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Winter 2009–10

A special issue



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# Occupational Outlook Quarterly

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# Getting started

#### by Dixie Sommers

n almost anything you do, you're more likely to succeed if you have a plan. Deciding on a career is no exception.

If you're making a decision about education, training, or a career—or if you are helping someone else who is making such decisions—you need to know how the labor market is expected to unfold in the future. How many jobs are likely to be available in the career you want? How much will they pay? What kind of training will you need?

Projections and related information from the U.S. Bureau of Labor Statistics (BLS) provide the answers to these questions. In a changing economy, these projections help you to glimpse the future—and to plan for it.

This special issue of the *Occupational Outlook Quarterly* provides a graphic summary of the latest projections, those covering the decade from 2008 to 2018. We also invite readers to examine our detailed profiles of occupations in the 2010–11 *Occupational Outlook Handbook* and of industries in the 2010–11 *Career Guide to Industries*. The November 2009 issue of the

Monthly Labor Review includes more detailed descriptions of the data, analysis, and methods BLS uses in the projections. (For details about these and related publications, see the list on page 49.)

Total employment is projected to reach 166 million by 2018, reflecting the addition of about 15 million new jobs between 2008 and 2018. Behind this total employment projection are trends and major findings depicted in charts for four areas: occupations, the labor force, industries, and the overall economy.

### **Occupations**

- ♦ Among all occupational groups, the professional and related occupations group and the service occupations group are expected to gain the most new jobs and produce the largest numbers of job openings. (See page 10.)
- ♦ Within the professional and related occupations group, healthcare practitioner and technical occupations are projected to gain the most jobs, about 1.6 million. Education, training, and library occupations are projected to gain more than 1.3 million jobs. (See page 11.)

Dixie Sommers is the Assistant Commissioner of the Office of Occupational Statistics and Employment Projections, BLS, (202) 691-5701.

- ♦ Registered nurses, home health aides, and customer service representatives are expected to gain the most new jobs. Registered nurses will add more than half a million jobs. (See page 13.)
- ♦ Most 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. The 20 occupations that are expected to have the most openings from growth and replacement include jobs in a variety of fields, such as office support, sales, and service occupations. (See page 14.)
- ♦ The 20 occupations expected to have the most openings also range widely in median annual wages, from more than \$91,000 for general and operations managers to nearly \$59,000 for postsecondary teachers to less than \$17,000 for waiters and waitresses. (See page 14.)
- ♦ Job openings are expected in occupations that require every level of education and training. But, in general, workers in occupations with higher education and training requirements earn higher wages. (See pages 15–27.)

### The labor force

- ♦ By 2018, the number of people in the labor force—those working or looking for work—is expected to increase by nearly 13 million people between 2008 and 2018. This is a smaller gain than the nearly 17 million people added to the labor force during the previous decade. (See page 30.)
- ♦ As the baby-boom generation ages, the number of people in the labor force aged 65 and older is projected to grow very rapidly, by 78 percent over the projections decade. At the same time,

the labor force in younger age groups is expected to either decline or increase at much slower rates. (See page 32.)

♦ The labor force will continue to become more diverse. The share of the labor force that is Asian, black, or in other non-white race groups is expected to increase to 21 percent, up from 19 percent a decade earlier. And Hispanics are expected to constitute 18 percent of the labor force in 2018, up from 14 percent in 2008. (See pages 34 and 36.)

#### **Industries**

- ♦ Job growth over the 2008–18 decade will be concentrated in service-providing industries. In 2018, service-providing industries are expected to account for 131 million out of 154 million wage and salary jobs overall. (See page 38.)
- ♦ The professional and business services sector is projected to gain the most new jobs, nearly 4.2 million. Two sectors—health care and social assistance and professional and business services—are each projected to grow 24 percent over the decade, the fastest rate for all sectors. (See pages 40 and 41.)
- ♦ Among goods-producing industries, construction is projected to gain about 1.3 million jobs from 2008 to 2018. Some of this growth will be recovering jobs lost between 2006 and 2008, however. Employment is expected to decline in manufacturing and natural resources and mining, the other goods-producing sectors. (See page 40.)
- ♦ Among detailed industries, the management, scientific, and technical consulting services industry is projected to be the fastest growing. It is also expected to provide the most new jobs. (See pages 42 and 43.)

# Defining the sections

The charts project 2008—18 changes in occupational employment, the labor force, industry employment, and the overall economy. You will get the most out of the charts if you understand how BLS defines these areas.

"Occupation" is a way of classifying jobs according to the type of work performed. People who supervise children are in the occupation of child care worker, for example.

"Industry," on the other hand, is a way of classifying jobs and businesses according to the type of good produced or service provided. For example, any job in a child daycare center—from child care worker to cook—is classified as part of the child daycare services industry.

"Labor force" is a measure of the number of people available for work. It includes both individuals who are employed and those who are unemployed (those not working but actively looking for a job).

"Overall economy" includes several concepts. The most important is the value of final goods produced and services provided, which is known as the gross domestic product, or GDP.

(Continued on page 5)

### Reading the charts

The charts provide graphic answers to some basic questions about employment: How many new jobs there will be, how fast the number of jobs is changing, and how many job openings will be available for new entrants to the labor force.

**How many new jobs there will be.** Charts that show numeric change illustrate how many new jobs there will be (the actual number of jobs gained or lost over the projections decade). In general, the occupations and industries with the greatest numeric increases are those that already have large numbers of workers.

**How fast the number of jobs is changing.** Charts showing percent change illustrate how fast the number of jobs is changing (the rate of job growth or decline during the decade). The fastest rates of growth are usually found in occupations and industries that have fewer workers.

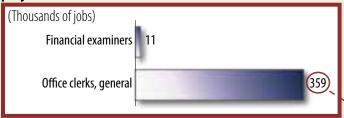
Fast growth does not always mean many new jobs. See, for example, the charts below. They show the projected increase in employment for general office clerks compared with that for financial examiners. In numeric terms, as shown in the chart at upper left,

more than 30 times as many new jobs are projected for office clerks as for financial examiners between 2008 and 2018.

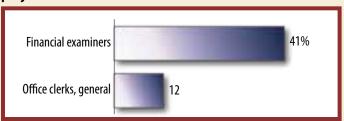
Percent change tells a different story. As the chart at lower left shows, employment of financial examiners is expected to grow more than 3 times as fast as that of general office clerks—even though financial examiners are projected to gain fewer jobs.

**How many job openings there will be.** 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 new to an occupation. Job openings for workers new to an occupation include 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 for some other reason. The chart below at right shows how many job openings for general office clerks are expected to result from job growth and how many are expected to result from the need to replace existing clerks who leave the occupation.

#### Numeric employment growth in two occupations, projected 2008-18



#### Percent employment growth in two occupations, projected 2008-18



### Job openings for office clerks, projected 2008–18



(Continued from page 3)

### **Overall economy**

- ♦ Personal consumption expenditures on goods are projected to grow an average of 2.3 percent each year between 2008 and 2018. The largest growth in personal consumption expenditures on goods is expected to be for computers and software. (See page 48).
- ♦ Personal consumption expenditures on services are projected to increase by 2.6 percent annually. Spending on medical care and insurance services will add the most to expenditures on services. (See page 48.)

### 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.

We begin with 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 will 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—the total supply of workers to the future economy.

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 this output is used by other industries; for example, steel is used in making cars. Other output such as the cars themselves or the repair services for maintaining them—is sold directly to consumers.

We also study trends in productivity—the amount of output produced per worker—and use this information to translate projected output into the number of jobs needed in each industry to produce these goods and provide these services.

Next, we project how the jobs in each industry will be distributed by occupation. To do this, we make extensive use of the BLS Occupational Employment Statistics survey, as well as of information from other sources for sectors that are not covered by the survey, to depict how employment in each of nearly 300 industries is distributed across more than 700 occupations. (For the 2008–18 projections, we used 2008 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. Using this analysis along with the survey data and our industry employment projections, we project employment by occupation—in this set of projections, for 2018.

Our projection methods are based on the fact that employment trends in most occupations are closely tied to the trends in particular industries. For example, in 2008, about 60 percent of registered nurses worked in hospitals. So an increase in the demand for hospital services between 2008 and 2018 will increase the need for these workers. Based on changes in demand, we project that the real output of the hospital industry will increase over the decade, and about 274,000 more registered nurses will be needed in hospitals to provide this output. As a result, this industry is projected to account for about 47 percent of the roughly 582,000 new jobs for registered nurses.

### A note about the economy in 2008

Our usual practice is to prepare new projections every other year, with the base year of the projections period being an even-numbered year. For this set of projections, the base year, 2008, happens to be during a significant downturn in the U.S. economy. Total employment of wage and salary workers fell by 532,000 between 2007 and 2008, and it continued to fall in 2009. The construction, manufacturing, and financial activities industry sectors, along with occupations that are concentrated in these industries, were hit particularly hard.

When developing long-term projections, however, our focus is on long-term trends in population, labor force, productivity, and output growth. The population and the labor force have been aging and their growth rates slowing. These long-term trends are expected to continue, regardless of the fluctuations in the economy. Readers should keep in mind, however, that the projected changes in employment between 2008 and 2018 usually include regaining jobs that have been lost during the downturn.



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 over the 2008–18 decade. Many of the charts that follow show which occupations or occupational groups are expected to grow fastest (highest percent growth) or gain the most jobs (highest numeric growth).

Employment growth for all workers is projected to average about 10 percent between 2008 and 2018. This average is shown as a dotted vertical line in the chart on page 12.

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 leave an occupation permanently for other reasons. Some charts show which occupations are expected to have the most openings for workers who are entering the occupation for the first time. These charts show projected openings both from job growth and from replacement needs (the need to replace workers who leave).

#### Growth by occupational group

Most charts in this section focus on detailed occupations. To better illustrate general employment trends, however, five charts at the beginning of the section show employment growth in broad groups of similar occupations.

The following are descriptions of 10 broad occupational groups in the Standard Occupational Classification (SOC), a system used by the Federal Government to classify workers into occupational categories. The groups are listed in the same order used in the SOC:

- ♦ Management, business, and financial occupations. Many of these workers direct the activities of business, government, and other organizations and perform tasks related to finance and business. Examples include school administrators, financial managers, accountants, and food service managers.
- ♦ Professional and related occupations. These workers are in education, healthcare, science, information technology, the arts, and a variety of other jobs. Examples are physical therapists, engineering technicians, lawyers, writers, interior designers, and computer software engineers.
- ♦ Service occupations. This group includes workers who assist the public. Police, cooks, home health aides, flight attendants, child care workers, and cosmetologists are examples.
- ♦ Sales and related occupations. Workers in this group are involved in the sale of goods and services, both to businesses and to consumers. Examples include cashiers, insurance sales agents, retail salespersons, telemarketers, and real estate agents.

- ♦ Office and administrative support occupations. Workers in this group prepare and file documents, interact with the public, and gather and distribute goods and information. Examples include secretaries, stock clerks, mail carriers, computer operators, and receptionists.
- **♦** Farming, fishing, and forestry occupations. Workers in this group tend and harvest renewable resources. Examples include farmworkers, fishing vessel captains, and logging equipment operators. Workers who manage farms or ranches are counted in the management occupations group rather than in this group.
- **♦** Construction and extraction occupations. This group includes workers in construction and building trades, such as carpenters and electricians. It also includes occupations in oil and gas extraction and mining, such as roustabouts and mining machine operators.
- ♦ Installation, maintenance, and repair occupations. Workers in this group install and maintain all types of equipment. They include avionics technicians, automotive service technicians and mechanics, computer repairers, industrial machinery mechanics, and millwrights.
- ♦ *Production occupations*. Most people in these occupations work as assemblers or machine operators, primarily in manufacturing industries. Examples include computer-controlled machine tool operators, machinists, textile occupations, power plant operators, and chemical equipment operators.
- ♦ Transportation and material moving occupations. Workers in these occupations move people or materials. They include airline pilots, truck drivers, locomotive engineers, and parking lot attendants.

#### Classification by postsecondary education and training obtained

As an aid to jobseekers and counselors, some charts focus on occupations that have similar education and training requirements. For each occupation they analyze, BLS economists choose the education and training category that is most significant for workers in that occupation—either the category that is most common among workers currently in the occupation or the category that gives new workers the best chance of qualifying for a job. In nearly all occupations, however, workers have a variety of educational backgrounds.

Each occupation is assigned to one of several education and training categories, ranging from a doctoral degree to short-term on-the-job training. Definitions for the postsecondary education and training categories accompany the relevant charts.

#### 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 wages, but overtime and nonproduction bonuses are not.

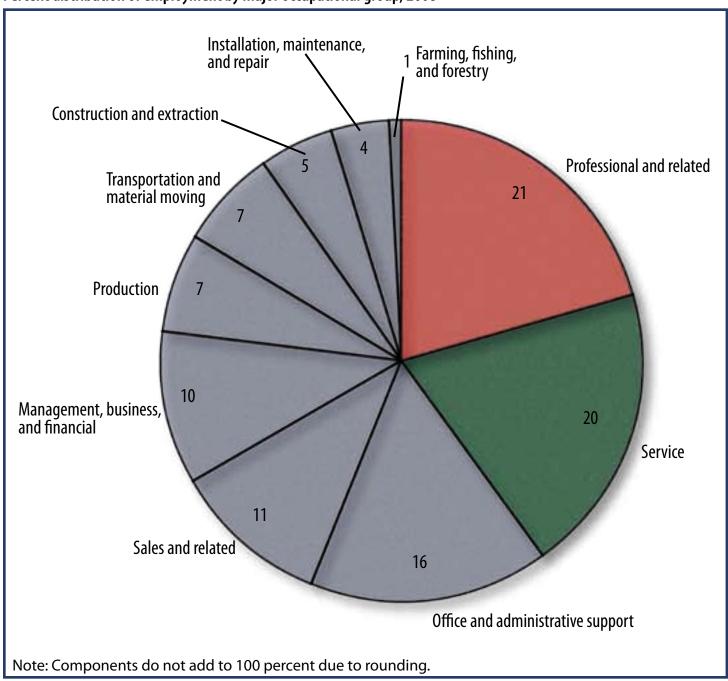
For individual occupations, most charts include 2008 median annual wage data from the BLS Occupational Employment Statistics (OES) program. The median wage is the point at which half of the workers in an occupation earned more than the amount, and half earned less. In May 2008, the median annual wage for all workers was \$32,390.

The highest median annual wages among the occupations in a given chart are in **boldface** type. For occupations with a median annual wage of more than \$166,400, 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  $(\ge)$  \$166,400.

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

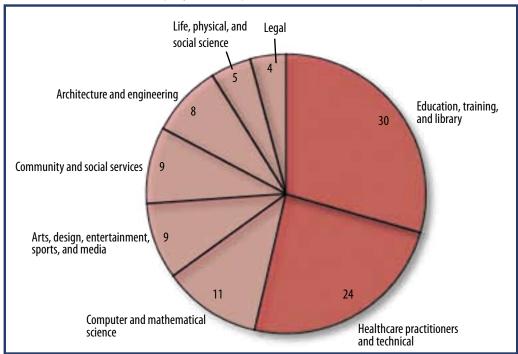
### Employment, 2008

Percent distribution of employment by major occupational group, 2008



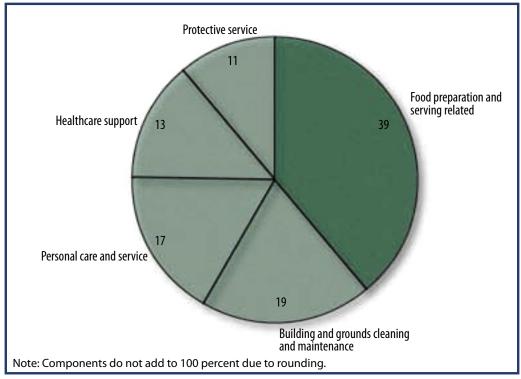
Occupations that have similar job duties are grouped according to the tasks that the workers in those occupations perform. Two major occupational groups—professional and related occupations and service occupations—accounted for almost half of total employment in 2008.

#### Percent distribution of employment in professional and related occupations, 2008



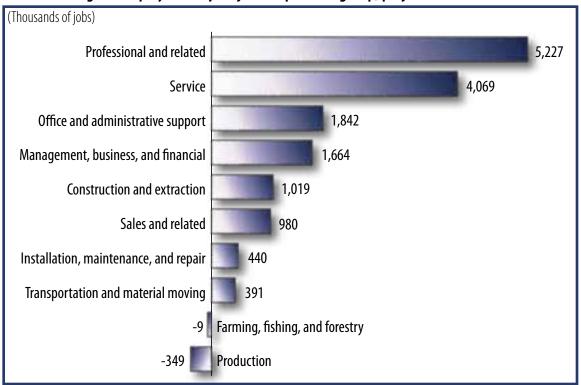
Within the professional and related group, occupations related to education and healthcare accounted for the largest proportion of jobs in 2008.

#### Percent distribution of employment in service occupations, 2008



Workers involved in preparing and serving food made up the largest share of those in service occupations in 2008.

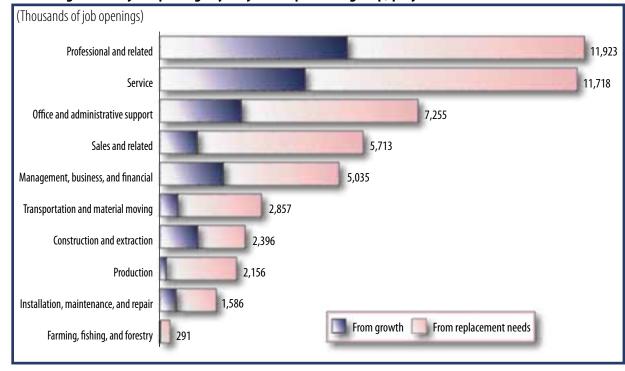
#### Numeric change in employment by major occupational group, projected 2008–18



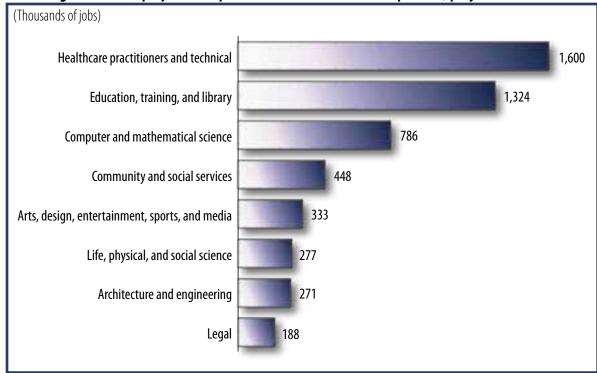
The two occupational groups that were the largest in 2008 are also projected to add the most new jobs to the U.S. economy between 2008 and 2018. Two occupational groups are projected to lose jobs, due in part to increasing worker productivity and an ongoing shift to a serviceproviding economy.

Employment prospects depend on more than job growth. Openings for new workers occur not only when jobs are added to the economy but also when current workers leave an occupation permanently. In fact, the need to replace workers who leave an occupation is expected to create more openings than job growth will.

#### Numeric growth in job openings by major occupational group, projected 2008–18



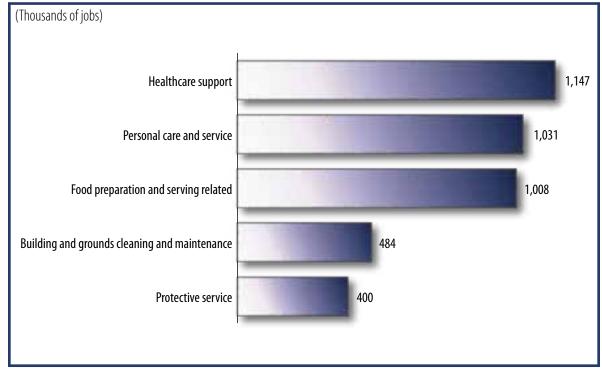
#### Numeric growth in employment in professional and related occupations, projected 2008–18



Workers in professional and related occupations have a variety of specialized skills. Within this group, two occupations are each expected to gain more than 1 million new jobs between 2008 and 2018.

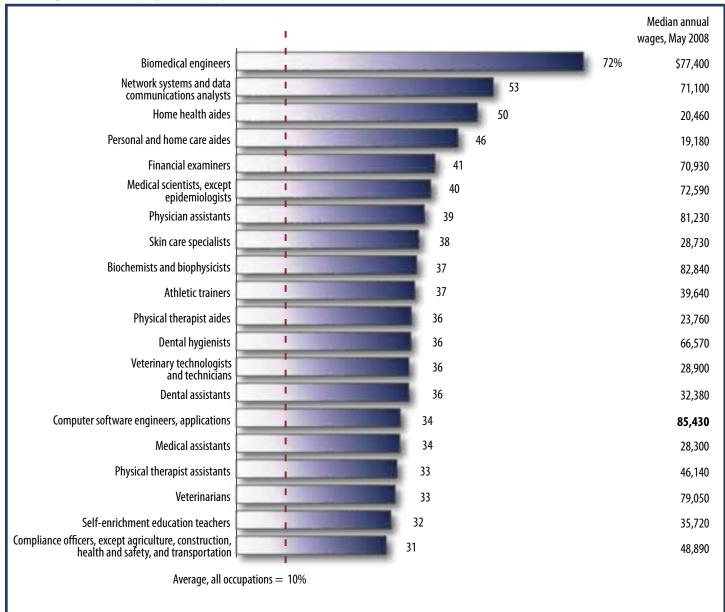
#### Numeric growth in employment in service occupations, projected 2008–18

Three occupations within this group are expected to gain more than 1 million new jobs from 2008 to 2018. Much of the employment growth in healthcare support occupations will come from increased demand for basic medical services to older persons. Job growth in personal care and service occupations will be driven primarily by demand for personal and home care for the elderly and disabled and by demand for child care services.



### **Fastest growing occupations**

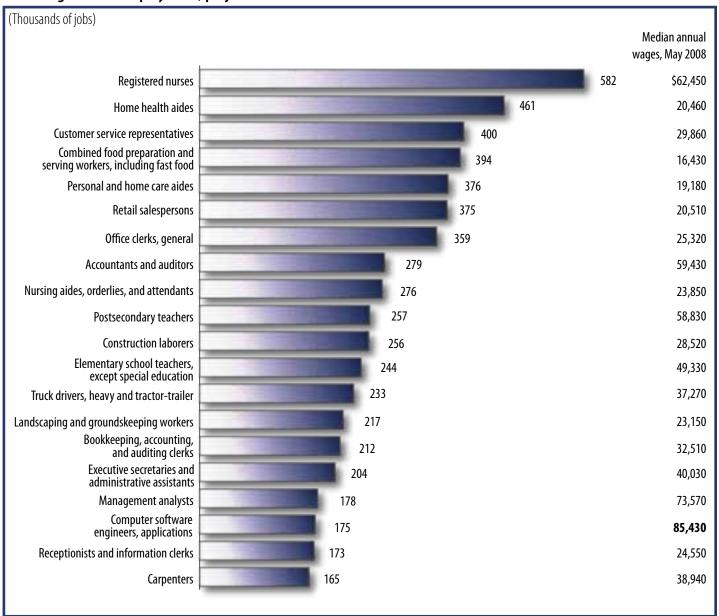
#### Percent growth in employment, projected 2008–18



Many of the occupations projected to grow the fastest relate to healthcare and care of the elderly. Of all the projected fastest growing occupations, however, computer applications software engineers had the highest median annual wage in May 2008.

### Most new jobs

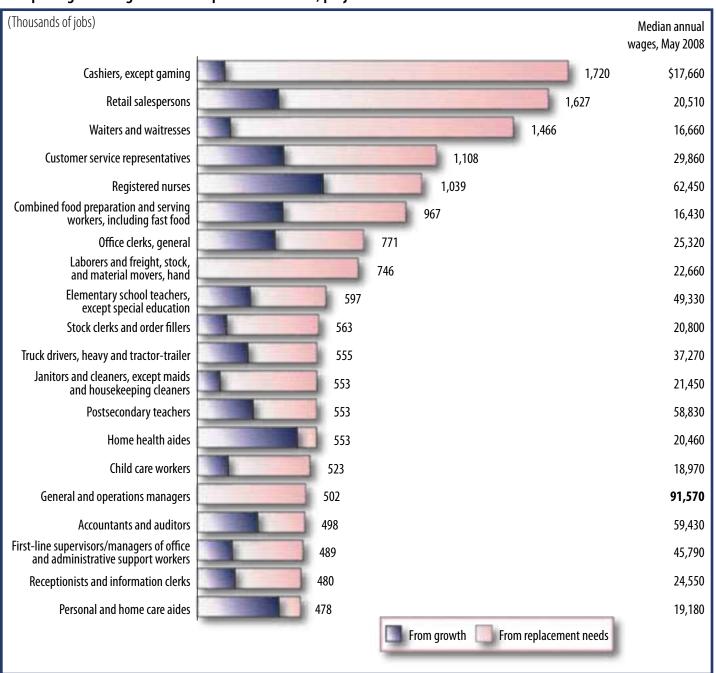
#### Numeric growth in employment, projected 2008–18



These 20 occupations are projected to gain the most new jobs between 2008 and 2018 and account for almost 38 percent of all new jobs projected over the decade. Although these occupations have a range of wages, responsibilities, and education and training requirements, many relate to healthcare and care of the elderly. As with the projected fastest growing occupations, computer applications software engineers had the highest wage in May 2008 among occupations projected to gain the most new jobs.

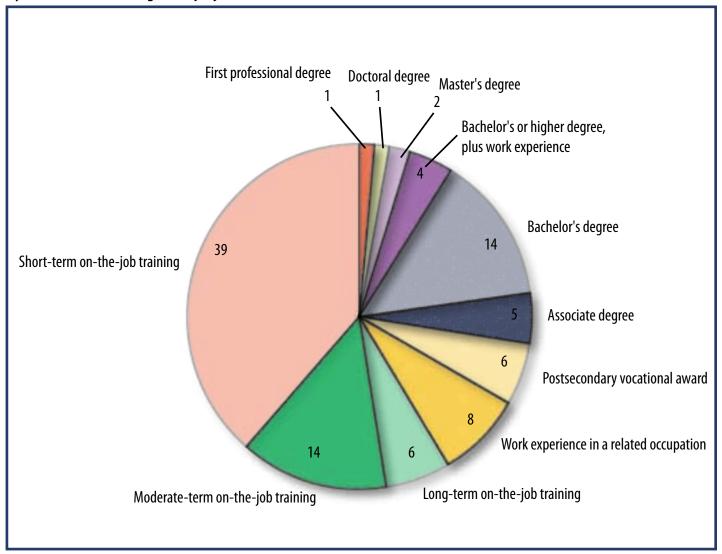
### Most job openings for workers new to an occupation

Job openings due to growth and replacement needs, projected 2008–18



Two retail occupations—cashiers and retail salespersons—are expected to have the most job openings over the projections decade. For most of the occupations in this chart, the need to replace workers leaving the occupation is projected to create more openings than job growth will. Of the occupations shown, general and operations managers had the highest median annual wage in May 2008. All job openings in that occupation are expected to result from replacement needs.

#### Percent distribution of job openings due to growth and replacement needs by education or training level, projected 2008–18

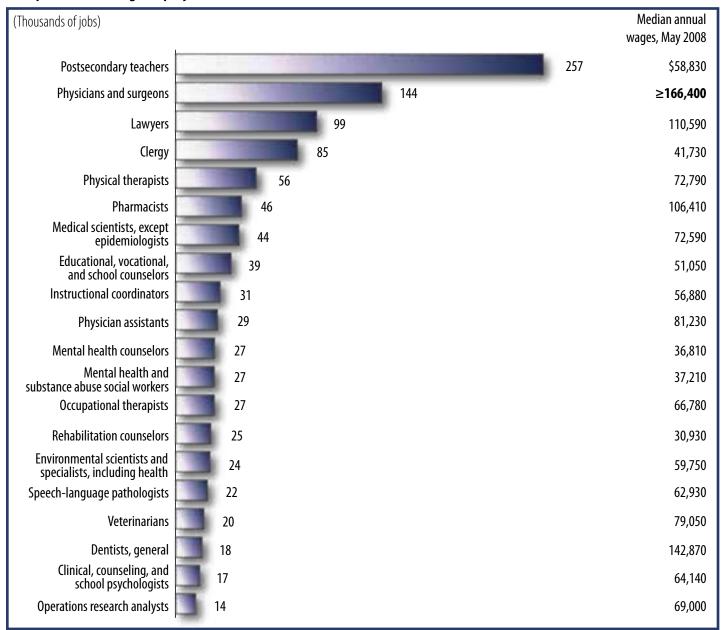


Most job openings over the projections decade will be in occupations that require short-term on-the-job training. Occupations requiring moderate-term on-the-job training and those requiring a bachelor's degree are also expected to have a large share of the projected job openings.

Charts on the following pages show projected employment growth, projected job openings, and 2008 annual wages for detailed occupations within these categories. Generally, workers in occupations with higher education and training levels earn higher wages than do those with lower levels of education and training. The median annual wage for all occupations in May 2008 was \$32,390.

### **Graduate degree**

Occupations that have the most growth and that usually require a master's, doctoral, or first-professional degree, projected 2008–18

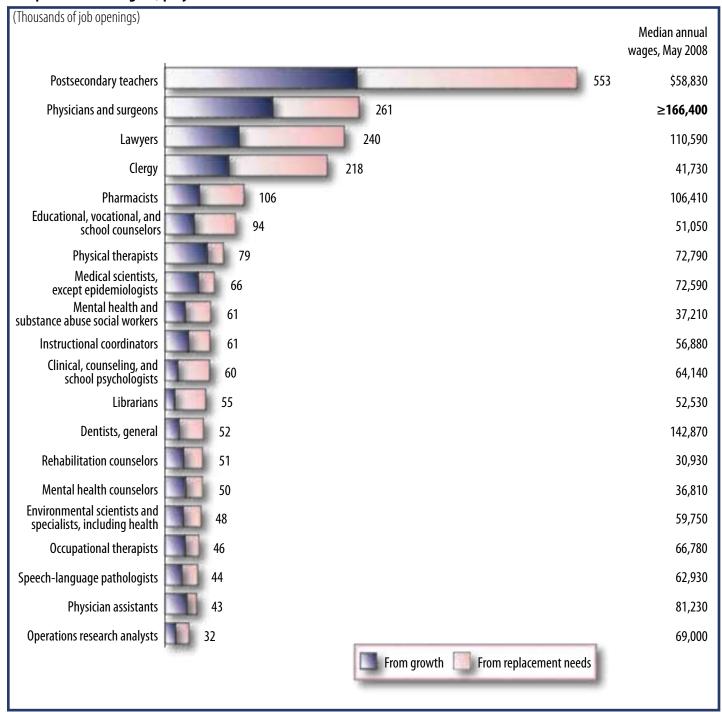


Completion of a master's degree usually requires 1 or 2 years of full-time academic study beyond a bachelor's degree. A doctoral degree (such as a Ph.D.) or a first professional degree (such as a medical or law degree) usually requires at least 3 years of full-time academic study beyond a bachelor's degree.

Most high-growth occupations in these educational categories are related to healthcare, education, and social services. The projected increase in the number of postsecondary teachers reflects expanding college enrollments. And the employment growth for physicians and surgeons and other medical occupations reflects an aging population's increased demand for medical services.

### **Graduate degree**

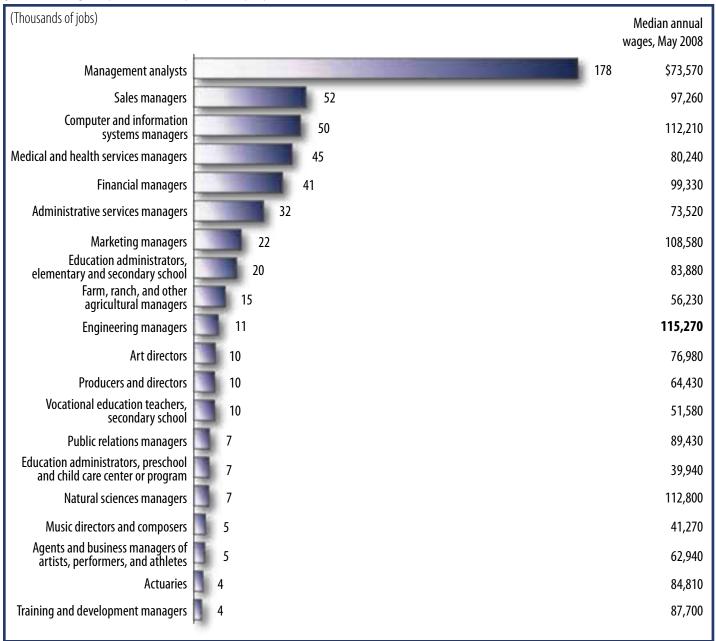
#### Occupations that have the most job openings and that usually require a master's, doctoral, or first-professional degree, projected 2008–18



Between 2008 and 2018, nearly 300,000 job openings for postsecondary teachers are expected to arise from the need to replace existing teachers who retire or leave the occupation permanently for other reasons.

### Bachelor's or graduate degree plus work experience

Occupations that have the most growth and that usually require a bachelor's or graduate degree plus work experience, projected 2008–18

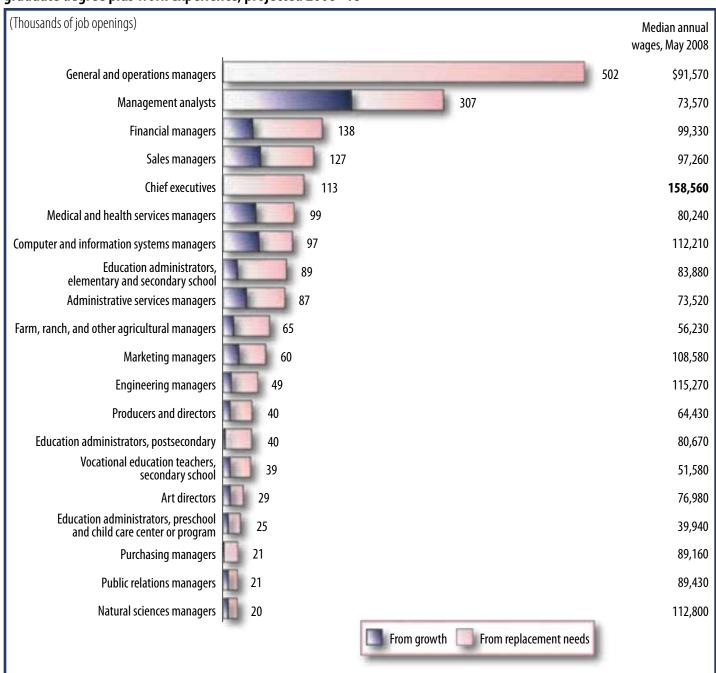


Occupations in this category often require a bachelor's or graduate degree and experience in a closely related occupation.

Nearly all of these occupations have managerial responsibilities, and jobs are usually filled by experienced staff who are promoted into managerial positions.

## Bachelor's or graduate degree plus work experience

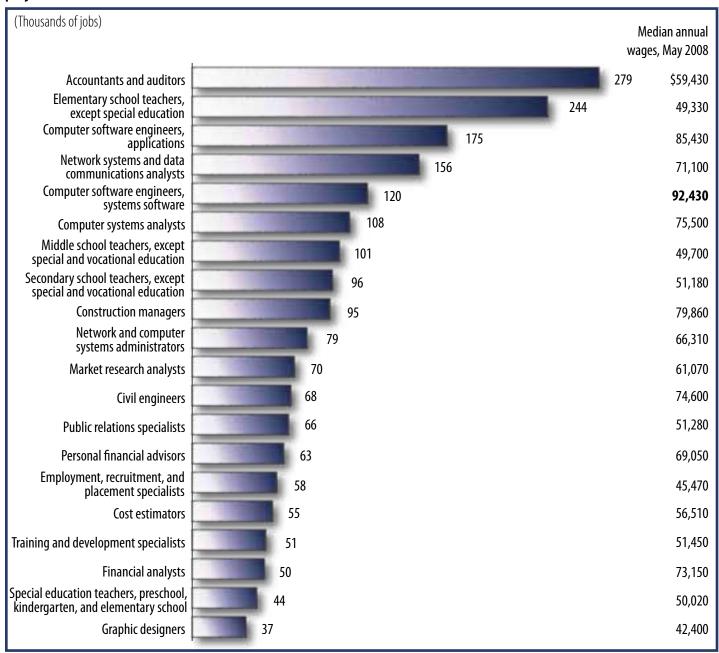
Occupations that have the most job openings and that usually require a bachelor's or graduate degree plus work experience, projected 2008–18



Within this category, general and operations managers are expected to have the most job openings over the 2008–18 decade. Because this occupation is large, many new workers will be needed to replace those who retire or leave permanently for other reasons.

### Bachelor's degree

# Occupations that have the most growth and that usually require a bachelor's degree, projected 2008–18

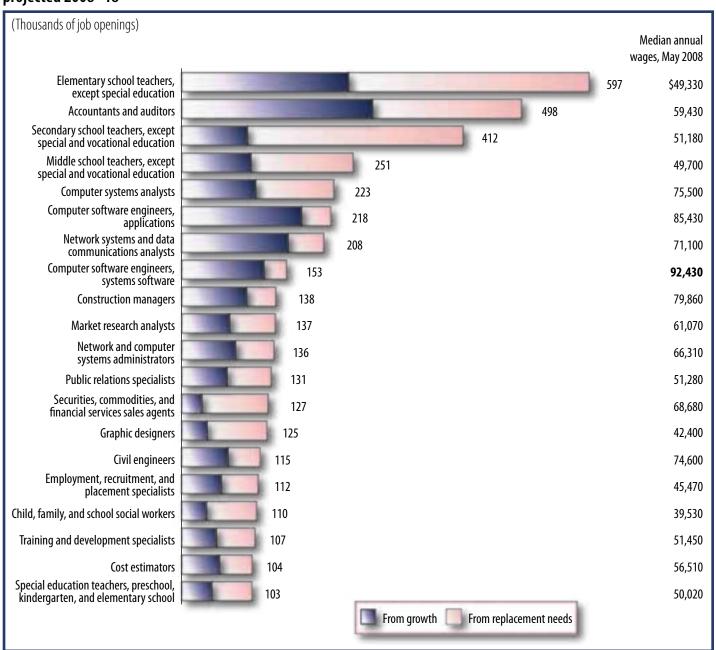


Completion of a bachelor's degree usually requires at least 4 years of full-time academic study beyond high school.

Most of these occupations relate to business, computers, or education. As businesses continue to invest in information technology, demand for workers in several computer-related occupations will grow. Several occupations involved in recruiting, training, and managing a qualified workforce are also expected to have significant job growth over the projections decade.

### Bachelor's degree

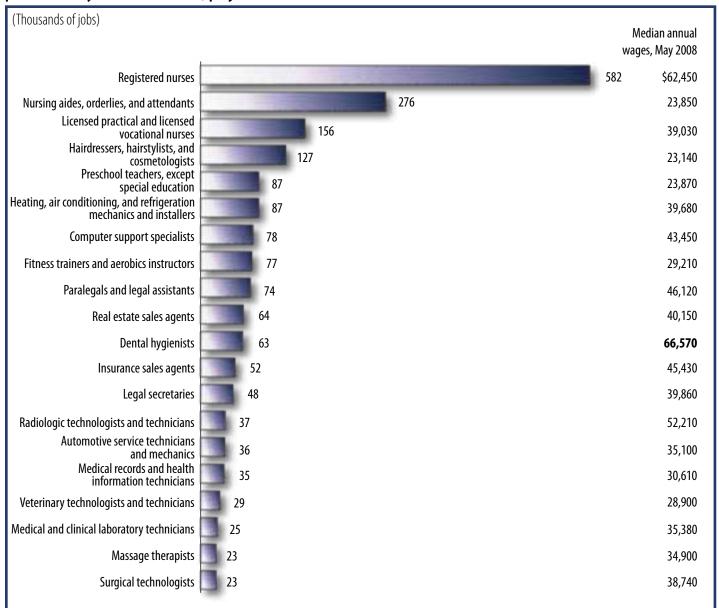
#### Occupations that have the most job openings and that usually require a bachelor's degree, projected 2008-18



Thousands of openings for workers who have a bachelor's degree are expected in a variety of occupations. The large number of projected openings for teachers reflects the size of teaching occupations, the need to replace teachers who are expected to retire, and rising student enrollments.

# Associate degree or postsecondary vocational award

Occupations that have the most growth and that usually require an associate degree or postsecondary vocational award, projected 2008–18

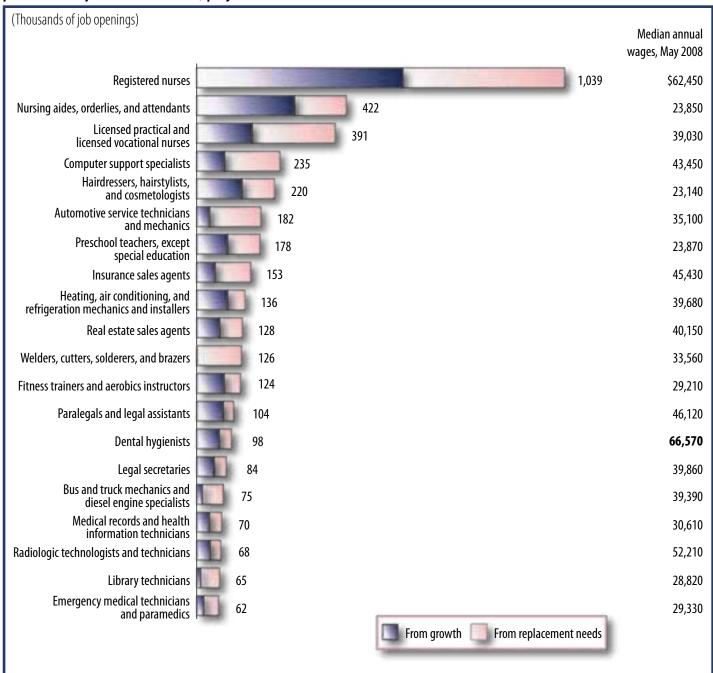


Completion of an associate degree usually requires 2 years of full-time academic study beyond high school. Postsecondary vocational programs vary in length and range from several weeks to 1 year or more. Completion of these programs often leads to a certificate or other award but not an academic degree.

At this level of training, occupations that are projected to gain the most jobs are largely related to healthcare, reflecting the growing medical needs of an aging population.

# Associate degree or postsecondary vocational award

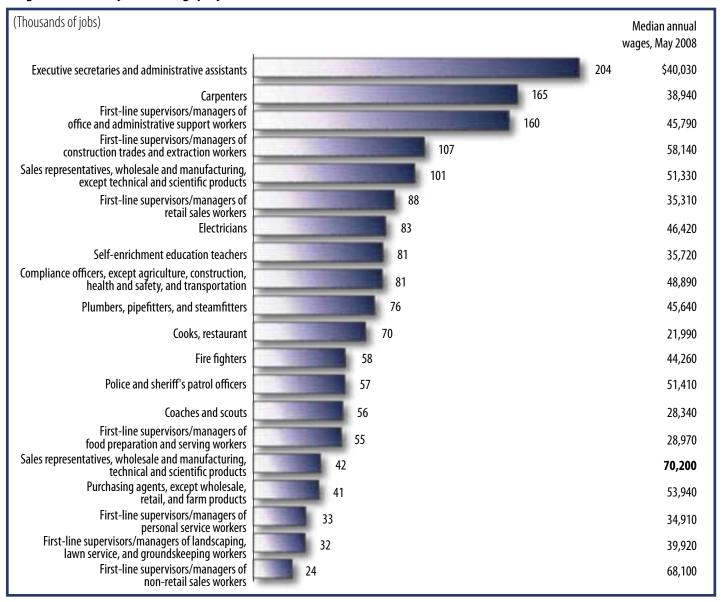
Occupations that have the most job openings and that usually require an associate degree or postsecondary vocational award, projected 2008–18



Over the 2008–18 decade, more than 1 million job openings are expected for registered nurses seeking employment in the occupation for the first time.

### Work experience or long-term on-the-job training

Occupations that have the most growth and that usually require work experience or long-term on-the-job training, projected 2008–18

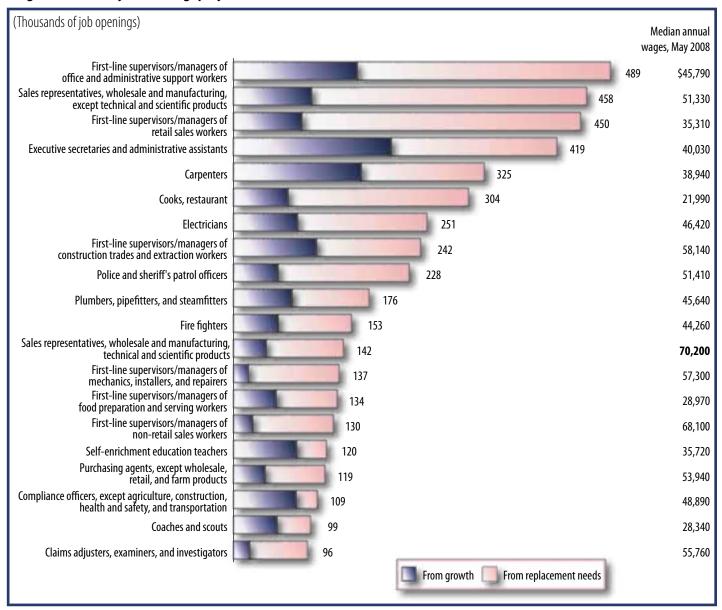


Occupations that require work experience are often supervisory, and workers' experience usually must be in the occupation being supervised. Occupations in the long-term on-the-job training category usually require workers to have 1 year or more of on-the-job training. Apprenticeships and long-term employer-sponsored training are classified here.

Employment of executive secretaries and administrative assistants is expected to increase in part because the duties in this occupation are less likely than many other office and administrative support occupations to be affected by technological advances. Increased activity in building and remodeling is expected to create growth in construction occupations. Supervisory occupations are also projected to gain many jobs over the 2008–18 decade.

# Work experience or long-term on-the-job training

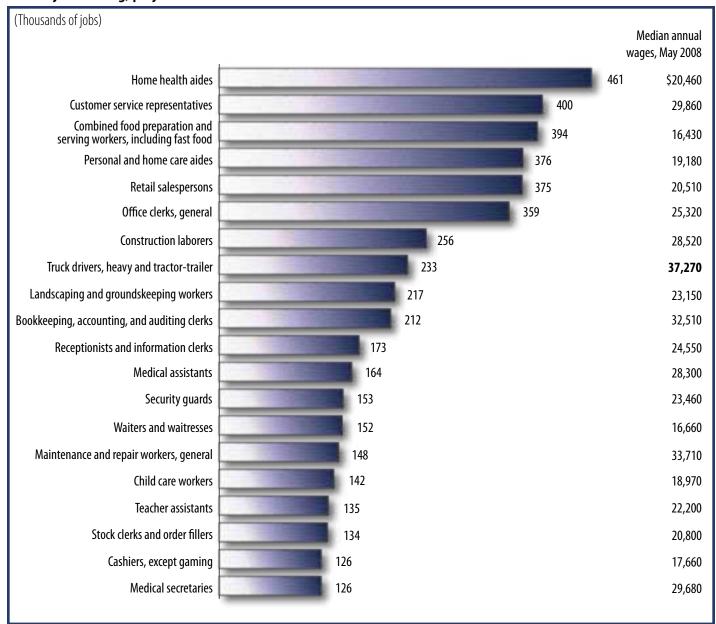
Occupations that have the most job openings and that usually require work experience or long-term on-the-job training, projected 2008–18



Replacement needs are expected to account for most of the job openings in these occupations. Even occupations that are not expected to gain many new jobs—such as such as first-line supervisors of mechanics, installers, and repairers—will offer some job openings because of the need to replace existing workers who leave the occupation permanently.

### Short- or moderate-term on-the-job training

Occupations that have the most growth and that usually require short- or moderate-term on-the-job training, projected 2008-18



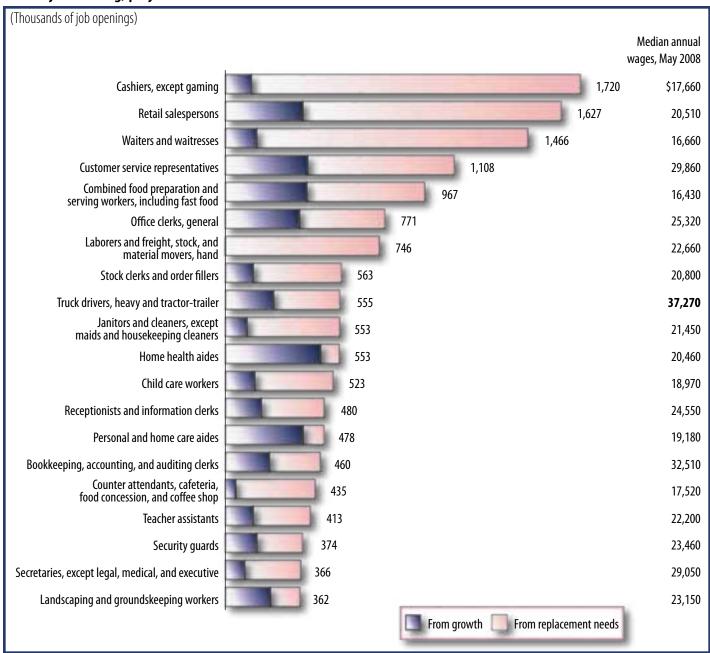
For occupations that require moderate-term on-the-job training, workers develop the skills that they need during 1 to 12 months of combined on-the-job experience and informal training.

For occupations in the short-term on-the-job training category, workers develop the skills that they need after a short demonstration of job duties or during 1 month or less of on-the-job experience or instruction.

Each of the occupations shown here is projected to gain more than 100,000 new jobs between 2008 and 2018.

# Short- or moderate-term on-the-job training

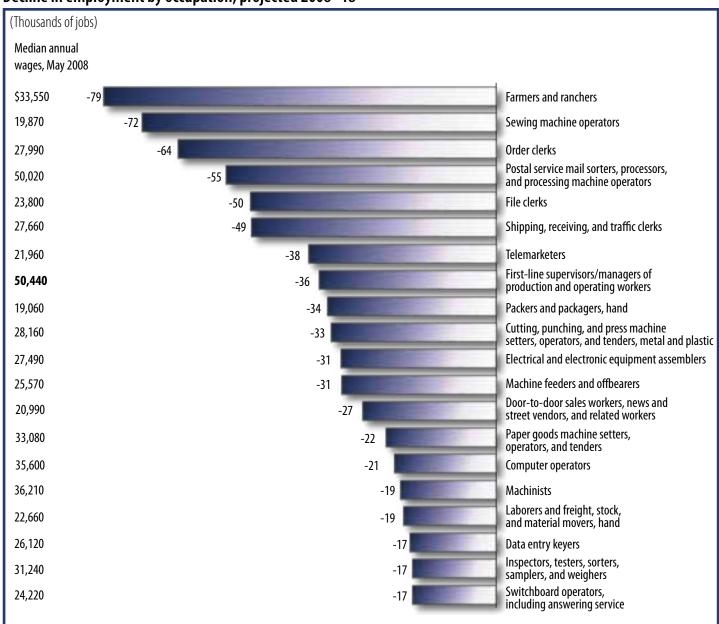
Occupations that have the most job openings and that usually require short- or moderate-term on-the-job training, projected 2008-18



Among occupations that require relatively little training, the need to replace workers is expected to account for the bulk of job openings.

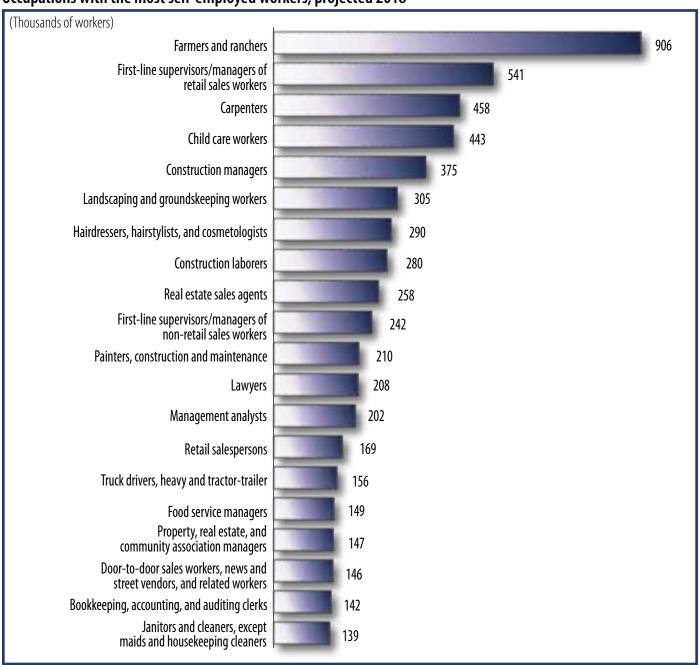
### Most job losses

#### Decline in employment by occupation, projected 2008–18



The occupations that are expected to have the largest employment declines—in part because technology is increasing worker productivity—are primarily production occupations and office and administrative support occupations. Even in occupations that are not expected to gain new jobs, however, the need to replace existing workers who leave will create some opportunities.

#### Occupations with the most self-employed workers, projected 2018



Most of the new jobs added to the economy are expected to be for wage and salary workers; employment of self-employed and unpaid family workers is projected to change little through 2018. Farmers and ranchers are projected to have the highest levels of self-employment in 2018. But self-employment is also expected to be common in business, construction, and personal service occupations.



he labor force is the number of people aged 16 or older who are either working or looking for work. It does not include active-duty military personnel or institutionalized people, such as prison inmates. Quantifying this total supply of labor is a way of determining how big the economy can get.

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 percent of the population that is working or actively seeking employment.

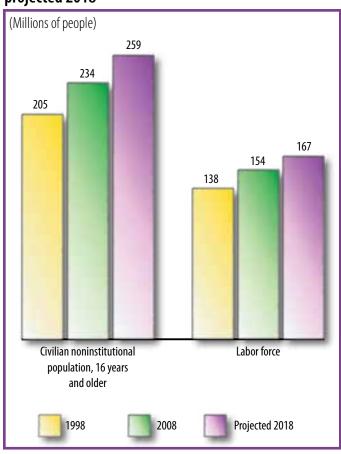
Labor force participation rates vary significantly between men and women and among different age, racial, and ethnic groups. Each group also has varying population growth rates. These variations change the composition of the labor force over time.

The charts that follow show how the labor force is projected to change among age groups, between men and women, among racial groups (Asians, blacks, whites, and others), and among ethnic groups (Hispanics and non-Hispanics of any race). These are the categories that the U.S. Census Bureau uses to produce the demographic data on which BLS projections are based.

Total labor force growth is expected to average about 8 percent between 2008 and 2018. This average is shown as a dotted vertical line in the chart on page 32.

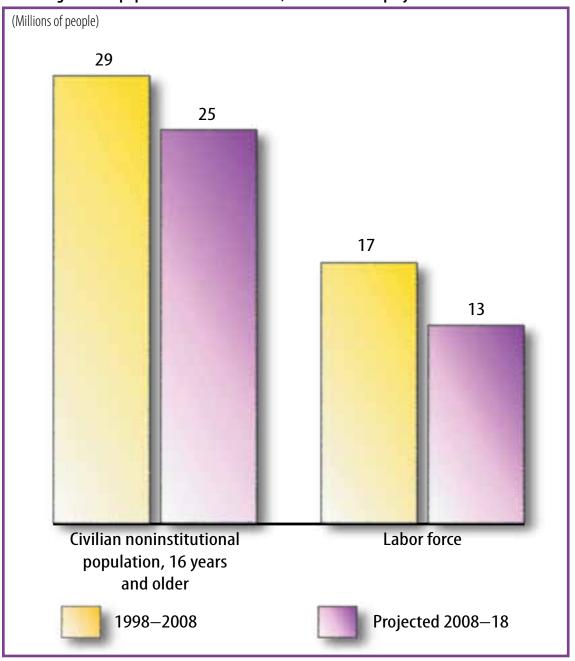
As in previous years, the labor force is projected to grow more slowly than the number of jobs, but this is not an indication of a labor shortage. Instead, this discrepancy reflects that these two measures are based on different concepts.

#### Population and labor force, 1998, 2008, and projected 2018



Both the population and the labor force are projected to continue growing slowly. By 2018, the number of people working or looking for work is expected to reach about 167 million. That number excludes people who are active-duty members of the U.S. Armed Forces, are in institutions, or are younger than 16 years of age.

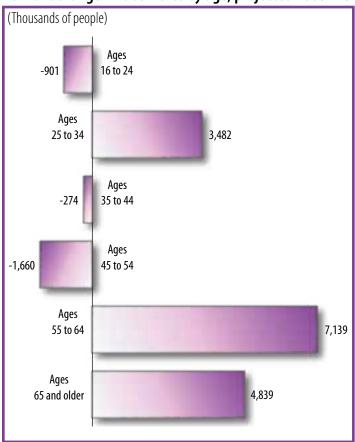
#### Numeric growth in population and labor force, 1998-2008 and projected 2008-18



Between 2008 and 2018, both the population and the labor force are expected to grow less than they did during the previous decade.

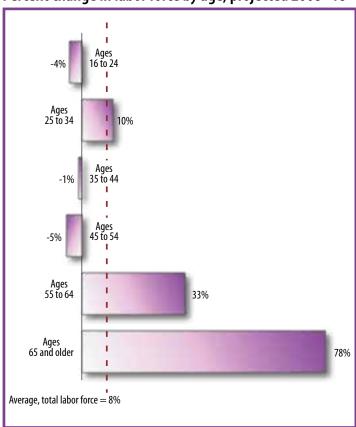
### **Labor force**

#### Numeric change in labor force by age, projected 2008–18

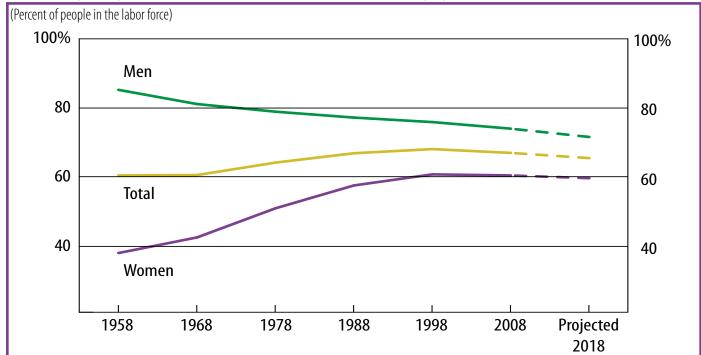


The baby-boom generation—those born between 1946 and 1964—is expected to remain in the labor force longer than previous generations. As this group ages, the number of people in the labor force aged 55 to 64 is expected to increase by more than 7 million during the projections decade, and the number of people aged 65 and older is projected to increase by almost 5 million. The numbers of 45- to 54-year-olds and 35- to 44-year-olds are expected to shrink as baby boomers age and shift into older groups.

#### Percent change in labor force by age, projected 2008–18



Thanks to advances in medicine, people now enjoy better health as they age and, as a result, are able to remain in the labor force longer than workers in previous generations did. And a variety of economic factors—an increase in the Social Security eligibility age, for example—create incentives for people to keep working. Because of such factors, the number of people in the labor force aged 65 and older is expected to grow about 10 times faster than the total labor force.

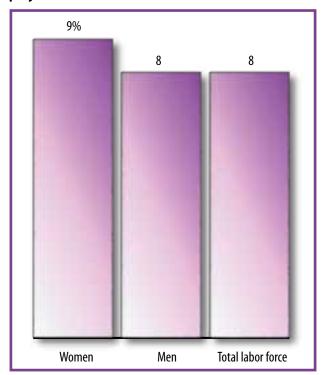


#### Labor force participation rates for men and women, 1958–2008 and projected 2018

The labor force participation rates for both men and women are expected to decline slightly over the projections decade. By 2018, about 71 percent of men and 59 percent of women are expected to be in the labor force.

The aging of the population will be a factor driving down labor force participation rates. Despite working longer than previous generations, baby boomers will still have lower levels of labor force participation than those in younger age groups. The babyboom generation is becoming a larger segment of the total population, driving down overall participation in the labor force.

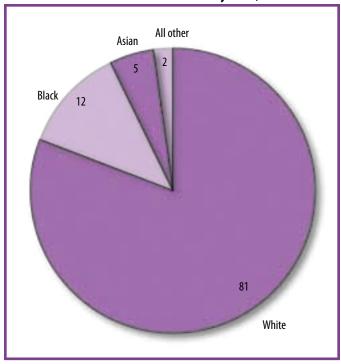
#### Percent growth in labor force for men and women, projected 2008-18



Between 2008 and 2018, the increase in the number of women in the labor force is expected to be greater than the increase in the number of men. But the rate of growth for both groups is expected to be about the same.

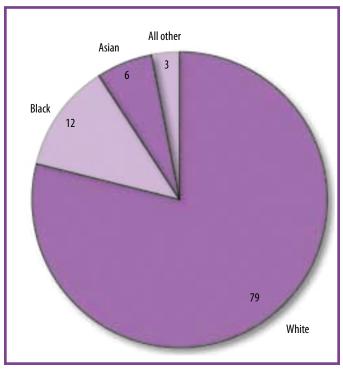
# **Labor force**

#### Percent distribution of labor force by race, 2008



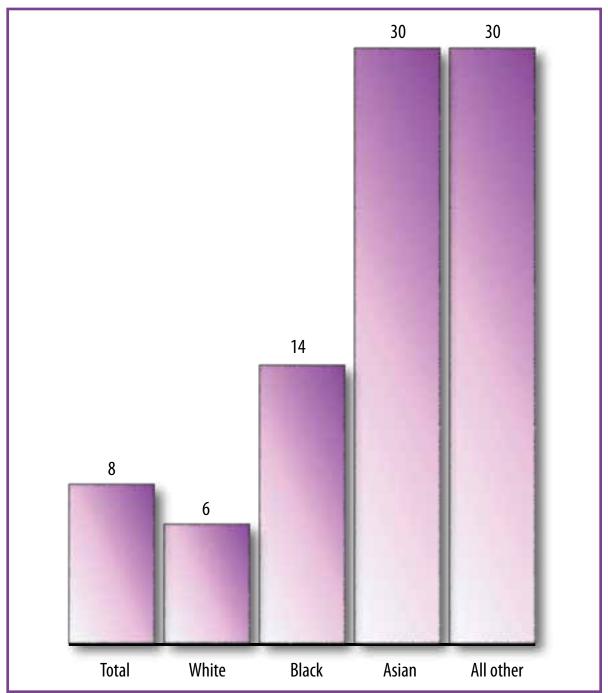
Whites made up 81 percent of the labor force in 2008.

#### Percent distribution of labor force by race, projected 2018



Although whites will continue to be the largest racial category in the labor force, other racial groups are projected to make up 21 percent of the labor force by 2018.

### Percent growth in labor force by race, projected 2008-18

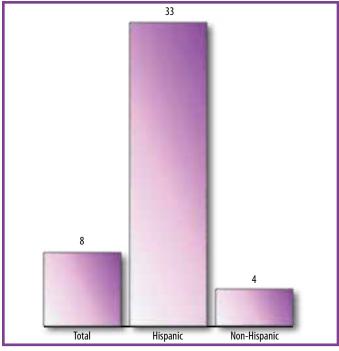


Although Asians will remain a small part of the labor force, they—along with the "all other races" category—will have the fastest rate of labor force growth between 2008 and 2018. This growth is due to increased immigration and both groups' very high labor force participation rates.

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 white, black, or Asian.

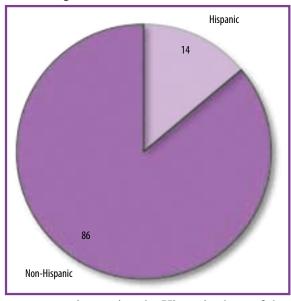
# **Labor force**

### Percent growth in labor force by ethnic origin, projected 2008-18



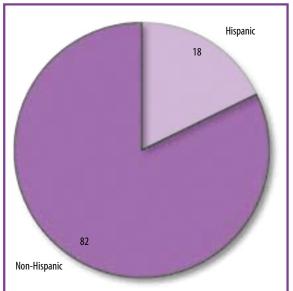
The Hispanic labor force is growing faster than any other ethnic group because of overall population growth from higher births and increased immigration—and because of significantly higher labor force participation rates. The growth rate of 33 percent for the Hispanic labor force is about 8 times that of non-Hispanic workers over the projections decade...

### Percent distribution of labor force by ethnic origin, 2008



...increasing the Hispanic share of the labor force from 14 percent in 2008...

### Percent distribution of labor force by ethnic origin, projected 2018



...to 18 percent in 2018.



his section illustrates projected employment change from an industry perspective over the 2008-18 decade. Workers are grouped into an industry according to the type of good produced or service provided by the establishment in which they work. Everyone who works in a hospital, for example, is part of the hospital industry, regardless of his or her job duties. The hospital industry includes not only healthcare workers, such as doctors and nurses, but also thousands of other workers, such as office managers and janitors.

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). Unlike employment totals in the occupational charts, however, employment totals in this section cover only wage and salary workers and do not include selfemployed or unpaid family workers.

Employment growth for all wage and salary workers is projected to average about 11 percent between 2008 and 2018. This average is shown as a dotted vertical line in two charts.

As discussed in the introduction to this issue of the Quarterly, job growth or decline in some industries affects particular occupations significantly. The number of jobs for registered nurses, for example, is highly dependent on the growth of the hospital industry. Many occupations, however—from human resources managers to computer systems analysts—are found in nearly every industry.

Employment growth in industries depends on industry output (the total amount produced) and worker productivity (how much each worker produces). Laborsaving technologies and methods can increase productivity, limiting employment growth even as output increases. For example, even as agricultural output is projected to increase, employment on farms is projected to decline as advanced methods and machines reduce the number of workers needed to raise crops and livestock.

Likewise, employment in one industry can be affected by changing practices in another. For example, increased use of contractors and consultants has led to greater employment in the management, scientific, and technical consulting services industry. But this practice has led to reduced employment in the many industries that previously hired management and technical analysts as employees.

Industries shown in the charts are defined primarily according to the 2007 North American Industry Classification System (NAICS), a system used by the Federal Government to classify establishments into industry categories. Industries fall into either goods-producing or service-providing sectors.

# **Industry employment**

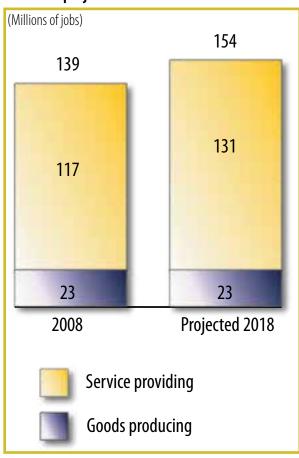
The goods-producing sectors are:

- ♦ *Construction*. Examples of establishments in this sector include electrical contracting firms and construction companies.
- ♦ *Manufacturing*. Examples include businesses that make computer chips, machinery, and other goods.
- ♦ *Natural resources and mining*. Establishments in this sector include farms, aquaculture companies, and oil and gas extraction companies.

The service-providing sectors are:

- ♦ *Educational services*. This sector includes local, State, and private schools and other providers of education.
- Financial activities. Included in this sector are finance, insurance, real estate, and rental services organizations.
- ♦ *Health care and social assistance*. Health care and social assistance providers—including public and private providers of health care and private providers of social assistance—are part of this sector. Examples include hospitals, doctors' offices, and assisted living facilities.
- ♦ *Information*. This sector includes print, software, and database publishing firms; movie, video, and sound production and distribution establishments; broadcasting and telecommunications providers; and information and data processing providers.
- ♦ *Leisure and hospitality.* Examples include hotels, restaurants, sports teams, theme parks, performing arts companies, and arcades.
- ♦ *Professional and business services.* Examples include temporary help firms, consulting services, and waste management establishments.
- ♦ *Public administration*. This sector consists of government establishments that administer programs and provide for public safety. Federal, State, and local government (except education and hospitals) are classified here.
- ♦ Trade, transportation, and utilities. Included here are wholesale and retail trade establishments, airports, messenger services, and power plants.

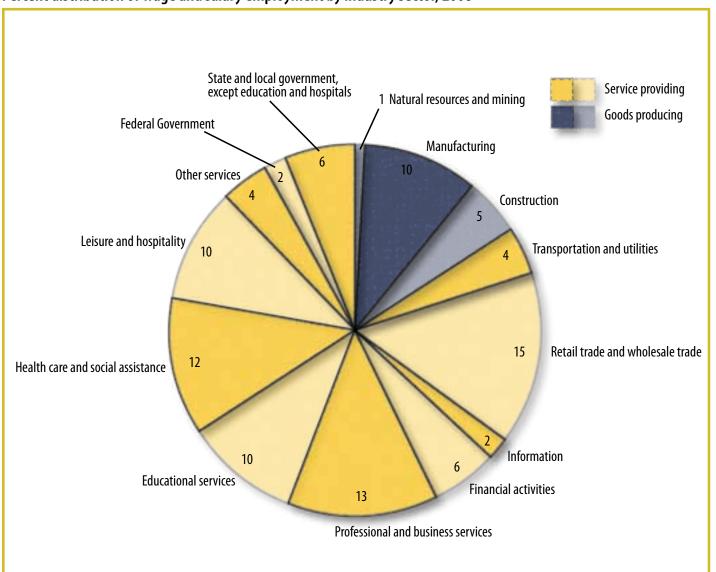
### Wage and salary employment by industry type, 2008 and projected 2018



Service-providing industries are projected to account for the most job growth between 2008 and 2018. In goods-producing industries, employment is projected to stay about the same over the decade.

# Employment, 2008

### Percent distribution of wage and salary employment by industry sector, 2008

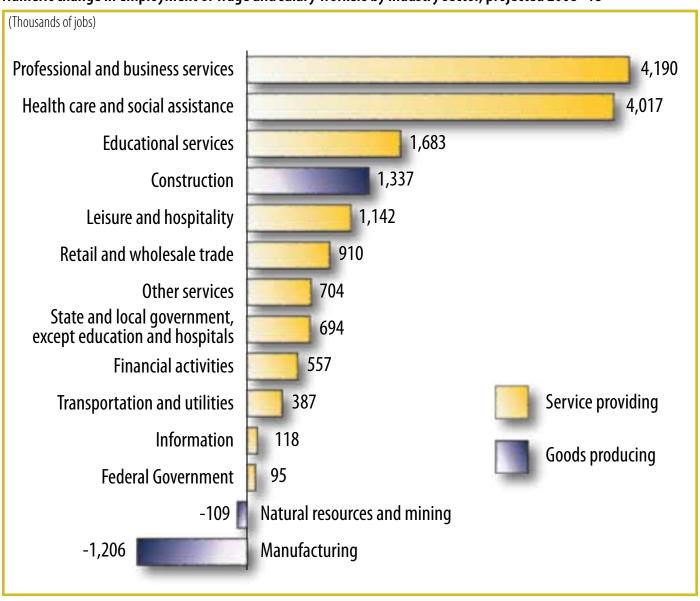


In 2008, about 15 percent of jobs were in retail and wholesale trade establishments.

# **Industry employment**

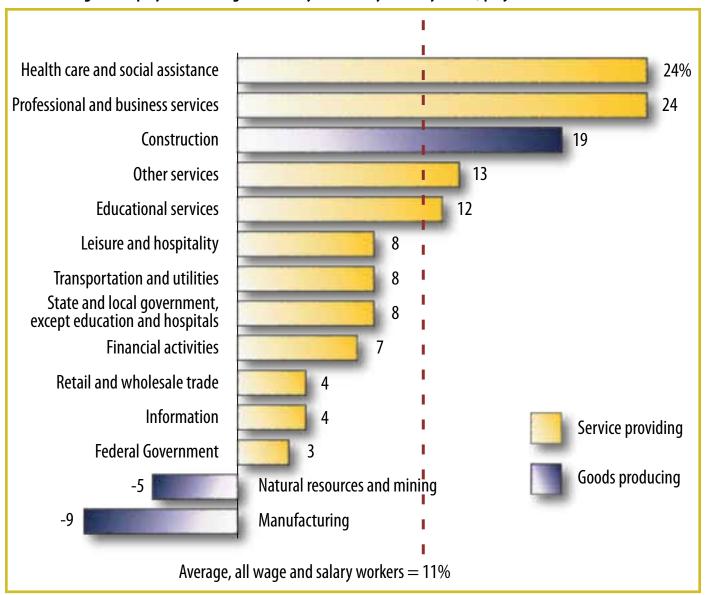
# **Employment change**

Numeric change in employment of wage and salary workers by industry sector, projected 2008–18



Employment is projected to increase by more than 4 million in both the professional and business services sector and the health care and social assistance sector. Growth in professional and business services is expected to be led by providers of administrative support services and consulting services. Growth in health care and social assistance is expected to be driven by increased demand from an aging population.

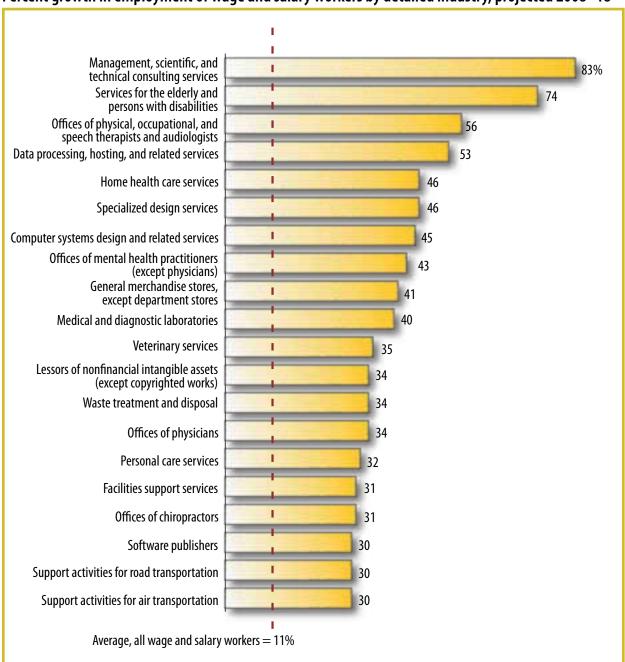
### Percent change in employment of wage and salary workers by industry sector, projected 2008–18



Both the health care and social assistance sector and the professional and business services sector are projected to grow more than twice as fast as the average for all industries between 2008 and 2018.

# **Fastest growing industries**

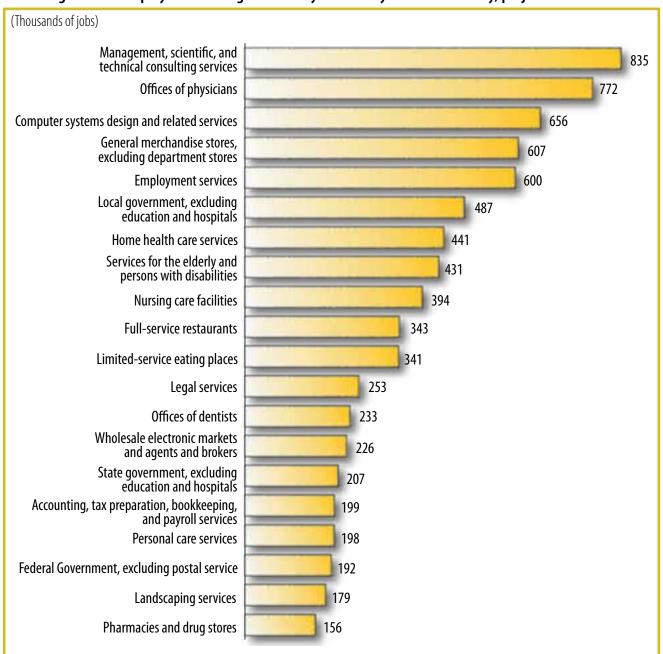
### Percent growth in employment of wage and salary workers by detailed industry, projected 2008–18



As this and the next chart show, all of the detailed industries that are expected to have the fastest growth and the most gains in employment between 2008 and 2018 are serviceproviding ones. The management, scientific, and technical consulting services industry is projected to grow the fastest and to gain the most jobs. Firms in this industry help companies respond to globalization, technological changes, and other business challenges.

# Most new jobs

### Numeric growth in employment of wage and salary workers by detailed industry, projected 2008–18

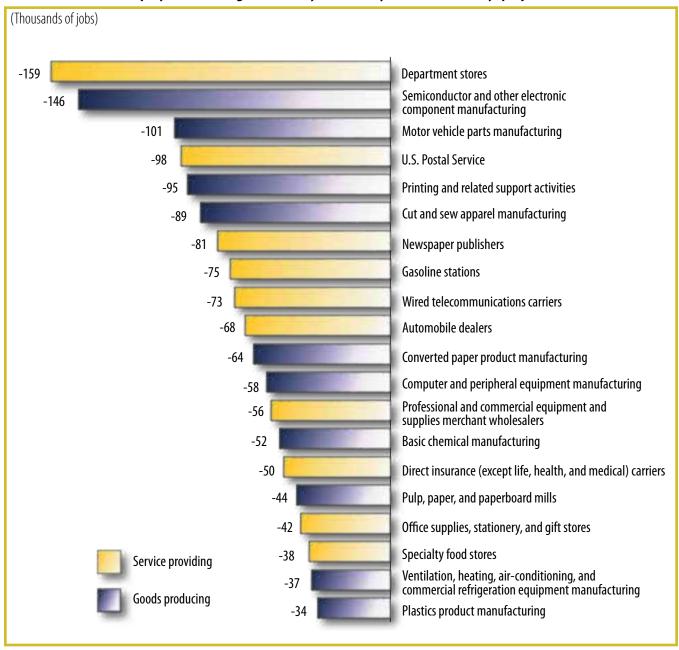


Of the 20 industries projected to gain the most jobs, 5 relate to health care. These industries are offices of physicians, home health care services, services for the elderly and persons with disabilities, nursing care facilities, and offices of dentists. The employment gains in these industries reflect an aging population's increasing demand for services.

# **Industry employment**

## **Most job losses**

### Numeric decline in employment of wage and salary workers by detailed industry, projected 2008–18



Declines in industry employment are usually the result of falling demand for specific goods and services, increased imports that reduce domestic production, or the use of technology that increases worker productivity. Declining employment may lead to unfavorable job prospects, but the need to replace workers who leave an industry often creates some job openings.



he economy's need for workers originates in the demand for the goods and services that they provide. So, to project employment, BLS starts by projecting the gross domestic product (GDP) for 2018. GDP is the value of the final goods produced and services provided in the United States.

Then, BLS estimates the size—in inflation-adjusted dollars—of the five major categories of production. The categories are:

- ♦ *Personal consumption expenditures.* This category includes purchases made by individuals, including goods (such as automobiles, clothes, and food) and services (such as education, healthcare, and rental payments).
- ♦ *Gross private domestic investment.* This category includes business investment in equipment and software; the construction of houses, factories, hospitals, and other structures; and changes in business inventories.
- ♦ Government consumption expenditures and gross investment. This category includes goods and services bought by Federal, State, and local governments.
- ♦ *Exports.* These are goods and services produced in the United States and purchased in foreign countries.
- ♦ *Imports*. Imports are goods and services produced abroad and purchased in the United States. Because GDP measures production in the United States, the value of imports is subtracted from the other four categories of GDP.

Next, BLS breaks down these major categories into more detailed ones, such as the production of automobiles or the provision of medical services.

Changes in the level and composition of production often affect industry employment levels. For example, an increased level of business investment in computer software may increase employment in the computer industry and in all those industries that provide inputs—either products or services—to the computer industry. In turn, employment in occupations in those industries would also grow.

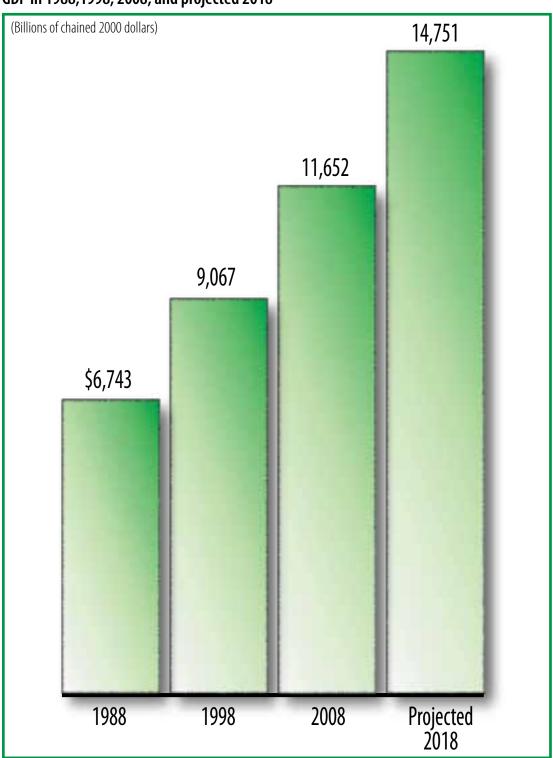
Industry employment levels are also affected by changes in labor productivity—the amount an employee produces per hour of work. Because of technological advances, for example, some industries are able to increase output with fewer employees.

Unlike previous sections, the growth charts in this section show annual rates of change instead of the percent change over the entire projections decade. Annual rates are used here, in part, because they are the measure used for other economic indicators, including inflation.

To show changes in demand more accurately, dollar amounts in these charts are given not in current dollars but in 2000 chain-weighted dollars. This means that amounts have been adjusted for changing prices over time.

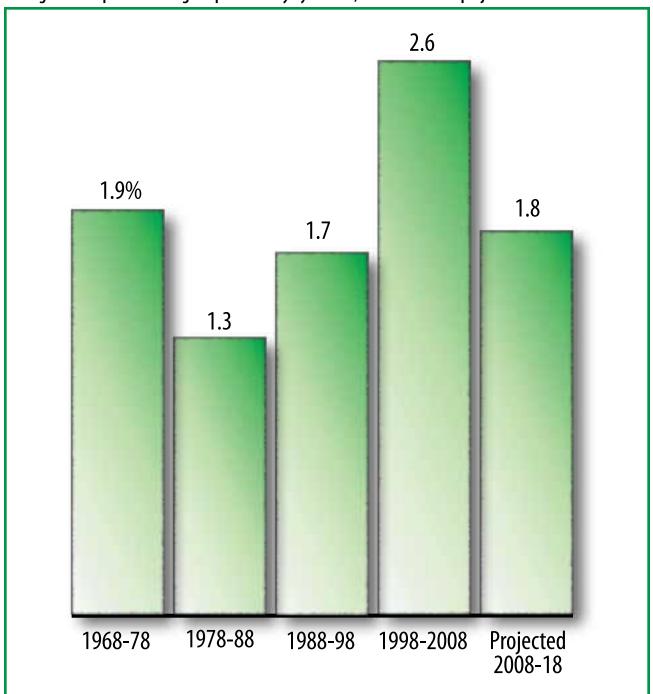
# **Overall economy**

### GDP in 1988,1998, 2008, and projected 2018



By 2018, the value of goods produced and services provided (gross domestic product, or GDP) in the United States is projected to reach nearly \$14.8 trillion.

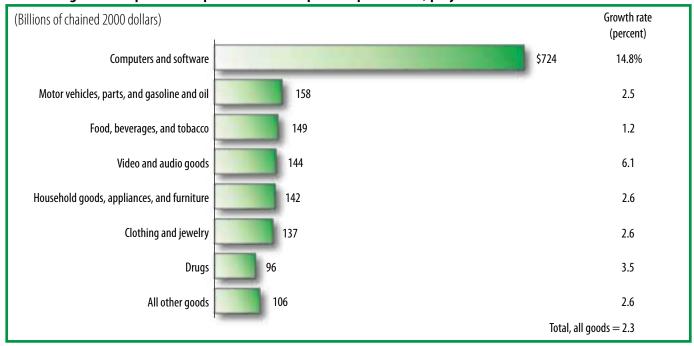
Average annual percent change in productivity by decade, 1968–2008 and projected 2008–18



Growth in GDP is due, in part, to increasing productivity. Productivity is projected to grow 1.8 percent annually over the 2008–18 decade. This rate is slower than the 2.6-percent average rate of growth over the 1998–2008 decade but is in line with growth rates from prior decades.

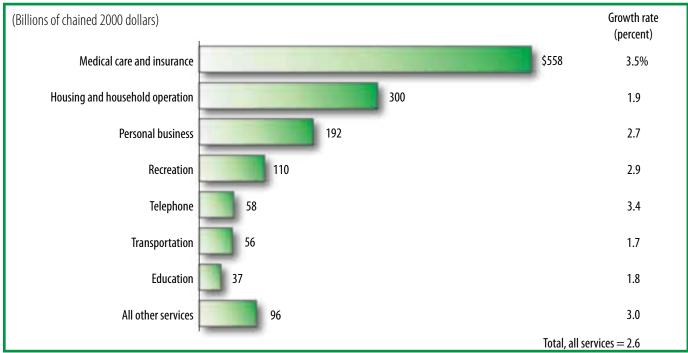
# **Overall economy**





Of all goods components, computers and software expenditures are expected to have the largest and the fastest growth. Contributing to this growth will be the continued expansion of the Internet and ongoing development of mobile technologies.

### Growth in services components of personal consumption expenditures, projected 2008–18

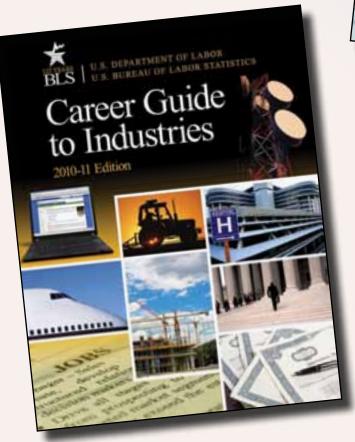


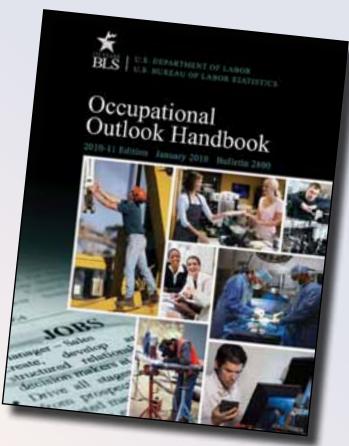
Of the services components, spending on medical care and insurance is expected to have the largest and fastest growth as the population ages.

### Other BLS publications describing the 2008–18 projections

This issue of the *Quarterly* is one of several BLS publications that include projections data. The others give more detail or present the projections from another point of view.

- ♦ The November 2009 issue of the Monthly Labor Review contains five articles related to the projections. The first summarizes the projections and is followed by four more detailed articles, each focusing on one major component: labor force, economic growth, industry output and employment, and occupational employment.
- ♦ The 2010–11 edition of the *Occupa*tional Outlook Handbook assesses job outlook for hundreds of occupations. It also discusses each occupation's work activities, working conditions, earnings, and educational requirements that people need to enter and succeed in the occupation.





- The 2010–11 edition of the *Career* Guide to Industries presents employment projections from an industry perspective. It provides details on employment, working conditions, occupations in the industry, training and advancement, earnings, and job outlook for 45 major industries.
- "The job outlook in brief" summarizes occupations covered in the Occupational Outlook Handbook. It includes employment data, projections, and a short description of prospective employment trends. The "Brief" will be presented in the spring 2010 Quarterly.

Each of these publications will be available online at no cost. Price and ordering information for the print versions will be published on the Employment Projections program's Web site, www.bls.gov/emp.



#### Choosing and changing jobs

Career myths and how to debunk them. Fall 05

Career planning the second time around. Summer 09

Gap year: Time off, with a plan. Fall 09

Employment matchmakers: Pairing people and work. Winter 07–08

Flexible work: Adjusting the when and where of your job. Summer 07

Job openings by industry, March 2008 (chart). Summer 08

Résumés, applications, and cover letters. Summer 09

What can I do with my liberal arts degree? Winter 07–08

### **College graduates**

2004–14 job outlook for college graduates, The. Fall 06

Career beginnings for business majors. Winter 08–09

Job outlook by education, 2006–16. Fall 08

What can I do with my liberal arts degree? Winter 07–08

### **Earnings and benefits**

An overview of employee benefits. Summer 05

Beyond averages: Other ways to look at occupational wages. Winter 07–08

Class of 1993: Earnings and occupations by college major, 1 and 10 years after graduation, The.

Summer 08

Earnings data from BLS: What we have and how to find it. Summer 07

Education and income: More learning is key to higher earnings (chart). Fall 06

Good-for-you benefits on the rise (chart). Spring 07

Health benefit costs by occupation: An employer's perspective (chart). Fall 08

High-paying occupations with many job openings, projected 2004–14 (chart). Spring 06

Large occupations with higher-thanmedian wages, May 2008 (chart). Fall 09

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Work more, earn more: Occupations that pay a premium for longer workweeks. Winter 06–07

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2004–14 job outlook for college graduates, The. Fall 06

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Admissions consultant. (You're a *what*?) Spring 08

Athletic trainers: Providing healthcare for athletes of all kinds. Spring 05

Auctioneer. (You're a *what*?) Fall 06 Avalanche forecaster. (You're a *what*?) Winter 06–07

Build machines, earn a living: Opportunities in machinery manufacturing. Summer 05

Career beginnings for business majors. Winter 08–09

Careers for creature lovers. Winter 06–07

Careers for scientists—and others—in scientific research and development. Summer 05.

Careers in auto racing: Work in the fast lane. Fall 09

Careers in forensics: Analysis, evidence, and law. Spring 09

Careers in homeland security: Many jobs, one mission. Summer 06

Careers in the green industry: Jobs for people with green thumbs. Spring 05

Cartoonist. (You're a *what*?) Fall 08 Cobbler. (You're a *what*?) Summer 07

Commercial diver. (You're a *what*?) Winter 07–08

Employment matchmakers: Pairing people and work. Winter 07–08

Employment, trends, and training in information technology. Spring 09

### See the complete *OOQ* Online index at www.bls.gov/ooq/ooqindex.htm



Farming in the 21st century: A modern business in a modern world. Spring 05

Framer. (You're a what?) Spring 07 From court reporting to Web casting: Captioning in the new millennium. Summer 06

Futurist. (You're a what?) Spring 09 Geography jobs. Spring 05

Going "green": Environmental jobs for scientists and engineers. Summer 09

Groupmakers and grantmakers: Jobs in advocacy, grantmaking, and civic organizations. Fall 05

Healthcare jobs you might not know about. Summer 08

Health educators: Working for wellness. Summer 07

Home stager. (You're a what?) Summer 08

Image consultant. (You're a what?) Fall 05

Interior designers: Sprucing up space. Fall 05

Jobs in weddings and funerals: Working with the betrothed and the bereaved. Winter 06-07

Length of unemployment by occupation, 2006 (chart). Winter 06-07

Limnologist. (You're a what?) Winter 08 - 09

Making the news: Jobs in TV journalism. Spring 09

Meeting and convention planners. Fall 05

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Military training for civilian careers (Or: How to gain practical experience while serving your country). Spring 07

Model maker. (You're a what?) Spring 05

More than food and drink: Careers in restaurants. Spring 09

Occupational employment of workers without disabilities and workers with disabilities, April 2009 (chart). Summer 09

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