



Job Supply and Demand Projections

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Ideas Forum
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Objective

Forecast long-term worker availability and job fulfillment.

Capture the scale of demographic shift in the workforce.

Big picture of future labor market in Wisconsin.

Key Points

- Wisconsin's overall population will continue to grow
- The labor force will be older
- The labor force participation rate (LFPR) has been declining and will continue to decline
- Wisconsinites will be working longer



Model Components

Population Models

In Military or Institutions

Labor Force Participation Rates

Unemployment Rates

Jobs per employed

Interstate commuting

Assumptions

- Model population
 - Department of Administration (DOA)
 - Weldon Cooper Center (WC)
 - Base model (average)
- LFPR trends extended
- Unemployment trends continued
- Jobs per employed



Supply Model

$$JobsSupply_t = \sum_{ag} (P_{agt} \times (1 - \gamma_{agt}) \times \xi_{agt} \times v_{agt} \times \kappa_{gt}) + \sum_{ag} (C_{at}^{in} - C_{at}^{out})$$

$$\gamma_{agt} = \frac{P_{agt} \in (Institution \cup Military)}{P_{agt}}$$

$$\xi_{agt} = \frac{P_{agt} \in (Employed \cup Unemployed)}{P_{agt} - P_{agt} \in (Institutionalized \cup Military)}$$

$$v_{agt} = \sum_e \left(\frac{P_{agte} \in (Employed \cup Unemployed)}{P_{agt} \in (Employed \cup Unemployed)} \times \frac{P_{ag2016e} \in (Unemployed)}{P_{ag2016e} \in (Employed \cup Unemployed)} \right)$$

$$\kappa_{gt} = \frac{\sum_{gt} jobs}{P_{gt} \in Employed}$$

Where

a - the series of age groups. This is age cohorts in 5-year increments. Beginning age 16-19, 20-24, ... until age 70-74. The oldest age cohort is the population over age 75.

g - Gender

e - Highest education level categories (less than high school, high school, associate's degree, some college, bachelor's degree, post-bachelor's degree)

t - Year

P - Estimate of the population ages 16 and over in Wisconsin.

γ - Rate of institutionalization or military service. Multiplying this rate by the population yields the Civilian Non-institutionalized population.

ξ - Labor force participation rate: the rate of people employed or actively looking for employment compared to the total civilian, non-institutionalized population of working age.

v - Unemployment rate: the percentage of the labor force which does not have a job and actively looking for work.

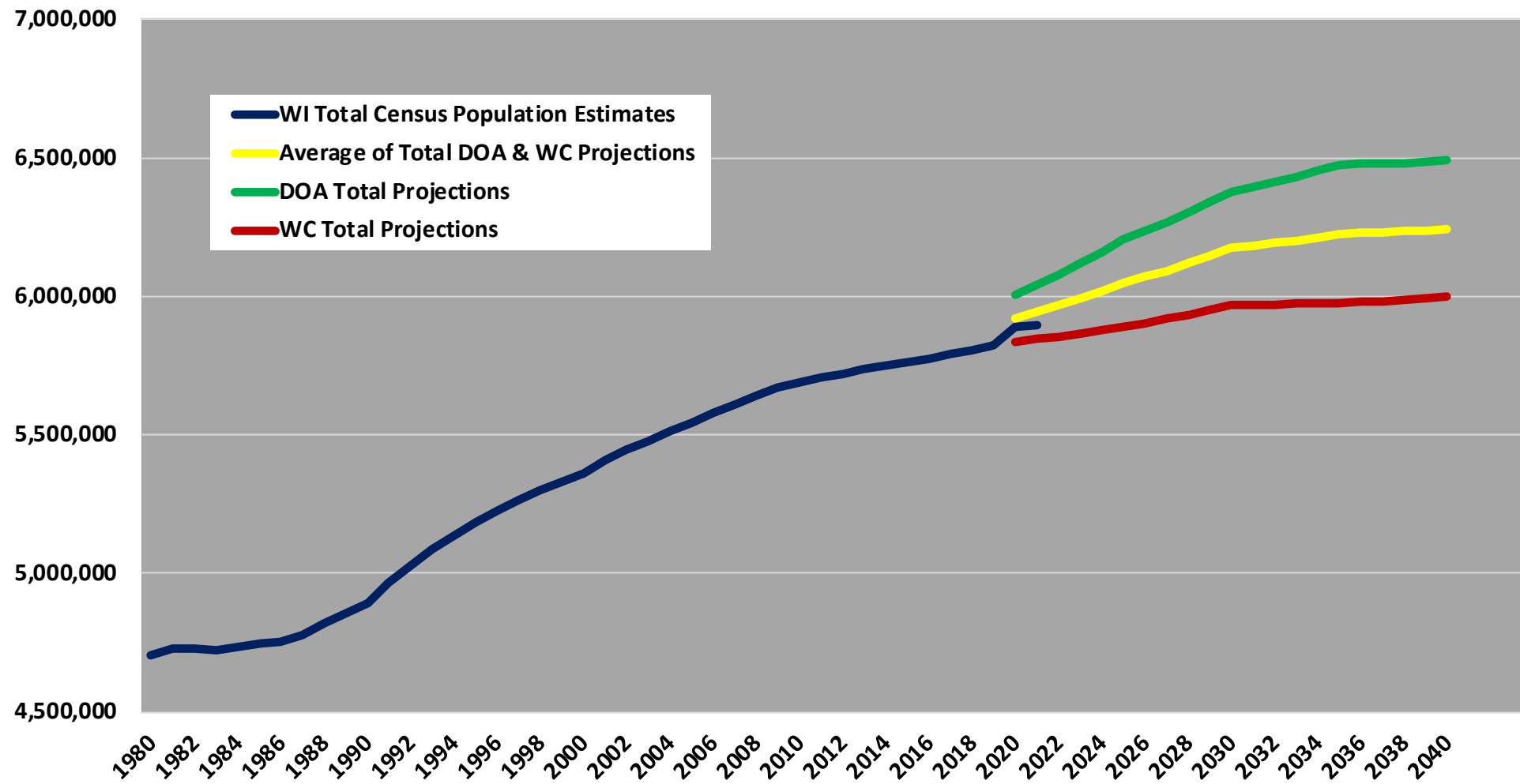
κ - The number of jobs per employed person.

C^{in} - The number of jobs in Wisconsin where the employee resides outside of the state.

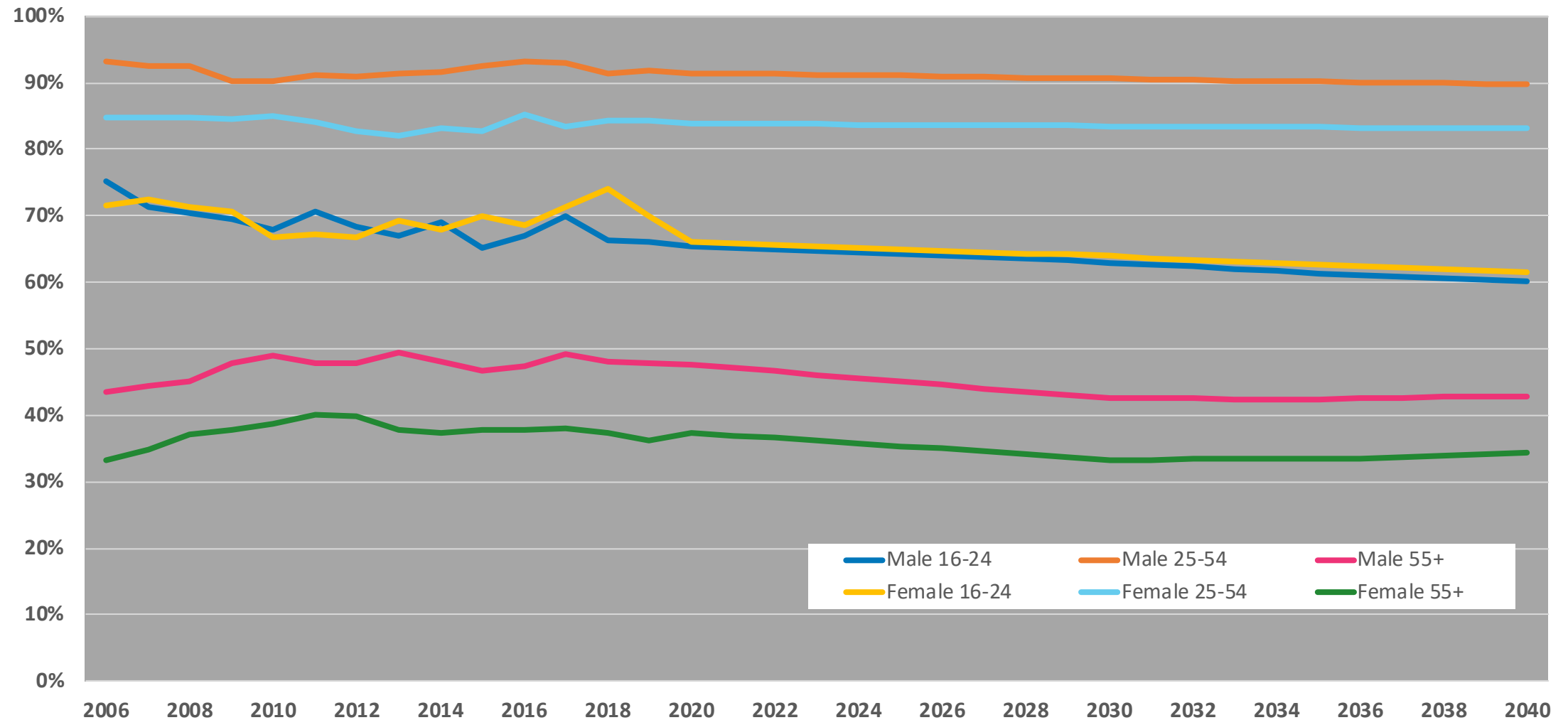
C^{out} - The opposite of the above: the number of jobs outside of Wisconsin filled by employees who reside in Wisconsin.



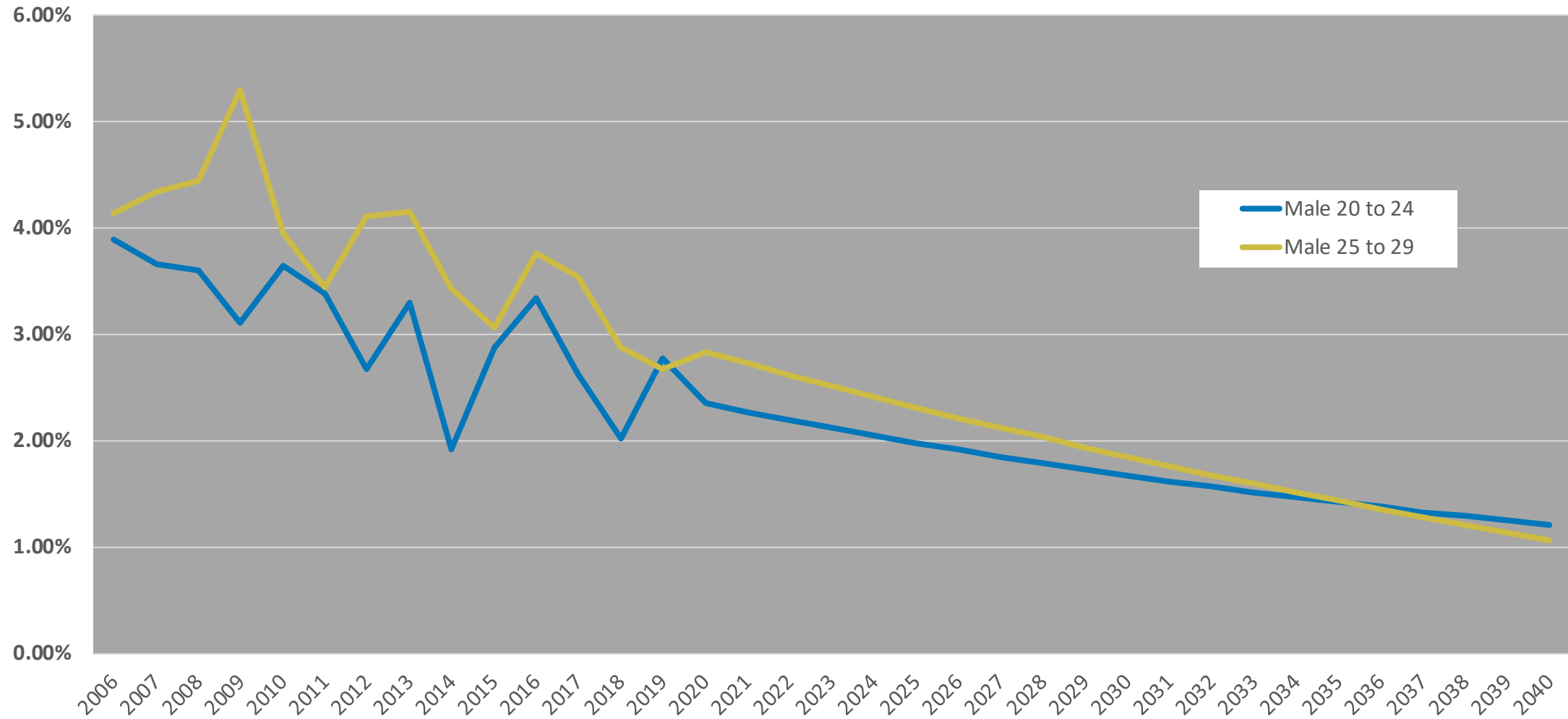
Population Projections



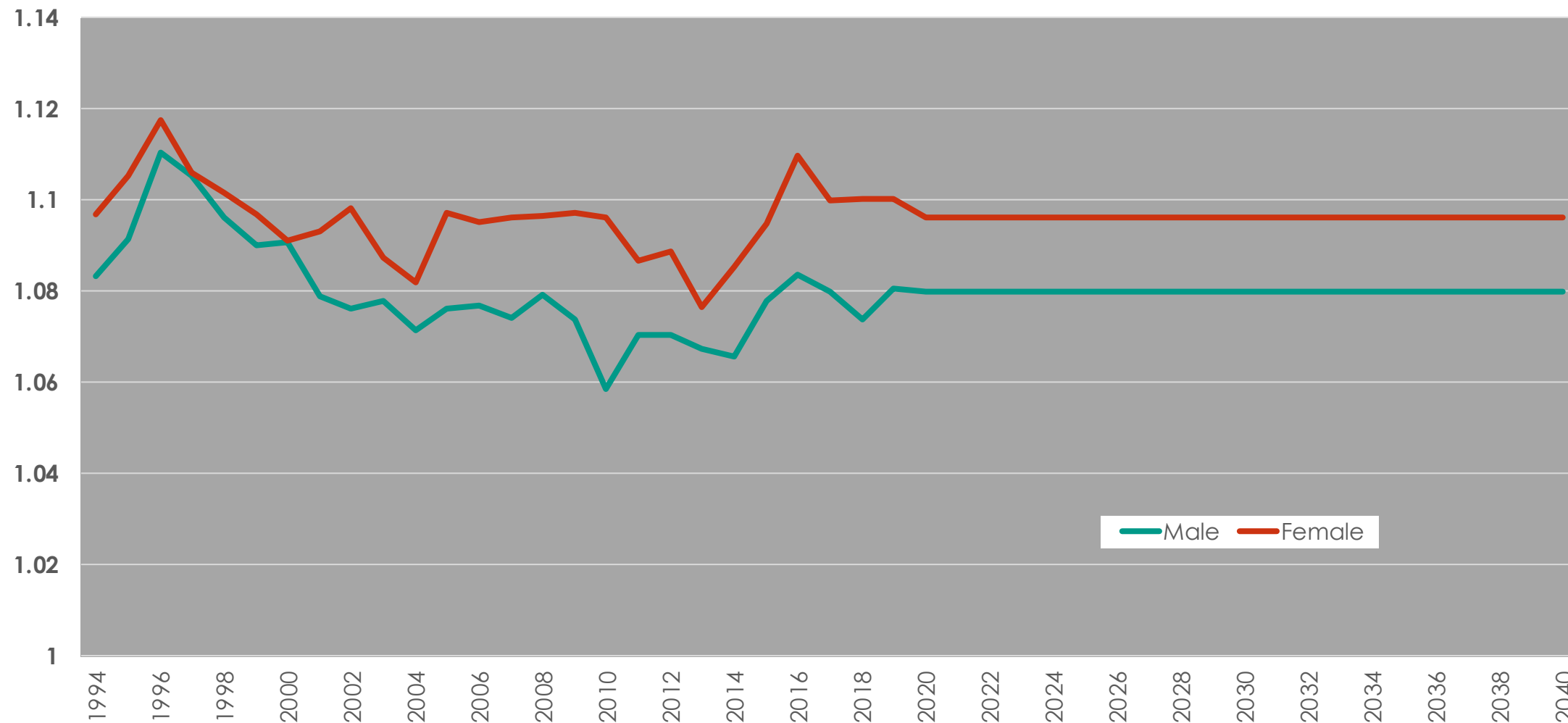
Labor Force Participation



Institutionalized Military Rate Projections

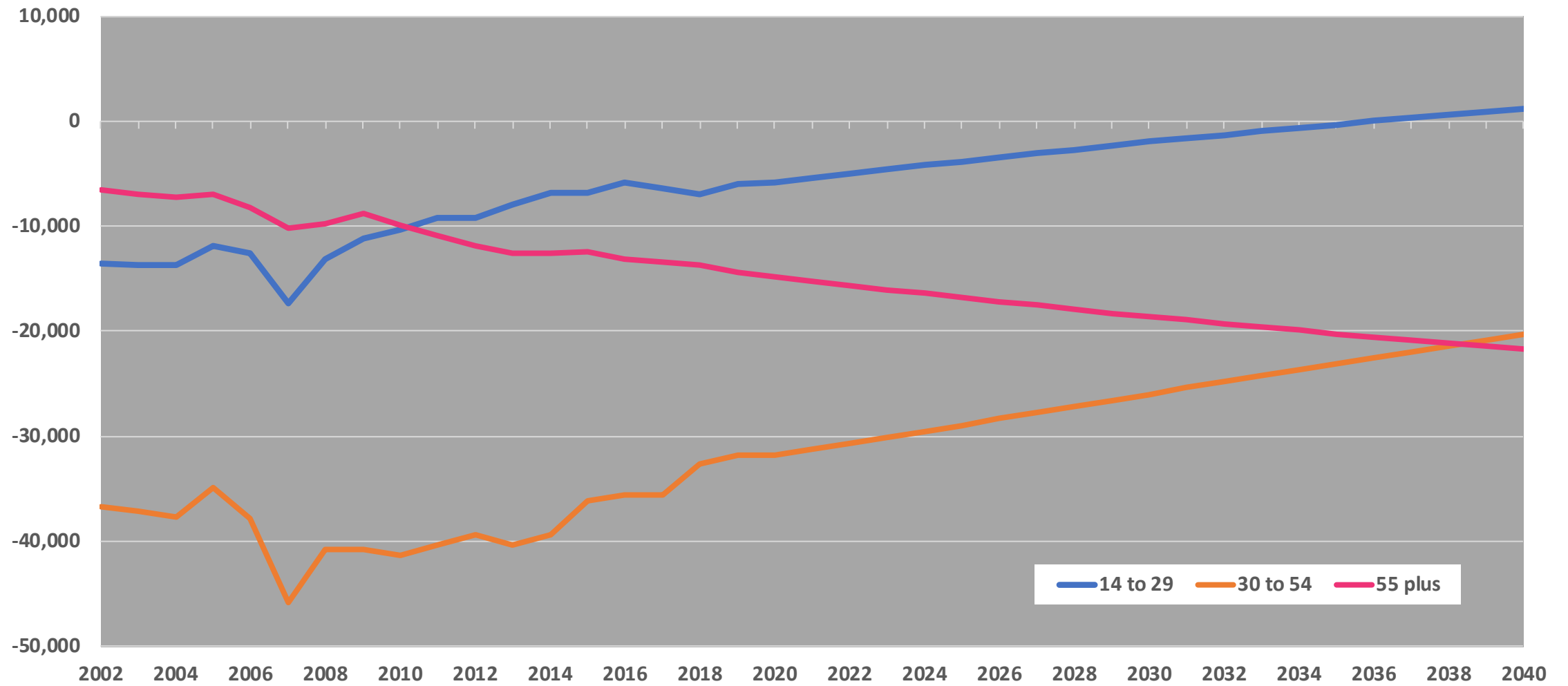


Jobs Per Employed

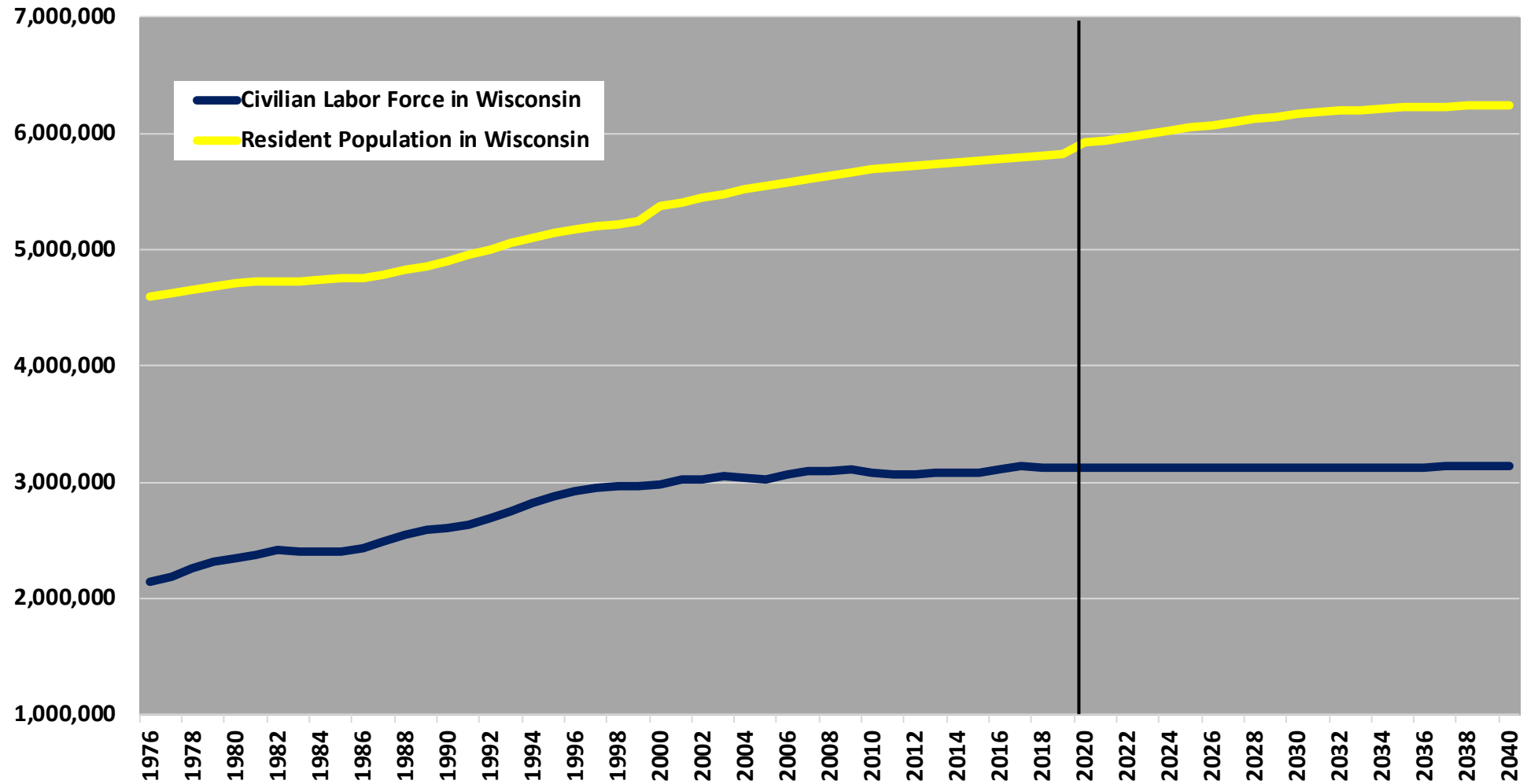




Commuting



Population vs Workforce

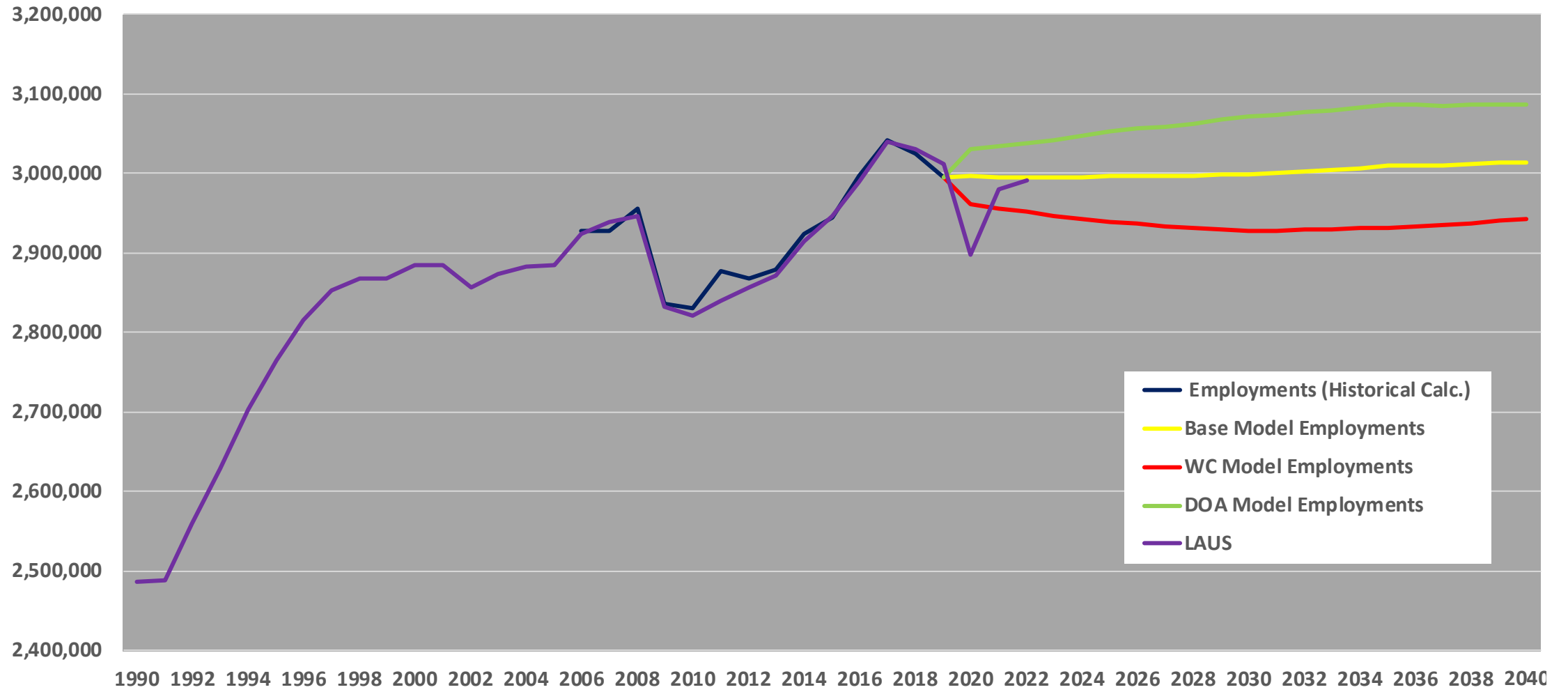




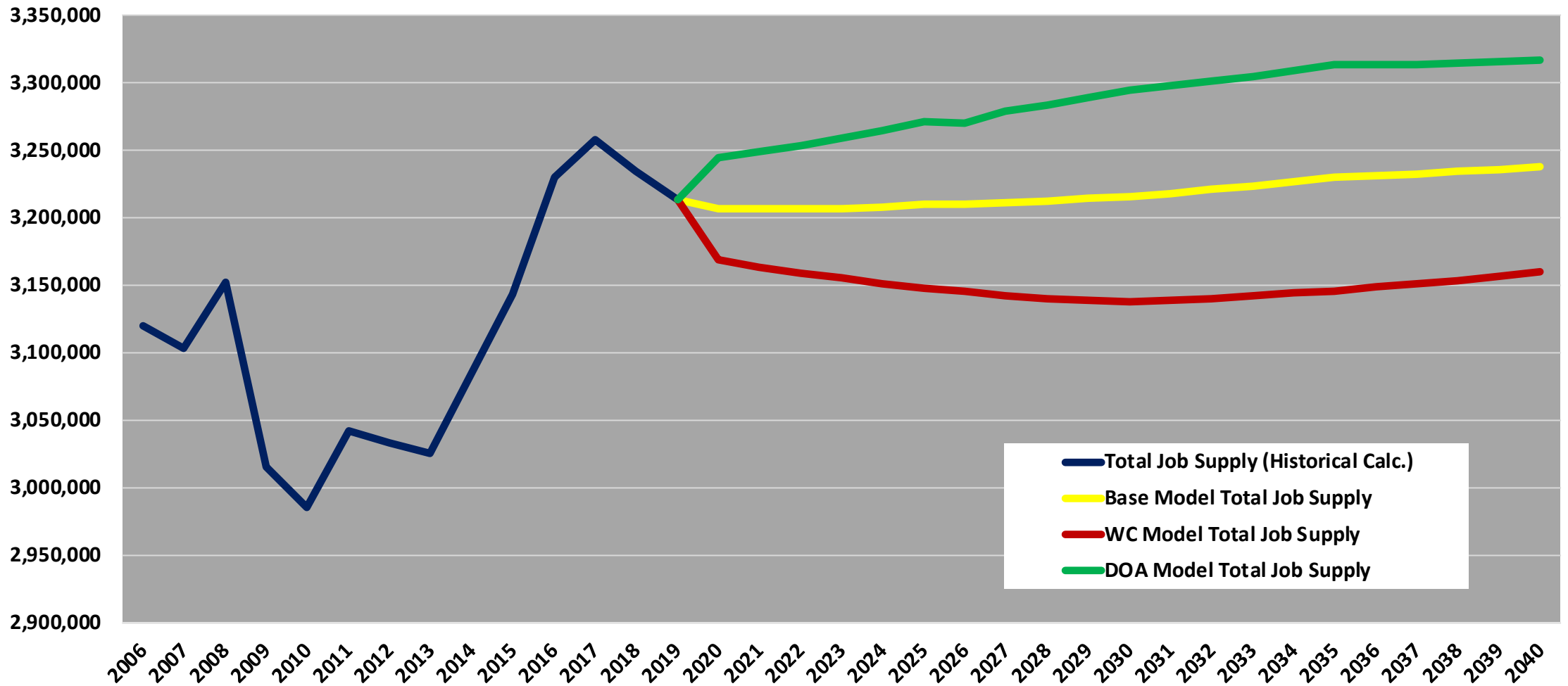
Labor Force

Age Groups	Gender	Change (2020 to 2040)
16-24	Men	-12,535
	Women	-10,445
25-64	Men	-20,513
	Women	-5,822
65 and over	Men	31,435
	Women	31,422

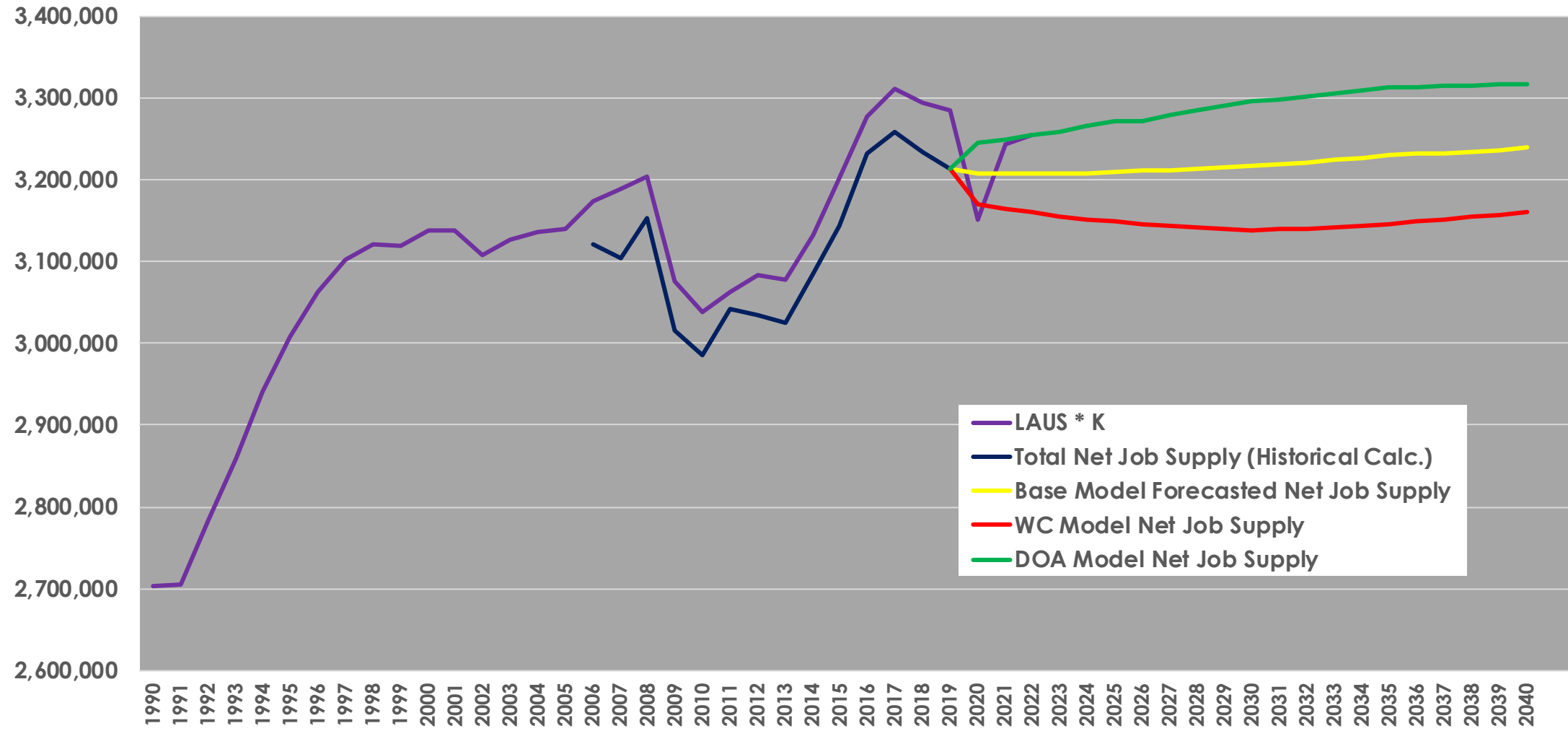
Employment



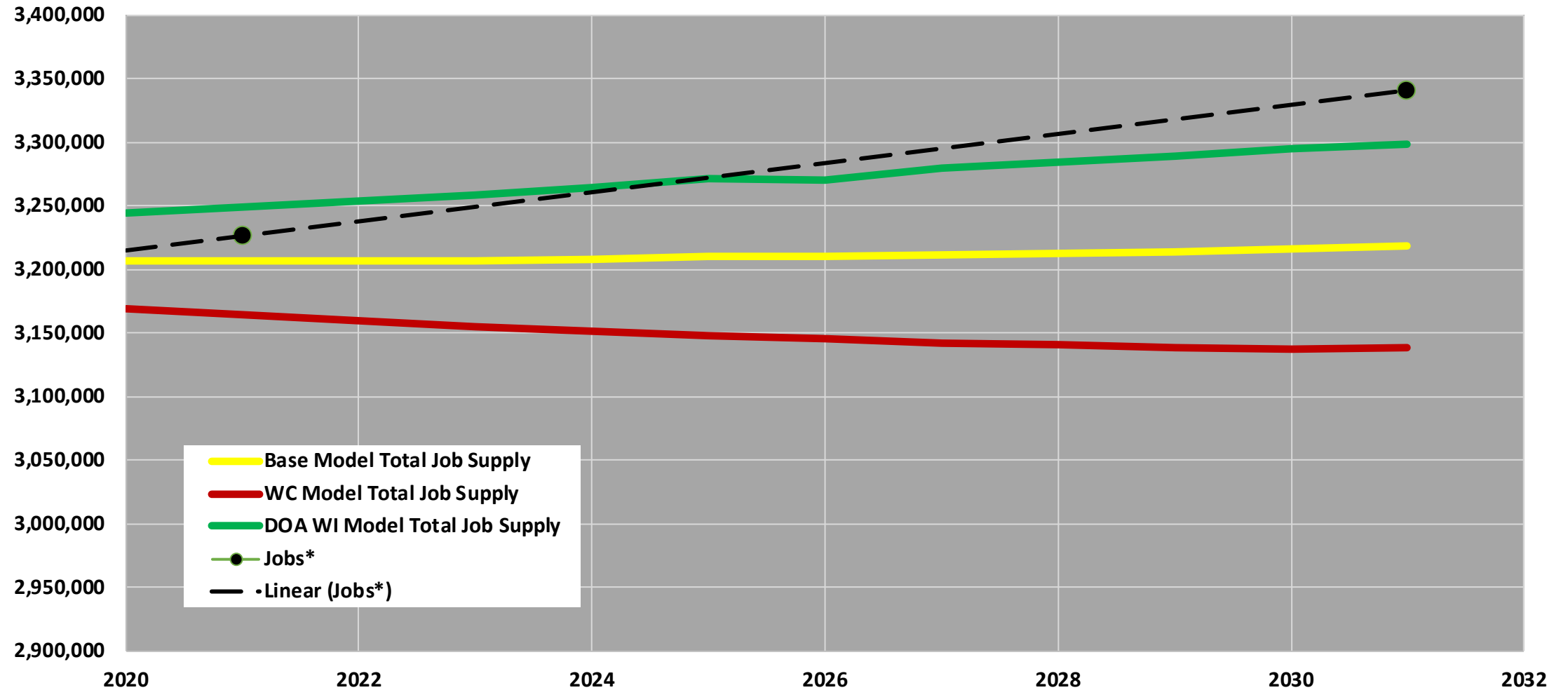
Job Supply Projections



Job Supply Comparisons



Job Supply Scenarios



*Jobs numbers are calculated using 2018-2028 percent change from DWD Occupation Projections and then applying to 2021 base employment.



Gap Analysis 2031

Population Models	Supply	Jobs*	Gap
Base Model	3,218,568	3,340,884	-122,316
Weldon Cooper	3,139,032	3,340,884	-201,852
DOA WI	3,298,104	3,340,884	-42,780

*Jobs numbers are calculated using 2018-2028 percent change from DWD Occupation Projections and then applying to 2021 base employment.





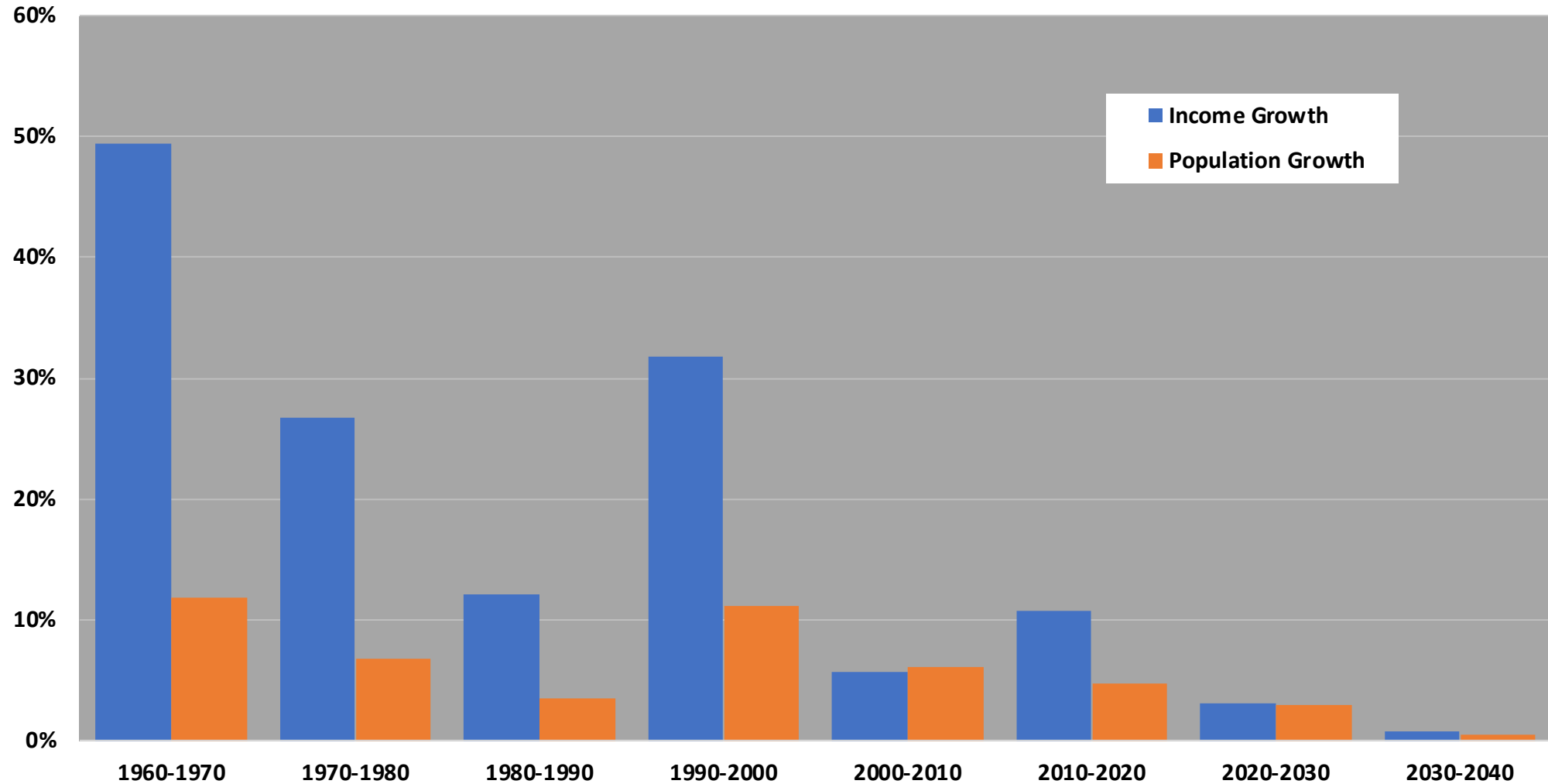
Key Takeaways

The population will keep increasing, but the labor force will grow minimally.

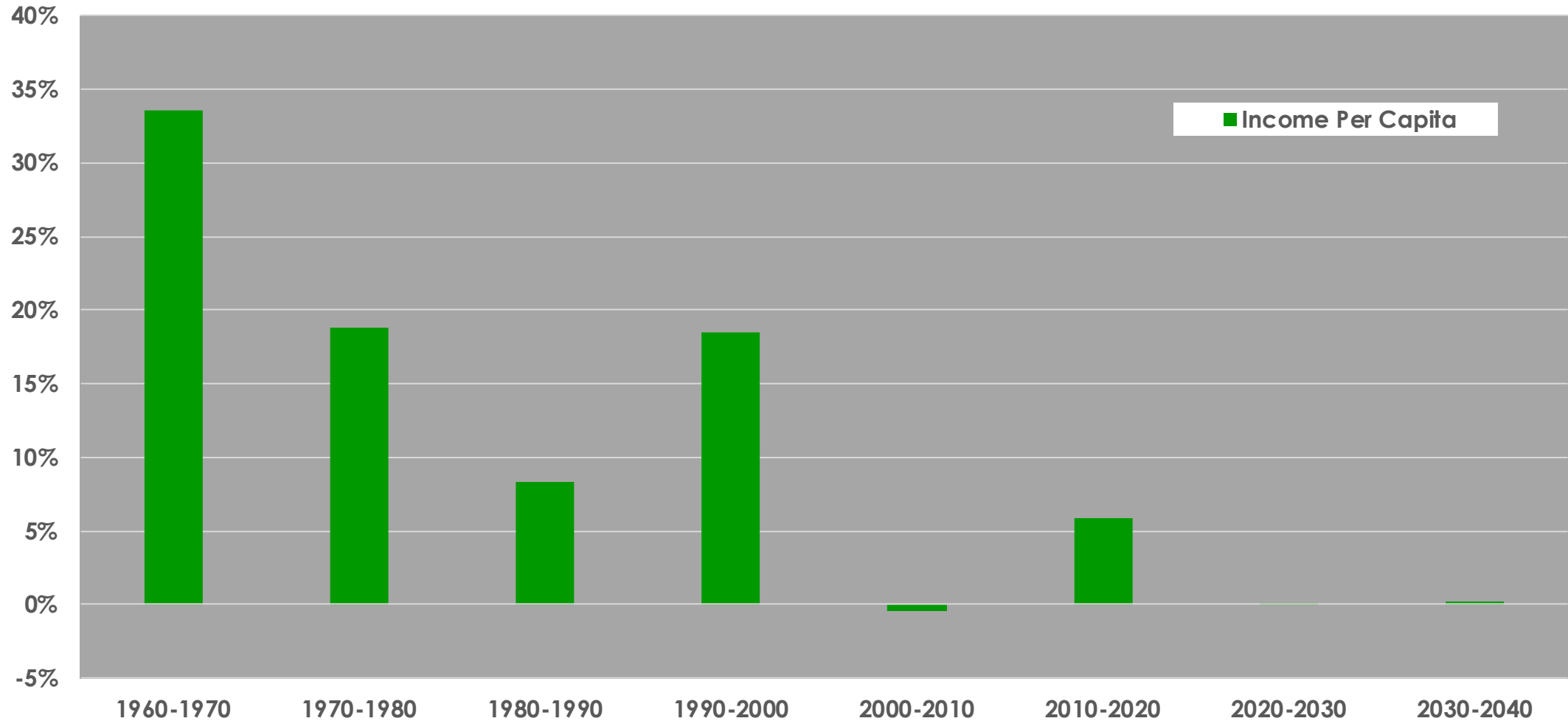
Ramifications will impact the economy on a broad scale.

This verifies that there will be a workforce quantity challenge.

Real Per Capita Personal Income



Per Capita Income Percent Growth



Further Questions

How will Wisconsin's economy adjust to an aging population?

What strategies are effective to increase the size of the labor force?

How can business attract and retain talent in this landscape?

How will this affect Wisconsin's tax revenue?





Resources

- Hot Jobs
- Skills Explorer
- Registered Apprenticeship / Youth Apprenticeship
- Wisconsin Fast Forward grants
- On the Job Training



Questions?

Thank You!

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