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Minnesota's Labor Shortage

Working Paper 99-17

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May 1999

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Minnesota's Labor Shortage

Labor shortages have become a major issue in Minnesota in the 1990s. Employers in all areas of the state report difficulty finding workers in a wide range of industries and occupations. Chronic shortages are reported by high tech industries, restaurants, retailers and nursing homes.

The tight labor market has its bright side. It is easier for people to find jobs, and wages have gone up. But there is also a downside to the labor shortage. Both business groups and government policy makers fear that the inability to find enough workers will affect the state's economic growth and tax revenues. They also fear that a labor shortage could spur an inflationary spiral as employers keep raising wages to compete for the limited supply of workers.

Demographic shifts and a strong economy have produced the labor shortage.

Minnesota's labor shortage stems from a combination of short-term economic conditions--- strong job growth and very low unemployment--- and longer term demographic trends.

There are two major demographic factors. One is the slower growth in the working age population now that the large baby boom generation has been absorbed into the work force.

The second demographic factor is that labor force participation rates are now extremely high. In the future it will be impossible to achieve the same gains in participation that occurred in earlier years.

Economic conditions will change with the business cycle, but the demographic trends will be harder to alter. Unless more people move into Minnesota in the next few years, the supply of new workers may not keep pace with the anticipated growth in jobs. The long-term prospect is for either a continued labor shortage or a rapid increase in migration into the state.

Unemployment rates are very low.

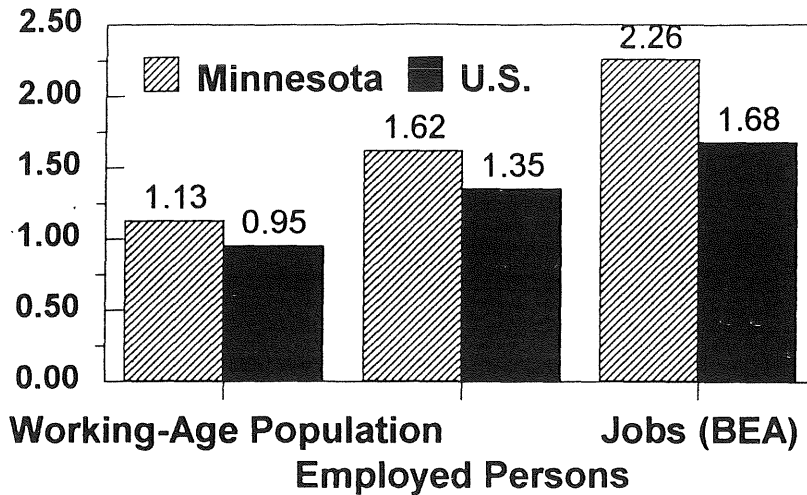
Minnesota has experienced strong job growth and low unemployment rates throughout most of the 1990s. From 1990 to 1997, Minnesota's working-age population, 16 to 64, grew at an annual average rate of 1.13 percent. At the same time, the number of employed persons grew at an annual average rate of 1.35 percent and the number of jobs by 2.26 percent annually.

Here in a nutshell is the origin of the labor shortage: more jobs are chasing fewer people.

The rapid growth of jobs relative to population has helped produce record-low rates of unemployment. Minnesota's unemployment rate, historically lower than the national average, has fallen during the 1990s. Economists generally consider a 6 % unemployment rate to represent full employment. For most of this decade, Minnesota has been below that level. The statewide annual average unemployment rate in 1998 was a very low 2.5 percent.

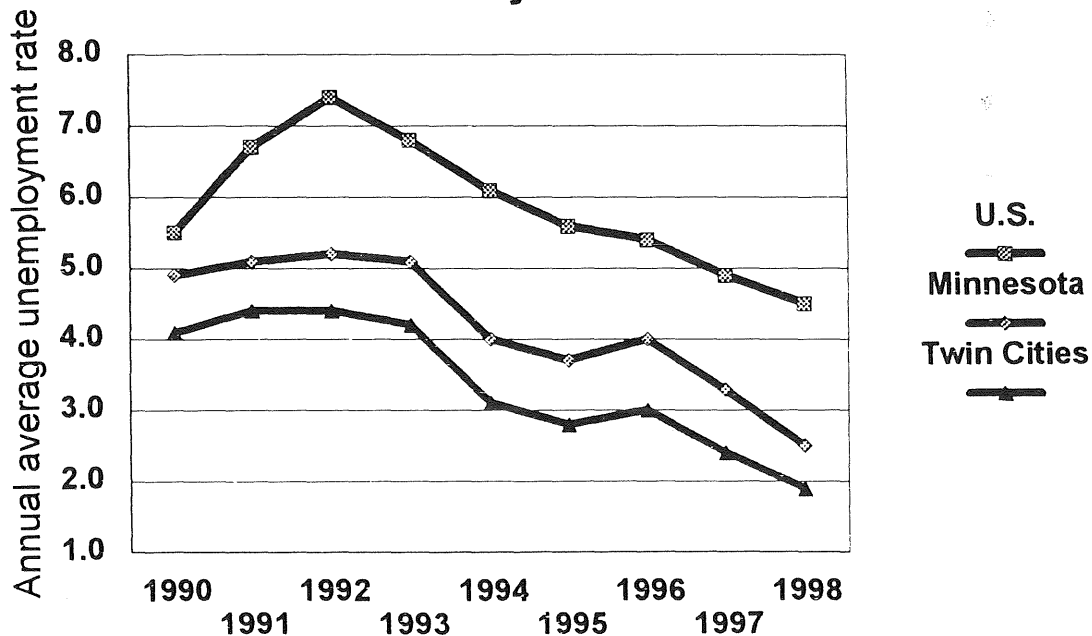
Both Jobs and Employment Grew Faster than Working-Age Population 1990 to 1997

Annual average percent change



Sources: U.S. Census Bureau, MN Dept. of Economic Security, U.S. Bureau of Economic Analysis

Minnesota and Twin Cities unemployment rates have been very low in the 1990s



Minnesota Dept. of Economic Security
Twin Cities refers to 7-county area

In the seven-county Minneapolis-St. Paul area (Region 11), unemployment was even lower, averaging only 1.9 percent in 1998.

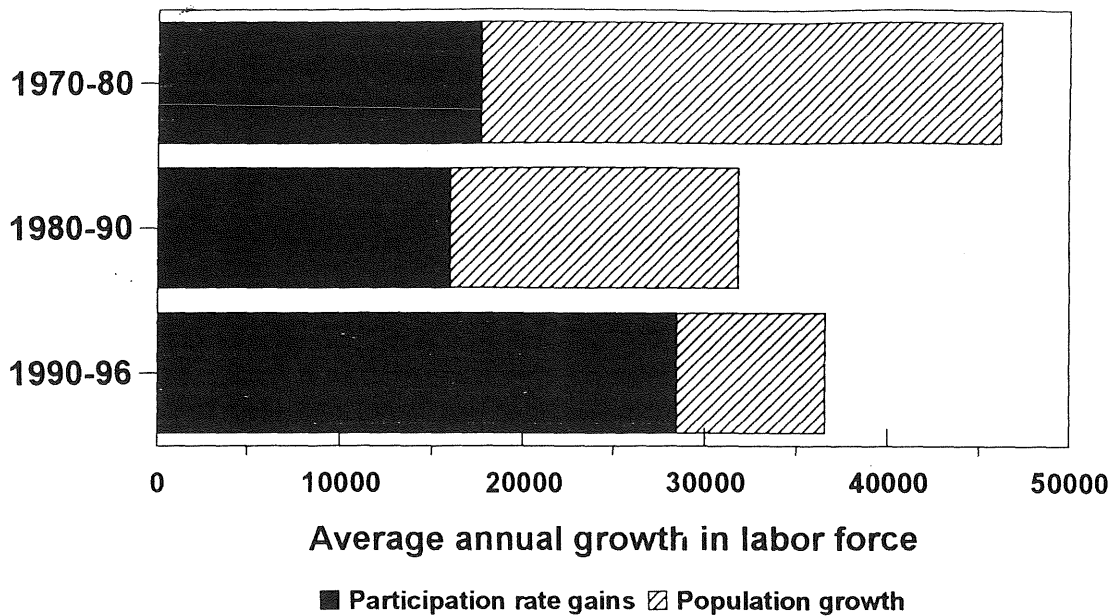
Labor force growth has become more dependent on rising participation rates.

Minnesota's annual rate of labor force growth from 1990 to 1997 was 1.4 percent, only slightly lower than the 1980 to 1990 average of 1.5 percent but considerably below the rate of 2.7 percent in the 1970s. Growth during the 1990s has been uneven. Much of the gain occurred between 1992 and 1994 and between 1997 and 1998. Increases in the other years were modest.

A look at the sources of labor force growth over the past several decades gives insight into the prospects of growth in the future. Labor force grows from two sources: increases in the number of working-age people and increases in rates of labor force participation. Over time, population growth has played a smaller role in Minnesota's labor force growth, while rising rates of labor force participation have become more important.

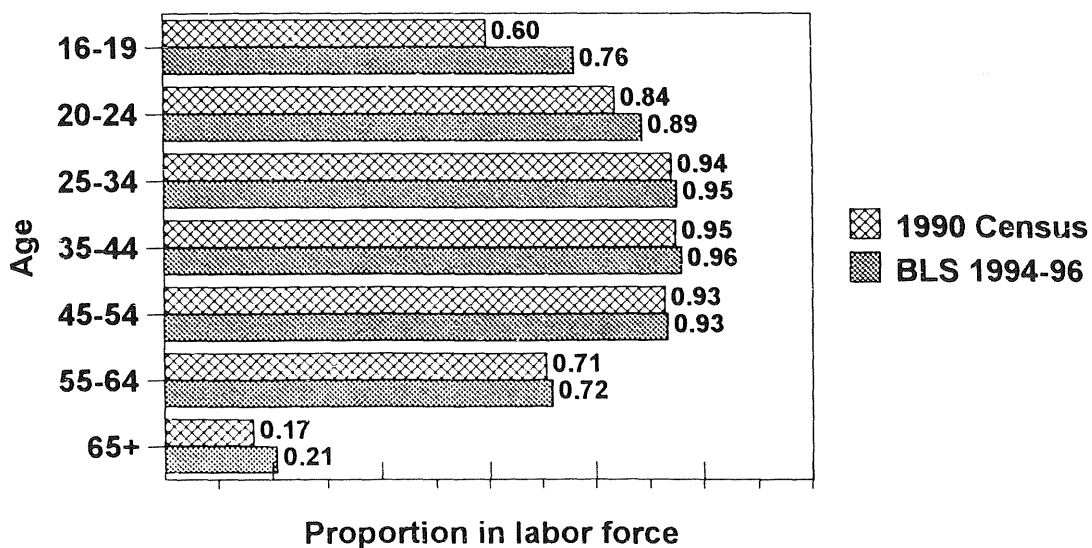
In the 1970s, both factors were very significant. Large numbers of baby boomers joined the work force and women's participation rates rose, producing an astonishing 30 percent growth in the labor force between 1970 and 1980. About 62 percent of the growth during the decade was attributable to population gains and the remaining 38 percent to higher rates of female labor force participation.

Minnesota labor force growth is becoming more dependent on increasing participation



DES, BLS, Decennial Census

Data suggest Minnesota male labor force participation rates have grown the most among youngest and oldest age groups



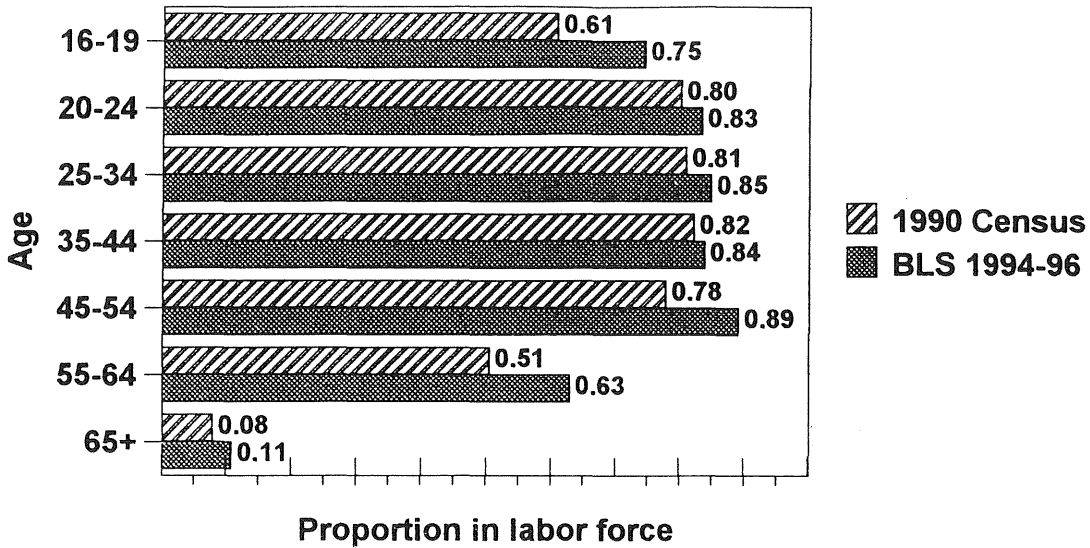
1994-1996 average from U.S. Bureau of Labor Statistics, provided by MN Dept. of Economic Security

Labor force growth slowed to 16 percent in the 1980s, with half the gain picked up from higher participation rates and the other half from population growth. In the 1990s, the annual rate of labor force growth has been higher than in the 1980s, but the sources of growth have changed. About 78 percent has stemmed from gains in participation rates and only 22 percent from population growth.

Participation increases among teens and older women.

Which age groups are responsible for the rising participation rates in the 1990s? Data from the U.S. Bureau of Labor Statistics suggests that the largest gains have occurred among teenagers and older women. The BLS data are based on the Current Population Survey, which includes a relatively small number of Minnesota households. Because the sample size is so small, sampling variation is large and annual numbers can fluctuate considerably. For this reason, an average of the age-specific rates for the three-year period of 1994 through 1996 is used to make comparisons to rates from the 1990 census. Participation rates grew for women in all age groups, with the most striking gains among teenagers and women ages 45 to 64. Participation also increased dramatically among teenage males. Men ages 20 to 24 and men over 65 also seem to be participating in the labor force at a higher level than in 1990. The numbers suggest that participation rates for men ages 25 to 64 have not changed much.

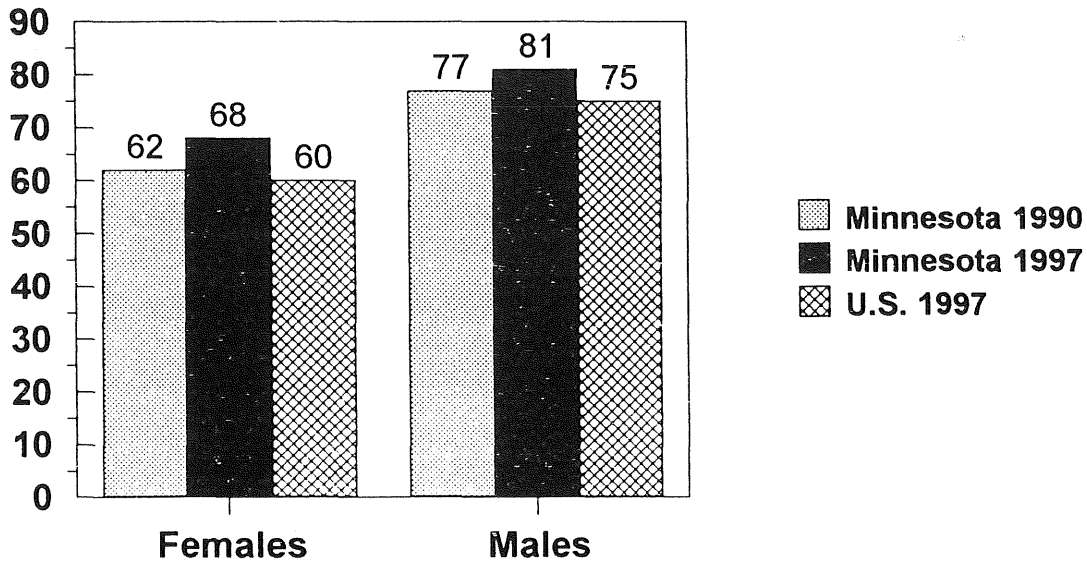
Minnesota female participation rates appear to have grown fastest among teens and among women 45 to 64



1994-1996 average from U.S. Bureau of Labor Statistics, provided by MN Dept. of Economic Security

Minnesota labor force participation rates are above U.S. average

% of population age 16+ in labor force



Source: U.S. Census, Bureau of Labor Statistics

The labor force has grown faster than was projected by the State Demographer's Office in 1994. The 1994 report projected that labor force would grow at an annual average rate of 0.9 percent during the 1990s; the actual growth through 1997 was 1.4 percent annually. The primary reason the projections were too low was that participation rates grew much faster than expected. The projected 1995 labor force participation rates were 77.3 percent for males and 63.4 percent for females. The actual 1996 rates, according to Bureau of Labor Statistics data, were 80.9 percent for males and 68.7 percent for females. Working-age population also grew slightly faster than projected, but unanticipated participation gains were the major reason that actual growth exceeded projections.

Teenage participation rates are very responsive to economic conditions. The strong demand for labor has made it easy to find entry-level jobs and has probably attracted many teens into the work force. Some older workers may have been drawn into the labor force for similar reasons. One can speculate that many of these youths and older workers are not employed full-time.

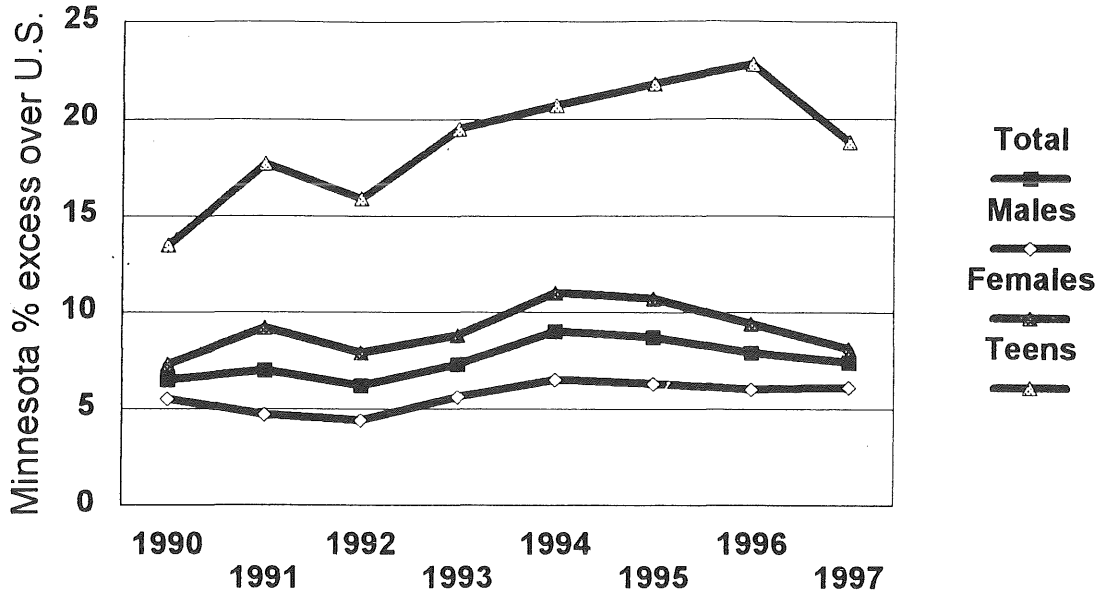
For women ages 45 to 64, the gain may reflect generational as well as economic influences. Women currently in their forties and fifties have more work experience than previous generations of women in this age group. Working outside the home is now accepted or even expected for older women, and they are less likely to have small children at home than are younger women. The BLS data show that women ages 45 to 54 have the highest

participation rates of any female age group. While these numbers, as noted above, are subject to substantial sampling error, it is certainly plausible that women in their late forties and early fifties, the leading edge of the baby boom, would have very high rates of work force participation.

What are the prospects for future gains in labor force participation? Minnesota has experienced tremendous gains in participation rates this decade, and the state now has some of the highest participation rates in the country. The BLS data suggest that most of this growth occurred between 1990 and 1995. Since 1995 participation rates for women and teens have leveled off or declined slightly. Perhaps this leveling indicates that participation rates have reached some sort of ceiling, or perhaps it is just a temporary phenomenon. Data also show that the gap in participation rates between Minnesota and the U.S. average has lessened slightly in the past few years. The biggest difference between Minnesota and the U.S. average remains the participation rate for teenagers. Obviously it is easier for young people to find a job in Minnesota than in many other states.

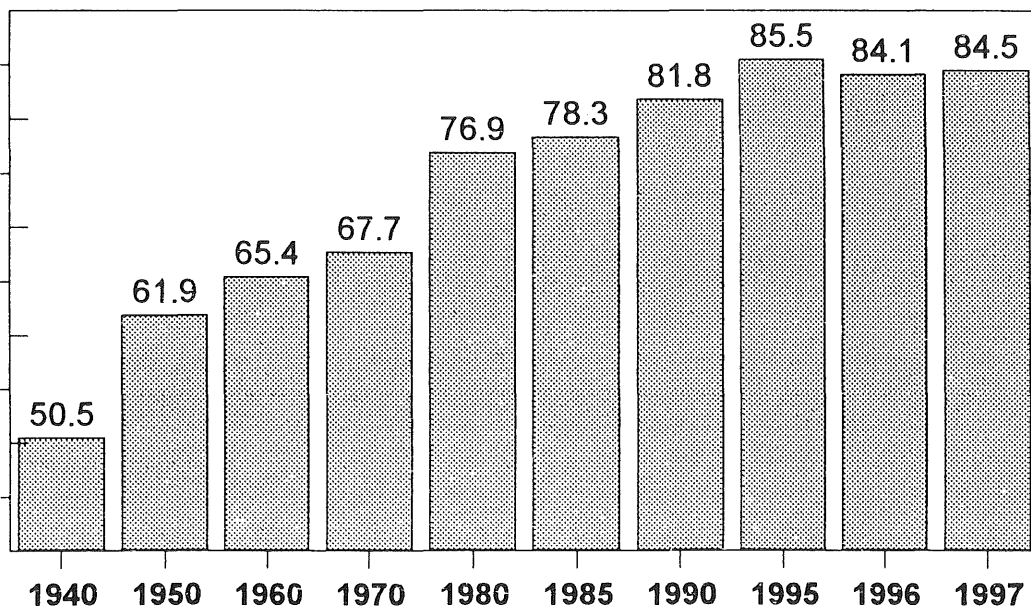
Data on the ratio of employment to working age population also suggest that participation peaked in about 1995, at 85.5 percent, and has if anything declined slightly since then. In 1997 the figure was 84.5 percent.

Gap between U.S. and Minnesota labor force participation rates peaked in 1994 and appears to be narrowing



Source: BLS, MN Dept. of Economic Security

Minnesota Ratio of Employment to Working-Age Population



Working age is defined as ages 16 to 64
Sources: Census and MN Dept. of Economic Security

Participation rates for men ages 25 to 54 are already so high there is little room for increase, so gains in participation would have to come from women, young adults, and the elderly.

Right now the lowest participation rates are for people over age 55. Many of these people are retired and do not want to work, or are unable to work due to poor health. Judging from the Bureau of Labor Statistics numbers, however, many older adults have been drawn into the labor force during this decade, and perhaps more could be drawn from this source. More teens could also be working, though many could only work part time because of school. More women ages 20 to 44 could work, though again some might only be able to work part time because of family obligations.

Projections suggest the labor shortage will continue.

Will the labor force grow enough in the next few years to meet the demand for labor? To try to answer this question, we prepared three sets of short-term labor force projections. These are based on three different scenarios about trends in labor force participation rates applied to the most recent (1998) set of statewide population projections. The three sets of labor force projections can then be compared to two sets of statewide employment projections. One employment projection series is from the Minnesota Department of Economic Security for the period 1996 to 2006. DES forecasts an annual average increase of 1.48 percent in wage and salary employment. The Department of Finance, in projections used to prepare the state budget forecast, comes up with a very similar assumption, projecting an annual increase of

1.42 percent between 1998 and 2001. This growth rate is similar to the annual gain in employed persons thus far in the 1990s.

The three labor force participation scenarios are referred to as the maximum rates model, the current rates model, and the 1990 rates model. The maximum and 1990 rates models have to be considered unlikely, but the results are illuminating. The maximum model uses the highest of either current rates, projected rates from the 1994 report, or a set of arbitrary maximums. The rates assumed for women and for men over 55 are well above the current levels. The model assumes, rather unrealistically, that these high participation levels begin immediately and continue through the projections period. Assuming these extremely high participation rates, projected labor force growth, 1.6 percent annually, moderately exceeds projected employment growth.

Using 1990 rates of labor force participation results in a growth rate of only 0.15 percent annually. This projections series is probably also somewhat unrealistic, since it assumes participation rates immediately revert to their lower 1990 levels and stay there. But the results do illustrate how much Minnesota's labor force expansion has come to depend on maintaining and increasing very high rates of labor force participation.

The third projection series, using current participation rates based on the average of the 1994 to 1996 Bureau of Labor Statistics rates, is the most probable of the three scenarios presented

here. Since labor force participation appears to have leveled off after about 1995, it is reasonable to assume constant rates for the next few years. Applying these rates results in a projected annual average 1.08 percent growth in Minnesota's labor force between 1996 and 2005. This is well below the projected rate of growth in jobs.

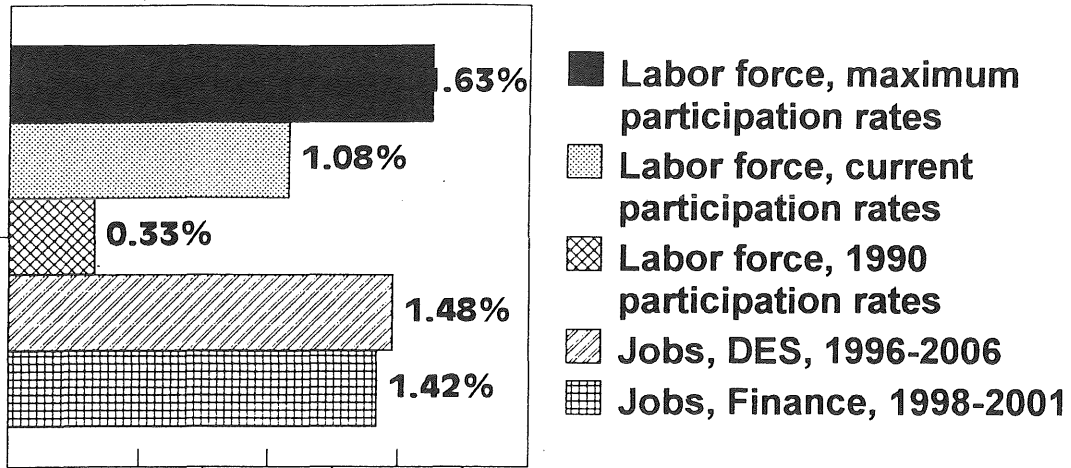
Number of workers under 25 and over 45 is expected to grow.

Though in this more likely scenario labor force growth is not expected to keep pace with employment, the supply of younger workers should increase. The 16- to 24-year-old labor force is projected to grow at an annual rate of 2.2 percent as members of the baby boomlet generation reach adulthood. This should mean a slightly larger supply of workers for fast food, retail and other entry-level jobs.

As the baby boomers age into their fifties and sixties, there will be strong growth among the labor force ages 45 to 64. Assuming current participation rates, annual growth will be 3.4 percent between 1996 and 2005. To deal with this aging labor force, employers will need to change workplace ergonomics and invest more in retraining. The aging of the work force may exacerbate employers' difficulties in recruiting, since older workers tend to be less mobile.

The number of workers ages 25 to 44 is projected to decline, a reflection of the lingering effects of the baby bust of the 1970s. Many employers prefer workers in this age bracket, in

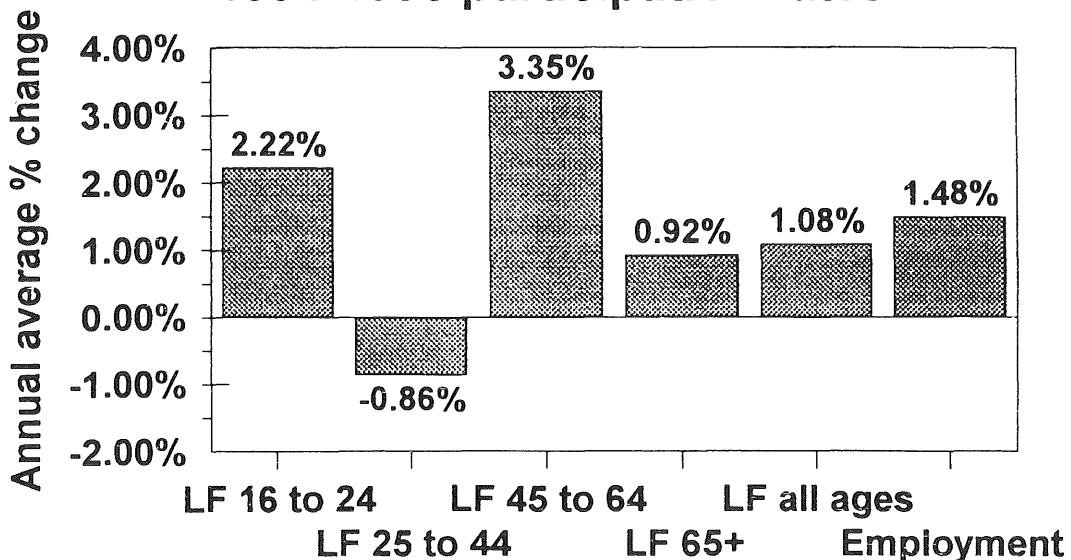
Under most scenarios, labor force growth between 1996 and 2005 is not expected to keep pace with employment growth



Projected annual % increase

State Demographic Center (labor force projections)
 MN Department of Economic Security (employment growth 1996-2006)
 MN Department of Finance (Employment growth 1998-2001)

Projected annual change in labor force and employment in Minnesota, using BLS 1994-1996 participation rates



Labor force projections 1996 to 2005 from State Demographic Center assuming constant participation rates.
 Employment projections 1996-2006 from MN Department of Economic Security.

the belief they are more energetic and have more up-to-date skills than older workers. Well-prepared workers in this prime age group will be in demand and will find employment easily.

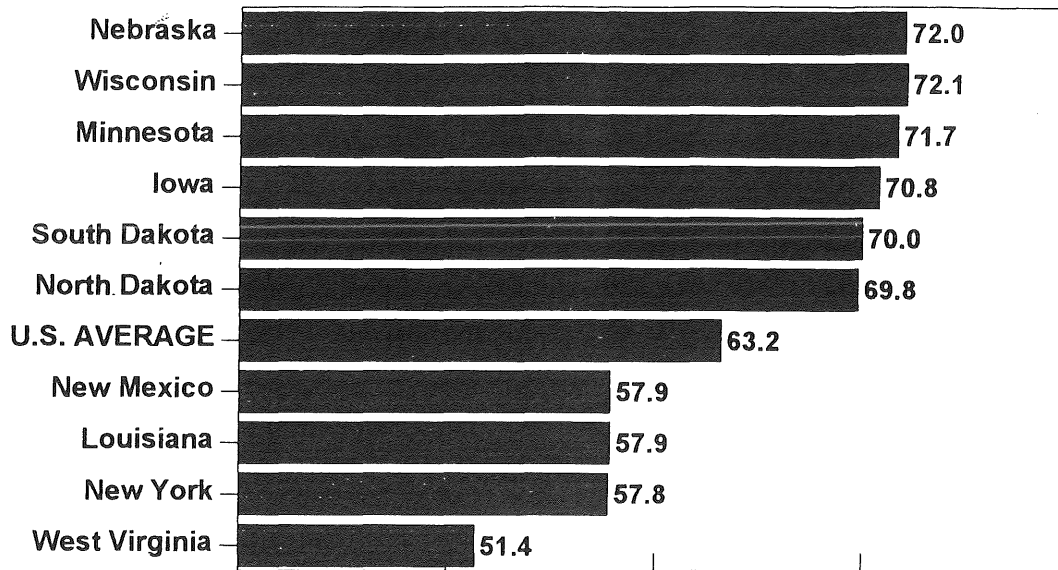
Consequences of the labor shortage.

The simple analysis of labor force and employment projections discussed above suggests that Minnesota's labor shortage will continue into the next decade. What consequences can we expect? One possibility is that demand for labor will bring in more people from other states. This would make the population and labor force grow faster than projected and thus even out the supply and demand. A look at the migration trend data offer only limited support for this prospect, however. Internal Revenue Service data show that the net inflow to Minnesota from other states peaked between 1992 and 1993 and has since tapered off. Even though the state economy has remained very strong into the late 1990s, we are experiencing less in-migration.

Minnesota gets many of its migrants from other midwestern states, and these states also have very tight labor markets. Most of the states with the lowest unemployment rates and highest rates of labor force participation border on Minnesota or are elsewhere in the midwest. Thus large numbers of new migrants cannot be expected to come from elsewhere in the region.

Migrants could also come from more distant states, of course. Minnesota exchanges large numbers of migrants with states such as Texas and California, and in-migration from such

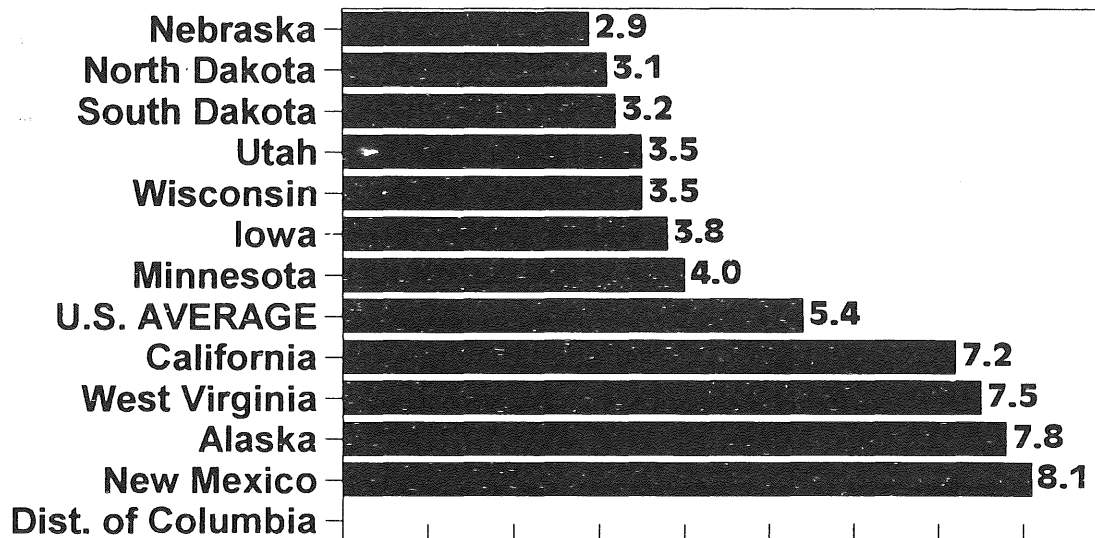
Midwestern states lead the nation in ratio of employment to population (1996)



Civilian employment as % of civilian noninstitutional population

U.S. Bureau of Labor Statistics

Midwestern states have some of the lowest unemployment rates (1996)



% unemployed of civilian labor force

U.S. Bureau of Labor Statistics

states has helped provide needed workers in the 1990s. However, as the economies in these large faraway states have improved, they are not sending as many people to Minnesota.

If more people cannot be drawn from other states, what about other countries? The number of immigrants coming to Minnesota during the 1990s has increased. The availability of jobs has played a large part in this influx. The potential supply of immigrants is huge, but whether there are enough legal immigrants to meet future labor demands is another question.

If labor demand cannot be met from domestic or international migration, employers may rely more on automation and technology, ask employees to work more hours, or recruit more workers who fill multiple jobs. This would allow them to increase productivity without an equivalent increase in the number of workers.

Another outcome, however, is that employers will not be able to find enough workers and the state's economy will suffer as a result. Jobs will be exported to other states or countries with more available workers. Business expansions will be put on hold or canceled. Tax revenues will be lower than anticipated and it will be harder to pay for state programs and services.

Of course a severe recession could solve the labor shortage problem, at least for a couple of years, but few would see this as a desirable "solution." Nor would a recession reverse the longterm demographic trends that underlie Minnesota's current labor crunch.

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April 29, 1999