Tab 13

Disruptive Trends

In Transportation

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March 2018

FEHR PEERS

Trends

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Trends

1970 to 2004 **INCREASE**

- Labor Force Participation
- Driving Age Population
- Vehicle Ownership
- Licensing Regulations
- Gasoline Prices
- Congestion & Time Use
- Non-Auto Mode Options
- GDP, Real Income Growth
- Suburban & Urban Migration
- Household Formation
- Goods & Services Delivery
- Tele-Commuting
- Social Networking
- Internet Shopping

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Trends

2017 to 2040 **UNCERTAINTY**

Labor Force Participation

Driving Age Population

Vehicle Ownership

Licensing Regulations

Gasoline Prices

Congestion & Time Use

Non-Auto Mode Options

GDP, Real Income Growth

Suburban Migration

Householdd Formationn

Goods & Services Delivery

Tele-Commuting

Social Networking

Internet Shopping

Autonomous Cars

Driverless Vehicles

VMT per capita will be 10% to 20% above its 2004 peak, suggesting a need to accelerate transportation investment to keep pace with population growth.

Your Forecast

2040

15,350

2040 **Published Forecasts**

17,100 VMT per capita
U.S. DOT

16,300 VMT per capita
Transportation Financing Commission

13,400 VMT per capita
U.S. Energy Administration

12,200 VMT per capita
Public Interest Research Group: High

8,200 VMT per capita
Public Interest Research Group: Low

2004
13,200 VMT per capita

2012
12,100 VMT per capita

1970

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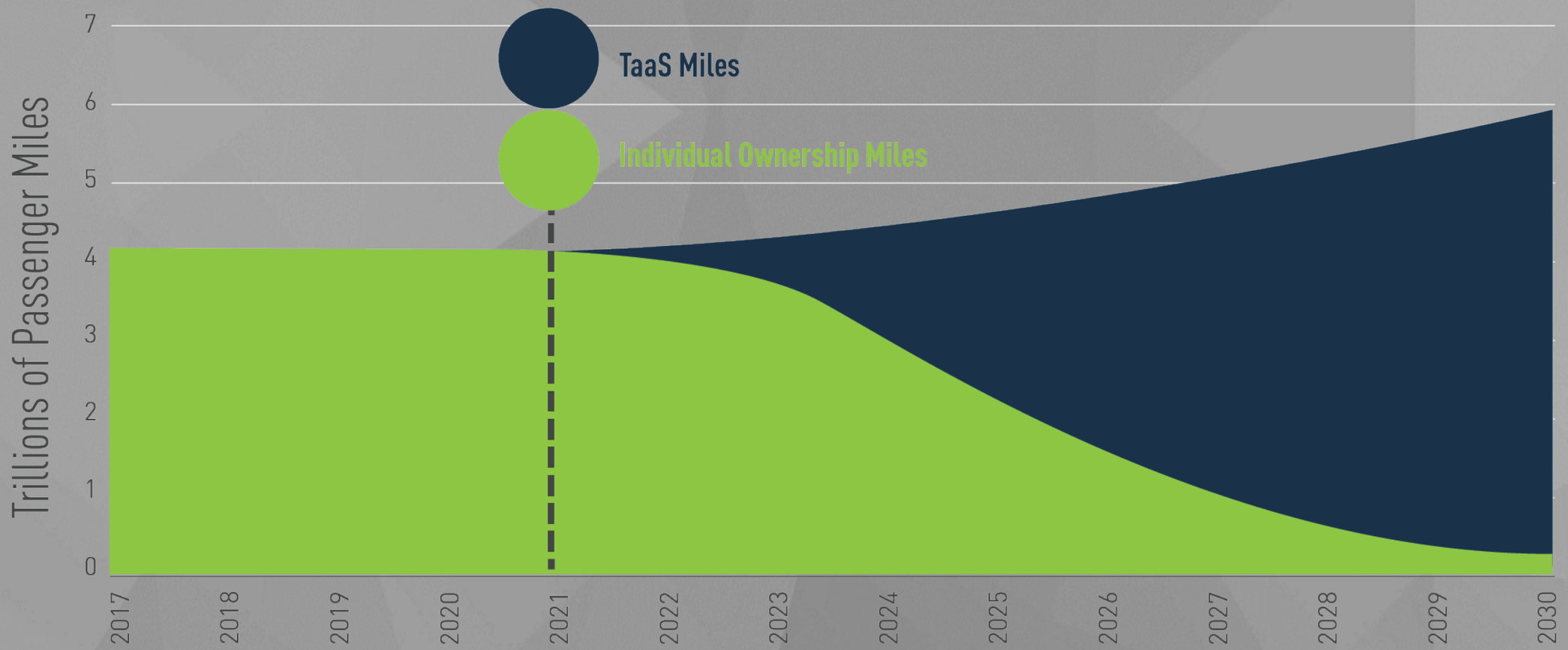
Trend Effects

Tipping Point

95% of Passenger Miles by 2030
Delivered by Transportation as a Service (TaaS) in Autonomous Electric Vehicles (AEVs)



https://tonyseba.com | 2018 TRB Presentation

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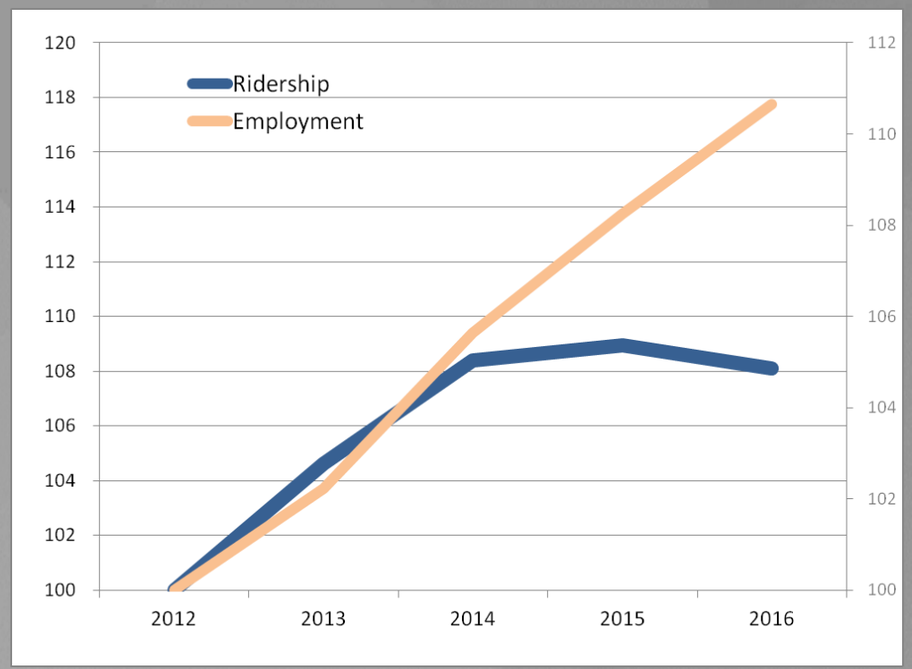
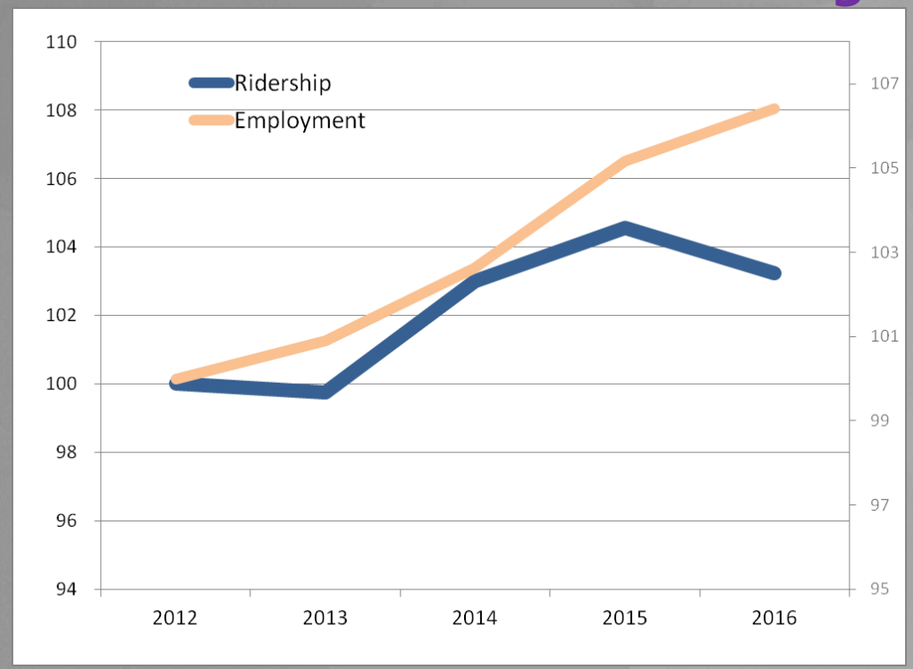
Trend Effects

Evidence

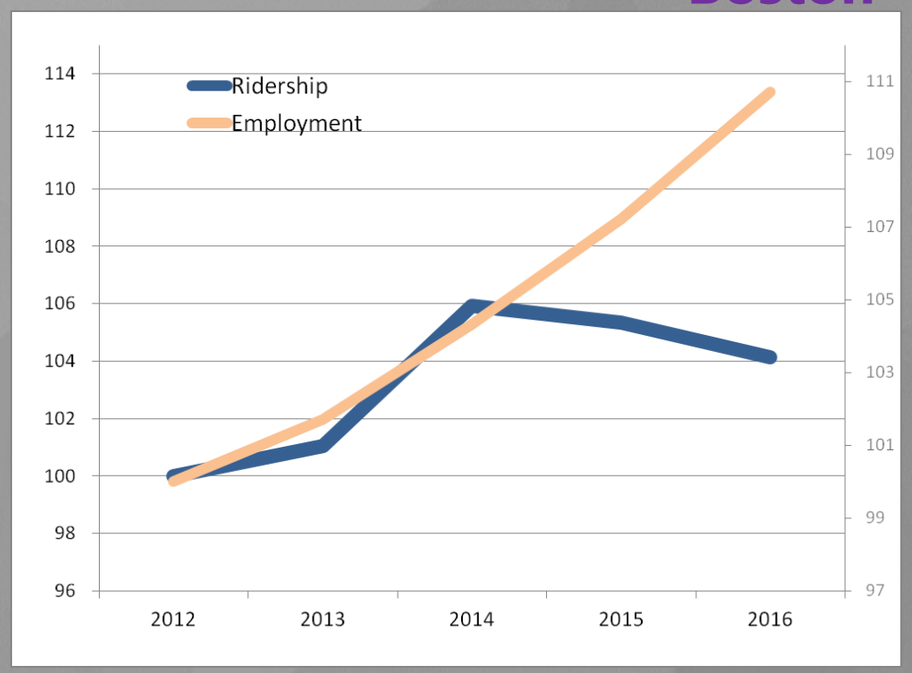
New York



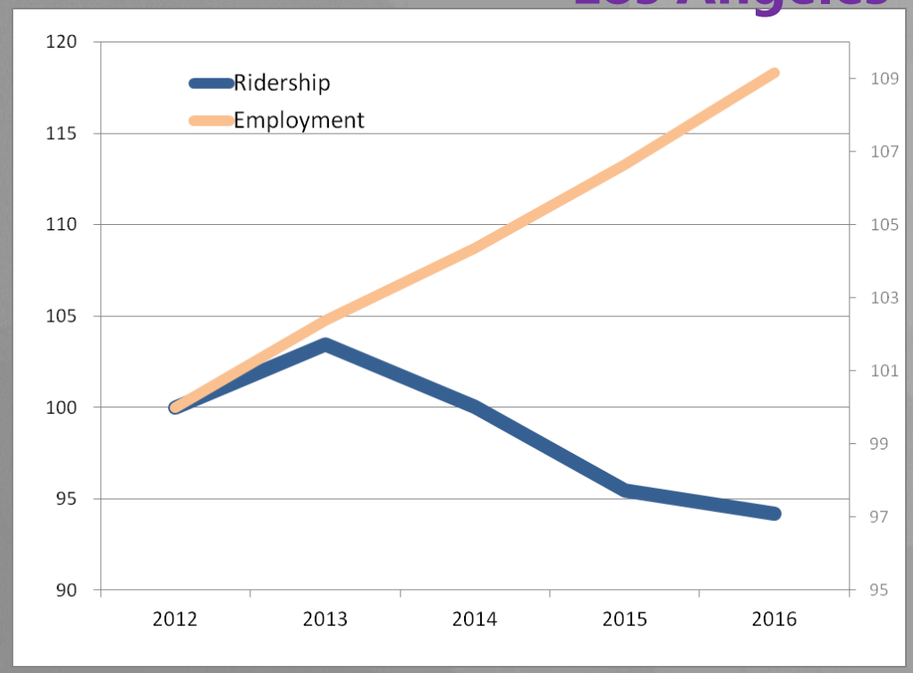
Chicago



Boston



Los Angeles



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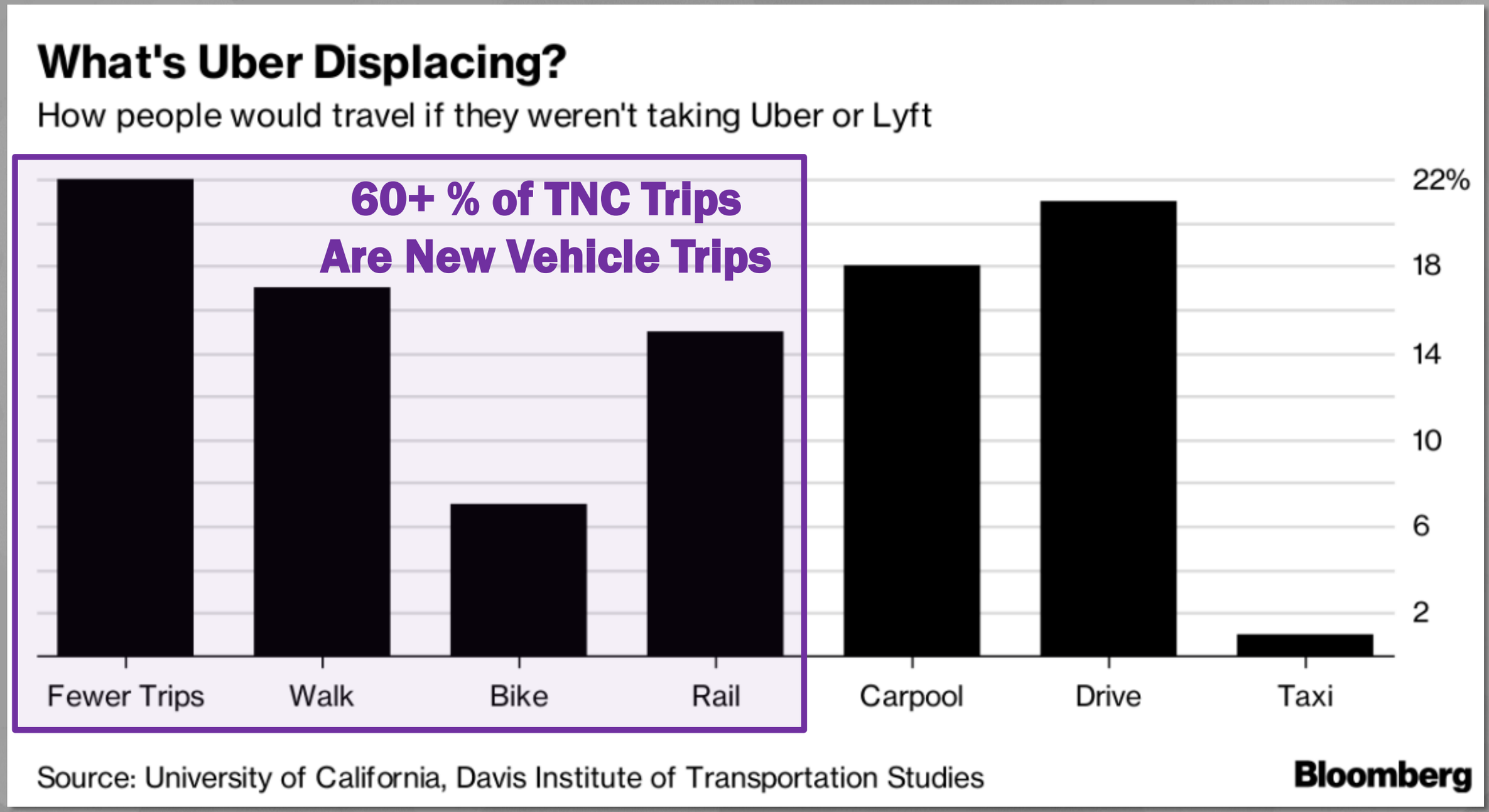
TNC Effects

Evidence



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TNCs to AVs

Fehr & Peers Testing

9
Regional Travel Demand Models

2
Freeway Simulations

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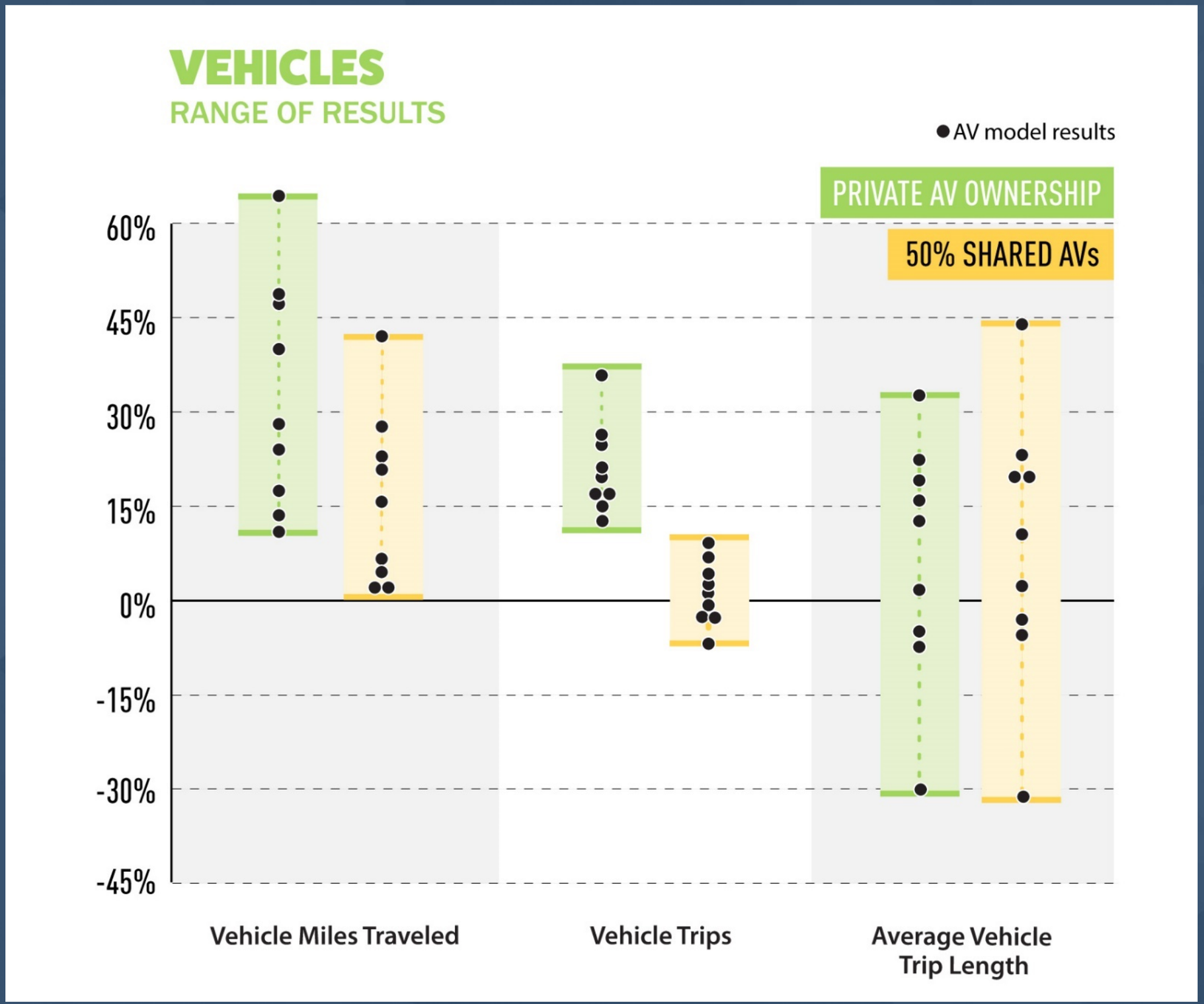
AV Tests

Vehicle Results



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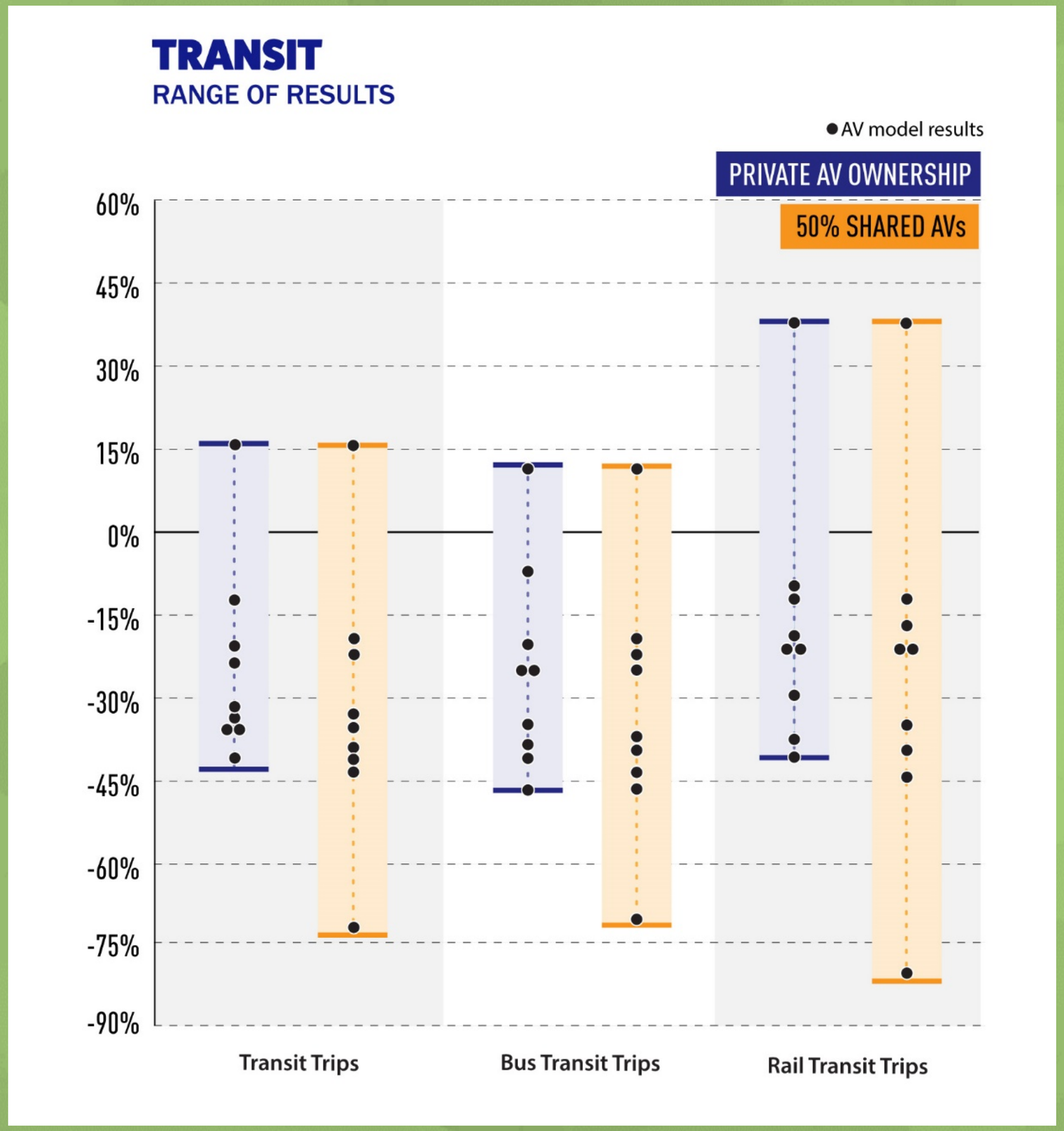
AV Tests

Transit Results



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AV Effects

Evidence

Research Findings: Chauffeur Experiment

(Harb et al., 2017)

- 13 San Francisco Bay Area subjects — *Cohorts: 4 Millennials, 4 Families, 5 Retirees*
- More auto travel
  - 76% increase in VMT — *Retirees increase most*
  - 22% of increased VMT were ghost trips — *Consistent across cohorts*
- Change in activity patterns
  - 94% increase in # longer trips (over 20 miles)
  - 80% increase in # evening trips (after 6 pm) — *Retirees increase most*
- Bimodal impact on miles walked — *Consistent across cohorts*
  - Half decreased (-28% on average), half increased (+49% on average)
- Virtually no biking, transit, TNC use in the sample — *Consistent across cohorts*

Berkeley
UNIVERSITY OF CALIFORNIA

Targets
By 2020, increase non-auto modes: • Triple bicycle; • Double pedestrian; and • Double transit. (2010-12 California Household Travel survey is baseline.)
By 2020, achieve 15% reduction (3% per year) of statewide per capita VMT relative to 2010 levels reported by District.
• 15% reduction (from 2010 levels) of GHG to achieve 1990 levels by 2020. • 85% reduction (from 2000 levels) in diesel particulate matter emissions statewide by 2020. • 80% reduction (from 2010 levels) in NOx emissions in South Coast Air Basin by 2023.

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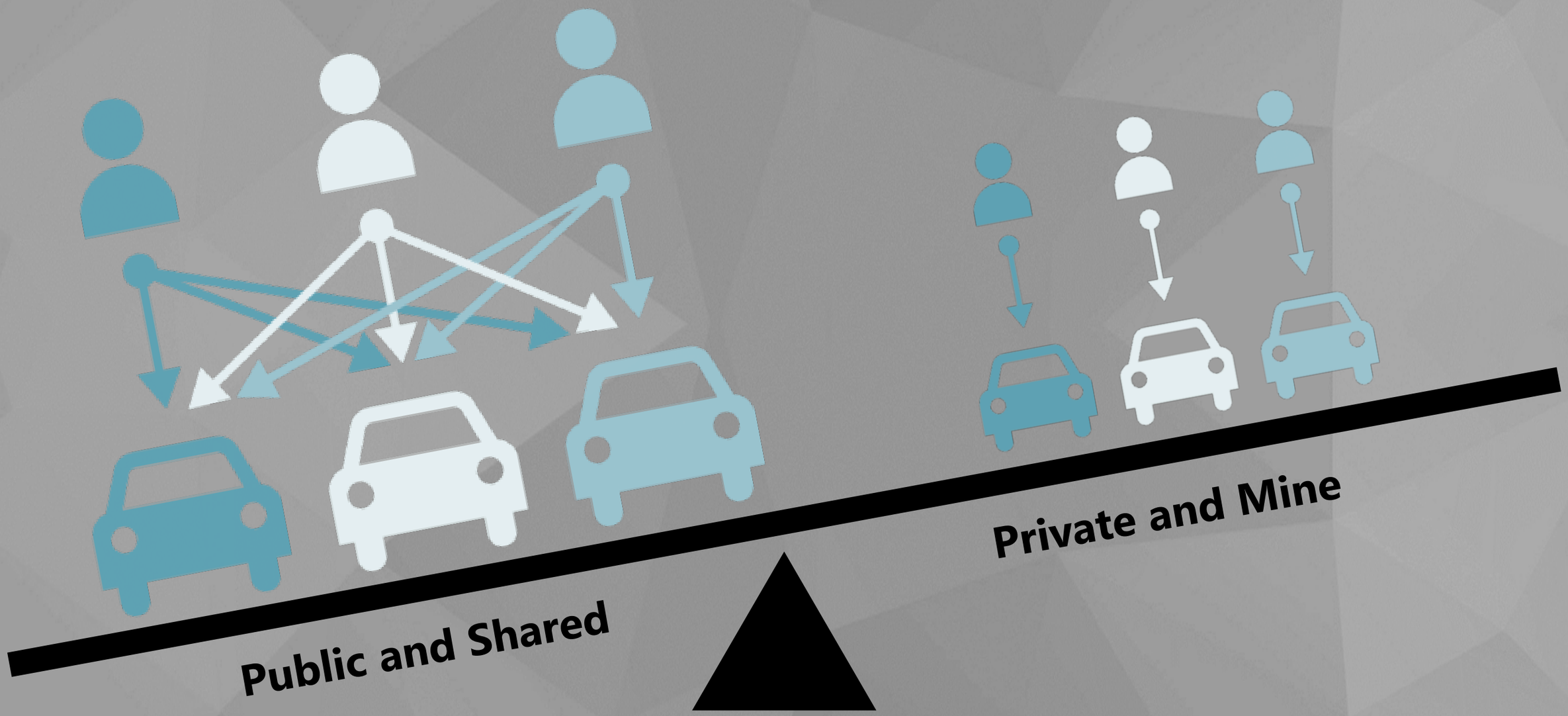
Policy Response



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