POPULATION AGING AND REGIONAL TRANSPORTATION FINANCE

John Cho
Wanyang Hu
Simon Choi
Frank Wen

Southern California Association of Governments

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Outline

- Motivation and Objective
- Data, Variables and Methodology
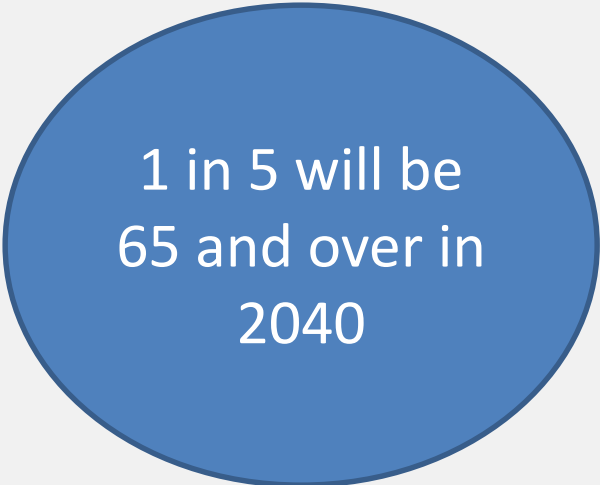- Results
- Summary and Conclusion

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The nation's population has been aging

Dramatic jumps in the population of 65 and over started to occur as Baby-Boomers—76 million people born between 1946 and 1964—move into older age group in 2011. About 1 in 8 people in the country are elderly today, but elderly population would account for over 20 percent of total population—i.e., one in every five Americans—by 2040.
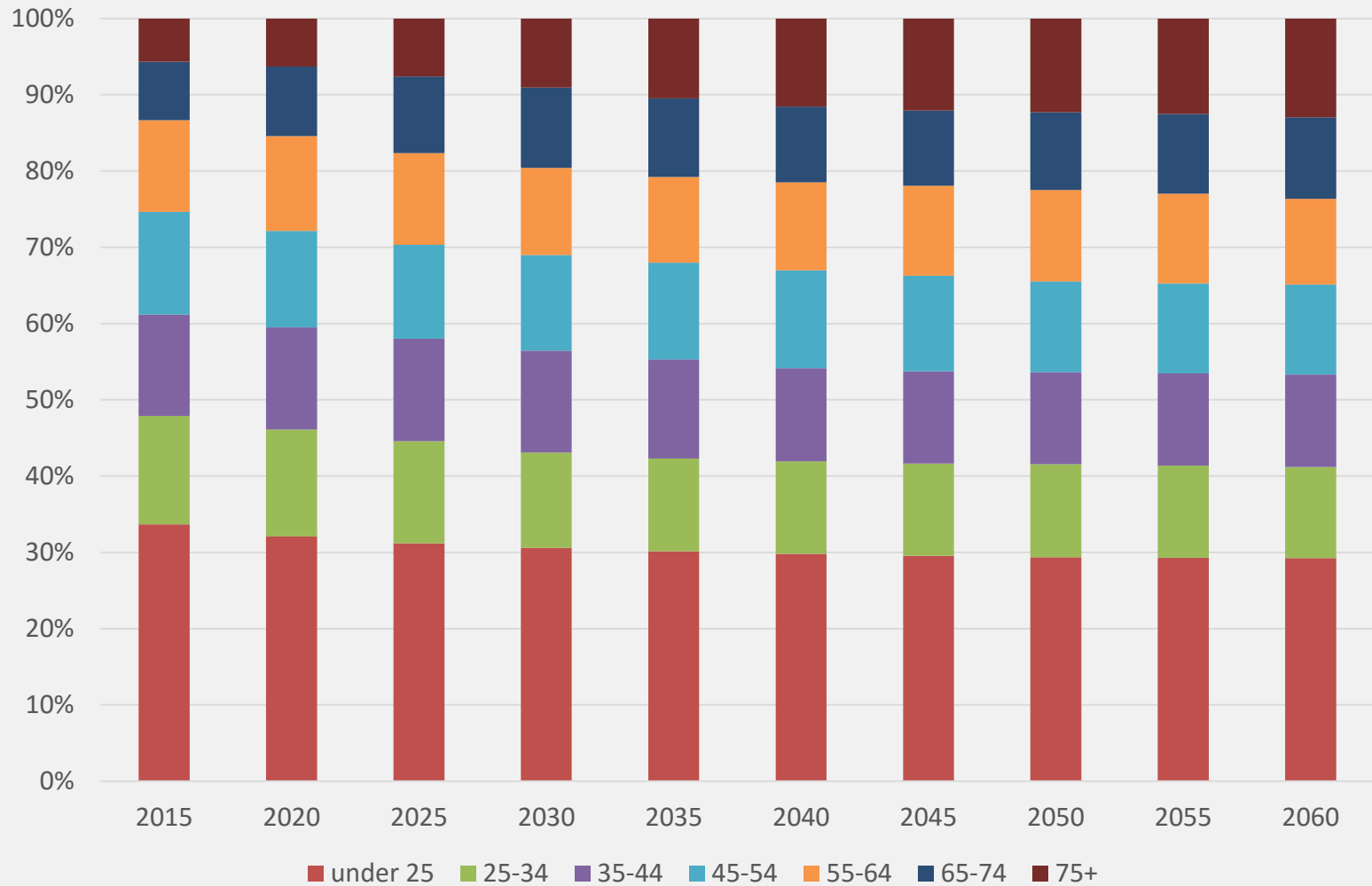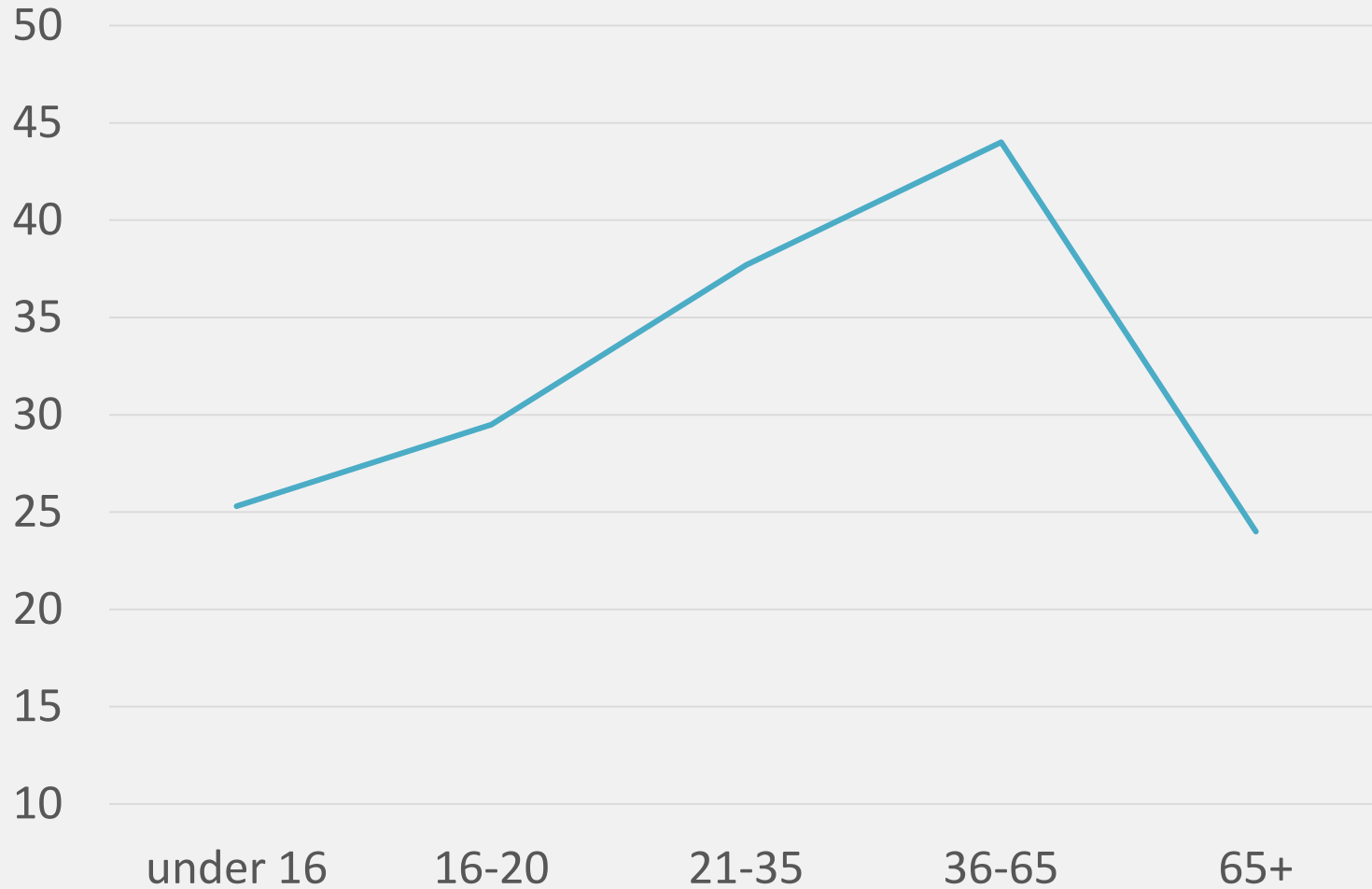
1 in 8 are 65 and over in 2015

1 in 5 will be 65 and over in 2040

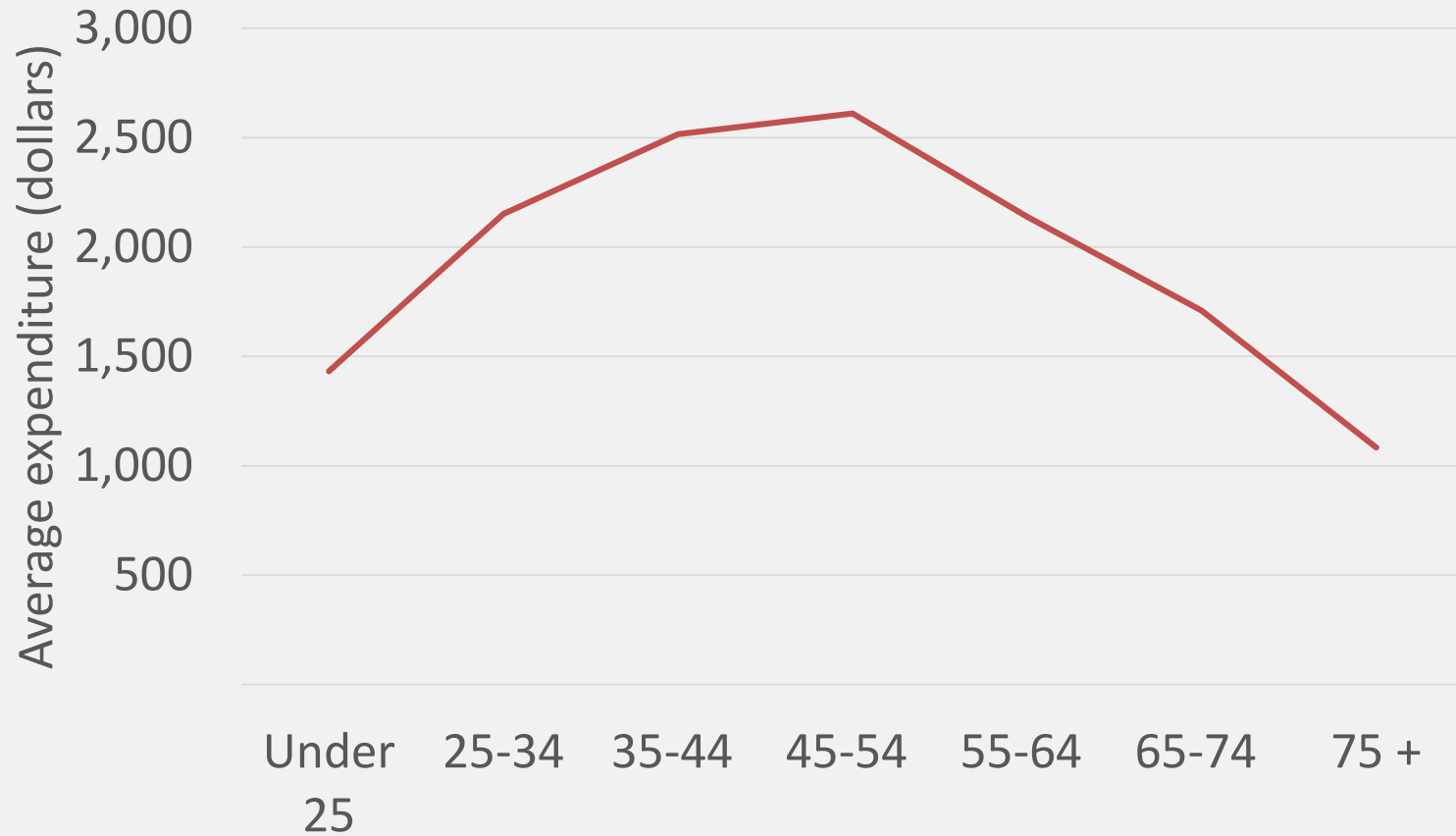# California is not different from the US

under 25   25-34   35-44   45-54   55-64   65-74   75+

Daily Person Miles of Travel by Age in 2009
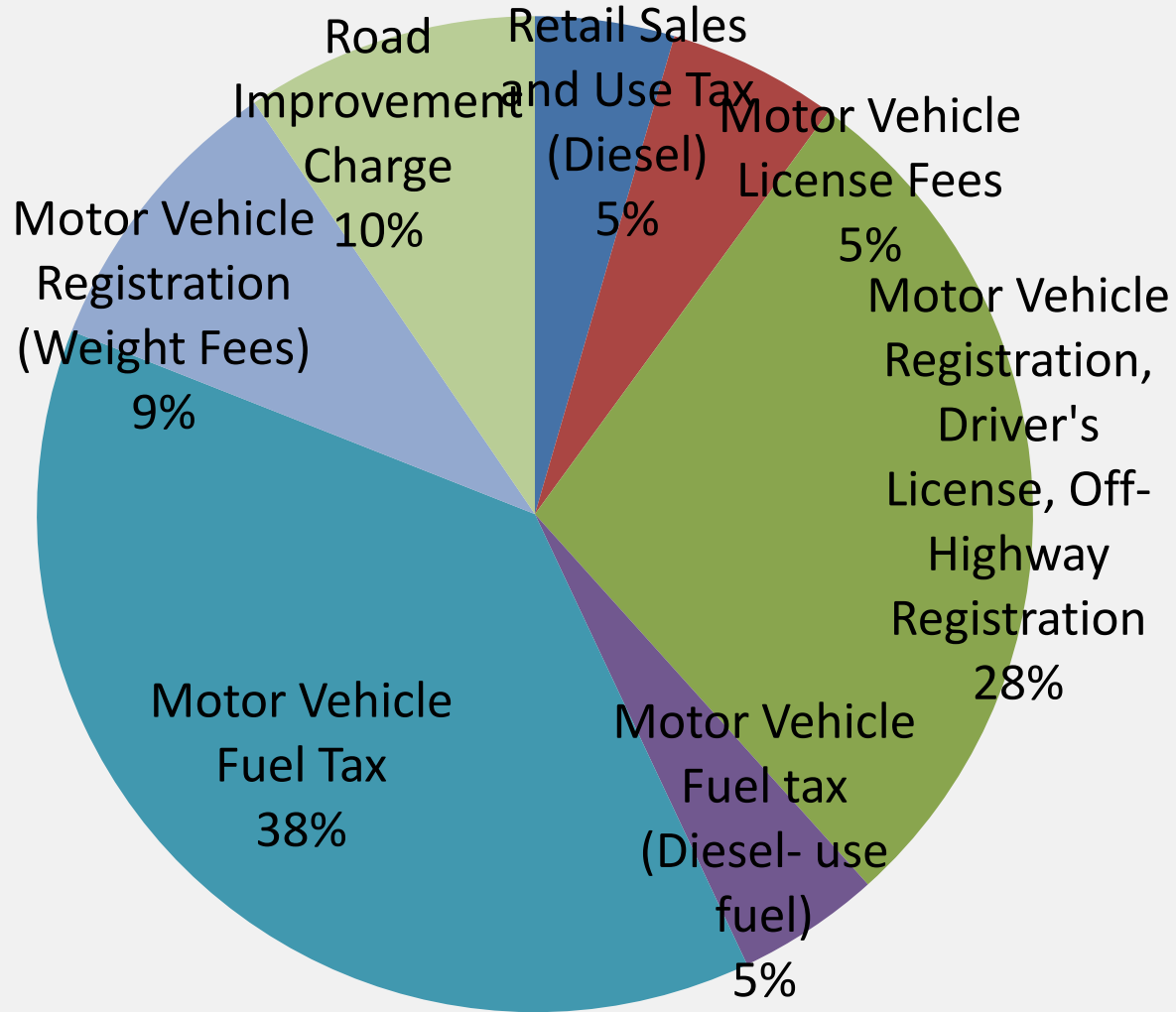
Source: National Household Travel Survey, 2009

Average expenditure on gasoline by age group

Transportation Revenue

Road Improvement Charge 10%

Retail Sales and Use Tax (Diesel) 5%

Motor Vehicle License Fees 5%

Motor Vehicle Registration (Weight Fees) 9%

Motor Vehicle Registration, Driver's License, Off-Highway Registration 28%

Motor Vehicle Fuel Tax 38%

Motor Vehicle Fuel tax (Diesel- use fuel) 5%

Source: California Department of Transportation, 2016

Objective

The objective of the study is to estimate likely impacts on transportation revenue by demographic change in California.

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Annual Average Expenditure on Gasoline per Household by Householder's Age Group

|	Avg	Under 25	25-34	35-44	45-54	55-64	65-74	75+
Gasoline ($)	2,090	1,432	2,152	2,516	2,611	2,138	1,709	1,083

Source: Consumer Expenditure Survey, 2015

Annual average expenditure on gasoline per person is calculated by dividing it by number of people in households.

CA Population Projection by Age Group (Million)

Legend: under 25 · 25-34 · 35-44 · 45-54 · 55-64 · 65-74 · 75+
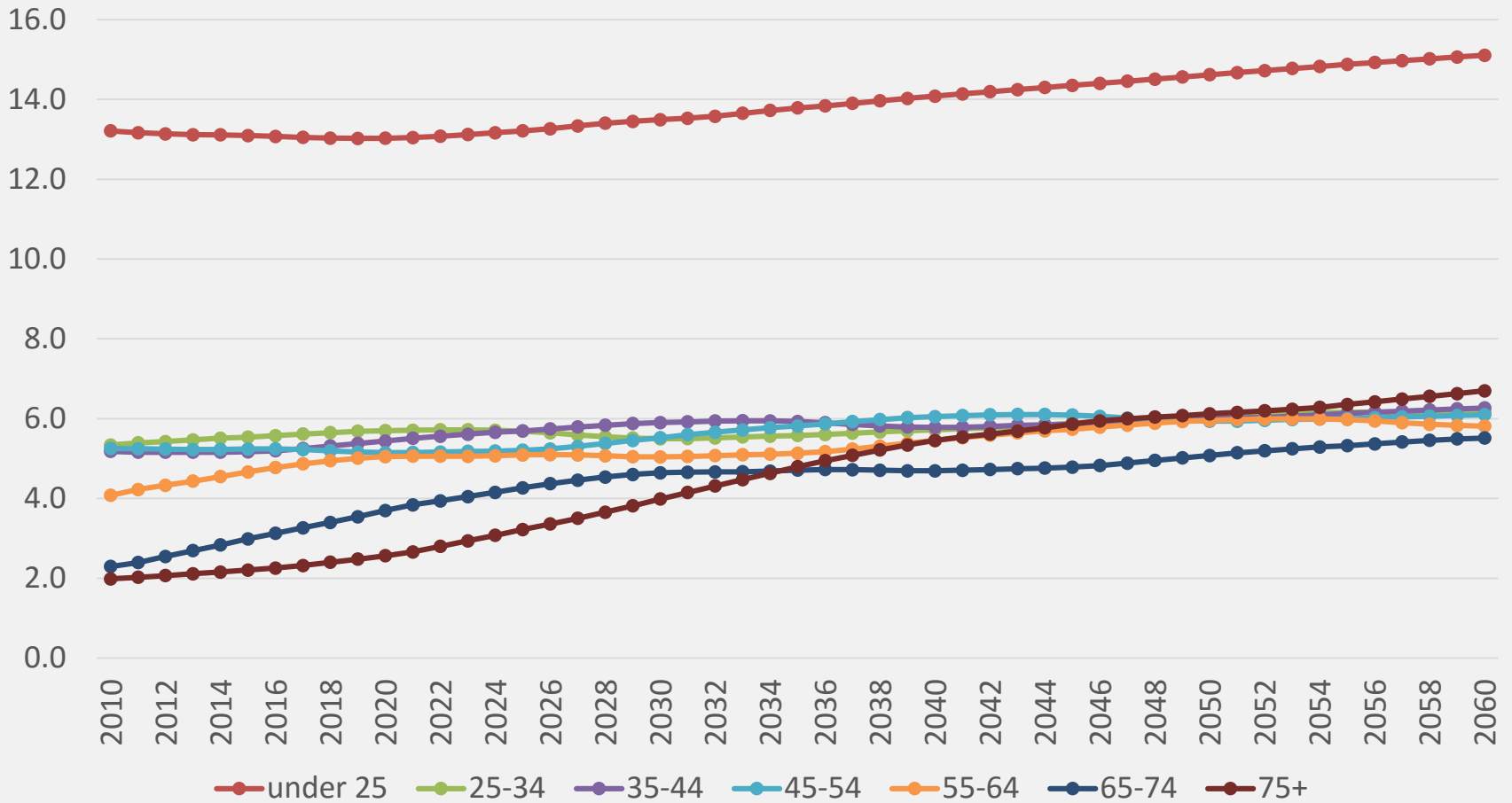
Source: California Department of Finance, 2014

MPG Improvement from 1975 to 2013
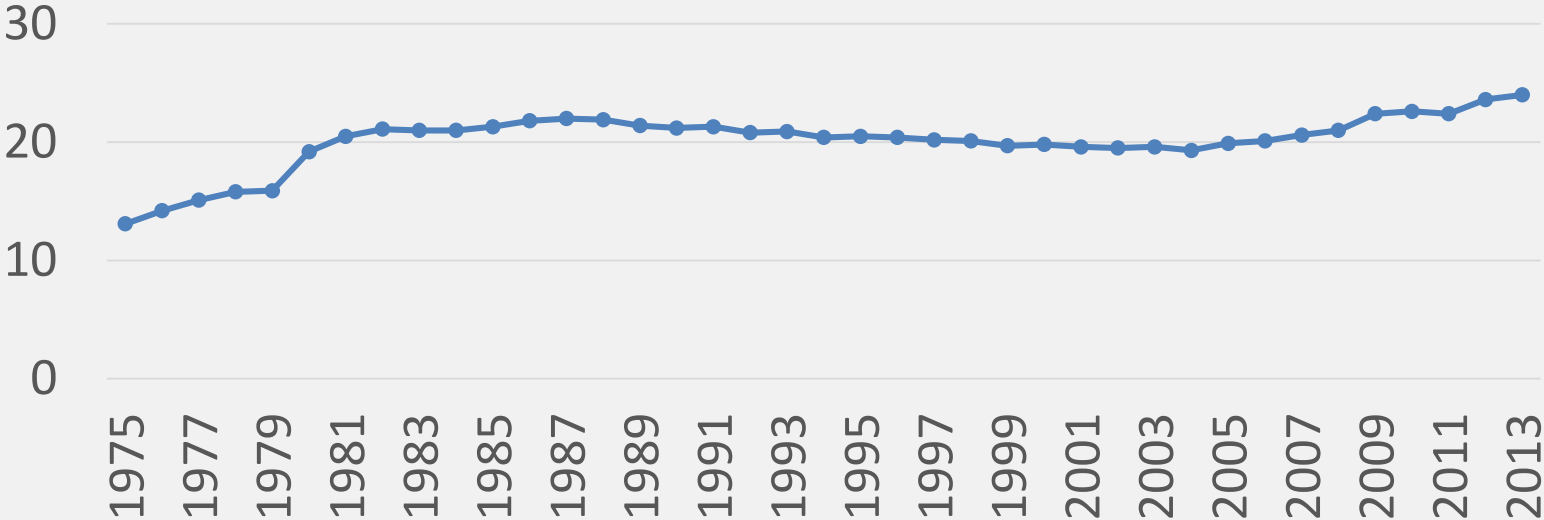
Annual rate of decreasing gasoline consumption = -1.58%

Method

Gasoline consumption per person for age group i, year 2015

$$GC_{i,2015} = \frac{exp_{i,2015}^{gas}}{price_{2015}^{gas}}$$

Adjusted gasoline consumption per person for age group i, year 2020-2060

$$aGC_{i,t} = GC_{i,2015} * r_{MPG}$$

Gasoline consumption for age group i, year 2020-2060

$$aGC_{i,2015} * POP_{it}$$
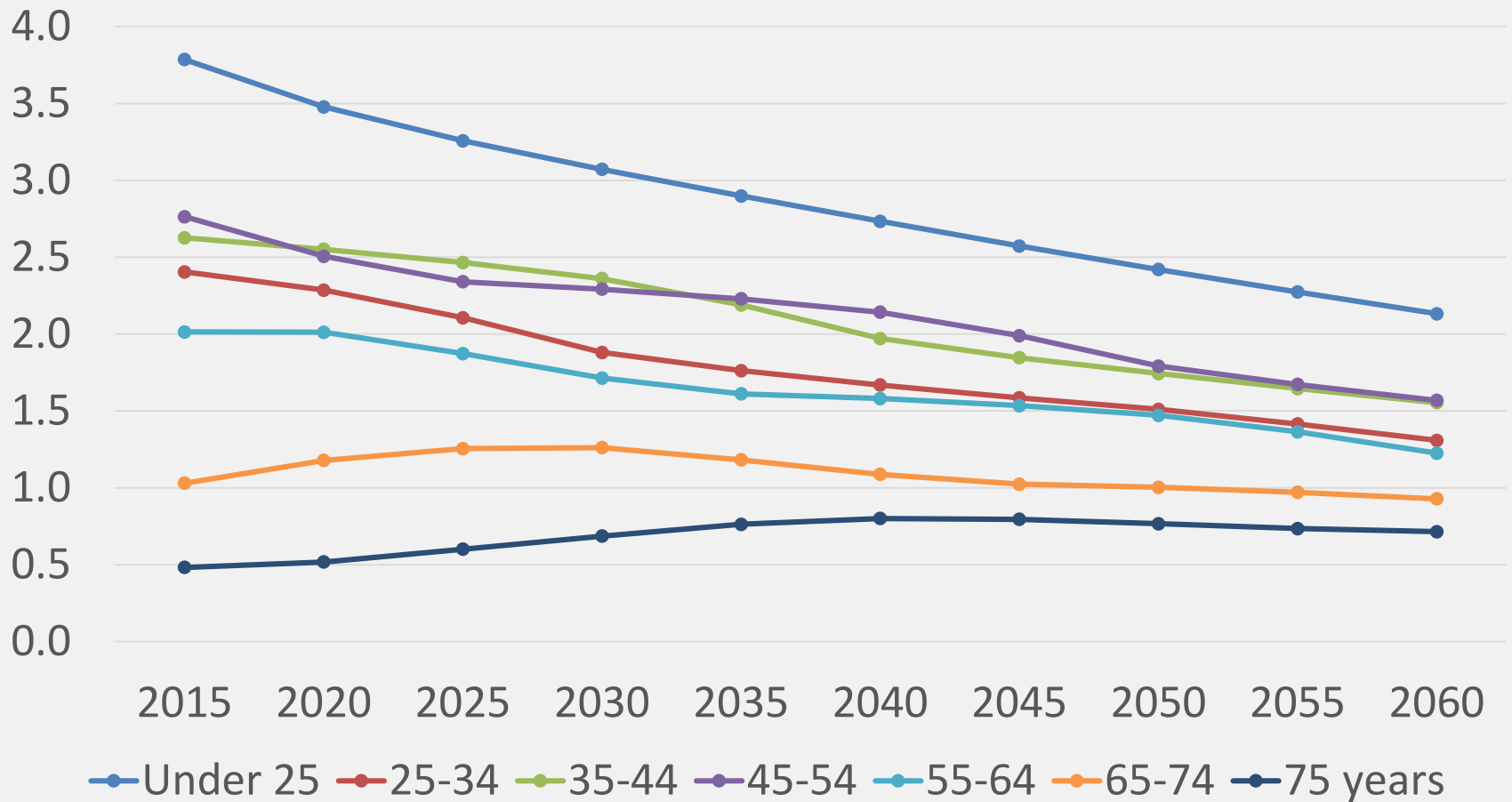
Total Gasoline consumption in year 2020-2060

$$TGC_t = \sum_{i=1}^{m} aGC_{it} * POP_{it}$$

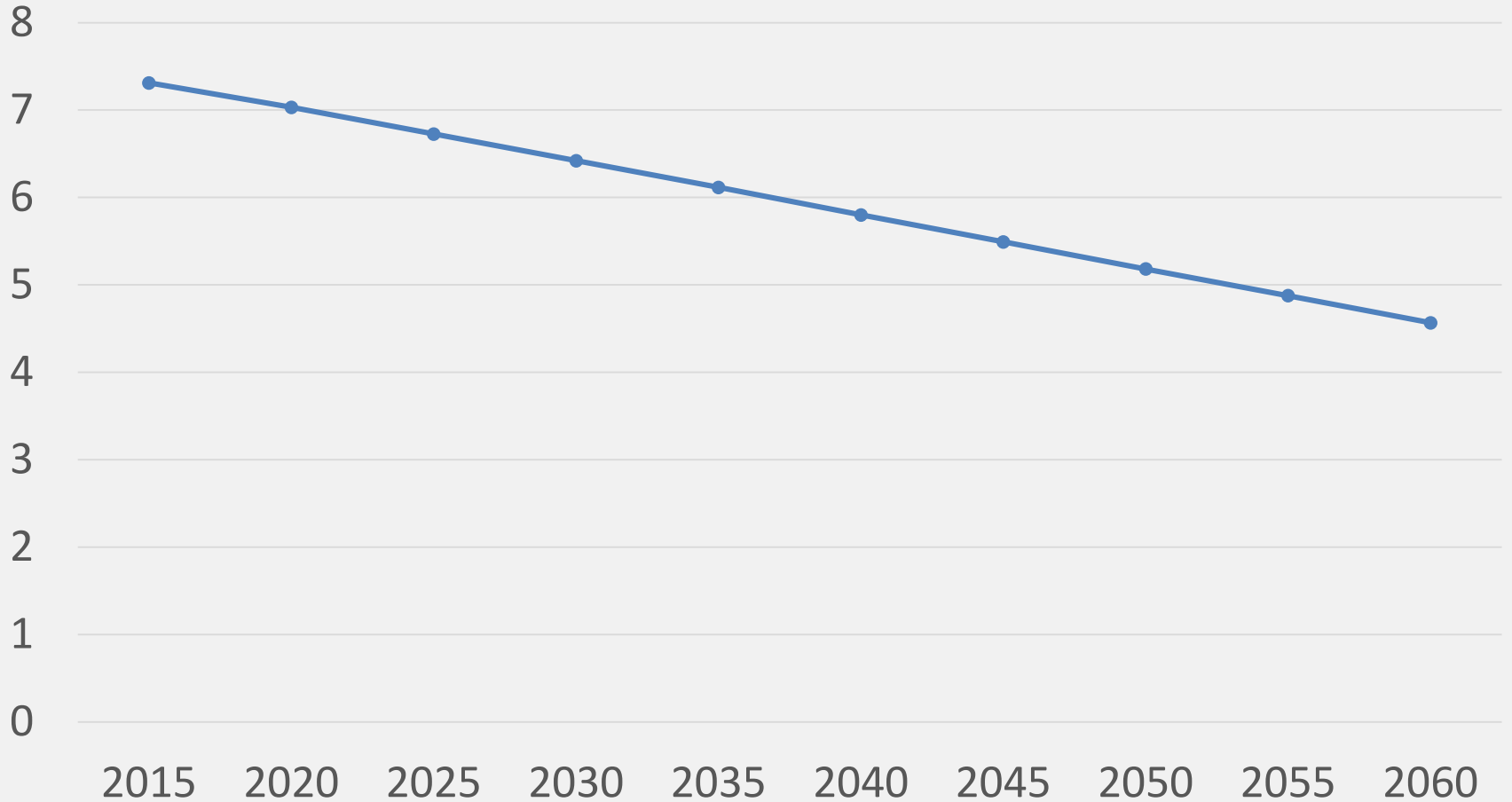Revenue: State $0.3 per gallon, Federal: $0.184 per gallon

Outline

Projected gasoline consumption

Legend: Under 25, 25-34, 35-44, 45-54, 55-64, 65-74, 75 years

X-axis: 2015, 2020, 2025, 2030, 2035, 2040, 2045, 2050, 2055, 2060

Y-axis: 0.0, 0.5, 1.0, 1.5, 2.0, 2.5, 3.0, 3.5, 4.0

Projected Total Revenue from Gasoline Consumption ($Billion)

2040: 26% decrease from 2015

2060: 60% decrease from 2015

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Population Aging and Transportation Revenue?

The study has shown that transportation revenue from gasoline consumption can be decreased by 26% by 2040 and 60% by 2060 due to aging population.
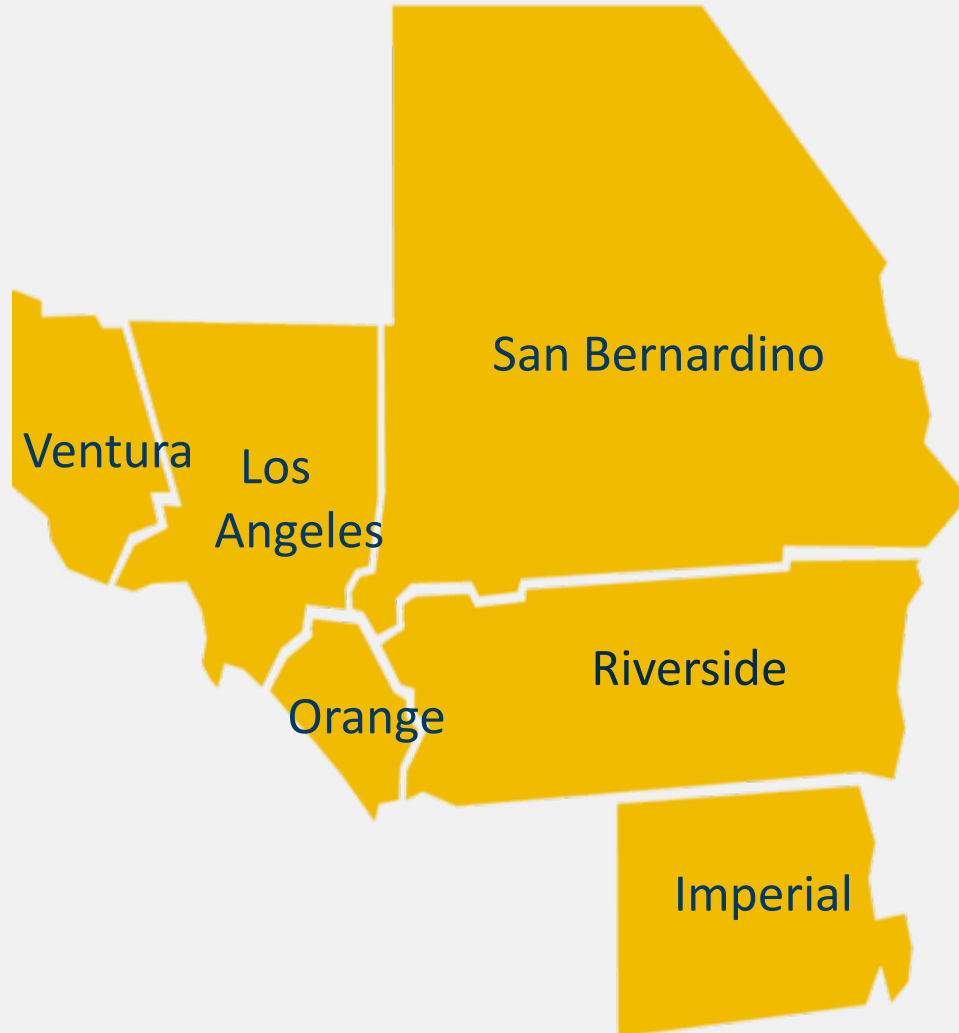
Alternative revenue source? e.g.)Mileage-based user fee

Limitation of the study: assumption of fixed gasoline consumption per person by age group, fixed technology and fixed gasoline tax rate.

Thank you for your attention.

Questions or Comments ?

SCAG Quick Facts

Ventura

Los
Angeles

San Bernardino

Orange

Riverside

Imperial

- Nation's largest Metropolitan Planning Organization (MPO)

- 6 counties, 191 cities and 38,000+ square miles.

- 19 million people (5.8% of US population; 48.5% of California population)

- GRP in 2010: $910 Billion, 16th largest economy in the world

- 10,000 lane miles of freeway; 4 major airports; Nation's global gateway for trade