



EV Growth Accelerating in Emerging Markets

TALES FROM THE EMERGING WORLD | EMERGING MARKETS EQUITY TEAM | April 2025

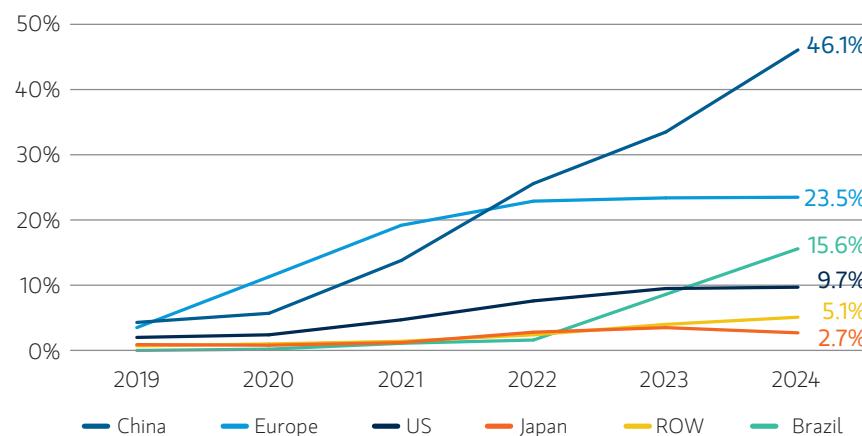
The race for electric vehicle (EV) leadership is shifting gears. In a world increasingly shaped by protectionism and tariffs, the short-term outlook for EVs may seem uncertain. Yet, much like the hum of an electric motor, the EV transition is quietly accelerating in emerging markets (EMs). Driven by policy support, innovation and affordability, EV models from EM manufacturers are offering an increasingly attractive value proposition to consumers, particularly to those in other EMs.

Although Tesla popularized the modern EV, emerging market automakers—especially in China—are leading the next wave of adoption by focusing on lowering costs. In 2024, China's sales penetration of battery EVs (BEV) and plug-in hybrid (PHEV) models rose to 46% of new car sales, far ahead of Europe (24%) and the U.S. (under 10%) - (Display 1).

DISPLAY 1

China Powering Ahead in Electric Car Race

Battery EV and plug-in penetration of new car sales (%)



Source: BNEF. Data as of December 2024.

AUTHOR



ERIC CARLSON
Head of Sustainability,
Emerging Markets
Equity

The U.S. is beset by high prices, patchy infrastructure and limited incentives. With the average EV price hovering around \$55,000, the U.S. EV market is far removed from the sub-\$30,000 sweet spot typically considered "the largest and most competitive segment."¹ EV innovation had already begun to slow before the current trade war was launched by the Trump administration. Today, it remains mired in policy uncertainty while EMs quietly surge ahead.

China Is Leading the Charge

In China, it is a different story. While government incentives and industrial policy were important in kickstarting the sector in its early days, momentum is now driven by economic factors. Domestic automakers account for 90% of EV sales, underscoring the growing competitiveness of local brands. Leading original equipment manufacturers are offering vehicles that combine innovations such as fast charging, sophisticated user experience and self-driving capability with mass market affordability. New EVs are on average 17% cheaper than internal combustion engine (ICE) models.² Lower fuel and maintenance costs have made EVs a practical option for Chinese consumers.

With 85% of global battery manufacturing capacity, China has established formidable cost advantages. Innovation, economies of scale and declining lithium prices have pushed battery costs, which make up 30-40% of an EV's unit cost, below \$100/kilowatt hour—the threshold for EV-ICE cost parity without additional subsidies.

PHEVs are gaining ground as well, especially in areas with limited charging infrastructure. The combined BEV and PHEV adoption is contributing to projections that new EV market penetration will reach 80% in China by the decade's end.³ The rapid growth of EVs is also seen as a major contributor to slowing oil consumption in China, with the country's top oil refiner forecasting demand to peak by 2027.⁴

Going Global

In 2023, China surpassed Japan to become the world's largest vehicle exporter, shipping over 5 million passenger cars.⁵ Much of this growth came from EMs where EV sales, excluding China, have grown at an 84% compound annual growth rate over the past 5 years. In ASEAN markets, EV penetration stands at 6%, of which Chinese brands hold a 50% share. Thailand is the largest market in Southeast Asia, where EV sales tripled from 2022 to 2023, with Chinese models controlling around 80%. The same pattern of dominance holds for the Middle East and LATAM regions, accounting for 60% of the EV market in Israel and 75% in Brazil.⁶ Anecdotal evidence from these regions suggests growing consumer acceptance and comfort with Chinese EVs.

EV Dreams to Dominance

Chinese giant BYD (Build Your Dreams) leads globally with 23% EV market share, offering an affordable and diverse product lineup of BEVs and PHEVs. BYD's competitive edge comes from its ability to combine innovation with low costs, driven by vertical integration—manufacturing

65% of required direct materials in-house—and breakthrough technologies. Earlier this year, the company unveiled new charging technology, reportedly 4x faster than Tesla's Supercharger.⁷ BYD, which produced 4.1 million units last year, is expanding production at a pace and cost unmatched by peers (Display 2).

While BYD controls more than 30% of China's EV market, the company is looking at EM countries for its next stage of growth. BYD nearly doubled its EV exports in 2024 to 417,000 vehicles from a year earlier and plans to boost this by another 90% in 2025.⁸ To achieve this target, BYD has opened plants in Thailand and Uzbekistan with additional capacity coming online in Brazil, Turkey and Hungary, designed to mitigate EU tariff pressures.

Korea's EV Roadmap in the U.S.

However, the one place BYD will not be selling is in the United States. Facing a current tariff rate of 247.5%, Chinese EVs are effectively locked out of the U.S. With Chinese brands sidelined, South Korea's Hyundai Motor Group is driving the affordable innovation segment, especially through Kia, growing market share from almost zero in 2014 to 10% in 2024.⁹ Its competitive advantage lies in flexible production and high levels of automation. Hyundai invested early in the development of its innovative EV-dedicated platform, eGMP, which enables manufacturing of 10 different models on a single production line.

In 2025, Hyundai plans to grow its presence in both PHEVs and

¹ Electric Car Wars: Who Will Win The Battle For The \$30,000 EV? – Investor's Business Daily – August 9, 2024.

² ASKBNEF: Electric Vehicles and Charging in 2025 webinar.

³ BNEF EV Outlook.

⁴ China's oil consumption to peak by 2027, says top refiner Sinopec – Reuters – December 19, 2024.

⁵ China Association of Automobile Manufacturers.

⁶ BNEF.

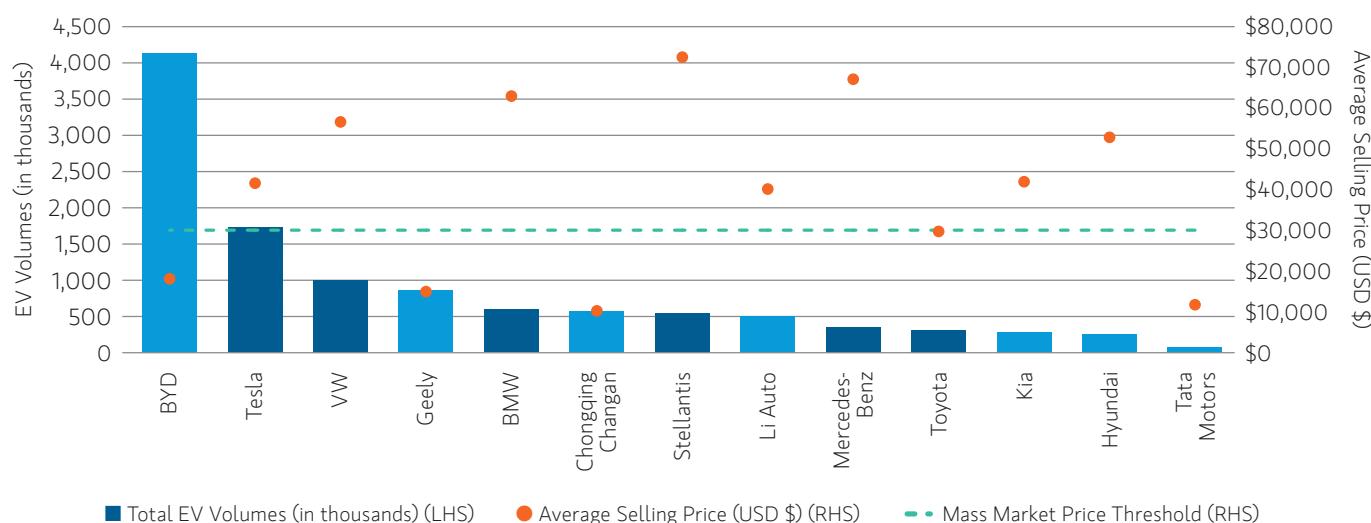
⁷ A Revolution Is Coming To EV Charging And Tesla Looks Like Missing Out – Forbes – March 29, 2025.

⁸ Company data.

⁹ Company data. BNEF.

DISPLAY 2**Affordability Will Be the Key Differentiator**

Companies aim for \$30,000 EVs



Source: Company data, MSIM estimates. Note: Actual selling prices may vary and are influenced by several factors including but not limited to regional differences, dealer pricing, local taxes and fees and government incentives.

BEVs through sub-\$40,000 models, such as Kia EV3 and EV4, to target the U.S. mass market. It already produces in the U.S. and plans to invest another \$21 billion through 2028 to increase production and hedge itself against tariffs.¹⁰

The Road Ahead

Emerging markets EV manufacturers are driving affordable innovation at

scale. EM governments view EVs as a strategic opportunity to attract manufacturing investment, enhance energy security and advance long-term decarbonization goals.

While protectionist policies offer short-term relief, they fail to fix core challenges—higher costs, slower adoption and an uncertain regulatory landscape. Meanwhile, EMs are forging ahead with their own agency.

Over a century ago, Ford's Model T revolutionized the auto industry by making cars for the masses. Today, Detroit is passing the baton to China, Korea and other EMs who are powering up the reinvention of the affordable modern car.

Risk Considerations

There is no assurance that a portfolio will achieve its investment objective. Portfolios are subject to market risk, which is the possibility that the market values of securities owned by a portfolio will decline and that the value of portfolio shares may therefore be less than what you paid for them. Market values can change daily due to economic and other events (e.g. natural disasters, health crises, terrorism, conflicts and social unrest) that affect markets, countries, companies or governments. It is difficult to predict the timing, duration, and potential adverse effects (e.g. portfolio liquidity) of events. Accordingly, you can lose money investing in a portfolio. Please be aware that a portfolio may be subject to certain additional risks. In general, **equities securities'** values also fluctuate in response to activities specific to a company. Investments in **foreign markets** entail special risks such as currency, political, economic, market and liquidity risks. The risks of investing in **emerging market countries** are greater than the risks generally associated with investments in foreign developed countries.

¹⁰ Bloomberg. Company data.

IMPORTANT DISCLOSURES

There is no guarantee that any investment strategy will work under all market conditions, and each investor should evaluate their ability to invest for the long-term, especially during periods of downturn in the market.

A separately managed account may not be appropriate for all investors. Separate accounts managed according to the particular Strategy may include securities that may not necessarily track the performance of a particular index. Please consider the investment objectives, risks and fees of the Strategy carefully before investing. A minimum asset level is required.

For important information about the investment managers, please refer to Form ADV Part 2.

The views and opinions and/or analysis expressed are those of the author or the investment team as of the date of preparation of this material and are subject to change at any time without notice due to market or economic conditions and may not necessarily come to pass. Furthermore, the views will not be updated or otherwise revised to reflect information that subsequently becomes available or circumstances existing, or changes occurring, after the date of publication. The views expressed do not reflect the opinions of all investment personnel at Morgan Stanley Investment Management (MSIM) and its subsidiaries and affiliates (collectively "the Firm"), and may not be reflected in all the strategies and products that the Firm offers.

Forecasts and/or estimates provided herein are subject to change and may not actually come to pass. Information regarding expected market returns and market outlooks is based on the research, analysis and opinions of the authors or the investment team. These conclusions are speculative in nature, may not come to pass and are not intended to predict the future performance of any specific strategy or product the Firm offers. Future results may differ significantly depending on factors such as changes in securities or financial markets or general economic conditions.

Charts and graphs provided herein are for illustrative purposes only. Past performance is no guarantee of future results.

This material has been prepared on the basis of publicly available information, internally developed data and other third-party sources believed to be reliable. However, no assurances are provided regarding the reliability of such information and the Firm has not sought to independently verify information taken from public and third-party sources.

This material is a general communication, which is not impartial and all information provided has been prepared solely for informational and educational purposes and does not constitute an offer or a recommendation to buy or sell any particular security or to adopt any specific investment strategy. The information herein has not been based on a consideration of any individual investor circumstances and is not investment advice, nor should it be construed in any way as tax, accounting, legal or regulatory advice. To that end, investors should seek independent legal and financial advice, including advice as to tax consequences, before making any investment decision.

This material is not a product of Morgan Stanley's Research Department and should not be regarded as a research material or a recommendation.

The Firm has not authorised financial intermediaries to use and to distribute this material, unless such use and distribution is made in accordance with applicable law and regulation. Additionally, financial intermediaries are required to satisfy themselves that the information in this material is appropriate for any person to whom they provide this material in view of that person's circumstances and purpose. The Firm shall not be liable for, and accepts no liability for, the use or misuse of this material by any such financial intermediary.

This material may be translated into other languages. Where such a translation is made this English version remains definitive. If there are any discrepancies between the English version and any version of this material in another language, the English version shall prevail.

The whole or any part of this material may not be directly or indirectly reproduced, copied, modified, used to create a derivative work, performed, displayed, published, posted, licensed, framed, distributed or transmitted or any of its contents disclosed to third parties without the Firm's express written consent. This material may not be linked to unless such hyperlink is for personal and non-commercial use. All information contained herein is proprietary and is protected under copyright and other applicable law.

Eaton Vance is part of Morgan Stanley Investment Management. Morgan Stanley Investment Management is the asset management division of Morgan Stanley.

DISTRIBUTION

This material is only intended for and will only be distributed to persons resident in jurisdictions where such distribution or availability would not be contrary to local laws or regulations.

MSIM, the asset management division of Morgan Stanley (NYSE: MS), and its affiliates have arrangements in place to market each other's products and services. Each MSIM affiliate is regulated as appropriate in the jurisdiction it operates. MSIM's affiliates are: Eaton Vance Management (International) Limited, Eaton Vance Advisers International Ltd, Calvert Research and Management, Eaton Vance Management, Parametric Portfolio Associates LLC and Atlanta Capital Management LLC.

This material has been issued by any one or more of the following entities:

EMEA:

This material is for Professional Clients/Accredited Investors only. In the EU, MSIM and Eaton Vance materials are issued by MSIM Fund Management (Ireland) Limited ("FMIL"). FMIL is regulated by the Central Bank of Ireland and is incorporated in Ireland as a private company limited by shares with company registration number 616661 and has its registered address at 24-26 City Quay, Dublin 2, D02 NY19, Ireland.

Outside the EU, MSIM materials are issued by Morgan Stanley Investment Management Limited (MSIM Ltd) is authorised and regulated by the Financial Conduct Authority. Registered in England. Registered No. 1981121. Registered Office: 25 Cabot Square, Canary Wharf, London E14 4QA.

In Switzerland, MSIM materials are issued by Morgan Stanley & Co. International plc, London (Zurich Branch) Authorised and regulated by the Eidgenössische Finanzmarktaufsicht ("FINMA"). Registered Office: Beethovenstrasse 33, 8002 Zurich, Switzerland.

Outside the US and EU, Eaton Vance materials are issued by Eaton Vance Management (International) Limited ("EVMI") 125 Old Broad Street, London, EC2N 1AR, UK, which is authorised and regulated in the United Kingdom by the Financial Conduct Authority.

Italy: MSIM FMIL (Milan Branch), (Sede Secondaria di Milano) Palazzo Serbelloni Corso Venezia, 16 20121 Milano, Italy. **The Netherlands:** MSIM FMIL (Amsterdam Branch), Rembrandt Tower, 11th Floor Amstelplein 1 1096HA, Netherlands. **France:** MSIM FMIL (Paris Branch), 61 rue de Monceau 75008 Paris, France. **Spain:** MSIM FMIL (Madrid Branch), Calle Serrano 55, 28006, Madrid, Spain. **Germany:** MSIM FMIL, Frankfurt Branch, Grosse Gallusstrasse 18, 60312 Frankfurt am Main, Germany (Gattung: Zweigniederlassung (FDI) gem. § 53b KWG). **Denmark:** MSIM FMIL (Copenhagen Branch), Gorrisken Federspiel, Axel Towers, Axeltorv2, 1609 Copenhagen V, Denmark.

MIDDLE EAST:

Dubai: MSIM Ltd (Representative Office, Unit Precinct 3-7th Floor-Unit 701 and 702, Level 7, Gate Precinct Building 3, Dubai International Financial Centre, Dubai, 506501, United Arab Emirates. Telephone: +97 (0)14 709 7158).

This document is distributed in the Dubai International Financial Centre by Morgan Stanley Investment Management Limited (Representative Office), an entity regulated by the Dubai Financial Services Authority (DFSA). It is intended for use by professional clients and market counterparties only. This document is not intended for distribution to retail clients, and retail clients should not act upon the information contained in this document.

This document relates to a financial product which is not subject to any form of regulation or approval by the DFSA. The DFSA has no responsibility for reviewing or verifying any documents in connection with this financial product. Accordingly, the DFSA has not approved this document or any other associated documents nor taken any steps to verify the information set out in this document, and has no responsibility for it. The financial product to which this document relates may be illiquid and/or subject to restrictions on its resale or transfer. Prospective purchasers should conduct their own due diligence on the financial product. If you do not understand the contents of this document, you should consult an authorised financial adviser.

U.S.

NOT FDIC INSURED. OFFER NO BANK GUARANTEE. MAY LOSE VALUE. NOT INSURED BY ANY FEDERAL GOVERNMENT AGENCY. NOT A DEPOSIT.

LATIN AMERICA (BRAZIL, CHILE COLOMBIA, MEXICO, PERU, AND URUGUAY)

This material is for use with an institutional investor or a qualified investor only. All information contained herein is confidential and is for the exclusive use and review of the intended addressee, and may not be passed on to any third party. This material is provided for informational purposes only and does not constitute a public offering, solicitation or recommendation to buy or sell for any product, service, security and/or strategy. A decision to invest should only be made after reading the strategy documentation and conducting in-depth and independent due diligence.

ASIA PACIFIC

Hong Kong: This material is disseminated by Morgan Stanley Asia Limited for use in Hong Kong and shall only be made available to "professional investors" as defined under the Securities and Futures Ordinance of Hong Kong (Cap 571). The contents of this material have not been reviewed nor approved by any regulatory authority including the Securities and Futures Commission in Hong Kong. Accordingly, save where an exemption is available under the relevant law, this material shall not be issued, circulated, distributed, directed at, or made available to, the public in Hong Kong. **Singapore:** This material is disseminated by Morgan Stanley Investment Management Company and should not be considered to be the subject of an invitation for subscription or purchase, whether directly or indirectly, to the public or any member of the public in Singapore other than (i) to an institutional investor under section 304 of the Securities and Futures Act, Chapter 289 of Singapore ("SFA"); (ii) to a "relevant person" (which includes an accredited investor) pursuant to section 305 of the SFA, and such distribution is in accordance with the conditions specified in section 305 of the SFA; or (iii) otherwise pursuant to, and in accordance with the conditions of, any other applicable provision of the SFA. This publication has not been reviewed by the Monetary Authority of Singapore. **Australia:** This material is provided by Morgan Stanley Investment Management (Australia) Pty Ltd ABN 22122040037, AFSL No. 314182 and its affiliates and does not constitute an offer of interests. Morgan Stanley Investment Management (Australia) Pty Limited arranges for MSIM affiliates to provide financial services to Australian wholesale clients. Interests will only be offered in circumstances under which no disclosure is required under the Corporations Act 2001 (Cth) (the "Corporations Act"). Any offer of interests will not purport to be an offer of interests in circumstances under which disclosure is required under the Corporations Act and will only be made to persons who qualify as a "wholesale client" (as defined in the Corporations Act). This material will not be lodged with the Australian Securities and Investments Commission.

Japan: For professional investors, this material is circulated or distributed for informational purposes only. For those who are not professional investors, this material is provided in relation to Morgan Stanley Investment Management (Japan) Co., Ltd. ("MSIMJ")'s business with respect to discretionary investment management agreements ("IMA") and investment advisory agreements ("IAA"). This is not for the purpose of a recommendation or solicitation of transactions or offers any particular financial instruments. Under an IMA, with respect to management of assets of a client, the client prescribes basic management policies in advance and commissions MSIMJ to make all investment decisions based on an analysis of the value, etc. of the securities, and MSIMJ accepts such commission. The client shall delegate to MSIMJ the authorities necessary for making investment. MSIMJ exercises the delegated authorities based on investment decisions of MSIMJ, and the client shall not make individual instructions. All investment profits and losses belong to the clients; principal is not guaranteed. Please consider the investment objectives and nature of risks before investing. As an investment advisory fee for an IAA or an IMA, the amount of assets subject to the contract multiplied by a certain rate (the upper limit is 2.20% per annum (including tax)) shall be incurred in proportion to the contract period. For some strategies, a contingency fee may be incurred in addition to the fee mentioned above. Indirect charges also may be incurred, such as brokerage commissions for incorporated securities. Since these charges and expenses are different depending on a contract and other factors, MSIMJ cannot present the rates, upper limits, etc. in advance. All clients should read the Documents Provided Prior to the Conclusion of a Contract carefully before executing an agreement. This material is disseminated in Japan by MSIMJ, Registered No. 410 (Director of Kanto Local Finance Bureau (Financial Instruments Firms)), Membership: the Japan Securities Dealers Association, The Investment Trusts Association, Japan, the Japan Investment Advisers Association and the Type II Financial Instruments Firms Association.