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Autos Post Covid-19: Industry Evolution To Accelerate Whilst Consumer Habits Change

07 May 2020

Global

Autos

Key Views:

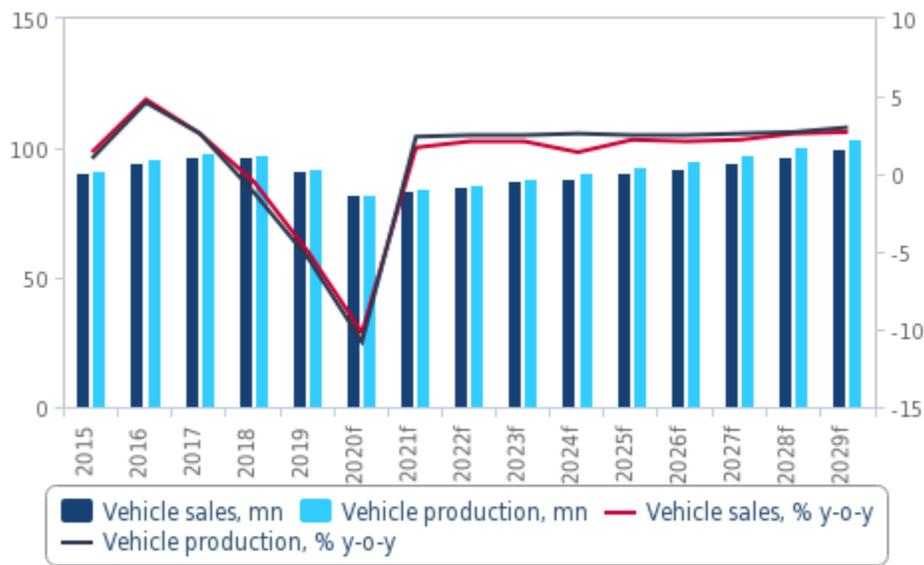
- Following the severe negative impact that the Covid-19 pandemic has had on the global automotive industry, we believe that several key long- and short-term structural changes will occur post-Covid-19.
- The vehicle sales environment post-Covid-19 will see some trends shift, such as consumer bases, while other existing trends, such as e-commerce, will likely accelerate over 2020-2024. In addition to this, we note that the seven-year auto loans will become entrenched in some markets such as the US, while contagion fear and environmental concerns will drive consumers to buy cars and adopt electric vehicles (EVs).
- The experiences gathered during the lockdown period will define a 'new normal' for the autos industry, including improving the online shopping experience, video calls with potential clients to answer their specific questions, and providing secure online applications to finalise paperwork and a renewed focus on autonomous vehicles' importance.
- Original equipment manufacturers (OEMs) will also go through a restructuring process, which will involve EV platform consolidation, automation, supply chain diversification and changes to OEMs' global operational network.

Following the severe negative impact that the Covid-19 pandemic has had on the global automotive industry, we believe that several key long- and short-term structural changes will occur post-Covid-19. These will include changes in consumer purchasing habits, in the size of the role that technology plays in the industry and the pandemic's impact on the EV segment. Furthermore, we also highlight structural changes in autos production, namely OEM operational restructuring, supply chain shifts and the acceleration of automation.

We forecast that global vehicle sales will contract by 10.2% in 2020 as a combination of the Covid-19 outbreak and low oil prices, both weaken economic activity and [vehicle sales](#) as a result. Furthermore, as a result of this weakening demand for vehicles, coupled with factory stoppages and supply chain disruption caused by the spread of Covid-19, we expect [global vehicle production](#) to contract by 10.8% in 2020. We also believe that this weakness in the global automotive industry will motivate automakers and suppliers alike to make structural changes to their operations to evolve with changes in consumers' purchasing habits and to government policy changes in reaction to the impact Covid-19 is having on the autos industry. Below we discuss these structural changes in the automotive industry, which are divided into 'Sales' and 'Production' sections. However, we note that some of the trends we highlight are not restricted to either sales or production, but could affect both sides of the industry.

Autos Weakness To Drive Structural Changes Post Covid-19

Global Vehicle Sales & Production, units % y-o-y



f = Fitch Solutions forecast; Source: National sources, Fitch Solutions

Sales

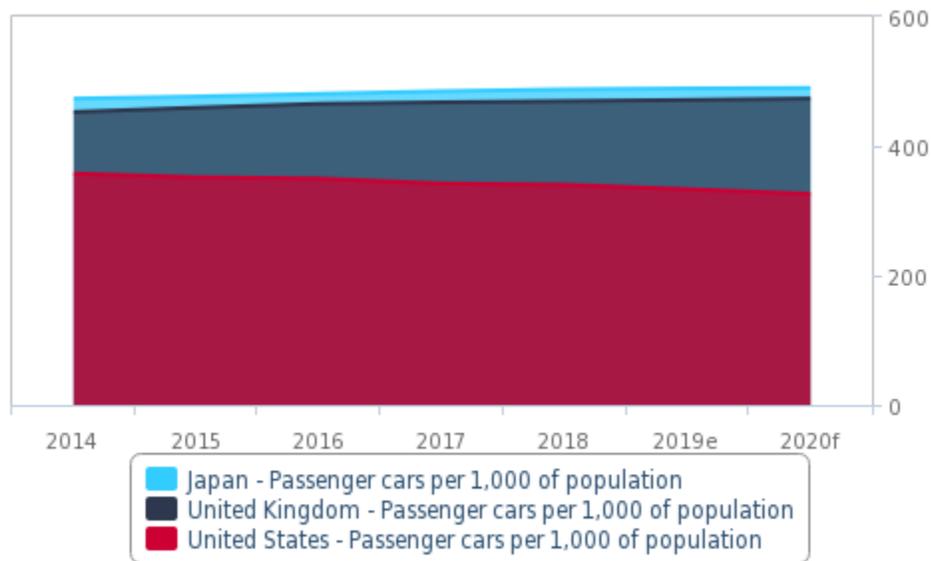
Vehicle Purchasing Habits To Change Post Covid-19

We believe the vehicle sales environment post-Covid-19 will see some trends shift, such as partial move back towards private vehicle ownership, while other existing trends, such as e-commerce, will likely accelerate over 2020-2024. In addition to this, we note that the already popular seven-year auto loans will become even more entrenched in some markets such as the US and will also likely be introduced in new markets in order to boost affordability and demand for vehicles. Lastly, we believe that scrappage schemes will also be put under the spotlight also in order to boost consumer demand for vehicles over the short term to medium term (one-three years).

One of the most significant consumer trends we believe will emerge from this Covid-19 period is that we could see consumers shun public transportation and opt for ride-sharing services and personal vehicle ownership. Specifically, we expect consumers in markets where the affordability of vehicles is not an issue and the use of public transport remains high, as is the case in most developed countries, to increasingly avoid public transportation amid fears of contracting Covid-19. Well-developed public transport infrastructure in most developed markets has led to stagnant vehicle ownership rates (*see chart below*). However, we believe that there is scope for commuters who are able to afford high vehicle ownership costs, such as vehicle insurance and high parking costs, and who do not necessarily commute in high-density areas where parking is hard to come by, will opt for personal vehicle ownership if they want to reduce their exposure to crowded public transport. This bodes well for some demand for passenger vehicles in the short to medium term (one-three years)

This will also be the case for ride-hailing services. Although it does not eliminate the risk of infection, it will give consumers an alternative to crowded public transport options and will drastically reduce the risk of infection when compared to other public transport methods. This bodes well for the demand for vehicles over the short to medium term, and will help the automotive industry to get back on its feet. The middle class in various emerging markets where the use of public transport options remains high could also pivot to the use of personal transportation, thereby offering further support to the recovery efforts of the global autos industry.

Well Developed Public Transport Infrastructure Has Led To Stagnant Vehicle Ownership Rates Growth Select DMs - Passenger Cars Per 1,000 Inhabitants



e/f = Fitch Solutions estimate/forecast. Sources: National sources, Fitch Solutions

The Covid-19 pandemic and the subsequent shut down of most dealerships have brought the need for online vehicle sales to the forefront. The need to develop e-commerce channels for the purchase of vehicles will most certainly accelerate as the desire to visit a physical dealership diminishes due to fear of contagion and the shift of shopping habits online. According to **Geely Auto Group**, more than 10,000 customers in China ordered and paid for vehicles using its online vehicle sales platform, which highlights the willingness and demand from consumers to purchase vehicles online. Furthermore, we believe that this trend will accompany the shift of new car launches online and the slow demise of traditional auto shows as we know them. We believe this trend will be long-lasting with more OEMs building e-commerce channels while reducing their physical presence.

The Re-Emergence Of Scrappage Schemes

Scrappage schemes will be a popular way of supporting vehicle sales by governments in the hope of propping up demand for new vehicles, whilst at the same time attempting to reduce the level of pollution in major population hubs. This need will be exacerbated by another trend that we discuss later on in this article, namely our belief that more consumers will grow increasingly cautious of climate change post-Covid-19 as respiratory diseases gain wider attention.

Reports suggest that the premiers of lower Saxony and Bavaria in Germany support such measures to boost ailing new vehicle demand. In India a new scrappage policy had been agreed upon pending implementation, however, OEMs such as **Toyota Motors** and **Maruti Suzuki** have reportedly established their own scrappage centres in the wake of declining demand for new vehicles. We, therefore, expect more governments to launch incentives aimed at reviving demand for new vehicles with the added benefit of renewing an ageing vehicle fleet.

Longer-Term Auto Loans Are Here To Stay

We believe the trend of offering consumers longer maturity vehicle loans will remain popular post-Covid-19, as OEMs have already started offering them to entice buyers as they offer lower monthly repayment and lower down payment costs thus increasing the affordability of an increasingly strained consumer. We, therefore, envision longer maturity loans remaining in place as a way to shore up demand for new vehicles. High household debt levels prior to the Covid-19 induced economic crisis, plus an expected increase in indebtedness and unemployment resulting from the pandemic will result in far fewer consumers being able to afford shorter-term vehicle financing options. OEMs will then use longer-term financing options (seven+ years) to lower repayment premiums in order to prevent cash-strapped consumers from moving into the used vehicle market.

We expect to see longer-dated vehicle loans becoming entrenched in markets such as the US, Malaysia and Thailand as such loans in these countries are already popular. We also expect longer duration vehicle finance options to be introduced in more markets, as consumers looking to purchase new vehicles seek more affordable financing options. Moreover, emerging markets with a large middle-income population, strong prospects of economic growth post-Covid-19 as well as a strong domestic banking sector will also be able to carry out longer-term vehicle finance options.

Role Of Technology To Increase Post-Pandemic

Throughout the lockdown period implemented to stem the spread of Covid-19 in most countries, technology has become an enabler for both consumers and businesses alike to carry on with some degree of continuity. As countries exit this period and businesses begin to reopen we expect the experiences gathered during the lockdown period to define a 'new normal' for the autos industry and in some cases accelerate some of the trends we have identified as 'Megatrends' in the industry up to 2050.

On the retail side, dealers around the world have reported the need to innovate in order to keep consumers engaged and, on a more practical level, bring in sales to keep the business afloat. This includes improving the online shopping experience, video calls with potential clients to answer their specific questions, and providing secure online applications to finalise paperwork. This is one area of technology adoption we had already been expecting to take off in the industry, but at a later date as consumers would still want to see the car, talk to a specialist and take a test drive (see *Three Key Threats To The Traditional Dealer Model*, July 14 2015). However, this new experience of buying a car when the physical showroom is not an option has proven that consumers' needs can still be met, including delivery of cars to the consumer's home for a test drive. Indeed, some dealers have reported that it has forced them to think more about the consumer experience in general and how this can be maintained in the future, which is a positive outcome from the lockdown period.

Technology will also play an increased role for those consumers who are not looking to buy a vehicle. It is possible that for those consumers who want to avoid public transport but without owning their own vehicle, ride-hailing will become a favoured option (as discussed in the sections above). Even though the car will be used by other people, we expect the current increased hygiene standards to be maintained by ride-hailing firms going forward, particularly if it helps to give them a competitive edge over public transport. Another positive result for ride-hailing firms is that they have proven to be adaptable during lockdown periods. With their core passenger business on hold, many have turned to delivery services, either for groceries, takeaway food or small business deliveries. This gives them a more diversified business model going forward and gives consumers more convenient services that they are now growing accustomed to.

Other adaptations to the delivery business during lockdown, including contactless deliveries (leaving parcels in agreed spots and cashless payment) also pave the way for the acceleration of another technology. Autonomous vehicles (AVs) have now proven their worth in a period when human contact has had to be reduced. Hospitals and research institutions have used AVs to transport test samples around closed campuses, reducing the exposure of humans to potentially harmful materials, while AV companies such as **Neolix** in China and **Optimus Ride** in the US have switched their autonomous shuttles to providing delivery services, particularly for vulnerable people unable to leave their homes. These efforts could go a long way in improving consumer perception of AVs, even if only for certain use cases until more testing has been done.

Policy Change To Support Recovery

We believe that car brands and auto lobbies will pressure policymakers to delay upcoming emission standards as part of industry support measures to overcome significant supply and demand shocks following the outbreak of Covid-19. We highlight that new emission rules will take effect in Europe, China, and the US in 2020, and hence believe that these will see increased pushback from major automotive players given the drop in vehicle demand amid the pandemic.

Automakers are under severe financial pressure stemming from weak sales in 2019, exacerbated by the weak global demand stemming from the Covid-19 outbreak. As such, most automakers are not strong enough financially to be able to cope with the possible fines from non-compliance to the new emissions standards. We believe that Covid-19 headwinds would prompt policymakers to delay the implementation of new emission standards by at least six months to give carmakers some breathing room to overcome supply and demand disruptions. Below, we look at the likelihood of delays in implementing the new stricter emissions standards in the EU, US and China (the three largest autos markets globally).

ANALYSIS OF NEW EMISSION STANDARDS IMPLEMENTATION BY COUNTRY/REGION

| Country/ Region | Policy | Current Effective Date | Possible Postponement Date | Brief Analysis |
|--------------------|---|------------------------------|----------------------------------|--|
| EU | European average fleet emission of 95 g/CO2 per km. | January 1 2021 | June 1 2021 | <p>Slowing EV demand in Europe in 2020 will encourage carmakers to ask the European Commission (EC) for an extension to new fleet emission requirements. Non-compliance will result in massive fines which automakers are not able to afford amid weakness in the global autos market. Given that carmakers are relying on EVs to reduce their average fleet emissions, sales of which have slowed thus far over 2020, missing the new CO2 requirement is looking very plausible right now, which could jeopardise their strained financial position given hefty fines for non-compliance.</p> <p>The EC could postpone the effective date of the new fleet emission requirement from January 1, 2021, to June 1, 2021, giving carmakers time as part of stimulus measures to help offset the negative impact of Covid-19 on the European economy. Furthermore, we note that European car brands play a major role in the region's economy which will motivate governments to assist them.</p> |
| China | China 6 emission standard lowers maximum permissible particle number (PN) count to PN11 from PN10 | July 1 2020 | December 31 2020 | <p>Carmakers and the China Association of Automobile Manufacturers (CAAM) have requested that the government push back the deadline for implementation of the China 6 emission standard further to help the industry recover since manufacturers were unable to adjust their output as the industry was paralyzed by the outbreak of Covid-19 and the supply chain disruptions, especially for EVs. Given that the central government pledged to support the autos industry, we believe that it is very likely that the new standard will be pushed back to at least January 1, 2021, if not further.</p> |

Source: National sources, Fitch Solutions

The Trump administration recently finalized its emission standard targets, though the Competitive Enterprise Institute already filed a lawsuit against the revised policy. California state and some carmakers also plan to sue, thus lengthy legal challenges will delay nationwide implementation. The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule could change given that American carmakers have to comply with other countries' regulations if they have retail operations there.

SAFE emission standard requires 1.5% annual increase in emission efficiency through 2026
 March 31 2020 n/a

This unambitious emission targets will also face a backlash from environmental consumer groups especially in light of respiratory health issues caused by the Covid-19.

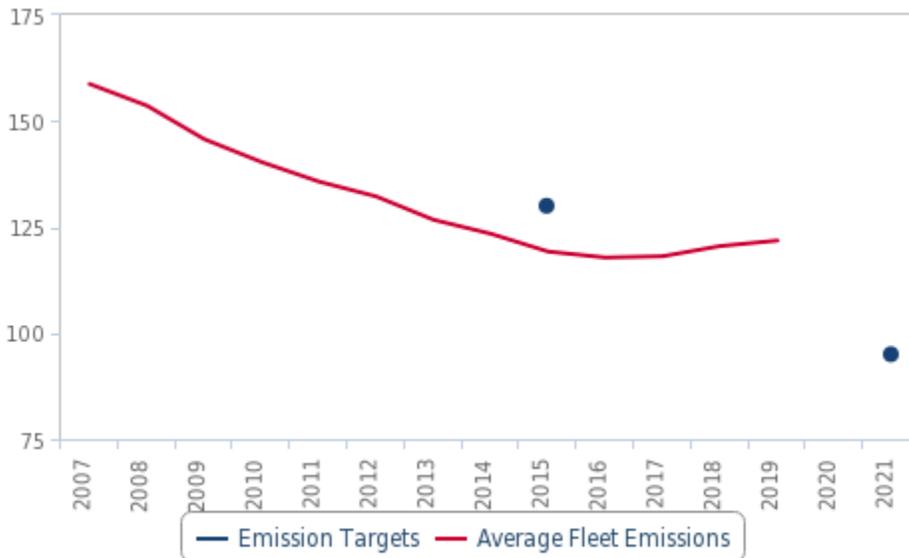
Source: National sources, Fitch Solutions

European Emission Targets Hardest To Achieve

We have highlighted previously that [carmakers in Europe will struggle](#) to meet the EC's 2020/2021 average fleet emissions target of 95g/CO2 per km at the current pace of reduction of average fleet CO2 levels. Previously, we believed that most major carmakers would be able to meet the new target by promoting their EVs, however, given that Covid-19 is a major headwind to EV demand in 2020, we are growing increasingly doubtful that carmakers will be able to comply, which is why we believe that the implementation of the emission policy will be delayed. We note that average fleet emissions in Europe reached 121.8g/CO2 per km in 2019 (see chart below) largely because carmakers had to offload higher emission vehicles prior to the new standard being phased in from January 1 2020. We believe car manufacturers will have to navigate through weaker EV demand, financially-cautious consumers and businesses, and higher-priced EVs while trying to comply with new standards.

Car Companies Will Struggle To Meet Emission Targets, And Face Fines

Average Fleet Emissions & EC Targets

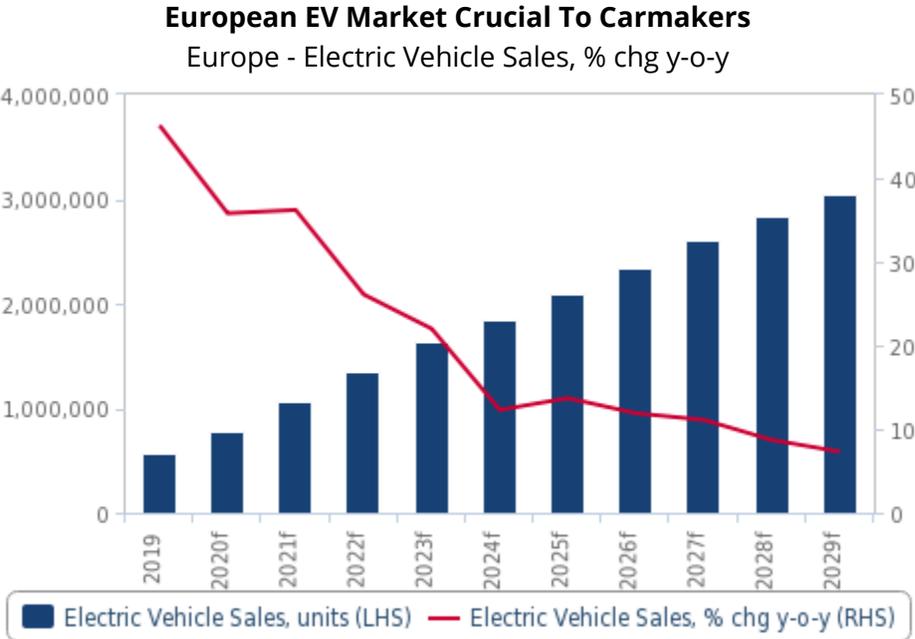


Source: EEA, Fitch Solutions

EVs At Centre Of Production Restart

As carmakers plan to restart their operations post-Covid-19, we believe they will likely prioritise EV factories where the level of automation is higher, as these require less personnel on the floor to restart assembly lines, making them compliant with new social-distancing, health and safety rules. In our view, accelerating low-volume production of EVs is an optimal response given severe global supply chain disruptions and we have seen this strategy implemented by major producers including **Volkswagen** in Germany, **Hyundai** in the Czech Republic, and **Audi** in Belgium. We also note that **General Motors Company** (GM) announced a shift in new model launches, concentrating on models that were due out first, such as **GMC** Hummer EV, **Cadillac** Lyriq, **Chevrolet** Bolt EUV and Cruise Origin shuttle, as well as its new Ultium battery system. Following a halt to production across developed and emerging markets, automakers are strategizing how to return to operations at a reduced capacity whilst mitigating safety and legislation risks, which bodes well for low-volume EV production. We expect other producers to follow suit for four reasons.

Firstly, EV production is more automated and less labour-intensive than traditional vehicle production, and therefore more likely to be compliant with expected social distancing and other safety rules. Secondly, despite its growth, EV production remains on a lower scale to conventional production, making it more commercially viable during a period of economic uncertainty. Thirdly, given that EVs typically have fewer component parts than traditional combustion engine vehicles, prioritizing production of EVs allows automakers to narrow supply chains at a time of heightened global supply risk. Lastly, ramping up production of EVs coincides with the requirement to reduce average fleet emissions in Europe. While we expect EV sales in Europe to soften on the back of the Covid-19 outbreak, we still hold a broadly positive outlook for the EV market and forecast EV sales to grow on average by 18.5% annually over our 2020-2029 forecast period (see chart below).



f = Fitch Solutions forecast. Source: National sources, Fitch Solutions

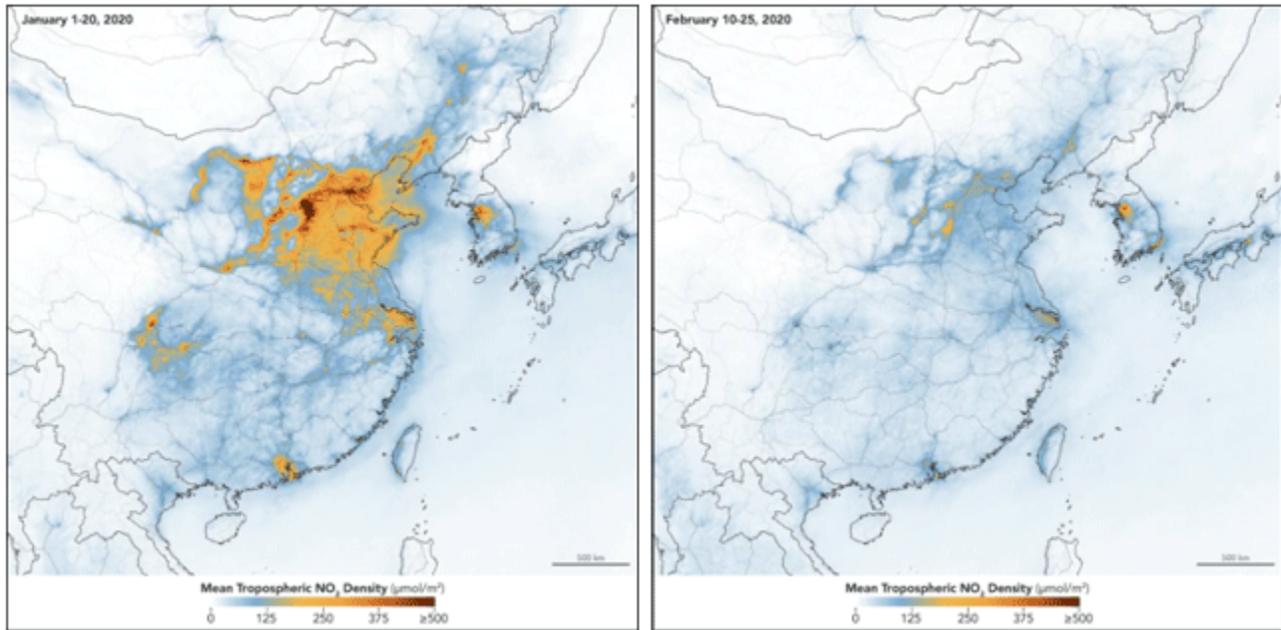
Climate Change To Accelerate EV Adoption

Adding further wind to the EV adoption sail is our belief that more consumers will grow increasingly cautious of climate change and their carbon footprint post-Covid-19, especially as respiratory diseases gain wider attention during and after this pandemic. Indeed, reducing vehicle pollution was on the agenda in several countries that experienced high levels of nitrogen dioxide (NO2) in the air, such as China, the US, and several European states. However, as air pollution is directly linked to respiratory diseases, we believe major countries will ramp-up their efforts in curbing greenhouse gas emissions to tackle high CO2 levels. This means that governments will increasingly promote the use of electric cars as these have zero tailpipe emissions and contribute to CO2 and NO2 reduction. Striking examples of improved air quality amid

Covid-19 lockdowns that banned travel in major cities, from Beijing to Los Angeles, to Bangladesh and Moscow, help grow consumers' awareness of transport pollution which we believe will add to the momentum of EV adoption. For example, according to the European Environment Agency, over the week of March 16-22 2020, the average concentration of NO₂ in Milan was down 21% y-o-y, Bergamo saw a 47% y-o-y reduction, while Barcelona recorded a 55% y-o-y decline. Furthermore, according to NASA, China saw a drastic reduction of NO₂ during the lockdown period (see image below).

Electric Vehicles To Gain From Pollution Concerns

China - Mean Tropospheric NO₂ Density (LHS: Pre-Lock Down & RHS: During Lock Down)



Source: NASA

Furthermore, we also believe that governments will consider introducing more ambitious emission reduction targets and rolling emission-free transport zones in major cities, following the examples of London, Oslo, Antwerp, Melbourne and Copenhagen. As such, we believe that there is an opportunity for carmakers to use the growing pollution concern post-Covid-19 to accelerate the adoption of EVs further.

Cash Strapped OEMs To Increasingly Share EV Platforms

As part of our [Key Themes 2020](#), we have highlighted that EV platform consolidation will gain traction going forward as carmakers will start utilising each other's EV platforms in order to catch up in the EV race and to avoid the significant financial burden associated with internally developed EV platforms. We believe the financial strain caused by the Covid-19 pandemic will severely limit carmakers' capacity to invest additional funds to develop EVs in-house and thus lead to the acceleration of this trend.

We believe platform sharing would ensure that the majority of carmakers can offer competitively priced models and effectively compete in the EV segment without being left behind. We highlight that in January 2020, **Nissan Motors** announced plans to develop an EV platform that will be used by all Alliance members, including the **Renault, Mitsubishi** and **Infiniti** brands, to benefit from economies of scale during production while accelerating EV roll-out. Furthermore, in April 2020, GM announced that it will share its Ultium battery technology and the EV platform with **Honda** as part of Honda's effort to develop two new EVs for the North American market by 2024. This will allow Honda to accelerate its electrification strategy while helping GM to recoup investments into the EV technology. We have compiled a list of EV

platforms and the level of their competitiveness, based on development stage, flexibility to adapt to multiple models, and each OEM's estimated production capacity, in order to identify which EV platforms will likely be adopted by other OEMs (see table below).

NEW EV PLATFORMS AND THE LEVEL OF COMPETITIVENESS

| Automaker | EV Platform | Development | |
|--------------------------------|--|-------------------|-----------------|
| | | Stage | Competitiveness |
| Volkswagen / Audi | Modular electric drive matrix (MEB) | Completed | Strong |
| Audi/Porsche | Premium Platform Electric (PPE) | Completed | Strong |
| Volvo/Geely | Compact Modular Architecture (CMA) | Completed | Strong |
| PSA Group | Electric Common Modular Platform (e-CNP) | Completed | Strong |
| Ford | Global Electrified 2 (GE2) | Completed | Strong |
| Rivian/Lincoln | Skateboard | Final stage | Strong |
| Tesla | Tier-3 Mass-Market-Vehicle Platform | Completed | Strong |
| Porsche | J1 | Completed | Strong |
| BMW | Cluster Architecture (CLAR) platform | Completed | Strong |
| Great Wall Motors | ME (Mini Electric) platform | Completed | Good |
| BYD | e-platform | Completed | Good |
| Renault, Nissan and Mitsubishi | Alliance platform | Completed | Weak |
| PSA Group | Efficient Modular Platform (EMP2) | Completed | Weak |
| FCA | Small Vehicle Platform (SVP) | Completed | Weak |
| Volkswagen | Modular Longitudinal Matrix EVO | Completed | Weak |
| Hyundai/KIA | | Under development | TBD |
| Jaguar Land Rover | Electric-Global Modular Platform (E-GMP) | Under development | TBD |
| | Modular Longitudinal Architecture (MLA) | Under development | TBD |
| Toyota | electric Toyota New Global Architecture (e-TNGA) | Under development | TBD |
| Daimler | Vision EQS | Under development | TBD |

Source: National sources, Fitch Solutions

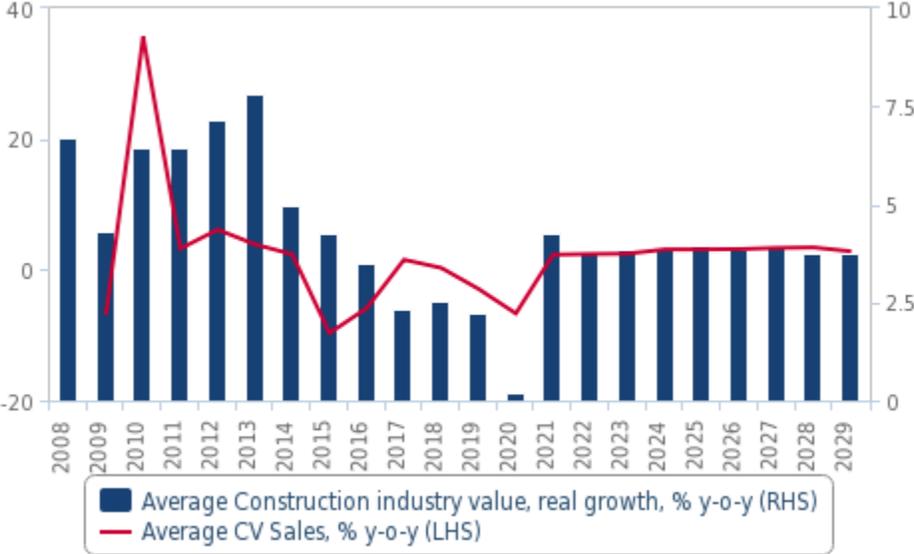
Post-Pandemic Stimulus Presents Upside Risk For CVs

We believe that emerging markets (EMs) will likely use infrastructure spending to boost their economies and increase employment in the longer term following the devastation that will be caused by the Covid-19 pandemic in 2020. We highlight that EMs face acute fiscal pressures that leave them largely incapable of allocating substantial financing to construction and infrastructure to facilitate growth over the short term. However, over the medium to long term, covering the second half of our forecast period (2025-2029), EMs will likely once again invest heavily in their infrastructure as it remains a key source of foreign direct investment and employment, which when coupled with the pent up demand for commercial vehicles (CVs) over 2020-2024 will significantly drive up the demand for CVs in these later years.

Our Infrastructure team believes whilst any prolonging of the outbreak of Covid-19 would constrain investment intentions in the sector in 2021 and beyond, the factors that delivered such a strong expansion for global construction in the previous decade are no longer present to the same degree. Furthermore, in a global economic environment in which governments are increasingly indebted, as a result of public stimulus deployed to mitigate the economic impact of

Covid-19, EM governments will likely act with greater caution in the coming years with regards to financing large-scale infrastructure projects that could damage their fiscal position. This means that the CV markets in EMs will remain weak over 2020-2024 and will see demand for vehicles build up and released from 2025 onwards once infrastructure spending regains momentum. We are holding off on revising our longer-term CV sales outlook until we have concrete evidence that EM governments are implementing stimulus packages focusing on infrastructure, and the size of the packages. We currently forecast the Sub-Saharan Africa (SSA), Middle East And North Africa (MENA), Asia and Latin America's (LatAm) CV sales to average annual growth of just 2.9% over 2021-2029. However, as we noted previously, we could see a spike in CV sales once EMs start implementing stimulus policies.

Historical Correlation Highlights Impact Infrastructure Stimulus Could Have
 Average Growth Of MENA, SSA, Asia & LatAm, % y-o-y

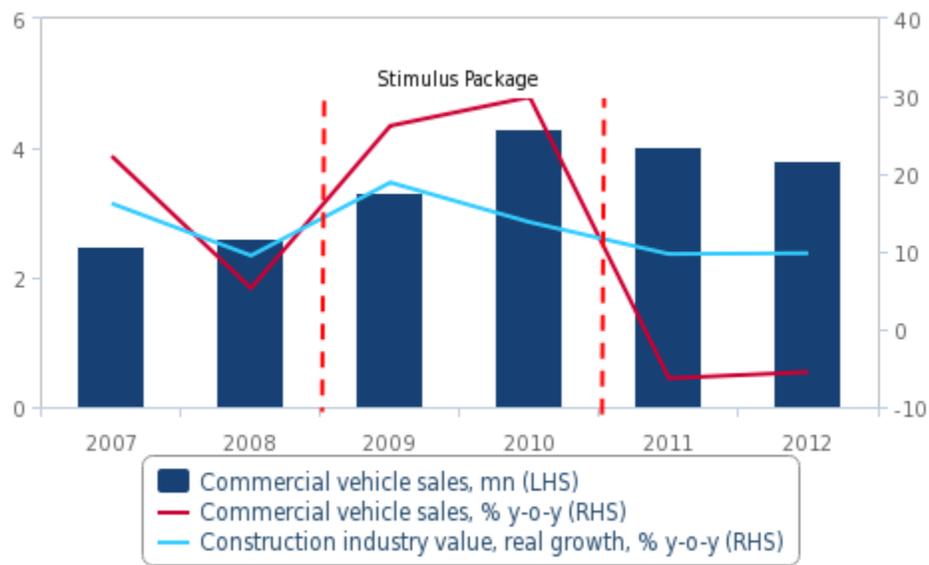


Source: National sources, Fitch Solutions

Over the shorter term (2021-2023), we note that China is one of the markets that we believe could significantly increase spending on its infrastructure as a means of stimulating the economy because it is the only EM with the current capacity to spend on infrastructure. In 2008/09, China announced a stimulus package of around USD568bn (around 7% of its GDP at the time) over a period of two years with a focus on infrastructure development which saw its economy rebound quickly and CV sales jump up by 26.2% in 2009 and 29.9% in 2010 (see chart below). The annual National People's Congress, which was originally scheduled to take place in March 2020, has been postponed due to Covid-19, and as a result, official announcements on stimulus plans have not been released by the central government. That said, more than 20 major cities and provinces have already moved ahead to release investment plans for infrastructure projects estimated to be worth more than CNY49trn.

We Could See A Repeat Of 2009/10 CV Demand Spike

China - Commercial Vehicle Sales, Units & Construction Industry Value, % y-o-y



Source: National sources, Fitch Solutions

Production

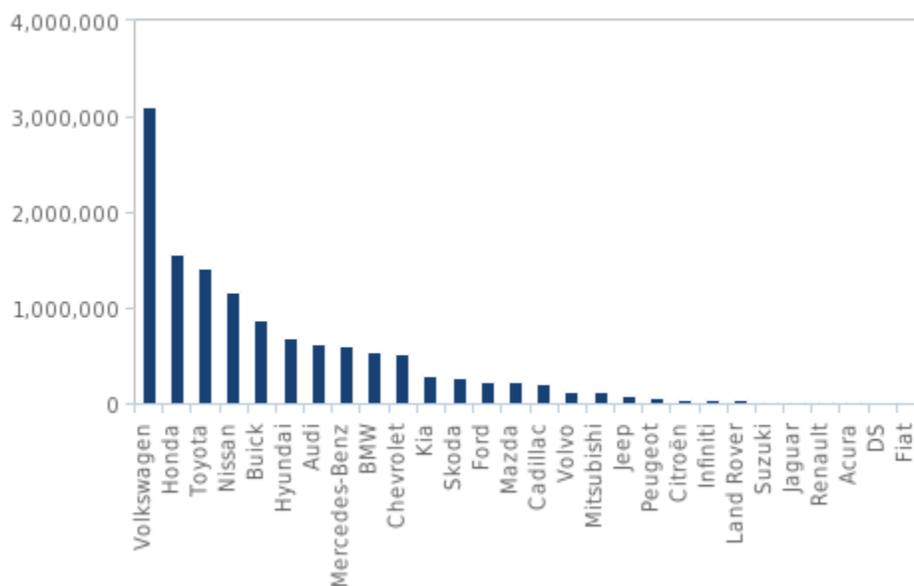
OEM Restructuring Measures To Shake Up Car Markets

We believe that the global vehicle sales slowdown will prompt major carmakers to accelerate cost-cutting measures, such as scaling down market presence, supply chain diversification, labour force cuts, R&D reduction, new model launch delays, and increased automation, to optimise operations and reduce financial burdens. We note that some carmakers are better-placed to weather the decline in the autos market, especially those that had a healthy balance sheet and a strong presence in the markets in which they operate prior to the pandemic.

However, we note that automakers will look to exit markets, other than their home base, in which they perform poorly, such as Renault which has exited China's passenger vehicle (PV) segment. Using China as an example, Renault decided to pull out of the Chinese PV market in April 2020 citing falling demand for its internal combustion engine (ICE) cars, however, Renault is maintaining its presence in China's EV and light commercial vehicle segments as it has a strong footing in these segments. We forecast the Chinese car market to contract by 18.4% in 2020, which will put significant financial pressure on all car brands in China, especially those who were unable to secure a significant market share, such as **DS**, **Jaguar**, and **Suzuki**. As such, we believe this could lead to other brands reducing their presence in the country (*see chart below*).

Foreign Car Brands Held 60% Market Share

China - Foreign Car Brands Passenger Vehicle Sales, units (2019)



Source: CAAM, Fitch Solutions

As some automakers leave some markets where they are performing poorly, we believe that Chinese automakers will use this short-term opportunity to expand their presence and buy factories from OEMs who are leaving these markets, most likely at a significant discount due to the market weakness. We highlight that the South East Asia region's automotive sector will be especially open to a shake-up, and could see Chinese auto brands significantly expand their presence and try to compete against the dominant Japanese brands. In February 2020, Chinese automaker **Great Wall Motor** acquired GMs' Rayong vehicle production facility in Thailand, which we believe is an early indication of what is to come. As China's car manufacturing has now mostly restarted, local carmakers could seek new revenue streams to diversify their exposure to a weakening domestic market.

As part of the industry's restructuring efforts, we believe carmakers may opt to delay their product launches planned for 2020 amid challenging times and wait until the market recovers, which we believe will largely start from 2021 onwards. A number of carmakers have already announced that the release of new and refreshed models will be pushed back to late 2020 or 2021 in light of production challenges brought on by Covid-19 and the reduced demand for new vehicles in 2020. GM plans to push the release of its updated models, including updates of the Chevrolet Equinox, GMC Terrain, Cadillac XT4, Bolt EV, Chevrolet Silverado and GMC Sierra, to 2022, as the carmaker tries to cut operational costs. Ford will delay the preview of its new Bronco model while Maserati postponed the unveiling of its electrification strategy as well as the all-new MC20 model. These types of moves will also serve to reduce the overall financial burden associated with launching new models.

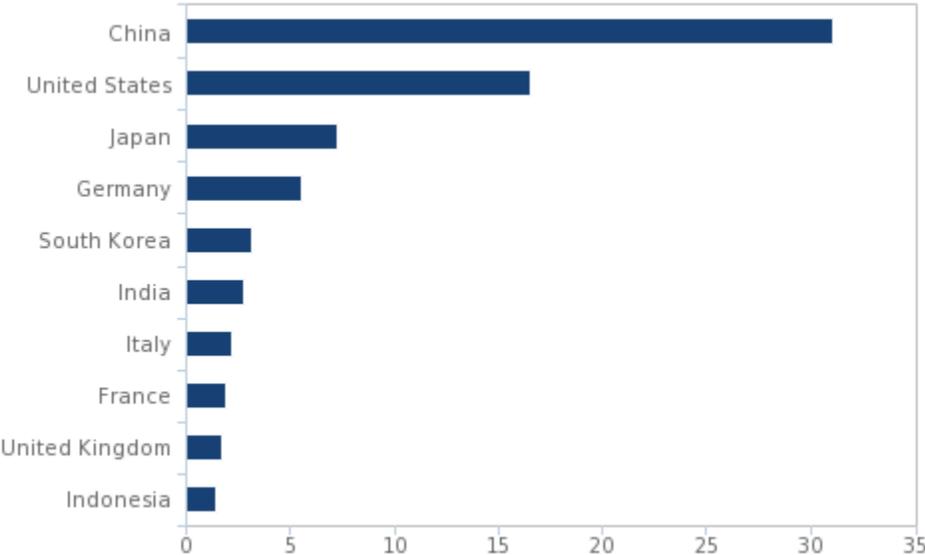
Reliance On Chinese Manufacturing To Diminish Not Disappear

Although we believe that the automotive supply chain will experience a shake-up in the wake of the Covid-19 pandemic, we do not expect a mass exodus from China but rather a reduction in capacity and a limited number of companies relocating due to political pressure. Furthermore, we expect manufacturers in the automotive industry will seek to diversify their supply chains and bring them closer to their target markets, especially following the uncertainties caused by the US-China trade war, before Covid-19 further exposed these issues. However, we believe companies will reduce, not eliminate their dependence on Chinese manufacturing. This is due to the continued attractiveness of China as a manufacturing base, the sheer size of the Chinese automotive market and the fact that no other country can come close to the size of China's manufacturing industry. In 2018, China's nominal Gross Value Added (GVA) as a % of global Manufacturing GVA reached 31.1%, compared to 15.6% from the US which is the second-highest. We highlight that,

outside of the US and China, the next eight highest manufacturing GVA countries only managed a combined 25.9% of total global Manufacturing GVA, still below that of China, which highlights how significant of a role Chinese manufacturing plays in the global economy.

No Other Market Can Easily Replace China's Manufacturing Industry

% of Global Manufacturing Nominal GVA, USDbn (2018)



Source: UN, Fitch Solutions

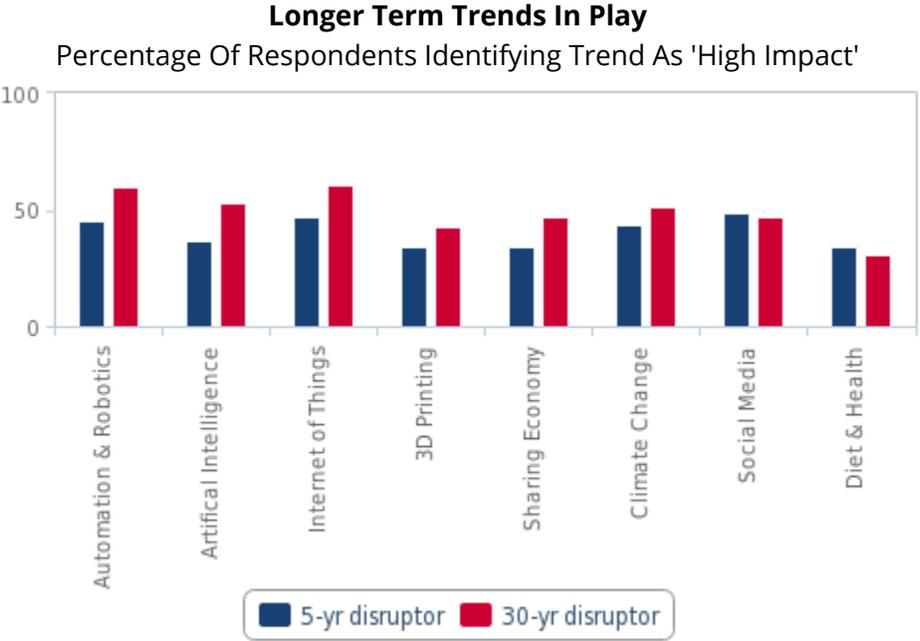
That said, there is a growing trend of governments offering incentives for their manufacturers to leave the Chinese market and return to their home bases. Japan was one of the first countries to offer financial incentives to lure manufacturers out of China. India has also recently announced that it would offer a range of incentives, including developing 461,589 hectares of land for manufacturing, to lure manufacturers out of China. Above and beyond this, many countries including South Africa and the US have voiced their commitment to bringing manufacturing back to their local markets and out of China. However, we believe that this will have limited success as businesses require trade certainty, growth opportunity and attractive operating conditions, such as labour supply and supportive policies, which vary from country to country.

Markets that we believe could benefit from the automotive supply chain diversification include Vietnam, Brazil, Mexico, Thailand, some Central and Eastern European countries and finally North Africa. This is because these regions offer attractive labour dynamics (low cost and large supply), strong trade routes, favourable cost and availability of utilities, growing demand for new vehicles and they are increasingly improving their manufacturing incentives to be more appealing to automakers. However, this process of automakers diversifying their supply chains will take a while to be realised and will face growing pains in the form of skill shortages and some political volatility which could cause uncertainties that automakers are seeking to avoid.

Advantages Of Automation Seen In Factory Restarts

One of the Megatrends to 2050 that we expect to be accelerated as a result of the Covid-19 pandemic is the automation of manufacturing plants. In our survey of industry players asking respondents which Megatrends they considered to be 'high impact', some of the biggest responses in percentage terms were for 'Automation and Robotics', both over the next five years and 30 years (see chart below). In addition to the efficiency gains that were already an attractive benefit of a highly automated manufacturing facility, the ability to reduce the human risk factor and keep operations running is now recognised as another advantage, which has been made especially clear amid the production disruptions caused by the Covid-19 pandemic. Our view is supported by the fact that German carmaker VW announced that one of its first

plants to re-open would be its Zwickau plant which has recently been upgraded to accommodate production of the ID3 electric car. The company has previously claimed the model requires less time and labour to assemble than the e-Golf partly due to the highly automated process. In this case, the upgrade has also enabled the carmaker to restart its operations with fewer people needed and so adhere to health and safety requirements.



Source: Fitch Solutions - Megatrends Survey 2020

We highlight, however, that this is likely to be a trend for new manufacturing plants in the future. The economic impact of the pandemic on companies means that there is unlikely to be money available for unnecessary Capex in existing facilities. Therefore we see it as a gradual shift toward greater automation and we would anticipate the likelihood of pushback from labour unions given the number of job losses that have been incurred as a result of the virus. We also see limitations of the technology itself being a barrier to widespread adoption throughout the industry. As sophisticated as automotive robots have become, there are still some complex tasks that can only be done by hand, particularly in the luxury segment where traditional crafts and bespoke configurations are more common. For these high-end brands, it is also part of the attraction that certain parts of the car are produced or finished by hand by skilled craftspeople. For mass-produced vehicles that rely on the efficiency however, the lengthy stoppages and gradual restarts will underline the need for increased automation.

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