

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

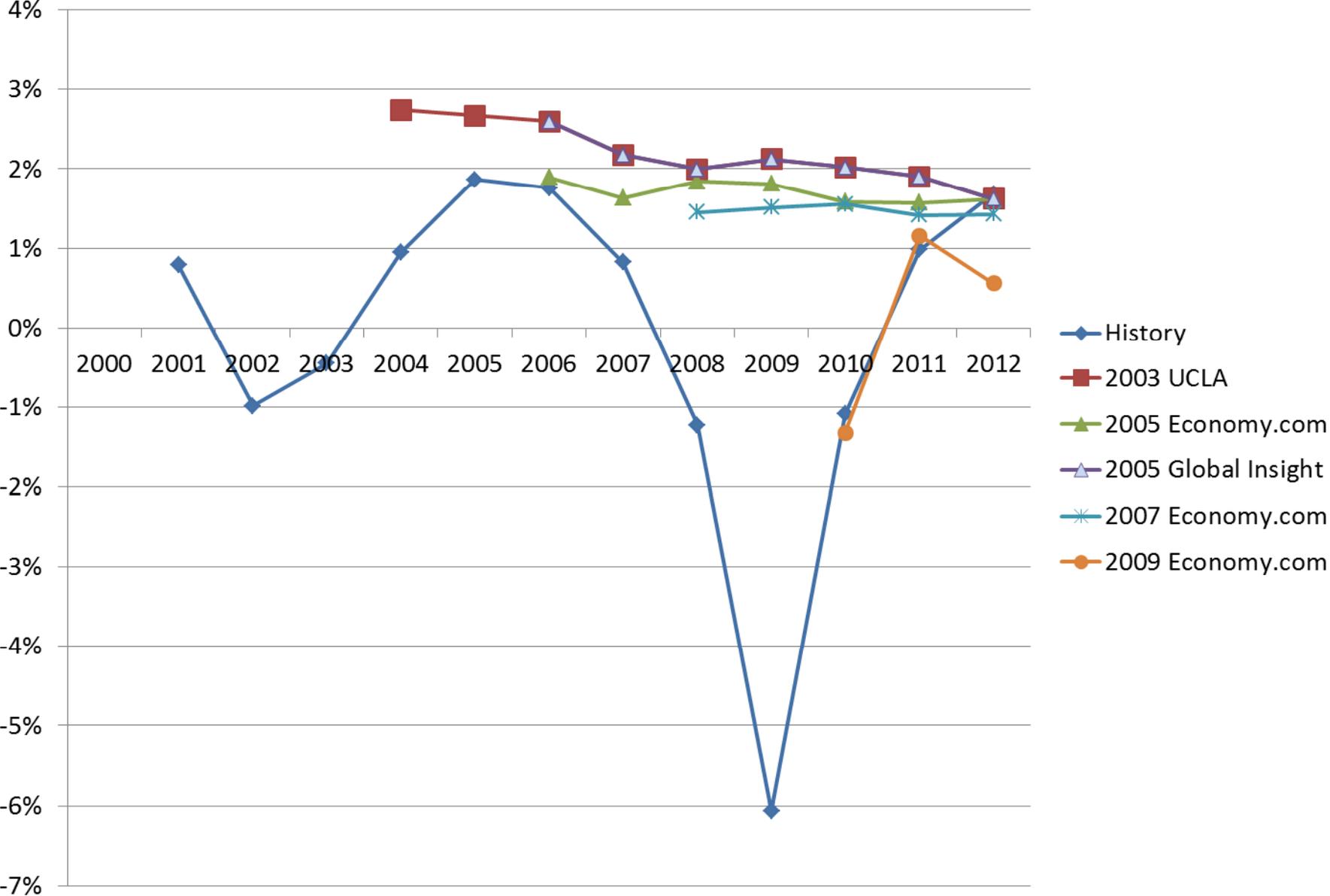
Advantages

- 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

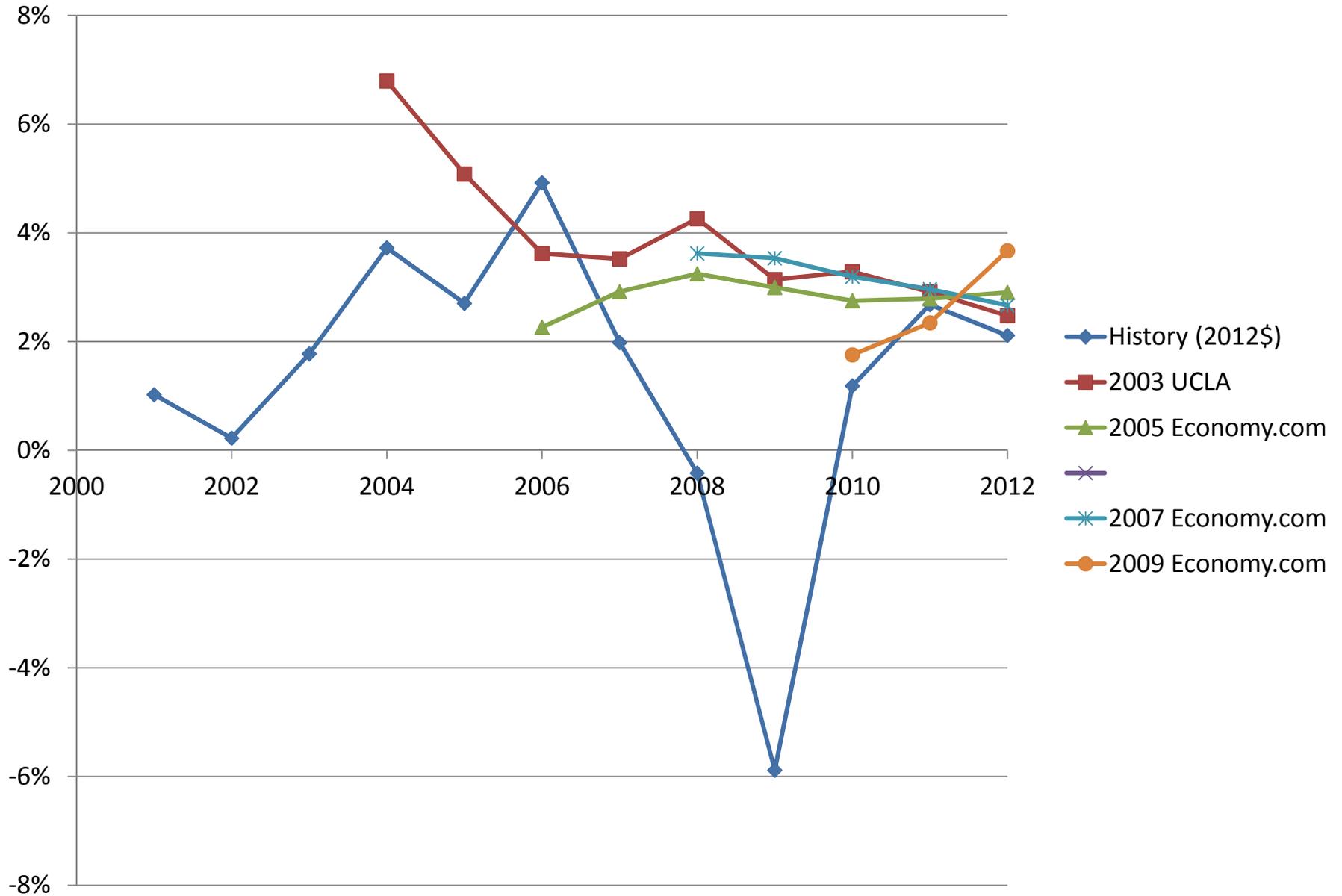
Disadvantages

- 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?

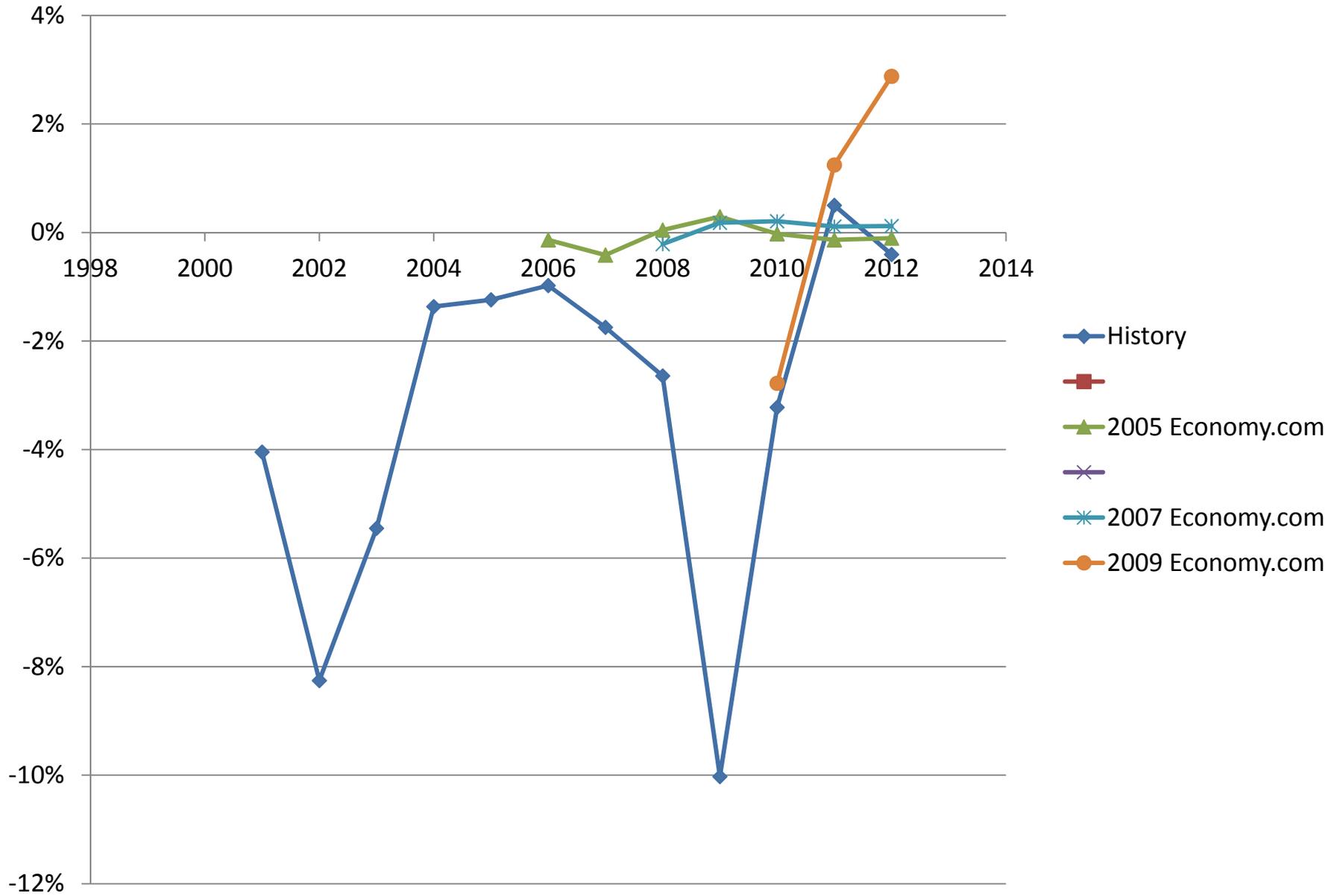
Annual Percent Change in Total Employment



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