# Interpretation Issues in SCAG Forecast Evaluation

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## Major Causes of Forecast Variations

- Variations in the forecasted SCAG region share of national and state jobs and population
- Variations in the underlying national population and job projections
- Variations as a result of specific beginning and end year dates
- Note that the forecasts are updated roughly every four years currently

# Variations in Forecasted Shares

- These variations are the responsibility of the SCAG forecast team
- They represent differences in the SCAG region share of national and state jobs and population from what actually occurred

# Variations in National Population and Job Projections

- The SCAG region forecasted job and population levels could vary from actual results because the underlying national population and job projections were different from actual results.
- For all of the projections prepared by CCSCE since 1976, Census Bureau national population projections and their translation into job projections by the Bureau of Labor Statistics were the starting point for developing SCAG region projections.

# Variations in National Population and Job Projections (cont'd)

- National job projections could vary from actual results because

--the population projections were wrong

--labor force participation rates were higher or lower than projected

--variations in unemployment rates or multiple job holding are possible (though small) sources of variation

# Variations Because the Beginning or End Forecast Year Was in a Recession

- There are 12 SCAG forecasts in this evaluation of which five have not ended yet.
- Recession years (according to the NBER) that begin or end a forecast cycle include 1970, 1980, 1990, and 2008.
- 1970 was the start year in the first forecast cycle, 1980 in the 5$^{th}$ cycle, 1990 was the end year in cycles 1 and 2 and the beginning year in cycle 7, and 2008 was the beginning year in cycle 12.

# Reasons That Jobs Have More Variation Than Population

- In addition to different than projected population levels, job forecasts can vary from actual because

--the end year is a recession year

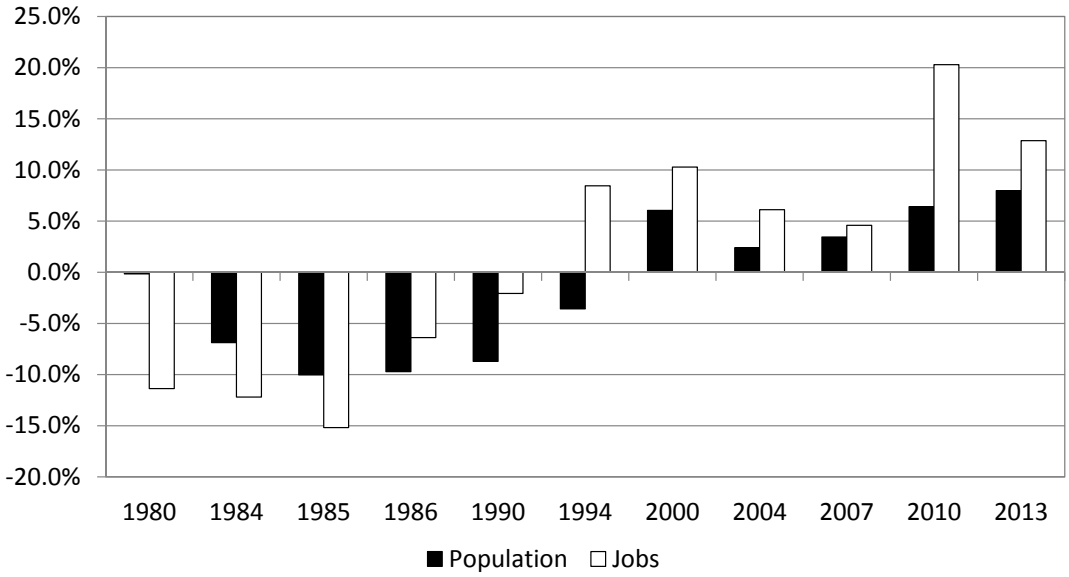
--even when not in a growth period like we have today, labor force participation can be higher or lower than forecast

- As a result the SCAG evaluation result of more variation in jobs than population is expected.

# Comparing Job and Population Variances for Ten Years Out

- On the next chart, negative numbers reflect that the forecast was lower than actual and positive numbers reflect that the forecast was higher than actual
- The years at the bottom are the $10^{th}$ forecast year. 1984 and 1985 were the first years of recovery as was 1994 and 2004. 2010 was the depth of a recession. 1980 was a recession year.

# Ten Year Variances




# Comments on Ten Year Variances

- In most cases job and population variances are in the same direction.
- The early forecasts were low compared to actual results while the later forecasts have been higher than actual.
- The job variances are higher than the population variances in most cases.
- The SCAG region share of national jobs was forecast too high in the 2004 and 2008 RTPs.

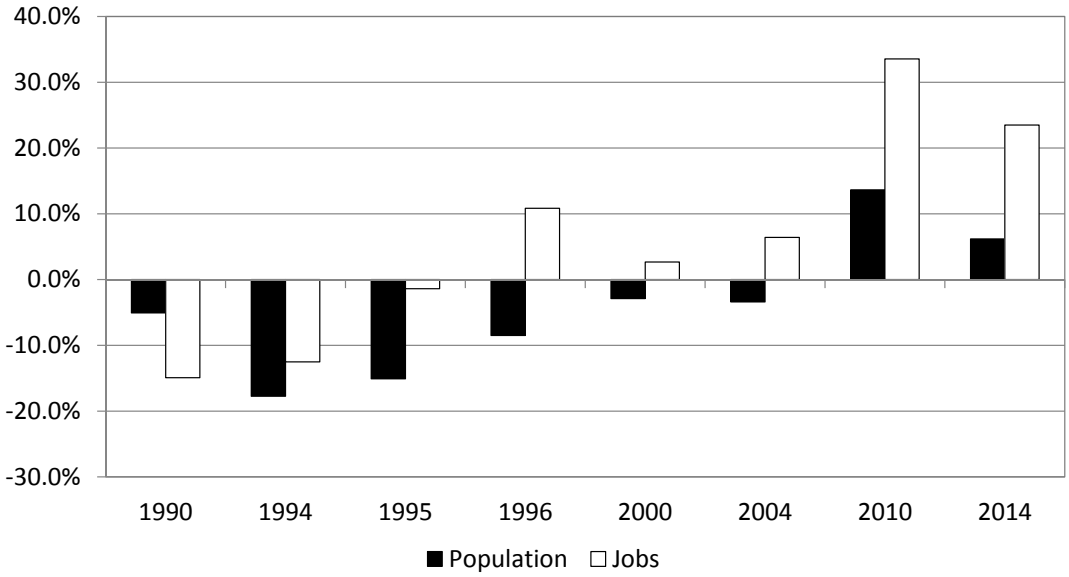
## Comments on Ten Year Variances (cont'd)

- Four of the six years where the job forecasts were high were in or just after a recession. These are the most recent forecasts.
- The early job forecasts were lower than actual as the strong performance of the regional economy to 1990 was not projected.
- Part of the high job forecasts was caused by high national projections that did not capture the sharp decline in labor force participation.

## Comments on Ten Year Variances (cont'd)

- The later year variances in population were caused by 1) the high job forecasts and 2) not capturing the decline in birth rates, which was captured in the 2016 forecast.
- In any case the recent population variances have been relatively small.

# 20 Year Variances




# Comments in the 20 Year Variances

- The forecasts ending in 1996, 2000 and 2004 have below average variances.
- The last two forecast ending in 2010 and 2014 have large variances with the forecasts above the actual results.
- 2010 was the low point for regional jobs and also a period of outmigration of residents. Between 2007 and 2010 the region lost more than 600,000 jobs and a similar number of residents moved out of the region.

# Comments on 20 Year Variances (cont'd)

- If 2016 instead of 2014 were chosen as the ending year the variances would be somewhat lower but it is certainly true that the forecasts made in the 1990s over projected job growth.
- Part of the cause is U.S. job forecasts that did not take account of declines in labor force participation rates and part was higher than actual projections of SCAG/U.S. job shares.
- SCAG region birth rate declines were not factored into the population forecasts in these periods.

# Examining the Large 20 Year Job Variances

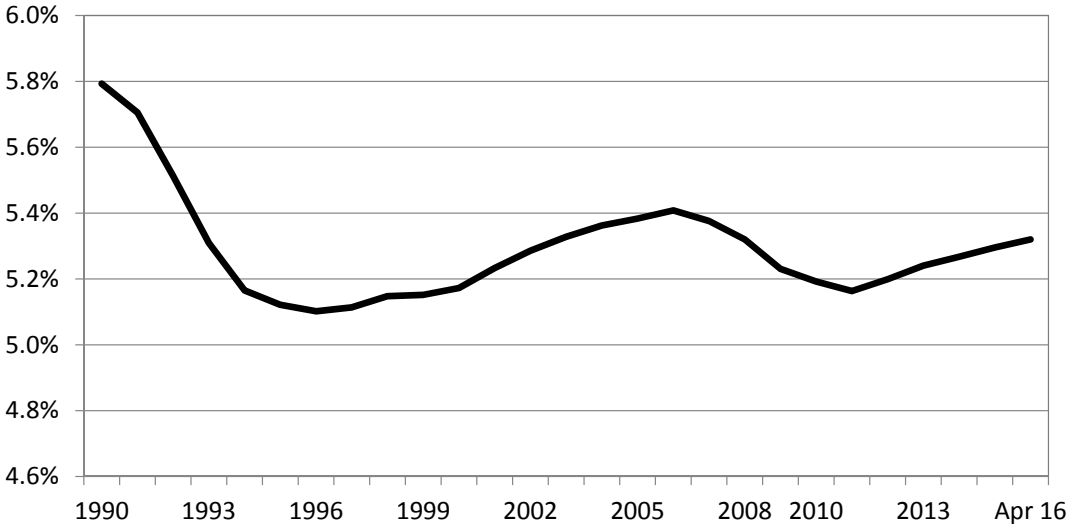
- For the forecast ending in 2010 (33% variance)

--of the 2.4 million high forecast, approximately 1 million was caused by 2010 being a recession low

--approximately 400,000 was caused by high U.S. job growth projections

--the other 1 million (13% variance) was caused by a high share projection missing the aerospace decline that occurred after the forecast

# SCAG Region Share of U.S. Non Farm Wage and Salary Jobs




# The Twenty Year Job Forecast Ending in 2014

- A 24% variance
- Of the 1.8 million high forecast, 900,000 was caused by the recession
- Approximately 400,000 was caused by high U.S. job projections
- Approximately 500,000 or 6% variance was caused by a high share projection for SCAG versus the U.S.