Global Political Drivers | Tech + Decarbonomics

TECH WAR: EU AT A CHINA CROSSROADS AS THE EV RACE FIRES UP

Grace Fan

- **Despite the EU's divided China stance today, a policy crossroads is coming over the next 12-24 months as a result of powerful, shifting forces in its auto sector – home to 11.5% of EU manufacturing jobs – that will likely result in more protectionist policies, angering Beijing.**
- **Three core drivers underpin this trend: 1) The collapse of the 'golden goose' of the China market for legacy carmakers as EV sales soar; 2) China's emergence as the world's top auto exporter in H1/23; and 3) 20+ Chinese EV firms gunning to sell cars abroad, notably to Europe.**
- **While all legacy carmakers will struggle in this changing environment, EU automakers led by Germany are most at risk as a result of current EU policies (e.g., low 10% auto import tariff, Euro 7 rules, 2035 phase-out of ICE cars) that are less supportive of local players vs US policies.**
- **Adding to hurdles, EU automakers are also lagging in the next phase of EVs – 'smartification' – in which US and Chinese firms lead the race to turn cars ever smarter en route to full self-driving capabilities.**
- **Volkswagen Group's recent woes – capped by its pragmatic yet humbling move to license Chinese EV platforms for at least two brands (VW, Audi) in China – is emblematic of rising challenges ahead, with tough choices to come as US-China tech decoupling gathers speed.**
- **We maintain our base case that as EVs grow smarter, connected car ecosystems will fragment with US-China decoupling – a trend given new impetus by US chip controls and the race to add generative AI in smart car features amid Beijing's push for AI "core socialist values".**
- **In Europe, near-term leading indicators to monitor will be pivotal 2024 EU and US elections that could intensify pressures for higher auto import tariffs, more stringent car-linked data privacy/cyber regulations and new investment restrictions.**
- **Investors looking to future-proof bets in the auto sector's demolition derby race should factor in both de-risking and decoupling scenarios, while tracking green subsidy 'loopholes' that offer Chinese suppliers less exposed to the tech war growth opportunities in grey areas.**

EU: Auto industry woes => a more hawkish China tilt

The EU – long more dovish on China than the US – is headed for a regulatory crossroads in the next 12-24 months with powerful shifts in the auto industry set to propel more protectionism. In April last year, we forecast two impacts for global tech from the then-just started war in Ukraine and unprecedented Western sanctions against Russia: **1) First-order effects** that would strengthen techno-nationalism, beginning with China among big EMs; and **2) Second-order** effects in the form of new DM restrictions up to and including outright bans on outbound investments that would speed the bifurcation of global tech into different blocs.

Both these effects have played out since late 2022 – especially in some more recent developments. These include: **i)** Biden's escalatory 7 Oct 2022 chip controls and success in convincing key allies to back them amid a new AI boom; **ii)** Biden's executive order this month for first-of-kind US outbound investment restrictions; **iii)** China's calibrated tit-for-tat reactions to US moves; and **iv)** the just-concluded BRICS summit in Johannesburg in which the group voted to expand its membership to six new countries in a bid to extend its global influence and counter US-led hegemony.

In our April 2022 note, we also singled out the potential for Chinese EVs to flood into the European market as the most relevant case study of tech fragmentation risks. This area now looks more relevant than ever – both as a risk indicator and also a source of potential equity trades driven by politically fraught regulation. The uncertain outcomes – mediated via pivotal EU and US 2024 elections - will nonetheless hinge on likely **protectionist reactions** ranging from strong pressure for higher auto import tariffs, more green industrial subsidies and a possible dilution of net-zero targets to new car-linked data privacy/cyber-regulations and sharper investment restrictions.

China's EV shockwaves remake the playing field

Gradually, then suddenly: China's transformation into a global EV powerhouse has finally hit home for legacy carmakers, triggering a crisis long in the making. In H1/23, China – the world's largest auto market since 2010 and a once-reliable generator of earnings growth for foreign automakers – reached a double inflection point:

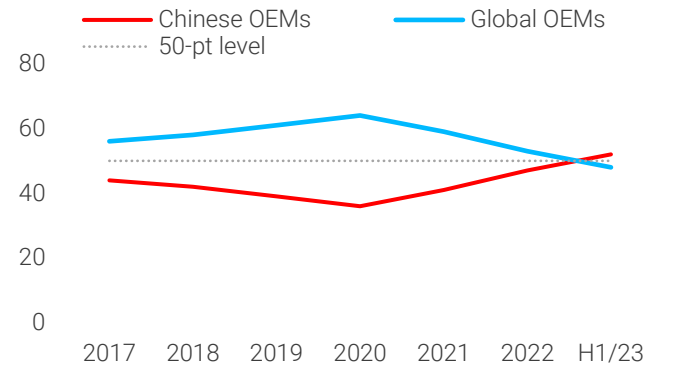
1. **Locally branded cars outstripped foreign brands in sales** for the first time in four decades (see chart below left) – aided by longstanding EV industry subsidies (by one count, Chinese government support totalled an estimated US$130+bn (RMB953bn) between 2009 and 2021, and a new US$72bn package of green car tax breaks to 2027 was announced this June). This helped pave the way for:

2. **China's overtaking of Japan as the world's top auto exporter starting in Q1/23** (chart below right). Part of this export outperformance, to be sure, was super-charged by Russia – with Chinese shipments to its northern neighbour jumping sixfold yoy in H1/23 to nearly 300,000 units as other carmakers exited the country post-Ukraine invasion. However, China's EV exports also grew in this timeframe to account for nearly 30% of overall passenger vehicle exports, up from just over 20% in the year-ago period – led by its top EV markets of Belgium (as EU entry point), UK and Thailand. Today, Tesla is the top Made-in-China (MIC) EV exporter, accounting for 35% of MIC EVs in H1/23 (if down from 48% of the total in the year-ago period), followed by BYD (with a 15% share).

Alongside the two firms, some **20 Chinese EV firms all have plans to sell abroad, notably to Europe** (e.g., Nio, GAC, Great Wall Motors, Geely [which owns Volvo and Polestar], SAIC [which owns British brand MG]). Looking out to next year, **China's faltering economy with associated RMB weakness – plus a months-long EV price war – is likely to galvanize more of these export plans.** Local automakers' pursuit of foreign demand will also be driven by growing overcapacity in the country's auto sector rising to nearly double its domestic demand. The chairman of state-owned Changan Auto Zhu Huarong warned in May that 60-70% of Chinese car brands could be eliminated over the next two to three years as a result of these headwinds.

Electric shock: Local brands account for over half of the China market for 1st time in post-Mao era

China passenger vehicle sales (% sales volume by brand origin)

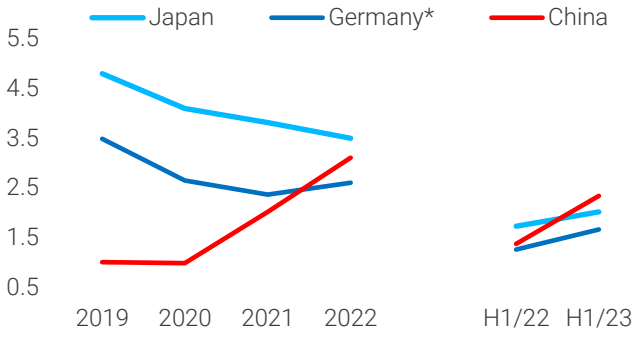


*EVs represented nearly 30% of overall new auto sales in H1/23.

Sources: CPCA, Automobility, MarkLines Data Center.

China surpassed Japan as the top global auto exporter in H1/23, after passing Germany in 2022

Top 3 auto exporters by units



*Data for H1/22 and H1/23 only includes passenger vehicle data and not commercial vehicle data.

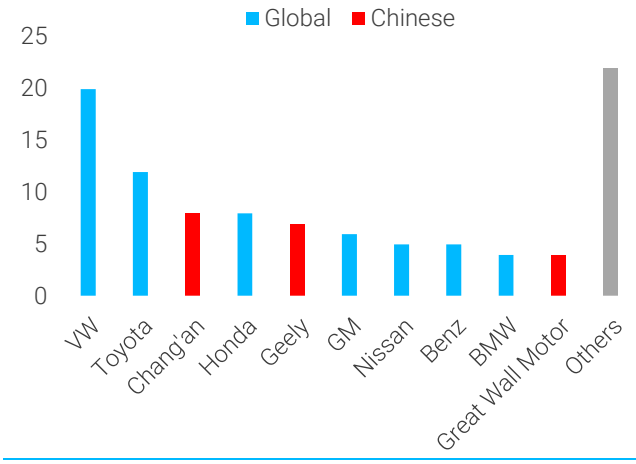
Sources: CAAM, Automobility, JAMA, VDA.

Among global automotive sector players, legacy European automakers (led by German firms) are the most vulnerable to these developments – both in the wake of Biden's Inflation Reduction Act (more on this below) and as many of these firms have long prioritized the China market over the US one in contrast to their Japanese and American rivals. Over the past decade, the German auto sector led by the 'Big Three' (Volkswagen, Daimler, BMW) has led European investment in China – accounting for nearly one-third of the region's entire FDI into the mainland from 2013 to 2021 and jumping to 42% of FDI in 2021 alone.

Yet while sales of internal combustion engine (ICE) vehicles in China are still dominated by foreign brands today (see chart below left), Chinese domestic brands now account for more than 80% of EVs sold today (chart below right) – with Tesla as the only foreign automaker to rank in the top five. To add to the crisis for legacy automakers (both foreign and their Chinese JV partners), even as China's economy has slowed, **EV sales have sizzled to 35% of new car sales in June and July – far outpacing the State Council's official 2025 EV target of 20% of new car sales set back in 2020 and nearing its 2030 target** of 40% of new car sales seven years early.

While foreign automakers still dominate ICE sales in China . . .

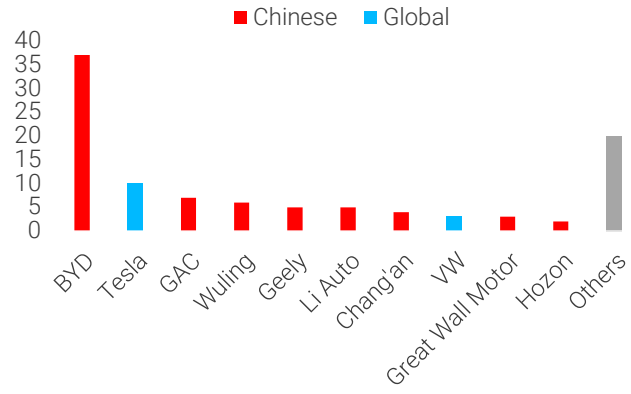
Top 10 ICE firms in China in H1/23 (% of units sold)



Sources: Automobility, GlobalData TS Lombard.

. . . four out of five EVs sold in China today are Chinese brands led by BYD

Top 10 EV makers in China in H1/23* (% of units sold)



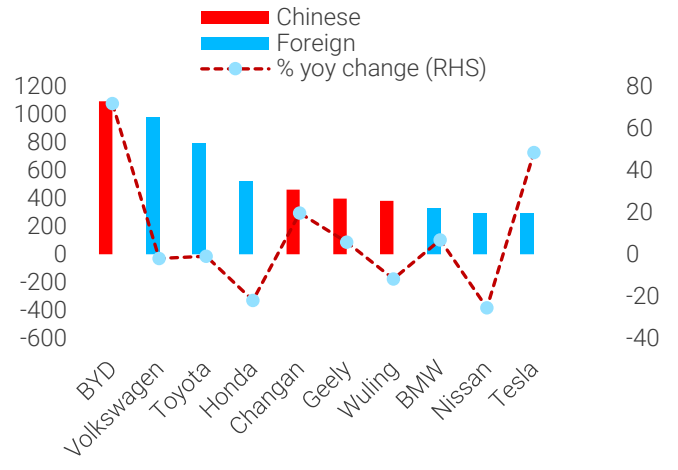
*Includes plug-in hybrid EVs as well as battery EVs.

Sources: Automobility, GlobalData TS Lombard.

In this context, Volkswagen's announcements last month that it will move to using Chinese EV platforms (XPeng, SAIC) for at least two brands (VW, Audi) in China was both a comeuppance for a firm that as late as 2019 had towered over its Chinese competition and an eminently pragmatic decision as it battles to stem decline. The moves came as the German giant trimmed its 2023 global delivery estimate to 9-9.5mn units (vs 9.5mn previously) in large part because of its falling China sales.

BYD dethroned Volkswagen as China's top-selling car brand in H1/23

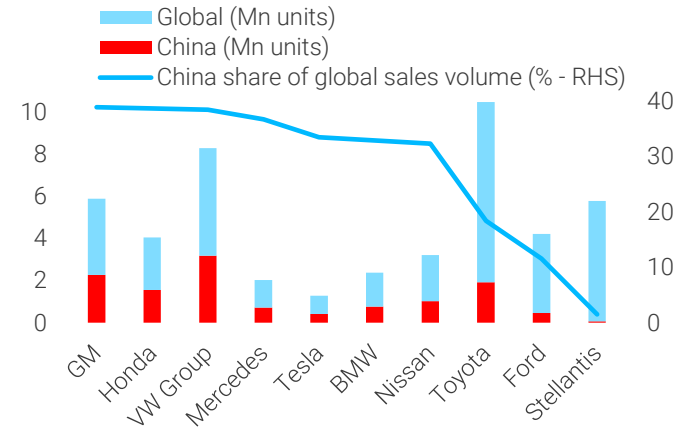
1,000 units sold in H1/23 (LHS) / % yoy change (RHS)



Source: CarNewsChina.com

Foreign automakers reliant on the China market are scrambling to shift gears but are late to the game

New car sales by automaker in 2022



Sources: CPCA, Reuters.

Ongoing problems at VW's internal software unit Cariad also played a part, potentially postponing the carmaker's launch of new EV models for its Porsche, Audi and Bentley brands to later this decade. With its recent XPeng/SAIC deals tucked under its belt, though, even if

Cariad continues to be plagued by growing pains, VW is undoubtedly thinking that it can turn to exporting its MIC EVs built on Chinese tech platforms to Europe, Asia and other EMs come 2026 and beyond. XPeng's advanced driver assistance system (ADAS) is well-regarded among its peers, even if the exit of Wu Xinzhou, XPeng's head of autonomous driving unit, early this month to join Nvidia was likely a blow to VW after the firm took a 6.85% equity stake in XPeng.

Still, Volkswagen is not alone among the legacy automakers in looking to China to sharpen its tech edge. Stellantis is also reportedly shopping around for a Chinese EV partner, while Chinese startup Leapmotor has said it is in partnership talks with two legacy automakers. Over the past decade, VW, BMW and Daimler Mercedes-Benz have struck several R&D partnerships with Chinese Big Tech firms (with all three firms working with Baidu and Tencent), while both VW and Mercedes-Benz have opened or expanded mainland R&D tech centres in the past two years. More significantly, VW invested €2.4bn in a JV with Chinese AI chipmaker Horizon Robotics last year (via Cariad) as well as €1bn in battery-maker Gotion in 2020.

Germany's 'Big 3' automakers routinely rank in the Top 5 European investors in China

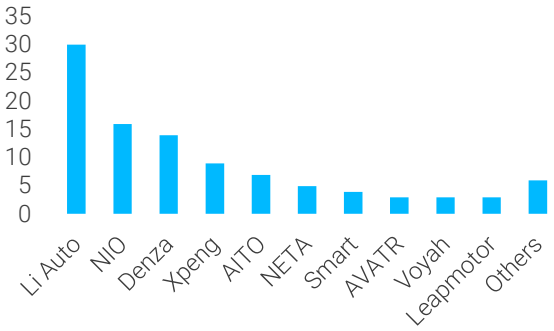
Rank based on annual FDI transaction value 2018-21

	2018	2019	2020	2021
1	Volkswagen	Heineken	Grifols	Volkswagen
2	Diageo	Volkswagen	Volkswagen	BASF
3	Allianz	IKEA	BASF	BMW
4	Daimler	Daimler	Daimler	Veolia
5	Vailog	AXA	Permira	CrystecPharma

Source: Rhodium Group.

Chinese EV startups lead the market on adopting ADAS Level 2+ capable EVs

% of EVs in China in Q1/23 with ADAS L2+ EVs by brand



Source: Canalys.

Rising risks as US-China tech decoupling accelerate

Auto sector firms face increasing hazards from the combination of the global EV sector moving from electrification to its next phase – 'smartification' (i.e. digital cockpits, AI voice assistants) – amid the deepening of the US-China tech war. As we have previously argued, notwithstanding recent rhetoric from senior EU and US officials of their hopes of "derisking, not decoupling" from China, US-China tech bifurcation is already on the way – with the biggest risks ahead for firms in advanced tech sectors with long manufacturing lead times given future policy uncertainties (for more details, see our 21 October 2022 note Tech war: Major escalation, heavy casualties; our 24 Feb 2023 note Tech war: Next steps, with South Korea on the hot seat; and our 23 June 2023 note Taiwan blow-up risk: A domestic spring).

To be sure, Biden's executive order (EO) this month that greenlit first-of-kind outbound investment restrictions was both narrowly targeted to a few sectors (advanced chips and microelectronics, AI, quantum) and less restrictive than Beijing had feared. In addition to not requiring existing investments to be unwound (so no analogy here to the predicament of Western firms present in post-invasion Russia), the EO omitted both biotech and green energy from the list

while still allowing for 'passive investments' from US fund managers. Moreover the restrictions on outbound investments are only set to take effect sometime next year. For its part, the Chinese government's reaction to the Biden administration's latest tech war moves has avoided pure tit-for-tat in favour of asymmetrical moves: the partial Micron ban, export controls on gallium/germanium and solar equipment machinery, the BRICS expansion push). This relatively cautious reaction is also reflective of its ongoing economic fragility.

Still, Washington's hawkish bipartisan consensus on China guarantees that even if a Republican President enters the White House in 2025, the tech war is set to continue – not least in the context of China's rapid military build-up (even if our base case remains that a direct Taiwan invasion is highly unlikely over the next two years). Here, the Senate's recent overwhelming 91-6 vote approving outbound investment notifications in the must-pass annual defence bill (NDAA) on a slightly wider list of sectors (e.g., hypersonics) is instructive, signalling a sea change in philosophy from the past three decades even if the actual text fell short of mandating any outright bans. Just as importantly, with US VC and private equity investors already projecting ahead to a time when more tech sectors will be added to this list, complicating their exit strategies, many are thinking twice about China for new investments, not least in the context of Beijing's recent raids on Western consulting firms and its expanded counter-espionage legislation.

Generative AI raises the stakes and will further speed US-China tech bifurcation over the next two to three years. The Biden administration's current restrictions on AI chips are already forcing Chinese firms to spend more to get less computing power, though without being an insurmountable stumbling block for now. This is clear from reports that Chinese Big Tech firms have placed more than US$5bn in orders for (slightly slower) Nvidia A800 chips to be delivered in 2023 and 2024. Looking ahead, assuming the US continues to maintain or impose more chip restrictions as we expect, China will begin to increasingly lag US tech development by mid-decade – with knock-on effects for its domestic cloud and smart/self-driving car sectors among other industries despite no US export controls to date on automotive sector chips (e.g. Nvidia Drive Orin).

To this must be added Beijing's interim generative AI rules (effective 15 August) which mandate that firms uphold "core socialist values" for services offered to the domestic public. Although the final interim rules were broadly welcomed by the private sector as more pro-innovation than the draft rules issued in April, Chinese firms are likely to stay more cautious than their Western counterparts in deploying AI technologies for consumer-facing technologies as a result of these rules –likely handicapping them in the tech race ahead even though national champions will still arise.

The EU will lag behind the US in tech decoupling, but is on track to turn more hawkish with German automakers losing share in the Chinese market. In the decade to 2018, the German auto industry was the undisputed growth driver of the EU's biggest economy and still represents nearly one-tenth of the German GDP and 40% of R&D spending. Not surprisingly, then-Chancellor Angela Merkel adopted a pro-Beijing stance. Since then, however, as Chinese tailwinds have turned increasingly into trade headwinds (see here and here) – Berlin has inched towards a more sceptical China stance. For example, while Chancellor Olaf Scholz last year still gave the green light for Chinese state-owned shipper Cosco to buy a 24.9% stake in Germany's largest port of Hamburg over the objections of the EU Commission, the German government also blocked Chinese attempts to take stakes in two domestic chip firms.

New draft legislation championed by Economy Minister Robert Habeck will reportedly expand screening of Chinese inbound investment in German firms (e.g., AI, cloud, cybersecurity, critical raw materials), even though the coalition government fell short of endorsing outbound investment screening in its China strategy published last month. Still, Reuters reported this week that the volume of investment guarantees provided by the German government to firms investing in China plummeted this year to a mere €51.9mn to date, less than a tenth of the guarantees issued for all of 2022 (€746mn). In addition, German Interior Minister Nancy Faeser last week publicly chided the country's telcos for not yet moving to expunge critical 5G Huawei and ZTE components from their networks – making it clear that the government has finally firmed up its stance on the matter. Baby steps, perhaps, but as China increasingly shifts from Germany's top market to its biggest rival, we expect Berlin's stance to harden accordingly.

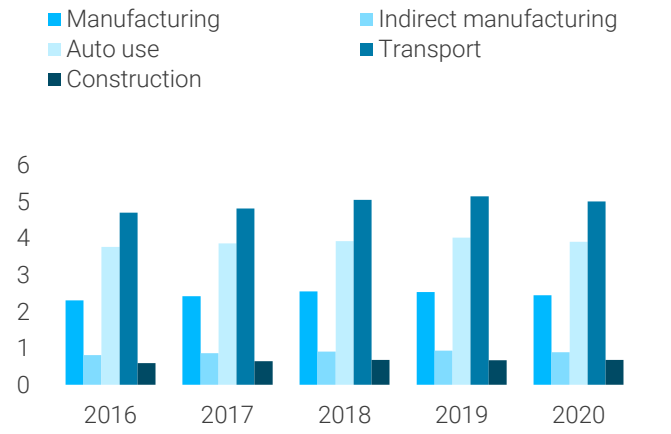
European Commission President Ursula von der Leyen is planning to release draft outbound investment restrictions before yearend to complement Biden's rules. In addition, there is a review period for the EU FDI Act starting this October which could help to focus minds on how to plug the gaps in investment screening that exist today. Still come early near year, with just six months left to the June 2024 EU parliamentary elections, it is unclear if much progress will be made on this issue prior to the ballot. Be that as it may, key member states (e.g., Italy, France, Netherlands) have recently reinforced or pledged to enforce more foreign investment controls in their respective countries as perceived geopolitical risks have multiplied, in a sign that national security concerns are top of mind.

Looking ahead, once the current volume of Chinese EVs to Europe turns from a growing trickle to a flood (likely over the next 12-24 months), we expect protectionist reactions to flare up, ranging from strong pressure for higher auto import tariffs and more green industrial subsidies to more car-linked data privacy regulations and outbound investment restrictions. Thus far this year an estimated 8% of new EVs have been Chinese-made, up 2pp from last year and double the 4% seen in 2021. Still, a wild card as to the timing of rising sales is lack of Chinese brand recognition that could stall more European consumers from taking the plunge. Their unbeatable value proposition is price, with Chinese-made budget cars that could be one quarter cheaper than average European brands even with the EU's current 10% auto import tariff, aided by China's lower labour costs and dominance of the EV battery supply chain.

Whenever the Chinese EV wave hits, as the chart below left illustrates, the European auto sector which represents 13mn workers accounting for 7% of EU GDP will react – presenting a potent political force to reckon with. As trade frictions play out, interwoven with fears of Chinese tech surveillance and legitimate cybersecurity concerns (the EU's ban of TikTok on official government devices early this year is a case in point), they will cloud not just Chinese EV hopes of conquering DM markets for players at the top of the tech stack but eventually the growth prospects of China-Western auto JVs, partnerships and alliances. Even so, the EU is stuck between a rock and a hard place, given the lagging position of European automakers on both electrification and smartification. In this context, the bloc's 2035 deadline for ending all sales of new ICE vehicles will look all the more challenging if consumers' access to cheaper Chinese models is limited by protectionism motivated by the desire to shelter domestic champions from Chinese competition and security concerns about Chinese tech. To top it off, the EU must compete not just with China but also with the US which has attracted US$140+bn in EV/battery supply chain and renewables investments galvanized by Biden's Inflation Reduction Act (see chart below right). If the EU wants to avoid the spectre of European deindustrialization, it faces tough choices ahead.

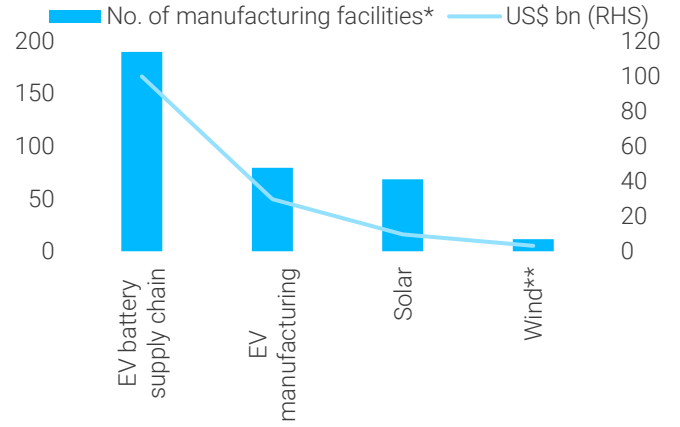
The EU auto sector accounts for 11.5% of the bloc's manufacturing jobs and 7% of EU GDP

Mn jobs



Source: ACEA.

Biden's IRA: The EV/battery supply chain dominates the green manufacturing pipeline



*EV/battery supply chain and renewables projects announced under Biden.

Sources: DoE, GlobalData TS Lombard.

Conclusion: Leading indicators

History provides one easy – if flawed – solution to the EU's coming dilemma. In the 1980s, the US protectionist response to the Japanese auto "invasion" was ultimately finessed by simply locating Toyota and other Japanese auto manufacturing facilities inside the US. This, of course, remains a potential answer for the EU at the present juncture (and in fact a stampede of Chinese battery suppliers – e.g., CATL, EVE Power, Sunwoda, SVolt – has already occurred in Hungary and elsewhere). **The rub is that when it comes to manufacturing increasingly smart connected EVs there is the 'small matter' of the massive quantities of data they will be generating** (estimated at a minimum of 1-2 terabytes of raw data per car per day to up to 5TB of data an hour from fully autonomous cars). As we have previously underscored, Beijing's by now routine banning of Tesla cars from sensitive CCP locations foreshadows a future in which more governments will be forced to contend with similar issues from vehicles made by geopolitical rivals.

In a connected car world in which smart vehicles are projected to have 100x more code than an airplane today, Europeans will have a choice between:

i) **Allowing their consumers access to affordable Chinese EVs** (potentially assembled on European territory) at the expense of growing exposure to Chinese tech that could, in turn lead to future frictions (à la Huawei) as politicians react to these perceived surveillance threats; or

ii) **Full-on protectionism** against imports of Chinese EVs – which could put the majority of EVs on the domestic European market out of reach of many consumers – unless a relaxation of stringent auto rules (e.g. on current Euro 7 regulations and/or the 2035 ban on new ICE vehicle sales) is enacted in defiance of the current mandates that are a 'sacred cow' in mainstream European politics today.

Whatever the answer – perhaps via some combination of these two poles in a 'muddle-through' approach– it will be politically fraught. Leading indicators to monitor therefore include:

- **The June 2024 EU parliamentary elections**. Success for right-wing parties would increase support for some combination of protectionism against Chinese EVs with relaxation of 'net zero' mandates to support the legacy auto manufacturers.
- **The US November 2024 elections**: If Trump (or a similar GOP candidate) returns to the White House, the resulting tensions with Europe – part of a wider fragmentation of the global order – would play out in the tech/net zero space in the form of reduced scope for accommodating European interests in America's IRA subsidy scheme (with the GOP campaigning on a repeal of key green tax credits). This would make Europe's dilemma as regards its automotive economic heartland more acute than ever.
- **New developments in global or multilateral AI regulation.** While this will take time to unfold, an increasing number of experts are arguing for stringent rules and regulations on AI hardware and model training to avoid the worst case outcomes (i.e. engineered bioweapons by terrorist groups). Alongside related legislation to track (e.g., the EU's AI Act, Data Act), this could change the parameters of global tech development.

These prospects points to three investment conclusions.

The first is generic, to do with general risk mitigation. Stock screening should entail ever closer scrutiny of Western firms' progress in reducing the concentration of their supply chains in and around China.

The second involves potential trades driven by politics and policy with a European focus. For example, European estrangement from the US and ever stronger commitment to net zero goals as the climate crisis deepens could lead to an opportunity for Chinese EV manufacturers in the pivotal European market similar to Toyota's breakthrough in the US in the 1980s. For now, however, the pre-conditions for any such big additional bets on Chinese EVs are far from being in place – and scenarios with the opposite outcomes are equally plausible.

Such uncertainty and volatility in the European political and regulatory environment spells a value trap for automotive firms – above all, the legacy vehicle manufacturers, but also Chinese players. Still, various regulatory loopholes should be monitored – starting with Biden's IRA – that could serve to help firms less exposed to tech war risks look attractively valued (see the Appendix for more details). Of note, a number of deals hinge on how the Biden administration will define "foreign entity of concern" criteria (aka China) related to the IRA's US$7,500 clean vehicle tax credit in guidance expected before yearend.

Appendix

Biden's IRA: Loopholes + broad guidance have aided select foreign firms to date

Date	Firm(s)	Partner	Details
Feb-23	CATL (China)	Ford (US)	Ford licenses CATL's LFP* battery tech for use in its new US$3.5bn battery cell plant in Michigan; US lawmakers are looking to review the fine print of the deal and Beijing could weigh in too
Mar-23	GEM (China)	SK On / EcoPro (South Korea)	Battery maker SK On and materials firm EcoPro sign an MoU with Chinese battery materials firm GEM for a JV to build a nickel precursor plant in Korea to qualify for IRA EV tax credits as the country has an FTA with the US; the plant is set to begin Q3/24
May-23	Huayou Cobalt (China)	Posco (South Korea)	Posco's battery materials subsidiary Future M signs an MoU with Huayou to co-produce IRA-compliant cathode and anode materials in Korea
Jun-23	CNGR Advanced Material (China)	Posco (South Korea)	Posco announces a US$1.2bn JV deal with CNGR to similarly produce IRA-compliant battery materials for high-nickel cathodes in Korea
Aug-23	BYD (China)	KG Mobility (South Korea)	BYD is reportedly looking to build an EV battery plant to produce LFP batteries with Korean automaker KG starting Jan 2025 as it too looks to qualify for partial IRA EV tax credits
Aug-23	Geely (China)		Geely's Volvo and Polestar brands are planning to offset a hefty Trump-era 25% import tariff on their Made-in-China cars via a tax mitigation provision (US Duty Drawback programme) also used by GM that allows firms to receive tariff refunds if they also export vehicles in the same category from US facilities
Commercial leasing vehicle loophole			
Dec-22	Various automakers, led by Hyundai, Kia and EU firms		Following vociferous complaints about the IRA from South Korea and the EU for the US' green protectionism, the IRS clarifies that consumers who lease vehicles will qualify for the IRA's commercial clean vehicle tax credit (45W) of US$7500 which have no regional content rules. The US imports of Korean vehicles rising sharply
Battery materials defined as "critical minerals"			
Mar-23	Various firms		Treasury issues guidance defining active cathode and anode materials as "critical minerals", not "battery components" - making these inputs eligible for a US$3750 EV credit if they originate from FTA countries like South Korea. If cathode/anode materials were to be defined as "battery components", they would need to be manufactured or assembled in N. America to qualify for a US$3750 tax credit.

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