CT's Inclusive Economic Action Plan

Compendium – Full Diagnostic

Feb 7, 2020

Contents

Our aspiration

CT will be a leading state in the nation for economic growth and job opportunities for all by 2025

The fastest job growth in the Northeast

A top ten state for median household income growth

15,000 additional households lifted into earning an annual living wage

A top ten state for median household income of racial and ethnic minorities

The most work-ready population in the US

Each target is tied to a specific metric, relative ranking, and absolute value

	Aspiration metrics	Draft public target	Suggested internal target for 2025[1]	CT's current position	CT's historical position	What you need to believe to achieve it
Growth[1]	Net job growth (% CAGR)[1]	Have the fastest job growth in the Northeast	**20K net new jobs** above projected annual growth of 27k jobs (0.3% from 2020 to 2025), top 15 nationally	**41st** with expected CAGR of 0.3% creating 27k jobs from 2020 to 2025	**46th** with a CAGR of 0.3% creating 27k jobs from 2015 to 2020	CT creates 20K jobs above expected job growth in the next 5 years to meet an 0.5% p.a. growth target, creating a total of 47k net new jobs
	Median household income growth (% CAGR)[1]	Become a top ten state for median household income growth	**Top 10 in median income**, increasing annual median household income by $500 above projections from 2020 to 2025	**15th** with an expected CAGR of 3.2% for a $14k increase in annual income from 2020 to 2025	**42nd** with a CAGR of 2.6% for a $10k increase in annual income from 2015 to 2020	New jobs created in CT will have an average annual wage of $68K-$83K to reach a top 10 median household income in the US
Inclusion	Households earning a living wage (%)	Lift 15,000 additional households into earning an annual living wage	**Enable 15K additional households** (1% of CT households) to earn a living wage (top 15 nationally)	**19th** with 60% of households (818k) earning a living wage in 2018	65% of households in CT earned a living wage in 2014[3]	At least 30% of net new quality credentials are earned by individuals in households currently below a living wage
	Median household income of racial & ethnic minority residents ($)	Become a top ten state for median household income of minority residents	**Top 10 in MHHI of racial and ethnic minority residents** $3K increase in MHHI	**13th** with racial and ethnic minority households earning $56k in 2018	**11th** with racial and ethnic minority households earning $49k in 2013	25K minority residents will attain new credentials beyond the 110k expected, with an incremental value of ~$14k; 20k minority residents attain a net new job worth $66k on avg.
	Population with a quality credential[2] (%)	Build the most work-ready population in the US	**#1 state for educational attainment** with a 51K incremental residents aged 25-64 with a quality credential	**5th** with 54.1% of residents holding a quality credential in 2017	**3rd** with 52.8% of residents holding a quality credential in 2013	CT will improve by 2.7 p.p. to reach MA's current level of 56.8% of the population with at least a quality credential, implying 10k net new credentials per year above the 50k degrees and certificates created today

1. Growth metrics are based on a forward looking five year forecast for all US States, using most recent source available (Moody's Analytics, 2020-2025)
2. Statistics include the Lumina Foundation's estimates of the share of the population 25-64 with a high quality non-degree credential
3. Historic ranking data is limited for this metric

Source: Moody's Analytics, Bureau of Labor Statistics, US Census, United Way ALICE index, Lumina Foundation

For each metric, a wide range of aspiration levels was considered

CT baseline position[3] | CT 2025 target

	Aspiration metrics		Top 5	Top 10	Top 15	Top 20	Top 25	Top 30	Top 35	Top 40
Growth[1]	Net Jobs	CAGR	1.0%	0.7%	0.5%	0.5%	0.5%	0.4%	0.4%	0.3%
		Absolute value	84k	58k	47k	43k	40k	37k	36k	27k
		Incremental value	57k	31k	20k	16k	13k	10k	9k	1k
	Median household income	CAGR	3.5%	3.4%	3.2%	3.2%	3.0%	3.0%	2.9%	2.8%
		Absolute value	15.1k	14.6k	14.1k	13.7k	13.2k	12.9k	12.7k	12.1k
		Incremental value	1.0k	0.5k	0.0k	-0.4k	-0.9k	-1.2k	-1.4k	-2.0k
Inclusion	Households earning a living wage	Share	63.5%	62.8%	61.4%	60.0%	58.9%	57.9%	57.1%	55.2%
		Absolute value	861.9k	852.4k	833.4k	814.4k	799.4k	785.9k	775k	749.2k
		Incremental value	43.4k	33.9k	14.9k	-4.1k	-19k	-32.6k	-43.4k	-69.2k
	Median income of minority households	Absolute value	72.4k	59.3k	54.2k	51.9k	47.6k	44.8k	42.1k	39.9k
		Incremental value		3.0k	-2.1k	-4.4k	-8.7	-11.4k	-14.2k	-16.4k
	Population with a quality credential[2]	Share	54%	52%	51%	49%	48%	46%	45%	43%
		Absolute value	1,941k	1,873k	1,812k	1,773k	1,719k	1,633k	1,600k	1,543k
		Incremental value	0k	-68k	-129k	-169k	-223k	-309k	-341k	-398k

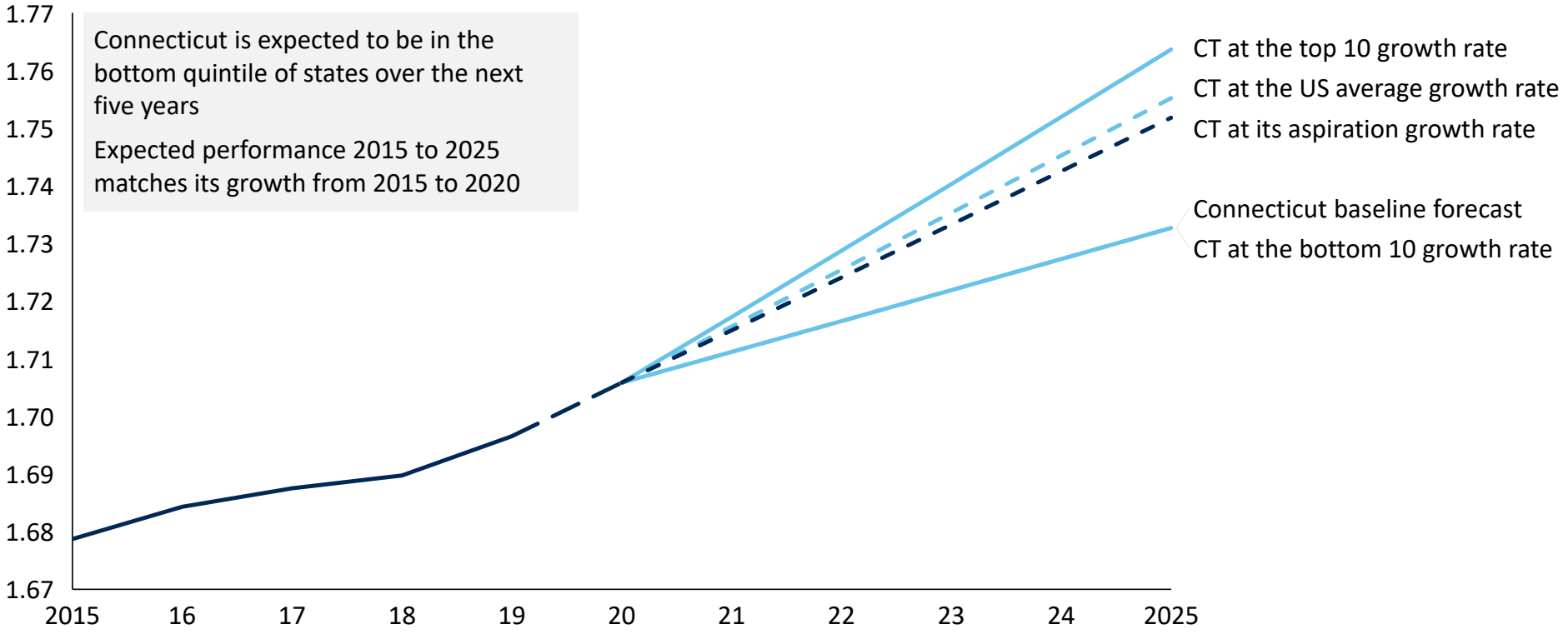
1. Growth metrics are driven by the 2020-2025 forecast for all US States
2. Statistics include the Lumina Foundation's estimates of the share of the population 25-64 with a high quality non-degree credential; 2025 target is to reach #1 on this measure
3. Baseline position is defined as the expected CT forecast for growth metrics and as the most recent reported historical value for inclusion metrics

Source: Moody's Analytics, Bureau of Labor Statistics, US Census, United Way ALICE index, Lumina Foundation

ADVANCECT

Historical context and expected performance: net job growth

Connecticut employment growth at different performance levels[1], millions of jobs

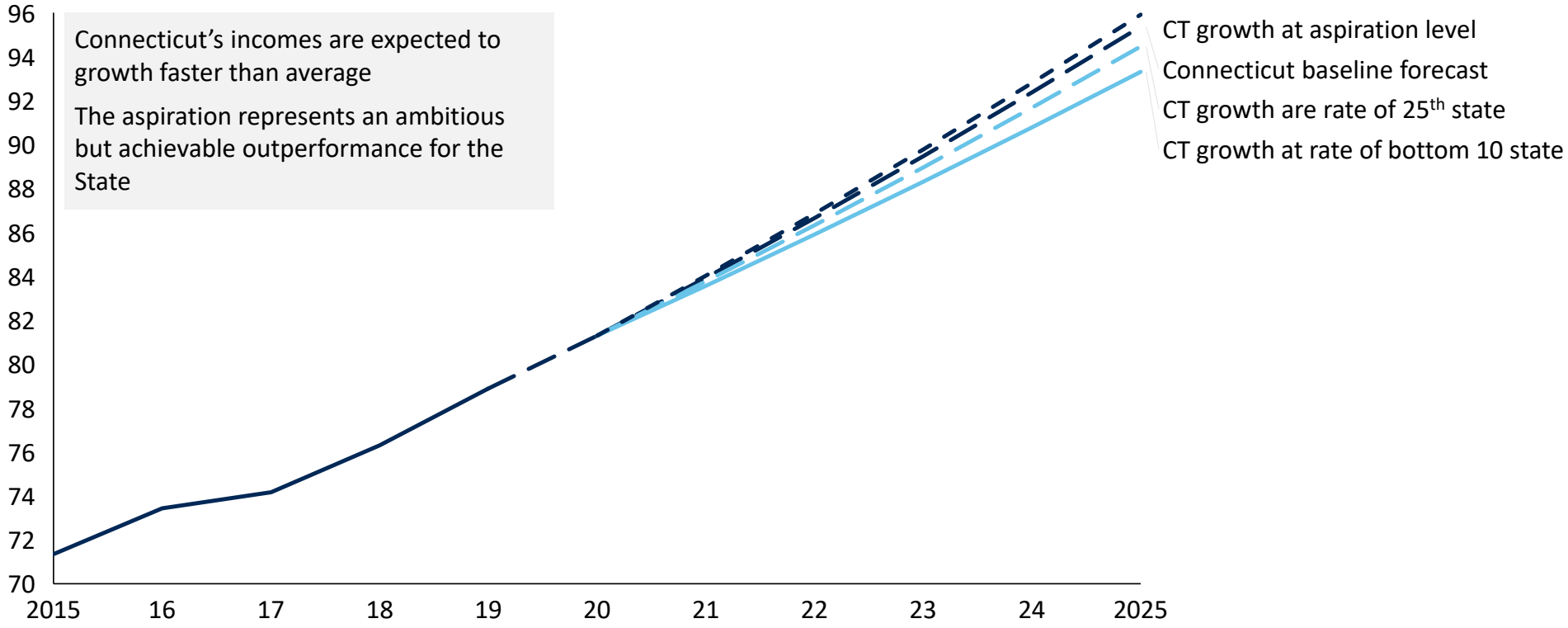


1. Historical data ends in 2018; 2019 is forecasted data, with diverging scenarios considered from 2020 on

Source: Moody's analytics, BLS

Historical context and expected performance: median household income growth

Connecticut median household income growth at different performance levels[1], $K

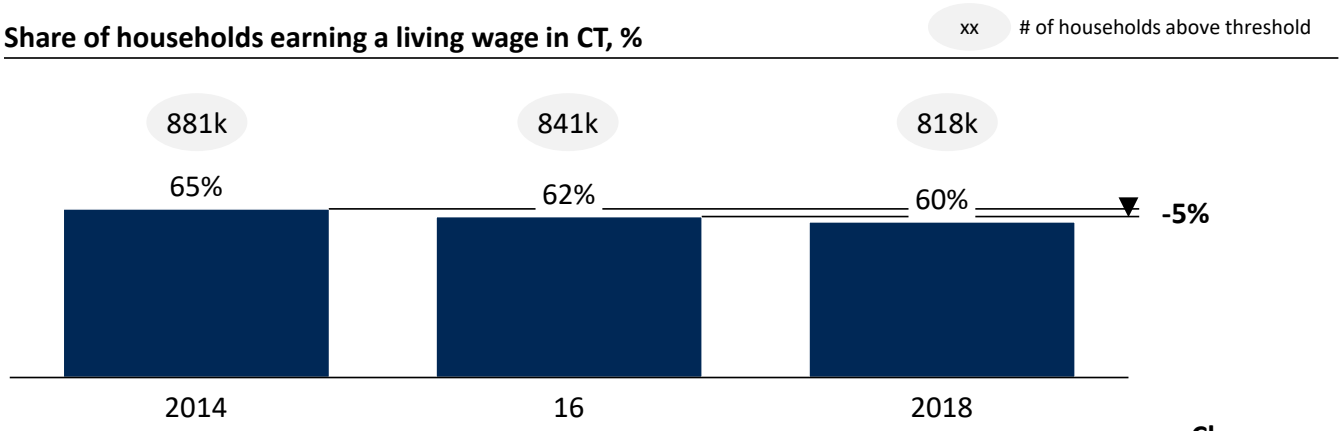


1. Historical data ends in 2018; 2019 is forecasted data, with diverging scenarios considered from 2020 on

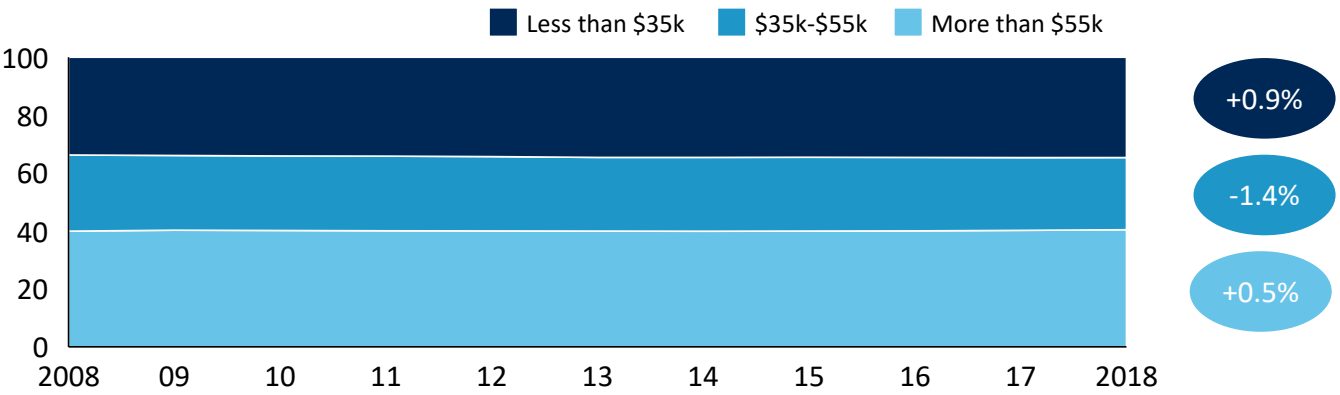
Source: Moody's Analytics

Historical context and expected performance: share of households earning a living wage

Share of households earning a living wage in CT, %



CT employment share by income level, %



Change ’08-’18

+0.9%

-1.4%

+0.5%

Implications

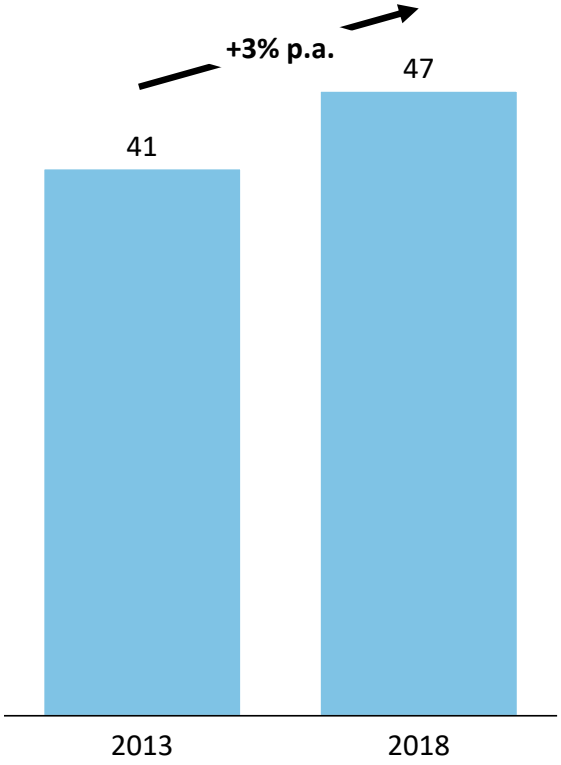
- Since the first report on living wages from United Way of Connecticut in 2014, the share of households earning a living wage has fallen 5%
- Over the last decade, low wage jobs (paying less than $35k) grew faster than any other income bucket
- Bold intervention through both traditional economic development and targeted workforce programs will be needed to reverse this trend going forward

Source: United Way of Connecticut ALICE reports, EMSI, BLS Occupational Employment Survey

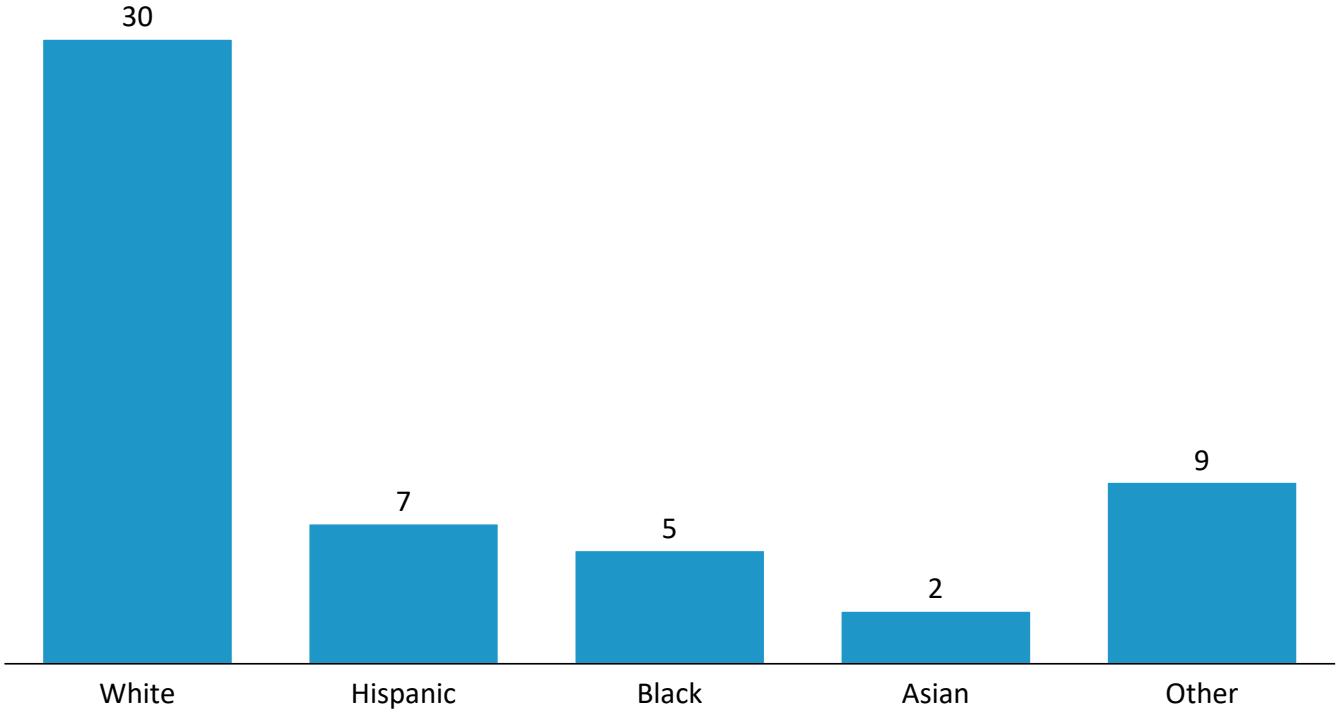
ADVANCECT

Historical context and expected performance: minority income levels

Black and Hispanic median household income over time[1], $K



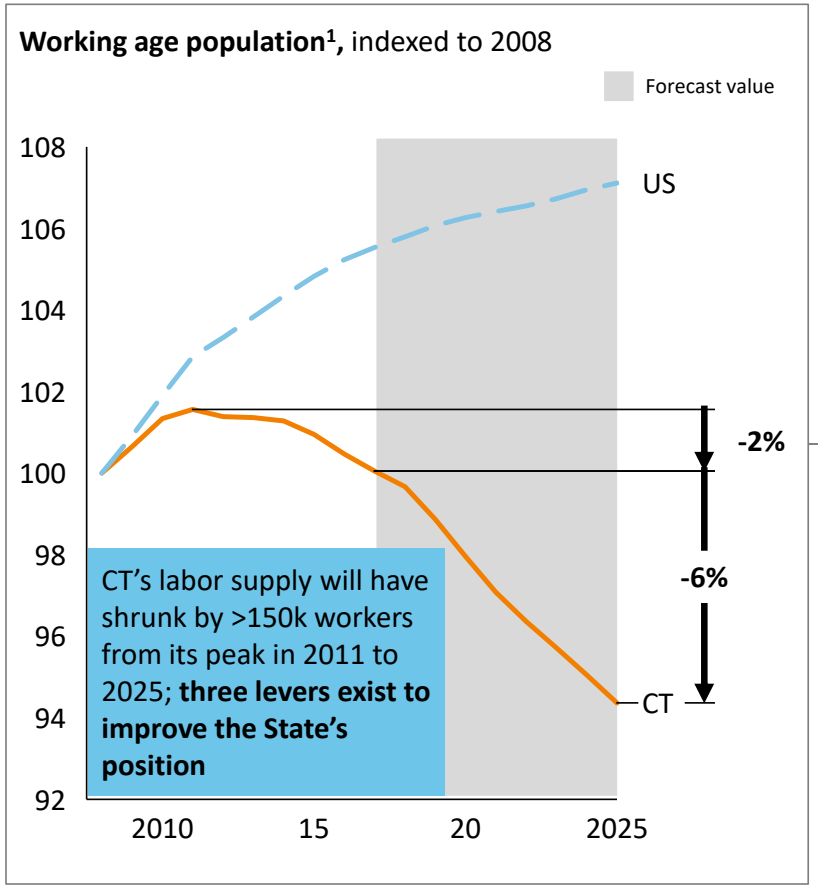
Connecticut educational credential and degree completions by race[1], K 2018

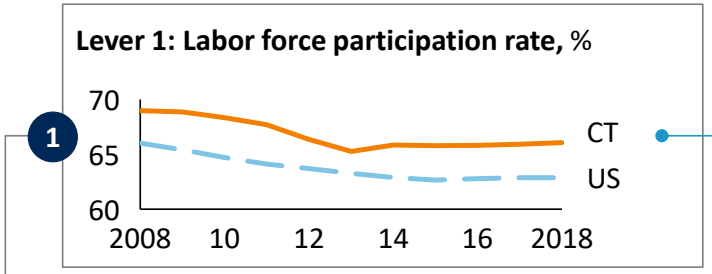


1. Projections are unavailable for this measure

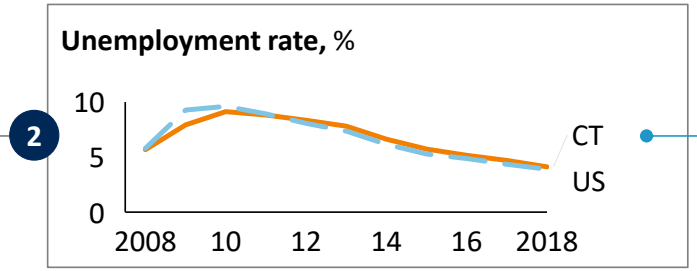
Source: US Census, National Center for Education Statistics

CT's labor supply is trending towards a 6% decline in the coming years, with few levers available to mitigate trend

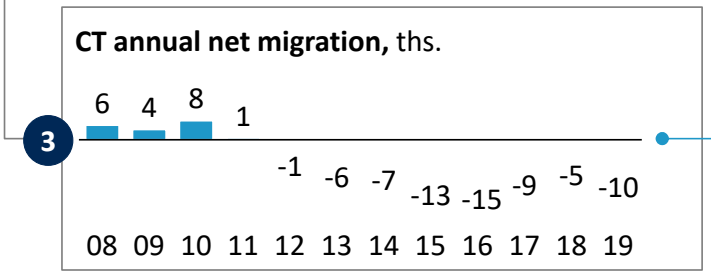




Stable, higher than US average LFPR is a structural barrier to unlocking sufficient new worker participation



Historically low unemployment rate is a structural barrier to bringing sufficient numbers of job seekers back to employment



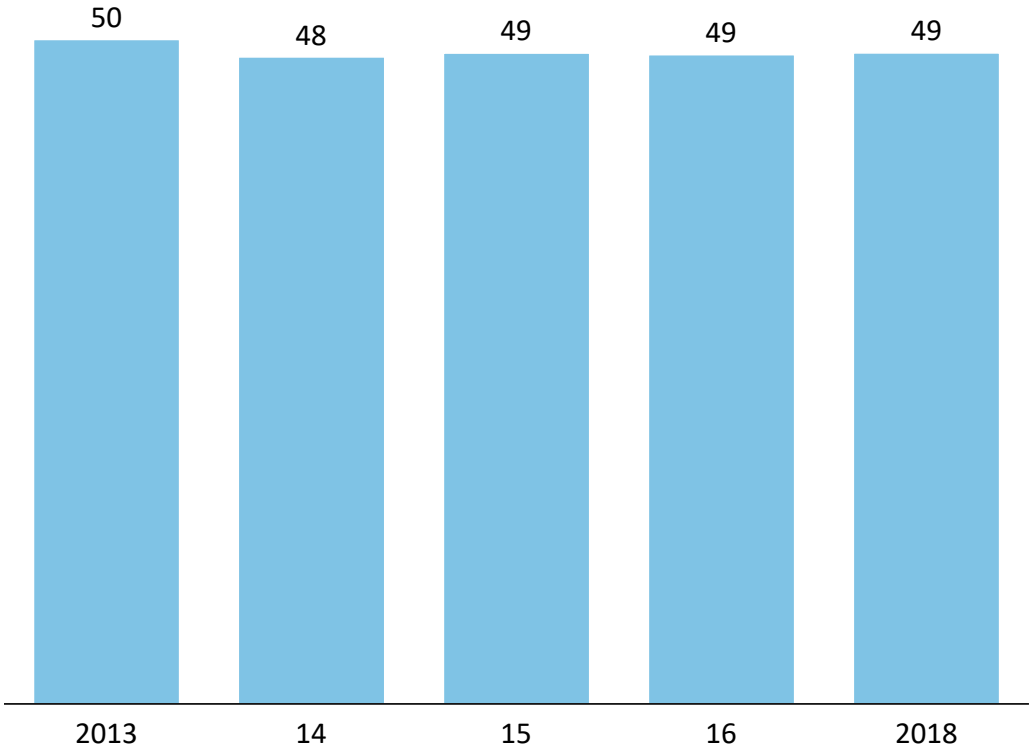
Substantial opportunity exists to improve CT's net migration, but it has historically struggled to take advantage of this lever

1. Defined as population aged 20 to 64

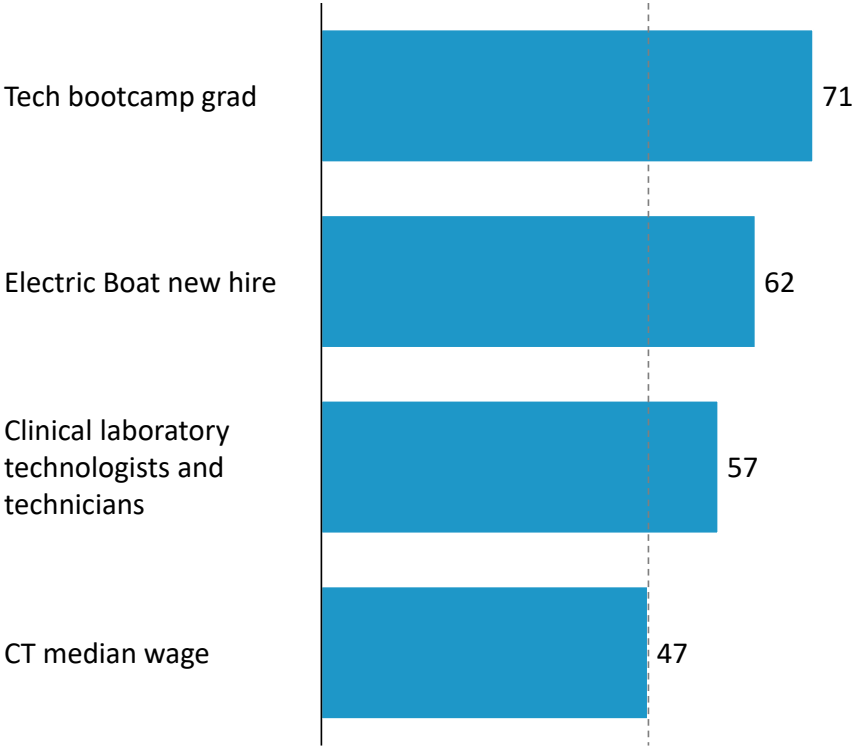
Source: Moody's analytics, BLS, US Census

Historical context and expected performance: quality credentials

CT credentials[1] (degrees and certificates) per year[2], K



Annual wages of workers in credential-friendly fields, $K



1. According to the Lumina Foundation, a quality credential is a degree, certificates, industry certifications, or other credentials that—at a minimum—has clear and transparent learning outcomes and that leads to meaningful employment and to further learning 2 2017 excluded due to an anomaly in the data

Source: EMSI, National Center for Education Statistics, CourseReport, Electric Boat, BLS Occupational Employment Survey, expert interviews

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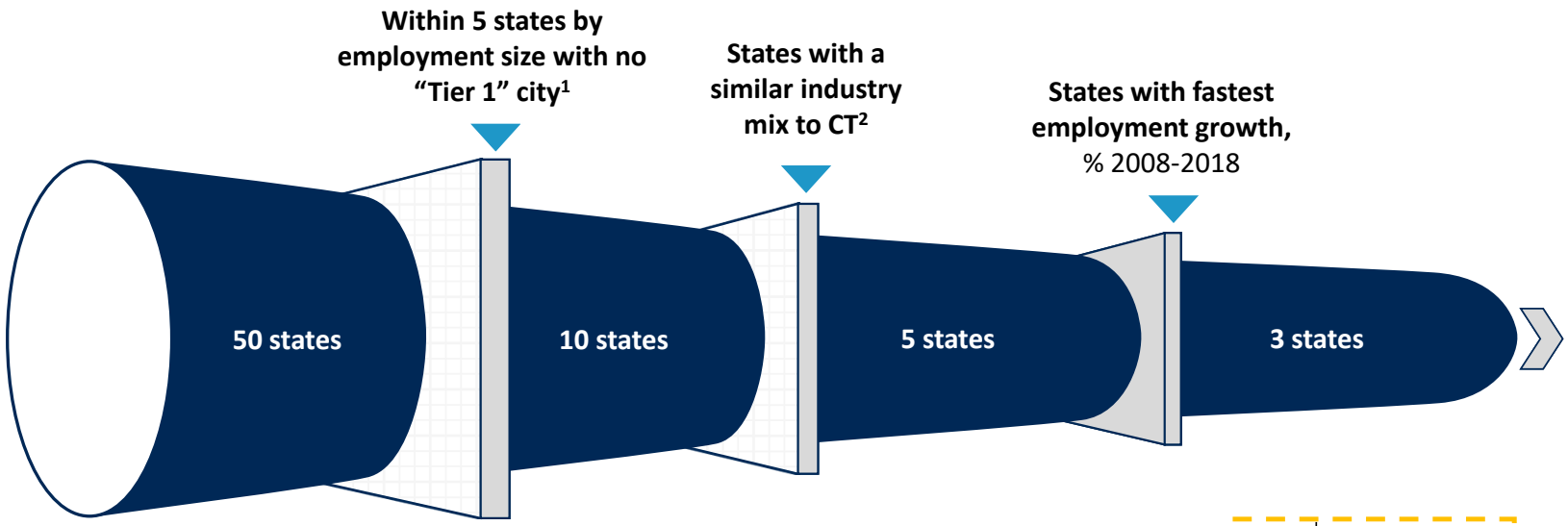
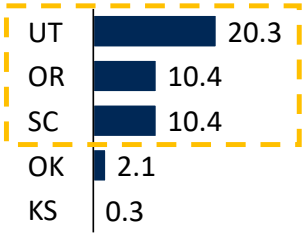
CT could better understand its economic performance through comparisons to 'aspirational peers'

Aspirational peer selection approach



Remaining states:

UT	IA	KS
OR	OK	OK
SC	LA	OR
NV	KS	SC
KY	AL	UT

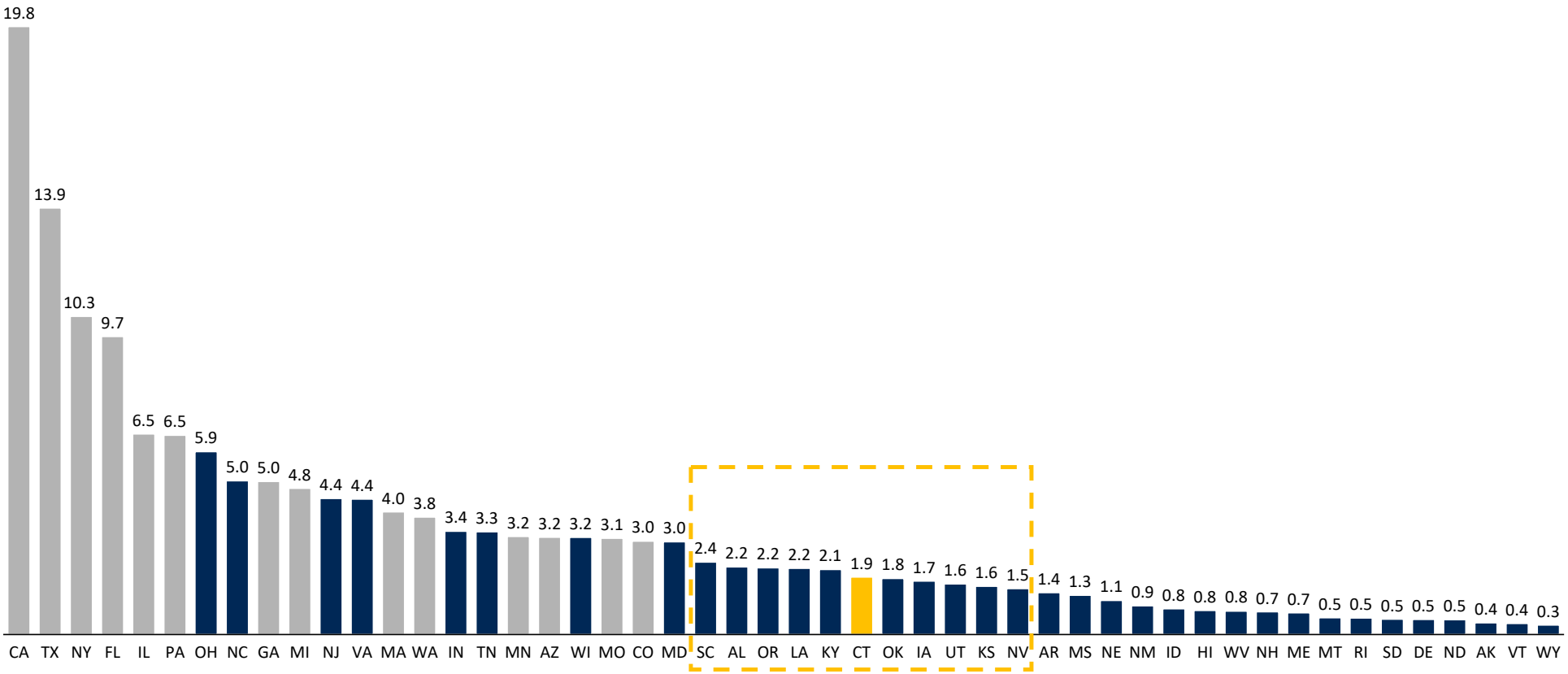


1. Metro areas of 1.5M workers or more
2. Requires a similar reliance (+/- 2% of total industry mix) on at least two of four traded sectors core to CT's economy: finance and insurance, manufacturing, education services, and professional services

Source: EMSI, BLS

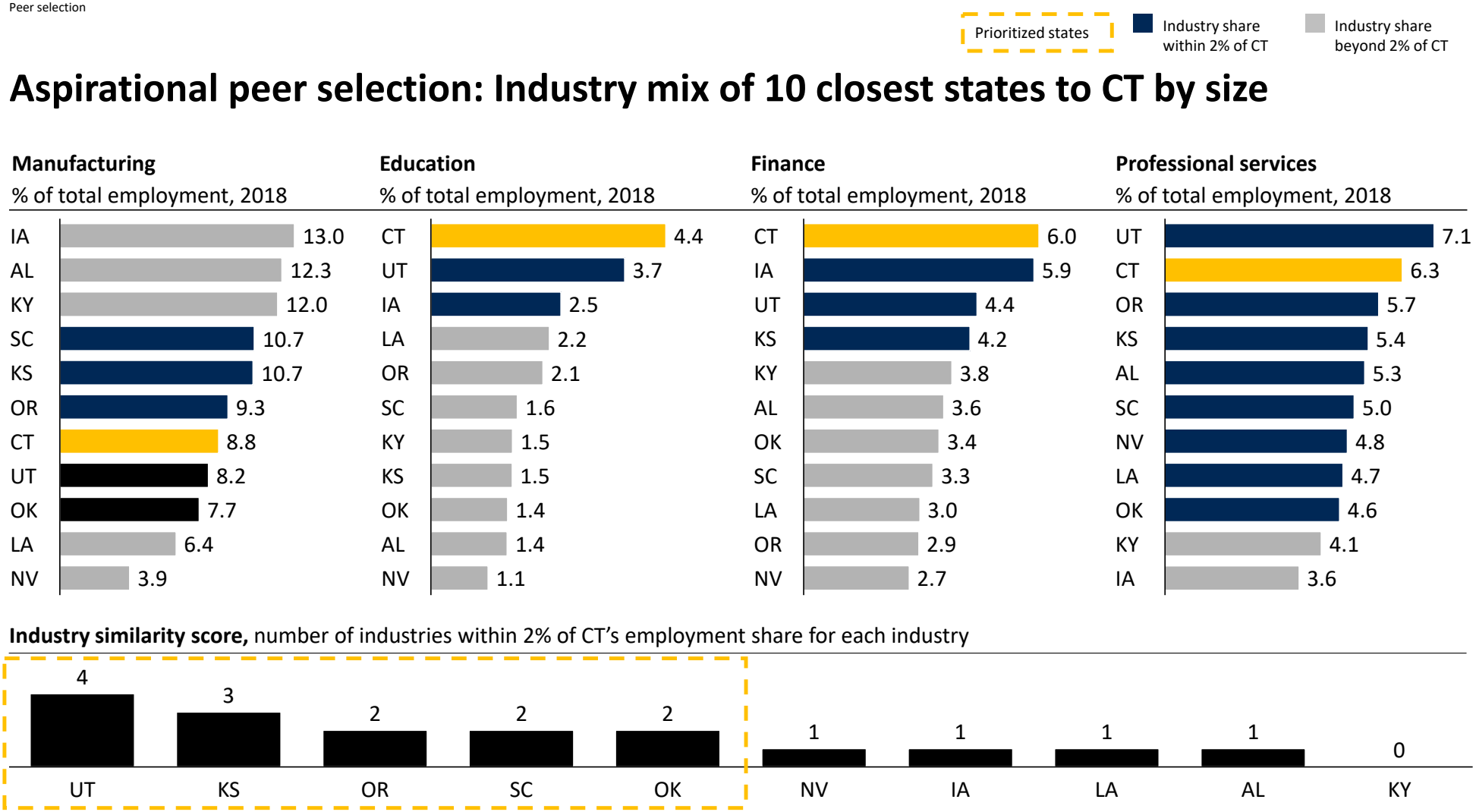
Aspirational peer selection: Similar employment size and no Tier 1 cities

Employment by state, millions of workers, 2018



Source: EMSI, BLS

Aspirational peer selection: Industry mix of 10 closest states to CT by size



Industry similarity score, number of industries within 2% of CT's employment share for each industry

Source: EMSI, BLS

Peers used for comparisons to other states fit into two distinct archetypes

Peer set	Explanation	Criteria for a state to be included	Peer states
Regional	**Attributes:** • Operate in a similar regional context • Share labor sheds with certain regions and compete on company attraction **Rationale:** • Provide benchmarks for local competitiveness	• Immediate neighbors to Connecticut	• MA • RI • NY • NJ
Economic	**Attributes:** • Broadly comparable economies to CT • Outperformed over last decade **Rationale:** • Provide national benchmarks • Offer insight into elements of differentiated economic performance	• +/- 5 states from CT in size of labor pool No "Tier 1" city (metro area with 1.5M workers or more) • Rely on at least two of four key industry sectors in CT (finance, manufacturing, prof. services, education) • High performing over the past decade (top 3 states by job growth 2008-2018)	• UT • OR • SC
		• Economic ties to major city across border • Coastal, federally funded manufacturing	• VA

Source: EMSI, BLS

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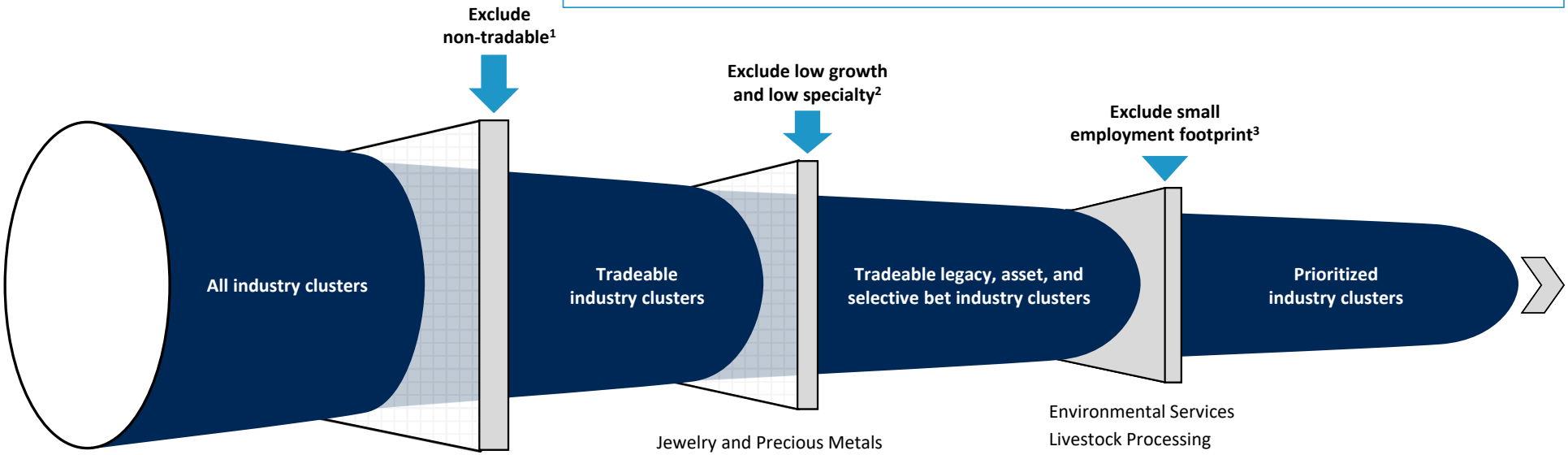
We identified attractive sectors for the state using a series of filters

Non-tradable industries are excluded from industry cluster analyses because their growth is capped by local demand (as compared to tradable industries). They follow (rather than create) long-term sustainable growth

Non-tradable sectors are included in workforce analyses, as potential generators of quality jobs



Examples of filtered clusters:

Local Health Services
Local Logistical Services
Local Utilities

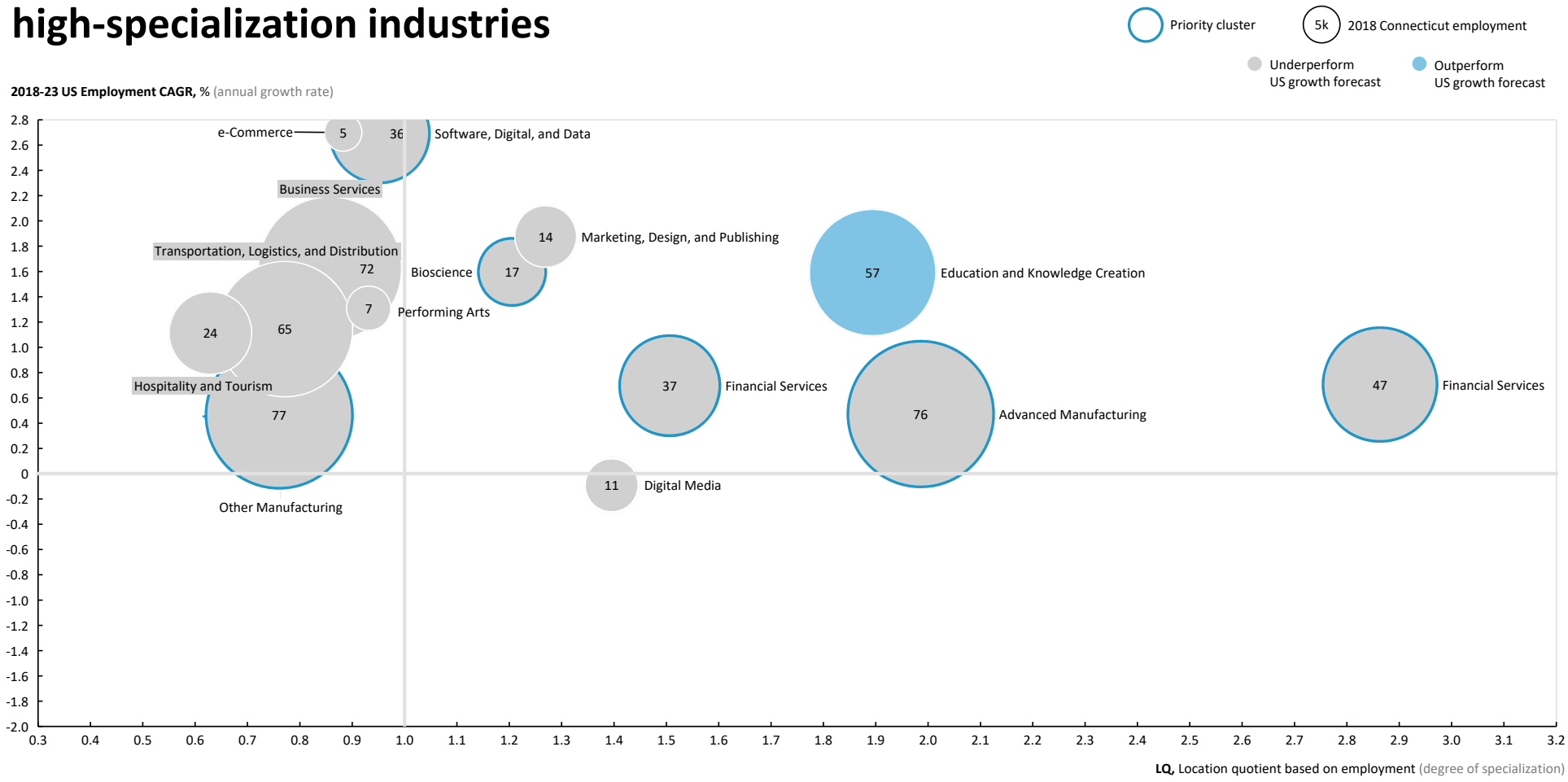
Jewelry and Precious Metals
Oil and Gas Production
Metal Mining
Coal Mining
Tobacco

Environmental Services
Livestock Processing
Music and Sound Recording
Wood Products
Furniture

Note: this exercise aims to inform the prioritization of sectors for pro-active outreach and activities for the State. However, passive opportunities in deprioritized areas should still be pursued

1. As defined by US cluster mapping initiative
2. Low growth defined as US forecasted 5-year CAGR< overall US forecasted 5-year CAGR (1.06%), low specialty defined as LQ < 1
3. Defined as less than 5000 jobs in CT

Priority clusters were strategically chosen from high-growth, high-specialization industries



NOTE: US Cluster Mapping Initiative's industry clusters and sub-clusters were used to map Connecticut's economy in the above data; only segments with CT employment >5000 are shown

Source: EMSI, BLS

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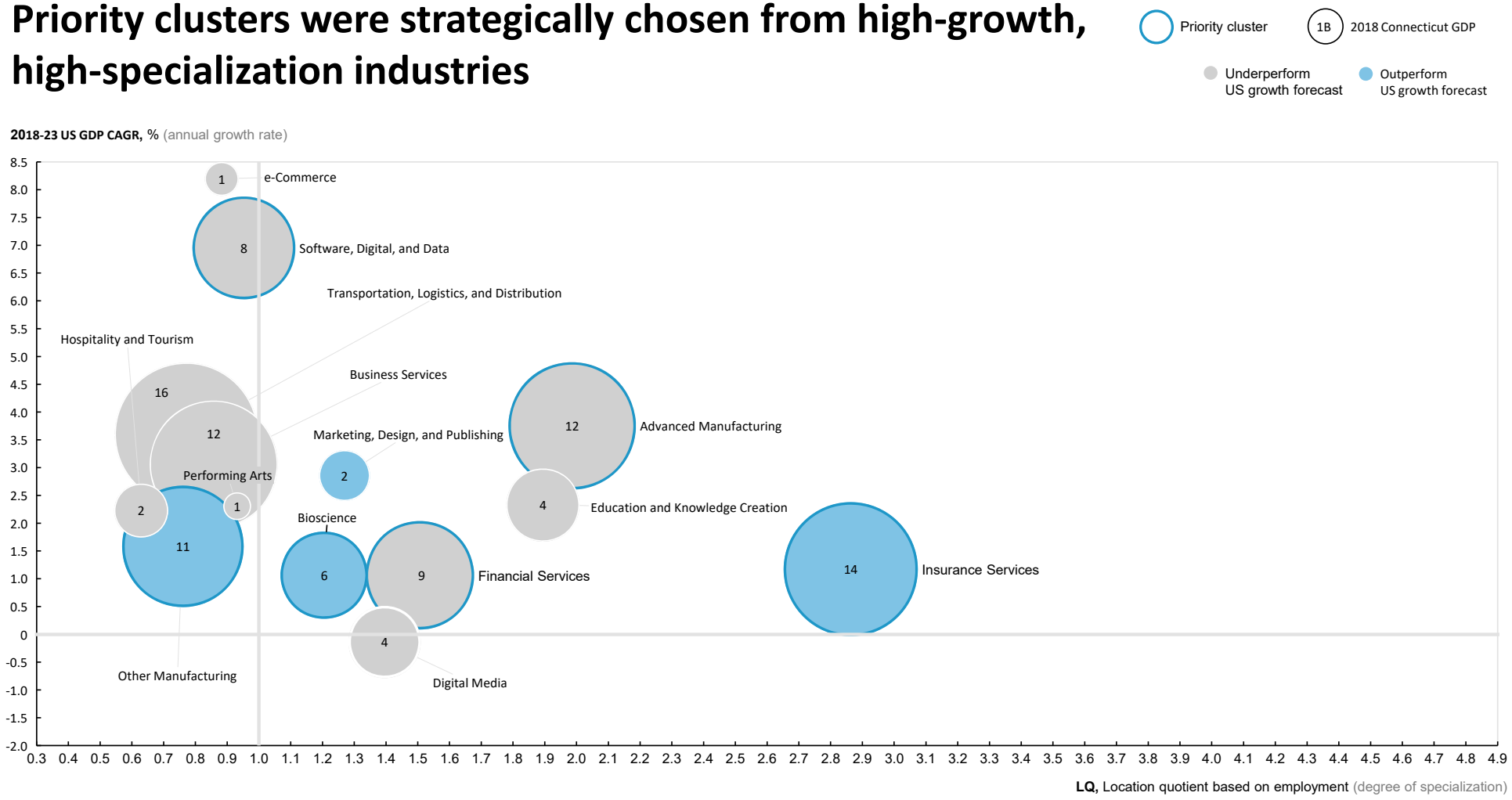

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SOURCE: EMSI, BLS

CT has strong industries to serve as the engines of growth

Low High

	Jobs				Inclusivity	Productivity growth			Specialization
Target cluster	**2018 jobs,** K	**US jobs CAGR** '18-'28	**Δ to US jobs CAGR[1]** '18-'28 p.p.	**Jobs multiplier[2]**	**Good pay / no BA jobs[3],** share	**2018 GDP,** $B	**US GDP CAGR[1],** 18-'28	**Δ to US GDP CAGR[1]** '18-'28 p.p.	**Specialization,** LQ[4]
Advanced Manufacturing	76	0.1%	-0.3 p.p.	2.6	22%	12	3.6%	-0.6 p.p.	2.0
Bioscience	17	1.2%	-0.4 p.p.	2.9	16%	6	0.9%	0.1 p.p.	1.2
Financial Services	37	0.7%	-1.9 p.p.	2.5	10%	9	0.8%	-0.4 p.p.	1.5
Insurance Services	47	0.6%	-1.3 p.p.	4.2	12%	14	1.5%	-0.3 p.p.	2.9
Other Manufacturing	77	0.2%	-0.5 p.p.	2.3	24%	11	1.5%	0.5 p.p.	0.8
Software, Digital, and Data Services	36	2.1%	-1.4 p.p.	2.2	12%	8	6%	0.0 p.p.	1.0
Portfolio Total	**290**	**0.6%**	**-0.9 p.p.**	**2.7**	**18%**	**59814**	**2.9%**	**-0.6 p.p.**	**1.4**

1. Delta to US is measured as the difference between projected US growth and projected CT growth over the coming decade; 2. Weighted averages of EMSI's multipliers, estimated by a multi-region "gravitational pull" model for transactions flows; represents the total number jobs created when a job is created in a given sector (i.e., original job in industry plus jobs in adjacent/support/service industries); 3. Good jobs are jobs that pay above the regional median wage and include benefits but do not require a college degree, while promising jobs lead to good jobs; 4. LQ is a measurement of the comparative concentration or density of industries relative to other locations; the ratio of an sector's share of jobs in a given area to that occupation's share of jobs in the U.S. as a whole

Source: EMSI, BLS, Brookings Institute, Moody's Analytics

Full deep dive on CT's industry clusters

DRAFT

	Jobs				Inclusivity	Productivity growth			Specialization
Target cluster	**2018 jobs,** K	**US jobs CAGR** '18-'28	**Δ to US jobs CAGR[1]** '18-'28 p.p.	**Jobs multiplier[2]**	**Good pay / no BA jobs[3],** share	**2018 GDP,** $B	**US GDP CAGR[1],** 18-'28	**Δ to US GDP CAGR[1]** '18-'28 p.p.	**Specialization,** LQ[4]
Advanced Manufacturing	76	0.1%	-0.3	2.6	22%	12	3.6%	-0.6	2.0
Agricultural Inputs and Services	7	0.2%	0.1	1.6	14%	Incomplete Data	Incomplete Data	Incomplete Data	0.3
Bioscience	17	1.2%	-0.4	2.9	16%	6	0.9%	0.1	1.2
Business Services	72	1.3%	-0.7	2.4	16%	12	2.7%	-0.2	0.9
Coal Mining	0	-0.5%	6.2	1.4	31%	0	-14.1%	13.3	0.0
Communications Equipment and Services	1	-0.9%	-5.6	6.4	24%	0	-2.3%	6.6	0.3
Construction Products and Services	4	2.1%	-1.4	2.1	37%	1	1.5%	-2.2	0.5

1. Delta to US is measured as the difference between projected US growth and projected CT growth over the coming decade; 2. Weighted averages of EMSI's multipliers, estimated by a multi-region "gravitational pull" model for transactions flows; represents the total number jobs created when a job is created in a given sector (i.e., original job in industry plus jobs in adjacent/support/service industries); 3. "Good pay / no BA" jobs are jobs that pay above the regional median wage and include benefits but do not require a college degree, or are jobs that lead to those jobs; 4. LQ is a measurement of the comparative concentration or density of industries relative to other locations; the ratio of an sector's share of jobs in a given area to that occupation's share of jobs in the U.S. as a whole

Source: EMSI, BLS, Brookings Institute, Moody's Analytics

Full deep dive on CT's industry clusters

DRAFT

	Jobs				Inclusivity	Productivity growth			Specialization
Target cluster	**2018 jobs,** K	**US jobs CAGR** '18-'28	**Δ to US jobs CAGR[1]** '18-'28 p.p.	**Jobs multiplier[2]**	**Good pay / no BA jobs[3],** share	**2018 GDP,** $B	**US GDP CAGR[1],** 18-'28	**Δ to US GDP CAGR[1]** '18-'28 p.p.	**Specialization,** LQ[4]
Digital Media	11	-0.1%	-1.9	3.7	16%	4	0.4%	-1.5	1.2
e-Commerce	5	2.3%	-2.0	2.3	12%	1	7.1%	0.3	0.9
Education and Knowledge Creation	57	1.3%	0.6	1.6	9%	4	2.2%	-0.2	1.9
Electric Power Generation and Transmission	0	-0.8%	0.1	4.3	46%	0	2.1%	-1.9	0.4
Environmental Services	2	1.5%	-1.1	2.0	29%	0	2.5%	0.2	1.2
Financial Services	37	0.7%	-1.9	2.5	10%	9	0.8%	-0.4	1.5
Fishing and Fishing Products	0	-0.3%	-0.9	1.4	15%	Incomplete Data	Incomplete Data	Incomplete Data	0.2

1. Delta to US is measured as the difference between projected US growth and projected CT growth over the coming decade; 2. Weighted averages of EMSI's multipliers, estimated by a multi-region "gravitational pull" model for transactions flows; represents the total number jobs created when a job is created in a given sector (i.e., original job in industry plus jobs in adjacent/support/service industries); 3. "Good pay / no BA" jobs are jobs that pay above the regional median wage and include benefits but do not require a college degree, or are jobs that lead to those jobs; 4. LQ is a measurement of the comparative concentration or density of industries relative to other locations; the ratio of an sector's share of jobs in a given area to that occupation's share of jobs in the U.S. as a whole

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Food Processing and Manufacturing	0	-0.8%	2.5	2.2	11%	0	-1.1%	-0.5	0.0
Forestry	0	-0.7%	-0.4	1.4	17%	Incomplete Data	Incomplete Data	Incomplete Data	0.1
Government	244	0.4%	-0.6	2.5	0%	0	-1.7%	-0.5	0.9
Green Energy and Renewables	1	1.6%	-2.7	4.4	11%	1	2.1%	-1.9	1.3
Hospitality and Tourism	24	0.8%	-0.1	1.6	3%	2	2.1%	-0.9	0.6
Insurance Services	47	0.6%	-1.3	4.2	12%	14	1.5%	-0.3	2.9
Livestock Processing	0	-0.8%	5.0	1.6	18%	0	-1.4%	-0.2	0.0

1. Delta to US is measured as the difference between projected US growth and projected CT growth over the coming decade; 2 Weighted averages of EMSI's multipliers, estimated by a multi-region "gravitational pull" model for transactions flows; represents the total number jobs created when a job is created in a given sector (i.e., original job in industry plus jobs in adjacent/support/service industries); 3 "Good pay / no BA" jobs are jobs that pay above the regional median wage and include benefits but do not require a college degree, or are jobs that lead to those jobs; 4 LQ is a measurement of the comparative concentration or density of industries relative to other locations; the ratio of an sector's share of jobs in a given area to that occupation's share of jobs in the U.S. as a whole

Source: EMSI, BLS, Brookings Institute, Moody's Analytics

Full deep dive on CT's industry clusters

DRAFT

	Jobs				Inclusivity	Productivity growth			Specialization
Target cluster	**2018 jobs,** K	**US jobs CAGR** '18-'28	**Δ to US jobs CAGR[1]** '18-'28 p.p.	**Jobs multiplier[2]**	**Good pay / no BA jobs[3],** share	**2018 GDP,** $B	**US GDP CAGR[1],** 18-'28	**Δ to US GDP CAGR[1]** '18-'28 p.p.	**Specialization,** LQ[4]
Local Commercial Services	106	0.9%	-0.4	1.6	13%	9	1.9%	0.1	1.0
Local Community and Civic Organizations	89	1.7%	0.2	1.3	4%	3	1.2%	-0.9	1.2
Local Education and Training	32	1.0%	-0.8	1.3	7%	2	2.3%	-1.1	1.6
Local Entertainment and Media	17	-0.5%	-1.1	1.6	12%	3	-1.3%	1.5	1.0
Local Financial Services	30	0.6%	-0.1	2.6	11%	6	1.0%	1.4	0.8
Local Food and Beverage Proc. and Distribution	55	0.4%	-0.6	1.5	12%	4	0.7%	0.3	1.1
Local Health Services	228	1.5%	-0.6	1.8	13%	19	2.4%	-0.6	1.2

1. Delta to US is measured as the difference between projected US growth and projected CT growth over the coming decade; 2. Weighted averages of EMSI's multipliers, estimated by a multi-region "gravitational pull" model for transactions flows; represents the total number jobs created when a job is created in a given sector (i.e., original job in industry plus jobs in adjacent/support/service industries); 3. "Good pay / no BA" jobs are jobs that pay above the regional median wage and include benefits but do not require a college degree, or are jobs that lead to those jobs; 4. LQ is a measurement of the comparative concentration or density of industries relative to other locations; the ratio of an sector's share of jobs in a given area to that occupation's share of jobs in the U.S. as a whole

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Local Hospitality Establishments	142	1.0%	-0.2	1.3	0%	5	2.2%	-0.8	0.9
Local Household Goods and Services	32	0.6%	-0.2	1.5	16%	2	1.6%	0.0	1.2
Local Industrial Products and Services	2	0.8%	-1.0	1.9	15%	1	1.6%	0.2	0.7
Local Logistical Services	34	1.2%	-0.1	1.6	24%	4	1.8%	0.1	1.1
Local Motor Vehicle Products and Services	46	0.8%	-0.2	1.8	13%	5	3.6%	0.7	0.8
Local Personal Services (Non-Medical)	52	1.0%	-0.1	1.3	5%	2	1.3%	-0.2	1.1
Local Real Estate, Construction, and Development	122	0.9%	-0.7	1.7	31%	38	1.8%	-0.3	0.9

1. Delta to US is measured as the difference between projected US growth and projected CT growth over the coming decade; 2. Weighted averages of EMSI's multipliers, estimated by a multi-region "gravitational pull" model for transactions flows; represents the total number jobs created when a job is created in a given sector (i.e., original job in industry plus jobs in adjacent/support/service industries); 3. "Good pay / no BA" jobs are jobs that pay above the regional median wage and include benefits but do not require a college degree, or are jobs that lead to those jobs; 4. LQ is a measurement of the comparative concentration or density of industries relative to other locations; the ratio of an sector's share of jobs in a given area to that occupation's share of jobs in the U.S. as a whole

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Local Retailing of Clothing & General Merchandise	48	0.1%	-0.3	1.5	12%	1	1.3%	-0.2	0.9
Local Utilities	16	-0.5%	-0.9	3.6	29%	3	1.5%	-1.2	1.2
Marketing, Design, and Publishing	14	1.5%	-0.9	1.8	11%	2	3.0%	2.8	1.3
Metal Mining	0	0.8%	1.1	2.0	34%	0	-9.1%	8.3	0.0
Music and Sound Recording	0	0.6%	-1.9	1.6	18%	0	-3.2%	1.5	0.3
Nonmetal Mining	1	0.6%	-1.7	2.2	47%	0	-7.9%	8.9	0.4
Oil and Gas Production and Transportation	0	1.6%	-2.7	3.6	27%	0	1.9%	-1.6	0.0

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Other Manufacturing	77	0.2%	-0.5	2.3	23%	11	1.5%	0.5	0.8
Performing Arts	7	1.0%	-1.0	1.5	12%	1	2.3%	-1.1	0.9
Printing Services	0	-0.9%	4.2	1.7	11%	0	-8.6%	3.1	1.3
Software, Digital, and Data	36	2.1%	-1.4	2.1	12%	8	6.0%	0.0	1.0
Transportation, Logistics, and Distribution	65	0.8%	-0.7	2.6	18%	16	3.6%	-0.6	0.8
Unclassified	3	Incomplete Data	Incomplete Data	Incomplete Data	Incomplete Data	Incomplete Data	Incomplete Data	Incomplete Data	Incomplete Data
Video Production and Distribution	4	1.5%	2.1	3.7	14%	1	-2.8%	1.5	1.2

1. Delta to US is measured as the difference between projected US growth and projected CT growth over the coming decade; 2. Weighted averages of EMSI's multipliers, estimated by a multi-region "gravitational pull" model for transactions flows; represents the total number jobs created when a job is created in a given sector (i.e., original job in industry plus jobs in adjacent/support/service industries); 3. "Good pay / no BA" jobs are jobs that pay above the regional median wage and include benefits but do not require a college degree, or are jobs that lead to those jobs; 4. LQ is a measurement of the comparative concentration or density of industries relative to other locations; the ratio of an sector's share of jobs in a given area to that occupation's share of jobs in the U.S. as a whole

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Water Transportation	1	0.9%	1.4	3.3	33%	0	-0.7%	-1.0	0.6

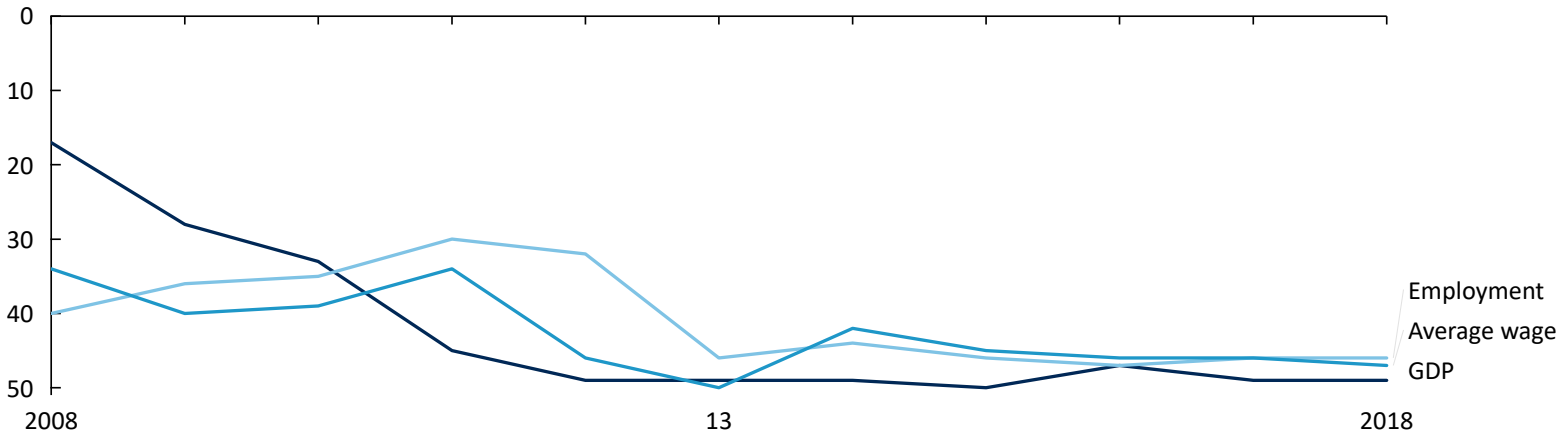
1. Delta to US is measured as the difference between projected US growth and projected CT growth over the coming decade; 2. Weighted averages of EMSI's multipliers, estimated by a multi-region "gravitational pull" model for transactions flows; represents the total number jobs created when a job is created in a given sector (i.e., original job in industry plus jobs in adjacent/support/service industries); 3. "Good pay / no BA" jobs are jobs that pay above the regional median wage and include benefits but do not require a college degree, or are jobs that lead to those jobs; 4. LQ is a measurement of the comparative concentration or density of industries relative to other locations; the ratio of an sector's share of jobs in a given area to that occupation's share of jobs in the U.S. as a whole

Source: EMSI, BLS, Brookings Institute, Moody's Analytics

Contents

CT lags the nation in key growth indicators

CT's growth rankings vs US states[1], Rank



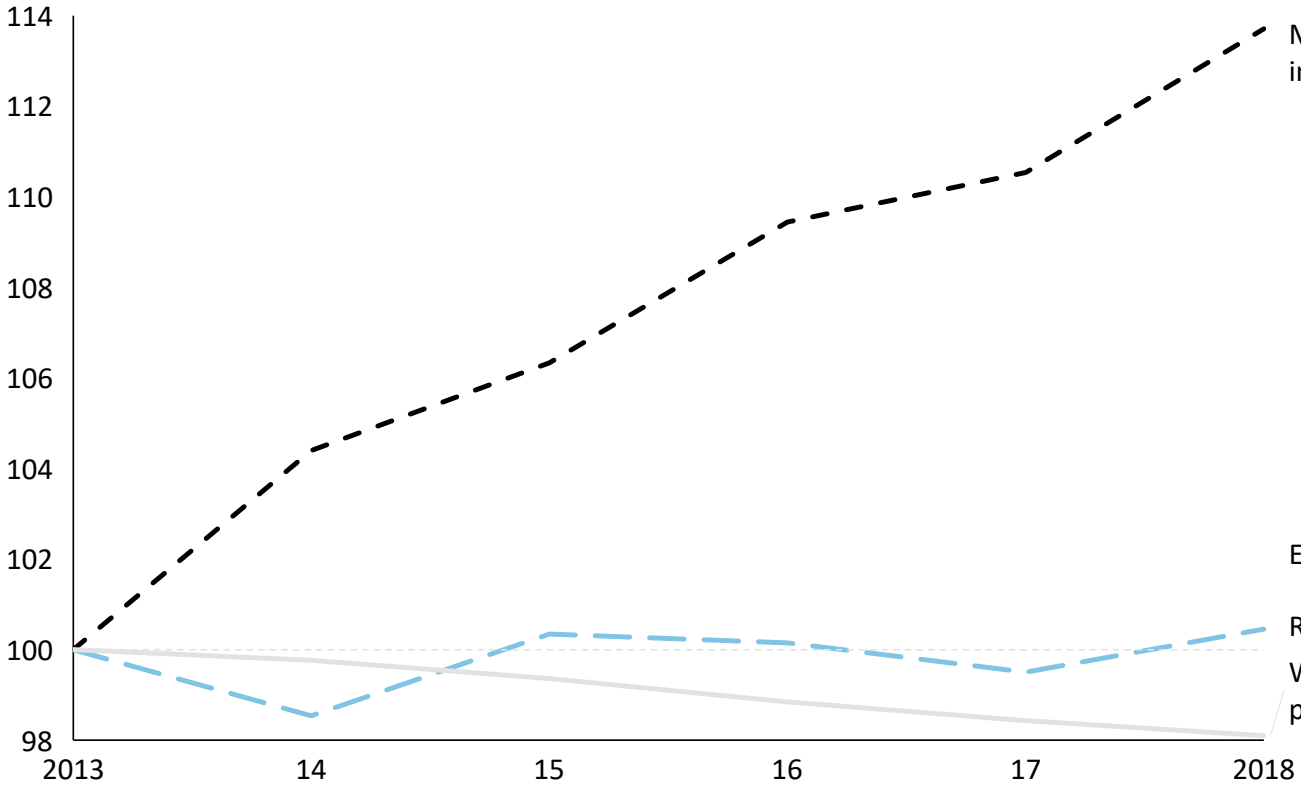
	2008	13	2018
Employment growth rank	40	46	46
Average wage growth rank	34	50	47
GDP growth rank	17	49	49

1. Growth rate defined as the CAGR for the trailing five years

Source: US Bureau of Economic Analysis, US Bureau of Labor Statistics, Moody's Analytics

Connecticut has been among the slowest growing states in the nation across four key indicators over the past five years

Growth of core aspirational indictors, indexed to 2013



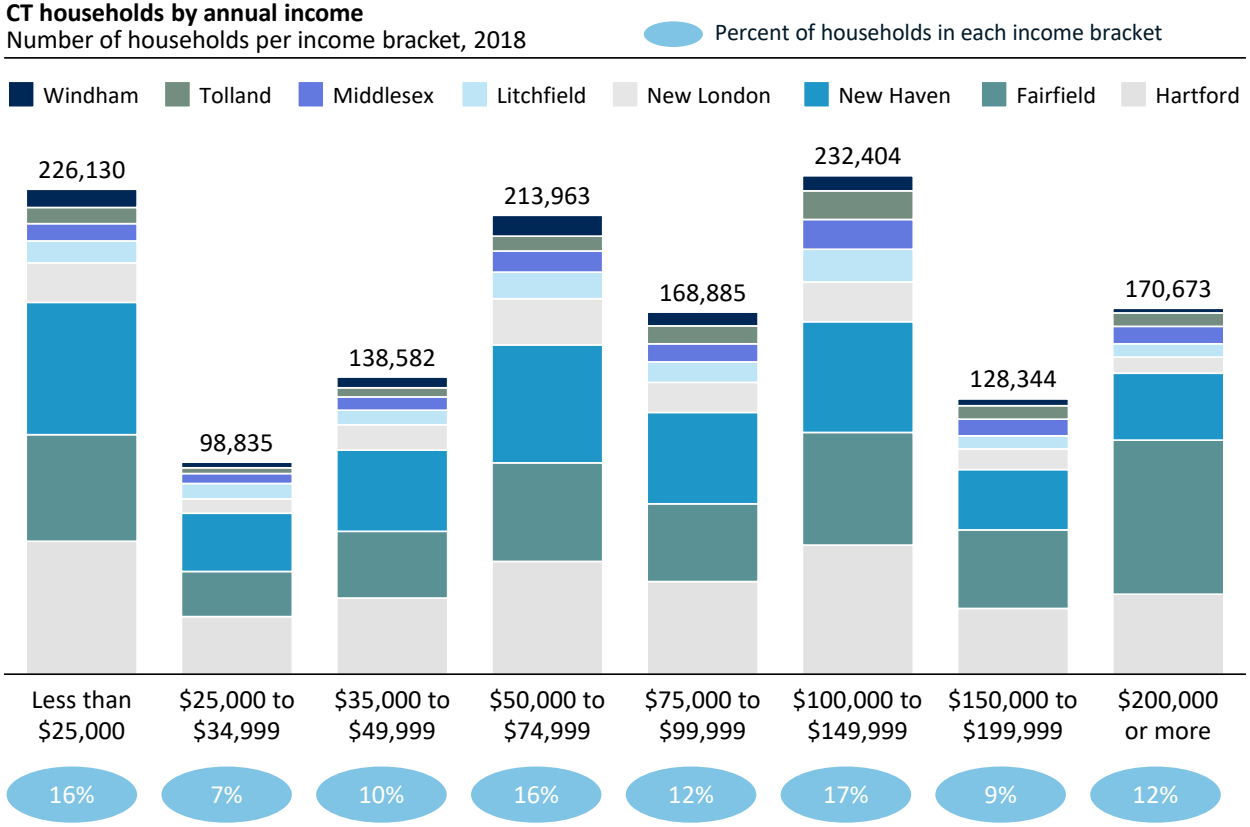
	CAGR, 2013-2018	Growth rank '13-'18
Median household income[1]	2.6%	42
Employment	0.4%	46
Real GDP	0.1%	48
Working age population	-0.4%	44

1. Not adjusted for inflation

Source: BEA, BLS, Census

CT households struggle to meet cost of living

CT households by annual income
Number of households per income bracket, 2018



CT households by income indicators[1]
Percent of householders below indicator, 2018

	Poverty[2] ~$19K	Living wage[3] ~$55K, varies
Windham	13%	38%
Tolland	9%	28%
Middlesex	7%	31%
Litchfield	7%	34%
New London	10%	37%
New Haven	12%	41%
Fairfield	10%	34%
Hartford	11%	38%
Connecticut	10%	37%

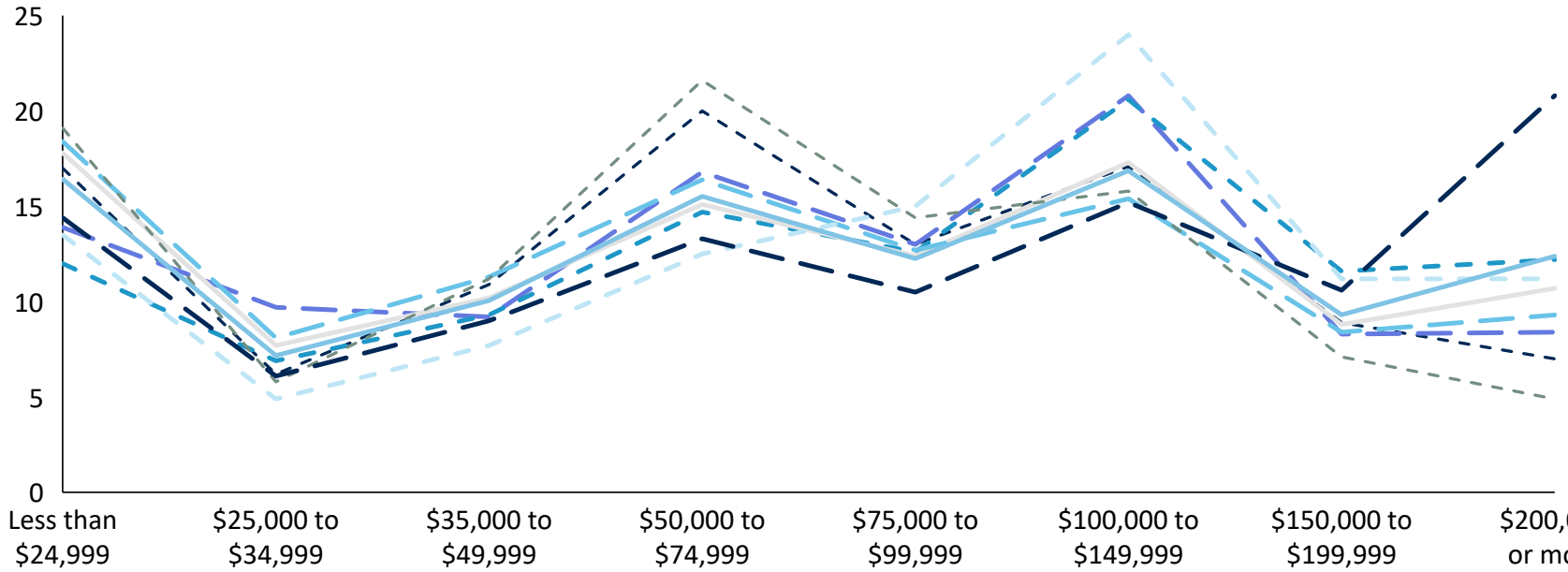
Connecticut has the **5th highest cost of living** nationally, approximately **30% higher** than the national average

1. Based on household size of 2.5 for Connecticut
2. Midpoint poverty threshold between household of 2 and household of 3, based on US Department of Health & Human Services poverty guidelines
3. Living wage translated to annual income ranges from $52,101 (Windham) to $59,273 (Fairfield), based on MIT Living Wage Calculator

Source: US Census, US Department of Health & Human Services, MIT Living Wage Calculator, Council for Community and Economic Research - Cost of Living Index

Income distribution varies by county

CT households by annual income, Percent of total households per income bracket, 2018



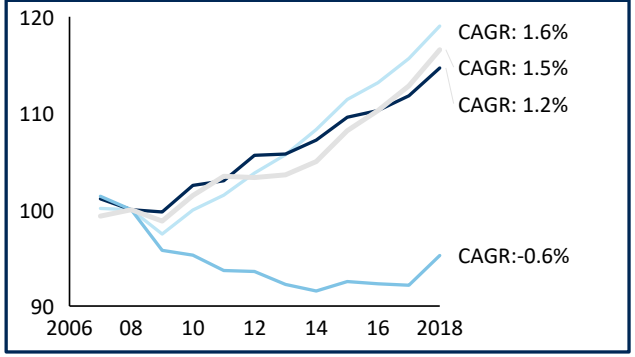
	Less than $24,999	$25,000 to $34,999	$35,000 to $49,999	$50,000 to $74,999	$75,000 to $99,999	$100,000 to $149,999	$150,000 to $199,999	$200,000 or more
Connecticut	16%	7%	10%	16%	12%	17%	9%	12%
US	20%	9%	12%	17%	13%	15%	7%	8%

Source: US Census, US Department of Health & Human Services, MIT Living Wage Calculator, Council for Community and Economic Research - Cost of Living Index

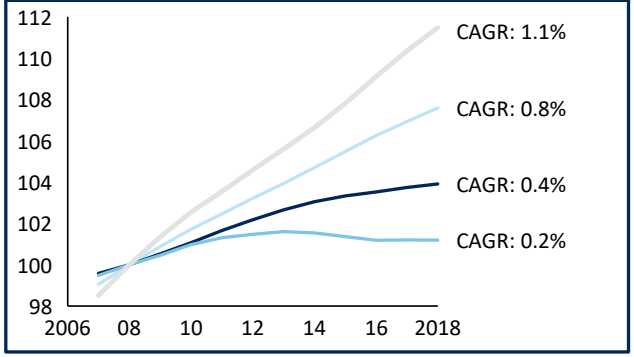
CT outperforms peers[1] and US on productivity, labor force participation, and median income, but lags on GDP, population growth, and unemployment

Connecticut | Regional peers | Economic peers | United States

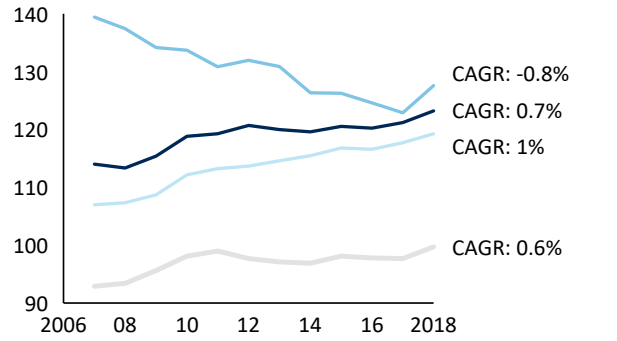
GDP, Indexed to 2008



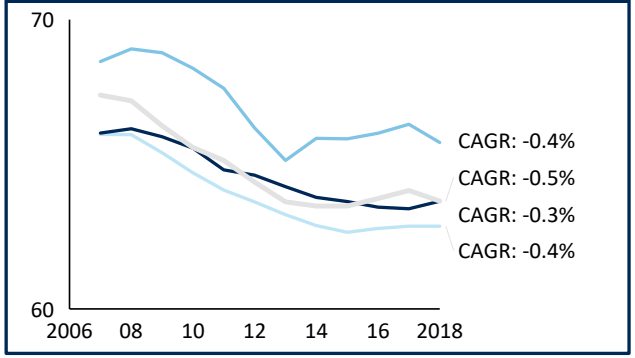
Population, Indexed to 2008



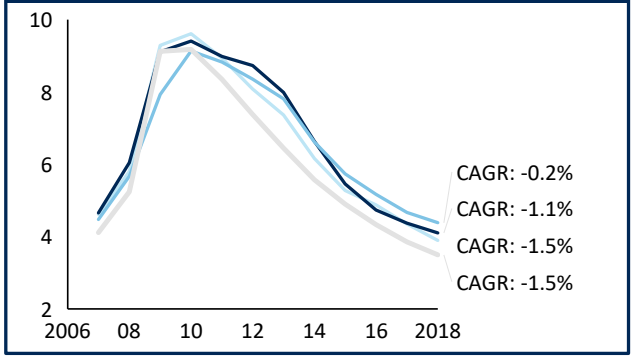
Productivity, GDP per worker (USD thousands)



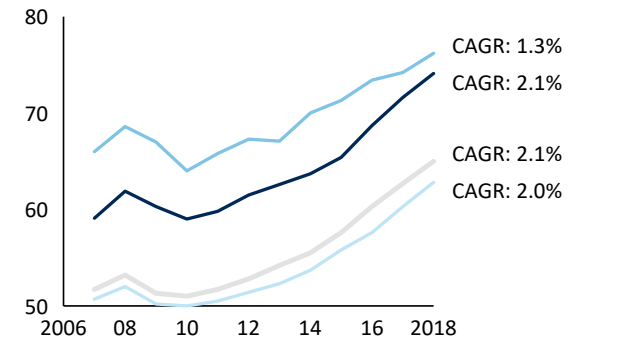
Labor force participation rate, Percent



Unemployment rate, Percent



Median household income, USD thousands



1. Regional peers: MA, NJ, NY, RI. Economic peers: OR, SC, UT, VA.

Source: Bureau of Economic Analysis, Bureau of Labor Statistics, US Census

Connecticut has strong R&D; other enablers pose challenges to economic growth

1 Innovation

CT has a strong R&D and patent generation pipeline (6th in US for business R&D and 8th in patent generation per capita)

Conversion rate to in-state startups or scale ups is low (45th in startup density and 36th in high growth company density)

2 Business climate

CT ranks in the bottom 10 states for doing business across multiple indices

- CT is ranked second to last on small business friendliness
- Regulatory burdens in the state are a particular pain point (e.g., ranked 50th on occupational licensing requirements)
- Business costs in CT are 10% higher than national average, but lower than regional peers MA and NJ
- CT's corporate tax rates, while variable by industry, are comparable overall to other states (ranked 27th)
- CT ranks 43rd on individual income tax rates and 50th on property tax rates

3 Infra-structure

Broadband: Digital connectivity is strong (14th nationally for broadband access) but speed/quality lags (48th in ultra-fast internet)

Transportation: CT ranks 35th on commute times and 43rd on road quality, which impact quality of life and competitiveness in transportation and logistics

Energy costs: Energy prices are high (3rd most expensive in US), which impacts competitiveness in energy intensive sectors (e.g., manufacturing); renewable energy requirements are in line with regional peers and not a differentiated driver

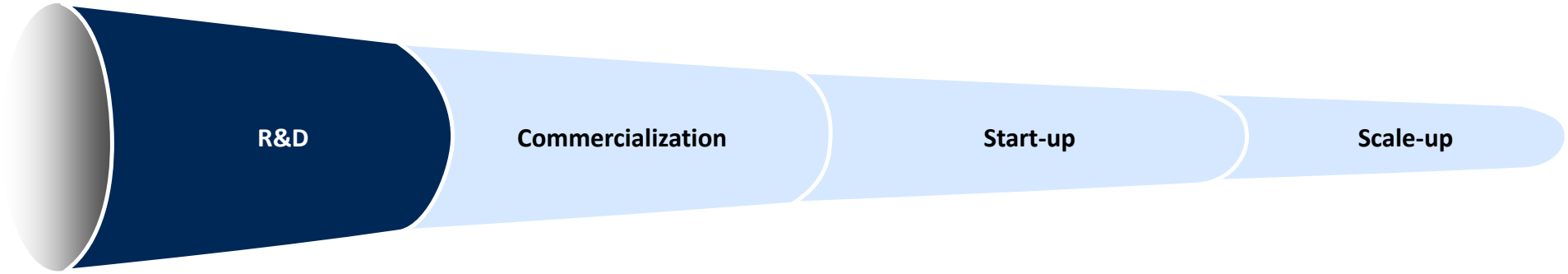
4 Cities

Connecticut's urban cores lag in many important quality of life measures (e.g., safety, walkability, access to arts/culture)

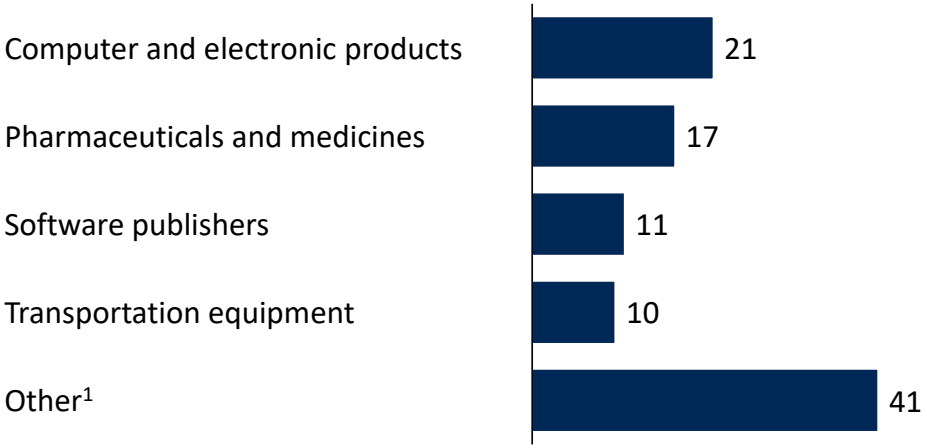
Connecticut's urban cores underperform other regions of the state on key livability questions

Contents

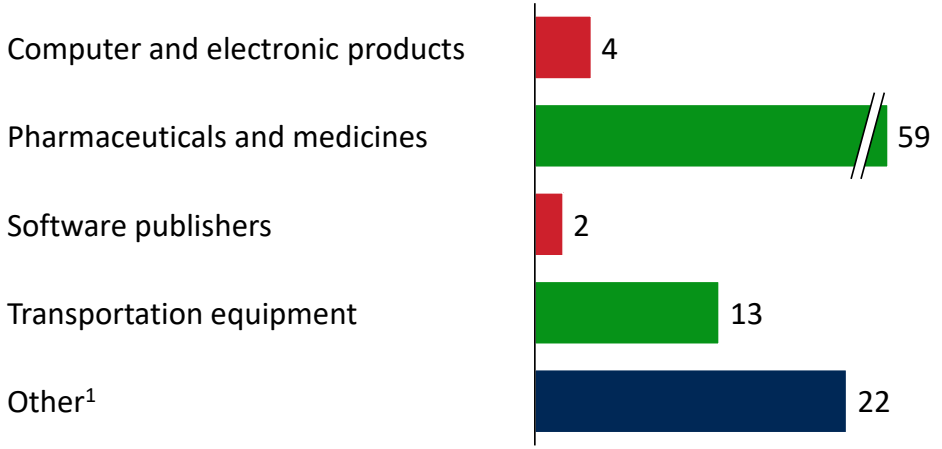
1: Majority of Connecticut's business R&D is driven by the pharmaceutical and medicine sector



US business R&D by top industries[1], 2015
Percentage



Connecticut business R&D by top US industries[1], 2015
Percentage



1. Other includes industries with less than 10% share

Source: National Science Foundation

1: CT's innovation pipeline is strong in early stages but struggles to convert new IP into in-state growth companies

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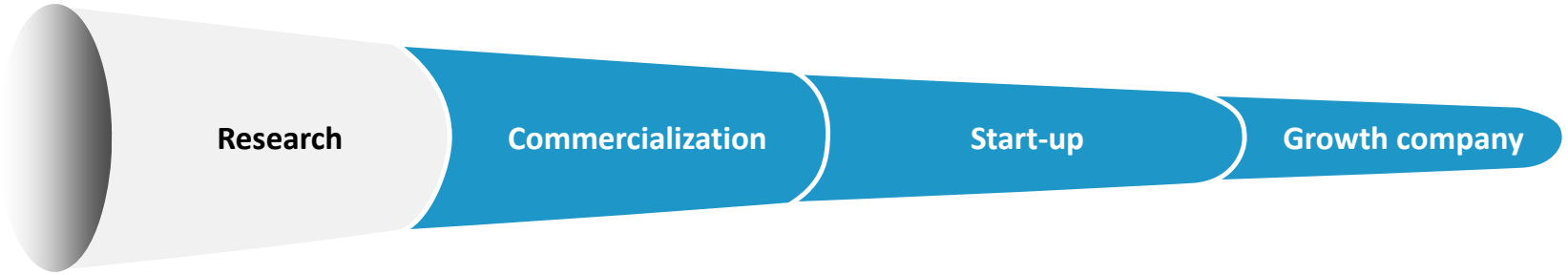
Innovation pipeline

University/ Industry driven innovation

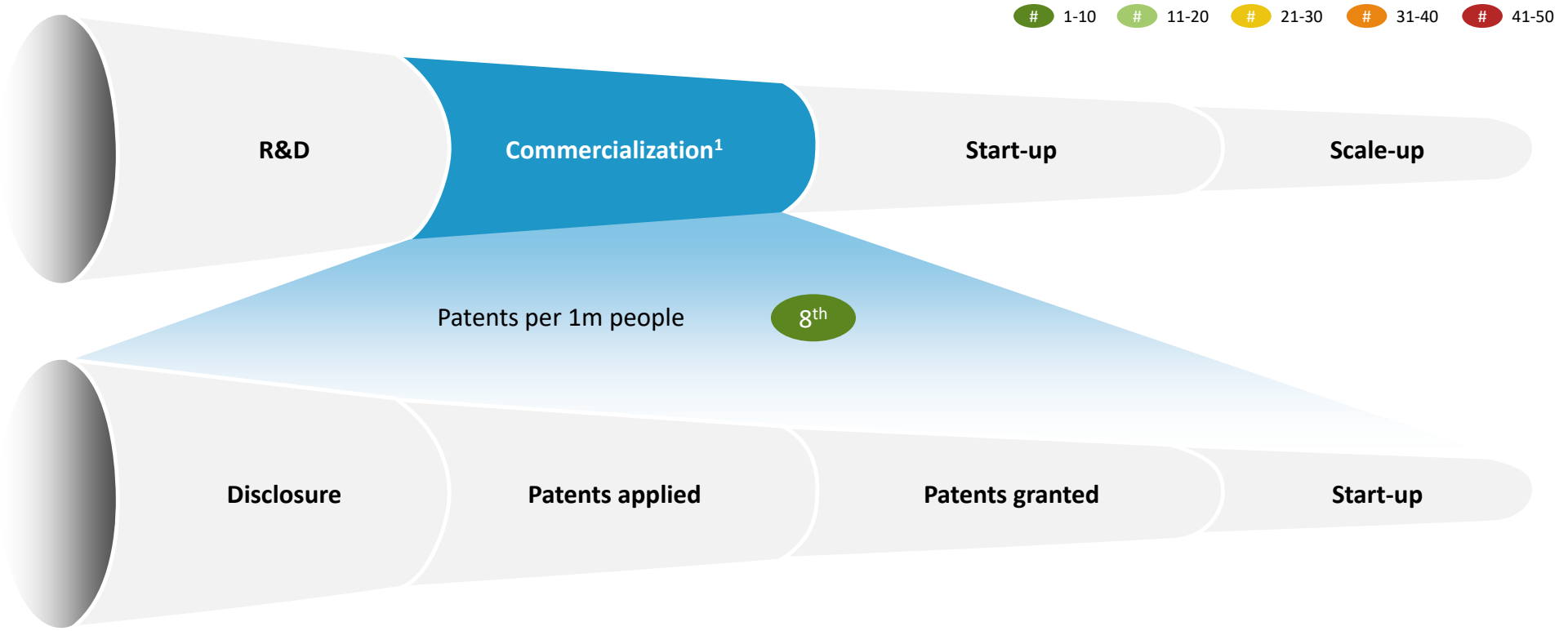


CT rank

Academic science/engineering R&D, percent of GDP	8	Patents per million people	8	Rate new entrepreneurs	31	Established small business density	8
Business R&D as % of private industry output	6			Startup density	45	High growth company density	36
Small Business Innovation Research/Technology Transfer, per $1m GDP	18					Survival rate	12
State agency R&D, per $1M GDP	7						

Source: Kauffman Foundation; National Science Foundation; U.S. Census; U.S. Patent and Trademark Office, Moody's; Small Business Administration

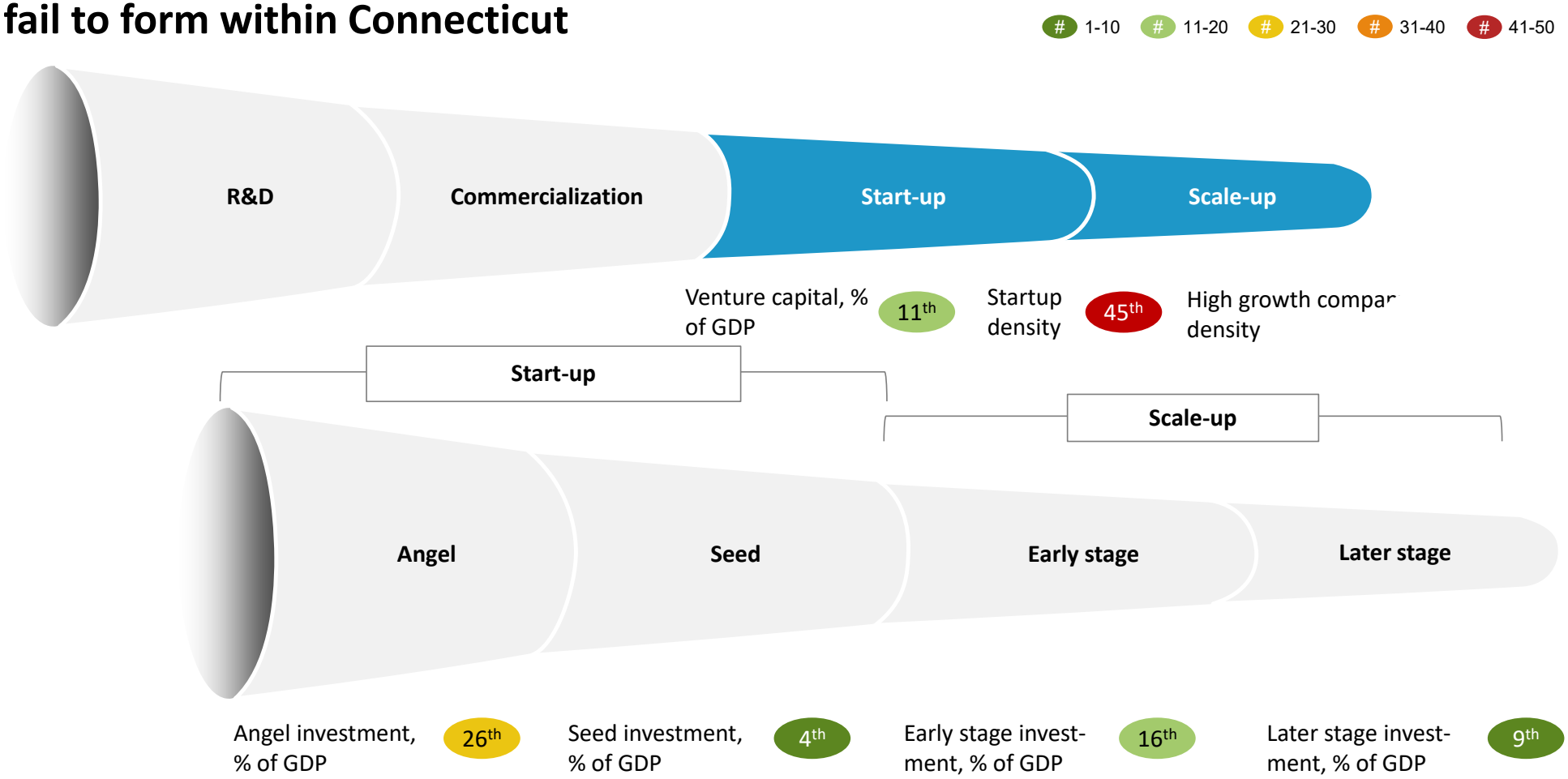
1: Connecticut's patents are not leading to as many startups despite a strong pipeline



1. Rankings based on the sum of 2014, 2015 and 2016

Source: Association of University Technology Managers (AUTM), Experian, National Science Foundation

1: Despite strong access to capital and a robust pipeline of patents/R&D, companies fail to form within Connecticut



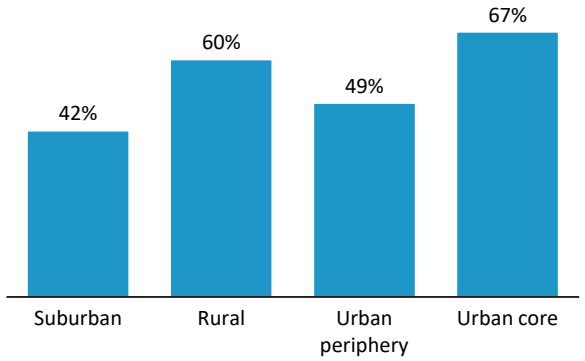
Source: Pitchbook

Contents

2: Connecticut's urban cores lag in many important quality of life measures

Top quartile nationally | Middle 50% | Bottom quartile nationally

Ability to find suitable employment
% of CT residents indicating fair to poor



School ranking
National rank of 13,506 school districts

Connecticut Urban core

Bridgeport	10,196
Hartford	7,499
New Haven	6,002
Stamford	1,318

Safety of CT's urban cores
Violent crime per 100k resident

Connecticut urban core compared to national average

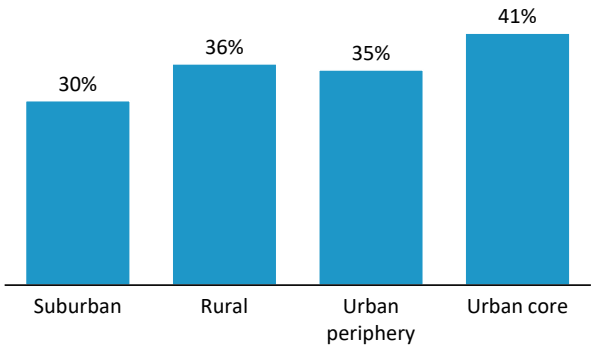
Bridgeport	2.2x
Hartford	2.7x
New Haven	2.6x
Stamford	0.6x

Walkability score
50-69=somewhat walkable

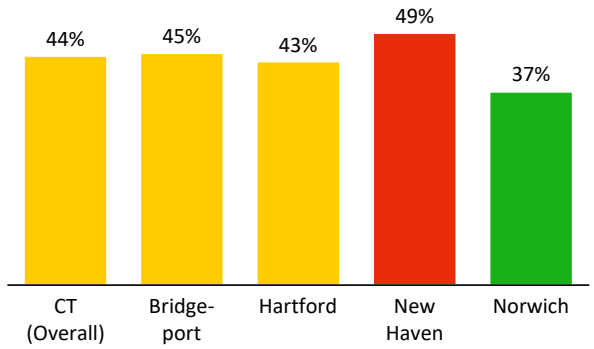
Connecticut Urban core compared to national average

Bridgeport	65
Hartford	68
New Haven	65
Stamford	51
Boston	96
Philadelphia	77

Ability to utilize arts and cultural resources
% of CT residents indicating rarely to never

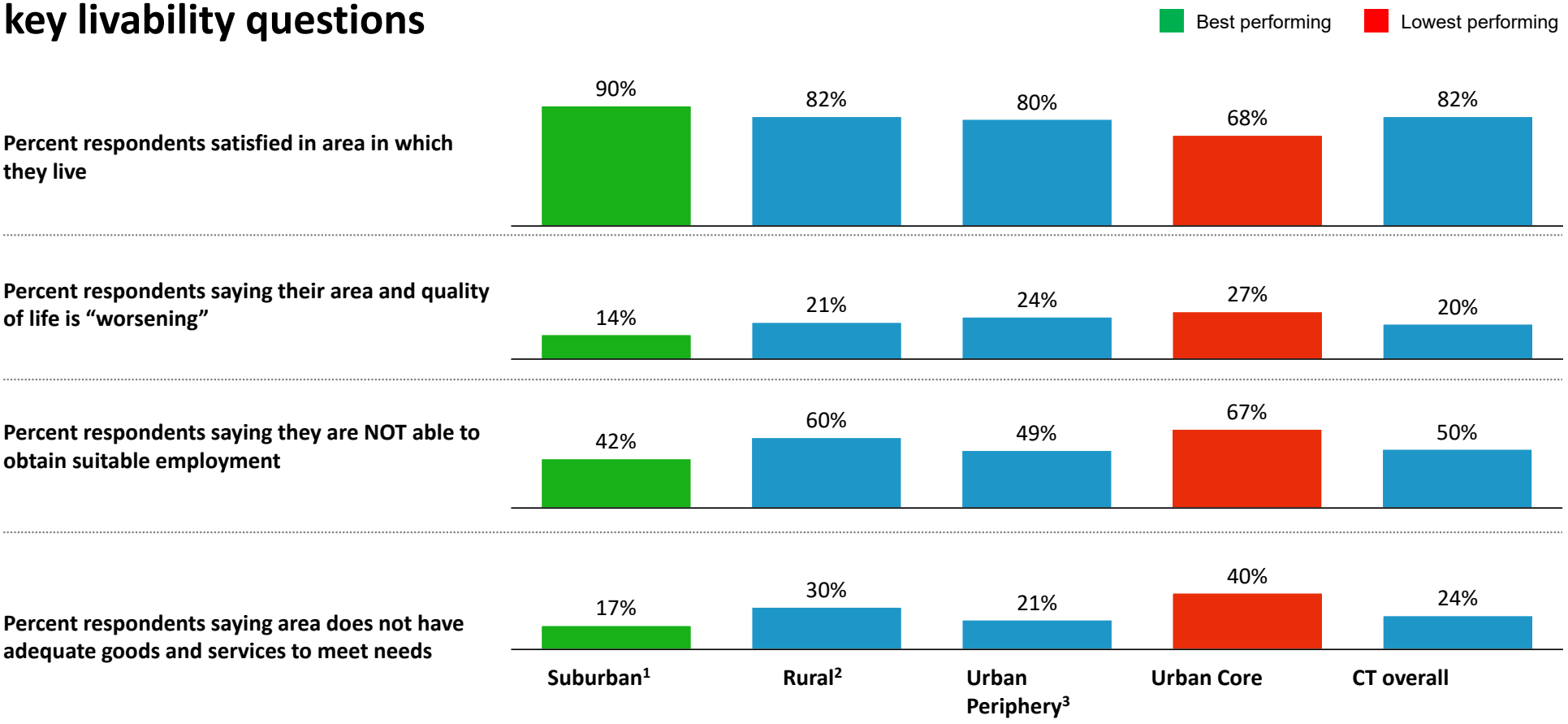


Rent burden
% renters spending >50% of income on gross rent



Source: Education Week, CT Data Haven, FBI Crime Database, Walkscore.com, Zillow.com

2: Connecticut's urban cores underperform other regions of the state on key livability questions



NOTE: Survey based on 16,219 responses—28% suburban, 13% rural residents, 38% urban periphery, 17% urban core residents, 5% "wealthy"

1. Includes locations such as North Haven and Granby located near larger urban centers 2 Includes locations such as Putnam and Sharon located farther from an urban core
2. Includes locations such as Putnam and Sharon located farther from an urban core
3. Includes locations such as Norwalk and East Haven located around urban cores

Source: CT Data Haven (Apr-Oct 2015)

Contents

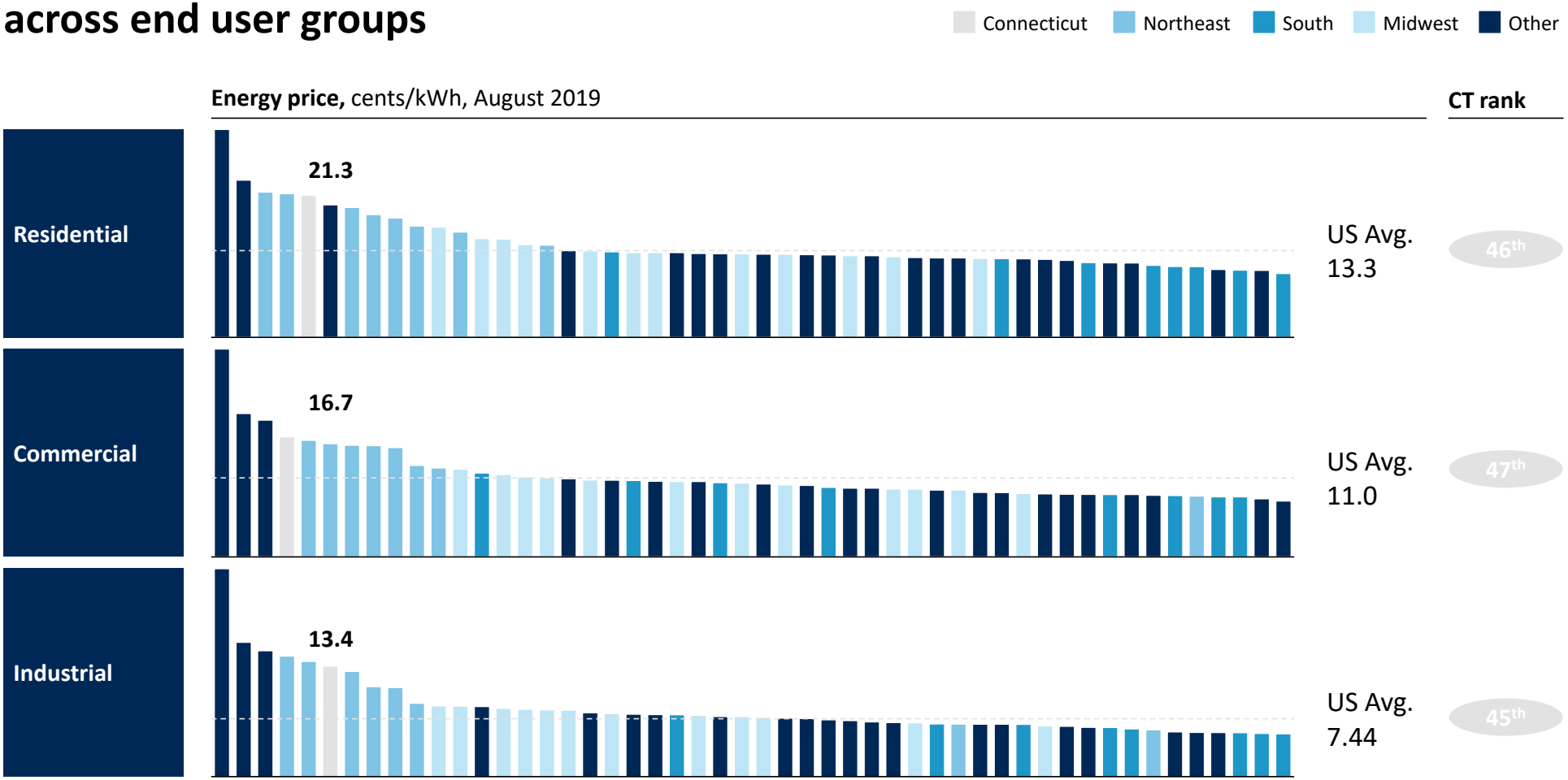
3: CT trails all peers but Rhode Island on infrastructure rankings

Ranking
1 50

			Regional peers				Economic peers			
	Metric	CT	MA	RI	NY	NJ	UT	OR	SC	VA
Energy	Electricity price	48	47	46	42	41	7	13	26	22
	Power grid Reliability	13	8	2	33	6	27	23	28	47
	Renewable Energy Usage	37	36	46	19	46	42	1	26	31
Internet access	Broadband Access	14	7	14	21	7	4	7	43	16
	Ultra-Fast Internet Access	48	47	48	18	42	7	14	17	44
Transpor-tation	Commute time	35	46	29	50	48	12	23	25	43
	Public Transit Usage	19	8	17	1	2	13	16	40	15
	Road Quality	43	45	49	26	46	31	8	20	9
	Bridge Quality	24	30	50	37	29	5	12	32	16

Source: US News best states index 2019

3: Energy prices in Connecticut are among the highest in the nation across end user groups

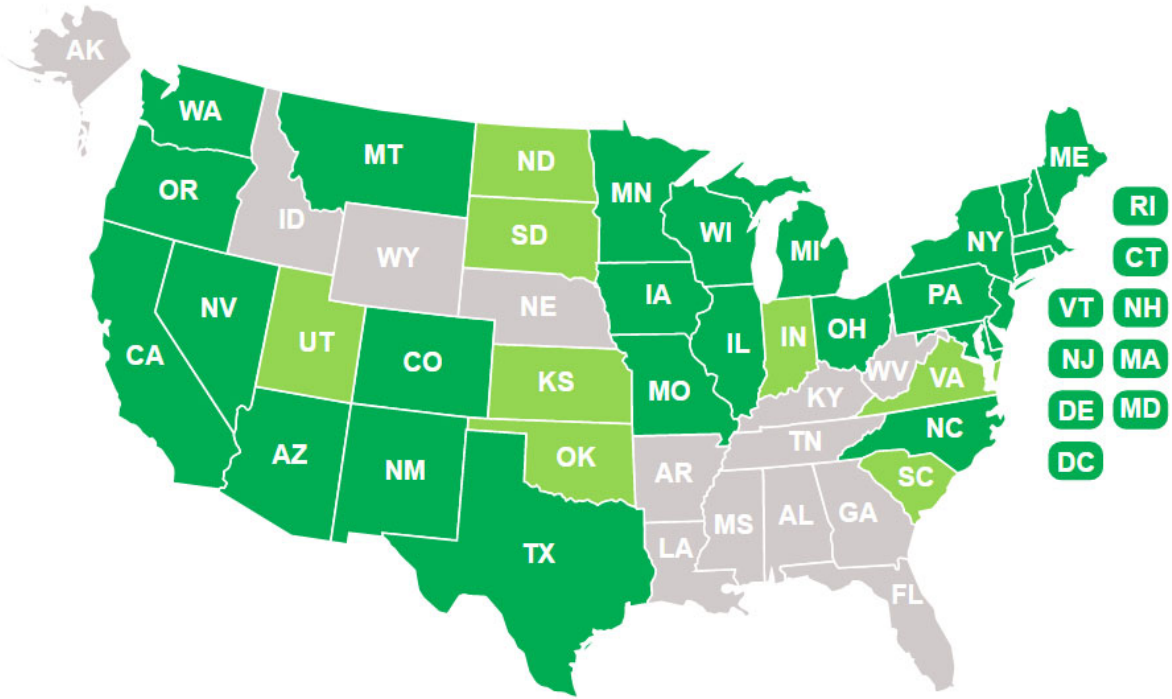


Source: US Energy Information Administration

3: Renewable energy requirements are common across the Northeast, and Connecticut's targets are in line with neighbors

Required renewable energy standards
Voluntary renewable energy standards
No renewable energy standards

State renewable energy standards

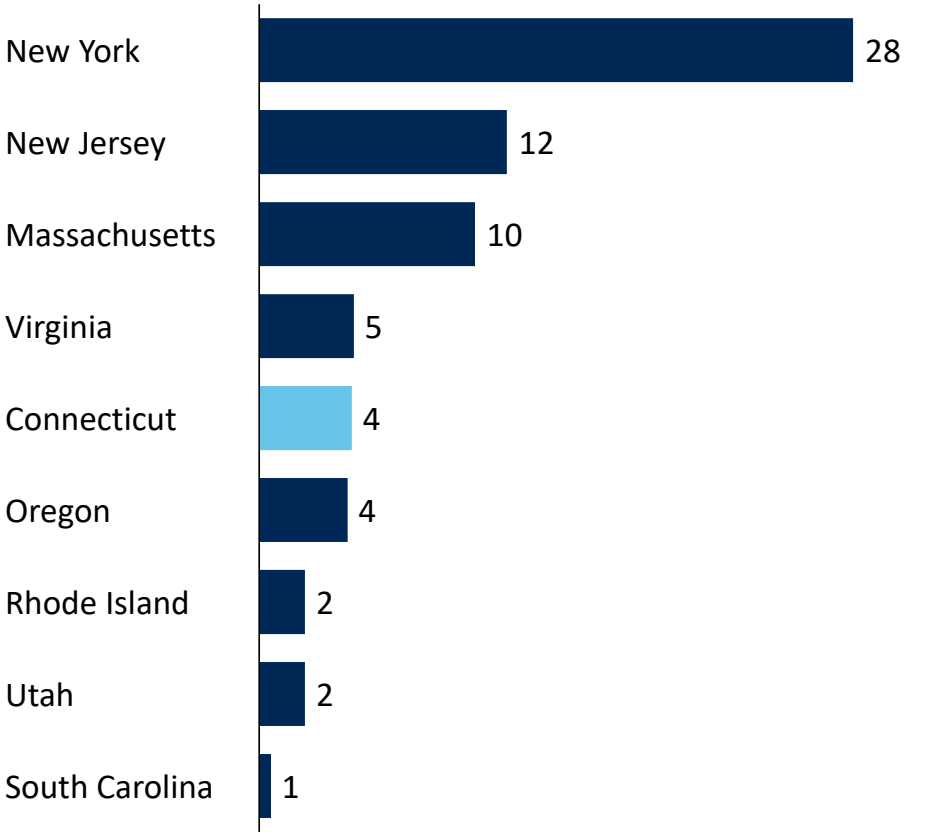


	Renewable target, %	Target date
New York	50	2030
Rhode Island	39	2035
Connecticut	35	2030
Massachusetts	35	2030

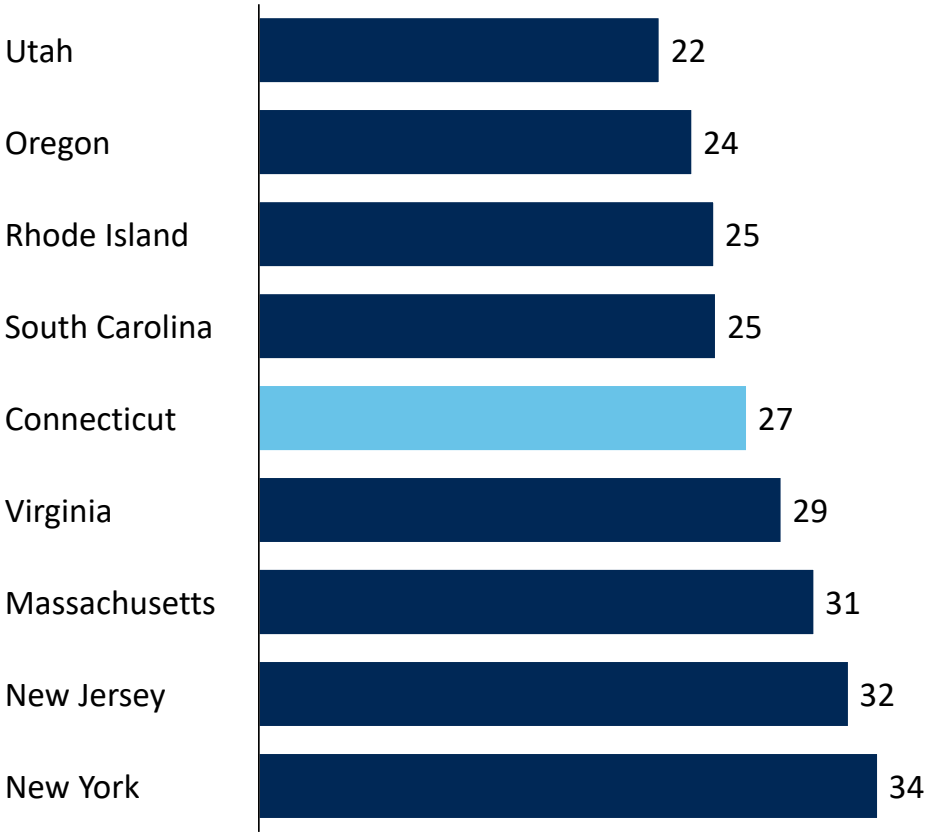
Source: National Conference of State Legislators

3: Connecticut has a low share of public transit use compared to regional peers, and long commutes times compared to economic peers

Share of commuters using public transit, % 2018



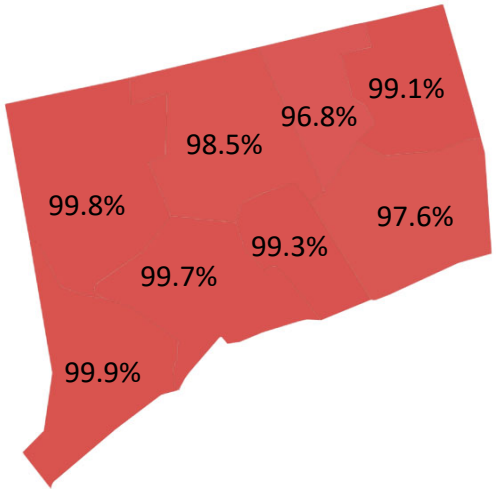
Average commute time, minutes 2018



Source: US Census

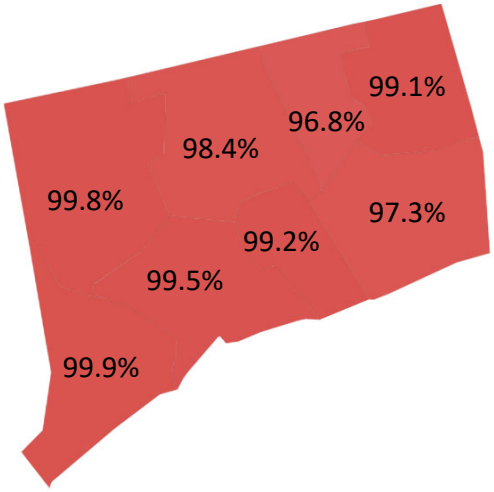
3: Connecticut has high accessibility for wired, fast, consumer-use connections, but just 5% of the state has access to ultra-fast internet

Basic broadband (25 mbps)



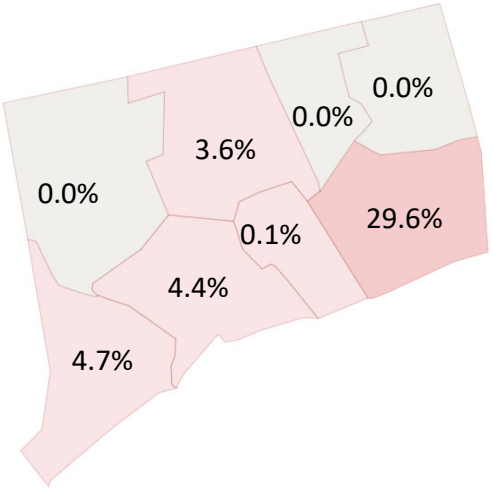
99.1% coverage

High-speed internet (100 mbps)



99.0% coverage

Ultra-fast internet (1,000 mbps)



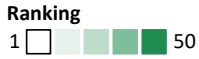
5.4% coverage

Connecticut's low penetration of ultra-fast internet is in line with neighboring states (all neighbors have <10% coverage), but trails economic peers by a significant margin (UT, OR, and SC each have 20-30% coverage)

Source: Broadband Now

Contents

3: CT's scores are common among regional peers but low among economic peers



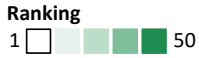
Business climate rankings[1]	CT	Regional peers: MA	RI	NY	NJ	Economic peers: UT	OR	SC	VA
1 Best states for business (Forbes, 2019)	43	19	41	28	39	3	20	16	4
2 Top states for business (CNBC, 2019)	35	14	50	27	36	4	22	34	1
3 Small business friendliness ranking (Thumbtack's 2019 small business survey)	48	13	41	47	40	7	37	44	2

Overall business friendliness rankings include a range of factors, from workforce to regulatory environment

1 Inclusion of these rankings for reference does not constitute an endorsement of their elements, assessments, or veracity

Source: Forbes, CNBC, Thumbtack

1: Forbes: despite scoring highly in quality of life, CT otherwise ranks in bottom quintile



Forbes Best States for Business, 2019	Regional peers				Economic peers			
	CT	MA	RI	NY	NJ	UT	OR	SC	VA
Overall national rank	43	19	41	28	39	3	20	16	4
Business Cost	45	48	44	29	49	23	27	21	30
Labor supply	31	5	29	34	23	2	6	20	3
Regulatory environment	43	37	44	34	49	6	36	17	3
Economic climate	42	5	40	18	29	8	9	15	20
Growth prospects	48	15	32	21	30	7	9	12	24
Quality of life	6	4	20	14	5	9	38	39	1

Source: Forbes Best States for Business

2: CT receives mixed scores from CNBC; its low rankings often align with rest of region

Ranking
1 50

CNBC's Top States for Business, 2019	Regional peers				Economic peers			
	CT	MA	RI	NY	NJ	UT	OR	SC	VA
Overall national rank	35	14	50	27	36	4	22	34	1
Workforce	15	5	32	29	14	18	19	28	1
Economy	43	18	48	14	40	3	7	22	16
Infrastructure	43	48	50	44	39	17	22	30	13
Cost of doing business	43	47	44	42	45	18	31	24	35
Quality of life	20	10	28	13	11	9	16	41	17
Education	8	1	25	7	4	20	36	29	1
Technology and innovation	18	3	27	4	15	21	12	32	17
Business friendliness	21	14	40	49	45	13	43	35	3
Access to capital	20	6	39	2	12	19	23	26	15
Cost of living	43	47	41	48	41	25	45	26	32

Source: CNBC Top States for Business

3: Thumbtack: small business owners identify regulatory burden as major pain point

Ranking
1 50

Thumbtack Small Business Friendliness Survey, 2019	CT	Regional peers: MA	RI	NY	NJ	Economic peers: UT	OR	SC	VA
Overall Friendliness	F		D+	D	D+		C-	D	
Ease of starting a business	D	C+	B	D	B		B+	B-	B+
Ease of hiring	D	D+	D	C-	D+	D+	D+	D	C
Regulations	F	C+	D	D	C	B-	D	C	
Employment, labor, and hiring	F		D+	D	C+	B-	D+	B-	
Tax code	F	C	F	F	D+	C+	F	D+	
Licensing	F	C-	D	D+	C	B	D	C-	
Training and networking programs	C	F	D+	C+	C+	D+	D	F	C
Government websites	B+	B+	B+	F	B		B+	C	

Source: Thumbtack.com Small Business Friendliness Survey, 2019

3: CT's regulatory environment is among the lowest ranked in the nation

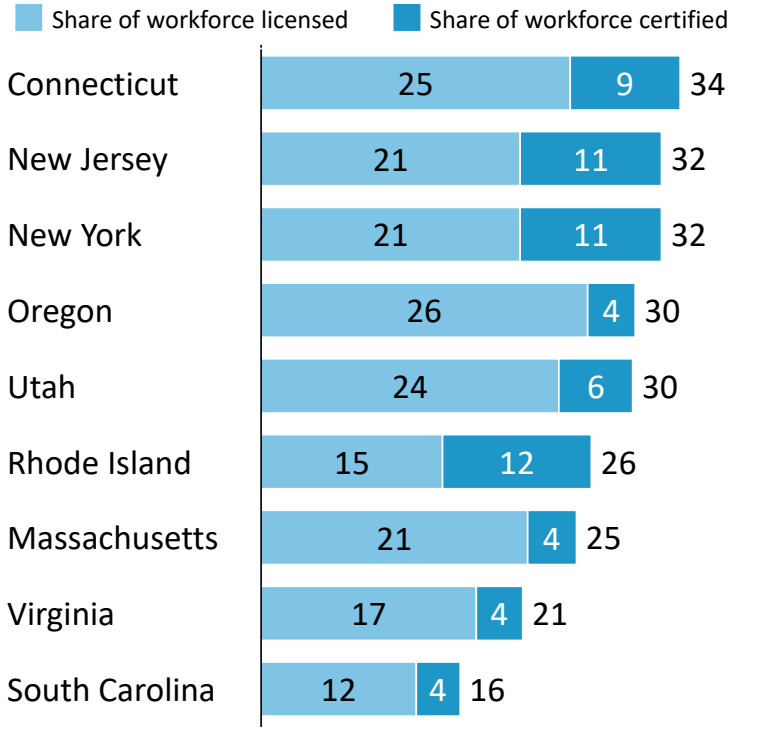
Business Regulations, 2017	Regional peers				Economic peers			
	CT	MA	RI	NY	NJ	UT	OR	SC	VA
State Energy Regulation Rank	47	38	27	50	43	17	41	20	32
Land Use Regulation Rank	38	48	49	30	46	29	33	12	26
Occupational Licensing Rank[1]	50	19	38	8	47	25	34	1	5
Start-up & Filing Cost Rank[2]	48	48	44	50	39	5	1	43	30
Labor Rank	46	36	48	43	50	7	42	8	1
Tort Rank	25	19	31	18	32	9	28	39	7

1 Occupational licensing: Number of occupations that require a license, share of the workforce licensed, share of the workforce certified
2 Start-up and filing costs: compares which states are the best for businesses to incorporate across a range of issues including the incorporation fee and ongoing filing burden

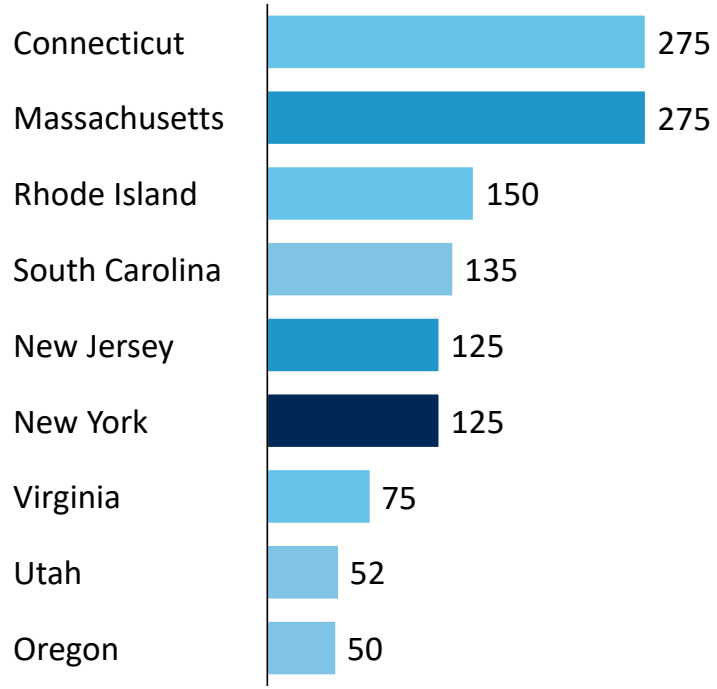
Source: Pacific Research Institute, The 50-State Small Business Regulation Index

3: Occupational licensing requirements and startup costs exceed peers

State licensing requirements, %



Minimum startup filing costs, $



Periodic filing costs and tax burden

Source: Brookings Institute, Gimme Law "Best States to Incorporate"

3: CT ranked in the bottom 10 states for property and individual income taxes

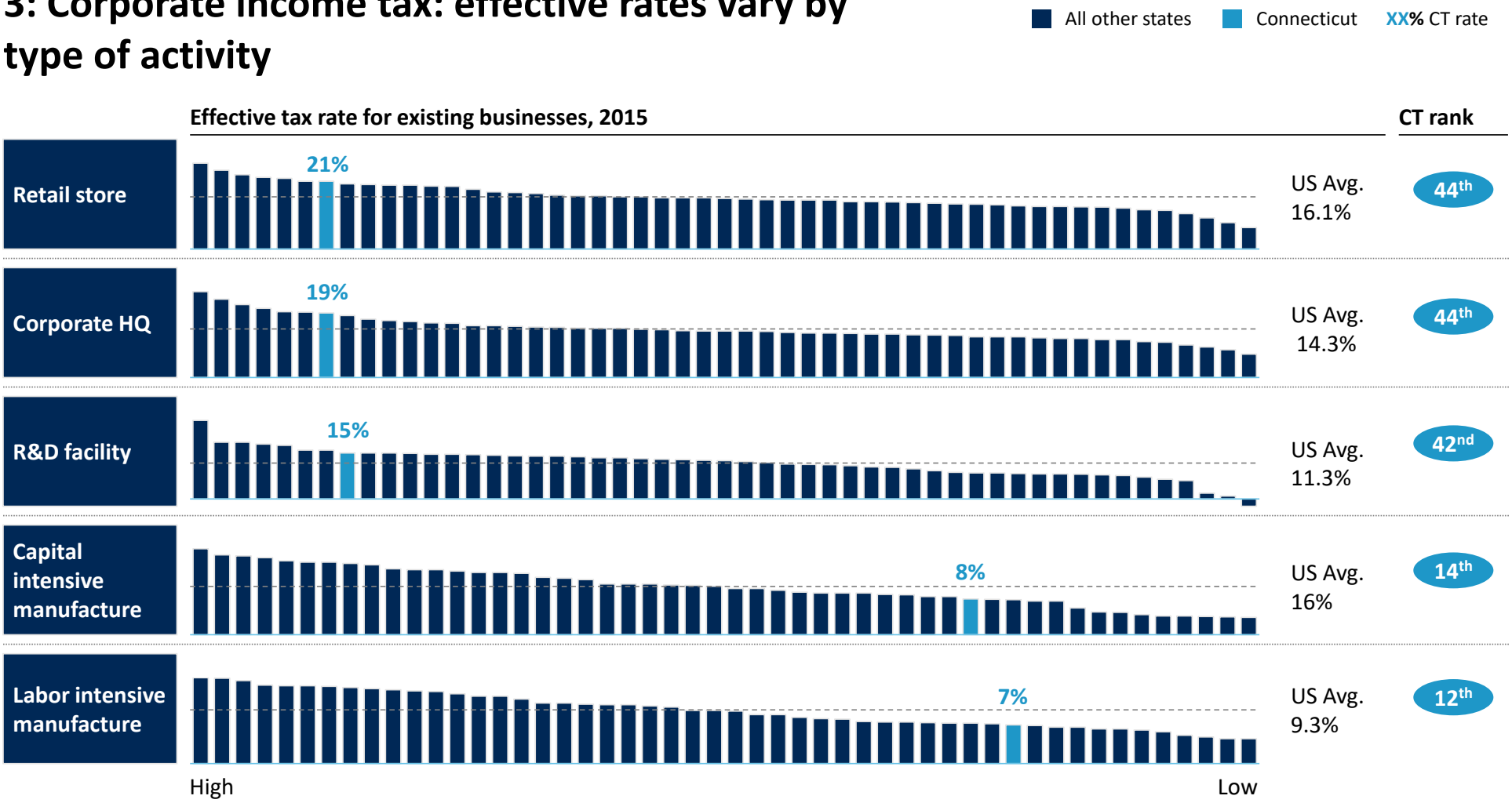
Ranking 1 – 50

Business Tax Climate Index, 2020	Regional peers				Economic peers			
	CT	MA	RI	NY	NJ	UT	OR	SC	VA
Corporate Tax	27	39	40	13	49	12	33	4	14
Individual income tax rank	43	11	29	48	50	10	38	34	35
Sales tax rank	26	13	25	43	42	22	4	31	11
Property tax rank	50	48	45	46	47	5	18	30	32
Unemployment insurance rank	21	50	31	38	30	15	36	26	41
Overall Rank	47	36	39	49	50	9	8	30	25

The Tax Foundation's ranking heavily weights property tax in its overall assessment, driving perception of Connecticut as among the least tax friendly states in the nation

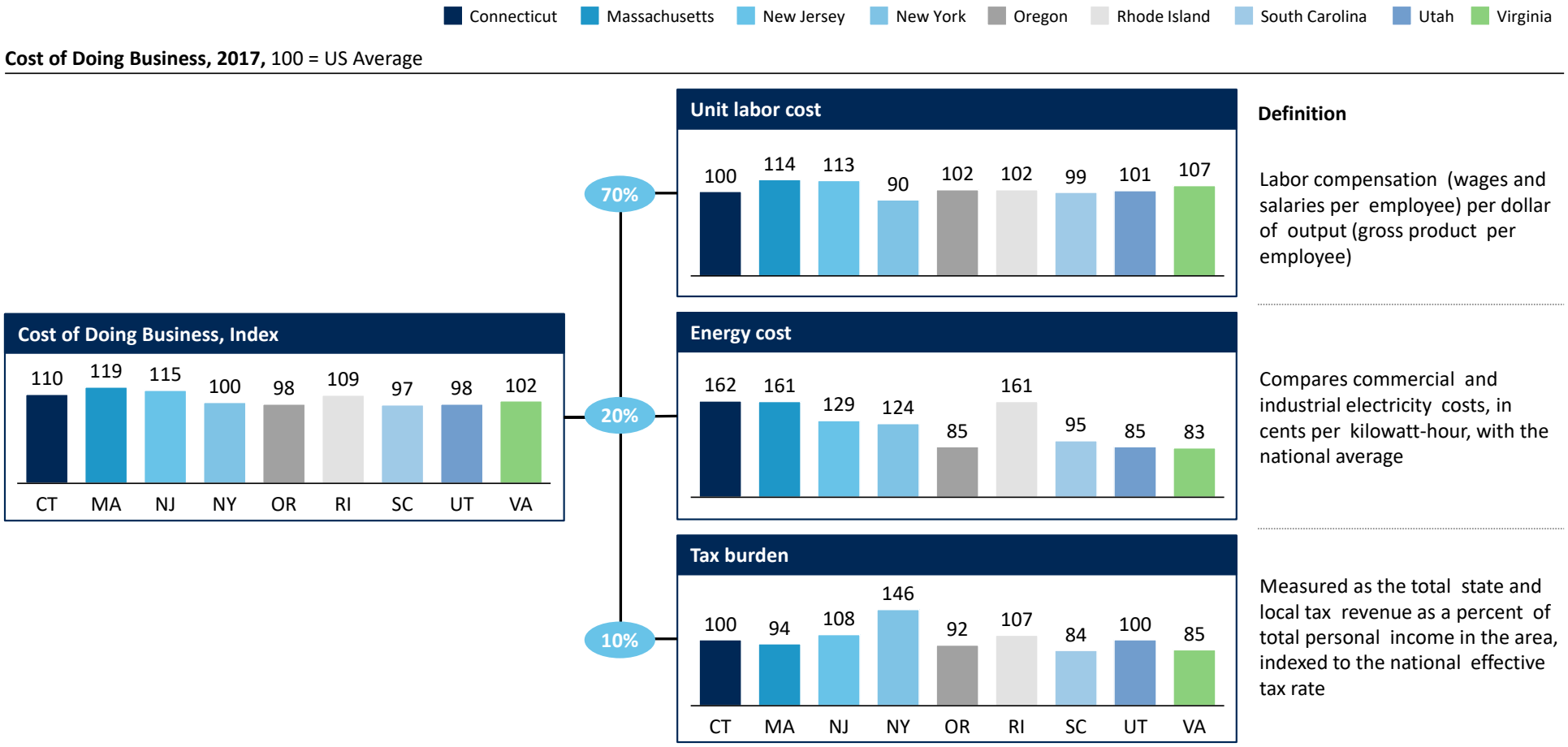
Source: The Tax Foundation

3: Corporate income tax: effective rates vary by type of activity



Source: Location Matters: The State Cost of Doing Business Tax Foundation (http://bit.ly/2DFglqF), Connecticut Tax Expenditure Report 2016

3: Connecticut's cost of doing business is 10% higher than US average



Definition

Labor compensation (wages and salaries per employee) per dollar of output (gross product per employee)

Compares commercial and industrial electricity costs, in cents per kilowatt-hour, with the national average

Measured as the total state and local tax revenue as a percent of total personal income in the area, indexed to the national effective tax rate

Source: Moody's Analytics, North American Business Cost Review

Contents

Workforce executive summary

Workforce outcomes

1. **Connecticut has an active labor force but ranks poorly on underemployment and long-term unemployment**
   - Labor force participation rate is at least 2 p.p. higher than both regional and economic peers
   - State ranks poorly in underemployment (#51)1 and long-term unemployment (#48), although absolute value of unemployment is low

Demand

2. **Employer mix in Connecticut is dominated by four sectors; 35% share of current employment faces automation disruption**
   - Employers in three non-tradable sectors (healthcare, government, retail) drive 40% of current employment, and manufacturing drives another 10%; sector mix reflects growth in healthcare employment and decline in manufacturing employment
   - Demand for occupations that currently represent 65% of Connecticut jobs – including in health and STEM - have potential to see net job growth despite automation, while remaining occupations could see declines due to automation

Supply

3. **Workforce supply in Connecticut faces decline due to aging workforce and high out migration**
   - Talent supply projected to fall by 7% over next decade, as CT ranked 41st on out migration nationally
   - Connecticut retains less than 40% of university graduates
4. **Connecticut is a national leader in terms of education quality, and workforce is highly educated relative to peers**
   - Connecticut performs in Top-15 of nation on numerous education attainment metrics from K-12 to higher education
   - 64% of workforce has at least some college education and only 10% of workforce has less than high school degree
5. **However, while Connecticut leads in 4-year education, the state lags in providing non-traditional postsecondary training**
   - Connecticut is a national leader in 4-year STEM graduation rates and peer leader in Career and Technical education enrollment
   - Connecticut lags in 2-year graduation rates, 2-year STEM graduation rates, and apprenticeship completion rates

Gaps

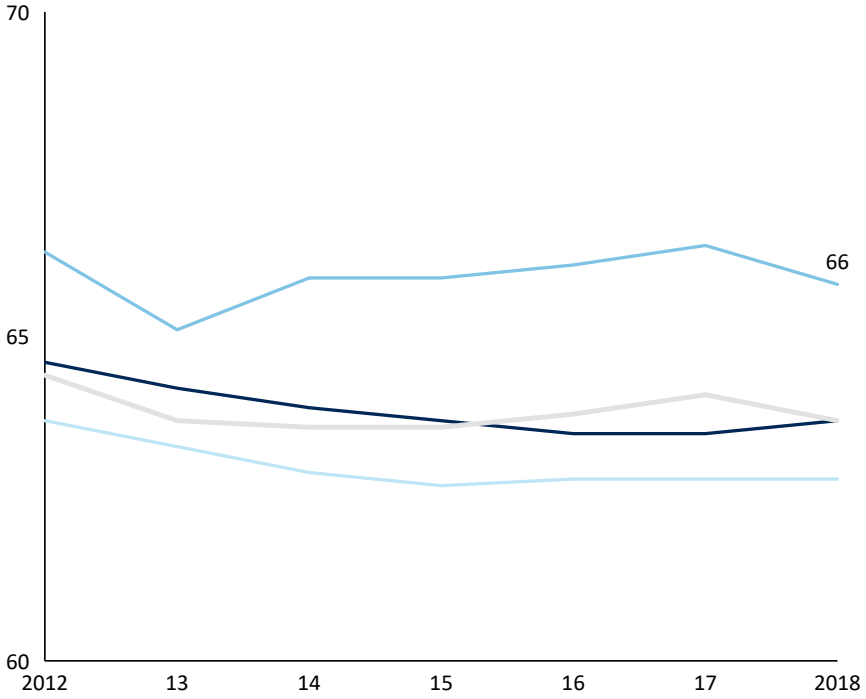
6. **Employers have unmet demand across the education and skill spectrum, reflecting opportunity for workforce system to step in**
   - Many possible drivers of unfilled jobs, including insufficient availability of training, poor uptake of existing training options, or relative job attractiveness to job seekers
   - Shortages are most pronounced in healthcare (3 jobs / available worker) and computer related occupations (2 jobs / available worker) – both occupations which offer access to living wages

1. Rankings include 50 states and District of Columbia

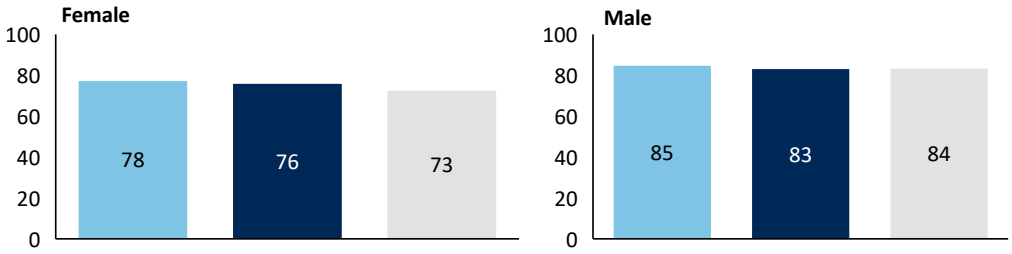
1: CT has an active labor force—men and women—relative to peers

Connecticut Regional Peers Economic Peers Connecticut Regional Peers United States Economic Peers

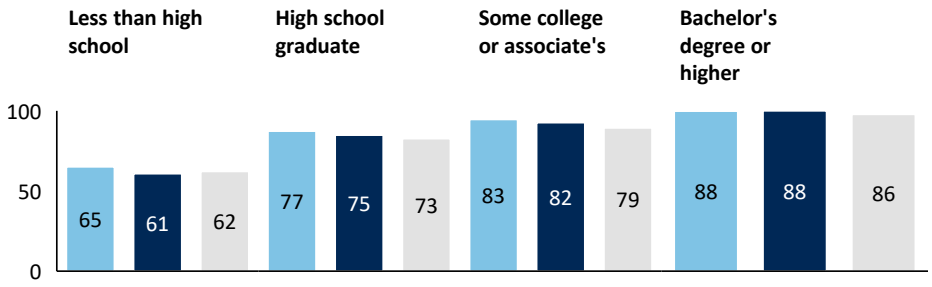
Labor force participation rate (LFPR)
% population 16 and above, 1980-2018



Labor force participation rate (LFPR) by gender
% population 20 to 64, 2018

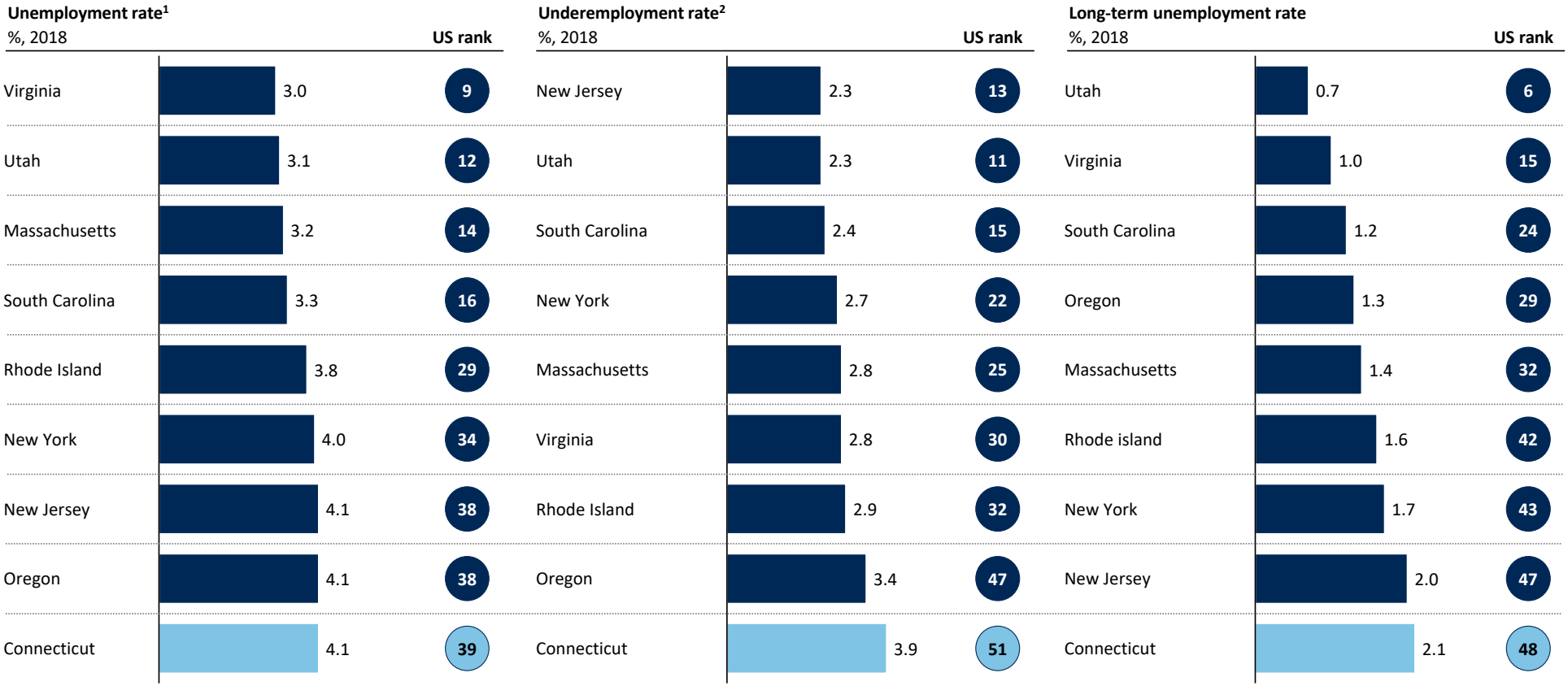


Labor force participation rate (LFPR) by education
% population 25 to 64, 2017



Source: Moody's; US Bureau of Labor Statistics (BLS); US Census

1: Underemployment and long-term unemployment rates are high relative to US and peers



1. Rankings include 50 states and District of Columbia
2. Underemployment is defined as involuntary part-time workers (difference between U-5 and U-6). Long-term unemployment is defined as persons unemployed 15 weeks or longer (U1)

Source: US Bureau of Labor Statistics (BLS)

1: Connecticut has a high labor force participation rate but also high underemployment and long term unemployment

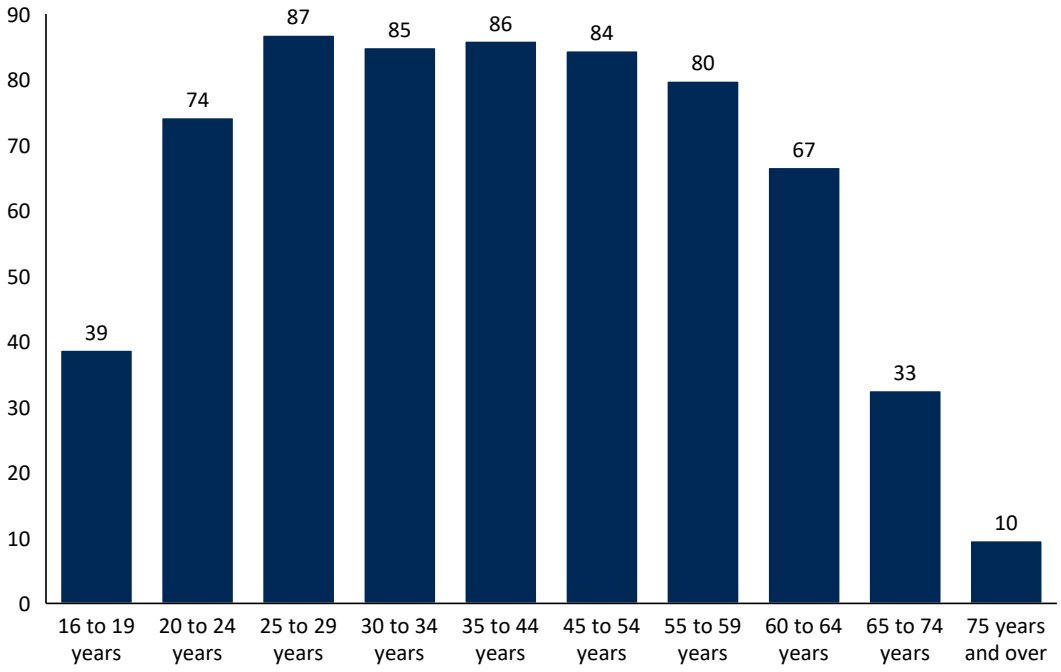
1. Includes people who indicate that they want and are available for full-time work and gave an economic reason for working 1 to 34 hours during a week, including: unfavorable business conditions, inability to find full-time work, seasonal declines in demand

1: Connecticut labor force participation by demographics

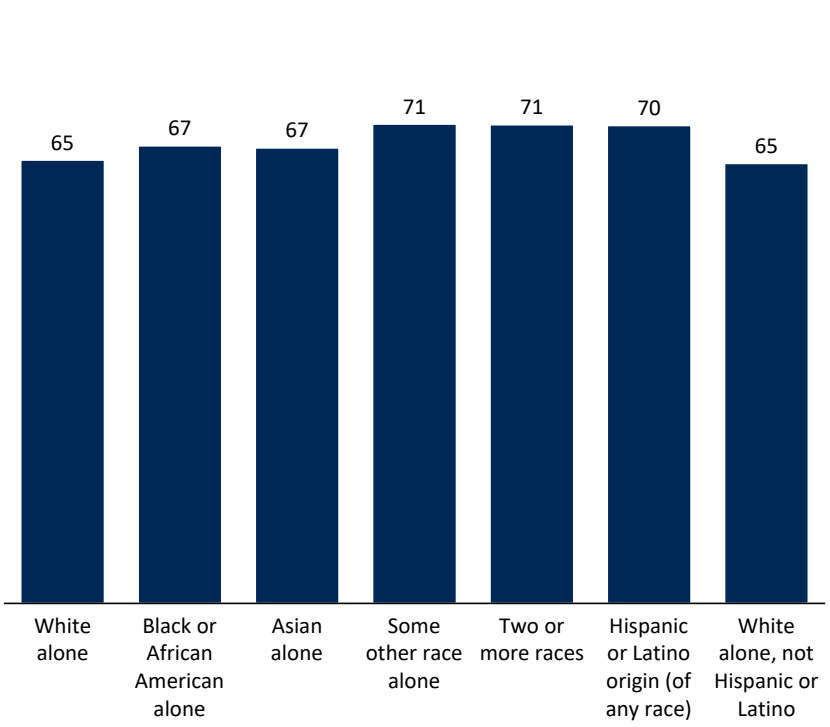
CT labor force participation rate (LFPR) by demographics

% population 16 and older, 2018

Age demographics



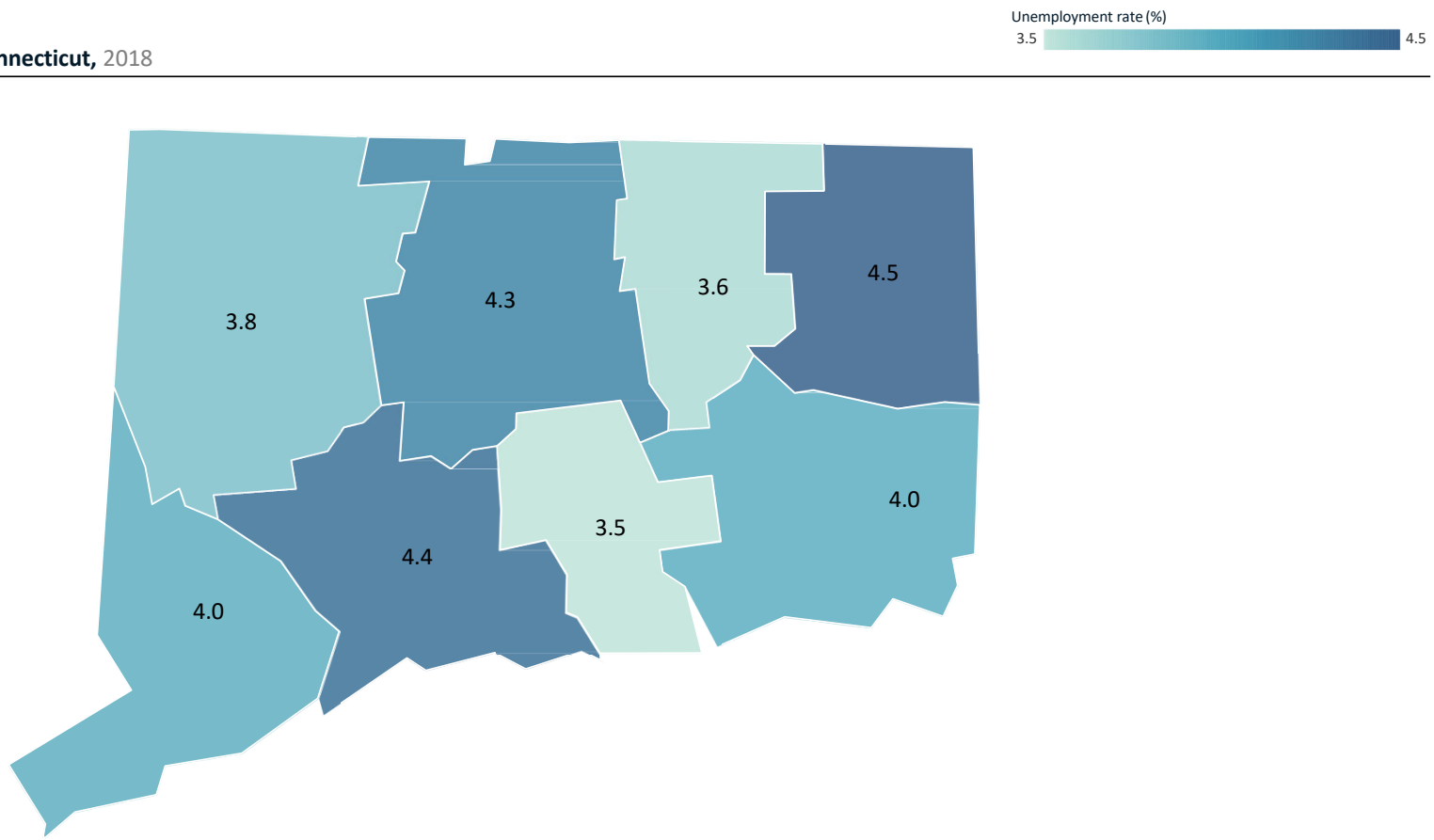
Race demographics



Source: Moody's; US Bureau of Labor Statistics (BLS); US Census

1: Unemployment rates are fairly evenly distributed across the state

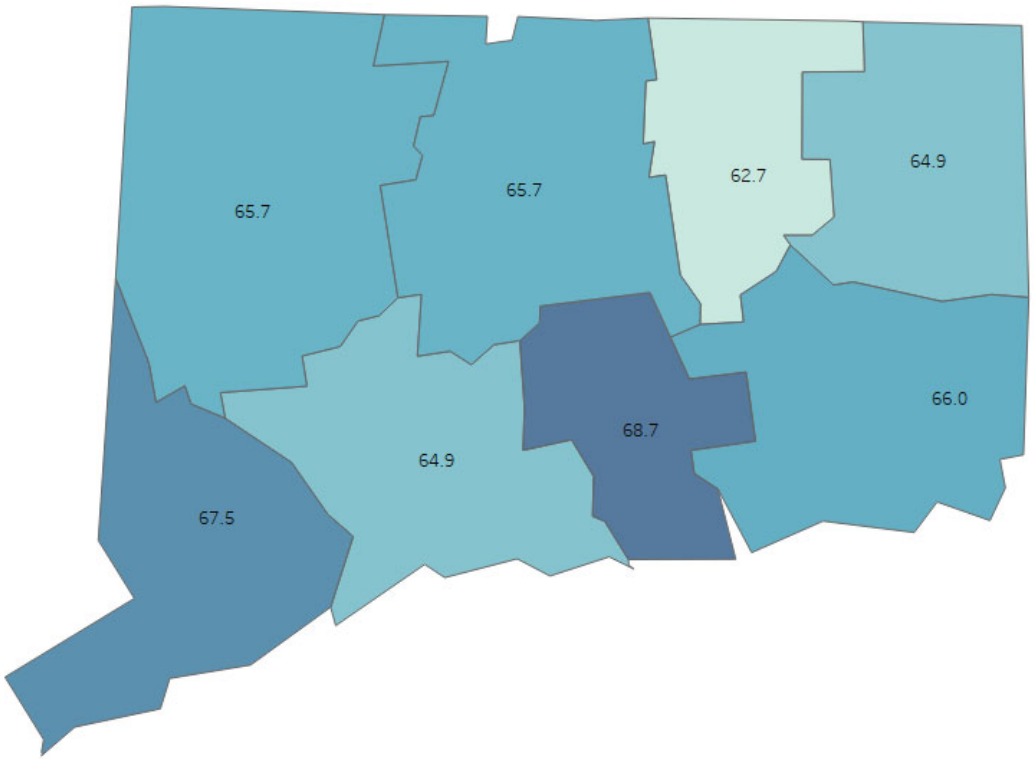
Unemployment rate by county in Connecticut, 2018



Source: Moody's Analytics

1: Labor force participation rate is fairly even across state, with exception of Tolland

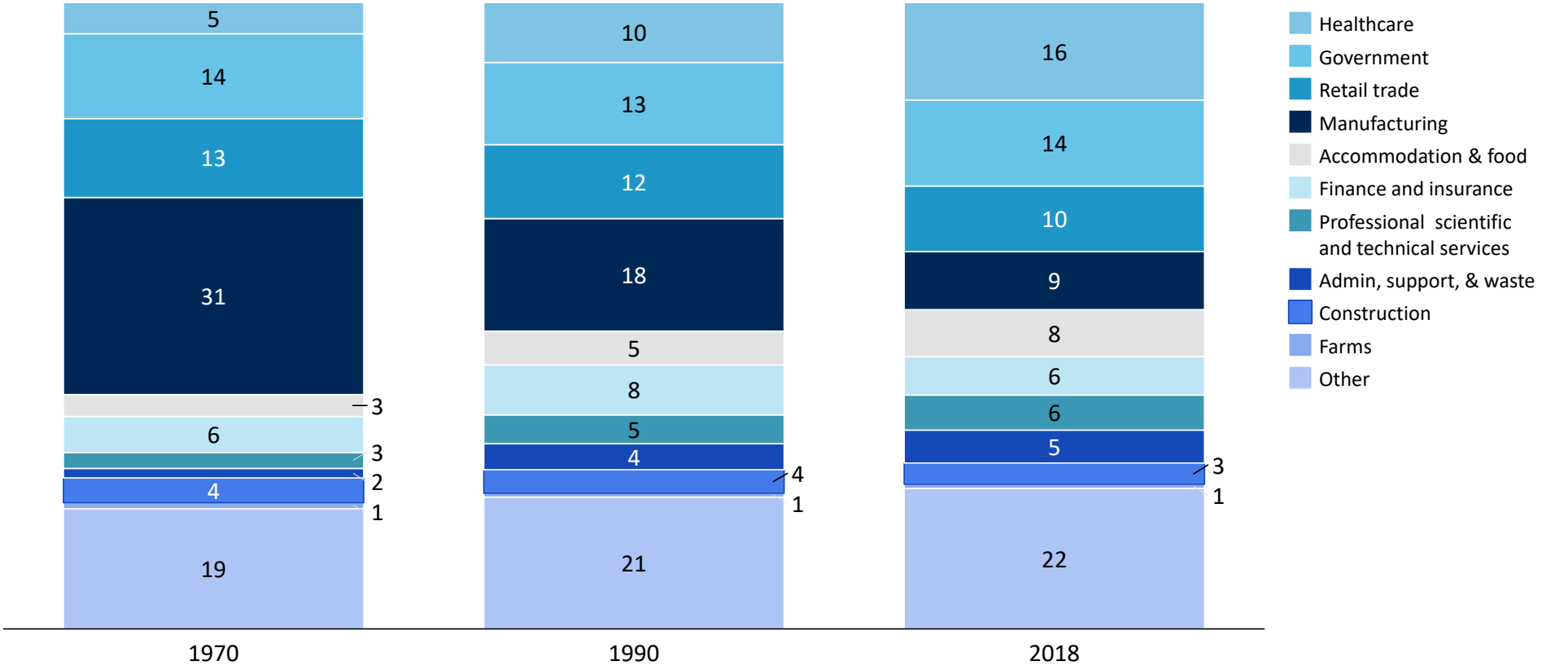
Labor force participation rate rate by county in Connecticut, % of population 16 years and over, 2018



Source: Moody's Analytics

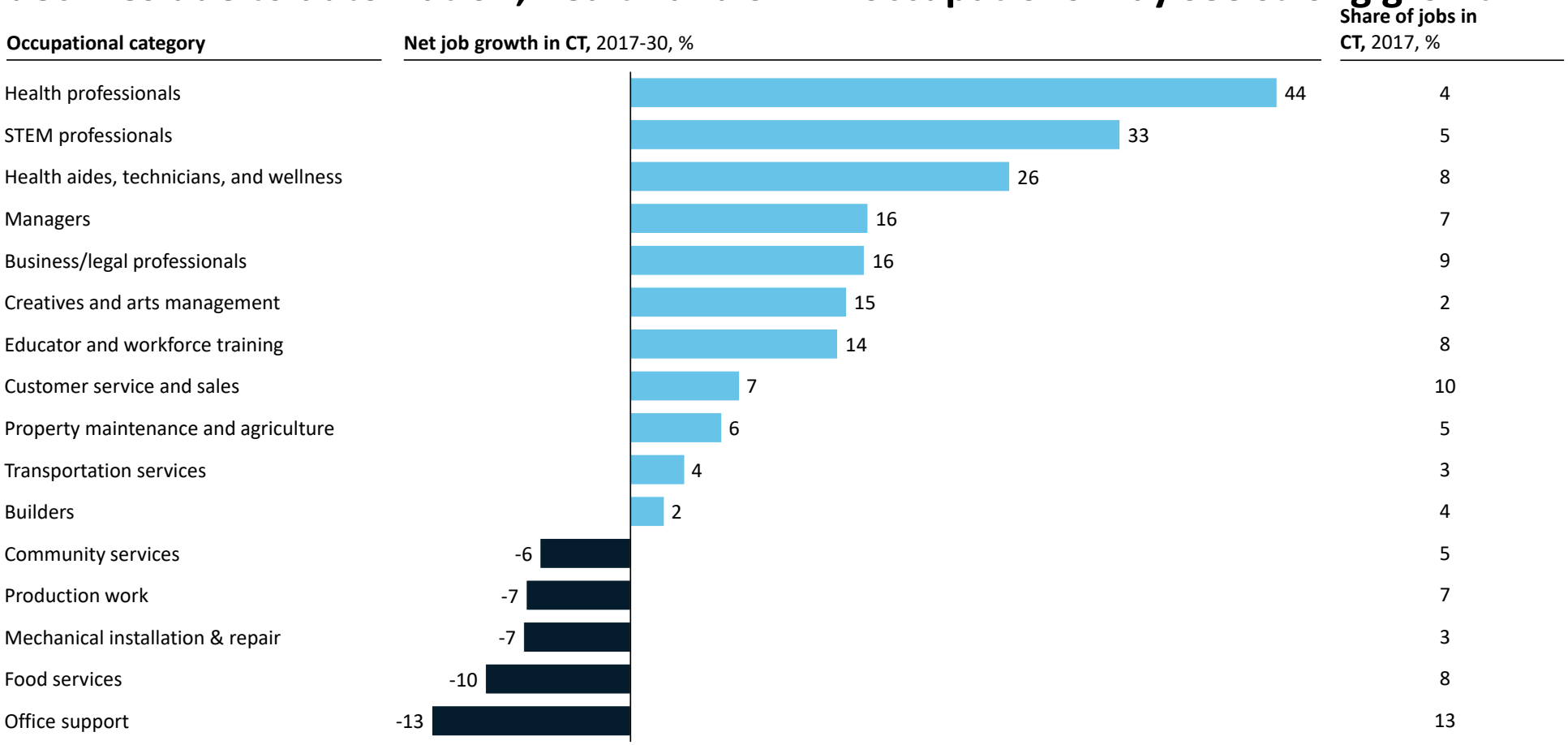
2: Three non-tradable sectors drive 40% of current employment, reflecting growth in healthcare employment and decline in manufacturing employment

Employment share by sector in Connecticut, %



Source: US Bureau of Labor Statistics (BLS)

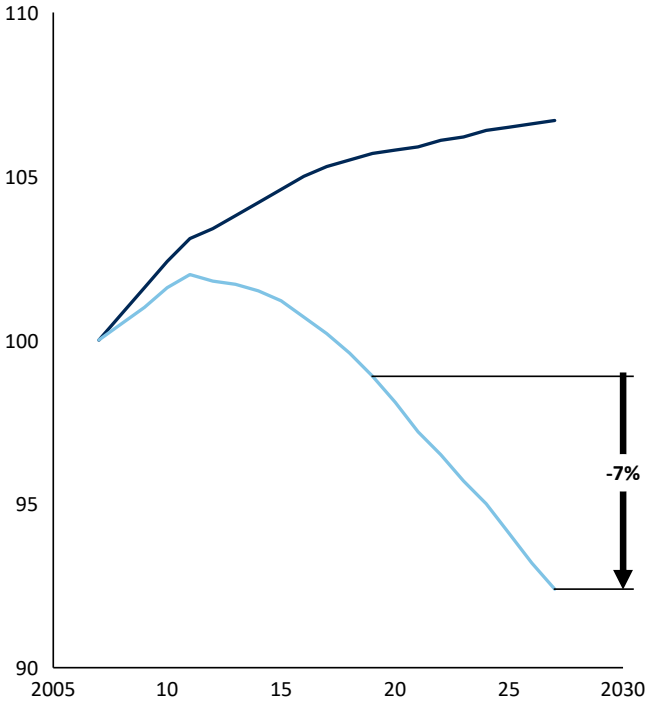
2: Office support, food services, and mechanical installation/repair jobs may see declines due to automation; health and STEM occupations may see strong growth



3: Workforce supply in Connecticut faces decline due to aging workforce and high out migration

United States Connecticut

Working age population (15-64) over time
Indexed to 2007



Net migration per 1,000 people
Thousand, 2018

		Rank
South Carolina	11.1	5
Oregon	8.4	10
Utah	8.0	11
Massuchusetts	4.0	18
Virginia	2.6	23
Rhode island	0.1	36
New Jersey	-0.4	39
Connecticut	-1.4	41
New York	-5.5	48

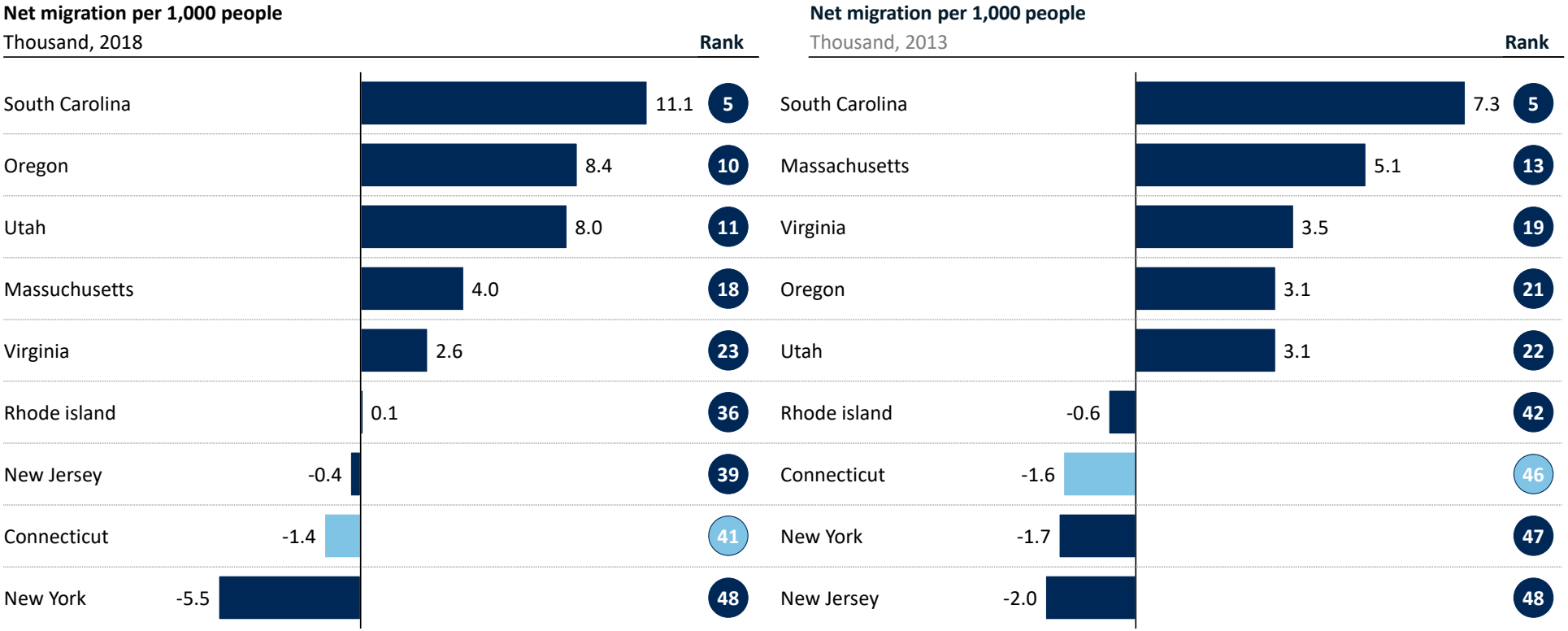
Graduates that live in state where they graduated
Percent, as of 2018

New York	55.0%
Oregon	55.0%
South Carolina	53.0%
Utah	49.0%
Massuchusetts	45.0%
New Jersey	38.0%
Connecticut	38.0%
Virginia	37.0%
Rhode Island	27.0%

Source: Moody's; US Bureau of Labor Statistics (BLS)

3: Connecticut trails most peers in net migration, losing 1.4 people per 1000 inhabitants in 2018

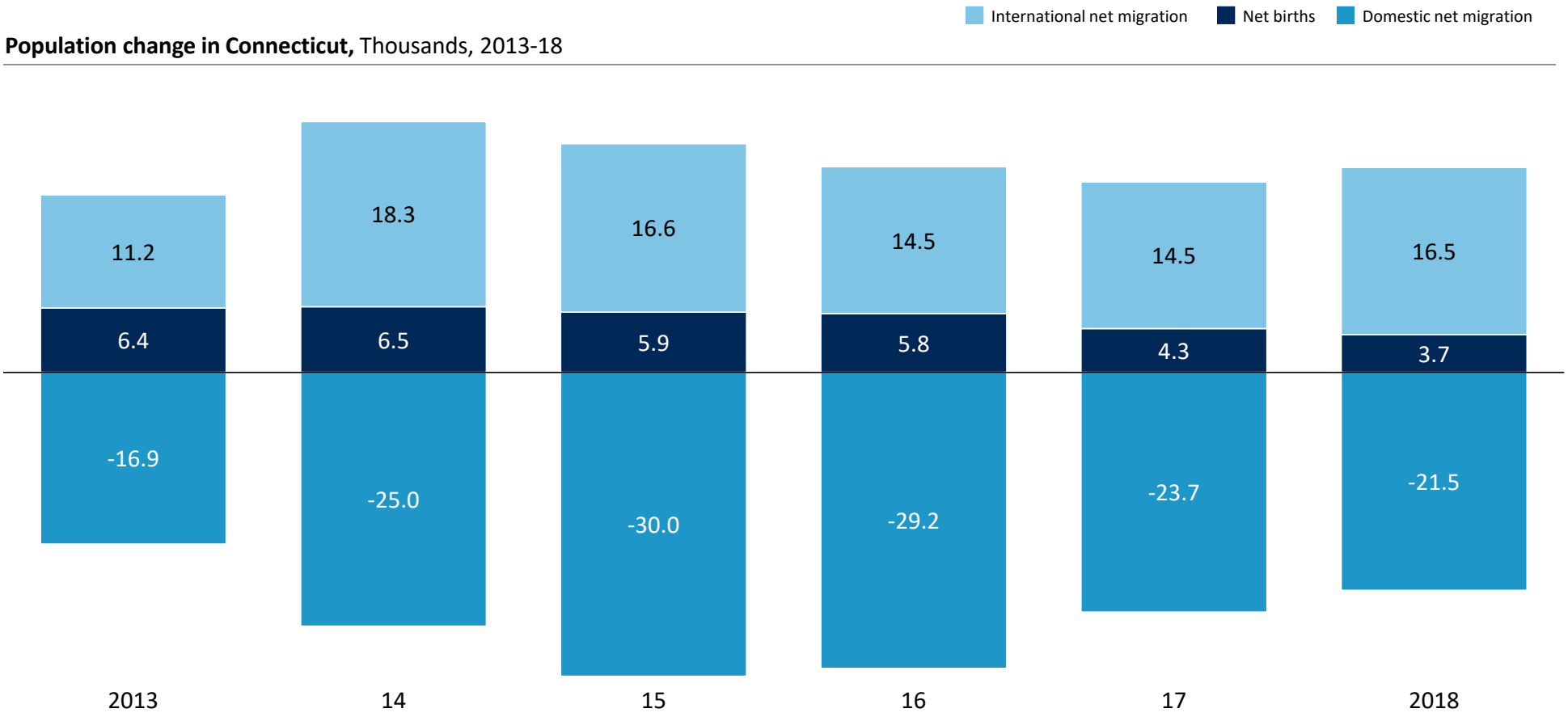
Net migration trends



Source: Moody's Analytics; US Census Bureau

3: Domestic outmigration outweighed foreign migration and births in 3 of last 5 years

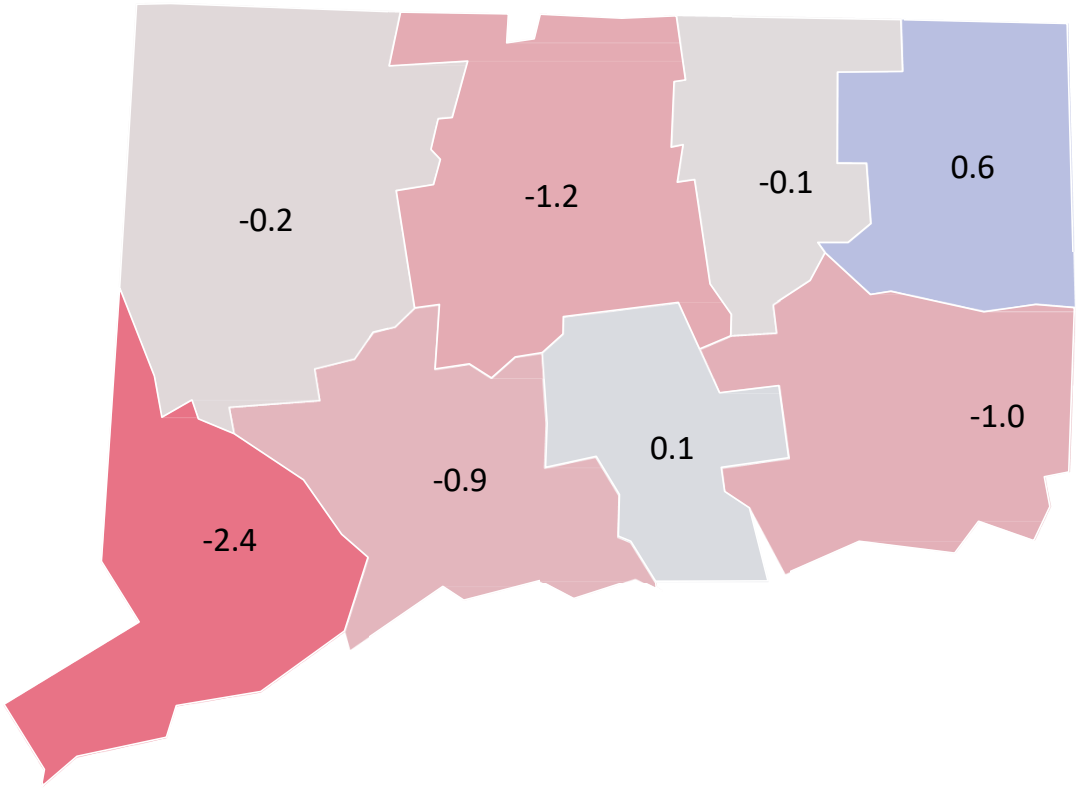
Population change in Connecticut, Thousands, 2013-18



Source: US Census

3: Only Northeast CT had significantly positive net migration in 2018

Net migration by county in Connecticut, Thousands, 2018

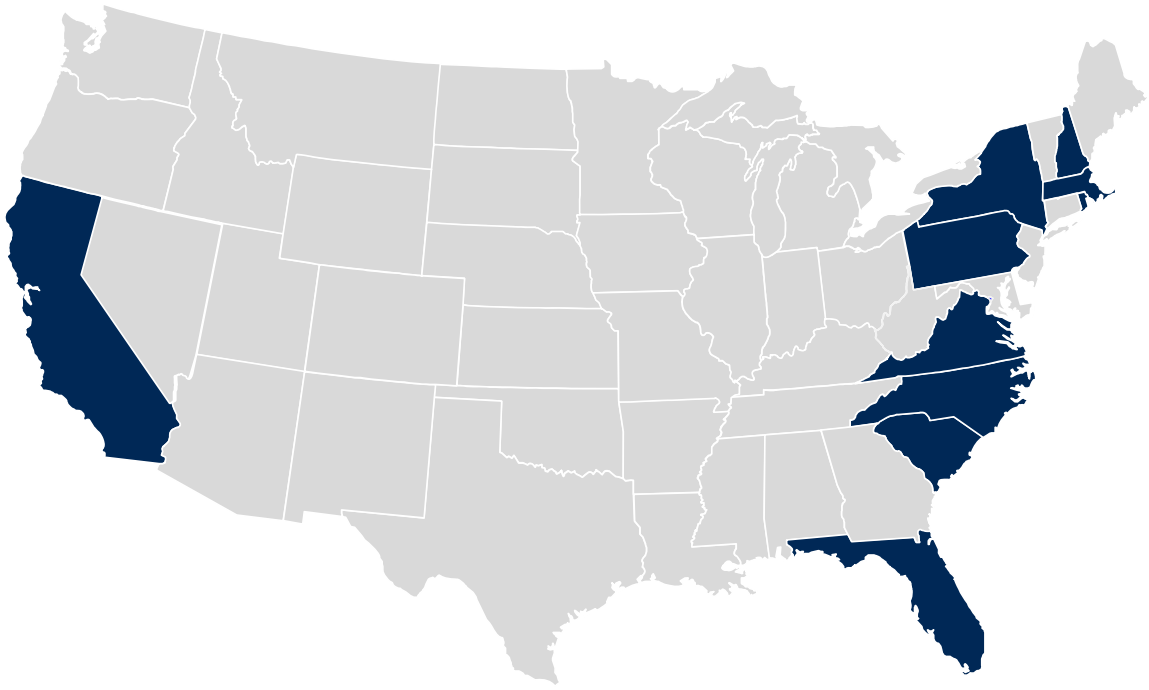


Source: Moody's Analytics

3: 70% of people leaving Connecticut are going to one of ten states

CT out-migration trends

Percent of total out-migration from CT, total 98,654 migrants1, 2017



State destination	Percentage of out-migration
New York	16%
Florida	12%
Massachusetts	9%
North Carolina	5%
Pennsylvania	5%
California	5%
South Carolina	5%
New Hampshire	5%
Virginia	4%
Rhode Island	4%
Total for Top 10	**70%**

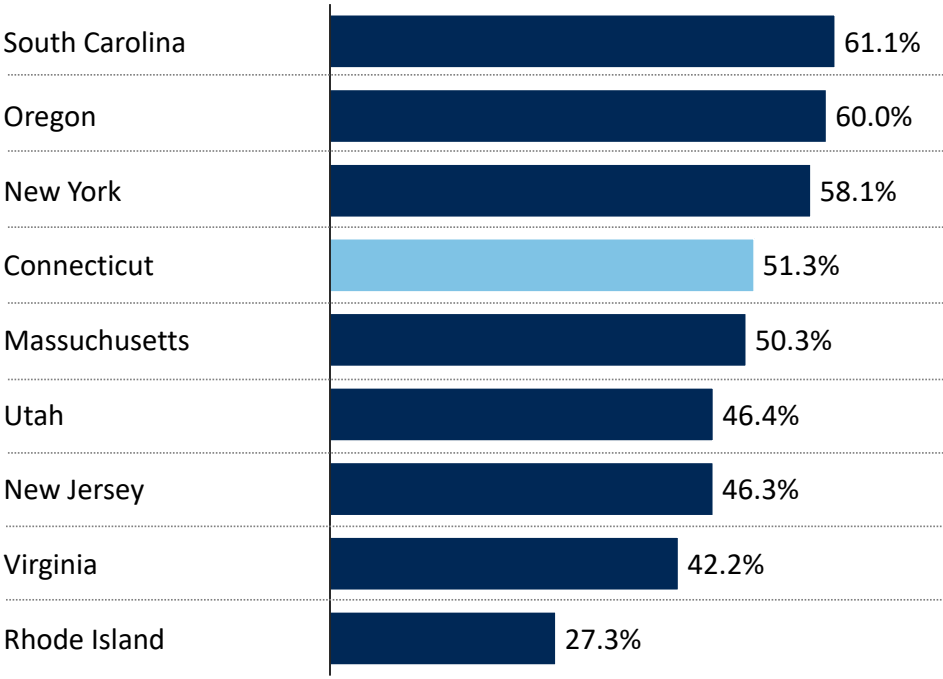
1. Based on definition of having lived in CT one year ago and moved to another state in last 12 months

Source: IPUMS

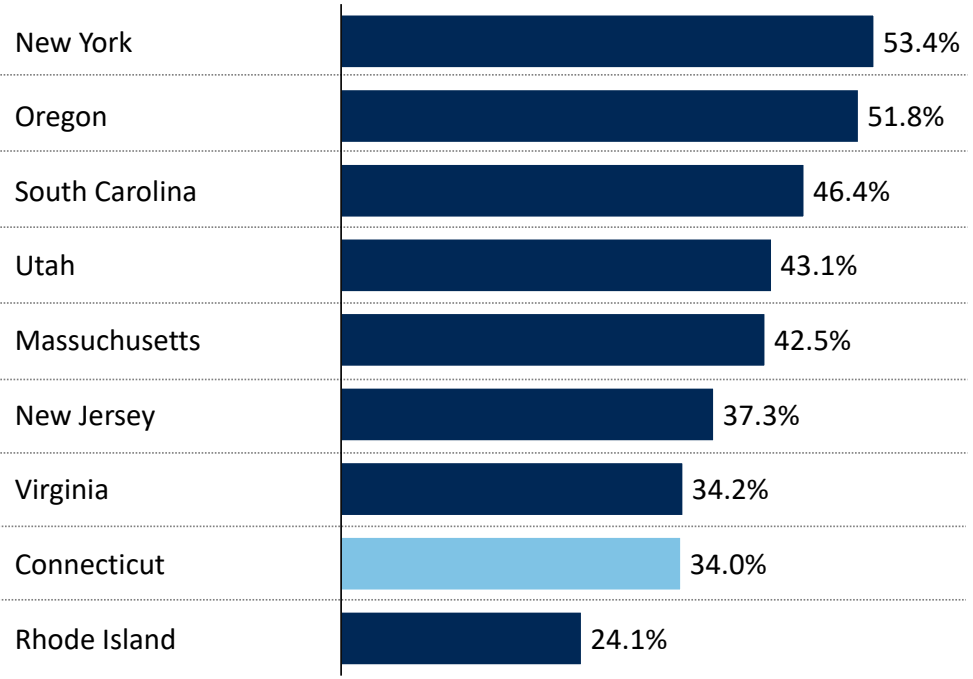
3: Connecticut retains significantly more of their associate's degree graduates compared to graduates from bachelor's+ degree programs

Talent production by state

Associate's degree graduates that live in state where they graduated, Percent, as of 2019



Bachelor's or higher graduates that live in state where they graduated, Percent, as of 2019

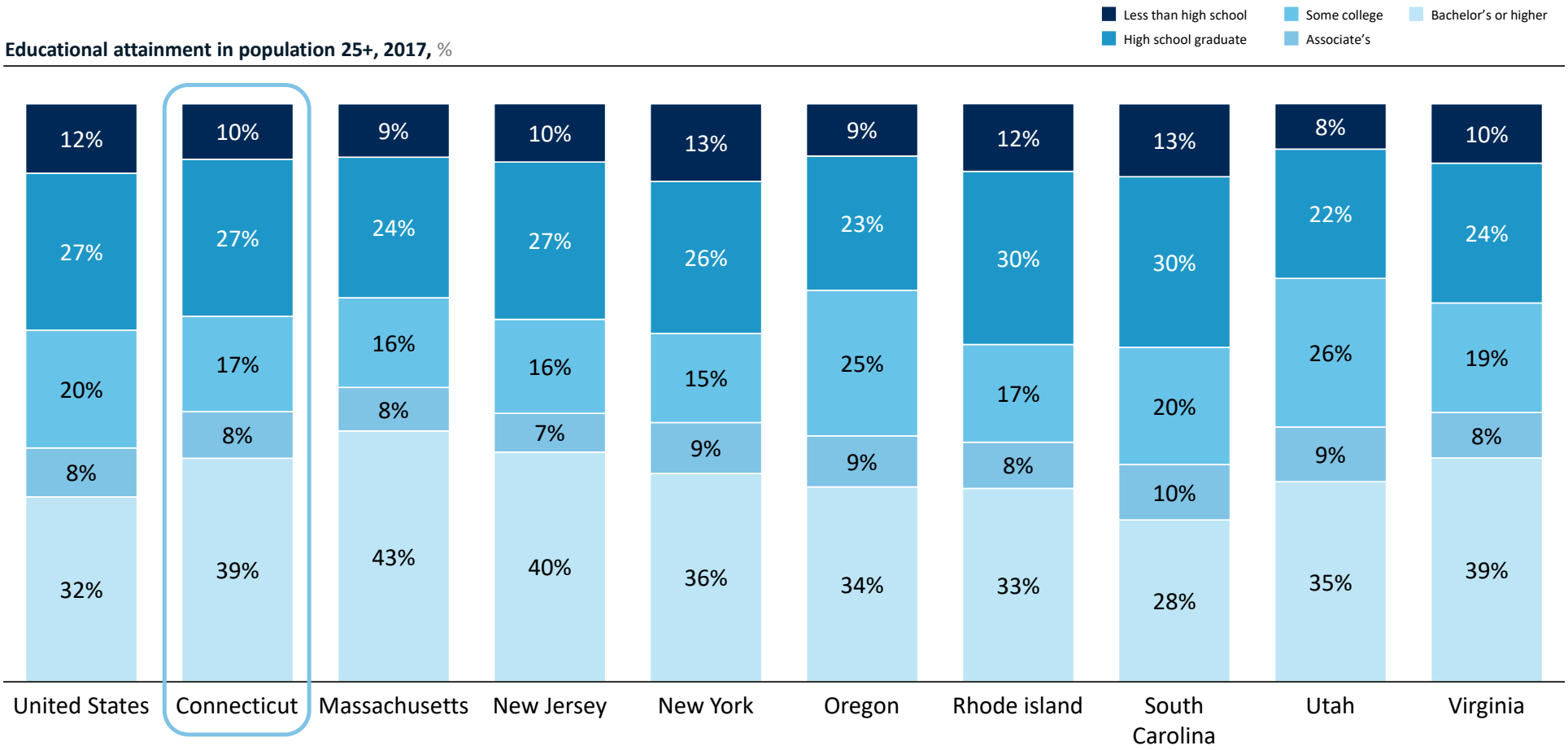


1. STEM includes the following programs: Computer and Information Sciences and Support Services (CIP 11), Engineering (CIP 14), Engineering Technologies and Engineering-Related Fields (CIP 15), Biological and Biomedical Sciences (CIP 26), Mathematics and Statistics (CIP 27), Physical Sciences (CIP 40), Science Technologies/Technicians (CIP 41)
2. Includes completions for bachelor's. postbaccalaureate certificates, master's, post-master's, and doctor's

SOURCE: Economic Modeling Specialists International (EMSI)

4: Workforce is highly educated relative to peers, only trailing MA and NJ

Educational attainment in population 25+, 2017, %



Source: US Census Bureau

4: Quality of K-12 and four year higher education system leads nation, while two year programs lag

CT rank in US (#) Top 15 (#) Middle 15 (#) Bottom 20

Pre-K-12

Pre-K

4	Preschool enrollment

K-12 primary

3	NAEP reading scores[1]
19	NAEP math scores[2]
15	High school graduation rate
2	College readiness

K-12 secondary

Higher Education

Post-secondary (2-yr)

6	Education attainment
13	4-year graduation rate
45	2-year graduation rate
49	Low debt at graduation

Post-secondary (4-yr)

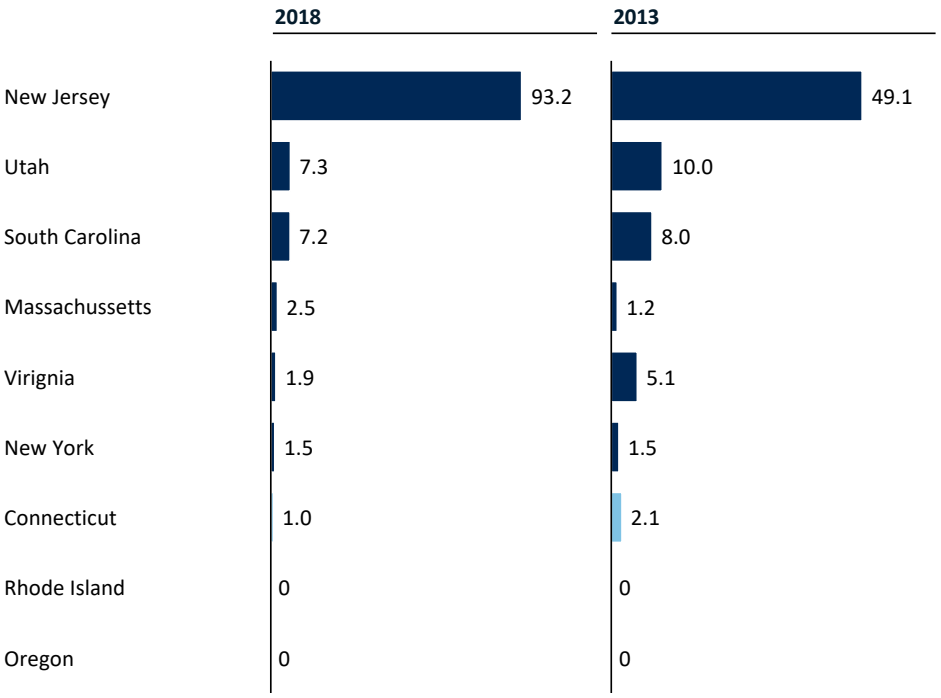
1. US Best States reports rank of 4 based on 2017 data, calculated new rank of 3 based on 2019 Nation's Report Card
2. US Best States report rank of 21 based on 2017 data, calculated new rank of 19 based on 2019 Nation's Report Card

Source: US News Best States, National Assessment of Educational Progress (NAEP)

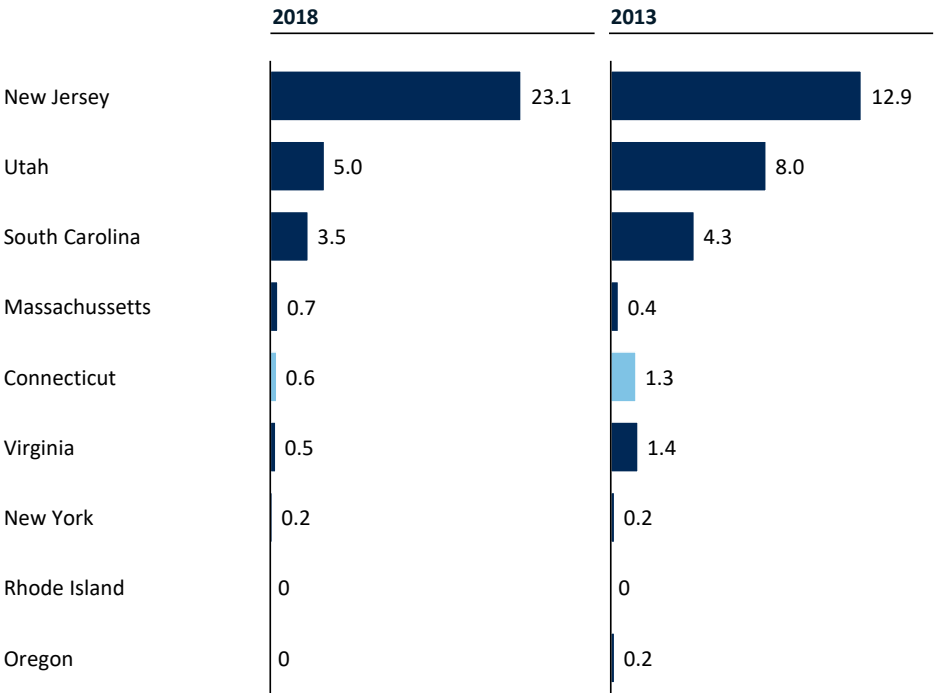
4: Connecticut trails most peers in state workforce spending

Government expenditures in workforce[1]

State workforce spending
USD million



State workforce spending per worker
USD

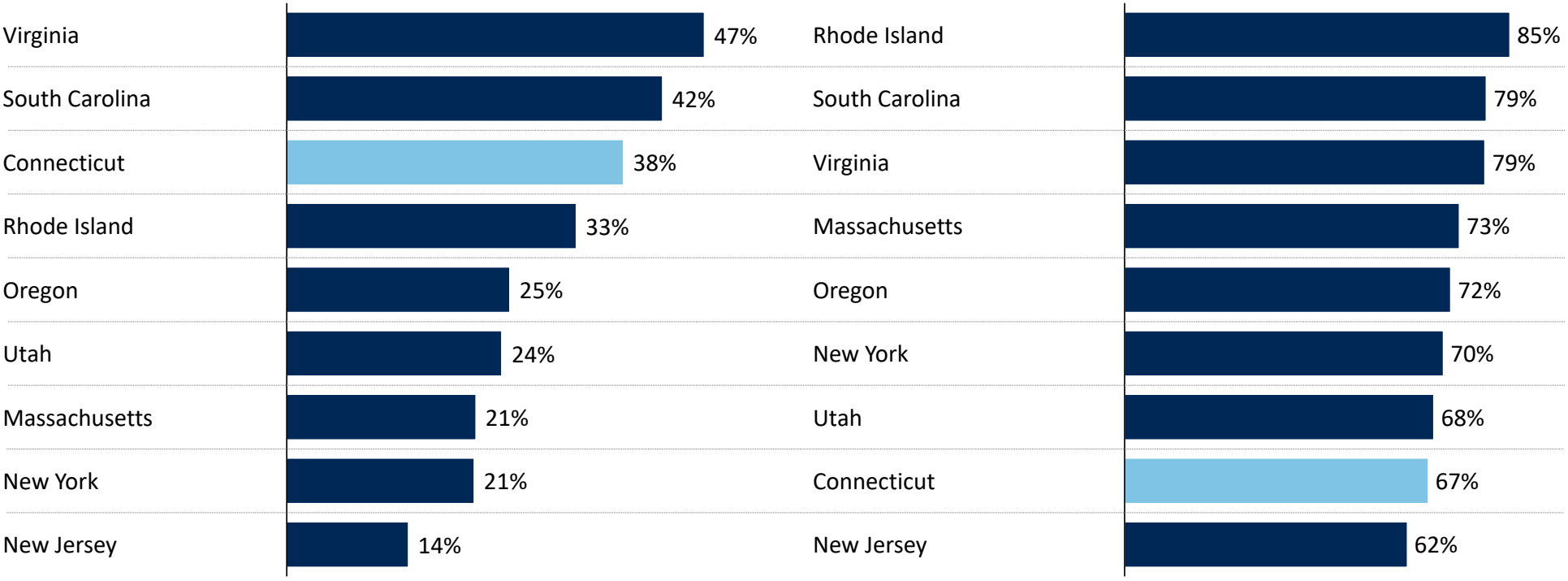


1. Based on C2ERs analysis of state budgets, including: customized training, incumbent worker training, sector-specific training, other workforce preparation and development

Source: Council for Community Economic Research (C2ER), State Economic Development Program Expenditures Database

4: Effectiveness of government spending on skills gains outperforms peers while employment placement lags

Workforce Innovation and Opportunity Act (WIOA) outcomes



1. The percentage of program participants who, during a program year, are in an education or training program that leads to a recognized postsecondary credential or employment and who are achieving measurable skill gains, defined as documented academic, technical, occupational, or other forms of progress, towards such a credential or employment

Source: FutureWork Systems, WIOA National Performance Dashboard

5: Connecticut leads in four year training and CTE, but lags in two year training and apprenticeships

Observations relative to peer performance around workforce training indicators

Leads in 4-yr higher education

- Connecticut has high-quality higher education and marked STEM focus since 2012
- Ranked 6th nationally for higher education attainment and 13th for 4-year graduation rates
- Connecticut graduates 19% of its bachelors and advanced programs in STEM fields (ranked 22nd), representing a 4 p.p. increase since 2012

Lags in 2-yr higher education

- Connecticut outcomes related to 2-year higher education to be explored
- Ranked 45th nationally for 2-year program graduation rates
- Connecticut advances only 6% of its associates and certificate graduates in STEM fields (ranked 40th)

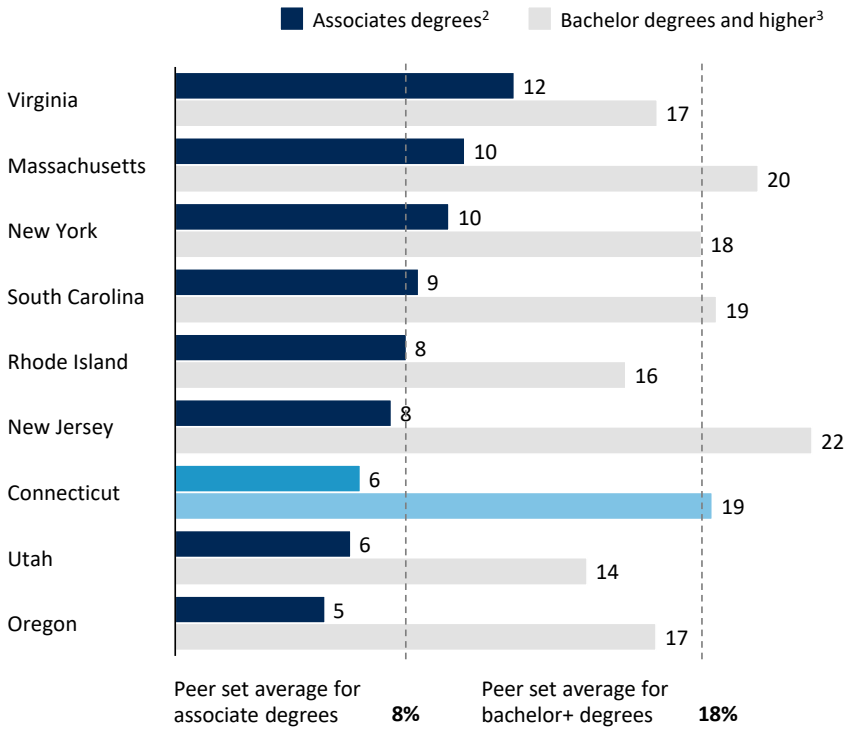
Leads in career and technical education (CTE)

- Connecticut has a higher number of students enrolled in CTE programs per capita than most peers, and ranks 2nd in both secondary and postsecondary per capita CTE enrollment
- 27% of population age 15-19 enrolled in secondary CTE (peers average 19%)
- 12% of population age 20-24 enrolled in postsecondary CTE (peers average 10%)

Lags in apprenticeship training

- Connecticut is "middle of the pack" compared to peers with 15 apprentices per 10K people
- However, apprenticeship completion rates appear to be low (12%) relative to completion rate in peer states (~60%)
- Volume of active apprenticeships and completion rates in Connecticut have declined significantly since 2012 – nearly 40% decline in active apprenticeships

STEM[1] graduates
Percent of total graduates with STEM degrees, 2018

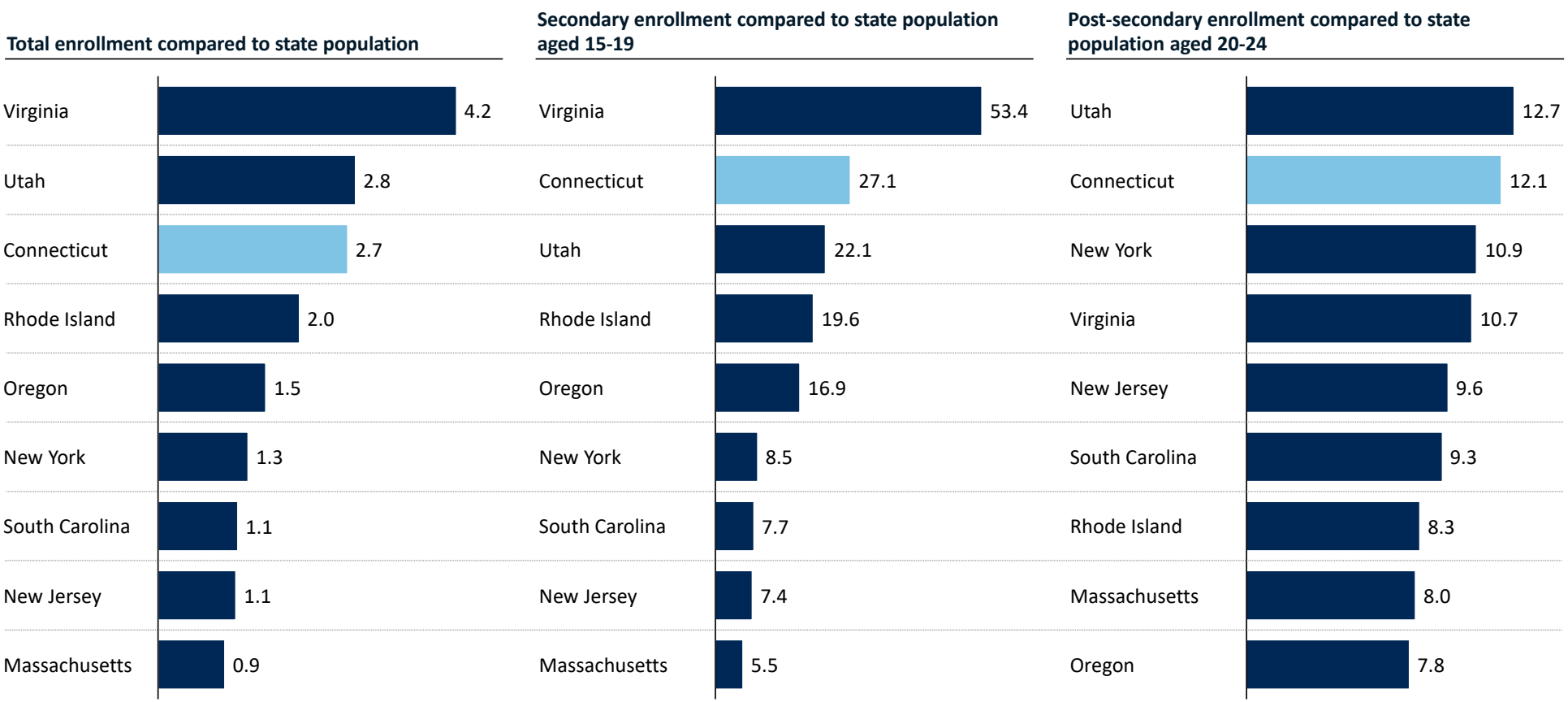


1. STEM includes the following programs: Computer and Information Sciences and Support Services (CIP 11), Engineering (CIP 14), Engineering Technologies and Engineering-Related Fields (CIP 15), Biological and Biomedical Sciences (CIP 26), Mathematics and Statistics (CIP 27), Physical Sciences (CIP 40), Science Technologies/Technicians (CIP 41)
2. Includes completions for associate's degrees as well as awards of at least two but less than 4 academic years
3. Includes completions for bachelor's. postbaccalaureate certificates, master's, post-master's, and doctor's

Source: Economic Modeling Specialists International (EMSI), US Department of Labor, Registered Apprenticeship National Results, U.S. Department of Education, Office of Career, Technical, and Adult Education

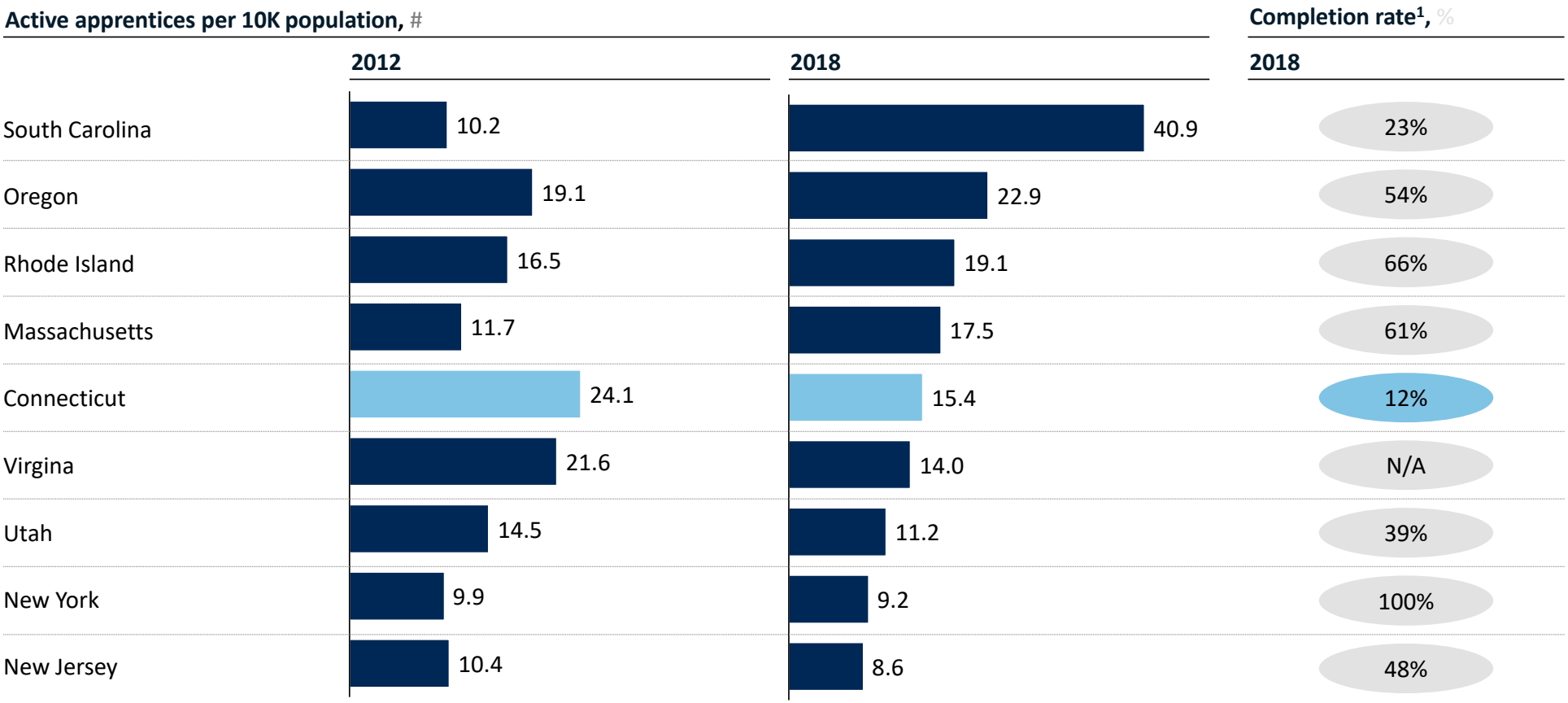
5: Connecticut has a higher number of students enrolled in CTE programs per capita than most peers

CTE enrollment (concentrator) [1], %, 2017-18



Source: Perkins Web Portal; Carl D. Perkins Career and Technical Education Act of 2006 (Perkins IV)

5: Connecticut is middle of the pack in terms of the number of active apprentices but trails in completions compared to peers

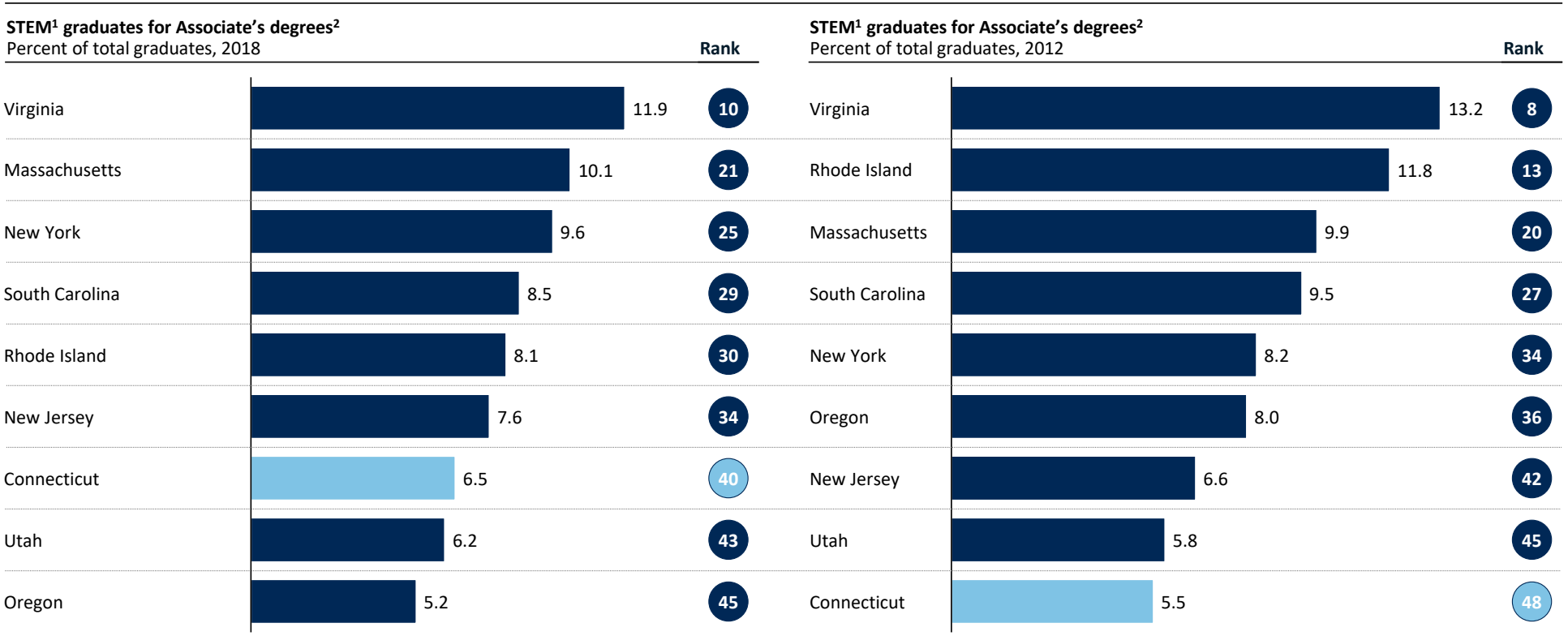


1. Total apprenticeship completers in 2016 and 2017 as a share of new apprentices entering in 2015 and 2016; Rankings include all 50 states in addition to Washington, DC and Guam

Source: US Department of Labor, Registered Apprenticeship National Results

5: Graduation in STEM fields in Connecticut has grown 1 p.p. since 2012, from 5.5% to 6.5% in 2017

Talent production by state



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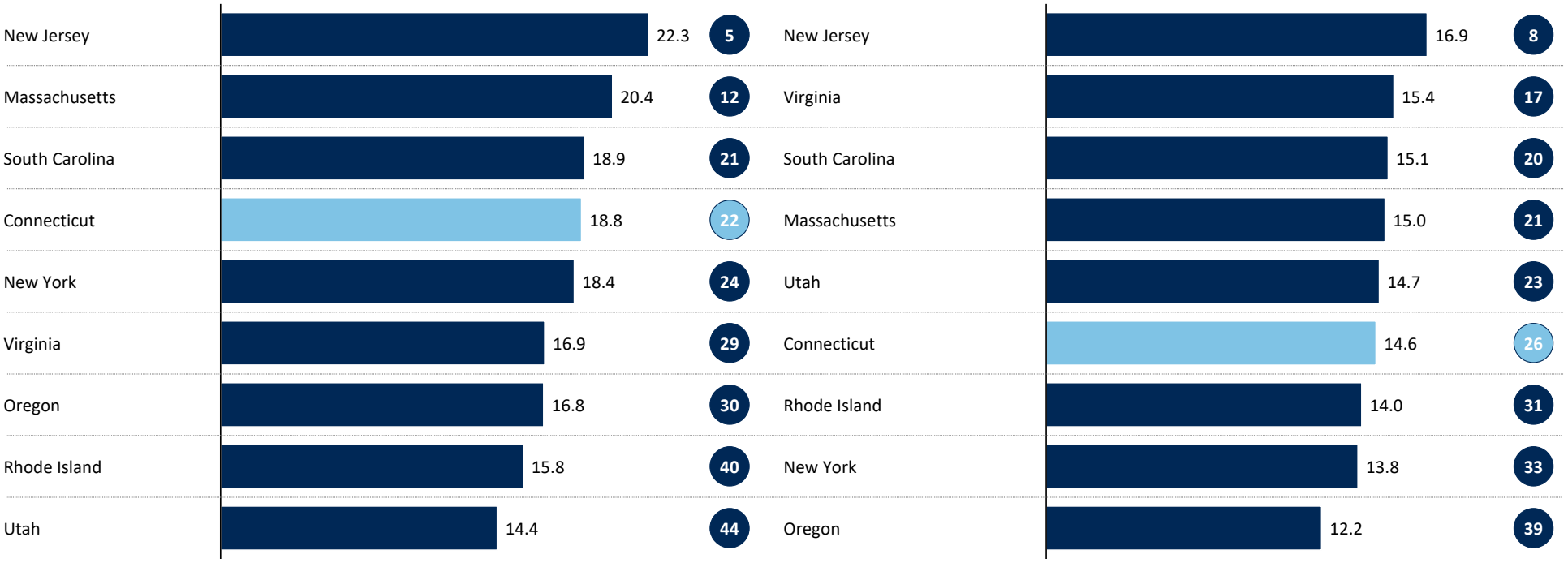
2. Includes completions for associate's degrees as well as awards of at least two but less than 4 academic years

Source: Economic Modeling Specialists International (EMSI)

5: Graduation for bachelor's and graduate STEM programs in Connecticut has grown 4p.p since 2012, from 14.6% to 18.8% in 2018

Talent production by state



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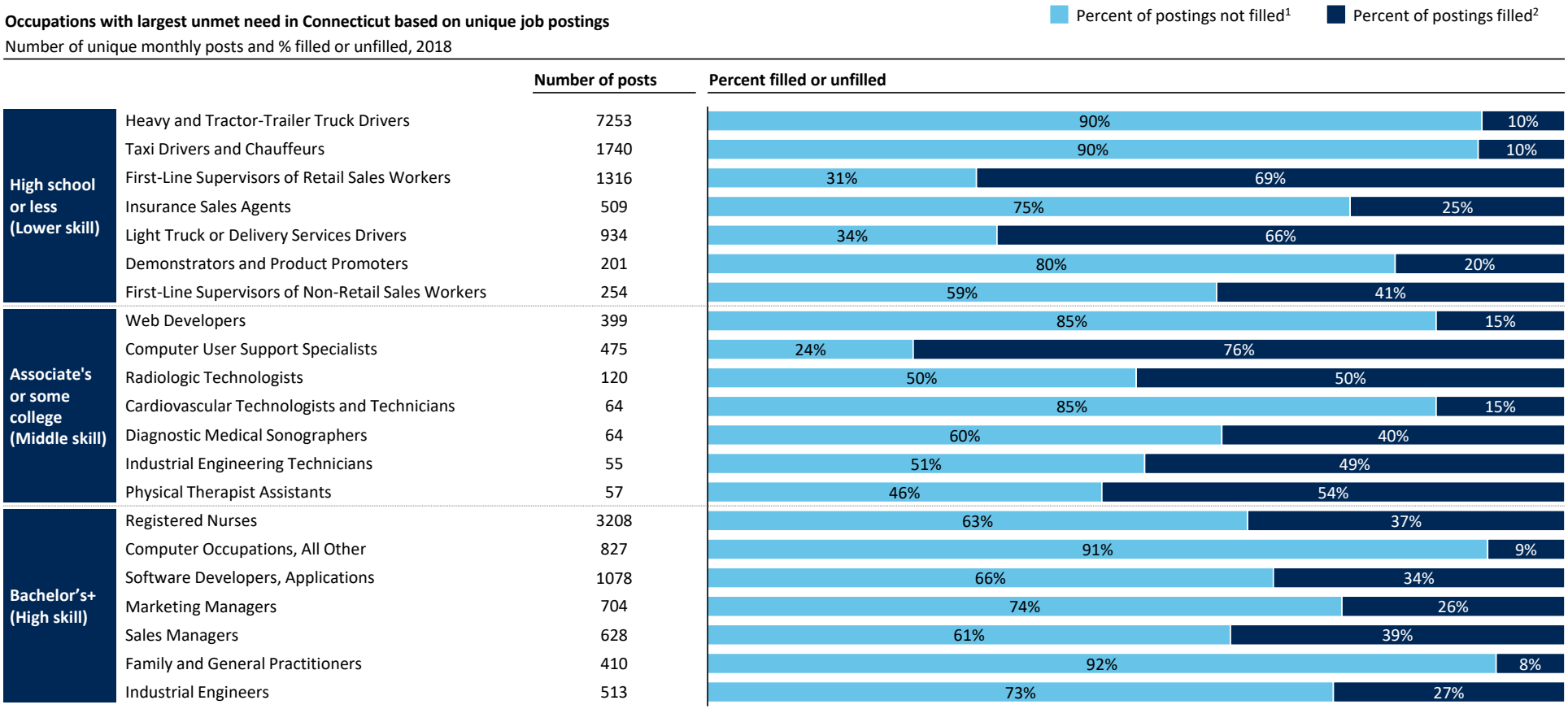
2. Includes completions for bachelor's. postbaccalaureate certificates, master's, post-master's, and doctor's

Source: Economic Modeling Specialists International (EMSI)

6: Employers have unmet demand across the education and skill spectrum

Occupations with largest unmet need in Connecticut based on unique job postings

Number of unique monthly posts and % filled or unfilled, 2018



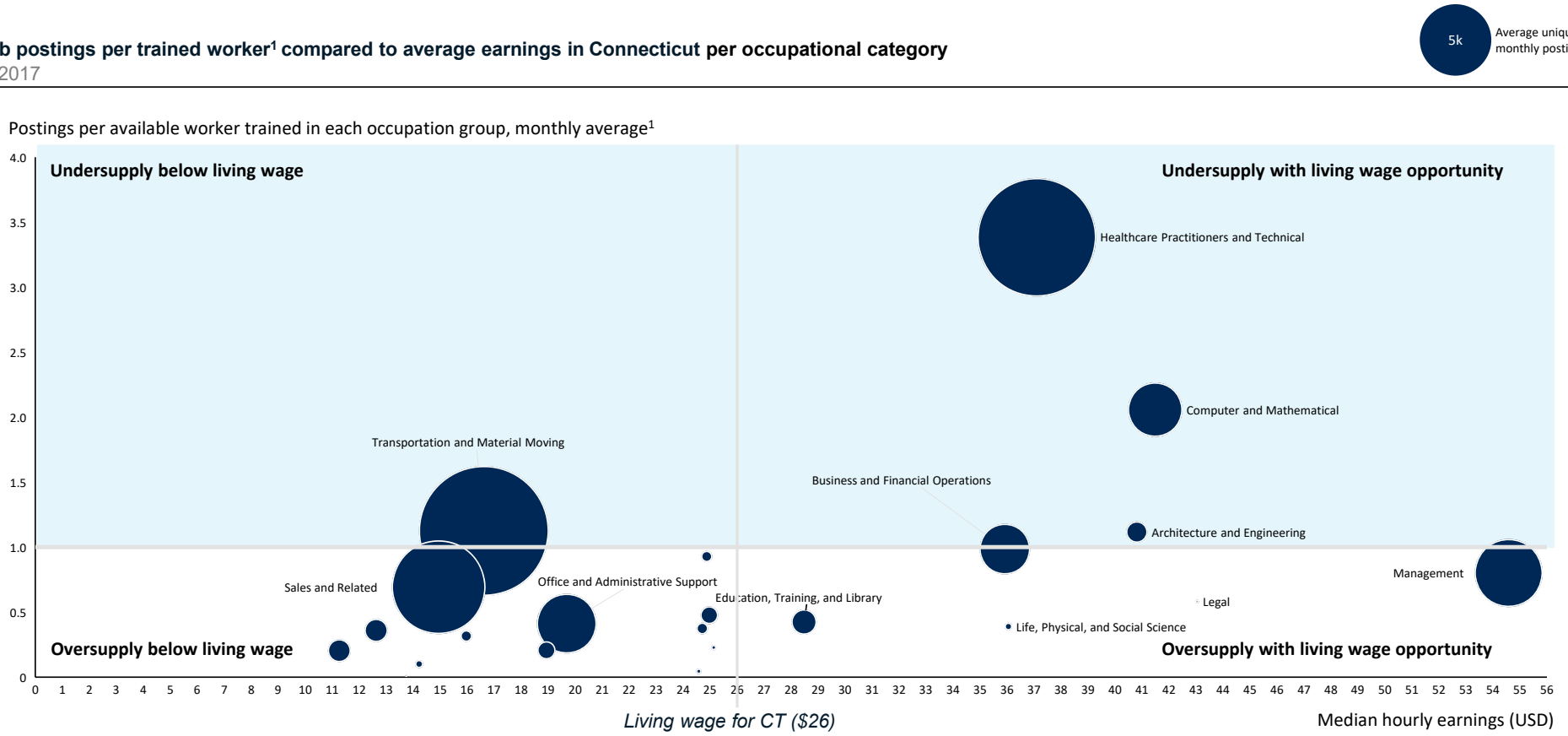
		Number of posts	Percent filled or unfilled
High school or less (Lower skill)	Heavy and Tractor-Trailer Truck Drivers	7253	90% / 10%
	Taxi Drivers and Chauffeurs	1740	90% / 10%
	First-Line Supervisors of Retail Sales Workers	1316	31% / 69%
	Insurance Sales Agents	509	75% / 25%
	Light Truck or Delivery Services Drivers	934	34% / 66%
	Demonstrators and Product Promoters	201	80% / 20%
	First-Line Supervisors of Non-Retail Sales Workers	254	59% / 41%
Associate's or some college (Middle skill)	Web Developers	399	85% / 15%
	Computer User Support Specialists	475	24% / 76%
	Radiologic Technologists	120	50% / 50%
	Cardiovascular Technologists and Technicians	64	85% / 15%
	Diagnostic Medical Sonographers	64	60% / 40%
	Industrial Engineering Technicians	55	51% / 49%
	Physical Therapist Assistants	57	46% / 54%
Bachelor's+ (High skill)	Registered Nurses	3208	63% / 37%
	Computer Occupations, All Other	827	91% / 9%
	Software Developers, Applications	1078	66% / 34%
	Marketing Managers	704	74% / 26%
	Sales Managers	628	61% / 39%
	Family and General Practitioners	410	92% / 8%
	Industrial Engineers	513	73% / 27%

1. Based on average unique job postings per month, minus average monthly hires
2. Based on average monthly hires in each occupation

Source: Economic Modeling Specialists International (EMSI)

6: Employers have unmet demand across the education and skill spectrum

Job postings per trained worker[1] compared to average earnings in Connecticut per occupational category
#, 2017

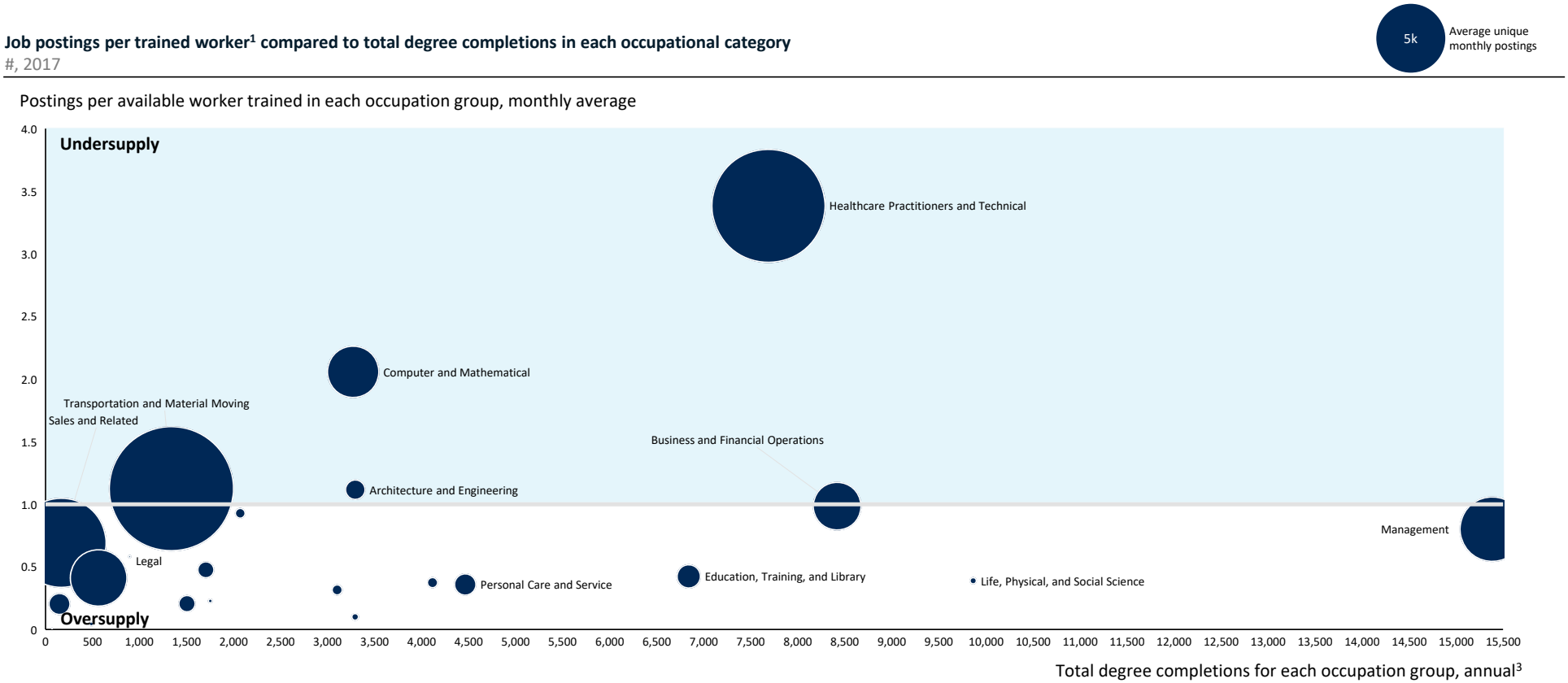


1. Includes all unemployed individuals and recent graduates qualified for each occupation, either trained through prior employment or formal education
2. Some occupations (e.g., construction, manufacturing) may be underrepresented due to regional markets differences, recent events (e.g., hurricanes), and nature of occupation resulting in low likelihood of job "posting"

Source: Economic Modeling Specialists International (EMSI), MIT Living Wage Calculator,

6: One driver of unmet demand is mismatch between type of degrees and employer needs

Job postings per trained worker[1] compared to total degree completions in each occupational category
#, 2017



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2. Some occupations (e.g., construction, manufacturing) may be underrepresented due to regional markets differences, recent events (e.g., hurricanes), and nature of occupation resulting in low likelihood of job "posting"
3. Degrees include all certifications and degrees greater than 1 year

SOURCE: Economic Modeling Specialists International (EMSI)