

The 2006–16 job outlook in brief

The population grows and ages, technology advances, and businesses find new ways to compete. Trends like these affect the future job market. And understanding such trends can give you an edge when planning your career.

The *Occupational Outlook Handbook*—published every 2 years by the U.S. Bureau of Labor Statistics (BLS)—features projections of long-term job growth and employment prospects for 270 occupations. This special issue of the *Occupational Outlook Quarterly* (OOQ) includes a table summarizing that information so readers can compare occupations at a glance.

The next few pages will help you get the most out of that table. Read on to learn what BLS projections mean, why employment is changing, and how BLS makes its projections.

Understanding employment projections

BLS projections give a broad overview of future employment conditions: They show total growth over the entire 2006–16 decade, but they do not account for variation from one year to another. Also, the projections are for the entire country. Because conditions vary significantly by location, jobseekers should supplement this general analysis with more specific information from State workforce agencies and career counselors. (See, for example, www.careeronestop.org.)

BLS projections show expected job growth and decline in various occupations. Usually, occupations that are gaining jobs offer more opportunities for workers than other occupations do. Each job that is added to a growing occupation equals an opening for a worker trying to enter that occupation.

But job growth tells only part of the story. Opportunities in any occupation are also shaped by how many of today's workers will need to be replaced when they retire or leave their occupations for other reasons. Job prospects also depend on how much competition there is for jobs. An occupation is more difficult to enter if many people want to work in it or if many people qualify for it.



Understanding job growth

In the table, projected job growth or decline is shown in two ways: as a number and as a percent. The number shows the actual number of jobs projected to be added or lost in an occupation.

For example, between 2006 and 2016, employment of registered nurses is expected to grow by more than 587,300 jobs, as the total number of nurses increases to provide healthcare to a growing and aging population.

In contrast, percent change shows the rate of job growth or decline over the projections decade. It illustrates trends in employment. Employment of computer software engineers is expected to grow about 38 percent, much faster than the 10-percent average for all occupations. This projected growth reflects continuing demand for new and better software to help consumers and businesses do more with their computers and other technological devices. It is expected that more workers will be needed to meet this demand.

A fast growth rate for an occupation does not always translate into lots of jobs. Employment of radiation therapists, for example, is expected to grow by 25 percent—much faster than average. But because that occupation is small, its growth rate reflects relatively few (about 3,600) new jobs.

Similarly, an occupation with a slow rate of growth can gain many jobs. Employment of sales worker supervisors, for example, is projected to grow about 4 percent, more slowly than the average for all occupations, over the 2006–16 decade. But because the occupation is large, that growth translates into more than 90,500 new jobs.

Job prospects

Increases and decreases in the number of jobs affect how easy it is to enter an occupation, but the total number of jobs is not the only factor. Employment prospects are also affected by how many workers leave and need to be replaced and by how many people want and qualify for jobs.

Replacement needs. Most of the job openings for people entering an occupation for the first time come not from job growth but from the need to replace workers who retire or permanently leave the occupation for other reasons.

Replacement needs sometimes provide numerous job openings even in an occupation that is projected to decline. The total number of machinists, for example, is expected to decline in the coming decade. But the occupation still offers good job prospects because many of today's machinists are expected to retire soon, and some of them will need to be replaced. And occupations that are large, have high worker turnover, or have many workers of retirement age offer many opportunities, no matter what their level of growth.

Competition. If many qualified people are vying for jobs in an occupation, that occupation might be harder to enter. Glamorous occupations, such as actors or commercial designers, are examples.

If an occupation has specific entry



requirements, economists can sometimes estimate how many people will qualify for future jobs and can compare that number with the number of expected job openings. This estimate of the expected supply of workers is based on historical data about the number of college degrees or technical certifications granted in subjects related to the occupation, information from technical journals and other relevant literature, interviews with occupational experts, and the judgment of the economists who study the occupation.

Why employment is changing

Occupations gain or lose jobs because of different, often conflicting, forces. Demand for what an occupation's workers produce drives up the number of jobs in an occupation. At the same time, some innovation might make each worker more productive and, thus, reduce the number of jobs needed to create goods or provide services. Demand and innovation combine to change employment and affect job prospects.

Similarly, a change in technology, business practices, population, or some other element can drive growth in some occupations while slowing it in others. Automation, for example, slows growth in some production occupations but speeds growth in occupations for workers who install or repair automation equipment.

This section highlights three of the most prevalent influences on employment gains or losses: changes in the demand for goods and services, increased worker productivity, and new business practices. Each is discussed frequently in the outlook table.

Demand for goods and services. As the population grows, more people will need goods and services, creating jobs for the workers who produce those goods and provide those services. This demand will generate employment growth in most occupations.

For example, a growing population's demand for more roads increases the need for construction workers, surveyors, and landscape architects.

Beyond population growth, population change is another factor affecting the products and services people need. For instance, as the baby boomers age and the number of older people increases, the demand for healthcare occupations is expected to increase. Personal and home health aides, for example, are projected to gain jobs faster than any other occupation.

At the same time, the number of children will increase, although more slowly, and those children will need education and supervision, creating many new jobs for teachers and childcare workers.

Another factor affecting the demand for goods and services is economic growth. An increase in business activity leads to growth in



many occupations, from secretaries to lawyers to computer support workers. Rising incomes, too, spur employment in occupations related to luxury goods and financial planning.

Technology also can increase demand for occupations. Advances in biotechnology, for example, are expected to increase demand for engineers and medical scientists who find practical applications for those advances. And continuing development in telecommunications technology and the Internet are spurring demand for writers, artists, and designers who create content for Web sites and other media.

Changes in the law also affect the goods and services demanded and the jobs created. Stricter finance laws heighten demand for accountants and auditors, for instance.

In the same way, shifting consumer tastes affect what we buy and, thus, affect employment. Retirees relocating to warmer climates, for example, will create demand for more pest control workers to cope with the insects that thrive in those environments.

Productivity. Computers, automated machinery, and other laborsaving technology reduce the number of workers needed to produce goods and services, thus lowering employment. This is one reason why jobs for farmers are projected to decline even as the production of food increases.

Rising worker productivity slows the growth of many occupations—from assemblers, who use machines to produce more



goods, to drafters, who use software to create better blueprints in less time.

Business practices and production methods. Sometimes, organizations change the way in which they produce goods or provide services, and establishments might begin to hire more workers in one occupation to stay competitive. For example, rapid employment growth for management analysts is projected as organizations attempt to improve performance by consulting outside experts.

How BLS develops projections

BLS economists analyze changing conditions, including the ones described above, to create specific estimates of job growth and decline. How do they do it? The process involves several steps.

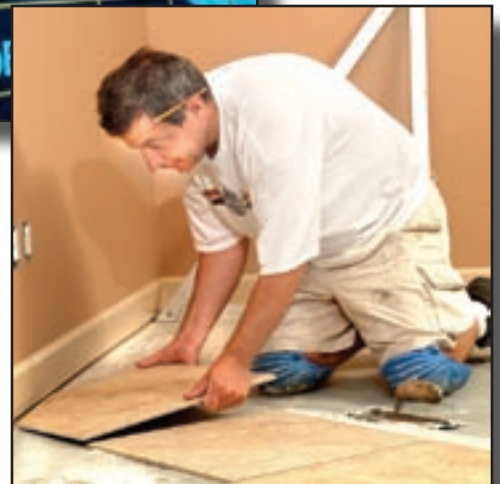
Economists begin by estimating the total number of available workers based on popu-

lation growth and labor-force participation rates. Based on trends, they project demand for goods and services. Economists next project how employment will grow in the industries that provide those goods and services.

Finally, BLS economists analyze what types of work employers in those industries need. They estimate how many of an industry's jobs will be in a given occupation. They do this by researching production methods, business practices, and other factors—and how they are changing.

When making projections, economists rely on ongoing trends. But trends can change unexpectedly because of shifts in technology, consumer preferences, or trade patterns and because of natural disasters, wars, and other unpredictable events.

For more information about the employment projections program, visit online at www.bls.gov/emp or call (202) 691-5700.



Guide to the table

The table that follows is divided into sections that correspond to the 10 groups in the Standard Occupational Classification System. Use the index beginning on page 46 to find a specific occupation.

Employment data

The table provides a snapshot of how employment is expected to change in 270 occupations. For each occupation, it shows estimated employment in 2006, the projected numeric change in employment (how many jobs are expected to be gained or lost) over the 2006–16 decade, and the projected percent change in employment (the rate of job growth or loss). Then, a key phrase describes the rate of job growth as compared with other occupations (see box) and is followed by a summary of job prospects and factors affecting employment.

The employment data in the table come from the BLS National Employment Matrix, except where noted. The symbol ★ marks the occupations that are projected to grow much faster than average or to gain at least 200,000 new jobs.

Occupational groups

Occupations are grouped according to the similarity of the tasks that workers perform. The table lists employment and outlook summaries for occupations in the following 10 groups:

Management, business, and financial.

Workers in these occupations establish plans and policies, manage money, and direct business activities.

Professional and related. Workers in this group perform a variety of skilled functions, such as diagnosing and treating illness, teaching, or designing.

Service. This group includes workers who assist the public in a number of ways, from providing grounds maintenance to providing community safety.

Sales and related. Workers in this group sell goods and services.

Office and administrative support. In these occupations, workers prepare and

organize documents, provide information to the public, gather and deliver goods, and operate office software and equipment.

Farming, fishing, and forestry. Workers in this group tend and harvest renewable resources and manage forests and public parks.

Construction trades and related. Workers in these occupations build and repair homes, roads, and office buildings and other structures.

Installation, maintenance, and repair. These workers install and repair all types of goods and equipment.

Production. By operating machines and other equipment, workers in this group assemble goods or distribute energy.

Transportation and material moving. Workers in these occupations move people and materials.

The table also includes a statement about opportunities in the U.S. Armed Forces.

Key phrases in the “Brief”

For descriptions about changing employment between 2006 and 2016:

<i>If the description reads...</i>	<i>Employment is projected to...</i>
Much faster than average	Increase 21 percent or more
Faster than average	Increase 14 to 20 percent
About average	Increase 7 to 13 percent
Slower than average	Increase 3 to 6 percent
Little or no change	Increase or decrease 2 percent
Moderate decline	Decrease 3 to 9 percent
Rapid decline	Decrease 10 percent or more

For descriptions about opportunities:

If an occupation is projected to have “very good” or “excellent” opportunities, then many openings are expected relative to the number of jobseekers. The reference does not address the quality of job openings or of the occupation’s earnings.