The Strengths of QWI and Administrative Data Relative to Survey-Based Estimates in a Small State Context

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Introduction

Employment demographics are one of the most frequently requested types of information and are used in many ways including employment projections and research.

Survey-based measures are limited by sample size *(particularly in states with small populations)*. The Current Population Survey (CPS) sample of Maine residents:

- includes ~ 800 households
- collects a 60-65% response rate among these households *(response rates have been falling)*
- collects a lower response rate for those in the labor force *(relative to those not in the labor force)*
- resulting in an average person weight ~ 2,000 for a CPS respondent in the labor force

Administrative employment and wage records are collected for ~ 650,000 distinct wage and salary job holders each quarter.

Administrative data is much more representative of the workforce than survey-based measures.

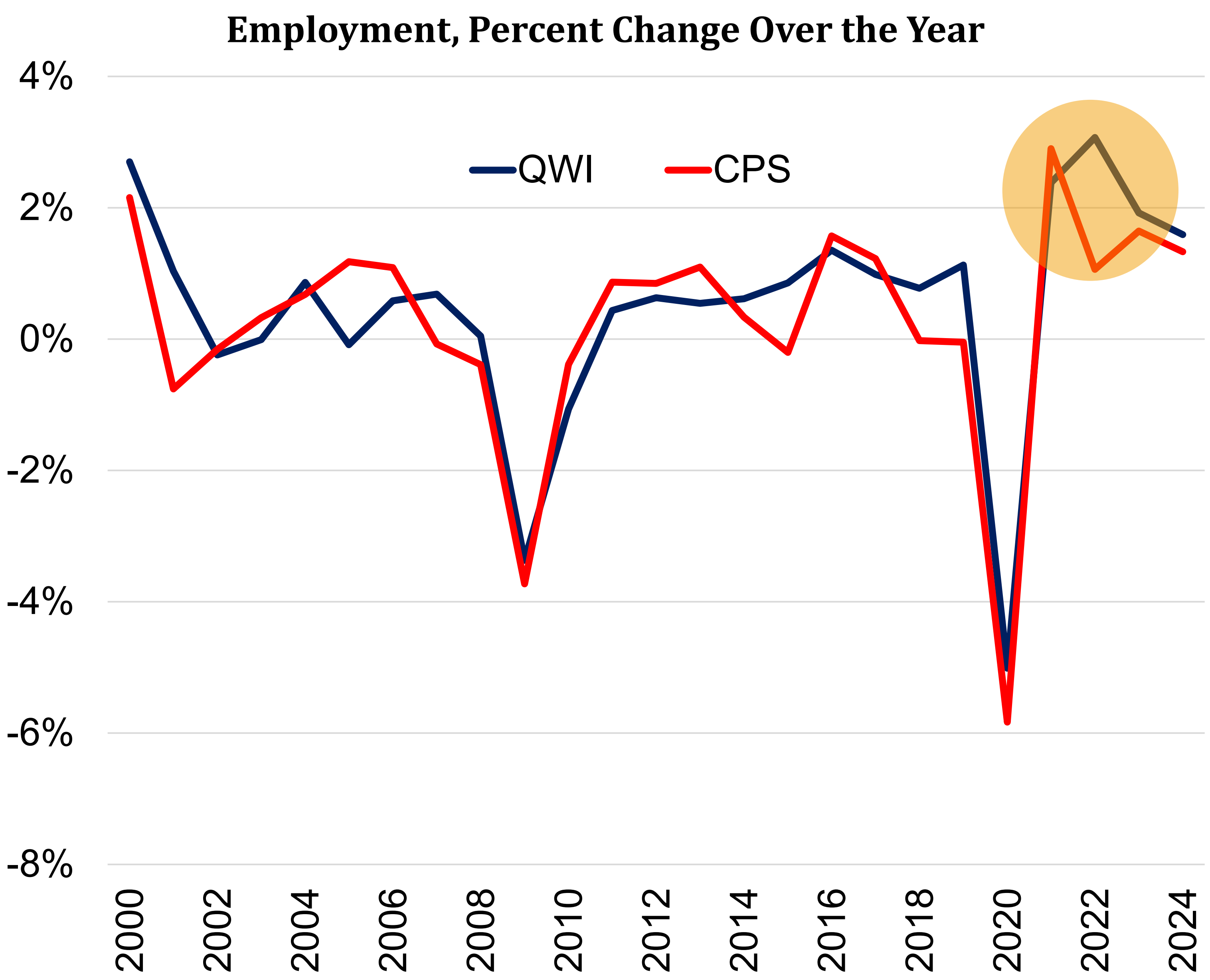
Try to use and direct data users toward these types of data sources where possible.

Assessing employment trends

Generally household survey and employer reported measures [Current Employment Statistics (CES), Quarterly Census of Employment and Wages (QCEW) and Quarterly Workforce Indicators (QWI)] align in terms of employment trends.

There is a significant divergence in employment growth rates in the last five years for these series in Maine.

Employer reported administrative series are much smoother because they are more representative.



Assessing employment trends for demographic groups

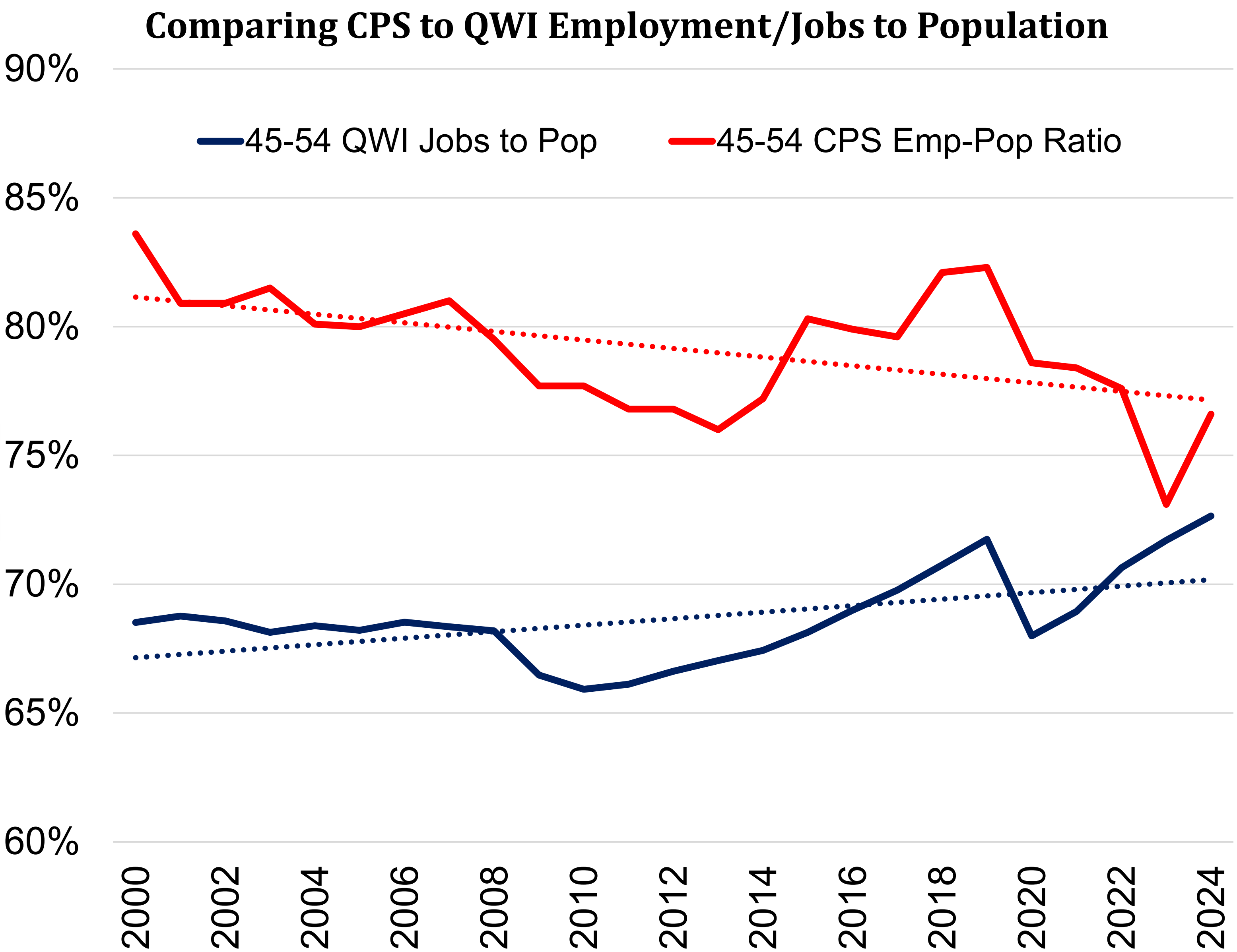
Quarterly Workforce Indicators (QWI): two distinct employment slumps for age 45-54 workers from recessions starting in 2008 and 2020. Employment recovery thereafter was relatively smooth. Jobs-to-population ratio had fully recovered then reached a new high in 2023-24.

Linear trend has a positive slope.

CPS: employment recovery of age 45-54 workers from the 2008 recession is much less gradual. Employment-to-population ratio has not recovered from the pandemic. 2023 is an all-time series low (despite high demand for labor at that time).

Linear trend has a negative slope.

Conceptual differences could explain this divergence (changes in multiple job holding, commuting patterns, agricultural or self-employment) but can be ruled out by other data sources (On the Map, wage records and American Community Survey).



Employment Projections Methodology

MAINE DEPARTMENT OF LABOR

Previous method:

Current Population Survey data used to forecast employment to population ratio by age cohort.

State population projections are combined with employment to population ratio forecast to determine employment by age cohort and aggregate employment.

Industry employment projections are constrained to sum to aggregate employment.

Current method:

Population projections process is unchanged.

Quarterly Workforce Indicators data are used to forecast jobs to population ratio by age cohort.

State population projections are combined with jobs to population ratio to determine employment by age cohort and aggregate employment.

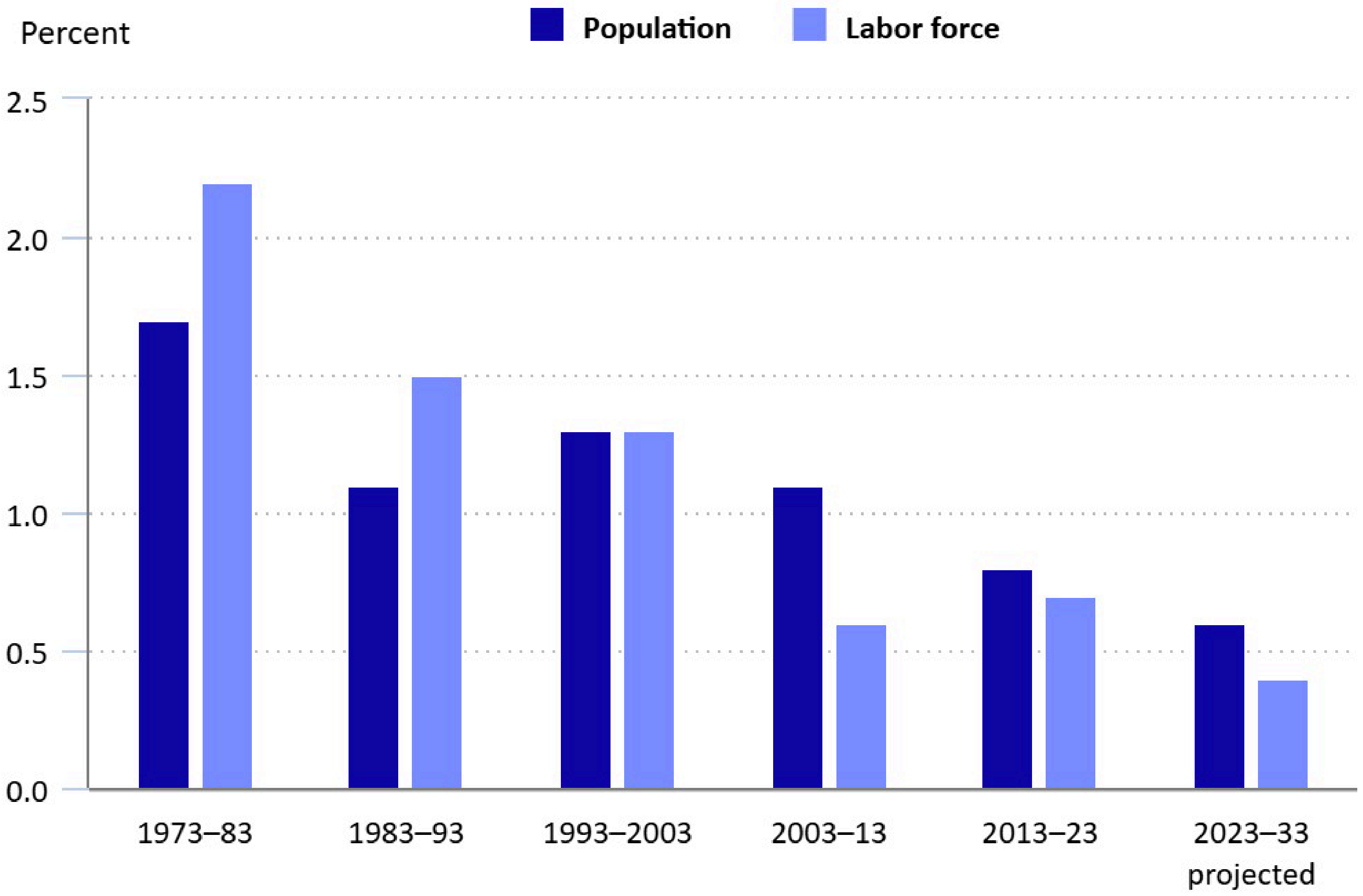
Adjustments are made for employment not captured in QWI (non-covered, self-employment and cross state commuting, etc.).

U.S. population and labor force changes are expected to slow

Demographic constraints are expected to result in lower rates of population and labor force growth nationally.

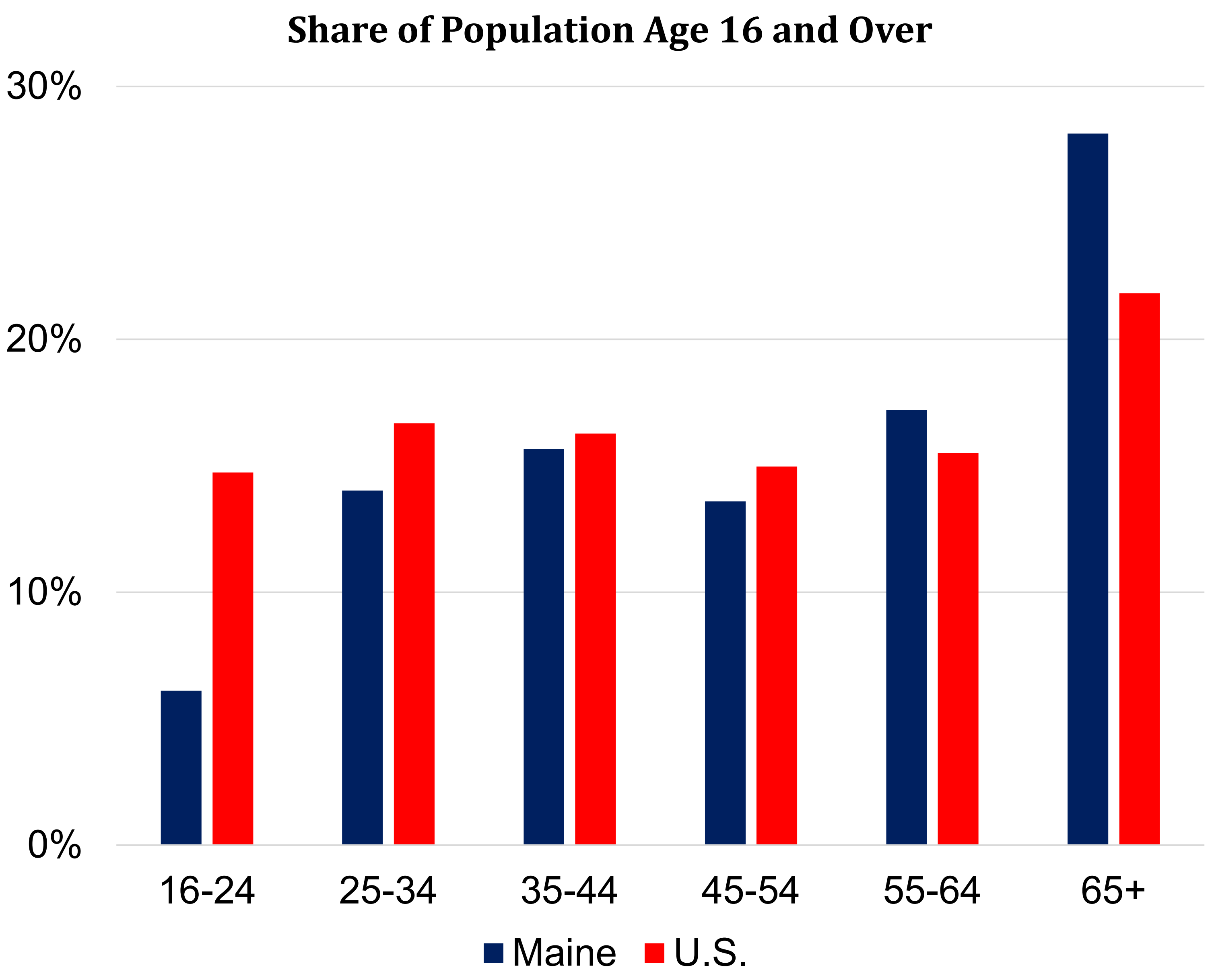
(Source: U.S. Bureau of Labor Statistics, Employment Projections. [Labor force and macroeconomic projections overview and highlights, 2023–33](#))

Population and labor force growth, 10-year compound average annual rates, for selected periods and 2023-33 projected



The population structure in Maine is older than the nation

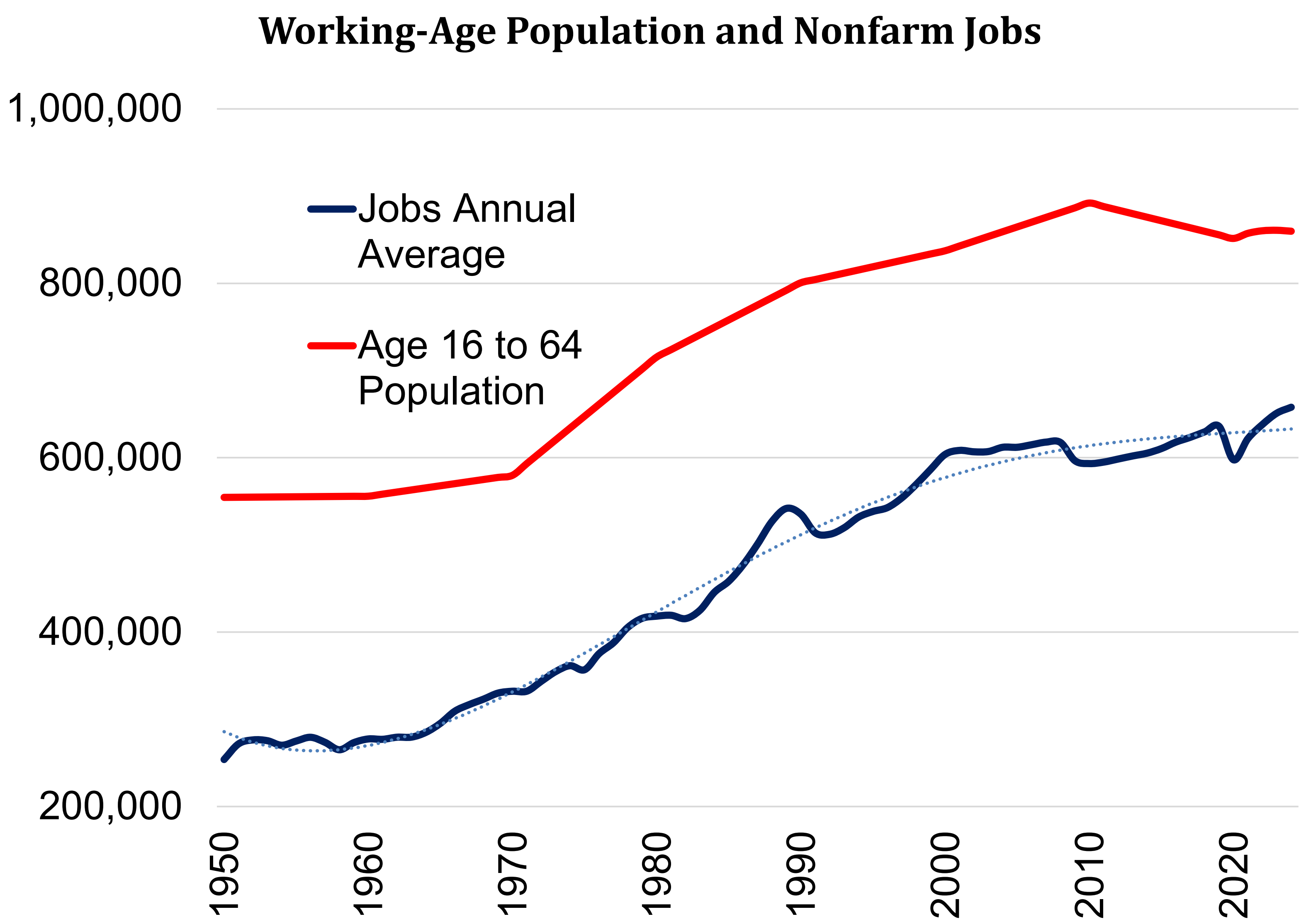
A large share of population in Maine are age 55 and above: this constraint is expected to be more impactful relative to the nation.



Net employment change has closely tracked working age population change in Maine

The population between age 16-64 is modestly smaller today than 15 years ago.

Job growth has progressively slowed, generally parallel to the working-age population.



LED Reporting

A strength of LED data: robust data products are created by combining so many different data sources.

A limitation of LED data: confidentiality protections prohibit enhanced microdata from being shared back with state partners.

- Requests for information and research questions do not always align with the aggregate LED data series that are publicly available.
- To fill in some gaps, we have worked to replicate LED concepts and definitions with our own state microdata.

Replicating LED employment measures

The QWI Full-Quarter job measure is helpful in understanding employment dynamics and identifying wage records that might contain partial quarter earnings information.

[Bailey and Spletzer (2020)] extend this measure to distinguish between sequential (job transitions) and simultaneous (multiple) job holding.

QWI Employment Measures

Employment

Measures	-5	-4	-3	-2	-1	*t*	+1	+2	+3	+4	+5
Beginning-of-Quarter											
End-of-Quarter											
Full-Quarter											
Full-Quarter, *Previous Quarter*											
Reference Quarter											

Bailey and Spletzer Multiple Job Holding Measure

	1 job	2 jobs	3 or more jobs	
0 full-quarter jobs	N_{01}	N_{02}	N_{03}	N_{0y}
1 full-quarter job	N_{11}	N_{12}	N_{13}	N_{1y}
2 full-quarter jobs		N_{22}	N_{23}	N_{2y}
3 or more full-quarter jobs			N_{33}	N_{3y}
	N_{x1}	N_{x2}	N_{x3}	N

Multiple job holding rates
Bailey and Spletzer (2020)

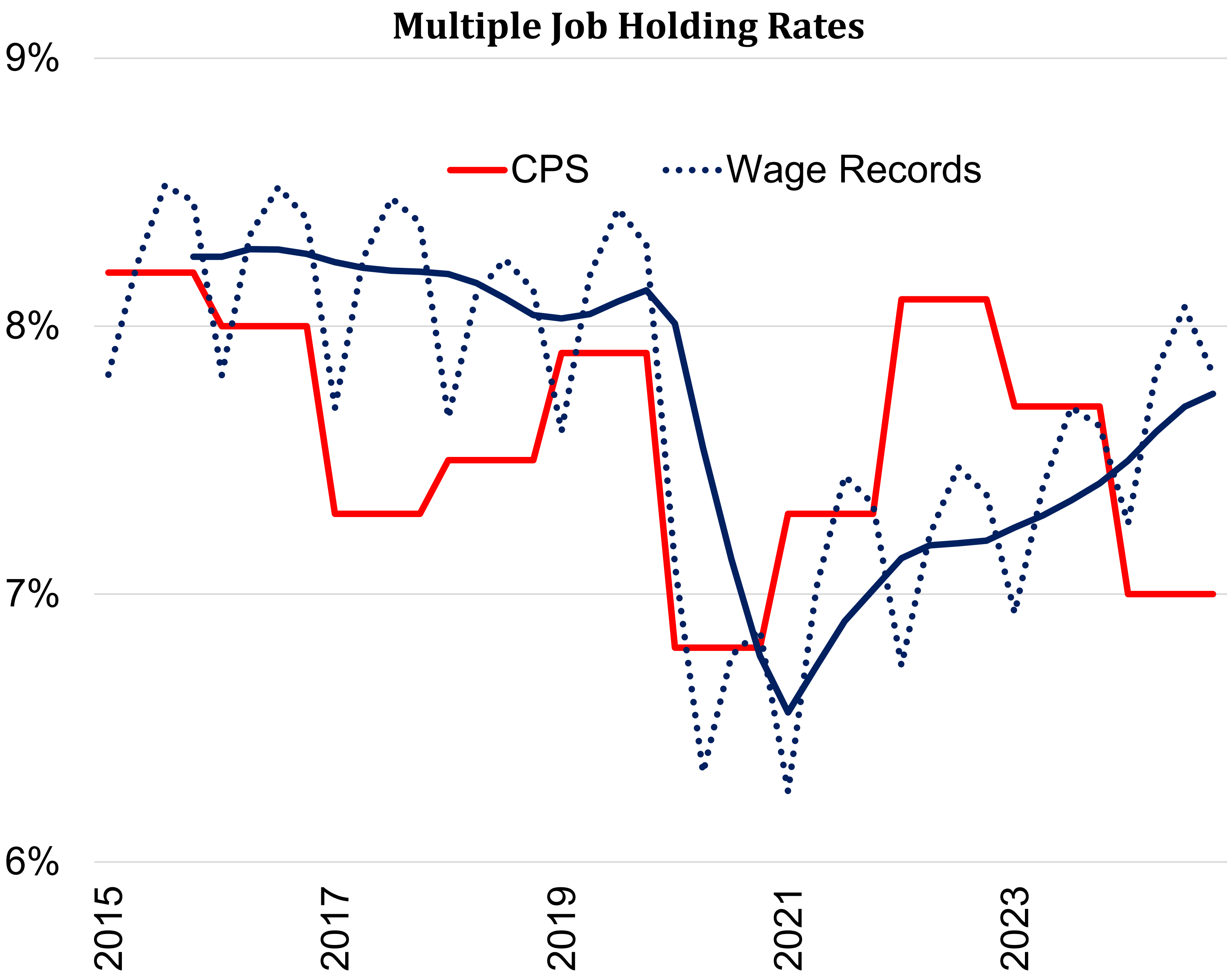
Replicating LED reporting capacity with state microdata allows for creation of new data series including multiple job holding rates.

Compared to CPS, this series often follows a similar trend with less volatility.

The two series trend in opposite directions in recent years.

Much more detail is available using state wage records and QCEW microdata relative to CPS data:

- primary industry
- secondary industry
- earnings
- firm size class
- seasonality

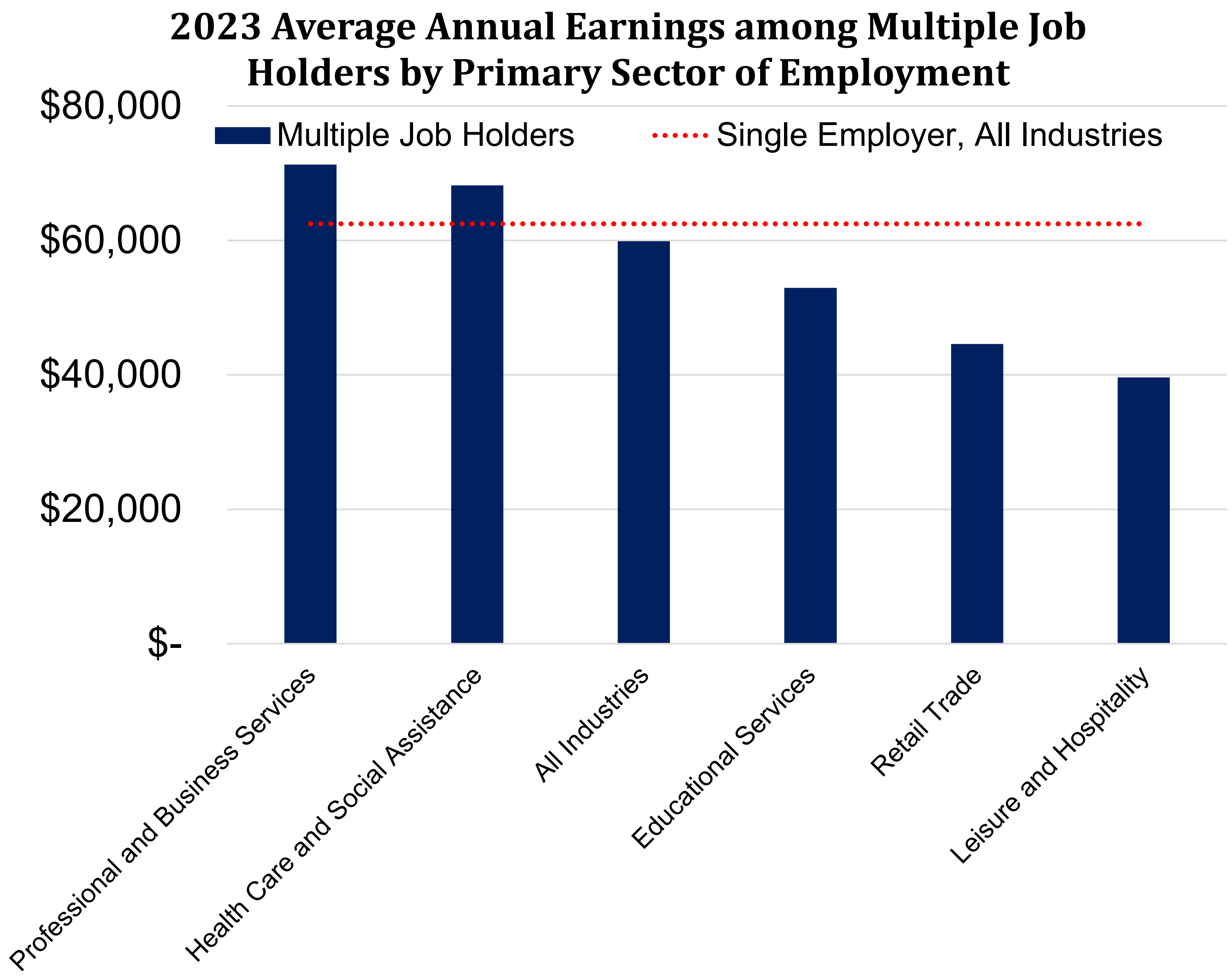


Across all employers, multiple job holders earn slightly less than workers with a single job

Multiple job holders have similar combined earnings from multiple jobs ($60,000 per year) to that of workers with a single employer ($62,500 per year).

Earnings among multiple job holders were lowest among those primarily employed in the leisure and hospitality ($39,600 per year) and the retail trade ($44,600 per year) sectors. Those with a primary job in healthcare and professional and business services had higher earnings than the average worker with one job.

(2023 annual earnings across all jobs among workers that held multiple jobs at the beginning of the year.)



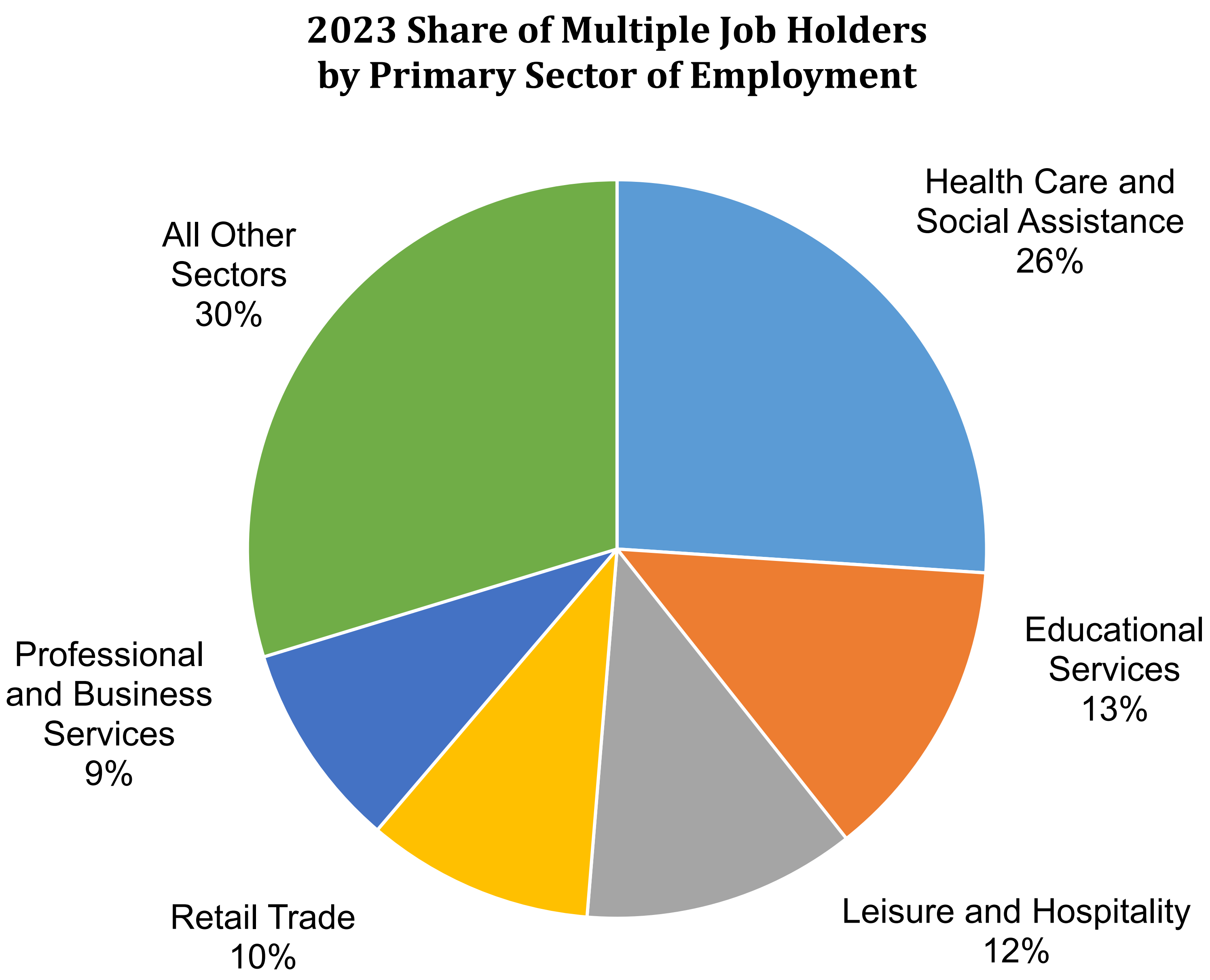
70 percent of multiple job holders have a primary job in one of five sectors

More than one quarter of multiple job holders primarily earn wages in the health care and social assistance sector.

Multiple job holding is more common among workers primarily employed in the education, the leisure and hospitality and the retail trade sectors. This is due to breaks in the academic calendar, a higher prevalence of seasonal and part time work and lower average pay in those sectors.

Multiple job holders earn 77 percent of their annual wages from their primary employer.

(Among workers holding multiple jobs in 2023 where the primary sector represents the sector from which the job holder earned the most wages in the year.)



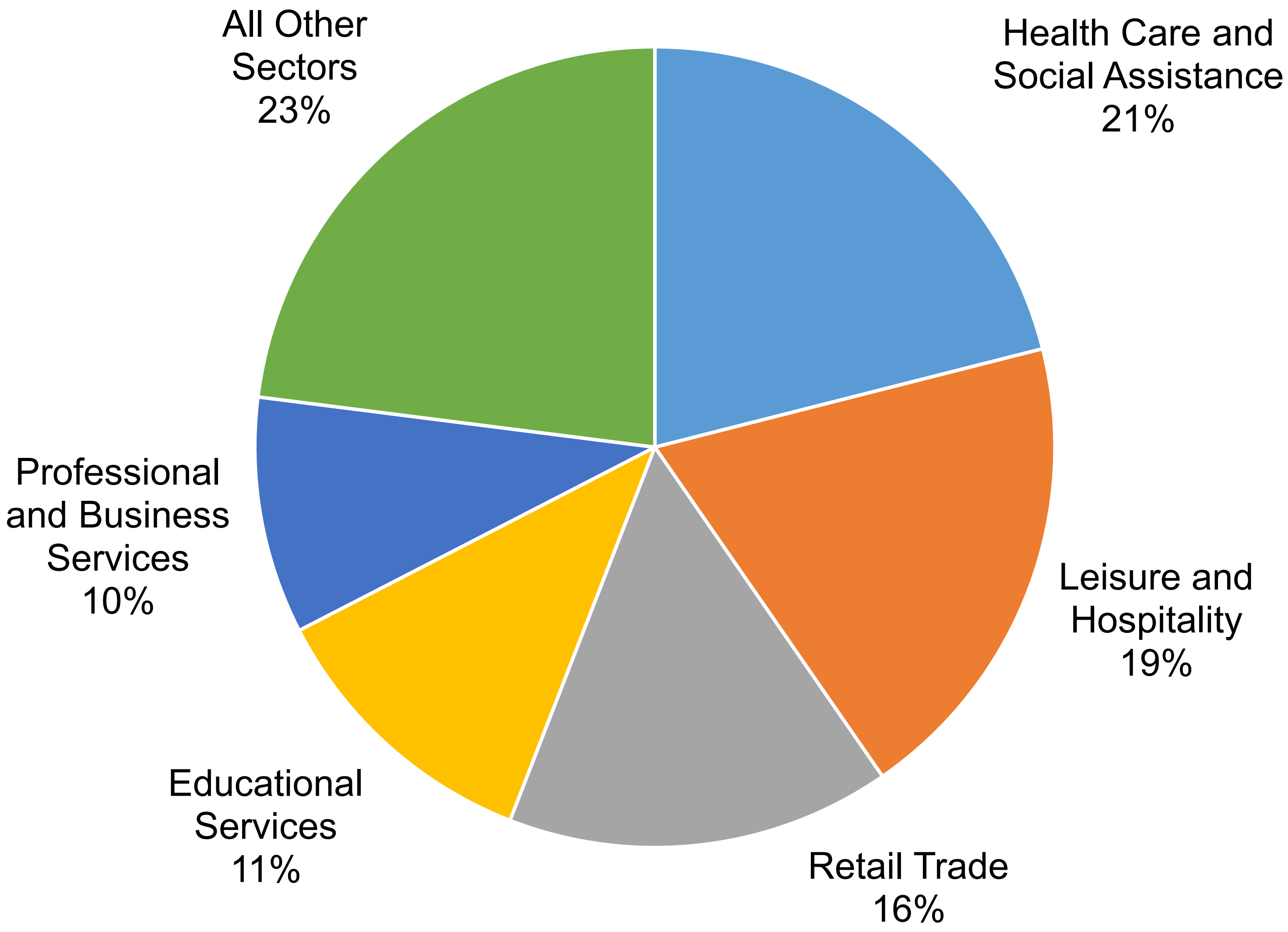
More than half of secondary jobs are in three sectors

While the sector mix is similar, secondary jobs are more likely to be in the leisure and hospitality and the retail trade sectors.

Multiple job holders earn 15 percent of their annual wages from their secondary employer.

(Among workers holding multiple jobs in 2023 where the secondary sector represents the sector from which the job holder earned the second most wages in the year.)

2023 Share of Multiple Job Holders by Secondary Sector of Employment

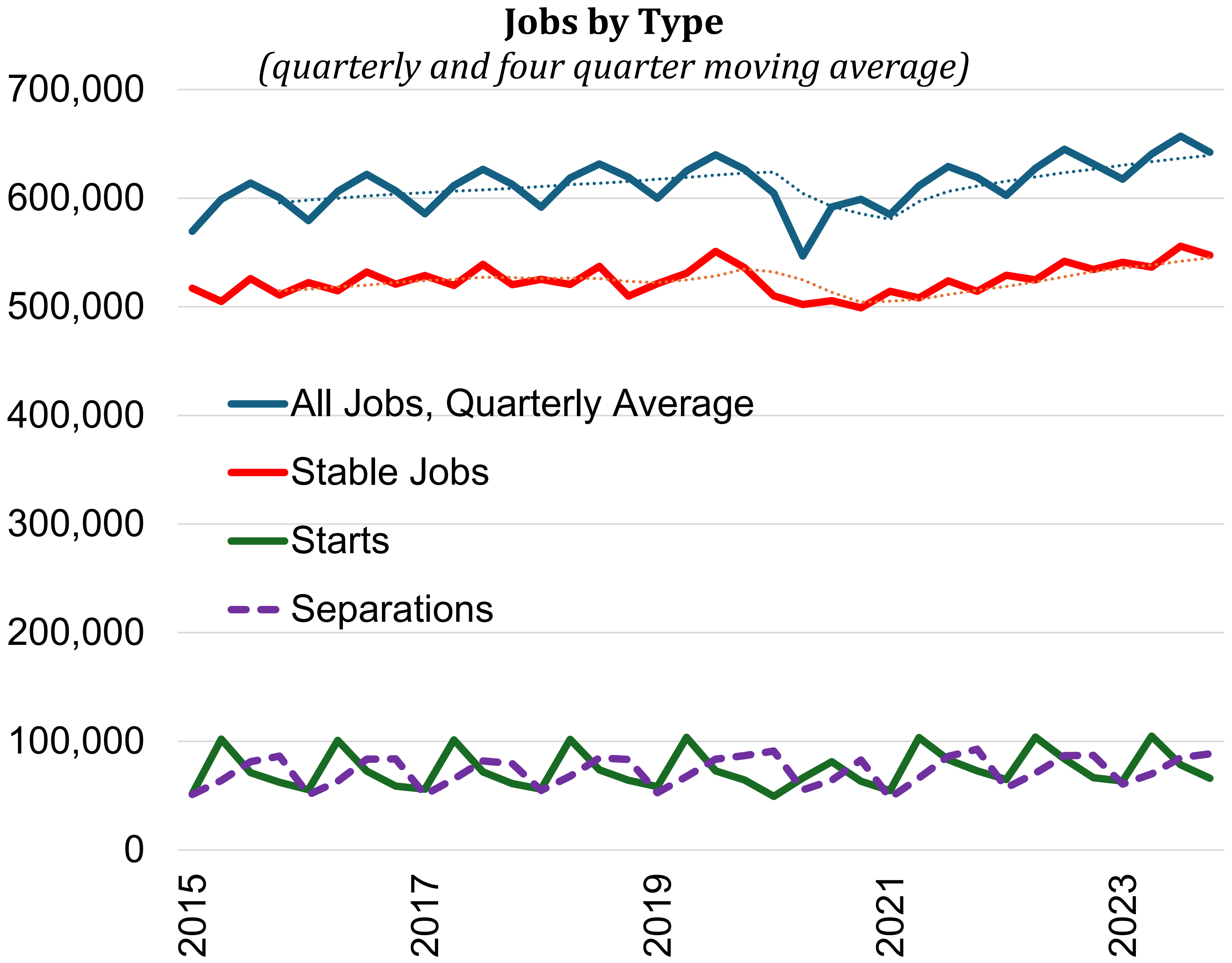


Using LED measure to assess employment stability

A longer-term goal is to incorporate LED measures into workforce program evaluations (WIOA, RESEA, etc.) in which upward mobility is more likely through employment stability (less likely in high-turnover employment).

Traditional measures are snapshots (employment 2nd quarter after exit) which cannot tell us much about the relative stability of employment.

Maine's labor market is highly seasonal. Total jobs can vary between 6 and 7 percent between summer highs and winter lows. Stable jobs are much less variable and are the driver of long-term employment trends.



Summary

LED and other administrative datasets generally are more representative relative to survey-based workforce data.

Particularly in the context of states with small populations where small sample sizes and falling response rates have led to more volatility in survey-based measures.

Because of this, we try to use and direct data users to sources like the Quarterly Workforce Indicators where possible.

While access to enhanced LED microdata would be ideal, replicating LED measures and enhancing state microdata through intrastate data sharing enables higher quality state research and evaluation.