



Occupational Outlook Quarterly

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**Inside, projections of:**  
Occupational employment  

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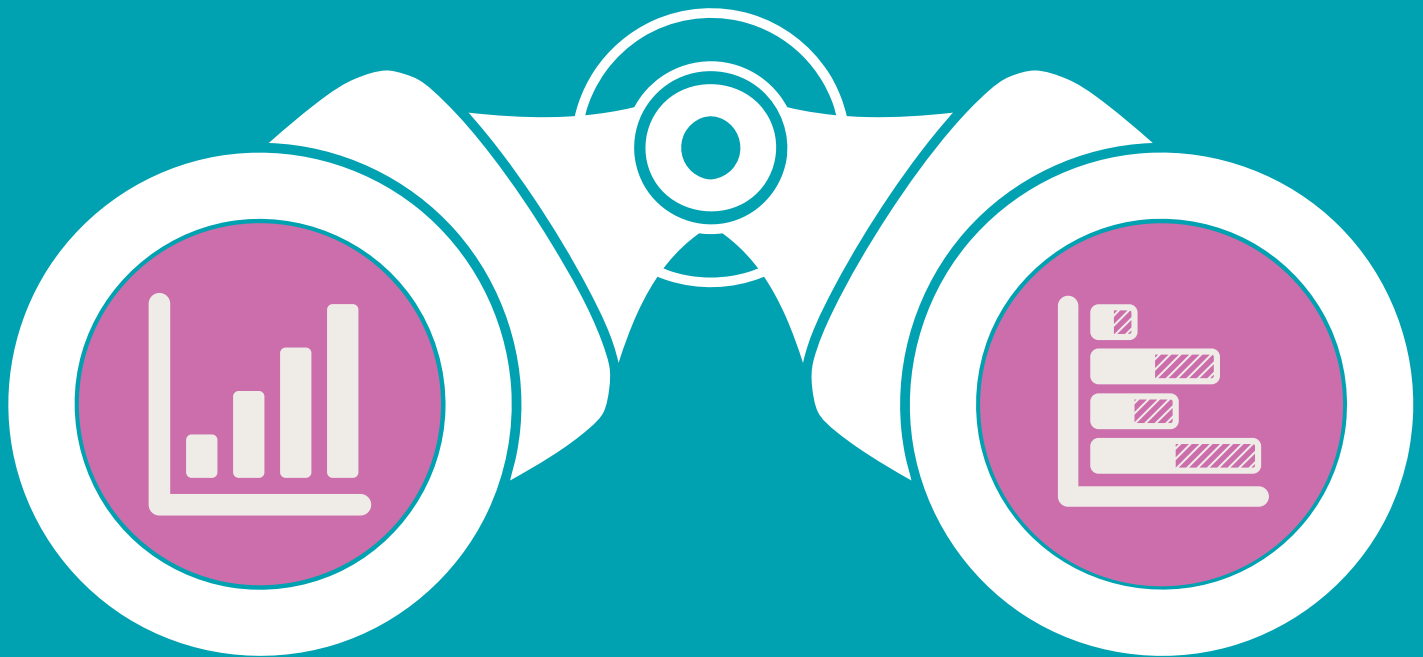
Labor force  

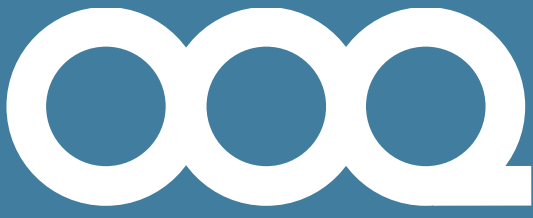
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Industry employment

# Charting the projections: 2012-22

**A special issue**





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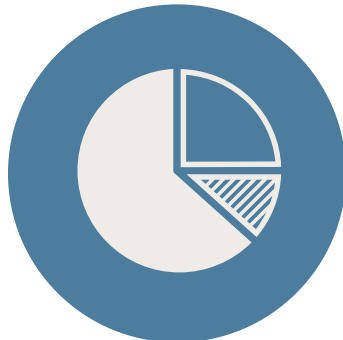
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#### Editorial staff

Kathleen Green, Editor  
Sara Royster, Managing editor  
Elka Torpey, Contributing editor  
Dennis Vilorio, Design and layout  
Maureen Soyars, Associate editor  
Keith Tapscott, Design consultant



# Getting started



## Getting started

**W**hen making career choices for yourself, or helping someone else to choose a career, it's good to know a few basics: the types and number of jobs likely to be available, the wages of workers in those occupations, and the ways you can prepare to work in the occupations. And that's just to get started.

The U.S. Bureau of Labor Statistics (BLS) provides this information and more. The 2014–15 *Occupational Outlook Handbook* covers hundreds of occupations in detail, describing data on employment, wages, projections, education, and job duties. And several articles in the *Monthly Labor Review* include comprehensive descriptions of the data, analysis, and methods BLS uses in the projections.

This special issue of the *Occupational Outlook Quarterly* (OOQ) offers a graphic summary of the latest projections, which cover the decade from 2012 to 2022.

### Reading the charts

The charts in this issue of the OOQ provide graphic answers to some basic questions about employment: How many new jobs are projected? How fast is the number of jobs projected to change? How many job openings are expected for people who are entering an occupation?

**How many new jobs are projected?** Charts that show numeric change illustrate how many new jobs are projected. In general, the occupations and industries with

the greatest numeric increases are those that already have large numbers of workers.

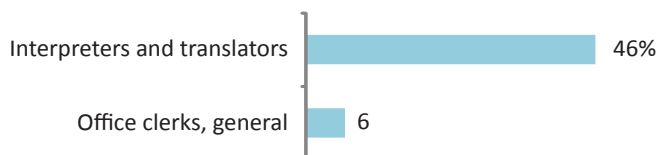
### **How fast is the number of jobs projected to change?**

Charts showing percent change illustrate how fast the number of jobs is projected to change (the rate of job growth or decline during the 2012–22 decade). The fastest rates of growth are often in occupations and industries that do not have large numbers of workers.

Fast growth does not always mean many new jobs. For example, see the following three charts. The first two charts show projected employment growth for general office clerks compared with that for interpreters and translators. The third chart shows, for office clerks, projected employment growth as part of projected total openings.

As this first chart illustrates, employment of interpreters and translators is expected to grow more than 7 times faster than that of general office clerks.

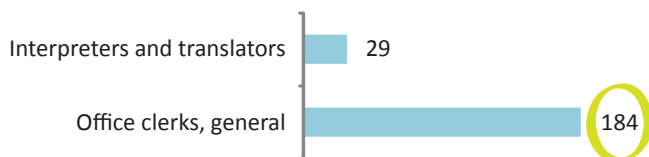
### Percent employment growth in two occupations, projected 2012–22



# Getting started

But in numeric terms, that faster growth doesn't mean a greater number of new jobs. As this chart shows, over 6 times as many new jobs are projected for general office clerks as for interpreters and translators from 2012–22.

## Numeric employment growth in two occupations, projected 2012–22, in thousands of jobs



**How many job openings are expected?** Some charts go beyond showing the expected change in the total number of jobs and show how many job openings are expected for workers who are entering an occupation. This includes not only openings from growth in the number of jobs but also openings from the need to replace workers who retire or leave an occupation permanently.

This chart shows employment growth as part of total job openings projected for general office clerks. Most openings for these workers are expected to come from the need to replace existing clerks who leave the occupation.

## Job openings for general office clerks, projected 2012–22, in thousands of openings



## Highlights of the projections

The charts show the projected 2012–22 changes in occupational employment, the labor force, and industry employment. You will get the most out of the charts if you understand how BLS organizes data in these areas.

**Occupation** classifies jobs according to the type of work performed. For example, people who help retail customers find and buy products are in the occupation of retail salespersons. Projections highlights in this section include:

- Occupational groups related to healthcare are projected to have the fastest growth and to add the most new jobs. (See pages 7–8.)
- About 51 million job openings for workers entering an occupation are expected across 22 occupational groups. (See page 9.)
- Industrial-organizational psychologists is projected to be the fastest growing occupation. (See page 10.)
- Personal care aides and registered nurses are expected to gain the most new jobs: more than 500,000 each. (See page 11.)
- Most projected job openings for workers entering an occupation come from the need to replace workers who have left the occupation, rather than from the need to fill newly created jobs. (See page 12.)
- In most of the growing occupations that typically require a degree or a non-degree award, median annual wages are higher than the median wage for all workers. The same is true of occupations in these education groups that have many openings. (See pages 13–18.)
- In growing occupations that typically require a high school diploma or less, experience or on-the-job training is often required at the entry level. (See pages 19–22.)
- Farmers, ranchers, and other agricultural managers are projected to lose the most jobs. (See page 23.)

**Labor force** is a measure of the number of people available for work. It includes both people who are employed and those who are unemployed (those not working but actively looking for a job). It excludes active-duty military personnel and the institutionalized population, such as prison inmates. Projections highlights include:

- By 2022, the number of people in the labor force is expected to increase by about 8 million. (See page 25.)
- Labor force participation rates are projected to fall slightly for both men and women. (See page 25.)
- As aging baby boomers continue working, the number of 65- to 74-year-olds in the labor force is projected to increase more than that of other age groups. Workers ages 75 and older are expected to have the fastest rate of growth. (See page 26.)
- The labor force will continue to become more diverse. For example, Whites' share of the labor force is projected to decline and Hispanics' to rise over the decade. (See pages 27–28.)

# Getting started

**Industry** classifies jobs in businesses according to the type of good produced or service provided by that business. For example, any job in clothing stores—such as retail salesperson or stock clerk—is classified as part of the retail trade industry. Projections highlights include:

- Job growth is projected to be concentrated in service-providing industries. (See page 31.)
- The health care and social assistance sector is expected both to grow the fastest and to add the most jobs. (See pages 32–33.)
- Many of the detailed industries that are projected to grow the fastest are in the health care and professional and business services sectors. (See page 34.)
- The construction industry is expected to gain the most new jobs. All of this projected growth is to regain jobs lost during the 2007–09 recession but is still not enough to return construction to its prerecession employment level. (See page 35.)
- Of the industries projected to lose the most jobs, nearly half are in manufacturing. (See page 36.)

## How we develop the BLS projections

BLS economists in the Office of Occupational Statistics and Employment Projections develop the projections in a number of steps, first analyzing broad trends and then examining several hundred industries and occupations.

The 2007–09 recession affects the projections, in part because the economy has been slow to recover. Although the recession ended in 2009, the economy added about 2.3 million jobs between 2010 and 2012—just over 30 percent of the 7.6 million jobs lost between 2006 and 2010. Some of the projected changes in employment between 2012 and 2022 include regaining jobs that were lost during the downturn. For example, of the 15.6 million new jobs projected to be added to the economy between 2012 and 2022, about 5.3 million are needed just to return total employment to its prerecession level from 2006.

**Population and labor force.** We begin developing projections by analyzing how much the U.S. population and labor force are expected to grow over the next 10 years. We use population projections from the U.S. Census Bureau, which take into account trends in births, deaths, and immigration.

We combine the population projections with our own estimates of what portion of the population is expected to be in the labor force, based on historical trends for each age, gender, and race or ethnic group. The result is



a projection of the labor force—an estimate of the total supply of workers in the future economy.

**Economic growth.** We then create a model of an economy that is operating at full potential, given the labor force and several other factors. Using this framework, we estimate the dollar value of each industry’s total output of goods or services. Some of these goods and services are sold to other industries; for example, plastics are used in making computers. Other output—such as the computers themselves or computer-user support services—is sold directly to consumers.

**Industry employment.** We also study trends in productivity—the amount of output produced per hour of work. Because of technological advances, for example, some industries are able to increase output with fewer employees. We use this information to translate projected output into the number of jobs that each industry needs to produce these goods and provide these services.

**Occupational employment.** Next, we project how the jobs in each industry are expected to be distributed by occupation. We depict how employment in each of more than 300 industries is distributed across over 800 occupations. To do this, we make extensive use of the BLS Occupational Employment Statistics survey, and we obtain information from other sources for sectors that are not covered by the survey. (For the 2012–22 projections, we used 2012 employment data.)

We analyze how this distribution is likely to change over the decade by studying trends in technology, changing skill requirements, and other factors. Our projection methods are based on the fact that employment trends in most occupations are closely tied to the trends in particular industries. Using this analysis, along with the survey data and our industry employment projections, we project employment by occupation—in this set of projections, for 2022.

# Occupational employment



## Occupational employment

**W**hen choosing a career, jobseekers often want to know which occupations offer the best prospects. Generally, occupations that have rapid job growth, many new jobs, or many job openings—and good wages—promise better opportunities.

This section shows how employment in particular occupations is projected to change between 2012 and 2022. Many of the charts in this section show the occupations or occupational groups that are expected to grow fastest (highest percent growth) or gain the most jobs (highest numeric growth) in the coming decade.

Between 2012 and 2022, overall employment is projected to grow by about 11 percent. This overall growth rate is shown as a dotted vertical line in the charts on pages 7 and 10.

But when it comes to employment prospects, job growth tells only part of the story. Job openings for workers also come from the need to replace workers who retire or otherwise leave an occupation permanently. Some of the charts show the occupations that are expected to have the most openings for workers who are entering the occupation; these charts show projected openings both from job growth and from replacement needs.

### Growth by occupational group

Most charts in this section focus on detailed occupations. To better illustrate general employment trends, however,

charts at the beginning of the section show employment growth in broad groups of similar occupations.

The federal government classifies workers into groups using the 2010 Standard Occupational Classification (SOC) system. Aggregate occupational groups analyzed for the 2012–22 projections are in the table on page 6.

### Growth by education assignment

To help guide students and jobseekers, some charts show occupations by education assignment. These charts are grouped by the typical level of education most workers need to enter an occupation: graduate degree, bachelor's degree, associate's degree or postsecondary non-degree award, high school diploma or equivalent, or less than a high school diploma.

- Completion of a graduate degree typically requires a bachelor's degree plus 1 or 2 years of full-time study for a master's degree or at least 3 years of full-time study for a doctoral or professional degree.
- Completion of a bachelor's degree typically requires at least 4 years of full-time study beyond high school.
- Completion of an associate's degree typically requires 2 years of full-time study beyond high school. Postsecondary non-degree award programs typically last from several weeks to 1 year or more beyond high school.

# Occupational employment

## Occupational groups analyzed for the 2012–22 projections, with examples of occupations

Aggregate occupational group	Example occupations
Management, business, and financial	Management analysts, cost estimators, accountants and auditors
Computer, engineering, and science	Computer systems analysts, civil engineers, medical scientists
Education, legal, community service, arts, and media	Rehabilitation counselors, teacher assistants, coaches and scouts
Healthcare practitioners and technical	Physical therapists, registered nurses, pharmacy technicians
Service	Home health aides, bartenders, childcare workers
Sales and related	Cashiers, retail salespersons, insurance sales agents
Office and administrative support	Customer service representatives, general office clerks, medical secretaries
Farming, fishing, and forestry	Agricultural inspectors, fishers and related fishing workers, fallers
Construction and extraction	Carpenters, construction laborers, oil and gas roustabouts
Installation, maintenance, and repair	Automotive service technicians and mechanics, HVAC mechanics and installers, general maintenance and repair workers
Production	Team assemblers, bakers, machinists
Transportation and material moving	Heavy and tractor-trailer truck drivers, taxi drivers and chauffeurs, hand packers and packagers

Although the charts in this section are arranged by education assignment, columns within each chart also provide information about the work experience and training assignments for the occupations. Assignments for work experience in a related occupation are indicated in the appropriate column as follows: 5 years or more (5+), less than 5 years (<5), or none (N).

Assignments for on-the-job training typically needed to attain competency in an occupation are indicated in the appropriate column as follows: internship/residency (I/R), apprenticeship (A), long-term (L), moderate-term (M), short-term (S), or none (N).

- An internship or residency is generally supervised in a professional setting and may occur before a worker is employed. Completion of the program is commonly required for state licensure or certification in some fields.
- Apprenticeships combine paid on-the-job training with occupation-specific instruction. Most programs last between 3 and 5 years.
- Long-term on-the-job training lasts more than 12 months and either includes training on the job or combines work experience with formal instruction.
- Moderate-term on-the-job training includes informal instruction and training on the job that lasts more than 1 month and up to 12 months.

- Short-term on-the-job training includes informal training on the job or experience of 1 month or less.

## Wages

Wages include hourly, weekly, or annual pay that people receive for the work that they do. Sales commissions, tips, and production bonuses also are part of the wages shown in these charts, but overtime pay and nonproduction bonuses are not.

For individual occupations, most charts include May 2012 median annual wage data from the U.S. Bureau of Labor Statistics (BLS) Occupational Employment Statistics (OES) program. The median wage is the point at which half of the workers in an occupation earned more than the amount, and half earned less. In May 2012, the median annual wage for all workers was \$34,750.

The highest median annual wage among the occupations in a given chart is in **boldface** type. For occupations with a median annual wage of more than \$187,200, a specific wage figure is not given because the OES survey does not publish wage data above this amount. In these cases, the charts show that the median wage was greater than or equal to ( $\geq$ ) \$187,200.

Wages in these charts are for wage and salary workers only. Self-employed workers are not included in these measurements.

# Occupational employment

## Percent change by occupational group

Percent change in employment by major occupational group, projected 2012–22



Overall growth, all occupations = 11%

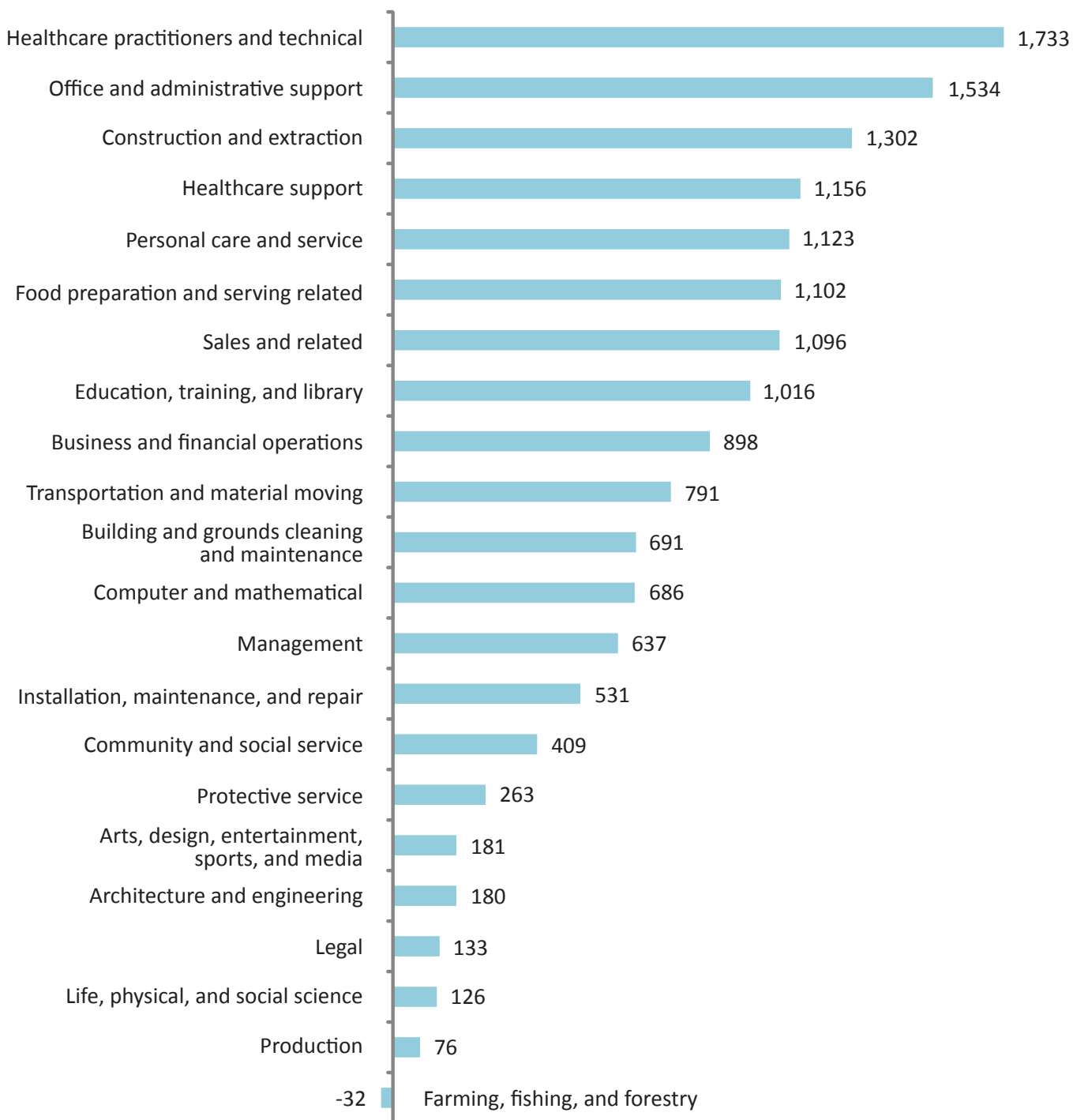
Projected percent change in employment measures the rate of expected growth or decline for each major occupational group between 2012 and 2022. Of the 22 major SOC groups analyzed for these projections, nearly half are expected to grow as fast as or faster than the average for overall projected employment growth during the decade.



# Occupational employment

## Numeric change by occupational group

Numeric change in employment by major occupational group, projected 2012–22, in thousands of jobs

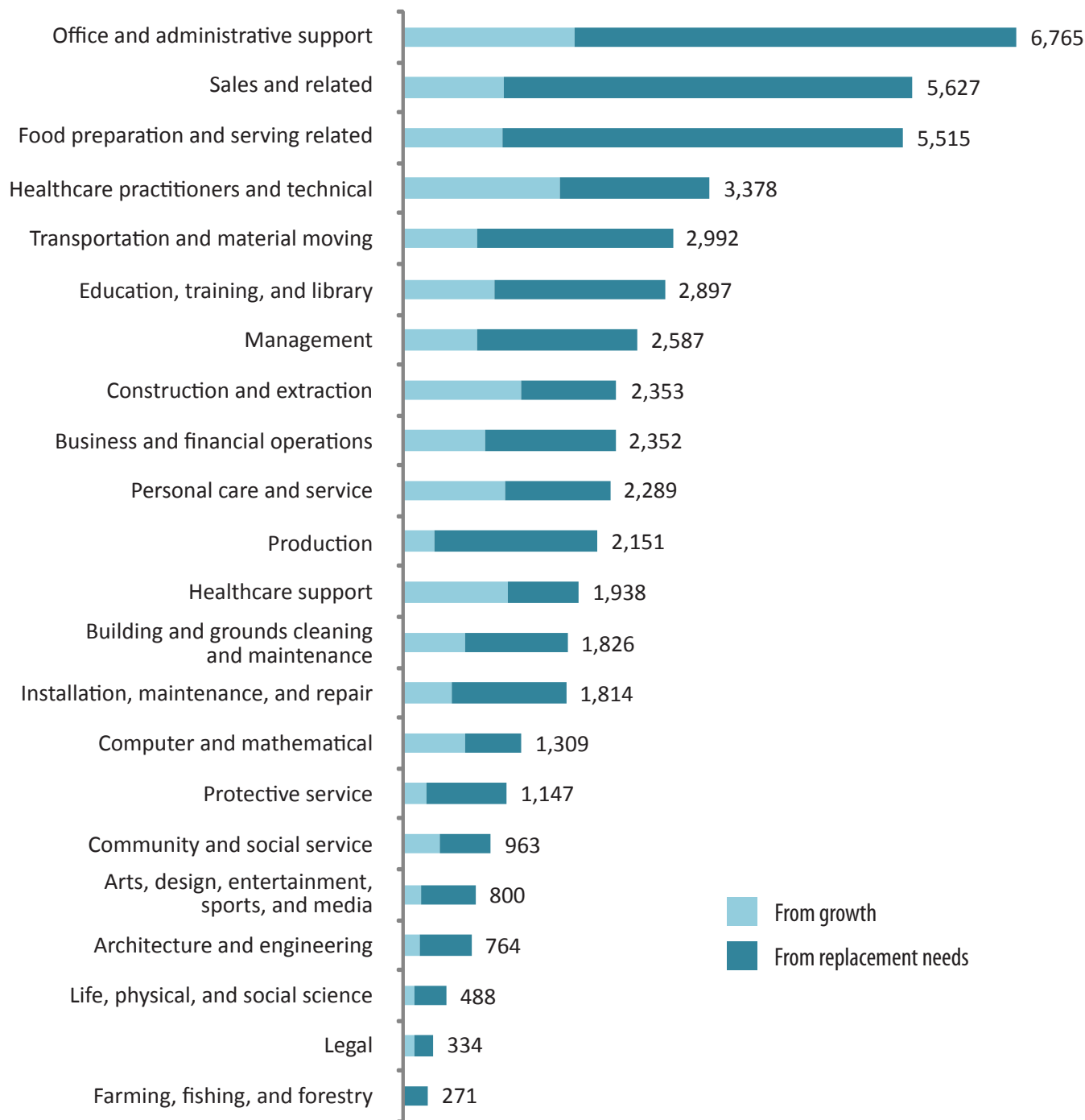


Projected numeric change in employment is the number of new jobs expected to be added to each major occupational group between 2012 and 2022. Of the 22 major SOC groups analyzed, the only group projected to lose jobs is farming, fishing, and forestry.

# Occupational employment

## Job openings by occupational group

Job openings by major occupational group, projected 2012–22, in thousands of openings

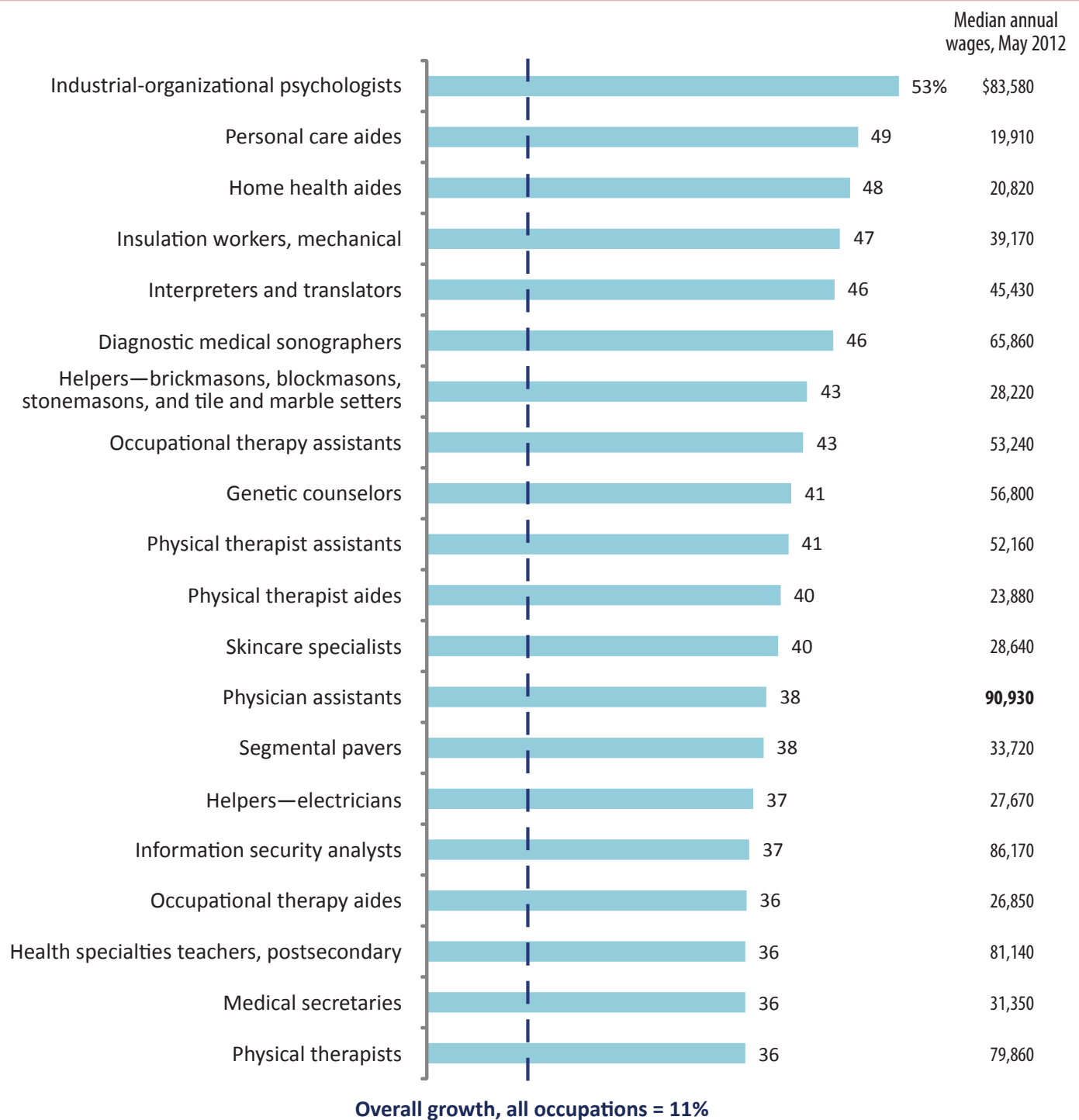


This chart shows the number of job openings that the major occupational groups are projected to have over the 2012–22 decade. Openings for new workers occur not only when jobs are added to the economy but also when current workers leave an occupation permanently. In most of these occupations, the need to replace workers who leave an occupation is projected to create more job openings than those expected from job growth.

# Occupational employment

## Fastest growing occupations

### Percent growth in employment, projected 2012–22

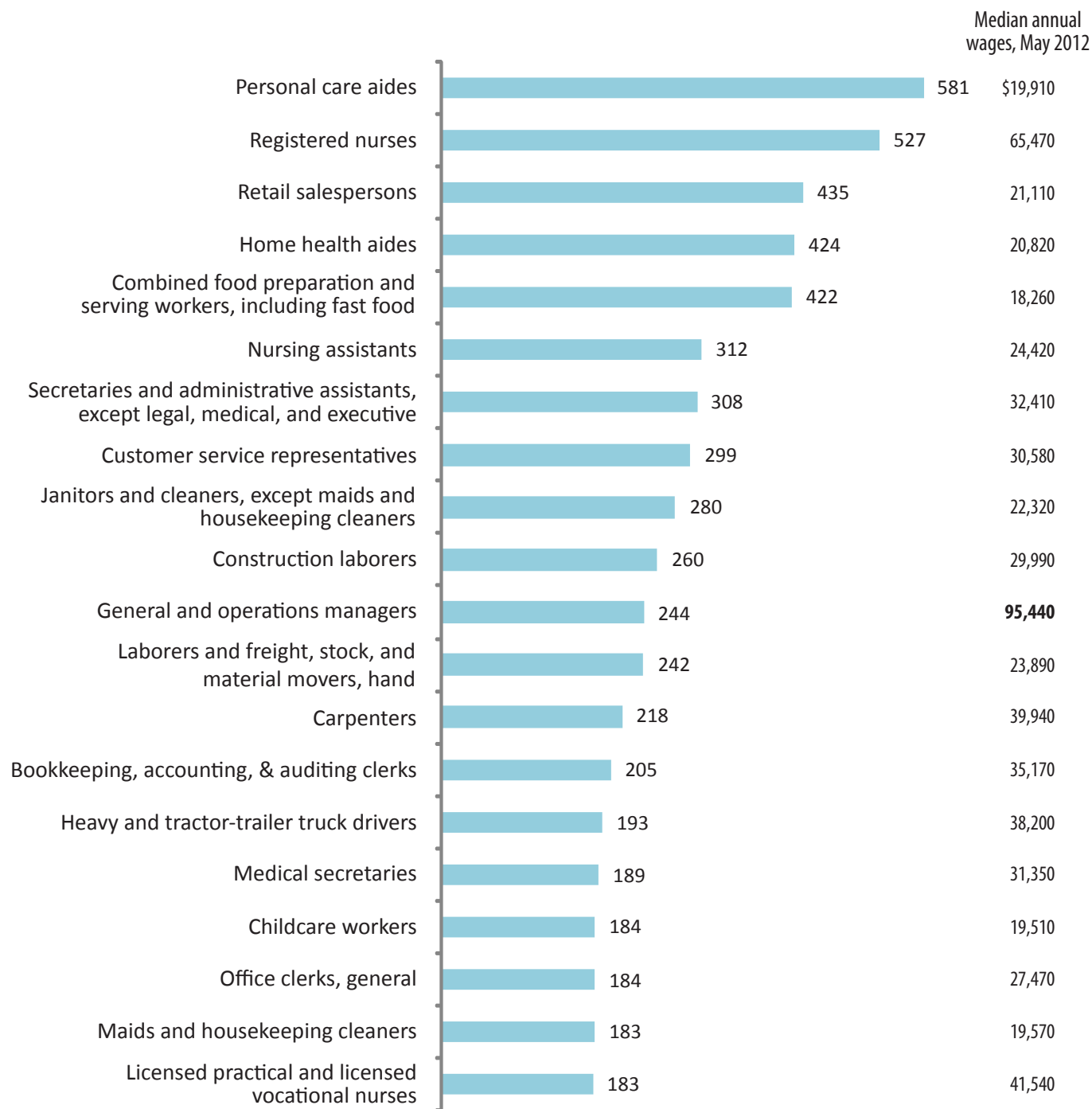


Projected percent growth in employment measures how fast an occupation is expected to add jobs. The 20 occupations in the chart are projected to grow the fastest over the 2012–22 decade. Many of these fast-growing occupations are related to healthcare.

# Occupational employment

## Most new jobs

Numeric growth in employment, projected 2012–22, in thousands of jobs

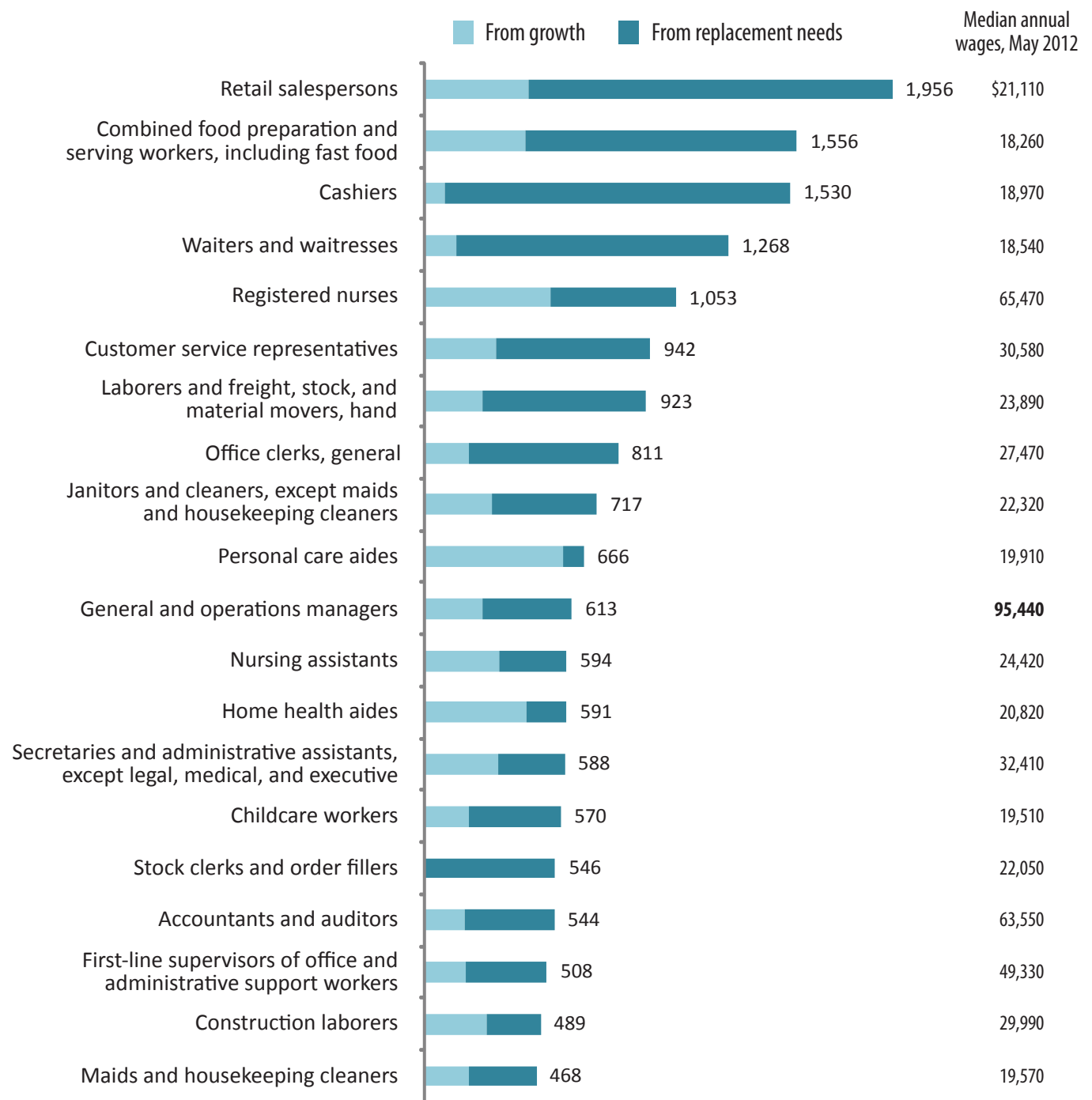


Projected numeric growth in employment measures how many new jobs are expected to be added in each occupation. These 20 occupations are projected to gain the most new jobs from 2012 to 2022 and account for about 38 percent of all jobs expected to be added over the decade.

# Occupational employment

## Most job openings

Job openings due to growth and replacement needs, projected 2012–22, in thousands of openings

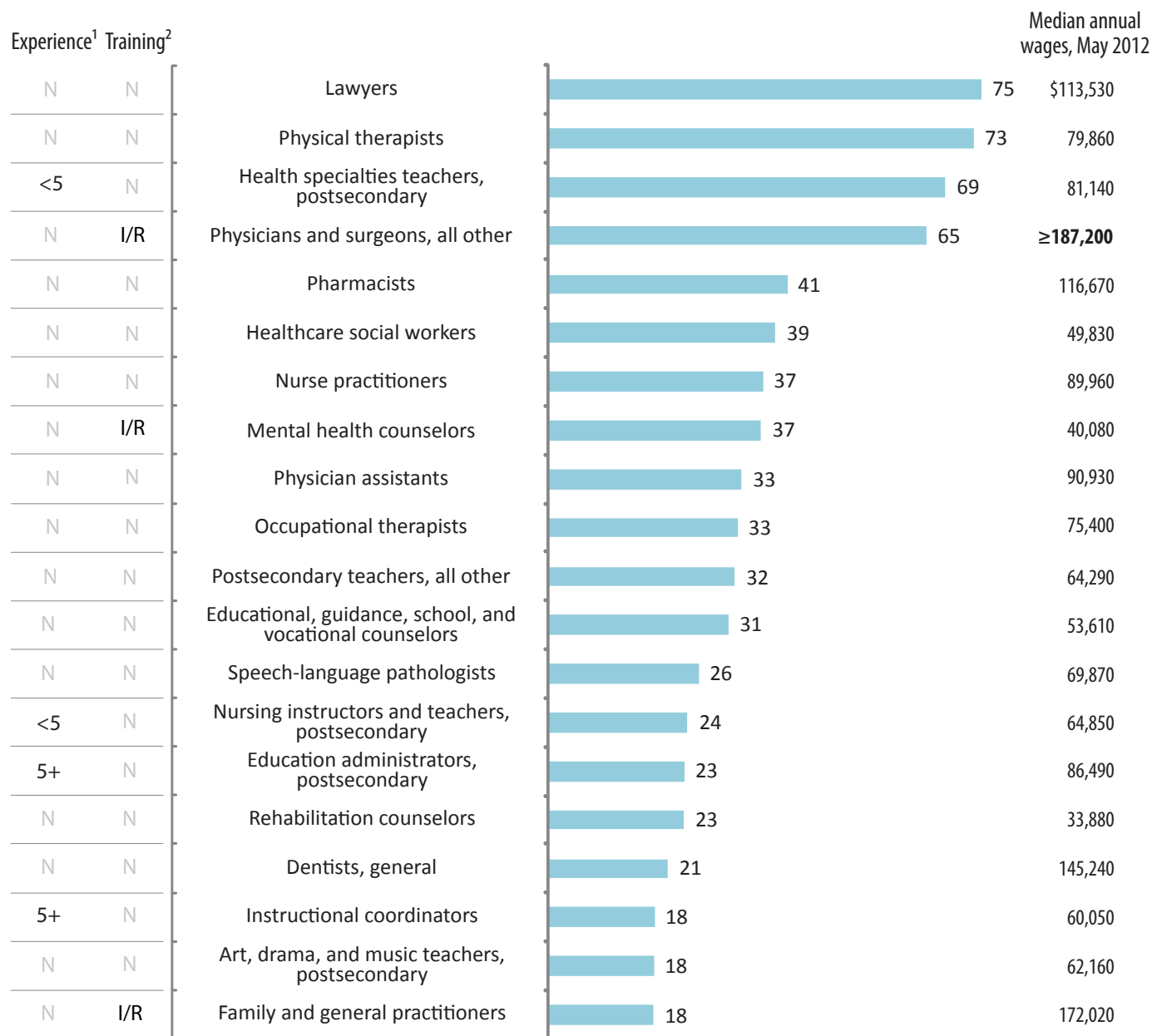


These occupations are projected to have the most job openings due to growth and the need to replace workers who leave the occupation permanently. Many of these are service-related occupations, which are projected to have numerous openings over the 2012–22 decade. For most of the occupations in this chart, the need to replace workers leaving the occupation is projected to create more openings than those expected from job growth.

# Occupational employment

## Graduate degree

Occupations that have the most growth and that typically require a master's, doctoral, or professional degree to enter the occupation, projected 2012–22, in thousands of jobs



<sup>1</sup> Indicates whether **work experience in a related occupation** is also typically needed for entry into the occupation. Assignments are more than 5 years (5+), less than 5 years (<5), or none (N).

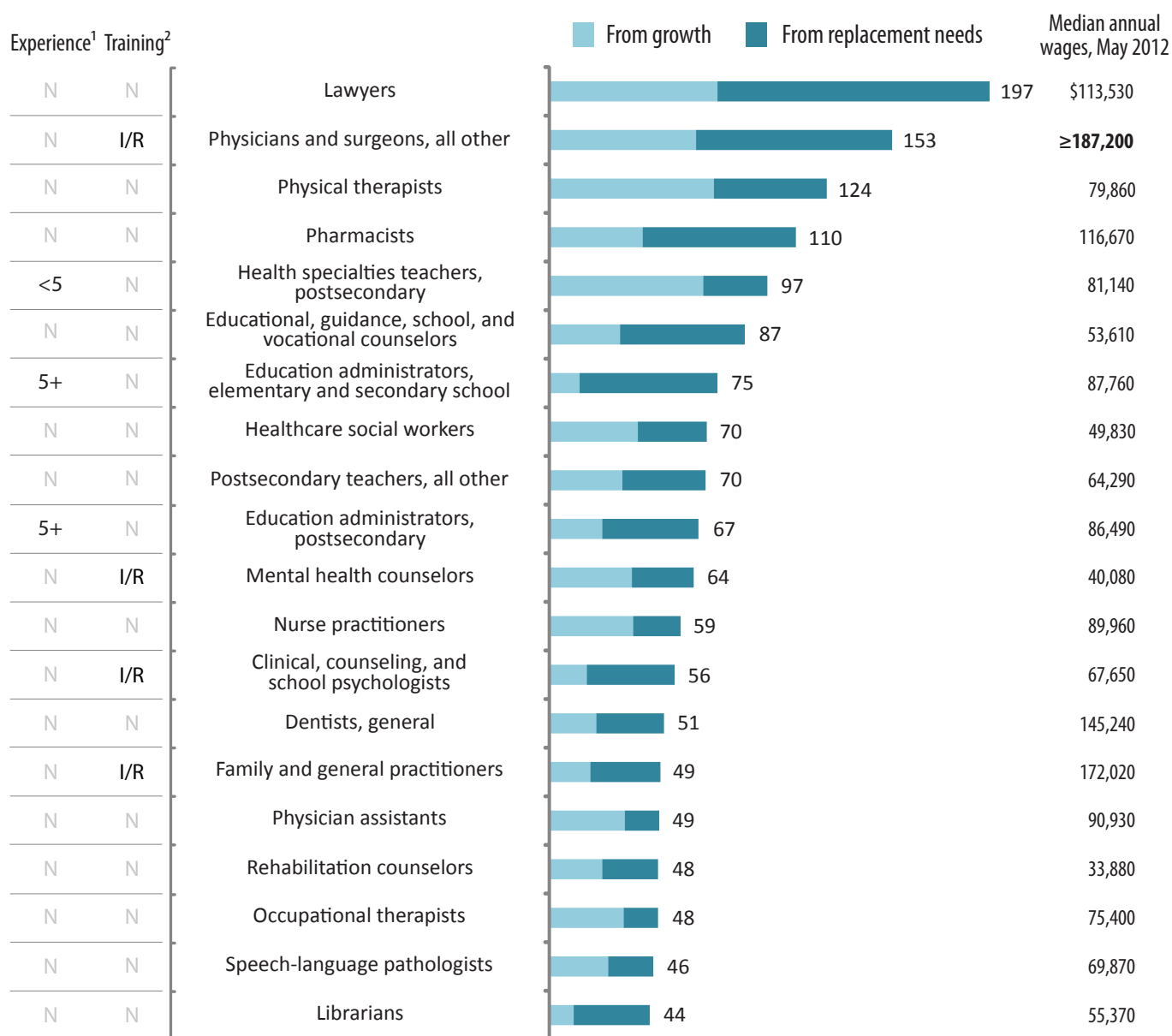
<sup>2</sup> Indicates whether **on-the-job training is typically needed to attain competency in the occupation**. Assignments are internship/residency (I/R), apprenticeship (A), long-term (L), moderate-term (M), short-term (S), or none (N).

Of occupations that typically require a master's, doctoral, or professional degree for entry, these are projected to add the most new jobs between 2012 and 2022. An increasing need for treatment of obesity, diabetes, and other diseases in the population is expected to account for some of the growth in healthcare occupations.

# Occupational employment

## Graduate degree

Occupations that have the most job openings and that typically require a master's, doctoral, or professional degree to enter the occupation, projected 2012–22, in thousands of openings



<sup>1</sup> Indicates whether **work experience in a related occupation** is also typically needed for entry into the occupation. Assignments are more than 5 years (5+), less than 5 years (<5), or none (N).

<sup>2</sup> Indicates whether **on-the-job training is typically needed to attain competency in the occupation**. Assignments are internship/residency (I/R), apprenticeship (A), long-term (L), moderate-term (M), short-term (S), or none (N).

Of occupations that typically require a master's, doctoral, or professional degree for entry, these are projected to have the most job openings between 2012 and 2022. Job openings in healthcare and social services occupations are expected to arise, in part, from the needs of an aging population.

# Occupational employment

## Bachelor's degree

### Occupations that have high growth and that typically require a bachelor's degree to enter the occupation, projected 2012–22, in thousands of jobs

Experience <sup>1</sup>	Training <sup>2</sup>			Median annual wages, May 2012
<5	N	General and operations managers	244	\$95,440
N	I/R	Elementary school teachers, except special education	168	53,400
N	N	Accountants and auditors	167	63,550
N	N	Software developers, applications	140	90,060
<5	N	Management analysts	134	78,600
N	N	Market research analysts and marketing specialists	131	60,300
N	N	Computer systems analysts	128	79,680
N	N	Software developers, systems software	83	99,000
N	M	Construction managers	78	82,790
N	I/R	Middle school teachers, except special and career/technical education	76	53,430
N	N	Medical and health services managers	73	88,580
N	N	Personal financial advisors	60	67,520
N	N	Civil engineers	54	79,340
N	N	Cost estimators	53	58,860
N	I/R	Secondary school teachers, except special and career/technical education	53	55,050
5+	N	Computer and information systems managers	51	<b>120,950</b>
N	N	Recreation workers	49	22,240
5+	N	Financial managers	47	109,740
N	N	Child, family, and school social workers	43	41,530
N	N	Network and computer systems administrators	43	72,560

<sup>1</sup> Indicates whether **work experience in a related occupation** is also typically needed for entry into the occupation. Assignments are more than 5 years (5+), less than 5 years (<5), or none (N).

<sup>2</sup> Indicates whether **on-the-job training is typically needed to attain competency in the occupation**. Assignments are internship/residency (I/R), apprenticeship (A), long-term (L), moderate-term (M), short-term (S), or none (N).

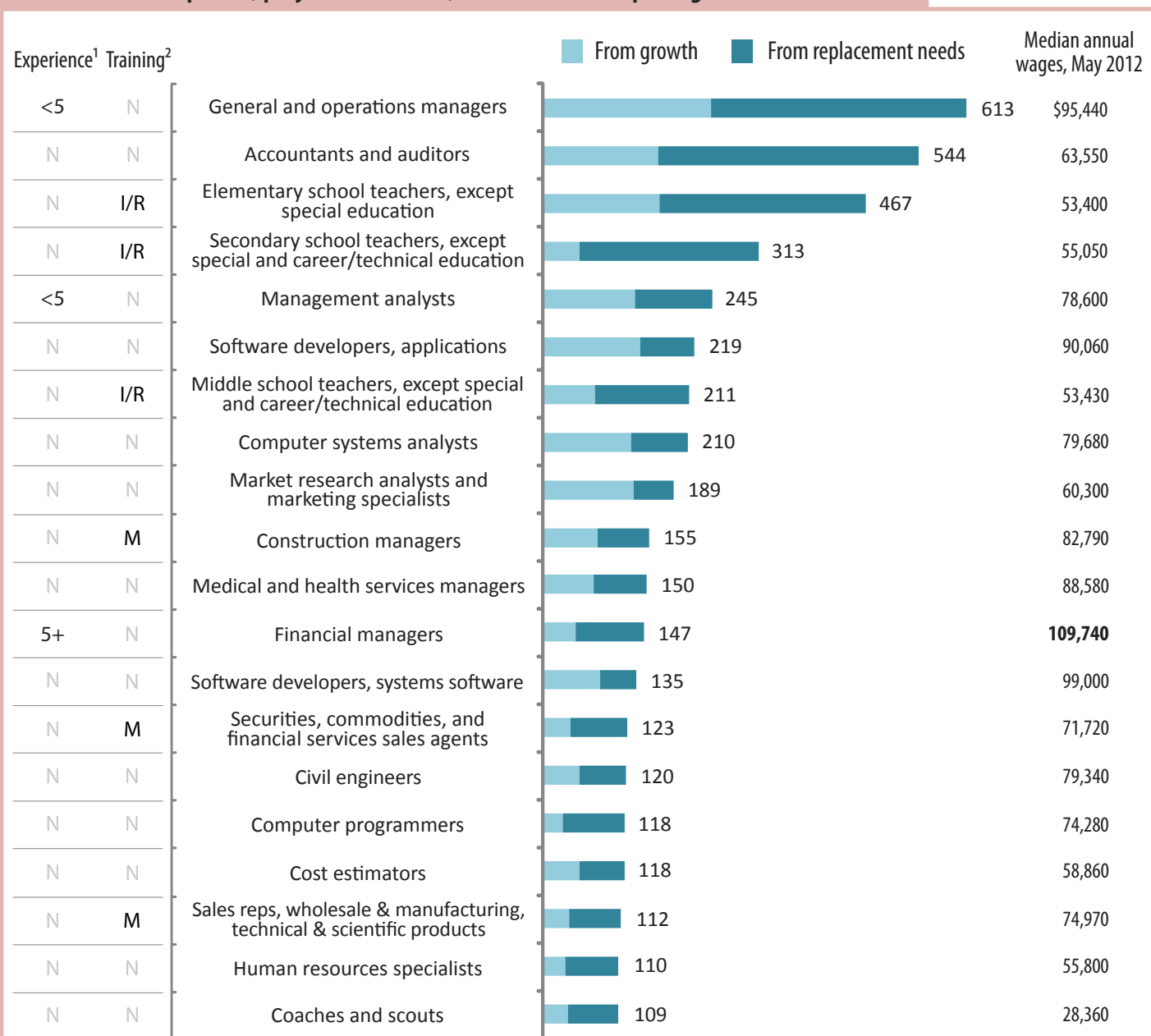
Of selected occupations that typically require a bachelor's degree for entry, these are projected to add the most new jobs between 2012 and 2022. As businesses continue to rely heavily on technology, computer-related occupations such as software developers and computer systems analysts are expected to experience high growth.



# Occupational employment

## Bachelor's degree

Occupations that have many job openings and that typically require a bachelor's degree to enter the occupation, projected 2012–22, in thousands of openings



<sup>1</sup> Indicates whether **work experience in a related occupation** is also typically needed for entry into the occupation. Assignments are more than 5 years (5+), less than 5 years (<5), or none (N).

<sup>2</sup> Indicates whether **on-the-job training is typically needed to attain competency in the occupation**. Assignments are internship/residency (I/R), apprenticeship (A), long-term (L), moderate-term (M), short-term (S), or none (N).

Of selected occupations that typically require a bachelor's degree for entry, these are projected to have the most job openings between 2012 and 2022. The large number of projected openings for teachers reflects the many teaching jobs that exist, the need to replace teachers who are expected to retire, and rising student enrollments.

# Occupational employment

## Associate's degree or postsecondary non-degree award

Occupations that have the most growth and that typically require an associate's degree or postsecondary non-degree award to enter the occupation, projected 2012–22, in thousands of jobs

Experience <sup>1</sup>	Training <sup>2</sup>			Median annual wages, May 2012
N	N	Registered nurses	527	\$65,470
N	N	Nursing assistants	312	24,420
N	S	Heavy and tractor-trailer truck drivers	193	38,200
N	N	Licensed practical and licensed vocational nurses	183	41,540
N	N	Medical assistants	163	29,370
N	N	Hairdressers, hairstylists, and cosmetologists	78	22,700
N	N	Preschool teachers, except special education	76	27,130
N	N	Dental assistants	74	34,500
N	N	Dental hygienists	64	<b>70,210</b>
N	L	Heating, air conditioning, and refrigeration mechanics and installers	56	43,640
N	N	Emergency medical technicians and paramedics	55	31,020
N	N	Medical and clinical laboratory technicians	48	37,240
N	N	Paralegals and legal assistants	46	46,990
N	N	Radiologic technologists	42	54,620
N	N	Medical records and health information technicians	41	34,160
N	N	Massage therapists	30	35,970
N	N	Surgical technologists	29	41,790
N	N	Physical therapist assistants	29	52,160
N	N	Web developers	28	62,500
N	N	Phlebotomists	27	29,730

<sup>1</sup> Indicates whether **work experience in a related occupation** is also typically needed for entry into the occupation. Assignments are more than 5 years (5+), less than 5 years (<5), or none (N).

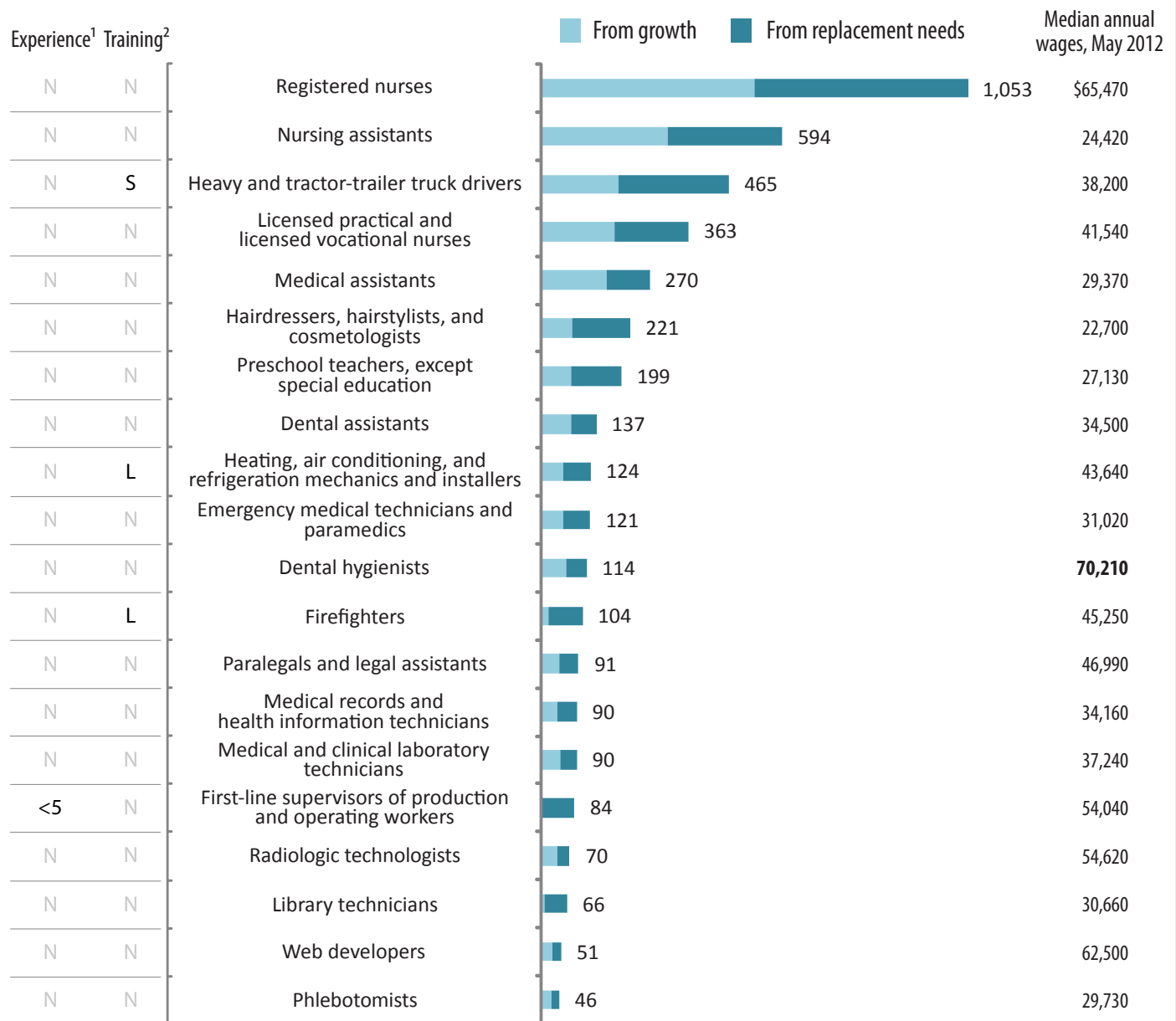
<sup>2</sup> Indicates whether **on-the-job training is typically needed to attain competency in the occupation**. Assignments are internship/residency (I/R), apprenticeship (A), long-term (L), moderate-term (M), short-term (S), or none (N).

Of occupations that typically require an associate's degree or postsecondary non-degree award for entry, these are projected to have the most job growth between 2012 and 2022. Most of the occupations are in healthcare, which is projected to add many jobs in response to the needs of an aging population and those seeking treatment for disease.

# Occupational employment

## Associate's degree or postsecondary non-degree award

Occupations that have the most job openings and that typically require an associate's degree or postsecondary non-degree award to enter the occupation, projected 2012–22, in thousands of openings



<sup>1</sup> Indicates whether **work experience in a related occupation** is also typically needed for entry into the occupation. Assignments are more than 5 years (5+), less than 5 years (<5), or none (N).

<sup>2</sup> Indicates whether **on-the-job training is typically needed to attain competency in the occupation**. Assignments are internship/residency (I/R), apprenticeship (A), long-term (L), moderate-term (M), short-term (S), or none (N).

Of occupations that typically require an associate's degree or postsecondary non-degree award for entry, these are projected to have the most job openings between 2012 and 2022. Healthcare occupations are projected to have many job openings as medical advances increase the average life span and create new options for treating disease.

# Occupational employment

## High school diploma or equivalent

Occupations that have high growth and that typically require a high school diploma or equivalent to enter the occupation, projected 2012–22, in thousands of jobs

Experience <sup>1</sup>	Training <sup>2</sup>			Median annual wages, May 2012
N	S	Secretaries and admin. assistants, except legal, medical, and executive	308	\$32,410
N	S	Customer service representatives	299	30,580
N	A	Carpenters	218	39,940
N	M	Bookkeeping, accounting, and auditing clerks	205	35,170
N	M	Medical secretaries	189	31,350
N	S	Childcare workers	184	19,510
N	S	Office clerks, general	184	27,470
<5	N	First-line supervisors of office and administrative support workers	172	49,330
N	S	Receptionists and information clerks	136	25,990
N	M	Sales reps, wholesale & manufacturing, except technical & scientific products	132	54,230
N	S	Security guards	130	23,970
5+	N	First-line supervisors of construction trades and extraction workers	128	<b>59,700</b>
N	L	Maintenance & repair workers, general	125	35,210
N	A	Electricians	115	49,840
<5	N	First-line supervisors of food preparation and serving workers	109	29,270
N	S	Billing and posting clerks	93	33,450
N	A	Plumbers, pipefitters, and steamfitters	82	49,140
N	S	Social and human service assistants	81	28,850
<5	N	First-line supervisors of retail sales workers	71	36,820
N	M	Pharmacy technicians	71	29,320

<sup>1</sup> Indicates whether **work experience in a related occupation** is also typically needed for entry into the occupation. Assignments are more than 5 years (5+), less than 5 years (<5), or none (N).

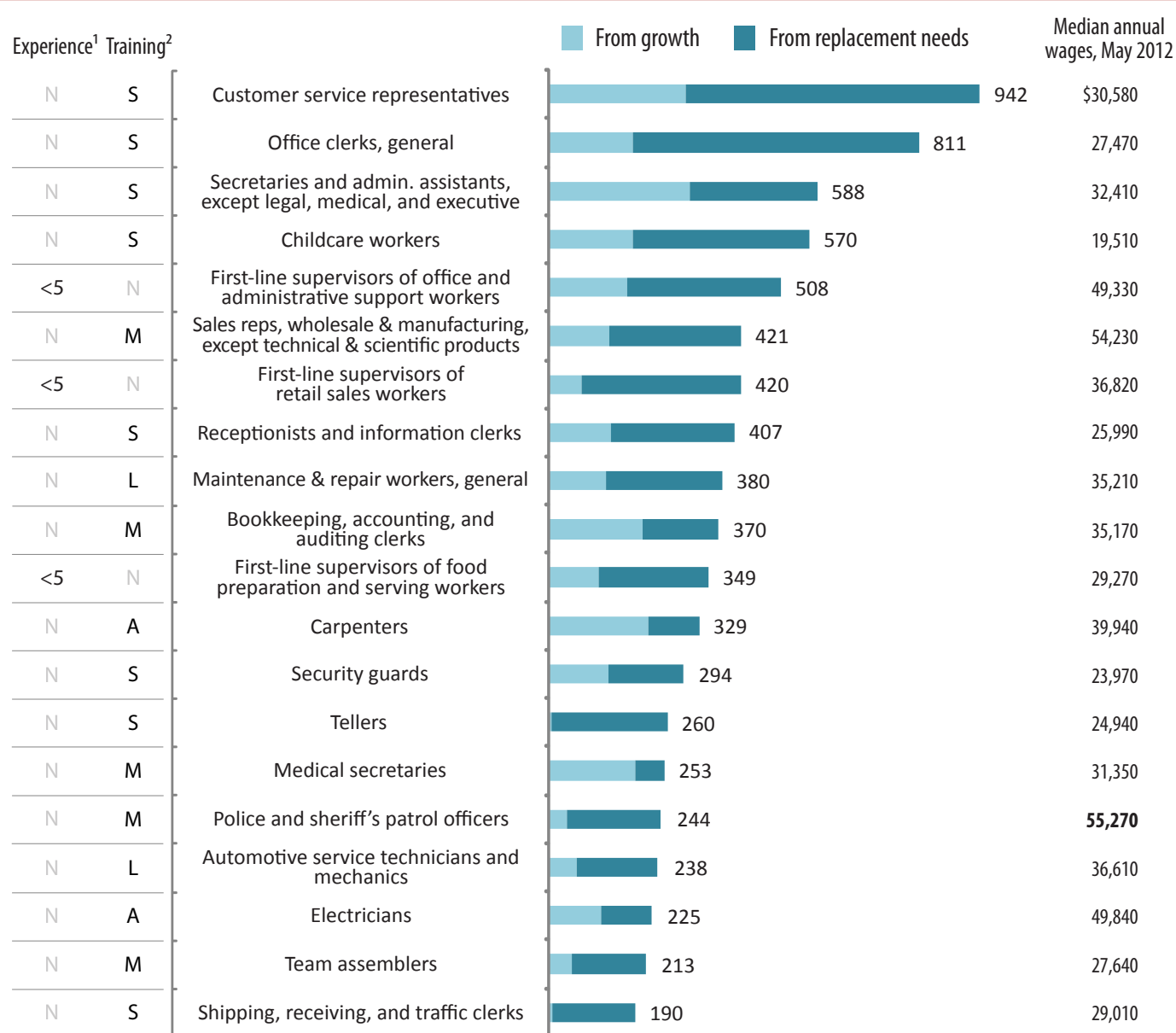
<sup>2</sup> Indicates whether **on-the-job training is typically needed to attain competency in the occupation**. Assignments are internship/residency (I/R), apprenticeship (A), long-term (L), moderate-term (M), short-term (S), or none (N).

Of selected occupations that typically require a high school diploma or equivalent for entry, these are projected to have the most job growth from 2012 to 2022. Most of the occupations require that workers get some form of on-the-job training to attain competency.

# Occupational employment

## High school diploma or equivalent

Occupations that have many job openings and that typically require a high school diploma or equivalent to enter the occupation, projected 2012–22, in thousands of openings



<sup>1</sup> Indicates whether **work experience in a related occupation** is also typically needed for entry into the occupation. Assignments are more than 5 years (5+), less than 5 years (<5), or none (N).

<sup>2</sup> Indicates whether **on-the-job training is typically needed to attain competency in the occupation**. Assignments are internship/residency (I/R), apprenticeship (A), long-term (L), moderate-term (M), short-term (S), or none (N).

Of selected occupations that typically require a high school diploma or equivalent for entry, these are projected to have the most job openings between 2012 and 2022. Duties in several of these occupations, including first-line supervisors, often involve the direction of workers with less seniority. These supervisory occupations typically require some work experience in a related occupation, in addition to a high school diploma or equivalent.

# Occupational employment

## Less than a high school diploma

Occupations that have the most growth and that typically require less than a high school diploma to enter the occupation, projected 2012–22, in thousands of jobs

Experience <sup>1</sup>	Training <sup>2</sup>			Median annual wages, May 2012
N	S	Personal care aides	581	\$19,910
N	S	Retail salespersons	435	21,110
N	S	Home health aides	424	20,820
N	S	Combined food preparation and serving workers, including fast food	422	18,260
N	S	Janitors and cleaners, except maids and housekeeping cleaners	280	22,320
N	S	Construction laborers	260	29,990
N	S	Laborers and freight, stock, and material movers, hand	242	23,890
N	S	Maids and housekeeping cleaners	183	19,570
<5	M	Cooks, restaurant	150	22,030
N	S	Landscaping and groundskeeping workers	139	23,570
N	S	Waiters and waitresses	132	18,540
N	S	Cashiers	87	18,970
N	S	Bartenders	66	18,900
N	M	Painters, construction & maintenance	63	35,190
N	S	Cooks, institution and cafeteria	54	22,860
N	S	Food servers, nonrestaurant	49	19,640
N	S	Counter and rental clerks	47	23,130
N	M	Cement masons & concrete finishers	41	<b>35,760</b>
N	S	Packers and packagers, hand	40	19,910
N	S	Taxi drivers and chauffeurs	36	22,820

<sup>1</sup> Indicates whether **work experience in a related occupation** is also typically needed for entry into the occupation. Assignments are more than 5 years (5+), less than 5 years (<5), or none (N).

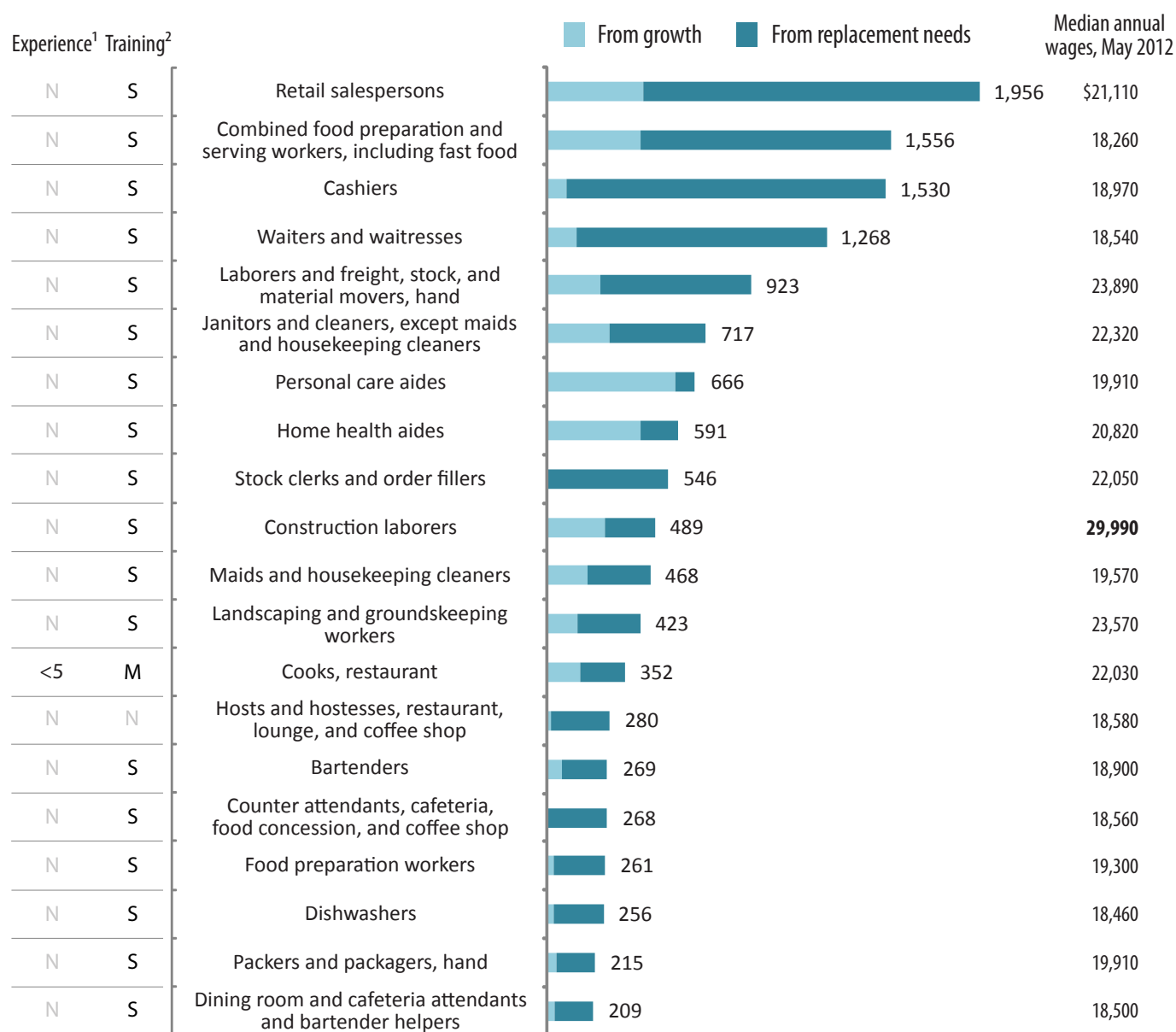
<sup>2</sup> Indicates whether **on-the-job training is typically needed to attain competency in the occupation**. Assignments are internship/residency (I/R), apprenticeship (A), long-term (L), moderate-term (M), short-term (S), or none (N).

Of occupations that typically require less education than a high school diploma for entry, these are projected to have the most job growth between 2012 and 2022. Personal care aides and home health aides together are projected to add more than 1 million new jobs, largely because their services are expected to be in demand as the population ages.

# Occupational employment

## Less than a high school diploma

Occupations that have the most job openings and that typically require less than a high school diploma to enter the occupation, projected 2012–22, in thousands of openings



<sup>1</sup> Indicates whether **work experience in a related occupation** is also typically needed for entry into the occupation. Assignments are more than 5 years (5+), less than 5 years (<5), or none (N).

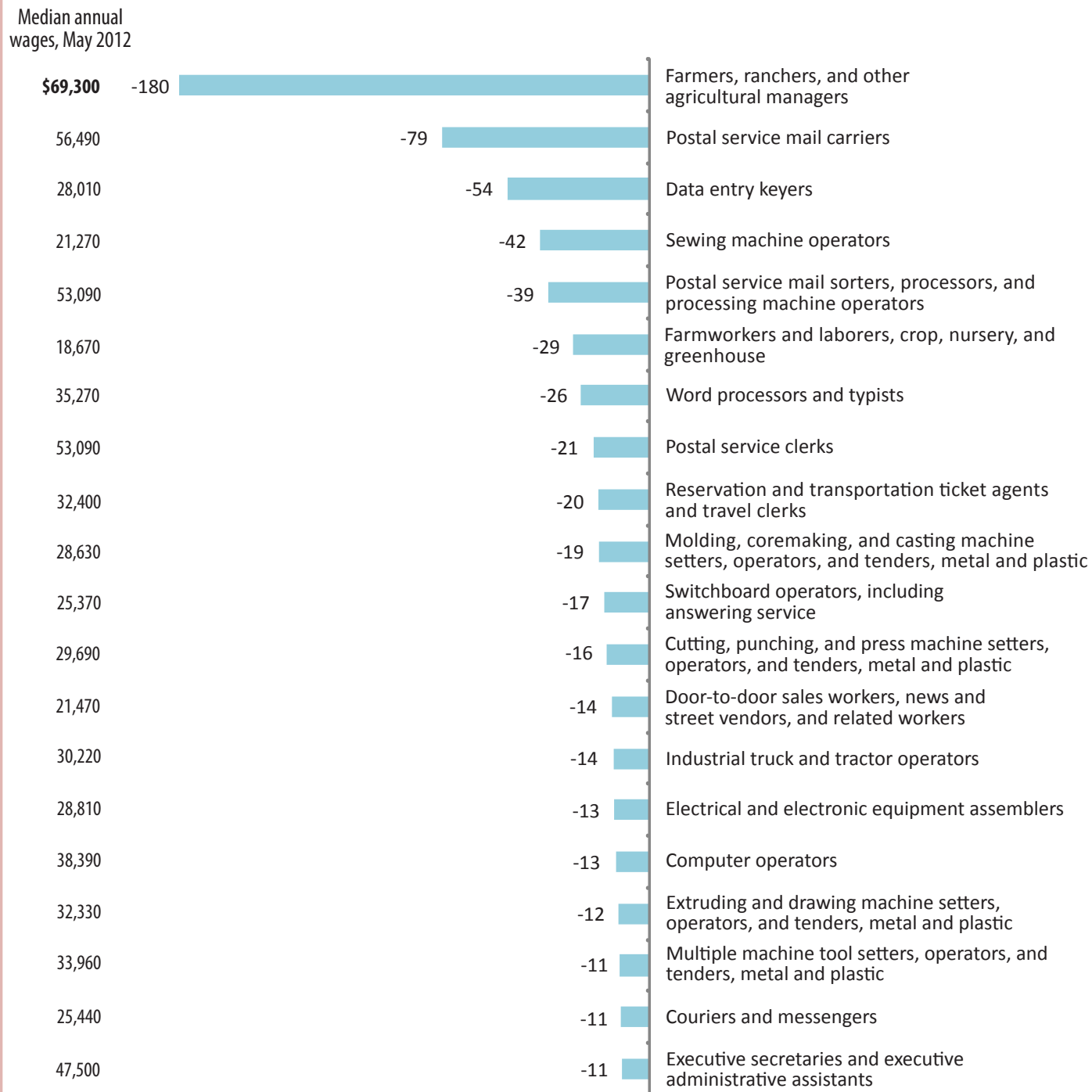
<sup>2</sup> Indicates whether **on-the-job training is typically needed to attain competency in the occupation**. Assignments are internship/residency (I/R), apprenticeship (A), long-term (L), moderate-term (M), short-term (S), or none (N).

Of occupations that typically require less education than a high school diploma for entry, these are projected to have the most job openings between 2012 and 2022. Several of these occupations are related to food service. Most of these occupations are expected to have high numbers of job openings over the decade because of the need to replace existing workers who leave the occupations permanently.

# Occupational employment

## Most job losses

Decline in employment by selected occupation, projected 2012–22, in thousands of jobs



These selected occupations are projected to lose numerous jobs over the 2012–22 decade. There are many reasons why occupations experience declines in employment, including increasing worker productivity. Even in these occupations, however, the need to replace workers who leave is expected to create some job opportunities.





## Labor force

**T**he labor force is the number of people ages 16 or older who are either working or looking for work. It does not include active-duty military personnel or the institutionalized population, such as prison inmates. Increases or decreases in the size of the labor force can significantly affect the growth of the economy.

The size of the labor force depends on two factors. The first is the size of the population, which is determined by rates of birth, immigration, and death. The second is the labor force participation rate—the percentage of the civilian noninstitutional population ages 16 and older that is working or actively seeking work.

Labor force participation rates vary significantly between men and women and among different age, racial, and ethnic groups. Population growth rates also vary from one group to another. These variations change the composition of the labor force over time.

The charts that follow show how the labor force is projected to change between men and women and among age groups, racial groups (Asians, Blacks, Whites, and others), and ethnic groups (Hispanics and non-Hispanics of any race). BLS bases its labor force projections on U.S. Census Bureau population projections.

Total labor force growth is expected to be about 0.5 percent annually between 2012 and 2022. (See table at right.) This average growth rate is shown as a dotted vertical line in the chart on page 26.

As in previous years, the labor force is projected to grow more slowly than the number of jobs, but this does not indicate a labor shortage. Instead, this discrepancy reflects that these two measures are based on different concepts.

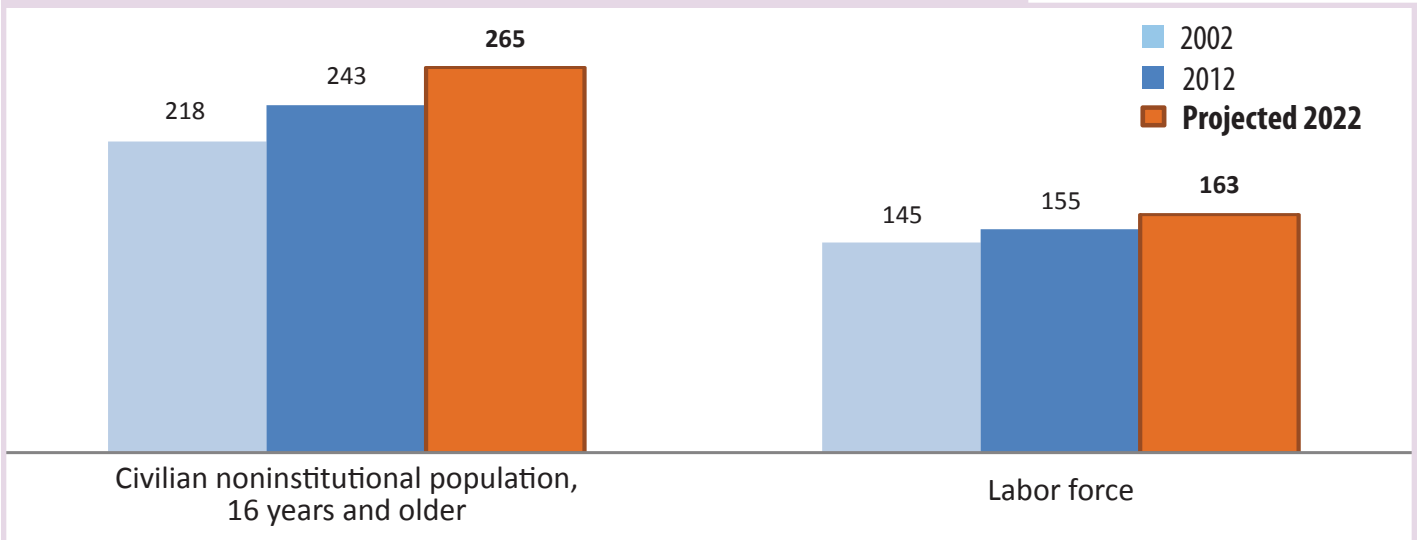
**Annual growth rates in population and labor force, 2002–12 and projected 2012–22, in percent**

Category	Annual growth rate	
	2002–12	Projected 2012–22
Civilian noninstitutional population, 16 years and older	1.1%	0.9%
Labor force	0.7	0.5



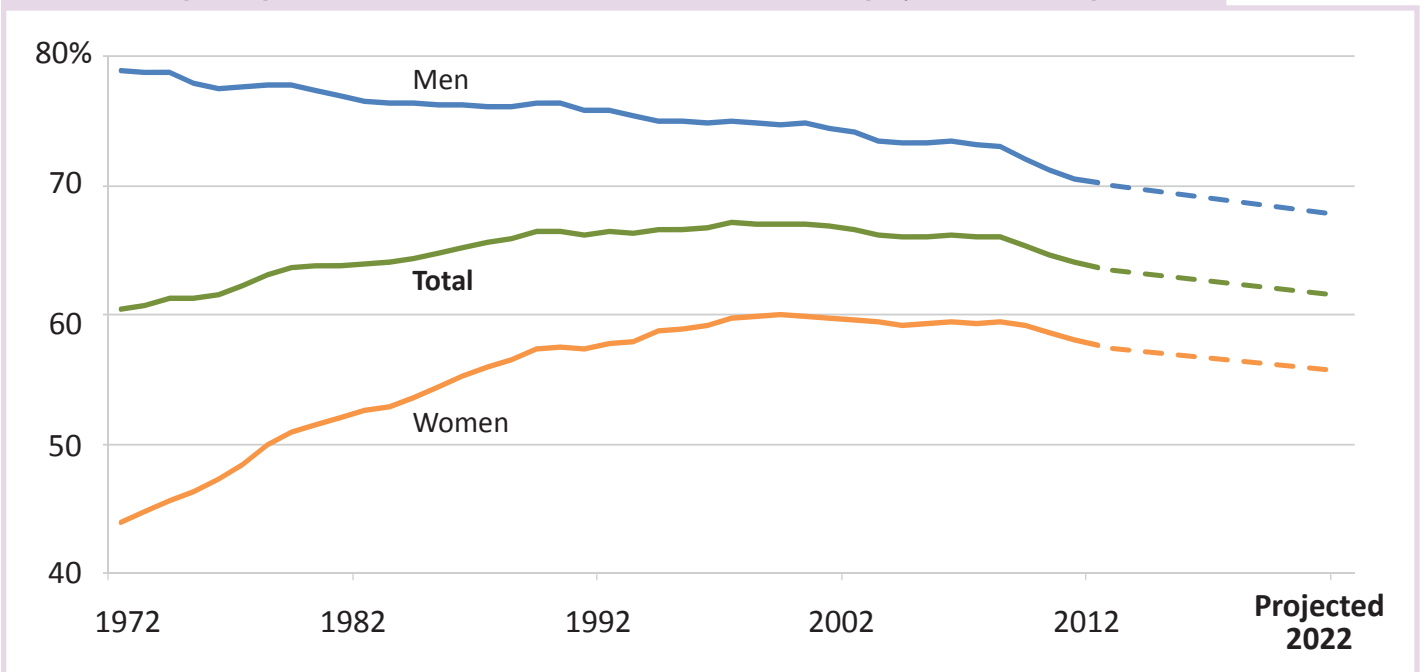
# Labor force

Population and labor force, 2002, 2012, and projected 2022, in millions of people



This chart shows the sizes of the population and the labor force in 2002 and 2012 and their projected sizes in 2022. “Population” refers to the civilian noninstitutional population; people in this group are ages 16 or older and are not active-duty members of the U.S. Armed Forces, inmates of penal or mental institutions, or in homes for the elderly. The labor force includes the subset of the population that is either working or currently seeking a job.

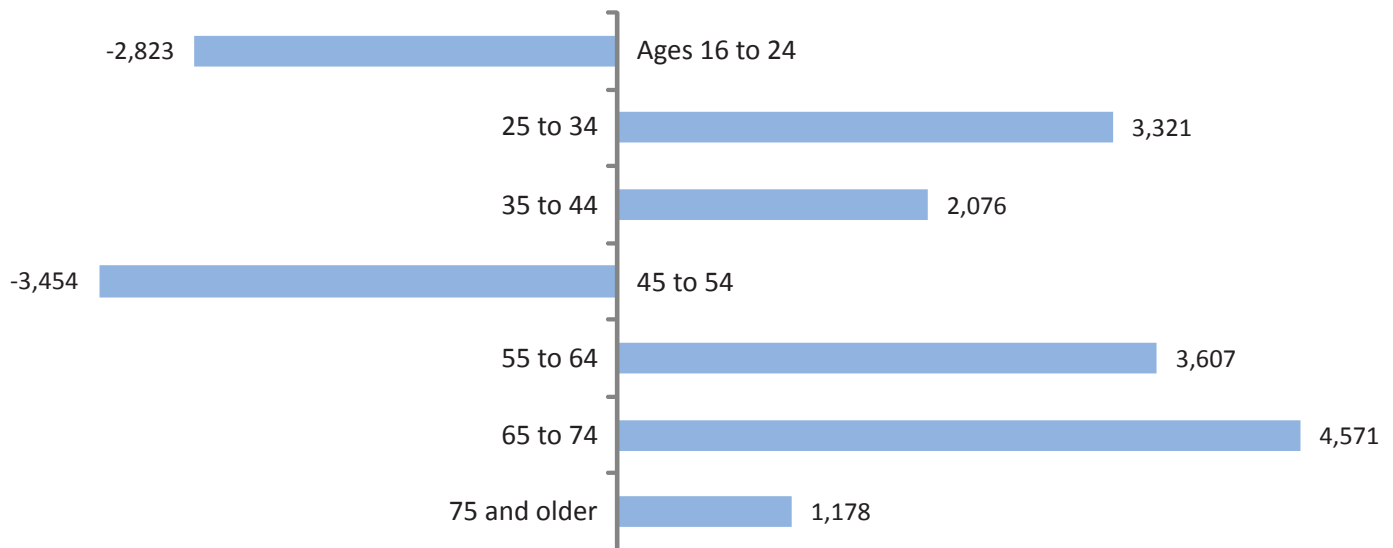
Labor force participation rates for men and women, 1972–2012 and projected 2022, in percent



Labor force participation rates are the percentages of men and women in the population who are either working or looking for work. The rates for men and women have converged over the last several decades. By 2022, the rates are projected to fall to 68 percent for men and 56 percent for women. The overall labor force participation rate is expected to decline from about 64 percent in 2012 to about 62 percent in 2022.

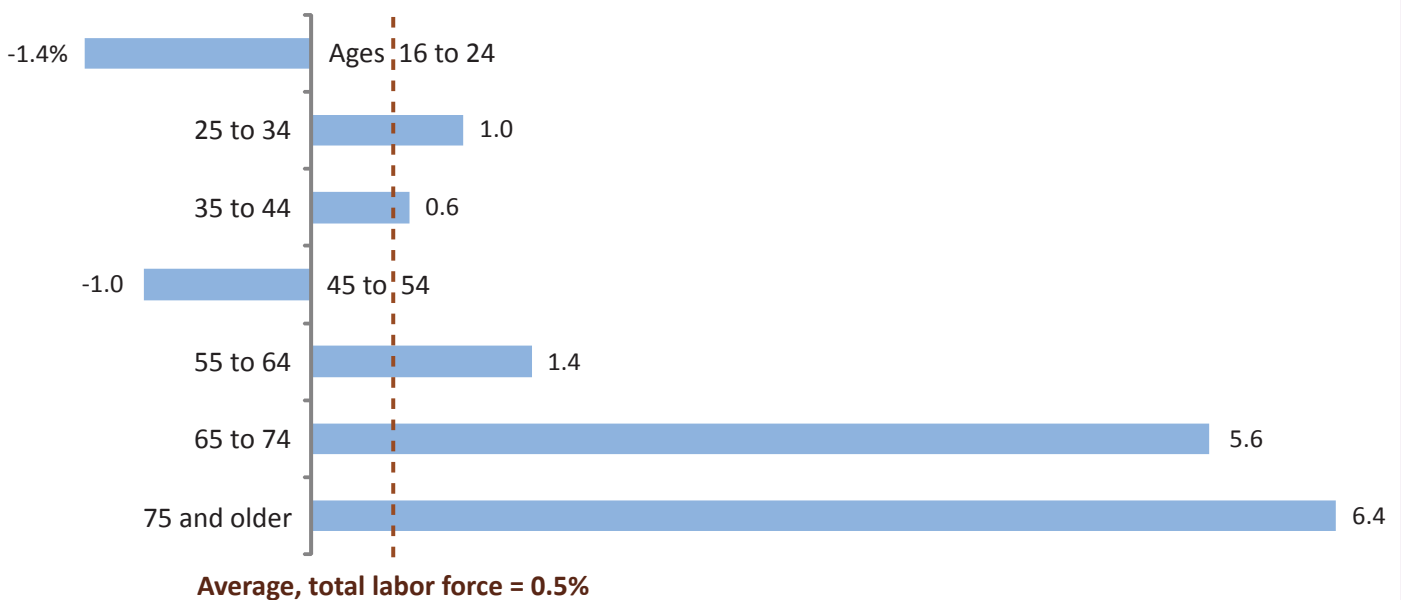
# Labor force

## Numeric change in labor force by age, projected 2012–22, in thousands of people



The projected numeric change in the labor force by age shows the number of people working or looking for work who are expected to be added to each age group between 2012 and 2022. The shares of the labor force ages 55 to 64 and 65 to 74 continue to grow as the baby-boom generation ages but keeps working.

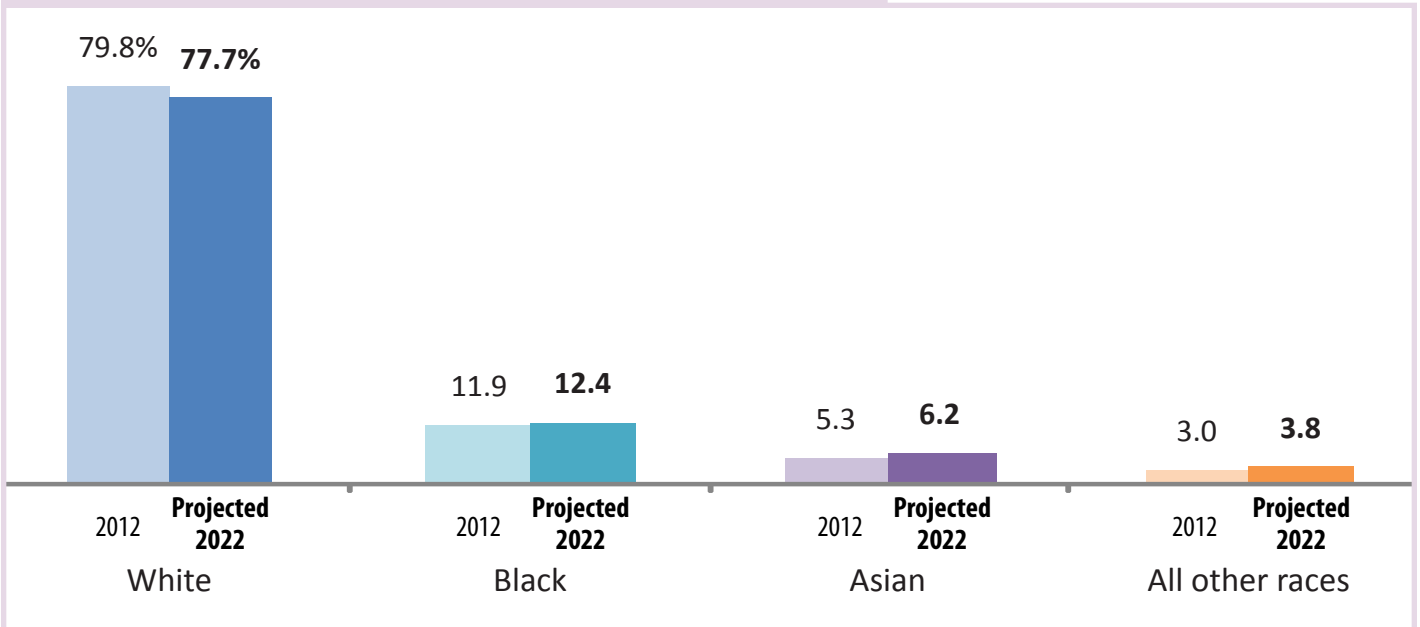
## Annual growth rate in labor force by age, projected 2012–22, in percent



The projected annual growth rate in the labor force by age shows the percent increase or decrease expected each year between 2012 and 2022, on average, for people in these age groups who are either working or looking for work. The projected rate of growth is highest for those ages 75 and older, as the baby-boom generation ages and as advances in healthcare allow people to live and work longer.

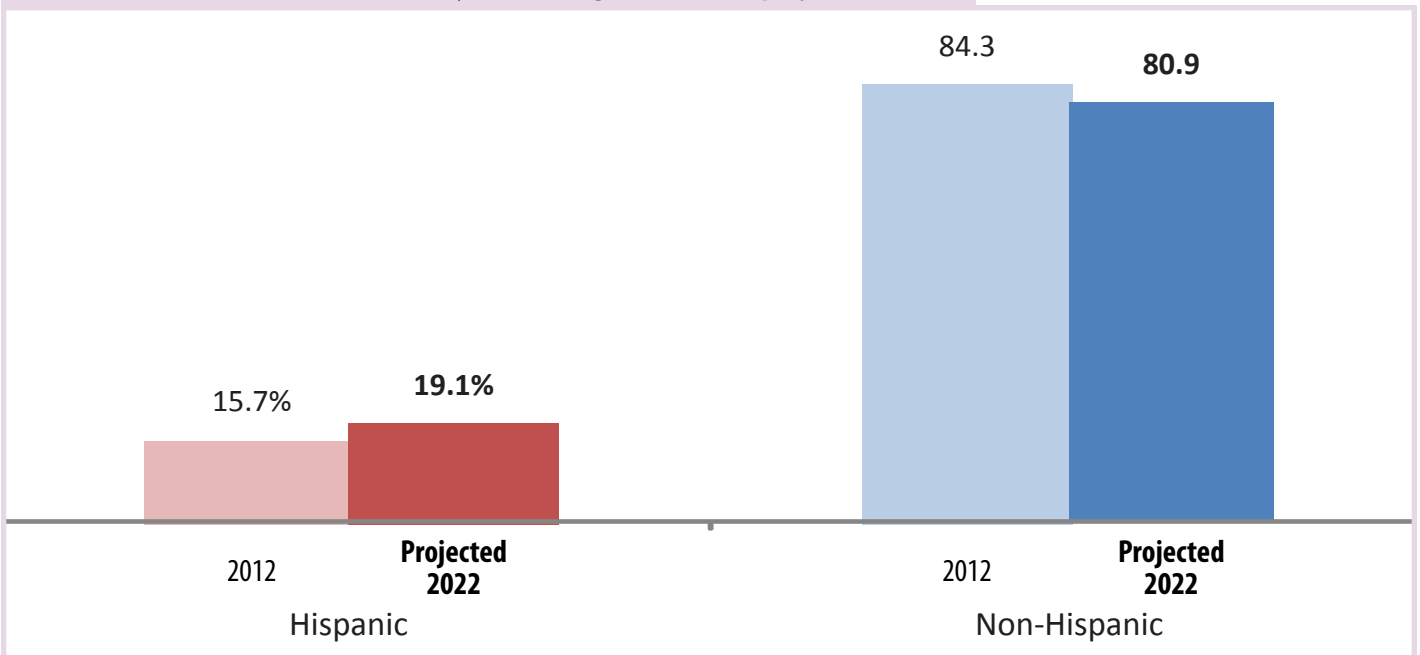
# Labor force

## Percent distribution of labor force by race, 2012 and projected 2022



The percent distribution of the labor force by race shows the share of people in each race who are either working or looking for work. Whites' share of the labor force is projected to fall from about 80 percent in 2012 to about 78 percent in 2022. Other races' shares are expected to rise as their population growth outpaces that of Whites.

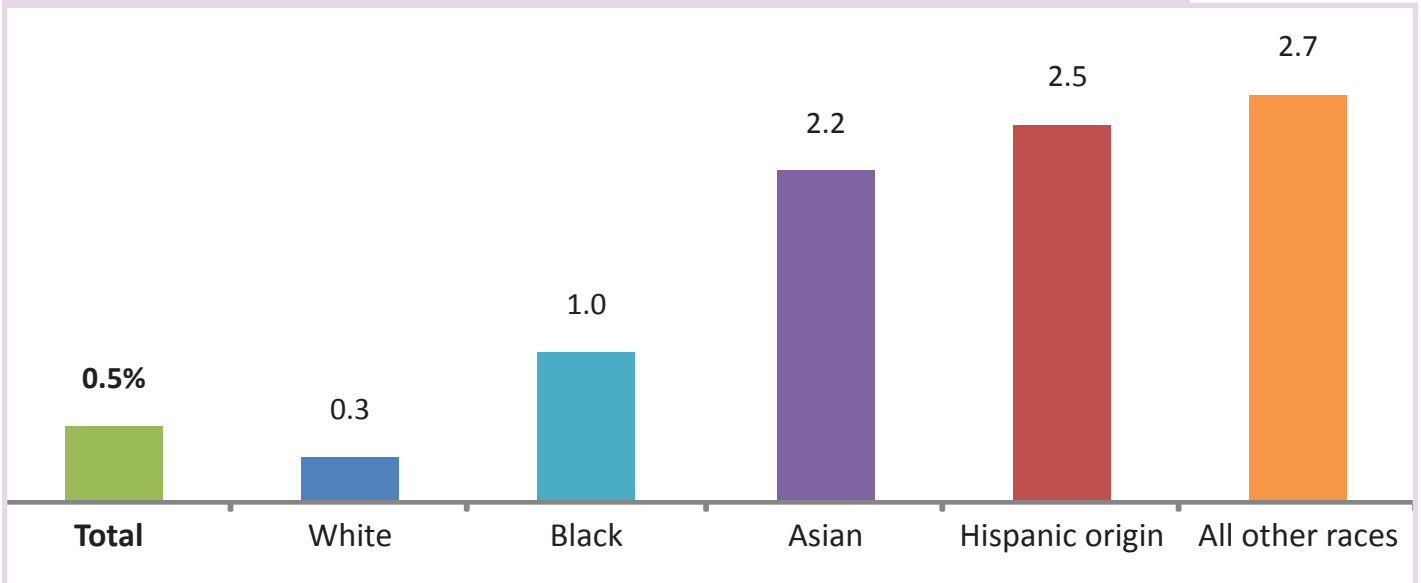
## Percent distribution of labor force by ethnic origin, 2012 and projected 2022



The percent distribution of the labor force by ethnic origin shows the share of people in each of these groups who are either working or looking for work. As the Hispanic population grows at a faster rate than the non-Hispanic group, its share of the labor force is projected to increase from almost 16 percent in 2012 to about 19 percent in 2022.

# Labor force

Annual growth rate in labor force by race and Hispanic origin, projected 2012–22, in percent



The projected annual growth rate in the labor force by race and Hispanic origin shows the percent increase expected during the 2012–22 decade for people in these groups who are either working or looking for work. The “all other races” category includes American Indians and Alaska Natives, Native Hawaiians and other Pacific Islanders, multiracial individuals, and any other people who do not identify themselves as Black, White, or Asian.



# Industry employment



## Industry employment

**T**his section illustrates projected employment change for industries over the 2012–22 decade.

Workers are grouped into an industry according to the type of good produced or service provided by the establishment for which they work. For example, all the workers on a construction company's payroll are part of the construction industry, regardless of their specific job duties. The construction industry includes not only construction workers, but others—such as office managers and truck drivers—who perform tasks in an administrative or support role.

Industry employment projections are shown in terms of numeric change (growth or decline in the total number of jobs) and percent change (the rate of job growth or decline) over the 2012–22 decade.

Employment growth for all wage and salary workers is projected to average about 11 percent between 2012 and 2022. This average growth rate is shown as a dotted vertical line in the charts on pages 32 and 34.

Job growth or decline in some industries can affect a particular occupation significantly. The number of jobs for computer programmers, for example, is highly dependent on growth of the software industry. However, many occupations—such as accountants, customer service

representatives, and human resources specialists—are in nearly every industry.

Employment growth in industries depends on industry output (the total amount produced) and worker productivity (how much each worker produces). Labor-saving technologies and methods can improve productivity but limit employment growth even as output increases. For example, output in the travel arrangement and reservation services industry is projected to increase, but employment is projected to decline. Technological advancements, such as online reservation systems, are likely to reduce the number of workers needed to offer travel services.

Industries shown in the charts are defined primarily according to the 2007 North American Industry Classification System (NAICS), which the federal government uses to sort establishments into industry categories.

In most of the charts, industries are categorized into one of two groups: goods producing or service providing. Service-providing industries are projected to account for the most job growth between 2012 and 2022, adding about 14.1 million jobs. In goods-producing industries, employment is projected to stay about the same, adding about 1.2 million jobs over the decade. Examples of establishments for these industries are in the table on page 30.

# Industry employment

## Industry sectors analyzed for the 2012–22 projections, with examples of establishments

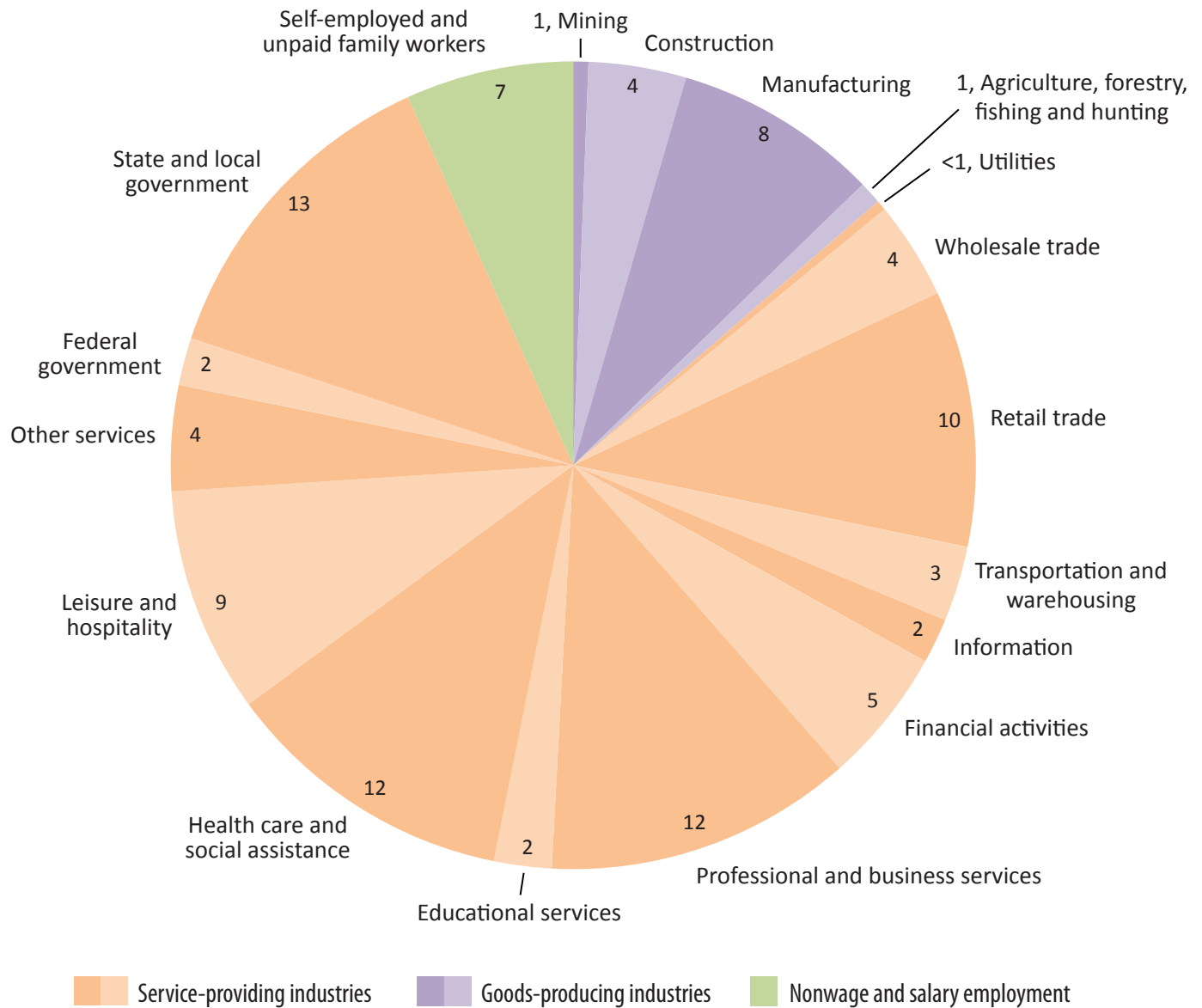
Industry sector	Examples
<b>Goods-producing industries</b>	
Agriculture, forestry, fishing and hunting	Soybean farming, beef cattle ranching and farming, logging
Construction	Residential building construction, land subdivision, roofing contractors
Manufacturing	Flour milling, breweries, footwear manufacturing
Mining, quarrying, and oil and gas extraction	Natural gas liquid extraction, coal mining, stone mining and quarrying
<b>Service-providing industries</b>	
Educational services (private)	Elementary and secondary schools, flight training, fine arts schools
Federal government	Postal service, federal electric utilities, federal defense government compensation
Financial activities	Commercial banking, consumer lending, insurance agencies and brokerages
Health care and social assistance	Home health care services, nursing and residential care facilities, child day care services
Information	Newspaper publishers, sound recording studios, television broadcasting
Leisure and hospitality	Bed-and-breakfast inns, spectator sports, amusement and theme parks
Other services	Car washes, barber shops, parking lots and garages
Professional and business services	Computer systems design and related services, office administrative services, employment services
Retail trade	Furniture stores, meat markets, electronic shopping
State and local government	Local government passenger transit, state government enterprises, state and local government capital services
Transportation and warehousing	Urban transit systems, taxi services, marine cargo handling
Utilities	Electric power generation, natural gas distribution, sewage treatment facilities
Wholesale trade	Office equipment, industrial supplies, confectionary merchant wholesalers



# Industry employment

## Employment, 2012

Percent distribution of employment by major industry sector, 2012



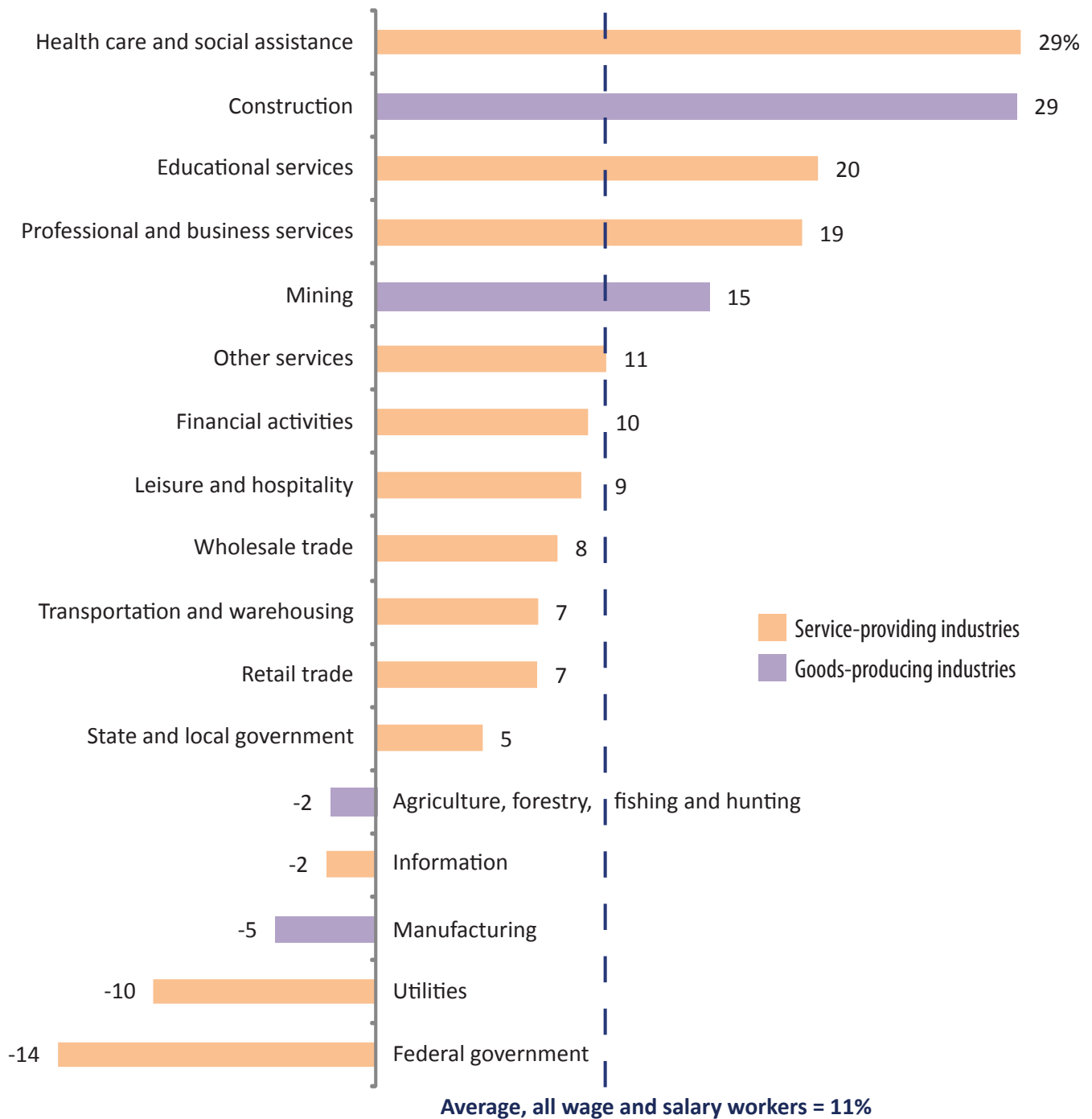
The percent distribution of employment is each industry sector's share of total employment in 2012. Four industry sectors—healthcare and social assistance, professional and business services, state and local government, and retail trade—accounted for nearly half of all employment.



# Industry employment

## Percent change in employment

Percent change in employment of wage and salary workers by industry sector, projected 2012–22

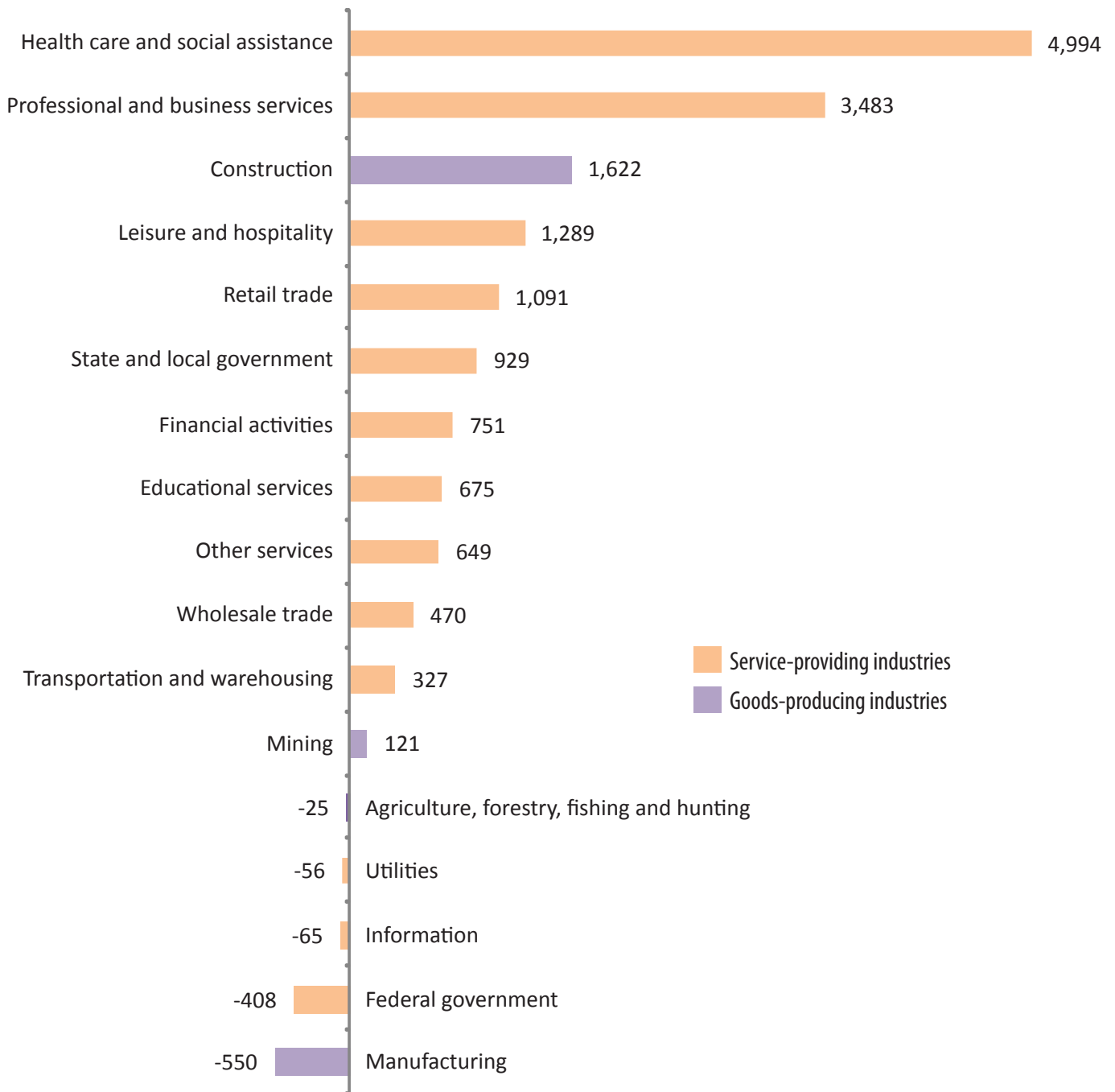


This chart shows the rate at which jobs are expected to be added or lost over the 2012–22 decade in each major industry sector. The health care and social assistance sector and the construction sector are projected to continue growing more than twice as fast as the average for all industries. In construction, projected rapid employment growth represents the continued recovery of significant job losses that occurred during the 2007–09 recession.

# Industry employment

## Numeric change in employment

Numeric change in employment of wage and salary workers by industry sector, projected 2012–22, in thousands of jobs

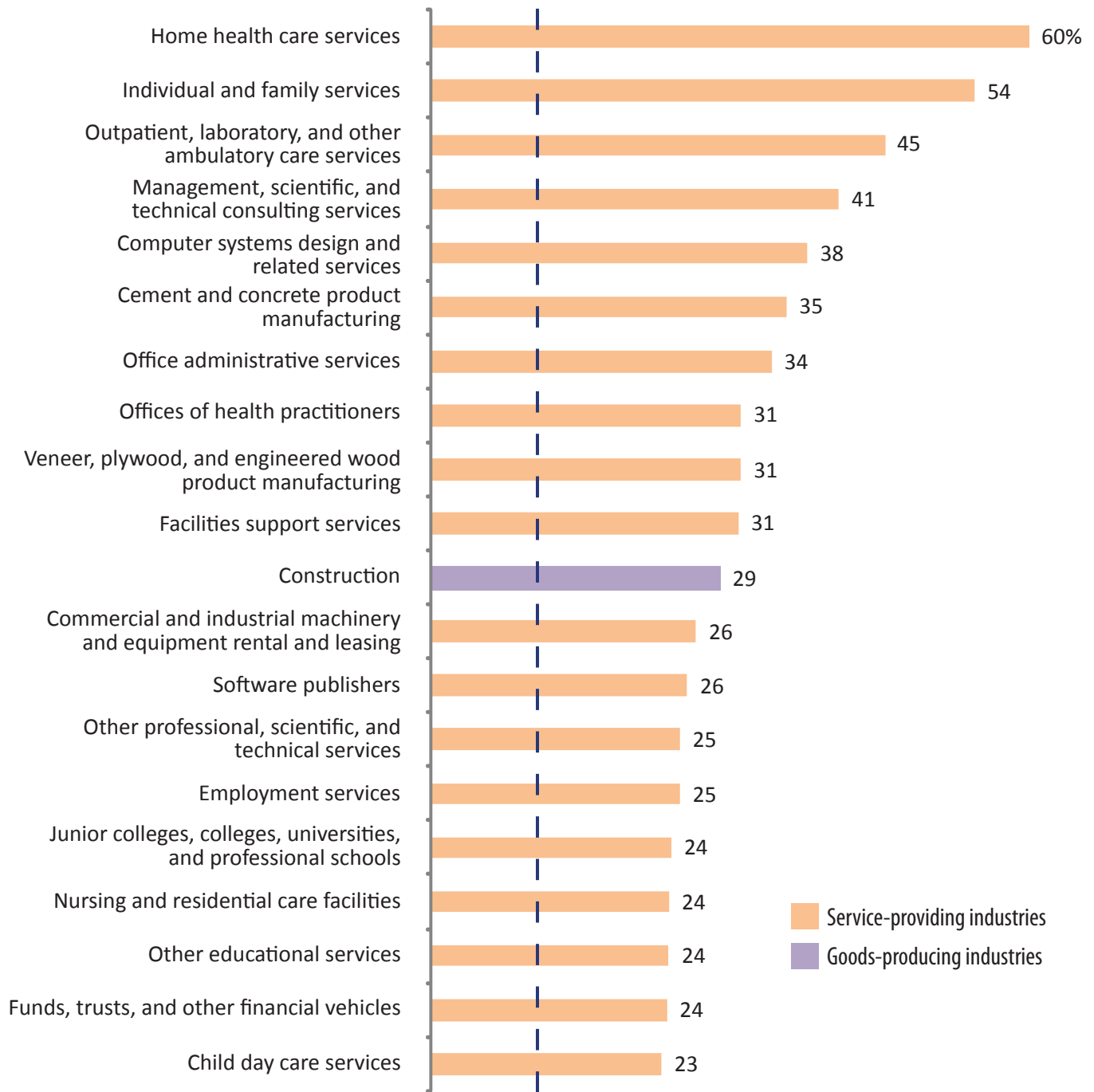


This chart shows how many jobs are expected to be gained or lost between 2012 and 2022 in each major industry sector. Employment growth is projected in health care and social assistance because of advances in medicine and technology that allow people to live longer and to seek treatment for diseases.

# Industry employment

## Fastest growing industries

Percent growth in employment of wage and salary workers by detailed industry, projected 2012–22



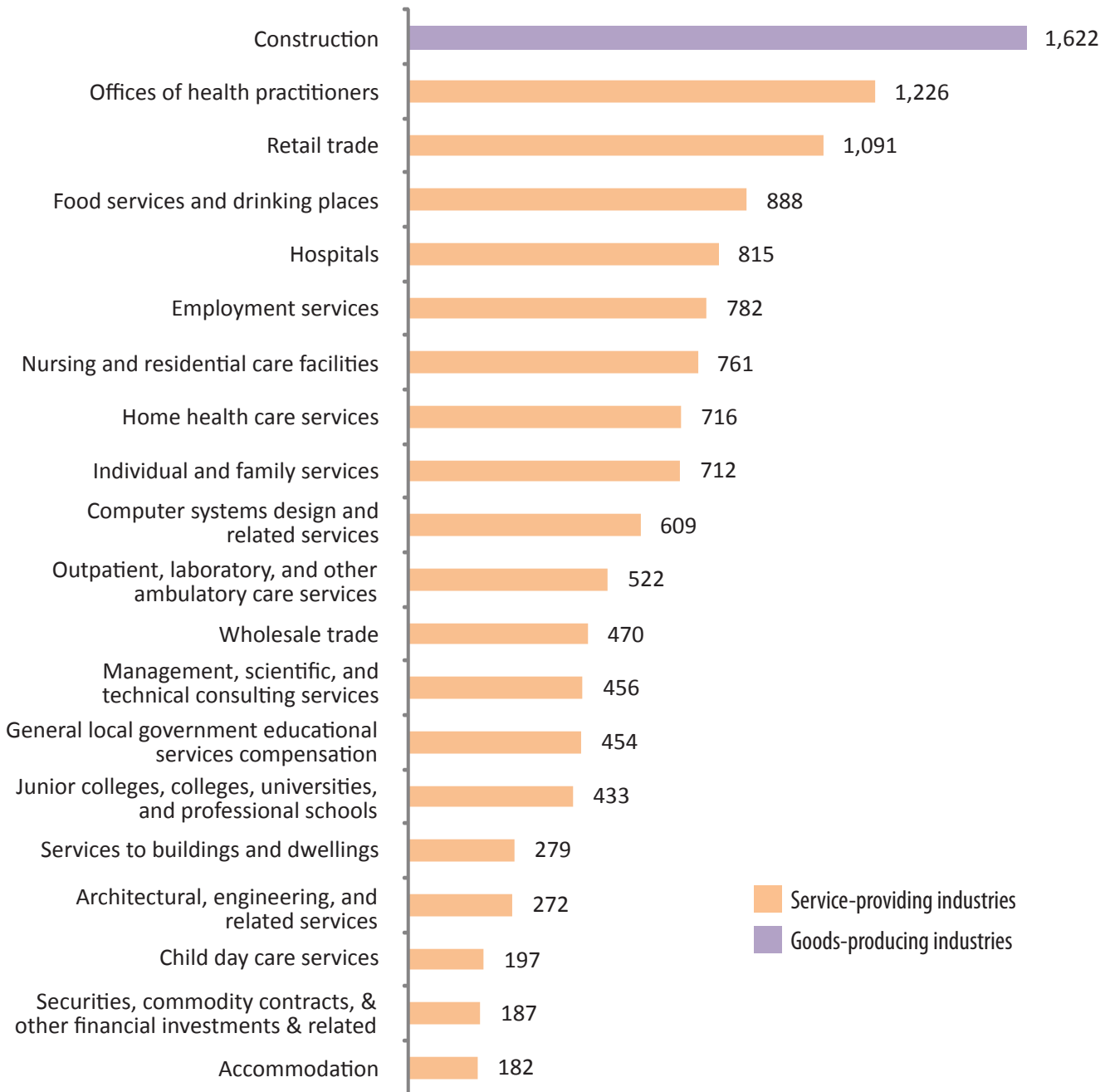
Average, all wage and salary workers = 11%

This chart shows how fast industries are expected to add jobs over the 2012–22 decade. Many of these industries are related to health care. Employment in professional and business services sectors also is projected to grow quickly due to an increased use of complex technologies—and a need for workers who understand those technologies.

# Industry employment

## Most new jobs

Numeric growth in employment of wage and salary workers by detailed industry, projected 2012–22, in thousands of jobs

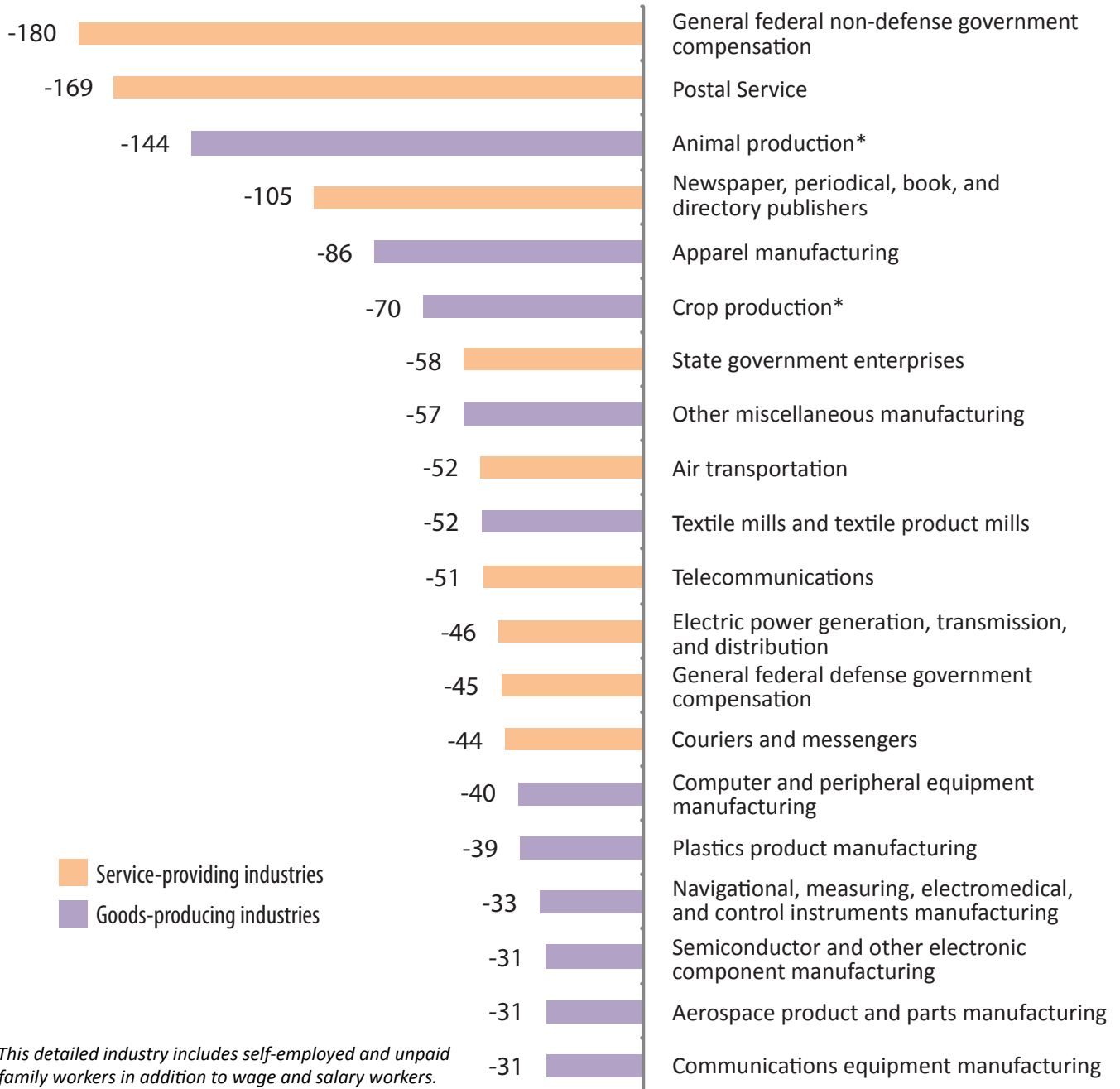


These industries are projected to add the most new jobs between 2012 and 2022. Industries that are projected to have large numeric growth usually already have the highest levels of employment. All of the projected growth in construction is to regain jobs that were lost during the 2007–09 recession, but these 1.6 million jobs are still not expected to be enough to return construction employment to its prerecession level. Five other industries projected to gain the most jobs are related to health care.

# Industry employment

## Most job losses

**Numeric decline in employment of workers by detailed industry, projected 2012–22, in thousands of jobs**



These industries are projected to have the largest declines in the number of jobs between 2012 and 2022. Nearly half are manufacturing industries, which together are projected to lose more than 400,000 jobs. A decline in industry employment is usually the result of falling demand for specific goods and services, increased imports that reduce domestic production, or the use of technology that improves worker productivity. Even with decreases in employment, however, some openings are expected because of the need to replace workers who leave the industry permanently.