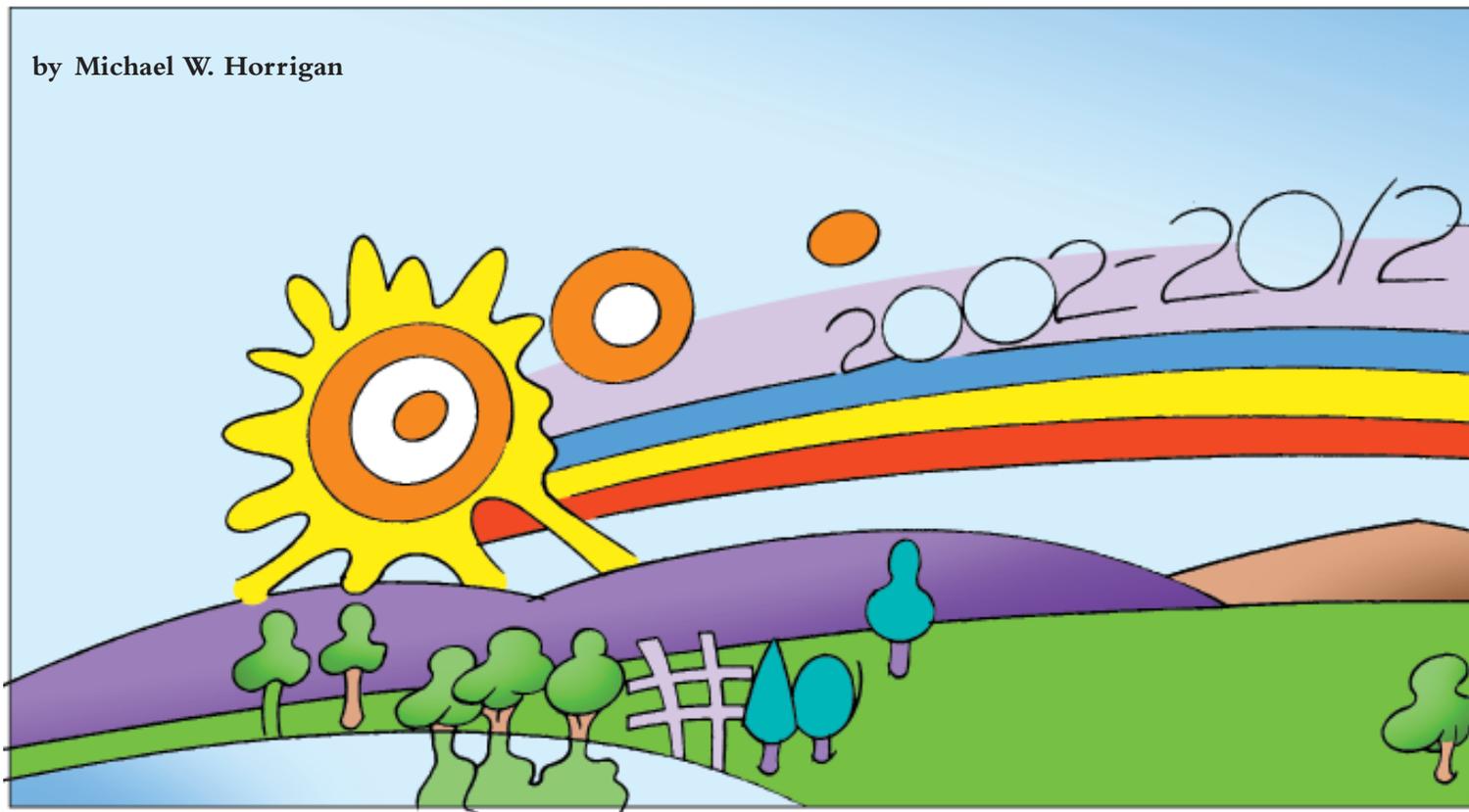


Introduction to the projections

by Michael W. Horrigan



Fluctuation in the U.S. economy is nothing new. When it comes to the things we produce and the work we perform, in fact, the one constant is change. The predominant industries and occupations of the present—and the future—are different from those of 100 years, 60 years, and even 10 years ago:

- ◆ At the turn of the last century, 40 percent of all U.S. workers were employed in agriculture. Today, fewer than 2 percent work in that industry.
- ◆ At their height during World War II, manufacturing industries employed nearly 4 of every 10 workers in this country. By 2002, the figure had fallen to 1 of every 9 workers.
- ◆ In 1994, there were about 1.4 million computer specialists. By the end of the decade, that number had more than doubled, rising to more than 2.9 million workers.
- ◆ Over the 2002-12 decade, the Bureau of Labor Statistics (BLS) projects that employment in

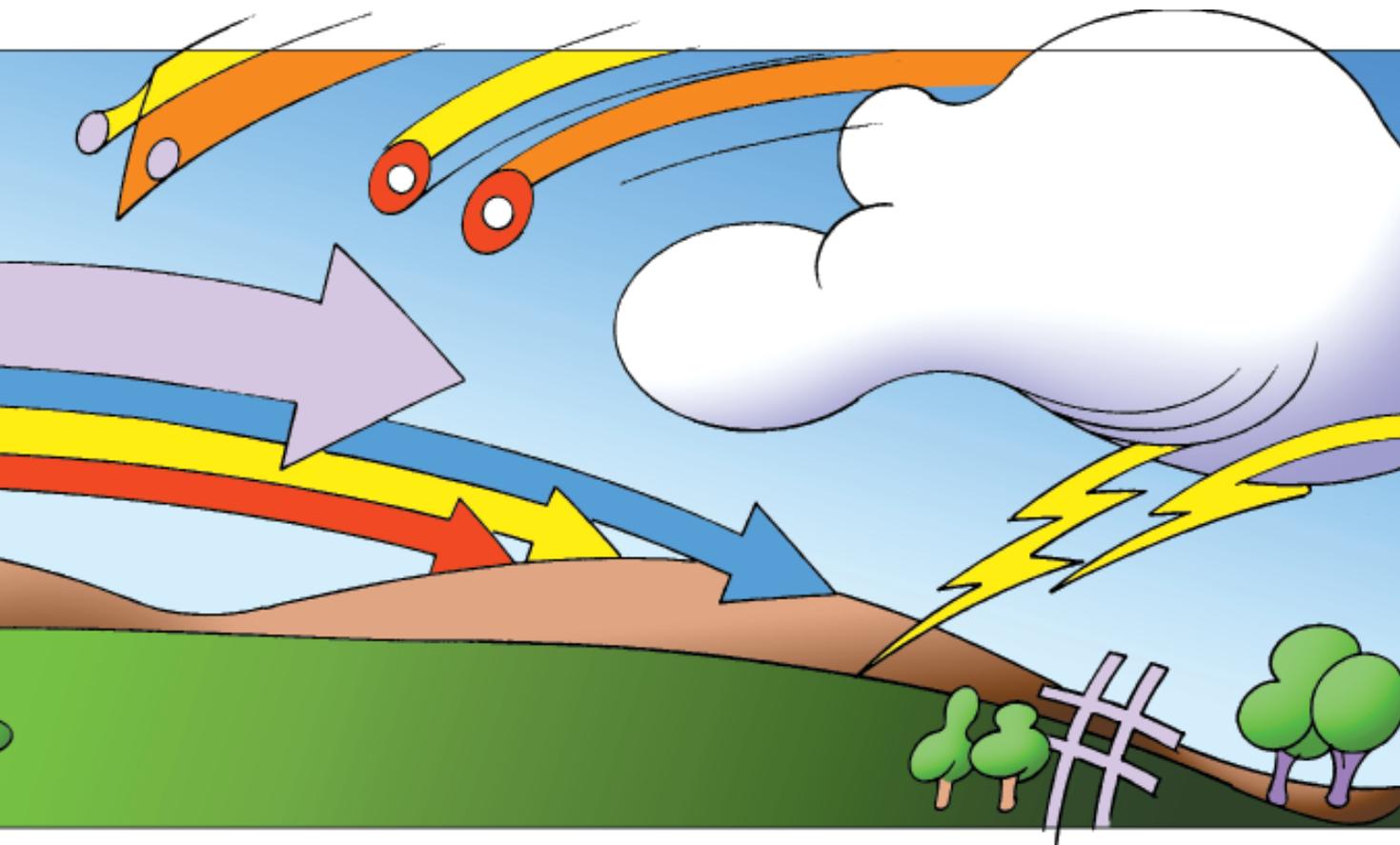
healthcare occupations will grow by 2.9 million, an increase of about 29 percent.

The pace of employment change is not always so dramatic, especially in the shorter term. But because of the dynamic nature of the U.S. economy, the speed of technological innovation, and the changing demands for skills by employers, it is essential that the best and latest information is made available to individuals who are making decisions about education, training, and careers.

This special issue of the *Occupational Outlook Quarterly* provides a graphic summary of the latest employment projections published by BLS, those covering the decade from 2002 to 2012. These projections, which are updated every 2 years, continue a nearly 60-year tradition of providing advice to individuals who are entering the job market, changing careers, or making further education and training choices.

First created to assist World War II veterans in re-entering the world of work, the BLS projections program has grown steadily. What began as simple descriptive material about available occupations now uses a model-based approach to provide projections of the

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overall economy, the labor force, industry employment and output, and occupational employment growth.

The charts on the pages that follow provide an overview of our major findings in each of these areas.

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. We begin with a view of how the U.S. economy will grow over the next 10 years. We create a model of an economy that is operating at potential—with strong output growth, strong labor productivity, and relatively low unemployment rates—in the longer run.

Using this framework, we estimate the production of goods and services by U.S. industries. Some of this output is used by other industries; for example, steel is used in making cars. Whether the goods and services produced are used by other firms or sold directly to consumers, the demand for output results in a demand for the labor needed to produce it.

Knowing the size of the labor pool is an essential

part of our projections, because the number of workers available helps to determine the total number of jobs in the economy. To determine the future size of the labor force, we use projections of population change from the U.S. Census Bureau and combine them with our own estimates of how much of the population will be employed, based on historical trends.

As important as knowing the size of the labor force is knowing how it will be used. The mix of occupations that will be in demand is determined both by the amount of output being produced and by the ways industries produce it.

In 1983, for example, the production of computer and office equipment required the services of nearly 100,000 precision production, craft, and repair workers and 26,000 computer engineers, scientists, programmers, and systems analysts. But by 1998, the number of production workers had fallen to 68,000—and employment in the computer-related occupations had risen to more than 61,000.

Some occupations are closely tied to the changing fortunes of particular industries. For example, in 2002,

59 percent of registered nurses worked in hospitals, and another 17 percent worked in offices of physicians and other ambulatory healthcare centers, including home healthcare centers. Between 2002 and 2012, we project that the real output of hospitals and ambulatory healthcare services will increase 26 and 45 percent, respectively. This accounts for 74 percent of the 623,000 projected increase in the employment of registered nurses.

In developing projections of occupational employment trends, we make extensive use of the BLS Occupational Employment Survey. This survey shows the employment levels of more than 700 occupations in each of nearly 300 industry classifications. Survey results are reviewed by experts who have knowledge of both industry and occupational employment trends in the U.S. economy.

We invite readers to examine our detailed profiles of occupations in the 2004-05 *Occupational Outlook Handbook* and of industries in the 2004-05 *Career Guide to Industries*. (See “Other BLS publications presenting information on the 2002-12 projections,” page 49, for more details, including ordering and price information.)

Charting the projections

The charts in this issue express two concepts about employment: changes in levels and changes in the rates of growth or decline. Some occupations will have large changes in both. For example, we project that employment in medical assistant occupations will increase by 215,000 jobs, or 59 percent, over the 2002-12 decade.

In other cases, occupations that are relatively large may have slower rates of growth (percentage changes) than do smaller occupations, but the increase in their employment levels will be substantially larger. For example, in 2002 there were 1,055,000 accountants and auditors and 47,000 environmental engineers. Between 2002 and 2012, the occupation of accountants and auditors is projected to add more than 11 times as many new jobs—205,000 compared with 18,000—because its 2002 employment level was so much larger than that of environmental engineers. However, employment of environmental engineers is projected to grow twice as fast as that of accountants and auditors: 38 percent compared with 19 percent. (See sidebar at right.)

Another important concept in understanding these charts is grasping the difference between employment change and total job openings. Between 2002 and 2012, total employment is projected to increase by nearly 15 percent, for net employment growth of 21.3 million jobs. However, we estimate that there will be 56.3 million total

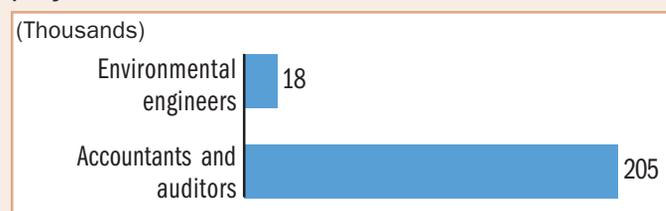
job openings during the same decade, reflecting both the increase in jobs and the need to replace 34 million workers who leave growing occupations.

Highlights of the 2002-12 projections

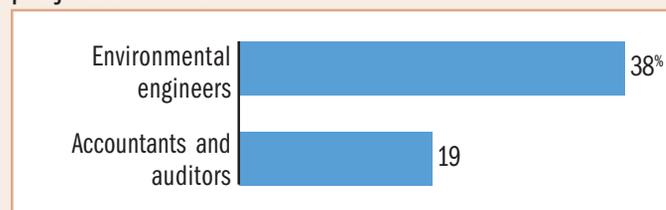
The 2002-12 projections, which are explored in detail in the February 2004 issue of the *Monthly Labor Review*,

Two views of employment growth

Numeric employment growth in two occupations, projected 2002-12



Percent employment growth in two occupations, projected 2002-12



Employment growth or decline is measured in two ways: numeric change and percent change. Numeric change is the actual number of jobs gained or lost over the projections decade. Percent change is the rate of job growth or decline during the decade.

The upper chart shows the projected increase in employment for accountants and auditors compared with that for environmental engineers. In numeric terms, more than 11 times as many new jobs are projected for accountants and auditors as for environmental engineers between 2002 and 2012.

Percent change tells a different story. As the lower chart shows, employment of environmental engineers is expected to grow about twice as fast as that of accountants and auditors.

provide information on projected trends in the overall economy, the labor force, industry output and employment, and occupational employment trends. Highlights include:

Occupational employment

- ◆ Total employment is projected to increase by 21.3 million over the 2002-12 decade, adding about 600,000 more jobs than were added in the previous decade. (See the chart on page 9.)
- ◆ Among occupational groups, the professional and related occupations group, followed by services, is expected to increase the fastest and add the most jobs. (See the charts on page 12.)
- ◆ Education, training, and library occupations are projected to increase by 2.1 million jobs, healthcare practitioner and technical occupations by 1.7 million. (See the chart on page 13.)
- ◆ Sixteen of the 20 fastest growing occupations are related to healthcare or computers, including medical assistants and network systems and data communications analysts. (See the chart on page 14.)
- ◆ Registered nurses and teachers are expected to gain the most new jobs—more than 600,000 each. Several of the occupations projected to have high employment increases relate to education, although high-growth occupations span diverse areas of interest. (See the chart on page 15.)
- ◆ Nearly every education and training category is expected to include high-growth, high-pay occupations. (See the charts on pages 16-23.)

Industry employment

- ◆ Industry employment growth over the 2002-12 decade is projected to be concentrated in the service-providing sectors. The professional and business services sector, which accounted for about 12 percent of industry employment in 2002, is projected to grow nearly twice as fast as the overall economy. Education and health services industries, transportation and warehousing, and information industries also are among the fastest growing. (See the charts on pages 29-30 and 32.)
- ◆ Among goods-producing industries, construction is projected to gain about 1 million jobs. Employment in manufacturing is expected to decline slightly. (See the charts on pages 31-32.)
- ◆ Eight of the 20 industries projected to add the most new jobs also are expected to be among the fastest growing. These include computer systems design

and related services, investigation and security services, and community care facilities for the elderly. (See the charts on pages 33-34.)

Economic growth

- ◆ Gross domestic product (GDP), which measures the final demand for all goods and services in the economy, is projected to grow by an annual rate of 3 percent. (See the charts on pages 37-38.)
- ◆ Personal consumption expenditures are projected to continue to account for more than two-thirds of GDP. (See the chart on page 38.)
- ◆ Gross private domestic investment (residential construction and purchases by businesses), exports, and imports are expected to continue growing fast, each with an average annual growth rate of more than 5 percent. (See the chart on page 38.)
- ◆ Among the goods components of consumer expenditures, purchases of computers and software and of video and audio goods are projected to grow rapidly, each increasing by more than 10 percent annually. (See the chart on page 39.)
- ◆ The services components of personal consumption expenditures are projected to increase by 2.8 percent annually. Growth will be driven, in part, by an increase in medical care and insurance services. (See the chart on page 39.)

Labor force

- ◆ By 2012, the number of persons working or looking for work is expected to reach 162 million. The labor force is projected to show steady growth, increasing by 17 million, or 12 percent, over 2002 levels. (See the charts on page 43.)
- ◆ As the baby-boom generation ages, the number of people in the labor force aged 55 to 64 years old is projected to grow by 51 percent, more than 4 times the average for all age groups. The number of labor force participants aged 65 and older is expected to grow by 43 percent. (See the chart on page 44.)
- ◆ The women's labor force participation rate continues to edge upward. The share of women in the labor force is projected to increase from 46.5 percent in 2002 to nearly 47.5 percent in 2012. (See the charts on page 45.)
- ◆ Because of higher birth rates and increased immigration among the Hispanic and Latino population, the Hispanic and Latino labor force is projected to increase by 33 percent. (See the chart on page 48.)