



# **Major Automotive Global Trends**

**November 2022**



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## 1. Global

### **Computer chip supply is improving, but additional challenges continue to disrupt the global supply chain, production, and car export from China.**

Computer chip bottlenecks that have disrupted global car manufacturing in the last two years are being gradually released. Yet, the auto industry is still encountering a variety of logistics disruptions that affect vehicle delivery schedules.

It should be noted that the situation is especially grave when it comes to transporting vehicles from eastern countries, in particular China, due to a growing shortage in RORO ships destined for the main lines to Europe and the US. An article in a Chinese newspaper at the beginning of November claimed that Chinese car export is being delayed due to a shortage of ships suited for vehicle transport. The article quoted a senior executive from one of the Chinese car manufacturers, saying: "We have orders for 2,000-3,000 new cars each month, but we can send only 500 units due to lack of capacity in the ships".

This shortage is the result of, among other things, the leap in car export from China globally. In the first ten months of 2022, 179,000 cars were exported from Guangzhou port alone – twice the amount that was shipped in the same period last year. Overall, China exported 2.1 Million vehicles during Jan-Sep 2022, an increase of 55% compared with 2021.

According to the article, the number of RORO ships designed for vehicle transport did not grow proportionally to the production and export rate, resulting in a shortage. The direct implication of this shortage is a dramatic rise in transportation costs. According to the article, the rates for transporting vehicles on RORO ships from China to the west are currently 120-150\$ per cubic meter, while a year ago, the rate was around 30\$ per cubic meter. This rise in transport



costs is added to the swift rise in inputs for vehicle production in China, and a horizontal increase in price for all exported vehicles, especially BEVs.

**October global deliveries: world auto market recovers due to an increase in supply, but the effect of the recession will be felt next year.**

Despite signs of a global economic recession, during October, the auto market demonstrated an impressive recovery on all fronts, according to deliveries registered in November. The American auto market rose in October to 1.18 Million private and institutional sales, an increase of 11.5% compared with October 2021, a result of an increase in production and inventory after a long period of chip shortage. The level of cars for sale inventory during October has risen by 7.8% compared with September. At the same time, the rate of increase of average car prices slowed to 1.1% only, hinting that customers are not ready to pay "any price" for a new car. That being said, it is worth noting that October sales in the US last year were meager due to chip shortage.

Europe also registered an increase in sales during October, for the third month in a row, thanks to an improvement in production rate. In the UK, October sales grew by an impressive 26%. The French auto market also completed an increase of three months in a row, but cumulative sales since the beginning of the year are still down 11% compared with last year. The same goes for Germany, which registered an increase of 17% in October compared with 2021, but annual sales until now are down 5.5%. Positive sales numbers have also been registered in China, Japan, South Korea, India, and other markets.

Based on October delivery figures, the annual sales rate for passenger cars in 2022 is currently at 81.6 million units, almost identical to last year but 9.5% lower than in 2019, in which nearly 90 million vehicles were sold.



**Goldman-Sachs: Europe and the US will be free from dependence on Chinese batteries by the end of the decade.**

By 2030, the US and Europe will be freed from dependence on Chinese Lithium car batteries, estimates Goldman-Sachs in research published this November. According to the study, by the end of the decade, the US government and EU will invest 160 billion US\$ to establish production lines and raw materials supply in their territories to cut off the dependence on China and create a complete and independent supply chain. Goldman-Sachs analysts estimate that current and future investments made by Korean batteries production giants LG and SK in US plants will enable the US to self-supply all local demand for batteries within 3-5 years, eliminating the need to import batteries from China.

According to the report, in order to reach the destination, an investment of 78.2 billion US\$ in production infrastructure and 60.4 billion US\$ in materials such as Lithium, Nickel, and Cobalt will be required. There will also be a need for an investment of 13.5 billion US in mining and/or purchasing mines for these raw materials and 12.1 billion US for extracting these materials. The report states that currently, China is the world leader in the battery supply chain, starting with mining and processing these materials and all the way to actual battery production.

**The global auto industry to lose production of 4 million vehicles in 2022 due to computer chip shortage. However, this figure represents an improvement of over 50% compared with 2021.**

Disruptions in computer chip supply have "cost" the auto industry loss of production of 4 million units since the beginning of 2022, predicts Auto Forecast Solutions research company, in a report published on November 22<sup>nd</sup>. However, the production rate is improving monthly, and according to the forecast, 2022 will end with a loss of 4 million units, attributed directly to chip shortage.



**These figures represent a substantial improvement over the loss of production in 2021 of 10.1 million units. Still, the damage is much more severe than expected in early forecasts from the beginning of the year.** AFS estimates that the weekly production loss rate in the US, attributed to chip shortage, is 79,000 units. However, China lost only 172,000 vehicles between January and November this year due to chip shortages. AFS estimates that the crisis will not end completely in 2022. The company notes that in the Japanese auto industry, the shortage is still felt; consequently, production volumes are expected to drop next year.

## 2. USA

**US Inflation Reduction Act continues to cause tension with US allies over canceling subsidies for "foreign" EVs.**

The US inflation reduction act (IRA), which also canceled the tax benefits for EVs produced outside of the US, continues to make waves and causes international tensions. A formal letter sent by the South Korean government to the US government at the beginning of November claims that the IRA will damage foreign EV producers and may impact international trade agreements such as the WTO and the mutual free-trade agreements between the US and South Korea.

When meeting with American officials, representatives of the South Korean government asked for a three-year extension before tax benefits on South Korean EVs imported to the US are canceled. These talks have yet to bare any fruit.

The South Korean request was backed up by South Korean senior analysts that claimed that implementing IRA will severely damage the competitiveness of Korean car manufacturers, which are currently in second place in US EV



sales. Additionally, there is a growing concern that once Korean manufacturers start producing EVs on US soil, their benefits may be revoked due to their dependence on Chinese mineral supply for the production of batteries, a dependence that cannot be altered in the short run without dramatically increasing production costs. Currently, Korean auto manufacturers import 84% of the mineral Lithium Hydroxide, which is vital for car battery production, from China.

The US decision to cancel tax benefits for foreign EVs was also criticized this November during the G20 summit, in which US president Joe Biden and the US treasury secretary participated.

During the summit, the French finance minister said that the decision to discriminate against foreign auto manufacturers as part of the IRA "shook" the European car industry. He added that he hopes that some of the controversial issues will be resolved, at least for European manufacturers, during the visit of the French president to the US. According to the French minister of finance: "The US government's determination to protect its interests and advance green technologies is understandable. However, this determination should not negatively affect US allies and the European economy". The South Korean president also used the G20 summit in order to ask the US president to avoid discriminatory steps against South Korean companies as part of the IRA.

### **US government allocates dozens of millions of US\$ for lithium batteries recycling projects.**

As part of its policy to accelerate EV penetration into US roads, the Biden administration is gearing up for primarily used battery recycling in the future. During November, the administration announced the allocation of 74 million US\$ for ten projects that promote the recycling of batteries and their use outside the automotive sector. The announcement made by the US ministry of energy



said that: "The demand for materials embedded in the batteries, such as Lithium and Graphite, is expected to rise by 3,000 times over the next years, hence supporting the recycling of these materials will support the entire local supply chain for batteries in the US". The ministry divides the battery's value chain into six areas: "production of raw materials", "material separation and processing", "component manufacturing", "cell and case manufacturing", "implementation" (production of complete batteries), and "recycling and re-use". The 2.8 billion US\$ allocated by the administration so far for the whole program was channeled mainly into the first four areas and to private companies that produce new batteries. The current budget will also be directed to universities and research institutions in the field of battery recycling around the US.

The projects include, for example, the use of batteries that have lost more than 30% of their capacity in order to allow mobile charging for EVs in remote rural areas.

According to recent estimates, the scope of the global market for car battery recycling was 1.93 billion US\$ in 2022, and it is supposed to grow to 30.5 billion US\$ by 2032 – a yearly growth rate of 31.8%. At the same time, the effectiveness of recycling is expected to also expand to a level of 95% in restorative materials such as Copper, Nickel, and Cobalt.

**American auto market November sales forecast: rise in sales due to supply improvement, but at the same time moderation in demand and prices.**

Overall sales of passenger cars in the US market in November are expected to reach 1.122 million units, an increase of 10% compared with November 2021, estimates from research company S&P Global. This figure represents a yearly sales rate of 14.2 Million cars for 2022. It is the third month in a row that car sales have increased, resulting in gradual improvement in inventory stemming





from production increase and a decrease in demand surplus due to the rise of interest rates for a car funding. According to the researchers, "We are continuing to follow the larger-than-expected growth rate in inventory, which may indicate recession".

The company estimates that the market share of EVs during November is expected to reach 5.9%. Almost 50.5% of EV sales in the US are concentrated in the eight large coastal cities, led by San Francisco and Los Angeles, that capture nearly a third of sales. On the other hand, EV sales in states and cities within the US are still meager compared with overall car sales. However, the researchers believe this situation will change quickly, especially in large cities in the central US. The sales estimation of J.D. Power and LMC Automotive projects that November car sales in the US grew by 9.9%, or when adjusting the figures according to the number of work days compared with last year, an increase of 5.6%. According to the forecast, November data suggests an ongoing improvement in car production capacity and an increased available inventory to over a million vehicles, the second month in a row. At the same time, production allocation for fleets is also growing.

The researchers say that demand for cars from private customers is still higher than the supply, as can be seen from the rise in average transaction prices, which is still peaking, alongside dealer profitability. However, the researchers estimate that these figures will start to decline as inventory and interest rate increase. According to the two research companies, the average transaction price for a new car in the US rose to 54,872 US\$ in November, an increase of 3.1% compared with November last year, but the increase rate is dropping. The dealer's average profit per unit settled at around 4,360 US\$, a decrease of 15.4% compared to the previous year but still twice the gain in 2019.



### **3. China**

**The Chinese auto market is battling a new wave of COVID closures, but EV sales continue to rise.**

The market for passenger cars in China is expected to register 1.86 million units during November, an increase of 2.4% compared to last year, despite wide COVID closures during the following month. However, the market for vehicles with alternative drive trains, mainly EVs, keeps breaking records.

According to an estimate made by the Chinese Private Car Association (CPCA), 600,000 new cars with alternative drive trains will get on Chinese roads this November, a leap of 58.5% compared with November 2021 and 8% compared with this passing October. **The penetration rate of all kinds of EVs as part of overall deliveries is expected to break the previous record and stand at 32.3% in November.** The association mentions that the widening of the closures in November has neutralized the effect of government incentives on the auto market. Some manufacturers are expected to register a 9-12% decrease in deliveries compared with last year. Meanwhile, Chinese auto manufacturers continue to suffer from the shortage in chip supply and various logistic disruptions resulting from the new wave of COVID closures. Prolonged closures have also caused Chinese dealers a sharp increase in inventory, now standing at 53 days on average compared with inventory for 44 days as it was until October.

### **4. South Korea**

**New research: global car sales to reach a new record by 2025. However, 2023 will be a challenging year for the Korean auto industry.**

Despite the prediction for a swift recovery in global car sales in 2023, the South Korean auto industry is expected to shrink during that year, so estimates research was carried out by the South Korean Auto Technology Institute and



published in November. According to the research, global car sales are expected to increase in 2023 by 4.7% to around 85.3 Million units, despite signs of recession and the computer chip shortage that is supposed to disappear by 2024.

The research estimates that in 2025, global car sales will soar to an all-time record of close to 97 million units. EV sales worldwide are also expected to reach a new record in 2025, with a leap from 9 million this year to 12 million next year and 20 million by 2025.

The researchers claim, "Even though the growth rate of the European and US auto markets is supposed to slow down next year, China will compensate with accelerated growth driven by government support".

However, contrary to the global trend, the researchers estimate that South Korean car sales will drop next year by 0.5% compared with 2022, and car export from South Korea will decrease by a significant 4.2%. Overall production of cars in South Korea is expected to shrink by 3% next year to 3.49 Million units.

The report states that Korean auto manufacturers are expected to experience the pressure of the American IRA (Inflation Reduction Act) that recently revoked tax benefits from EVs manufactured outside the US.

## **5. Europe**

**The EU continues to present EURO 7 emission standard details: for the first time, legislation will expand to take into account indirect emissions caused by EVs.**



During November, the EU Commission published further details regarding the new EURO 7 emission standards that will take effect starting in 2025. The new details reveal that, for the first time, the new standards will consider peripheral environmental pollution caused by EVs. Among other things, the new regulations will relate to particles caused by brake systems erosion and to the emission of such micro-plastic particles. The goal is to quantify the pollution created when EVs are being driven and establish enforcement and control mechanisms through taxation to prevent the over-driving of these vehicles.

According to the regulations, starting from 2025, all new vehicles sold in Europe, including EVs, will have to emit no more than 7 Mg particles per Km, and from 2035 no more than 3 Mg per Km from brake pads. Additionally, for the first time in the regulations, auto manufacturers will have to limit the number of micro-particles emitted due to brake wear.

The scientific reason behind this requirement is that EVs are substantially heavier than their ICE counterparts, sometimes by hundreds of Kilograms. Thus, they wear their tires much quicker and cause more damage to road infrastructure. The EU still needed to determine the maximum value of this pollutant for each type of tire (Winter Tires, A/T Tires, etc.). **The future EU regulations will include, for the first time, indicators for EV battery efficiency over time to protect consumers. According to the suggested regulations, after five years or 100,000 Km, batteries in new EV models sold in Europe will have to retain at least 80% of their original capacity. After eight years or 160,000 Km, they will have to keep at least 70% of their actual capacity.**

The regulations still need to clarify how the EU intends to enforce and monitor battery capacity and tire and brake wear. The auto industry, however, is already trying to form solutions for these new requirements.



In November, the German press said that manufacturers would try to address the brakes wear requirement by equipping future EVs with more aggressive energy-recuperating braking mechanisms that operate when releasing the throttle. A possible solution for limiting tire wear could be achieved by using advanced composite materials for tire manufacturing and also by building "particle traps" around the wheels. Both ways, it will come down to additional costs, and the subject has already received adverse reactions from the VDA and the ACEA. The chairman of BMW, Oliver Zipse commented on the issue and said: "These regulations will delay the goal of zero-emission transportation in Europe". He says, "Unfortunately, the environmental advantages of the EU's proposal are limited but will contribute substantially to car costs. The proposal focuses on extreme conditions, whose relevance to everyday use is low".

**PWC Research: by 2025, Europe will import more than export cars – heading the import will be Chinese vehicles.**

The European auto industry surged last month following a new forecast made by global consulting firm PWC that predicts that by 2025 Europe will import more cars than it exports. One of the reasons for that is the leap in importing Chinese vehicles to Europe. The researchers note that China is gradually becoming an EV export super-power. While China is selling more and more EVs in Europe, even European and American car manufacturers are progressively moving their production to China.

The research states that the Chinese quantitative leap is enormous. Last year, European auto manufacturers alone produced 35,000 EVs in China and exported them to Europe. This year, the figure is expected to reach 66,000, and three years from now, almost 800,000 made in China will be sold in Europe. **According to the research, 330,000 "European" cars made in China will be sold in Europe by 2025.** The report's authors say that these developments



mean that Europe may find itself with an import surplus over the export of 221,000 vehicles in 2025. In 2015, for example, Europe had a production surplus of 1.7 million cars. The authors added that the Chinese auto industry is taking advantage of the European push towards e-mobility and the broad governmental support for export they get in China. On the other hand, European auto manufacturers are preoccupied with problematic background conditions, including prolonged disruptions of the supply chain and soaring energy prices. As a result, they are losing their traditional technological advantages. Europeans have yet to find an answer to the relatively cheaper EVs manufactured in China; consequently, there is not even one European EV model in the list of the five top-selling EVs. **The research concludes that until now, Chinese manufacturers have captured only a marginal part of the European EV market, but by 2030 they may hold a significant market share.**

#### **The new government in Sweden revokes subsidies for EVs and PHEVs.**

Sweden is one of the countries with the highest EV penetration rate, in no small part thanks to generous subsidies. However, at the beginning of November, the new Swedish government published new mandates that cancel governmental subsidies for EVs and PHEVs starting on November 8<sup>th</sup>. The government claims that the reason for this is that the cost of buying and operating an EV today is at par with the cost of petrol cars; the market is strong enough, and therefore, there is no further need for government support. The unofficial reason is probably a surge in budget costs due to the subsidies given to a massive wave of EV purchases that occurred in the passing year. Despite the cancelation, the Swedish government will continue to pay subsidies for vehicles bought before the new mandate since, according to Swedish regulations, they are paid to the buyers only six months after the purchase to ensure that the car doesn't leave the country.



### **German government mulling how to restrict German car manufacturers' dependence on the Chinese market**

The German auto industry is between a rock and a hard place regarding its car manufacturing policy in China. On the one hand, all major German car manufacturers are trying to expand their production operations in China to remain competitive against independent Chinese brands that are threatening to flood Europe with their cars. On the other hand, the same manufacturers are under increasing pressure from European regulators to decrease their dependence on China.

During November, a confidential memorandum of the German foreign ministry was published, according to which the government intends to stiffen the regulations for investments in China for all German companies, including the auto manufacturers that are especially exposed to the Chinese economy. According to the regulations, companies will have to disclose more information about their activities in China and also perform "pressure tests" for geo-political risks, for example, in case of rising tension between the west and China regarding Taiwan and other sensitive tension spots. The main tool through which the government can enforce these regulations is by reducing government incentives to companies that are operating in China but don't abide by the rules. For now, the document is regarded as a draft only, and final directives are expected to be received early next year, according to the opinion of the entire German government. It should be noted that up until a few years, the German government encouraged tightening the economic and trade relations between China and large German auto manufacturers, which enjoyed record sales and profits from the expanding Chinese economy. However, this relationship is being re-visited following the sweeping support China gave Russia over the invasion to Ukraine and following American pressure over it.



## **6. UK**

### **The British auto industry is slowly recovering, but 2022 will be the worst in the past 40 years in terms of car sales. On the agenda: limitations on EV incentives from 2025**

Over the past few months, the British auto industry registered a certain recovery thanks to an increase in the demand for export and a growth of 7.4% in production thanks to parts supply improvement. And still, 2022 will be the worst year for the industry in four decades, according to a report published by the British society of motor manufacturers and traders (SMMT) at the beginning of November.

The organization predicts that overall, 1.566 million cars will be sold in the UK this year, a decrease of 5% compared with last year and almost 29% less than in 2019, before the COVID crisis. The SMMT explains the drop as a continuation of the after-effects of the chip shortage and the soaring inflation accompanied by a sharp rise in energy prices that limits the purchasing of expensive goods. According to the SMMT, the welcomed rise in sales over the past few months cannot compensate for the damage caused by COVID and the related logistics disruptions and component shortages.

The SMMT expects the market recovery to continue in 2023, and deliveries next year will climb to 1.8 million units. This will happen, among other reasons, due to the British government's decision to commit and support budgetary an accelerated shift to zero-emission vehicles in the coming years. In the passing year, almost 10% of new car deliveries in the UK were of EVs.

Meanwhile, the British minister of finance declared in November that the country intends to abolish the exemption from road fees, which private EVs, Electric LCVs, and electric motorcycles enjoy. The exemption will be canceled starting from April 1<sup>st</sup>, 2025; however, owners of expensive EVs that cost more





than 40,000 BP will have to pay, starting from that date, a new yearly "luxury car tax" that they were previously exempt from. Beginning in 2025, electric LCVs will have to pay the exact toll that diesel and gasoline cars pay now, at 290 BP a year for most models. The tax paid by employees on company EVs will also rise by 5% a year until 2027. According to the people who drew up the plan, it is not about abandoning the commitment to support e-mobility but rather a move to a more just taxing system since EVs also contribute to congestion. As expected, the announcement received a broad public objection from drivers and environmental organizations in the UK.

## 7. Israel

**The Israeli state comptroller examined the government vehicle administration: vehicle procurement was inefficient, wasteful compared with car leasing, and insufficiently attentive to safety issues.**

During November, the Israeli state comptroller published a periodic review in which he dedicated an extensive part to the functioning of the government vehicle administration. The report relates to 2021, and according to the state comptroller, the government vehicle administration's financial reports show that in 2021, the expenditure was 178 million NIS. The government fleet included 5,100 vehicles that 12,000 drivers are allowed to use (excluding the army and the ministry of defense fleets that are managed separately). According to the report, the average annual expenditure of the administration between 2011-2021 was 226 Million NIS. The comptroller was critical of the administration in several areas, some of which are crucial. According to him, procurement of new vehicles is lacking. **As a result, 40% of the active vehicles in the government fleet – 2,000 cars – exceed the vehicle age model set by the administration, which is four years.** As of January 2022, the average age of government vehicles was six years; for passenger cars, the period was five



years, and in addition, there were 200 relatively young vehicles with over 200,000 Km traveled.

As for the governmental declared shift to green transportation, the comptroller determined that the active government fleet is based on polluting vehicles and 75% of the passenger cars are not hybrid or electric. Also, government offices currently have only six charging stations for EVs, which hinders the shift to an EV-only fleet by 2025 target set by the government.

The comptroller mentions that although there is a work plan for examining shifting the fleet to leased cars, the plan has not been promoted; according to financial estimations, the potential for an on-time income as a result of shifting to leased cars is 500 million NIS, and afterward, there will be a yearly saving of 6 million NIS in addition to better service and a younger fleet.

The comptroller was very critical of the administration's safety procedures and said: "Since 2018, the vehicle administration has not carried out safety inspections in government offices, have not investigated traffic accidents of government cars, have not collected deductibles from drivers that caused casualties as a result of reckless driving and have not checked complaints filed for erratic driving in administration vehicles. At the end of the review, only three safety officers were employed by the administration that did not appoint nine safety officers according to the directions of the transportation ministry from April to May 2021. Additionally, an incorrect procedure has been rooted in which traffic reports given to government employees were not paid by them and in their name to avoid adding points to their driving licenses. The report claims that between 2019-2021, government offices paid 246,000 in traffic reports.

In his summary, the comptroller recommends, among other things, that the vehicle administration will be prepared organizationally and financially to



purchase new cars in the required amount to renew the fleet by the desired car age model and to implement the government's decision to shift to non-polluting and electric vehicles.

As for the shift to EVs, it is recommended that the housing administration will forward the establishment of charging stations in government offices in a scope that will support increasing the number of EVs in the government fleet. It is also recommended that despite the existing difficulties in establishing charging stations, the vehicle administration should examine, together with the ministry of energy, the conditions for allocating EVs to government employees that are entitled to them and operate to realize the government's decision to shift to an all-electric fleet by 2025.