After the Baby Boom: Population Trends and the Labor Force of the Future

BY TIMOTHY SCHILLER

ver the past 40 years, the baby boom generation's participation in the workforce and women's increased presence in the workplace have had a large effect on the

American labor force and the nation's economic growth. But as the baby boomers start to retire in large numbers and women's participation in the workforce levels off, what effect will this have on the U.S. labor force and the nation's economy? More specifically, how will these factors affect the economies of the Third District states? In this article, Tim Schiller describes the issues associated with these and other demographic shifts and their impact on the local and national economies.

The U.S. economy has grown at an annual rate of around 3.4 percent, adjusted for inflation, over the past 50 years. An important factor in achieving that pace of economic growth has been an increase of about 1.7 percent annually in the supply of workers. This relatively rapid growth in the labor supply has been the result of two factors: the entry of the baby boom generation into the labor force, and the increasing participation of women in the labor force. Those two factors are now



Tim Schiller is a senior economic analyst in the Research Department of the Philadelphia Fed. poised to fade, and labor force growth will ebb as a large cohort of workers reaches retirement age and as women no longer swell the ranks of the labor force. For output growth to continue at its pace of the past half-century in the face of slower labor force growth, workers' productivity will have to grow more rapidly.

A slower-growing, aging labor force will make it difficult to meet the need for workers in some major industries and occupations in the nation and in the Third Federal Reserve District. The issues associated with these demographic shifts are likely to be more acute in the tri-state region than in the nation because the region's population is older, the labor force is projected to grow more slowly, and the occupational and industrial mix in the region is more heavily concentrated in those jobs for which demand is projected to grow and the supply of workers is likely to be tight. Alternatively, the region's favorable mix of industries and occupations—it's concentration in education and health care—could give the region an advantage in attracting more workers to meet the growing need.

THE FUTURE SUPPLY OF WORKERS

To project the supply of labor, we need to understand the factors that influence the number of workers in the economy. The basic factor is the size of the working age population, which includes all those 16 years of age and older. They are not all in the labor force, however. Only a percentage of the working age population is working or available for work, and this percentage is called the labor force participation rate. It differs by age, sex, race, and ethnicity. So projections of the overall population are only the starting point for estimating the labor force. To estimate the size of the total labor force, we also need population projections by age, sex, race, and ethnicity and projections of their labor force participation rates.1

The Slowing of Labor Force Growth. The Bureau of Labor Statistics (BLS) projects a slowing of growth in the labor force, from a rate of 1.7 percent per year between 1950 and 2000 to just under 0.8 percent

¹Labor force participation rates also vary over the business cycle, typically falling during recessions and rising during expansions, but in this article the focus is on long-term trends in participation rates.

per year between 2000 and 2050. (For the BLS's projection methodology, see *Projecting Population and Employment.*) The slower growth projected for the labor force reflects both a decline in population growth and a decrease in overall labor force participation.

The BLS takes its population projections from the Census Bureau. And the Census Bureau projects that overall population growth will gradually slow from an annual rate of around 1.2 percent from 1990 to 2000, to less than 1 percent in this decade, then to less than 0.7 percent by the middle of this century. The Census Bureau projects that the fertility rate (the number of children born per woman during her lifetime) will increase slightly during the first half of the century, the death rate (the number of deaths as a percent of the total population) will increase, and the annual number of immigrants during the projection period will be similar to the current rate of around 1 million. The combined result of these projected changes is a projected slowing in population growth over the projection period, 2000 to 2050.

To these population factors, the Bureau of Labor Statistics adds its own projection of labor force participation to estimate the future growth of the labor force, and this projection is also for slower growth or a leveling off in the participation rate.

Three factors account for the projected slowing of labor force growth. In order of significance these are: 1) slower growth in the age group with the highest labor force participation; 2) an end to the increase in women's labor force participation; 3) a decline in the number of immigrants in relation to the total population and labor force.

Typically, labor force participation begins at age 16 and declines significantly around the usual retirement age of 64. Although there are indications that more workers will remain in the labor force past normal retirement age in the future, the population in the 16 to 64 age group supplies the bulk of the labor force, and it is expected to continue to do so. In the current decade and in the years after 2030, the 16 to 64 age group will grow at about the same rate as the overall population. However, from 2010 to 2030 the increase in this group will be between 0.2 and 0.3 percent, much lower than total population growth, because the baby boomers will be moving out of this age group (Figure 1). As they do so, their labor force participation will declining participation among women of all ages by 2030.

As noted earlier, immigrants will make up a declining proportion of the population and labor force. This will affect labor force growth in two ways. First, immigrants will add proportionally less to the overall labor force in the future. Second, immigrants tend to have higher labor force participation rates than the rest of the population, so their relative decline in the labor force will result in an even greater decline in the overall labor force participation rate.

The aging of the baby boomers will also contribute to the second factor tending to reduce the growth rate of the labor force: a reversal in the growth of women's labor force participation rate.

decline, reducing the growth rate in the overall labor force.

The aging of the baby boomers will also contribute to the second factor tending to reduce the growth rate of the labor force: a reversal in the growth of women's labor force participation rate.² Women's labor force participation rate increased from 34 percent in 1950 to 60 percent in 2000. It is projected to rise to 62 percent in 2012, then decline to 57 percent by 2050 (Figure 2). A large part of the decline will be the result of the aging of baby boom women and the fact that women typically retire at earlier ages than men. This will act as a brake on the growth of the overall participation rate for women. But not all of the decline in women's participation rate is due to the aging of the population. The Bureau of Labor Statistics projects An Older and More Diverse Labor Force. During the next several decades, demographic changes will influence the composition of the labor force in two ways: it will become older as we have already indicated, and it will become more diverse with respect to race and ethnicity.

As the baby boomers entered the labor force in the 1970s and 1980s, the percentage of young workers went up and the percentage of older workers went down. As the boomers age, the percentage of older workers will increase. The percentage of the labor force that is 55 and older will rise from around 13 percent in 2000 to around 20 percent in 2030. Then, as the boomers retire, the percentage of older workers will decline somewhat, to around 19 percent in 2050 (Figure 3).

Besides the aging population's effect on raising the median age of the work force, the average retirement age will likely rise in the future. The BLS projections take this possibility into ac-

 $^{^2\,\}text{Men}{}^{\text{s}}$ participation rate has been declining for more than 50 years, and projections show it will continue to do so.

Projecting Population and Employment



he U. S. Bureau of Labor Statistics (BLS) publishes 10-year projections of the labor force and employment every two years. The latest projections were published in 2004 and cover the period from 2002 to 2012.^a The Bureau also occasionally

publishes longer term projections of the labor force, but not employment. The latest, published in 2002, extends to 2050.^b

The starting point for employment projections is projected population growth. The BLS uses the Census Bureau's middle-series projection. This projection is

^aSee the article by Michael Horrigan and the ones by Mitra Toosi.

derived by combining the mid-range forecast of the birth rate, death rate, and international immigration among the various age and race cohorts that make up the total population.^c The middle series assumptions for the total population are that the birth rate will remain close to its present level, the death rate will increase, and international immigration will decrease over time relative to the size of the U.S. population. Immigration is still expected to add significantly to the total population, but because the number of immigrants is projected to be constant, based on current law and recent net immigration patterns, immigrants are expected to contribute less to both population growth and total population in the future.

(box continues on next page)

^bSee the articles by Mitra Toosi.

^cSee the article by Frederick Hollman and co-authors.





In projections of state populations the Census Bureau takes into account likely state-to-state migration and international immigration in addition to the natural increase in the state's population (the birth rate minus the death rate). Through 2025, each of these factors is projected to affect population growth in different ways for the three states of the region: Pennsylvania, New Jersey, and Delaware (see the accompanying chart).^d

Each of the three states is expected to gain proportionately less from natural increase than the nation. In Pennsylvania, the natural increase in the population is expected to be slight. The state is expected to experience little international immigration and net outward migration to other states. New Jersey's natural increase and net international migration is projected to be the highest among the three states. The projections suggest the state will continue to have a higher rate of international immigration than the nation. Some of the international migration is expected to be offset by high levels of outmigration from New Jersey to other states. Among the three states in the region, only Delaware is projected to gain population from all three sources: natural increase, international immigration, and state-to-state migration.

For employment by industry and occupation, the BLS projections are based on a combination of a projection of the total number of available workers and a projection of the economy's growth during the projection period.^e In other words, the employment projection assumes the economy will grow at a steady trend rate with all available workers employed. For the 10 years from 2002 to 2012, the BLS projects real GDP will increase at an average annual rate of 3.0 percent, slightly below the 3.2 percent average annual rate of the previous 10 years.^f

^fSee the article by Betty Su.

count by projecting a rising labor force participation rate for the 55- to 64year-old age group in the short term.³ In fact, recent data indicate that labor force participation among both men and women age 55 and older has risen.⁴ The major reasons for this are related to retirement financing. The minimum age to receive full Social Security benefits is rising, and some workers will delay retirement until they qualify for full benefits. Furthermore, there is a trend away from reliance on defined benefit plans to more participation in defined contribution plans, which are more

financially rewarding to those who work beyond normal retirement age.⁵

There is also some evidence that baby boomers are more interested than earlier generations in continuing to work in some manner during "retirement." Surveys in recent years indicate that more people currently employed plan to work beyond age 65 than did workers in previous generations.6

Changing demographics will affect not only the median age of the labor force but also the racial and ethnic composition. Because projected immigration is expected to be made up largely of Asians and Hispanics, and because these and other minority racial and ethnic groups have greater birth rates than other population groups, most minority ethnic and racial groups will increase their share of the population and the labor force (Figure 4).⁷ In

^d The latest projections of state population, based on the 2000 census, extend to 2030, but they do not include details of the components of population change. However, the previous projection, based on the 1990 census, does include details of these components, but it extends only to 2025.

^e See the article by Michael Horrigan.

³See the article by Sophie Korczyk and the 2004 article by Mitra Toosi.

⁴See the article by Katharine Bradbury.

⁵ Defined contribution plans are those in which employees making periodic payments to retirement funds (such as 401k's) through payroll deductions. Their retirement income depends on the investment return to the fund. Defined payment plans are those in which the employer promises a fixed retirement payment to employees based on salary and years of employment. A growing number of firms are placing limits on the retirement pay earned under defined benefit plans; in response, workers are turning to defined contribution plans to boost prospective retirement income.

⁶See the article by Christopher Reynolds, and the 2003 publication from AARP.

⁷For example, the birth rate (number of births per 1,000 persons) for Hispanics is 22.6, for blacks it is 16.1, and for non-Hispanic whites it is 11.7 (National Center for Health Statistics, 2003).

Projected Annual Growth Rates of U.S. Population and Labor Force



FIGURE 2



addition, their labor force participation is projected to rise.

THE FUTURE DEMAND FOR WORKERS

A smoothly functioning economy requires a match between the skills of available workers and the job requirements of the industries and by occupations that need workers. These job requirements will change as the demand for different products and services changes, and as the technologies that workers use evolve. So, in addition to projections of the labor force, the Bureau of Labor Statistics also projects employment by industry and occupation.

Labor economists classify employment in two ways: by industry and by occupation. Every worker is counted in both of these classifications. In industry classifications, every worker is assigned to an industry according to the kind of good or service produced by the firm in which he or she is employed. In occupational classifications, every worker is assigned to an occupation according to the kind of work he or she does. (See Major Industrial and Occupational Classifications for examples of the major categories of industries and occupations.) For some jobs, the occupational classification is closely associated with an industry. For example, most physicians are self-employed or work for firms that directly provide health-care services. so most are counted in the health-care industry. However, some might be employed in other types of firms-a manufacturing firm, for example-and would therefore be counted as working in the manufacturing industry. Regardless of the industry in which they work, all physicians are counted as health-care practitioners within the professional occupations category.

For other jobs, the occupational classification is not so closely associ-

Labor Force Participation Rate^{*}

Labor Force Thousands Percent 250,000 25.0 Projected Actual 200,000 20.0 15.0 150.000 10.0 100,000 50.000 5.0 0.0 0 1950 1960 1970 1980 1990 2000 2010 2020 2030 2040 2050 Labor Force - Percent 55 and Older Source: Bureau of Labor Statistics

FIGURE 4

Racial and Ethnic Composition Of the Labor Force



ated with an industry. For example, all computer programmers are counted in the computer and mathematical science occupations group of the professional occupations category. But many work for banks, part of the financial industry, as well as in many other industries such as manufacturing and education, and they are counted as working in those industries.⁸

Growth in Service Industries and Professional and Nonprofessional Service Occupations. In general, demand for workers in professional and service occupations is expected to increase. Among occupational categories, the BLS projects that employment in the two largest-professional and related occupations, and service occupations-will grow the fastest in percentage and absolute terms to 2012 (Figure 5). Together, these occupations will account for more than half the total job growth to 2012.9 Among the industry categories, job growth from 2002 to 2012 will be concentrated in services.¹⁰ The services industries with the strongest projected employment growth-both in absolute and percentage terms-are education and health services, and professional and business services (Figure 6).

A major factor in future demand for workers by industry and occupation

⁹See the article by Daniel Hecker.

 $^{10}\,\mathrm{See}$ the article by Jay Berman.

⁸ A potential source of confusion is the use of the word "service" as both an industry and occupational classification. There are many service industries, such as professional and business services, education and health services, etc., in which there are workers in many occupations. Jobs in these industries have a large range of educational requirements and pay. Service occupations, however, are more narrowly defined. The largest service occupations are health-care aides, policemen and firemen, food preparation workers, and building and grounds maintenance workers. Most of the jobs in the service occupations are at the lower end of the scale of educational requirements and pay.

Major Industrial and Occupational Classifications

Industries are categorized according to the output of establishments. Occupations are categorized according to the jobs that individuals perform. People in most occupations can work in one of several industries, and every industry employs persons in many occupations.

Industry	Types of Firms (major categories)
Mining	Oil and gas extraction, mining
Utilities	Electric utilities, natural gas utilities, water systems, sewage systems
Construction	Building, utility, highway and bridge construction, specialty contractors
Manufacturing	Food, textile, paper, chemicals, metals, metal products, machinery, computer, electrical equipment, transportation equipment, furniture
Trade	Wholesale, retail
Transportation	Air, water, and land transportation, warehousing, pipelines
Information	Publishing, motion pictures and sound recording, broadcasting, Internet, telecommunications, data processing
Finance	Banks, savings institutions, credit unions, securities firms, insurance, commodities firms
Real Estate and Rental	Real estate lessors, real estate agencies, rental and leasing services
Professional Services	Legal, accounting, architectural, engineering, computer, management, scientific, advertising, and marketing services
Administrative	Employment services, business support services, travel services, waste management
Education	Elementary and secondary schools, colleges and universities, trade schools
Health and Social Care	Offices of physicians and dentists, outpatient care centers, medical laboratories, home health-care services, hospitals, nursing and residential care facilities, social services, child day care services
Arts, Entertainment	Performing arts companies, spectator sports, amusement and gambling facilities
Accommodation	Travel accommodations, food service and drinking places
Other Services	Auto repair, equipment repair, personal and laundry services
Occupation	Types of Jobs (major categories)
Management, Business	Executives and managers, accountants, business analysts, purchasing agents, human resource specialists, financial specialists
Professional	Computer and mathematical occupations, architects, engineers, scientists, social workers, lawyers, teachers, librarians, artists, performing artists, athletes, physicians, pharmacists, health-care technologists, nurses
Service	Health-care aides, law enforcement and protective occupations, food preparers and servers, building maintenance workers, personal care workers
Sales	Retail sales workers, rental clerks, real estate agents, sales agents
Office, Administrative	Financial clerks, records clerks, couriers and dispatchers, secretaries, office support workers
Farming, Fishing	Farm, fishing, and logging workers
Construction, Extraction	Construction trades, miners, oil and gas drilling workers
Installation, Maintenance	Electricians, mechanics, equipment repairers
Production	Manufacturing production workers, machinists, printers, woodworkers, power plant operators
Transportation	Aircraft pilots, motor vehicle drivers, railroad workers, water transport workers, material moving workers

Occupations with Greater than Average Projected Growth



FIGURE 6

Industries with Greater than Average Projected Growth



is the aging of the nation's population. An aging population will increase demand for health services, so demand for workers in this industry will grow. By occupation, the bulk of workers in this industry will be medical practitioners (for example, physicians, pharmacists, and nurses), part of the professional occupations category, and nonprofessional service occupations (for example, health-care aides and assistants). Other occupations that will be in demand to serve an aging population will be personal care workers (within the services occupations) and social workers (within the professional occupations). These two occupations can be found in a variety of industries and in government agencies.

The other major factor in future demand for workers by industry and occupation is changing technology. The increasing capabilities of computer and telecommunications technologies will increase the demand for workers in the information services industry. which includes firms that create computer software and provide Internet services, for example. Furthermore, continuing advances in the automation of business functions will increase demand for workers in computer-related occupations in all industries. The automation of manual work has been at least partially responsible for the decline in manufacturing employment over the past several decades, and it is increasingly affecting nonmanufacturing work, as well. In fact, automation is one of the reasons that office and administrative occupations are projected to have the slowest growth among occupational categories except for production (mainly manufacturing) and agricultural occupations.

Employment growth in the professional and business services industries is also projected to be strong, and this will drive growth in management and business occupations. Firms provid-



*Ranked by number of replacement openings. Numbers at end of bars are replacement openings as percent of total openings.

Source: Bureau of Labor Statistics

ing employment services, including temporary staffing firms, and those providing business consulting on management, human resource administration, marketing, and scientific and technical matters are expected to grow. Here again, technological change is an influence, as advances in telecommunications and the standardization of information technology have increased the outsourcing of business functions, which these service industries provide.

The BLS also projects growth in the educational services industry. The BLS projects rising enrollments in post-secondary institutions as the children of the baby boomers reach college age and as workers of all ages demand more training throughout their careers. This is another instance of the

influence of technological change on labor demand: the anticipated need for more job training, and the educators to provide it, is at least partly a result of workers' need to keep pace with advances in the technology used in the workplace. Although the BLS projects flat enrollments for preschool through secondary levels, it projects that increases in hours of operation and reductions in class size will necessitate higher employment. Because the bulk of educational services is provided through state and local governments, the projected increase in demand for education will underpin growth in government employment.

Replacement Needs May Differ from Growth. As baby boomers retire, the need to replace them will be more pressing in occupations in which large proportions of current workers are members of the baby boom generation.¹¹ Thus, the occupations with the greatest percentage or number of additional jobs may not be the occupations with the largest number of job openings. Among broad occupational categories, service, office, professional, and sales occupations will have the largest replacement needs (Figure 7).¹² Some specific occupational categories, such as truck drivers, teachers, physicians, nurses, and managers and administrators, have large numbers of baby boomers, and these occupations will face large replacement needs as baby boomers retire. So job seekers in the future will have opportunities in industries and occupations that are not growing but that will have large numbers of job openings due to replacement needs.

¹¹See the article by Arlene Dohm.

¹²Other industries with large numbers of baby boomers — mainly, manufacturing and farming — have had declining employment. So the need to replace workers in those industries will not be as great.

Projected Annual Population Growth 2000-2030



THE FUTURE LABOR FORCE IN THE REGION

Just as slower population growth will set an upper limit on labor force growth for the nation in the decades ahead, it will also limit labor force growth in the three states of the Third Federal Reserve District: Pennsylvania, New Jersey, and Delaware. The industries and occupations projected to have strong growth in the nation—services and professions—are also projected to have strong growth in the three states.

Slower Population and Labor Force Growth in the Region. As mentioned earlier, national population growth is projected to slow from about 1.3 percent per year from 1970 to 2000 to a bit less than 1 percent per year from 2000 to 2030 (the latest year for which we have state projections). Population growth in Pennsylvania, New Jersey, and Delaware is also projected to be slower from 2000 to 2030 than it was in the preceding 30 years. Pennsylvania and New Jersey are projected to have slower population growth over the projection period than the nation, and growth in Delaware is projected to match the national growth rate.

In the region as in the nation, the 16 to 64 age group is projected to grow more slowly than the total population from 2000 to 2030 (Figure 8). This age group will increase in New Jersey and Delaware, but at a slower rate than in the nation. In Pennsylvania, the 16 to 64 age group is projected to decrease from 2000 to 2030.

Future Industry and Occupational Employment in the Region. The service industries are projected to have the most rapid growth in employment in the region, as they are in the nation (Figure 9).¹³ The region already has a relatively high concentration of employment in education and healthcare industries, and these are projected to have high growth rates. Occupational projections for the region are also much like those for the nation, with likely gains in high-skill health occupations and both high-skill and low-skill service occupations (Figure 10).

The pattern of industry and occupational employment projections is very similar for Pennsylvania and New Jersey. Total growth is projected to be lower for Pennsylvania than New Jersey, but the top industry categories are the same for both states: professional and business services and education and health (though the order in the two states is reversed). As in the U.S., occupations in professional and business services will be the fastest growing.

Projections for Delaware are different. Education and health services are not top industry categories. The top category is transportation and warehousing, where employment is projected to grow as major national retailers establish distribution facilities in the state. In terms of occupations, management and business will grow fastest; professional jobs are only the fourth fastest growing.

In the Third Federal Reserve District, the largest metropolitan area is Philadelphia-Camden-Wilmington, which consists of 11 counties in Pennsylvania, New Jersey, Delaware, and Maryland. There are no forecasts of industry or occupational employment growth for this entire metropolitan area. However, the Delaware Valley Regional Planning Commission has forecast annual employment growth

¹³ In both Pennsylvania and New Jersey employment in agricultural industries and occupations is projected to have large percentage increases, but the number of current jobs and the absolute increases are very small in both states.

for the Pennsylvania-New Jersey portion of around 0.6 percent from 2000 to 2030. This is a considerably slower rate than the nearly 1 percent annual growth from 1970 to 2000.

It is important to keep in mind that both the industry and occupational employment projections are based on demand, while the labor force projections are based on supply, determined by population growth and labor force participation. As noted earlier, many of the workers in the industries and occupations with growing demand are close to retirement age now. This is especially the case for the education and health-care industries. Projected increases in demand for these industries and projected increases in the number of workers retiring from them will make it difficult to replace and increase the number of workers available to meet the growing demand.

This issue is especially important for our region because the education and health-care industries are a larger part of the regional economy than they are in the nation. Like the national projections, the state employment projections assume the jobs required for economic growth will be filled, with a limit set by the projected population. With slow growth projected for the regional population, it is possible that education and health-care employers in the region will face more difficult times ahead in meeting their staffing needs. Conversely, it is possible that the region will be able to attract more workers than is currently anticipated precisely because it is a center for these industries with growing demand and therefore growing employment opportunities. So besides presenting a challenge to the region, the demographic factors that will influence the labor markets in the years ahead also present the region with an opportunity to build on its strengths.

FIGURE 9

Industries with Fastest Projected Growth

Pennsylvania















Occupations with Fastest Projected Growth

Pennsylvania



New Jersey



Delaware



ISSUES RAISED BY AN OLDER, SLOWER-GROWING LABOR FORCE

An older, slower-growing labor force will raise issues for employers in the years ahead. The major issues are determining job tasks and responsibilities for older workers (job content), administering compensation and benefits for this group, ensuring the continuity of expertise within firms when older workers retire, and improving labor productivity as the pool of available workers expands less rapidly. Business and nonprofit employers are beginning to recognize these issues and take steps to deal with them.

With slower growth in the labor force, employers will need to consider labor-saving changes in production methods and more on-the-job training in order to get the most production from their employees. In addition to training new employees, training programs will also have to focus on retraining older workers as technology and job tasks change. This retraining is already taking place for nurses and engineers, professions in which the average age of workers has been rising more quickly than others.¹⁴ Companies in industries that face large worker replacement needs, such as health care, aerospace, education, and utilities, are stepping up training programs.15

Another issue is retaining expert knowledge within firms as their most experienced workers leave. To deal with this issue, firms have begun to set up mechanisms by which older workers share their knowledge and skills with their younger co-workers.¹⁶ Another way many firms are tapping older workers' expertise is by

 $^{14}\mbox{See}$ the 2004 publication from AARP.

¹⁶See the article by Dorothy Leonard and Walter Swap, and the one by Anne Fisher.

¹⁵See the article by Alison Maitland.

rehiring retirees, often on a part-time or contract basis.¹⁷ Firms that rely heavily on intellectual capital are also stepping up programs to assess their critical knowledge, record interviews with their expert staff, document all essential information, and—in some cases—redesign production processes to eliminate the amount of expert knowledge workers need to have.¹⁸

An older work force is likely to desire a different mix of employee benefits and working arrangements than what has been typical.¹⁹ For example, older workers are more likely to require family-friendly employment arrangements that will allow them to care for aging spouses and elderly parents, for whom nonresidential institutional care is not as widely available as daycare is for workers' children. According to some analysts of labor issues, older workers might also be more interested in telecommuting, to spare themselves the inconvenience of commuting. Changes in job content to reduce the physical demands of a job are one way some companies are attempting to preserve workers' ability to remain productive as they age. Another agerelated concern is job safety because older workers tend to take longer to recover from accidents than younger workers.

¹⁹ See the AARP's 2004 publication; the article by Lynn Karoly and Constantijin Panis; and online article 1123 from the Wharton School. Retirement issues are paramount for older workers, of course. They might be more interested in compensation packages that permit a shift of salaries into pensions, to make up for shortfalls in retirement financing, and to payments for health-care expenses, which tend to increase with age.

Older workers are more likely to require family-friendly employment arrangements that will allow them to care for aging spouses and elderly parents.

They also might be more interested in phased retirement arrangements (also referred to as partial retirement) in which they can reduce their hours of work and earn part of their salary and receive part of their pension. Currently, phased retirement plans are mainly available only to workers who have reached normal retirement age and not to older workers generally. To make phased retirement more widely available to older workers, both private retirement arrangements and tax rules regarding pensions and health-care coverage would require revisions.²⁰ But many firms, including some of the nation's largest, have already begun

to implement some of the working arrangements and employment agreements that are important to older workers.²¹

SUMMARY

The aging of the baby boom generation will prompt changes in both the supply of and the demand for workers among different industries and occupations, leading to potential shortages of workers in health care and education. As the baby boom generation grows older, the average age of the labor force will increase, its growth will slow, and its composition will become more diverse. These challenges are likely to loom especially large in the region. All the issues associated with an older, slower growing population and labor force are likely to be more acute in the region. This is because, compared with the nation, the region's population is older, its labor force is projected to grow more slowly, and the occupational and employment mix in the region is more heavily concentrated in those jobs for which demand is projected to grow and the supply of workers is likely to be less ample, especially education and health care.

But the region is already a center of education and health-care industries and occupations, in which demand is projected to be strong. So this favorable job mix could enable the region to attract more workers than currently anticipated.

¹⁷ See online article 996 from the Wharton School.

¹⁸See the book by David DeLong.

²⁰ See the article by Rudolph Penner, Pamela Perun, and Eugene Steurele.

 $^{^{\}rm 21}$ See the 2004 publication from AARP and the article by Milt Freudenheim.

REFERENCES

AARP. Staying Ahead of the Curve 2004: Employer Best Practices for Mature Workers. Washington, DC: AARP, 2004.

AARP. Staying Ahead of the Curve 2003: The AARP Working in Retirement Study. Washington, DC: AARP, 2003.

Berman, Jay M. "Industry Output and Employment Projections to 2012," *Monthly Labor Review*, February 2004, pp. 58-79.

Bradbury, Katharine. "Additional Slack in the Economy: The Poor Recovery in Labor Force Participation During This Business Cycle," *Public Policy Briefs*, Federal Reserve Bank of Boston, 2005.

DeLong, David W. Lost Knowledge: Confronting the Threat of an Aging Workforce. Oxford: Oxford University Press, 2004.

Dohm, Arlene. "Gauging the Labor Force Effects of Retiring Baby-Boomers," *Monthly Labor Review*, July 2000, pp. 17-25.

Fisher, Anne. "How to Battle the Coming Brain Drain," *Fortune*, March 21, 2005, pp. 121-128.

Freudenheim, Milt. "More Help Wanted: Older Workers Please Apply," *New York Times*, March 23, 2005, p. A1.

Hecker, Daniel E. "Occupational Employment Projections to 2012," *Monthly Labor Review*, February 2004, pp. 80-105. Hollman, Frederick W., Tammany J. Mulder, and Jeffrey E. Kallan. "Population Projections of the United States: 1999 to 2100: Methodology and Assumptions," Working Paper No. 38, U.S. Department of Commerce, Bureau of the Census, 1999.

Horrigan, Michael. "Employment Projections to 2012: Concepts and Context," *Monthly Labor Review*, February 2004, pp. 3-22.

Karoly, Lynn A., and Constantijn W. A. Panis. *The 21st Century at Work*. Santa Monica, CA: Rand Corporation 2004.

Korczyk, Sophie M. Is Early Retirement Ending? Washington, DC: AARP, 2004

Leonard, Dorothy, and Walter Swap. "Deep Smarts," *Harvard Business Review*, September 2004, pp. 88-97.

Maitland, Alison. "Bosses Slow to Grasp the Nettle," *Financial Times*, November 17, 2004, p. 2.

National Center for Health Statistics. *Births: Final Data for 2002.* National Vital Statistics Reports, Vol. 52, No. 10, December 17, 2003, Updated as of June 2004.

Penner, Rudolph G., Pamela Perun, C. Eugene Steuerle. *Legal and Institutional Impediments to Partial Retirement and Part-Time Work by Older Americans*, Urban Institute, 2002. Reynolds, Christopher. "Retirement Goes Boom: American Demographics Exclusive Survey," *American Demographics*, April 2004, pp. 12-13.

Su, Betty. "The U.S. Economy to 2012: Signs of Growth," *Monthly Labor Review*, February 2004, pp. 23-36.

Toosi, Mitra. "Labor Force Projections to 2012: The Graying of the U.S. Workforce," *Monthly Labor Review*, February 2004, pp. 37-57.

Toosi, Mitra. "A Century of Change: The U.S. Labor Force, 1950-2050," *Monthly Labor Review*, May 2002, pp. 15-28.

Wharton School, University of Pennsylvania (a). Older Workers: Untapped Assets for Creating Values.

http://knowledge.wharton.upenn.edu/ index.cfm?fa=printArtcile&ID=1123, February 18, 2005.

Wharton School, University of Pennsylvania (b). Redefining Retirement in the 21st Century. http://knowledge.wharton.upenn. edu/index.cfm?fa=printArtcile&ID=996, February 18, 2005.