

# READING THE METER

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

October 21, 2020

## Contents

---

Forecast Meter.....	2
Forecast Summary (Updated 10/21).....	2
U.S. Light Vehicle Sales Outlook (Updated 10/21).....	2
North American Production Outlook (Updated 10/21).....	3
Market Meter .....	5
U.S. Light Vehicle Sales (Updated 10/7).....	5
Segments vs. Gas Prices (Updated 10/7).....	7
ZEV Powertrain Sales (Updated 10/7).....	8
Seasonally Adjusted Annual Rates (Updated 10/7).....	8
Average Transaction Price (Updated 10/7).....	9
Auto Loan Financing (Updated 10/21).....	10
Crude Oil and Gas Prices (Updated 10/21).....	10
Production Meter .....	11
U.S. Light Vehicle Production (Updated 10/21).....	11
U.S. Light Vehicle Inventory and Days' Supply (Updated 10/7).....	12
Global Meter (Updated 10/21).....	13
Recovery Meter.....	15
North American Assembly Facility Operating Status (Updated 9/3).....	15
Roadway Travel (Updated 10/21).....	15
Repairable Claims (New 9/16).....	16
Consumer Confidence and Sales (Updated 10/21).....	17
Employment (Updated 10/7).....	17

## Forecast Meter

### Forecast Summary (Updated 10/21)

2020 Sales, <sup>i</sup> Extended Sales Forecast <sup>ii</sup> and Production Forecasts <sup>iii</sup>		
	U.S. Sales & Forecasts	North American Production
<b>March</b>	992,392 (-33% YoY)	1.01 million units (-34% YoY)
<b>April</b>	707,852 (-48.7% YoY)	8,463 (-99.4% YoY)
<b>May</b>	1,114,931 (-29.5% YoY)	248,602 (-83% YoY)
<b>June</b>	1,103,791 (-24% YoY)	743,216 (-17% YoY)
<b>July</b>	1,227,091 (-12.1% YoY)	1,261,884 (+2.2% YoY)
<b>August</b>	1,325,144 (-19.1% YoY)	951,983 (-1.1% YoY)
<b>September</b>	1,344,310 (6.4% YoY)	1.36 million units (-5% YoY) (estimate)
<b>October Estimate</b>	15.3M SAAR (-7.6% YoY)	1.47 million units (5% YoY)
<b>1<sup>st</sup> Quarter</b>	3,476,512 (-12.7% YoY)	3.86M (-11.7% YoY)
<b>2<sup>nd</sup> Quarter</b>	2,948,410 (-33.3% YoY)	1.4M (-67.6% YoY)
<b>3<sup>rd</sup> Quarter</b>	3,904,539 (-9.2 YoY)	4.10 million units (-.5% YoY)
<b>Calendar YTD</b>	10,312,741 (-18.8% YoY)	9.40 million units (-27.1% YoY)
<b>2020 Full Year Estimate</b>	12.6-14.2M (-15%-26% YoY)	13.4 million units (-20.2% YoY)

### U.S. Light Vehicle Sales Outlook (Updated 10/21)

**IHS Markit October Update<sup>iv</sup>:** “US light vehicle retail demand has proven more resilient in the near-term in spite of a very challenged US economic outlook. As a result, the US light vehicle sales outlook has been increased to 14.3 million units and 15.5 million units for 2020 and 2021, respectively.”

“IHS Markit expects the market’s sales recovery to be over years, with the US not seeing 17 million light-vehicle registrations annually again through 2025.”<sup>v</sup>

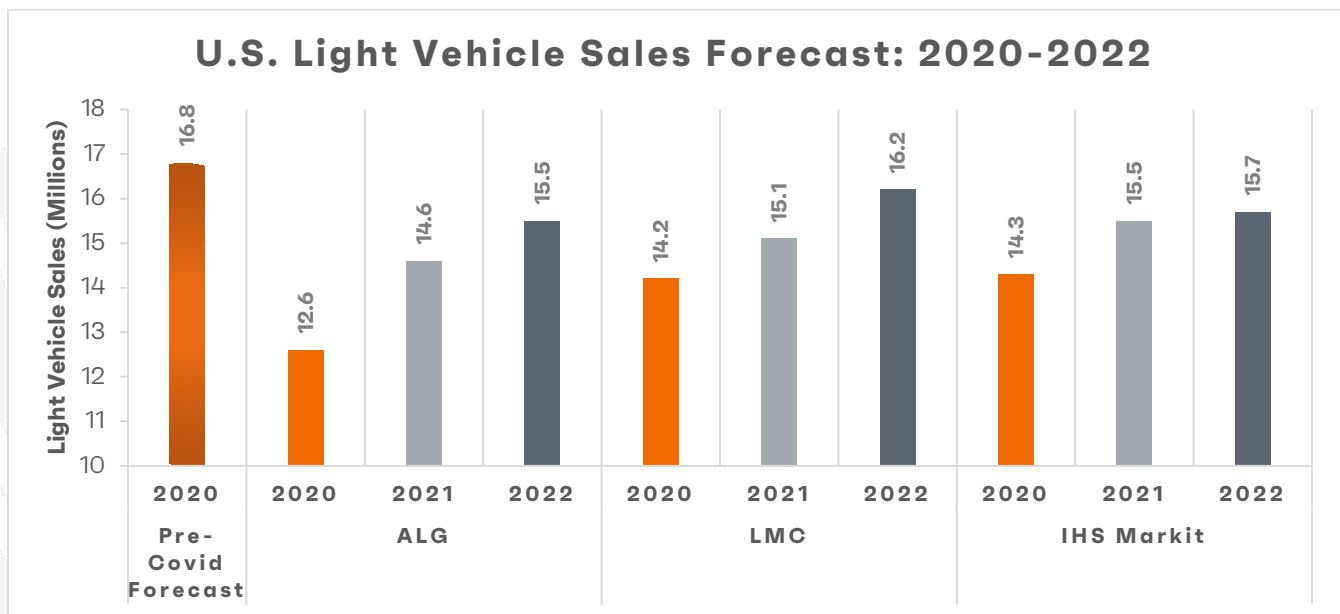
**Wards Intelligence October Outlook<sup>vi</sup>:** “Wards Intelligence partner LMC Automotive has raised its sales forecast for 2020 to 14.2 million units. The forecasted volume for entire-2020 pegs the Q4 outlook at a 15 million-unit seasonally adjusted annual rate, a decline from Q3’s 15.3 million.

“Though there are still shortages among strong selling vehicles, especially pickups, the overall level is relatively in balance for a market running at between a 14.5 million and 15 million-unit SAAR. However, if dealers can continue turning over half their start-of-the month inventory, as they have for the past two months, sales could run above a 16 million-unit SAAR in Q4 – continuing September’s 7-month high 16.3 million SAAR.

“There are reasons to be cautious that the industry can continue the five straight months of sequential SAAR-based growth since demand bottomed out in April. First, most ’21 models, along with their mostly

higher prices, are becoming widely available this month. Pursuant to that, lean inventory also means there will be a lower mix of older model-year vehicles to unload through discounting in Q4 compared to most years. There also are potential economic headwinds looming in the background that could cause a pullback by consumers, such as still-high unemployment.

“Initial modeling puts October’s SAAR at 15.3 million units but with a stronger possibility of finishing higher than lower. In fact, October demand could end much higher than the initial outlook if momentum from the last five months carries into it.”



## North American Production Outlook (Updated 10/21)

**IHS Markit October Update<sup>vii</sup>:** “The outlook for North America light vehicle production was increased by 92,000 units and 715,000 units for 2020 and 2021, respectively (and increased by 512,000 units for 2022). Production was revised higher based on stronger US sales expectations for the year and the continued need to restock depleted inventories. For 2021, improved demand expectations and ongoing inventory requirements further support the upgraded outlook. Given the rapid inventory depletion due to COVID-19 related factory shutdowns earlier in the year, production continues to play catch-up to meet stronger than expected vehicle demand. With regional production well past the production restart phase, manufacturers are now expected to remain in a restocking phase for an extended period that spans to mid-2021. Production increases are broad-based with pickups and utility vehicles seeing the largest increases to keep pace with above average segmental demand. US light vehicle retail demand has proven more resilient in the near-term in spite of a very challenged US economic outlook. As a result, the US light vehicle sales outlook has been increased to 14.3 million units and 15.5 million units for 2020 and 2021, respectively.”

**WardsIntelligence October Update**<sup>viii</sup>: “Although trimmed slightly from last month’s expectations, Q4 output is expected to grow 3.6% year-over-year to a total of 4.03 million units. Some 6,300 units were cut from month-ago’s expectations for Q4, but mostly due to adjustments to weaker selling vehicles. If the outlook holds firm, the Q4 gain will be the first quarterly year-over-year increase since Q4-2018.

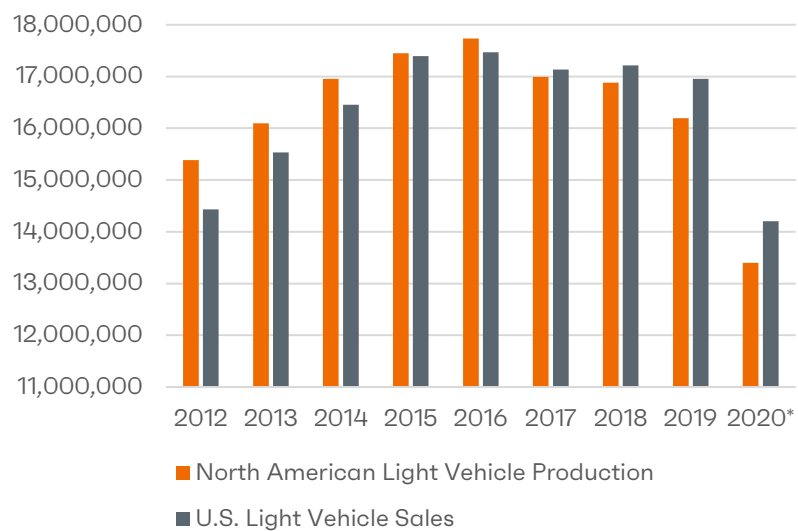
“The entire year is projected to finish at 13.43 million units, 19.9% below 2019’s 16.78 million.

Though demand in North America has been steadily rising since the pandemic skewered it in late-March and April, sales still are not back to pre-Covid 19 levels, and there remain several slower sellers that automakers are not rushing to restock dealer lots with. Most of the slower sellers are cars, as consumers – even in a recessionary period – continue to prefer utility vehicles, and because many price-sensitive buyers apparently either are staying out of the market or defecting to used vehicles to meet their needs.

“Rising demand over the past six months has put North American light-vehicle assembly plants in total back to pre-pandemic capacity utilization levels. In fact, both Q3 and forecasted Q4 are pegged well above the same-period 2019 levels. Based on estimated straight-time capacity assuming two 8-hour shifts, five days per week over 52 weeks, North American light-vehicle plant capacity utilization rose to 89.7% in Q3 from Q2’s pandemic-induced drop to 31.3% and like-2019’s 88.2%. The fourth quarter is expected to record utilization of 88.3%, compared with 83.7% in Q4-2019.

“In Q4, truck output is expected to rise 8.3% year-over-year to 3.16 million units. Light trucks are projected to increase 9.1%, while medium-/heavy-duty trucks will decline 10.8% - but a strong improvement from the 26% decline in Q3 and 66% drop in Q2. Fourth-quarter car output is set to decline 10.2% year-over-year.”

**North American Production And U.S. Light Vehicle Sales (\*2020 Forecast)**

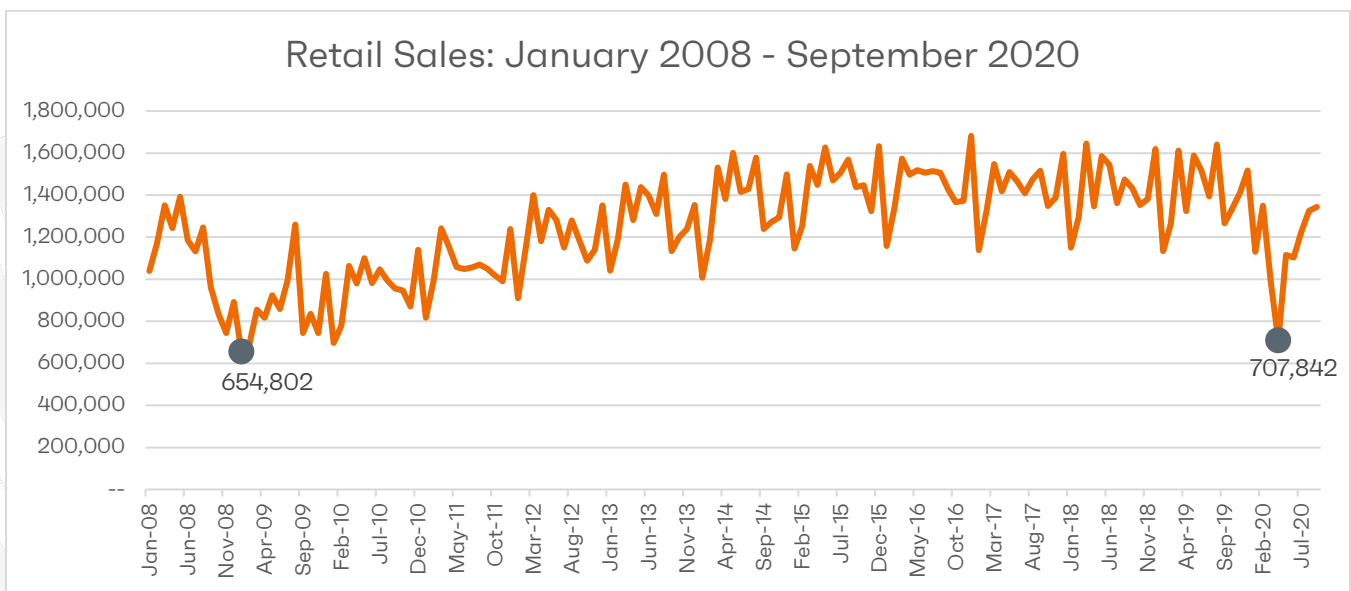


## Market Meter

### U.S. Light Vehicle Sales (Updated 10/7)

#### Monthly Sales (Updated 10/7)

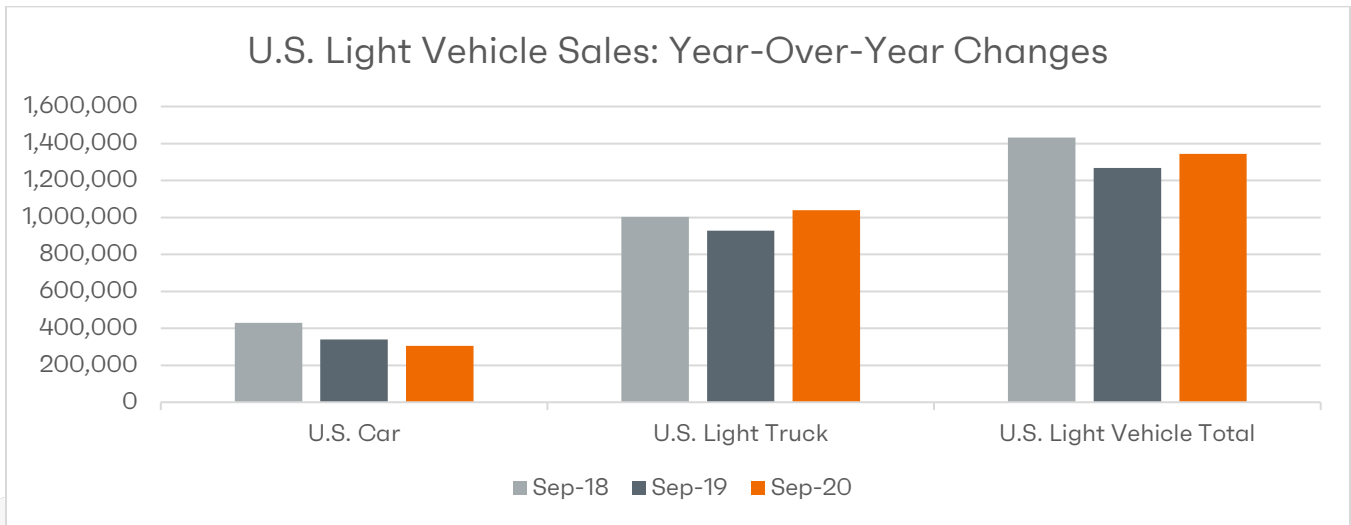
This chart helps to put into context the monthly retail sales due to the COVID pandemic and showing the relative drop in sales compared to the 2008 financial crisis.



#### October Sales (Updated 10/7)

**WardsIntelligence**<sup>ix</sup>: “September’s SAAR of 16.3 million units was the fifth straight month of sequential growth since the pandemic descended onto the market, and was a strong improvement on August’s 15.2 million, though still well below same-month 2019’s 17.1 million. Raw volume in September totaled 1.34 million units, 6.1% above like-2019’s 1.27 million. However, the daily selling rate over the month’s 25 selling days of 53,772 was down 2.4% from September 2019’s 55,093 – 23 selling days.”

Year over year, September light vehicle sales are up 6.1 percent from 2019. The segment trend continues to favor light trucks over cars, with trucks capturing more three-quarters of the market (77.3%), and gaining 4.06% market share over 2019, with the overall truck volume up more than 111,000. <sup>x</sup>



### **Fleet Sales**

**Wards Intelligence<sup>xi</sup>:** “Based on Wards Intelligence and LMC Automotive data, fleet deliveries in August fell an estimated 32% year-over-year but significantly improved on the average 66% downturns during the April-July period.”

**IHS Markit<sup>xii</sup>:** “Automakers have also reported shifting some of the production they had planned for rental car fleets to retail cars, following the canceled order and as production resumed in June. In making that change, automakers may be able to soften the impact of lost rental fleet orders over the course of the year. . . . Two other factors which IHS Markit expects could be impacting compact and mid-size car sales are the disappearance of service jobs in the first half and canceled rental-fleet orders. As compact and mid-size cars are less expensive than utility vehicles, the lack of buying power from this group could be having an impact on passenger car registrations, particularly at the low end. While not all rental-fleet orders were for cars, the loss of orders from major rental-car companies from Hertz to Avis had impact on first half as well. Those canceled orders coincided with production shutdown as well, and as production resumed, automakers in some cases shifted planned production from rental-car fleet vehicles to vehicles configured for retail. Benefits from that change would be seen in the second half, however.”

**J.D. Power<sup>xiii</sup>:** The baseline forecast from J.D. Power called for 13.4 million in retail sales and 3.4 million in fleet/other sales. With the revised forecast of 12.9-14.2 in total sales, fleet sales fall to a range from 1.6 million to 1.9 million, a decline of 44%-53% from the baseline.



## J.D. Power Retail and Fleet Sales Forecast

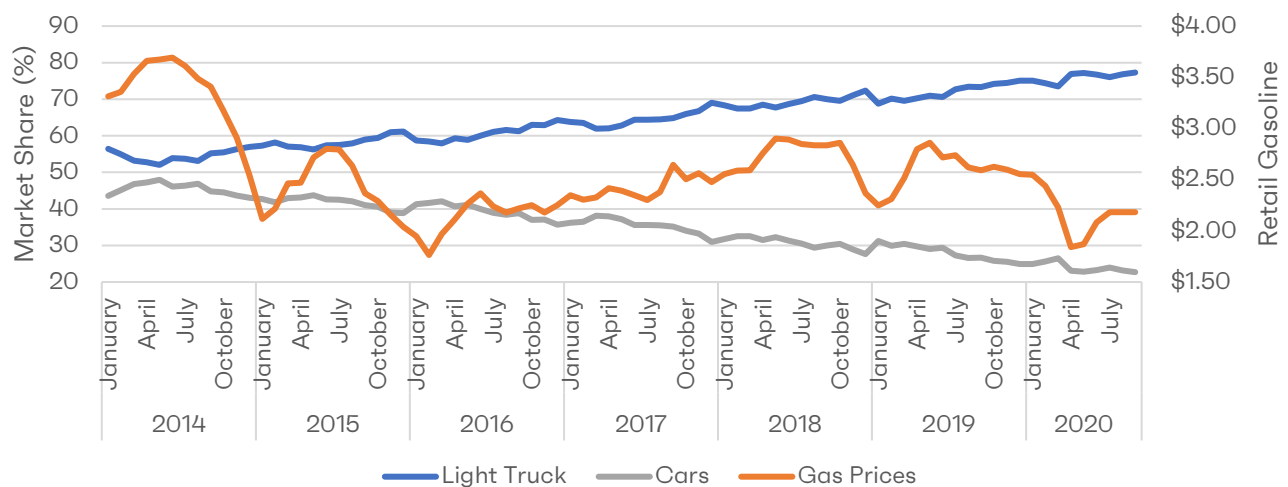
	Pessimistic Forecast	Optimistic Forecast	Pre-COVID Baseline Forecast
Retail Sales Forecast (million)	11.3	12.3	13.4
Fleet/Other Sales Forecast (million)	1.6	1.9	3.4
Total Sales Forecast (million)	12.9	14.2	16.8
Fleet Percent of Total Sales	12%	13%	20%
Retail Percent of Total Sales	88%	87%	80%
Fleet Loss From Baseline of 3.4 (million)	-1.8	-1.5	-
Fleet Loss as % Baseline Fleet Sales	-53%	-44%	-
Fleet Loss as % Total Sales	-14.0%	-10.6%	-

## Segments vs. Gas Prices (Updated 10/7)

**Segment Sales For September:** Light trucks accounted for 77.3% of sales in September, a 4.1% gain in market share from a year ago. Compared to 2019, sales of cars are down more than 33,000, but negligibly different from August 2020. Total sales are up more than 77,000 from August 2020, but down 87,000 from September 2020.<sup>xiv</sup>

**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>xv</sup> and gas was over \$3.00<sup>xvi</sup> a gallon. As fuel prices dropped below the \$3.00 mark in mid-September 2014, light truck sales began to take off – and never looked back. Gas prices since have averaged only \$2.47 a gallon (through August 2020) and when combined with increased fuel economy for light trucks, an increase of 4 mpg since 2013<sup>xvii</sup>, the perfect conditions existed to continue fueling light truck market growth.

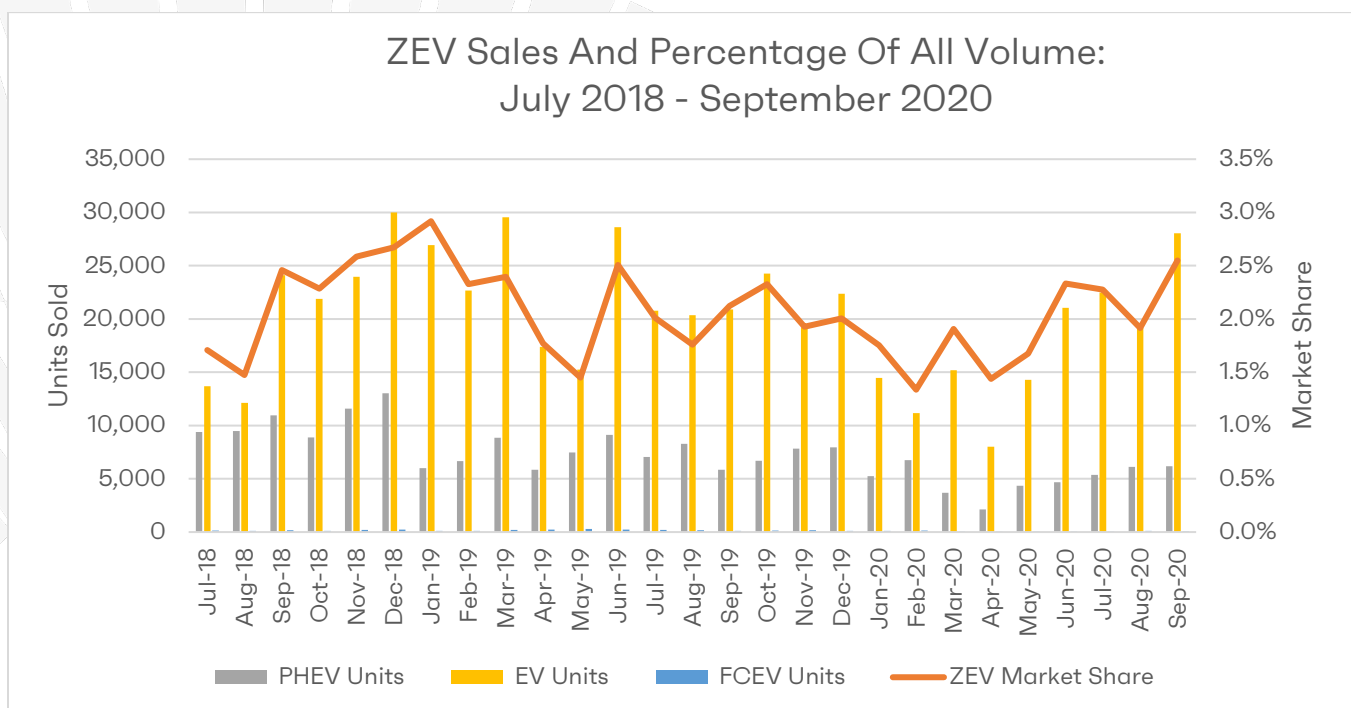
Market Share Of Light Trucks And Cars vs. Gas Prices:  
January 2013 - September 2020



## ZEV Powertrain Sales (Updated 10/7)

Sales of zero emission vehicles (BEV, PHEV, & Fuel Cell) accounted for only 2.6% of total vehicle sales in September 2020, up .5% from a year ago and up .7% from August 2020. Sales of battery electric vehicles led the way for ZEVs accounting for 2.1% of the total, up .4% from September 2019. Plug-in hybrids accounted for .5%, unchanged from a year ago.

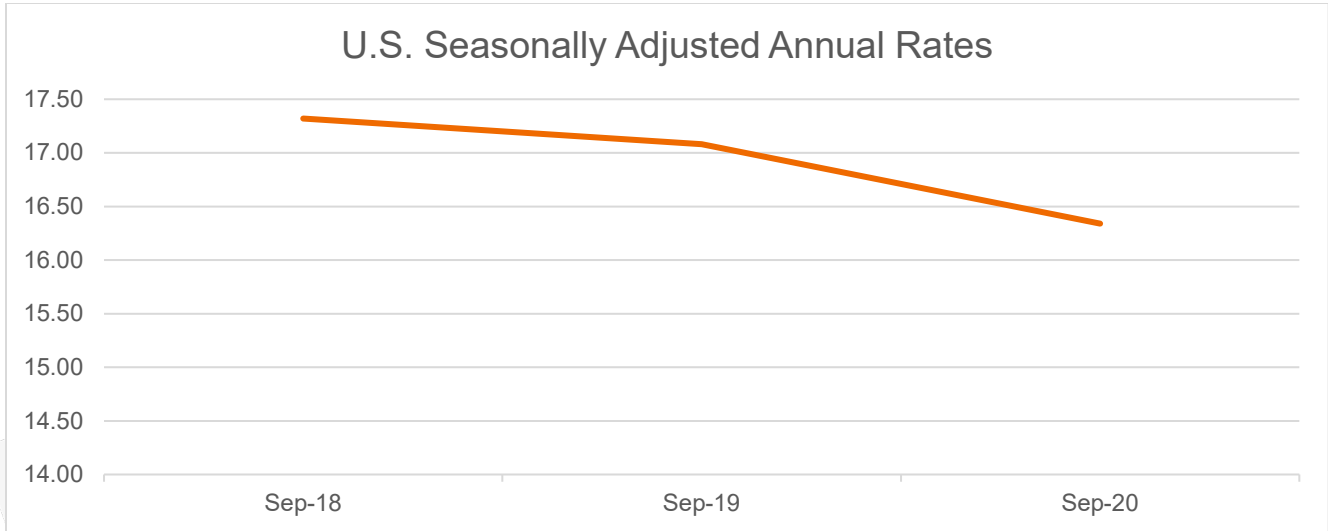
**IHS Markit<sup>xviii</sup>:** “In the first half of 2020, electric vehicles (EVs) continued to gain market share in the US, while the share of plug-in hybrid EVs (PHEVs) continued to fall. In the first half, 1.50 percent of US registrations were EVs, up from 1.35 percent a year earlier. Hybrid electric vehicles (HEV) saw their share improve from 2.97 percent in the first half of 2019 to 3.13 percent in the first half of 2020, while PHEVs saw their share drop from 0.53 percent to 0.39 percent over the same period. Non-electrified powertrains continue to both dominate the landscape but see their share slightly eroded. In the first half of 2020, their share fell to 95.0 percent, from 95.2 percent in the year-earlier period.”



## Seasonally Adjusted Annual Rates (Updated 10/7)

“The third quarter ended in a flourish with U.S. light-vehicle sales topping a 16 million-unit seasonally adjusted annual rate for the first time since February. September’s SAAR of 16.3 million units was the fifth straight month of sequential growth since the pandemic descended onto the market, and was a strong improvement on August’s 15.2 million, though still well below same-month 2019’s 17.1 million. . . . The third-quarter SAAR totaled 15.3 million units, a significant increase on Q2’s 11.4 million, and highest since Q4-2019’s 16.8 million. The 2019 Q3 SAAR was 17.0 million units.”<sup>xix</sup>

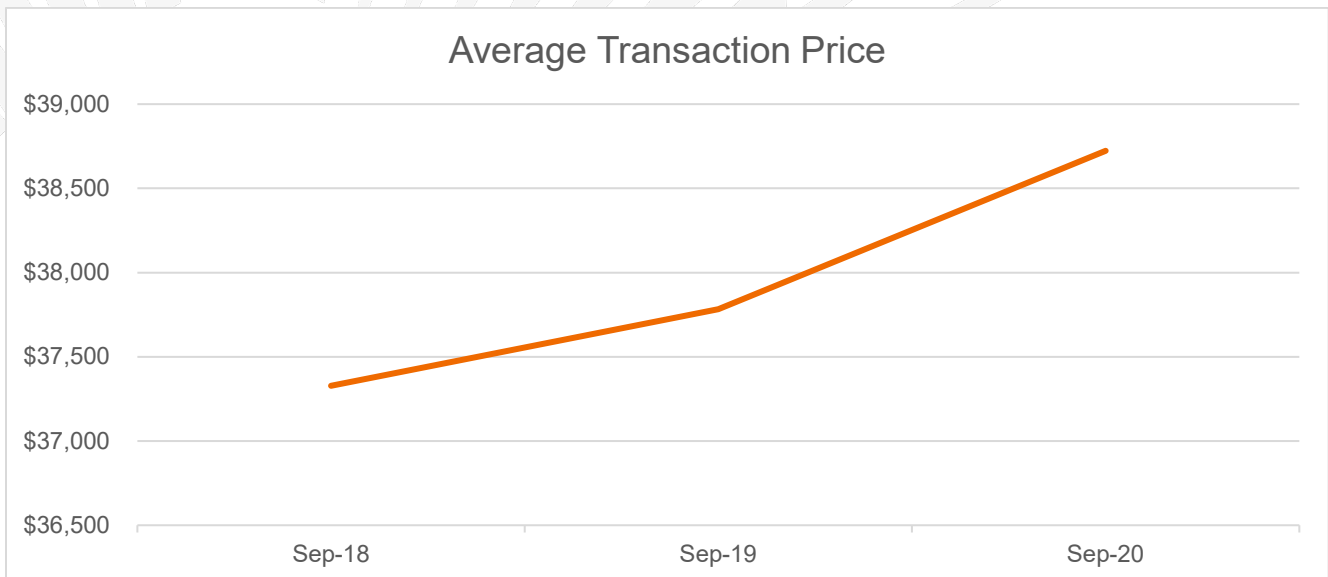




## Average Transaction Price (Updated 10/7)

**Kelley Blue Book:** “The valuation analysts at Kelley Blue Book today reported the estimated average transaction price for a light vehicle in the United States was \$38,723 in September 2020. New-vehicle prices increased \$940 (up 2.5%) from September 2019, while raising \$23 (up 0.1%) from last month.”<sup>xx</sup>

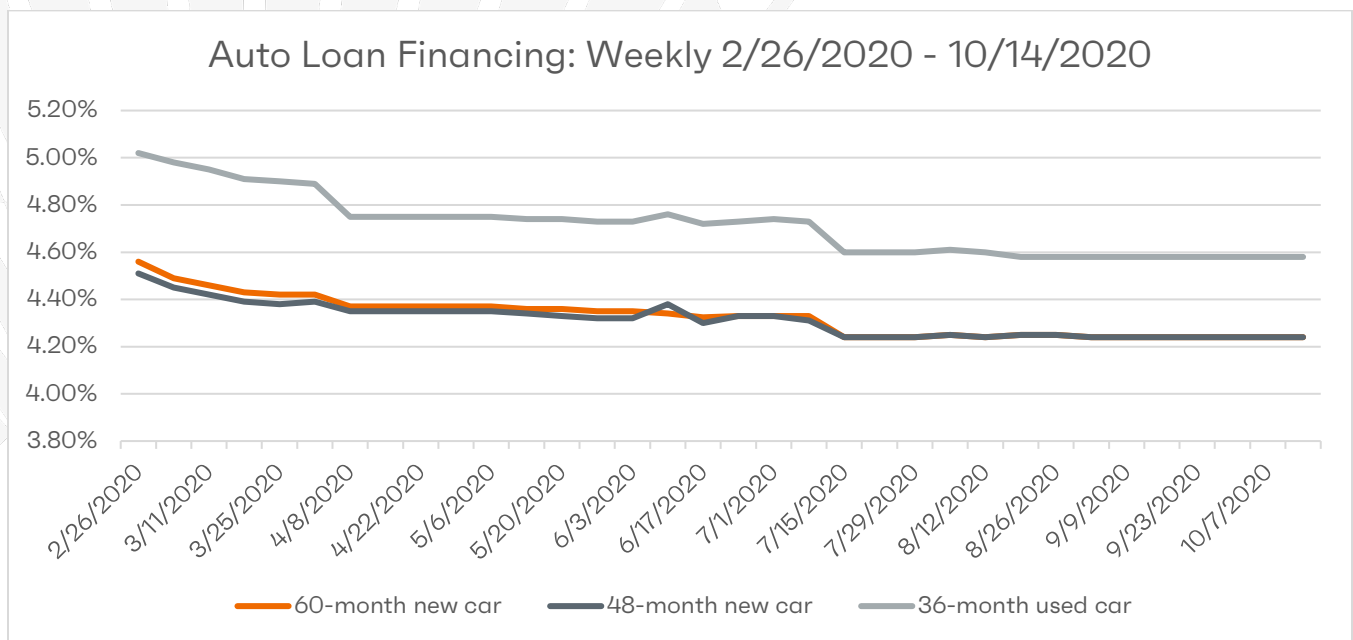
**Incentive Spending:** “Based on data from ALG, average incentive spending in September declined slightly from August but was up 5.2% year-over-year.”<sup>xxi</sup>



## Auto Loan Financing (Updated 10/21)

**Financing Remains Largely Unchanged:** Rates for the week of October 14<sup>th</sup> were unchanged from October 7<sup>th</sup>, which again matched this year’s lows. Since dropping in mid-July to the lowest rates all year, rates have remained relatively static. Since the beginning of the year, rates are down .36% and down .37% from about a year ago.<sup>xxii</sup>

Dates	60-month new car	48-month new car	36-month used car
10/23/2019	4.61%	4.57%	5.11%
1/2/2020	4.60%	4.55%	5.10%
10/7/2020	4.24%	4.24%	4.58%
10/14/2020	4.24%	4.24%	4.58%
One Week Change	0.00%	0.00%	0.00%
Two Week Change	0.00%	0.00%	0.00%
Change since 1/3/20	-0.36%	-0.31%	-0.52%
One Year Change	-0.37%	-0.33%	-0.53%



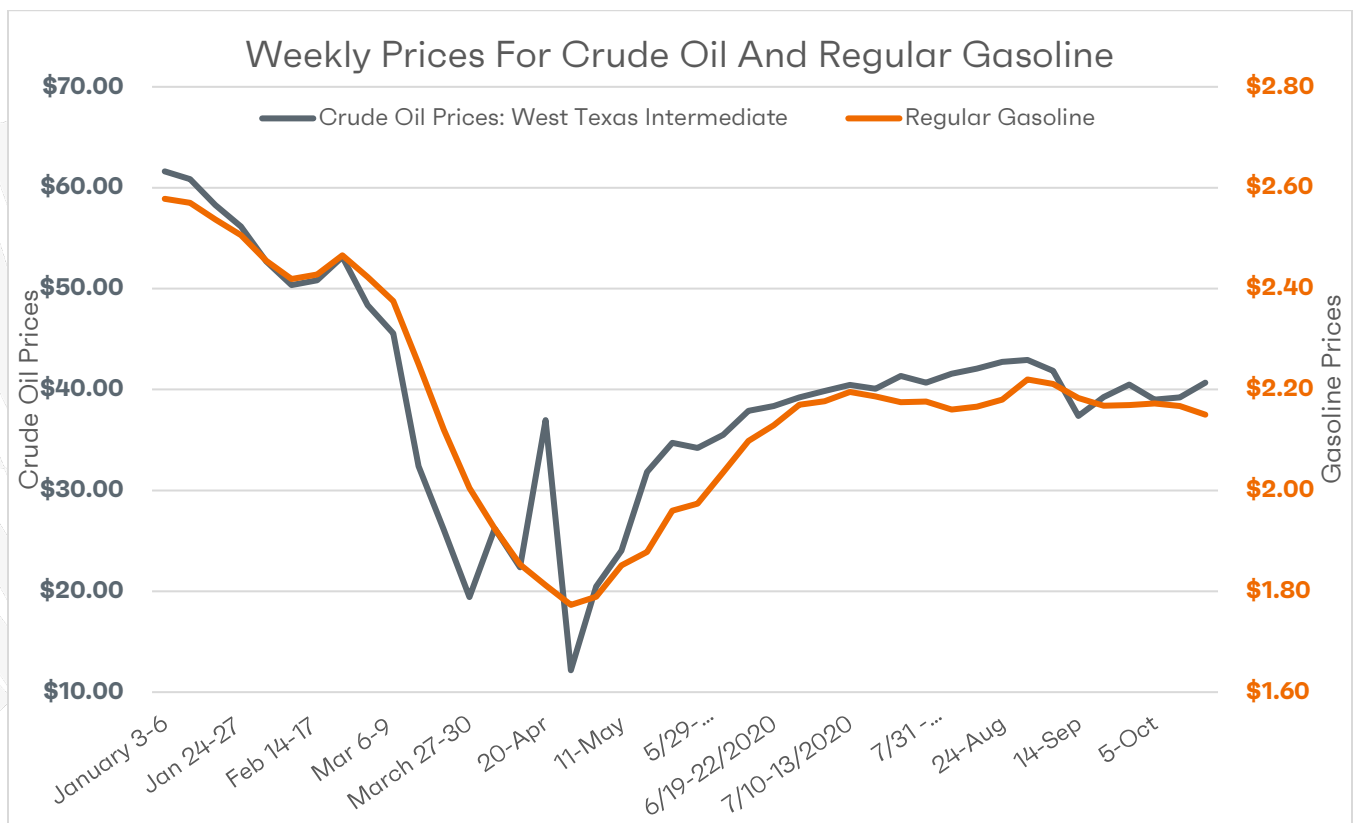
## Crude Oil and Gas Prices (Updated 10/21)

**EIA Outlook For Gasoline<sup>xxiii</sup>:** “EIA estimates U.S. gasoline consumption totaled 8.5 million barrels per day (b/d) in September, down 0.3 million b/d from August, and if confirmed in monthly data, it would be the lowest level for September since 1999.”

**EIA Outlook For Production<sup>xxiv</sup>:** “EIA reported that U.S. crude oil production averaged 11.0 million b/d in July (the most recent month for which historical data are available), up 0.5 million b/d from June. In

May, U.S. crude oil production reached a two-and-a-half-year low of 10.0 million b/d, resulting from curtailed production amid low oil prices. Since then, U.S. production has increased mainly because tight oil operators have brought wells back online in response to rising prices. EIA estimates that production rose to 11.2 million b/d in September.”

**Oil And Gas Remain Low:** Oil prices, as benchmarked at West Texas Intermediate, as well as gasoline prices, both continued their rebound that began over the summer and are mostly holding steady, though October has seen a slight dip in prices, down to \$2.15 (falling just below the low point in August), oil rose just above \$40 for the first time in three weeks. Compared to the start of the year, crude oil is down 34%, while gas prices are down 17%.<sup>xxv</sup>

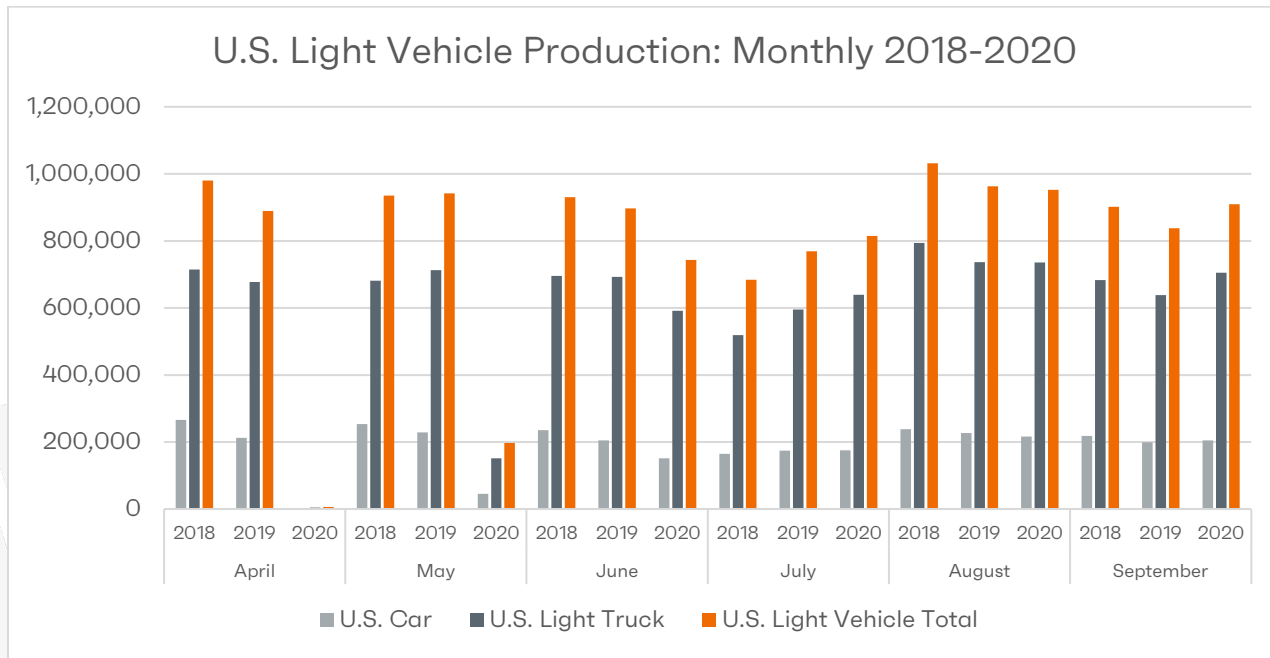


## Production Meter

### U.S. Light Vehicle Production (Updated 10/21)

**WardsIntelligence<sup>xxvi</sup>:** “North American production of light vehicles and medium-/heavy-duty trucks not only increased year-over-year in September but finished over 38,000 units above expectations, as automakers continued to trying to catch-up inventory with demand for the strongest selling vehicles,

especially pickups, SUVs and most CUVs. . . . September’s data still includes some temporary estimates, but Q3 production finished at 4.10 million units, a smidgeon below like-2019’s 4.12 million.”



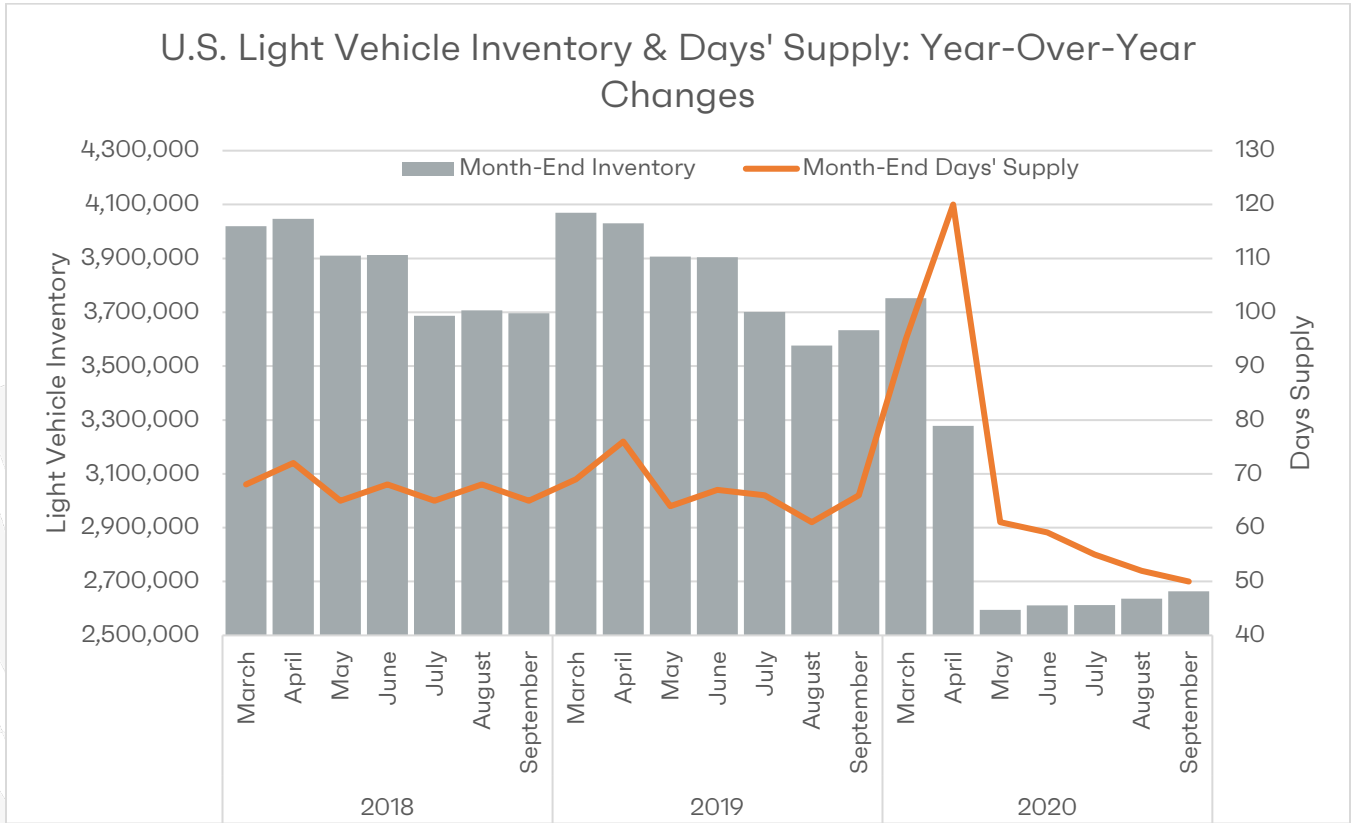
## U.S. Light Vehicle Inventory and Days’ Supply (Updated 10/7)

**September Inventory Update<sup>xxviii</sup>:** “September U.S. light-vehicle inventory increased 3.6% from August but remained at a 9-year low for the fifth straight month. Inventory ended September totaling 2.66 million units, 26.7% below the same year-ago period but a welcomed increase for automakers from the prior month’s 2.57 million.

“Though a potential hindrance to near-term sales, boding well for local production is that inventory of domestically made vehicles ended September down 27.9% year-over-year. Light-truck plants will continue to strain to keep up with demand, with plants building pickups busting at the seams. Plants solely building cars will not have the same problem, as demand for sedans continues to worsen relative to the rest of the industry. Inventory of import, or overseas-sourced, vehicles was down a lesser 22.0% year-over-year heading into October.

“Sept. 30 light-vehicle days’ supply totaled 50, lowest for the month since 49 in 2011 and well below the typical 63 to 65 the month historically ends at.

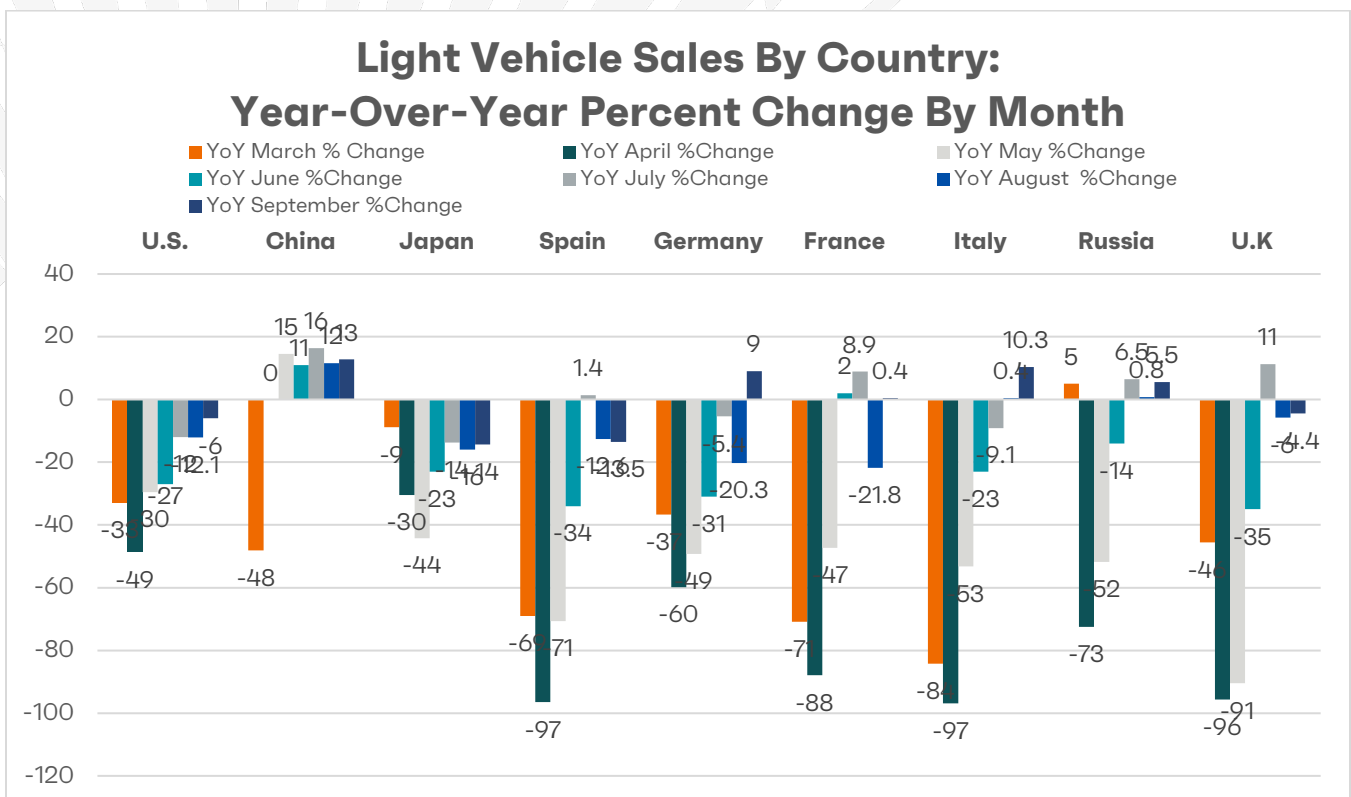
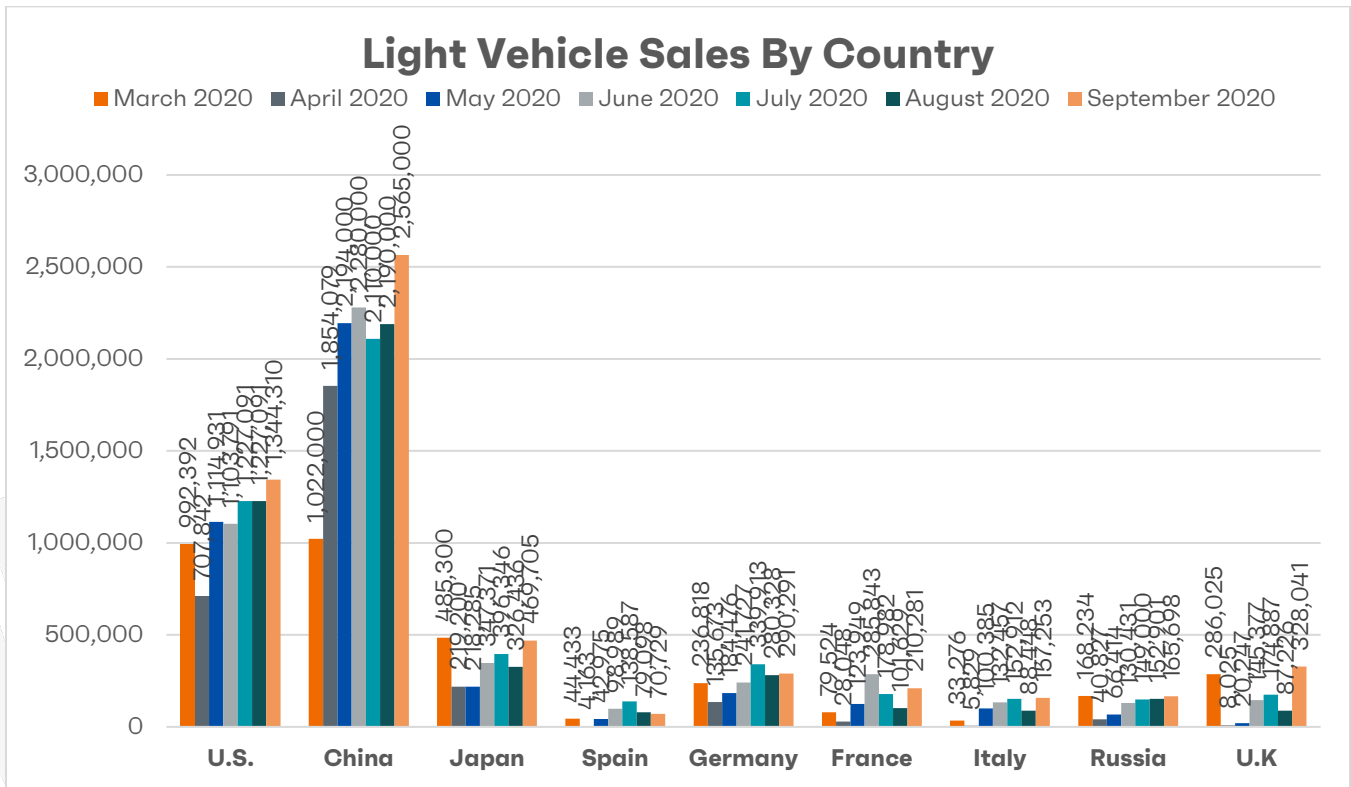
“Based on the current Q4 sales forecast, Wards Intelligence expects inventory to continue making upward strides in the next three months toward being more in balance with demand – meaning less lost sales due to shortages on dealer lots. But inventory will remain tilted toward the short-supply side heading into 2021.”



xxix

## Global Meter (Updated 10/21)

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





## Recovery Meter

### North American Assembly Facility Operating Status (Updated 9/3)

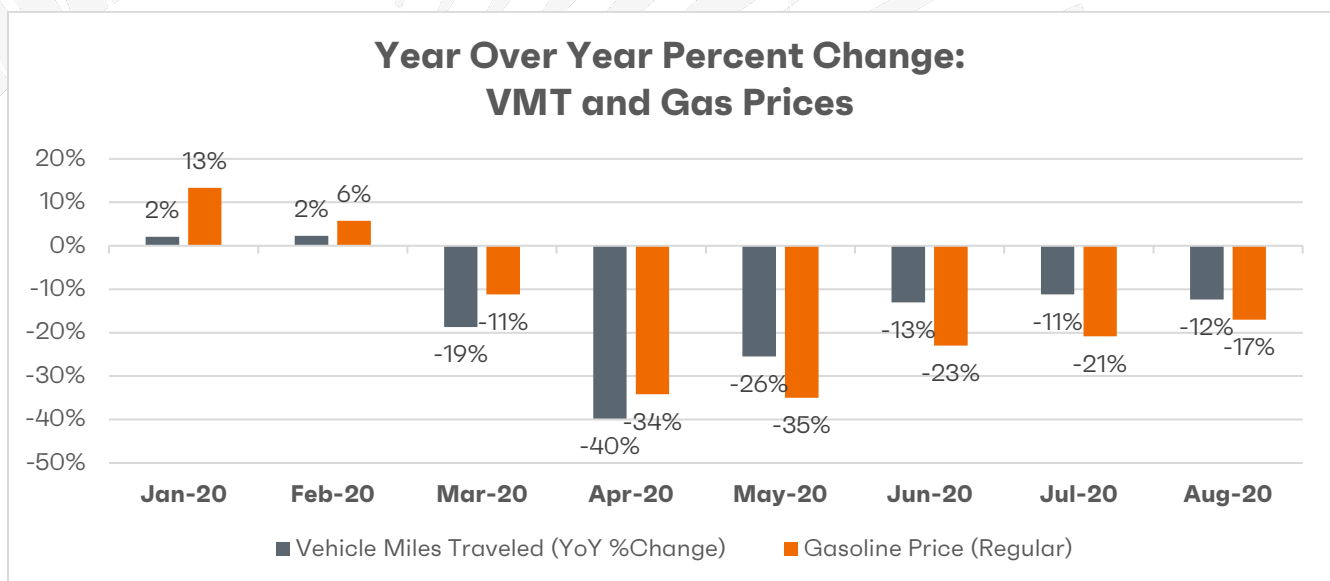
After all automotive manufacturing was shut down for the first time since World War II for roughly eight weeks, automakers have resumed production at all plants across North America. The extent to which production has ramped up or employment has been reinstated continues to fluctuate due to the impacts of COVID-19. We will continue to monitor the operational status of assembly facilities.

To view information on plant operating status during the shutdown, please click [here](#).

### Roadway Travel (Updated 10/21)

According to the U.S. Department of Transportation, vehicle miles traveled continued to increase month-to-month, peaking in July, but falling back again in August<sup>xxx</sup>:

- “Travel on all roads and streets changed by -12.3% (-35.3 billion vehicle miles) for August 2020 as compared with August 2019. Travel for the month is estimated to be 251.3 billion vehicle miles.
- “The seasonally adjusted vehicle miles traveled for August 2020 is 239.7 billion miles, a -11.8% (-32.2 billion vehicle miles) decline from August 2019. It also represents a 0.8% increase (2 billion vehicle miles) compared with July 2020.
- “Cumulative Travel for 2020 changed by -15.3% (-332.5 billion vehicle miles). The cumulative estimate for the year is 1,844.4 billion vehicle miles of travel.”

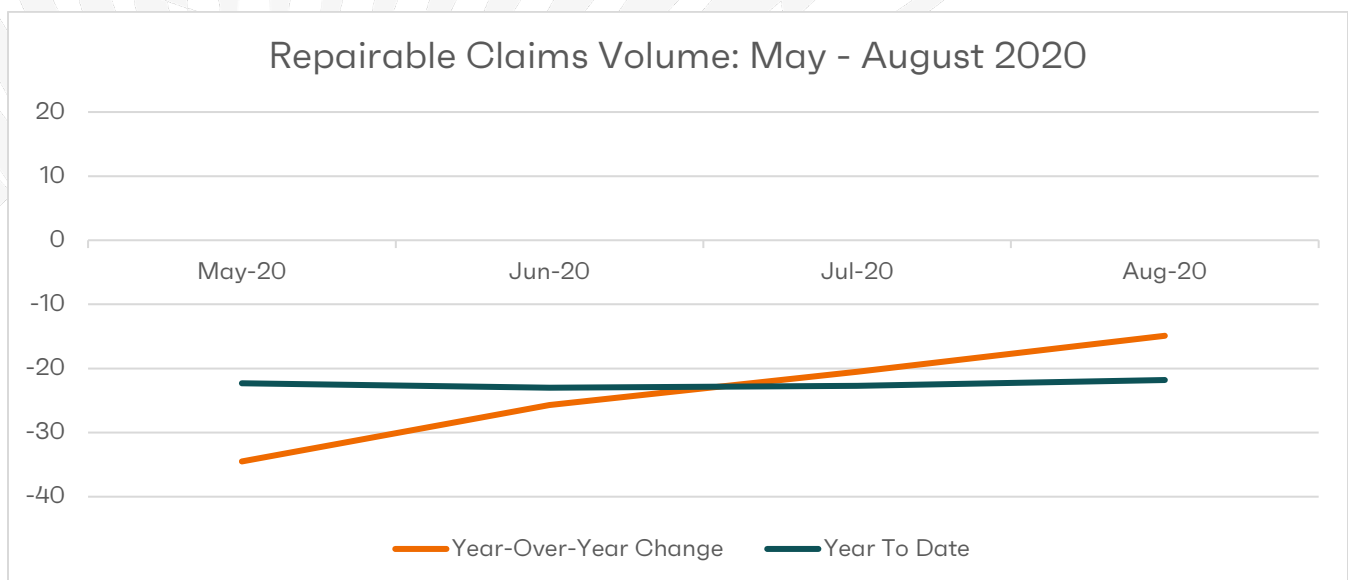


## Repairable Claims (New 9/16)

In addition to highlighting key data regarding vehicle production and sales, the number of auto accidents and insurance claims are also useful to understand since the start of the COVID pandemic. The following chart and statistics help to highlight how vehicle repairs and insurance claims have decreased since that start of the year.

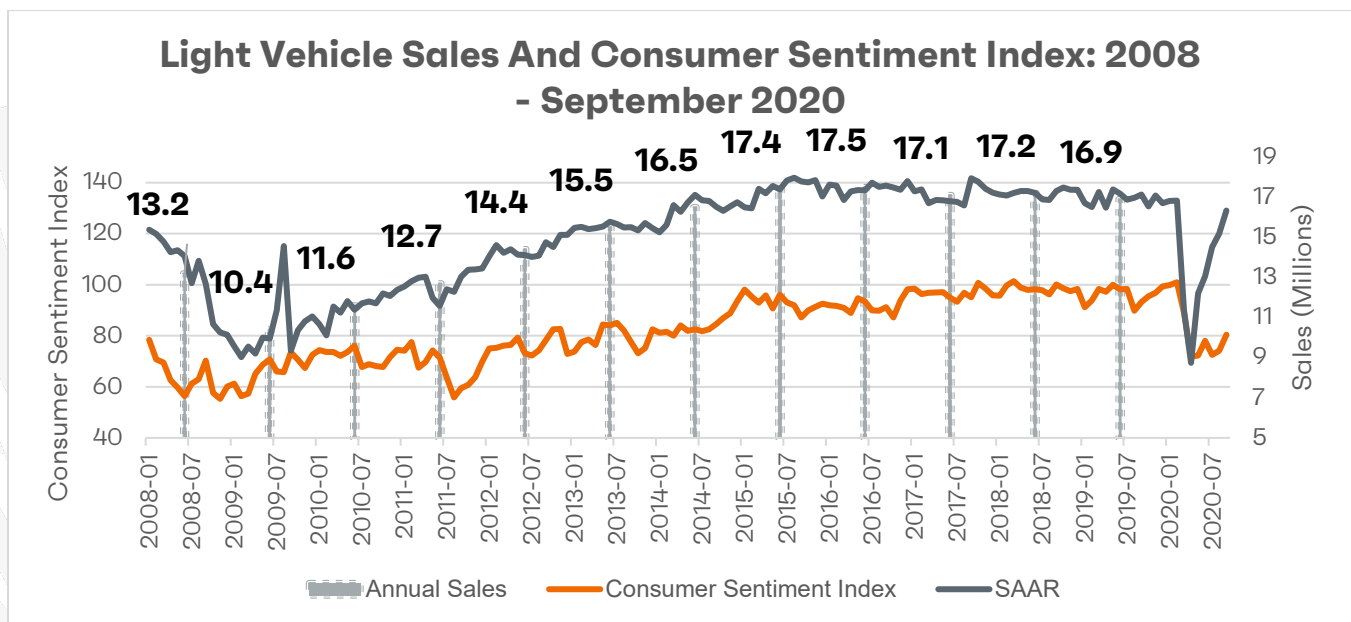
**Latest Data From CCC:** “The primary factor most highly correlated to accident frequency is vehicles per road mile – i.e. how many vehicles on a given road at any given point. . . . With the number of COVID-19 cases rising again as many return to school, and the approach of normal flu season, many companies plan to keep at least part of their staff remote through the remainder of the year. This will likely mean non-comprehensive may remain down -10 to -15 percent for full year 2020.

- “Overall repairable appraisal counts for the industry were down -14.9 percent in August 2020 versus August 2019.
- “Excluding comprehensive losses, counts also remained down over 25 percent year-to-date, although August 2020 non-comprehensive counts were down only -20.5 percent versus down -24.7 percent in July 2020.
- “With the number of COVID-19 cases rising again as many return to school, and the approach of normal flu season, many companies plan to keep at least part of their staff remote through the remainder of the year. This will likely mean non-comprehensive may remain down -10 to -15 percent for full year 2020.”<sup>xxxi</sup>



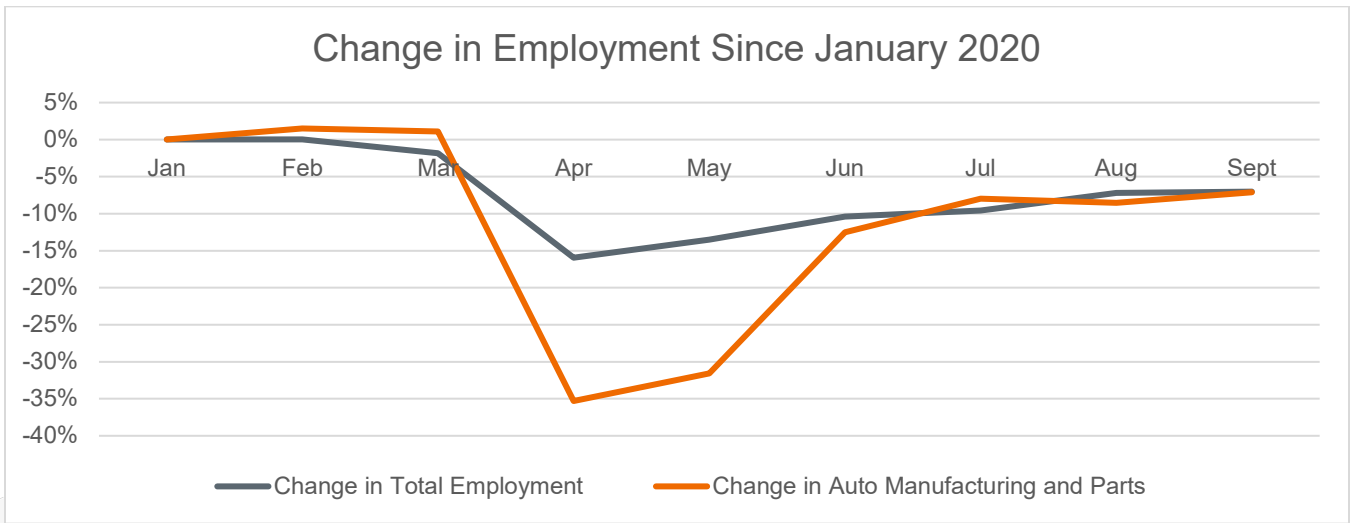
## Consumer Confidence and Sales (Updated 10/21)

At the start of the year, consumer sentiment, as measured by the University of Michigan, was registering a 100 on their index, but as Covid-19 took hold, the index dropped at its worst by more than a quarter<sup>xxxii</sup>. The index made gains in September and is now back over 80 for the first time since March. While the April low of 71 is only 9 points off from where the index sits currently, it is still much higher than it was during the depths of the recession in 2008. While new vehicle sales continue to recover despite wavering consumer confidence, the rest of the year could see sales stall against consumer sentiment headwinds.



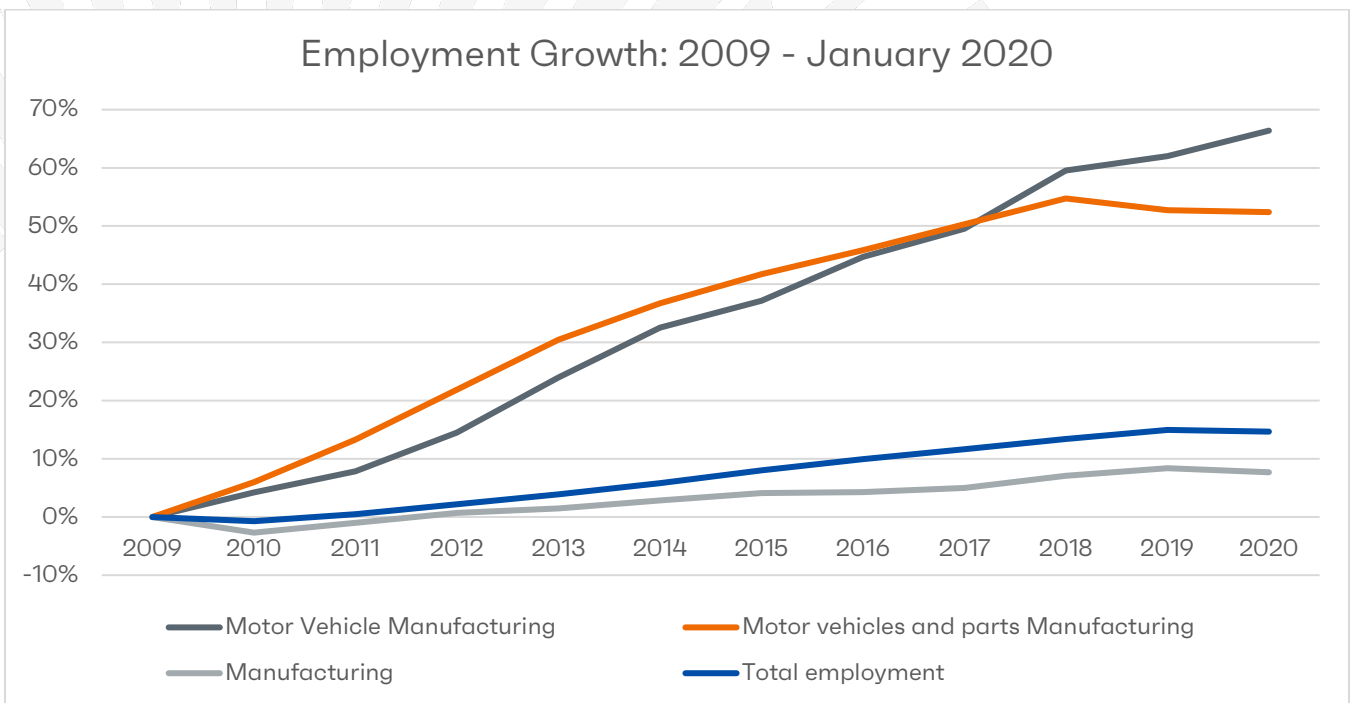
## Employment (Updated 10/7)

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 has raced back and is now only down about 70,000 employees, constituting an 7 percent loss since January. September's employment is an improvement of over 14,000 jobs since August. <sup>xxxiii</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>xxxiv</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.



- <sup>i</sup> WardsIntelligence, "U.S. Light Vehicle Sales, March," 4/1/2020; WardsIntelligence, "U.S. Light vehicle Sales, April," 5/1/2020
- <sup>ii</sup> Haig Stoddard, "COVID-19 Impact Will Tank March, Second-Quarter U.S. Light-Vehicle Sales," *WardsIntelligence*, 3/25/20; Haig Stoddard, "March 25 COVID-19 Update: 2020 North America Production, U.S. Sales Forecasts," *WardsIntelligence*, 3/30/20; Haig Stoddard, "U.S. Light-Vehicle Sales Start on the Road Back in May," *WardsIntelligence*, 5/21/20
- <sup>iii</sup> Haig Stoddard, "COVID-19's Toll on North America Vehicle Production in March, Q2," *WardsIntelligence*, 3/30/20
- <sup>iv</sup> IHS Markit, email, "IHS Markit Monthly Automotive Update – October 2020," 10/16/2020
- <sup>v</sup> IHS Markit, email, "IHS Markit Monthly Automotive Update – August 2020," 8/14/2020
- <sup>vi</sup> Haig Stoddard, "North American Production Rises in September; Gains to Continue in Q4," *WardsIntelligence* 10/20/20
- <sup>vii</sup> IHS Markit, email, "IHS Markit Monthly Automotive Update – October 2020," 10/16/2020
- <sup>viii</sup> Haig Stoddard, "North American Production Rises in September; Gains to Continue in Q4," *WardsIntelligence* 10/20/20
- <sup>ix</sup> Haig Stoddard, "Tags: Market Analysis September U.S. Light-Vehicle Sales Top 16 Million SAAR," *WardsIntelligence*, 10/1/2020
- <sup>x</sup> WardsIntelligence, "U.S. Light Vehicle Sales, September 2020," 10/1/20; WardsIntelligence, "U.S. Light Vehicle Sales, September 2018, 10/1/18
- <sup>xi</sup> Haig Stoddard, "U.S. Light-Vehicle Sales Rise to 6-Month High in August," *WardsIntelligence*, 9/1/2020
- <sup>xii</sup> IHS Markit, "[IHS Markit Analysis: US Registration Data Show Market Share Improvement for Pick-up Trucks, Decline for Compact Cars in H1.](#)" 8/17/20
- <sup>xiii</sup> J.D. Power, "J.D. Power Auto Industry Impact Report," 6/4/2020
- <sup>xiv</sup> WardsIntelligence, "U.S. Light Vehicle Sales, September 2020," 10/1/2020
- <sup>xv</sup> WardsIntelligence, U.S. Light Vehicle Sales, January 2013 – December 2019
- <sup>xvi</sup> U.S. Energy Information Administration, Weekly Retail Gasoline and Diesel Prices, Regular price per gallon, including taxes
- <sup>xvii</sup> WardsIntelligence, Fuel Economy Index, December 2013 & 2019
- <sup>xviii</sup> IHS Markit, "[IHS Markit Analysis: US Registration Data Show Market Share Improvement for Pick-up Trucks, Decline for Compact Cars in H1.](#)" 8/17/20
- <sup>xix</sup> Haig Stoddard, "September U.S. Light-Vehicle Inventory Rises But Lean-Running Remains the Name of the Game," *WardsIntelligence*, 10/2/2020
- <sup>xx</sup> Kelley Blue Book, Press Release, "Average New-Vehicle Prices Rise 2.5% Year-Over-Year in September 2020, According to Kelley Blue Book," 10/1/2020; Kelley Blue Book, Press Release, "Average New-Car Prices Up Less Than 1% Year Over Year for September 2019 as Retail Demand Weakens, According to Kelley Blue Book," 10/1/2019
- <sup>xxi</sup> Haig Stoddard, "September U.S. Light-Vehicle Sales Top 16 Million SAAR," *WardsIntelligence*, 10/1/2020
- <sup>xxii</sup> Bankrate, "[Current Car Loan Interest Rates.](#)" Accessed 10/21/20; Internet Archive, Bankrate, "Current Car Loan Interest Rates, cached image from 10/26/19
- <sup>xxiii</sup> EIA, "[Short-Term Energy Outlook.](#)" 10/6/2020
- <sup>xxiv</sup> EIA, "[Short-Term Energy Outlook.](#)" 10/6/2020
- <sup>xxv</sup> U.S. Energy Information Administration, Regular Gasoline, [https://www.eia.gov/dnav/pet/pet\\_pri\\_gnd\\_dcus\\_nus\\_m.htm](https://www.eia.gov/dnav/pet/pet_pri_gnd_dcus_nus_m.htm), Accessed 10/7/20; U.S. Energy Information Administration, Daily Cushing, OK WTI Spot Price, <https://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=PET&s=RWTC&f=W>, Accessed 10/21/20; YCharts, [https://ycharts.com/indicators/wti\\_crude\\_oil\\_spot\\_price](https://ycharts.com/indicators/wti_crude_oil_spot_price), Accessed 10/21/20
- <sup>xxvi</sup> Haig Stoddard, "North American Production Rises in September; Gains to Continue in Q4," *WardsIntelligence* 10/20/20
- <sup>xxvii</sup> WardsIntelligence, "North America Production, June 2018," 7/20/18; WardsIntelligence, "North America Production, June 2020," 7/21/20; WardsIntelligence, "North America Production, July 2018," 8/20/18; WardsIntelligence, "North America Production, July 2020," 8/20/2020
- <sup>xxviii</sup> Haig Stoddard, "September U.S. Light-Vehicle Inventory Rises But Lean-Running Remains the Name of the Game," *WardsIntelligence* 10/2/20
- <sup>xxix</sup> WardsIntelligence, "U.S. Light Vehicle Inventory, March 2020," 4/2/2020; WardsIntelligence, "U.S. Light Vehicle Inventory, April 2018," 5/3/18; WardsIntelligence, "U.S. Light Vehicle Inventory, May 2020," 5/21/2020; WardsIntelligence, "U.S. Light Vehicle Inventory, May 2018," 6/5/18; WardsIntelligence, "U.S. Light Vehicle Inventory, June 2020," 7/2/20; WardsIntelligence, "U.S. Light Vehicle Inventory, June 2018," 7/5/18; WardsIntelligence, "U.S. Light Vehicle Inventory, July 2020," 8/4/20; WardsIntelligence, "U.S. Light Vehicle Inventory, July 2018," 8/2/18; WardsIntelligence, "U.S. Light Vehicle Inventory, September 2020," 10/1/2020
- <sup>xxx</sup> U.S Department of Transportation, [https://www.fhwa.dot.gov/policyinformation/travel\\_monitoring/tvt.cfm](https://www.fhwa.dot.gov/policyinformation/travel_monitoring/tvt.cfm), accessed 10/21/2020
- <sup>xxxi</sup> CCC, "[CCC AutoClaims Snapshot – August 2020.](#)" 9/10/2020
- <sup>xxxii</sup> University of Michigan Consume Sentiment Index, <https://fred.stlouisfed.org/series/UMCSENT>, Accessed 10/7/2020
- <sup>xxxiii</sup> Bureau of Labor Statistics, Current Employment Statistics, Accessed 10/7/2020
- <sup>xxxiv</sup> Jerry Hirsch, "[Auto Industry Has Soared Since 2010, Leading Economic Recovery.](#)" *Los Angeles Times*, 1/3/14