

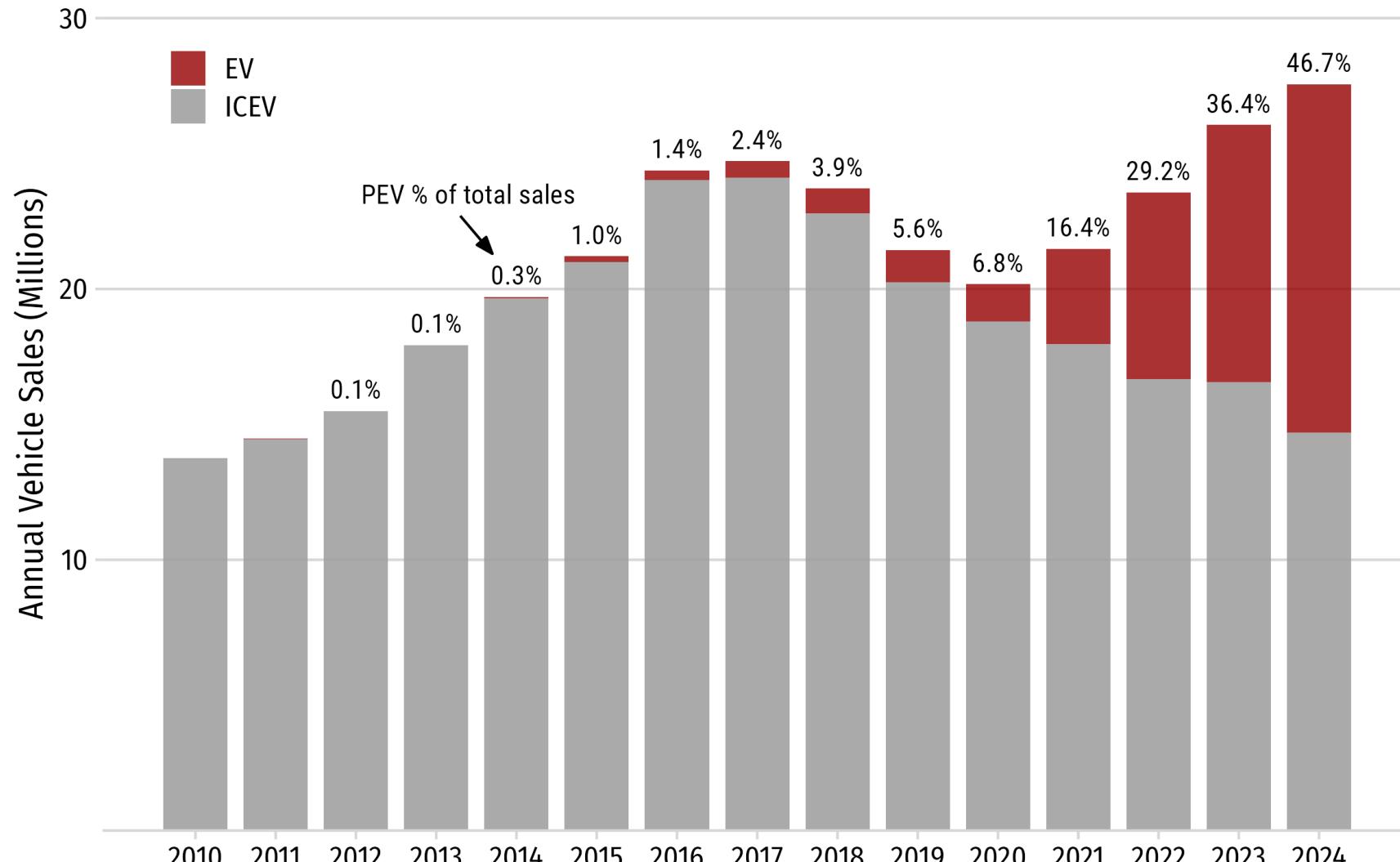
The EV Transition in the U.S. & China

John Paul Helveston, George Washington University

April 23, 2025

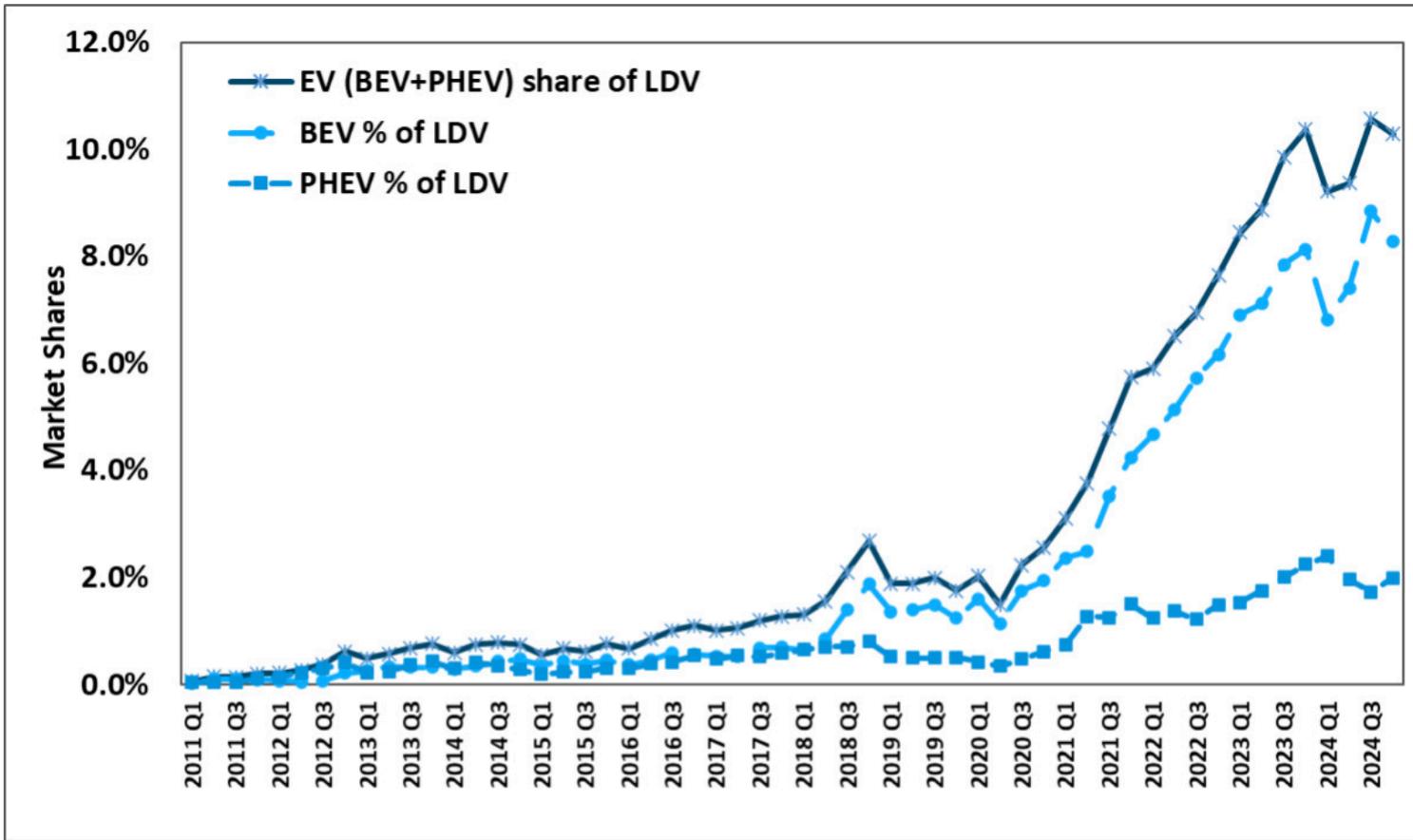
In China, PEV sales grow while ICEV sales slow

After peaking in 2017, internal combustion engine vehicle (ICEV) sales have declined for 7 straight years

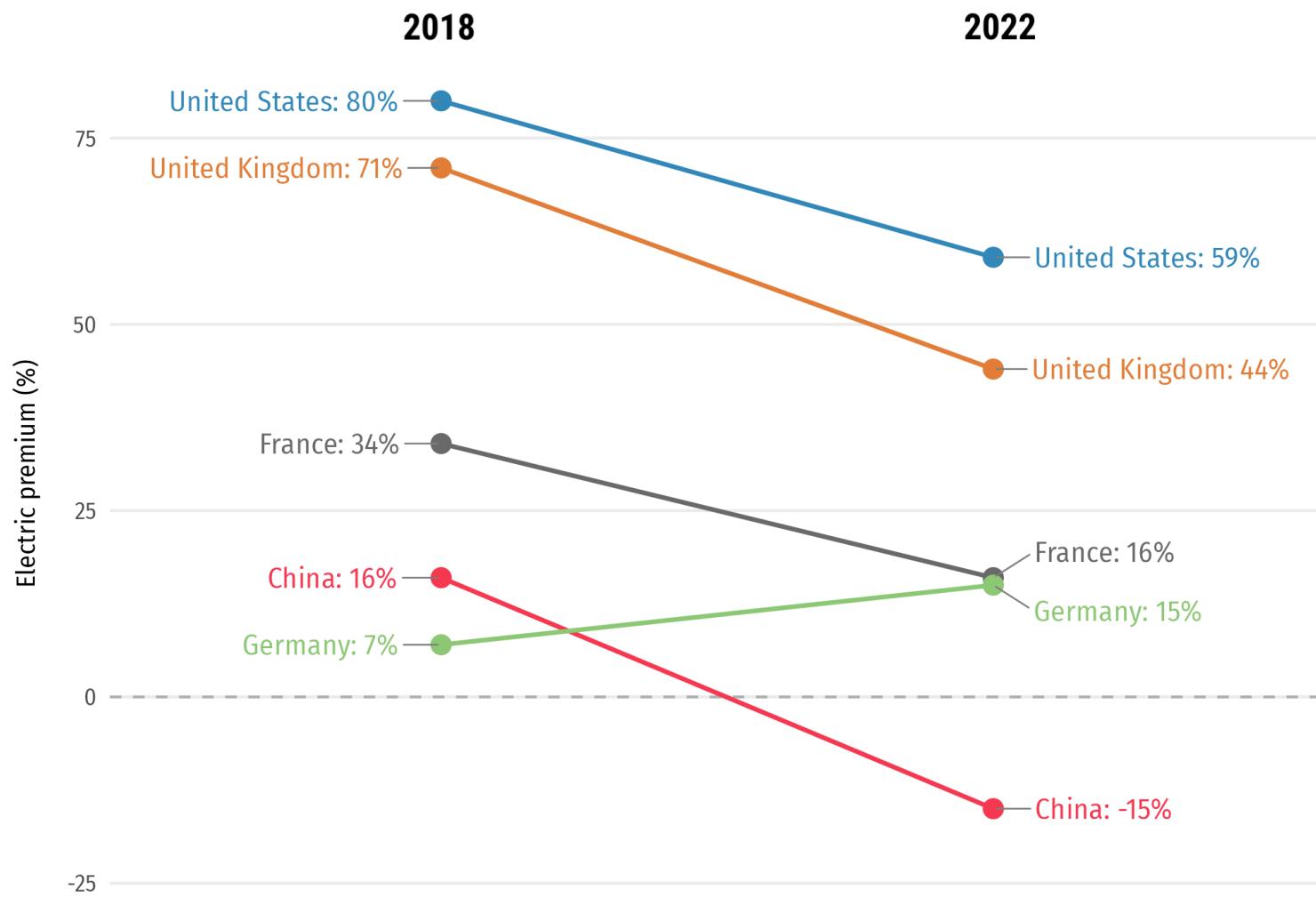


Data sources: OICA, marklines.com

EV sales in US reaching ~10% of sales



Source: Argonne National Lab, <https://www.anl.gov/ev-facts/model-sales>

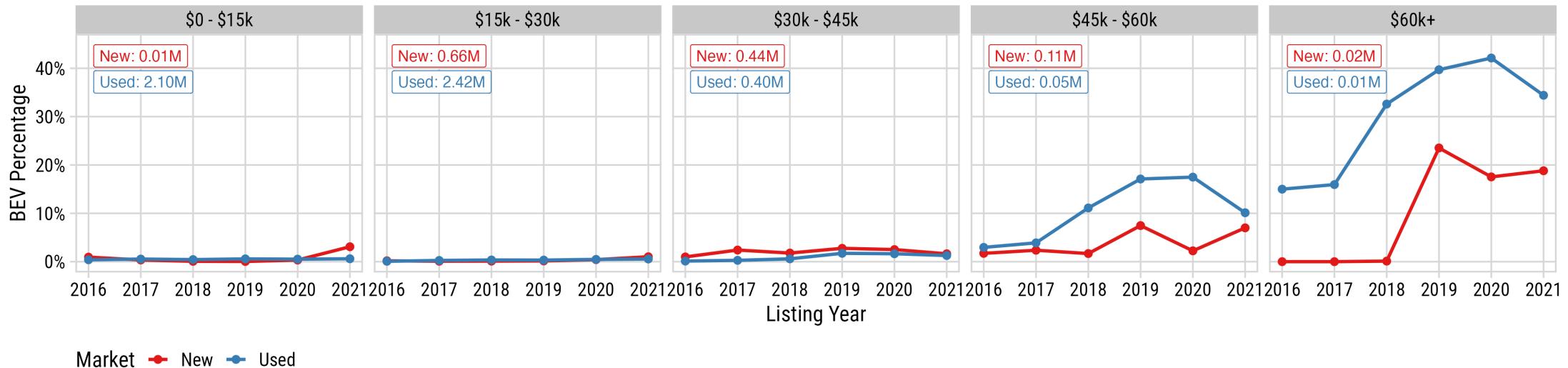


The EV sector has an affordability problem (except in China)

Source: <https://www.iea.org/reports/global-ev-outlook-2024/executive-summary>

BEVs Concentrated in High-Price Segments in US

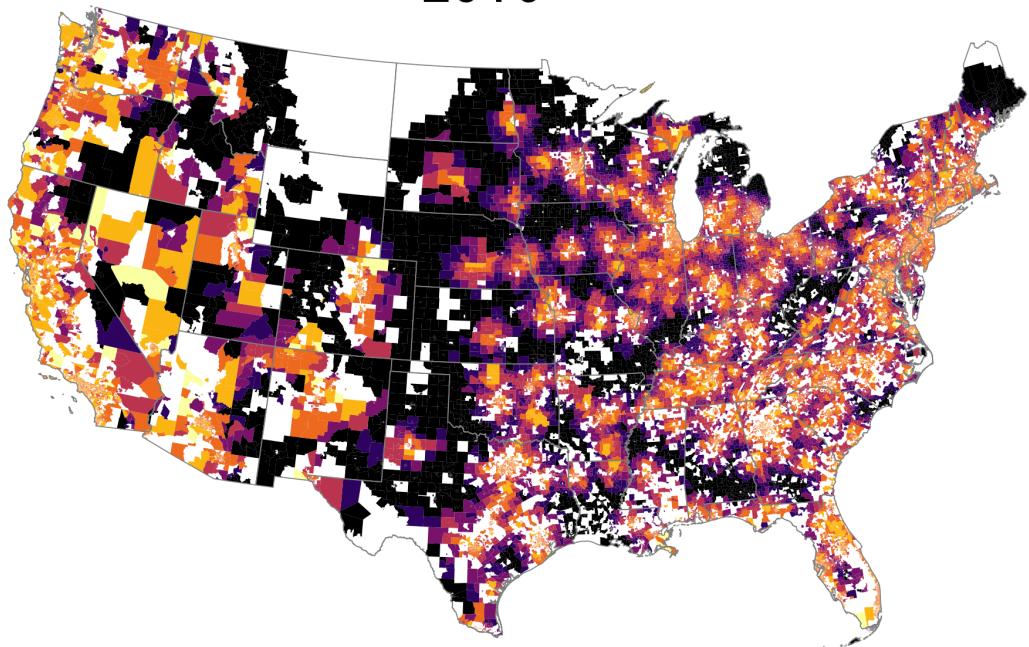
In 2021, BEVs just 1.1% of new and 0.6% of used listings under \$45,000



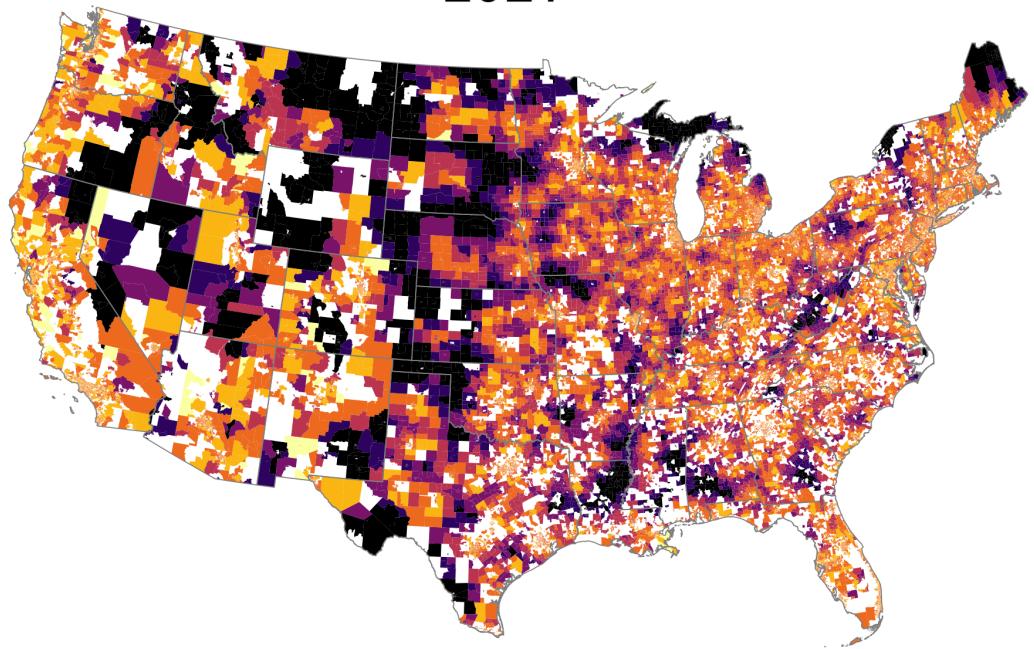
Data pulled from >60k dealerships, 2016 to 2021. Source: marketcheck.com

The BEV Deserts of America

2016



2021



Additional travel time to nearest <\$25,000 BEV (Minutes)



Things that don't help affordability:

Tariffs (100% tariff on imported Chinese EVs)

Effectively banning the use of Chinese suppliers

Opportunities

Chinese FDI into U.S.

Gotion batteries: Multi-billion dollar investments in Illinois and Michigan

Challenge: Uncertainty around Foreign Entities of Concern (FEOC) status

Technology Licensing Agreements

Ford-CATL: Licensing battery technology in a Michigan plant

Challenge: CATL was recently added to DOD's list of "Chinese military companies"

We need to stop viewing EVs as
environmental technology

and start viewing them as
essential technology

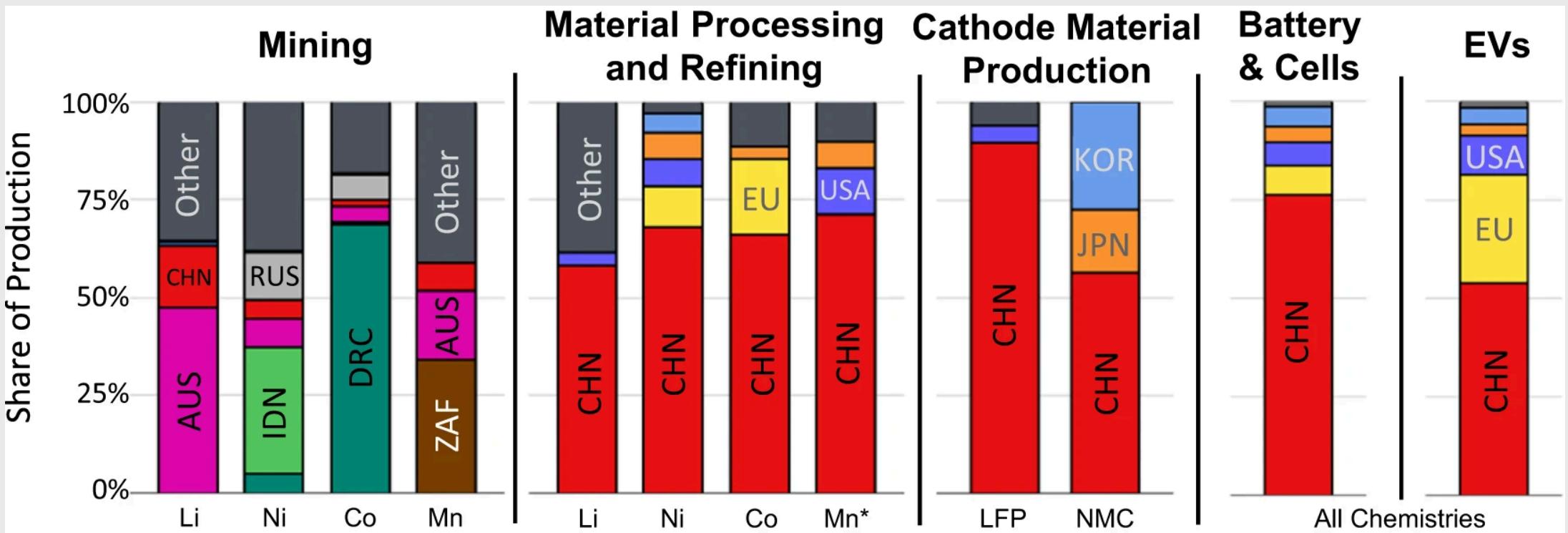
Thanks!

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Extra Slides

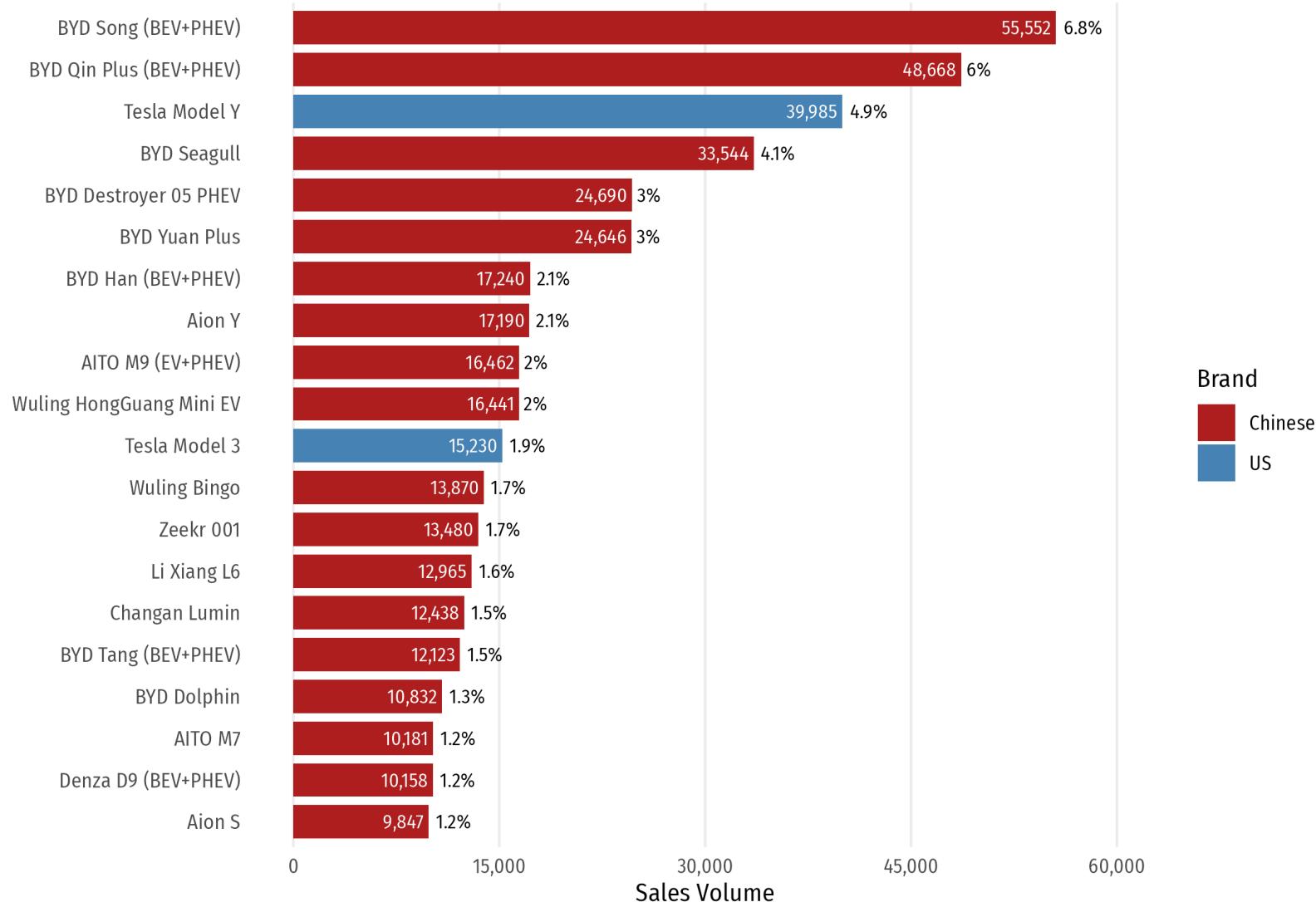
Chinese firms dominate the EV battery supply chain



Cheng, Anthony L., et al. "Electric vehicle battery chemistry affects supply chain disruption vulnerabilities." *Nature Communications* 15.1 (2024): 2143.

Top 20 EV Models by Sales (May 2024)

Percentage is total % of all vehicle sales



Chinese firms dominate China's EV market