The 2010–20 job outlook in brief

It can be difficult choosing a career. When planning for the future, knowing which occupations are expected to grow—and which aren't—is valuable information.

The *Occupational Outlook Handbook* (*OOH*), published every 2 years by the U.S. Bureau of Labor Statistics (BLS), features projections of job outlook and employment prospects. The 2012–13 edition of the *OOH* contains the 2010–20 employment projections and detailed information for almost 350 occupations, including each occupation's job tasks and wages, along with the education and training typically required to enter it.

This special issue of the *Occupational Outlook Quarterly* (*OOQ*) includes a table highlighting 2010 employment, 2010–20 projections, 2010 wage data, and education and training information so you can compare occupations at a glance. Unlike previous presentations of the "job outlook in brief," the table in this issue provides less narrative but more data for each occupation. The guide on pages 6 and 7 explains the information available in the table.

The next few pages explain what the BLS projections mean, why employment is changing, how BLS makes its projections, and where to find more projections information.

Understanding the employment projections

BLS projections give a broad overview of future employment conditions. The projections show expected changes in employment over the entire 2010–20 decade, but they do not depict variation from one year to another. To understand the projections, you need to know how BLS shows projected employment change and why employment changes.

Projected employment change

The projections show expected job growth or decline in hundreds of occupations. Usually, occupations that are gaining jobs offer more opportunities for workers than declining occupations do. Each job that is added to an occupation equals an opening for a worker trying to enter that occupation.

In the table, projected employment change over the 2010–20 decade 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. Percent change shows the rate of expected job growth or decline, whether very fast, very slow, or somewhere in between.

Sometimes, occupations with large projected changes in employment are also growing or declining at a fast rate. For example, between 2010 and 2020, employment of personal care aides is expected to grow by almost 607,000 jobs—one of the largest projected gains of any occupation. And the occupation's projected growth rate of 70 percent makes it the fastest growing one.

Other times, there is little correlation between projected numeric changes in employment and rapid growth or decline. Biomedical engineers, for example, are projected to add about 10,000 jobs over the

decade—a relatively small gain. But that increase represents growth of 62 percent, much faster than the average. Cashiers are projected to gain 250,000 jobs but have a slower-than-average growth rate of 7 percent.

In general, occupations with the greatest numeric changes are those that already have large numbers of workers. The fastest rates of change are usually in occupations that have fewer workers (as is the case for biomedical engineers).

Why employment changes

Occupations gain or lose jobs because of different, often conflicting, forces. Demand for goods and services drives up the number of jobs in an occupation. But a new innovation might make each worker more productive and, thus, reduce the number of workers needed to create goods or provide services. Demand and productivity can combine to change employment and affect job prospects.

Demand for goods and services. As the population grows, so too does demand for many goods and services. This increased demand often results in a greater need for workers who produce those goods and provide those services—and this, in turn, generates employment growth in many occupations. For example, an increasing number of children needing education increases the demand for elementary and secondary school teachers.

In the same way, shifting tastes change the goods and services that consumers demand. These changes then lead to changes in employment. For example, demand for sophisticated electronics, such as high-definition televisions and video recorders, is expected to drive employment growth for home entertainment installers and repairers.

Increased worker productivity. New organizational structures, increased education and training, and labor-saving technologies, such as computers and automated machinery, might reduce the number of workers needed to produce goods and provide services, thus lowering employment. For example, employment of printing machine operators is expected to decline as increasing printer speeds and automation require fewer workers to keep up production levels.

Rising worker productivity slows job growth in many occupations. For example, the growth of loan officers will be limited by underwriting software, which allows loan officers to evaluate loans more quickly than they could previously.

How BLS develops projections

BLS economists analyze changing conditions to create 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 population growth and labor force participation rates. Considering trends, economists project demand for goods and services. They next project how employment will change in the industries that provide those goods and services.

Finally, BLS economists analyze what types of workers employers in those industries need. Economists estimate how many of an industry's jobs will be in a given occupation by researching production methods, business practices, and other factors—and analyzing how these elements 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 **www.bls.gov/emp** or call (202) 691–5700.

How the recent recession affects the projections

When developing long-term projections, BLS focuses 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 fluctuations in the economy.

BLS prepares new projections every other year, with the base year of the projections decade being an even-numbered year. For this set of projections, the base year, 2010, follows a severe downturn in the U.S. economy. Total employment of wage and salary workers fell by nearly 7.8 million between 2007 and 2010.

The projected changes in employment between 2010 and 2020 include regaining some jobs that were lost during the downturn. For example, the recent recession had a particularly severe impact on jobs in construction. Although employment in construction is projected to grow rapidly, it is not expected to return to its pre-recession employment level by 2020. Similarly, employment in the transportation and material moving and production occupations groups is also expected to grow, but not enough to return to 2006 levels.

Individual industry and occupation groups were affected in different ways by the recession. Some were severely affected, some mildly so, and others seem not

to have been affected at all. Some industries and occupations are not expected to recover completely. Others are expected to recover and have continued growth, and still others are projected to keep on growing.

For more information

BLS projections are used by high school students and their teachers and parents, college students, career changers, and career development and guidance specialists. In addition, other federal agencies, researchers, and academics use the projections to understand trends in the economy and labor market.

Beyond the "Brief"

This issue of the *OOQ*, and the 2012–13 edition of the *OOH* on which it is based, are among several BLS presentations of the 2010–20 projections.

The winter 2011–12 issue of the *OOQ* includes charts that show detailed projections of occupations, the labor force, industries, and the economy. Charts include those that project the fastest growing occupations, occupations adding the most new jobs, occupations with the most job openings for workers new to the occupation, and occupational job growth and job openings by education. This issue is available online in both PDF and HTML formats at **www.bls.gov/ooq/2011/winter/home.htm**.

The January 2012 issue of the *Monthly Labor Review* contains articles that provide more analytical and technical details of the projections. These articles are available online at **www.bls.gov/opub/mlr/2012/01/home.htm**.

For tables with detailed, comprehensive statistics used in preparing the projections, see **www.bls.gov/emp/tables.htm**. Projections methodology is available at **www.bls.gov/emp/ep_projections_methods.htm**.

Projections by state

State workforce agencies use the BLS projections, which are national in scope, to prepare their own projections. Together, state and BLS projections are used by policymakers and education and training officials to make decisions about education and training policy, funding, and program offerings.

For state-specific projections, visit **www.projectionscentral.com**. (Current state projections feature 2008–18 data; projections based on 2010–20 data will not be available until next year.)

A guide to the table

The table that follows is divided into sections by occupational group, with an overview for each group and detailed information for the occupations in that group.

Occupational groups

Occupations that have similar job duties are grouped according to the tasks that the workers in them perform. The table lists these 22 occupational groups in the order they appear in the Standard Occupational Classification (SOC) system. The text introducing each group gives an overview of the group.

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

Occupations

Each of the 341 occupations profiled in the *OOH* is included in the table. The data and other information in the table give a snapshot of the occupation's important details.

Employment data. For each occupation, the table shows estimated employment in 2010, the projected numeric change in employment (that is, how many jobs are expected to be gained or lost) over the 2010–20 decade, and the projected percent change in employment (that is, the rate of job growth or loss). A key phrase also describes the rate of job growth as compared with other occupations. (See page 7.)

The employment data in the table come from the BLS National Employment Matrix, except where noted.

Wages. Median annual wage data in the table are 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.

For the occupational groups, the data box identifies which occupation in the group had the highest median annual wage in May 2010. The median annual wage for each individual occupation is provided in the table. In May 2010, the median annual wage for all workers was $33,840. Some occupations show that their wage was greater than or equal to (≥) $166,400 because the OES program does not publish wage data above $166,400.

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 the table, but overtime and nonproduction bonuses are not. In addition, wages in these charts are for wage and salary workers only. Self-employed workers are not included in these measurements.

Education, experience, and training. This set of projections introduces a new BLS system for assigning occupations to education, experience, and on-the-job training categories.

Each occupation is assigned to 1 of 8 education categories. These assignments represent the typical level of education most workers need to enter the occupation. They are shown in the table as follows: doctoral or professional degree; master's degree; bachelor's degree; associate's degree; postsecondary non-degree award; some college, no degree; high school diploma or equivalent; and less than high school.

To enter some occupations, workers typically need experience in a related one. Assignments in the table identify occupations in which such experience is required or in which related experience is a commonly accepted substitute for formal education or training. The assignments are more than 5 years, 1 to 5 years, less than 1 year, or none.

Some workers receive training on the job that helps them acquire the skills they need to become competent in the occupation. Assignments for on-the-job training typically needed to attain competency are indicated in the table as follows: internship/residency, apprenticeship, long-term, moderate-term, short-term, or none.

For additional information, see **www.bls.gov/emp/ep_education_training_system.htm**.

Key phrases in the "Brief"

For descriptions about changing employment between 2010 and 2020:

If the growth adjective reads...	Employment is projected to...
Much faster than average	Increase 29 percent or more
Faster than average	Increase 20 to 28 percent
About as fast as average	Increase 10 to 19 percent
Slower than average	Increase 3 to 9 percent
Little or no change	Decrease 2 percent to increase 2 percent
Decline moderately	Decrease 3 to 9 percent
Decline rapidly	Decrease 10 percent or more