The 2002-12 job

by William Lawhorn

If you're looking for a career, it helps to know which ones offer the best prospects. That's where the Bureau of Labor Statistics (BLS) can help. The *Occupational Outlook Handbook* provides details on projected job growth and employment prospects for about 270 occupations. This article summarizes that information in a table for readers to compare occupations at a glance.

The next four pages can assist you in getting the most out of the table. Read these pages first to learn what affects job prospects, why employment changes, and how BLS makes its projections. The guide to

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outlook in brief

using the table will help you to identify what information is presented. Following the table are an index and a list of other BLS publications that include data from the 2002–12 projections.

Understanding job prospects

These projections give a broad overview of future employment conditions: they show total growth over the entire 2002–12 decade. They do not account for variation from one year to another. Also, the projections are for the whole country; conditions vary significantly by location.

Jobseekers should supplement this general information with more specific information from State employment agencies and career counselors.

Usually, occupations that are growing offer better opportunities for jobseekers. That's because each job that is added to a growing occupation equals another opening for a worker who is trying to enter that occupation. But job growth is measured in different ways, and it tells only part of the story. Opportunities in any occupation also are shaped by how many workers leave permanently and need to be replaced and by how much competition there is for

openings.

Measuring job growth. In the table, projected change in the number of jobs for each occupation is shown in two ways: by number and by percent.

Numeric change shows the actual number of jobs projected to be added or lost in an occupation, regardless of its rate of growth. For example, employment of bookkeeping, accounting, and auditing clerks is expected to grow by over 59,000 jobs. Yet this large occupation is projected to grow only 3 percent, more slowly than the average for all occupations, over the 2002–12 projections decade.

In contrast, percent change shows the rate of growth or decline over the projections period. It illustrates trends and employment changes, but a high percent-growth rate does not always translate into lots of jobs. Employment of biomedical engineers, for example, is expected to grow 26 percent—faster than the average for all occupations. But because the occupation is small, that projected growth rate reflects relatively few (about 2,000) new jobs.

Replacement needs. Most openings for jobseekers entering an occupation for the first time come from the need to replace workers who retire or permanently leave the occupation for other reasons. These "replacement needs" sometimes can provide numerous job opportunities even in an occupation that is projected to decline, such as stock clerks and order fillers, for which replacement needs are expected to be the primary source of job openings.

Because of the need to replace workers, large occupations and occupations that have high worker turnover usually offer many opportunities no matter what their level of growth. Similarly, occupations that have many older workers often offer good opportunities because those workers will retire sooner than younger workers. For this reason, tool and die makers—whose occupation is projected to have little or no growth—are expected to have excellent prospects.

Competition. If many qualified people are vying for jobs in an occupation, it may be harder to enter. If an occupation has specific entry requirements, economists can sometimes estimate how many people will be qualified for future jobs and then compare that number to the number of expected job openings. Analyses are based on information obtained from technical journals and other relevant literature, interviews with occupational experts, historical data, and the judgment of the economist who studied the occupation.

Why employment changes

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

Similarly, a single 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 in which workers 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, productivity, and business practices.

Demand for goods and services. Occupations grow and contract, in large part, because people, governments, and businesses change the types of goods and services that they buy. And factors that affect demand also affect employment. A demand for more houses, for example, increases the need for construction workers. Demand for education increases the need for teachers.

Population change is one factor that affects demand—and employment. As the number of older people grows, for example, services related to

healthcare are expected to be in greater demand. This population change is expected to drive job growth in many health-related occupations, including that for medical assistants, who are expected to have faster employment growth than any other occupation.

Conversely, a growing number of young people will need education and supervision, creating many new jobs for teachers and child care workers.

Demand also grows because of increases in the population as a whole. More people mean that more goods and services will be needed, and more workers will be needed to provide them.

Economic trends are another factor affecting demand. Rising income spurs employment of financial planners and restaurant workers, for example. Technology also can increase demand. In the case of atmospheric scientists, for example, better weather-prediction methods are increasing the accuracy of predictions and causing businesses to hire more weather forecasters. Similarly, because of Internet and telecommunications technology, more writers, artists, and designers are needed to create content for Web pages and other media.

If demand for a good or service does not increase, employment often does not grow in related occupations. For example, the lack of new nuclear power plants means that nuclear engineers are not expected to have much job growth over the 2002–12 decade.

Many other factors, from changes in laws to changes in consumer tastes, also affect demand and employment.

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 demand for food increases.

Business practices. Sometimes, organizations change the way in which they produce goods and provide services. Establishments might begin to use more of one occupation and less of another to reduce costs; for example, libraries are shifting some tasks from librarians to library technicians and assistants, decreasing employment in one occupation and increasing employment in others. In another instance, general office clerks are now able to take on the tasks of other, more specialized clerks.

The BLS projections process

BLS economists project employment by analyzing past trends and researching how conditions are changing. The process involves several steps. First, economists estimate the total number of available workers based on population growth and labor force participation rates. Next, economists estimate the total future demand for goods and services produced in the United States. Third, they project demand for specific goods and services.

Based on estimates of which goods and services will be demanded, the economists next project how employment will grow in the industries that provide them. Finally, BLS economists analyze how much, or how little, jobs will grow in the occupations that those industries use. They do so by researching how production methods, business practices, and other factors are changing.

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

On the whole, however, BLS employment projections are more accurate than not. The pace of actual growth or decline is often faster or slower than projected, but the direction in which an occupation is expected to change is usually on target. Comparing the projections with the actual data is the final step in the projections process. The most recent article studying the accuracy of past projections is "The 1988–2000 employment projections: How accurate were they?" in the spring 2003 *Occupational Outlook Quarterly*, online at **www.bls.gov/opub/ooq/2003/spring/art01.pdf**.