



# CASE Automotive Technology

Credit Implications for Managed Lanes

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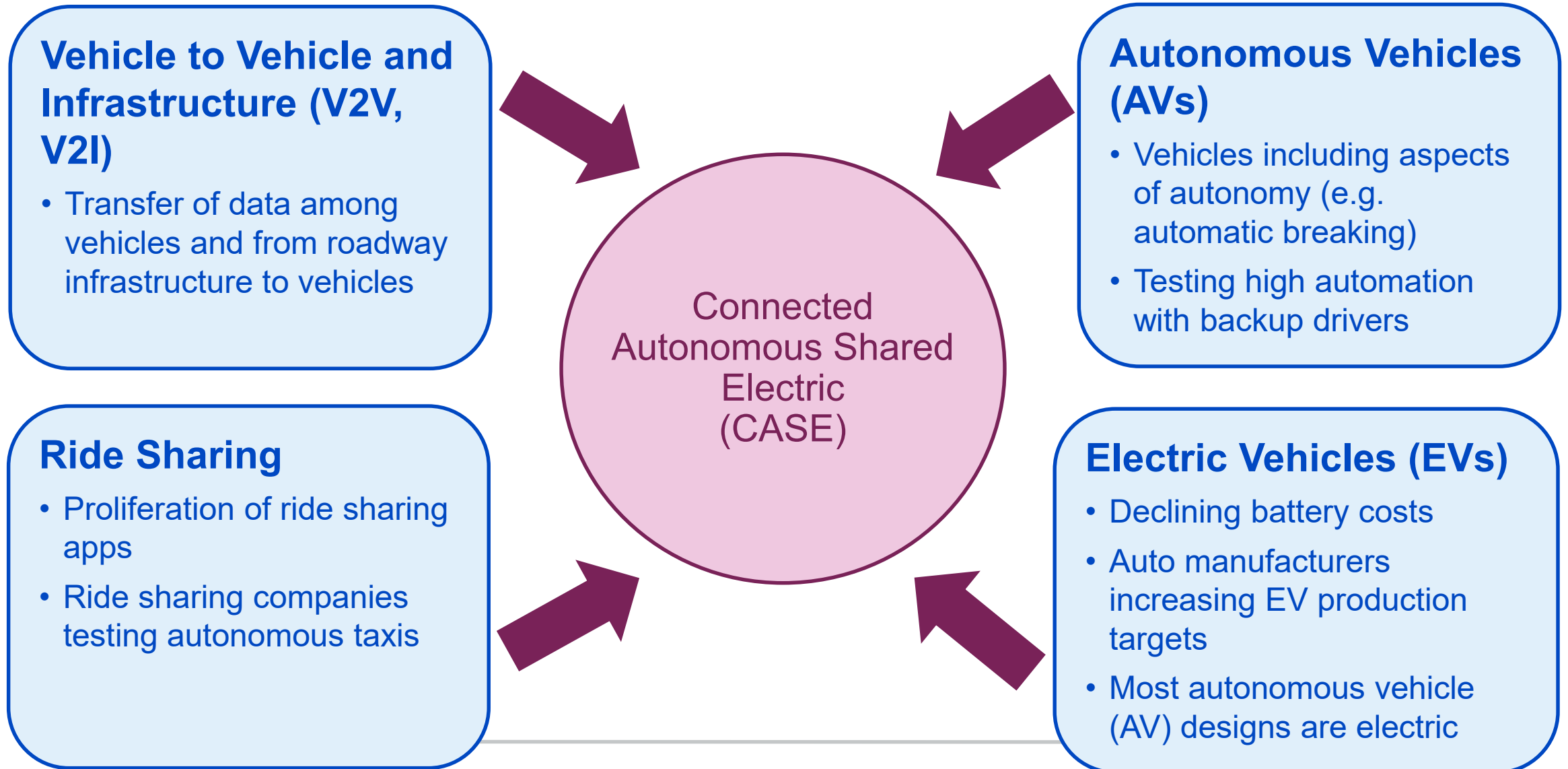
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**Fitch**Ratings

# Overview

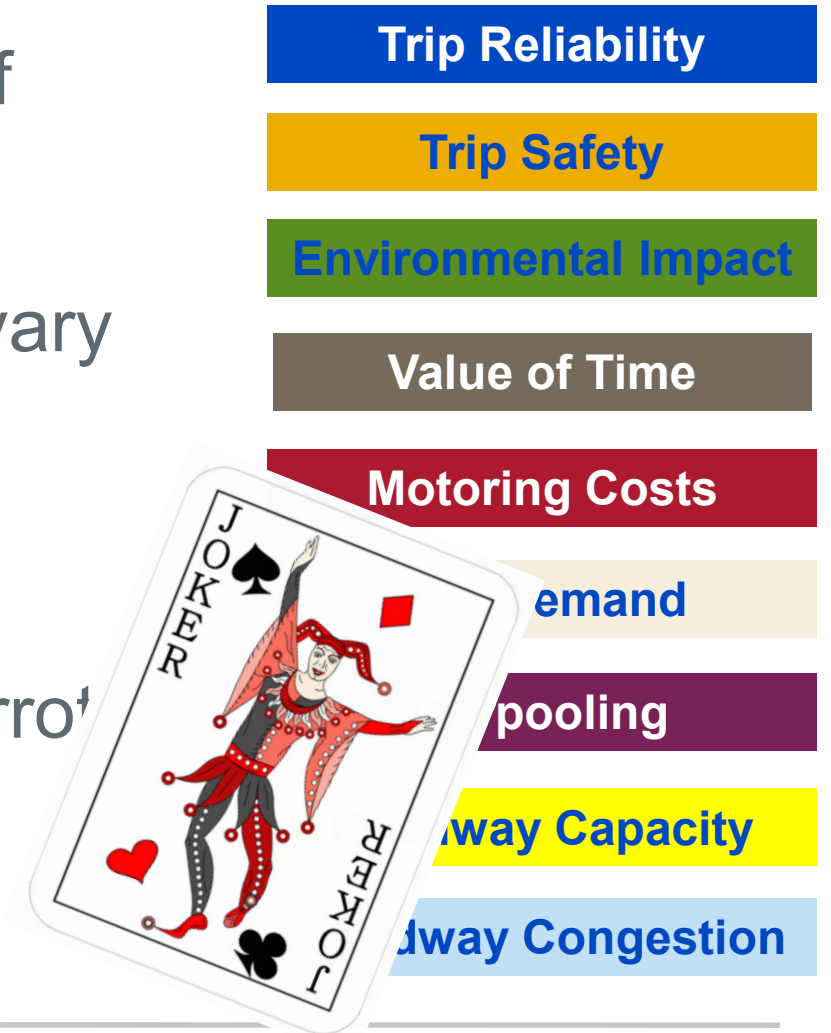
- Car tech: An introduction to CASE
- How CASE will shape the driving experience
- How credit impacts will vary by asset class
- A closer look at CASE & managed lanes
- How Fitch is incorporating CASE into credit risk

# Technological Developments Are Changing Mobility



# How CASE Will Shape the Driving Experience

- CASE tech will impact a broad spectrum of automotive attributes
- Direction of impact and its magnitude will vary by technology
- Combining the pro's and con's
- Wild Card: Governmental regulation as carrot and stick



# CASE Credit Impact by Asset Class



**Toll Roads**



**Managed Lanes**



**Transit**

- Different modes of transportation will be affected differently
- Standard toll roads relatively well-positioned with exceptions
- Transit already impacted by ride sharing
- Parking could be heavily impacted by automation, sharing
- Managed lanes at risk

# A Closer Look at Managed Lanes

Technology	Driver Impact	ML Credit Impact
Connected	Improved trip reliability, safety, and congestion.	Negative
Automated	Improves trip reliability & safety, lowers operating costs, increases trips, increases roadway capacity, spurs carpool formations.	Negative
Shared	Lowers value of time, motoring costs, increases trip demand, spurs carpool formations.	Wildcard
Electric	Induces trips by lowering operating costs, somewhat lowers VOT.	Positive
<b>Net Impact</b>	<b>Overall road network conditions improve while demand goes up, offset by increased corridor capacity and carpool formations. Value of time and reliability fall.</b>	<b>Likely Negative</b>

# How is Fitch Addressing Effects of CASE?

- **Fitch Cash Flow Forecasts**

- CASE not yet explicitly incorporated
  - Tech in infancy
  - Timing highly uncertain
  - Holding on academic research, explicit incorporation by T&R firms
- Use of breakeven analyses
  - CAGR
  - Revenue shocks
- Escalating haircuts typical
- Structural protections

A photograph of a modern glass skyscraper with the 'Fitch Ratings' logo mounted on its facade. The logo is in a red serif font for 'Fitch' and a grey sans-serif font for 'Ratings'. The building is set against a clear blue sky. To the left, another curved glass building is partially visible.

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