

Closing the gap:
the progress towards
affordable EVs and
the rising competition
from China

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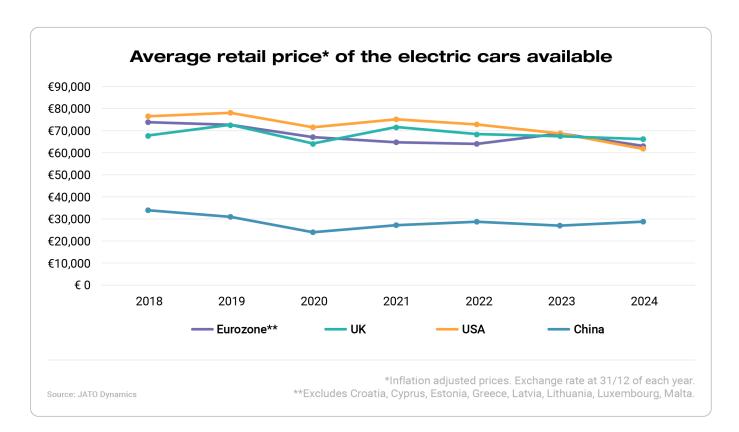


The European automotive industry's biggest challenge: global expansion of Chinese electric cars

The established automotive industry is facing an existential threat. Competition from China's rapidly expanding automakers is the biggest challenge facing European, American, Japanese, and Korean carmakers. Over the past three years, China has propelled its car industry to the top of the global rankings – both domestically and overseas – a trend driven predominantly by its competitive pricing.

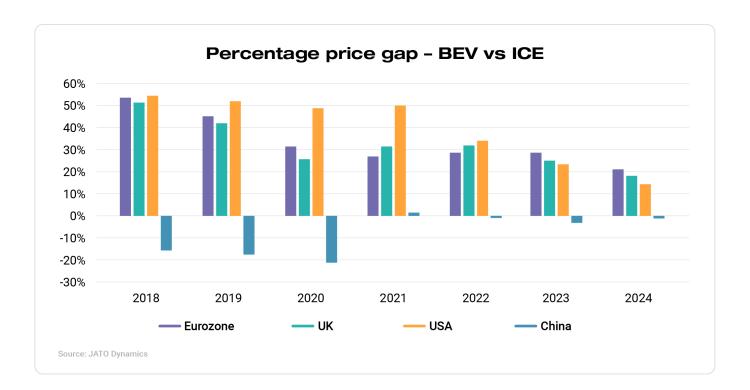
While over the past one hundred years, there have been plenty of crises and comebacks, leaving winners and losers in their wake, these re-drawings of the automotive landscape would typically occur every 15-20 years. In comparison, today's challenges have been accelerated by different forces. Regulation, trade disputes and the rise of new players pose fresh, serious challenges to legacy automakers that have been operating for over a century.

This paper sets out to illustrate how the West's legacy automakers are grappling with rising competition from China, with new Chinese automotive brands moving into emerging markets, and how the prices of both battery electric vehicles (BEVs) and internal combustion engine vehicles (ICEs) are evolving.



Closing the gap: the progress towards affordable EVs and the rising competition from China





The narrowing of the BEV-ICE price gap

Since electric powertrains were introduced, the industry has been focused on a long-term goal to reduce the prices of BEVs (battery electric vehicles) to the point of parity with ICEs (internal combustion engine vehicles). This ambition is yet to be achieved, at least in the West, though significant progress has been made in reducing the production costs of BEVs.

As demand for BEVs and plug-in hybrids continue to gain momentum across the world, it has become easier for manufacturers to lower the cost of their batteries. In the meantime, competition from China has led to the emergence of new technological solutions, such as enhanced infotainment solutions and connectivity, as carmakers have been forced to come up with answers to tackle the challenge.

The impact of China's advancements is clear. In 2018, the average retail price of a BEV in the Eurozone was €74,124 − 53% more expensive than an ICE. Over this period, the category largely comprised premium models, and consumers had a relatively limited choice. In essence, electric vehicles were the preserve of the few. This was reflected in the category's market share: in 2018, BEVs accounted for just 1.1% of total registrations in Europe.

From 2019, the average price of ICEs increased, but the gap between the two categories dropped to 46% as governments across Europe attempted to boost demand for BEVs and cheaper electric models entered the market. This trend continued amid the semiconductor shortage of 2021 as carmakers focused on their most profitable models and those they could sell on most easily thanks to incentives - often BEVs.



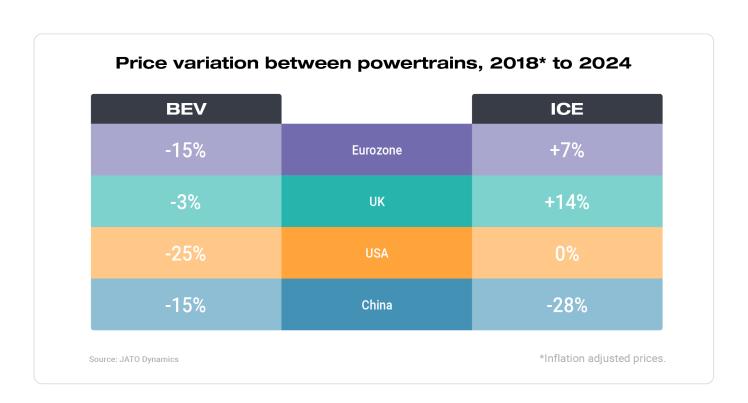
The price gap between BEVs and ICEs remained at 27% on average in 2021, 29% in 2022, and 29% in 2023, before shortening in 2024, when the retail price of a BEV, at €62,709, was 22% higher than that of an ICE. This is the closest to price parity the European automotive industry has seen to date and provides reassurance that the price gap between the two categories might be bridged over time.

However, the narrowing of the price gap between BEVs and ICE vehicles over the past seven years is not only the result of the average BEV price decreasing. JATO data shows that within the Eurozone, the average retail price of a BEV decreased by 15% between 2018 and 2024, with a 7% price jump for ICE vehicles. Passenger vehicles overall have become more costly in this timeframe.

The United Kingdom is a case in point. In 2018, a BEV was 51% more expensive than an ICE equivalent in 2018; today, they are 18% more expensive. Meanwhile, the average retail price of a BEV has decreased by 11% over the past six years in the UK, while the price of an ICE has risen by 11% over the same period.

In the United States, where, largely for cultural reasons, electric vehicles have typically held less appeal, the price evolution has been even more dramatic. Automakers' electric offerings were concentrated in the higher segments until Tesla introduced its Model 3 and Model Y to the market, in 2016 and 2019 respectively. The price gap between BEVs and ICE vehicles in the US stayed near 50% until 2021, but the arrival of newer models and price cuts from Tesla, amongst other influences, reduced the gap to 33% the following year. In 2023, the average retail price of a BEV was just above \$75,000, compared to \$60,000 for an ICE vehicle. Last year, the price gap dropped to 15% - far lower than in the UK and the rest of Europe.

While it is true that the average retail price of a BEV in the US has declined by 25% between 2018 and 2024, ICE vehicles have not posted any variation (0%) over the same period. Reflecting trends in the European market, this means that the narrowing of the price gap between the two categories can't be largely attributed to the rising cost of an ICE vehicle over this period, rather than just due the drop in the price of a BEV.





BEV price gap - China vs other regions

	2018	2019	2020	2021	2022	2023	2024
Eurozone	118%	137%	179%	136%	122%	152%	111%
UK	100%	136%	165%	163%	136%	155%	122%
USA	125%	154%	196%	174%	152%	153%	109%

Source: JATO Dynamics

*Inflation adjusted prices.

03

China: saying goodbye to ICE

Although widespread adoption of BEVs remains far from reality across much of the world, in China, electric vehicles have become an essential part of modern life. According to JATO data, the average retail price of a BEV in China is 1% lower than an ICE vehicle. Price parity between the two powertrains was more or less achieved in 2021, when many of China's carmakers moved to expand their businesses overseas.

Part of the reason for this price parity is that China's government has incentivised the country's carmakers to concentrate their efforts on the production of new energy vehicles (NEVs). This focus has not only accelerated the development of better and cheaper batteries but has sparked intense price competition within the country, enabling consumers to buy an electric car in China for just ¥24,900 − the equivalent of €3,250 or \$3,450.

In contrast to the US and Europe, where inflation and other forces have combined to push up the price of BEVs and ICE vehicles, China has seen the average price of both BEVs and ICE vehicles decrease, with the price of each dropping by 15% and 28% on average, respectively. This progress is largely down to three factors: economies of scale, Chinese ownership of the battery parts production process, and the active role of China's central government.

In other words, in a market where electric cars have become a serious rival to the combustion engine vehicle, prices have dropped dramatically. And, in comparison, prices have risen in countries where there has been greater reluctance from the public to embrace the shift to electric vehicles. This poses the question: is the price evolution a cause or a consequence of BEV uptake?





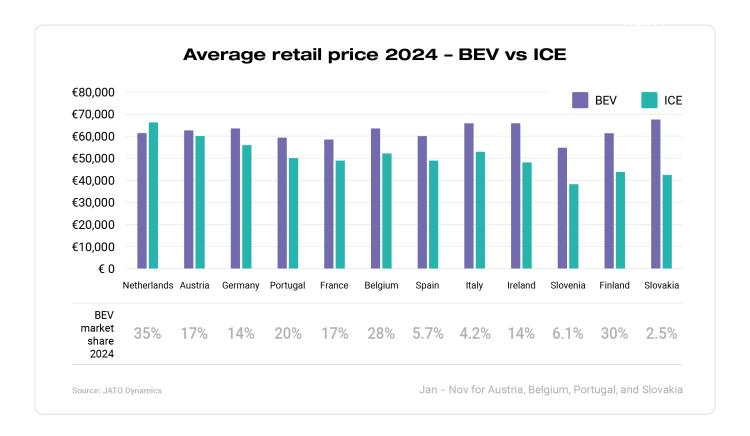
From imports to independence

In contrast to many of the world's established automotive markets, China had previously developed a reputation for its preference for foreign cars. While many of these vehicles were produced locally, there was a consensus among Chinese consumers that automotive brands from outside the country produced vehicles that were more technically advanced and of higher quality than those produced domestically.

For decades, companies like Volkswagen, Mercedes, BMW, General Motors, Toyota, Honda, and Hyundai sought to capitalise on years of burgeoning demand in China and expanded their footprint primarily through joint ventures with local carmakers. This approach fuelled existing perceptions, allowing these brands to gain market share, while domestic players gained knowledge and expertise in exchange. In the period that ICE vehicles dominated global markets, this relationship favoured the former. However, due to the rapid rise of EVs, the tide has turned. The capabilities acquired by China's carmakers under the stewardship of western brands have found application in the Chinese governments drive toward the mass production of NEVs. And, as the old Chinese adage goes, "the student surpasses the teacher".

In 2019, prior to the COVID-19 pandemic, Chinese car brands accounted for 36.8% of all new car sales domestically. Between January and November 2024, this figure increased to 59.1%. This shift is explained by the ability of local carmakers to rapidly adapt to the demands of consumers, adding new technologies and features that are leading both consumers and industry players to reimagine the user experience. In recent years, the Chinese new car market has seen little growth. Since 2019, total sales of new cars have fluctuated between 20.8 and 23 million units. Under these more saturated and stagnant conditions, domestic brands have started looking for opportunities abroad to fulfil their growth ambitions.





The battle for emerging markets

Thanks largely to the ongoing and robust support of the central government, many of China's manufacturers have established themselves domestically. However, expansion has not come without challenges – both at home and abroad.

During the pandemic, trade and travel restrictions caused brands to halt their global expansion plans. While the operating environment has since normalised, in the years following we have seen a rapid period of consolidation of automotive brands in China that has played out through a competitive price war. Those that survived now have the market share and production capacity to enter a number of high-potential overseas markets simultaneously.

Due to a range of factors, China's carmakers have focused their efforts on gaining ground in developing Southeast Asian markets including Thailand, Indonesia, Malaysia, and Singapore. More lenient trade restrictions and higher price sensitivity among consumers make these countries fertile ground for competitively priced products. As evidence of this trend, many Chinese carmakers have now established a physical presence with local production facilities.

The rising popularity of Chinese cars in the region is being felt most keenly by Japanese brands like Toyota, Nissan, Honda, and Mitsubishi. According to JATO Dynamics data, these brands held a 75% market share



in the ASEAN region (excluding the Philippines) in 2019, while Chinese brands accounted for just 1.9%. In 2024, this split shifted significantly to 61% and 7.2% respectively – a trend that is even more dramatic in the BEV market.

In Europe, the geopolitical environment – namely the conflict in Ukraine – has also created opportunities for China's carmakers. Due to the imposition of sanctions, Western, Japanese, and Korean carmakers exited the Russian market, creating an increase in demand that has been met by Chinese brands. Prior to the onset of the invasion, the market share of these brands in Russia was 7.5%, but between January and November 2024 it had increased to 43%.

In addition to Southeast Asia and Russia, China has also set its sights on Latin America. Having initially targeted markets without or with very small local car industries like Chile, Peru, Ecuador, Bolivia, Colombia, and several Central American countries, China's carmakers then looked to establish themselves in Mexico and Brazil – the region's two largest and most developed markets. Last year, BYD sold close to 77,000 new cars in Brazil, and the Chinese car brands accounted for 30% of the new car registrations in Chile between January and November 2024.

In conjunction with these strategic expansion plans, China has not lost sight of its goal to establish a strong foothold in the US and Europe – the world's second and third largest automotive markets behind China. Due to protectionist policies, entry into US is almost impossible. In Europe, Chinese brands are steadily gaining market share, but their presence is still marginal due to trade restrictions, lack of awareness, and perception issues among the consumers in Europe. Despite these challenges, it seems only a matter of time before China's car makers start gaining real traction on European roads.

Average retail price by segment and powertrain Eurozone 2024

	A segment (city-car)	B segment (B hatchback)	C segment (C hatchback)	B-SUV
Combustion (ICE)	€19,059	€24,162	€35,927	€30,247
Hybrid (HEV)		€27,500	€37,073	€34,363
Plug-in hybrid (PHEV)			€46,162	€42,220
Electric (BEV)	€32,668	€35,938	€41,428	€42,189
Price gap BEV vs ICE	71%	49%	15%	39%

Source: JATO Dynamics



The competitive edge of Chinese electric vehicles

It is evident that China is racing ahead of other markets when it comes to producing electric vehicles. This is not only evident when reviewing pricing but features too. As well as competitive prices, cars made by Chinese brands often have other advantages, including better software and a variety of features that create an exciting and unique onboarding experience for the driver.

While Chinese brands are currently performing well, many of them are relatively new entrants to the market and it is unknown how their vehicles will perform after several years of use. However, alongside innovation, Chinese consumers value technical quality and safety – something that has always been a high priority for the majority of Chinese car brands.

The extent of China's competitive edge can be clearly seen when comparing similar western and Chinese models. For example, a 4,997mm-long Xiaomi SU7 sedan on its entry-level trim and with a single electric motor is priced today (January 2025) at ¥215,900 in China − equivalent to €28,600 or \$29,500. This includes 299 hp, 700 km of range CLTC, and 5 years or 100,000 km warranty.

For a similar price, a European consumer would be able to purchase a typical electric city-car or small B-SUV with maximum power of 113 hp. In the US, they would be able to buy a small electric B-Hatch with 181 hp and less than 200km of range.

In 2018, an electric vehicle in the Eurozone was, on average, 118% more expensive than an electric car in China. This increases to 125% for consumers buying in America when compared to China. This gap peaked even further in 2020, when the average retail price of an electric car in the Eurozone was 179% higher, and the US 196% higher than in China. This imbalance has only dropped slightly since then. From January to November 2024, vehicles in the Eurozone were 111% more expensive, and 109% more expensive in the US, than in China.

Price differences per market are so significant that the same vehicles produced in the same Chinese factory would cost a fraction of the price when sold in China compared to Europe. For instance, the cheapest automatic smart #1 in Europe with a "Pure" trim level, 49 kWh, 272 hp, retails at €33,815 in France (November 2024). The B-SUV is produced by Geely at its plant in Xi'an, China. The same vehicle, listed with a "Longdong Standard" trim - the cheapest in China - is priced at ¥154,900 (November 2024), the equivalent of €20,200¹.

The comparison between the US and China is more difficult given there are very few electric cars manufactured in China that are also available in America. However, the Polestar 4, which is available in both countries and produced at the Hangzhou Bay plant, China, is a good example. The cheapest model costs \$54,900 in the US (November 2024), whereas in China, the cheapest model with the same power has a starting price of just ¥339,900 – the equivalent of \$46,900.

¹As of November 30 2024 exchange rate



Country price comparison for the same product, made in the same factory

		Eurozone	UK	USA	China
	Polestar 4 100 kWh Long Range Dual motor 544 hp	€69,300	£65,990	\$62,900	¥ 399,900
			€79,424	€59,452	€ 52,190
	MG4	€30,690	£26,995	N/A	¥139,800
	49 kWhStandard 170 hp		€32,490		€18,245
	BYD Atto 3 / Yuan Plus 60 kWh Comfort 204 hp	€37,990	£37,695		¥163,800
			€45,370		€21,380
	Cupra Tavascan / Volkswagen ID. UNYX 82 kWh 4WD 340 hp	€54,990	£55,880	N/A	¥249,900
			€67,250		€32,614

Source: JATO Dynamics

Car images by IMAGIN.studio

07

How does China fare in regions beyond the West?

As China exports its vehicles to regions across the world, their cheaper price points are already influencing the purchasing decisions of consumers globally. This is particularly apparent in emerging markets, where purchasing power tends to be weaker, and safety and emissions regulations are often more relaxed.

In Latin America, Mexico largely trades within the United States-Mexico-Canada Agreement (USMCA), therefore Chinese manufacturers use Brazil as a base in the region. BYD, GAC, and Great Wall are just a few of the companies that are already building factories in Brazil to meet the increasing demand for electric vehicles. This also allows them to serve trade partners in Argentina, Paraguay, and Uruguay from the MERCOSUR economic bloc. It's worth noting that this bloc is currently negotiating a free trade agreement with the European Union.

BYD is gaining significant traction in Brazil, Latin America's largest car market, and the world's sixth largest. Last year, the manufacturer was the 10th best-selling passenger car brand, outselling traditional brands like



Citroen and Peugeot, which produce some of their vehicles locally. Its position within the BEV segment in Brazil was even more remarkable, with BYD electric cars accounting for 73% of the segment's total volume.

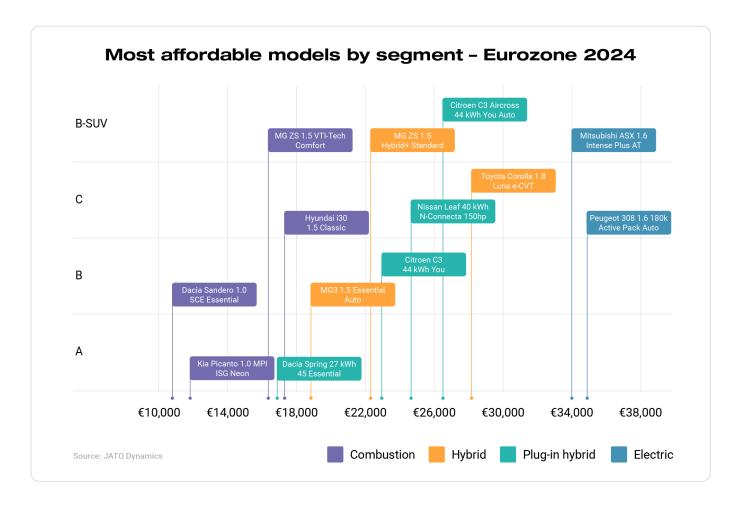
One of the drivers of BYD's success is its competitive price points. A BYD Yuan Up, which falls into the large B-SUV segment, with 177 hp, 45.1 kWh battery capacity, and 380km of NEDC range, is priced from R\$182,800 − the equivalent of €29,000 or \$30,000 (January 2025). Its direct competitor, the Peugeot e-2008 (imported from Europe) is available with 158 hp, 54 kWh battery capacity, and 234 km of range Inmetro, with a larger starting price of R\$259,990 − the equivalent of €41,300 or \$42,600.

The expansion of Chinese manufacturers in Latin America is also occurring in other regions, such as Southeast Asia. Thailand is Southeast Asia's second largest car market, registering around 800,000 units per year. BYD leads this market by a large margin, and in the period of January to November 2024, the manufacturer had a 40% share in the BEV segment.

One of the country's top-selling BEVs, the locally made BYD Atto 3, is powered by 201 PS, and has a battery capacity of 49.9 kWh. Its entry price is 1,099,900 baht – the equivalent of €30,800 or \$31,700. In contrast, the closest indirect competitor, the Nissan Leaf imported from Japan, with a 40-kWh battery and 150 PS, retails at 1,590,000 baht – the equivalent of €44,500 or \$45,900.

Brazil market price comparison - Chinese-made vs European-made vehicle Peugeot e-2008 **BYD Yuan Pro** 1,623 Weight (kg) 1,550 4,309 Length (mm) 4,310 Power (cv) **Battery capacity (kWh)** 45.1 261 Inmetro Range (km) Made in China **Price** Source: JATO Dynamics Prices as of January 2025 in Brazil. Car images by IMAGIN.studio





The future of an evolving industry

As the examples explored in this paper demonstrate, China is racing ahead of its competitors, able to offer consistently cost-effective and innovative vehicles for consumers across the globe.

The European Commission's decision to impose higher tariffs on Chinese-made electric vehicles imported to the EU was a result of many factors, including the subsidies that Chinese manufacturers receive and China's resulting ability to offer significantly lower price tags.

Although Chinese OEMs continue to receive benefits and incentives, arguably their largest advantage over other markets is the ability to handle large volumes, as well as their monopoly over the battery supply chain. We are yet to see how the European Commission's tariffs will impact China, however, as long as their workforce and supply chain continue to thrive, the West will only lag behind China in the evolving EV industry.





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