

Electric Vehicles and Auto Loans

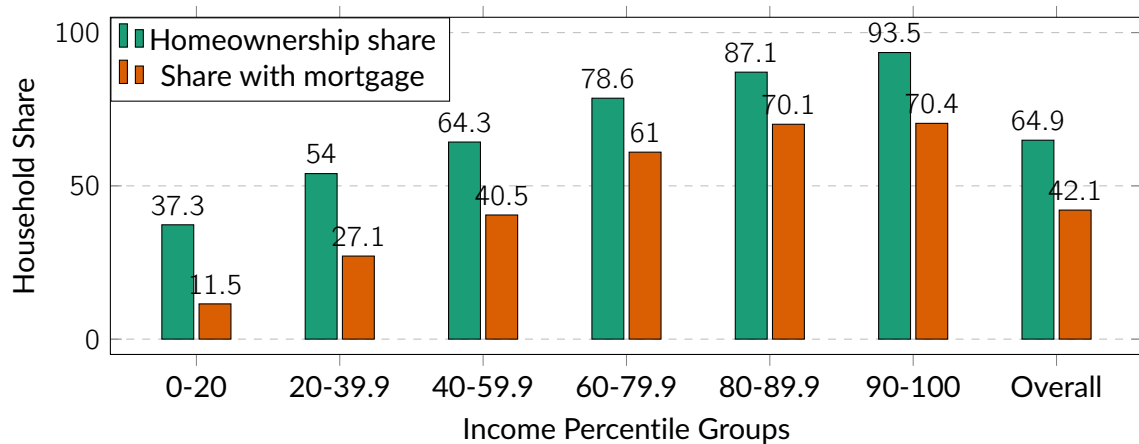
Paul Goldsmith-Pinkham

Yale SOM & NBER

Household Finance, NBER Summer Institute

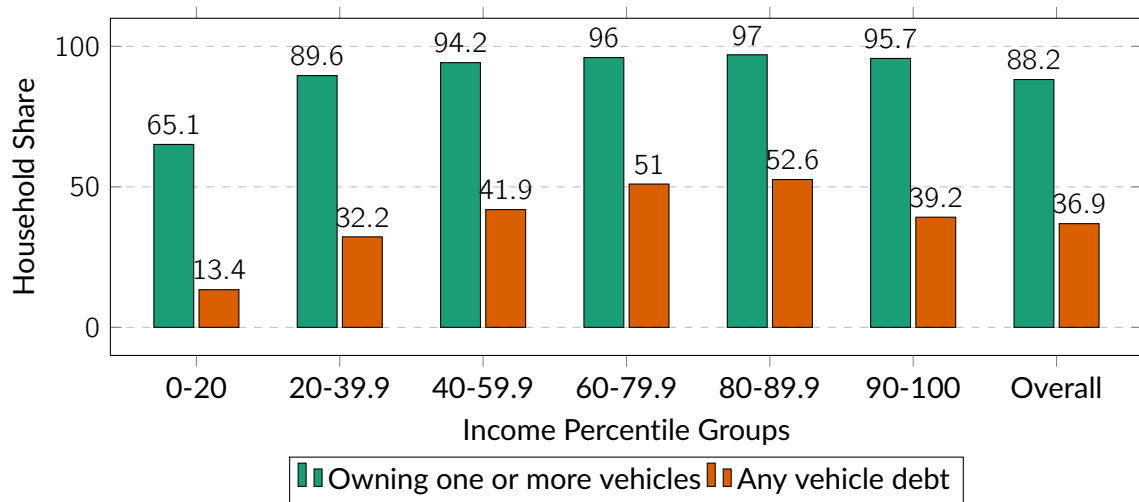


We should study mortgages but...



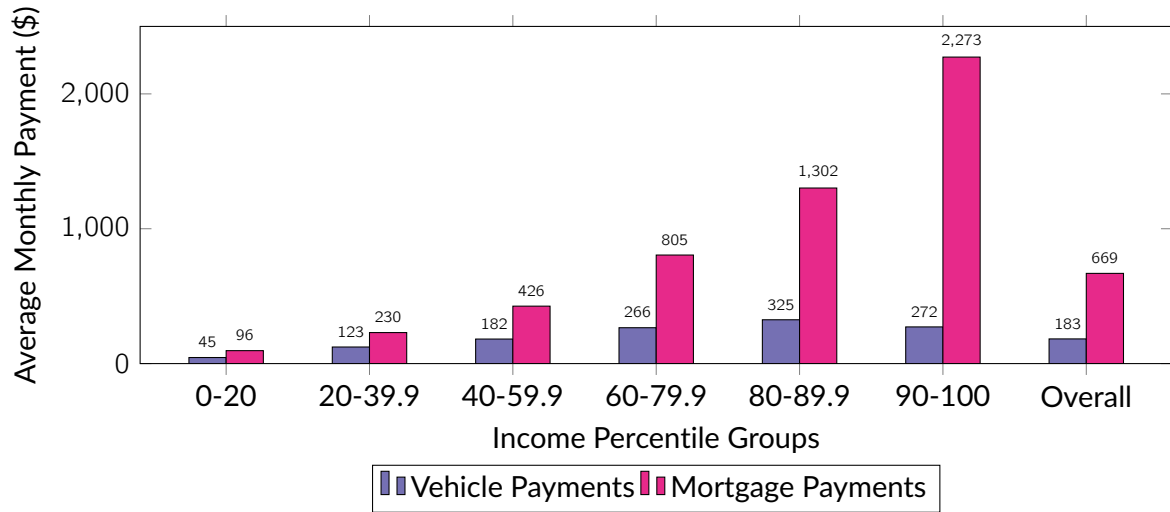
2019 Survey of Consumer Finances

We should also study auto loans!



2019 Survey of Consumer Finances

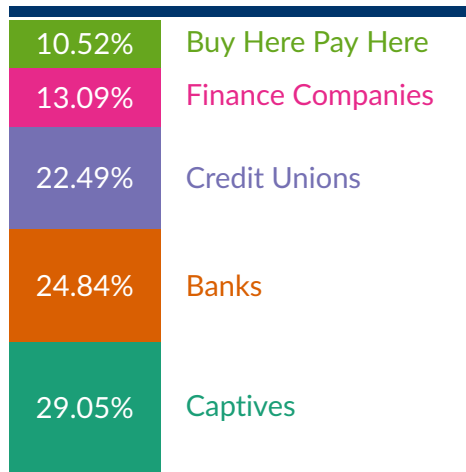
Average Vehicle and Mortgage Payments Across Income Groups



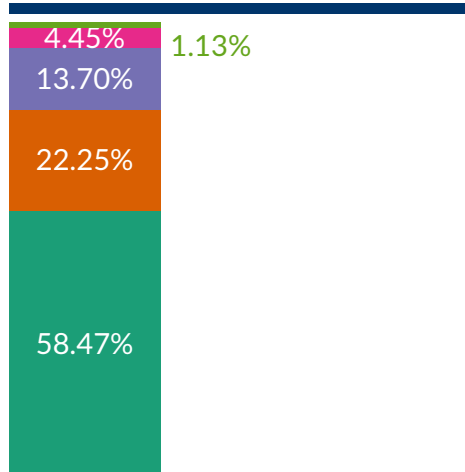
2019 Survey of Consumer Finances

U.S. Auto Loan Market Share (as of 2023) [Total = \$685bn]

All Cars

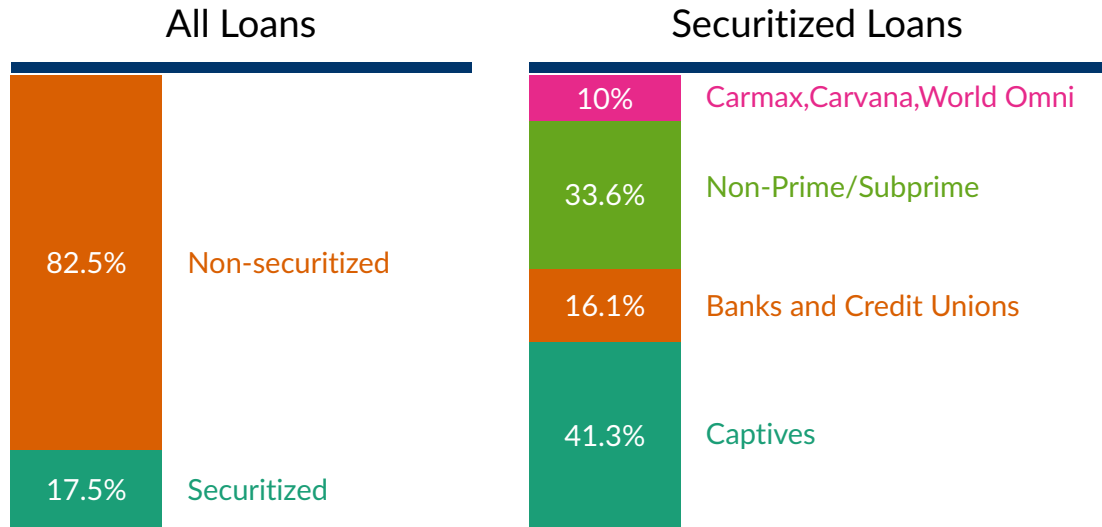


New Cars



Source: S&P Global Auto Loan ABS Tracker

Composition of ABS by Lender type (as of 2023)

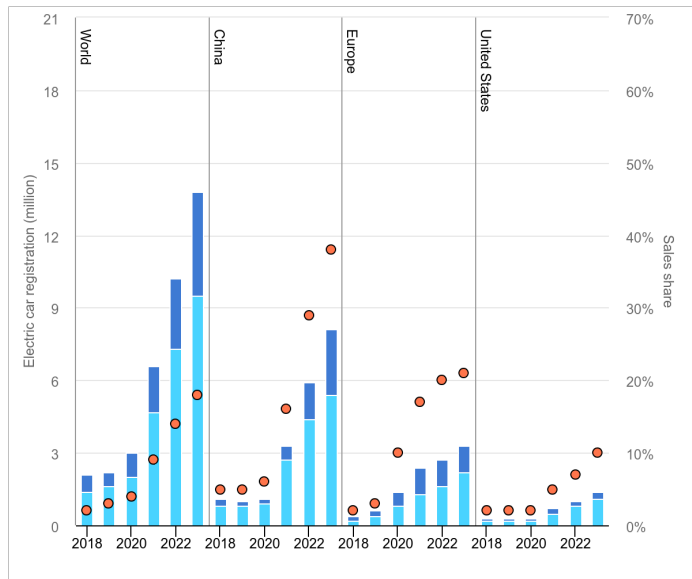


Source: S&P Global Auto Loan ABS Tracker

Electric Vehicles (EV) are new relative to ICE

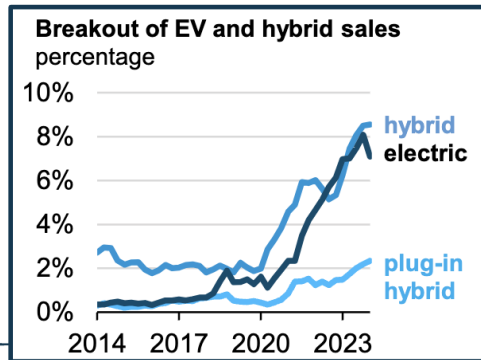
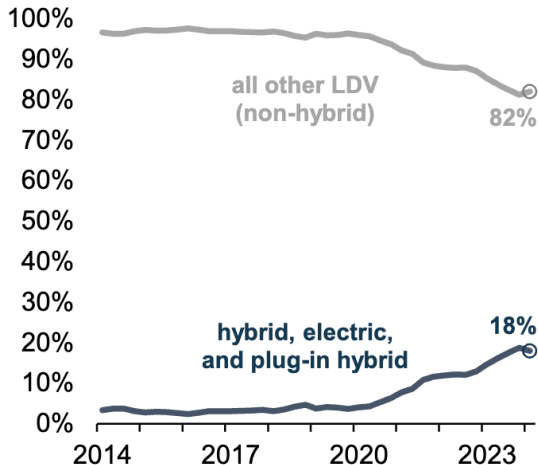
- EVs are a small share of the market
- But growing rapidly
- What counts as an EV is complex as well

Source: International Energy Agency



What is an electric vehicle?

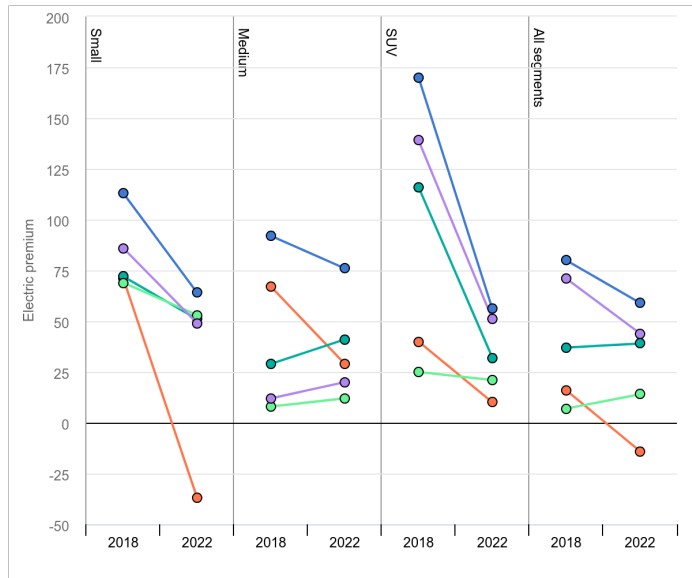
Quarterly U.S. light-duty vehicle (LDV) sales by powertrain (Jan 2014–Mar 2024)
percentage of sales



Source: Energy Information Administration

Battery EVs are more expensive than ICE

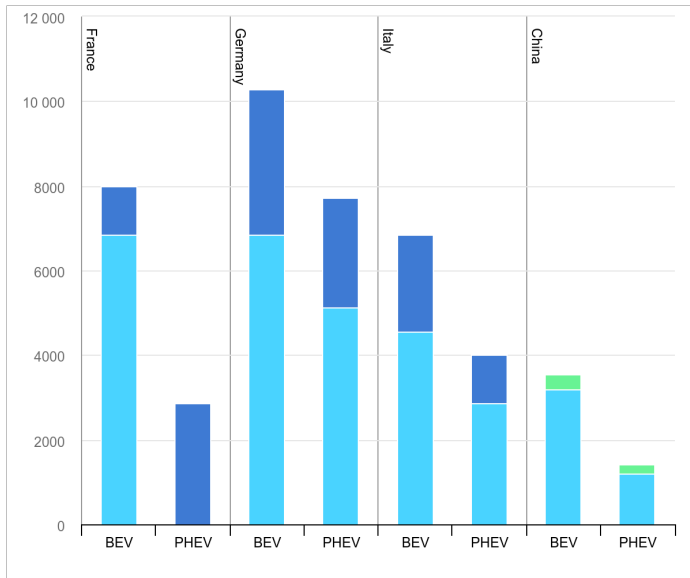
- From International Energy Agency (IEA) reports, “Price gap between the sales-weighted average price of conventional and electric cars in selected countries, before subsidy, by size, in 2018 and 2022”



Subsidies in electric vehicles are huge

- US Subsidies post-IRA: \$7,500 for some BEV and PHEV, not others
- \$100bn allocated in IRA to clean transport

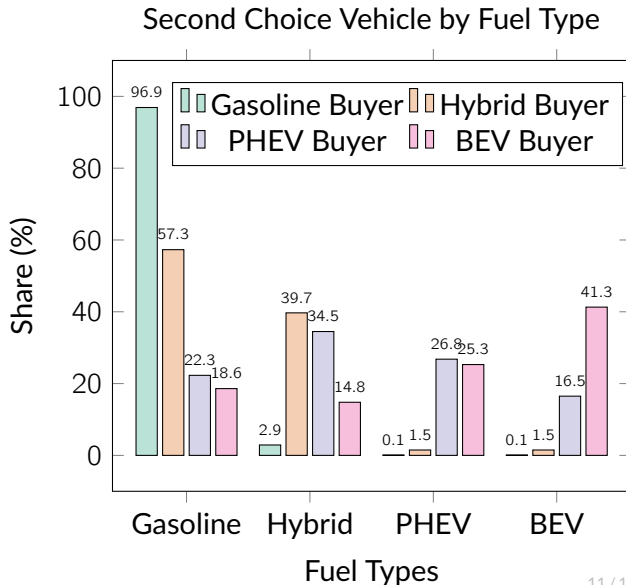
Source: IEA



What is the right comparison?

- Not enough time to provide true discussion, but important question to ask: what are we trying to compare?
- The customer base across these vehicles may not be the same, which makes the comparison challenging
- How should we evaluate these differences in light of this?

Source: Xing, Leard, and Li (2021)

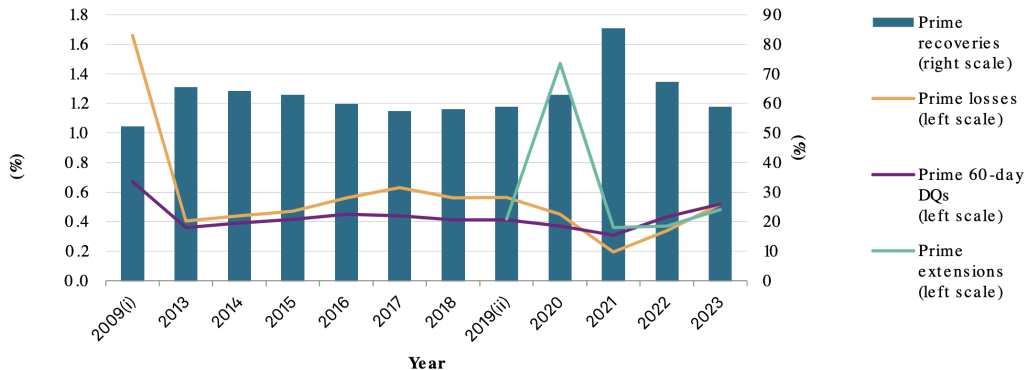


What are the incentives of the lenders?

- Captive finance and pricing are intimately linked Hankins, Momeni and Sovich (2023), Argyle et al. (2021)
- Search behavior for auto loans suggests that consumers are not shopping around Argyle, Naduald and Palmer (2023)
- Huge amount of information about borrower in
 - Choice of car
 - Choice of contract
- How do lenders and sellers price discriminate?
 - In what niche does a non-captive compete?
- Key risks: credit risk (default), recovery risk (collateral value)

What are the incentives of the lenders?

Average prime losses, DQs, and recoveries



(i) Peak year for average losses. (ii) For the purpose of this chart, we started aggregating extensions beginning in August 2019. DQs--Delinquencies.

Copyright © 2024 by Standard & Poor's Financial Services LLC. All rights reserved.

Big questions we can ask

Auto Lending

- How does the segmentation of auto lending interact with sensitivity to macro shocks? E.g. gas shocks, or interest rate shocks?
- When does collateral value matter most for lending? How do lenders understand this risk?
- How does the secondary ABS market price risk? How similar and different is it to the mortgage market?

Government Climate Subsidies

- Should we be targeting loans for EV purchases, rather than credits?
- When does collateral value matter most for lending? How do lenders understand this risk?
- How does the secondary ABS market price risk? How similar and different is it to the mortgage market?