

# Economic-Demographic Projections for the IEPR Forecasts

Comments from the CEC Energy Demand Expert Panel  
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# Panel Responded to these Issues

- Review available model structures and comment upon their advantages and disadvantages for use with IEPR forecasts
- Compare the accuracy of these projections with known historical trends
- Evaluate whether these projections are adequate for capturing our uncertainty about 10-year economic and demographic trends

# IEPR Economic Projections

- CEC considers multiple economic-demographic projections for IEPR forecasts
  - Global Insight, Moody's, UCLA, CA Dept of Finance
- CA and US forecasts coordinated but done independently
  - CA forecasts are not shared from US forecasts
- Many individual equations are estimated
- Metropolitan areas are not modeled as well as states
- Demographic projections are tied to economic conditions in these models

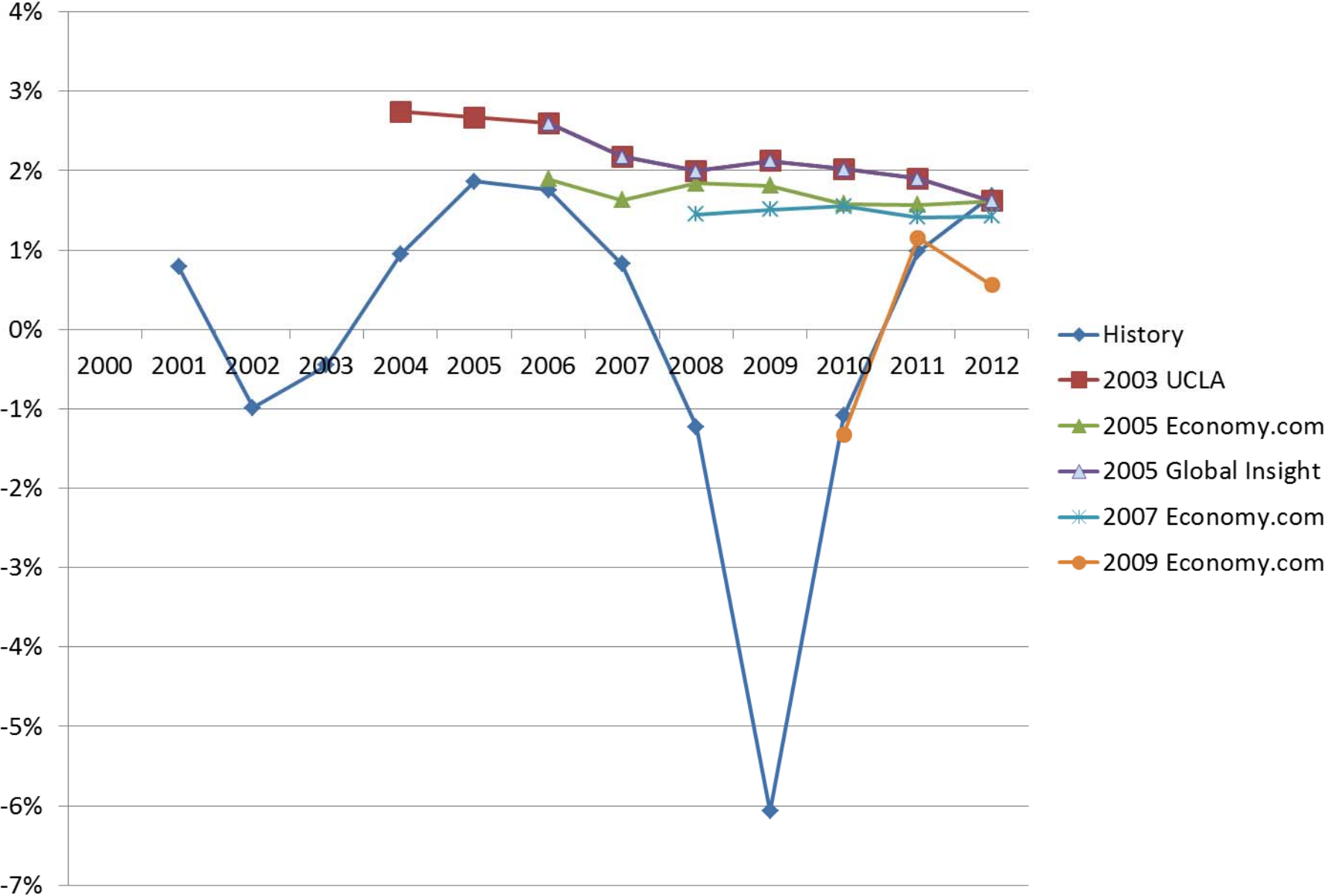
# Advantages

- Considerable detail on short-run macroeconomic conditions
  - monetary, federal and state spending, government taxation, financial conditions, and short-run surprise shocks like rapid oil price escalation or shifts in exchange rates.
- Short-run conditions fluctuate around the economy's long-run path
- Structured framework for conducting what-if policy simulations
- Integrates California with national economic conditions

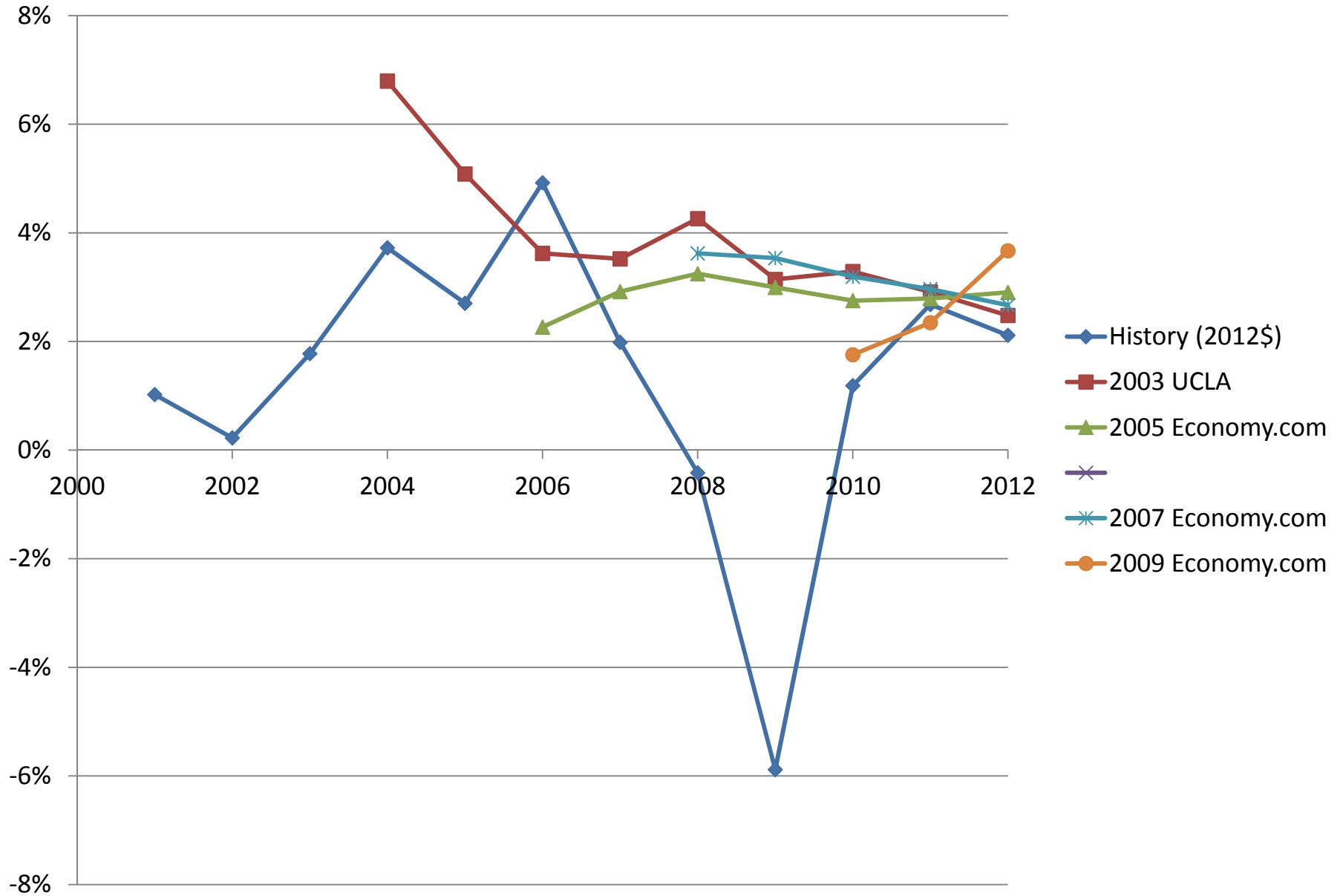
# Disadvantages

- Includes less detail on long-run growth patterns important for California's ten-year projections of electricity consumption.
  - Long-run growth patterns respond to the growth in labor force and factors that augment productivity growth
- Problems in incorporating uncertainty
  - How to assign probabilities to any scenario?
- Moody's has evaluated many different conditions in a Monte Carlo analysis, but open questions remain:
  - How comprehensive is the Monte Carlo simulation? Which input variables are specified as distributions and which are not?
  - Have the importance of different factors been evaluated?
  - How are correlations among input variables managed?

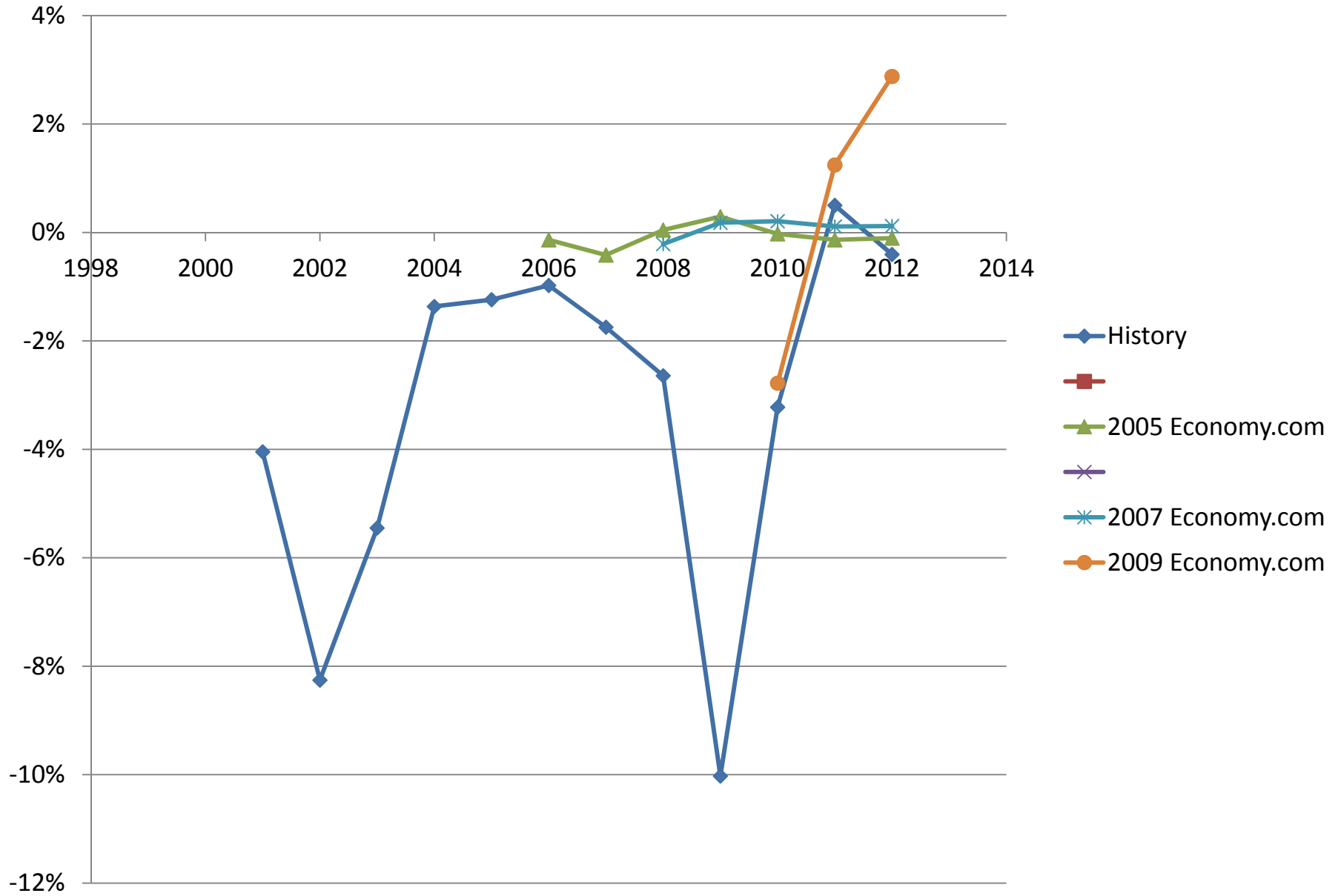
# Annual Percent Change in Total Employment



# Annual Percent Change in Personal Income

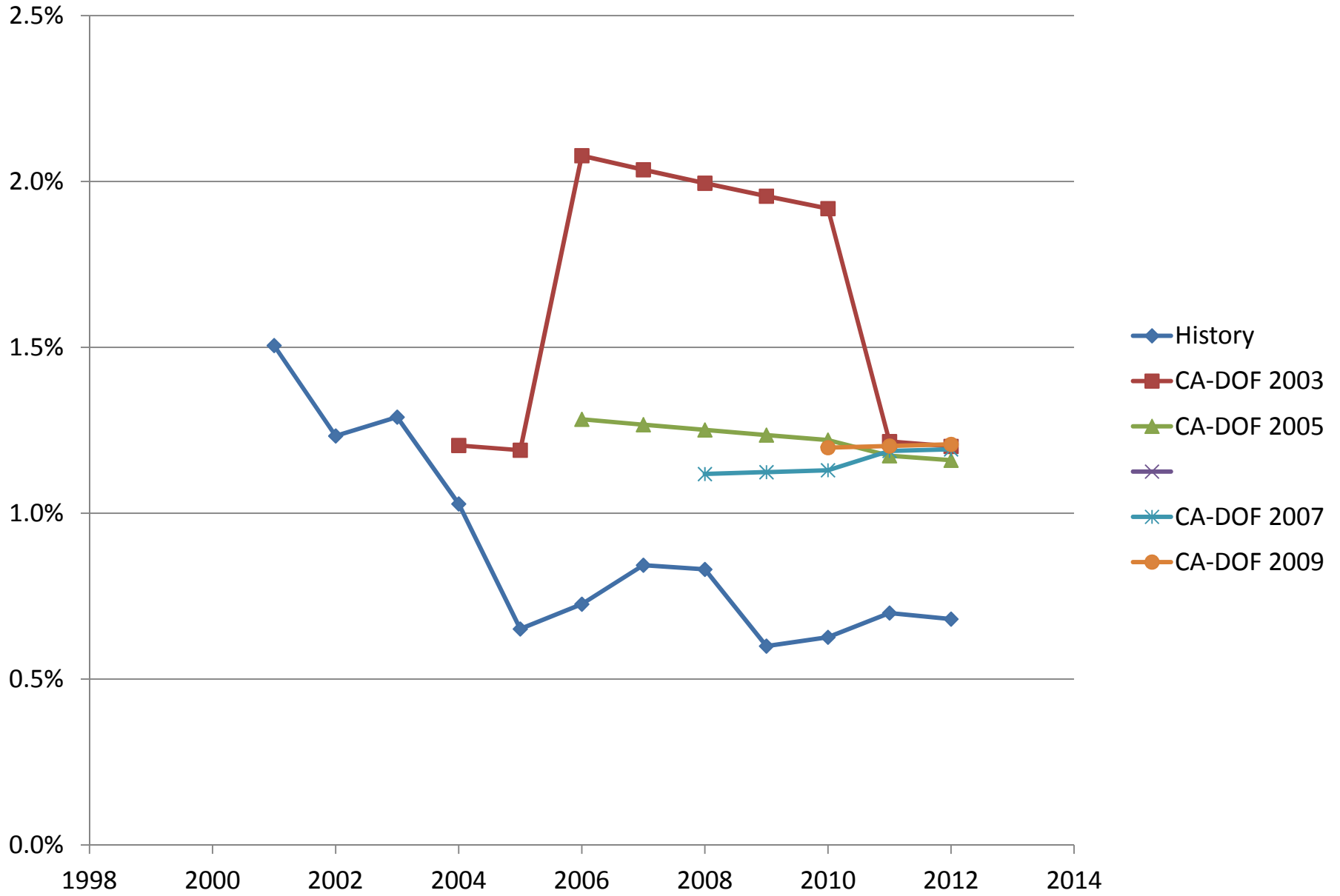


# Annual Percent Change in Manufacturing Jobs





# Annual Percent Change in Population



# Generating Scenarios

- Past projections exceed actual economic and demographic growth rates (particularly for the Great Recession).
- Models produce reasonable optimistic cases.
- Models may not fully capture uncertainty about pessimistic cases.
- Expert panel suggested a pessimistic case combining :
  - Lower long-term growth rate
  - Second recession (particularly later in the 10-year horizon)

# Conclusions/Next Steps

- Approaches have strengths
  - consistent framework for incorporating important economic linkages
- The Panel has some major concerns:
  - Do projections capture uncertainty about long-term economic trends (especially with more pessimistic assumptions)
  - How can large-scale models better represent macroeconomic and demographic uncertainty
- We need to continue discussions with vendors to understand how to incorporate scenarios probabilities.
- This interaction will improve our understanding about representing fundamental uncertainties
  - May mean developing CEC's own scenarios