

Sector Morsel

Is the EV transition running out of charge?

25 January 2024

Key takeaways

- Following the pandemic, global supply shortages meant that many consumers could not buy the vehicle they wanted, leading to a period of very low auto sales. The good news is that at the start of this year these problems appear largely resolved, and auto sales should remain strong given the pent up demand that has built up.
- But one area of the market that still appears relatively soft, however, is electric vehicle (EV) sales. Bank of America internal data on new auto loan originations suggests that the share of EVs has recently flattened out, and BofA Global Research has revised down its forecasts for both sales of EVs and their market share.
- A lack of affordability, limited choice and 'range anxiety' are likely key reasons for the relatively sluggish mass market EV adoption. But we remain optimistic: hybrid vehicles are bridging some of the gap to full EV transition, while the choice and affordability of EVs should improve from here.

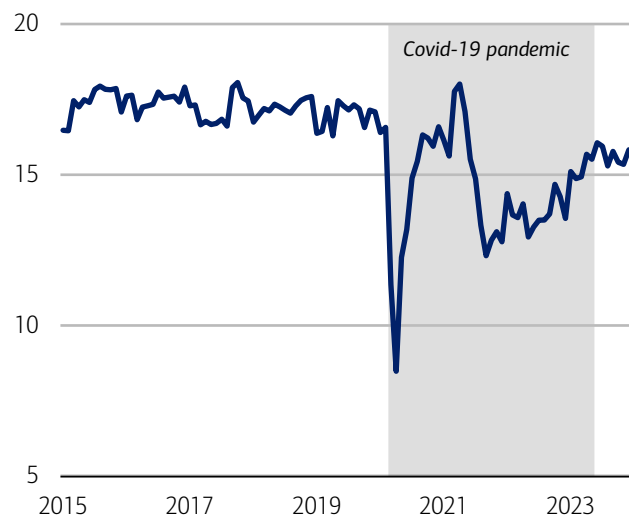
The auto industry is finally recovering

US auto sales dropped precipitously during the initial year of the pandemic, reflecting widespread lockdowns, social distancing and consumer uncertainty. Then, as Covid restrictions eased, there was a 'V-shaped' recovery in sales through mid-2021.

But the exit from the pandemic led to widespread global supply chain issues in 2022, including in the semiconductors that modern vehicles rely on. This meant auto manufacturers could not return to the normal levels of production needed to meet the rebounding demand, resulting in constrained auto sales and frustrated buyers (Exhibit 1). Auto inventories plunged over this period taking the ratio of auto inventory to sales (Exhibit 2) to low rates compared to history.

Exhibit 1: The 2020-2023 pandemic period was marked by a slump in vehicles sales, with buyers frustrated by lack of supply

Lightweight vehicles (autos + light trucks, seasonally-adjusted annual rate (SAAR) million units)

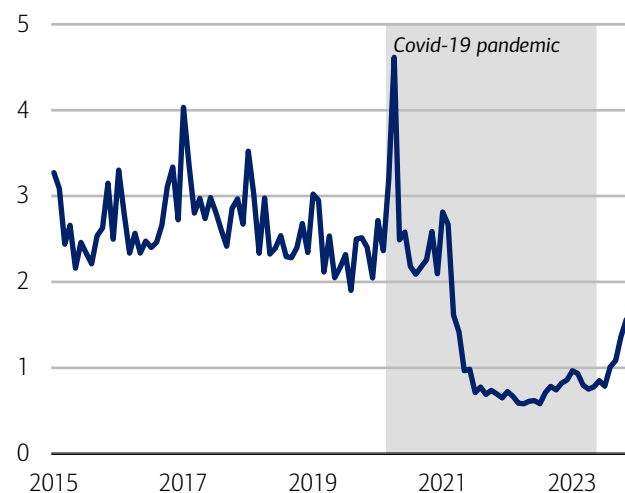


Source: Haver Analytics

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Exhibit 2: Inventories fell sharply over the pandemic and are now rising to more 'normal' levels

Domestic auto inventory/sales ratio (monthly, %)



Source: Haver Analytics

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The good news is that these problems increasingly appear to be in the rear-view mirror. Auto sales in 2023 approached more normal levels, while inventories of vehicles, albeit still stretched, are rising. One possible cloud on the horizon is geopolitical tensions in the Red Sea, but for now the potential impact on US auto production appears limited.

BofA Global Research expects US auto sales to continue to be powered by pent-up demand and a healthy consumer, making for expanding sales through to 2028. Sales should peak in that year at 17m-18m, compared to 15.5m in 2023.

But the EV transition is taking longer

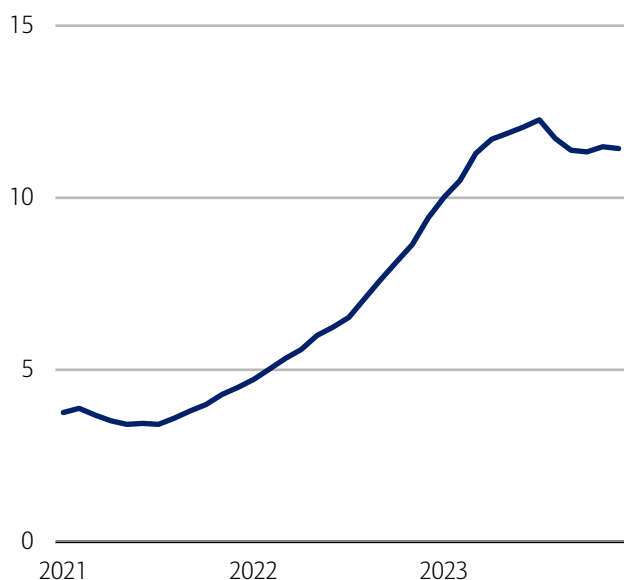
Alongside the challenges of the pandemic, the auto industry is navigating a fundamental shift from its traditional reliance on internal combustion engines (ICE) towards battery electric vehicles (EVs). As discussed in [EVs: When electric dreams become reality](#), the transportation sector accounts for nearly 40% of carbon dioxide emissions and within that, personal vehicles account for 60%.

However, following a wave of excitement about the electrification of the automotive industry, there were signs of softer demand for electric vehicles in the second half of 2023, even as the overall auto market rebounded. This was also against the background of more EV models coming to market and improved government incentives through the Inflation Reduction Act (IRA) (see [IRA ripple effect](#) for more).

Bank of America consumer auto loan origination data appears to confirm the picture of a levelling off in the share of new loans for EVs (Exhibit 3). When we split the data by generations, we find that it is mainly the older generations (Gen X, Boomers and Traditionalists) where the share of EVs in new auto originations appears to have stopped rising, for now at least (Exhibit 4).

Exhibit 3: Bank of America data highlights an apparent levelling off in EV demand

Share of EVs in Bank of America new auto loan originations (Rolling 12-month moving average, %)

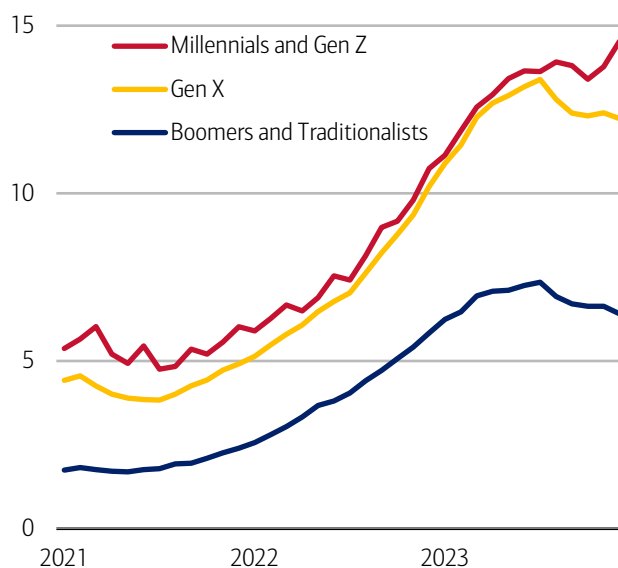


Source: Bank of America internal data

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Exhibit 4: Older generations' demand for EVs appears to have cooled

Share of EVs in Bank of America new auto loan originations by generations (Rolling 12-month moving average, %)

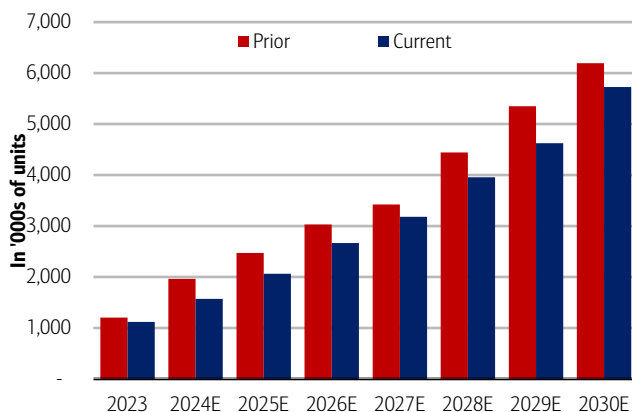


Source: Bank of America internal data

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Exhibit 5: BofA Global Research has revised its forecast for EV sales down...

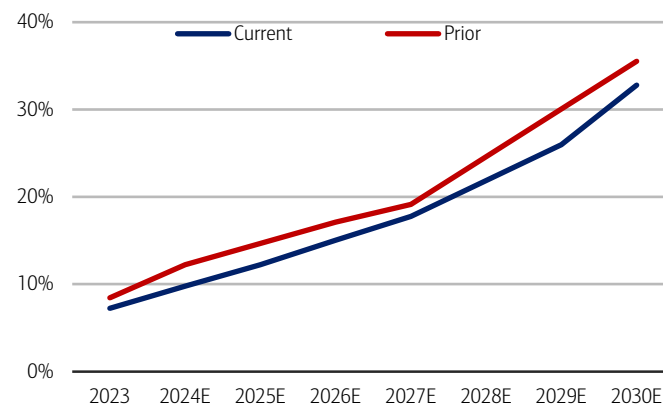
EV volumes forecast: Current vs Prior (000s of units, annual)



Source: BofA Global Research

Exhibit 6: ...resulting in a slower rise in EV market share

EV penetration rate forecast: current vs prior (%)



Source: BofA Global Research

Softer EV demand has led BofA Global Research to revise down its volume forecasts for EVs and their overall share of the overall US market out to 2030 (Exhibit 5 and Exhibit 6). So what is driving the slower uptake of EVs? BofA Global Research points to a number of factors:

Lack of affordability

Unsurprisingly, for consumers the price of vehicles matters and there still appears to be a relative lack of affordable 'mass market' EVs. Of 62 EV models currently sold in the US, BofA Global Research counts only 20 with a starting manufacturer's suggested retail price (MSRP) below \$45k.

Most EVs are seen as competing in the 'premium' end of the auto market. According to BofA Global Research, since 2020, the number of EV models in this segment has increased fourfold, while the number of mass-market models has stagnated. In addition, EV penetration is notably higher at the premium end of the market (14% versus 7%).

Geography: Long distances and large vehicles means big batteries

The US is a large country, so consumers want their vehicles to be able to cover significant distances. At the same time, US consumers tend to have a greater preference for larger vehicles than in other parts of the world. Longer distances and larger vehicles require bigger batteries – again pushing up the price of mass-market vehicles and leading to more consumer 'range anxiety.' As [previously discussed](#), there is still significant variation in the number of electric charging stations per head across the US. For example, California has five times more charging stations per head than Texas as of 2022.

Regulation

Different parts of the world are taking different approaches to the EV transition, with a combination of 'carrots' and 'sticks.' The US has adopted a largely 'carrot' approach by offering incentives for consumers to make the EV switch. The IRA provides significant credits to consumers buying an EV. However, from January 2024, a tightening of the requirements for vehicles to qualify for incentives means some EVs will no longer be eligible for the price subsidies. And with elections in the US occurring later in 2024, US consumers may also face some uncertainty over which regulations and incentives will continue in future years.

The good news – hybrids filling the gap until more affordable EVs arrive

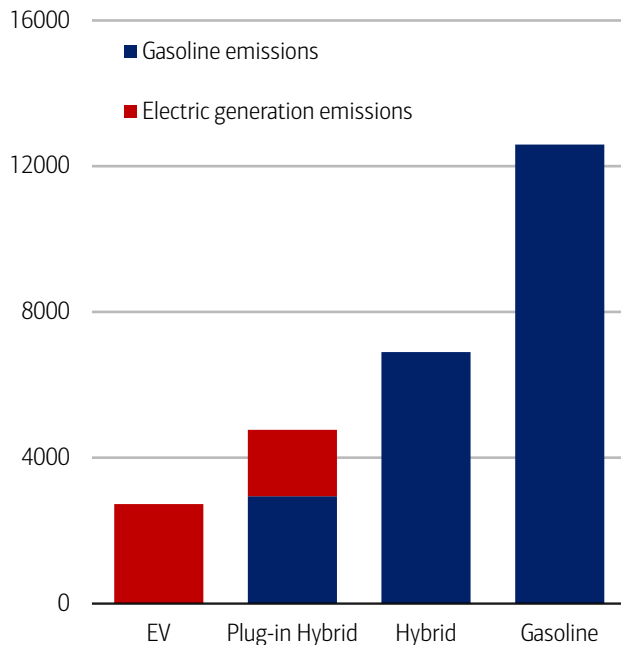
Given EVs are an important part of the transition to net zero, should we be concerned about a slower adoption rate?

The good news is that the market is adopting hybrid powertrains more quickly. Bank of America internal data indicates that the share of hybrids sales continues to rise (Exhibit 8), for vehicles with prices below \$50K and, interestingly, also for vehicles with prices above \$50K.

Hybrids typically supplement combustion engines with the capability for electric-only driving and can still make an important contribution to carbon reduction. The US Department of Energy estimates that plug-in hybrids (where the onboard battery is charged from an external power source) produce less than 40% of the carbon emissions of a regular gasoline vehicle, making a helpful contribution to the carbon reduction trajectory.

Exhibit 7: Hybrids are a useful step on the road to EV transition

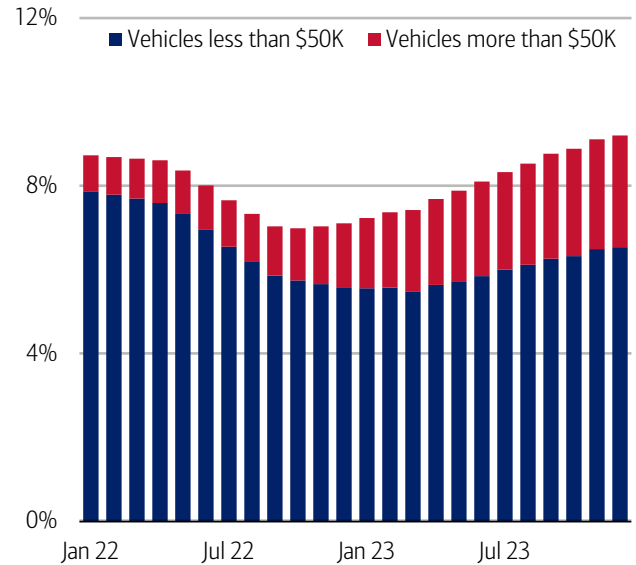
Estimated annual emissions per vehicle (pounds of CO2 equivalent)



Source: US Department of Energy

Exhibit 8: The share of hybrids appears to be rising in both mass-market and premium auto sales

Share of Hybrids in Bank of America new auto loan originations by vehicle price segment (Rolling 12-month moving average, %)



Source: Bank of America internal data

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Furthermore, while 2024 is not a big year for mass-market EV model launches, the pipeline looks stronger from 2025, as significant investments by car manufacturers begin to come to market. At the same time, the charging network that consumers need to relieve their range anxiety is steadily advancing, so the launch and availability of more affordable EVs should help keep the overall transition to electric vehicles on track.

Methodology

Selected Bank of America transaction data is used to inform the macroeconomic views expressed in this report and should be considered in the context of other economic indicators and publicly available information. In certain instances, the data may provide directional and/or predictive value. The data used is not comprehensive; it is based on **aggregated and anonymized** selections of Bank of America data and may reflect a degree of selection bias and limitations on the data available.

Bank of America consumer auto loan originations data reflects loans for private vehicle sales and covers originations at dealers, direct purchases and refinancings.

BofA Global Research's 'Top down' approach to forecasting EV volumes and penetration in the US market is based on a cost parity analysis between Internal Combustion Engine (ICE)/EV components/vehicles (for Original Equipment Manufacturers), and a price parity analysis between ICE/EV average transaction prices (for consumers) and cost parity analysis between ICE/EV total cost of ownership (for consumers).

Additional information about the methodology used to aggregate the data is available upon request.

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