

# Technical Panel on Labor Force Participation

## Report to the Social Security Advisory Board

Robert Moffitt, Panel Chair  
Johns Hopkins University  
June 30, 2017

# Charge

- Evaluate the assumptions of the Trustees and the methods employed by the Office of the Chief Actuary as they pertain to the projections of the size of the labor force and rates of labor force participation; and make recommendations as to how those assumptions and methods could be improved
- Some specific aspects:
- Consider future long trends in LFPR by gender and age
- Consider how the Great Recession will affect those trends
- Investigate possible increases in demand for older workers and their effects on labor force participation of older individuals

# 2015 Technical Panel

- Also made some recommendations on the labor supply portion of the OCACT model
  - (1) Allow for greater increases in educational level of the population in the future
  - (2) Incorporate labor demand
  - (3) Do sensitivity testing to both of these, alternate scenarios
  - (4) Evaluate the sensitivity of trust fund balances to alternative labor supply projections
- Also made some remarks on other issues (cohort effects, female labor supply, etc.)
- But the Panel did not have time to evaluate the labor supply portion of the OCACT model in depth
- This Panel: in-depth examination

## This Panel's Members

- Robert Moffitt, Johns Hopkins University, Chair
- Gary Burtless, Brookings Institution
- Chinhui Juhn, University of Houston
- Kathleen McGarry, UCLA
- Kevin Murphy, University of Chicago

# Overview and Outline

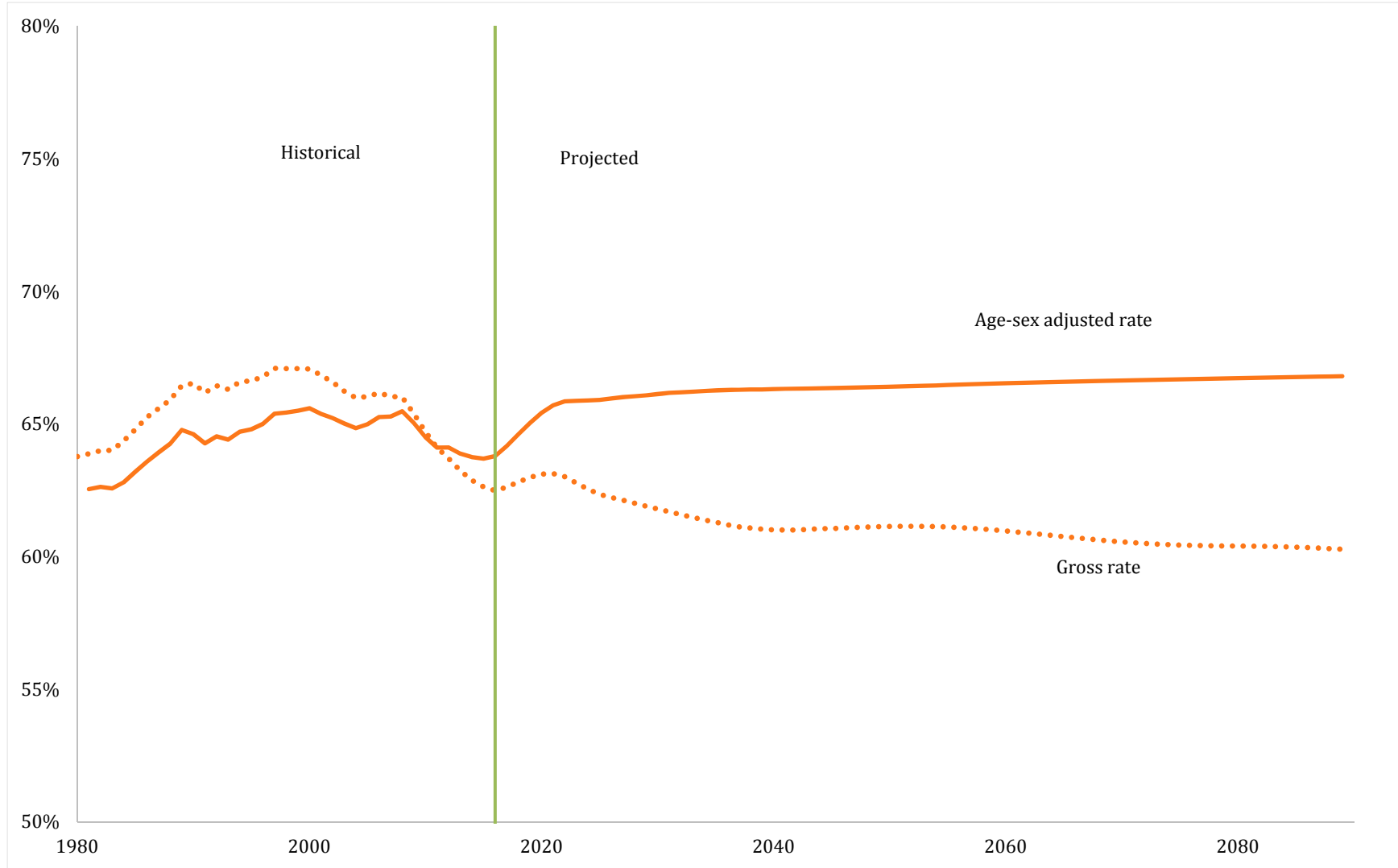
- I. Background: OCACT Labor Force Model and Projections
- II. OCACT Detailed Age LFPR Projections by Age and Gender
- III. Explanations for Pre-Recession Trends
- IV. The Recession
- V. Other Issues
  - A. Educational Composition
  - B. Life Expectancy
  - C. Disability
  - D. Older Worker Demand
  - E. Administrative Data
- VI. Comparison to CBO and Federal Reserve Board models

# I. Background, OCACT Model and Projections

- OCACT Model projects LFPRs 75 years into future
- Separate projections by gender and age groups
- For women, also separate projections by marital status and presence of young children
- Each group's projections have different factors affecting projected LFPRs
- Factors affecting all groups: business cycle, disability prev (<75)
- Factors affecting younger groups only: time trend
- Factors affecting older groups only: education, replacement rate, earnings test, female LFPR (men), life expectancy, others
- Impact of Factors based on various past estimates
- Impact of business cycle: estimated on relationship between LFPR and unemployment rate 1981-2007

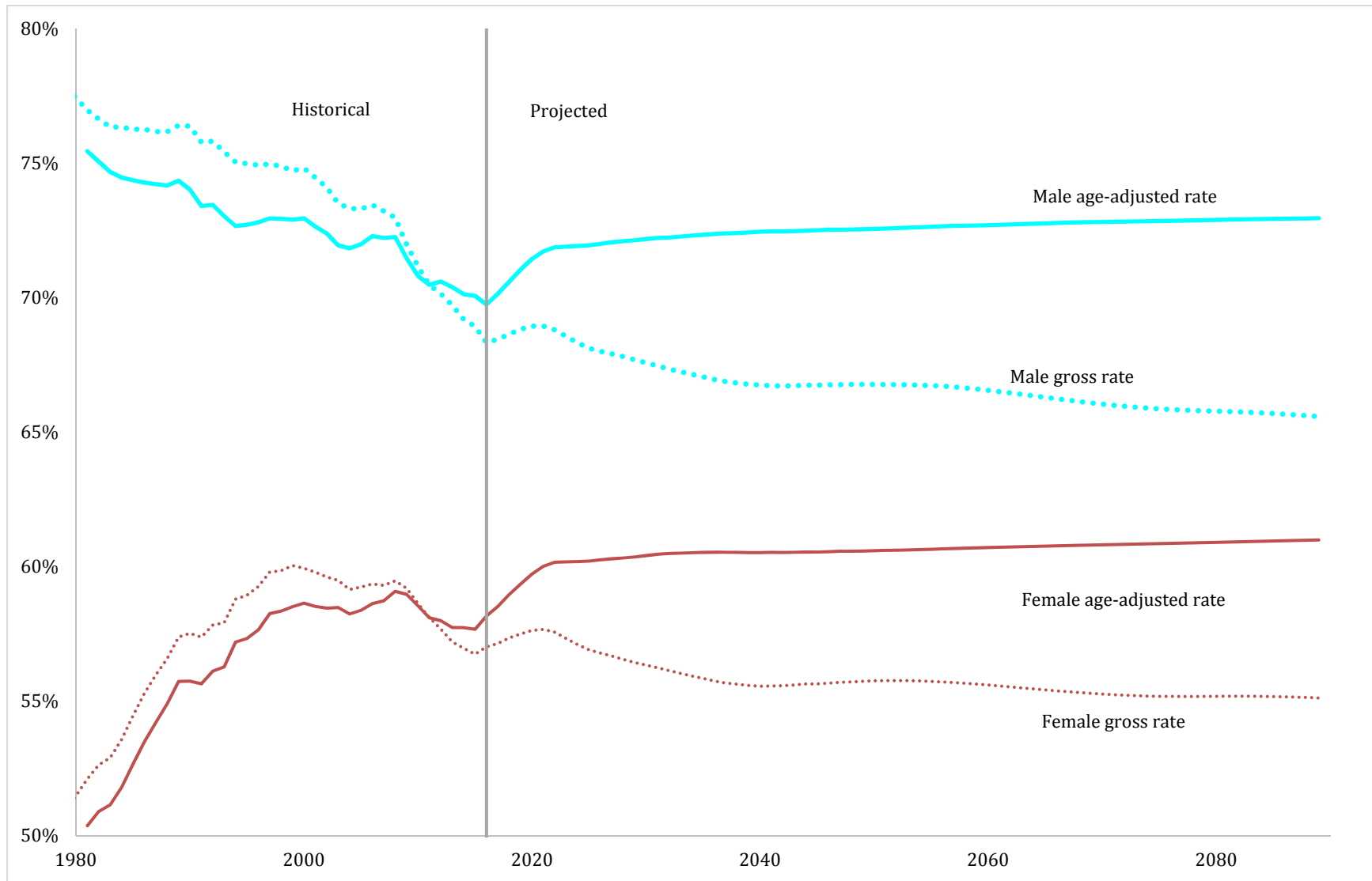
- Long-Run Projections from the model are very flat because none of the factors in the model vary much in the long run (disability prevalence, life expectancy, etc. a little):

# LFPR 16+, Historical and OCACT Projected





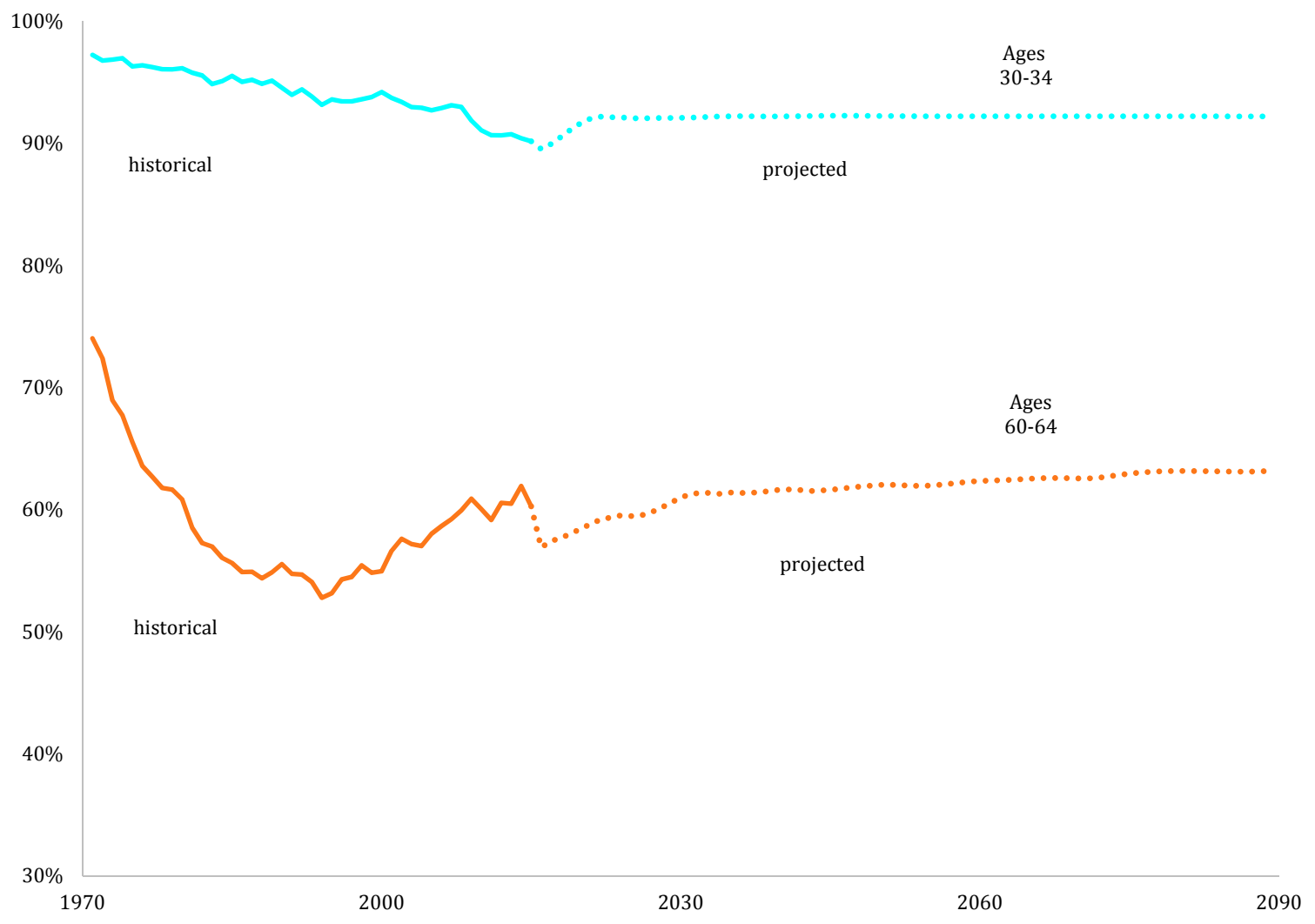
# LFPR, 16+, Historical and Projected, by Gender



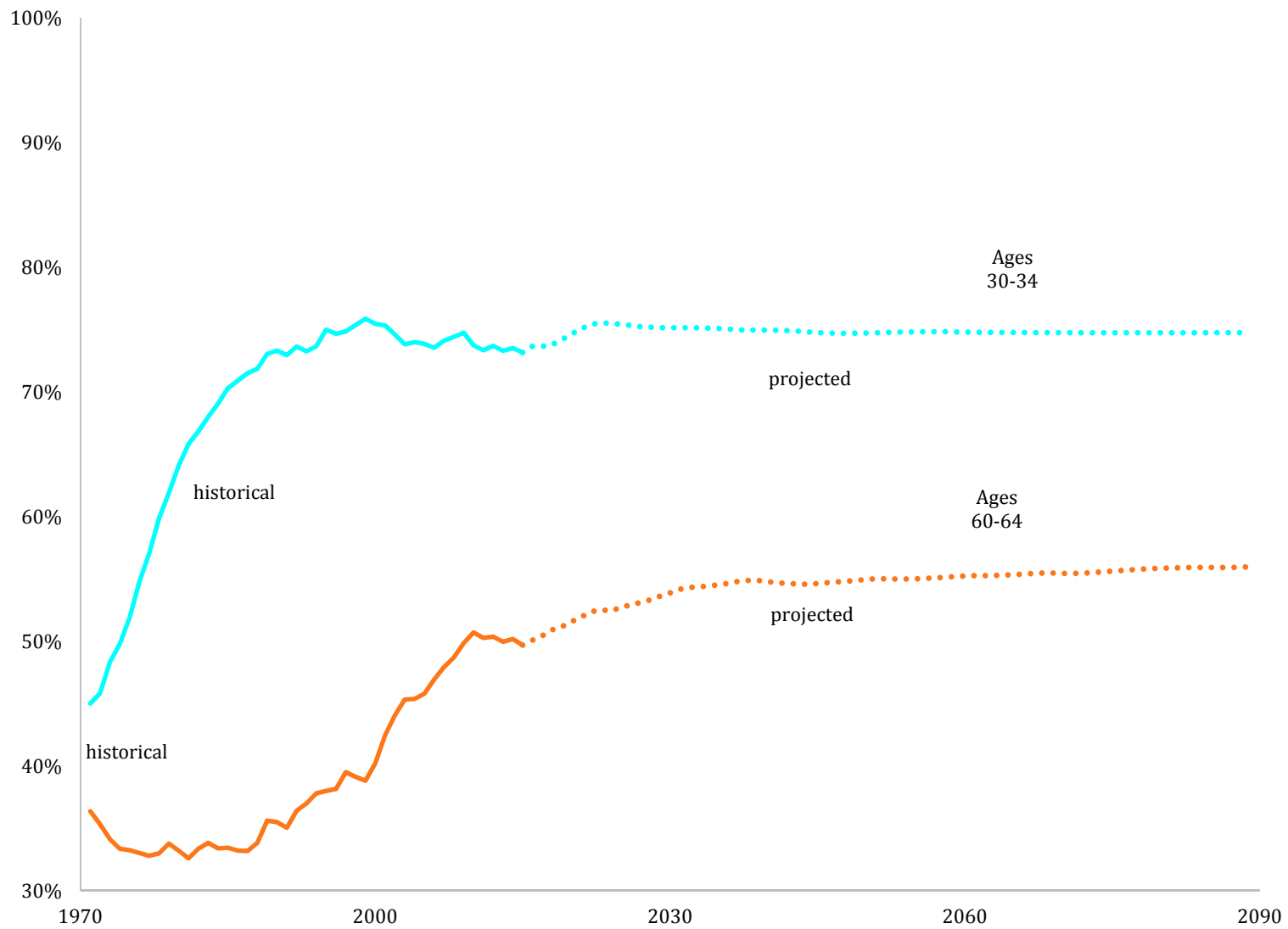
## II. More Detailed Projections by Age and Gender

- The Panel based its work on more detailed projections by age and gender (projections of demographic composition were not studied)
- Helps focus more directly on the model
- The Panel focused on
  - A. Historical trends for each age-gender group and
  - B. The OCACT projections for each age-gender group
- Both historical and projected LFPRs differ by age and gender
- Illustrate with prime age (30-34) and older (60-64):

# Men



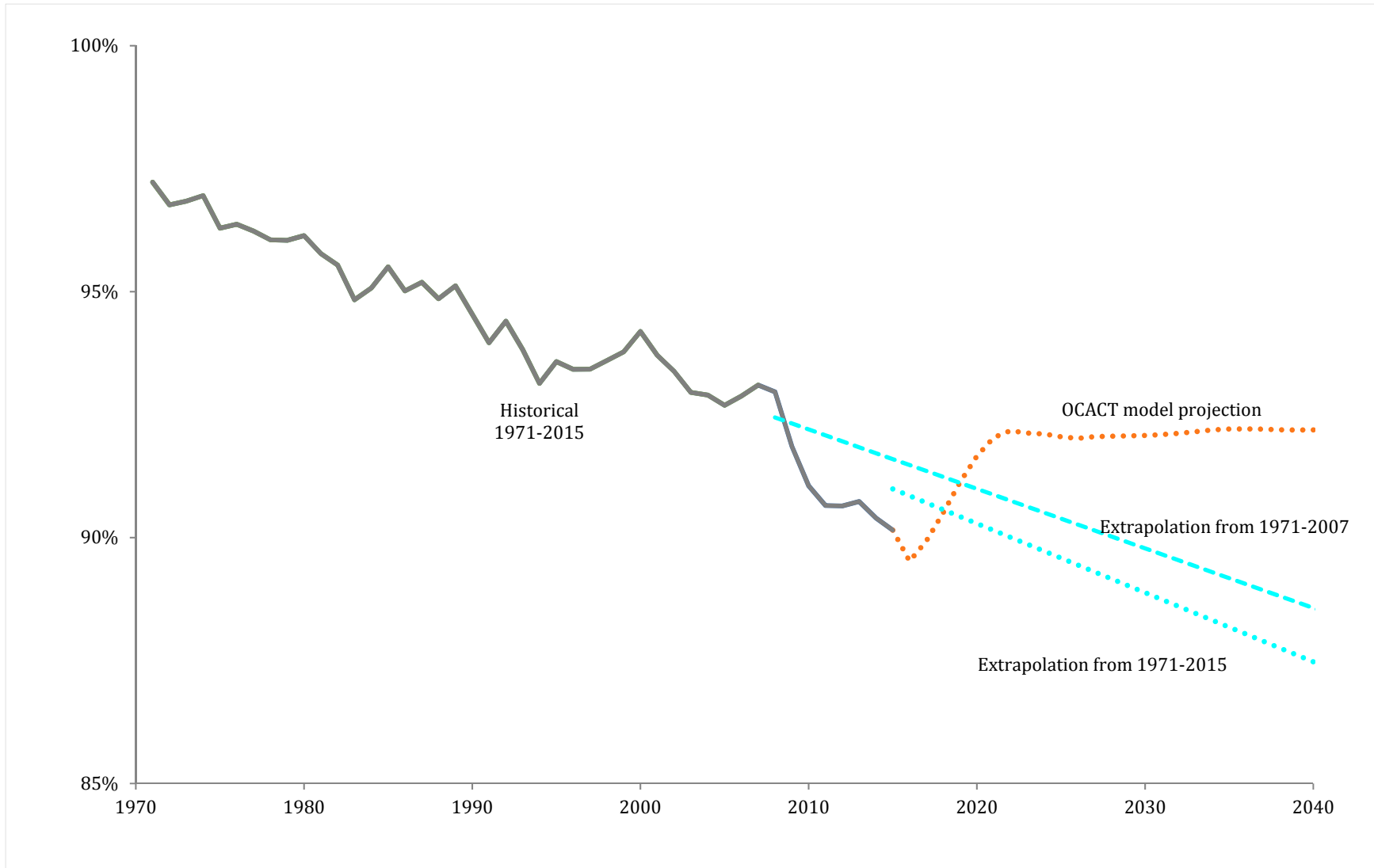
# Women



- Older Male and Most Female projections are plausible extensions of pre-Recession trends
- Older Men's LFPRs have been rising more slowly, plausible that they will level out
- Women's LFPRs are no longer rising (except older women) and plausibly will flatten out
- But Prime Age Male projections are very different than past trends
- Past trends are projected not to continue

- Can be seen visually by illustrative linear projections from past trends:

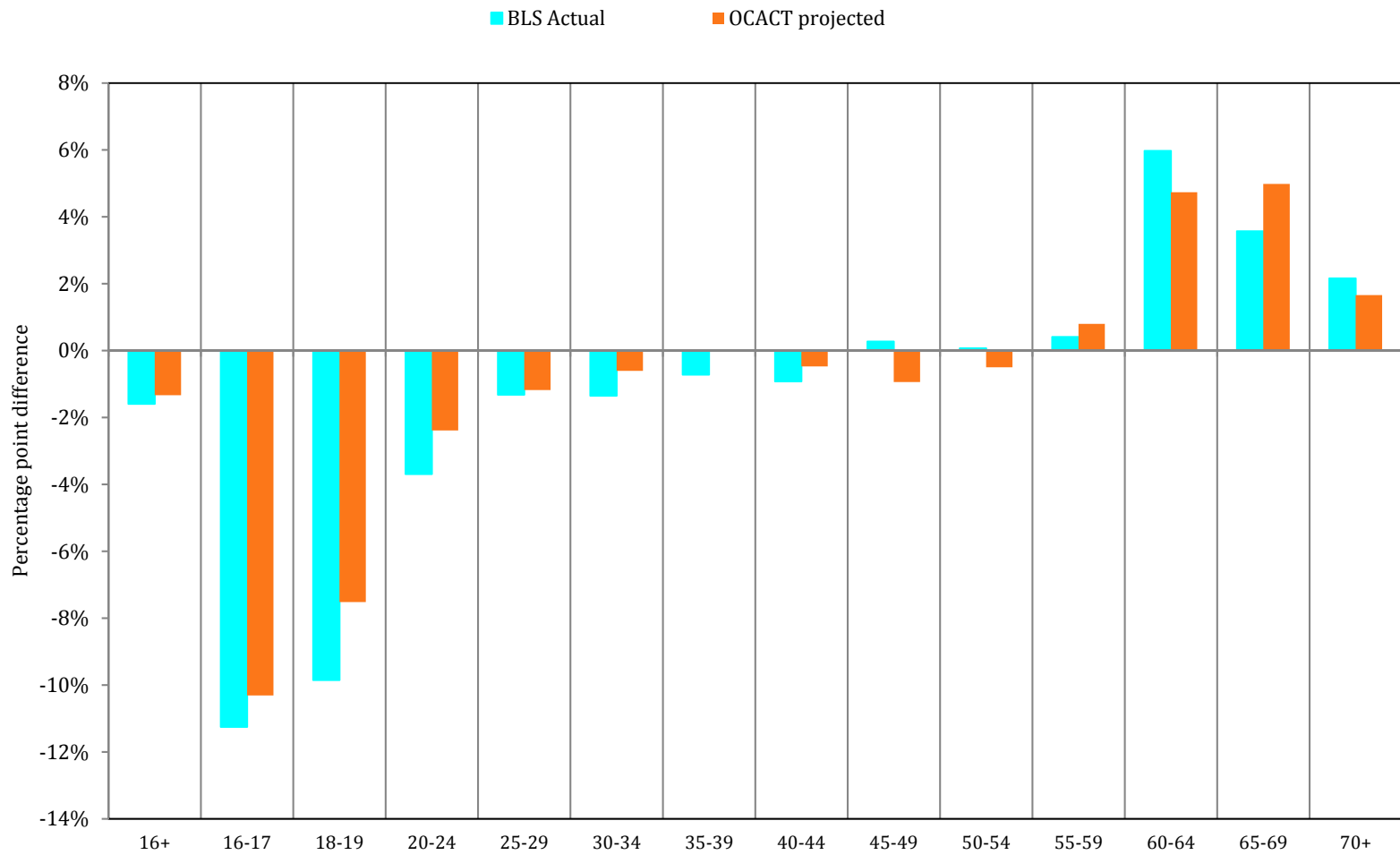
# Linear Projections for Men 30-34



- By definition, whatever forces were causing the pre-Recession downward trend are being assumed not to continue into the future
- What forces are assumed in the OCACT model to generate the downward Pre-Recession LFPR trends for prime-age men?
- At the Panel's request, the OCACT calculated estimates of LFPRs by gender and age for 2000-2007



# Actual and OCACT Projected LFPR Changes, 2000-2007, by Age



- Results: On average, model is fitting actual trends
- But only a net result of underprojecting declines at younger ages and overprojecting them at older ages
- Further, where the major declines in LFPRs have occurred (35 years of age and under), the OCACT model is generating those only from an assumed linear time trend
- That time trend is then shut down for the projections

- Recommendation 1:

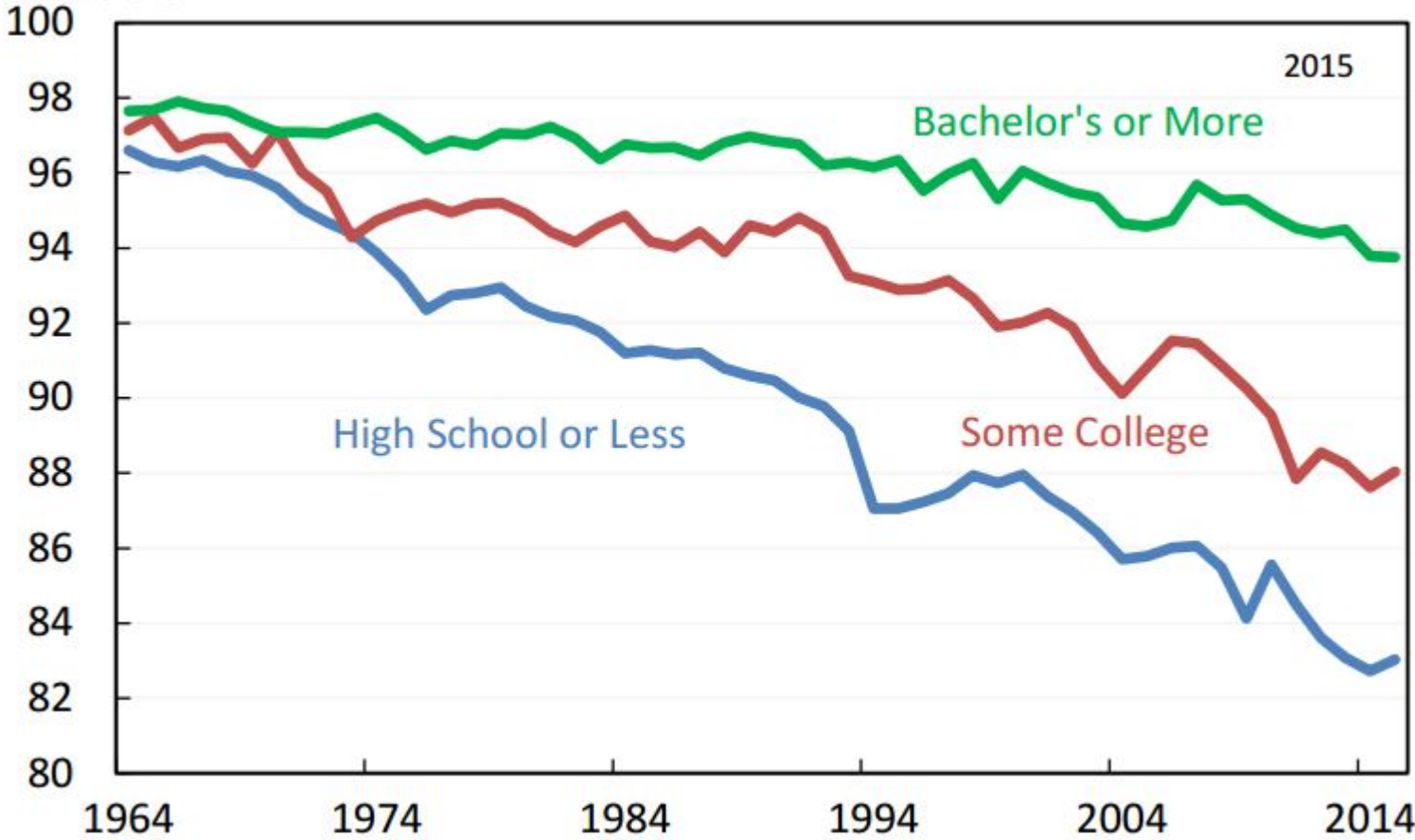
The OCACT should put additional effort into systematically exploring the capability of its labor force projection module to explain pre-Recession historical trends, and should explicitly consider which, if any, of the forces generating recent historical trends are likely not to continue into the future

# III. Causes of Pre-Recession Trends

- What is missing from the OCACT model that would explain pre-Recession declines in LFPR?
- Has been a tremendous amount of research on this question by labor economists
- Complex, not fully understood
- Female slowdown/decline more difficult to explain
- But leading explanation for male decline is that it has been a result of declines in labor demand for lower-skilled workers
- Skill-biased technological change, trade, outsourcing, etc.
- Clearly shows up in decline in wages of lower-skilled men

- The evidence is that the declines in male LFPR has been concentrated among those with lower educational levels:

# LFPRs by Education Level, 1964-2015 (Men 25-54)



- Will these declines continue into the future?
- No one knows, but economists who are expert in this area see no evidence that the forces of automation, decline of manufacturing, and decreased demand for less educated workers are slowing
- The default assumption should be that these forces will continue at least for some period

- Recommendation 2:

The OCACT model should allow for differential trends in labor force participation by level of education, and should assume that the forces underlying those trends will continue at least over the medium term. Further, consistent with Recommendation 1, the OCACT model should be modified to capture pre-Recession trends by education.

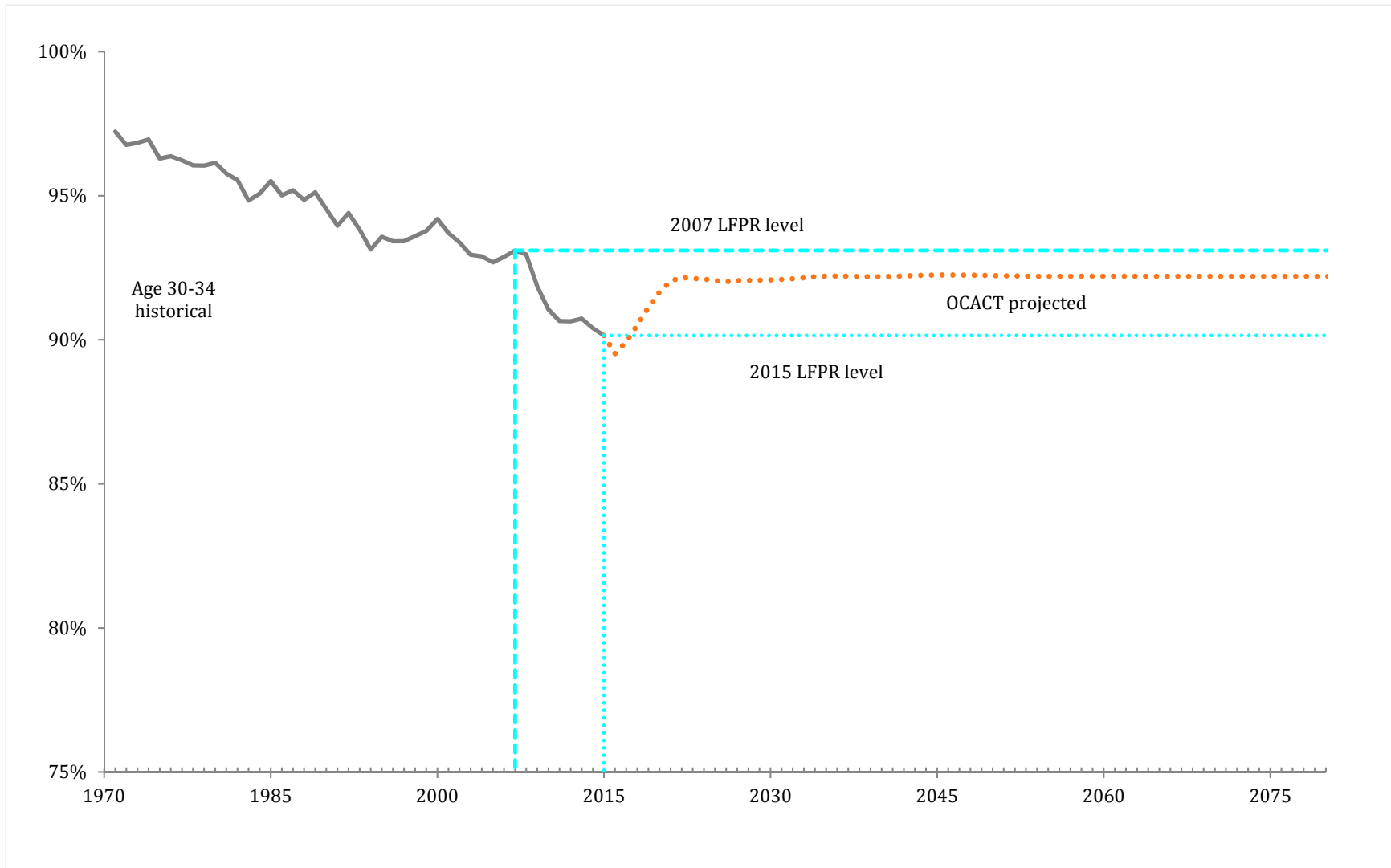


## IV. Great Recession

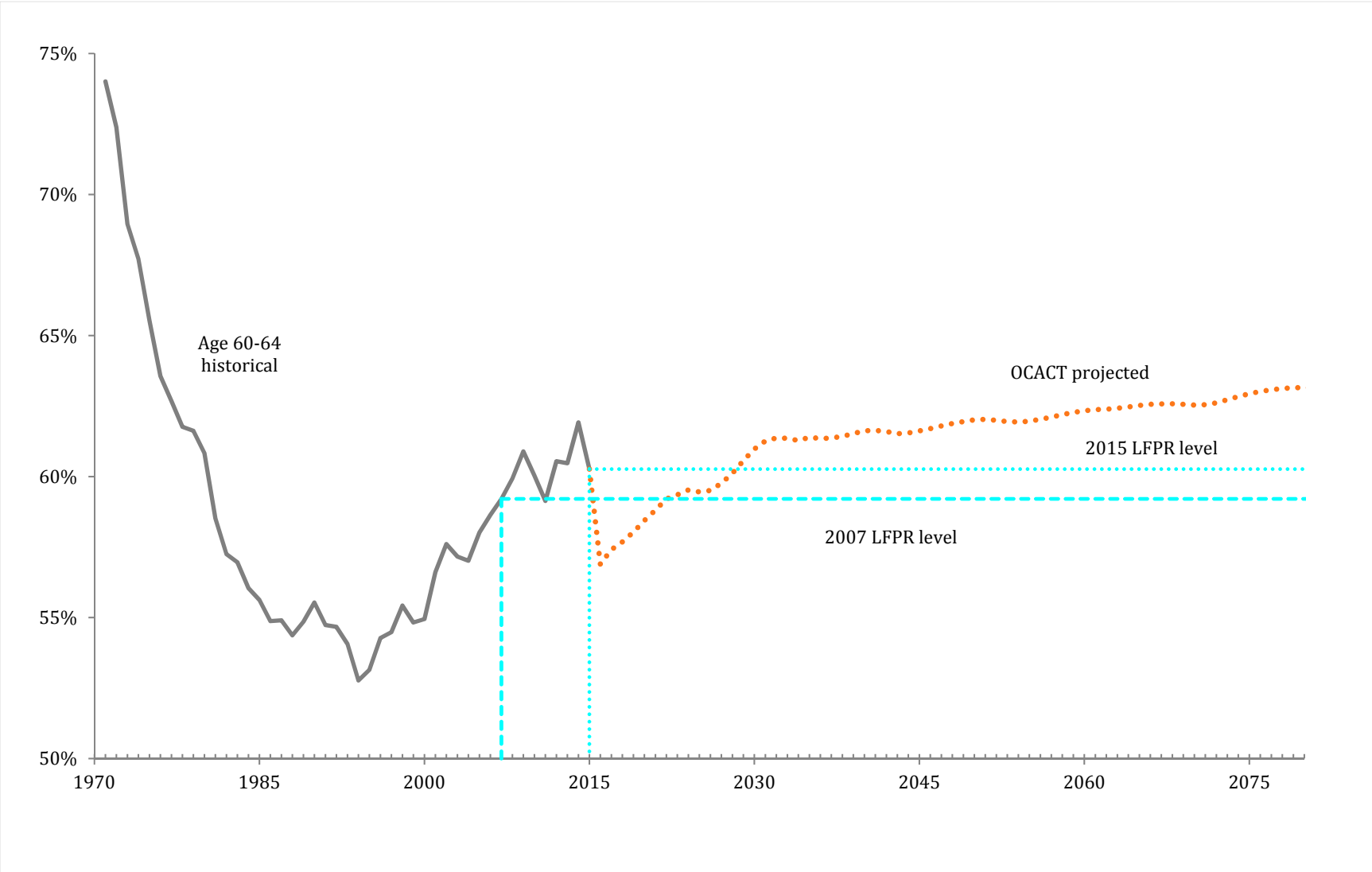
- Major downturn, dramatic fall in LFPRs (see previous figures)
- Conventional view of a business cycle: decline in aggregate demand which leads employers to lay off workers, reduce hiring, and reduce number of vacancies
- The number of workers searching for jobs exceeds the number of vacancies
- After aggregate demand returns to its normal level, so do vacancies, and the unemployment rate returns to its normal level

- The return of the unemployment rate to its normal level should lead to a return of the LFPR to its normal level.
- But what is the normal level of the LFPR to which we should expect to return?
  - The Pre-Recession Level, or
  - The Level implied by a continuation of Pre-Recession trends?
- **The Panel believes that the evidence strongly supports the latter:** we are at an unemployment rate of less than 5% and we are 9 years out from the trough of the Recession, and there has been virtually no recover in LFPRs.
- And this is close to where we would be if the pre-Recession trends were simply continuing

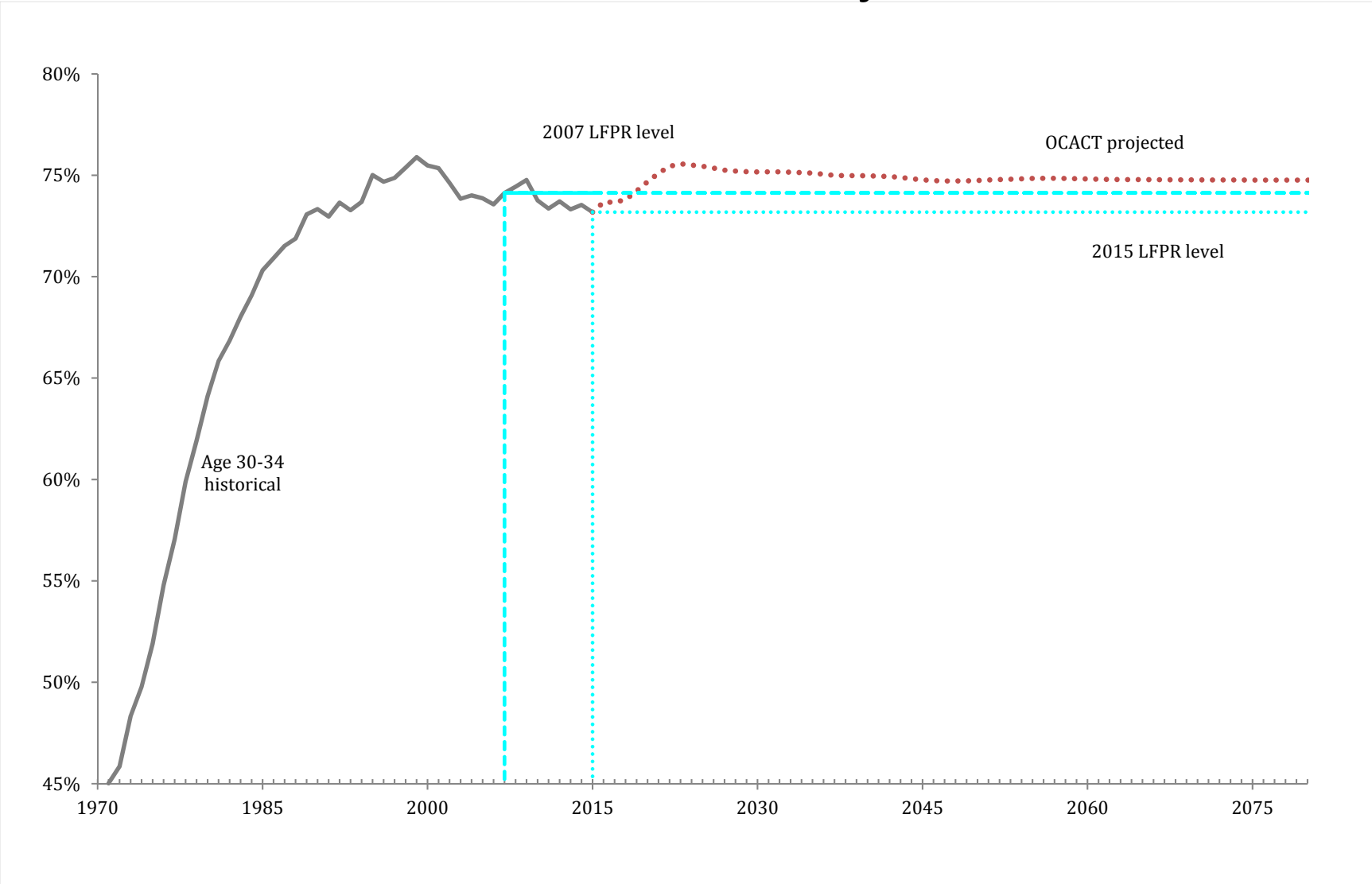
# Male 30-34 Actual and Projected LFPRs



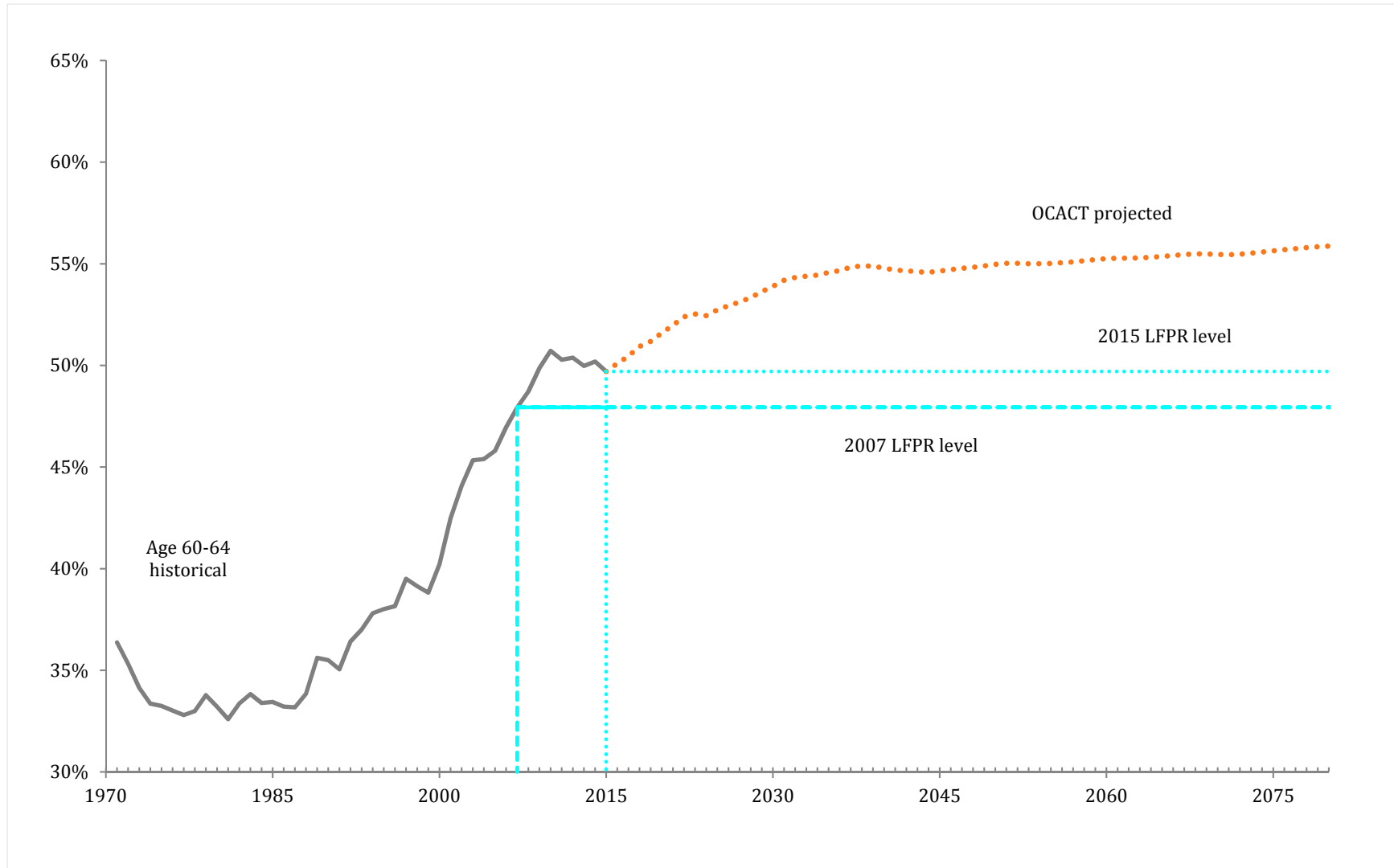
# Male 60-64 Actual and Projected LFPRs



# Female 30-34 Actual and Projected LFPRs



# Female 60-64 Actual and Projected LFPRs



- Recommendation 3:

The OCACT model should greatly reduce the magnitude of its projected recovery from the Recession for prime age men and should instead project that relatively little recovery will occur until the evidence suggests otherwise.

- Recommendation 4:

The OCACT model should incorporate data from Recession years in estimating its effect of the business cycle on the labor force participation rate.



## V. Other Issues

### A. Educational Composition

- Improvements can be made in projection

### B. Life Expectancy

- More attempts at validation of its method should be conducted

### C. Disability

- Recommend incorporation of DI application rates as well as benefit receipt

### D. Administrative Data

- Investigate the use of more-accurate SSA earnings data to estimate employment rates

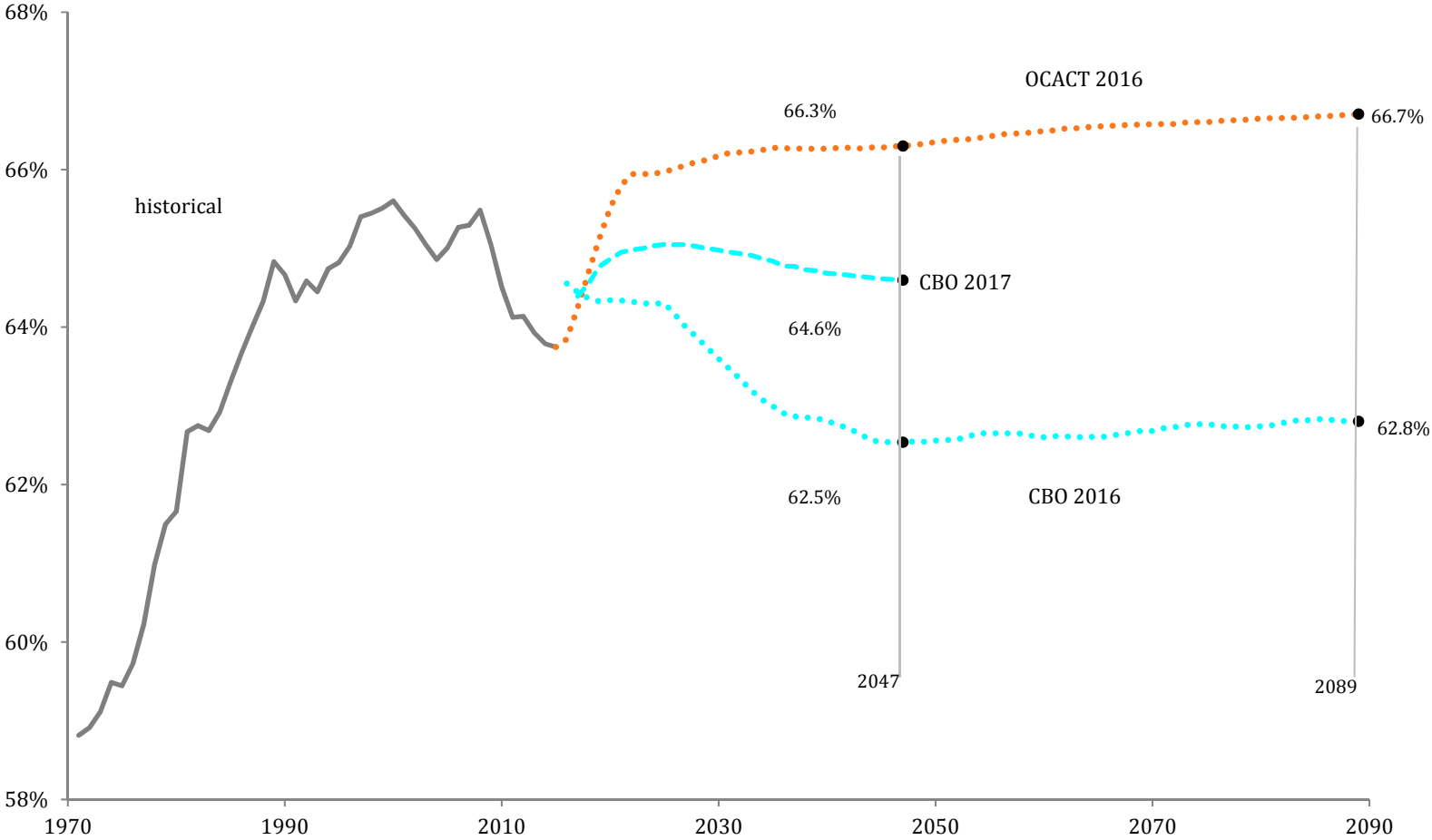
## Labor demand for older workers:

- No recommendation, just monitor the wages of older workers to see if they are rising, which is the best indication of an increase in demand
- Some evidence on this already (see Report)

## VI. Comparison to CBO and Federal Reserve Board Models

- 2016 **CBO** projections of LFPR far below those of OCACT
- Have a short-term model (10 years) and a long-term model (75 years) that is calibrated to the results from the short-term model
- But CBO has made major changes in their model and say that their 2016 estimates are being revised, with substantial changes
- January 2017 CBO Blog: new (30-year) projections through 2047, can see the differences through that date:

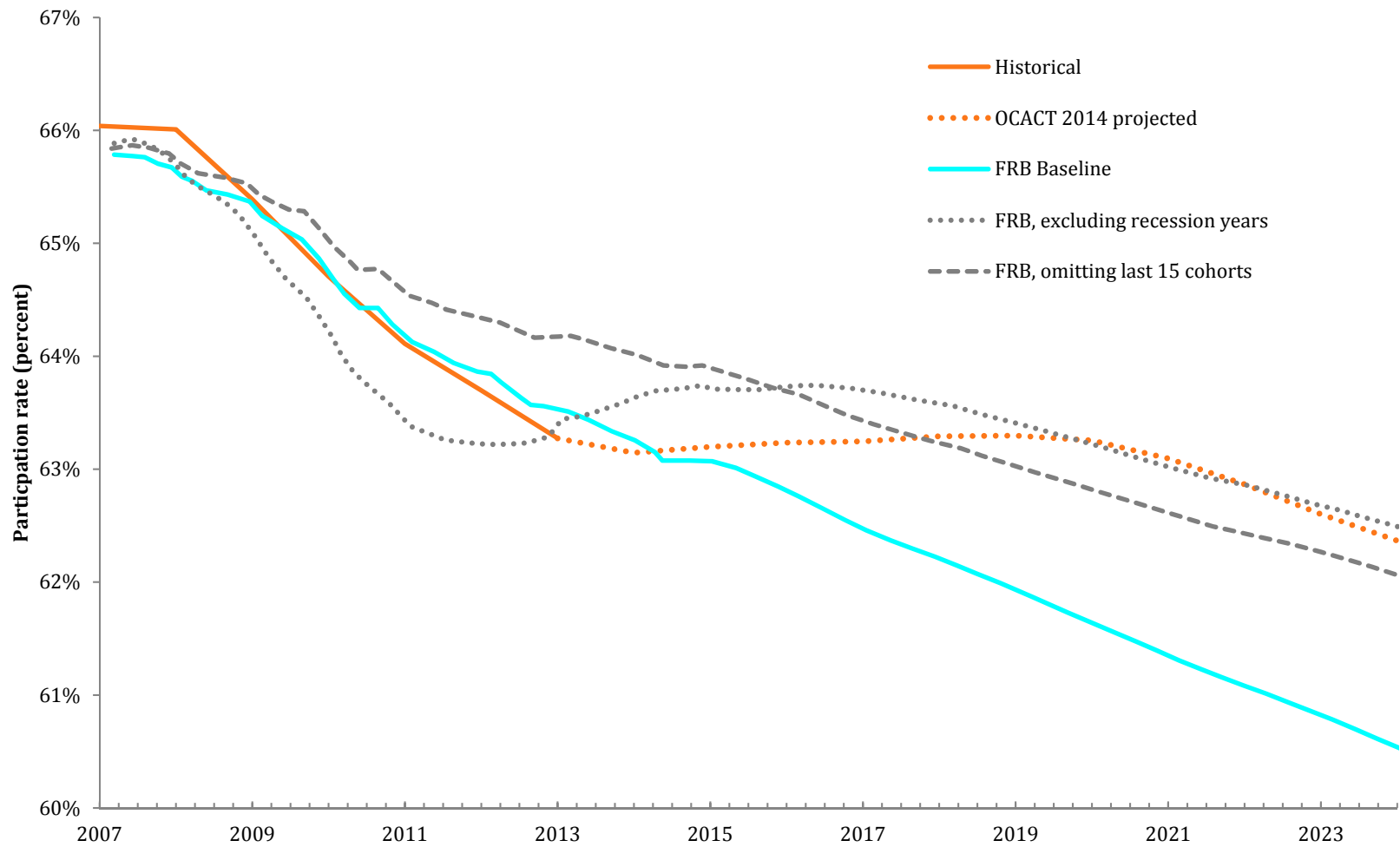
# OACT and CBO Projections (age-sex adjusted)



- CBO and OCACT now much closer than before
- January 2017 Blog makes clear that remaining differences with OCACT are mostly for men
- Sources of remaining differences?
- To answer that question, need to understand which of the (many) model differences with OCACT are responsible for the difference
- We do not have enough information from CBO to determine that
- The Panel makes no recommendations to OCACT on the adoption of any CBO model feature

- **Federal Reserve Board**
- Makes 10-year projections
- Very different model than OCACT
- Specification of cohort effects important
- Large differences in projections through 2024:

# OCACT and FRB Projections (not age-sex adjusted)



- Projections are sensitive to inclusion of Recession years and specification of cohort effects
- There are differences of opinion on whether and how to include cohort effects
- But, again, the Panel did not have the information from the FRB to quantify the importance of different OCACT-FRB model differences in explaining the LFPR differences
- The Panel makes no recommendations to OCACT on the adoption of any FRB model feature at this time



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