



Automotive Industry Weekly Digest

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[Sales Highlights] Ford posts highest-ever EBIT in Q1, expects USD2.5-bil. impact from microchip shortage during 2021

IHS Markit perspective

Implications Ford returned adjusted EBIT of USD5.4 billion in the first quarter, despite lower wholesales and higher costs on the semiconductor shortage. The company also reported net income of USD3.3 billion on revenue of USD36.2 billion.

Outlook After a full-year loss in 2020 and a loss in the first quarter of 2020, Ford's performance in the first quarter of 2021 saw the company demonstrate resiliency in a still-difficult external environment, including the ongoing COVID-19 pandemic and the semiconductor shortage. In addition, in the first quarter, Ford saw the benefit in several regions of actions taken over the past several years.

Ford has reported adjusted earnings before interest and taxation (EBIT) of USD5.4 billion in the first quarter of 2021, despite lower wholesale deliveries and higher costs on the semiconductor shortage. The company also reported net income of USD3.3 billion on revenue of USD36.2 billion in the first quarter.

Ford revenue by segment, Q1

	Q1 2021	Q1 2020	Y/Y % change
Automotive	33,554.0	31,342.0	7.1
Ford Credit	2,663	2,967	-10.2
Mobility	11	11	0.0

Source: Ford Motor Company

Although Ford's wholesales declined on the impact of the semiconductor shortage, the company also reported that higher margins on vehicle sales and reduced structural costs led to a record adjusted EBIT in the first quarter and improved revenue versus the first quarter of 2020. Overall, Ford's wholesales dropped 5.7% year on year (y/y), largely on the global supply-chain disruption. With production issues continuing to affect the auto industry globally, including Ford, there remains an imbalance between demand and supply. As a result, in the first quarter, Ford's pricing improved, which was most evident in North America and helped to lead to what CEO Jim Farley said was the highest adjusted EBIT result in Ford's history in the first quarter. Along with higher net pricing, higher Ford Credit earnings and lower structural costs contributed to the first-quarter result. Although supply-chain issues impacted on sales, the stronger pricing also meant an improvement in Ford's revenue in the first quarter compared with first quarter 2020, which increased 5.5% to USD36.2 billion. Ford reported net income of US\$3.3 billion in the first quarter, compared with a loss in the first quarter of 2020. Ford posted adjusted EBIT of USD5.5 billion in the first quarter, compared with an adjusted EBIT loss of USD632 million in first quarter 2020. In the first quarter, Ford reported special items of USD400 million on redesign actions in South America and Europe. This included Ford's announcement in January of the ending of production in Brazil, although that action had a larger impact on results in the fourth quarter of 2020 than in the first quarter of 2021. Ford also reported a USD900 million investment gain on Rivian's Series F funding round in January, although chief financial officer (CFO) John Lawler stated that the gain was a non-cash item. In the first quarter, Ford's adjusted EBIT margin was 13.3%, although excluding the Rivian benefit, the margin was 10.3%. Ford reported a debt increase from USD24.0 billion on 31 December 2020 to USD25.9 billion at the end of the first quarter of 2021. Ford also reported USD47.2 billion in liquidity and USD5.5 billion in cash at the end of the first quarter, both up compared with 31 December 2020. Lower volume and mix



affected Ford's adjusted EBIT negatively by USD800 million in the first quarter, while there was a USD3.0-billion positive impact resulting from net pricing. Ford reported improvements in structural and warranty costs, but increases in commodities and freight costs. Ford Credit's adjusted EBIT improved to USD0.9 billion in the first quarter, on strong auction and non-recurrence of increases in losses due to coronavirus disease 2019 (COVID-19). Ford also stated that Ford Credit's loss-to-receivables result remains low and reflects historically low losses. Ford's return on invested capital (ROIC, trailing four quarters) improved to 8.2% in the first quarter of 2021, from 2.5% in the first quarter of 2020. Ford's adjusted pre-tax result reached USD3.94 billion, compared with a loss of USD1.14 billion in the first quarter of 2020.

Ford's regional automotive results included first-quarter EBIT losses in South America and China, and positive adjusted EBIT for the International Markets Group (IMG), North America, and Europe. In North America, adjusted EBIT improved from USD373 million in first quarter 2020 to USD2.94 billion in the first quarter of 2021. In Europe, Ford reported adjusted EBIT of USD341 million, compared with a loss of USD149 million a year earlier. In South America, Ford posted an adjusted EBIT loss of USD73 million, an improvement from a USD112 million loss a year earlier, as the company exited unprofitable segments.

Ford's EBIT by segment

	Q1 2021	Q1 2020	Y/Y % change	YTD 2021	YTD 2020	Y/Y % change
Automotive	3,403	-154	2,109.7	3,403	-154	2,109.7
Ford Credit	962	30	3,106.7	962	30	3,106.7
Mobility	-197	-285	-30.9	-197	-285	-30.9

Source: Ford Motor Company

Ford reports three business lines: Automotive, Ford Credit, and Mobility. Ford's Automotive revenues in the first quarter improved 7.1% y/y to USD33.6 billion, as higher pricing offset lower volumes. Ford Credit's revenues were USD2.7 billion in the first quarter, down 10.2% y/y. The Mobility division's revenues were even with a year earlier, at USD11 million, although the division is still in a development stage. In terms of EBIT, the Automotive division's businesses saw adjusted EBIT of USD3.4 billion in the first quarter of 2021, up from a loss of USD154 million a year earlier. Ford Credit's adjusted EBIT increased to USD962 million in the first quarter of 2021, compared with USD30 million a year earlier. The Mobility division continues to see EBIT losses as the new business invests in autonomous vehicle development.



Ford's global financial performance

	Q1 2021	Q1 2020	Y/Y % change	YTD 2021	YTD 2020	Y/Y % change
Wholesales (000)	1,062	1,126	-5.7	1,062	1,126	-5.7
Revenue (USD bil.)	36.2	34.3	5.5	36.2	34.3	5.5
Adjusted pre-tax results (USD mil.)	3,942.0	- 1,146.0	244.0	3,942.0	- 1,993.0	97.8
Net income (loss), attributable to Ford (USD mil.) (GAAP)	3,262.0	- 1,993.0	63.7	3,262.0	- 1,993.0	63.7
Net income margin (GAAP)	9.0	-5.8	(14.8)pts	9.0	-5.8	(14.8)pts
Adjusted EBIT (non-GAAP)	5,448.0	-632.0	762.0	5,448.0	-632.0	762.0
Adjusted EBIT margin (non-GAAP)	13.3	-1.8	15.1pts	13.3	-1.8	15.1pts
Net cash (USD bil.)	5.5	6.8	-19.1			
Debt (USD bil.), vs 31 Dec 2020	-25.9	-24.0	7.9			
Adjusted ROIC (%), trailing four quarters)	8.2	2.5	5.7 ppts			

Source: Ford Motor Company

In **North America**, Ford's wholesale deliveries took a rollercoaster ride in 2020, with a significant drop in the second quarter over COVID-19 shutdowns, a rise in the third quarter, but dipping again in the fourth quarter on the planned F-150 changeover. In the first quarter of 2021, the semiconductor shortage pulled Ford's wholesale deliveries down. Ford's wholesales dropped 14% y/y to 533,000 units in the first quarter. However, as with the global picture for the automaker, regional revenues improved on stronger customer demand for Ford's fresh product portfolio and higher industry-wide net pricing resulting from the lower inventories. In North America, Ford's revenue reached USD23.0 billion in the first quarter, compared with USD21.8 billion in first quarter 2020. North America also provided 63% of Ford's global revenue in the first quarter. In the region, Ford posted EBIT of USD2.9 billion, much higher than USD373 million in first quarter 2020 as Ford began to grapple with the early impacts of the COVID-19 pandemic. The North American region saw an EBIT margin of 12.8%. Ford reported that the F-150, Mach-E, and Bronco Sport have seen profitable growth; in mid-2021, the Bronco will arrive and continue the product offensive. North America remains Ford's most significant market, and there is no reason to expect this situation to change. Although in the first quarter, there was some lingering impact from the end of the Fusion in the US market, the products on offer are in line with consumer demand and Ford's focus on high-margin products has had a positive effect on pricing. In the first quarter of 2021, Ford noted that, although its US market share declined 1.3 percentage points to 13.1%, the quality of sales improved and retail share was up 1 percentage point to 9.9% and fleet share declined with lower rental sales. Ford's US retail average transaction price improved USD2,934 per unit, the company reported. However, the lack of lower-end affordable product projects is on the list of issues for the company to address. We have noted previously that Ford needs to improve its regional profitability without counting on higher volume, and the company's first quarter 2021 results indicate an early success for Ford in this arena. In addition, Ford stated that its ongoing efforts to improve quality processes are gaining traction and that warranty expenses decreased USD400 million.

**Ford's revenues (USD bil.), Q1**

	Q1 2021	Q1 2020	Y/Y change	%	YTD 2021	YTD 2020	Y/Y change	%
North America	23.0	21.8	5.5		23.0	21.8	5.5	
South America	0.9	0.7	28.6		0.9	0.7	28.6	
Europe	7.1	6.2	14.5		7.1	6.2	14.5	
China	0.8	0.6	33.3		0.8	0.6	33.3	
International Markets Group	2.0	2.4	-16.7		2.0	2.4	-16.7	

Source: Ford Motor Company

In the fourth quarter of 2020, Ford finished the final phase of its restructuring in **Europe**. In the first quarter of 2021, the company announced plans to move to the next phase of its European transformation, including a commitment to an all-electric vehicle future, including investment in production of electrified products in Cologne and manufacture of the next-generation Transit in Turkey. The company also reported further headcount reductions in Western Europe to a total 11,000 jobs (more than 20% of the European workforce). Ford's European operations were also affected by the microchip shortage, although wholesales fell by only 10,000 units and the earlier shift to light commercial vehicles (LCVs) and discontinuation of low-margin products contributed to an increase in revenue to USD7.1 billion. Ford's regional EBIT reached USD300 million, up by USD500 million compared with first quarter 2020, and its margin was 4.8%. In Europe, Ford's net pricing improved by USD200 million and structural costs were down USD200 million. The company reported its commercial vehicle share in the European Union 20 (EU20) markets reached 15.9%, up from 14.9% a year earlier, and that its mix of utility vehicles improved to 30.4%.

Ford's wholesales (000), Q1

	Q1 2021	Q1 2020	Y/Y change	%	YTD 2021	YTD 2020	Y/Y change	%
North America	533	619	-13.9		533	619	-13.9	
South America	18	59	-69.5		18	59	-69.5	
Europe	278	288	-3.5		278	288	-3.5	
China	150	81	85.2		150	81	85.2	
International Markets Group	82	78	5.1		82	78	5.1	

Source: Ford Motor Company

In the first quarter of 2020, Ford saw a particular impact on its operations and results in **China**, with production suspended for much of the quarter and most of the country under lockdown conditions. This contributed to y/y improvements in results in China in the first quarter of 2021. In the first quarter of 2021, Ford's EBIT in China improved USD200 million to breakeven, for a fourth consecutive y/y EBIT improvement. Ford puts the improvement down to a strong performance by Lincoln, as well as to Ford near-premium utility vehicles and commercial vehicles. Ford also reported a further shift in Ford brand's sales towards high-margin near-premium utility vehicles. Lincoln, with 90% of its production now localised as the Nautilus has been added to its production in China, saw its best-ever first-quarter retail sales in China. Ford reported that its Chinese market share improved to 2.3% in the first quarter. Ford's wholesales reached 150,000 units in China in the first quarter, a notable step up from 81,000 units in first quarter 2020.



Ford's EBIT (USD mil.), Q1

	Q1 2021	Q1 2020	Y/Y % change	YTD 2021	YTD 2020	Y/Y % change
North America	2949.0	373.0	690.6	2949.0	373.0	690.6
South America	-73.0	-112.0	-34.8	-73.0	-112.0	-34.8
Europe (excl. Russia)	341.0	-149.0	-328.9	341.0	-149.0	-328.9
China	-15.0	-241.0	-93.8	-15.0	-241.0	-93.8
International Markets Group	201.0	-25.0	-904.0	201.0	-25.0	-904.0

Source: Ford Motor Company

Ford's International Markets Group includes operations in South America, Asia Pacific, and the Middle East and Africa, as well as its Russian joint venture (JV). Although Ford continues to report results for South America, the region is now part of the International Markets Group. The company reports its results in Asia Pacific and the Middle East and Africa under the International Markets Group. In **South America**, Ford has ended manufacturing in the region and the automaker reported improved results in the first quarter on this "asset-light" structure, with more improvements expected. Ford's earlier restructuring activities helped contain its regional EBIT loss in 2020, and in first quarter 2021, its losses declined to USD73 million from USD100 million a year earlier. Ford's regional structural costs were down 33% y/y in the first quarter, and Ford noted USD800 million in annual structural cost reductions since 2018. Ford's wholesales declined on market conditions, as well as Ford focusing on the Ranger pick-up, Transit van, and key imported products. In addition, Ford has exited the unprofitable fleet market in Brazil. However, some of the decline in wholesales from 59,000 units in the first quarter of 2020 to 18,000 units in the first quarter of 2021 may be a result of a consumer reaction to the company's plant closures in Brazil. The Ranger continues to see its segment share increase and is partly responsible for improved pricing. In the first quarter, the **International Markets Group** overall saw wholesales improve to 82,000 units, up from 78,000 units a year earlier, but down from 93,000 units in fourth quarter 2020, and structural costs improve 18%. In the region, Ford shifted from breaking even in first quarter 2020 to reporting USD200 million in EBIT in the first quarter of 2021. The company's results in the region are benefiting from lower structural costs and lower warranty cost on prior models, with the Ranger and Everest seeing segment market share increases. In addition, in February 2021, Ford announced an investment in South African manufacturing.

Ford's EBIT margin, Q1

	Q1 2021	Q1 2020	Y/Y % change	YTD 2021	YTD 2020	Y/Y % change
North America	12.8	1.7	11.1pts	12.8	1.7	11.1pts
South America	(16.7)	(15.4)	(1.3)pts	(16.7)	(15.4)	(1.3)pts
Europe	4.8	(2.4)	7.2pts	4.8	(2.4)	7.2pts
China	(1.8)	(40.6)	42.4pts	(1.8)	(40.6)	42.4pts
International Markets Group	8.9	(1.3)	16.0pts	8.9	(1.3)	16.0pts

Source: Ford Motor Company

Outlook and implications

After a full-year loss in 2020 and a loss in the first quarter of 2020, Ford's performance in the first quarter of 2021 saw the company demonstrate resiliency in a still-difficult external environment, including the ongoing COVID-19 pandemic and the semiconductor shortage. In addition, in the first quarter, Ford saw the benefit in several regions of actions taken over the past several years.



During the company's earnings conference call, Lawler addressed the impact of the semiconductor shortage on the company's expectations for this year. Ford reported losing about 200,000 units of planned production in the first quarter, but also said it expected that the second quarter would represent a trough for the company on this issue. Ford expects about 50% of planned production to be lost in the second quarter (about 700,000 units), and a further 10% loss of planned production (about 200,000 units) in the second half of 2021. The already difficult situation was made more so by the Renesas fire; Ford no longer expects to be able to recover production lost in the first half in the second half. For the full year 2021, Ford now assumes a production loss of 1.1 million units. When reporting its full-year 2020 results in February 2021, Ford had indicated the upper range of its expected exposure to the microchip shortage would be a USD2.5 billion reduction in EBIT in 2021. When reporting its first-quarter results, Ford said this remained the expected exposure, as well as a USD3.0 billion negative impact on free cash flow. Ford now expects the microchip shortage issue may not be resolved until 2022.

As a result, Ford has revised its expectation for its full-year 2021 performance. Ford expects its performance in the first quarter to be its best quarterly performance of 2021. The company's revised guidance includes a loss in the second quarter, although Ford expects the loss to be recovered in the second half. Instead of its earlier guidance of adjusted EBIT of between USD8.0 billion and USD9.0 billion in 2021, Ford now expects its full-year adjusted EBIT to be between USD5.5 billion and USD6.5 billion. Ford now expects its adjusted free cash flow to be between USD0.5 billion and USD1.5 billion, down from prior guidance of USD3.5–4.5 billion. Ford intends to hold its capital spending at between USD6.0 billion and USD6.5 billion, up from USD5.7 billion in 2020 and unchanged from the earlier guidance. Ford expects its global redesign EBIT charges to be USD2.2–2.7 billion, compared with USD3.4 billion in 2020.

[Sales Highlights] NIO reports 125.1% y/y growth in sales during April

Chinese electric vehicle (EV) manufacturer NIO delivered 7,102 vehicles during April, an increase of 125.1% year on year (y/y), according to a company statement. The deliveries include 1,523 units of the ES8 sport utility vehicle (SUV), and a combined 5,579 units of the ES6 SUV and EC6 SUV. William Bin Li, founder, chairman, and CEO of NIO, said, "2021 is crucial for NIO. Our power, sales, and service networks will grow. NIO's brand awareness, superior NIO user experience, and important investments in research and development of new products and technologies will further establish NIO's foundation and future development."





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Outlook and implications

Both the EC6 and ES6 are positioned in the premium EV segment with hefty price tags, but through its battery leasing programme NIO has effectively lowered the overall costs for both models. Its vehicle deliveries continued to increase in the first quarter, with 20,060 vehicles delivered during the period. In the second quarter of 2021, NIO expects its vehicle deliveries to be between 21,000 and 22,000 units, representing an increase of approximately 103–113% from the same quarter of 2020 and an increase of approximately 5–10% from the first quarter of 2021. The company also recorded a gross profit of CNY1.554 billion (USD240 million) during January–March, compared with a gross loss of CNY167.5 million in the same period last year. NIO has started construction of a smart EV industrial park in Hefei, Anhui province (China). Called the Neo Park, the facility covers an area of 11.2 million square metres and includes manufacturing and research and development (R&D) facilities with designed annual capacity of 1 million vehicles and 100 GWh of batteries. The R&D facility will focus on development of technologies related to complete vehicles, core parts, and autonomous vehicle operation.



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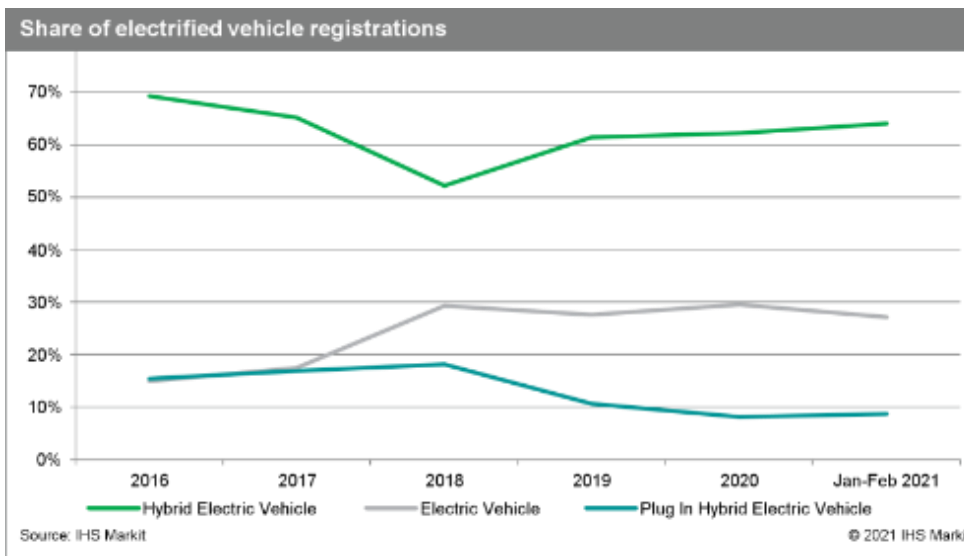
[Electrification Highlights] Early 2021 registrations show electrified vehicles gaining ground

IHS Markit perspective

Implications Armed with the first two months of registration data, IHS Markit has a look at the inroads electric vehicles may be making. Their share of registrations improved from 5.9% in 2020 to 8.0% in the first two months of 2021. Although this suggests promise, most of this gain has gone to traditional HEVs rather than BEVs or PHEVs.

Outlook Watching registrations of electrified vehicles can help gauge the ease of making the sweeping transitions to all-electric or zero-emissions vehicles that regulators and, consequently automakers, are striving for. The pivot seems inevitable, given current conditions. The early indicators reflect where consumers are at present. The transition to a zero-emission vehicle future is barely beginning, although regulatory pressures and investment cycles have the potential to speed up the transition

Armed with the first two months of registration data, IHS Markit has a look at the inroads electric vehicles may (or may not) be making. Their share of registrations improved from 5.9% in 2020 to 8.0% in the first two months of 2021. Although this suggests promise, most of this gain has gone to traditional hybrid electric vehicles (HEVs) rather than battery electric vehicles (BEVs) or plug-in hybrid electric vehicles (PHEVs).



Looking at the total US light-vehicle market, there have been small share increases for BEVs and PHEVs, from 0.4 percentage points (pp) for BEVs and 0.2 pp for PHEVs. However, HEVs increased 1.4pp, from 3.7% in 2020 to 5.1% in the first two months of 2021. Looking more closely at registrations for electrified vehicles only, HEVs went from 62.2% of electrified vehicle registrations in 2020 to 64.0% over the first two months of 2021. However, while BEVs gained some ground in terms of overall market, within electrified vehicles, they accounted for 27.2% in the first two months of 2021; down from 29.5% over the course of 2020. PHEV registrations improved 0.6pp, to 8.7% of electrified vehicles. This report will not deeply dive into fuel cell electric vehicles (FCEVs); although they increased from 0.11% of electrified-vehicle registrations in 2020 to 0.13% in the first two months of 2021, these are still severely limited in availability.



Hybrid electrics are most popular

As Tesla dominates in BEV registrations, Toyota dominates in both HEV and PHEV registrations. Of the top 10 hybrids registered in 2020 or so far in 2021, seven were Toyotas. Toyota sells more HEVs than Tesla does BEVs, at least so far. In 2020, Toyota registered nearly 264,400 HEVs and about 69,600 in the first two months of 2021; Tesla registered 201,000 EVs in 2020 and about 41,700 in the first two months of 2021. In 2020, Toyota also launched the latest-generation Sienna minivan with only a hybrid powertrain available, as well as expanding its vehicle line-up with the hybrid-only Venza. Toyota's Highlander was new for 2020, and accounted for 9.9% of hybrid registrations in the first two months of 2021, compared with the hybrid option accounting for only 4.0% of hybrid registrations in 2018 for the previous-generation Highlander Hybrid. The Honda CR-V's share of HEV registrations increased in the first two months of 2021, reaching 6.5% in 2021 from 4.4% in all of 2020. The CR-V also took the third position in HEV registrations. Ford's Escape Hybrid's share of HEV registrations dropped from 4.2% to 3.3%. The only luxury model in the top 10 for HEV registration share is, surprisingly, not the Lexus RX but the Mercedes-Benz GLS. In 2020, the GLS accounted for 3.8% of HEV registrations, although this has dropped to 3.3% in the first two months of 2021. The Lexus RX only took 2.7% of HEV registrations in 2020, also dropping in early 2021 to 2.1%.



Although BEVs do tend to be more prevalent in luxury segments, HEVs seem to be gaining ground for both luxury and non-luxury registrations. In the first two months of 2021, HEVs accounted for 6.8% of luxury-segment registrations, up from 5.6% in 2020. In non-luxury segments, HEVs accounted for 5.2% of registrations in the first two months of 2021, up from 3.6% in 2020.

EVs have promise for future, but current volume still all about Tesla

Tesla has four of the top 10 EV registrations by model, with the newly launched Ford Mustang Mach-E taking eighth position in the first two months of 2021. As production is still ramping up and not all versions were available, its share of 2.6% of EV registrations in the first two months of 2021 bodes well for overall performance. The Mustang Mach-E came in ahead of the Porsche Taycan and Hyundai Kona. Chevrolet's Bolt EV had the third highest registrations in the first two months of 2021, although its 7.3% dropped from 7.8% in 2020. Chevrolet is in the process of launching a mid-cycle update and expanding to include a utility vehicle body style called the Bolt EUV; it is slightly larger than the Bolt EV and both include more features for 2021 model year; the outlook is for a stronger close to 2021. Nissan's Leaf raised its share of EV registrations in the first two months of 2021. Although its sales persistently stay behind the Bolt – despite offering a less-expensive version and still being eligible for the US federal tax credit – its share rose to 3.9% in early 2021, from 3.6% in 2020. In 2020, Tesla's four models took the top four positions in EV registration share, but with the Model X and Model S out of production in early 2021 in preparation for an update, the two dropped to fifth and sixth. Audi's e-tron share declined very slightly, from 2.8% in 2020 to 2.7% in early 2021. However, Audi is aggressively adding e-tron products throughout 2021 and 2022, and its performance is likely to continue to improve.

As Tesla is considered a luxury brand and automakers are focused on launching high-end EVs with potential to recoup some of the higher cost on the powertrain, within the luxury segments, the share of EV registrations has grown in early 2021. Although in 2020, EVs made up about 10.5% of light-vehicle registrations, in early 2021 this jumped to 12.5%. EV registrations in non-luxury segments, where higher volume overall also makes it difficult to stand out, EVs in the first two months of 2021 only accounted for 0.5% of light-vehicle registrations.



PHEVs remain stubbornly weak

The performance of PHEVs has been stubbornly weak compared with the market overall, despite increased offerings. PHEVs made up 0.74% of total light-vehicle registrations in 2018; this slipped in 2019 and 2020, but in the first two months of 2021 improved to 0.70%. Looking at PHEV performance against only electrified vehicles, rather than the full market, does not suggest consumers are warming up; although this also reflects Chevrolet exiting the segment and Honda reducing availability of its PHEV. In 2018, PHEVs accounted for 18.1% of electrified vehicle registrations. However, in the first two months of 2021, they were only 8.7%. Although that was stronger than 8.1% in 2020, it suggests that consumers are not coming on board. However, in 2018, the Honda Clarity and Chevrolet Volt provided a combined 29% of PHEV registrations in the US, at nearly 37,000 units. By 2018, however, Chevrolet had decided to drop the Volt, and it was out of production by the end of that year. Honda has also pulled back on the Clarity, and its registrations dropped to only 3,873 units in 2020. The top PHEV remains the Toyota Prius Prime, but its registrations dropped from 27,621 units in 2018 to only 14,540 units in 2020. Several luxury makes are increasing PHEV options, with Toyota and Hyundai/Kia continuing to serve mainstream PHEV customers, but the shift to luxury also changes the volume opportunity. In 2018, IHS Markit counted 30 models with available PHEV options. Over the first two months of 2021, there are about 35 represented. Even with a slight share increase in early 2021, the story for PHEV adoption is not strong. This count also excludes new PHEVs from Jeep (Wrangler, Grand Cherokee, Grand Wagoneer/Wagoneer) all on sale within the next year but not available in early 2021. Within PHEV registrations, Toyota's Prius Prime leads and its RAV4 is in third, with the Chrysler Pacifica between them. The Pacifica's PHEV registration share was boosted in early 2021, accounting for 16.1%, compared with 9.6% in 2020. The Prius Prime was only minimally affected by the RAV4, with PHEV share at 20.8% in 2020 and 19.4% in early 2021. The RAV4's share of PHEV registrations jumped, however, from 4.3% in 2020 to 9.5% in early 2021. The fourth-placed Audi Q5 E is up as well, which could partly be thanks to stronger availability in early 2021; in 2020, it captured 5.9% of PHEV registrations and in early 2021, this was up to 9.5%. The Volvo XC90 rounded out the top five in early 2021.



The PHEV solution is stronger in Europe, and take-up rates are higher there. In the US, most PHEVs are luxury makes, as Chevrolet, Honda and Ford do not participate meaningfully with PHEVs today. In 2018, non-luxury vehicles accounted for 75% of PHEV registrations; in 2020, it was 61% and in early 2021 it is 59.8%. Although the leaders are volume products, the segment shift to favouring luxury options is a result of key mainstream brands abandoning the solution and luxury brands offering more choice. Luxury brands have made a bigger push into PHEVs, particularly German luxury brands. In 2021, Audi offers PHEV solutions for the Q5, A7 and A8. BMW offers PHEV options for the X5, X3, 3-Series, 5-Series and 7-Series, as well as continuing the i8 and i3 PHEVs. The Lincoln Corsair and Aviator PHEVs mean half of Lincoln's line-up offers the option. Land Rover offers Range Rover and Range Rover Sport PHEVs. Although Mercedes-Benz has scaled back PHEV options in the US, Porsche offers PHEV options for the Cayenne and Panamera. Volvo offers PHEV options for its full range. In mainstream brands, Toyota, Hyundai and Kia each offer two PHEVs, although Hyundai is adding a third later in 2021. Jeep is also planning to add PHEVs, beginning with the Jeep Wrangler in April 2021. However, General Motors (GM) committed several years ago to developing either ICE or EV, and to skip the PHEV solution altogether. Ford has also scaled back its PHEV options, dropping the C-Max hatchback and Fusion sedan. In 2020, the Escape and Lincoln Corsair US launches were delayed on issues with the related Ford Kuga PHEV in Europe. Honda's electrification strategy also seems to favour hybrids and then EVs, largely skipping PHEVs. Toyota intends to offer a mixture, although it has favoured HEVs rather than PHEVs.

Outlook and implications



Watching registrations of electrified vehicles can help gauge how easy or difficult it will be to make the sweeping transitions to all-electric or zero-emission vehicles that regulators and, consequently automakers, are striving for. The pivot seems inevitable, given current conditions. Electrified vehicles' share of registrations rising in the first two months of 2021 is encouraging, although most of the change is in increased traditional hybrid share, while PHEV demand struggles. These early indicators reflect where consumers are at the minute. The transition to a zero-emissions vehicle future is barely beginning, although the regulatory pressures and investment cycles have the potential to speed up the transition.



The pivot to an electrified future is happening, although the timetable is led by legislation rather than by consumers. OEM-, supplier- and government-proposed and planned investment will improve the full scope of necessary elements, from infrastructure to battery prices. IHS Markit expects 2027 to be a global tipping point for an acceleration to global EV adoption. We expect that range anxiety is being addressed, battery costs are falling fast (particularly in China), and that manufacturing costs could reach a tipping point for BEVs by 2021. As EV production increases, scale will reduce cost, while ICE production will decline and scale will be adversely affected. IHS Markit expects that with incentives, EVs could reach price parity with ICEs by 2027, and perhaps even without incentives. Although adoption in China and Europe is expected to be well ahead of the US, a top-line forecast from IHS Markit in April 2021 suggests EV share could reach 25–30% in the US in 2030 and 45–50% in 2035 (a detailed forecast is not yet available). The registration figures from early 2021 reflect that there remains a significant gap for consumers, although the higher share of electrified registrations supports the potential that consumers could start to drive the change as well, assuming cost and infrastructure issues are addressed. Vehicle choice is the factor most in control for automakers, which are largely stepping up to that element of the challenge.

The gap that IHS Markit registration data continues to highlight, however, is consumer ambivalence toward PHEVs. The mixed solution, on paper, is a strong blend of EV power for some driving and addressing range concerns. In reality, consumers have not warmed up as expected. As a result, while some automakers continue to plan new PHEV solutions, we expect volume players like GM, Ford and Honda to focus elsewhere. The higher price of luxury PHEVs hides some of the cost of the powertrain and performance is easier to present as enhancing overall driving power as well as reducing fuel economy, but consumers still seem to be largely unconvinced, and luxury makers are also likely to increase focus on EVs, particularly in the US.



[Technology Highlights] Argo AI unveils details of new LiDAR technology

Argo AI, the autonomous vehicle (AV) startup backed by Ford Motor Company and Volkswagen (VW) Group, has developed LiDAR technology that will support commercialisation of autonomous transportation, according to a company statement. The LiDAR has a sensing range capability of 400 metres, with high-resolution photorealistic quality, and the ability to detect dark and distant objects with low reflectivity. The company says that the LiDAR is based on “Geiger-mode” sensing technology, which allows it to detect the smallest particle of light. The company says the LiDAR operates at a wavelength above 1,400 nanometres, which allows the sensor to have unique capabilities, including longer-range, higher-resolution, lower-reflectivity detection, and a 360-degree field of view. Bryan Salesky, founder and CEO of Argo AI, said, “Argo Lidar takes us to a whole new level of self-driving technology, unlocking our ability to power both delivery and ride-hail services.”



Outlook and implications

The new sensor will be the centerpiece of the Argo Self-Driving System (SDS), which is to debut on Ford’s ride-hailing and delivery vehicles next year and on VW models in the middle of the decade. Argo AI, which reportedly has plans to go public, is an artificial intelligence company focusing on developing commercial AV systems. The company develops software, hardware, maps, and cloud-support infrastructure that power AVs. It has developed a Level 4 AV system and has plans to deliver autonomous technology for shared fleets rather than personal ownership.

[Technology Highlights] Wejo collaborates with Esri to offer solution based on connected vehicle data

Initial launches will be Traffic Intelligence and Journey Intelligence



Source: Getty image/metamorworks



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Wejo has announced a partnership with Esri under which the companies will develop a new joint solution using Esri's geographic information system (GIS) technology and Wejo's road data, according to a 4 May press release. This will give customers optimized services based on existing curated data from Esri's location services with traffic and mobility intelligence collected directly from connected vehicles in near real-time.

"Providing traffic and journey intelligence together with the existing location intelligence available through Esri puts the many intricate pieces in the mobility puzzle together. Now organizations can see the bigger picture in one place and make smarter decisions about everything from operational efficiency and economic development to safety, security, and sustainability," said Richard Barlow, CEO, Wejo.

Outlook and implications

Esri says over 350,000 organizations, including departments of transportation, engineering, and construction firms, public safety organizations and insurance providers, rely on the company's location services. The partnership will see Wejo make an additional 8.6 trillion data points from more than 10.7 million vehicles available to users of Esri's ArcGIS. ArcGIS connects people, locations, and data using advanced mapping and analysis. Initial launches will be Traffic Intelligence which offers insight into traffic volumes including congestion and Journey Intelligence which aggregates journey data to show journey volumes, average speed, and travel times.



[GSP] North America Sales and Production Commentary -2021.04

North America sales

March 2021: +61.6%; 1.904 million units vs. 1.178 million units

YTD 2021: +10.8%; 4.569 million units vs. 4.125 million units

- With the incoming March 2021 sales data, year-on-year (y/y) regional demand levels will begin to be compared with the worst of the pandemic-impacted sales months from 2020. Volume improvements will reflect astronomical growth when compared with year-ago levels. Although March 2021 auto demand in the region stands out when compared with prior months or even 2019 levels and reflects the upside potential to projected annual volume totals as consumers—at least in Canada and the United States—remain confident and buying conditions remain positive.
- COVID-19 mitigation efforts continue across the region, but the pandemic situation, along with auto production levels pressured by supply chain issues, present the biggest immediate risks to auto sales levels. However, it's difficult to parse out any supply impact on the March 2021 auto demand result, and stimulus payments in the US helped support robust consumer spending levels for the month while Canadian auto sales in March set record volume for the month, even as case counts in the country increase.
- With a sales pace at 17.7 million units seasonally adjusted annual rate (SAAR), the March auto sales result in the United States blew through expectations. Amid continued pressure on auto build levels from supply chain issues, auto sales for the month were boosted by pent-up demand from the February inclement weather issues and stimulus payments that supported already simmering US consumers. While the pace of sales will certainly fall back from this March rise, the result for the month helped to push the first-quarter SAAR average to approximately 16.7 million units. Given that inventory issues will only be amplified by the strong selling rate, IHS Markit analysts expect continued volatility in the month-to-month readings in the immediate term. Given the strong incoming sales results and an upgraded US economic outlook, the April 2021 forecast release reflects an annual level of 16.5 million units in 2021 and 16.7 million units in 2022, up 259,400 units and 182,600 units, respectively, from the previous forecast setting.



- Even as a third wave of COVID-19 virus infections affects the country, Canadian consumers continue to sustain their capacity to spend, and those willing, ready, and able to enter a new car purchase continue to do so. March 2021 new auto registrations are estimated to have bumped over 180,000 units, marking a record volume level for the month. A surging housing market is also supporting consumers and the recovery in auto demand levels since April 2020 has been the strongest in the region. Demand will grow 20% in 2021 to 1.88 million units. Sales are expected to reach 1.93 million units in 2022, surpassing the pre-COVID-19 pandemic levels.



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- For three years before the current COVID-19 effect, Mexican light vehicle demand was leading the region in auto sales declines, and the current situation adds additional pressure to an economy that was already stagnating. Auto sales in the country continue to reflect the weakest recovery levels within the region and calendar year (CY) 2020 demand reflected a 28% decline for the year. March 2021 sales volume sustained this trend, with y/y sales up a mild 9.1% for the month. IHS Markit analysts project demand in CY 2021 to jump 13%, to 1.07 million units, with demand rising 1.34 million units by 2024, eclipsing the level during pre-COVID-19 CY 2019.
- While the region progresses toward “normalcy,” the early 2021 vehicle demand levels—at least in the United States and Canada—reflect that consumers continue to roar back thanks to economic stimulus and the relaxation of pandemic mitigation efforts. While auto sales appear to have motored back to pre-pandemic levels, the potential vehicle supply issues stemming from supply chain constraints present the next wrinkle to the near-term outlook. Stock management will continue to be an important variable moving through the immediate forecast. Automakers continue to assess their assembly operations as pressure builds from supply chain constraints including semiconductor shortages, inclement weather effects in February, and news of congestion at various ports. The combination of slower production and strong demand portend to inventory constrained demand levels in the immediate term, perhaps the only thing out there with the potential to cool down the auto consumer heading into the spring selling season. Regional sales are projected to increase 14% in 2021 to 19.47 million units followed by a moderate and sustained rebound across the region, with light vehicle sales bumping against the 20-million-unit level by CY 2023.

North America production

March 2021: +32.1%; 1.34 million units vs. 1.02 million units

YTD 2021: -4.5%; 3.61 million units vs. 3.78 million units

- The production outlook for 2021 was revised down by 79,356 units, or 0.5%, to a forecast 15.68 million units for the year, amid the ongoing semiconductor shortage and other supply chain and logistical issues. The quarterly progression for 2021 continues to reflect that the shortages are having the most impact on the first and second quarters, with the advent of normalcy beginning in the third quarter, and baseline operating levels and minimal overtime recovering lost volume in the fourth quarter. The quarterly view of changes to North American production in 2021 reflects actual results for most manufacturers, resulting in first quarter production increasing a marginal 0.1%, or 2,292 units, to total 3.61 million units. Production in second quarter 2021 was revised down 5.5%, or 218,175 units, totaling 3.78 million units owing to increasing shutdowns. Production in third quarter 2021 was revised upward by 1.9%, or 76,629 units, totaling 4.21 million units as manufacturers reduce summer shutdown plans while also aligning with the prospects of the semiconductor supply stabilizing in the second half of the year. Production in fourth quarter 2021 was revised higher by 1.5%, or 59,893 units, as manufacturers slowly begin to work to recover lost volume from earlier in the year. The net result is that production in the region should total 15.68 million units, reflecting an increase of 2.66 million units, or 20.4%, over COVID-19 ravaged 2020. Compared to the baseline December 2020 forecast of 16.17 million units ahead of the semiconductor shortage, the forecast has been revised down 3.0%, or 483,908 units—with supply rather than demand the key issue. Demand and inventory fundamentals support production in excess of 17.0 million units, but supply chain and other issues are suppressing the ability to reach such volumes. Given the broad and sweeping nature of the semiconductor shortage, a combination of reporting and actual production results in recent months were used to determine who and what will be affected, while the forecast is set to protect volume of the most profitable and important vehicles as manufacturers rationalize production. A positive sign is that several manufacturers have reduced, or cancelled, summer shutdown plans, and this should bolster production in third quarter 2021.



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Email

AsiaPacificAutomotive@ihsmarkit.com

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