

# The ABAG Regional Forecast Approach

Cynthia Kroll, ABAG Chief Economist

ABAG Executive Board Meeting

July 16, 2015

# What is the Regional Forecast?

- A realistic long-term regional outlook based on expected national and international trends
- Estimates to 2040 of regional totals for population, jobs, households and income
- Geographic distribution of the forecast within the region based on local policy choices, market conditions, and baseline circumstances
- Frequently revised (current time frame—every four years)

# Why Have a Regional Forecast?

- Internally consistent estimates of jobs, population, households and income
- Context for local general planning efforts
- Needed for planning and financing long term transportation, housing investments, and other infrastructure
- Provides the regional control totals for Plan Bay Area

# How Do We Do the Forecast?

## REGIONAL TOTALS

- **Population Forecast**
- **Economy Forecast**
- **Household Estimate**
- **Regional Housing Control Total**

## GEOGRAPHIC DISTRIBUTION AND SCENARIOS

Public  
Review

Sub  
regions

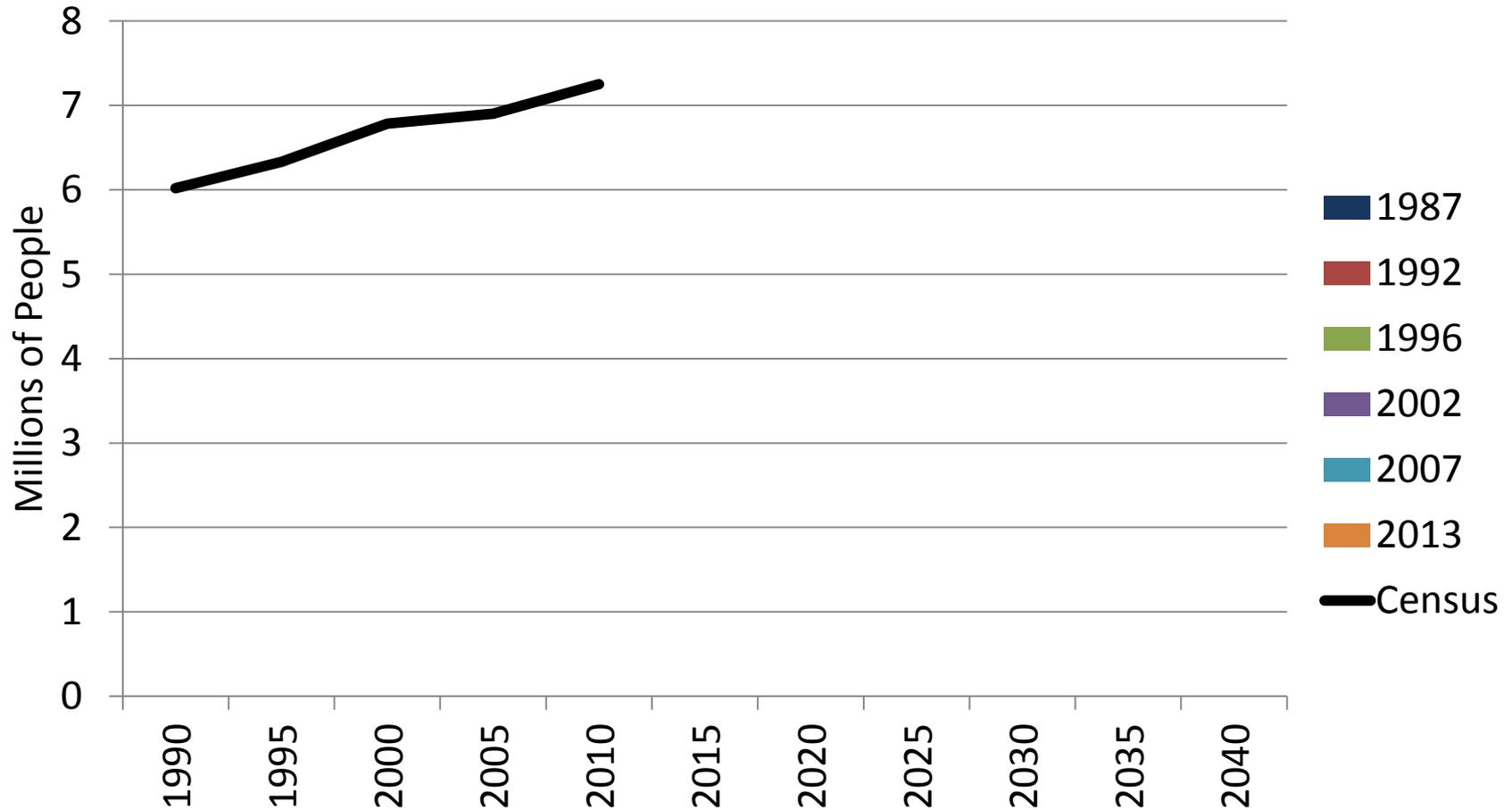
Local  
Agency  
Input

Details

TRAVEL DEMAND,  
GHG PRODUCTION

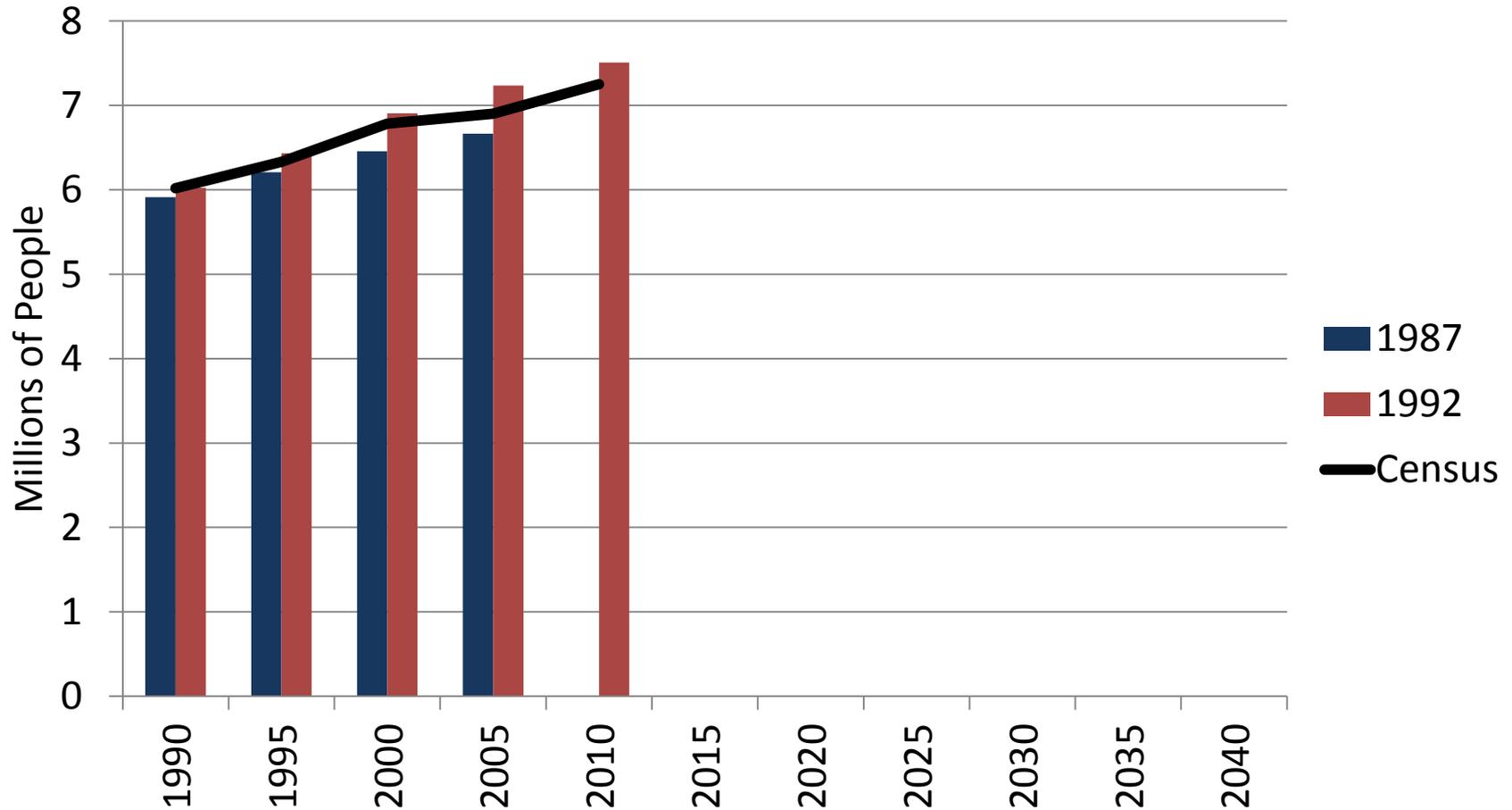
- *Travel demand*
- *GHG Estimates*

# Past Population Projections



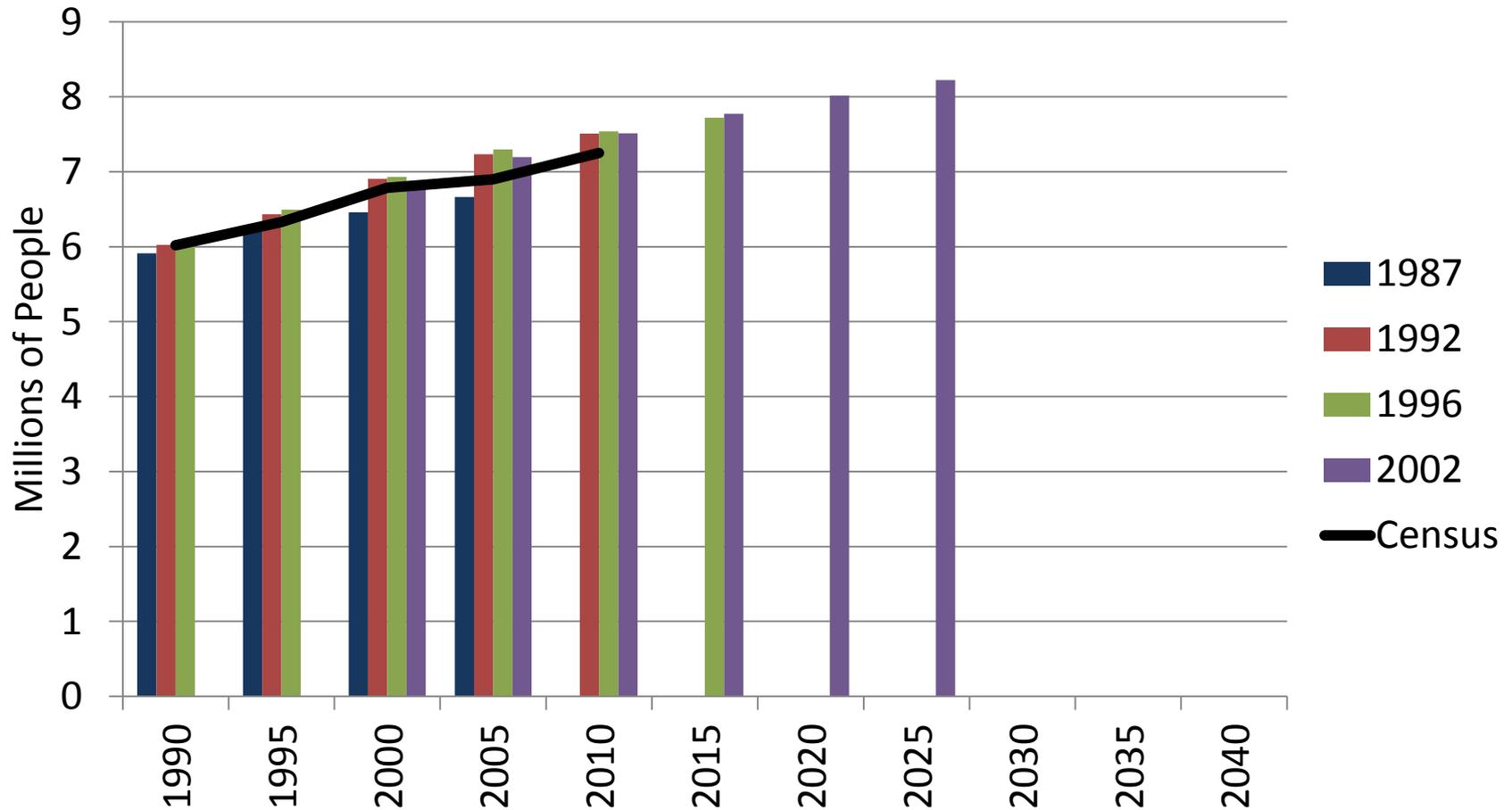
Source: ABAG from earlier Projections series and California Department of Finance.

# Past Population Projections



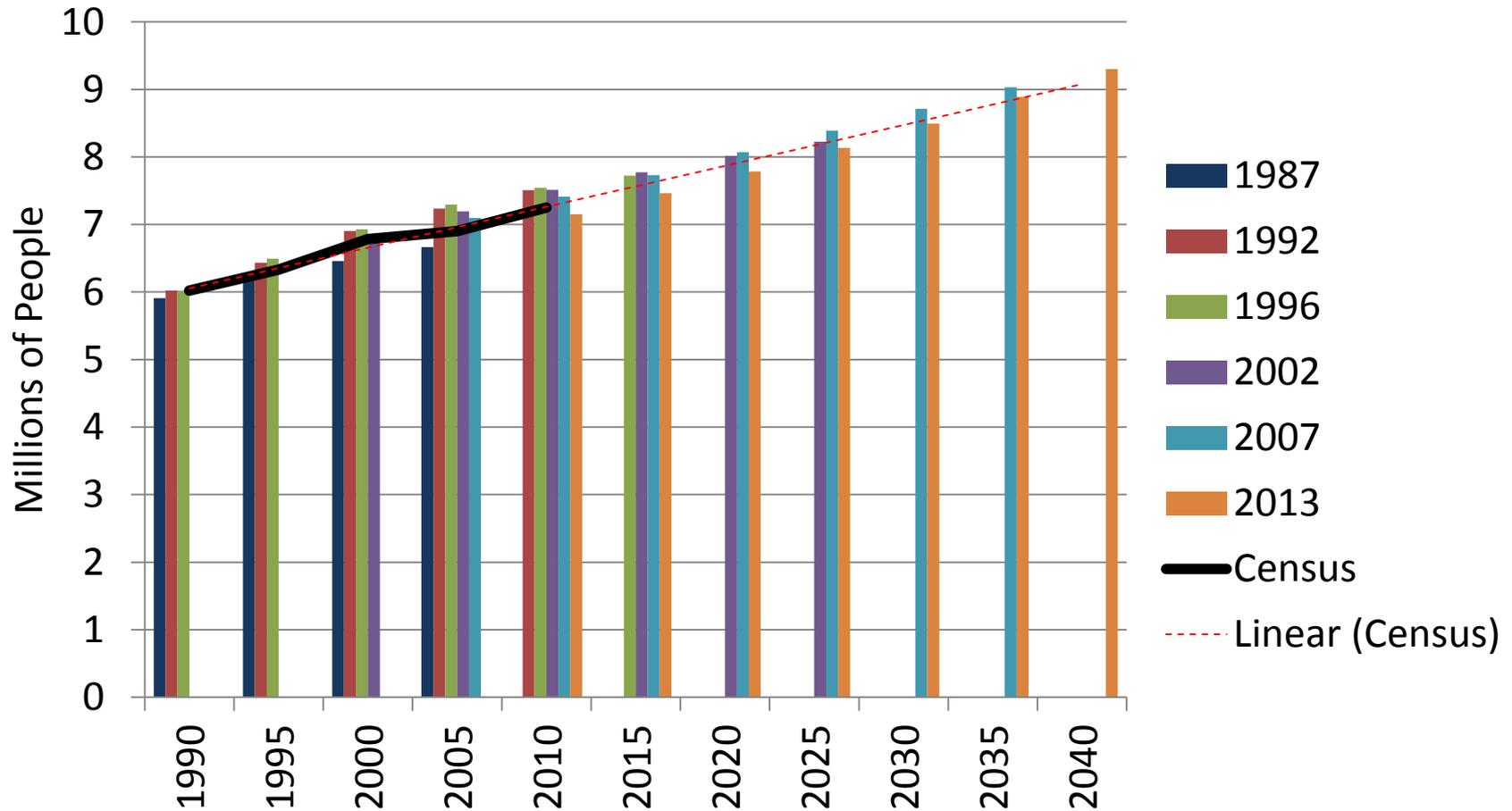
Source: ABAG from earlier Projections series and California Department of Finance.

# Past Population Projections



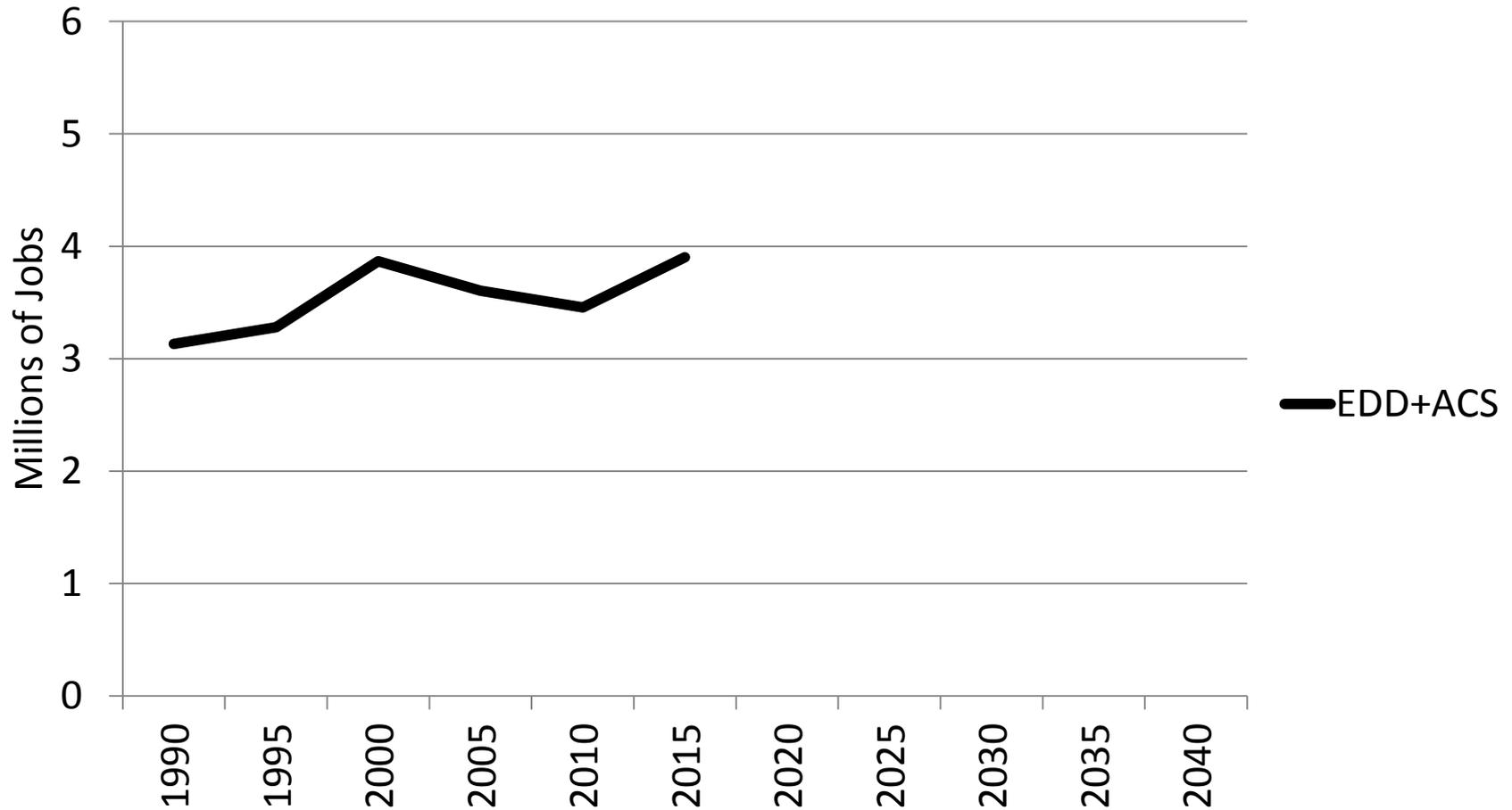
Source: ABAG from earlier Projections series and California Department of Finance.

# Past Population Projections



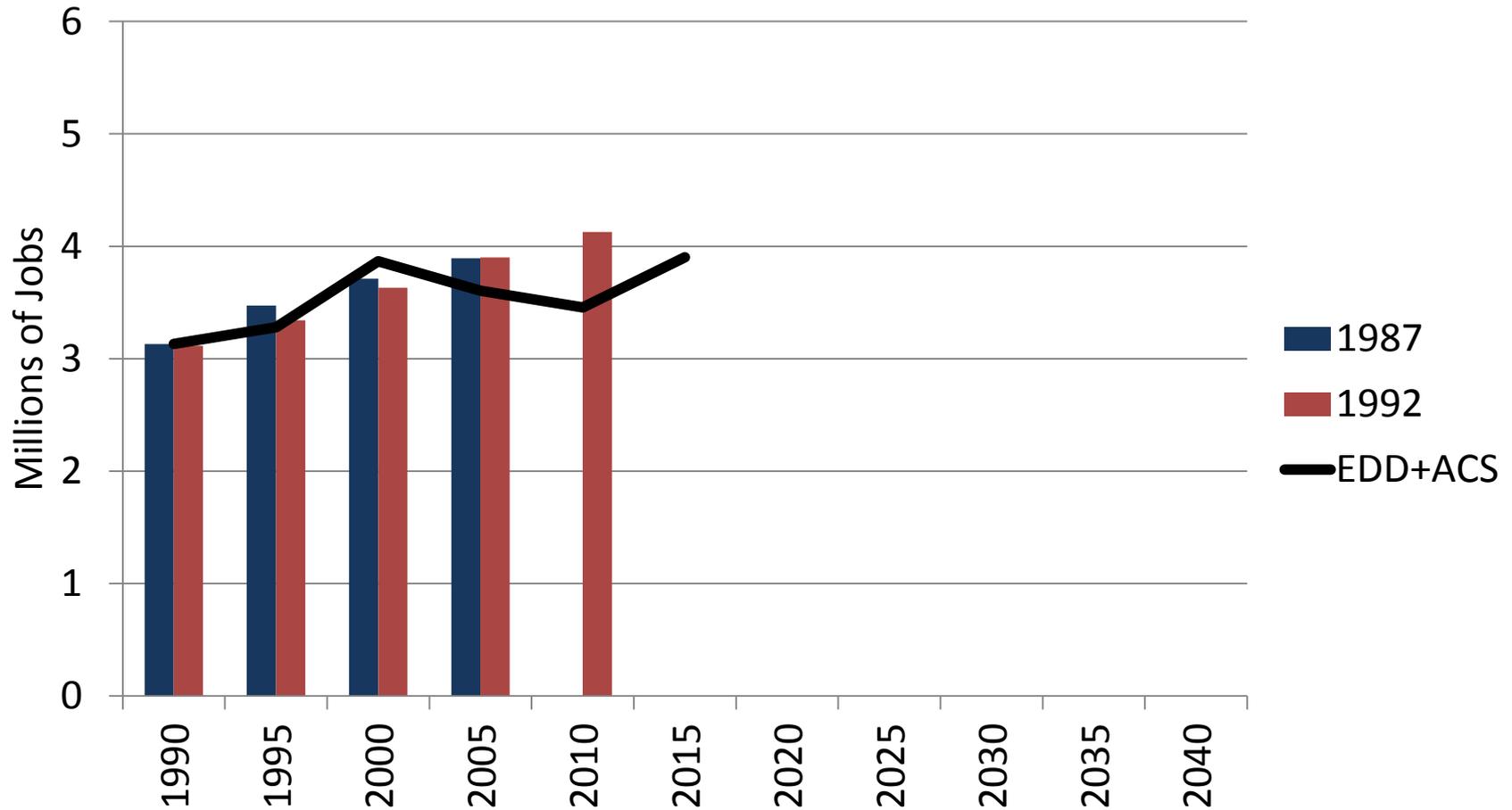
Source: ABAG from earlier Projections series and California Department of Finance.

# Past Employment Projections



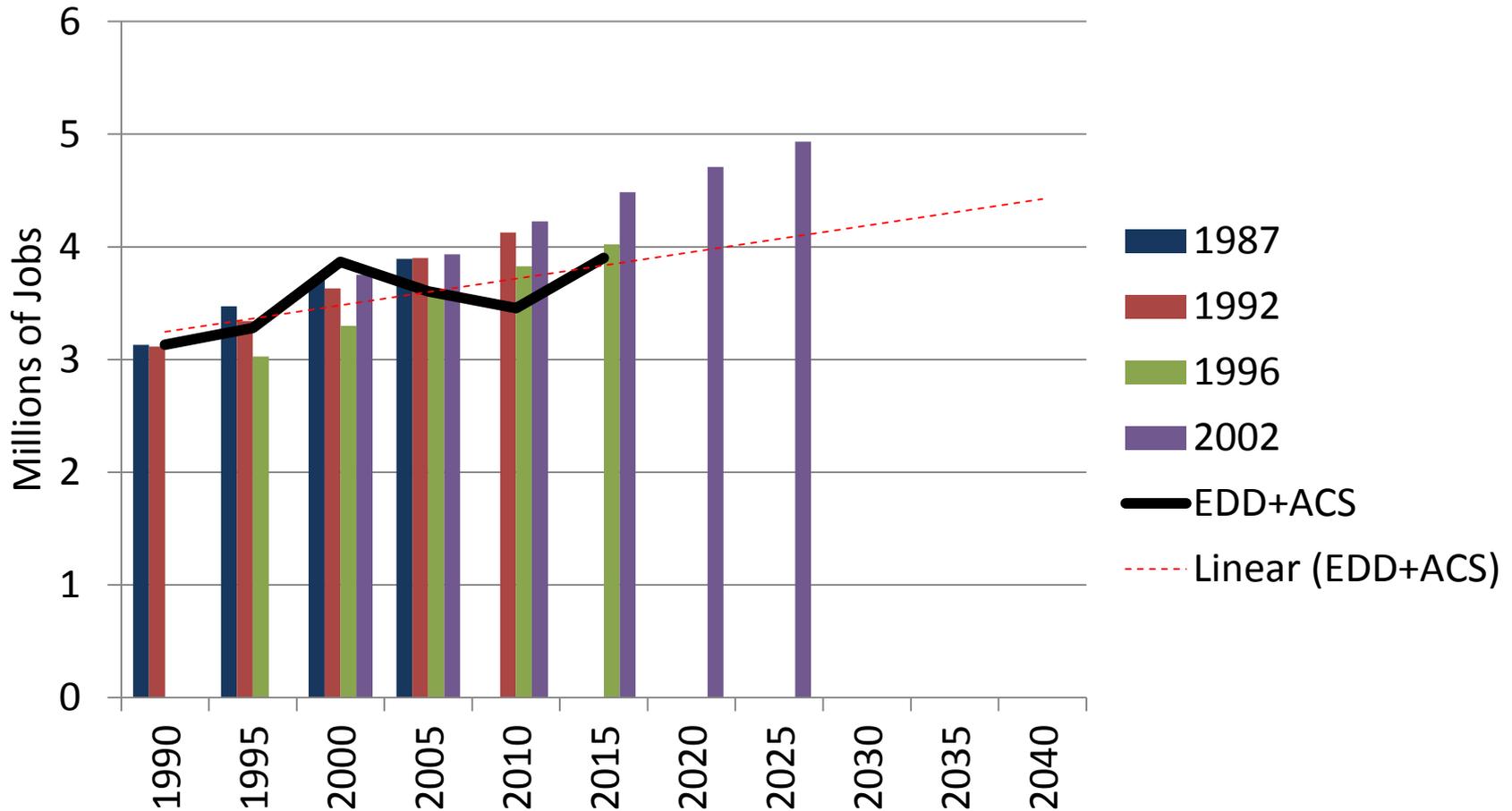
Source: ABAG from earlier Projections series and California Department of Finance. EDD+ACS is wage and salary plus self employed estimate. 2015 date is actually 2014.

# Past Employment Projections



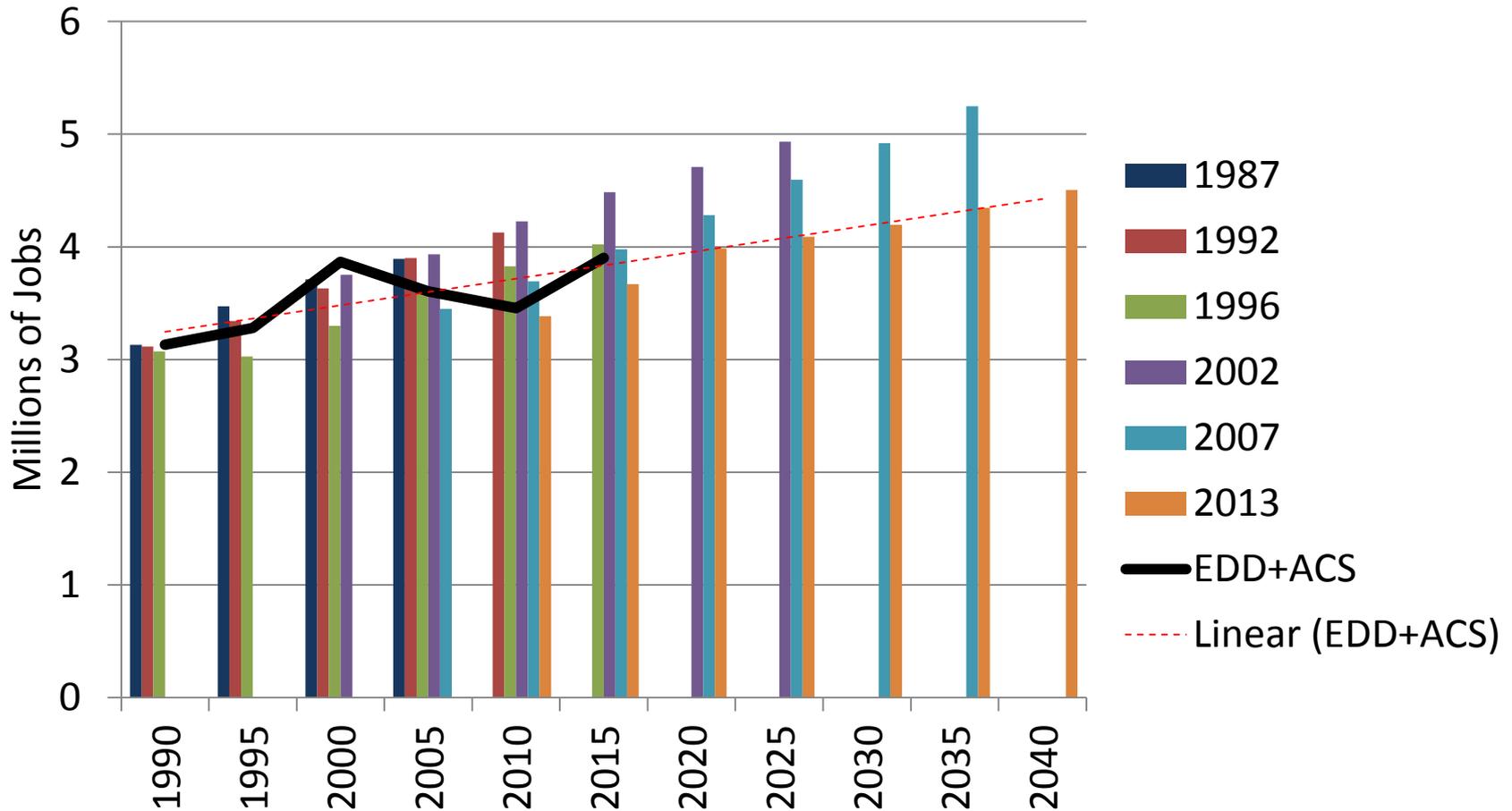
Source: ABAG from earlier Projections series and California Department of Finance. EDD+ACS is wage and salary plus self employed estimate. 2015 date is actually 2014.

# Past Employment Projections



Source: ABAG from earlier Projections series and California Department of Finance. EDD+ACS is wage and salary plus self employed estimate. 2015 date is actually 2014.

# Past Employment Projections



Source: ABAG from earlier Projections series and California Department of Finance. EDD+ACS is wage and salary plus self employed estimate. 2015 date is actually 2014.

# Why Are Employment Forecasts Less Accurate?

- Forecasts predict long term trends; employment has short term cycles.
  - Past “trends” depend on the starting point
  - Accuracy depends on point in cycle
- Measurement issues
  - Many different definitions of employment
  - ABAG definitions have changed over time (1 job/person vs BLS + self-employed)
  - Tracking options differ by definitions
  - Data accuracy is weaker for smaller geographies
- Geographic uncertainty in base and future—what will be the hot spots?
- Unanticipated technical and structural change

# Approaches Compared

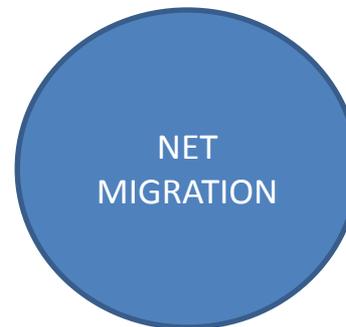
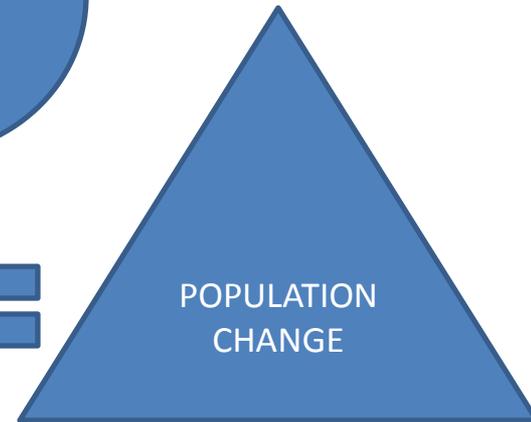
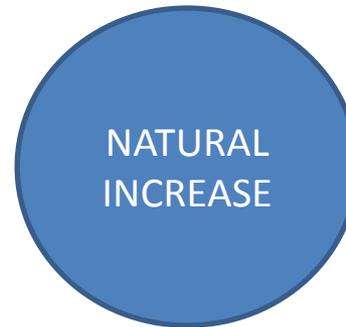
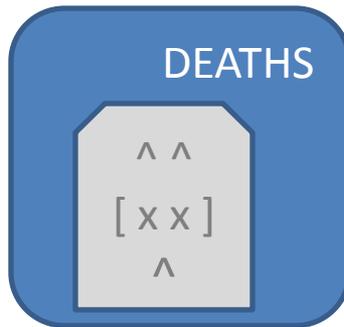
## Projections 2013

- Employment Projection (Shift Share compared to US)
- Population Projection (total driven by employment , commute share constant)
- Household projection (Estimated to accommodate population)
- Income from occupations
- Geographic distribution based on existing development, magnets and trends

## Projections 2017

- Population projection based on cohort characteristics
- Employment, output , income projection from calibrated relationships, alternatives
- Reconciliation of population and employment
- Households and income based on population characteristics and economic levels
- Separate commute and housing control total estimates
- Geographic distribution based on statistical relationships and policy

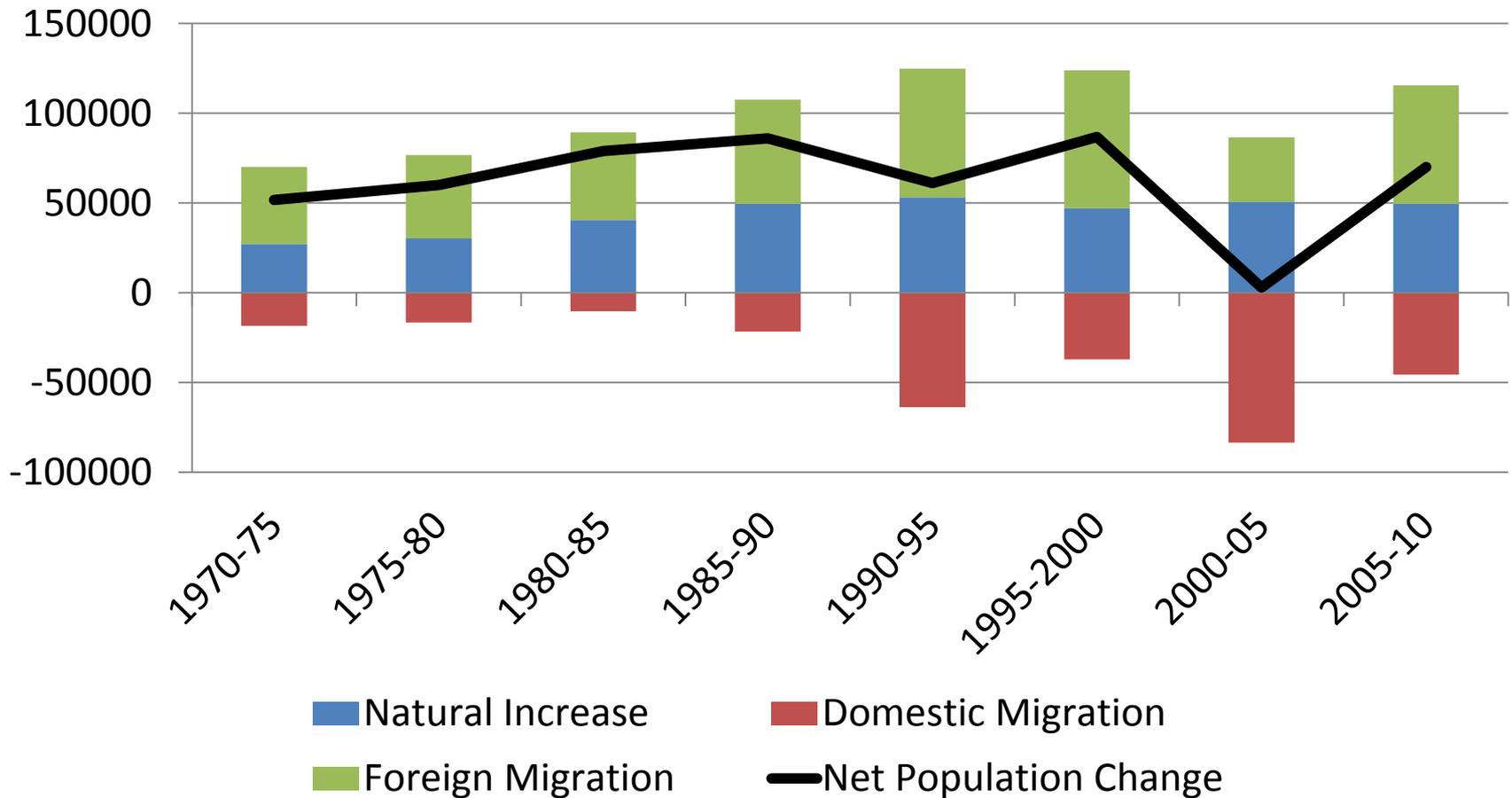
# Factors in Population Change



# ABAG Regional Population Forecast

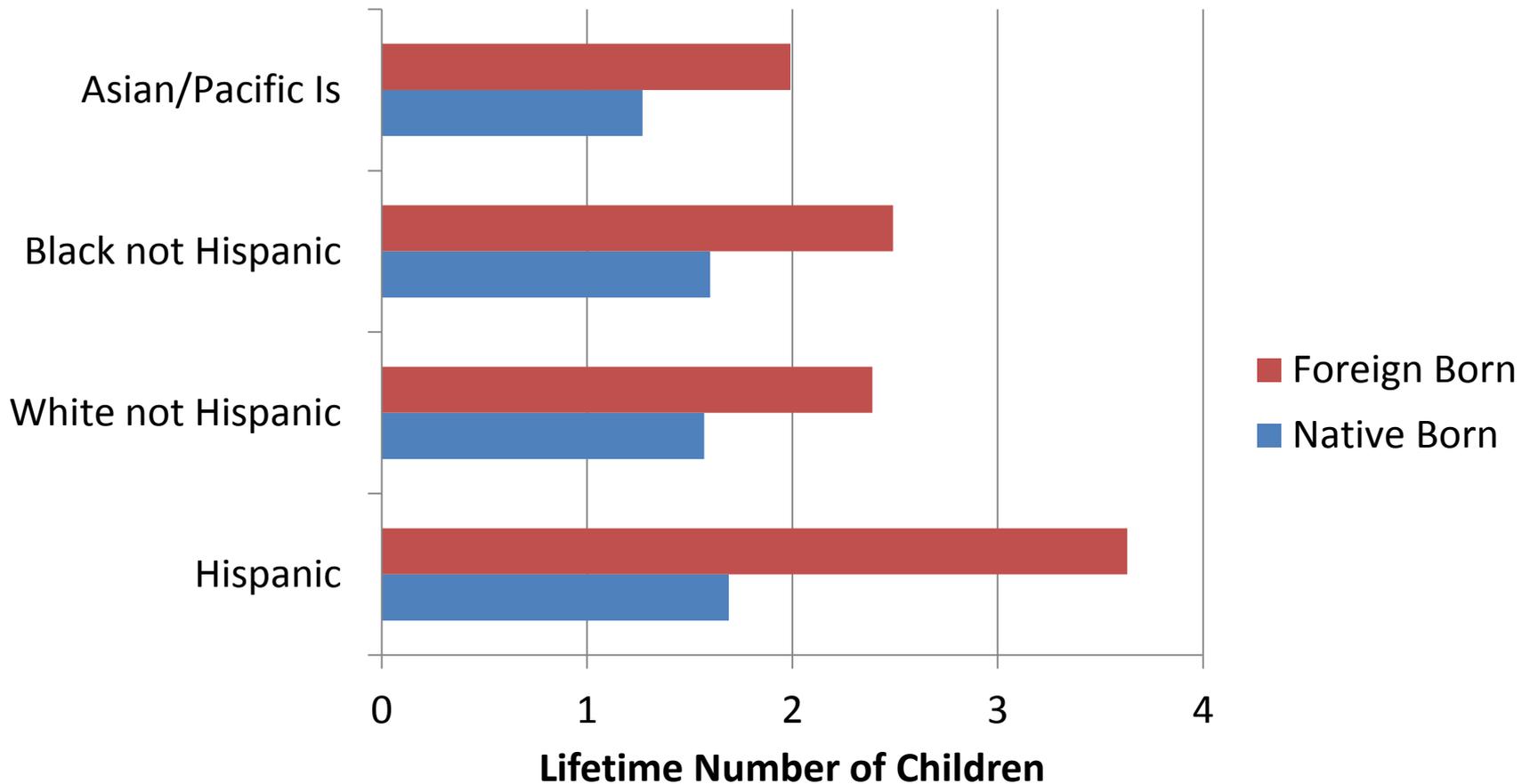
- Theoretical basis from John Pitkin and Professor Dowell Myers (USC)
- Cohort-Survival model with migration patterns drawn from past experience
- Natural increase sensitive to ethnicity, country of origin, and age structure of the population
- Migration sensitive to age, place of birth; does not include an economic component.

# Historic Components of Population Growth



Source: ABAG from Pitkin-Myers analysis.

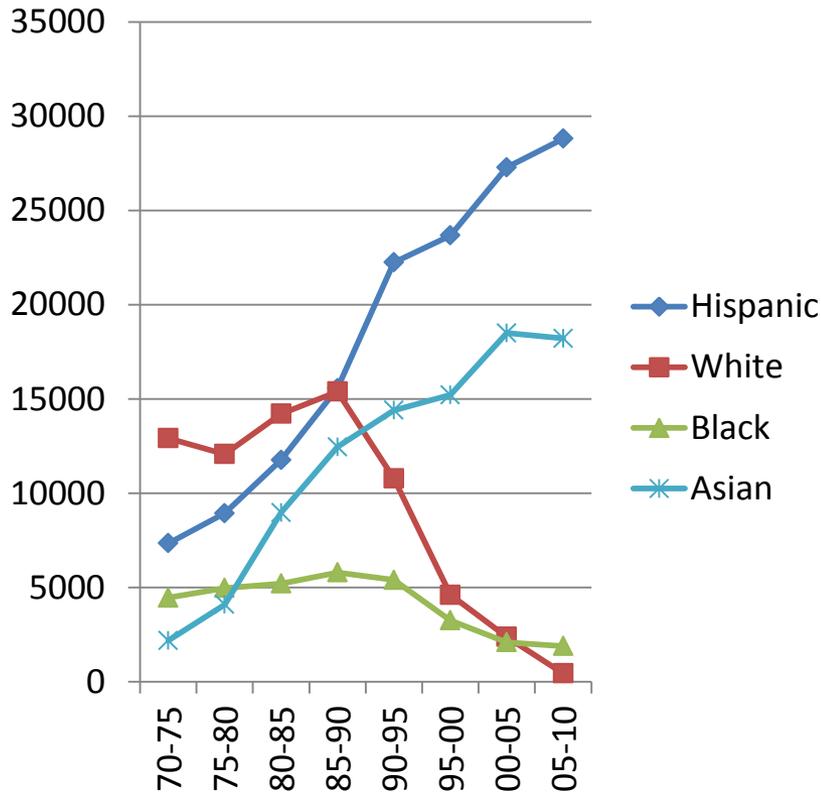
# Fertility Rates Vary by Ethnic Group and Nativity



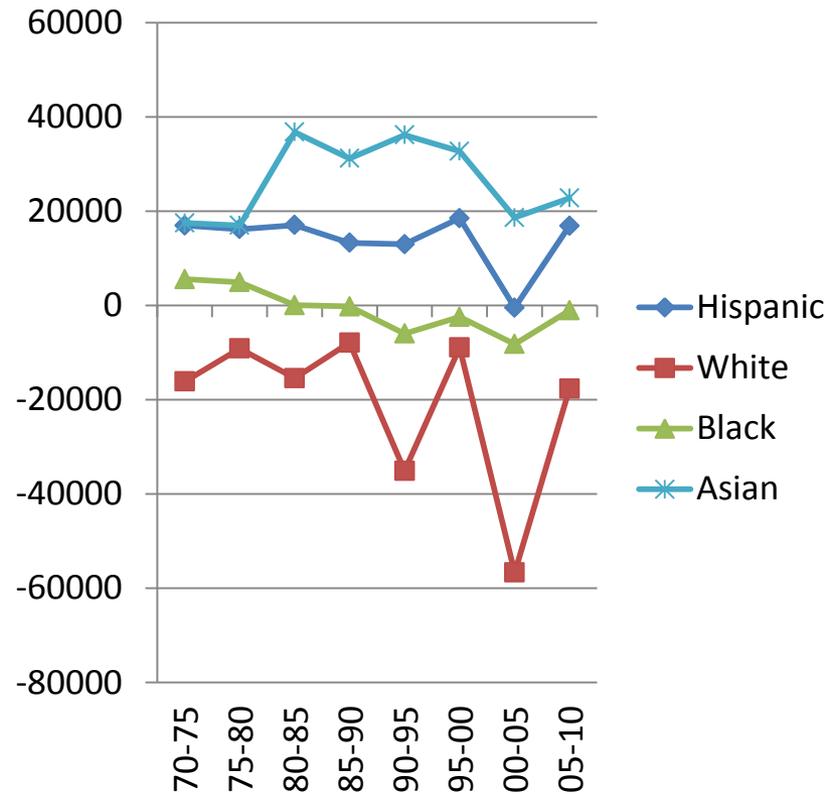
Source: ABAG from Pitkin-Myers analysis.

# Population Changes by Ethnicity

## Bay Area Natural Increase

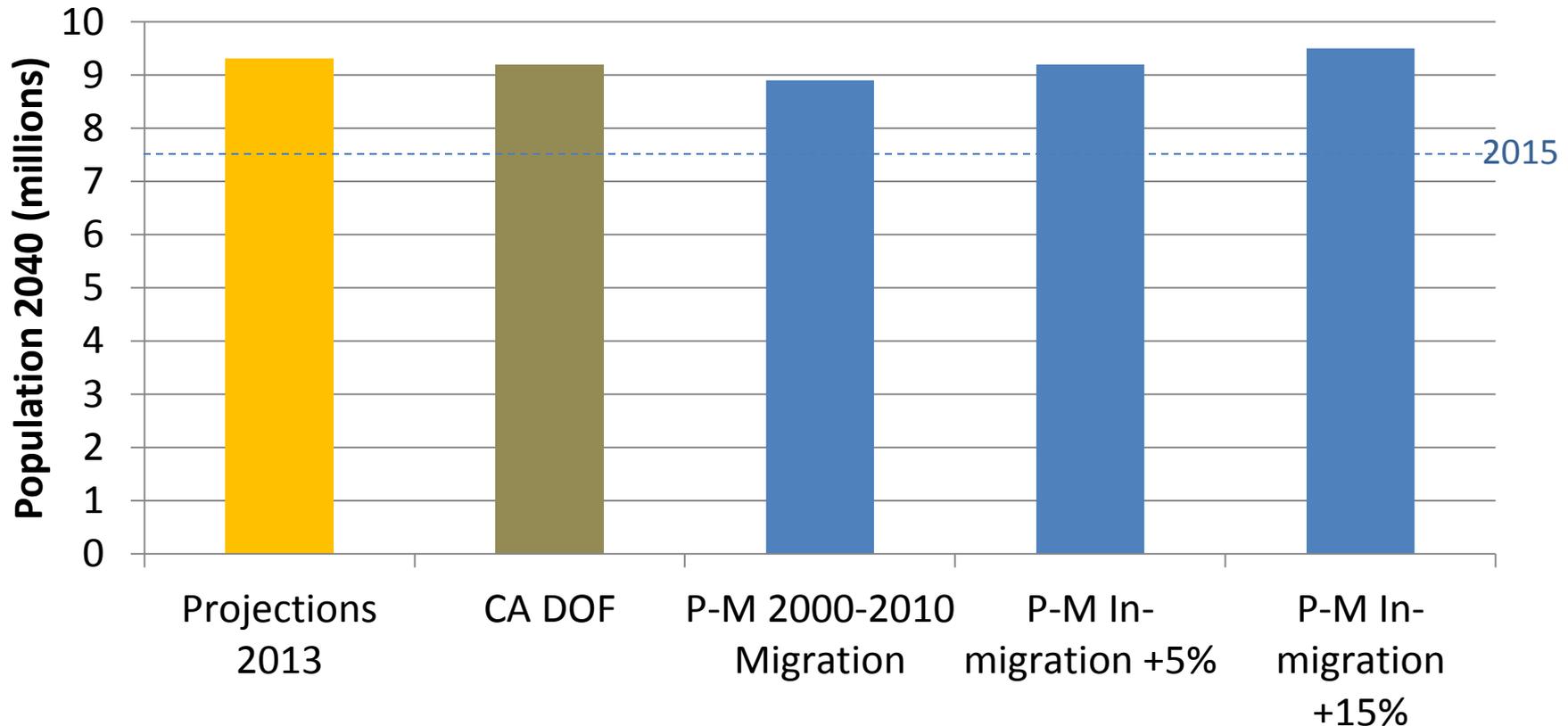


## Bay Area Net Migration



Source: Pitkin-Meyers analysis

# A Range of 2040 Outlooks Vary with Migration Levels

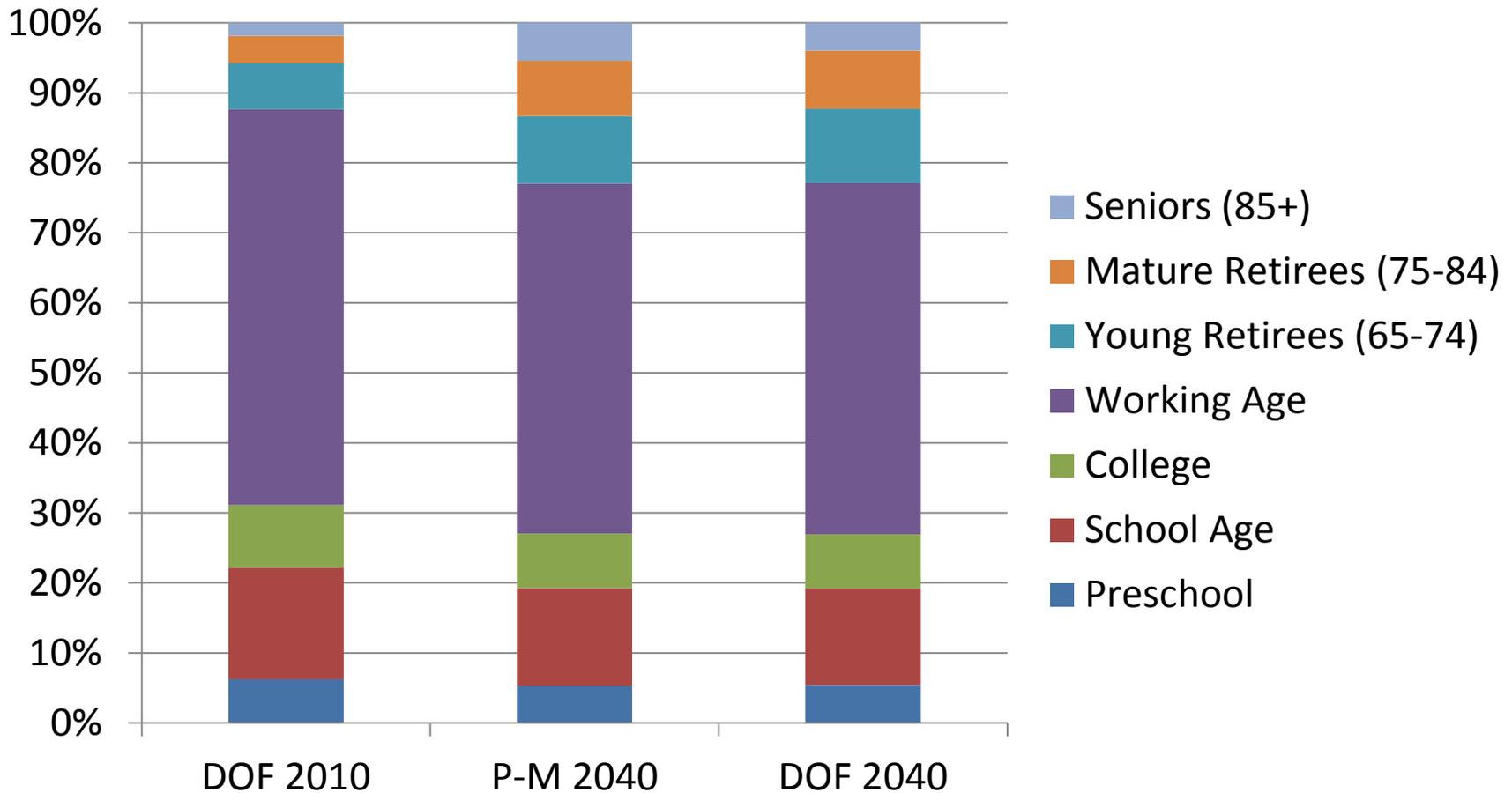


**Population Estimates Varying with Rates of In-Migration**

Source: Pitkin-Myers and California Department of Finance projections, ABAG adjustments.

**NOTE: PRELIMINARY MATERIAL—FINAL FORECAST WILL CHANGE.**

# Age Distribution of Population 2010 and 2040



Source: ABAG from Pitkin-Myers Bay Area Forecast 14.1 and California Department of Finance Report P-1, December 2014.

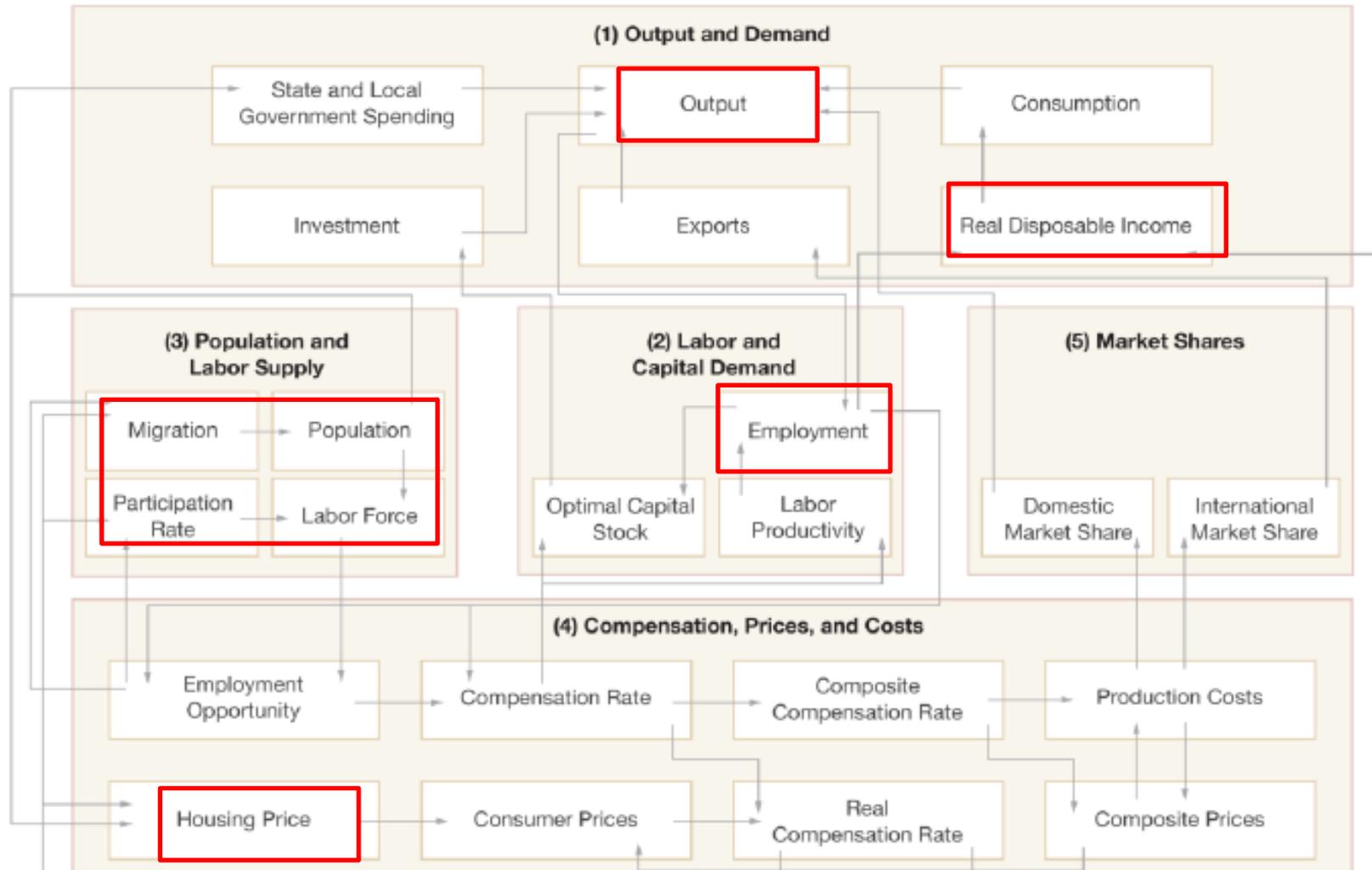
**NOTE: PRELIMINARY MATERIAL—FINAL FORECAST WILL CHANGE.**

# ABAG Regional Economic Forecast

- Factors forecast
  - Gross regional product
  - Employment by place of work (total, by industry)
  - Employment by place of residence (total only)
  - Population including economic migration
  - Labor force participation rates
  - Income
- Tools and calibration
  - REMI (CGE + econometric + input-output + other)
  - Alternative comparisons, including CCSCE, trends
  - In-house reconciliation with population model

# Remi Elements

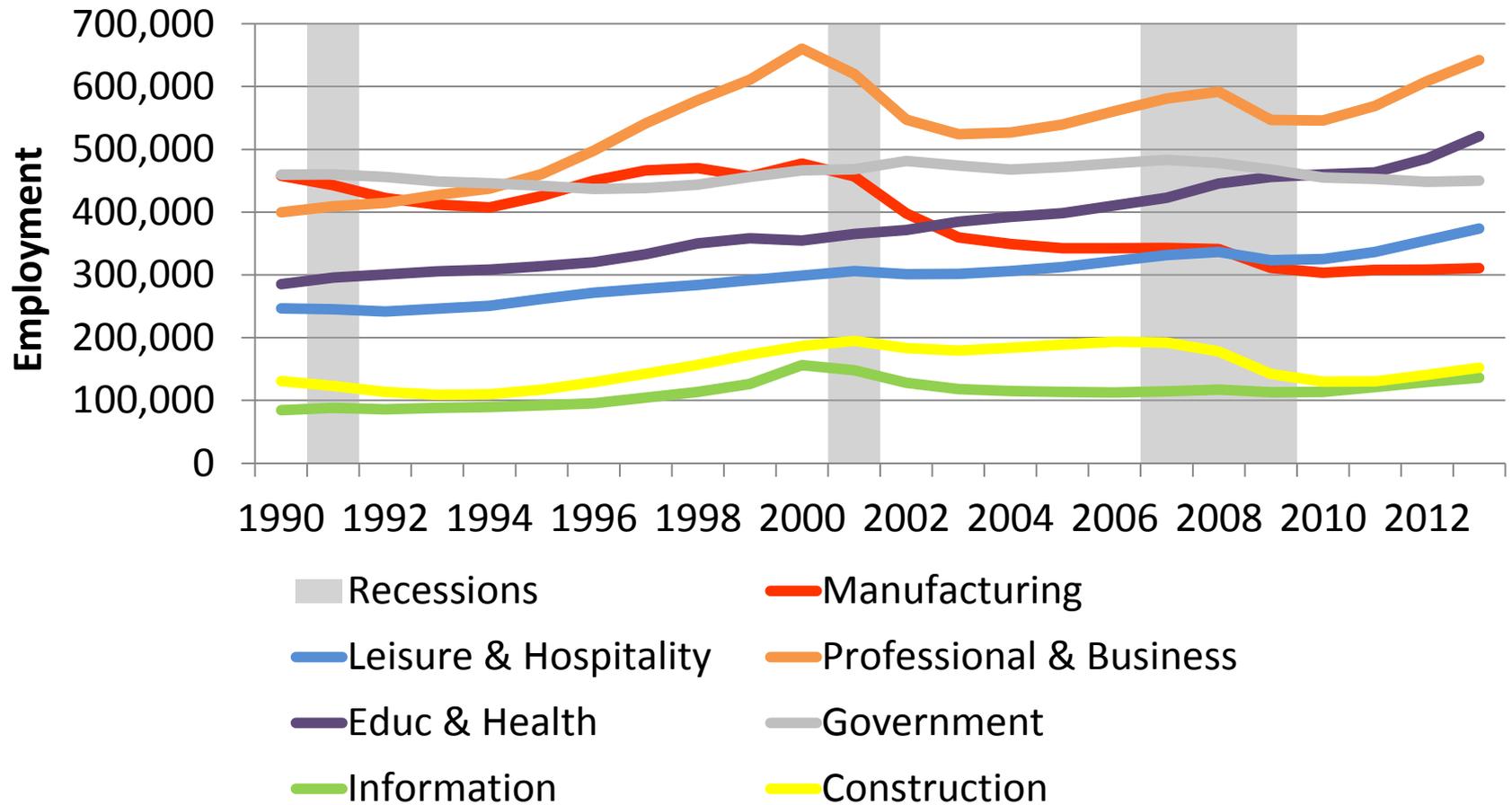
REMI Model Linkages (Excluding Economic Geography Linkages)



# What Is a Job?

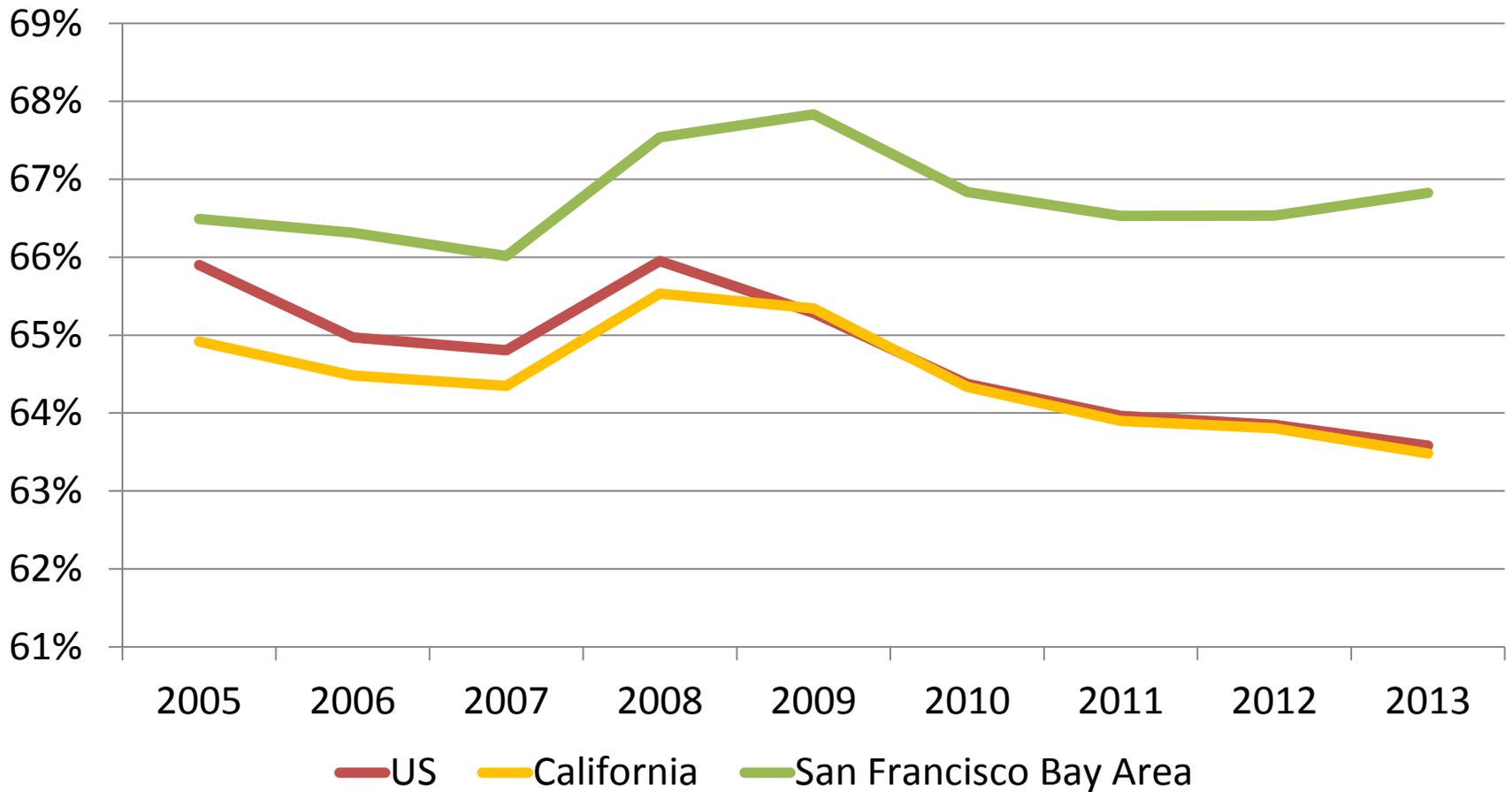
- Full-time or part-time
- Held by a person or a company (place of residence vs place of work)?
- Wage income and unemployment covered versus business owner or independent contractor?

# Finding the Balance among Economic Drivers



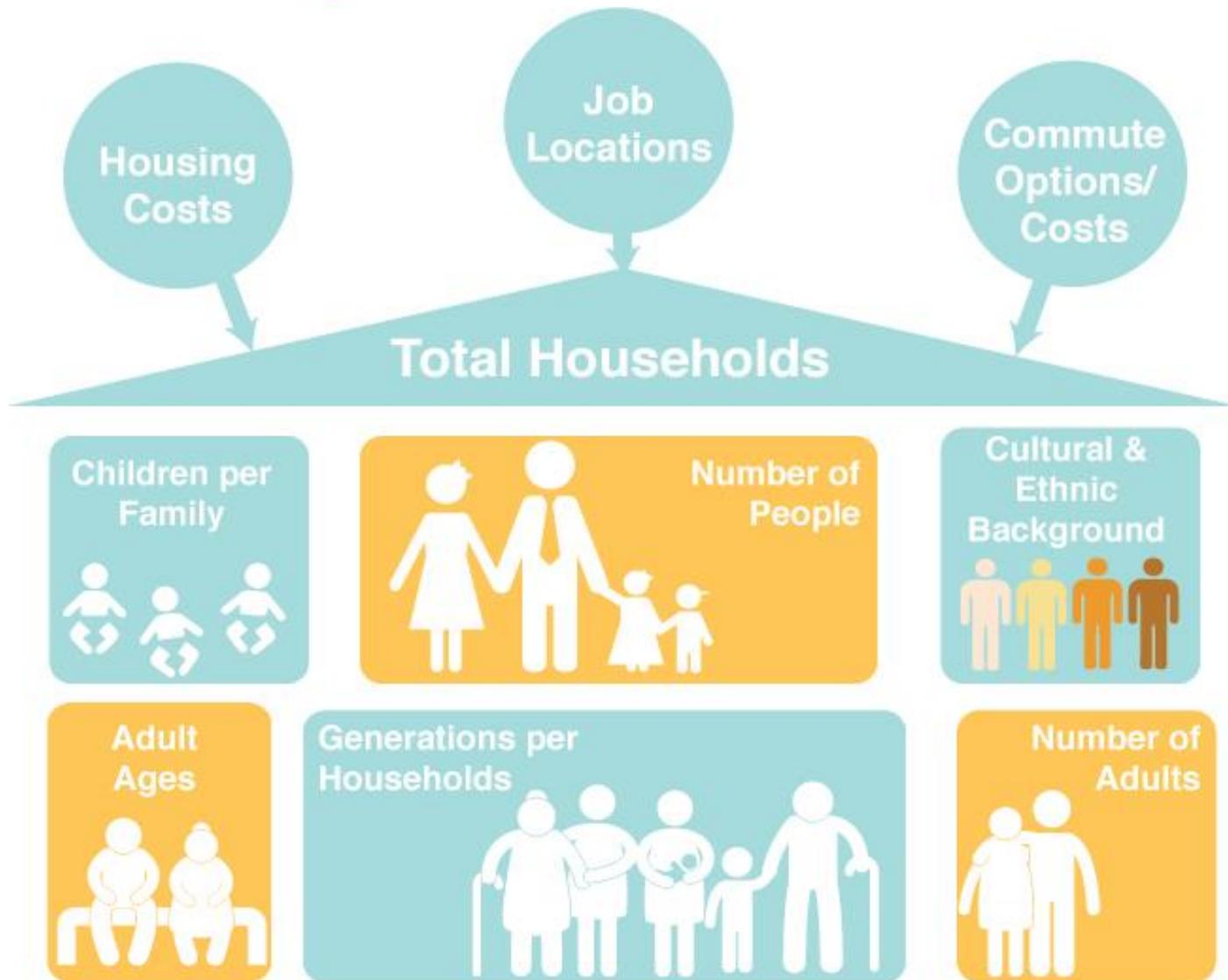
Source: ABAG from California Employment Development Department data

# Bay Area's High Labor Force Participation Rate



Source: ABAG from American Community Survey 1-year data.

# How Many Households?

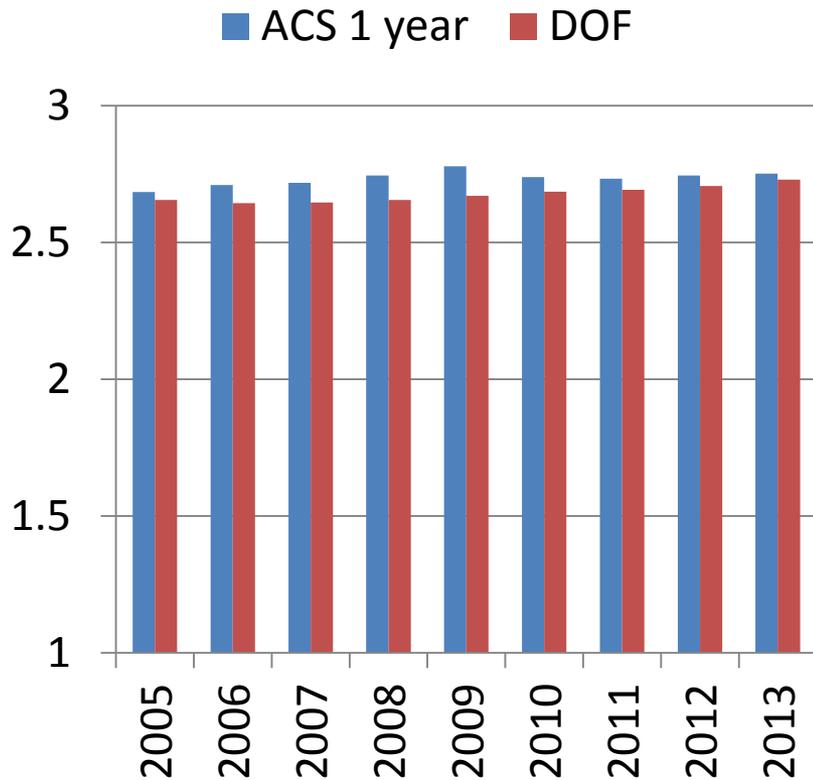


# ABAG Household-Income Forecasts

- Inputs
  - Population forecast reflecting demographic and economic factors
  - Historic household formation tendencies
    - by age
    - by ethnicity
    - (by place of origin)
- Forecast
  - Number of households
    - by demographic type
    - by income category
  - *Housing demand*

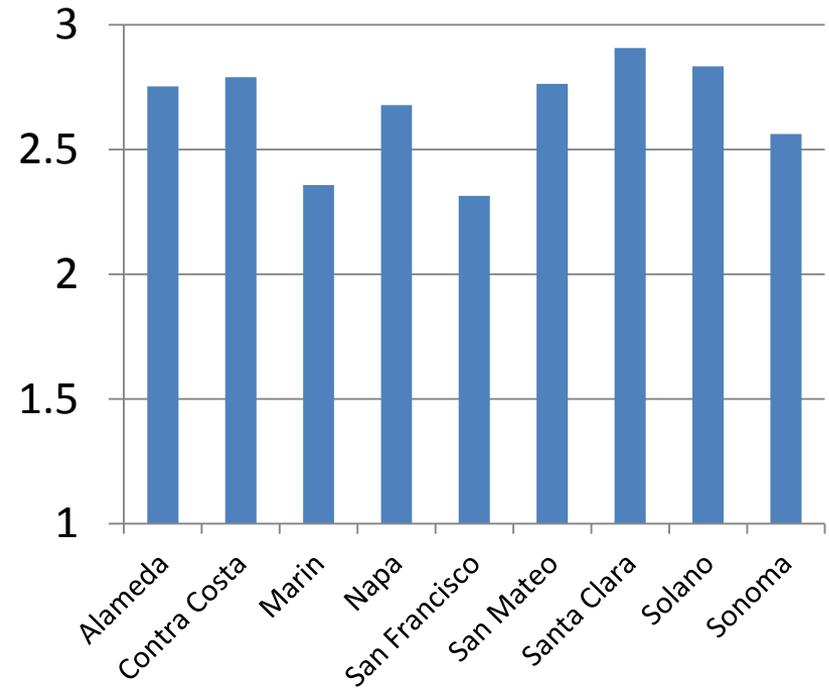
# Household Size Varies over Time, Place

## Bay Area Household Size



## Household Size by County

### 5 Year Average—2012 ACS



Source: ABAG from American Community Survey. Chart on left is from the 1 year data, chart on the right is from the 2012 5-year data.

# Household Forecasting Questions

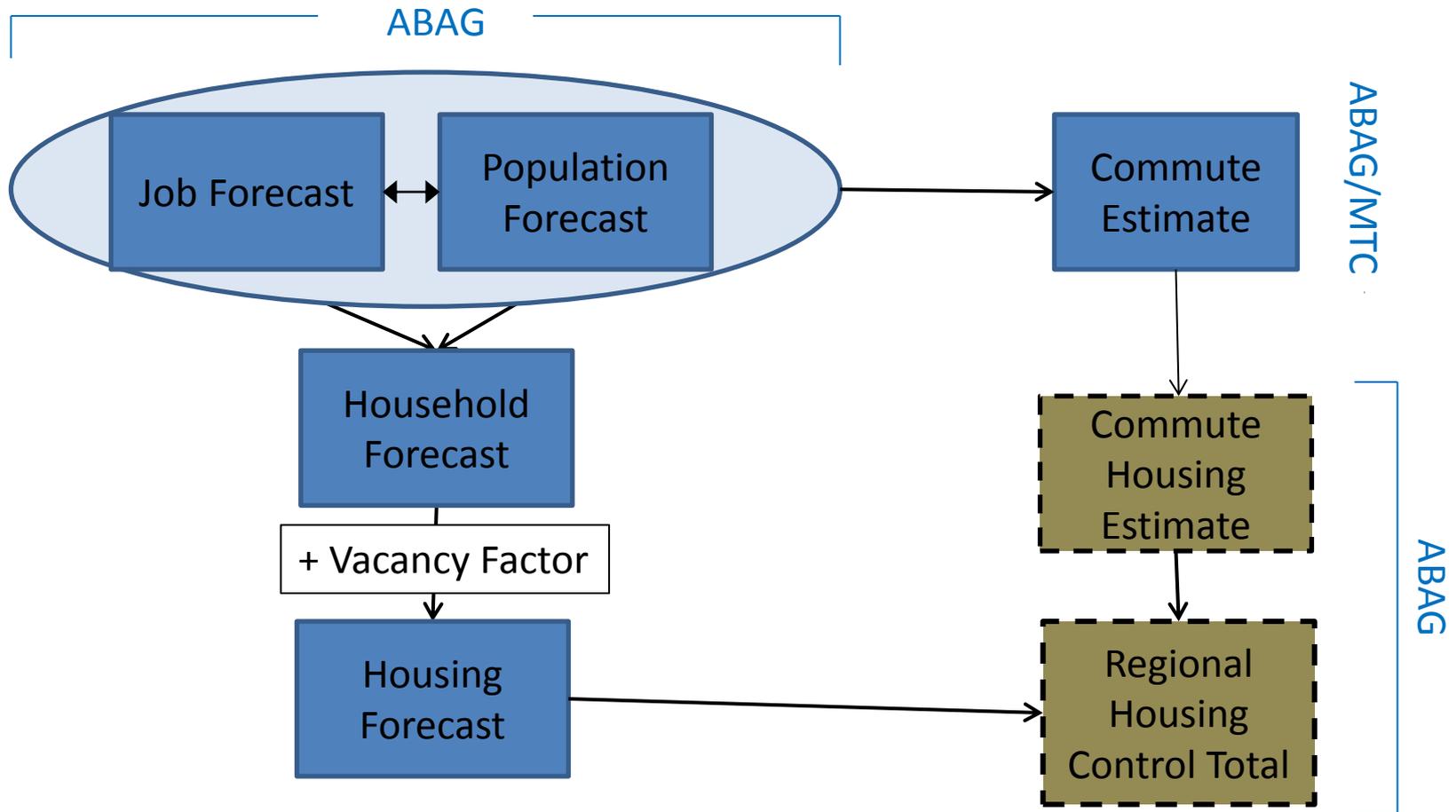
Most of net increase between now and 2040 will be households headed by retired and seniors.

- What type of housing will be available for older households?
- What type of housing will they choose?
- Does this differ for renters and homeowners?
- Will younger households continue their preference for urban settings? Will they move into suburban households as seniors move out?

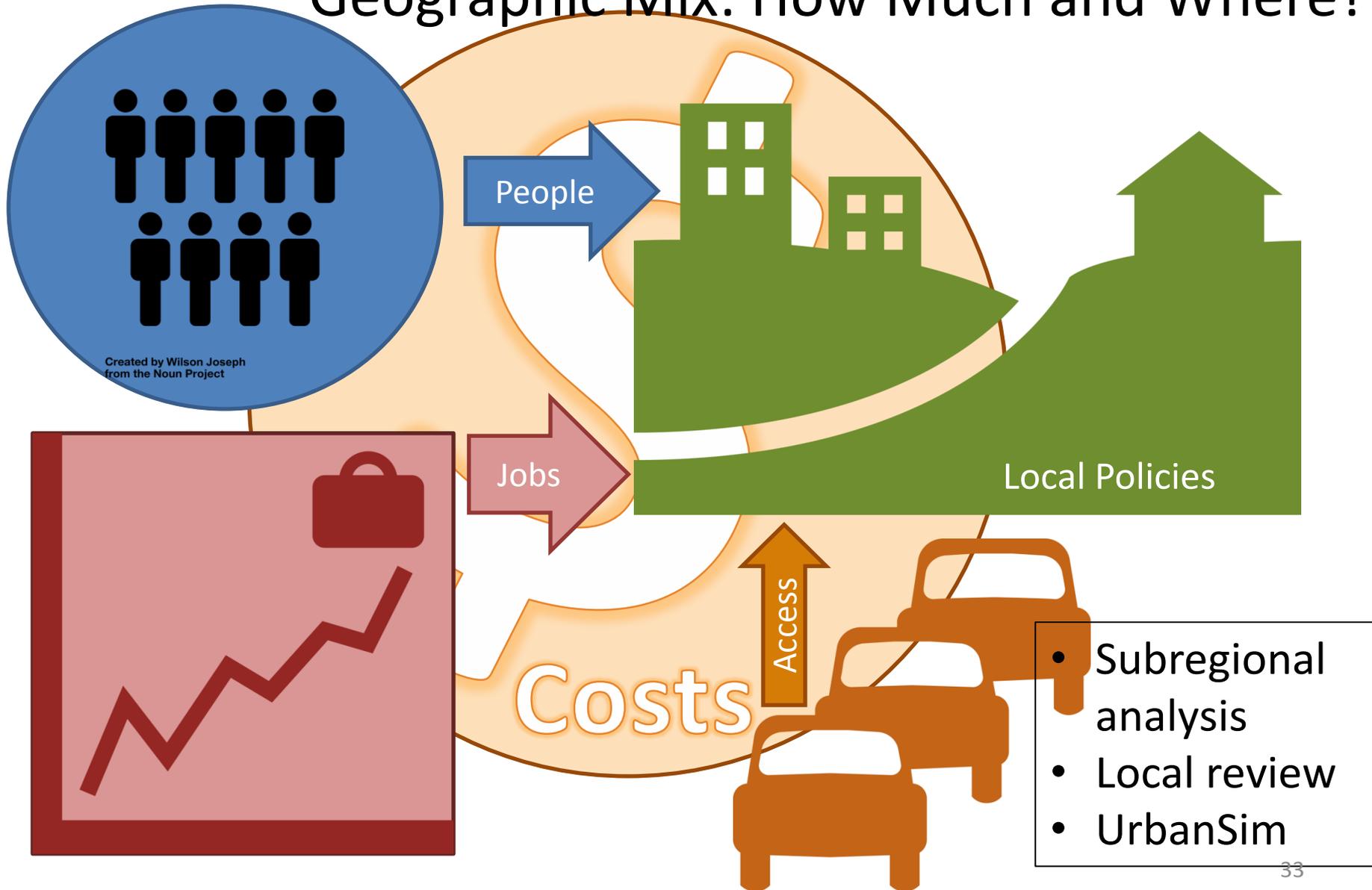
# The Regional Commute and Housing Demand



# Regional Forecast, Commute, and Regional Housing Control Forecast



# Population, Jobs, Households and Housing: Geographic Mix: How Much and Where?



- Subregional analysis
- Local review
- UrbanSim

# The Process Going Forward— Role for Local Jurisdictions

<b>Forecast Timing</b>	<b>Phase</b>	<b>Local Role</b>
Spring and Summer 2015	Data and plan verification	Review zoning, pipeline, PDA and general plan info
Fall 2015	Preliminary regional forecast and scenarios	Review and response
Winter and Spring 2016	Final regional forecast and scenarios	Review and response

Thank You

4/10/2015

[cynthiak@abag.ca.gov](mailto:cynthiak@abag.ca.gov)