



Automotive Industry Weekly Digest

08-19 February 2021





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[OEM Highlights] VW to develop autonomous vehicle technology in-house, wants to buy chips directly to beat shortage

IHS Markit perspective

Implications	The head of the VW Group's volume premium brand Audi, Markus Duesmann, has said the company will look to make the majority of its AV technology in-house while not ruling out collaborations, and it is also looking at sourcing its own semi-conductors.
Outlook	While VW is sensibly not ruling out collaborations with tech companies or with other OEMs, it will look to develop the majority of its AV technology in house in order to retain its own IP and proprietary technology.

The Volkswagen (VW) Group plans to develop software required for operating autonomous vehicles (AVs) in-house, reports *Automotive News Europe (ANE)*. The company is not ruling out partnerships with external companies on some aspects, but clearly wants to develop the majority of the software on its own. Markus Duesmann, head of VW's luxury unit Audi, said, "We'll make the bulk of the software on our own in the future". The automaker is targeting Waymo as a benchmark in software development. Duesmann also indicated that VW, being the world's second-largest automaker, is in a position to create new standards for software development, and is open to other companies joining those efforts. Duesmann added, "We have a size that makes us want to cooperate with ourselves initially".

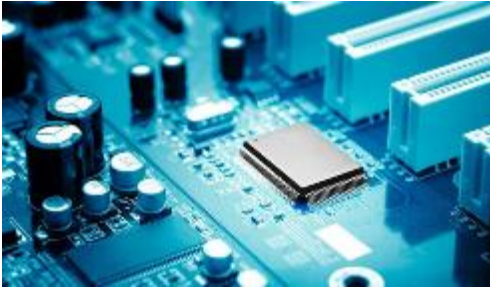


VW is also looking at alternative ways of tackling the current shortage of automotive chips and semiconductors by making direct purchases itself, instead of procuring them through existing suppliers. A Reuters report quoted a VW executive, who declined to be named, as stating, "We are thinking about entering direct contractual relationships," The executive added, "The industry will have to react due to the significance of semiconductors with regard to vehicles today." Global OEMs have been left dealing with major supply chain and production issues as a result of semiconductor supply shortages. This is largely the result of semiconductor manufacturers repurposing production and refocusing supply on items for which demand actually grew during the coronavirus disease 2019 (COVID-19) virus pandemic such as laptop computers, and away from the automotive space where demand fell. The OEMs and chip suppliers have been caught out by the faster-than-anticipated recovery in demand with VW first announcing in early December that it had an issue with semiconductor supply, and other manufacturers around the world following suit at the beginning of this year.

Outlook and implications



VW is opting for a different approach in developing its autonomous software in-house as automakers around the world partner with leading tech companies to achieve economies of scale and reduce development costs. VW has formed a new division called Car.Software, which employs more than 5,000 "digital experts", with an intention to create its own operating system and invest in its own cloud computing centre. The division aims to increase VW's in-house software development from the current 10% to 60% by 2025. Recently, Car.Software acquired the front camera software business from Hella to enhance its capability, expertise and access to hardware for its future AV technology offering.



The idea of sourcing semiconductors directly means that VW will look to cut suppliers such as Bosch and Continental out of its supply chain for the components.

VW has reportedly already had discussions with both companies over suing for damages regarding their inability to manage the situation and supply VW with what it needs. VW expects chip supplies to remain tight during the first quarter, but recover in the second. It aims to make up for delayed production in the second half of the year. One potential solution is for automakers to build up more inventory of semiconductors. This goes against the usual just-in-time (JIT) production methods that are commonly used across modern vehicle production lines, but such a strategy would be aided by the fact that semiconductors and chips are relatively small and do not take up a lot of physical space in comparison to other automotive components. The VW Group's LV production is set to climb from a COVID-19-hit 8.67 million units in 2020 to 10.02 million units in 2021. For a full assessment of VW's and other OEMs' global production disruption as result of the semiconductor shortage.



[EV Highlights] SAIC-GM-Wuling's small EVs gain popularity among Chinese consumers; BAIC posts EV sales slump in 2020

IHS Markit perspective

Implications With the Hongguang Mini EV becoming an instant hit in the EV market, a number of automakers, mostly Chinese OEMs, have rolled out their A-segment mini-size models in the market. Model such as the R1 from Great Wall Motor's Ora brand, the Clever EV from SAIC's Roewe brand, and the E300 from SGMW's Baojun brand are some of the best-selling nameplates among recent launches in the segment.

Outlook During 2020, production volumes of passenger BEVs in China increased 9.4% to 991,000 units. Rising demand for mini-sized models has contributed to the expansion.

SAIC-GM-Wuling (SGMW), General Motors' (GM) Chinese joint venture (JV) with SAIC Motor Corp and Wuling Motors, has announced that cumulative sales of its mini-sized electric vehicles (EVs) reached over 300,000 units as of 29 January. Meanwhile, BAIC Motor has announced that it sold 25,914 EVs in 2020, a decline of 83% year on year (y/y).

SGMW's total sales of mini-EVs, which the automaker refers to as Global Small Electric Vehicles (GSEVs), include sales volumes of the Wuling Hongguang Mini EV, Baojun E300, Baojun E200, and Baojun E100. In 2020, the combined sales of SGMW's GSEV product lines totalled 174,005 units. SGMW does not release model-level sales data. However, according to data from the China Association of Automobile Manufacturers (CAAM), the Wuling Hongguang Mini EV, a mini-sized two-door battery electric vehicle (BEV), has been leading the sales of A-segment BEVs in the Chinese market, with a total of 127,651 units during 2020. Given the model only went on sale in July last year, an average monthly sales of more than 20,000 units already shows the model's popularity in the entry-level EV market.



Meanwhile, BAIC Motor announced EV sales of 25,914 units last year, a decline of 83% from 150,601 units in 2019. The automaker is expected to report a net loss of up to CNY6.5 billion (USD1.01 billion) in 2020, compared with a net profit of CNY92 million in 2019. Reduced government subsidies on BEVs, shrinking demand for EVs from fleet and public-sector buyers, and increased research-and-development (R&D) spending to support the launch of new models are mentioned as factors that contributed to the company's deteriorating financial performance. In October 2020, BAIC began sales of the Alpha-T, the first model from its premium EV brand, Arcfox. According to CAAM data, 1,605 units of the Alpha-T were sold in China last year, including 422 units sold in December.



Outlook and implications

With the Hongguang Mini EV becoming an instant hit in the EV market, a number of automakers, mostly Chinese OEMs, have rolled out their A-segment models in the market. Model such as the R1 from Great Wall Motor's Ora brand, the Clever EV from SAIC's Roewe brand, and the E300 from SGMW's Baojun brand are some of the best-selling nameplates among the recent launches in the segment. Surging demand for new EV products such as the Tesla Model 3 and the Wuling Hongguang Mini EV also reflect heightened competition in the EV market. Automakers such as BAIC Motor, which used to enjoy a leadership position in the EV space, are losing their market shares to newcomers with appealing new products. During 2020, production volumes of passenger BEVs in China increased 9.4% to 991,000 units. Rising demand for mini-sized models has contributed to the expansion.

According to IHS Markit's January forecasts on China's new energy vehicle (NEV) market, production volumes of passenger BEVs are expected to reach 1.74 million units this year and then increase to 2.35 million units in 2022 and 3.12 million units in 2023. Through 2023, IHS Markit still expects the D segment to remain the highest-sales-volume segment in the Chinese EV market. The success of the Hongguang Mini EV has lured more automakers to the A-segment of the EV market with their products. However, we do not expect the segment to become a key driver of the Chinese EV market as consumers buying such types of vehicles tend to be highly price-sensitive and lack brand loyalty. The EV market share of D-segment mid-sized EVs is expected to reach around 45% in 2023, while the market shares of C-segment compact EVs and A segment mini-sized EVs are forecasted to reach around 26% and 13% respectively in 2023. As the EV market grows, A-segment vehicles are expected to contribute an even smaller share to the market, with a share of 10.5% forecast in 2025.



[Sales Highlights] US automotive industry experiences strong demand in January 2021

IHS Markit perspective

Implications	January 2021 had one fewer selling day than in 2020, and the year started with a 3.3% y/y volume decline. However, with a SAAR estimated to be in the range of 16.6–16.8 million units in January, the pace of sales is set to match pre-COVID-19 virus levels.
Outlook	January's automotive demand presented a tremendous start to the new year. The sales pace for the month will come close to matching pre-COVID-19 virus levels (16.9 million units in January 2020) and the best monthly performance of the auto demand recovery since March 2020. The result is even more impressive given the potential headwinds from vehicle inventory concerns, semiconductor supply issues, the political unrest, still-wavering economic conditions as a result of the pandemic, and still-recessed levels of the total fleet sales volume. Some of these pitfalls remain prevalent and point to the potential for some volatility in the monthly results ahead.

Quarterly reporting

Along with the General Motors and Fiat Chrysler Automobiles, Audi, BMW, Daimler, Nissan, Porsche, and Volkswagen have shifted to quarterly reporting for US sales. Monthly results for these automakers and monthly industry totals are estimated. In addition, at the time of writing, Ford's results are estimated as the company will report on 4 January.

US light-vehicle sales

	2021	2020	% change
January	1,109,578	1,147,458	-3.3
Year to date	1,109,578	1,147,458	-3.3

Source: OEM reporting and estimated industry sources

General Motors (GM) remained the top-selling automaker in the United States and its sales are estimated to have fallen in January 2021 by 2.8% year on year (y/y), a bit lower than the industry decline. Buick experienced a y/y sales improvement in January, up by 2.1% to 11,946 units. Continuing on from 2020, the Encore GX and Encore entry model duo sold fewer units in January 2021 than the Encore did alone in January 2020, although this year the Envision experienced a sales improvement along with the Enclave, both of which received the 2022 model year (MY) updates. Cadillac sales also improved at the start of 2021, by 2.3%, assisted by the availability of an all-new Escalade, with its sales improving by 44.5% compared with January 2020. Sales of the CT5 outpaced those of the CTS in January 2020, and the ATS had been ended earlier so the CT4 volume, all 720 units, was essentially incremental. Cadillac car sales improved by 24.5% y/y, although utility vehicle sales were down by 1.8%. GM's high-volume brand, however, experienced declines last month. Chevrolet sales dropped by 6.0%, with car sales down by 4.6% and truck sales down by 6.3%. The Corvette's sales jumped, but the Blazer, Equinox, and Silverado all experienced double-digit declines, while the TrailBlazer's volume offset the Trax's decline but did not raise the volume overall. The all-new Tahoe's sales increased, although the Suburban dropped. GMC, the company's other US high-volume brand, experienced a sales increase of 5.9% y/y. All models, except the aging Savana van and the Terrain, posted sales improvements in January.



Toyota Motor North America (TMNA) experienced a slight sales increase in January 2021 compared with January 2020, up by 0.6%, holding its edge over Ford. Lexus sales improved by 2.1% while the Toyota brand's sales were up by 0.4%. With the new IS available, Lexus car sales improved by 7.6% y/y. Utility vehicle sales were mixed, with the best-selling RX down by 0.6% but the NX up by 6.6%. The B-segment UX's sales dropped by 28% y/y. At Toyota, the January decline was centred on poor car performance; the brand's car sales dropped by 18.2% compared with January 2020, while truck sales improved by 11.8%. The key Camry and Corolla entries took double-digit declines of 14.9% and 19.7%, respectively. Sales of the RAV4 also slipped a bit in January (down by 7.1%), although it remained Toyota's highest-volume product. In January 2021, the new-generation Sienna experienced a 74.2% improvement and the Venza added 3,375 units. The 4Runner also sold 4,044 units higher than in January 2020. Despite the decline in passenger car sales, Toyota has said that it is committed to serving these segments. The Camry and Corolla combined accounted for nearly 86% of Toyota-brand car sales in January 2021 and 26.7% of total sales.

Ford sales in January are estimated to have fallen by 8.6%, among the steepest decline in the top-tier OEMs. The Ford brand experienced a sales drop of 8.4% in January 2021, while the Lincoln brand declined by 12.2%. In general, the automaker has been benefitting from strong truck sales, the addition of the Ranger, and improvements in the new-generation Explorer, although in January 2021 it was also affected by the loss of the Fusion sedan and a sales decline of the F-Series. In January 2021, the Bronco Sport arrived, and increased Ford's C-segment utility sales with its platform mate Escape. The Bronco Sport sold 8,050 units; despite the Escape's decline of 20% to 11,190 units, the combination exceeded the Escape's volume of 14,134 units in January 2020. Ford expects that its components sharing and careful product development will ensure both models maximise profitability. The Expedition may be seeing some effects from GM's new full-size utilities, and its sales in January fell by 22.8% y/y. Lincoln experienced lower volume in January 2021, in part because of the loss of the MKZ and Continental sedans, as well as a sales decline of the Aviator. Lincoln's utility vehicle sales were down by 0.4% y/y in January 2021, which suggests that the brand may find challenges in converting its sedan owners into utility owners.



In January, Fiat Chrysler Automobiles (FCA) completed its merger with PSA, creating new automaker **Stellantis**. Overall, Stellantis sales were flat in January 2021, down by 0.7%. Jeep remained Stellantis's highest-volume brand, with sales down by 4.5%. The declines were due to the Compass and Grand Cherokee, but with four new products arriving in 2021, the outlook is bright for Jeep. Jeep will add the Wagoneer and Grand Wagoneer, creating opportunity in a new segment, and launch an all-new Grand Cherokee and a three-row version called the Grand Cherokee L. Ram sales improved by 16.0% y/y in January, with a 14.9% improvement in the pick-up segment. The Chrysler brand also improved by 57%, as the Pacifica has added the Voyager variant and the Dodge Caravan was discontinued. Sales of the 300 improved by 2.7% y/y as well. Dodge sales dropped by 34% in January 2021, with most of these declines a result of the discontinued Caravan, slumping Durango sales, and the process of discontinuing the Journey. Sales of the Charger improved by 50% and exceeded the Challenger in January 2021. Alfa Romeo started 2021 with a 3.7% y/y increase in volume; its Stelvio utility experienced a volume improvement,



while sales of the Giulia sedan declined. Fiat sold only 231 units January 2021; with the model line being pared back to only the 500X, low sales are likely to continue.

American Honda reported a 9.2% y/y decline in January 2021 sales. Honda-brand sales fell by 9.4%, with car sales down by 19.2% and truck sales down by 2.0%. The CR-V was Honda's best-selling product and continued to distance itself from the second-place Civic (down by 22.8% y/y). The Accord continues to fall further behind as well, by 11.7% in January 2021. An all-new Civic is expected in mid-2021, with potential for model changeover to exacerbate declines this year. In addition, Honda is dropping the Fit, which will take a further toll on car sales. Acura sales dropped across the line-up and were down by 7.9% y/y. Acura's latest MDX will arrive at dealers in February 2021. The MDX's volume declined by 4.5% y/y in January 2021. An all-new TLX arrived in September 2020, but the model line dropped by 25.8% overall in January 2021.

Combined sales of **Hyundai, Genesis, and Kia** started 2021 with forward momentum; the group's sales improved by 7.9% y/y in January. The Hyundai brand's sales were up by 1.5% y/y, with Genesis up by 101% thanks to the new GV80, which outsold all three of its cars combined during the month. Kia sales improved by 11.4% y/y, with improving sales of the Forte compact car. However, the Seltos subcompact utility accounted for most of the brand's volume improvement. At Hyundai, car sales fell across the board, dropping by 14.5% compared with January 2021. On the utility vehicle side, all but the Tucson improved and Hyundai truck sales were up by 12.0%.



Nissan continued to struggle, and its sales dropped by 11.9% y/y in January 2021. The automaker's efforts to right itself after years of reliance on fleet sales and incentives were slowed by the coronavirus disease 2019 (COVID-19) virus pandemic and continued changes in management, although the January decline was less steep than its recent performance. Nissan-brand sales dropped by 7.7% y/y, with car sales up by 1.4% and light trucks down by 12.7%. Sales of the Versa and Sentra improved significantly last month. Nissan's all-new Rogue is a compelling package and might experience some of its earlier strong segment performance in 2021. In January, volume improved by 3.5%. Infiniti sales dropped by 43.5% in January 2021 compared with the same month of 2020, although QX50 sales increased by 22.5%, bucking the brand's trend. Under its new leadership, Infiniti's future path is being reshaped. This process could contribute to a difficult performance in the short term. However, there is opportunity for Infiniti sales to improve later in 2021, as the product range will receive the addition of the QX55 and the automaker's top-selling QX60 will have a new generation launched.

Subaru is generally a strong performer but started 2021 with sales even with January 2020 (up by 0.2%). Sales of the Legacy, Impreza, and Ascent declined, although the Crosstrek and the Outback wagon improved. Subaru truck sales improved by 5.3% owing to the Crosstrek, while car sales dropped by 6.8% y/y.

At the **Volkswagen (VW) Group**, overall sales dropped by 1.0% compared with a year earlier. Audi sales improved by 2.6% y/y, owing to gains from utility vehicles, which improved by 8.6%. However, its car sales fell by 8.8%. The



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Q5 is Audi's most significant US product, and sales improved by 27.4% during the month to 4,541 units; next was the Q3 with sales of 2,799 units. Porsche sales were steady, falling only by 0.7% y/y in January 2021. The electric Taycan continued to improve, while sales of the Panamera dropped by nearly 75%. Most volumes of the brand came from utilities, and Macan sales gained 14.4%. VW-brand US sales dropped by 3.2% in January 2021, despite the addition of the Atlas Cross Sport. In January 2021, the brand's car sales were down by 23.9% and truck sales were up by 15.3%. In 2021, VW will be focused on the launch of the ID.4 electric vehicle (EV), although it will also launch a new subcompact crossover utility vehicle (CUV) called the Taos, while the Golf is being trimmed back to two versions in the US.

US light-vehicle sales by top OEMs						
Group	Jan-21	Jan-19	% change	YTD 2021	YTD 2020	% change
General Motors*	201,954	180,885	11.6	201,954	180,885	11.6
Toyota	167,936	166,973	0.6	167,936	166,973	0.6
Ford*	142,577	156,041	-8.8	142,577	156,041	-8.8
Stellantis*	134,942	135,659	-0.7	134,942	135,659	-0.7
Honda	92,225	101,625	-9.2	92,225	101,625	-9.2
Hyundai-Kia	91,182	84,498	7.9	91,182	84,498	7.9
Nissan*	71,081	80,898	-11.9	71,081	80,898	-11.9
Subaru	48,400	46,265	0.2	46,400	46,265	0.2
Volkswagen Group*	44,953	45,402	-1.0	44,953	45,402	-1.0

Source: OEM reporting and IHS Markit industry sources. ©2021 IHS Markit

Outlook and implications

With a seasonally adjusted annual rate (SAAR) estimated at 16.6–16.8 million units at the time of writing, January's automotive demand presented a tremendous start to the new year. The sales pace for the month will come close to matching pre-COVID-19 virus levels (16.9 million units in January 2020) and would certainly be the best monthly performance of the auto demand recovery since March 2020. The result is even more impressive given the potential headwinds from vehicle inventory concerns, semiconductor supply issues, the political unrest, still-wavering economic conditions as a result of the pandemic, and still-recessed levels of the total fleet sales volume. Some of these pitfalls remain prevalent and point to the potential for some volatility in the monthly results ahead.

IHS Markit expects continued growth in auto demand levels in 2021, supported by sustained economic development from vaccinations and economic stimulus. We project US sales volume to reach 16.14 million units in 2021, up by an estimated 10.6% from the estimated 2020 level of 14.59 million units.



There were 24 selling days this January, one fewer than a year ago. On a unit volume level, approximately 1.10 million light vehicles were sold, an estimated 3.3% decline from year-ago levels. With a volume decline, despite the high SAAR demand rating, OEM results were mixed. GM experienced the strongest y/y improvement in January, while Nissan continued to struggle.



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Stock management will continue to be an important variable moving through the immediate forecast horizon. Although North American vehicle production schedules were expected to begin the year at nearly full capacity, the ongoing assessment of semiconductor shortages could prolong the vehicle supply recovery trajectory. While OEM results were mixed, the month-end January inventory levels as reported by AutoData at the time of writing did reflect some of the production push initially expected for the year. Compared with the end of December, January 2021 industry inventory was up by approximately 65,400 units. The days' supply reading at the end of January was 59 days' supply, up from a 46 days' supply level at the end of December and still down meaningfully from the 76 days' supply from a year ago.



[Supplier Trends and Highlights] Teijin, Applied EV develop new structural shell for autonomous EV platform

Shell enables reduction in weight and manufacturing complexity of the vehicle



Source: Getty Images/ gorodenkoff

Teijin and Applied EV have developed a new production-ready one-piece structural shell for Applied EV's zero-emission robotic vehicle platform, the Blanc Robot, Teijin announced in a press release on 2 February. Teijin said that the shell is a key component and enables AEV to significantly reduce the weight and manufacturing complexity of the vehicle, enabling AEV to achieve low mass, high-energy efficiency, and excellent structural performance.

“We expect our collaboration with Applied EV to help meet important needs in society by offering new solutions for automotive applications based on advanced materials and structural design required in next-generation EVs,” said Toshiaki Hotaka, general manager, Mobility Division, Teijin Limited. “Aiming to become a company that supports the society of the future, we have designated environmental value solutions as one of Teijin's priority fields for contributing to circular economies and sustainability.”

Outlook and implications

The Blanc Robot is a programmable, autonomous electric vehicle (EV) platform, designed, and engineered by Applied EV. It can integrate with many autonomous systems, carry a range of vehicle bodies and serve many purposes, including industrial, delivery and surveillance applications. Teijin and Applied EV are continuing to work together to further utilize Teijin lightweight material technologies for a range of other components, including structural elements, glazing, and exterior body panels for use in production EVs in the latter half of 2022.

The Blanc Robot's shell, or top cover, is the largest single component on the vehicle, measuring about four square meters in total. It is made from lightweight, high-strength and highly-rigid GF-SMC and molding technology provided by Continental Structural Plastics Holdings Corporation (CSP), the Teijin Group's core automotive-composites business. CSP's proprietary GF-SMC enables the Blanc Robot's shell to weigh around 20% less than an similar aluminum component and significantly simplify the manufacturing process, according to the company.



[GSP] ASEAN Sales and Production Commentary -2021.01

ASEAN sales

December 2020: +0.7%; 303,600 units vs. 301,442 units

YTD 2020: -27.9%; 2,439,444 units vs. 3,383,241 units

- Light vehicle sales in the Association of Southeast Asian Nations (ASEAN) recorded around 304,000 units in December 2020, a slight increase of 0.7% compared with December 2019. For full-year 2020, the ASEAN market decreased 28.0%, to around 2.44 million units. The ASEAN market will likely increase 15.0%, to 2.80 million units in 2021.
- Thai light vehicle sales in December 2020 increased 17.7% year on year (y/y) and 32.6% month on month (m/m), to about 102,700 units. December sales numbers include quarterly luxury brand sales, which are now compiled and reported only in the last month of each quarter. Even though there was a new wave of infections spreading locally, with limited local transmissions of new COVID-19 cases at the beginning of December when the 2020 Motor Expo was held, the negative impact to automotive sales was still minimal. Thailand has been under a state of emergency since late March 2020 until at the time of writing. As of 17 January 2021, the country had 12,054 cases of COVID-19 and 70 deaths. In December, Thai consumer confidence declined for the first time in three months to a five-month low amid increasing new local daily COVID-19 cases. The COVID-19 pandemic has hurt the Thai economy by dampening the country's two main earning sectors—tourism and export—amid the global economic recession. Thailand's third-quarter 2020 GDP dropped 6.4% y/y, improving from -12.1% y/y in the previous quarter. Its 2020 GDP is expected to have been -6.14% y/y. In 2021, the Thai economy should grow 3.76% or slightly lower amid the new wave of infections in the country and the decline in consumer confidence.



- Vehicle sales during January–December 2020 reached 772,800 units, for a 21.6% y/y decline. During April and May, automotive demand was hurt the most by strict containment measures and the sudden disruptions to demand and supply. As the pandemic has come under control since late second quarter 2020 and with pent-up demand during lockdowns, automotive sales momentum improved during June–December, supported by a quick recovery in demand in the pickup truck segment. Unemployment in big cities has forced people to return home to small towns to start small local businesses using pickups for operation, and the fast-growing e-commerce business and in-home delivery service have also supported pickup demand. In addition, the long-delayed 2020 Motor Show in July and the 2020 Motor Expo in December were successfully held, which significantly boosted automotive bookings and sales. The automotive sales pace will likely be slower in the first quarter of 2021. In addition to rising COVID-19 cases and declining consumer confidence, other risks include further income losses in those high-risk areas due to increasingly strict measures and a second wave of labor layoffs—especially in the tourism sector, which now bears high costs but has lost tremendous income for more months from a lack of foreign tourists. The first lot of COVID-19 vaccines (200,000 doses) should arrive in February, and a big lot of 26 million doses will arrive in May.
- In the short term, even as the effects of the COVID-19 virus will continue pressuring the economy, businesses, and consumer behaviors, IHS Markit expects expedited sales growth during 2021–23 because



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of the low base in 2020. Sales should also be supported by the new elections, urban expansion after the completion of the megaproject on public transportation, and substantial overseas investments to join the Eastern Economic Corridor (EEC)—Thailand's new flagship economic zone. Urban expansion will continue, especially in cities that are bordering provinces that have gained free-trade and labor opportunities after the creation of the ASEAN Economic Community. The government's automotive policy supporting the eco-car program and the electric vehicle (EV) scheme will likely contribute to Thai market demand in the short and long terms. OEMs that successfully join the scheme will reap benefits in terms of reduced import tariffs on machinery, raw material privileges, and corporate income tax exemptions in return for local production of hybrid electric vehicles (HEVs), plug-in hybrid electric vehicles (PHEVs), battery-electric vehicles (BEVs), and EV components. In the longer term, IHS Markit forecasts the automotive industry will grow at a slower pace as penetration levels and public transportation—especially the Skytrain in Bangkok—expand. In addition, there are more concerns about limited roads, high traffic congestion in big cities, and the growing number of alternative services for car sharing—Uber and GrabTaxi will be threats in the future.



- Indonesian car sales in December 2020 increased 6.0% m/m, to around 53,000 units, the highest monthly sales after a state of emergency was imposed in Jakarta around March to April 2020, thanks in part to higher consumer confidence. It was the strongest level since April 2020 and nearly brought optimism as consumer sentiment improved on the current economic conditions, driven by a better perception of job availability and income, including punctual purchases of durable goods, as well as future economic conditions. The fifth policy rate reduction in November 2020 might have spurred automotive demand through the end of the year. Furthermore, OEMs made a lot of efforts during the pandemic to stimulate year-end purchases, such as various attractive sales and aftersales programs, including mobile service programs that made purchasing easier for customers. In a year-on-year comparison, the market declined 34.0% because consumer purchasing power still had not returned to pre-pandemic levels from faltering economic performance and the increasing unemployment rate during the COVID-19 virus outbreak. For full-year 2020, Indonesian light vehicle sales closed around 0.50 million units, or a 47.0% y/y decrease. The main factor influencing the contraction was the worst domestic economy, including slow export performance, a decrease in tourism industry revenue due to the loss of tourists, and a decline of consumer spending because of income and job losses. Following increases in COVID-19 cases, Jakarta and nearby areas declared large-scale social restrictions until 4 June to curb the spread of the virus. Therefore, Indonesia's 2020 GDP should have declined around 2.42% y/y. To balance between public health safety and economic reality, the Jakarta governor allowed most activities with 50% capacity since 5 June. However, the Jakarta administration decided to reimpose large-scale social restrictions from 14 September until 11 October because of the continuously increasing number of daily new COVID-19 cases and the decreasing number of free hospital beds. Starting on 12 October until the end of the year, Jakarta had returned to relaxed large-scale social restrictions after the number of new cases became more stable. Indonesian light vehicle sales in 2021 will likely reach 0.69 million units, or a 37.0% y/y increase, thanks to government stimulus packages provided to counter the further impact of the pandemic; more crucial model launches in popular segments to attract consumers' interest; the vaccination program against COVID-19 (the country started mass vaccinations in the third week of January 2021, and the two-dose vaccine will be free for all Indonesian citizens, to boost consumer confidence and spur the economy); and the corporate income tax



cut since 2020 to attract investment and create more jobs. In the short-to-medium term, Indonesian car sales should continue to rise owing to robust demand, product refreshments, expectations of a further corporate tax cut, and public infrastructure improvement. For the longer term, the market should grow from a rising middle class. Considering the penetration rate is still low in the country, there remain plenty of opportunities for further growth in the years ahead. However, mass rapid transit (MRT) programs may result in consumers prolonging the decision to buy a new car, since MRT can accommodate many people at the same time through business areas that currently face severe traffic jams.

ASEAN production

December 2020: -8.5%; 277,889 units vs. 303,582 units

YTD 2020: -31.5%; 2,771,808 units vs. 4,045,314 units

- Light vehicle production in the Association of Southeast Asian Nations (ASEAN) region fell 8.5% year on year (y/y) in December 2020 with 277,889 units, while full-year production marked a historic contraction of 31.5% y/y with 2.77 million units largely owing to the COVID-19 global pandemic crisis. In the January 2021 forecast update, ASEAN's light production for full-year 2021 was slightly revised down by 10,400 units to reach 3.33 million units, maintaining the recovery pace with growth of 20.4% y/y. The production cut was mainly due to the weakening market outlook amid the new wave of COVID-19 infections in key production markets including Thailand and Malaysia since late December 2020, as well as the surging daily new cases in Indonesia. Moreover, the ASEAN production forecast for first quarter 2021 reflects the impact of the global semiconductor supply shortage. OEMs have adjusted their production volumes to tackle the risk of potential disruptions, whereas the supply chain recovery will remain the big concern for the production outlook through the second half of the year.

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[VIP ASSET] IHS Markit Special Report: Managing the 2021 automotive chip famine



As part of our continuing research and analysis on the **chip shortage** and its impact on **vehicle production** within the global auto industry, the Automotive Supply Chain and Technology team at IHS Markit recently completed the attached comprehensive analysis on the issue.

While we traditionally don't share this type of detail on a regular basis, given the widespread interest in the issue, we're happy to provide the report as background for your teams as you continue to cover this topic as it evolves.

Highlights in this report include:

- Global light vehicle production impact of 672,000 units anticipated in Q1, 2021; China most impacted at nearly 250,000 units
- Ongoing impacts into Q3, 2021
- Microcontroller Unit (MCU) lead times are 26 weeks or greater
- Taiwan Semiconductor Manufacturing Company (TSMC) manufactures roughly 70% of all automotive MCUs shipping today, creating a bottleneck across the industry
- Collaboration between OEMs and the semiconductor supply chain will be necessary to manage the situation in the coming weeks and months

“Because the cause of these constraints is the result of increasing demand from OEMs and limited supply of semiconductors, it will not be resolved until both forces are aligned. If the cause was a natural disaster, then the supply chain would respond with the appropriate recovery plans and while that would still take months or quarters to implement, plans already exist. This is a case of balancing supply and demand and with microcontroller unit (MCU) lead times being 26 weeks or longer, the supply chain constraints will likely persist until at least the third quarter of this year,” said Phil Amsrud, senior principal analyst-ADAS, Semiconductors and Components, IHS Markit.

Our analysts are also on standby for additional questions you may have, and we're continuing to monitor the situation from all aspects of the supply chain as the situation evolves.

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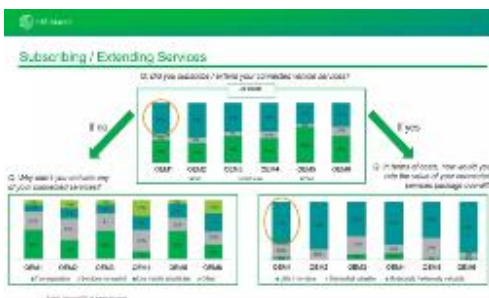


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[VIP ASSET] Connected Car Index

With the internet-of-things and an always-online lifestyle becoming a defining part of people’s lives globally, connectivity-services have shifted from “nice-to-have” to becoming a strategic priority for future-success of automakers.

The smartphone eco-system has shifted consumer’s expectations, meaning that it is no-longer sufficient for OEMs to offer just a market-competitive telematics features, but to also ensure that essential business-processes such as enrollment and frontend application-interfaces are up to par with what the user experiences outside of the automotive realm. IHS Markit has defined a unique indexing methodology, to help OEMs regularly and subjectively measure the health of their connected-services offering in relation to the best in the industry. Through a combination of surveying users of connected-services from a range of volume and premium OEMs globally, analysis of in-vehicle and remote digital interfaces, and qualitative evaluation of connected-service feature and business-process implementation, we can provide an easy-to-digest evaluation report supported by a full-index database with concrete recommendations to help our clients to improve their end-to-end connectivity service offering to ensure success for the future.





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[Webinar] CES 2021 Roundup



Due to the COVID-19 pandemic, the CES 2021 was held as a virtual event from 11 to 14 January and saw participation from multiple major automotive OEMs, suppliers, and startups. Despite the lack of a physical presence in Las Vegas, key announcements grabbed headlines ranging from the automotive industry's focus on 5G, new electronic architectures, the latest display technology, next-generation electrification, and more.

Automaker announcements were a particular highlight this year. General Motors showcased its new all-electric vehicle (EV), the Cadillac CELESTIQ, which featured all-wheel drive (AWD), four-wheel steering, and a full-glass roof made of a four-quadrant, suspended-particle-device smart glass. Sono Motors announced the launch of a new prototype generation of its solar electric car, the Sion, while Grupo Antolin showcased its Virtual Ride Hailing Concept Car and the Virtual Ride Sharing Concept Car. Mercedes-Benz presented its 141 cm MBUX Hyperscreen consisting of three seamlessly merged displays, which covers almost the entire vehicle's dashboard. The MBUX Hyperscreen will be launched as an option on the EQS SUV.



Source: Daimler

On the supplier side, highlights include Sony's latest developments of the VISION-S EV and Panasonic Automotive unveiling a new augmented reality head-up display (AR-HUD) that features advanced optics, 3D imaging radar, 4K resolution, AI-driven navigation, eye-tracking technology, and real-time situational control.

Panasonic also unveiled two variants of in-vehicle wireless charging technology and fully wireless Wi-Fi camera while OmniVision and Nextchip showcased a solution that provides high-quality images for rearview cameras, surround-view systems, and e-mirrors. StradVision and D3 Engineering partnered to demonstrate their automotive front camera solution. Continental, HERE, and Leia paired up to provide 3D navigation display solutions utilizing HERE's 3D depictions of buildings and topography, Continental's Natural 3D display, and Leia's lightfield technology.



Source: Continental



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Mainland China's startup Deeproute.ai presented the second-generation of its all-in-one sensing solution DeepRoute-Engine, an inference engine that accelerates the neural network computation, allowing algorithms to run on an energy-efficient computing platform. Mobileye also announced a collaboration with its parent company Intel to develop next-generation radar and lidar sensors for autonomous vehicles.

Alongside the pure technical innovations at CES, General Motors also chose the virtual venue to announce its new BrightDrop business that entails an integrated ecosystem of electric products, software and services for the first to last mile. In partnership with FedEx, GM will supply an EP1 propulsion-assisted electric pallet developed to easily move goods over short distances and an EV600 electric light commercial vehicle purpose-built for delivery of goods and services over long ranges. Most interesting, beyond the technical abilities of these vehicles, is the new business model and revenue source that GM is launching into, fully recognizing the future of mobility and how GM fits into the new equation differently compared to traditional business models.

As we leave the disruption of 2020 behind, the future is poised to be electrically powered and software-defined. Just how fast this transformation will take place is yet to be seen, but CES 2021 was evident in itself of the rapid pace of digital change still to come.

This webinar will be conducted in English. Welcome to add customer service ([ihsmarkitautomarket](#)) to get on-demand webinar link, and join the VIP group to get the full report

[Webinar] 2021 Automotive Forecast Webinar Series | APAC



In 2021, for the first time in history, we will deliver the forecast updates in local languages so we can bridge our communication channels to help you determine the current and future market share better.

Our regional automotive forecasting team provides strategic planners with a reliable and independent understanding of future supply and demand for vehicles. For an automaker, this is critical for determining future sales by location, body style, and model. For a supplier, our independent analysis can be used to validate RFQs and assess opportunities. With forecasts that span 7 to 30 years, we also help automotive stakeholders understand future disruptive technologies like autonomy, electrification, and mobility. Every day, 100% of the largest vehicle manufacturers and nearly all the largest auto component suppliers consider our forecasts essential for their product planning needs.

Webinar Schedule

This program is only available for our forecast clients and approved customers on a case by case basis. For details on each session in the local language, and to register, please click on the individual webinar



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topic. Do note you may register for multiple sessions if there are available seats, however, your registration will be subject to approval.

Special Note: To secure your seat, please use your own company email to complete the registration. You can also add the WeChat customer service (ihsmarkitautomarket) to apply to join the VIP group, submit the online Webinar participation application, and you will be invited to attend the conference after the review and approval.

Webinar Agenda

Date	Country	Language	Webinar Topic
[On-demand]	China	Chinese	China Light Vehicles Production Outlook Post COVID-19 新冠肺炎疫情后中国轻型车产量展望
22 Feb	Korea	Korean	South Korea Light Vehicles Sales Outlook Post COVID-19 포스트코로나와 국내 (한국) 경차 판매 현황
29 Mar	Japan	Japanese	COVID-19 Impact both on Domestic Sales and Production Markets in 2020-2022 COVID-19: 2020-2022年における国内需要と生産へのインパクト
26 Apr	ASEAN Oceania	English	ASEAN/ Oceania Auto Market & Production Outlook
24 May	China	Chinese	China Light Vehicles Sales Outlook Post COVID-19 后疫情时代的中国轻型车销量展望
21 Jun	Korea	Korean	South Korea Premium Brands Outlook 국내 (한국) 프리미엄 브랜드 전망
26 Jul	Japan	Japanese	Japan Automotive Industry in the Post COVID-19 Era Toward 2030 2030年に向けたポストCOVID-19時代の国内自動車産業
23 Aug	India	English	India Sales and Production Market Outlook
27 Sep	China	Chinese	China Sales and Production Outlook 中国汽车销售和前景
25 Oct	Korea	Korean	South Korea Light Vehicles Sales Analysis for 2021 and Beyond 2021년 이후의 국내 (한국) 경차 세일즈 분석
22 Nov	Japan	Japanese	Japan Sales and Production Market Outlook 日本の販売生産市場展望

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Email

AsiaPacificAutomotive@ihsmarkit.com

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