



Compendium of key analyses for Kentucky

Collaborative Blueprint created by and for Kentucky's Economic Developers

December 2023



Overview of this document

This document contains the following from the Collaborative Blueprint deliverables:

- Economic overview of Kentucky, focusing on 5 parts: Sectors & Firms, Talent & Human capital, Capital & Innovation, Infrastructure, Business climate, and Economic Development Operating Capabilities
- The Talent & Human capital section provides an overview of workforce demographics and educational attainment trends.
- Where applicable, the levers are analyzed through multiple lenses: state-wide, geographic breakdown, and by demographic group
- Data as of Dec 2023

Analyses were completed against a 6 part framework



- 1 Sectors & Firms**
- 2 Talent & Human capital**
- 3 Capital & Innovation**
- 4 Infrastructure**
- 5 Business climate**
- 6 Economic Development Operating Capabilities**

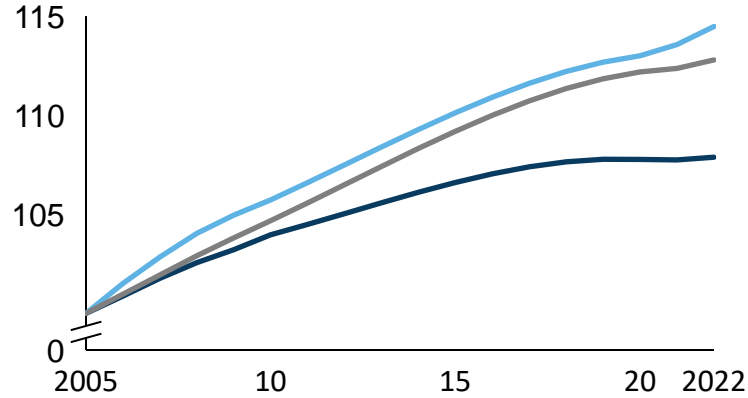
Where applicable, the levers are analyzed through multiple lenses: **state-wide, geographic breakdown, and by demographic group**

2. Talent & Human capital

Historically, Kentucky has lagged peers and US in population growth, labor force participation, and wages

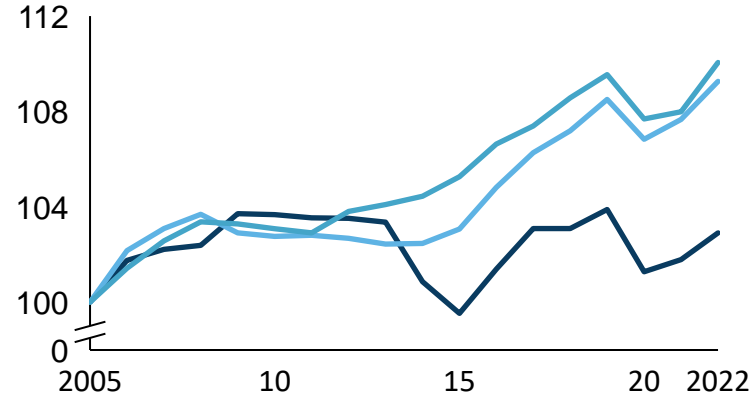
Population

Indexed to 2005 (2005=100)



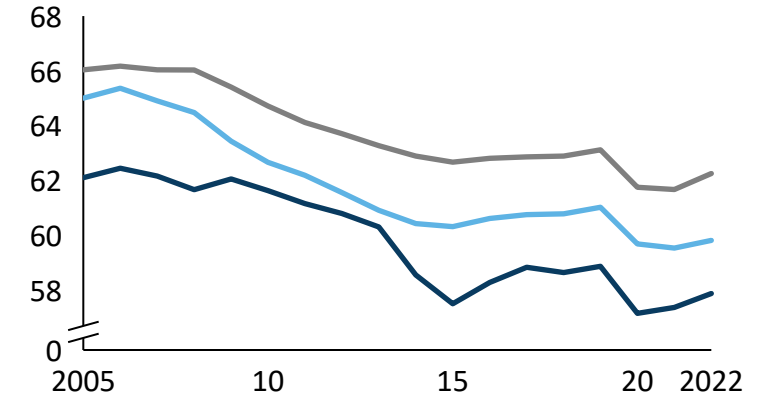
Labor force

Indexed to 2005 (2005=100)



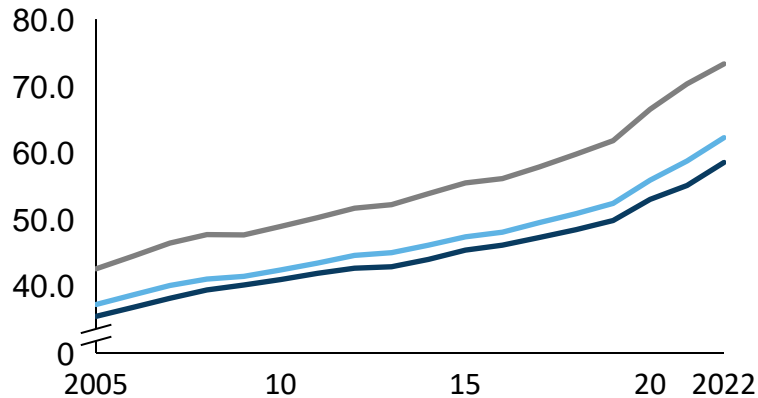
Labor force participation rate

Percent



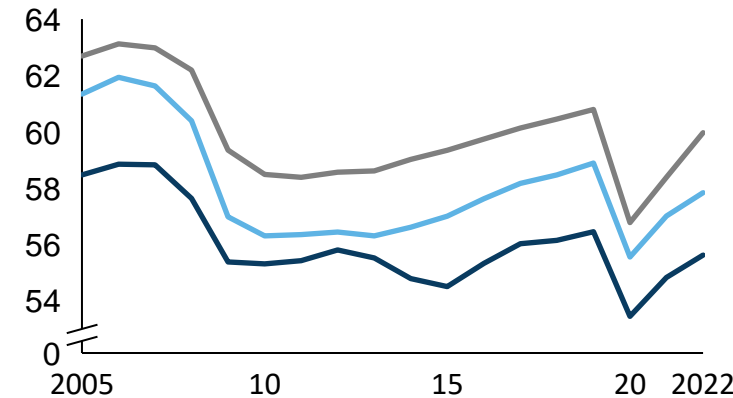
Wages

Thousands



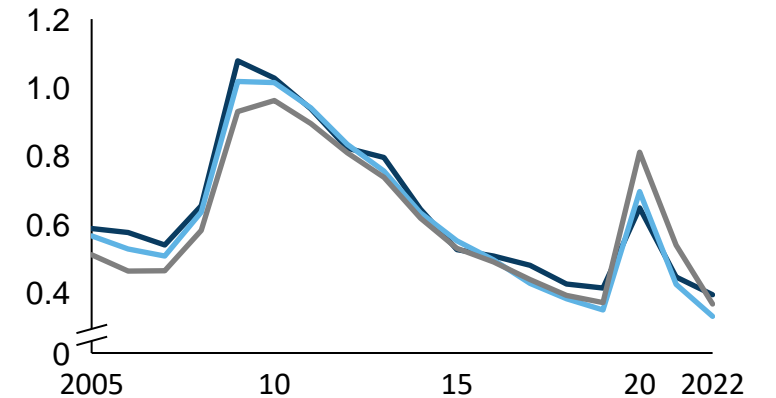
Employment to population ratio

Percent



Unemployment rate

Percent



Peers include: Alabama; Arkansas; Georgia; Indiana; North Carolina; Ohio; South Carolina; Tennessee

Source: Moody's Analytics, Bureau of Labor Statistics

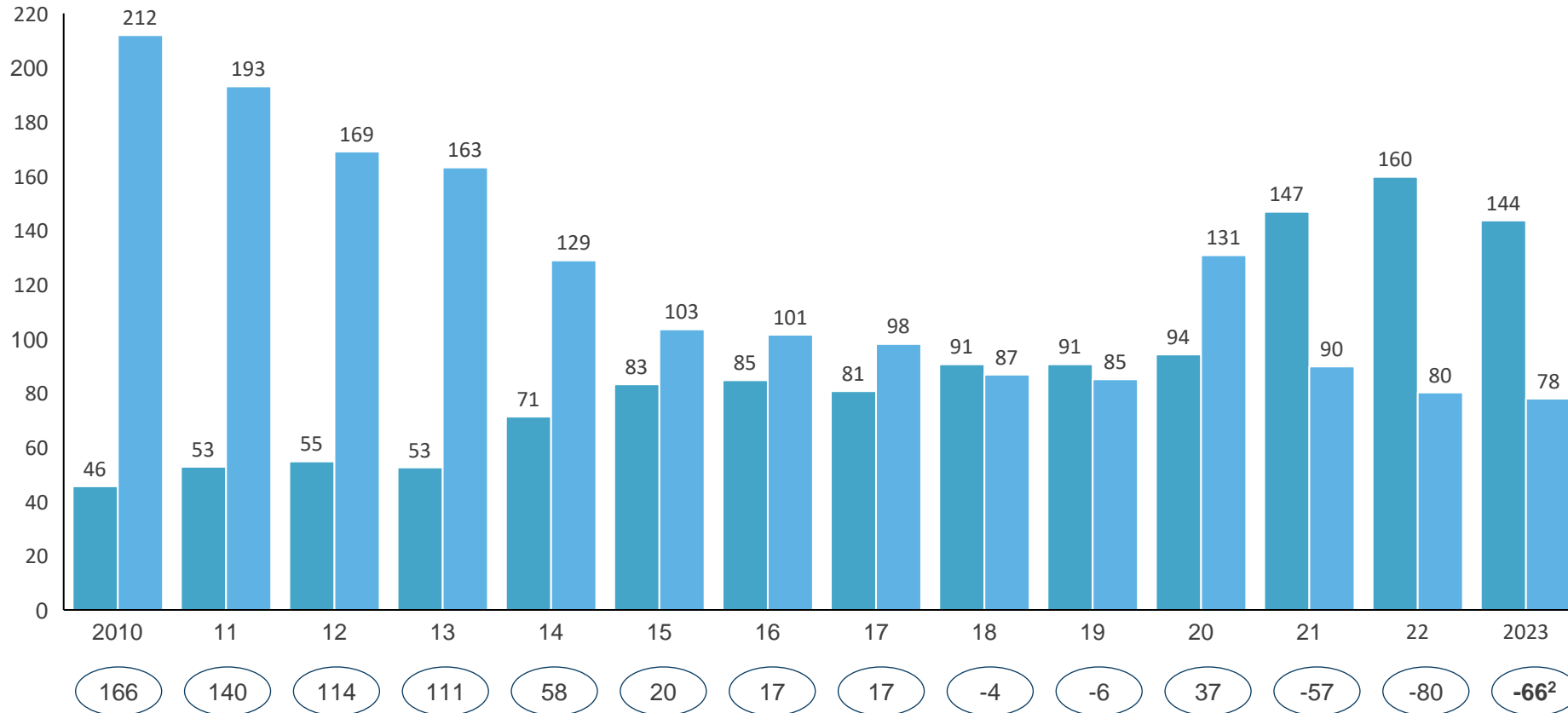
Data as of Dec 2023

Kentucky has ~66k more unfilled positions than unemployed workers

Kentucky's total unfilled positions versus unemployed 2010-2023
K, seasonally adjusted

xx Gap between unemployed and unfilled positions

■ Unfilled positions¹ ■ Unemployed



Takeaways

KY job demand in terms of unfilled positions has grown the last 10 years, a sign of both growth and/or a shrinking workforce

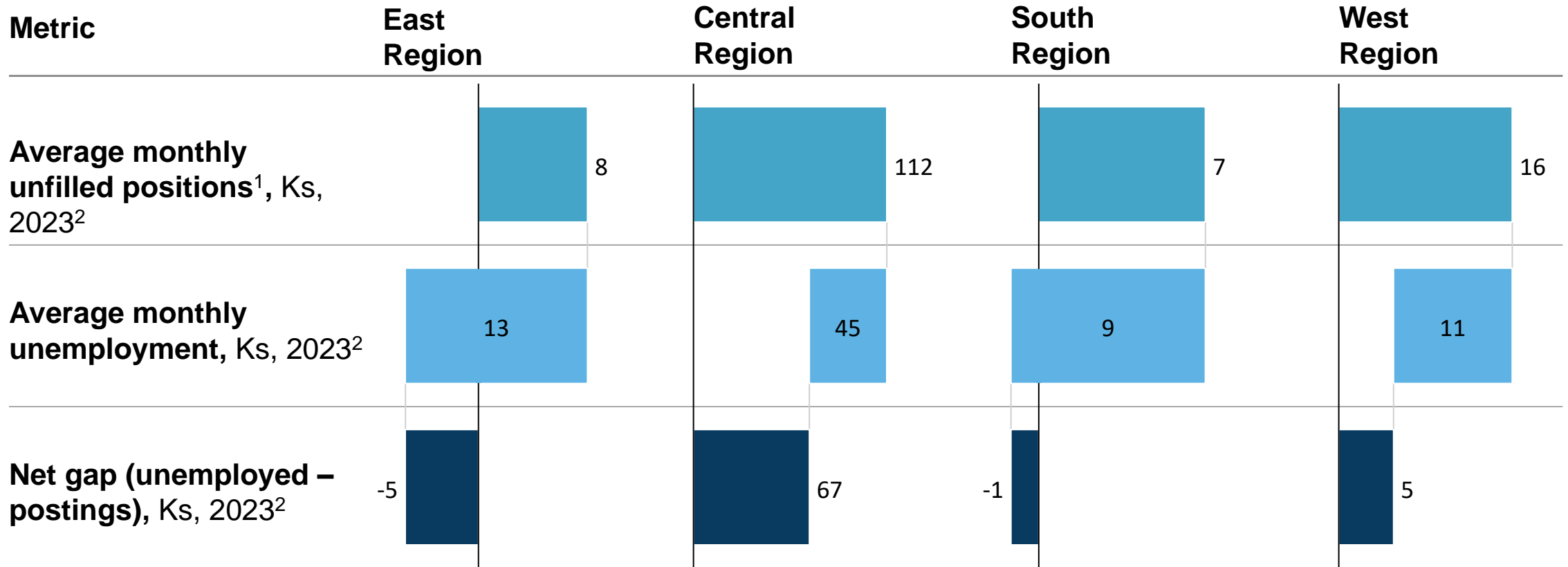
However, unemployment declines have led to an increasing gap between open positions and available workers

Note, the total talent gap may be larger given location and skills mismatch between unemployed workers and these postings

1. Unfilled positions of "job openings" are based on surveys of US employers done by the BLS and represent positions that are not filled on the last business day of the month. May 2023 data are preliminary

2. Represents the average talent shortage over the course of the year, seasonally adjusted, calculated as unemployed-unfilled positions. Current talent shortage as of May 2023 are about 66k

Worker shortages are concentrated in the Central Kentucky region



1. Unfilled positions as distributed by job postings; Job postings exclude those made by non-staffing companies or can't be matched to a specific Kentucky region

2. Jan - April 2023

Source: Lightcast, accessed 8/10/2023; BLS LAUS

Data as of Dec 2023

Workforce outcomes vary across Kentucky's demographics

	Population by race/ethnicity 2021	Poverty rate 2021	Mean per capita income USD, 2021	Unemployment rate Civilian labor force, 2021	Educational attainment Percent with Bachelor's+, 2021
White	3759.1K (83.6%)	14.9%	\$32,187	4.7%	26.0%
Black or African American	361.7K (8.0%)	25.2%	\$23,483	7.9%	19.3%
Two or more races	158.9K (3.5%)	22.8%	\$17,800	7.2%	25.0%
Hispanic or Latino	83.3K (1.9%)	22.0%	\$21,285	3.9%	23.9%
Asian	68.7K (1.5%)	13.4%	\$34,745	3.6%	53.9%
Some other race	51.4K (1.1%)	25.2%	\$19,395	5.6%	15.9%
American Indian and Alaska Native	7.1K (0.2%)	24.2%	\$19,081	6.2%	15.1%
Native Hawaiian and Other Pacific Islander	4.0K (0.1%)	17.8%	\$15,980	6.2%	14.5%

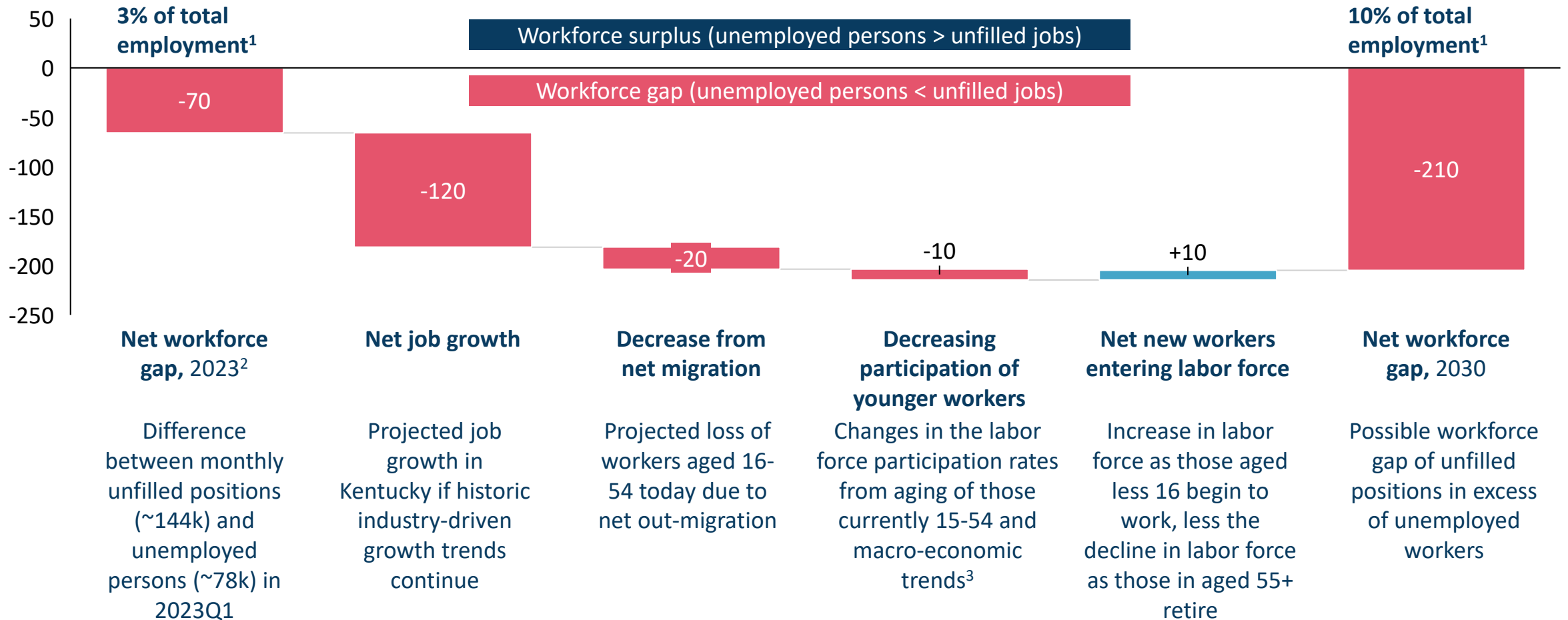
Note: Latinx are defined as 'White Hispanic or Latino' while 'White' is defined as 'White non-Hispanic or Latino'. All other Hispanic or Latino are included within their respective racial groups

Source: US Census Bureau, American Community Survey (ACS) 5-year estimates

Data as of Dec 2023

Kentucky could see a 3x increase in its workforce gap due to job growth and stagnating labor force

Possible workforce gap in Kentucky, 2030 (Approximate number of workers, thousands)



1. Total employment in KY in 2023 is 2.1M, projected total employment in 2030 is 2.2M, per Lightcast employment projections

2. Data for Jan-May 2023

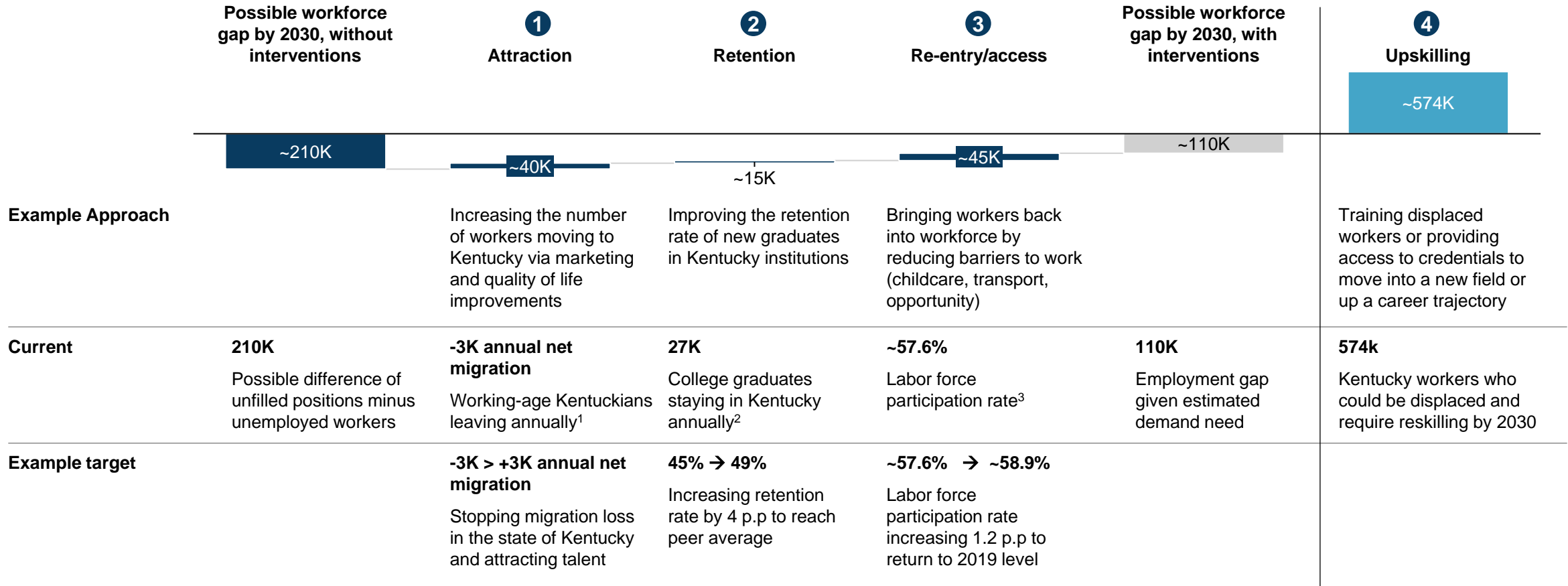
3. Modeled by age brackets, adjusting labor force participation rates of current workers by the effect of aging and long-term changes in labor force participation rate of age groups forecast by the BLS

Note: Moody's Analytics baseline scenario forecasts that the US economy will not go into a recession. Since it is a baseline, by definition the probability that the economy will perform better than this projection is equal to 50%, the same as the probability that it will perform worse.

Source: Lightcast, Moody's Analytics, US. Census Bureau, Bureau of Labor Statistics

Effort and coordination will be needed to address Kentucky's workforce challenges

Illustrative



⑤ Outcomes vary by geography and demographic group, targeted efforts will need to address region-specific challenges

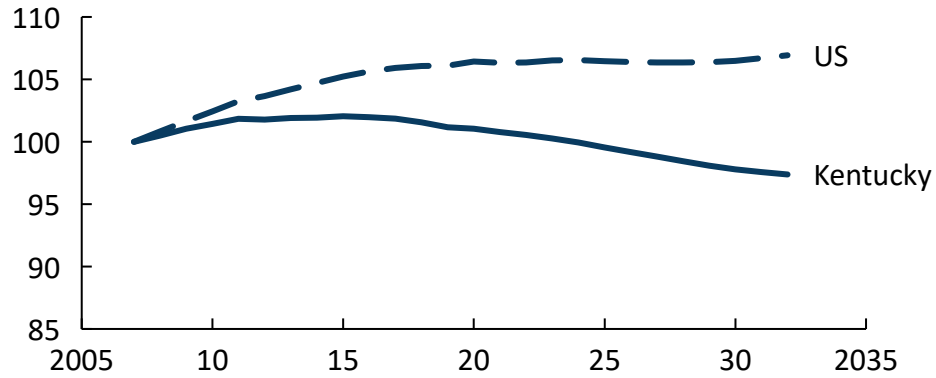
1. Based on projected demographic changes from Moody's Analytics
 2. In 2021 there were ~55k degree completions in Kentucky institutions (associate's bachelor's, master's and doctor's degrees). With a retention rate of 49%, an estimated 27K of these graduates remain in-state
 3. Seasonally adjusted labor force participation rate in Kentucky as of June 2023. If Kentucky increases its LFPR by 1.2 p.p, reaching the state's 2019 level, the labor force would increase by ~45K

Source: Bureau of Labor Statistics, Lightcast, U.S Census Bureau, IPUMS USA, McKinsey Global Institute

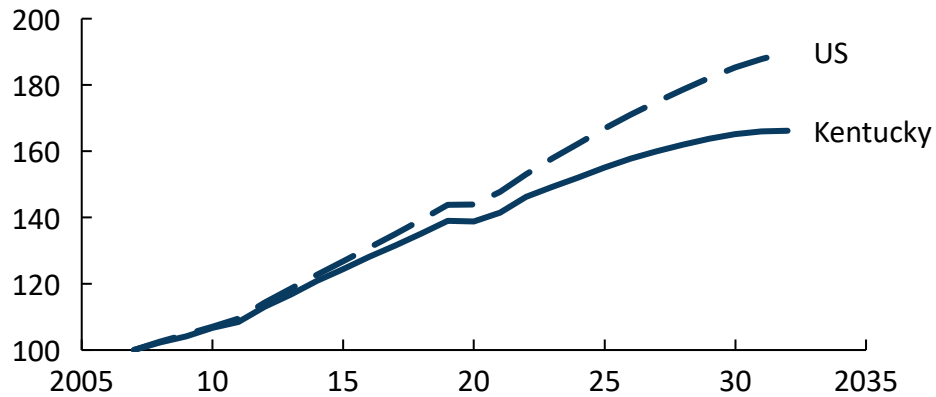
Data as of Dec 2023

1. Kentucky's working age population may decline by ~90K

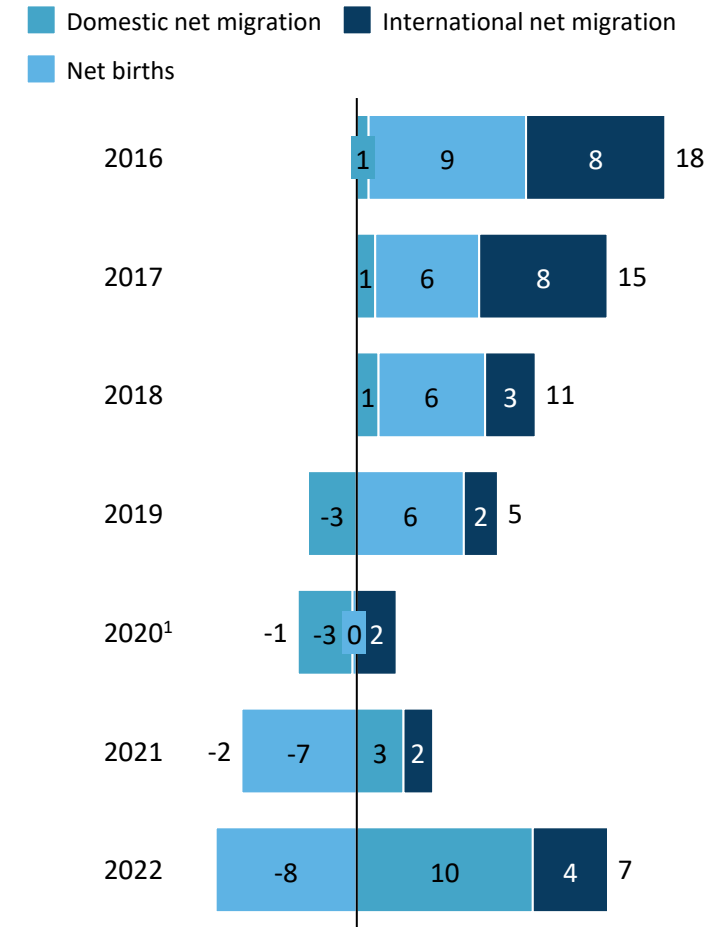
Population 15-64, Indexed to 2007



Population 65 years and older, Indexed to 2007



Drivers of total population change, Thousands

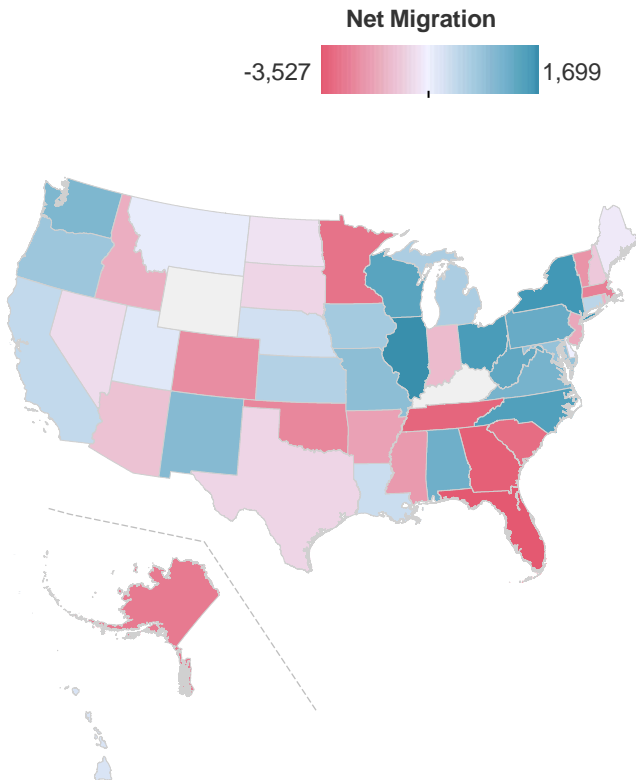


- Total population growth in Kentucky has ranged from **1k-13k per year** from 2016 to 2019, but **declined in 2020**
- **Net negative domestic migration** occurred in 2019 and 2020, with peak out-migration of ~3k residents in 2020, **net negative births occurred in 2021 and 2022**
- Combining the slow population growth with an aging demographic is forecast to result in an **overall decline in working age adults** in Kentucky
- While the US is forecast to see relatively constant population of working age adults, **Kentucky is expected to have ~90k fewer residents aged 15-64 in 2032 than it does in 2022**

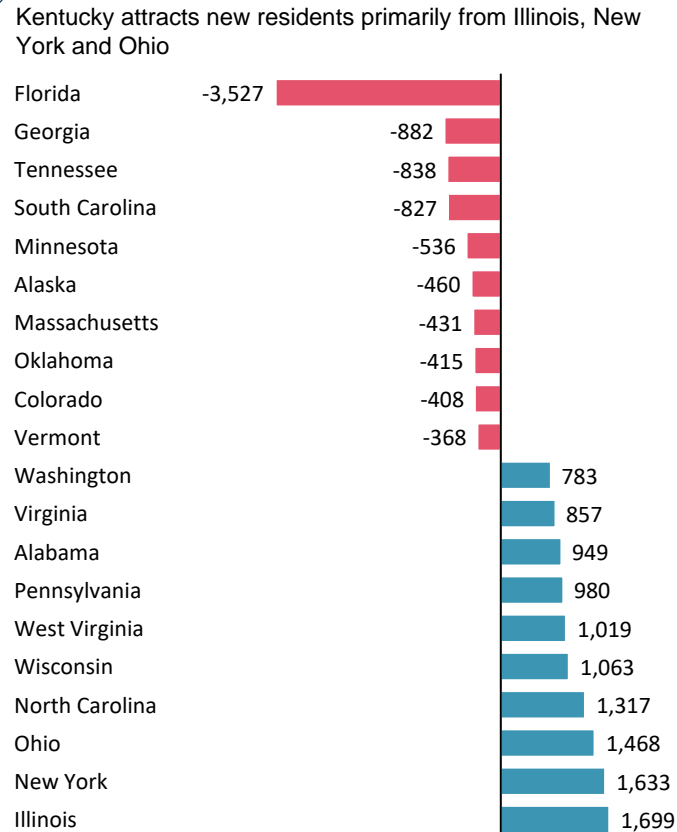
1. The pandemic had impact on both domestic and international migration. U.S. moving rate and number hit recorded lows in 2020
 Source: U.S Census Bureau, Moody's Analytics
 Data as of Dec 2023

1. Kentucky is attracting people primarily for personal reasons, and losing population due to job related reasons

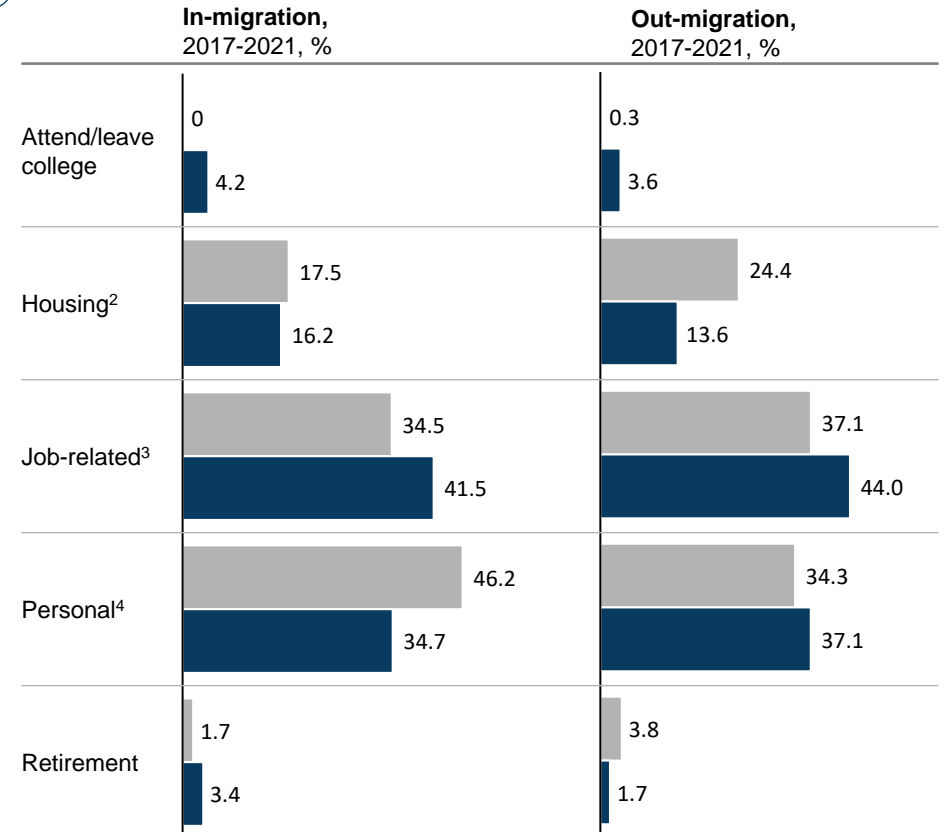
Migration to and from Kentucky
Net migration, 2017-2021



Top 10 States for migration and emigration, 2017-2021, Net migration



Reason for domestic migration to/from Kentucky, Percent of total migrators (2017-2021)



- Totals may not match those reflected on previous analyses because of differences in survey sample size and response rate
- Wanted to own home, wanted new or better housing, wanted better neighborhood, for cheaper housing, foreclosure or eviction, other housing reason
- New job or job transfer, to look for work or lost job, for easier commute, other job-related reason
- Change in marital status, to establish own household, other family reason, Change of climate, health reasons, natural disaster, other reason

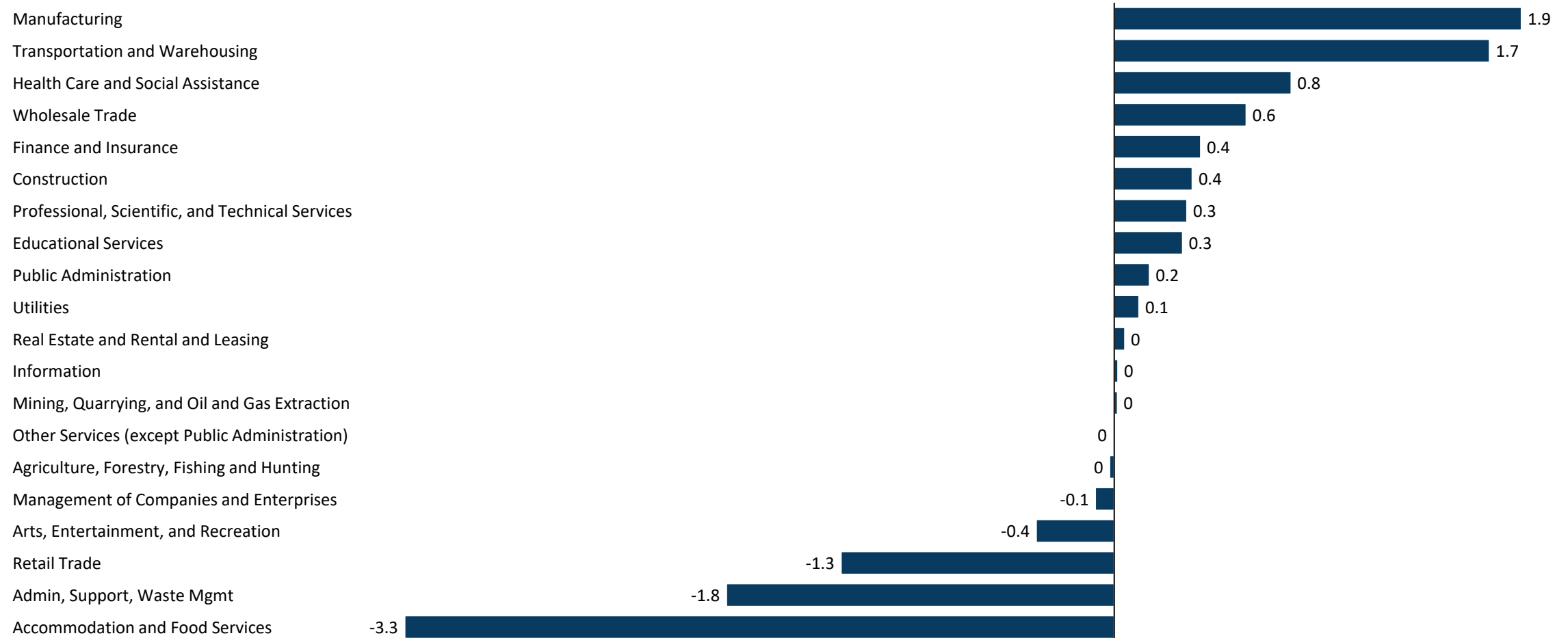
Source: US Census Bureau, County-to-County Migration Flows, US Census Bureau, Current Population Survey

Data as of Dec 2023

■ Kentucky ■ Peer average

1. Kentucky gains the most workers in manufacturing, transportation, and healthcare, and loses the most in retail trade, admin, and food services

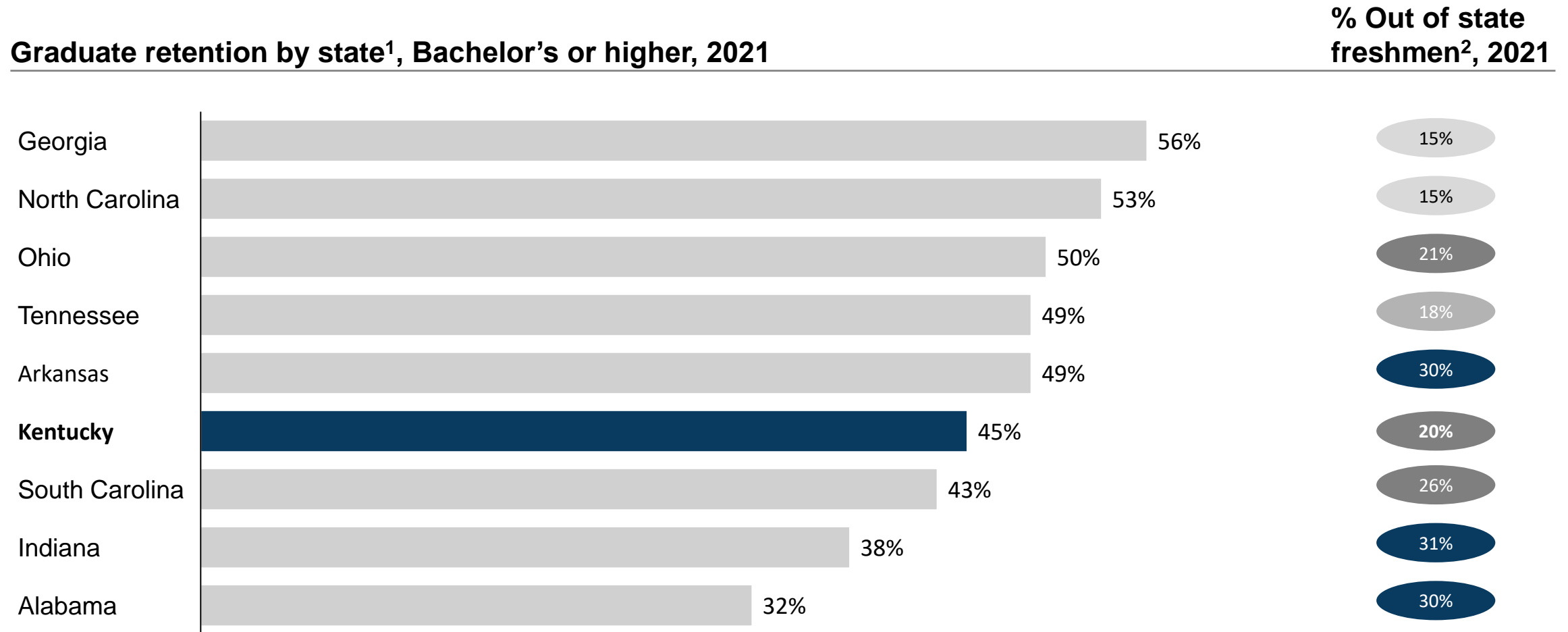
Kentucky job migration by industry of employment Net flow of jobs, 2017-2022



Source: US Census Bureau Job-to-Job Flows Explorer (2017 Q1-2021 Q4)

Data as of Dec 2023

2. Kentucky retains less than half of its BA and higher graduates, ranking 6th among peers



1. Profiles updated since 2018

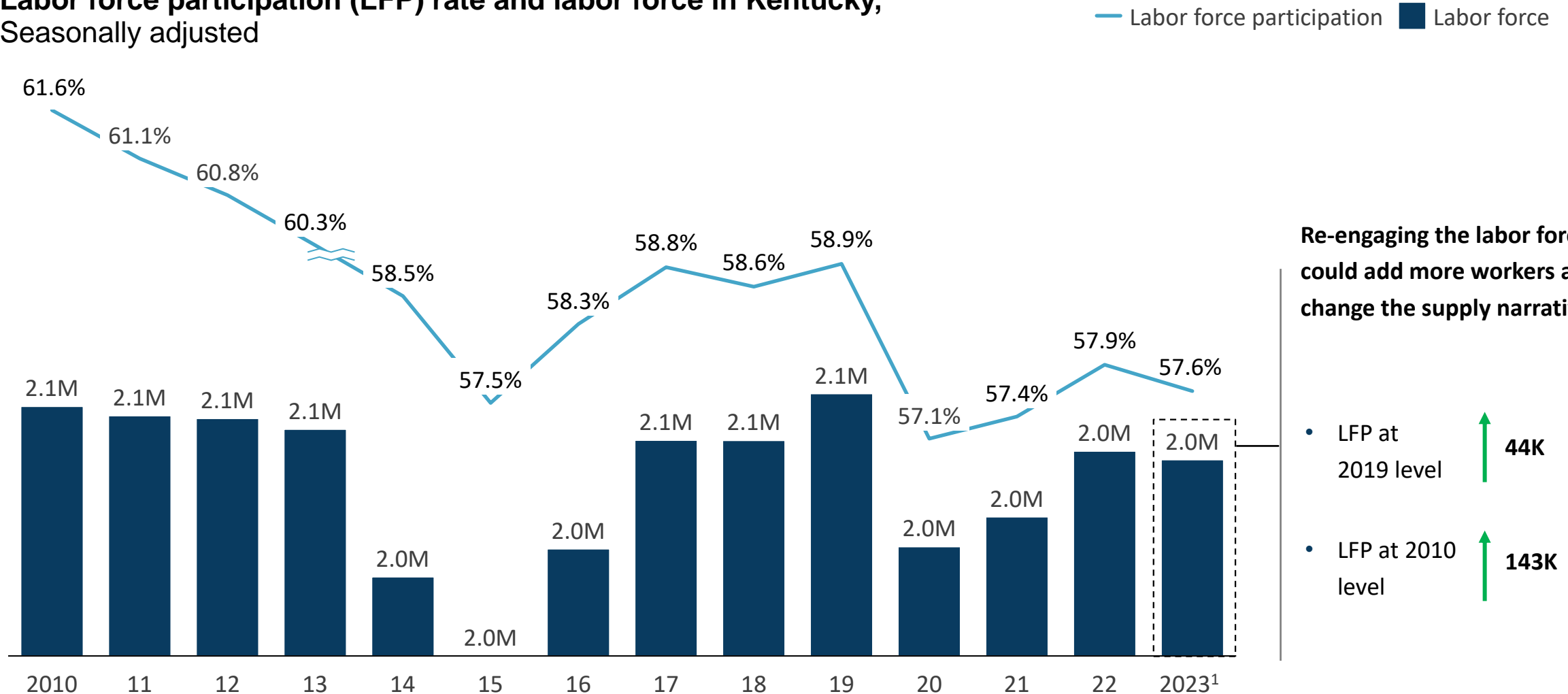
2. Any degree level

Source: Lightcast, accessed 8/1/2023

Data as of Dec 2023

3. Labor force participation is ~58% and still recovering

Labor force participation (LFP) rate and labor force in Kentucky, Seasonally adjusted



Re-engaging the labor force could add more workers and change the supply narrative

- LFP at 2019 level ↑ 44K
- LFP at 2010 level ↑ 143K

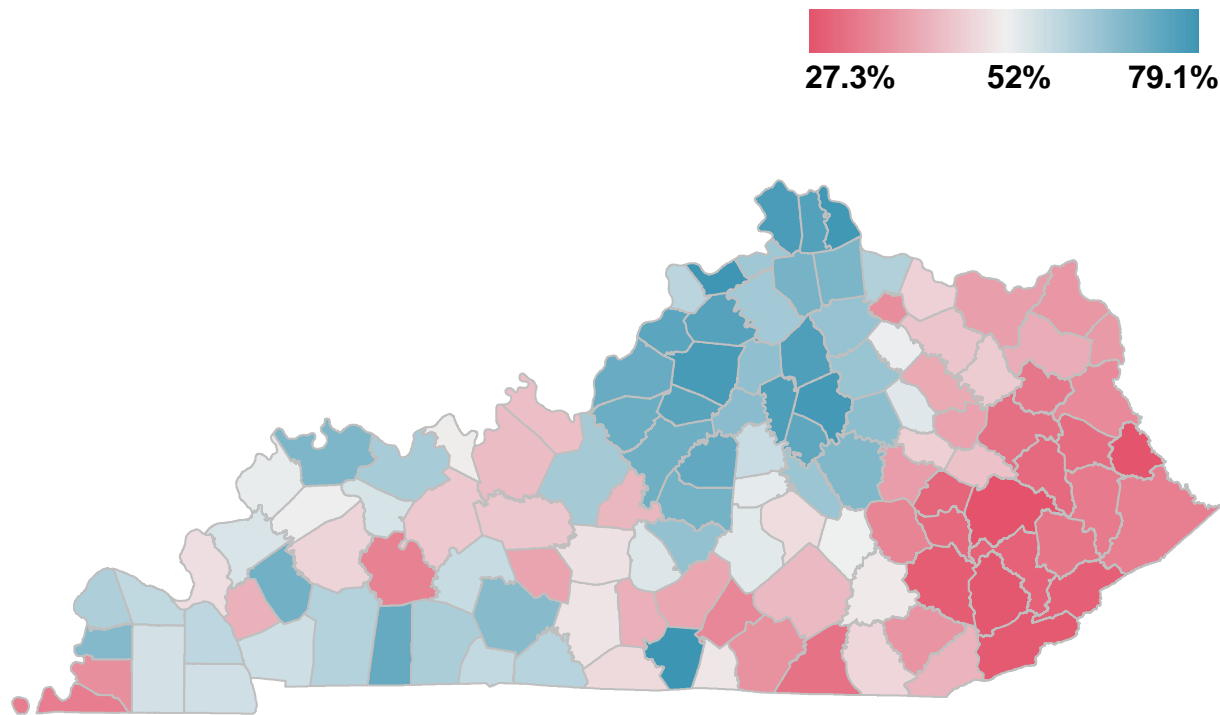
1. Data through June 2023

Source: BLS JOLTS, Local Area Unemployment Statistics

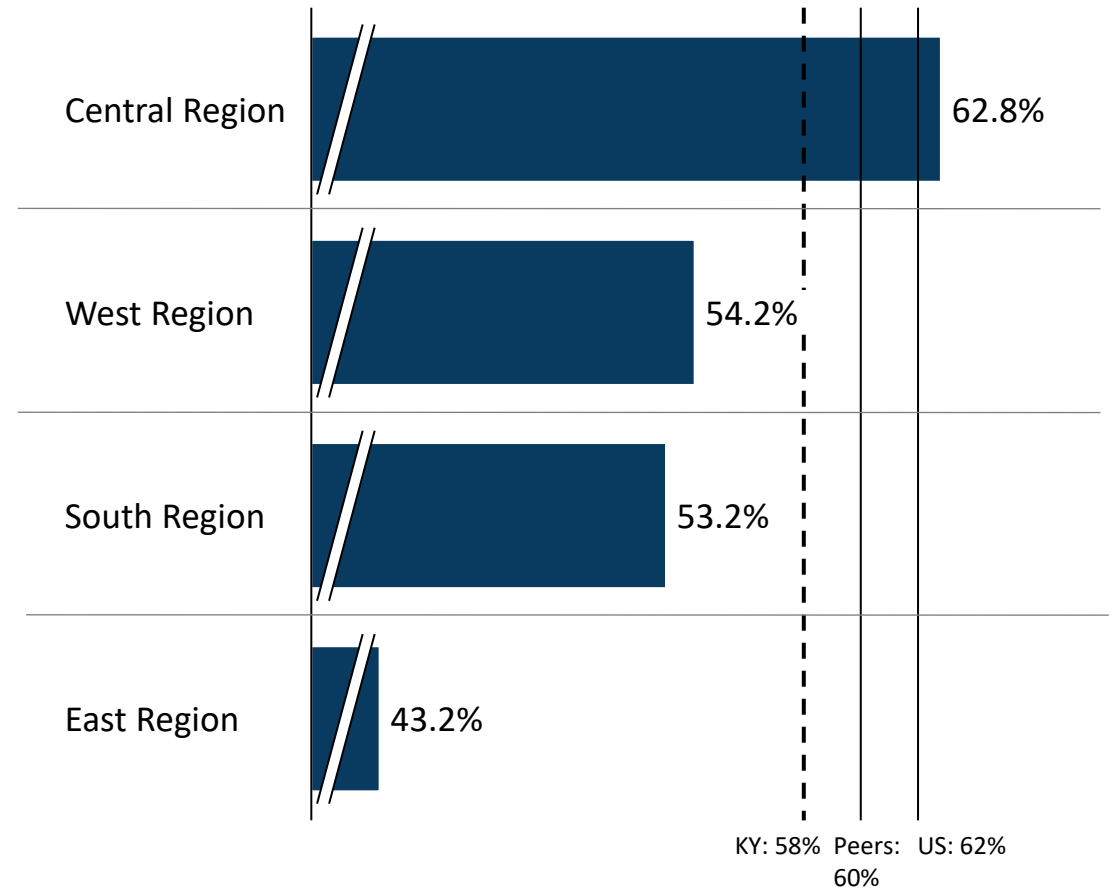
Data as of Dec 2023

3. Labor force participation rate varies regionally, with East region lowest at 43%

Labor force participation rate by county in Kentucky
%, April 2023



Labor force participation rate by region,
%, April 2023



Source: Lightcast, Accessed 8/2/2023

Data as of Dec 2023

3. Kentucky has a lower LFPR than the peers and US average across nearly all demographic groups

Labor force participation rate by selected characteristic, %, 2021¹

	Population characteristic	KY population estimate (K)	KY LFPR (%)	Peer average LFPR (%)	US LFPR (%)	Difference (%), KY-Peer avg.	Difference (%), KY-US	LF increase (K) if KY LFPR matched US
Age cohort	16+	3,613	58.8	61.0	63.0	-2.2	-4.2	151.7
	16-19	246	45.7	40.1	39.3	5.6	6.4	
	20-24	289	76.1	74.9	74.6	1.2	1.5	
	25-29	290	81.7	82.7	83.1	-1.0	-1.4	4.1
	30-34	292	79.2	81.5	83.1	-2.2	-3.9	11.4
	35-44	573	78.4	81.0	82.8	-2.6	-4.4	25.2
	45-54	552	75.2	79.7	81.4	-4.5	-6.2	34.2
	55-59	299	64.3	70.1	73.6	-5.8	-9.3	27.8
	60-64	302	49.1	54.8	58.7	-5.7	-9.6	29.0
	65-74	476	21.3	23.5	26.2	-2.2	-4.9	23.3
75+	293	6.2	6.5	6.9	-0.3	-0.7	2.0	
Gender ²	Male	1,302	76.7	80.4	82.3	-3.7	-5.6	72.9
	Female	1,296	69.1	71.8	73.7	-2.7	-4.6	59.6
Race ³	White, not Latinx	3,046	57.8	59.9	61.4	-2.1	-3.6	109.6
	Black	251	62.2	61.2	62.3	1.0	-0.1	0.3
	Asian	50	70.5	67.3	65.9	3.2	4.6	
	Latinx	117	71.3	69.3	67.5	2.0	3.8	
Education ⁴	No high school	245	44.4	54.9	60.8	-10.5	-16.4	40.1
	High school	723	65.7	70.1	71.7	-4.4	-6.0	43.4
	Some college	684	75.6	78.0	79.1	-2.4	-3.5	23.9
	Bachelor's degree	659	87.1	86.6	87.2	0.5	-0.1	0.7
Other ⁵	With disability	413	37.9	42.5	47.2	-4.6	-9.3	38.5
	Below poverty level	395	39.8	45.0	47.2	-5.2	-7.4	29.2

1. The labor force participation rate is different than the LRRP from BLS due to this analysis is based on U.S. census survey data (rather than statistics) that can be used to breakdown by demographics

2. Population 20 to 64 years | 2. Population 16-years and older | 3. Population 25 to 64 years | 4. Population 20 to 64 years

Source: United States Census Bureau, American Community Survey 2021 1-year estimates

3. ~60K Kentuckians could be willing to enter the workforce if the conditions are right

Top reasons for not looking for work amongst those who want a job¹

Monthly average Jan 2019 – June 2023, thousands

			Description
Family responsibilities, childcare	10.4	17%	Family responsibilities or childcare create barriers to entering labor force
In school or other training	7.5	12%	Students considering working under part-time or flexible work models
Couldn't find any work	6.2	10%	Discouraged – stopped looking for a job
Ill-health, physical disability	6.0	10%	People with physical disability who would be willing to work under flexible arrangements
Believes no work available in area of expertise	4.7	8%	Discouraged – thinks no work is available
Transportation problems	1.6	3%	Transport challenged: live far from employer of choice
Employers think too young or old	1.4	2%	Discouraged – discrimination
Lacks necessary schooling or training	0.5	1%	Discouraged - need credentials, upskilling
Others or not specified	21.7	36%	Didn't list a reason or mention something too specific outside of the above categories

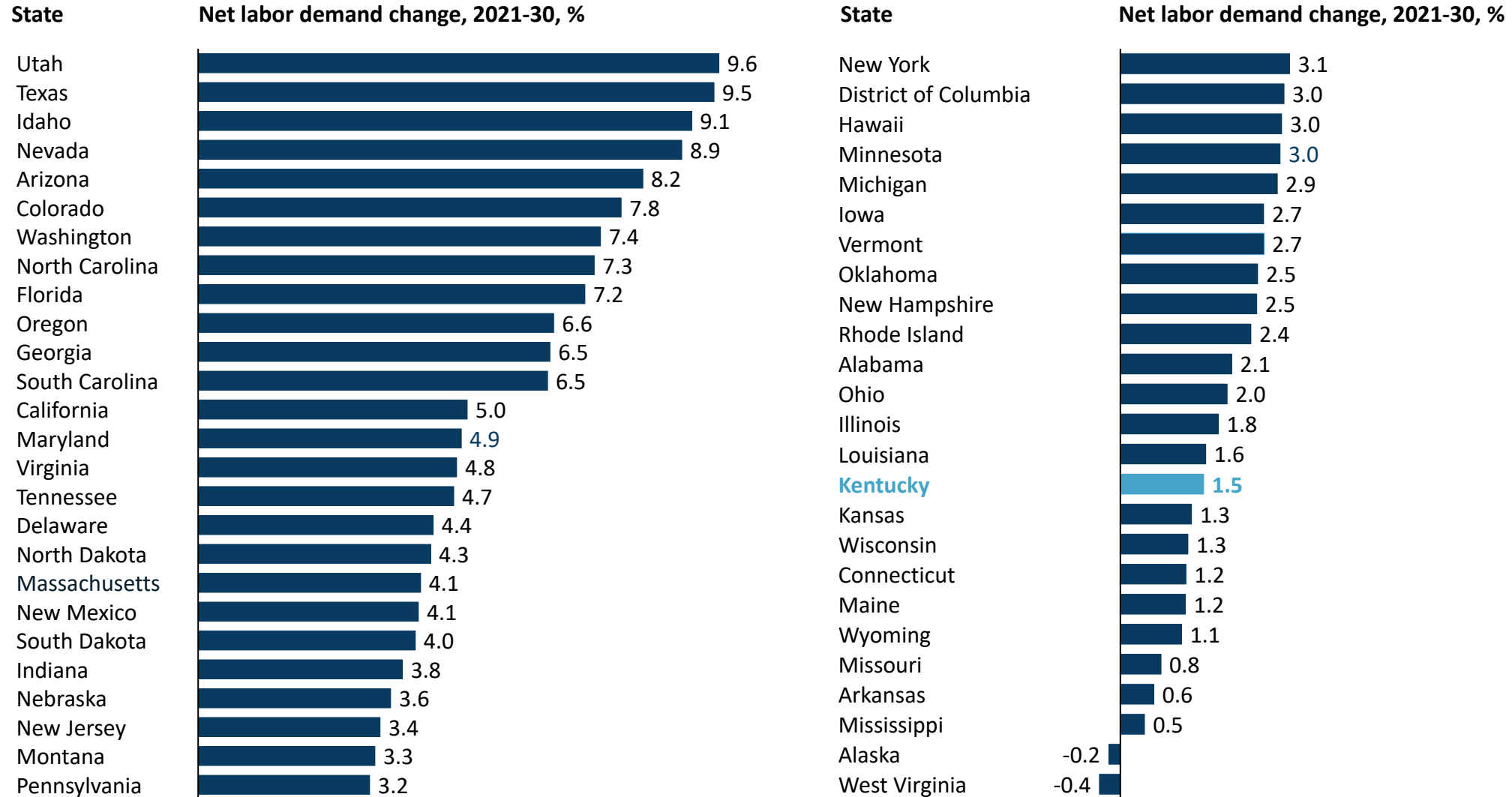
1. People who are not working or looking for a job (either full-time or part-time) but are available and searched for a job in the last 12 months but not in the past 4 weeks

Source: IPUMS CPS, January 2014 – June 2023; estimations based on representative sample size; BLS

Data as of Dec 2023

4. Kentucky could see 1.5 percent job growth between 2021-30

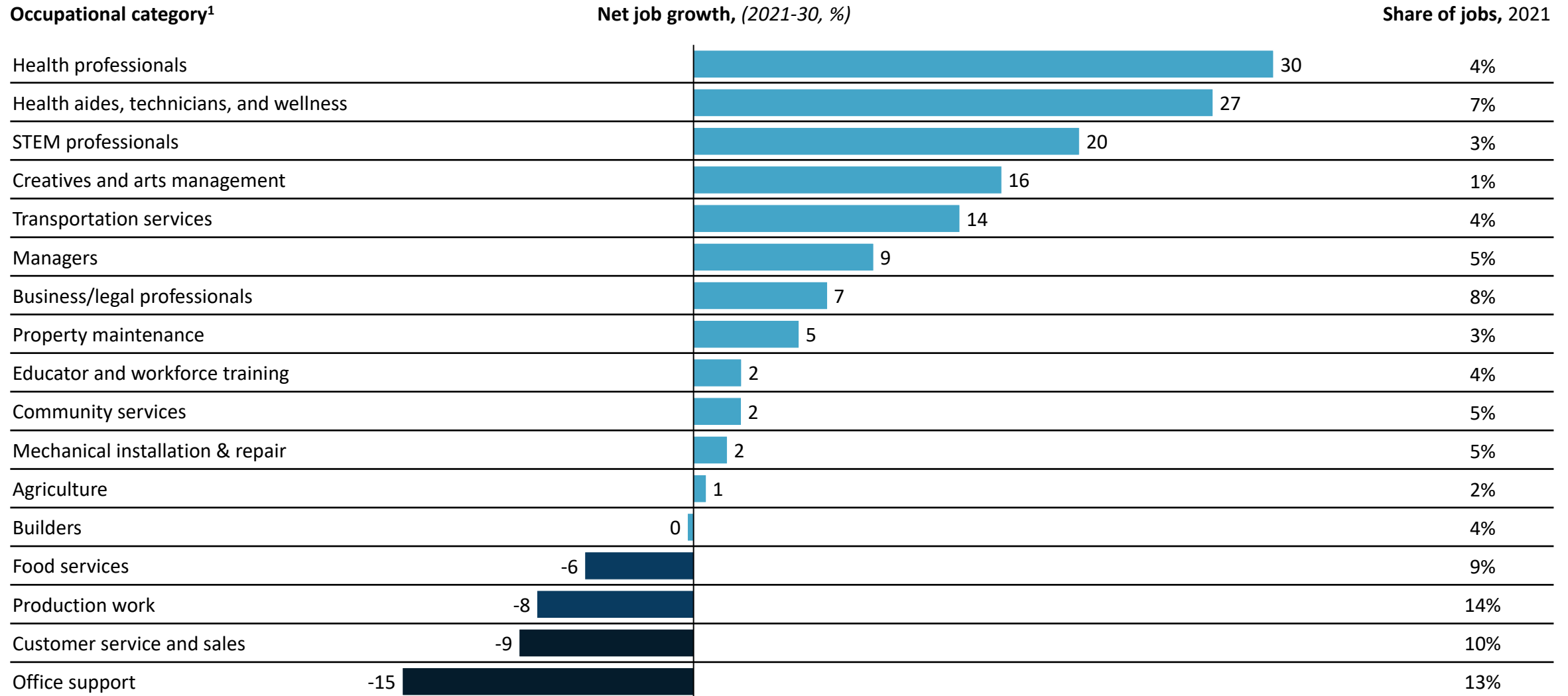
Net labor demand change, post-COVID scenario, 2021-2030, %



Source: O*NET, BLS, MGI FoW post-Covid model, September 2022; MGI The future of work in America, McKinsey Global Institute analysis

4. Jobs in healthcare and STEM may see high rates of job growth in Kentucky, while customer service and office support could decline

Net labor demand change, post-COVID scenario, 2021-2030, %



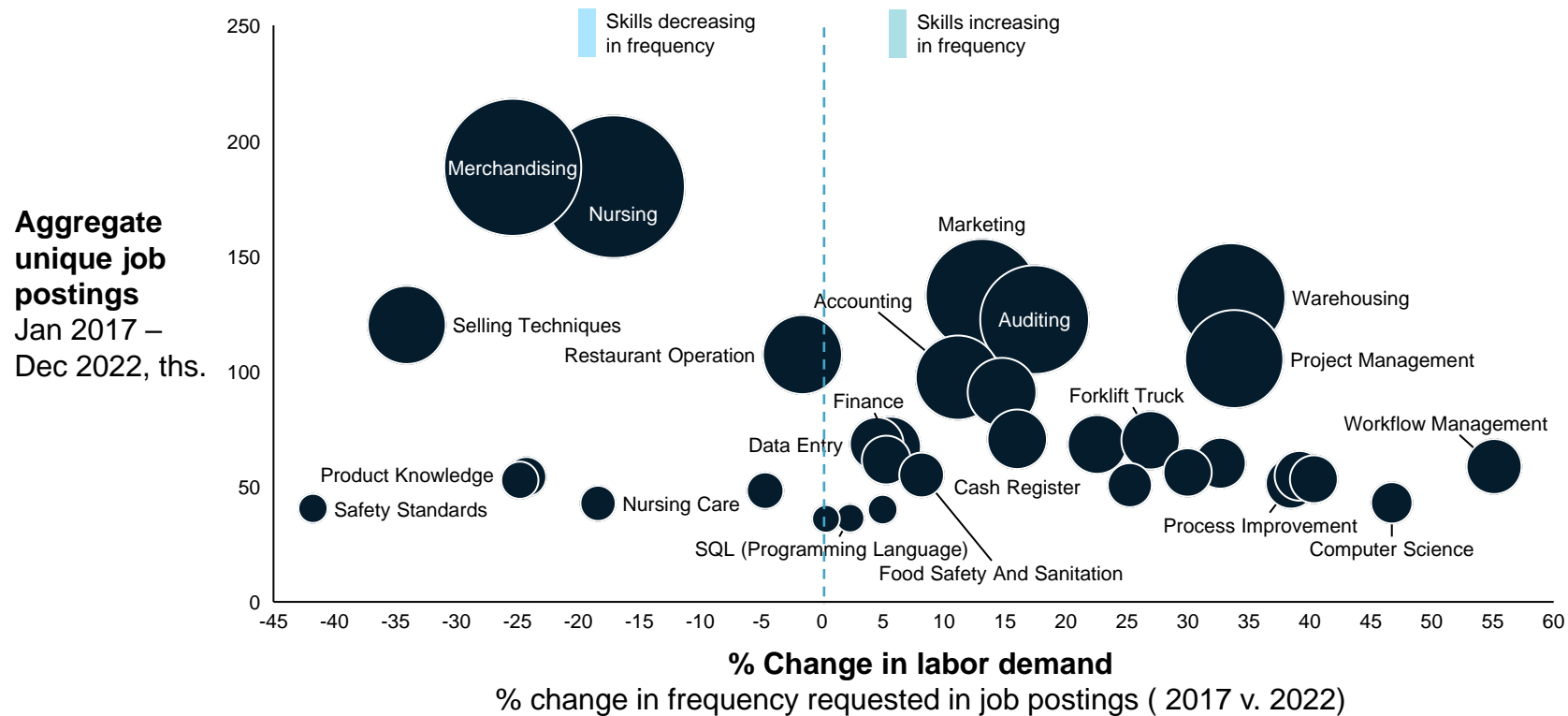
1. Occupational categories differ from previous analysis, this analysis uses O*NET occupational groupings, other analyses use SOC
 Source: O*NET; U.S. Bureau of labor statistics (BLS); MGI Automation Model October 2022; MGI FoW post-Covid model October 2022;

4. To prepare KY workforce could target in-demand tech, production and healthcare-related skills

○ Size represents Jan 2022- Dec 2022 unique job postings (current demand)

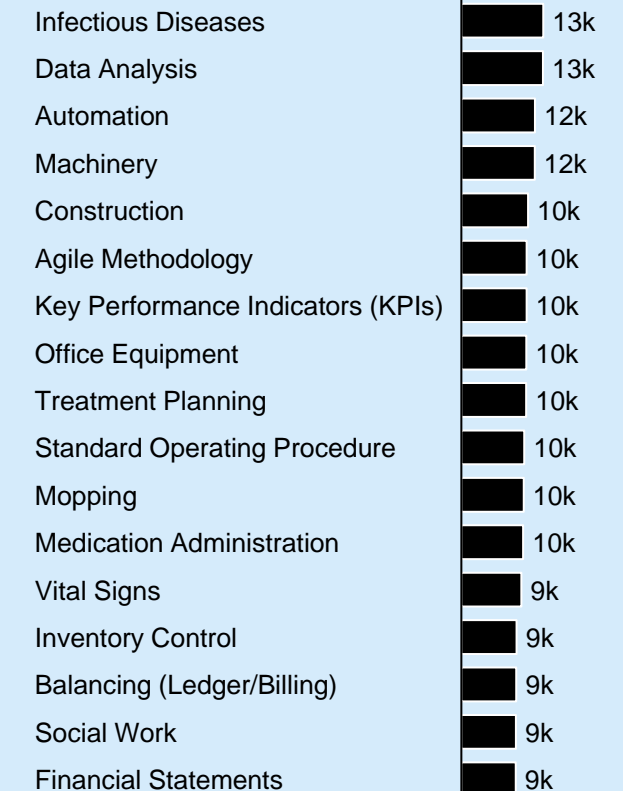
Top 50 in-demand specialized skills¹ in job postings in Kentucky

January 2022 – Dec 2022



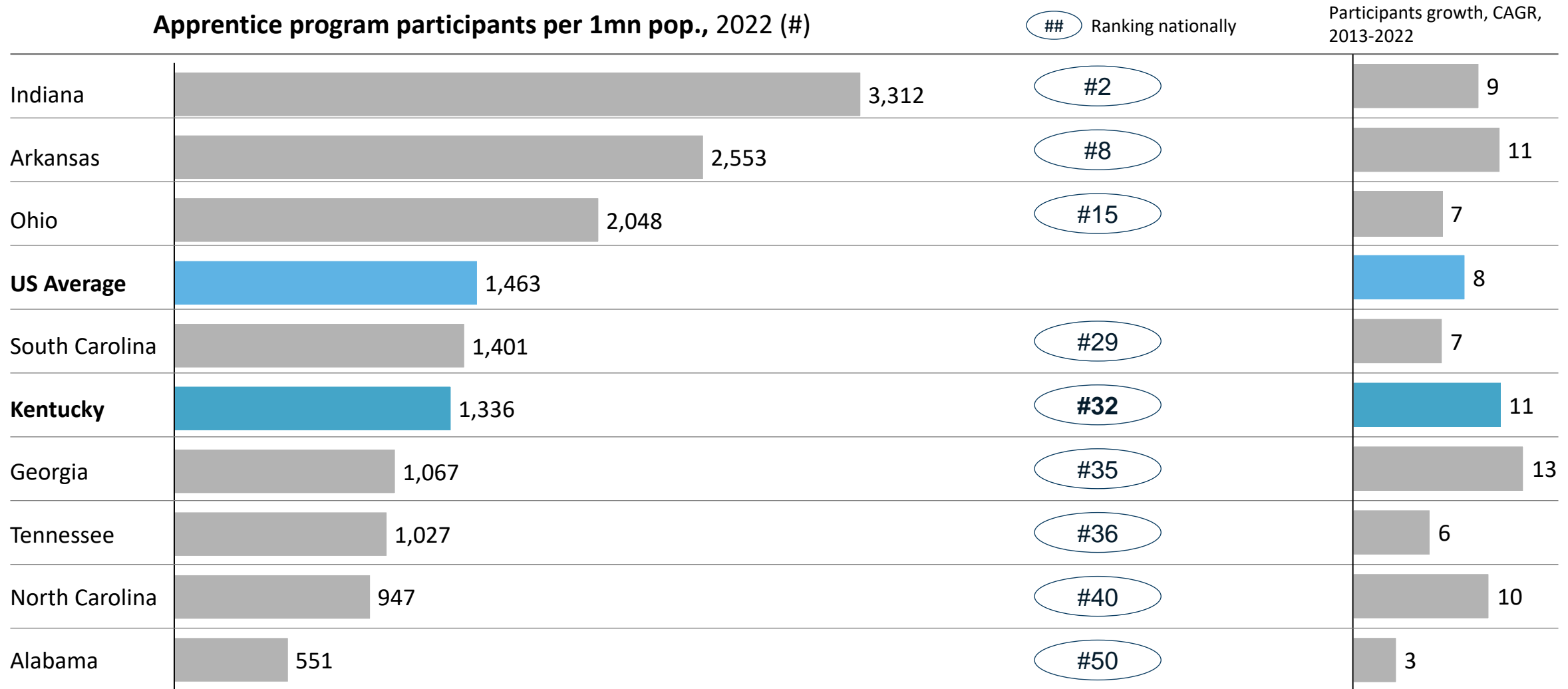
New specialized skills entering Top 50

Unique postings, Jan – Dec 2022



1. Specialized skills are primarily required within a subset of or equip one to perform a specific task. Chart includes skills that were in the top 50 in both 2017 and 2022. Nascent skills, that were in the top 50 in 2022 but weren't in 2017 are shown on the right-hand side of the page

4. Kentucky is ranked 32 nationally for apprenticeship opportunities, with above average growth since 2013



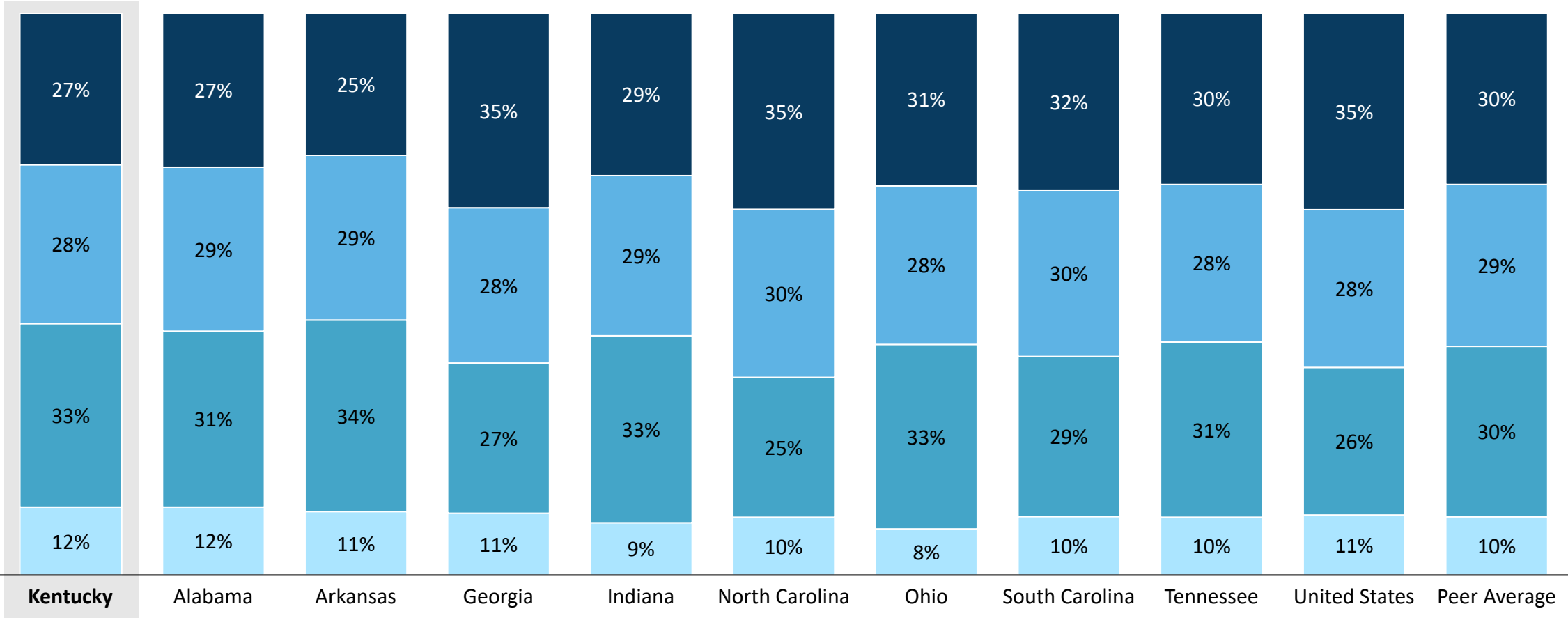
Source: US Department of Labor, Moody's Analytics, U.S. Census Bureau

4. Kentucky lags peers and US overall in educational attainment

■ Bachelor's degree or higher
 ■ Some college or associate's degree
 ■ High school graduate
 ■ Less than high school graduate

Educational attainment in population 25 and over

%, 2021



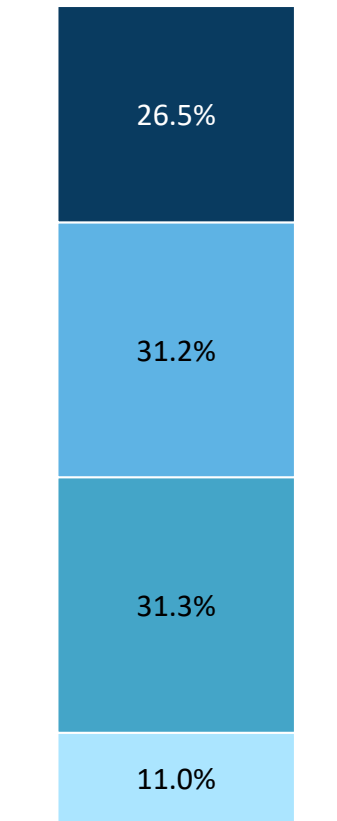
Source: US Census Bureau, American Community Survey (ACS) 1-year estimates

Data as of Dec 2023

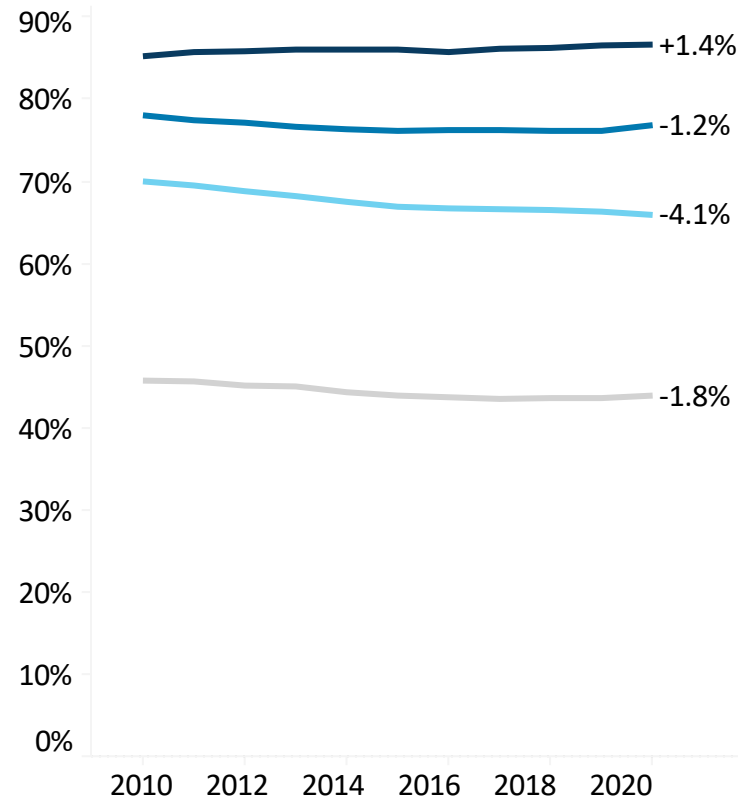
4. Higher educational attainment correlates to better labor force outcomes

■ Bachelor's degree or higher
 ■ Some college or associate's degree
 ■ High school graduate
 ■ Less than high school graduate

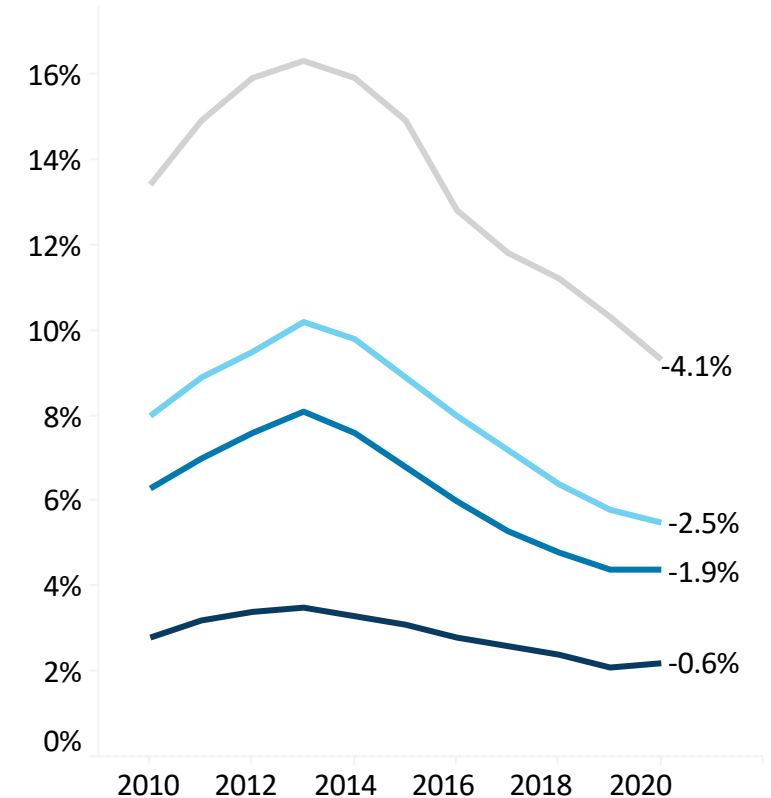
Education attainment among 25-64 year olds
Percent, 2020, 5-year estimate



Labor force participation rate among 25-64 year olds by educational attainment
Percent



Unemployment rate among 25-64 year olds by educational attainment
Percent



Source: US Census Bureau, American Community Survey (ACS) 5-year estimates

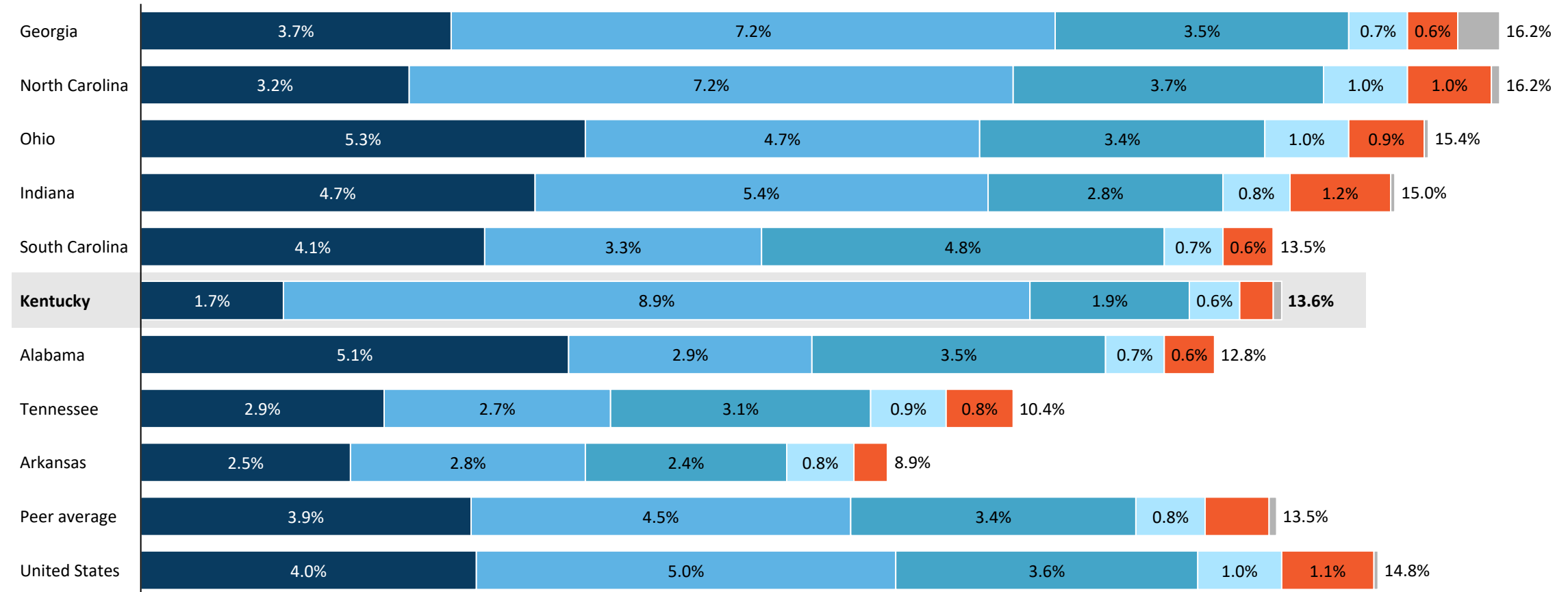
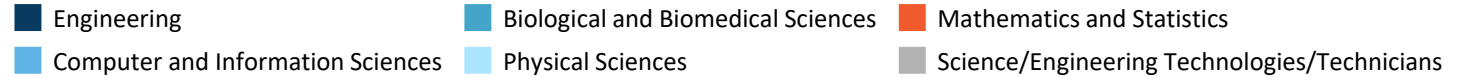
Data as of Dec 2023

4. ~14% of Kentucky graduates are in STEM fields, close to peer average

FOR OFFLINE REVIEW PRELIMINARY

STEM graduates

Percent, 2021



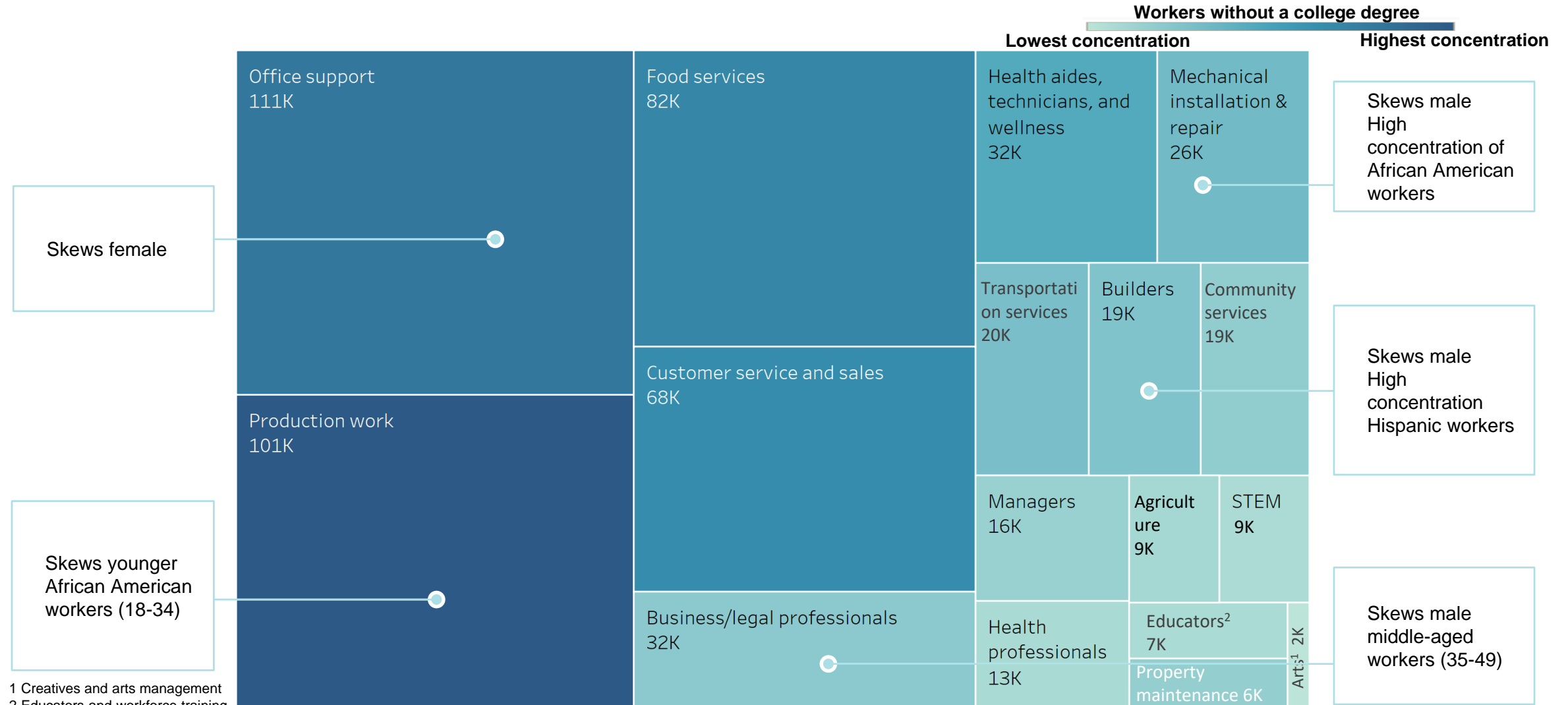
Note: Only includes awards that are Associate's or higher. Includes first and second major completions

Source: National Center for Education Statistics (NCES) Integrated Postsecondary Education Data System (IPEDS)

Data as of Dec 2023

4. Automation could displace ~574K jobs, affecting office support, production, food services, and customer service jobs the most

Expected job losses due to automation, 2030, post-COVID scenario, KY



1 Creatives and arts management
2 Educators and workforce training
3. Numbers are rounded off

Source: O*NET, BLS, MGI FoW post-Covid model, September 2022; MGI The future of work in America, McKinsey Global Institute analysis