

STATEMENT

OF THE

ALLIANCE FOR AUTOMOTIVE INNOVATION

BEFORE THE:

COMMITTEE ON COMMERCE, SCIENCE, and TRANSPORTATION

U.S. SENATE

HEARING TITLE:

**“The State of Transportation and Critical Infrastructure: Examining the
Impact of the COVID-19 Pandemic”**

June 3, 2020

PRESENTED BY:

John Bozzella
President and CEO



Chairman Wicker, Ranking Member Cantwell and distinguished members of the Committee: on behalf of the Alliance for Automotive Innovation (Auto Innovators) and our members, I thank you for the opportunity to appear today to share my perspective on how COVID-19 has affected the automotive industry and our members, and how our industry continues to respond to this public health crisis.

The Alliance for Automotive Innovation was formed at the beginning of this year to serve as the singular, authoritative, and respected voice of the automotive industry in the United States. Our 38 members include auto manufacturers producing nearly 99 percent of the cars and light trucks sold in the U.S., along with original equipment suppliers, technology companies, and other automotive-related value chain partners. In total, our industry employs roughly 10 million Americans, in addition to those who are employed in the technology and mobility sectors directly¹. We account for nearly 6 percent of our country's gross domestic product and represent our country's largest manufacturing sector².

The mission of Auto Innovators can be distilled to three words: cleaner, safer, smarter. We work with policymakers, including each of you on this Committee, to find intelligent solutions to reduce crashes, improve the environment, and enhance personal transportation. Our commitment to those core pillars remains steadfast, even during these abnormal times.

It will take months, if not years, to fully comprehend the toll this pandemic has inflicted on individuals, families, communities, the economy and the nation. But I am proud of how the industry and the men and women we employ across the country have stepped up to meet this challenge. And they are counting on all of us to care just as deeply about the future of their industry.

Auto Innovators was formed on the heels of an unprecedented seven years of growth³. Even with modest declines in the past two years, sales still hovered near record levels. This growth emerged from one of the greatest hits the industry ever took: the economic collapse that was the Great Recession.

The auto sector's strength was key to our national recovery. Autos formed the leading edge of economic growth which rippled throughout the economy.⁴ The auto sector accounted for nearly a quarter of all manufacturing jobs added since the recession.⁵ In the four years following the Great Recession, automakers and parts manufacturers added nearly 200,000 jobs.⁶ All told, since 2009, auto and parts makers added more than 342,000 jobs.⁷ Nearly 40,000 more

¹ Auto Alliance multi-industry contribution analysis: the economic impact of automotive manufacturing, selling, repairing, renting, and additional maintenance modeled using IMPLAN economic analysis data software, 2017 data year.

² *Id*; Bureau of Economic Analysis, Gross Output by Industry, <https://apps.bea.gov/iTable/iTable.cfm?ReqID=51&step=1>, Last accessed June 1, 2020; Bureau of Labor Statistics, Employment and Output by Industry, <https://www.bls.gov/emp/tables/industry-employment-and-output.htm>, Accessed June 1, 2020

³ U.S. Light Vehicle Sales, 2009 – 2016, Wards Intelligence

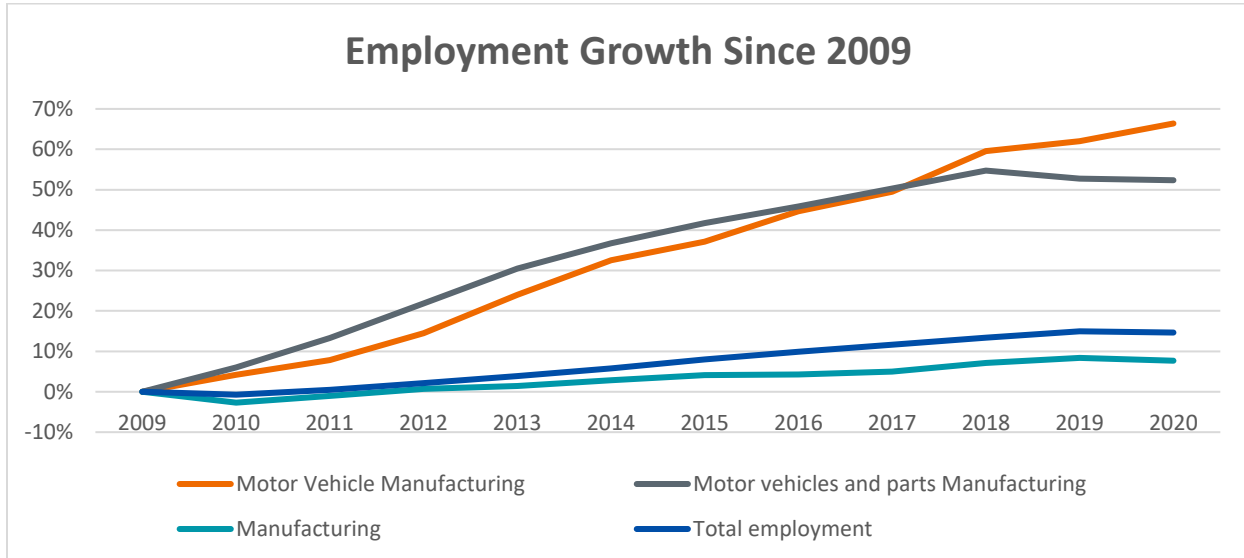
⁴ Jerry Hirsch, "Auto Industry Has Soared Since 2010, Leading Economic Recovery," *Los Angeles Times*, Jan. 14, 2014.

⁵ Bureau of Labor Statistics, *Automotive Industry: Employment, Earnings, and Hours*, Last Accessed May 8, 2020; Bureau of Labor Statistics, *Current Employment Statistics*, Last Accessed May 8, 2020.

⁶ *Ibid*.

⁷ *Ibid*.

Americans work in our industry than when the recession began.⁸ The jobs recovery in motor vehicle manufacturing and parts manufacturing far outpaced our nation’s recovery in both manufacturing and total jobs.

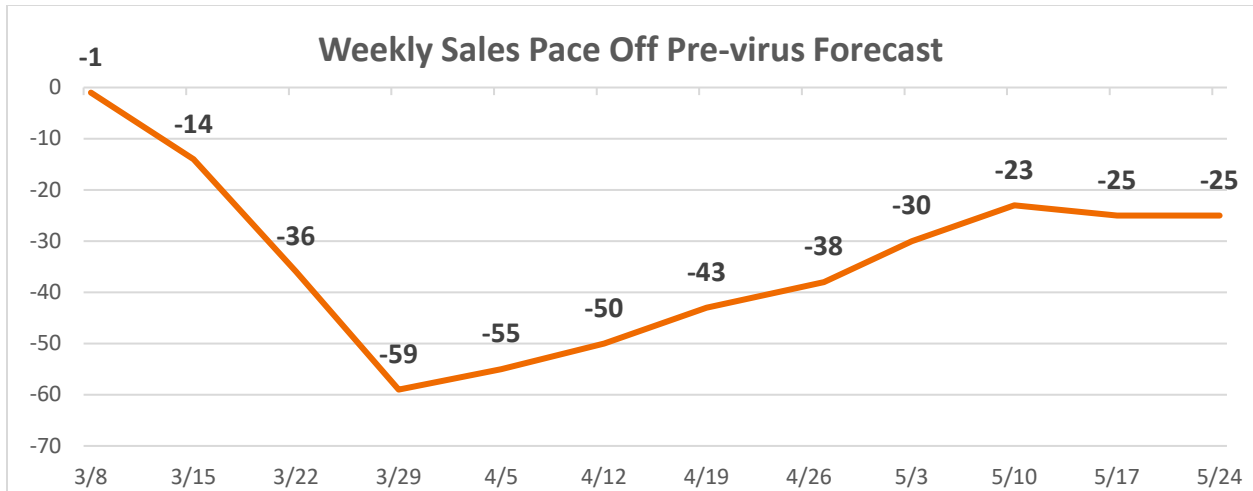


Then the COVID-19 pandemic hit. In just weeks, industry sales went from above average in February to a 33 percent drop in March and nearly a 50 percent reduction in April⁹. These depressed levels were mitigated, in part, by manufacturer incentives on new vehicle purchases¹⁰. By April – for the first time since World War II – all major North American production facilities were idled. Auto dealers were unable to accept orders they had already placed with OEMs. Rental fleets were parked due to the precipitous drop in travel and tourism. Nationwide, vehicle use dropped dramatically as federal, state, and local governments imposed a range of restrictions focused on reducing the spread of the coronavirus.

⁸ *Ibid.*

⁹ Wards Intelligence, *U.S. Light Vehicle Sales, March 2020*, April 1, 2020; Wards Intelligence, *U.S. Light Vehicle Sales, April 2020*, May 1, 2020.

¹⁰ J.D. Power, Presentation, *COVID-19: J.D. Power Auto Industry Impact Report*, May 13, 2020.



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While the gears of motor vehicle manufacturing ground to a halt, the automotive industry did not stop working. Instead, our members continued to innovate. They put their decades of experience in precision manufacturing, supply networks, logistics, purchasing, and innovation to use in combatting the coronavirus.

With lightning speed, automakers and suppliers developed new partnerships in the healthcare community and retooled manufacturing facilities to aid in the response. Within weeks, companies were dedicating facilities and people to making ventilators and personal protective equipment for those on the battle's front lines, as well as their own employees. They redeployed supply chains, leveraged purchasing networks and utilized their manufacturing prowess to make equipment at break-neck speed. Similarly, technology companies and new entrants to the mobility ecosystem deployed automated vehicles to provide contactless delivery of supplies and meals to individuals and communities in need.

In addition to making complex and specialized medical equipment, our member companies have donated and delivered millions of meals to those in need. They have contributed and retrofitted vehicles to provide transportation for health care workers and community members. They have assisted customers with flexible payment options on existing loans, as well as preferential financing terms for new vehicle purchases.

The contributions of Auto Innovators member companies remind us all why this industry is such a national asset. It was not just a handful of participants or large corporations stepping forward – it was the entire value chain, working together, to help the national response. Our partners in the supplier community, from the tier ones to the mom-and-pops, have also stepped forward and been tremendous partners throughout this crisis. Likewise, our auto dealership partners nationwide developed new and creative ways to provide sales and service to address Americans' transportation needs. In short, the automotive industry not only answered the nation's call but

¹¹ J.D. Power, Presentation, COVID-19: J.D. Power Auto Industry Impact Report, May 28, 2020.

also demonstrated the innovative spirit and resilient commitment that will help it survive and once again thrive.

While our members focused on the health and safety of their employees and supporting the national response, Auto Innovators devoted our attention to supporting those efforts, as well as the industry's long-term health. We quickly formed a high-level industry task force to coordinate information sharing, identify emerging challenges, and collaborate with industry and government partners. This included a weekly "Read the Meter" summarizing key statistics and metrics to track the state of the industry (Attachment 1). We supported federal and congressional efforts to provide market liquidity that has been tremendously important for individuals and businesses across the country. We worked closely with the Cybersecurity and Infrastructure Security Agency (CISA), to ensure the country's state and local governments had clear and consistent guidance regarding the essential nature of motor vehicle manufacturing and associated supply chains. We are continuing to work with the Department of Commerce, Department of State and countless others across the federal government to support collaboration and engagement with regional trading partners. In addition, we partnered with the Motor and Equipment Manufacturers Association/Original Equipment Suppliers Association to develop health and safety guidance for suppliers throughout the value chain. These efforts serve one goal – the auto industry's safe and coordinated restart as part of our nation's economic recovery.

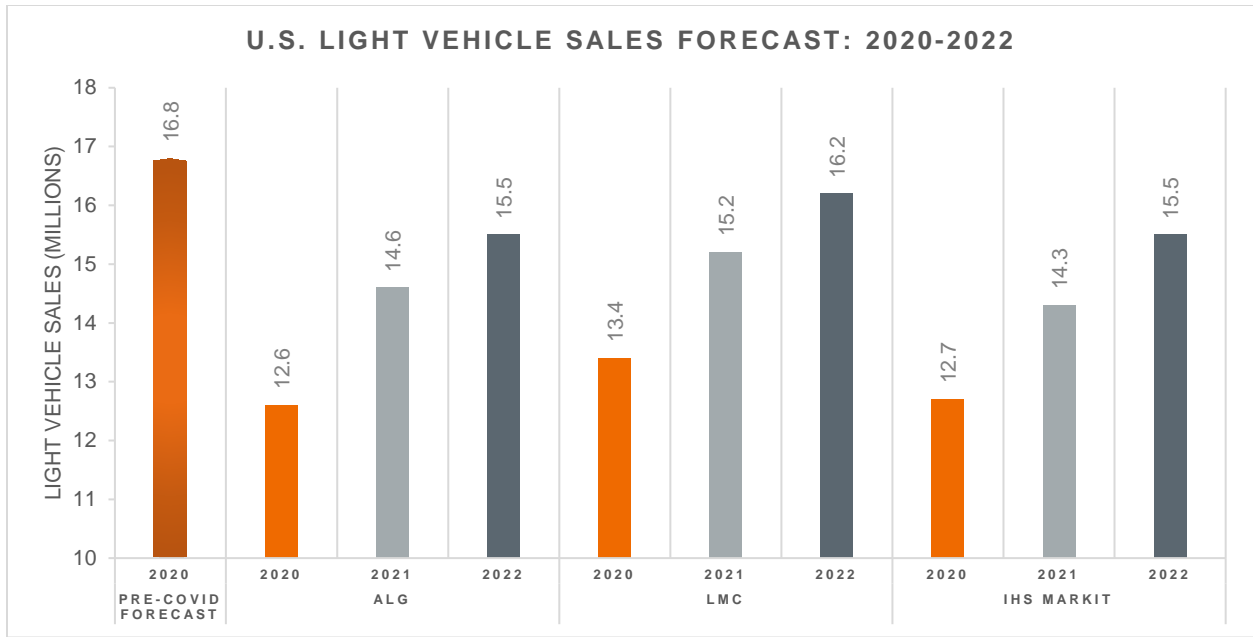
As we speak, that process is underway. Across the country, production facilities and suppliers are responsibly resuming operations. **But it is not business as usual.**

Employees are returning to a very different work environment. Over the past two months, our companies have worked closely with public health authorities, collaborated with industry partners, and observed lessons learned from around the globe to develop and implement a broad range of precautions. This includes, but is not necessarily limited to, a combination of: temperature scans, safety goggles, face shields and masks, physical changes to the work environment, hand sanitizers and lotions, more time between shifts, and proper distancing.

As employees adapt to new work environments, the industry is bringing supply chains back to life. With more than 10,000 components in an average vehicle, this requires extensive collaboration among suppliers, the states, and trading partners such as Mexico and Canada, to facilitate a safe and reliable restart of motor vehicle production. This will not happen overnight as the entire value chain implements and socializes new health and safety guidelines for their operations. But to be clear, we recognize that the public health issues will remain a challenge moving forward.

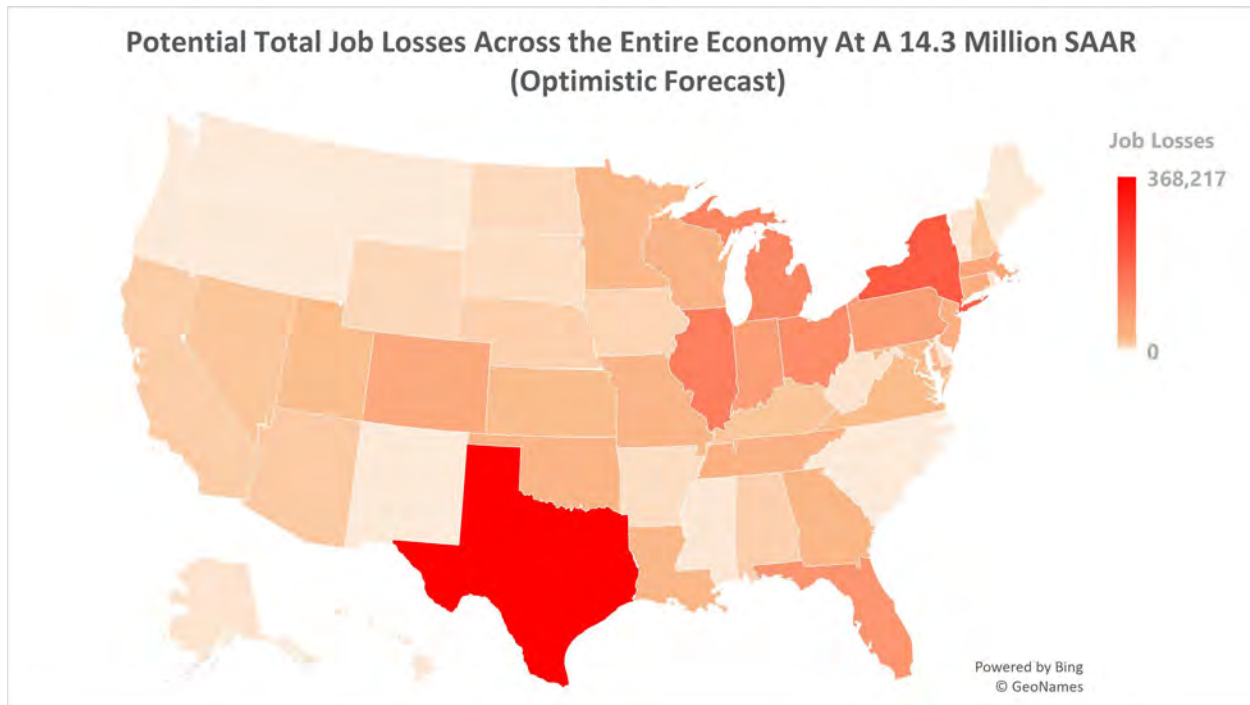
Even with the re-start of our industry, we know it will take time to recover from COVID-19's impacts. Before the public health crisis, analysts were projecting 2020 sales of almost 17 million units. Current market projections estimate that 2019 sales level might not return until 2023.¹²

¹² Haig Stoddard, Wards Intelligence, *U.S. Sales Outlook Brightens Slightly for 2020-2021 But Still a Lot of Uncertainty as to How the Recovery Ultimately Plays Out*, May 18, 2020; IHS Markit, Email, *Markit Monthly Automotive Update - May 2020*, Rec'd May 14, 2020; ALG, Press Release, *ALG Provides Third Revision of 2020 New Vehicle Sales Forecast Scenarios Based on Latest Impact of COVID-19*, April 20, 2020



Today, the projections anticipate a roughly 25 percent annual sales drop in light-duty vehicles. Even under the more optimistic scenarios – a drop in sales to about 14 million units – the industry’s job losses could total nearly 100,000 and result in nearly 2 million jobs lost across the entire economy.¹³

¹³ Center for Automotive Research, *Economic Study of Baseline Loss at 14.3 Million SAAR* (Forthcoming).



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The economic reality of the combined hit to auto production and sales is, in some respects, simple. Although restart efforts are underway, there is still a high degree of uncertainty when it comes to supply chain challenges, consumer confidence and overall economic signals. As automakers, suppliers and others absorb COVID-related losses, the industry will have less capital to invest in future technology development. In this highly competitive, capital-intensive industry, policies that support market stability will become even more critical as we take on the simultaneous challenge of recovering from the pandemic and sustaining investments in the innovations that will define the future of personal mobility. As evidenced by our response to this public health crisis, the auto industry is up to the challenge – but we cannot do it alone. Maintaining U.S. leadership in automotive innovation requires a shared commitment from both industry and our partners in government.

Despite various factors outside our control, one thing is certain: the auto industry is prepared and in position to make an essential contribution to all aspects of our national recovery from this pandemic. Motor vehicle manufacturing and associated supply chains are Critical Infrastructure for a reason – this industry has proven its ability to fuel our national economy. We will continue our part to protect public health and build future prosperity.

Today, we find ourselves on the cusp of a transformative moment in the future of the U.S. automotive industry. We must safely restart the industry amid significant economic uncertainty, while continuing to invest in new propulsion systems that reduce emissions and automated and connected vehicle technologies that save lives on America’s roadways. It will require creativity

¹⁴ *Ibid.*

and commitment, including from Congress and this committee, for the U.S. to retain its important leadership role when it comes to automotive innovation.

On behalf of this great industry, I look forward to continue working with this Committee to harness the innovative spirit of our members – and the entire auto ecosystem – to emerge from this public health crisis stronger, more resilient and an engine of U.S. leadership and prosperity, both now and in the future.

Attachment 1:
“Reading the Meter” (May 28, 2020)
Alliance for Automotive Innovation

READING THE METER

May 28, 2020

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Forecast Meter

Forecast Summary (Updated 5/27)

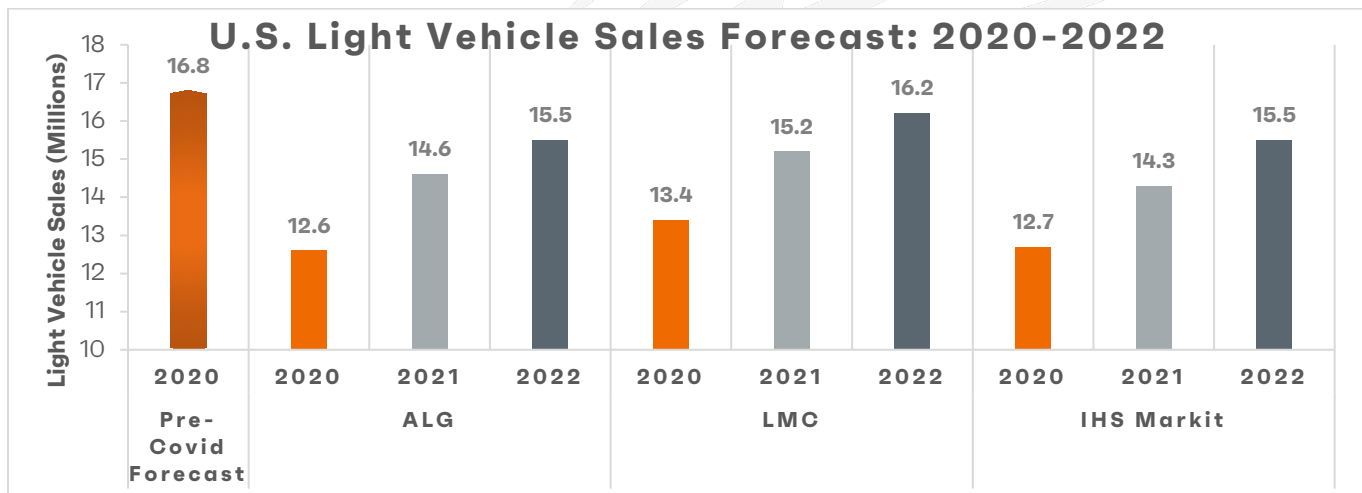
2020 March & April Sales,ⁱ Extended Sales Forecastⁱⁱ and Production Forecastsⁱⁱⁱ

	U.S. Sales & Forecasts	North American Production Forecast
March	992,392 (-33% YoY)	1.01 million units (-34% YoY)
April	707,852 (-48.7%YoY)	8,463 (-99.4% YoY)
May (through 5/17)	427,000 (-26% from forecast)	N/A
May Forecast	1,070,000 (-32.5% YoY)	N/A
June	13.2M SAAR	N/A
1st Quarter	3,476,512 (-12.7% YoY)	3.86 million units (-11.7% YoY 2019)
2nd Quarter Estimate	11.2 Million SAAR	
2020 Full Year	12.5-14.3 million	12.3

U.S. Light Vehicle Sales Outlook (Updated 5/27)

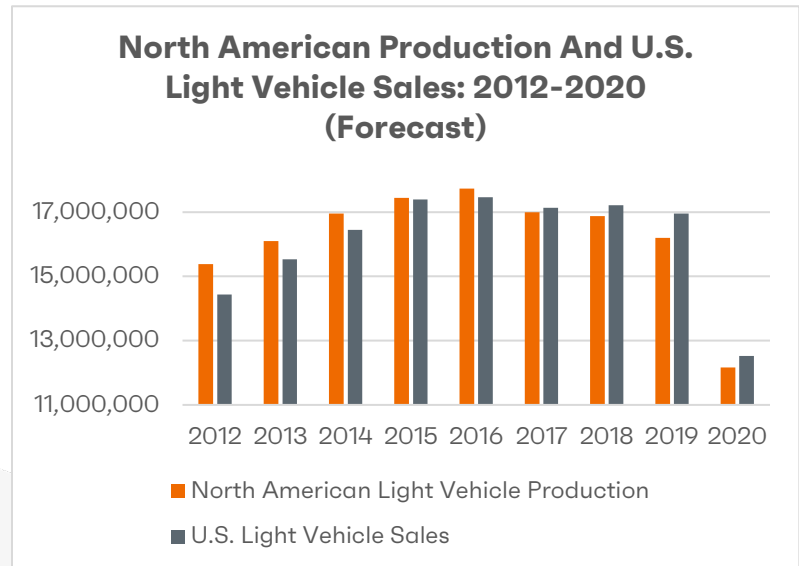
Wards Intelligence^{iv}: “Wards Intelligence partner LMC Automotive has upwardly revised its 2020 U.S. light-vehicle sales forecast to 13.4 million units. Previously, LMC was targeting 12.9 million units. The forecast for 2021 was raised slightly to 15.2 million units from 15.1 million, while 2022 remains at 16.2 million. On a seasonally adjusted basis, sales are not expected to resume pre-virus strength, or the 16.8 million forecast for 2020 prior to the virus’s impact, until sometime in 2023. Overall, sales in 2023 are pegged at 16.7 million units.”

J.D. Power Forecast: “J.D. Power May retail sales outlook is 961,000-1,064,000 units. This is a decline of 18-26% from our pre-virus forecast, or a sales drop of 239,000-341,000 units. Sales through May 17 were 427,000 units. . . . The virus is projected to remove 1.0-1.5million sales over the five months of March -July.”



North American Production Outlook (Updated 5/20)^v

North America Production: “The May 2020 forecast fine-tuned the previous nine-week shutdown across North America with production resuming the week of May 18 or earlier depending on the manufacturer and country. As a result, North America production for 2020 was revised up 167,000 units to total 12.3 million units that remains the lowest level since 2010. . . . With production in North America forecast to decline nearly 4.0 million units in 2020 to 12.3 million units, 87% or 3.45 million units of the total volume loss is projected to occur between March and June 2020. Despite heading into an uncharted market, manufacturer’s robust production plans for third quarter 2020 are supported by the more than total US inventory being wiped out over the course of four-months and US sales projected to total roughly 3.5 million units over the same time span.”



Work Stoppage Meter

North American Assembly Facility Operating Status (Updated 5/27)

Most automakers have resumed production at plants across North America, but the extent to which production has begun or employment has been reinstated is unknown. The summary chart assumes full employment for those plants that have reopened. As plants come back online, we will continue to monitor additional closures due to outbreaks or parts shortages.

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

North American Assembly Facilities (5-27-20)			
Country	Metric	Number	Percent of totals
U.S.	U.S. Employment	176,070	
	Closed 5/27/2020	20,700	12%
	Number of plants total	44	
	Number of plants Closed 5/27/2020	5	11%
Mexico	Mexico Employment	70,665	
	Closed 5/27/2020	57,212	81%
	Number of plants total	18	
	Number of plants Closed 5/27/2020	13	72%
Canada	Canada Employment	31,626	
	Closed 5/27/2020	-	0%
	Number of plants total	7	
	Number of plants Closed 5/27/2020	-	0%
North America	Total Employment	278,361	
	Closed 5/27/2020	77,912	28%
	Number of plants total	69	
	Number of plants Closed 5/27/2020	18	26%

*Assumes full employment at open plants

Market Meter

U.S. Light Vehicle Sales (Updated 5/28)

Weekly Sales^{vi}

J.D. Power Weekly Update: “Retail sales through May 24 are 670,000 units, a decline vs. pre-virus forecast of 25% or 219,000 units.

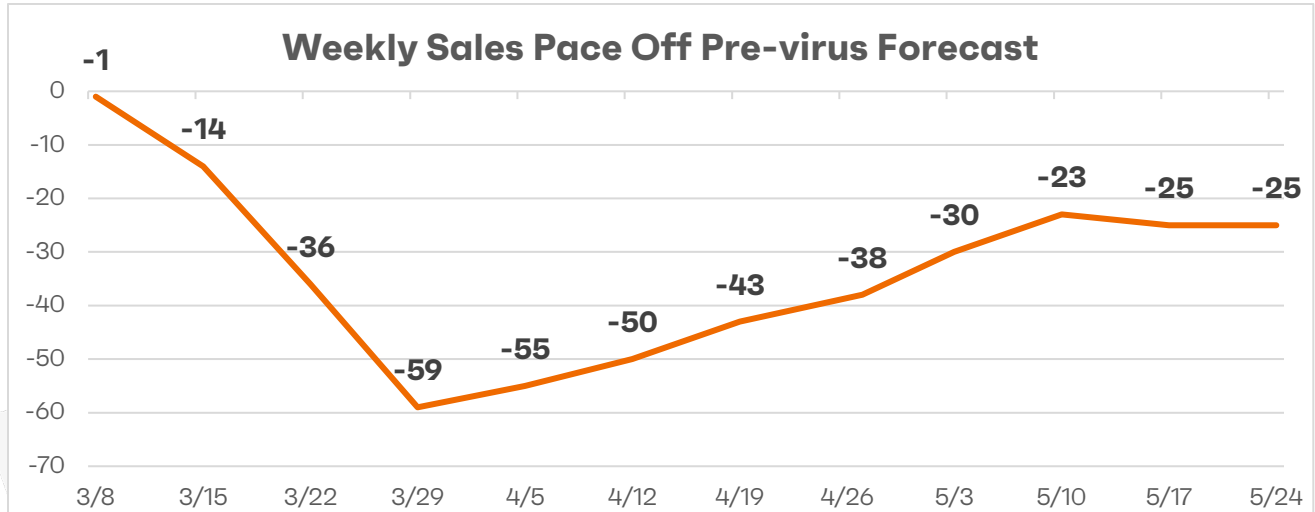
“After six weeks of consecutive growth, the recovery has been stable for three weeks.

“Performance of the top 5 segments remained flat in week of May 24. Demand for midsize and light duty pickups remained strong, roughly even with forecast. SUV performance aligned with industry performance while demand for cars continued to lag.

“Incentives hit record levels at over \$5,000 per unit during the week ending May 03. Week-over-week decreases in the week ending May 10 were driven by vehicle mix and lower supported finance incentive mix. Spending remained roughly flat in the following two weeks.

“While still elevated, 84-month loans are now halfway back to pre-virus levels at 13% for the week ending May 24.

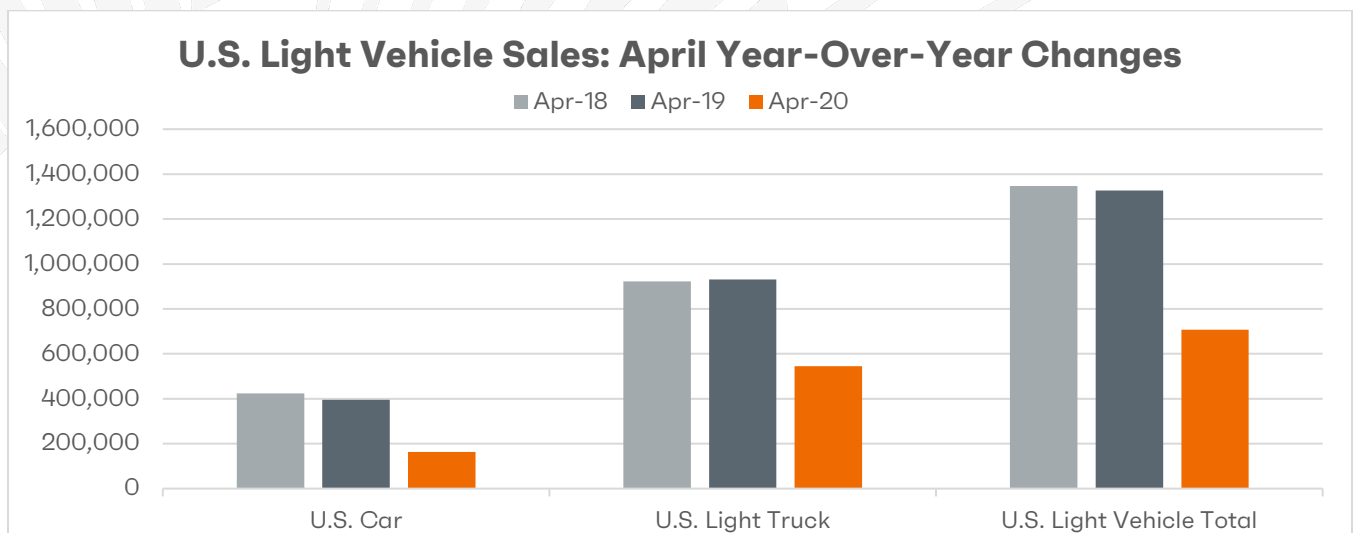
“22% of buyers during the week ending May 24 took a lease, the best weekly performance since mid-March, but still well below pre-virus levels. Many lessees who extended their leases have not yet returned to market, due to the monthly cadence of lease extensions.”



Monthly Sales ^{vii}

According to J.D. Power’s analysis, retail sales in April were 629,300 units, a decline vs. pre-virus forecast of 42% or 455,600 units.^{viii}

Year over year, April light vehicle sales are down 47% from 2019. The segment trend continues to favor light trucks over cars, with trucks capturing more three-quarters of the market (76.9%), and gaining nearly 5% market share over 2019, however the overall truck volume was down more than 387,000.



Fleet Sales

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 13-14.5 in total sales, fleet sales fall to a range from 1.6 million to 2.1 million, a decline of 38%-53% from the baseline.

J.D. Power Retail and Fleet Sales Forecast

	Pessimistic Forecast	Optimistic Forecast	Pre-COVID Baseline Forecast
Retail Sales Forecast (million)	11.4	12.4	13.4
Fleet/Other Sales Forecast (million)	1.6	2.1	3.4
Total Sales Forecast (million)	13	14.5	16.8
Fleet Percent of Total Sales	12%	14%	20%
Retail Percent of Total Sales	88%	86%	80%
Fleet Loss From Baseline of 3.4 (million)	-1.8	-1.3	-
Fleet Loss as % Baseline Fleet Sales	-53%	-38%	-
Fleet Loss as % Total Sales	-13.8%	-9.0%	-

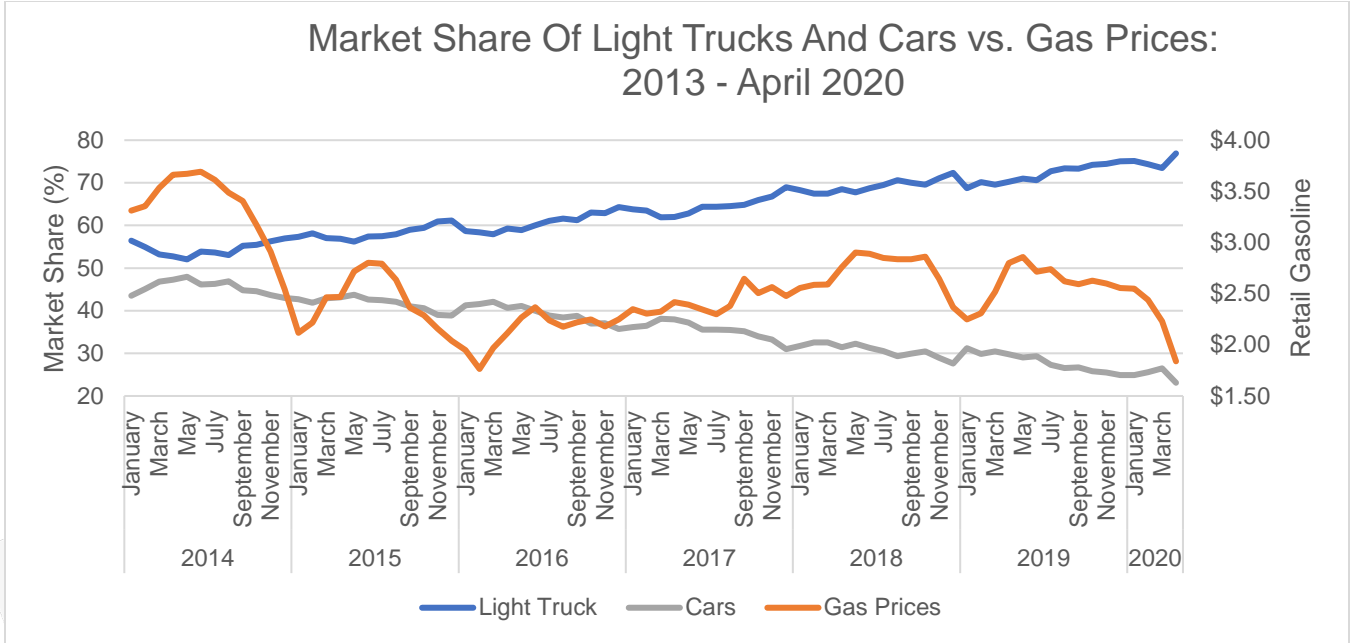
Rental Fleets: “Rental volume, which would have accounted for roughly 10% of new-vehicle sales in a 16.8 million-unit market, has all but dried up, and not coming back until business and vacation travel does. Additionally, automakers are trying to fill existing commercial orders but might not be able to meet all orders for ’20 model-year vehicles if production can’t be ramped up fast enough – some could be delayed until the ’21 model year, if not create more cancellations.”^{ix}

Segments vs. Gas Prices (Updated 5/20)

Monthly Sales For April: Light trucks accounted for nearly 77% of sales in April, a 3.5% gain in market share over March.

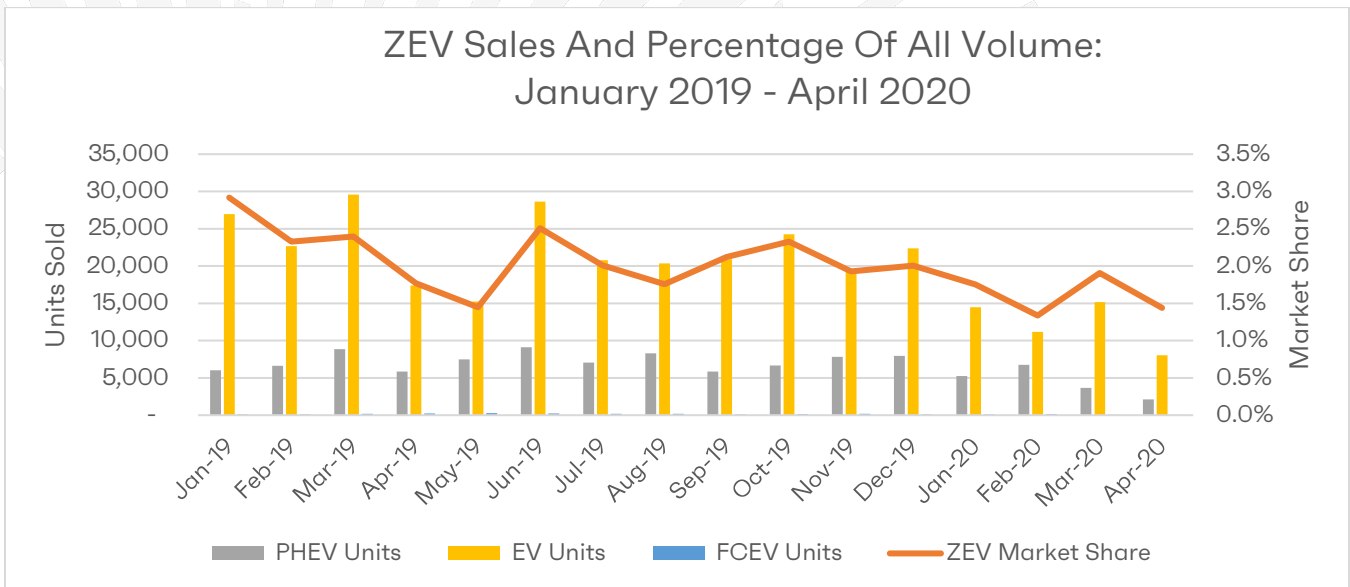
Historic Perspective: The upward trend in the popularity of light trucks over cars has been steady since 2013, when only 2% of annual market share separated the two segments^x and gas was over \$3.00^{xi} a gallon. As fuel prices dropped below the \$3.00 mark in mid-September 2014, light truck sales began to take off – and never looked back. Gas prices since have averaged only \$2.47 a gallon (through April 2020) and when combined with increased fuel economy for light trucks, an increase of 4 mpg since 2013^{xii}, the perfect conditions existed to continue fueling light truck market growth.

As gas prices are predicted to average only \$1.58 through the summer season^{xiii}, a further hit to the car segment is entirely possible.



ZEV Powertrain Sales (Updated 5/6)

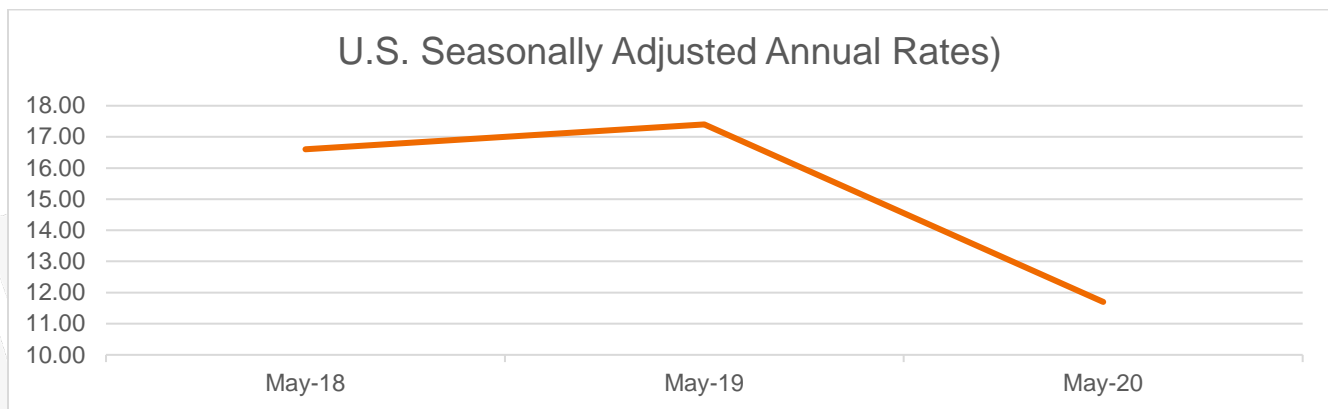
Sales of zero emission vehicles (BEV, PHEV, & Fuel Cell) accounted for only 1.4% of total vehicle sales in April 2020, down .4% from a year ago and .5% from March 2020. Sales of battery electric vehicles led the way for ZEVs accounting for 1.1%, but down from 1.31% in April 2019. Plug-in hybrids accounted for .3%, down .1% in market share, year-over-year.



Seasonally Adjusted Annual Rates (Updated 5/27)

“Although still near rock-bottom levels, U.S. light-vehicle sales are coming back faster than expected from the economic damage caused by the Covid-19 pandemic since mid-March, with May’s results forecast to rise sharply from April’s 8.6 million-unit seasonally adjusted annual rate to 11.7 million.”

“Wards Intelligence is penciling in a 13.2 million-unit SAAR for June, which would finalize the second quarter at an 11.2 million-unit SAAR.”^{xiv}

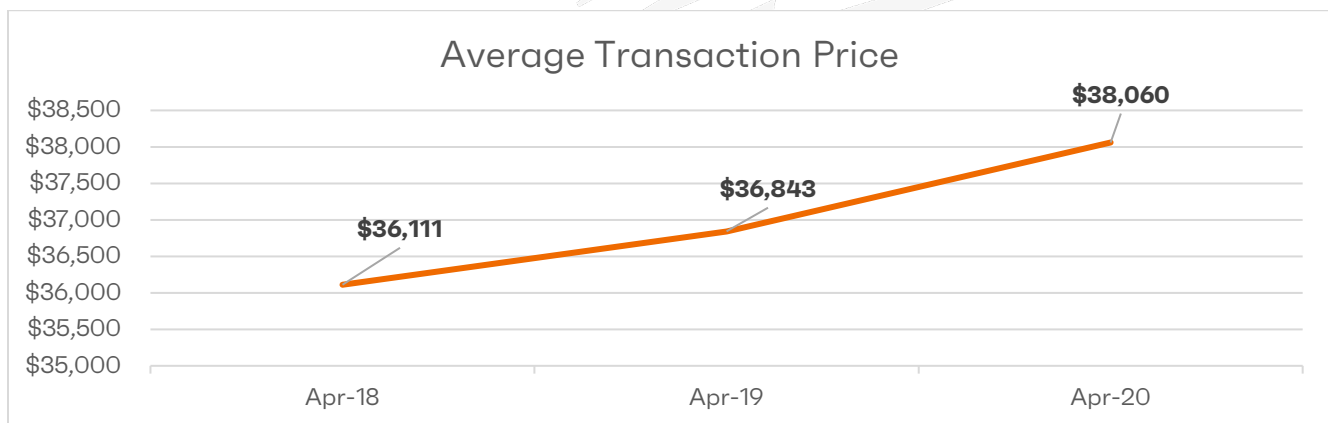


Average Transaction Price (Updated 5/28)

The average vehicle transaction price in April 2020, per Kelley Blue Book, was up 3% over April 2019, and 5.4% over April 2018.^{xv}

Additional Insight From J.D. Power^{xvi}: “Transaction prices reached their highest-level on record at \$35,700 during the week ending April 5, but have since declined. Average transaction prices declined again in the week ending May 24, with the variance driven largely by segment mix.”

“Incentives hit record levels at over \$5,000 per unit during the week ending May 03. Week-over-week decreases in the week ending May 10 were driven by vehicle mix and lower supported finance incentive mix. Spending remained roughly flat in the following two weeks.”



Auto Loan Financing (Updated 5/27)

Financing Down Nearly A Quarter Percent From The Beginning Of The Year, but remains stable.

Financing for the week of May 20, 2020 was unchanged from the previous week on the 60-month new car financing interest rate and has been mostly unchanged over the last seven weeks. Rates are down .24% since the beginning of the year. Rates have remained similarly stable on the 48 and 36-month used car loans over the past several weeks as well.^{xvii}

Additional Insight From J.D. Power: “May month-to-date percentage of buyers taking 84-month loans was 15%, nearly double the level in the same period last year.

“Captive lenders captured 73.6% of loans and leases in week ending May 24, up from the previous week.”^{xviii}

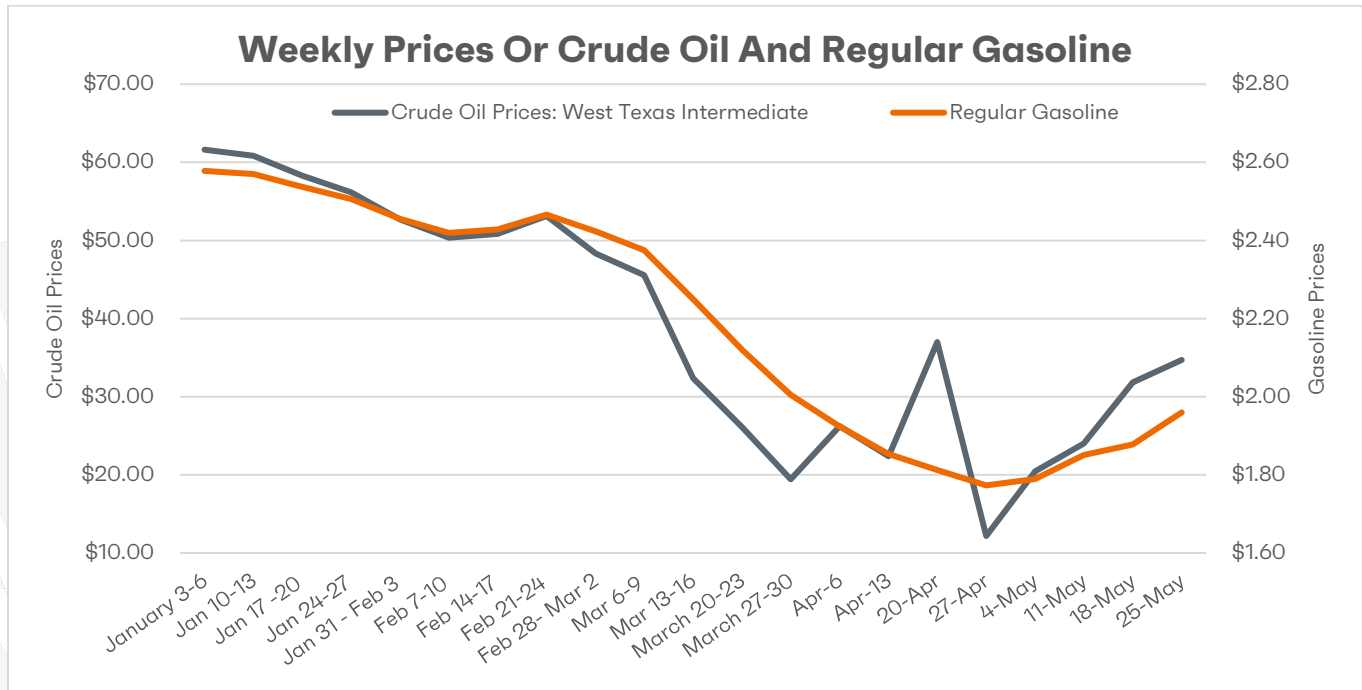
Auto Loan Financing				
Dates	60-month new car	48-month new car	36-month used car	
5/20/2020	4.36%	4.33%	4.74%	
5/13/2020	4.36%	4.34%	4.74%	
5/6/2020	4.37%	4.35%	4.75%	
4/29/2020	4.37%	4.35%	4.75%	
4/22/2020	4.37%	4.35%	4.75%	
4/15/2020	4.37%	4.35%	4.75%	
4/8/2020	4.37%	4.35%	4.75%	
4/1/2020	4.42%	4.39%	4.89%	
3/25/2020	4.42%	4.38%	4.90%	
3/18/2020	4.43%	4.39%	4.91%	
3/11/2020	4.46%	4.42%	4.95%	
3/4/2020	4.49%	4.45%	4.98%	
2/26/2020	4.56%	4.51%	5.02%	
1/2/2020	4.60%	4.55%	5.10%	
5/15/2019	4.75%	4.71%	5.25%	
One Week Change	0.00%	-0.01%	0.00%	
Two Week Change	-0.01%	-0.02%	-0.01%	
Change since 1/3/20	-0.24%	-0.22%	-0.36%	
One Year Change	-0.39%	-0.38%	-0.51%	

Crude Oil and Gas Prices (Updated 5/28)

Oil Forecasts For The Year Down More Than A Million Barrels A Day. “The U.S. cut its 2020 oil production forecast by more than 1 million barrels a day, as collapsing crude prices and plummeting demand threaten to shutter production in the country’s biggest fields. Production is expected to average 11.76 million barrels a day through December, down from a previous forecast of 12.99 million barrels, the Energy Information Administration said on Tuesday.”^{xix}

Retail Gas Forecast To Average \$1.58 For The Summer Driving Season. “For the April–September 2020 summer driving season, EIA forecasts U.S. regular gasoline retail prices will average \$1.58 per gallon (gal), down from an average of \$2.72/gal last summer”.^{xx}

Oil And Gas Remain Low: Oil prices, as benchmarked at West Texas Intermediate, as well as gasoline prices, both continued their slight rebound. For the week beginning May 18, Oil was up to nearly \$32; for the week of 5/25, was up to \$1.96. Since the start of the year, crude oil has fallen 44%, while gas prices has fallen 24%.^{xxi}

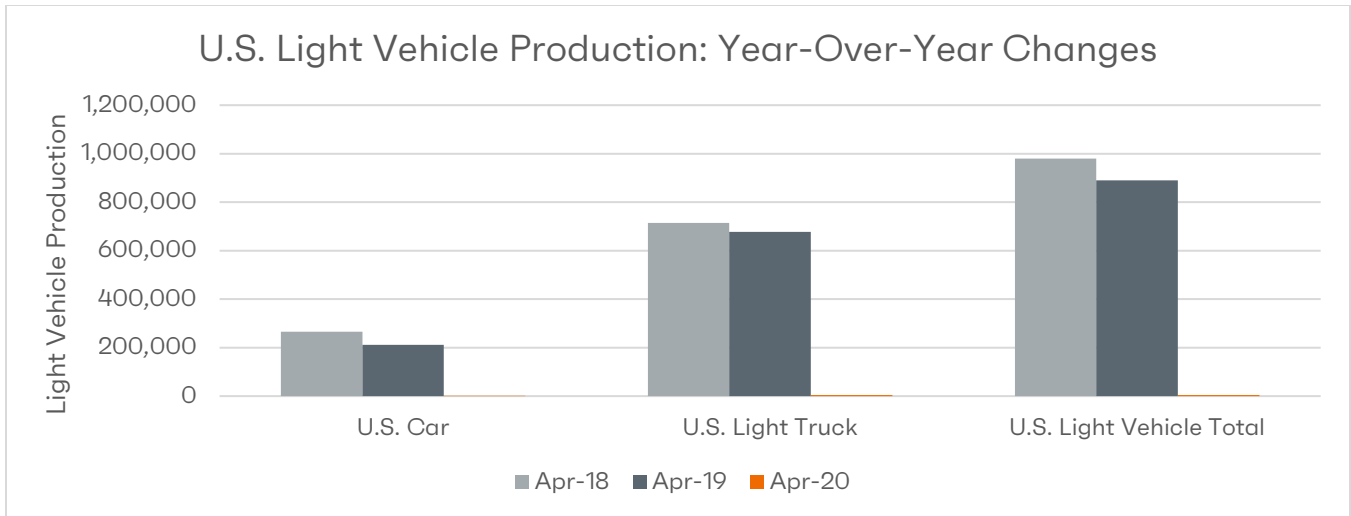


Production Meter

U.S. Light Vehicle Production^{xxii} (Updated 5/20)

U.S. Light vehicle production dropped 99.47% year-over-year in April. Only General Motors, Mercedes-Benz and Hyundai produced any vehicles in the U.S. during the month, for a light vehicle total of less than 5,000 (897 cars; 3,844 light trucks).

“North America light-vehicle production shrank 99.4% to 8,463 units in April, with most plants closed the entire month to slow the spread of the coronavirus. . . . Closures in the region began at the end of March, leaving the year-to-date tally down 32.2% at 3,772,027 LVs. It was the lowest 4-month total since 2009’s 2,341,925.”



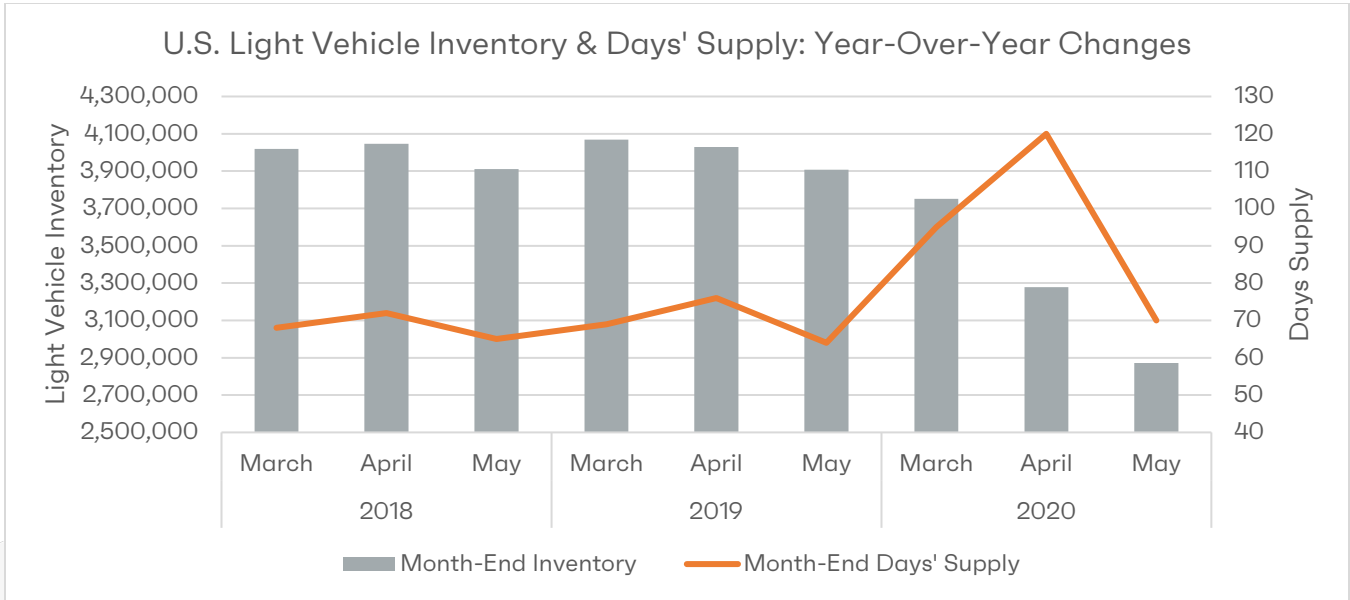
U.S. Light Vehicle Inventory and Days' Supply^{xxiii} (Updated 5/27)

May Inventory Update: “A consequence of stronger sales is that inventory will dry up faster than expected while manufacturers struggle to ramp-up production after a nearly complete shutdown of all North American operations in April.

“Thanks to the higher sales, combined with a drawdown in expectations of production for the U.S. market, Wards Intelligence expects inventory to end May at 2.87 million units, 26% below like-2019. In general, that should be enough to meet demand in June, but dealers will start experiencing more shortages on individual vehicles as they head into the month.

“Demand in June should rise from May. How strong could depend on the whiplash effect of more consumers being able to get out of total isolation and purchasing goods and services they denied themselves or had to put off while in lockdown. Even better weather could induce more optimism in the economy.

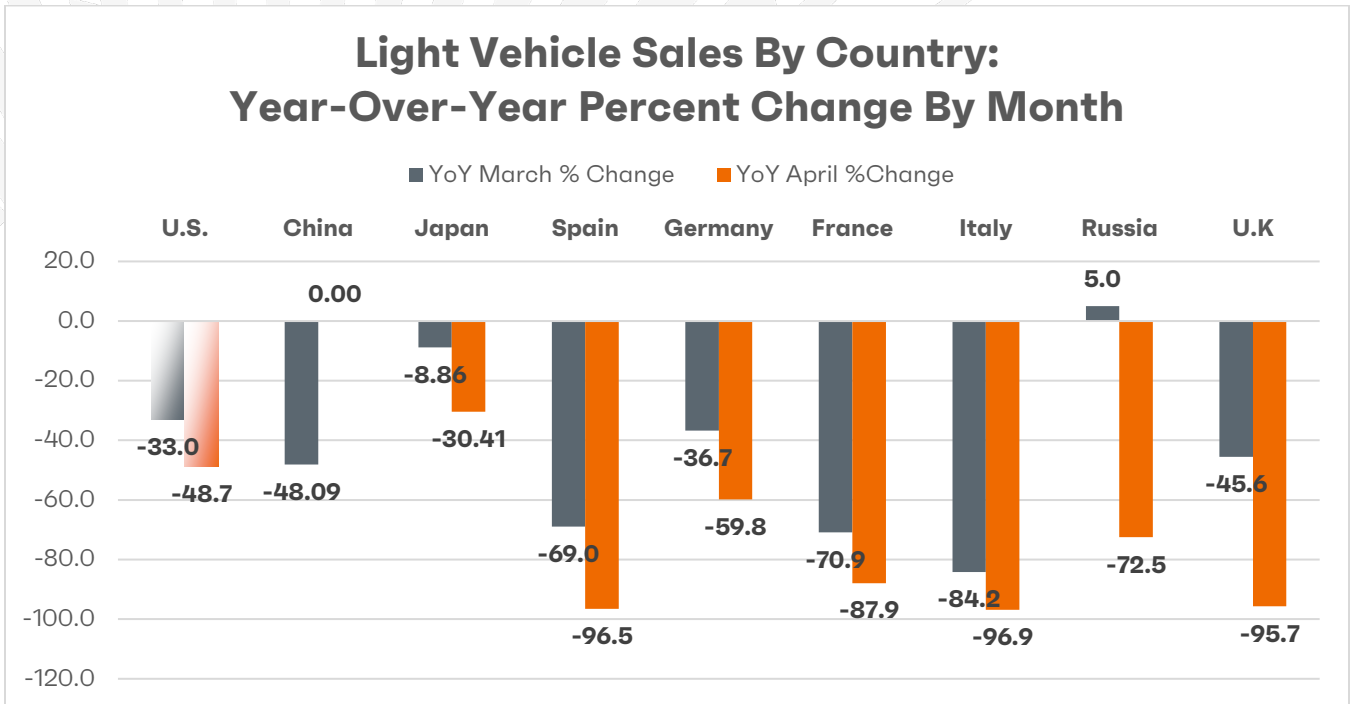
“On the downside, tighter inventory, and the prospect of not getting voids filled in the near-term, could put a damper on the rebound, and perhaps even get some automakers to temporarily cut back on incentives.”

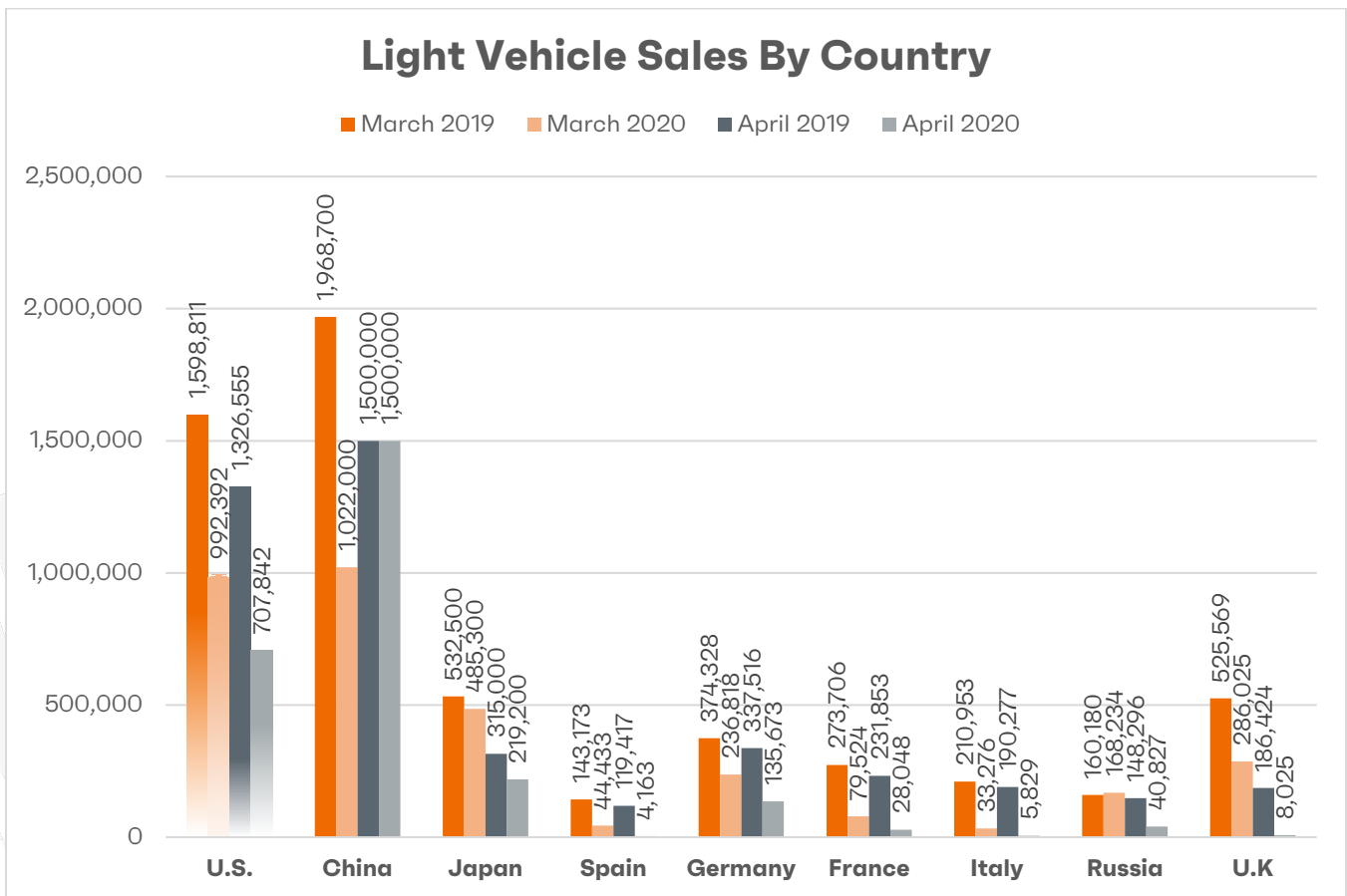


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Global Meter (New 5/28)

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





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- ⁱⁱⁱ Haig Stoddard, “COVID-19’s Toll on North America Vehicle Production in March, Q2,” *WardsIntelligence*, 3/30/20
- ^{iv} Haig Stoddard, “U.S. Sales Outlook Brightens Slightly for 2020-2021 But Still a Lot of Uncertainty as to How the Recovery Ultimately Plays Out,” *WardsIntelligence*, 5/18/20
- ^v IHS Markit, “North America Production Update Short-term implications of COVID-19,” 5/18/2020
- ^{vi} J.D. Power, Presentation, “COVID-19: J.D. Power Auto Industry Impact Report,” 5/28/20
- ^{vii} WardsIntelligence, “U.S. Light Vehicle Sales, April 2020,” 5/1/20; WardsIntelligence, “U.S. Light Vehicle Sales, April 2018, 5/1/18
- ^{viii} J.D. Power, Presentation, “COVID-19: J.D. Power Auto Industry Impact Report,” 5/6/20
- ^{ix} Haig Stoddard, “U.S. Light-Vehicle Sales Start on the Road Back in May,” *WardsIntelligence*, 5/21/20
- ^x WardsIntelligence, U.S. Light Vehicle Sales, January 2013 – December 2019
- ^{xi} U.S. Energy Information Administration, Weekly Retail Gasoline and Diesel Prices, Regular price per gallon, including taxes
- ^{xii} WardsIntelligence, Fuel Economy Index, December 2013 & 2019
- ^{xiii} U.S. Energy Information Administration, Press Release, “Short-Term Energy Outlook,” 4/7/20
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- ^{xviii} J.D. Power, Presentation, “COVID-19: J.D. Power Auto Industry Impact Report,” 5/28/20
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- ^{xxii} Sarah Petit, “North America Light-Vehicle Production All But Stopped in April,” *WardsIntelligence*, 5/19/2020
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