



Major Automotive Global Trends

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1. Global

The global auto industry is on the verge of a new “Chip Revolution” with the shift to 3-nanometer chip technology

Behind the scenes, the global auto industry faces a “Silent Electronic Revolution” that includes a shift to using super-advanced 3 nano-meter chips, the most advanced commercial technology today.

The shift is promoted by chip giants from Taiwan, such as TSMC, that during May presented a new plan that will enable auto manufacturers to switch to new chips and implement them in future car models. Today, most auto industry still uses 28 nanometers and upwards of obsolete chip technology. These are considered relatively cheap, but their global production scale is being reduced as the electronics industry progresses. That is one of the reasons for the prolonged chip shortage the industry suffered from in the last two years.

Recently, a few auto manufacturers, especially EV producers, started adopting “Smart Cockpit” and AI that use relatively advanced 7-nanometer chips, and some of the “Computer on Chip” automotive systems are expected to adopt 5-nanometer technology.

Experts predict that contrary to the years-long traditional lagging of the auto industry behind the electronics industry, the shift to 3-nanometer chips, which are the “Last Word” in the field, will be relatively swift. TSMC noted in a conference held in May that contrary to the past when chips were purchased by Tier 1 and Tier 2 suppliers to the auto industry, today, the auto manufacturers are having direct contact with advanced chip suppliers to ensure quick supply.

Market analysis: new global car sales this year to increase by 6%

The yearly global sales rate, according to the monthly SAAR (Seasonally Adjusted Annual Rate) passenger cars figures, rose during April to 85 million units, an increase of 2 million compared with March figures, so reveals the monthly analysis made by LMC Automotive research firm.

According to the analysis, monthly global sales rose in April by 23% compared with last April and amounted to 7 million units. Most of the sales drive stems from improved production scales worldwide due to improved chip availability.



Of the major markets, China led the increase with 81% growth compared with April 2022. Sales in Europe grew by 21%, India by 10.6%, and North America by 9.3%. The company's researchers estimate that the yearly sales rate is expected to drop in May to 84.5 million units; however, this figure is still significantly higher than the expected rate in May 2022, which stood at 75.8 million units. The company's yearly forecast estimated that the final global sales rate would be 86 million units, an increase of 6.2% compared with 2022.

Allianz Group: the accelerated export of the Chinese auto industry is an essential threat to European auto manufacturers

The biggest threat to the European auto industry in the next years will come from the Chinese auto industry, so reveals an analysis made by the global finance and insurance group Allianz and published on May 7th. According to the analysis, the shift to EVs will change the game's rules for the European auto industry; in the passing year alone, 4.4 million new energy cars (mostly EVs and PHEVs) were sold in Europe, 47% of the total car sales. Sales of EVs leaped by 28%, capturing 12% of total sales in Europe.

The analysis states that in light of the EU's plans to stop manufacturing and marketing ICE vehicles in 2035, the industry is now on the verge of substantial changes that will include the logistic supply chain, customers' needs, and the structure of the competition, given the entrance of new players to the arena.

The report claims that the main threat to European manufacturers comes from the Chinese auto industry, which is enjoying an almost 15 years advantage in developing EVs, building a supply chain, and serial manufacturing of EVs. As a result, the Chinese are leading the EV global arena and have competitive advantages in all aspects and export markets.

The report also states that already in 2022, three of the best-selling EVs in Europe were manufactured in China (including Tesla and VW), and by 2030 the European auto industry will suffer an aggregate loss of 7 billion euros due to the competition from China, and the Chinese manufacturers will increase their market share in the Chinese market to 75% at the expense of importing cars from Europe.

The report estimates that car imports from China to Europe will rise to 1.5 million units by 2030, equivalent to 13.5% of all European auto production in 2022. The influence on the European economy will be equivalent to a drop of 0.15% in GNP compared with



2022. However, in countries more dependent on their auto industry, the influence on the GNP will be between 0.3-0.4%.

2. USA

California: the administration asks the EPA to approve the accelerated program to stop selling ICE vehicles

In May, the state of California administration approached the EPA (Environmental Protection Agency), which is part of the federal government, in a request to approve the state's plan to limit car sales in its territory to EVs and PHEVs, starting in 2035.

The program, accepted by the California environmental commission last August, is considered one of the most aggressive roadmaps to stop selling ICE cars in the USA. It is supposed to take effect in 2026 and gradually reduce in yearly pulses the allowed sales quotas for ICE cars, up to complete stoppage in 2035.

The program still needs the federal government's approval, but the Biden administration has consistently refused to determine a deadline for stopping selling ICE cars. The EPA spokesman also said in response that, as with all requests of this kind, it will be publicly and openly discussed by the EPA's working methods. It should be noted that the program suggested by the EPA itself, which was presented in April, also recommends reducing ICE sales gradually, starting from 2032. The agency estimates that, in any case, by 2030, EV manufacturing will capture almost 60% of total car manufacturing in the USA, compared with 5.8% only last year.

Also, the administration in California is promoting a parallel program with a longer schedule for forbidding the sale of ICE trucks and commercial vehicles from 2036. Until now, this segment was considered almost a "Taboo" as far as environmental regulations due to the dominance of land transportation using diesel trucks in the US and the relatively low adoption rate of electric propulsion in this segment.

Despite that, the administration in California decided to forbid selling diesel trucks and CVs in California starting in 2036, including heavy trucks, vans, garbage trucks, etc. According to the decision, by 2045, all large commercial fleets will have to shift entirely



to EVs. The legislators in California estimate that the shift to electricity will save the fleets in the country 48 billion dollars in fuel and maintenance costs by 2050, along with dozens of billions of dollars saved from related health damages.

Despite inflation and high-interest rates: the American auto market registers a significant rise in May

The American auto market kept recovering in May and registered an increase of 20% compared with last May, claims a forecast made by the research division of the American auto trader Cox Automotive. The main reason is a significant improvement in inventories thanks to the “Chip Crisis” ending. According to the company’s data, dealer inventories in the US reached two million units in May compared with only one million only last May. Cox estimates that 1.365 million vehicles were sold in May, including sales to fleets, an increase of 20.3% compared with last May but a decrease of 1.1% compared with April.

The company’s analysts write that: “Sales continue to demonstrate strong growth compared with last year. On the surface, it is surprising since interest rates are significantly higher, and so are the prices... the reason is that car buyers now have a better chance of finding new cars that suit their needs. The demand, postponed from last year due to shortage in inventory, is supplied today thanks to high inventory levels”. However, the researchers expect a certain slowdown in the second half of the year due to negative macro figures that are still evident in the background of the American economy.

The monthly forecast made by the research division of J.D. Power also predicts high sales in May with an increase of 21% compared with last May, considering the different workdays in these two months. The company estimates that passenger car sales in May will add up to a million units, an increase of 9.6% compared with last year. On the other hand, fleet sales that have suffered from negative prioritization by the manufacturers due to shortage in the past two years are expected to leap in May by almost 50% thanks to allocation increment.

Despite the recession in the US that is still far from over, the prices of new cars kept climbing in May with an average deal price of 46,000\$. The average profit the dealers



drew from each deal in May was 3,700\$ - a drop of almost 25% compared with last May but still double the profit of May 2019.

The company estimates that in May, only 31% of new cars in the US were sold at a price higher than the manufacturer-suggested retail price (MSRP). At the same time, the average incentives are rising sharply due to supply growth. The average discount on a car rose in May by 88% compared with last May and added up to 1,800\$ per vehicle.

The researchers note that high prices combined with high-interest rates “Inflate” the monthly payment for car loans. The average monthly payment in May was 736\$, 48\$ more than last May.

Used car prices in the US are on a downtrend, and according to the J.D. Power report, the average price for a trade-in deal was around 9,462\$, a decrease of 24\$ compared with last May and a drop of 613\$ compared with the peak prices of June 2022. Sales of trucks and SUVs kept pushing sedan sales and captured 79% of total sales in May.

American manufacturers predict a price drop this year, discussing electricity but meanwhile investing in lucrative petrol-powered trucks

The prices in the new US auto market are starting to slowly decline from the record levels they have reached in the past two years, and according to industry estimates, the decline rate will become faster this year. In May, Reuters reported that Ford CEO Jim Farley estimates that the average price for a new car in the US will drop this year by 5% due to inventory accumulation at the dealers and “Competitive pressures that will decrease the dominance of Tesla in the EV market”.

Farley said Ford intends to increase their expenditure on ICE model marketing as a reaction to the price drop. It should be noted that the company relies on a steady income and high profitability from selling ICE models, such as big pick-ups, to finance the costs of developing new EVs in the next years, estimated at tens of billions of dollars.

Other key players in the American auto market are also continuing to invest in developing and selling gasoline-powered pick-ups, especially in the light-medium segment, considered the most lucrative industry. Research published this month shows that the average price in this segment almost doubled in the last decade and is now



42,000\$. Despite governmental incentives for EVs, this segment produced almost 240,000 sales and was the most profitable for all manufacturers.

3. China

Chinese research claims: European auto industry investments in China are growing

More and more voices in the EU are calling for the adoption of a trade policy that will block the advancement of Chinese auto manufacturers into Europe (see additional separate items on this to follow), but research conducted by the independent research firm Rhodium published in China this May reveals the complexity of the situation.

According to the research, investments of European auto manufacturers in China have grown dramatically in recent years, and today they are heavily dependent on the Chinese market both for production and export and for marketing to the local market. Data shows that direct investments of European companies in the Chinese auto industry reached last year 6.2 billion euros, compared with an investment of 1.5 billion euros in all other Chinese industries.

As a basis for comparison, in 2018, European companies' investments in the Chinese auto industry added up to 1.7 billion euros compared with an investment of 5.5 billion euros in all other industries. The numbers the research company refers to do not include the long-term 2.4 billion euros investment of VW in the Chinese chip manufacturer Horizon, nor the announcement made by VW this April, according to which it intends to invest one billion euros in opening a new auto innovation center in China.

The American auto industry also has many investments in China. According to the research, in Q1 2023, the total investments of foreign companies in the Chinese auto industry, including American companies, added up to 9.6 billion euros. This sum includes M&A, capital investments, and future transactions.

According to the data, Chinese companies are also active investors, and in the past year, their investments in the EU grew by 57%. Many were "Green" investments, mostly in developing plants for battery production in the EU.



The Chinese market is recovering slower than expected on the background of consumer concerns and subsidies reduction

The recovery rate of the Chinese market was slower than expected since the beginning of the year, so reveals data presented by the Chinese Association of auto manufacturers (CAAM) in May. According to the association, although April deliveries registered a significant increase compared with last year, the “Price War” and inconsistent discounts that characterized the Chinese market since March caused many customers to bide their time and postpone their purchase decisions. Also, the recovery rate of LCV sales is still very slow.

According to the CAAM, the outcome is that the demand is still slow and that potential growth is still unfulfilled. According to the association, 8.235 units were delivered in China between January and April this year, an increase of 7.1% compared with last year. However, they note that this comparison is problematic because sales plunged dramatically on the first 3rd of 2022 due to production disruptions and COVID curfews. Therefore, the “net” increase this year is still very low and is also substantially lower than the same period in 2019.

In January this year. The CAAM predicted that car sales in China would continue to demonstrate a positive and stable trend, and the yearly growth rate would be 3%, thanks to the central government's efforts to stabilize the economy, strengthen consumer trust and promote the demand using various incentives. However, due to high uncertainty, the CAAM decided not to update its yearly projection at this stage.

Recent data: China became the largest car exporter in the world this year

In Q1 2023, China became the largest car exporter in the world, so reveals data published by the Korean automobile manufacturers association (KAMA). According to the data, China exported between January and March 994,000 vehicles, 168,000 of which were commercial vehicles. In doing so, China overtook Japan, which exported 954,000 units, and left behind also Germany and South Korea. Almost 80% of the export was from independent Chinese brands; the rest were from foreign brands manufactured in China and exported from it. The export rate even grew during April.



Analysts mention that car export is today for the Chinese an essential valve for unloading the excess production capacity resulting from a stagnant market. The success the Chinese are experiencing in export stems, among other things, from varying export destinations. In 2016 most of the export was to Iran, India, and Vietnam. In contrast, today, Belgium, Chile, Australia, the UK, and even Israel are becoming the leading export markets, and 20% of the export goes to Europe.

Experts estimate that the entire global auto market is expected to be volatile because of the increased export from China. The research states that China is shifting today from exporting cheap and basic models to more advanced and more expensive ones, reflected in the average price of the cars before taxes, which climbed from 13,000\$ in 2018 to 20,000\$ this year.

4. South-Korea

South-Korean government to stream billions of dollars to the EV component industry to improve competitiveness vis-à-vis China

On May 23rd the South Korean Ministry of Energy announced that in the next few years, the government will stream 11 billion dollars to the component industry in Korea to increase EV production in the country five times over until 2030.

The support is for improving the liquidity and stability of the local component manufacturers and for building an almost independent EV supply chain in the country, similar to the one in China. At the same time, the large Korean auto manufacturers signed a memorandum of understanding to deepen the contacts with their component suppliers. In addition, the government will promote a special law that will prioritize developing advanced auto technologies and act together with industry and academia to qualify more than 30,000 future EV professionals.

These moves aim to preserve the Korean competitive force in export markets in the face of the Chinese EV manufacturers. Today, Korean manufacturers are at their peak of strength, with the export of cars and parts expected to cross the 80 billion dollar threshold for the first time this year. However, recent studies reveal that China has overtaken



Korea and Japan as the largest exporter (see a separate item). The Korean manufacturers will have to lower costs and optimize development and production in the next few years to preserve their status. Given the significantly lower costs of the Chinese and their independent supply chain, it hardly depends on exterior elements.

5. UK

British auto industry strengthens relations with Japan, increases production, and watches apprehensively at US regulation

In May, the British PM announced that a strategic collaboration agreement with Japan had been achieved. According to the announcement, Japanese companies will invest 22.5 billion US\$ in Britain, especially green energy, and strengthen the auto industry supply chain.

The largest investment is by Japanese trade giant Marubeni and its partners, which announced their intention to invest 10 billion GBP in Britain, mostly in developing wind turbines that will be placed on British shores. Sumitomo also announced investing 4 billion GBP in coastal wind turbines. Additional Japanese investments are expected in the supply chain for EV batteries. At the same time, a moderate positive trend is registered in the British auto industry after many quarters of decrease in production. Production data from April, published during May by the SMMT, show a descent increase of 10% in production compared with last year. During April, 66,527 units were produced in Britain, almost 82% of which was exported. Export levels in April grew by 14.7%, almost 60% to the EU.

Data also shows that car production in the UK is becoming “Greener”, with almost 40% of the total production of EVs and PHEVs. However, the SMMT notes that the scale of EVs export from the UK is at risk, given recent EU and US regulations that will harden the criteria for tax benefits to EVs and EV batteries manufactured outside the EU and the US. The immediate threat is the American IRA (Inflation Reduction Act) which will harm the tax benefits for PHEVs made in the UK, especially in the premium segment.

The SMMT also states that despite the recovery in production volumes in April 2023, it is still only half of what was in PRE-COVID April 2019. The British auto market is still far from recovery and registered a decrease in sales of 8.3% in April.



6. Europe

The battle against the impending EURO 7: eight EU governments signed a call to the EU to abort the new regulations

The battle in Europe against future EURO 7 regulations keeps exacerbating. Following severe criticism by European auto executives, eight EU member governments joined the public campaign in May. These are all countries where the auto industry contributes heavily to taxes and employment.

In a joint letter sent on May 22nd to the EU commission and all EU members, the eight countries call for a complete cancelation of significant parts of the EURO 7 regulations that refer to decreasing emissions from ICE vehicles. The letter said: “We oppose any new regulation that concerns emission levels, including the new demands for stringent emission tests and new emission quotas for new passenger and commercial vehicles”. The intention is particularly to the new regulations that limit NOX emissions and demand heavy investments from the auto manufacturers.

The regulations are supposed to take effect on July 1st, 2025, and most auto manufacturers claim they can be ready on time. Consequently, they will have to shut down plants, cancel complete lines, especially for popular models, and lay off workers.

The governments of France, Italy, Czechoslovakia, Bulgaria, Hungary, Poland, Romania, and Slovakia signed the letter. Germany’s absence was conspicuous since it also opposed the new regulations. Still, the political power of the green parties in Germany prevented them from objecting publicly despite pressure from the German automakers. Also, the EU reached in May a “Last Minute” understanding with the German government that will allow for the use of ICE that uses synthetic fuels, even after the date that forbids manufacturing of ICE in 2035.

The EU is biding its’ time in formulating measures to block mass car import from China, and the French government is initiating independent actions

The large European countries are beginning to realize the need to take steps in the face of the accelerated growth in auto import from China to Europe and the multiple Chinese brands entering the EU. Local initiatives result, among other things, from the understanding that the EU institution’s reactions to quick strategic changes in the world



market are very slow and that the EU is limited in taking steps against China because of the fear of a trade war.

Therefore, the large countries are starting to take the initiative into their own hands. One of them is France, whose government announced in May that it intends to change the CO₂ emission criteria, according to which subsidies for EVs are given. The new proposal states that emission values will be calculated not only according to the vehicle's emissions, in the case of BEV zero emissions, but also all the emissions related to the vehicle, including its production process and battery production process in their origin country.

The assumption behind this proposal is that manufacturers from developing countries, such as India or China, are still using polluting production procedures, or at least procedures that are not in Western standards. Therefore, with the new system, they will be "Punished" and receive a CO₂ emission rating that will be significantly higher than their Western counterparts and lose their subsidies in the French market. It should be noted that similar steps are also being considered in the EU, but estimates claim that it would take years to implement them even if the EU decides to adopt them.

When presenting the plan to the French House of Representatives, French President Emmanuel Macron said that France was the first European country to reform the criteria for EV subsidies. According to him, the new benefits will be "More Focused" and give incentives to increase EV and EV batteries in Europe. He did not mention the name "China", but according to estimates, this regulation is aimed specifically against Chinese auto manufacturers since China still produces 60% of its electricity for industry from polluting coal. Therefore its' odds of meeting the criteria are slim.

The proposal for changing EV tax incentives is part of a package designed to create a "Green Industry" that the French government is promoting. Meanwhile, France is the largest country in the EU that is taking such a step, probably because the presence of French auto manufacturers in China is marginal. Thus, it is not supposed to suffer from possible countermeasures from the Chinese government.

That being said, in Europe, it is estimated that France may incur scolding or even sanctions from the WTO and even from the EU Commission due to placing



discriminatory and illegal trade barriers. Other commentators assess that the EU will prevent from blocking the French move and may even regard it as a pilot to a similar move it is planning itself.

The subsidy for an EV in France today is 5,000 euros for all EV models, no matter where they are coming from, as long as their price is below 47,000 euros. A study made in France revealed that in Q1 of 2023, 40% of government subsidies went to EVs made in China, although this figure includes Tesla 3 and European models that are manufactured in China. Those manufacturers are expected to suffer from “Collateral Damage” once the new regulation takes effect.

A new ACEA study reveals: implementing EURO 7 will cost several times more than predicted by the EU

Another front against EURO 7 regulations opened on May 23rd by the ACEA that published a new study (attached to this document) claiming that the costs to the auto industry and the end customers, resulting from the implementation of the future EURO 7 regulations, will be 4 to 10 times higher than the sums quoted by the EU commission while presenting the regulation.

The study, commissioned by the ACEA to Frontier Economics research company, calculates that the costs for adhering to the regulations will be, on average, 2,000 euros for ICE passenger cars and LCVs and up to 12,000 euros for a diesel truck or bus. In contrast, the EU’s initial estimates comprised 180-450 euros for a passenger car and 2,800 euros for trucks and buses.

The researchers note that their estimates only relate to the direct production costs, particularly production equipment, and R&D, not including incidental costs such as purchasing costs. As a result, the price increase for end customers will likely be even higher than those mentioned in the study.

ACEA chairman Sigrid de Vries wrote in a letter attached to the study: “The European auto industry is committed to decreasing emissions for a healthier environment. However, the proposed EURO 7 regulations are not the right way to do it since their environmental impact will be minute at a very high price”.



According to the study, besides a leap in direct costs, the new regulations will also bring about an increase of 3.5% in average fuel consumption, which will add hundreds of euros in cost for a passenger car throughout its' lifetime and tens of thousands of euros for long haul trucks.

ACEA proposes to adopt alternative and more efficient ways to reduce emissions, such as promoting the removal of old polluting vehicles from the road and replacing them with newer ones that comply with the existing EURO 6 regulations. The ACEA claims that this step alone can reduce up to 80% in NOX emissions by 2035 when selling ICE vehicles will be forbidden.

Copenhagen municipality announced its intention to forbid the selling and driving of ICE vehicles in its territory from 2030

Europe set 2035 as the target to stop producing and selling ICE cars, but European "Green Centers" intend to implement the policy sooner and more aggressively. One example of that is Copenhagen, the Danish capital, that during May passed a decision to ban ICE vehicles from entering it beginning in 2030.

The decision was taken with a full majority in the city council, and now several implementation ways are being discussed. The municipality of Copenhagen intends to start feasibility tests already at the end of 2023; among other things, it intends to examine the costs of subsidizing charging stations for both passenger and LCVs in the city area alongside "Social Considerations". The rationale is to prevent a scenario in which residents and/or businesses with limited financial means will be left without transportation due to the inability to purchase expensive EVs or sell their old gasoline cars.

The Copenhagen municipality still needs the support of the Danish government in the decision. However, the government has already embraced the legislation and passed a decision that allows cities and municipalities to define "Zero Emission Areas" in their territory that only allow EVs.

Surprisingly, the decision was also welcomed by the Danish Association of auto importers that its' members still sell a lot of ICE cars. The association congratulated the customers had enough time to plan their future car purchases. The association



spokesperson Eve said, "We know that EVs are the future... these cars will dominate roads in coming decades, and therefore we naturally welcome the city's future regulation".

7. Israel

Government offices acting to revise the "Green Tax" system

The Ministry of the Environment, the Ministry of Energy, and the finance ministry are acting jointly to formulate a new "Green Tax" system that will replace the current methods that have existed since the beginning of the last decade. Within the current methods, each new model imported to Israel receives a "Green Rating" according to a complicated formula that prices the environmental cost of each pollutant that the car emits.

According to the "Green Score" groups, between 0 and 15, a purchase tax benefit of up to 15,000 NIS is given. Additionally, in the past, there were also special tax incentives for hybrids and PHEVs; however, the incentive for hybrids has already been canceled, and the incentive for PHEVs will be revoked in 2024.

An internal examination carried out by the government ministries reveals that in the past two years, this system has lost its' effectiveness, despite a bi-annual updating of the formula. The reason is the fast advancement of the global and local markets to EVs or at least "Electrified" motors that drastically reduce the average emission levels and also the need for tax incentives to reduce air pollution; within the current system, there is no "Penalty" for polluting vehicles and therefor no negative motivation to import them. It should be noted that one of the goals of the current system in the past decade was to indirectly reduce the average purchasing tax on cars, dropping it from peak levels to less than 60%. However, data from the tax authority reveals that following the cancelation of benefits for hybrids, the effective purchasing tax rose significantly in the past two years.

The relevant government ministries are now looking into two main ways to formulate a new "Green Tax" system that will speed up the shift of the Israeli auto market to 95% EV sales by the end of the decade, as government goals state.



One way is to reformulate the green tax formula according to new standards that are crystalizing these days in the EU. Among other things, it is being checked whether to significantly increase the weight and consequent costs of NOX and PM25 (fine respirable particles) caused by tire wear. These two components are receiving a lot of attention as part of the future EURO 7 regulation expected to take effect in Europe within two years.

Also, the ministries are looking into ways to weigh indirect emissions associated with the production process of EV batteries for “Electrified” cars. The EU is also examining this reform.

A second option is setting a ceiling for an average emission level by each importer. In case it exceeds the ceiling, there will be a fine that could reach dozens of millions of NIS. This method mimics the European regulation from 2019 that set similar quotas for car manufacturers in Europe. However, it is still unclear how this system can be equally implemented on importers that don't import EVs. Therefore their average emission levels will be significantly higher than the proposed ceiling. As far as is known, currently, there is no set date for the formulation of the “Green Tax” reform.

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A handwritten signature in black ink, appearing to be 'H. Shayb', written in a cursive style.