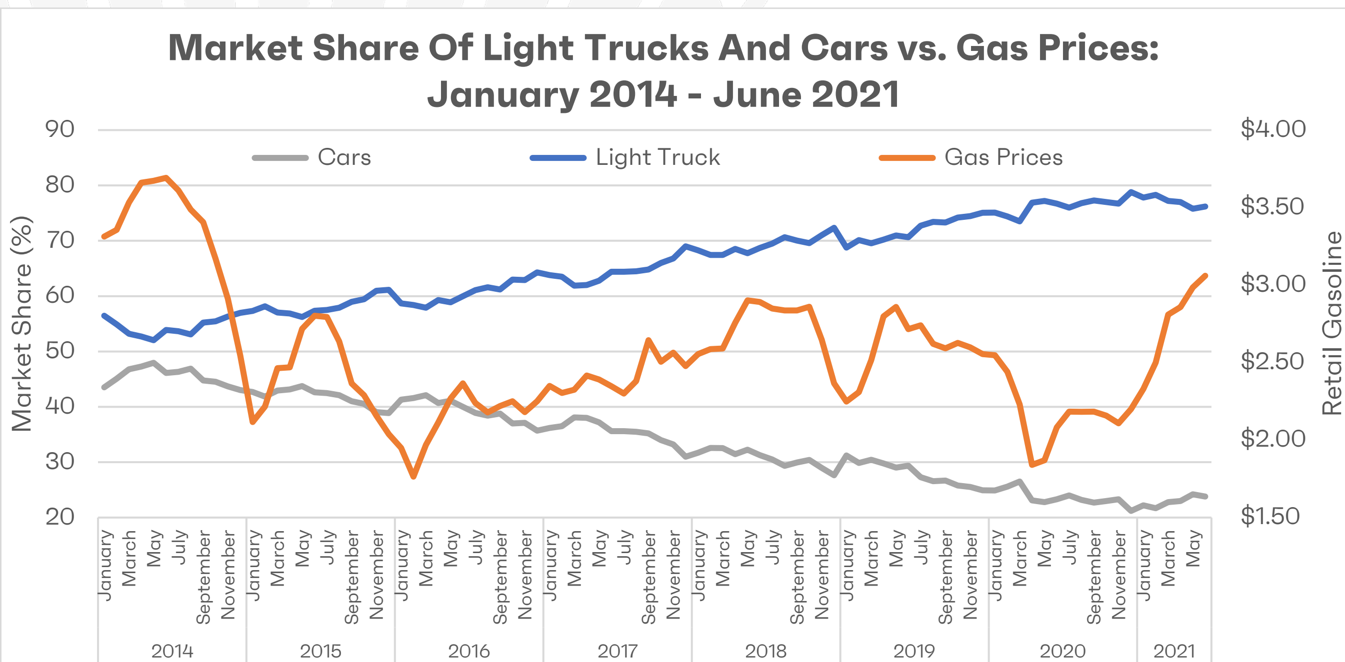
Monthly Sales For June: Light trucks accounted for 76.2% of sales in June, a 1% drop in market share from a year ago. Compared to 2020, sales of cars are up more than 57,763, but down nearly 136,000 from June 2019.

WardsIntelligence: "After posting year-over-year declines every month since 2012, car penetration increased for the second straight period in June, rising to 23.8% from like-2020's 22.8%.

"The year-long inventory-drain to traditionally strong segments, such as CUVs, pickups and SUVs, is dragging down deliveries of those vehicles enough so that penetration is being boosted for weaker sellers.

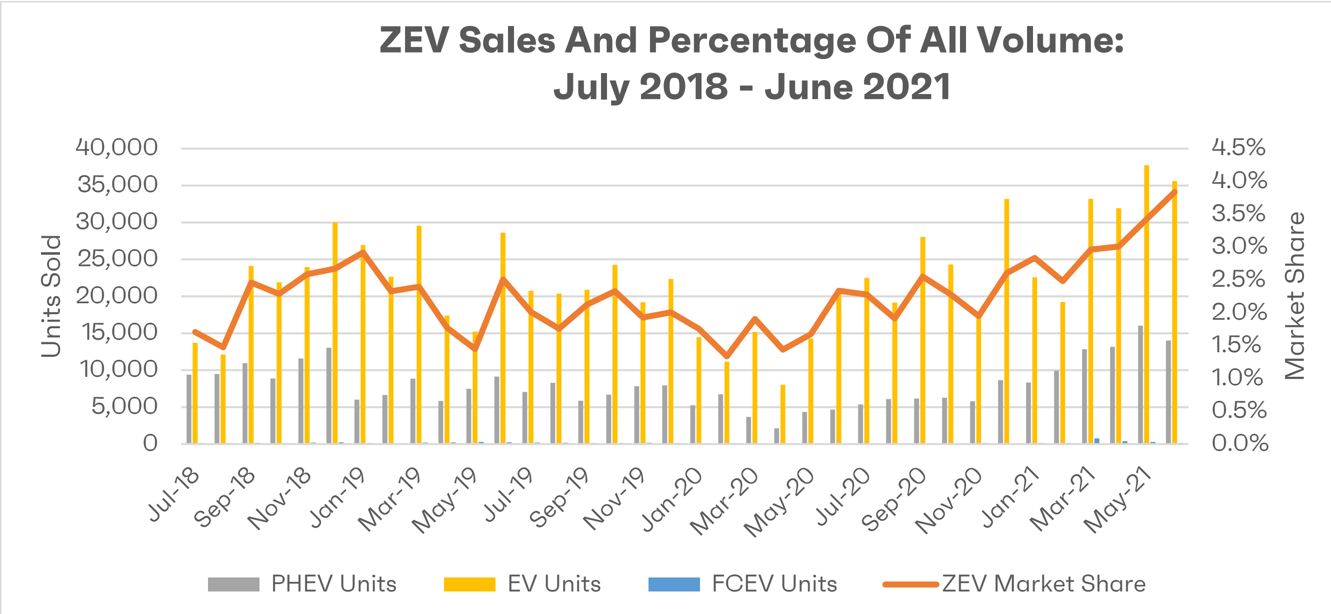
"June market share for pickups fell year-over-year a fourth straight month and SUVs were down a third consecutive period. CUV share rose in June – 46.5% from 45.1% - but the gap in percentage points was the smallest for the segment group in several months."[11]

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.[12] and gas was over $3.00.[13] 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 $2.67 a gallon (through June 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.[14]



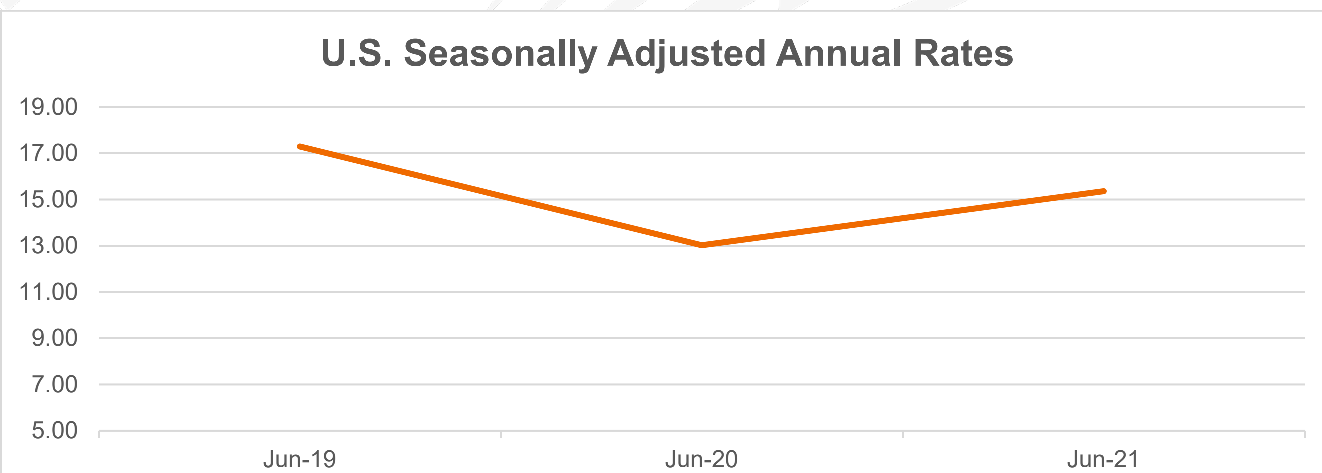
ZEV Powertrain Sales (Updated 7/7)

Sales of zero emission vehicles (BEV, PHEV, & Fuel Cell) accounted for 3.8% of total vehicle sales in June 2021, up from 1.5% from a year ago and up .4% from May 2021. Sales of battery electric vehicles led the way for ZEVs, accounting for 2.75% of total sales, up .83% from June 2020. Plug-in hybrids accounted for 1.08%, more than double the amount from the same time last year.[15]



Seasonally Adjusted Annual Rates (Updated 7/7)

WardsIntelligence: "June's SAAR was well above like-2020's pandemic-skewed 13.0 million units, but prior to the year-ago total, lowest for the month since 14.1 million in 2012. In fact, excluding 2020, it was the lowest SAAR for any month since 15.3 million units in January 2014. The deep sales drawdown due to waning inventory is expected to continue well into the summer before it starts to improve. Second-quarter 2021 totaled a 17.0 million-unit SAAR, a slight improvement on Q1's 16.9 million, and nearly even with same-period 2019's pre-pandemic 17.1 million. The first-half SAAR totaled 17.0 million, compared with like-2020's 13.0 million."[16]

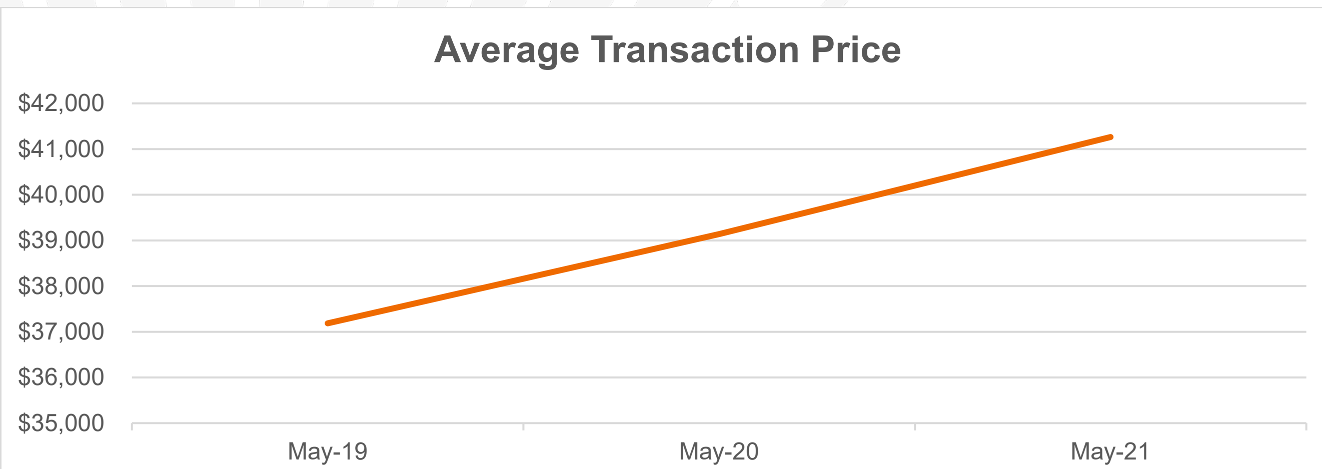


Average Transaction Price (Updated 7/7)

J.D. Power[17]: "For June 2021, average transaction prices are expected reach a record high $40,206, the first time above the $40,000 level. For context, average transaction prices are trending to be 14.9% higher in June 2021 than they were in June 2020 when prices broke the $35,000 level for the only the second month on record. This is partially due to retraction in manufacturer incentives. The average manufacturer incentive per vehicle is on pace to be $2,492, a decrease of $1,857 from a year ago and the second-lowest amount on record for the month of June. Expressed as a percentage of the average vehicle MSRP, incentives for June 2021 are trending toward a record low of 5.8%, down nearly five percentage points from a year ago, and the first time ever under 6%.

"The combination of strong retail volumes and higher prices means that consumers are on track to spend $45.6 billion on new vehicles this month, the highest on record for the month of June. Consumer expenditures on new vehicles is expected to reach a Q2 record of $149.7 billion, up 60.7% from 2020 and up 27.9% from 2019."

Kelley Blue Book: "The estimated average transaction price for a light vehicle in the United States was $41,263 in May 2021, according to the analysts at Kelley Blue Book. New-vehicle prices increased $2,125 (up 5.4%) from May 2020, while increasing $493 (up 1.2%) from April 2021."[18]

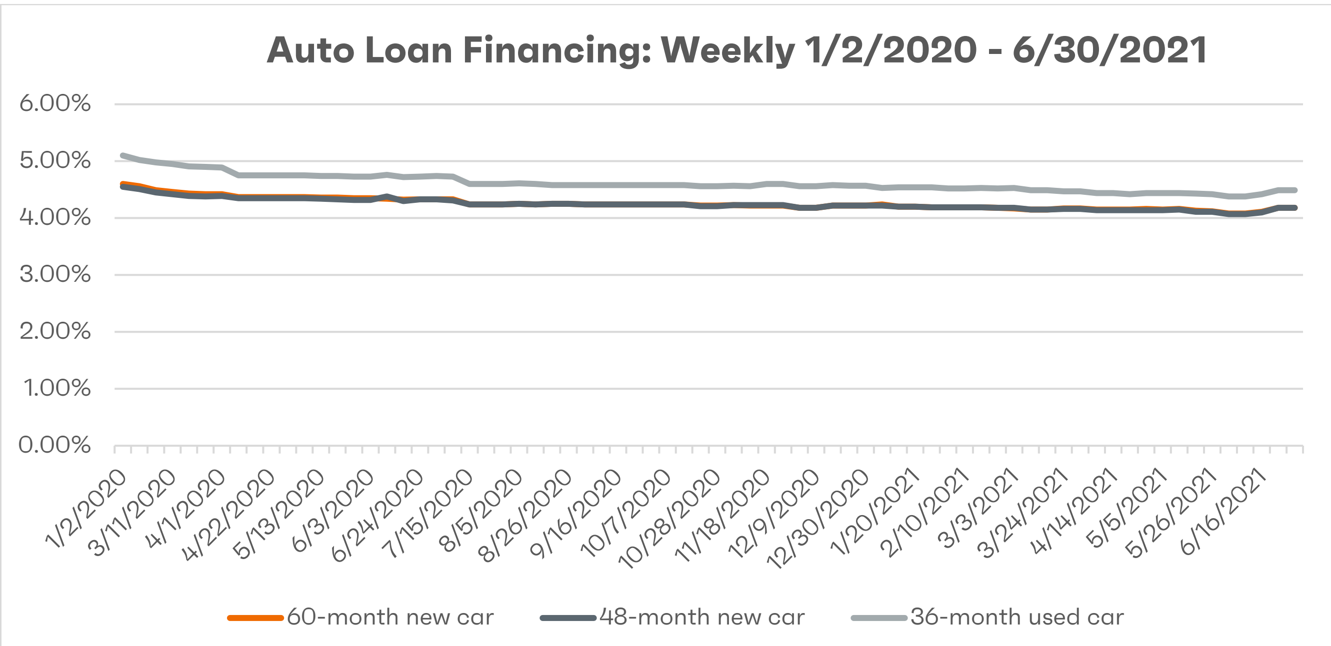


Auto Loan Financing (Updated 6/30)

Financing Flat After Rising To Four Month High: Interest rates for new cars and used cars held steady in the last week of June after rising to the highest level since February. The interest rate for 60 months currently stands at 4.18%. Rates remained at 4.49% for a 36-month used car loan. Since the beginning of last year, rates are down 0.42%, and down 0.15% since the same time a year ago.[19]

Dates	60-month new car	48-month new car	36-month used car
7/1/2020	4.33%	4.33%	4.74%
1/2/2020	4.60%	4.55%	5.10%

6/23/2021	4.18%	4.18%	4.49%
6/30/2021	4.18%	4.18%	4.49%
One Week Change	0.00%	0.00%	0.00%
Two Week Change	0.07%	0.08%	0.07%
Change since 1/3/20	-0.42%	-0.37%	-0.61%
One Year Change	-0.15%	-0.15%	-0.25%

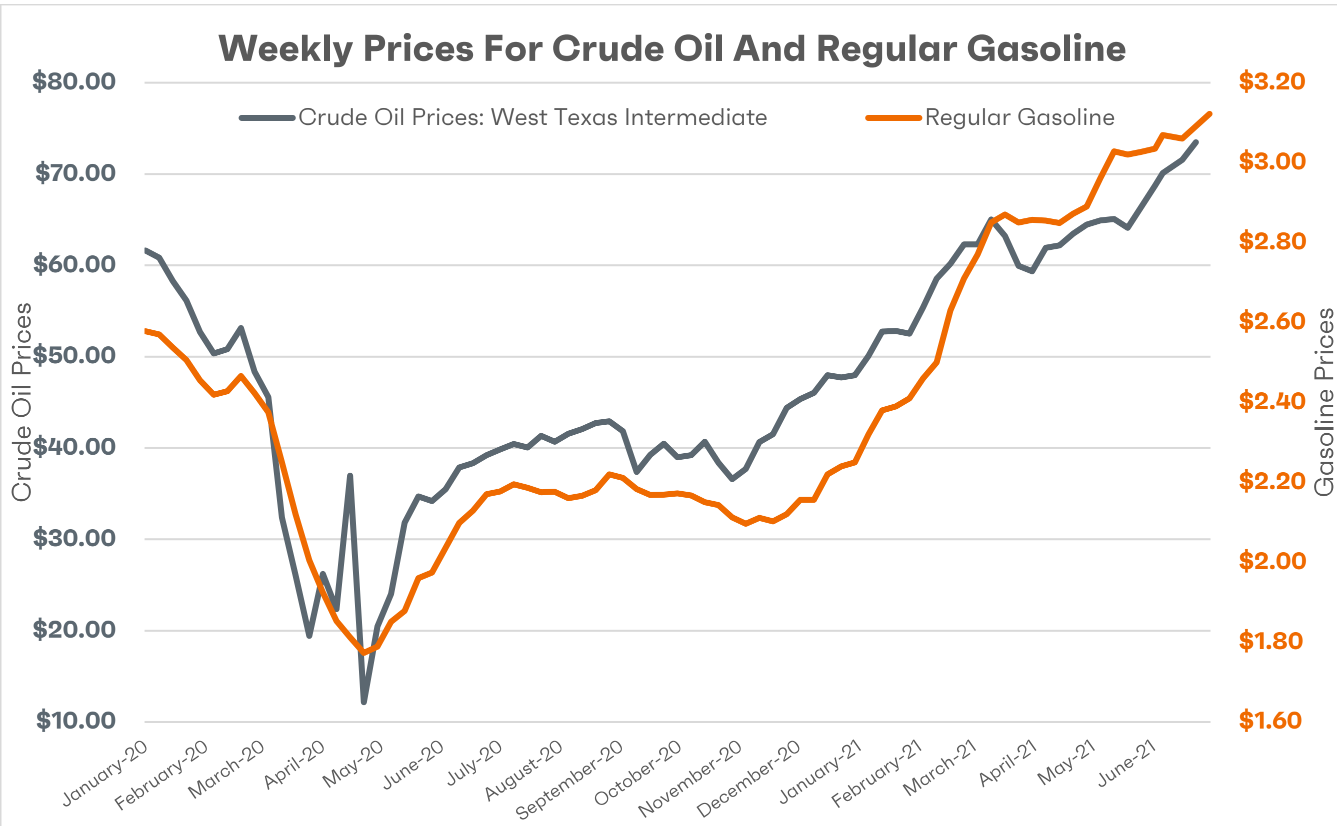


Crude Oil and Gas Prices (Updated 7/7)

EIA Outlook For Gasoline[20]**:** "U.S. regular gasoline retail prices averaged $2.78per gallon (gal)in 1H21, compared with an average of $2.20/gal in 1H20. In June, monthly retail gasoline prices averaged $3.06/gal, the first time the monthly average was more than $3.00/gal since October."

EIA Outlook For Oil[21]**:** "Brent crude oil prices averaged $73/b in June 2021, up $5/b from May. June was the first month when Brent crude oil prices averaged more than $70/b since May 2019. The increase likely reflected market expectations of continuing near-term tightness in global oil markets, which were evident in ongoing declines in global oil inventories. As vaccination rollouts have continued to ramp up in parts of the world, personal travel and mobility have been rising during much of 2021.Increasing oil consumption combined with production restraint from OPEC+ and relatively flat crude oil output in the United States have kept global oil consumption above global oil supply, draining inventories. Although global oil inventories during May and June fell at a slower rate than earlier in the year, the inventory draws of 1.2 million b/d over the past two months indicate the oil market was still in a structural deficit. Crude oil prices received additional support from increasing global economic activity and decreasing global COVID-19 cases. These factors have also contributed to rising prices across a wide range of assets including equities and other commodities."

Gas Prices Continue To Climb, Remail Above $3 A Gallon: Oil prices, as benchmarked at West Texas Intermediate, jumped nearly $2 a barrel in at the end of June to $73.48, the highest it has been in nearly three years. Since election day, oil prices have climbed over $35 a barrel. Gas prices rose again this week to $3.12, the highest mark since October 2014. Gas is 20 percent higher than the beginning of 2020.[22]

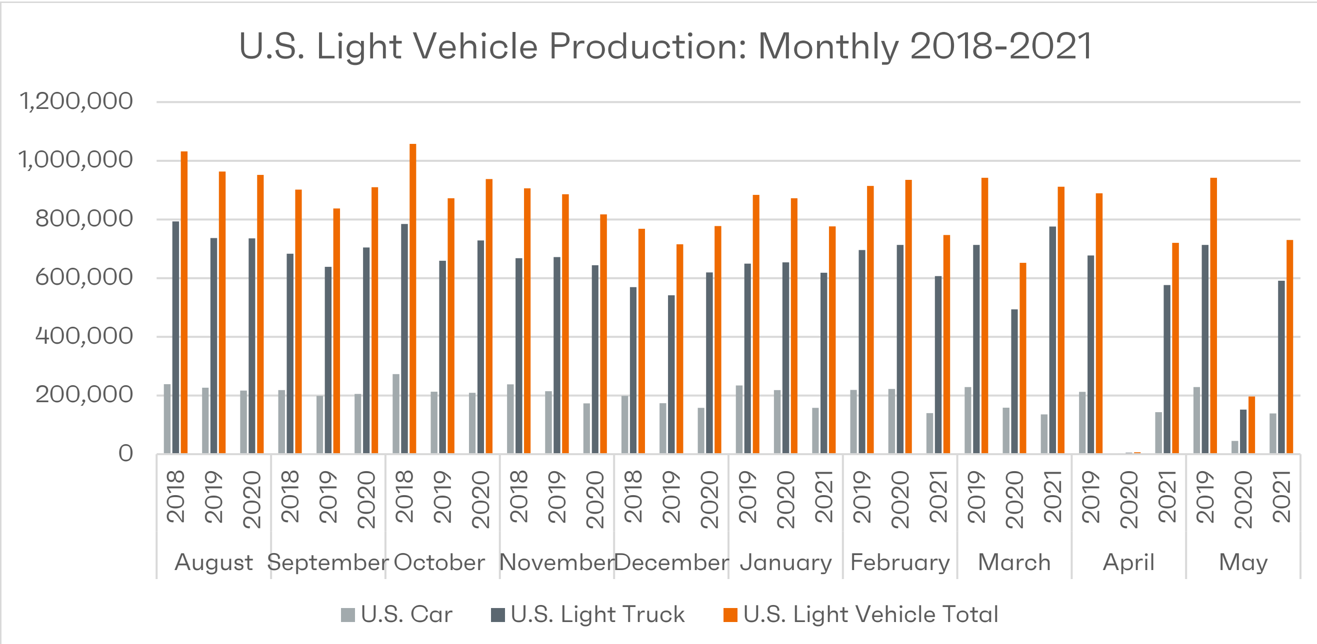


Production Meter

U.S. Light Vehicle Production (Updated 6/23)

WardsIntelligence[23]: "Downward revisions are lessening in magnitude, but parts shortages caused another 139,000 units to be lopped off second-quarter expectations, and, despite improvement, the supply of microchips for the automotive industry is anticipated to remain a sticking point into 2022. . . . Production of all vehicles in May totaled 1.09 million units, well above like-2020's 241,994. The total was 83,500 units lower than month-ago's expectations for May. Light-vehicle production totaled 1.06 million units, 360% above May 2020's 229,788."

Light vehicle production for May 2021 totaled 729,879, down 23% from 2019:



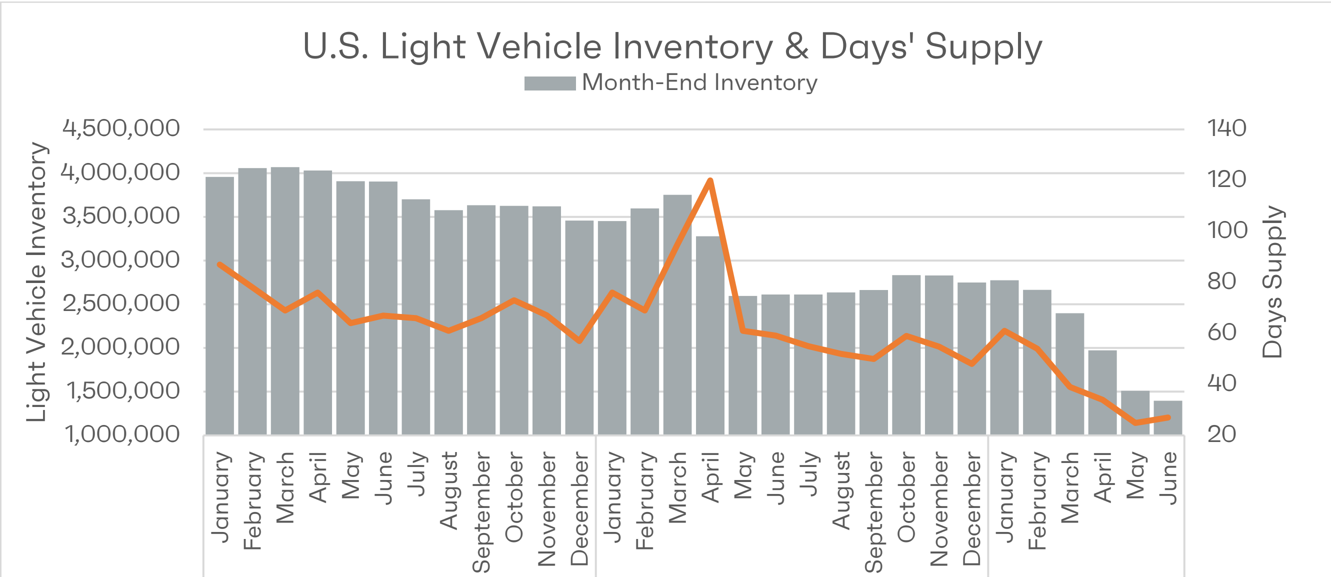
24

U.S. Light Vehicle Inventory and Days' Supply (Updated 7/7)

WardsIntelligence Inventory Update[25]: "U.S. light-vehicle inventory fell 7.5% in June from May, portending sales will not improve – and likely weaken – on last month's 15.4 million-unit seasonally adjusted annual rate anytime soon.

"Though there could continue to be other disruptions - such as slowdowns in parts deliveries to vehicle assembly plants due to backups in trans-ocean shipping - the shortage of microchips is mainly what continues to hinder manufacturers in their attempts to re-stock U.S. dealers with enough inventory to meet demand. Inventory ended June at 1.40 million units, or about 35% of what manufacturers normally would be carrying when demand is running at or above 17 million-unit annualized rates.

"The total is 46% below like-2020's 2.58 million units, which was an 8-year low due to major production stoppages caused by the onset of the Covid-19 pandemic in North America in the spring. In the five years prior to 2020, June inventory averaged 3.9 million units. June 30 days' supply of 27 was well below like-2020's 58 and the 67 averaged for the month in the five years through 2019. Inventory has been plummeting since the beginning of they year, but it is only in the past two months that sales volumes began to sharply fall along with it."



Global Meter

Global Light Vehicle Sales Outlook (Updated 6/23)

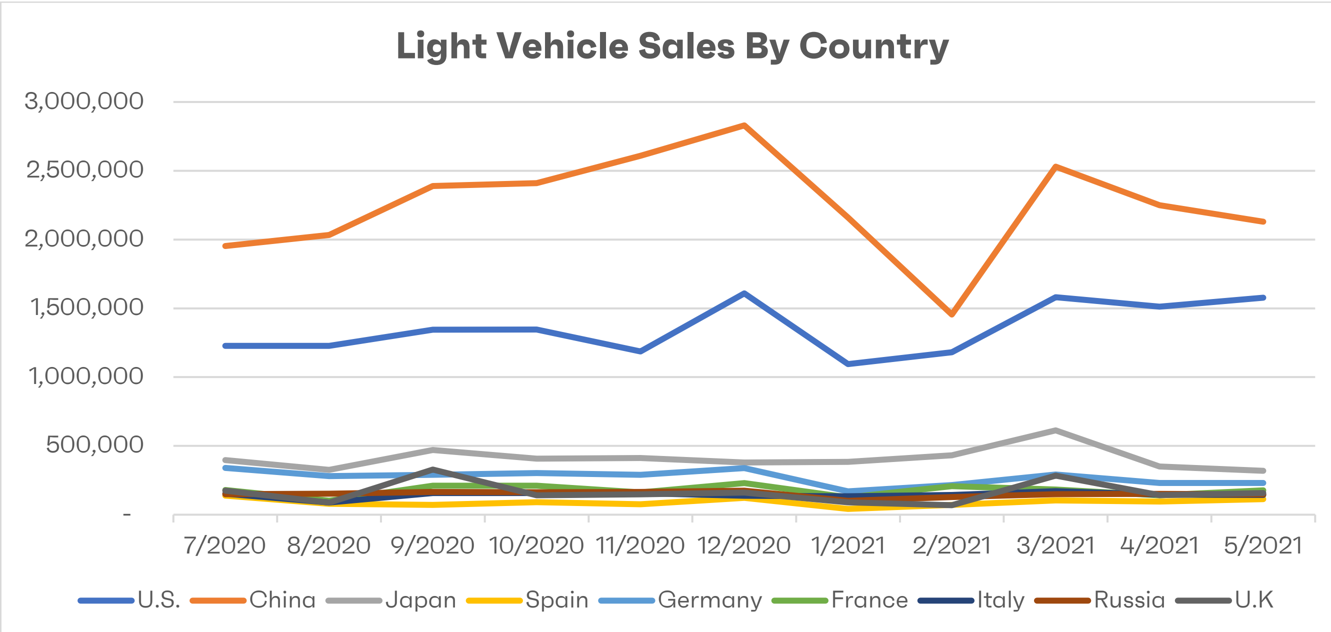
Wards Intelligence Outlook: "World vehicle sales soared 80.1% in April to 7.38 million, compared to year-ago's 4.10 million. All regions saw growth in sales as regional restrictions began to lift due to COVID-19 vaccination roll-outs.

"The recovery over year-ago's sharp decline was notable across all regions, as South America (+262.7%), Europe (+239.3%) and North America (+112.8%) experienced triple-digit gains. Several countries in Europe, Asia Pacific and South America saw four-digit gains in sales.

"Through the first four months of 2021, Europe sales were up 27.8% to 5.79 million, with only Netherlands and Romania year-to-date sales not pulling ahead. We expect further growth in sales and significant year-over-year comparisons in May 2021, as May 2020 was 54.1% down from 2019.

"Sales in the Asia Pacific region saw the smallest increase in April, improving 28.9% to 3.52 million. The region controlled 47.7% of the total market, much lower than last year's inflated 66.6% share. Sales in China saw a relatively modest 3.9% increase to 2.25 million vehicles. Although most countries experienced significant growth, South Korea (estimated -2.8%) came in behind the rest of the region."[26]

Sales in select countries around the globe, including year-over-year percent change by month as well as raw volume by month:

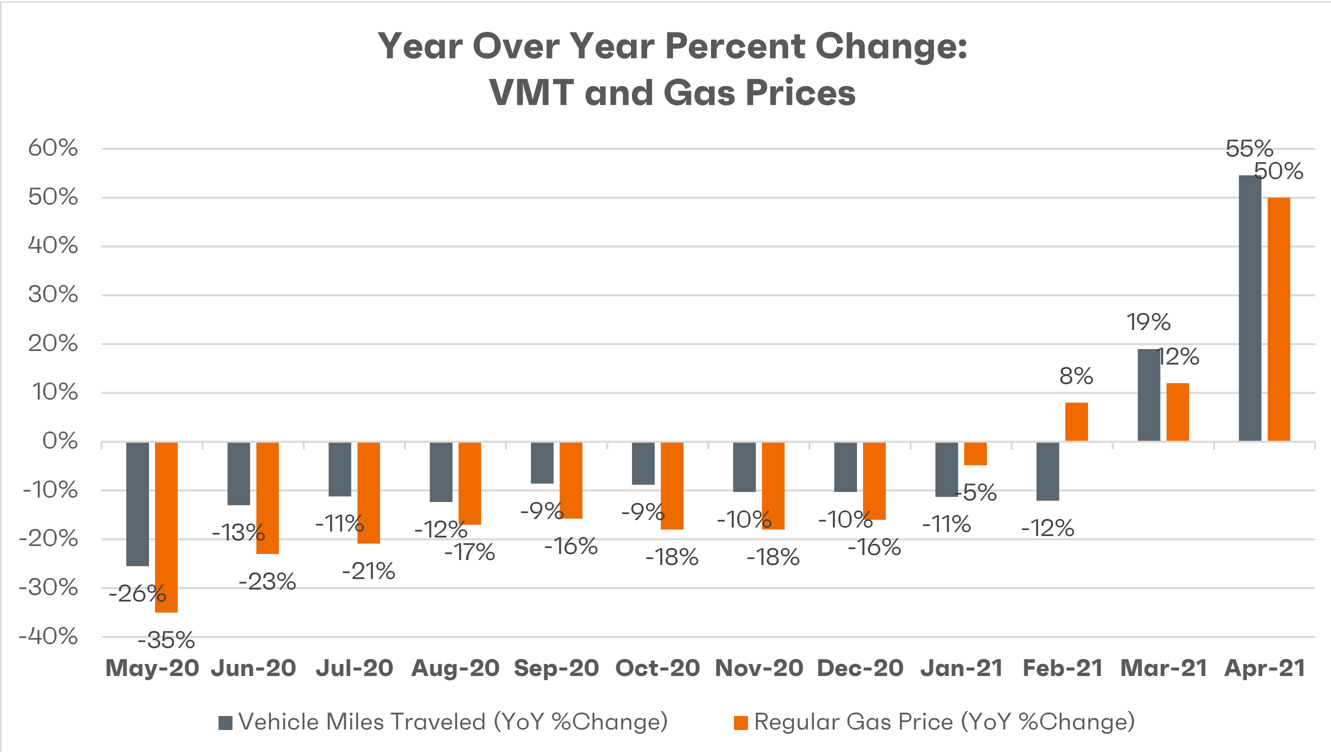


Recovery Meter

Roadway Travel (Updated 6/23)

According to the U.S. Department of Transportation, seasonally-adjusted vehicle miles traveled in April rose 56.5 percent from the same time a year ago. The cumulative travel estimate for 2021 is 947.5 billion vehicle miles.[27]

- Travel on all roads and streets changed by 54.6% (90.6 billion vehicle miles) for April 2021 as compared with April 2020. Travel for the month is estimated to be 256.5 billion vehicle miles.
- The seasonally adjusted vehicle miles traveled for April 2021 is 248.6 billion miles, a 56.5% (89.7 billion vehicle miles) increase over April 2020. It also represents -4.7% decline (-12.3 billion vehicle miles) compared with March 2021.
- Cumulative Travel for 2021 changed by 8.6% (75.2 billion vehicle miles.) The cumulative estimate for the year is 947.5 billion vehicle miles of travel.



Economic News (Updated7/7)

Manufacturing Added 15,000 Jobs In June. "Manufacturing added 15,000 jobs in June, the U.S. Bureau of Labor Statistics said today. But the manufacturing employment picture was mixed. Durable goods industries added 18,000 jobs, according to a breakdown by industry issued by the bureau. Non-durable goods industries cut 3,000 jobs. Within durable goods, results varied. Job gainers included fabricated metal products (up 5,700), primary metals (up 3,100), furniture (up 8,500) and miscellaneous manufacturing (up 3,300)." [28]

Motor Vehicles And Parts Were Down 12,300 (Seasonally Adjusted). "Holding the sector back was motor vehicles and parts, down 12,300. The auto industry continues to cope with a global shortage of semiconductors. That has resulted in reduced production of vehicles and temporary plant shutdowns."[29]

- **Motor Vehicle And Parts Manufacturing 11,400 Jobs In June (Not Seasonally Adjusted).[30]**

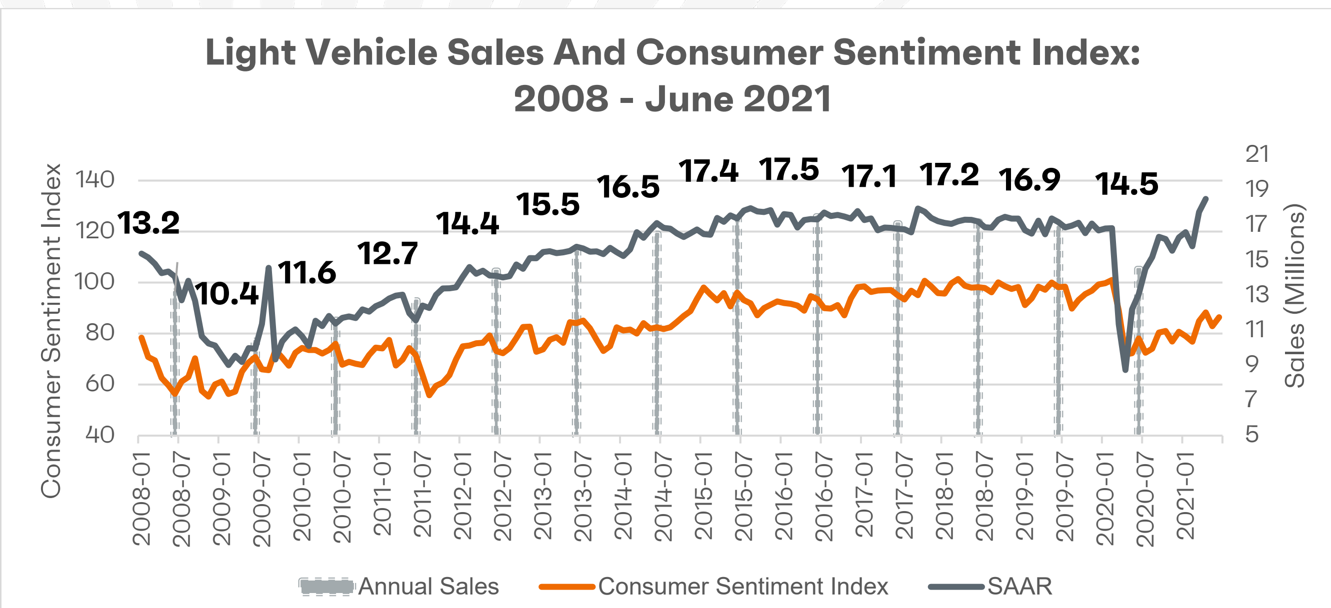
For June, The ISM Ticked Down To 60.6 From 61.2 In May. "Growth in U.S. manufacturing slowed slightly in June, as supply chain problems persist and businesses say they are still struggling to find workers to keep up with demand. The Institute for Supply Management, a trade group of purchasing managers, said Thursday that its index of manufacturing activity ticked down in June to a reading of 60.6 from 61.2 in May."[31]

The Index Of Prices For Raw Materials Increased To 92.1, A Level Not Seen Since 1979 During The Oil Crisis. "The index of prices paid for raw materials increased to 92.1, a level not seen since the 1979 Iranian revolution and oil crisis. Logistics challenges, elevated commodities prices and shortages of various supplies continue to pressure manufacturers. Shortages of semiconductors have been particularly disruptive to the auto industry, where production earlier this year was restrained because of the lack of supply."[32]

Auto Sales Make Big Contribution To Increase In GDP In The First Quarter. "In the first months of 2021, what was good for the auto industry was decidedly good for the American economy. Spending on motor vehicles and parts rose almost 13 percent in the first quarter, making a big contribution to the increase in gross domestic product, the Commerce Department reported Thursday. .. In fact, demand in the first quarter was robust enough that the auto industry was able to post healthy results despite a shortage of computer chips that forced temporary shutdowns of many auto plants."[33]Consumer

Confidence and Sales (Updated 6/16)

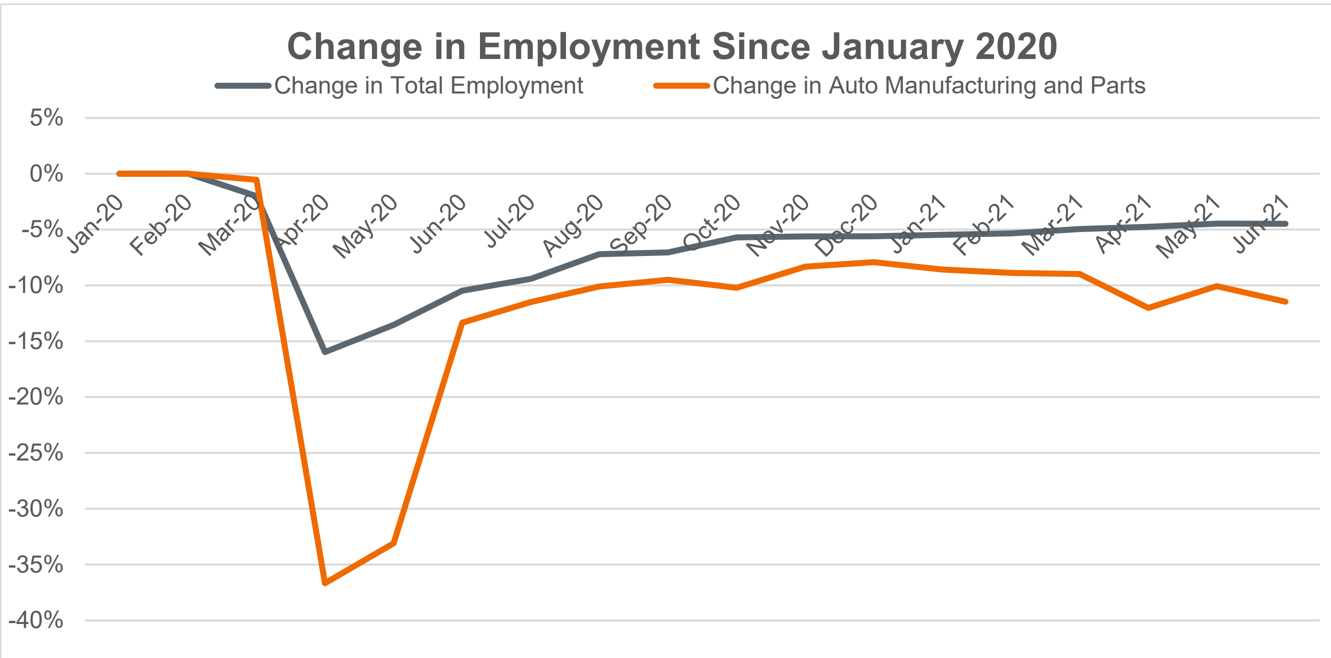
"Consumer sentiment rose in early June, recouping two-thirds of May's loss. The early June gain was mainly among middle and upper income households and for future economic prospects rather than current conditions. Stronger growth in the national economy was anticipated, with an all-time record number of consumers anticipating a net decline in unemployment. Rising inflation remained a top concern of consumers, although the expected rate of inflation declined in early June."[34]



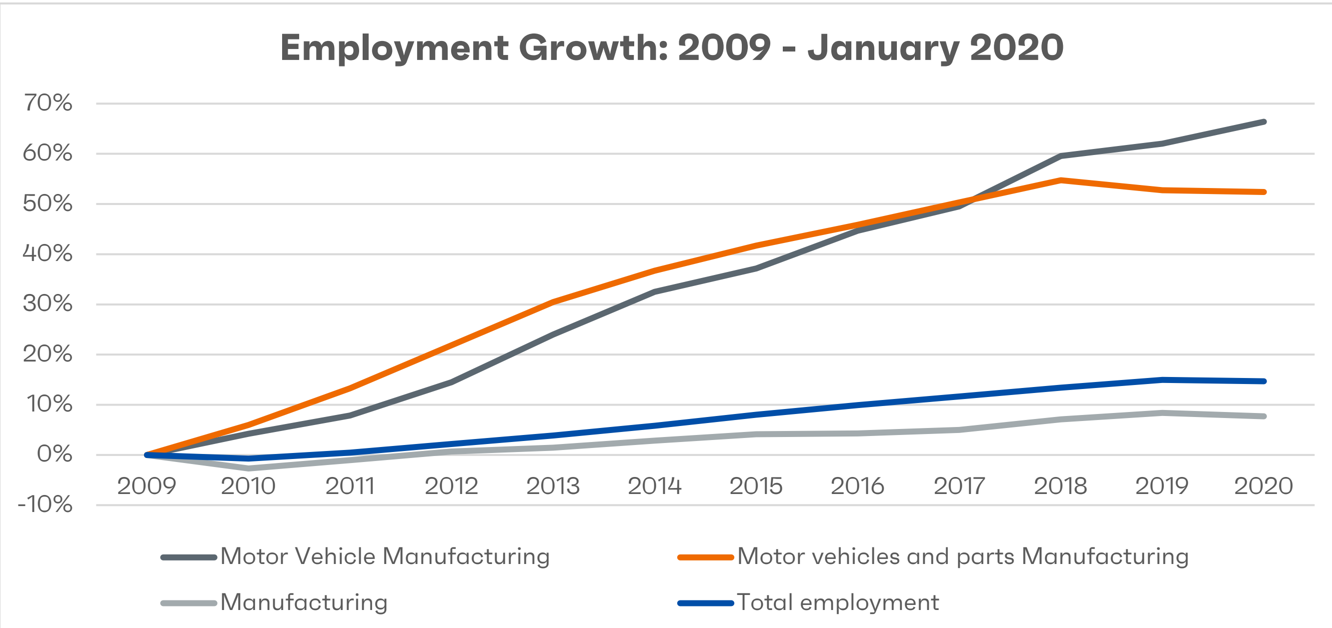
Employment (Updated 7/7)

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 100,000 since January 2020.[35]

- **Motor Vehicle And Parts Manufacturing 11,400 Jobs In June (Not Seasonally Adjusted).[36]**



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.[37] 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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