

# Growth and Change in South Dakota Labor Markets

An Assessment of the State's Labor Market Imbalances in a  
Weak National Recovery

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## Introduction

The American economy has experienced more than a decade of economic turbulence that began in early 2001 after a 20-year period of sustained prosperity that lasted from the early 1980s until the dot.com bubble burst in early 2001. In recent years with the Great Recession that began at the end of 2007, much of the nation experienced large job losses and rising unemployment and related labor market hardships. The current recovery from those job losses is quite weak. Slow Gross Domestic Product (GDP) and job growth have meant that the number of jobs in the nation at the end of 2013 was well below the pre-recession peak in 2007. This has meant that most states in the nation have seen two major labor market problems of high unemployment rates and reduced labor force attachment; both of which are the product of poor job creation.

South Dakota's economy weathered the recent recession in a much different fashion than most other states. The overall unemployment rate in South Dakota remained quite low relative to all but a few similarly fortunate states. When the job market recovery began in early 2010, labor market conditions in South Dakota tightened quickly and excess labor supply rapidly dried up. By 2013 the overall unemployment rate in the state declined to a level that is generally considered to signal an economy that is operating at full employment.

Under full-employment conditions some firms in key industries are confronted with labor supply bottlenecks that inhibit their ability to expand their payroll employment levels that are needed to produce more output and expand sales and revenues. Mismatches between the education, abilities, knowledge and skills of job seekers and those required by employers who want to fill specific occupational job opening sometimes play an important role in inhibiting a producer's ability to expand output and sales.

This paper is designed to assess labor market conditions in South Dakota and determine whether significant labor market imbalances exist in the state; assess the nature of those imbalances, and identify those segments of the state job market that are potentially experiencing economic losses associated with these job market imbalances.

The paper examines three important topics related to the ability of South Dakota's labor markets to properly adjust to rising demand for labor now and in the future. We begin by analyzing population developments in the state, examining changing patterns of domestic and

international migration and their impact on population growth in the state. We assess developments in the size and composition of the state's working-age population and relate these findings to measures of the patterns of labor force participation for different population groups in the state. We provide an appraisal of labor force developments in South Dakota and provide estimates of projections of labor force growth in the state over the next decade, which suggest that if recent population growth trends are sustained, the productive capacity of the state (measured by the size of its labor force) is likely to rise sharply in the future.

We next turn our attention to labor market imbalances in South Dakota from the supply side perspective of the market. We provide an expanded discussion of the idea of full employment and the full employment unemployment rate that we use as a benchmark to identify labor market segments in the state that are characterized by labor supply shortfalls as well as those labor market segments where substantial labor surpluses exist. We also discuss issues related to the duration of unemployment and compare unemployment durations in South Dakota with the U.S. to gain some insight into job market imbalances in the state.

Job market imbalances from the demand side perspective of the South Dakota job market is the third topic that is assessed in this paper. We begin by examining the changing industrial structure of employment in the state over the last decade and illustrate how such change impacts the occupational and educational requirements of employment across sectors of the South Dakota economy. We identify the key sources of new job creation during the current jobs recovery in the state and assess problems in hiring workers in a selected set of industries based on both analysis of data and discussions with employers across the state.

## **Summary of Key Findings**

### ***Population and Labor Force***

South Dakota has been a slow population growth state compared to most other states in the nation over the last 50 or so years. During the 1960 to 1990 period that state was ranked 47<sup>th</sup> out of 50 states in its annual average rate of population growth. During the 1990s the pace of population growth in the state increased, but remained well below that of the nation, and while this improvement in the pace of population growth continued through 2010, South Dakota still lagged the nation in its pace of population gain.

Slow population growth means that labor supply growth within a state or region will also be slow, inhibiting an area's ability to create economic prosperity and generate new jobs. Slow population growth acts as a powerful constraint on the productive capacity of a state. Fortunately, over the last three years South Dakota has reversed its historically slow pace of population growth. A sharp increase in the number of persons from other states relocating to South Dakota has meant that the state's population growth rate has surpassed that of the nation (3.8 percent vs. 2.4 percent for the nation) in recent years. Accelerated population growth in South Dakota means that in the long-run, labor supply in the state can grow at a more rapid pace, both compared to historical growth rates as well as relative to the U.S. as a whole.

The working-age population in South Dakota (those aged 16 and older) like the nation as a whole, is aging rapidly. The number of people aged 65 and older increased by nearly one-third since 1999-2000 while the number in the pre-retirement age group (55-64) has increased by 90 percent. Even with an aging working-age population South Dakota has a very high rate of engagement in the labor market. The basic measure of job market engagement of a state's working-age resident population is the labor force participation rate. Since the end of the 1990s South Dakota has a high rate of labor force participation compared to most other states in the nation. Over this period, South Dakota's labor force participation rate has averaged between 6 and 7 percentage points higher than the average for the nation as a whole. With its high rate of labor force attachment South Dakota has about 40,000 more persons supplying labor than would be expected if the rate of labor force attachment in the state was equal to the nation as a whole. This represents a very important advantage to South Dakota, sharply raising the productive potential of the state as well as signaling a strong work connection between residents and prospective employers.

Between 1999-00 and 2012-13, the South Dakota labor force increased by about 41,000 workers or 10%; about the same rate as the national labor force growth during that period. All of the labor force growth has been among older workers (55+ years old). The number of older workers increased by 54,300 while the number of 25- to 54-year olds decreased by 7,500 and the number of 16- to 24-year olds decreased by 5,300. The share of older workers in the South Dakota workforce increased from one in seven at the end of the 1990s to one in four in 2012-13. Despite the aging of the workforce, we expect that South Dakota will experience well above average labor force growth in the future, if recent population migration patterns are sustained.

Nonetheless, the labor force will continue to age, especially as the number of teens and young adults in the labor market declines in the coming decade

### *Labor Market Imbalances*

The evidence is clear that the primary labor market problem that has characterized the U.S. job market over the last five years has been a very large excess supply of labor at prevailing market wages. The Great Recession created massive job losses which left large parts of the U.S. labor force idle or near idle for very long periods of time. Since the recovery began, the pace of new job creation has remained slow, leaving large numbers of American's who are willing and able to work, without an opportunity for employment. The ratio of officially unemployed workers to vacant jobs stood at more than 3 unemployed persons for every job opening at the end of 2013. The national unemployment rate remained at 7+ percent. Yet despite the poor national context, South Dakota's job market appears to have minimal excess labor supply. Instead, a growing problem in the state is increasing labor scarcity.

South Dakota's overall unemployment rate, a measure of job market tightness or underutilization of available labor supply, was half that of the nation at the end of 2013 (3.6 percent versus 7.0 percent for the U.S.). Given the statistical relationships between unemployment rates and job vacancy rates in the U.S., we speculate that there is essentially 1 unemployed worker for every job opening in the state; a full-employment condition. More than one-half of all the counties in South Dakota had an unemployment rate below 4.0 percent at that time (end of 2013). Fewer than 10 percent of all counties in the state had an unemployment rate equal or higher than the national average; these counties were quite small in size.

Unemployment rates in South Dakota vary sharply across industries and occupations. We found 8 major industrial sectors in the state had very low unemployment rates of 2.9 percent or less during 2012-2013. These include durable goods manufacturers, professional, scientific and engineering services producers, and health care providers. These industrial sectors all had unemployment rates that suggest a substantial degree of labor scarcity. Interestingly, at the same time a few other industries in the state were experiencing substantial excess labor supply problems. These include industrial sectors where the unemployment rate averaged more than 7 percent over the 2012-2013 period, such as, construction, administrative support services and accommodation and food services.

Unemployment rates in South Dakota varied sharply across major occupational areas. College labor market occupations including managers, business and financial operations, computer and mathematical science occupations, engineering and health care professions all had unemployment rates below two percent—signaling labor scarcity in these professional areas. In contrast, we found a number of occupations that had very high unemployment rates including food preparation and service workers and protective service worker occupational groups, both of which had unemployment rates of around 9 percent among those who had worked in these occupations in the past.

Our findings suggest that occupations that require little skill or education were more often characterized by substantial excess labor supply conditions while occupations requiring considerable schooling and/or experience were characterized by labor scarcity in South Dakota. Related to this, we found that unemployment rates and the level of educational attainment in the state were closely connected. College graduates with a bachelor's degree or higher had an average unemployment rate of just 1.5 percent during 2012-2013. In contrast, the unemployment rate of high school graduates (no college) averaged 5.2 percent, while dropouts had an average unemployment rate of 10.4 percent during this period. When we examined problems of persistent or long-term unemployment (out of work for 27+ continuous weeks) in South Dakota we found very little long duration unemployment among college graduates. Most of those out of work for 6 months or longer over the last two years had not earned a college degree of any type.

### ***Job Growth and Job Market Imbalances***

South Dakota's job generation has dramatically outperformed the nation since the end of the 1990s expansion. Between 2001 and 2013, non-farm payroll employment in South Dakota grew by 11.3 percent compared to 3.2 percent of the nation as whole. A major part of this difference is associated with the state's ability to maintain most manufacturing jobs over the period while the nation lost nearly one in four manufacturing jobs. Stability in South Dakota's manufacturing sector was essential to the state's ability to so strongly outpace overall national rates of new job creation.

With a stable manufacturing job base, South Dakota's service producing sector also grew at a substantially more rapid pace than the nation as a whole. The health care and social assistance sector was the centerpiece of new job creation in the state, accounting for four in ten new jobs created between 2001 and 2013. The long-term shift of employment from goods

producing to service producing industries in South Dakota has resulted in strong job gains in college labor market occupations. Especially rapid growth occurred in the health professions, computer/mathematical and engineering occupations, life, physical and social sciences and in managerial/business and finance professions. This growth increased employment most rapidly among those with a bachelor's or master's degree, while employment among those who had not earned a high school diploma plummeted.

During the current economic recovery, employment levels in the South Dakota manufacturing sector rebounded strongly from steep losses incurred during the recession, nearly recovering to its pre-recession employment peak. Manufacturing employment accounted for about one in three new jobs created in the state during the 2010 to 2013 period; but all of this was just recovery from job losses during the recession. Health care and social assistance and professional and business services sectors were also strong contributors to the state's recent jobs recovery. Both of these sectors posted substantial net gains in employment over the business cycle, even after accounting for job losses during the recession.

Ten specific industries in South Dakota accounted for much of the new job growth experienced in the state. These industries included three durable goods manufacturers including fabricated metals producers, machinery manufacturers, and transportation equipment producers where labor supply problems were prevalent. In the services producing sector we identified the hospital industry and the professional, scientific and technical services industry as experiencing some labor supply shortfalls. We examined developments within these industries and interviewed a number of employers and education and training service providers connected to these industries to gather additional evidence about potential labor supply problems.

We found evidence of labor supply shortfalls in all three of the durable goods manufacturing industries that compete for many of the same worker skills, especially in welding and machine trades and operatives-related occupations, and engineering fields. Many of the manufacturing firms we met with had attempted to adjust to labor supply problems to blue-collar occupations in a variety of ways. Some developed internal training programs, others worked with local training and education programs often contributing resources to these programs to bolster enrollment and completions in these programs. Stepped up recruitment and offers of wage/compensation increases were also reported as measures to address labor supply problems. Some evidence of geographic mismatches was found, including difficulty in recruiting in more

rural communities with limited housing capacity. Several firms reported increased use of capital as a substitute for increasingly scarce blue-collar labor. Robotics and CAD/CAM and 3D printing (sometimes called additive manufacturing) may be technologies that may render some of the blue-collar skills currently in demand obsolete in the future.

Many firms found engineering and computer science-related occupational job openings difficult to fill. These firms compete in national labor markets against often large firms in major metropolitan areas. The South Dakota professional, scientific and technical services industry is a major employer of a large variety of workers in various business and management professions as well as scientific, engineering and computer science and mathematical technology occupations. Strong job growth and very low unemployment rates in this industry and among the major professional occupations that make up this industry also suggest growing labor scarcity.

The South Dakota health sector has served as a central source of new job creation for a decade, much of this in the health professions. Like the health sector in the nation, South Dakota health care providers are adjusting to a new era of regulation and cost control. This has meant a slowdown in national health care industry employment in recent months as organizations seek to implement new delivery strategies. Strong demand is expected for nurse practitioners as at least one outcome of this adjustment process, but some ambiguity remains as different providers implement substantially different staffing adjustments in response to federal policy actions.

## **Population Developments**

### ***Overall Population Developments***

The potential productive capacity of a state (or nation) is heavily influenced by developments in the size of the working age (16+) population along with the nature of job market attachment of working age residents of the state. Rapid growth in the size of the working age population in a state signals rapid expansion in the potential productive capacity of that state. Strong population growth is a broad signal of the potential to increase output, employment, and income with rising potential labor supply to the business community. Of course, not all of those in the working age population choose to actively participate in the labor market.

People in pre-retirement (55-64) and retirement age groups are less likely to actively participate in the labor market compared to prime age workers (25-54). Thus changes in the age composition of the population can influence the growth in labor supply potential within a state.

The level of educational attainment of the working age population also exerts an important influence on the choice to supply labor: those with higher levels of education tend to engage in the job market at higher rates than those with fewer years of schooling. The economic pay-off to educational attainment has consistently increased in the nation and in South Dakota since the mid-1970s. This means that those with fewer years of schooling are less likely to participate in the labor market than has been the case in the past.<sup>1</sup>

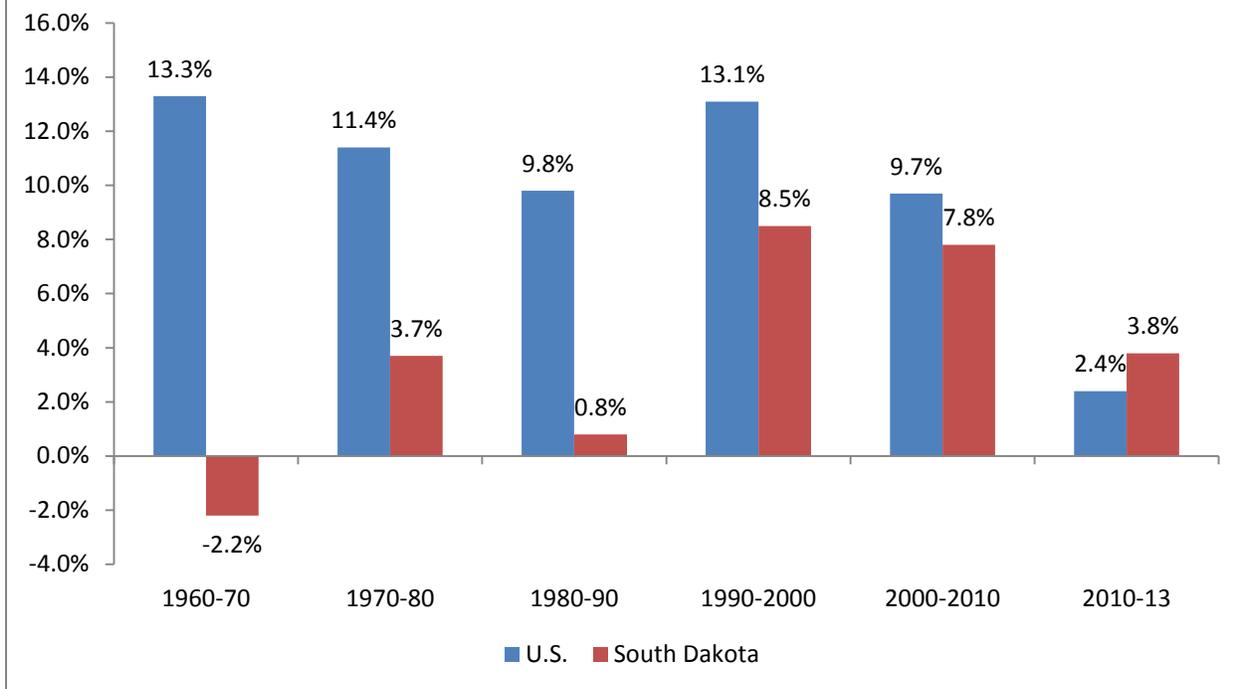
Over much of the post-World War II period, population growth in South Dakota has been below average. Between 1960 and 1990 South Dakota's resident population growth rate significantly lagged the national rate of population growth. It was not until the decade of the 1990s that South Dakota was able to narrow the large gap between its population growth and that of the nation. During the decade of the 1960s, South Dakota actually experienced a decline of 2 percent in the number of residents while the U.S. population increased by 13 percent. Over the following decade, during the 1970s, the state did see a growth in its population, but the rate of population gain was equal to just one-third of national population growth rate during that time. South Dakota experienced virtually no population growth during the 1980 to 1990 period (a rise of less than 1 percent) while the nation saw its population rise by about 10 percent over the same time period. This suggests that for the 30-year period between 1960 and 1990 the productive capacity of South Dakota grew only very modestly. With just a 2 percent increase in the population, South Dakota ranked 47<sup>th</sup> among 50 states in the pace of net population increase over the three decades between 1960 and 1990, while the nation's population increased by 39 percent.

After 1990, the pace of population growth in South Dakota accelerated considerably. Between 1990 and 2000 the state's resident population grew by over 8 percent, while the nation's population increased by about 13 percent. The gap in growth rates between the state and the nation narrowed further between 2000 and 2010. Over the past three years (2010-2013), the pace of population growth in the South Dakota has surpassed that of the nation, growing at a rate that is equal to 1.6 times the rate of national population growth.

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<sup>1</sup> Changes in the industrial and occupational composition of labor demand have favored those with higher levels of educational attainment. Technological change has had especially powerful adverse impacts on those with fewer years of schooling as capital and software have become effective substitutes for labor in many blue collar and clerical occupations. Frank Levy and Richard Murnane, *The New Division of Labor: How Computers are Changing the Way We Work*, Princeton University Press, 2004

## Percent Change in the Size of the Resident Population of South Dakota and the U.S. 1960 through 2013, Selected Time Periods



Source: U.S. Bureau of the Census, Population Estimates, <http://www.census.gov/popest/data/index.html>, tabulations by the Center for Labor Markets and Policy, Drexel University.

Much of the population growth that has occurred in South Dakota has come from migration, both foreign and domestic. During the 2000 to 2009 period, nearly one-fourth of the net increase in the size of the South Dakota population came from migration. Net international migration accounted for about 11 percent of the total population increase over the decade, while positive net domestic migration accounted for about 12 percent of the net increase in state residents over that period of time. As the pace of population growth in South Dakota has picked up over the past few years, migration into the state has become a significant source of population gain. Larger in-flows of migrants from other parts of the nation and the world have been a key source of the accelerated population growth in the state. Between 2010 and 2013, net international migration added 3,400 additional residents to the state's population. This represents a sharp increase in the net international migration (during the 2010-13 period) compared to the pace of net international migration experienced in South Dakota during the last decade.

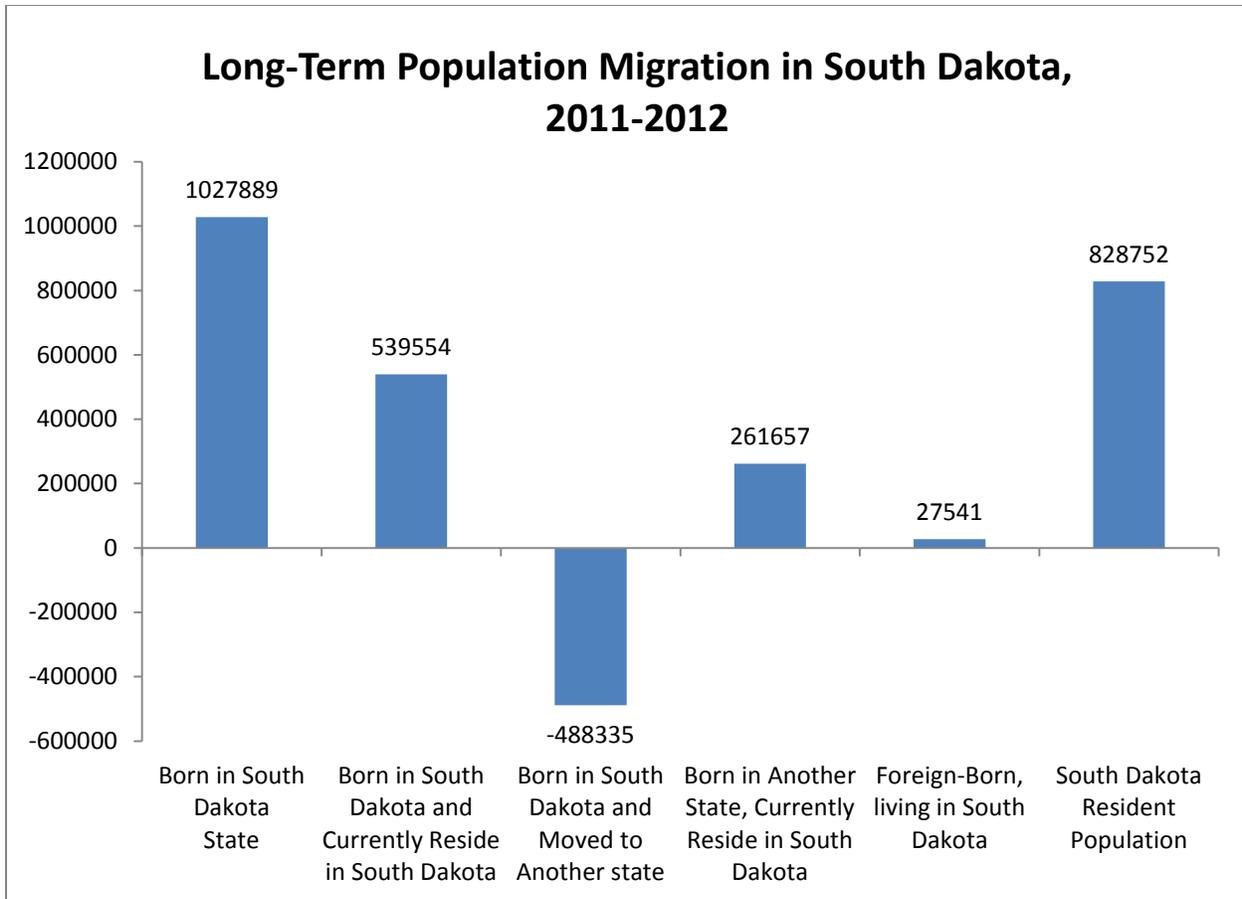
Table 1:  
Components of Total Population Change in South Dakota,  
2000 to 2009 and 2010 to 2013

Components of Population Change	2000-2009		2010-2013	
	Net Population Change	Share of Total Change	Net Population Change	Share of Total Change
Net Population Change	57548	100%	30697	100%
Natural Increase	40893	71%	15838	52%
Net International Migration	6545	11%	3404	11%
Net Domestic Migration	6822	12%	11556	38%
Residual*	3288	6%	-101	0%

\*The Residual is that element of a state's population change that cannot be attributed to any single component of population change. See: <http://www.census.gov/popest/data/index.html>

However, strong net domestic migration has been the primary source of the recent acceleration of population growth in South Dakota as the pace of net domestic migration into South Dakota from other states in the nation has increased dramatically since 2010. Indeed, net domestic migration accounts for 38 percent of the state's total population increase in the past few years. The net increase in the state population that came from domestic migration during the 2010-2013 period (11556) has already equal to 1.7 times the population increase from net domestic migration that occurred in South Dakota between 2000 and 2009 (6,822). This implies that there was a dramatic increase in net in-migration to South Dakota from other states in the nation in recent years. Strong net domestic migration is the primary reason that South Dakota now has the 7<sup>th</sup> most rapidly growing population in the nation.

Analysis of the public use data files of the American Community Survey lends support to this view. Long-term outmigration has led to well below average population growth in South Dakota over the long term. Currently, about 1.03 million residents of the U.S. reported that they were born in the state of South Dakota out of which about 540,000 have remained residents of the state. This is among the lowest fraction of state residents to birth residents in the nation. South Dakota is ranked 4<sup>th</sup> highest among all states in the nation in the share of births residents who resided in another state during 2011-2012, with 488,000 persons or 47 percent of all living persons who were originally born in South Dakota now residing in other states. Offsetting this outmigration, were about 262,000 persons who currently reside in South Dakota who were born



Source: U.S. Bureau of the Census, American Community Survey, Public Use Micro-data Files, 2011 and 2012, estimates by the Center for Labor Markets and Policy, Drexel University.

in another state, along with about 27,500 foreign born residents.<sup>2</sup> During 2011-2012 about 65 percent of South Dakota residents were born in the state and about 31 percent moved to South Dakota from another part of the U.S. Foreign-born residents accounted for about 3 percent of the state's population at that time. South Dakota's foreign-born population share is among the lowest in the nation. South Dakota had the 4<sup>th</sup> lowest foreign-born share of its total resident population among all states in the nation.

### *Characteristics of Migration*

The ACS data files permit us to gain an understanding of the characteristics of those who have migrated out of South Dakota in recent years (2008 to 2012) relative to those who moved into the state. We found that both in-migrants and out-migrants from South Dakota were young.

<sup>2</sup> South Dakota ranked 34<sup>th</sup> of 50 states in the contribution of net in-migration to population change. Only 21 states had positive net internal migration in the long-run with Florida leading this list by a wide margin of more than 5 million gain in population associated with net migration from other states.

The median age for both groups was about 25 at the time of the survey. Additionally, both in-migrants and out-migrants were largely non-Hispanic White. Some larger differences were found in the level of educational attainment between in-migrants and out-migrants. During the 2008 to 2012 period, the share of out-migrants with a college degree averaged about 28 percent of all those who moved from South Dakota, while the share of in-migrants with a college diploma averaged just about 22 percent over the same period. This means that during this period of time South Dakota was a net exporter of college graduates.

Table 2:  
Educational Attainment of the Mean Annual Number of Out-Migrants  
from and In-Migrants to South Dakota, 2008-2012

Educational Attainment	Out-Migrants	In-Migrants
No H.S. Diploma	22.9%	23.3%
H.S. Diploma/GED	17.6%	22.6%
Some College, No Diploma	26.0%	27.5%
Associate's Degree	5.5%	5.2%
Bachelor Degree	19.5%	13.5%
Master's or Higher Degree	8.5%	7.8%

Source: U.S. Bureau of the Census, American Community Survey, Public Use Micro-data Files, 2011 and 2012, estimates by the Center for Labor Markets and Policy, Drexel University

## Working Age Population Developments

This section of the paper examines developments in the narrower working-age population group (those aged 16 and older) by using data derived from the U.S. Bureau of the Census Current Population Survey (CPS). The CPS is a monthly survey of households conducted at the state and national level that serves as a basis for a wide variety of information about American household members. The survey asks a variety of questions, including many questions about the labor market experiences of working-age persons. These questions and their responses serve as the basis for critical economic and social measures included in the official national and state unemployment rates that are released each month, along with a wide range of information about the population and labor force.

The Census Bureau makes de-identified individual responses to the monthly CPS questionnaire available to researchers for further analysis. We have created a wide variety of estimates from the CPS survey for the state of South Dakota that help us gain some insight into

the nature of population change that has occurred in the state. These estimates also can help us better understand how this change impacts the nature of growth in the size of the state’s labor force and its productive potential, from a job market perspective.<sup>3</sup>

Our analysis of the CPS household survey reveals that the South Dakota working age population has increased by nearly 82,000 since the end of the 1990s, rising by about 15 percent over the period. This pace of growth is nearly equal to the 16 percent rise in the size of the nation’s working age population over the same period of time.

### *Race-Ethnicity*

The pace of working-age population growth in South Dakota has varied considerably across race-ethnic groups, age groups, and by level of educational attainment. The white, non-Hispanic population was the single most important source of population gains among those 16 and older in the state since the end of the 1990s accounting for just over half of the population growth in the state, with a disproportionate share of this increase concentrated among persons aged 55 and older. However, the overall pace of increase in the size of the white, non-Hispanic population of 9 percent over the 1999-2000 to 2012-13 period is well below the overall pace of increase in the size of the state’s working-age population. American Indians and Hispanics each separately accounted for about 15 to 16 percent of the rise in the size of the state’s population since the end

Table 3:  
Trends in the Size of the South Dakota Working Age Population,  
By Race/Ethnicity

Race-Ethnicity	1999-2000	2009-2010	2012-2013	Absolute Change	Relative Change
White, non-Hispanic	513516	550493	557380	43864	9%
Black, non-Hispanic	5081	5534	6897	1816	36%
American Indian	27034	37982	40054	13020	48%
Asian, non-Hispanic	3964	6065	5866	1902	48%
Hispanic	5495	15213	17677	12182	222%
All, 16+	555090	620385	636689	81599	14.7%

Source: U.S. Bureau of the Census, Current Population Survey, Public Use Micro-data Files, selected years, estimates by the Center for Labor Markets and Policy, Drexel University.

<sup>3</sup> The data included in this section are derived from a 22-month average during three time periods included 1999-2000, 2009-2010 and 2012-13, from the Current Population Survey Public Use Microdata Files available from the U.S. Bureau of the Census. All estimates were prepared by the Center for Labor Markets and Policy, Drexel University, Philadelphia, Pennsylvania.

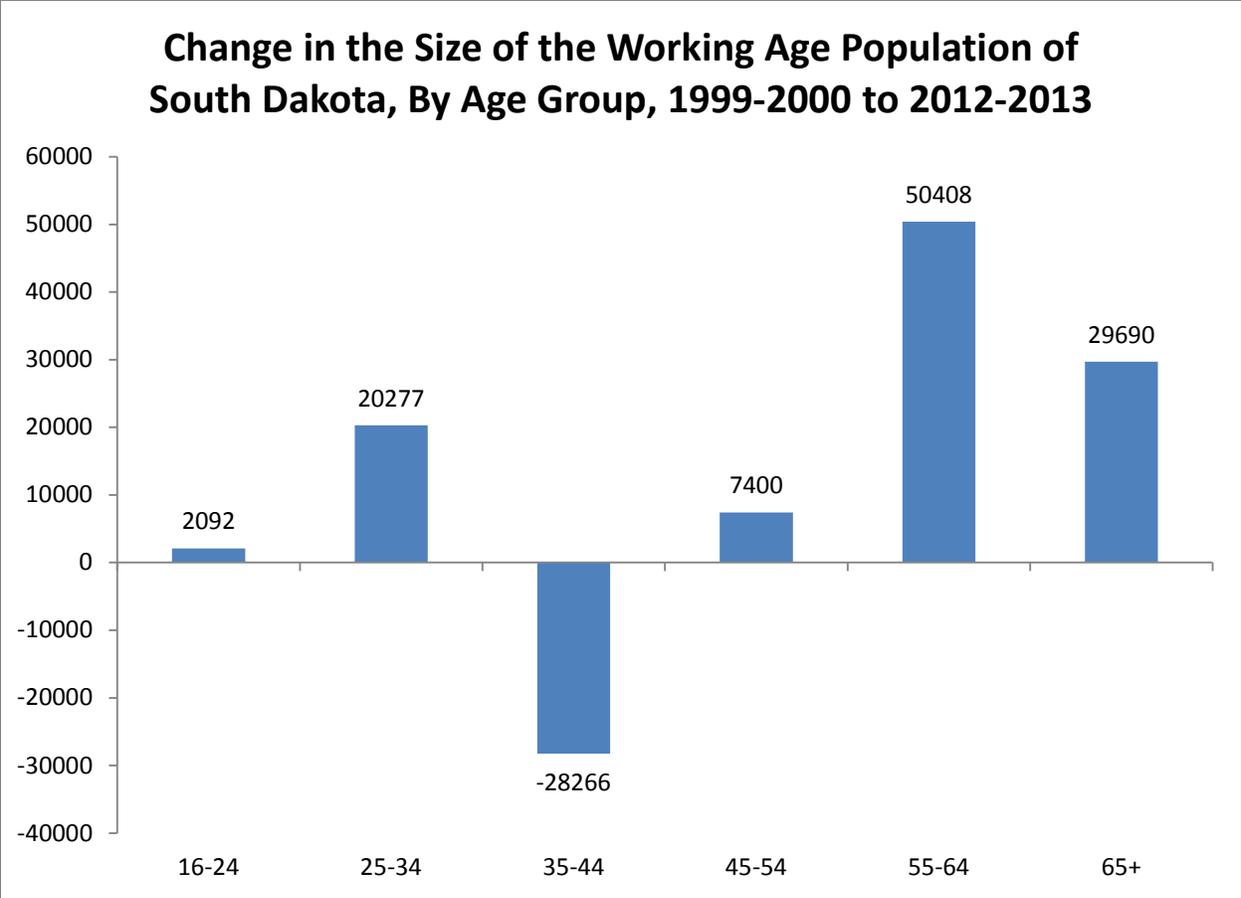
of the 1990s. Hispanics are the most rapidly expanding source of population in South Dakota in recent years with the number of working age Hispanic residents tripling since the end of the 1990s. This rapid pace of growth in the state's Hispanic population is likely to continue as Hispanic immigrant networks expand in the state.

Our earlier discussion of overall population change in South Dakota noted that international immigration began playing a more important role in overall population growth in the state beginning in the 1990s. Our analysis of the CPS population data reveals that the number of foreign-born residents in the state has increased sharply since the end of the 1990s, more than doubling over the period. Foreign immigrants accounted for about 15 percent of the total rise in the size of the state's working-age population.

### *Age*

Much of the growth in the state's working-age population that has occurred since the end of the 1990s has been concentrated among people over the age of 55. The number of people of retirement age (aged 65 and older) increased by almost 30,000, representing an increase of 31 percent. The state's pre-retirement age population (45- to 54-years old) increased by 50,000 or 90 percent since 1999-2000. The aging of the Baby Boomer Generation has already begun to affect the overall size of the number of persons ready and able to work in the state. In a subsequent section of this report we will examine the aging of the state's population and assess its meaning for labor supply growth in South Dakota between 2012 and 2022.

The growth of the older worker population in South Dakota was offset by a sharp decline in the number of persons in the 35 to 44 year old age cohort. This birth dearth age cohort (born between the mid-1960s and the late 1970s) is composed of persons born after the baby boomers, but before the echo generation of the boomers that was born between 1979 and 1996. The number of persons aged 35-44 in the state fell by 28,000; a one-quarter decline in the number of people in that age group since the end of the 1990s. The Echo generation composed of the children of the boomers bolstered the population of persons aged 25-34 by about 20,000, a 23 percent rise. However, the number of working age teens and young adults in the state has barely increased since the end of the 1990s.



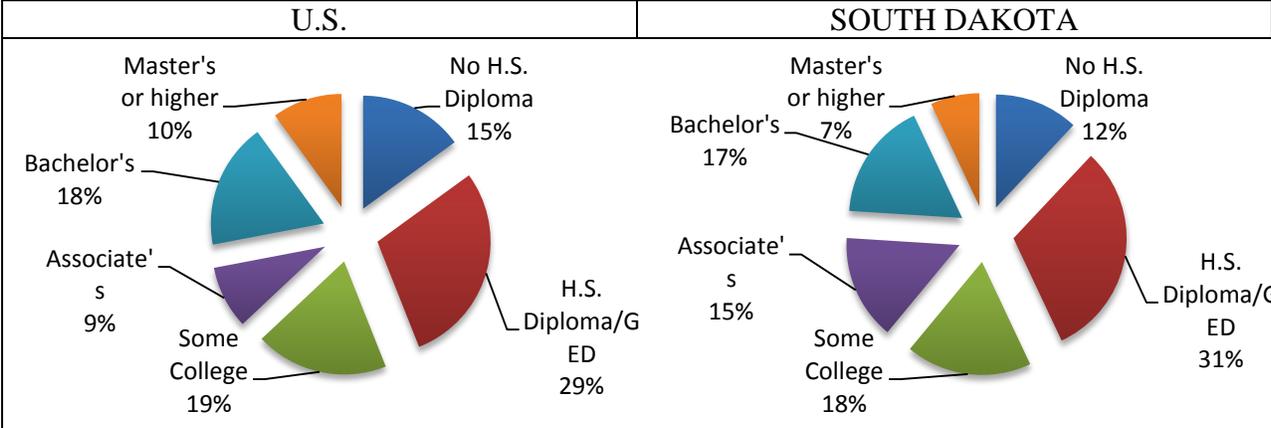
Source: U.S. Bureau of the Census, Current Population Survey, Public Use Micro-data Files, selected years, estimates by the Center for Labor Markets and Policy, Drexel University.

**Educational Attainment**

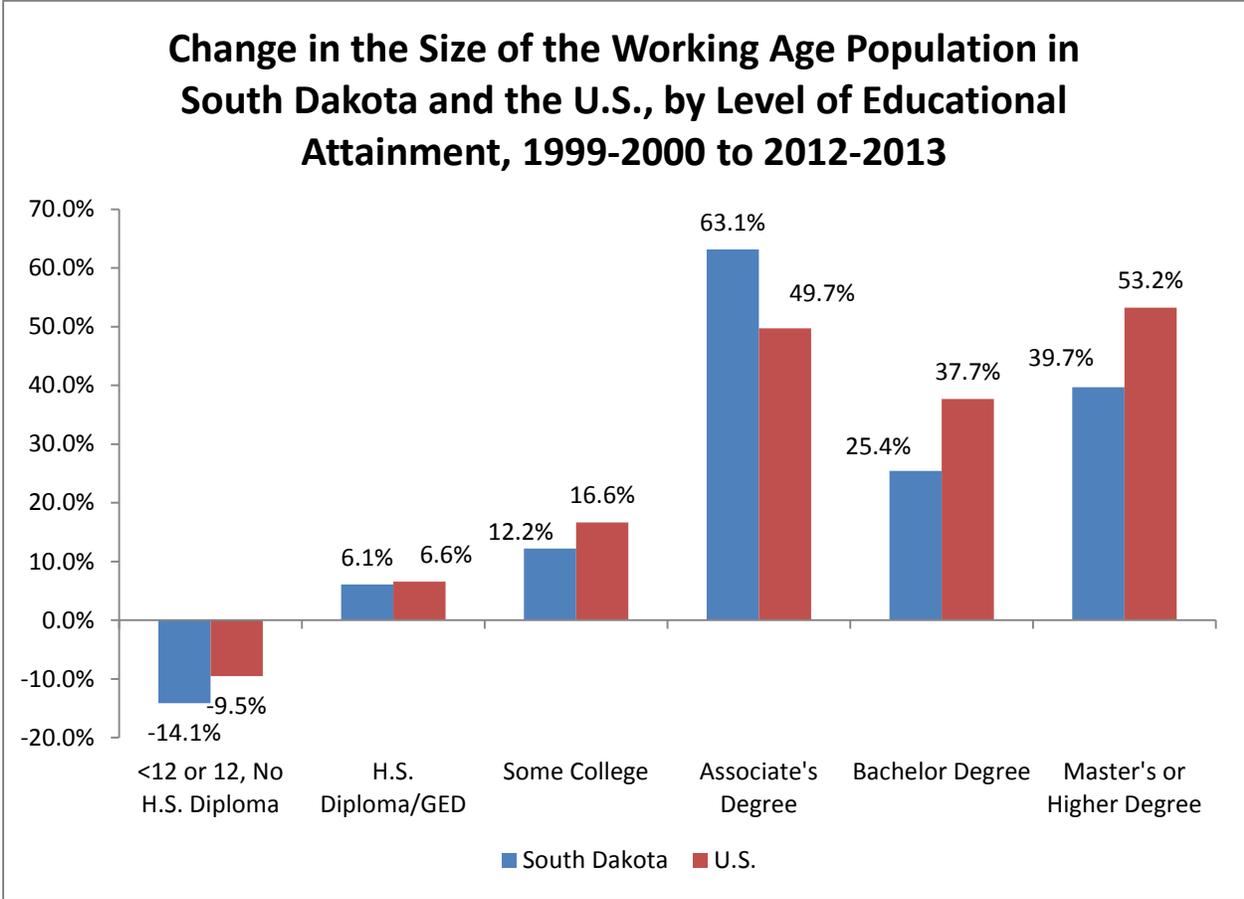
The level of educational attainment of the working age population in South Dakota was somewhat lower than that of their counterparts across the nation during 2012-13. South Dakota had above average shares of working age persons with less than a four year college degree. Overall, about 24 percent of working age residents of South Dakota during 2012-2013 had earned a bachelor’s degree or an advanced or professional degree, while this proportion was about 28 percent for the U.S. as a whole.

Perhaps more importantly we found that pace of increase in the number of working age South Dakota residents with a college degree was substantially below that of the nation as a whole. Since the end of 1990s decade, the number of working age persons in the U.S. with a bachelor’s degree increased by about 38 percent. South Dakota, already with a below average number of bachelor’s degree holding residents, experienced a much slower growth in the number

## Percentage Distribution of the Working-Age Population by Educational Attainment, 2012-2013



Source: U.S. Bureau of the Census, Current Population Survey, Public Use Micro-data Files, Selected Years, estimates by the Center for Labor Markets and Policy, Drexel University



Source: U.S. Bureau of the Census, Current Population Survey, Public Use Micro-data Files, selected years, estimates by the Center for Labor Markets and Policy, Drexel University.

of residents with a bachelor's degree. The state's increase of 25 percent more bachelor's degrees was equal to just two-thirds the pace of bachelor's degree population growth in the U.S. Similarly, South Dakota's pace of growth of persons with advanced or professional degrees was equal to just 62 percent of that in the nation as a whole. These findings suggest that the higher education gap between South Dakota and the nation as a whole has increased since the end of the 1990s.

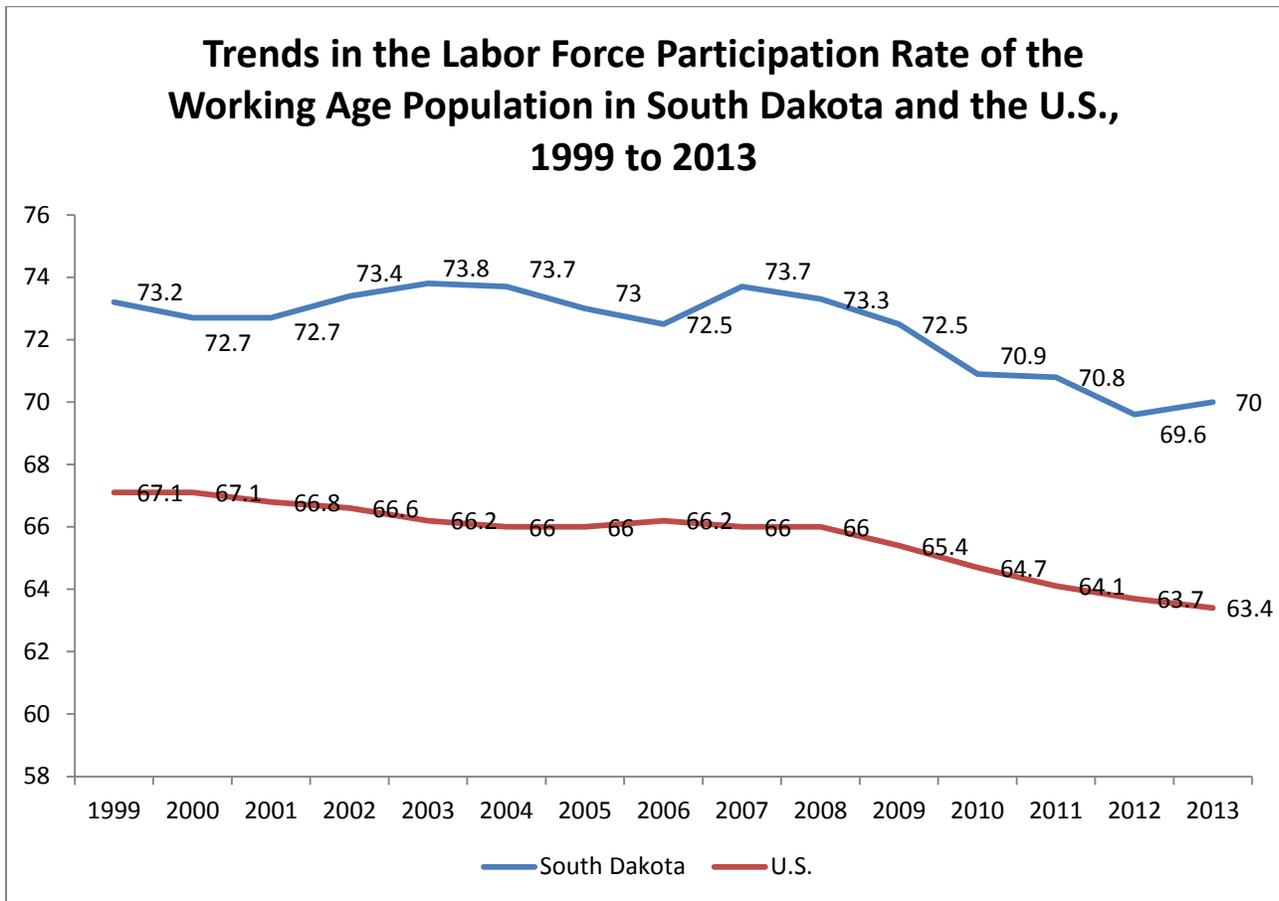
## **Labor Force Attachment in South Dakota**

A fundamental measure of labor market strength in a state or region is the labor force participation rate (LFPR) which measures the fraction of the working age population that is actively engaged in the labor market at a point in time, either by working (classified as employed) or by actively trying to find work while currently jobless (classified as unemployed). Together, the employed and unemployed represent those working age residents of a state who are actively engaged in the job market. The size of a state's labor force is thus dependent on developments in both the size of the working age population as well as their decisions about working. Together, these factors determine the size of a state's potential labor supply at a point in time. The measure of labor force change over time serves, among other things, as a fundamental indicator of a state's production potential. The pace of growth in the size of the labor force determines the ability of a state's economy to grow. A slow labor force growth means, *ceteris paribus*, slow growth in employment and output.

The labor force participation rate varies sharply across states in the nation. During 2013, the state of Nebraska had the highest LFPR of any state in the nation at 71.5 percent. This means that about 72 out of every 100 working age (aged 16+) Nebraska residents were actively engaged in the job market at any given point in time during 2013. In contrast, West Virginia residents, a state with the lowest rate of job market attachment among all 50 states, had a LFPR of just 53.5 percent during 2013, nearly 20 percentage points below that of Nebraska. If West Virginia had the same LFPR as Nebraska, then the state would have had about 270,000 more persons active in the jobs market—a one-third increase in the size of the state's available labor supply.

South Dakota has a high rate of labor force attachment compared to most other states in the nation. Since the end of the 1990s South Dakota has maintained a substantial labor force attachment advantage relative to most other states in the nation. Over the last decade South

Dakota has consistently had among the highest rates of overall job market attachment, generally ranked in the top three among all 50 states during that time. South Dakota's LFPR advantage



Source: U.S. Bureau of Labor Statistics Website, National Unemployment and Local Area Unemployment Programs

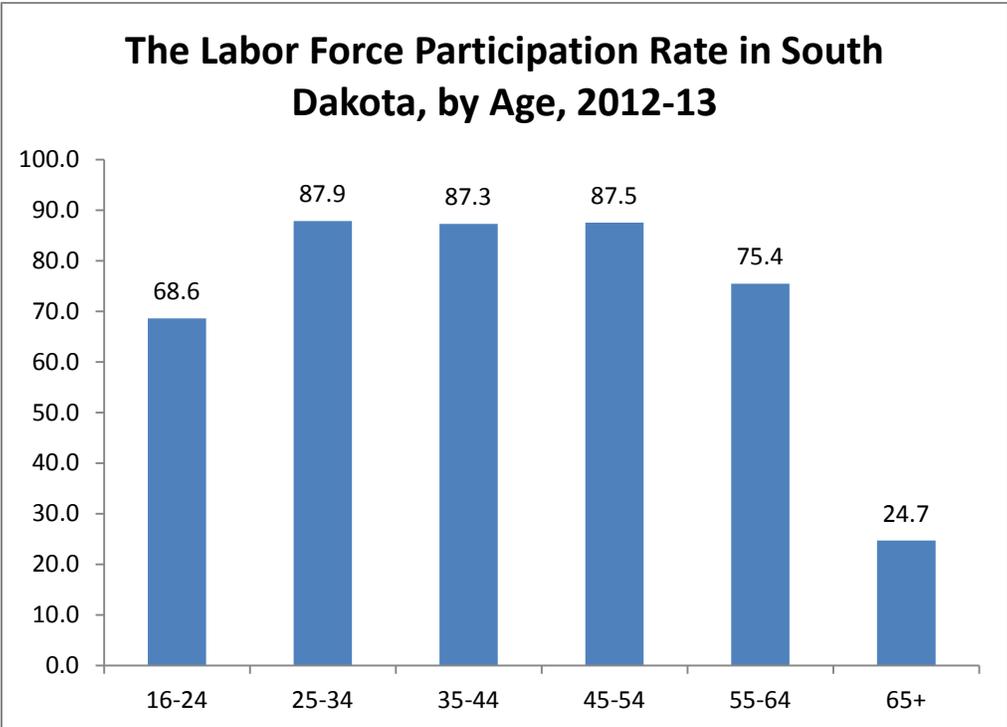
compared to most other states in the nation is considerable. Since the end of the 1990s South Dakota's LFPR has averaged between 6 and 7 percentage points higher than the average LFPR for the nation as a whole. With its high rate of labor force attachment South Dakota has about 40,000 more persons supplying labor than would be expected if the rate of labor force attachment in the state was equal to the nation as a whole. Strong labor force attachment in the state means greater production potential compared to other states.

It is important to note that the overall rate of labor force attachment in South Dakota, like the nation as a whole, has declined somewhat in recent years. Between 1999 and 2007 the state's labor force participation rate hovered around 73 percent. However, with the onset of the Great Recession, the South Dakota LFPR fell to about 71 percent and for the last three years has remained at about the 70 percent level. The decline in labor force attachment between 2007 and

2013 is not unique to South Dakota. Indeed every state in the nation saw its LFPR decline over this period. States such as Hawaii and Delaware saw their participation rates fall by as much as 5 to 6 percentage points since the beginning of the Great Recession through the end of 2013. In contrast, states like Texas and Kentucky experienced much more modest declines of around 1 percentage point in the job market attachment of their working age residents. South Dakota’s LFPR decline of about 3 percentage points ranks it as a below average LFPR decline state (35<sup>th</sup> largest absolute decline out of 50 states).

**Sources of Decline in Labor Force Attachment in South Dakota**

Declining labor force participation rates over the last few years were not entirely unexpected. The aging of baby boomers, the first of whom reached retirement age in 2010, means that as higher fractions of the working age population moves into the retirement age cohort, the overall labor force participation rate is expected to decline. Between 2009-10 and 2012-13 the number of 65-years or older residents of South Dakota increased by a remarkable 13 percent—accounting for 90 percent of the rise in the size of the state’s working age population over that time period. However, labor force participation rates vary sharply by age. Prime age



Source: U.S. Bureau of the Census, Current Population Survey, Public Use Micro-data Files, selected years, estimates by the Center for Labor Markets and Policy, Drexel University.

workers (25-54) were very likely to participate in the labor force in recent years with about 87 percent of the state's residents in this age cohort actively engaged in the job market at any given point in time during 2012-2013. However, the LFPR of those in the pre-retirement age group (55-64) averaged 75.4 percent over the last two years. Labor force participation drops sharply among those aged 65 and over. In South Dakota the participation rate for this group averaged just 24.7 percent during 2012-2013. Thus, as a higher fraction of the South Dakota working age population is aged 65 or older, we would expect, holding other factors constant, that the state's overall labor force participation rate will decline. However, the question still remains whether changes in the age composition is the sole or even a primary reason for the declines in labor force attachment that we have observed in South Dakota (or the U.S.) recent years.

One way to gain some insight into this question is to analyze trends in labor force attachment by key age groups to understand how job market attachment may have changed among different age groups within the state's working age population. Table 4 presents estimates of the labor force participation rate for selected age groups of the South Dakota population for three distinct time periods:

- 1999-2000 when the state was at full-employment after a decade of strong job growth,
- 2009-2010 representing a period that includes most of the massive national declines in payroll employment associated with the Great Recession, and
- 2012-2013 that includes the current LFPR levels from what has been, up to now, a sluggish recovery from the Great Recession.

These data suggest that much of the decline in the labor force participation rate is not the result of an aging population, but instead, associated with sharp declines in the labor force attachment among teens and young adults in the state as well as more modest, but still substantial declines in labor force participation among prime age workers. Like most other states in the nation, the data reveal an unexpected and substantial increase in the job market attachment of persons aged 55 and above. Indeed, we find that as the rate of labor force attachment of persons under the age of 55 has declined over time, there has been a simultaneous increase in the labor force participation of those South Dakota residents in their pre-retirement and retirement years.

Table 4:  
Trends in Labor Force Participation Rate of the Working Age Population in  
South Dakota, 1999-2000 to 2012-13

	1999- 2000	2009- 10	2012- 13	1999-2000 to 2012-13	
				Absolute Change	Relative Change
16-24	75.1	66.3	68.6	-6.5	-8.7%
25-34	89.9	87.0	87.9	-2.1	-2.3%
35-44	89.5	90.4	87.3	-2.2	-2.5%
45-54	90.3	88.0	87.5	-2.8	-3.1%
55-64	70.3	73.0	75.4	5.2	7.3%
65+	18.3	28.8	24.7	6.4	35.0%

Source: U.S. Bureau of the Census, Current Population Survey, Public Use Micro-data Files, selected years, estimates by the Center for Labor Markets and Policy, Drexel University.

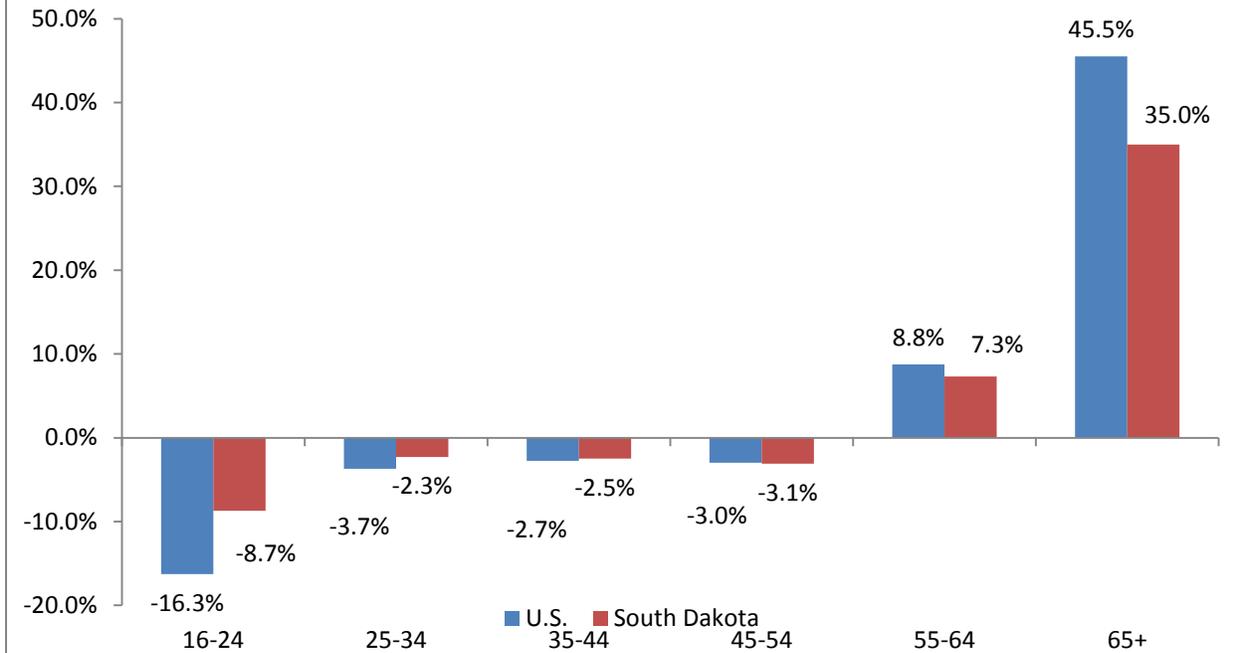
The largest change in labor force attachment in South Dakota occurred at either end of the state's 16+ population's age distribution. Teens and young adults, much like their counterparts nationally, have experienced considerable declines in their labor force participation rate, although young people in South Dakota are still much more likely to be engaged in the job market than their counterparts in the nation as a whole.<sup>4</sup> Furthermore, the pace of decline in job market attachment among those under the age of 25 in South Dakota was only about half that experienced among their counterparts in the U.S. between the end of the 1990s and 2012-13. The relative decline in the job market participation rate of young adult residents in South Dakota (16-24) since the end of the 1990s was 8.7 percent or half compared to that of their national counterparts (-16.3 percent).

At the same time that the labor force participation rate of teens and young adults declined in South Dakota, older workers in the pre-retirement age cohort (55-64) saw their job market attachment increase from 70.3 percent to 75.4 percent, representing a relative decline of 7.3 percent. Persons aged 65 and older also increased their rate of participation in the job market very sharply. South Dakotans aged 65 and older raised their LFPR from 18.3 percent during 1999-2000 to 24.7 percent by 2012-2013; a relative rise of 45 percent over the period.

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<sup>4</sup> The 16-24 year old LFPR in the U.S. during the identical 2012-13 period was 55.3 percent—about 12 percentage points below that of teens and young adult residents of South Dakota—a very large gap favoring labor supply in South Dakota.

## Trends in the Labor Force Participation Rate of the Working Age Population in South Dakota and the U.S. 1999-2000 to 2012-2013



Source: U.S. Bureau of the Census, Current Population Survey, Public Use Micro-data Files, selected years, estimates by the Center for Labor Markets and Policy, Drexel University.

The decline in the labor force participation of young people occurred along with a simultaneous rise in the work activities of older workers. These developments are likely closely related. Older workers, driven by a variety of economic forces, including declining asset values and an increased risk in holding any of a wide range of assets, opted to either return to work or remain in the labor force full-time or mix work and retirement income as a hedge against growing financial risks. Even in entry-level occupations where employers do not assign a high value to experience and content knowledge, older workers have increased their share of employment at the expense of teens and young adults.<sup>5</sup>

The decline in the labor force attachment of prime age workers, those between the ages of 25 and 54 is primarily thought to be consequence of labor force withdrawal associated with

<sup>5</sup> Neeta Fogg and Paul Harrington, "Rising Demand for Older Workers Despite the Economic Recession: Accommodation and Universal Design for the New American Workforce," *Public Policy and Aging Report*, Winter 2011

massive job losses during the Great Recession and a very sluggish job market recovery since the end of the recession in 2009. Some researchers attribute this decline to an increase in school enrollment and especially a sharp rise in the number of persons who have enrolled in disability based entitlement programs.<sup>6</sup> Overall about three quarters of the labor force decline in the nation has been among persons under the age of 55 - suggesting that most of the declining job market attachment that has occurred in the nation is not associated with an aging working age population, but rather choices about participation in the job market among prime age and teen and young adult workers.<sup>7</sup>

The labor force participation rate fell among all working age population groups regardless of race/ethnic characteristics. However, the pace of decline did vary considerable among race-ethnicity sub-groups of the population. White non-Hispanic residents experienced a very modest decline in their job market participation from 73.3 percent to 71.3 percent - a relative drop of about 3 percent. In contrast, the American Indian population, representing the second largest share of the state's working-age population (about 6 percent), experienced a very large decline in labor force attachment. During 1999-2000 the working-age American Indian residents of South Dakota had a labor force participation rate of 63.1 percent, but by 2012-13 their LFPR had fallen sharply to 52.7 percent. American Indians who are an increasingly important source of state's working age population (about 6 percent), experienced a very large decline in labor force attachment. During the 1999-2000 and 2012-13 period, the American Indian residents of South Dakota have seen an increase in their size of the state's working age population. A sharp decline in job market attachment in this group of residents depresses the production potential of the state. These findings are not unique to South Dakota, similar reductions in American Indian labor force participation between the end of the 1990s and today have also occurred across the nation. During the decade between 1998-2000 and 2011-2013, the labor force participation rate of American Indians across the nation fell from 63.3 percent to 55.9 percent, a relative decline of nearly 12 percent over the period.<sup>8</sup> The much larger loss in labor

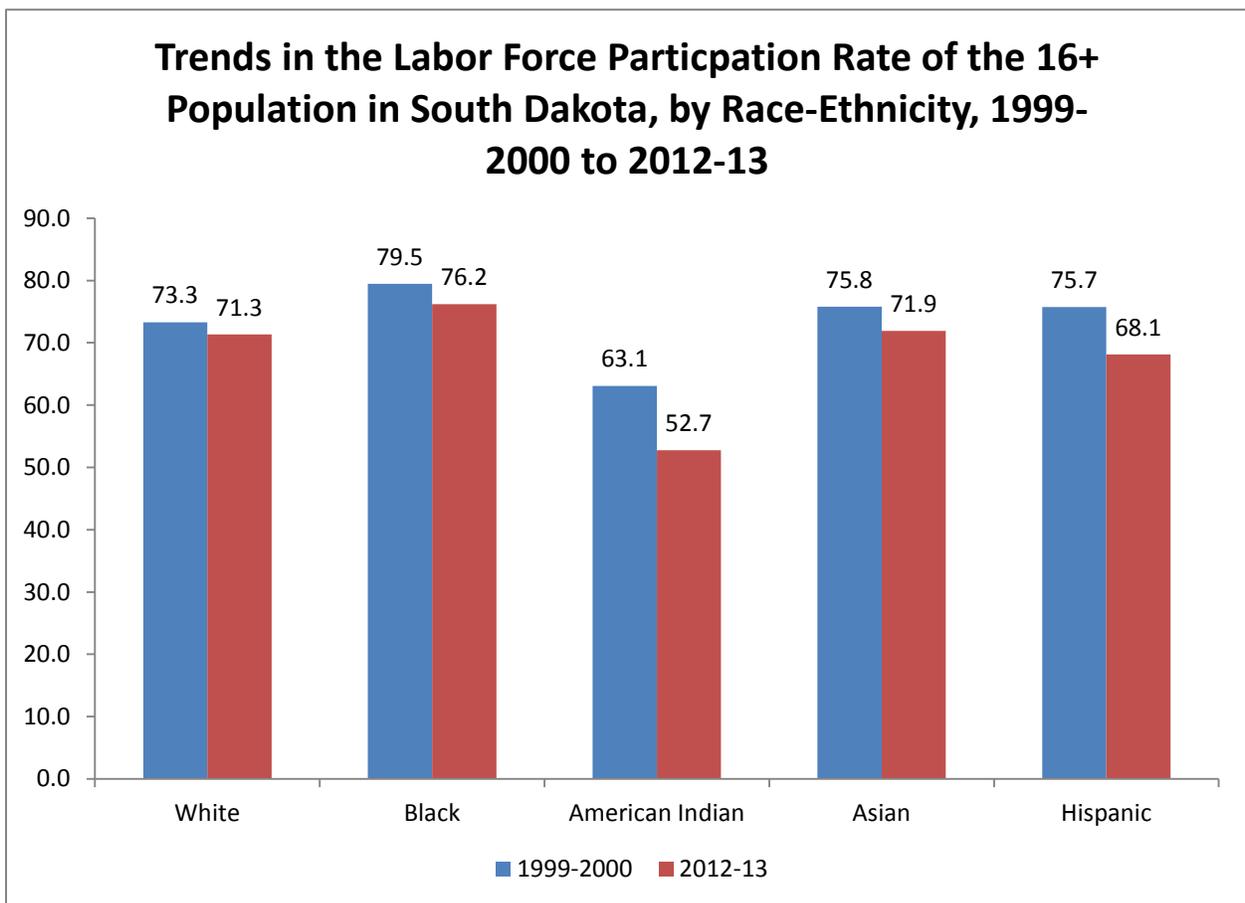
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<sup>6</sup> James Sherk, *Not Looking for Work: Why Labor Force Participation has Fallen During the Recession*, Background, The Heritage Foundation, September, 2013

<sup>7</sup> Heidi Shierholz, *More than Three-Quarters of Workers Missing from Labor Force are Under Age 55*, Working Economics, The Economic Policy Institute Blog, December, 2013

<sup>8</sup> Neeta Fogg, Paul Harrington and Stephen Zapisek, *Some Findings on the Labor Market Experiences of the Working Age American Indian Resident Population of South Dakota*, Center for Labor Markets and Policy Brief, Drexel University, Philadelphia, PA April, 2014

force attachment of American Indians in South Dakota and the nation, relative to the overall decline in the rate of labor force participation are not well understood. We might speculate that part of the observed decline in the labor force participation of American Indians in South Dakota may be associated with geographic mismatches between jobs and the residence of American Indian working age population in the state, but much more research needs to be undertaken to understand the underlying sources of the sharp decline in labor force participation of American Indian in the state and nation.

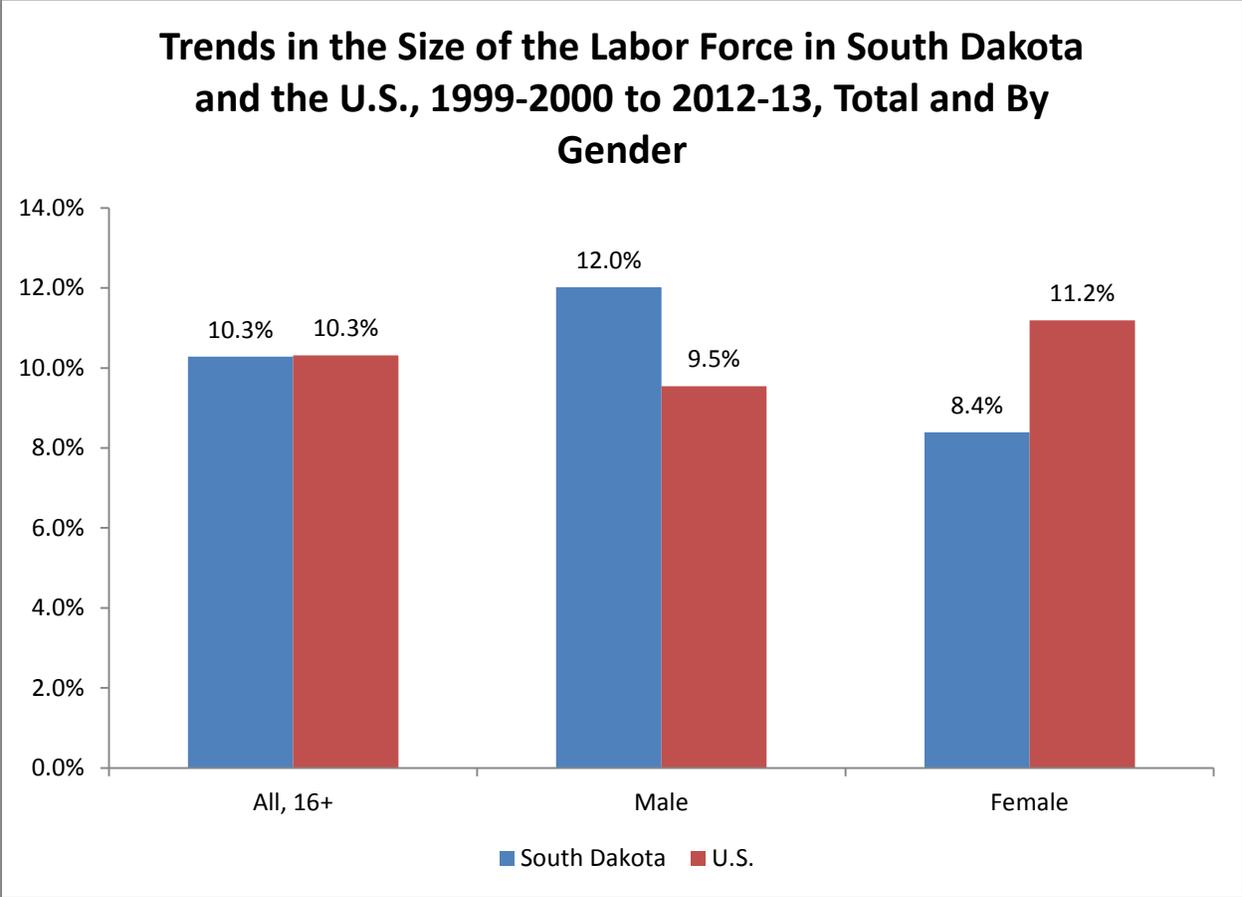


Source: U.S. Bureau of the Census, Current Population Survey, Public Use Micro-data Files, selected years, estimates by the Center for Labor Markets and Policy, Drexel University.

### Labor Force Growth and Change in South Dakota

The overall size of the South Dakota labor force grew by 40,600 workers between 1999-2000 and 2012-13, representing an increase of about 10.3 percent about equal to the rate of labor force growth in the nation over the same period of time. South Dakota’s male labor force grew by 12 percent over the period, with men accounting for about 60 percent of the increase in the

overall size of the state’s labor force since the end of the 1990s. In the U.S., female labor force growth outpaced that of men, with the number of women participating in the labor market rising by 11.5 percent while the number of male labor force participants grew at a slower pace of 9.5 percent between 1999-2000 and 2012-2013. In the nation as whole, women accounted for about half the rise in the size of overall labor force growth as the LFPR of men across the nation has declined. In South Dakota above average growth in the size of the male population increased the size of the male labor force which combined with slower declines in the male LFPR in the state relative to the nation meant that the number of men in the South Dakota job market increased at a higher pace than in the nation.



Source: U.S. Bureau of the Census, Current Population Survey, Public Use Micro-data Files, selected years, estimates by the Center for Labor Markets and Policy, Drexel University.

Growth in the size of the white, non-Hispanic labor force accounted just over one half of the labor force growth that occurred in South Dakota between 1999-2000 and 2012-2013. An aging and slow growing white, non-Hispanic working age population resulted in the white, non-

Hispanic labor force rising by just 5.6 percent, a rate of growth that was just over one-half the overall pace of labor force growth in the state. The size of the state’s Hispanic labor force has nearly tripled since the end of the 1990s, rising from 4,100 workers to about 12,000 over the period. Hispanics accounted for nearly one-fifth of the total rise in the size of the South Dakota labor force. Much of this is fueled by rapid increases in the size of the state’s Hispanic working age population that more than tripled over the period.

Table 5:  
Trends in the Size of the Labor Force in South Dakota and the U.S.,  
1999-2000 to 2012-2013, by Race/Ethnicity and Nativity Status

	1999- 2000	2009- 2010	2012- 2013	Absolute Change	Relative Change
<u>Total 16+</u>					
All, 16+	404720	445561	446321	41601	10.3%
<u>Race/Ethnicity</u>					
White, NH	376464	406004	397617	21153	5.6%
Black American Indian	4037	4532	5257	1220	30.2%
Asian	17054	16610	21125	4071	23.9%
Hispanic	3005	4807	4217	1212	40.3%
	4161	10246	12044	7883	189.4%
<u>Nativity</u>					
Foreign-Born	6881	17716	14033	7152	103.9%
Native-Born	397839	427845	432288	34449	8.7%

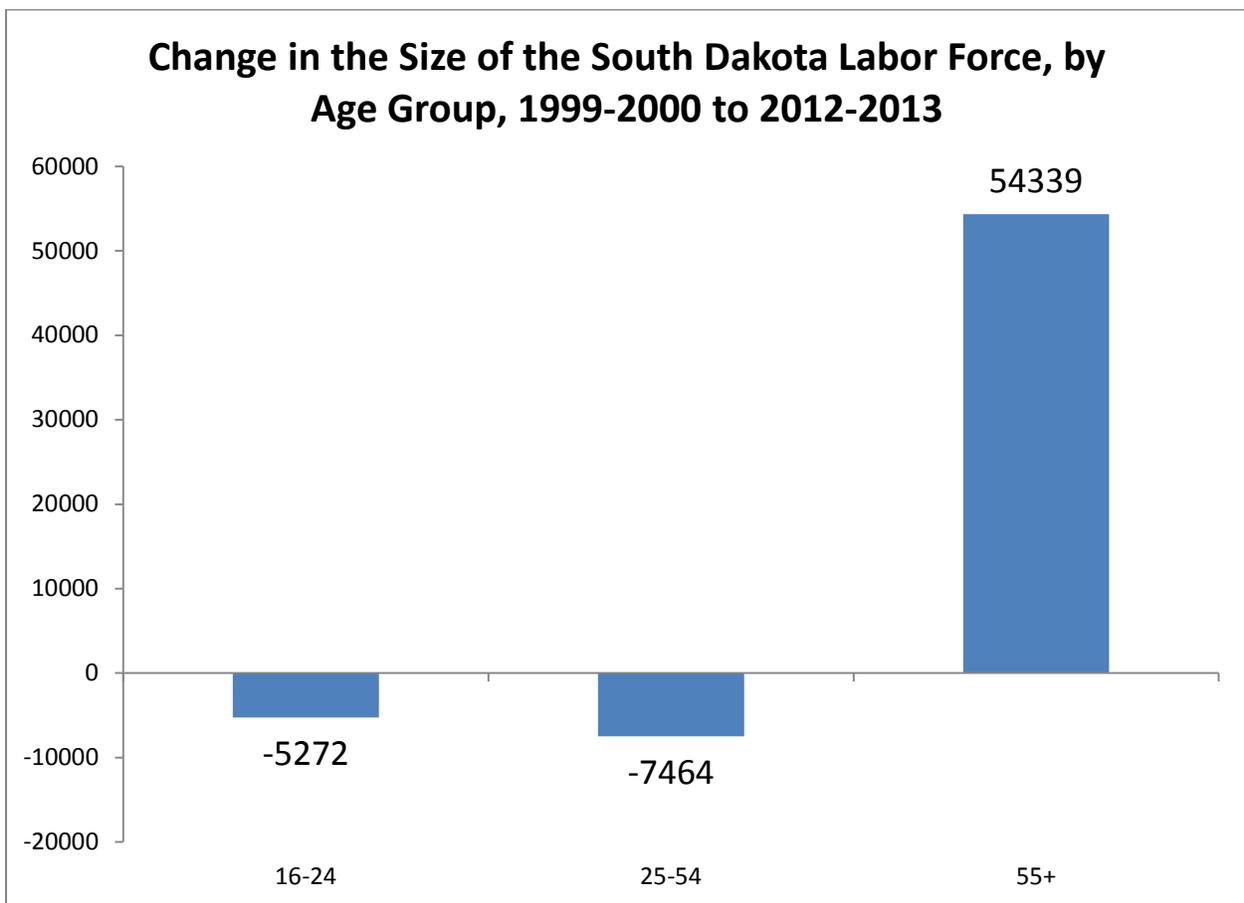
Source: U.S. Bureau of the Census, Current Population Survey, Public Use Micro-data Files, selected years, estimates by the Center for Labor Markets and Policy, Drexel University.

American Indians also accounted for a substantial share of labor force growth in the state. The increase in the size of the American Indian labor force was the result in growth in the size of the working age population. In fact, the LFPR for American Indians fell sharply over the 1999-2000 to 2012-2013 period offsetting what would have been much larger growth in size of the American Indian labor force given their strong working age population growth. Despite the decline in their job market participation, American Indians accounted for about 10 percent of the total rise in the size of the South Dakota labor force.<sup>9</sup>

<sup>9</sup> If the American Indian working age population had maintained its 1999-2000 LFPR of 63.1 percent it would have added an additional 10 percent growth in the size of the state’s labor force.

An important source of growth in the size of the state's labor force over the last decade was the rise in the number of foreign born persons who were active in the South Dakota labor market. Between 1999-2000 and 2012-13 the number of foreign born workers in the South Dakota labor force doubled from about 6,900 to 14,000. This increase accounted for about one-sixth of the gain in the size of the state's labor force.

Perhaps the single greatest change in the composition of the South Dakota labor force since the end of the 1990s is the rapid aging of the state's labor force. Between the end of the 1990s and today, all of the state's net labor force growth is associated with a rise in the 55+



Source: U.S. Bureau of the Census, Current Population Survey, Public Use Micro-data Files, selected years, estimates by the Center for Labor Markets and Policy, Drexel University.

population. The number of older workers in the state has increased by more than 54,000 since 1999-2000. At the same time, the size of the 16 to 54 labor force has declined in the state. A closer look at the findings in Table 6 reveal a more nuanced picture of changes in the age composition of the South Dakota labor force. The teen and young adult labor force experienced a

modest decline by about 5,300 individuals representing a relative decline of about 7 percent. Reflecting a surge in births that occurred between 1979 and 1988 associated with the Echo generation of the baby boomers, the 25 to 34 year old labor force in the state increased by about 20 percent between 1999-2000 and 2012-2013. This surge in the number of children of baby-boomers entering the labor force helped offset what would have been very large declines in the size of the prime age labor force in the state. The state's 35- to 44-year old labor force declined by 26 percent during the last decade, as baby boomers aged out of the prime aged labor force and were replaced by a much smaller birth cohort born between 1967 and 1979 (sometimes called the birth dearth generation).

Table 6:  
Trends in the Size of the Labor Force in South Dakota and the U.S.,  
1999-2000 to 2012-2013, by Age

Age	1999-2000	2009-2010	2012-2013	Absolute Change	Relative Change
16-24	77240	67901	71968	-5272	-6.8%
25-34	79151	90239	95157	16006	20.2%
35-44	104118	80465	76834	-27284	-26.2%
45-54	87325	107066	91139	3814	4.4%
55-64	39487	68180	80412	40925	103.6%
65+	17398	31708	30812	13414	77.1%

Source: U.S. Bureau of the Census, Current Population Survey, Public Use Micro-data Files, selected years, estimates by the Center for Labor Markets and Policy, Drexel University.

The aging of the very large baby boom age cohort over the last decade, combined with increased labor force participation among members of the baby boom, when they reach their pre-retirement and retirement ages, has resulted in a very large increase in the number of older workers actively participating in the South Dakota job market. Indeed the number of persons aged 55 and older who were active in the job market during 2012-13 was double the 1999-2000 level. At the end of the 1990s, persons aged 55 and older accounted for about one out of seven labor force participants. Today older workers account for one in four participants in the South Dakota job market.

## Projections of Labor Force Growth in South Dakota

As our discussion of population, labor force participation and labor force size and composition above implies, the basis of any labor force projections include both projections of the size of the working age population for various population groups as well as projections about expected labor force participation rates for these population groups. The U.S. Bureau of Labor Statistics just released a new round of labor force projections that are based on just released U.S. Bureau of the Census projections of the size and age/sex composition of the U.S. 16+ population through 2022 along with their own projections of labor force participation rates for a set of 16 age-sex population groups.<sup>10</sup>

The latest available U.S. Bureau of the Census age/sex population projections at the state level were published in 2005. In an earlier section of this paper we traced South Dakota population trends since 1960, relative to the U.S. pace of growth. It is worth repeating these trends here. During the 1960 to 1990 period as the U.S. population grew very rapidly, there was almost no population growth in the state. Beginning in the 1990s the size of the population growth gap between South Dakota and the U.S narrowed, although still remaining substantial.

The most recent detailed state level projections by the Census Bureau in 2005 are based on a period of time characterized by high levels of net out-migration from South Dakota that substantially suppressed the state's overall level of population growth. However, in recent years, South Dakota has reversed this trend and has now generated above average population growth through net in-migration, especially since 2010. Unfortunately, the Census Bureau will not produce state population projections for detailed age groups (needed for our labor force projections) until 2015.

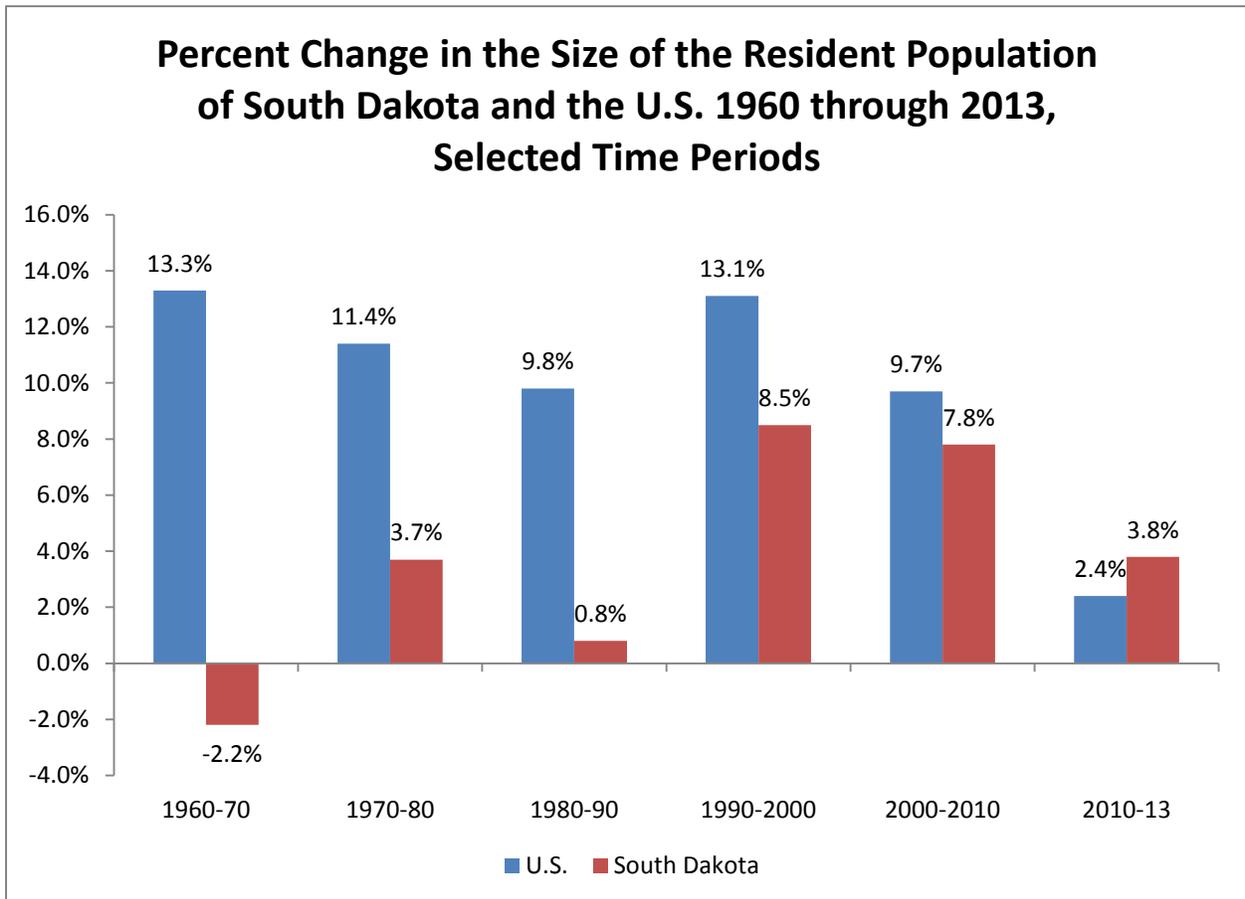
The 2005 population projections are drastically outdated. They forecast that by 2015 the state's population would stand at 801,939, but recently released Census Bureau population estimates for South Dakota reveal a resident population of 844,847 in 2013, with population rising at a pace that is 1.58 times that of the nation's rate of population growth between 2010 and 2013. Using the 2005 Census population projections as a basis for projecting the future size of the state's labor force seems fraught with obvious error, since South Dakota has been able to

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<sup>10</sup> Mitra Toosi, Labor Force Projections to 2022: The Labor Force Participation Rate Continues to Fall, *Monthly Labor Review*, U.S. Bureau of Labor Statistics, December, 2013

reverse the trend of out-migration beginning in the early 2000s with much larger growth in net in-migration that has fueled state population growth since 2010.

It is certainly most desirable to use updated Census based population projections as the base to create estimates of the size, age and gender composition of the South Dakota labor force in the future. However, as the state population forecasts will not be available until 2015, we have developed a set of back-of-the-envelope population projections that we think more realistically account for recent developments in the growth of the state’s population. Using these (back-of-the-envelope) population estimates combined with recently released national projections of labor force participation rates that we use to adjust our estimates of state labor force participation rates in the future, we have produced a set of South Dakota labor force projections for the 2012 to 2022 period.



Our projections are limited by a number of factors; nonetheless we present them as we believe that the state’s labor force will grow in the future. Labor force projections based on the

outdated population projections made in 2005 yield a decline in the absolute size of the state’s labor force between 2012 and 2022 of 4 percent. Our back-of-the-envelope projections forecast growth in the labor force and with the growth not exclusively concentrated among persons aged 55 and above as is projected using the outdated population projections. Strong net in-migration of younger persons into South Dakota in recent years suggest that if the state is able to continue attracting young people, this will mitigate some of the effects of a rapidly aging population on labor force growth.

The findings provided in Table 7 provide some insight, albeit speculative, into the potential path of labor force growth in South Dakota. The most important assumption used to produce these labor force projections is that South Dakota will maintain its recent advantage in net population growth over the entire 2012 to 2022. Clearly, many factors are in play that can change the path of population and labor force growth, but it seems likely that the single most important factor influencing long term labor supply growth is South Dakota’s ability to increasingly attract more working age residents into the state relative to the numbers that leave the state each year.

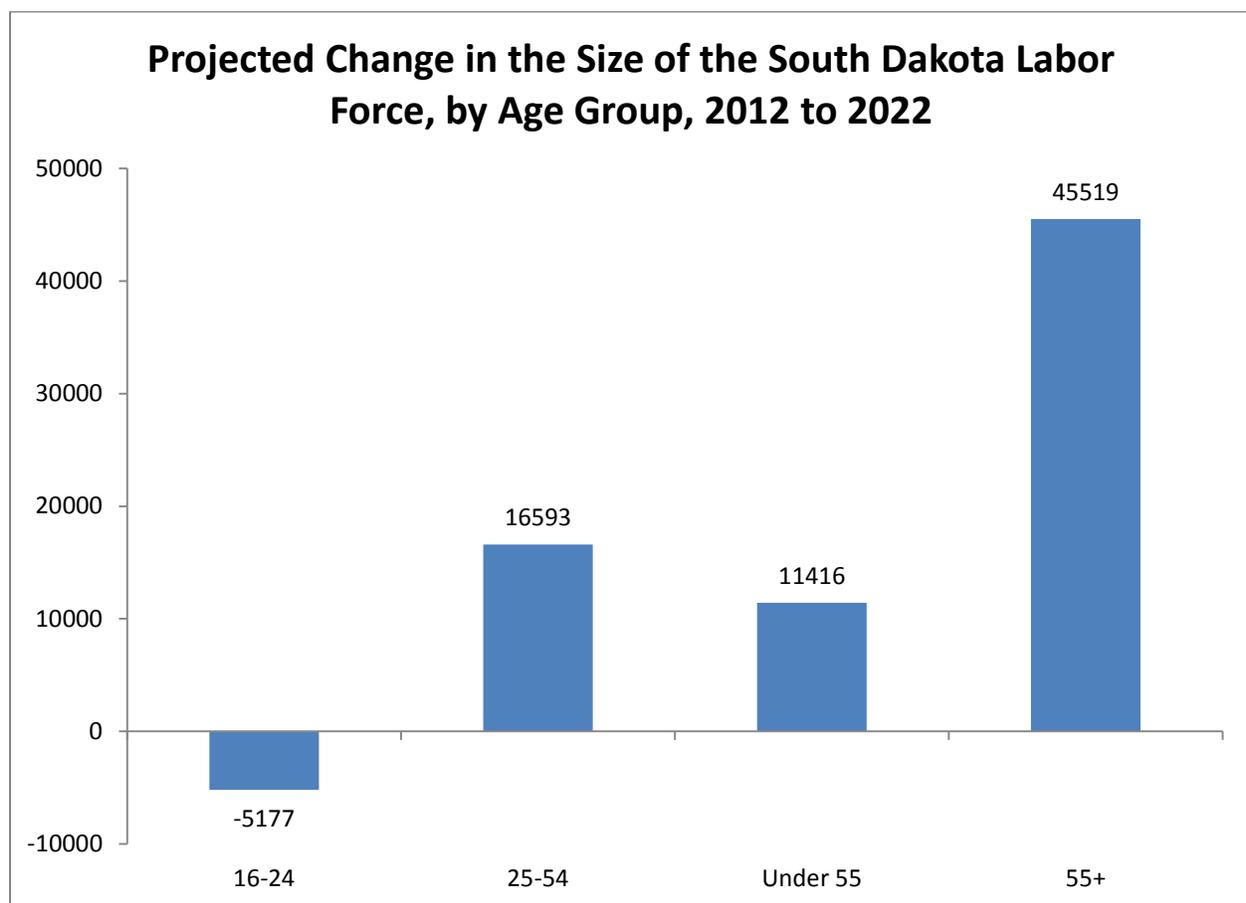
The strong labor market conditions that have existed in South Dakota compared to the U.S. over the course of the Great Recession and the current recovery suggest that the state has a chance to maintain its recent rate of accelerated population growth associated with improved in-migration of residents of other states who opt to relocate to South Dakota. That said it is important to recognize that the labor force estimates provided in Table 7 are more useful in understanding what the likely sources of labor force growth and change will be in the state and the kinds of labor supply problems that will likely confront employers in the coming years.

Table 7:  
Projected Change in the Labor Force of South Dakota by Age, 2012-2022

Age	2012	2022	Absolute Change	Relative Change
Total	444,770	501,705	56,935	12.8%
16-24	70,752	65,576	-5,177	-7.3%
25-54	263,289	279,882	16,593	6.3%
Under 55	334,042	345,458	11,416	3.4%
55+	110,728	156,247	45,519	41.1%

Despite our optimistic population scenario of continued strong net in-migration in South Dakota in the next decade (that typically consists of younger persons), we expect that the

overwhelming share of population growth will be concentrated among older workers aged 55 and above. The number of South Dakota residents in the older worker age cohort (55 and older) is expected to rise very sharply over the next decade. The number of older workers expected to participate in the South Dakota job market will account for about 80 percent of overall net growth in the size of the state's labor force. This share, while quite large, is much lower than that of the nation where persons aged 55 and older will account for 110 percent of the net increase in the size of the labor force, as the less than 55 labor force in the nation is projected to decline between 2012 and 2022.



Positive gains in migration can substantially bolster the pace of a state's population and labor force growth. Older workers account for a smaller share of overall labor force growth in South Dakota compared to the U.S. (but still a very large proportion) because our estimates assume that net in-migration will continue to bolster the size of the under age 55 population and labor force. It is important to note that the number of teens and young adults who will be active

in the job market in the future is expected to decline in South Dakota albeit at a pace much slower than the average for the nation as whole. Part of this decline is the product of a declining teen and young adult population age cohort in the nation, although positive net migration in South Dakota may offset some of this loss. However, the labor force attachment of teens and young adults in both South Dakota and the nation has fallen since 1999-2000. Our labor force projection of 16- to 24-year olds reflects an expected continuation of declines in the labor force attachment of young persons, but we expect that the rate of labor force participation decline for those aged 16 to 24 in South Dakota will be slower than the nation as whole, as it has been over the 1999-00 to 2012-13 period.

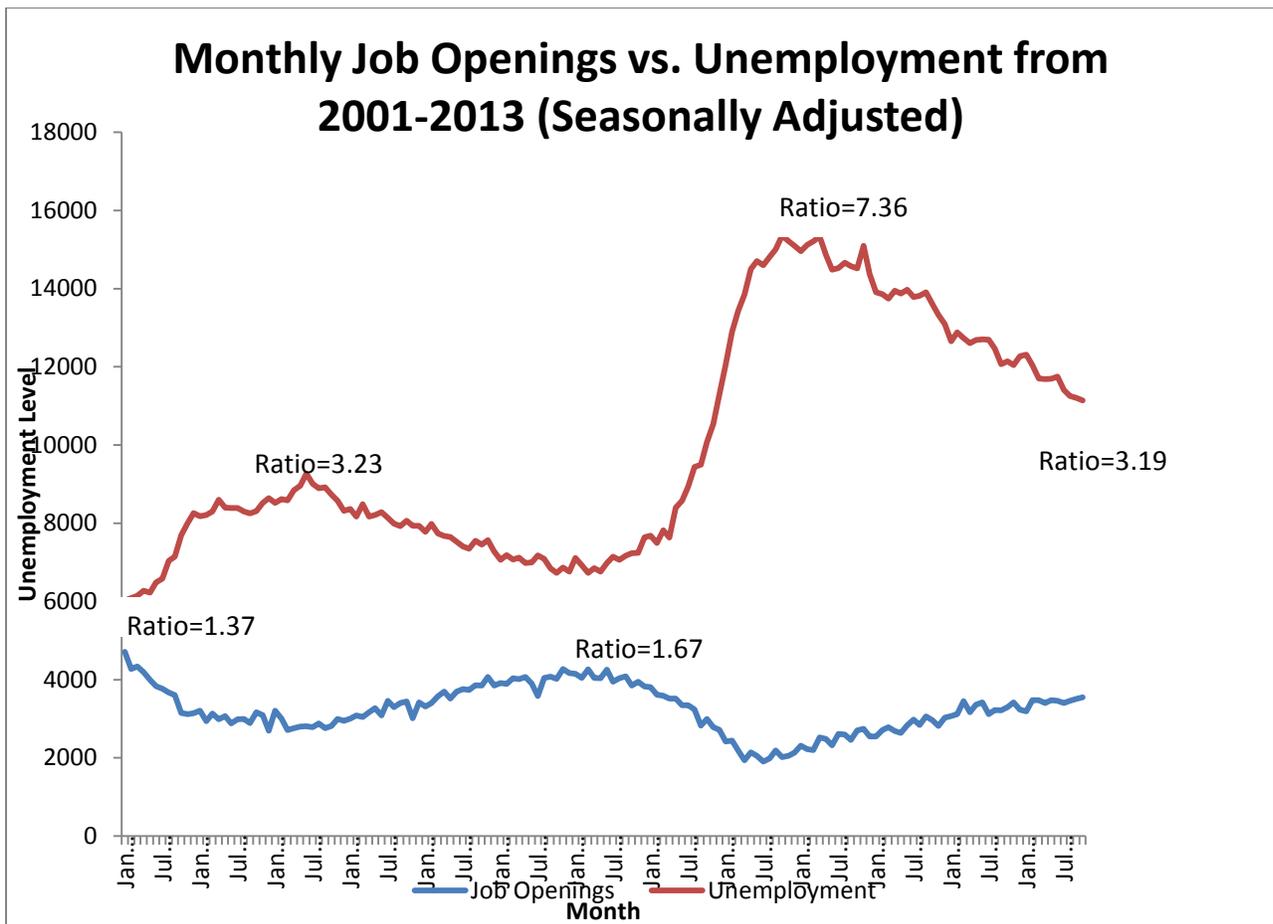
### **Labor Market Imbalances in South Dakota**

The end of 2007 saw the level of economic activity plunge in the U.S. on the tail of a burst in the housing price bubble and an associated collapse in the value of a variety of financial assets that led to the Lehman Brothers collapse in September of 2008. Over the next several years, households experienced massive wealth losses as the value of their financial assets plunged and the real values of residential and commercial properties spiraled downward. In response, households sharply curtailed their level of spending, leading to further declines in economic activity. Between 2008 and 2009, nominal GDP declined fueling fears of deflation and causing the Federal Reserve to engage in a series of extraordinary actions designed to reduce the chances of a 1930s-style economic depression.

Declines in non-farm payroll employment began in early 2008 and began to accelerate in September co-incident with the Lehman collapse and massive job losses were reported in the Bureau of Labor Statistics *Employment Situation* report for an extended period of time. As payroll employment levels declined, unemployment levels in the nation skyrocketed touching the 10 percent level. The average length of a spell of unemployment rose to 40 weeks by 2011, a stunning and unprecedented duration of joblessness, more than the longest duration of unemployment that has been measured since data collection began in 1948. The high level and long duration of unemployment was accompanied by a sharp decline in the labor force participation of persons under the age of 55 resulting in about 5 million fewer persons in the labor market than would have been expected with normal growth in the size of the working age population.

The post-2007 change in job market conditions in the nation represented a dramatic deterioration in overall labor market conditions in the nation from one of labor shortage to labor surplus. The 1980s and 1990s have often been labeled as the Great Moderation characterized by long periods of strong economic and job growth with short and less intensive periods of recession and job loss. Combined with a slowdown in the pace of labor force growth, the major job market problems by the end of the 1990s were most often associated with skill mismatches and overall labor shortages.<sup>11</sup> The recession of 2001 was followed by a recovery that once again brought the nation to a near full employment level by 2007.

One measure often used as an indicator of overall labor market conditions is the ratio of unemployed workers to the number of currently available jobs (U/V ratio). During the full-



Source: U.S. Bureau of Labor Statistics, Current Population Survey, National Unemployment Rates and Job Openings Labor Turnover Survey, [www.bls.gov](http://www.bls.gov)

<sup>11</sup> Neeta Fogg and Paul Harrington, "From Labor Shortage to Labor Surplus: The Changing Labor Market Context and Its Meaning for Higher Education," *Continuing Higher Education Review*, Vol. 73, 2009

employment period of 2000 this ratio essentially stood at 1 unemployed worker to 1 vacant job. During the recession of 2001, as unemployment and firm hiring slowed this ratio rose to 2.5 officially unemployed workers for every vacant job. However by 2006 as the U.S. economy recovered, this ratio had fallen to the near full employment level of 1.67 unemployed workers to 1 vacant job. At this low ratio of unemployed workers to vacant jobs occupational labor shortages develop, usually in occupations with extensive education and training requirements even though considerable excess labor supply (manifest in high unemployment rates) may exist simultaneously in other occupational areas. The massive job loss that occurred during the Great Recession resulted in a sharp rise in the U/V ratio. By the second quarter of 2010 there were more than 7 unemployed job seekers for every vacant job—a situation of extreme excess labor supply.

Since the job market recovery began in early 2010 the nation has seen unemployment levels slowly decline while the number of job vacancies had begun to rebound. At the end of 2013 the national U/V ratio had fallen to 3.0, a level that is just below that of the highest ratio (3.23) observed during the trough of the 2001 dot.com recession. Not only are national U/V ratios quite high, there is little evidence of upward wage pressures that also are associated with more robust labor market strength and emerging labor shortages.<sup>12</sup> The evidence of a national labor shortage is scant at best.<sup>13</sup> While some observers have argued that such shortages exist in the U.S., they do so with scant hard evidence. To the contrary, we find little evidence of labor shortages in the U.S.<sup>14</sup> Indeed, the current debate in the U.S. Congress about extended Unemployment Insurance benefits for the nation's long term unemployed centers on the question of excess labor supply in most states around the country.<sup>15</sup>

While the national job market experienced massive job losses and a sluggish jobs recovery, the labor market situation in South Dakota appears decisively different. The impact of cyclical declines on job creation in South Dakota have been much more moderate compared to

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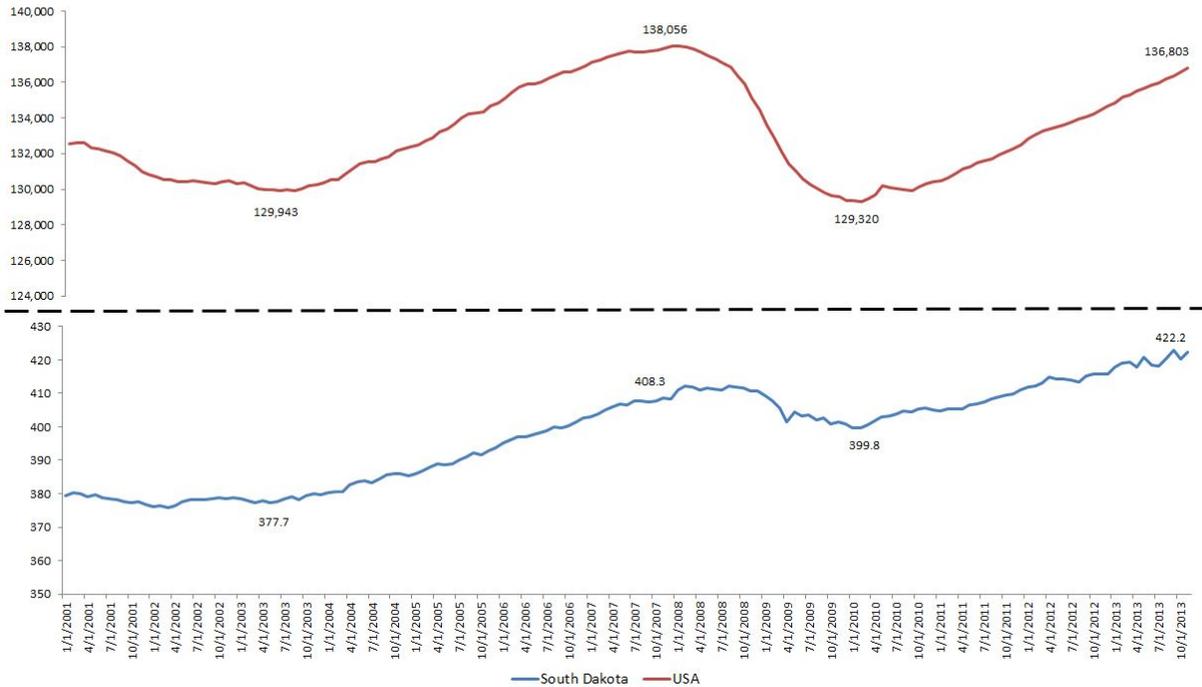
<sup>12</sup> BLS reports that real average hourly earnings of all payroll employees has risen by just 0.2 percent between December 2012 and December 2013 U.S. Bureau of Labor Statistics, *Real Earnings-December 2013*, January 16, 2014

<sup>13</sup> Thomas Kochan, et.al "Who Can Fix the 'Middle Skills' Gap?", *Harvard Business Review*, December, 2012  
Peter Capelli, "The Skills Gap Myth: Why Companies Can't Find Good People," *Time* June 2012

<sup>14</sup> Paul Harrington and Andrew Sum, "College Labor Shortages in 2018?" *The New England Journal of Higher Education*, November 2010

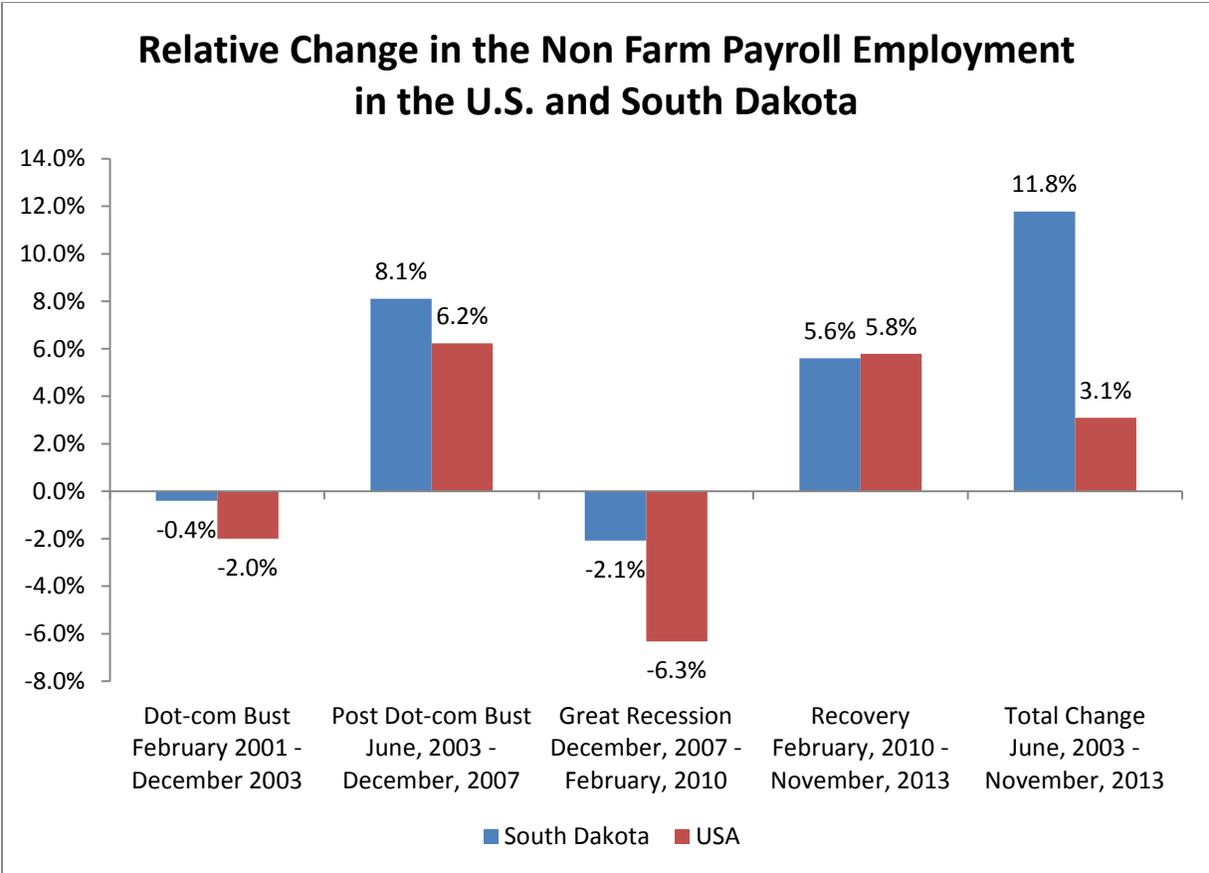
<sup>15</sup> Katherine Buschman Vassel, "Extended Unemployment Benefits: Economic Boon or Bust?" *Fox Business News*, January 6, 2014

**Total Nonfarm Employment for South Dakota and the United States,  
January 2001 - November 2013**



Source: U.S. Bureau of Labor Statistics, Current Employments Statistics Survey, U.S. and South Dakota, Seasonally Adjusted data, [www.bls.gov](http://www.bls.gov)

the nation as a whole. During the last two recessions South Dakota’s job loss has been much slower than that observed for the nation. The pace of new job creation has been either equal or greater than the rate of new job creation that occurred in the recovery phases from those recessions. The impact of South Dakota’s greater cyclical stability compared to the U.S. is that the state added net new jobs at a pace nearly 3 times that of the nation as whole. This has resulted in much lower unemployment and related labor supply underutilization problems during periods of national economic contraction and quicker acceleration to full employment conditions in the labor market.



Source: U.S. Bureau of Labor Statistics, Current Employments Statistics Survey, U.S. and South Dakota, Seasonally Adjusted data, [www.bls.gov](http://www.bls.gov)

***The Definition of Full Employment***

A full employment economy is one in which all labor resources are utilized in an economically efficient way. While some might think of full employment as condition of zero unemployment, this is a condition that is not possible to attain because of the time it takes for both job seekers to find the right job (no matter how plentiful jobs are, job search still take some time) and for employers to sort through applicants to identify the best fit for a position. These sorts of labor market frictions mean that the full employment unemployment rate will be above zero.

Complicating the measure of full employment are unemployment problems arising from mismatches between the knowledge, skills, abilities, behavioral traits and even geographic locations of job seekers and the hiring requirement (and locations) of firm’s job openings. This sort of mismatch leads to the problem of structural unemployment, a condition where job openings are plentiful, but job seekers do not possess the set of proficiencies required by

employers seeking to hire new workers. Thus unemployment associated with job search and labor turnover, commonly referred to as frictional unemployment along with structural unemployment can and does co-exist with vacant jobs—meaning that substantial unemployment can exist when jobs are plentiful.

During economic recessions the number of job seekers substantially exceeds the number of unemployed workers. As business conditions worsen lay-offs mount and the job market retreats from a full-employment/near full employment condition where most unemployment is either frictional or structural in nature to a condition of excess labor supply where the number of unemployed workers substantial exceeds the number of job vacancies. Referring to our earlier discussion of the U/V ratio, we observed that during the 2003 to 2007 jobs expansion, the U/V ratio in the nation fell to a level that characterizes a near full employment condition—about 1.67. This means that in some states and in many industries and occupations, frictional and structural unemployment problems were considerable—most notably in health fields and in many college labor market occupations-especially those related to information technology and related math intensive occupations.

By 2010, we found that the U/V ratio had risen to a remarkable high 7.36 meaning that there were more than 7 unemployed job seekers for every vacant job. There were about 15 million job seekers classified as unemployed, while about 2.1 million jobs were unfilled and actively seeking workers at a given point in time. In this labor market condition, there was simply no chance of finding work for more than 13 million jobless. The level of demand for labor was far below the level of available labor supply at that time. Hypothetically, if we had been able to immediately fill every job vacancy at the instant it became available, the unemployment rate, at best, would have fallen by only about 1.3 percentage point from its 10.0 percent level at that time. Today the nation's job market continues to be characterized by very substantial cyclical unemployment, with 3 unemployed job seekers for every currently vacant job at the end of 2013. Thus, only about one third of all unemployment in the U.S. is associated with either frictional or structural unemployment. The bulk of the nation's unemployment problems are associated with poor economic growth and a very sluggish job creation during the post-recession period.<sup>16</sup>

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<sup>16</sup> This discussion is based on the Beveridge definition of full employment which is defined as a condition where those seeking work is essentially equivalent to the number of vacant jobs, William H. Beveridge, *Full Employment*

## *Unemployment in South Dakota*

While labor surplus conditions continued to prevail in the U.S. through the end of 2013, there are few signs of excess labor supply problems in South Dakota. Instead, the evidence we have reviewed suggests that the state's job market is likely operating at a near full-employment condition with occupational shortages mounting in a number of industries across the state, ranging from manufacturing producers to high-end technology service oriented providers.

Perhaps the most useful and well known measure of state's labor market conditions is the unemployment rate measure published monthly by the U.S. Bureau of Labor Statistics and at the state level by the South Dakota Department of Labor and Regulation. The unemployment measure is used as an indicator of unutilized labor supply. In order to be defined as unemployed in the Current Population Survey, a monthly household survey used to produce a variety of labor market condition measures including the unemployment rate, household residents aged 16 or older must meet the following conditions:

- Be jobless during the reference week of the survey
- Have actively sought work in the 4 weeks prior to the survey reference week
- Be immediately available to begin work.

The unemployment rate is calculated as a fraction of the labor force. The labor force, as we discussed earlier, is simply all those persons who were either unemployed or employed during the survey reference week (based on a very minimal standard to be counted as employed—generally just work for one hour for pay or profit). So the unemployment rate is calculated as follows:

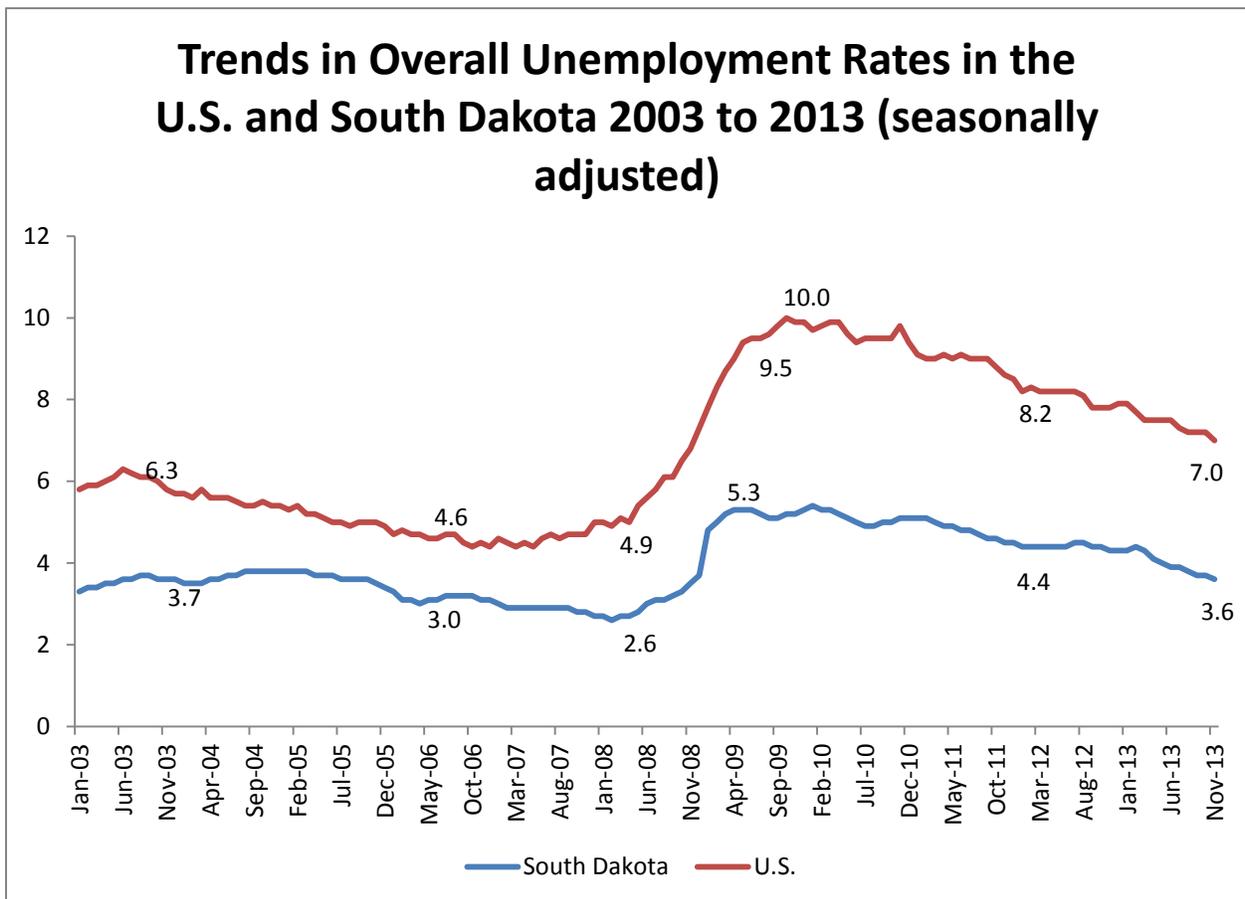
$$\text{Unemployment Rate} = \frac{\text{Number Unemployed}}{\text{Number employed} + \text{number unemployed (the labor force)}} * 100$$

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*in a Free Society*, WW Norton, New York, 1945. An alternative definition of a full employment labor market is based on the relationship between the rate of decline in unemployment to the rate of inflation. This measure, known as the non-accelerating inflation rate of unemployment or NAIRU defines the economically efficient level of an unemployment rate as that level of unemployment at which the inflation rate begins to accelerate. It is closely connected to the idea of a natural rate of unemployment, see Franco Modigliano and Lucas Papademos "Targets for Monetary Policy in the Coming Years," *Brookings Papers on Economic Activity*, No. 1, 1975; where the concept was introduced as NIRU. The rate of inflation in the U.S. is exceptionally low and some observers have argued that risks of deflation are far greater than those of inflation see: John Makin, "Forget Tapering, and Get Ready for QE4," *Real Clear Markets*, September 1, 2013

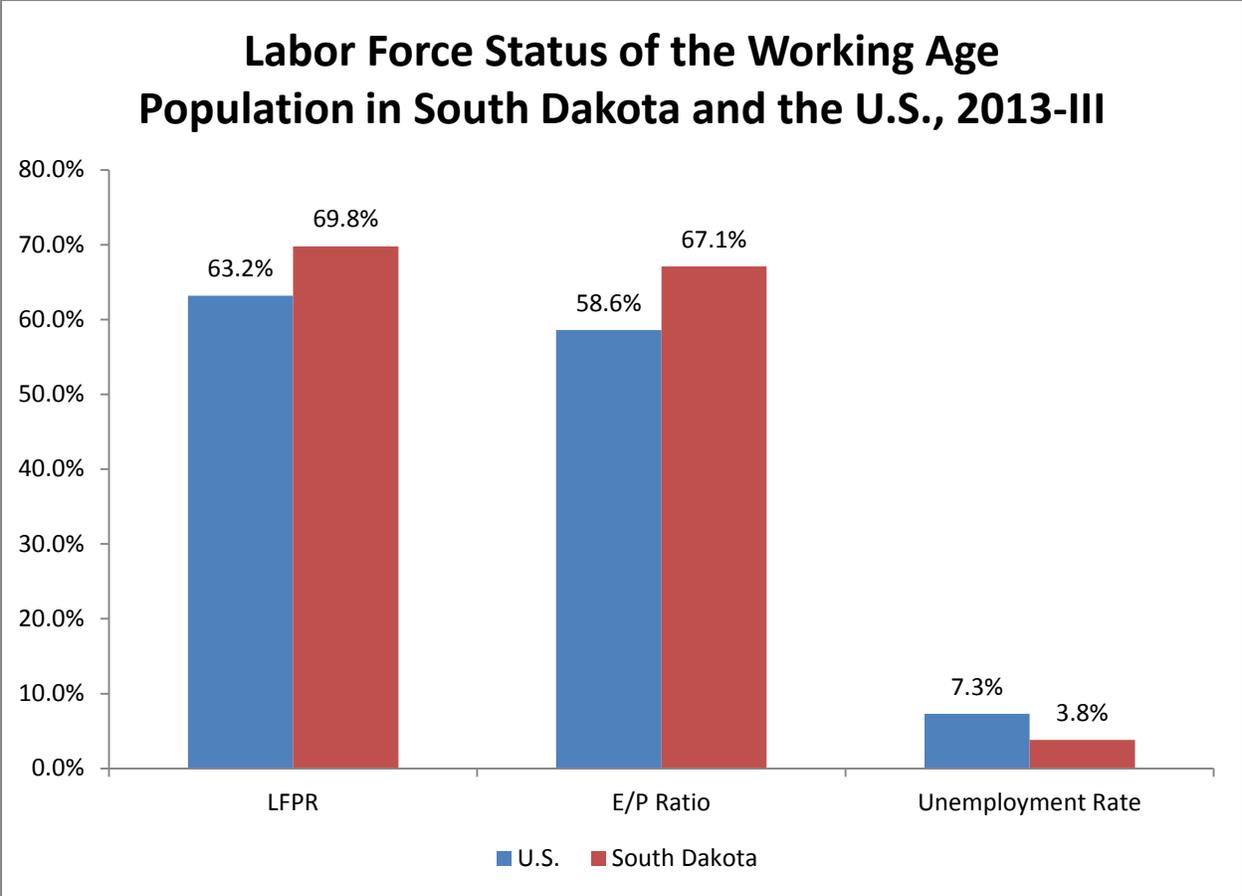
The unemployment rate is thus a measure of unutilized workers seeking work and available to work at a point in time.

The unemployment picture in South Dakota has been quite favorable compared to most other states in the nation. The South Dakota unemployment rate has remained well below the U.S. average rate of unemployment in every month over the last ten years. Indeed, for most of this time period we would consider the state's unemployment rate at or near its full employment level. Only during the worst months of the economic recession during 2009 did South Dakota's overall unemployment rate exceed 5 percent. In the meanwhile, the nation's unemployment rate skyrocketed to 10 percent. Since the trough of the labor market recession in early 2010 the unemployment rate has dropped steadily in South Dakota reaching just 3.6 percent in November 2013.



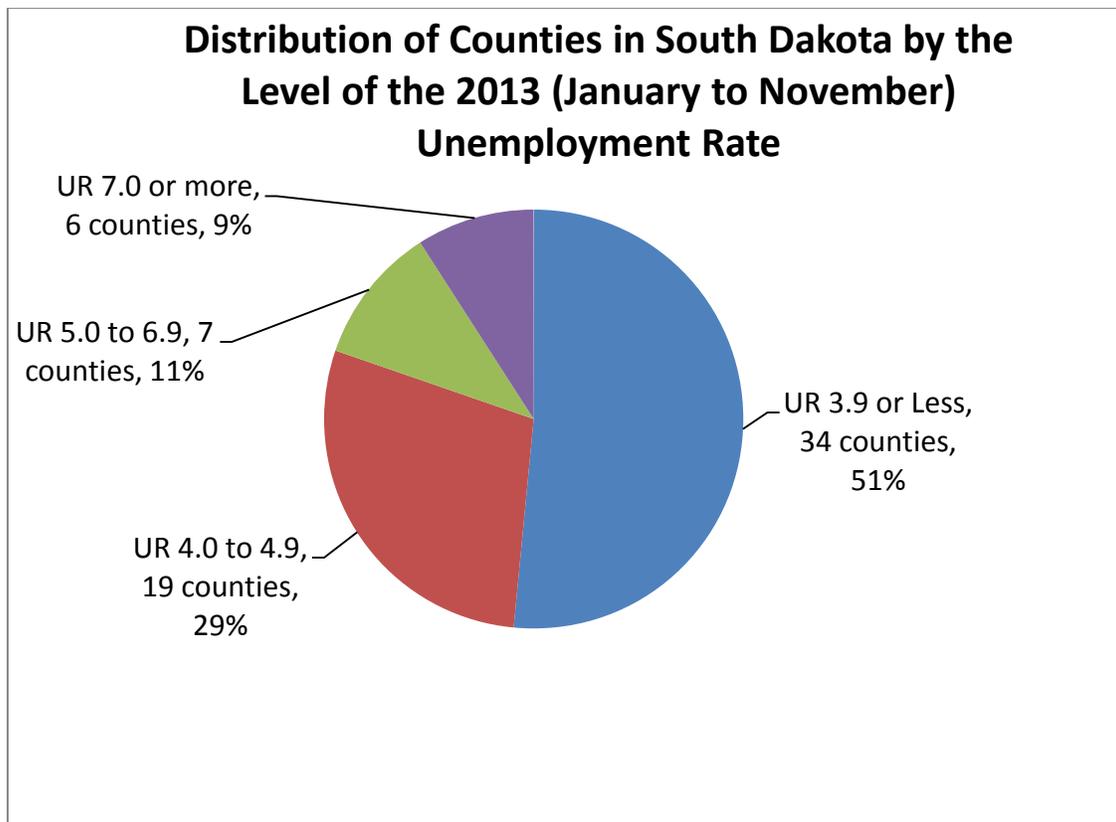
Source: U.S. Bureau of Labor Statistics, Current Population Survey and Local Area Unemployment Statistics, [www.bls.gov](http://www.bls.gov)

It is important to note that over this entire time period South Dakota has had among the lowest overall unemployment rates of any state in the nation, generally the second or third lowest among all states. During 2013-III only North Dakota had an average monthly unemployment rate that was lower than South Dakota. It is important to note that South Dakota achieved this very low rate of unemployment with among the highest right of labor force participation of any state in the nation (third highest mean monthly LFPR in the U.S. during 2013-III). The very high rate of labor force participation of the working age population in the state combined with very low unemployment rates means that South Dakota has among the highest fraction of working age residents with a job of any state in the nation (ranked third during 2013-III) with 67.1 percent of the state’s residents aged 16 and older employed. In sharp contrast, the national E/P ratio in 2013-III stood at 58.6 percent— a depressingly low rate of employment, associated with both depressed labor force participation and very high unemployment rates.



Source: U.S. Bureau of Labor Statistics, Current Population Survey and Local Area Unemployment Statistics, [www.bls.gov](http://www.bls.gov)

It is often the case that unemployment problems vary sharply within states, with some areas of a state experiencing strong labor demand while other parts of the state may be characterized by high rates of unemployment. These geographic mismatches between a state's labor demand and supply occur often in both large and small states. In South Dakota we did not find a high degree of variability in unemployment rates across the state. We found that for most, but not all of the counties in the state, unemployment rates in the last year have been low, at least when compared to national measures of unemployment. During 2013, only 6 out of 66 South Dakota counties for which data were available had an average monthly unemployment rate above the national average. Most counties (80 percent) had an unemployment rate during 2013



Source: U.S. Bureau of Labor Statistics, Local Area Unemployment Statistics Program, [www.bls.gov](http://www.bls.gov)

that averaged under 4.9 percent. In fact, more than half of the counties in the state had an unemployment rate that fell between 2.5 and 3.9 percent. All of the 12 larger counties in South Dakota (with an average labor force size of more than 10,000 during 2013) had an unemployment rate below 4.3 percent. Although there are small areas of South Dakota that in some cases have very high levels of unemployment, (three counties had unemployment rates

during 2013 in excess of 13 percent) most areas of the state have very low unemployment rates that are at levels that can be considered at or near full employment.<sup>17</sup>

We noted earlier that the U/V ratio for the U.S. at the end of 2013 was about 3 unemployed workers per vacant job at an unemployment rate of 7.0 percent. Since we do not have South Dakota statewide job vacancy data comparable to the national vacancy measures we have developed a hypothetical estimate of the U/V ratio in South Dakota based on the national measures of unemployment to vacancies at a given unemployment rate. This hypothetical measure estimates the U/V ratio in South Dakota to likely be at the 1:1 level consistent with the Beveridge measure of full employment. This means that most of the state's unemployment is associated with either geographic or skills mismatches as well as frictional sources of unemployment.

### *Unemployment by Industry and Occupation*

One way to gain some insight into potential labor market imbalances and structural unemployment in South Dakota is to examine data on unemployment rates by industry and occupation. Using the CPS public use micro data files, we have produced estimates of unemployment rates by industry and occupation for both South Dakota and the U.S. for the 2012-2013 time period. We have identified eight major industry sectors in the South Dakota economy that experienced industry wide unemployment rates that can be considered extraordinarily low, that is an overall industry unemployment rate of 3.0 or less on average during the entire 2012-2013 period. Together, these industries account for nearly one-half of the state's total employment. We also provide information on the national unemployment rate over the same time period in each of the eight industry sectors.

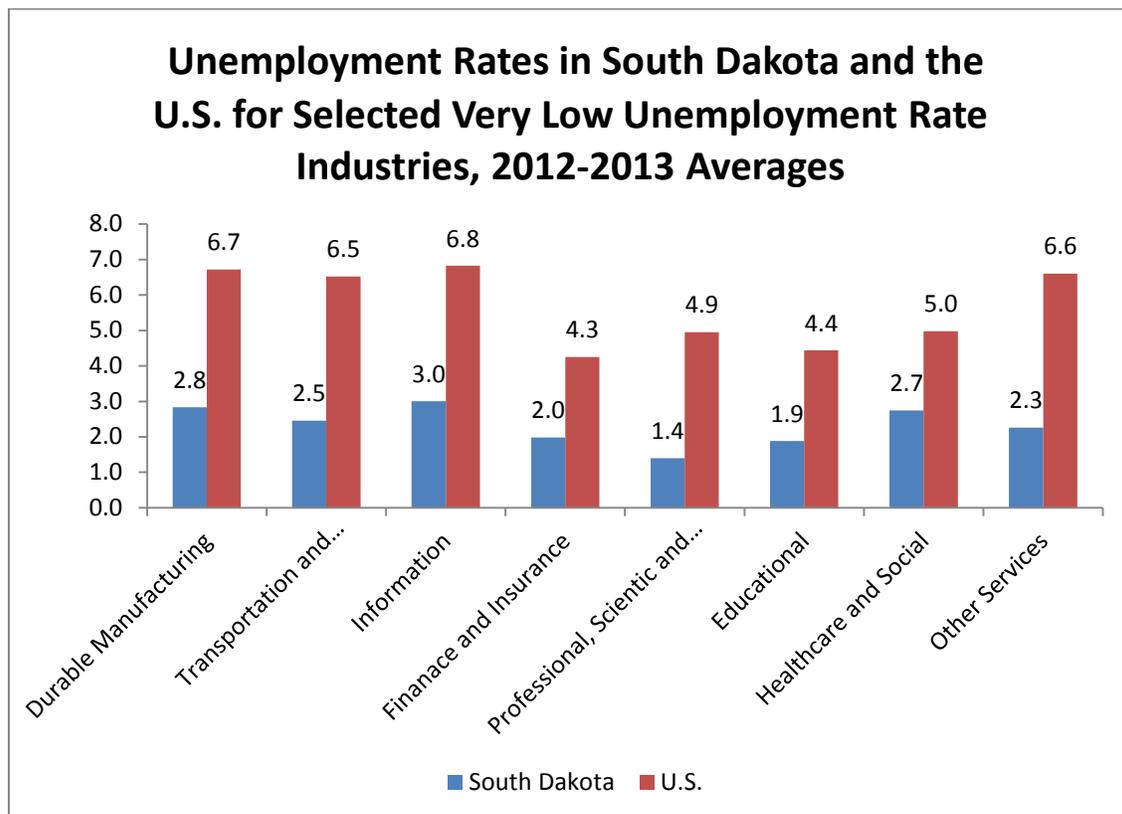
The industries characterized by very low unemployment rates during 2012-13 cover a number of different industry sectors. All of these industries had unemployment rates during 2012-2013 that were sharply below the unemployment rate for the same industry groupings in the nation. For example, the overall unemployment rate within the South Dakota durable goods industries that includes producers of fabricated metals, machinery manufacturers and

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<sup>17</sup> Most high unemployment counties in the state were located either entirely or partially on American Indian reservation lands. A total of 14 counties had an annual average unemployment rate in excess of 5 percent during 2013, 12 of these 14 were located on reservations, Deuel and Walworth counties, with unemployment rate of 5.2 percent and 5.1 percent respectively were the only high unemployment counties not located on reservation land. The 12 high unemployment counties located on reservation land accounted for less than 6 percent of the state's labor force, but 17 percent of its unemployment residents during 2013.

transportation equipment (all three posting strong net job creation over the last few years) averaged just 2.8 percent over the last two years; an unemployment rate sharply below the 6.7 percent rate observed for durable goods producers across the nation. In South Dakota the durable goods industry unemployment rate is strongly indicative of very tight labor markets with likely labor supply shortages among some occupations in the industry. However, the unemployment rate in the national durable goods industry suggests substantial excess labor supply with a high fraction of the industry’s workforce remaining unutilized during the current economic recovery.

The professional, scientific and technical services industry in South Dakota posted an extraordinarily low unemployment rate during the 2012-2013 period of just 1.4 percent. This industry also has been a leading source of payroll employment gains in the state since the end of the jobs recession. This industry includes a wide range of high end service firms including accounting and management services, scientific and engineering research and consulting and computer design and related consulting services. An unemployment rate of 1.4 percent suggests the potential for substantial labor supply problems in this industry.



Source: U.S. Bureau of Labor Statistics, Current Population Survey, Public Use Micro-data Files, Estimates by the Center for Labor Markets and Policy, Drexel University

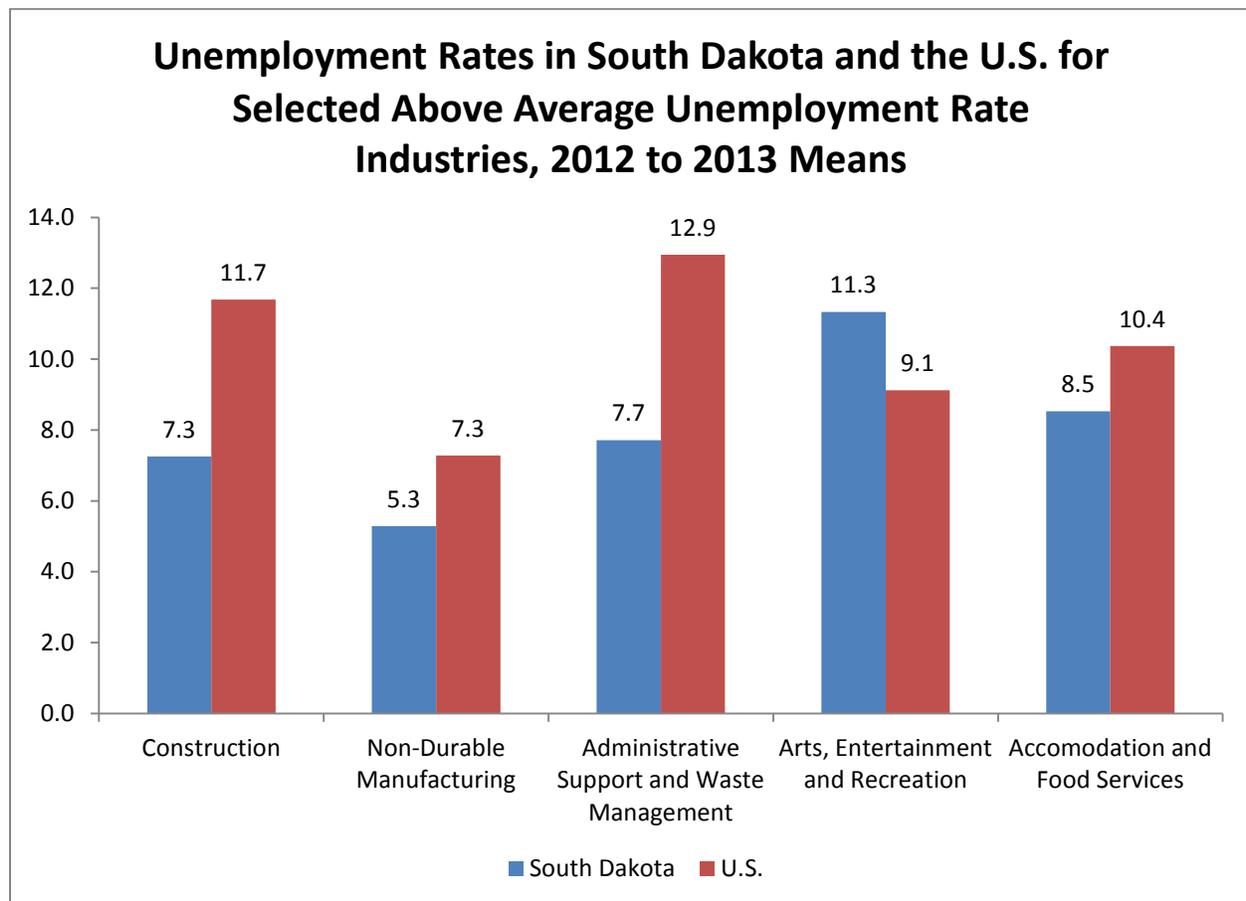
The healthcare and social services industry has been a mainstay of job growth and economic stability in most states and areas in the nation over the past decade as the demand for health services has increased sharply. This industry also accounts for about one out of five private sector jobs in South Dakota, playing a central role in the state's economy and job market. The overall health care and social services industry had an unemployment rate of just 2.7 percent (vs. 5.0 percent across the nation). The industry sector is composed of four major components including hospitals, ambulatory care providers, nursing and residential care facilities and social services. Within the health care sector, hospitals have been an important source of new job creation growing at a well above average pace over the course of the current jobs recovery—suggesting the potential for labor supply constraints on expanding service delivery in the state's hospital sector.

It is important to note that at the same time as a set of industries in South Dakota have very low unemployment rates that suggest the likelihood of labor supply problems in meeting some of their occupational staffing requirements, other industries in the state have unemployment rates that suggest considerable excess labor supply with substantial numbers of jobless workers who were previously employed in the industry.

We found that five major industry sectors in South Dakota had unemployment rates greater than 5.0 percent. These industries together, account for about one fourth of all employed workers in South Dakota. Our analysis of the CPS data files reveals very high unemployment rates in these tourism-oriented arts, entertainment and recreation industries (an unemployment rate of 11.3 percent) as well as in the accommodation and food services industry sector (an unemployment rate of 8.5 percent)—both characterized by considerable seasonal unemployment problems associated with tourism sales. The administrative support and waste management industry is dominated by firms that provide any of a wide range of services to other businesses ranging from janitorial and protective services to temporary help services. This industry group had an unemployment rate that has averaged 7.7 percent during 2012-2013—suggesting considerable excess labor supply.

Two important goods-producing industries in the state, construction with an unemployment rate averaging 7.3 percent during 2012-2013 and non-durable goods manufacturing with an unemployment rate of 5.3 percent were characterized by well above average unemployment rates over the period. Construction payrolls have grown at a slow pace

over the course of the economic recovery and remain well below their pre-recession levels. The state’s non-durable goods industry (with the exception of food processing firms) has not rebounded at a very rapid pace during the recovery. Food processors in South Dakota have grown at a rapid pace, bolstering demand and offsetting some of the unemployment associated with job losses in other non-durable industries.



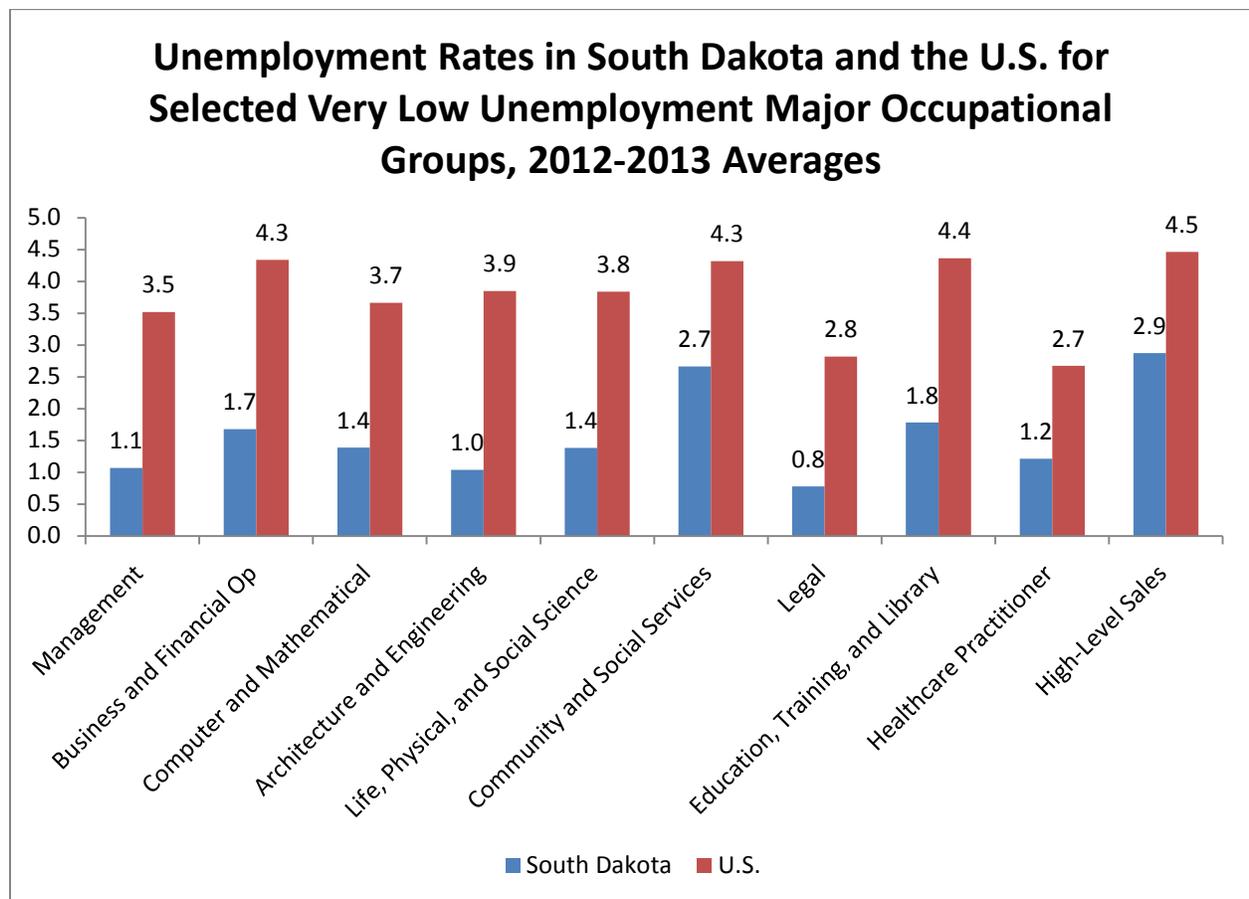
Source: U.S. Bureau of Labor Statistics, Current Population Survey, Public Use Micro-data Files, Estimates by the Center for Labor Markets and Policy, Drexel University

The overall unemployment rate in South Dakota has remained well below the national average and has been the third lowest overall unemployment rate among all the states in the nation during the past several years. However, our review of unemployment rates by industry during 2012-2013 in the state reveals some signs of potential labor shortages in some sectors of the state’s jobs market occurring simultaneously with quite substantial labor surpluses in other (although considerably smaller) industry sectors. The potential for labor supply shortages seems most likely in those industries where the overall unemployment rate was under 3.0 percent. At

the same time we identified a number of industries that had a considerable fraction of their labor force idle characterized by unemployment rates above 7 percent.

It is important to note that unemployment rates likely vary across different occupations within an industry. For example, we might expect different levels of unemployment in the health sector for the registered nurse occupation, compared to say nursing assistants. Differences in skill requirements and length of educational preparation often are closely associated with differences in unemployment rates among occupations. We have produced a set of measures of unemployment rates by major occupation for both South Dakota and the U.S. in order to understand how unemployment the relative job market conditions in key occupational sectors of the state’s labor market.

Our analysis of the CPS public use data files found that in South Dakota total of 10 broad occupational groups that had an average unemployment rate over the entire 2012 to 2013 period



Source: U.S. Bureau of Labor Statistics, Current Population Survey, Public Use Micro-data Files, Estimates by the Center for Labor Markets and Policy, Drexel University

that was below 3.0 percent. In contrast, no occupations in the U.S. economy had unemployment rates below that level during the same period of time. These ten occupations accounted for about 40 percent of all employment within the state and essentially cover the entire range of professional, managerial and high level sales occupations. The average unemployment rate for this group of occupations was just 1.6 percent in South Dakota during 2012 -2013. Occupational unemployment rates for this group ranged from a low of around 1.0 percent for engineering, management, health professional and legal occupations up to the 2.7 to 2.9 range for community and social service workers and high level sales workers.

A hallmark of these very low unemployment occupations is that in most instances there are substantial formal schooling and or on-the-job training requirements to attain the proficiencies required to become a productive worker. Skill shortages are most often found in occupations where long periods of formal schooling, apprenticeship or other kinds of on-the-job

Figure 1: Description of O\*NET Job Zones 3, 4 and 5

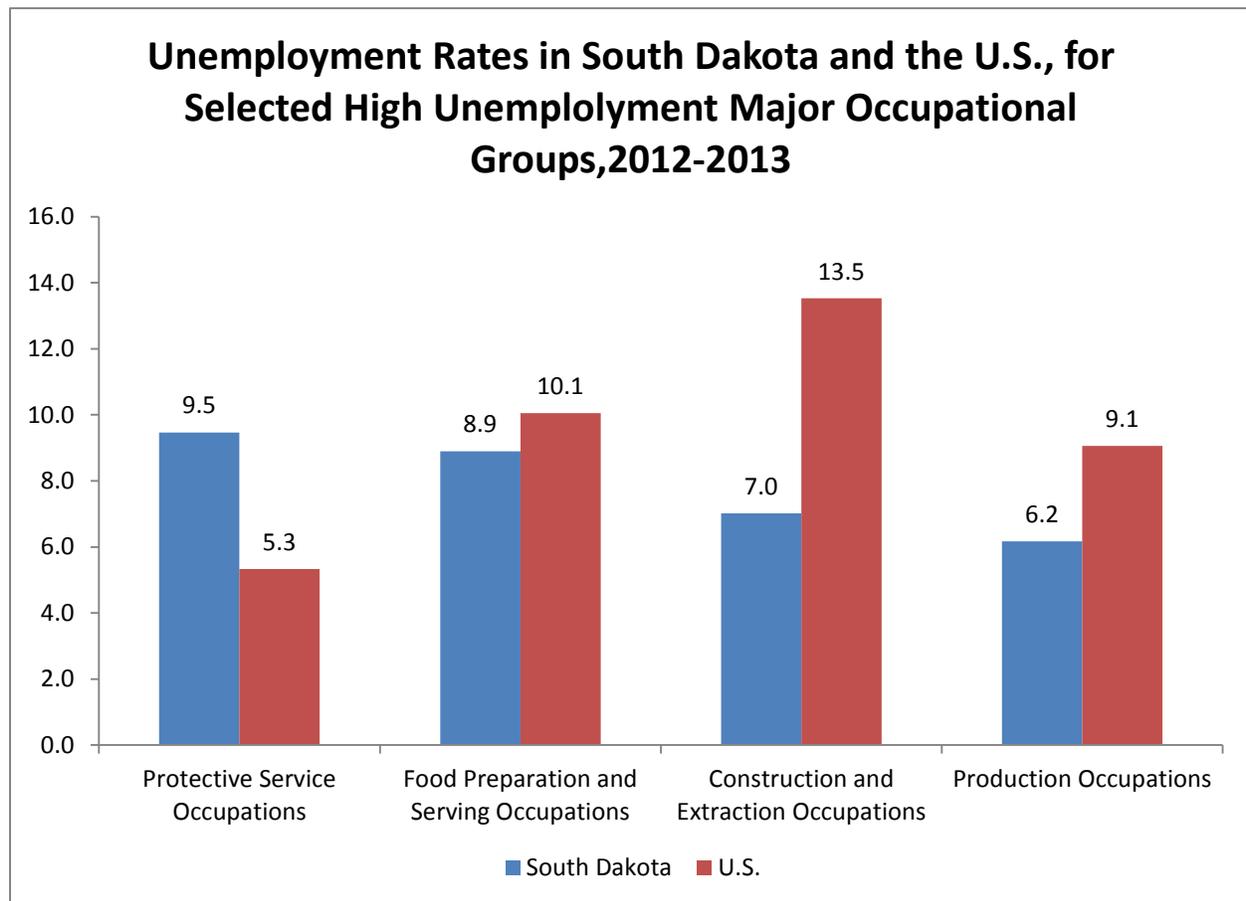
<b>Requirement</b>		<b>Job Zone 3: Medium Preparation Needed</b>
Overall Experience		Previous work-related skill, knowledge, or experience required
Job Training		One to two years
Education		Usually require training in vocational schools, related on-the-job experience, or associate's degree; some may require bachelor's degree
<b>Requirement</b>		<b>Job Zone 4: Considerable Preparation Needed</b>
Overall Experience		Minimum of two to four years of work-related skill, knowledge, or experience is needed
Job Training		Usually require several years of work-related experience, on-the-job training, and/or vocational training
Education		Usually require four-year bachelor's degree, but some do not
<b>Requirement</b>		<b>Job Zone 5: Extensive Preparation Needed</b>
Overall Experience		Extensive skill, knowledge, and experience are needed; many require more than five years of experience
Job Training		May require some on-the-job training, but most of these occupations assume that the person will already have the required skills, knowledge, work-related experience, and/or training
Education		Bachelor's degree is the minimum formal education required; however, many also require graduate school—for example, may require master's degree, and some require Ph.D., M.D., or J.D. (law degree).

Source: National Center for O\*NET Development. (2008). *Procedures for O\*NET Job Zone Assignment*. Raleigh, NC: the Center. Appendix (pp. 11-13). Available from [http://www.onetcenter.org/dl\\_files/JobZoneProcedure.pdf](http://www.onetcenter.org/dl_files/JobZoneProcedure.pdf)

training are needed to develop the abilities, knowledge, and skills required to work in these occupations. A review of the U.S. Department of Labor Occupational Information Network

(O\*NET) data base reveals that most of these low unemployment occupations are categorized in Job Zones 3, 4 or 5. Job Zone is a simple classification of occupations into five groups based primarily on the amount of education and training required to develop the proficiencies needed to be a productive worker in the occupation. Job Zones 3, 4, and 5 are at the upper end of the Job Zone classification. The requirements for these Job Zones are described below. Taken together the job zone classification and unemployment rates in the professional managerial and high level sales areas are consistent with the existence of skill shortages in many of these high end occupational areas.

Not all major occupational groups in South Dakota are experiencing low unemployment rates. Our analysis found that three major occupational areas that account for about one-seventh of statewide employment have unemployment rates above the 7.0 percent level. The construction



Source: U.S. Bureau of Labor Statistics, Current Population Survey, Public Use Micro-data Files, Estimates by the Center for Labor Markets and Policy, Drexel University

trade and laborer occupations in the state had a mean unemployment rate of 7.0 percent; nearly double the state-wide unemployment rate. The data reveal that on average 8.9 percent of food preparation and service workers were unemployed during 2012-2013 and more than 9 percent of all South Dakota resident protective service workers were classified as unemployed during 2012-2013. These occupations are generally (but not always) characterized with lower formal education and on-the-job learning requirements compared to those occupations with very low unemployment rates.

Many of the specific occupations that compose these three major occupational groupings are assigned to either O\*NET Job Zone 1 or Job Zone 2. Job Zone 1 occupations are true entry level positions, they require virtually no prior work experience or education for employment. However, certain behavioral characteristics including dependability, self-control and persistence that are generally required for employment in any occupations are also important for employment in these occupations. New hires can quickly acquire the skills and knowledge required to work in these jobs such as food service worker or security guard. Job Zone 2 occupations have more substantial occupational hiring requirements including specific occupational knowledge and skills that are often acquired by on-the job learning or relatively short-term class-room training. Many production jobs are in this semi-skilled category requiring training of usually less than six months, to become proficient in the occupation.

Figure 2: Description of O\*NET Job Zones 1 and 2

<b>Requirement</b>		<b>Job Zone 1: Little or No Preparation Needed</b>
Overall Experience		No previous work-related skill, knowledge, or experience needed
Job Training		Few days to a few months
Education		May require a high school diploma or GED; some may require a formal training course to obtain a license
<b>Requirement</b>		<b>Job Zone 2: Some Preparation Needed</b>
Overall Experience		Some previous work-related skill, knowledge, or experience may be helpful but is usually not needed
Job Training		Few months to one year
Education		Usually require a high school diploma and may require some vocational training or job-related course work

These findings reveal sharp variations in unemployment in South Dakota across occupational groups in the state. We found that about half of all employment in the state is concentrated in occupations with very low unemployment rates during the 2012-2013 period.

These occupations concentrated in professional, managerial and high level sales occupations require substantial education and training investments. We also found that despite the low overall unemployment rate in the state, about one in seven workers in South Dakota are concentrated in three high unemployment rate occupations; occupations characterized by substantial labor supply surplus—a paradox of high unemployment existing in some parts of the state job market at the same time that substantial labor supply constraints that impede economic growth and job creation, exist in other parts of the South Dakota job market.

### ***Unemployment and Educational Attainment***

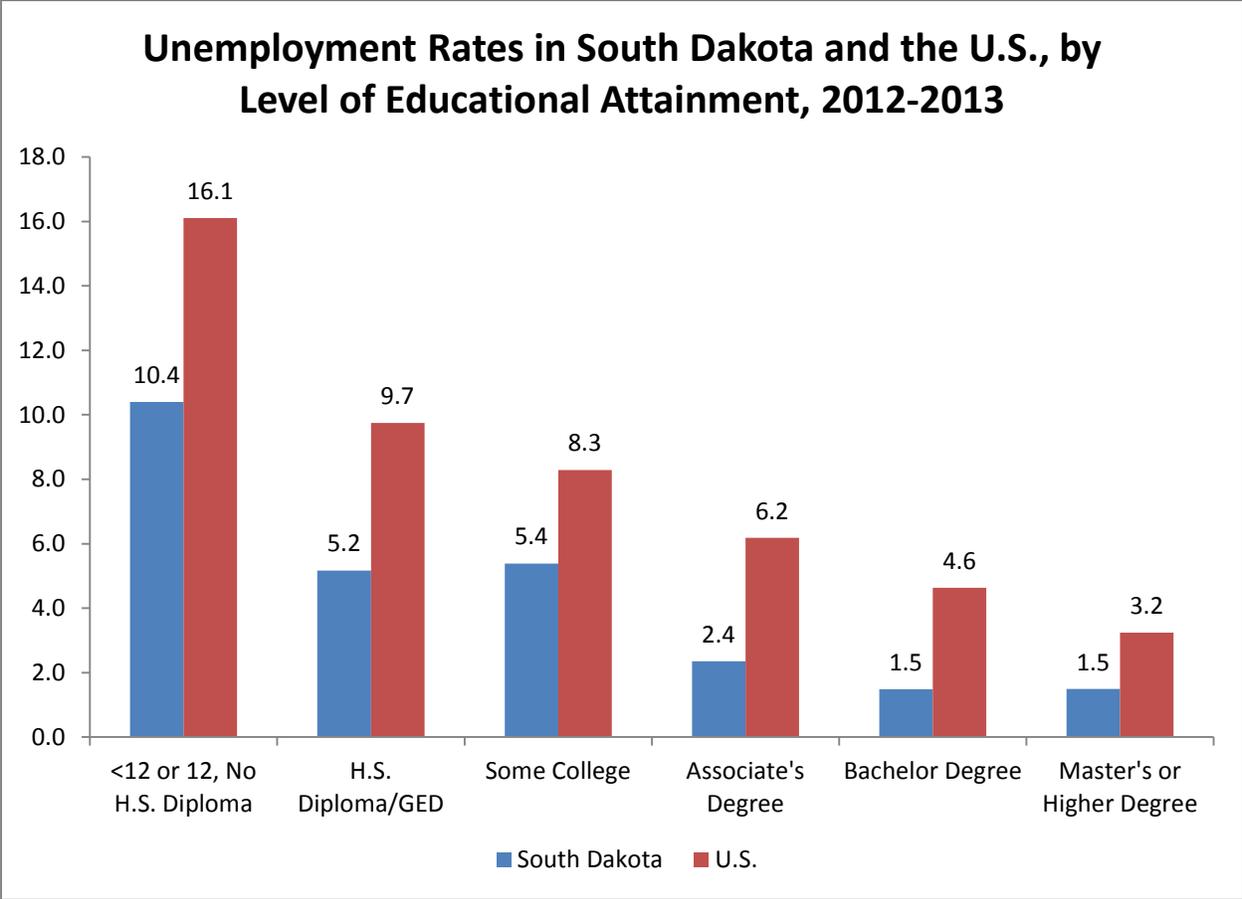
The analysis of unemployment rates by industry and occupation provided above strongly suggests the existence of structural imbalances in the South Dakota job market. We found very large differences in unemployment rates across industries and occupations. A number of industries that have posted above average rates of net job creation over the course of the current jobs recovery also have very high rates of labor utilization of their experienced labor force—characterized by very low unemployment rates. At the same time we found that a number of industries that have not experienced strong job growth in recent years are characterized by considerable excess labor supply.

When we analyzed data on unemployment rates by occupation we found that most occupations in the state that require high levels of ability, knowledge, and skill were characterized by extraordinarily low unemployment rates. At the same time that we found a few major occupational groups, characterized by relative low hiring requirement had unemployment rates that were more than double the overall statewide unemployment rate. In order to understand the potential role of education and skill mismatches in creating labor supply imbalances in South Dakota we have produced estimates of unemployment rates by level of educational attainment for labor force participants in South Dakota and the U.S. during the 2012-2013 period.

A look at the data reveals that across every educational attainment group, that the unemployment rate for South Dakota labor force participants is sharply below that of their counterparts in the nation, reflecting a much stronger job market in the state—across the board—relative to the nation. Unemployment rates were especially low in South Dakota for those who had earned a bachelor's degree or higher. Just 1.5 percent of all college graduate labor force participants in the state were unemployed in South Dakota; an unemployment rate that is much lower than the unemployment rates among the nation's college graduates of 4.6 and 3.2 percent,

respectively among those with a bachelor’s degree and a master’s degree or higher. At the associates’ degree level the South Dakota unemployment rate stood at just 2.4 percent sharply below the 6.2 percent observed for those with an associate’s degree in the nation.

Unemployment rates in South Dakota among labor force participants without a college degree were markedly higher than for those who have earned at least a two year degree award. Those who had just earned a high school diploma or had completed some college education without a degree, had an unemployment rate of 5.2 to 5.4 percent during 2012-2013, well below the very high rate of unemployment among their national counterparts (8.3 to 9.7 percent), but well above the very low unemployment rates experienced in the last few years by college graduates. South Dakotans without a high school diploma had a higher unemployment rate of 10 percent, but again much lower than that of high school dropouts across the nation (16 percent).



Source: U.S. Bureau of Labor Statistics, Current Population Survey, Public Use Micro-data Files, Estimates by the Center for Labor Markets and Policy, Drexel University

These findings on unemployment rates by level of educational attainment are quite consistent with our earlier findings on unemployment rates by industry and occupations. Strong labor demand in industries and occupations that have substantial education and training requirements have resulted in very low unemployment rates in those labor market segments resulting in a very disparate structure of unemployment rates in South Dakota that advantages those with substantial levels of post-secondary attainment. Once again, the evidence points to a state economy characterized by structural labor market problems with what appears to be inadequate labor supply in some sectors of the economy with substantial excess labor supply among workers with fewer years of education and occupational preparation.

### *The Duration of Unemployment*

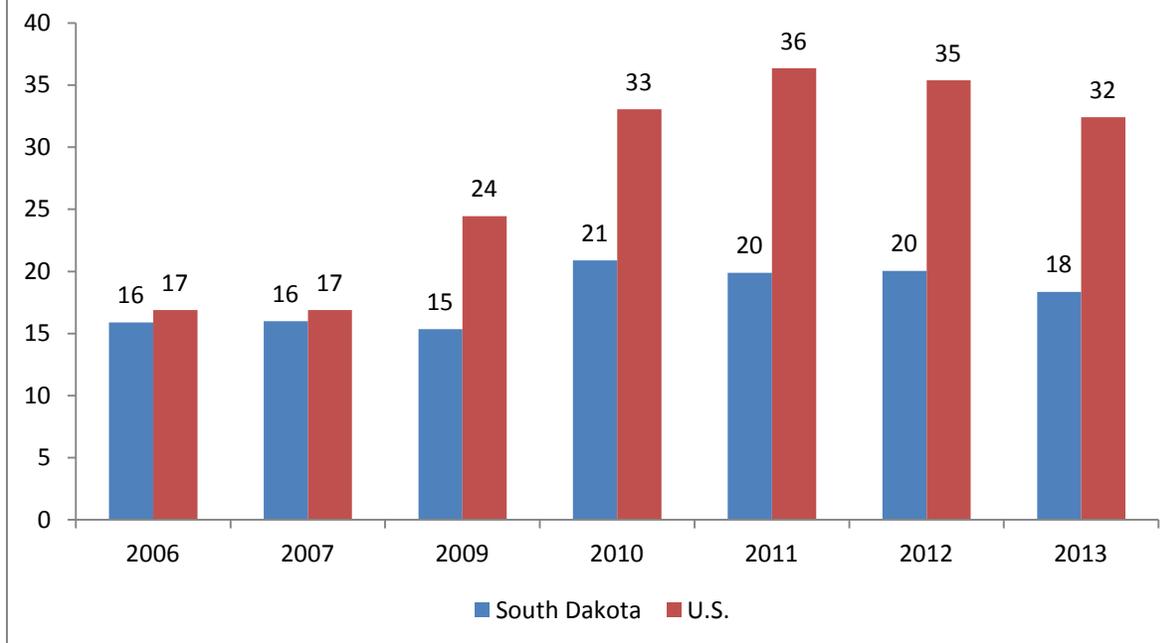
A unique characteristic of the current national economic recovery has been the extraordinary length of time that persons who experience a spell of unemployment remain unemployed.<sup>18</sup> The Great Recession saw the mean length of time that currently unemployed workers were jobless rise to historically unprecedented levels. Prior to the recession in 2007 the mean duration of a spell of unemployment in the U.S averaged about 17 weeks with an annual average unemployment rate of 4.6 percent. In South Dakota, even though the state's mean annual unemployment rate of 2.9 percent was much lower than the U.S. unemployment rate the mean duration of a spell of unemployment in the state was close to that of the nation at 16 weeks.

During the course of the economic recession the mean duration of unemployment more than doubled to an annual average duration of a spell of unemployment of 36 weeks, representing a stunning rise in the length of time jobseekers remained out of work, with much of the rise concentrated in persons who have been out of work for at least 27 weeks. In South Dakota, the rise in the mean duration of unemployment was much more modest, increasing to 21 weeks by 2010. Since the trough of the recession, the duration of unemployment in the nation has fallen very slowly still remaining at an extraordinary 32 weeks after three years of job market recovery. In South Dakota, the mean duration of unemployment has declined close to its pre-recession level as the state economy rebounded quickly from the worst effects of the recession.

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<sup>18</sup> The measure of the length of a spell of unemployment refers to those labor force participants who are currently in a spell of unemployment. It does not include those who ended a spell of unemployment either by finding work or withdrawing from the labor force.

## Trends in the Mean Weeks of a Spell of Unemployment in South Dakota and the U.S., Annual Averages, 2006 to 2013

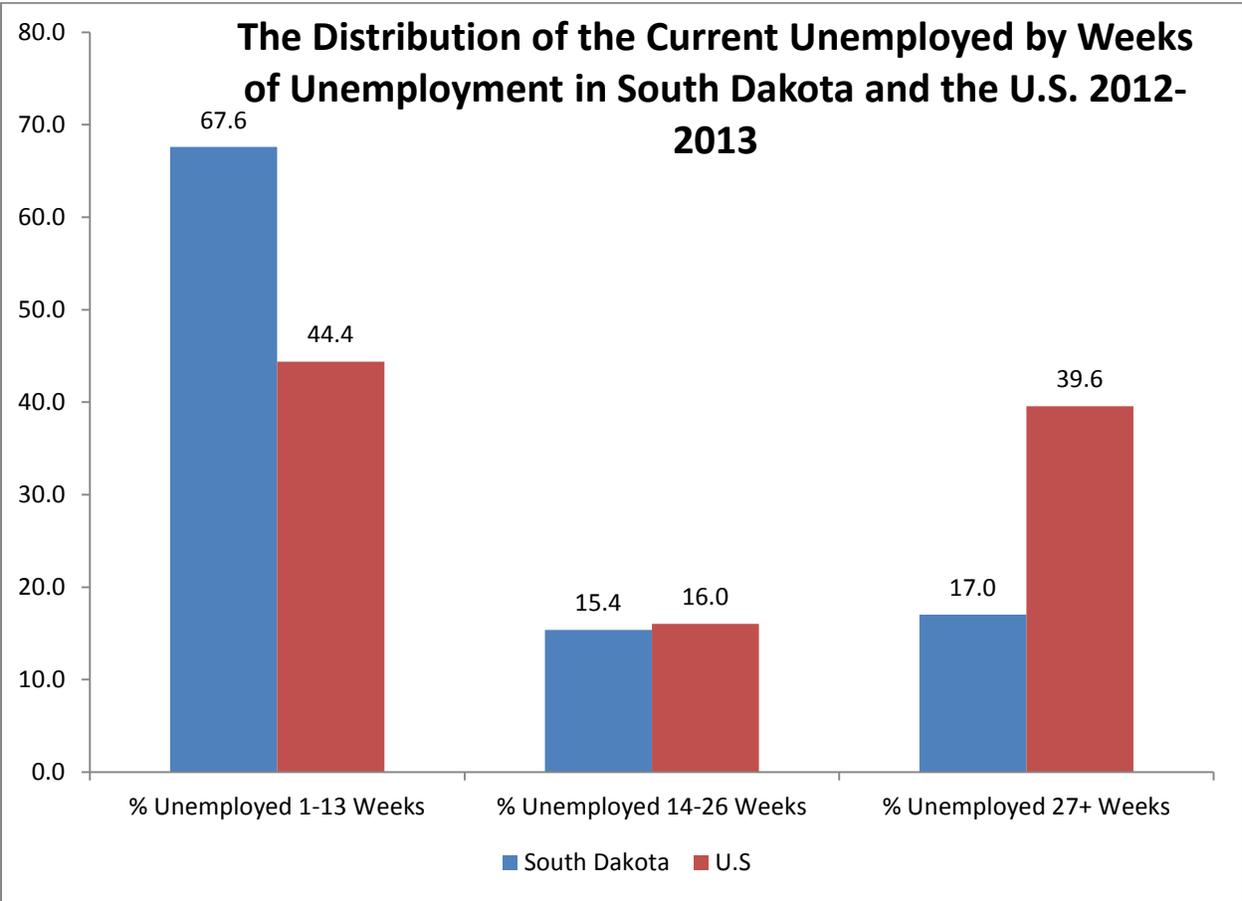


Source: U.S. Bureau of Labor Statistics, Current Population Survey, Public Use Micro-data Files, Estimates by the Center for Labor Markets and Policy, Drexel University

Explanations about the reasons why the duration of unemployment has skyrocketed in the nation range from a growing secular stagnation that is diminishing the long term production potential of the U.S. economy, to insufficient economic growth, to unemployment insurance serving as a disincentive to work. Long term unemployment in the U.S. has remained at extraordinary levels even up until today and while the incidence of unemployment is much lower for those with more years of schooling the duration of unemployment once a person becomes unemployed does not vary much by level of educational attainment.

A key reason that the mean duration of unemployment in state remains so far below the national level is that a much smaller fraction of all unemployed South Dakotans who remain jobless for 27 weeks or longer. Two-thirds of unemployment spells in South Dakota are less than 13 weeks in length; short-term unemployment that is often associated with job search among new entrants or re-entrants into the labor market. In the U.S. only 44 percent of all unemployed workers have been out of work for 13 weeks or less. Nationally, about 40 percent of all

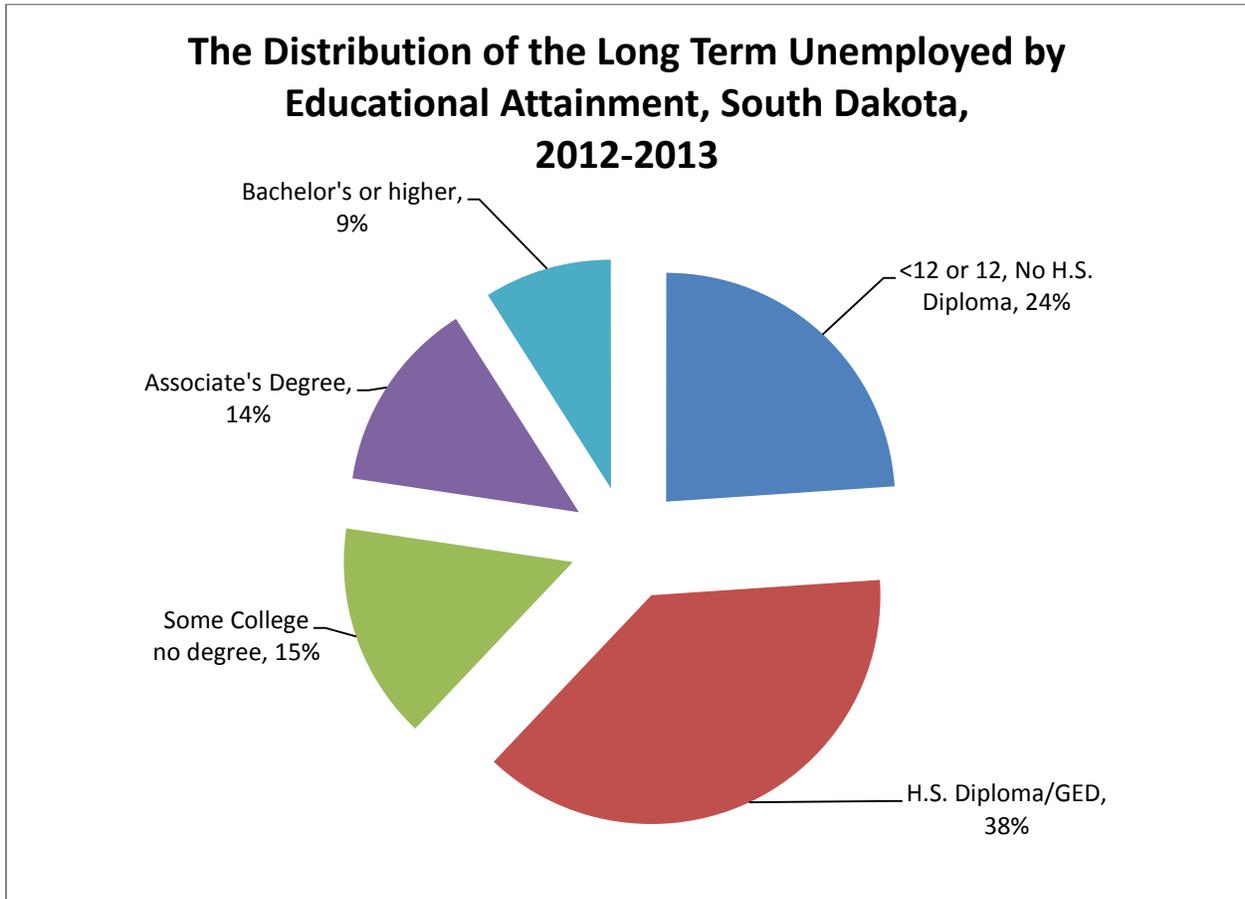
unemployed have been out of work at least half a year. This proportion in South Dakota is just 17 percent. This means that in South Dakota just 0.7 percent of the state’s labor force is long term unemployed compared to 3.1 percent of the U.S. labor force. Thus the incidence of long term unemployment in South Dakota is less than one quarter of that found in the U.S in recent years.



Source: U.S. Bureau of Labor Statistics, Current Population Survey, Public Use Micro-data Files, Estimates by the Center for Labor Markets and Policy, Drexel University

While only a small part of the overall unemployment in South Dakota is associated with job seekers out of work for more than 26 weeks, it useful to examine the level of educational attainment of those who have remained out of work for an extended period of time. We found that most of the long-term unemployment in the state is concentrated among job seekers with fewer years of schooling. High school dropouts account for one quarter of all the long term unemployment in the state, although they account for just 8 percent of the state’s labor force. High school graduates with no college degree account for just over half of all long-term

unemployment in the state. In contrast those with a four year college degree account for just 9 percent of all long term unemployment in South Dakota, even though they account for about 36 percent of the state's labor force.



Long term unemployment that is heavily concentrated among persons with lower levels of educational attainment is often associated with skill mismatch problems, especially in states or regions characterized by low overall unemployment rates. South Dakota's long term unemployment problem is very heavily concentrated among those labor force participants with lower levels of educational attainment. At the same time the problem of long term unemployment is virtually non-existent among college graduates.

### **Job Growth and Job Market Imbalances**

Over the last thirty years the American economy has experienced a period of job growth that was the envy of the world. This period was followed by a period of prolonged cyclical

instability that has led to stunted job growth and prolonged high unemployment, no real hourly wage gains for those employed, diminished labor force participation and rising poverty rates. The period of 1980 to 2000 known as the Great Moderation was characterized by strong GDP growth over long periods of time that led to very rapid increases in payroll employment levels over the period.<sup>19</sup> During the 1980s that nation was able to add nearly 19 million jobs, an increase of a stunning 21 percent in just ten years. After a very brief economic recession in 1990 the pace of GDP and job creation once again accelerated. The U.S. added an additional 22.4 million jobs, once again increasing non-farm employment levels by 20 percent. In just 20 years the Great American Jobs Machine, as it became known, added 41.3 million jobs, an astonishing 45 percent rise over the period.

The period of economic moderation come to an end with the beginning of the dot.com recession in early 2001 that was followed by a period of job market recovery beginning in 2003. This recovery was characterized by a much slower pace of new job creation and was much more short-lived compared to the expansions of the 1980s and 1990s. By the end of 2007, the nation's economy plunged into the Great Recession characterized by large payroll employment losses that was once again followed by a very sluggish jobs recovery.

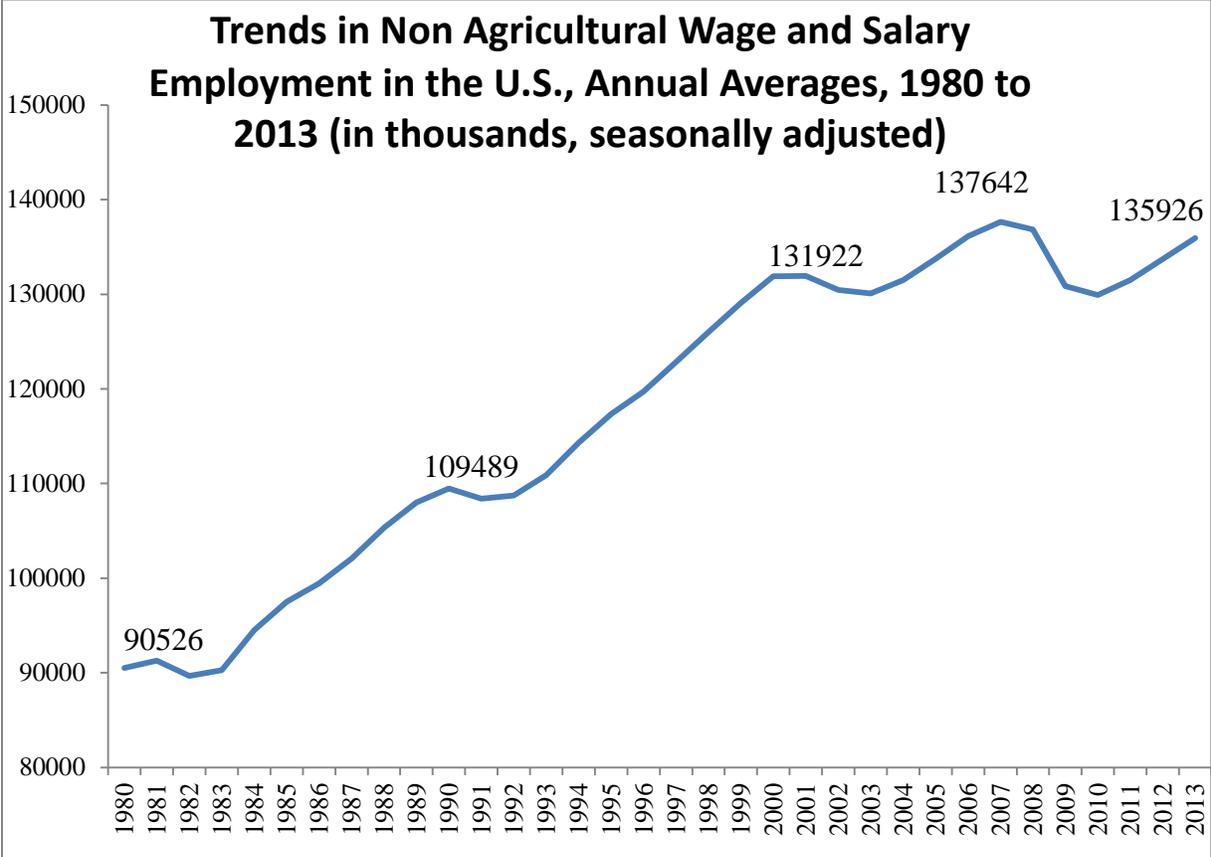
The nation was able to expand payroll employment levels by an average of about 2 percent per year between 1980 and 2000. However since then the pace of new job creation has slowed considerably. Between 2000 and 2007, that includes the dot.com recession and recovery from that recession, annual average payroll employment levels increased by just 5.75 million jobs, representing an annual average rate of increase of just 0.6 percent which is less than one-third of the pace of new job creation over the prior two decades. Over the 2007 to 2013 period including the great recession and subsequent recovery, total nonfarm payroll employment is still about 1.7 million jobs below its 2007 peak. Examining data for the last 13 years, we find that the nation has been able to add just 4 million jobs, which represents an annual average job growth rate of just 0.2 percent per year; a rate of new job creation equal to just 1/10<sup>th</sup> the pace of growth during the 1980 to 2000 period.

The poor job creation performance of the last 13 years has resulted in very high levels of unemployment, even now, four and one half years since the official end of the recession of 2007-

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<sup>19</sup> See: Alan Greenspan, "The Great Moderation," remarks by the Governor Ben S. Bernanke at the Eastern Economic Association Meeting, February 20, 2004 for a discussion of the decline in macroeconomic volatility that occurred during the 1980 to 2000 period.

2009. Sluggish job creation has meant that the primary labor market problems confronting most states in the nation are associated with limited employment opportunities for job seekers. While most states have struggled to add payroll jobs since the 1990s expansion, this has not been the case for South Dakota. Since 2001 non-farm payroll employment in South Dakota has increased



Source: U.S. Bureau of Labor Statistics, Current Employment Statistics (CES) Survey, various years, [www.bls.gov](http://www.bls.gov)

by 11.3 percent; a rate of growth in new job creation that is 3.5 times that of the nation as a whole placing the state among the most rapidly growing states in the nation by the measure of the rate of new job creation. South Dakota was tied for 10<sup>th</sup> (with Hawaii) among all states in its pace of new job creation over the period. Four of the ten most rapidly growing states over that period included four contiguous states located in the north Great Plains area of the U.S including Montana, South Dakota, North Dakota and Wyoming.

South Dakota’s ability to generate new employment opportunities is closely connected to its ability to maintain the number of goods-producing jobs in the state while generating most of the state’s jobs increase in service-producing industries. During the Great Moderation of the 1980s and 1990s most of the new jobs created in the nation were in the service-producing

industries, while the goods-producing sector essentially maintained its overall level of employment. However, after 2000, the nation’s goods-producing sector, led by the manufacturing industry, saw payroll employment levels plunge, even as employment in the service-producing industry increased.

The findings in Table 8 reveal that between the end of the 1990s expansion (in early 2001) through today, the U. S. goods-producing firms lost nearly 5.8 million jobs, representing a 23 percent decline since the beginning of 2001. At the same time overall employment in the U.S. service sector rose by about 9 percent with the addition of about 10 million jobs over the period. Huge job losses in the nation’s goods-producing sector combined with very modest growth in service-producing industries resulted in U.S. non-farm payroll employment rising by just 3.2 percent over the last 13 years.

Table 8:  
Trends in Non-Agricultural Payroll Employment in South Dakota and the U.S.,  
January 2001 to November 2013

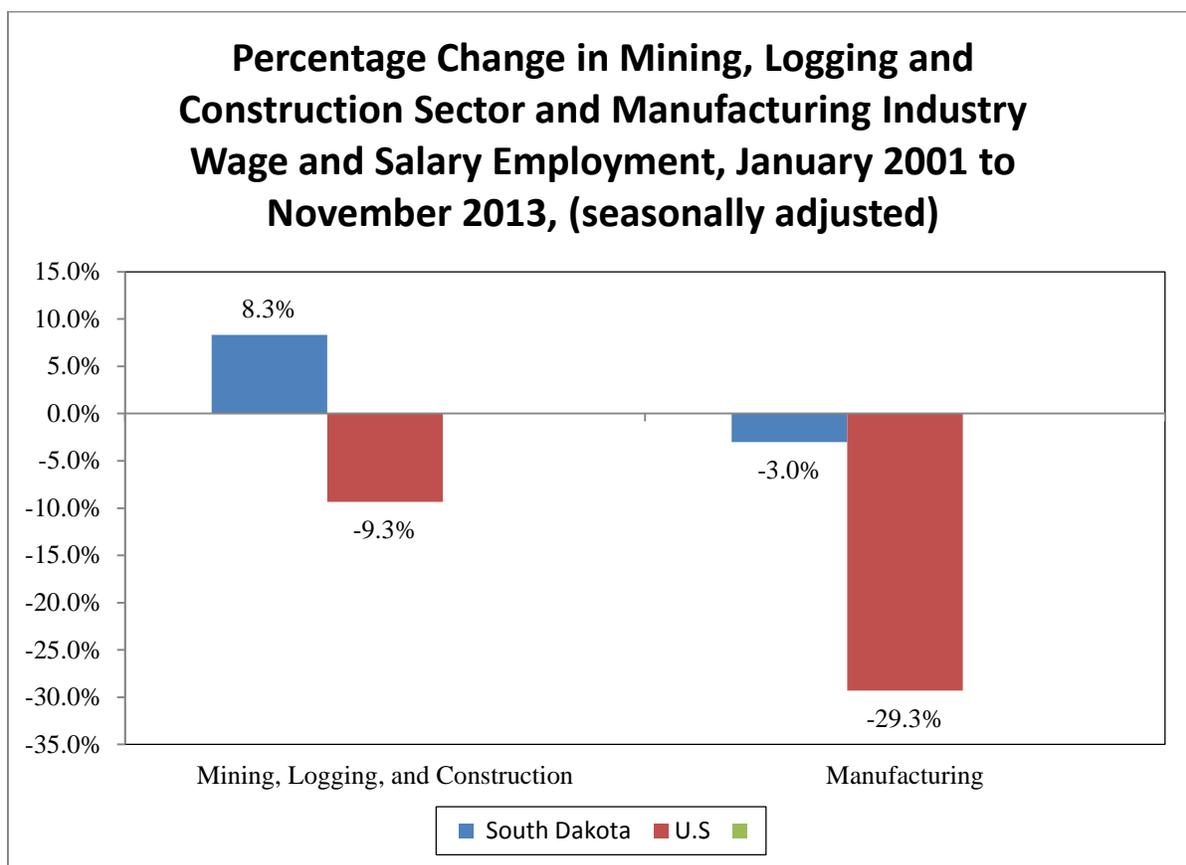
	South Dakota			
Sector	January, 2001	November, 2013	Absolute Change	Relative Change
Total Nonfarm	379.5	422.2	42.7	11.3%
Total Private	306.7	343.7	37	12.1%
Goods-producing	62.5	62.8	0.3	0.5%
Service-Providing	317	359.4	42.4	13.4%
	U.S.			
Sector	January, 2001	November, 2013	Absolute Change	Relative Change
Total Nonfarm	132548	136803	4255	3.2%
Total Private	111713	114941	3228	2.9%
Goods-producing	24531	18755	-5776	-23.5%
Service-Providing	108017	118048	10031	9.3%

Source: U.S. Bureau of Labor Statistics, Current Employment Statistics (CES) Survey, various years, [www.bls.gov](http://www.bls.gov)

Unlike the nation, South Dakota was able to maintain the number of goods-producing jobs despite the massive goods-producing industry job losses posted in the U.S. since 2001. Between 2001 and 2013, despite two national economic recessions, South Dakota did not lose any employment in its goods-producing sector. At the same time, the state’s service-producing industries were able to grow at a somewhat more rapid pace than service-producing firms in the nation. Employment stability in the goods-producing sector and above average growth in the

service-producing industry has resulted in South Dakota generating net new job growth since 2001 at a pace more than three times that of the nation.

In the nation only small losses occurred in the mining, logging and construction components of the goods-producing sector, just a 3 percent decline since 2001. In contrast, mining, logging and construction payroll employment levels in South Dakota increased by about 8 percent over the same time period. The overwhelming losses experienced in the nation's goods-producing industries were among manufacturing producers. Between 2001 and 2013 the nation's manufacturers shed nearly 5 million jobs, representing a 29 percent decline. At the same



Source: U.S. Bureau of Labor Statistics, Current Employment Statistics (CES) Survey, various years, [www.bls.gov](http://www.bls.gov)

time that employment in the U.S. manufacturing sector collapsed, South Dakota experienced only a very small decline—with its manufacturing payroll employment levels declining by just 3 percent from 43,300 jobs in January 2001 to 42,000 jobs by the end of 2013. South Dakota's manufacturing strength was extraordinary in the face of the nation's manufacturing sector's

extraordinary job losses since 2001. South Dakota was third lowest among all states in manufacturing job losses since the end of the 1990s expansion.

Stability in the South Dakota’s manufacturing sector amidst tremendous national turbulence in manufacturing was essential to state’s ability to so strongly outpace national rates of job growth and to insure that state labor markets operated at or near an overall full employment condition consistently since the end of the Great Moderation.

As we noted earlier the South Dakota service-producing sector was able to add non-farm jobs at a somewhat more rapid pace than the nation’s service sector, rising by 13.4 percent compared to an overall increase of 9.3 percent in the U.S. The service sector in South Dakota is composed a very broad array of industries ranging from retail trade to finance, professional and business services as well as the government sector. The nature of employment with respect to weeks and hours of work, wages and benefits and employment stability to name a few, vary enormously across these industries. Occupational staffing patterns of these industries are also very disparate which means that hiring requirements vary sharply across these service industries.

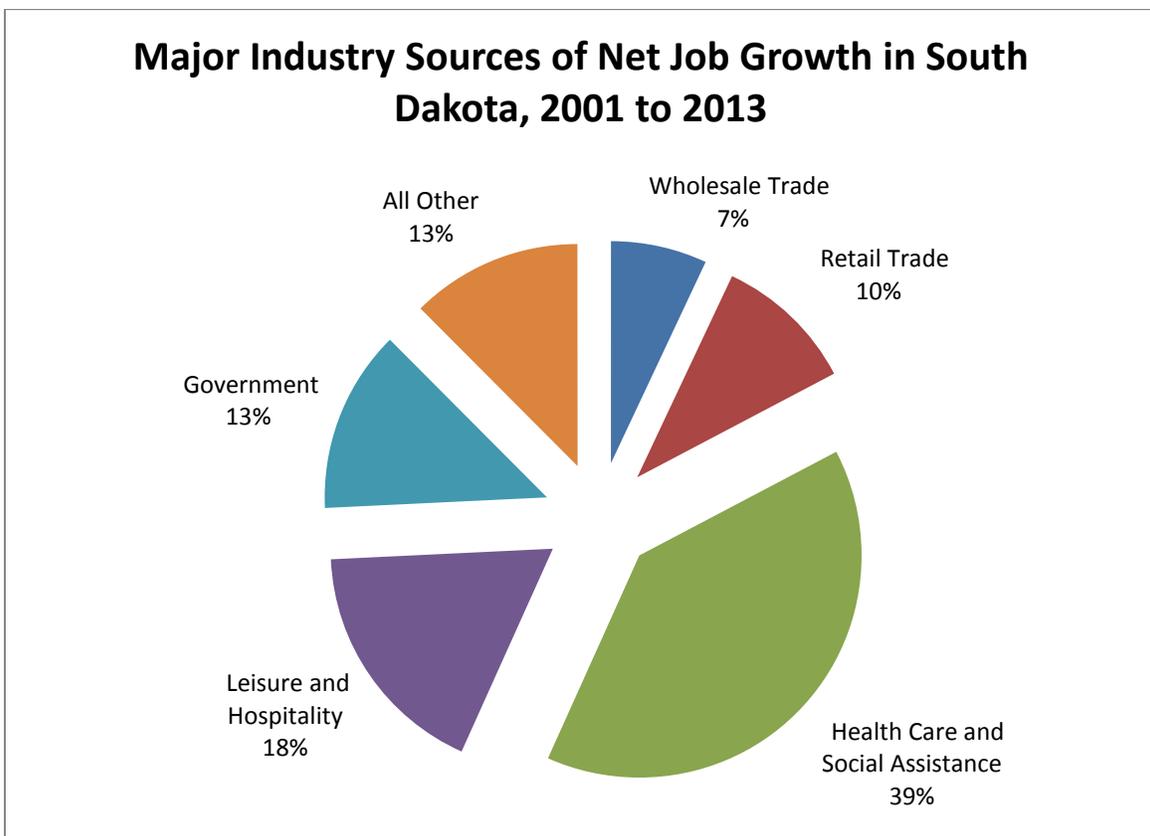
Table 9:  
Trends in South Dakota Service-Producing Sector Payroll Employment,  
by Major Industry Group, January 2001 to November 2013 (seasonally adjusted)

Industry	Jan-01	Nov-13	Absolute Change	Relative Change
Total Nonfarm	379.5	422.2	42.7	11.3%
Trade, Transportation, and Utilities	77.1	85.1	8	10.4%
-Wholesale Trade	16.6	19.6	3	18.1%
-Retail Trade	48.4	52.8	4.4	9.1%
-Transportation and Utilities	12.1	12.7	0.6	5.0%
Information	6.8	6.3	-0.5	-7.4%
Financial Activities	27.6	29.6	2	7.2%
Professional and Business Services	26.7	29.2	2.5	9.4%
Education and Health Services	51.8	68.7	16.9	32.6%
-Educational Services	5.4	7.4	2	37.0%
-Health Care and Social Assistance	46.4	61.3	14.9	32.1%
Leisure and Hospitality	38.4	45.9	7.5	19.5%
Other Services	15.8	16.1	0.3	1.9%
Government	72.8	78.5	5.7	7.8%
-Federal Government	11	11.1	0.1	0.9%
-State Government	16.9	18.4	1.5	8.9%
-Local Government	44.9	49	4.1	9.1%

Source: U.S. Bureau of Labor Statistics, Current Employment Statistics (CES) Survey, various years, [www.bls.gov](http://www.bls.gov)

The most important source of new job creation in the South Dakota services sector between 2001 and 2013 is the health care and social assistance industry. Payroll employment levels in the health care and social assistance industry increased from 51,800 during January 2001 to 68,700 jobs by November of 2013, the rise of about 15,000 jobs or a 32 percent increase over the period. The South Dakota health and social services industry accounted for four out ten new jobs created in the state since 2001—clearly a central component of the economic well-being of the state and a major contributor to the full employment environment of the state.

Leisure and hospitality, an industry closely associated with tourism, also experienced strong payroll employment gains, adding 5,700 jobs, nearly a 20 percent rise in employment, over the period. The leisure and hospitality sector also accounted for about 18 percent of the net increase in the state’s employment level and has been the second most important source of new job creation since 2001.



Retail trade stores, also with some connections to the tourism business, saw payroll employment rise by 4,400 jobs between 2001 and 2013, a rise of about 9 percent accounting for

about 10 percent of overall job creation in the state. Wholesale trade employment experienced relatively strong growth over the 2001 to 2013 period adding 3,000 jobs and growing by 18 percent. The wholesale trade industry along with the transportation and utilities (which added just 600 jobs over the period) accounted for just over 8 percent of the net rise in employment in the state since 2001. Finally, government, largely at the local level, was also an important source of the rise in payroll employment levels in the state. Government employment increased by about 5,700 jobs accounting 13 percent of the net employment increase that has occurred in South Dakota over the 2001 to 2013 period.

### **Occupational and Educational Impacts of Industry Employment Change**

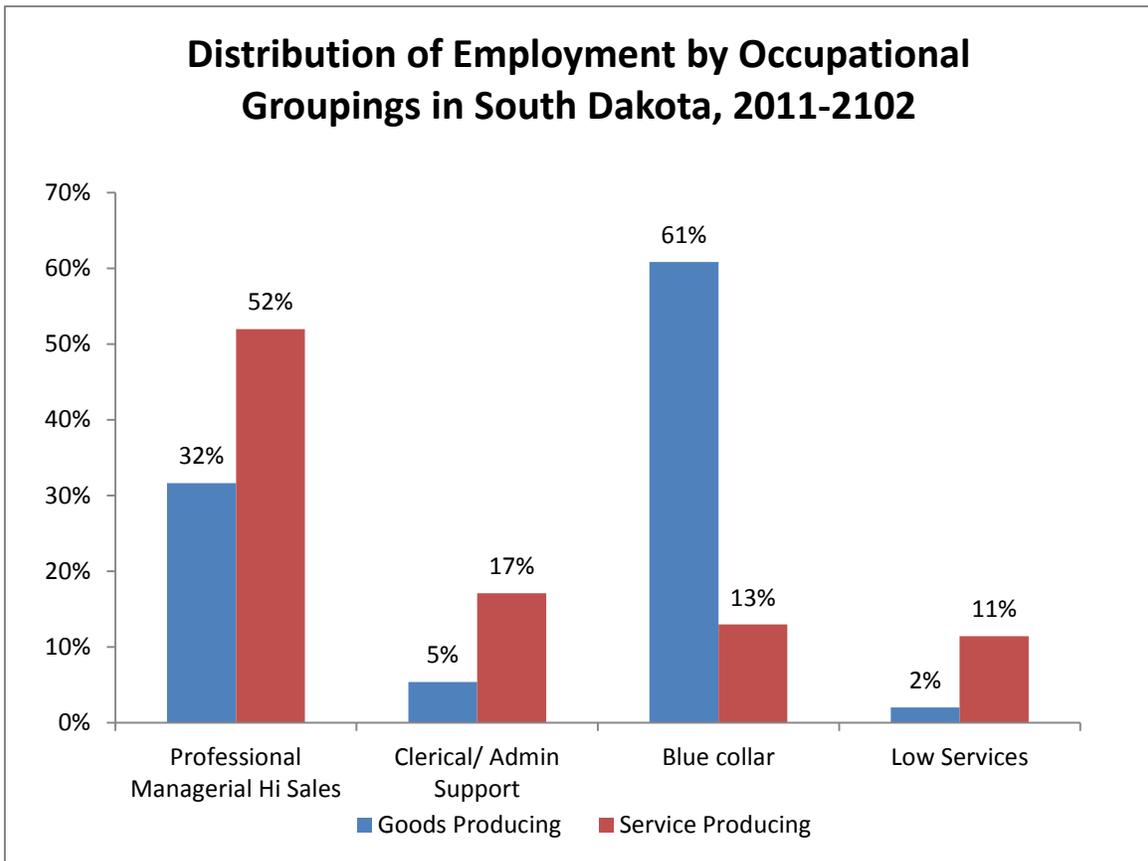
The industrial structure of employment in South Dakota has shifted from goods-producing to service-producing industries between 2001 and today. These changes in turn lead to changes in the occupational skills and abilities that employers require as well as in the level of educational attainment associated with acquiring those skills and abilities. Goods-producing firms in South Dakota have staffing patterns that are dominated by blue-collar occupations including installers and maintenance and repair workers, construction trades, production workers across a range of skill levels, as well as transportation and material moving occupations.

During 2011-2012, 61 percent of all those employed in the South Dakota goods-producing sector were employed in one of a wide variety of blue-collar occupations.<sup>20</sup> About one in three workers in the goods-producing sector in the state were employed in professional, managerial or high level sales occupations. Service-producing employers in the state had staffing structures that differ considerably from those of goods-producing firms. More than one half of all those employed in the state's service-producing firms worked in professional, managerial, technical or high level sales occupations. Clerical and administrative support occupations, ranging from cashiers to accounting clerks accounted for about 17 percent of employment among service producers, compared to just 5 percent among goods-producing firms. Lower level service occupations including food service workers, landscaping and janitorial services and security services account for about 11 percent of employment in the service-producing sector of the South Dakota job market, compared to just 2 percent in the state's goods-producing sector. Finally,

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<sup>20</sup> Census based estimates of employment in this section of the paper refer to employed persons under the age of 65, by their place of work, not their place of residence.

blue-collar occupations account for about 13 percent of employment in the state’s service-producing sector; partially associated with jobs in the repair and maintenance service industry among others. Net employment gains in the service-producing industries in the state should lead to gains in employment in occupations concentrated in this growth sector.



Source: U.S Bureau of the Census, 2011-2012 American Community Survey, Public Use Data Files, estimates by Center for Labor Markets and Policy, Drexel University.

With the emergence of the service-producing industry as the major source of net job creation over the last decade, the demand for workers with skills and abilities required by these service producers rose sharply. The data in Table 10 provide trends in employment by occupation among South Dakota firms between 2000 and 2011-2012 (average for both years combined). The strongest job growth was concentrated in the professional fields including scientific, engineering and math-related fields. Life, physical, and social sciences and related services saw employment rise by more than 40 percent over the decade. Healthcare professions and support occupations saw employment rise by 36 percent over the decade and computer and engineering employment grew by 32 percent over the period. Together these three professional

and healthcare support occupations accounted for nearly half the rise in employment in the state. Managerial and business and financial professions also saw substantial job gains with employment rising by about 19 percent over the period. Professional and managerial occupations accounted for nearly 80 percent of the rise in employment in the state over the last decade.

Table 10: Trends in the Number of Persons Employed in South Dakota by Major Occupational Group, 2000 to 2011-2012

Occupation	2000	2011-2012	Absolute Change	Relative Change
Management/Business and Financial Operations	50832	60397	9565	18.8%
Computer and Mathematical/Architecture and Engineering	9056	11919	2863	31.6%
Healthcare Practitioner and Technical/Healthcare Support Occupations	26056	35561	9505	36.5%
Education, Training, and Library	20533	20652	119	0.6%
Life, Physical, and Social Science/Community and Social Services	7398	10492	3094	41.8%
Legal Occupations	2620	2338	-282	-10.8%
Protective Service Occupations	5154	7278	2124	41.2%
High-Level Sales/Low-Level Sales Occupations	39762	35579	-4183	-10.5%
Office and Administrative Support	59150	55635	-3515	-5.9%
Installations, Maintenance, and Repair/Construction and Extraction/Production Occupations/Transportation and Material Moving Occupations	91327	93020	1693	1.9%
Personal Care and Service/Building and Grounds Cleaning	21938	27015	5077	23.1%
Arts, Design, Entertainment, Sports, and Media	4056	6970	2914	71.8%
Food Preparation and Serving	17319	20238	2919	16.9%
Total	355201	387094	31893	9.0%

Source: U.S Bureau of the Census, 2011-2012 American Community Survey, Public Use Micro Data Files and 2000 Decennial Census Public Use Micro Data Files, estimates by Center for Labor Markets and Policy, Drexel University.

Employment in blue-collar occupations increased by about 2 percent over the last decade; a relative position of strength in South Dakota given the substantial nationwide declines (-8.0 percent) that have occurred in blue-collar jobs since 2000. Skills and abilities in these occupations are often developed through apprenticeship, on-the job training as well as classroom training activities at the two year post-secondary education level.

Employment levels in sales occupations as well as in clerical and administrative support positions have declined in the South Dakota. Employment in these two broad occupational groups fell by about 7,700 jobs, a decline of 8 percent over the period. Losses in these areas are important since many clerical and sales jobs make up a core component of what are sometimes referred to as middle skills jobs. These are jobs that often do not require a post-secondary degree but are more often characterized by full-time and year round employment, with a solid wage and non-wage benefit compensation.

Substantial growth has also occurred in low-end service occupations including personal care and building services and food preparation and food serving occupations. Among personal and building care workers employed rose by 23 percent between 2000 and 2011-2012, while food preparation and serving occupations saw employment rise by 17 percent. Firms more often hire workers into these occupations at the entry level with reduced need to bring specific knowledge or abilities to these positions. More often, strong behavioral characteristics are the most prominent proficiency desired by employers in this segment of the job market. These lower level service occupations accounted for about one-quarter of the net rise in employment in South Dakota between 2000 and 2011-2012.

Over the last decade, as the industrial and occupational structure of employment has changed, the level of educational attainment of the state's workforce has changed as well. The number of employed persons without a high school diploma fell sharply (-29 percent) over the 2000 to 2011-2012 period, as it has in much of the nation as a whole. In part this decline

Table 11:  
Trends in Employment in South Dakota by Level  
of Educational Attainment, 2000 to 2011-2012

Education	2000	2011-2012	Absolute Change	Relative Change
Less than High School	38862	27598	-11264	-29%
High School Graduate	109888	132444	22556	21%
Some college or Associates	121812	118372	-3440	-3%
Bachelor's degree	63169	79840	16671	26%
Master's or higher	21470	28841	7371	34%
Total	355201	387095	31894	9%

Source: U.S Bureau of the Census, 2011-2012 American Community Survey, Public Use Micro Data Files and 2000 Decennial Census Public Use Micro Data Files, Estimates by Center for Labor Markets and Policy, Drexel University.

occurred because of sharp reductions in employment levels among in-school high school students as well as declines in employment among teen and young adult dropouts.<sup>21</sup> The number of employed persons with a bachelor's degree or higher grew at the most rapid pace over the 2000 to 2011-2012 period, rising by more than 24000 workers or about 28 percent. Among those with a college degree, employment for those with a master's degree grew by 34 percent compared to a 26 percent increase in employment for those with a bachelor's degree only. High school graduates with no post-secondary schooling also experienced a substantial rise in employment from nearly 110,000 workers in 2000 to more than 132,000 by 2011-2012, a 21 percent rise over the time period.

The data and analysis we have presented above reveals that since the end of the Great Moderation in 2000, South Dakota employers have added jobs at a much more rapid pace than their counterparts in the nation as a whole. South Dakota goods-producing firms have been able to maintain their employment levels since 2001 unlike their counterparts in the nation who experienced dramatic job losses over time. South Dakota service-producing firms have posted above average employment gains compared to their counterparts in the nation as a whole. The long-term shift of the state's industrial structure toward service-producing firms that on average are considerably more likely to employ professional and managerial workers, has meant that the bulk of new employment gains have been concentrated in these occupations. Large absolute and relative job gains in these occupations have been accompanied by strong job growth in employment among college graduates with a bachelor's degree or higher over the long term.

In the following section of this paper we examine data on recent employment developments within the state. While the impact of the Great Recession on employment levels in South Dakota was much more moderate compared to the nation as a whole, some industries lost considerable numbers of jobs and are now recovering from those losses. Below we examine developments in each of the major industry sectors in the South Dakota over the past two years followed by more detailed analysis of some specific industries within the state that have led the pace of job creation during the current recovery and thus are potentially more susceptible to labor supply constraints on their ability to grow and prosper.

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<sup>21</sup> Paul Harrington and Nancy Snyder, *Signaling Success: Boosting Teen Employment Prospects*, Commonwealth Corporation, April 2013; and Neeta Fogg and Paul Harrington, "The Collapse of the Labor Market for 16-24 Year Olds," *Cascade*, Federal Reserve Bank of Philadelphia, Fall 2011.

## Recent Job Growth Development and Potential Labor Supply Problems

Since the end of the 2003-2007 expansion, the nation experienced a period of rapid job decline followed by a slow jobs recovery. Nonfarm payroll employment in the nation fell by nearly 8.7 million jobs over the course of the economic downturn with about 7.6 million jobs recovered through the end of last year. Sadly six years after the recession began, the nation's overall payroll employment level is still about 1.1 million jobs below its pre-recession level.

In this section of our study we examine how key industries in South Dakota fared over the period of economic recovery and identify those specific industries that generated the largest volumes and rate of new job creation in the state. Current labor supply problems in South Dakota are most likely to occur in those sectors that have been able to generate large absolute and relative job gains since the end of the jobs recession in the nation.

We rely on data from the Quarterly Census of Employment and Wages (QCEW) statistical program to identify some of the specific industries that have generated new employment opportunities in the state.<sup>22</sup> The QCEW statistical program conducts a complete census of employment each calendar quarter as part of state unemployment insurance tax reporting. Since the QCEW is a complete enumeration of employment covered under the federal and state unemployment insurance compensation program, it allows us to produce a level of industry specificity that is not available under other statistical programs.

We begin by examining data on trends in major industry employment in South Dakota over the course of the recovery from the Great Recession including the period from the first half of 2010 (2010 Q1Q2) through the first half of 2013 (2013 Q1Q2). We then examine the ten most rapidly growing parts of the South Dakota job market that may be most prone to labor shortage problems now and in the future.

The findings provided in Table 12 examine covered private sector employment trends in South Dakota during the current jobs recovery that began in early 2010. The table examines data on average monthly employment during the first half of 2010 (when the national jobs recovery got underway) and the second half of 2013 (the latest period of time for which data are available.) Total private sector employment in South Dakota increased by about 17,000 jobs over the last 3 years, a 5.5 percent increase, equal to about the national pace of new job creation.

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<sup>22</sup> QCEW is a cooperative federal state program conducted by the U.S. Bureau of Labor Statistics across all states in the nation. In South Dakota the Department of Labor and Regulation is the state partner.

South Dakota is ranked 23<sup>rd</sup> among all states with respect to the pace of jobs recovery from the Great Recession.

The most rapidly increasing source of employment growth over the last three years has been in the state’s manufacturing sector. South Dakota manufacturing employment, primarily led by gains among durable goods producers, saw employment rise by more than 5,100 jobs or 14 percent over the course of the jobs recovery. Gains in manufacturing jobs accounted 3 in 10 new private sector jobs in the state over the period. The 14 percent rise in manufacturing employment since 2010 Q1Q2 ranked South Dakota 3<sup>rd</sup> in the nation in the pace of creating manufacturing jobs.

Table 12:  
Trends in Private Sector Covered Employment in South Dakota,  
by Major Industry Group 2010Q1Q2 to 2013 Q1Q2

Industry	2010 Q1Q2	2013 Q1Q2	Absolute Change	Relative Change
Total, all industries	310935	328069	17134	5.5%
AMU*	6878	7452	574	8.3%
Construction	18423	18903	480	2.6%
Manufacturing	36329	41491	5162	14.2%
Wholesale Trade	18448	19779	1330	7.2%
Retail Trade	48836	50382	1546	3.2%
Transportation and Warehousing	9253	9504	251	2.7%
Information	6555	6010	-546	-8.3%
Finance and Insurance	25255	25598	343	1.4%
Real Estate and Rental and Leasing	3343	3464	122	3.6%
Professional and Business	27046	29157	2111	7.8%
Educational Services	3335	3675	339	10.2%
Health Care and Social Assistance	55674	59101	3427	6.2%
Arts, Entertainment, and Recreation	6166	5848	-319	-5.2%
Accommodation and Food Services	35166	37244	2078	5.9%
Other Services (except Public Administration)	10227	10463	236	2.3%

\*Covered wage and salary jobs in agricultural production, mining and utilities

Source: U.S. Bureau of Labor Statistics, *Quarterly Census of Employment and Wages*, Various years.

Two industries that provide sophisticated and highly specialized services accounted for about one-third of South Dakota’s net job gains during the current recovery. Like most other states in the nation, the South Dakota health and social service sector has been a major source of new job creation. The health care and social service industry was the second most important

source of jobs during the recovery among all major industry groups in the state. Employment in the industry rose from 55,674 jobs during the first half of 2010 to 59,101 jobs in the first half of 2013, a gain of 3,427 or 6.2 percent over the period. The healthcare and social assistance industry accounted for 20 percent of the recent gains in private sector employment in South Dakota. The professional and business service sector, composed of professional and technical service firms, management organizations and business and administrative support organizations saw employment rise by just over 2100 jobs, a gain of nearly 8 percent over the period.

Consumer-oriented service firms including those focused on tourism activities also provided major contributions to private sector job gains in the state. Accommodation and food services employers added nearly 2100 jobs (+5.9 percent,) and the state's retail trade firms had employment growth of over 1,500 jobs (3.2 percent) between 2010 and 2013. These consumer service industries contributed about 21 percent to the net rise in private covered employment in South Dakota

In order to properly understand some of the differences in labor supply problems that confront different industries in the state, it is useful to examine the jobs created during the recovery in the larger context of the business cycle—accounting for both jobs lost during the decline as well as jobs gained during the recovery. Understanding the differences between cyclical and secular job creation should prove helpful in developing education and training strategies to bolster economic growth. In order to gain insight into the cyclical versus secular nature of job creation in the state, we examine private sector covered employment for each major industry group during the recession as well as the recovery and then assess its net change in employment over the entire business cycle.

Findings provided in Table 13 examine the number of jobs lost in each major private sector industry during the recession, the number of jobs gained during the recovery and the net gain over the entire period. These data reveal that much of the gain in payroll employment in the state that occurred between 2010 and 2013 (+17,134) was recovery from the jobs lost during the recession years of 2008 to 2010 (-12,318). About 70 percent of the net rise in private employment during the recovery was in the form of a 'jobs clawback,' that is, a recovery of jobs lost during the downturn. Overall between 2008 and 2013 private covered employment rose by just over 4,800 jobs or about 1.5 percent. In contrast the U.S. private sector is still about 1.2 million jobs below its 2008 level.

Manufacturing firms have been the leading source of new job creation in South Dakota over the last few years. As we noted earlier, the state's manufacturing sector added more than 5,100 jobs since the end of the recession. However it is important to note that between 2008 and 2010 the South Dakota manufacturing industry shed more than 6,300 jobs, a decline of 15 percent in just two years. The strong gains in manufacturing that have occurred over the last three years are associated with the industry recouping jobs that were lost during the recession. Indeed, the South Dakota manufacturing industry's overall employment level remains about 1,200 jobs below its pre-recession peak. Thus, the recent job gains in the South Dakota manufacturing sector are the product of business cycle changes, not gains associated with long term secular growth. This is an important issue for the state to consider. Recently industry employment projections by the U.S. Bureau of Labor Statistics suggest that manufacturing employment in the nation will continue its long term secular decline.<sup>23</sup> This issue is discussed in greater detail later in this section of the paper.

The second leading source of new job generation in recent years is the state's health and social service industry. Unlike most other major industries in South Dakota, the health and social service industry was able to post substantial net employment gains during the economic downturn. Between 2008 and 2010 the health and social service sector added nearly 2,200 jobs a rise of 4.1 percent during the recession. During the recovery the sector added an additional 3,400 positions, resulting in a total employment rise over the entire business cycle of 5,600 jobs or 10 percent. These data indicate the health care and social service sector's strong growth irrespective of overall business conditions in the state or nation and an indicator of strong secular employment growth. BLS employment forecasts expect continued strong new job creation in the health and social services industry over the next decade.

The professional and business service industry also exhibited a solid level of cyclical stability. Although unlike the health sector, the state's professional and business service producers experienced modest job losses of about 3 percent or under 1,000 jobs during the recession. However, during the recovery the industry added an additional 2,100 leading to a modest net employment gain for the sector or just under 1,200 jobs, a rise of 4 percent over the

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<sup>23</sup> Richard Henderson, "Industry Employment and Output Projections to 2022," *Monthly Labor Review*, December 2013

period. BLS expects continued above average rates of job growth in the nation’s professional and business sector.

The accommodation and food services industry also posted strong net employment gains over the course of the business cycle. Despite losses of about 250 jobs between 2008 and 2010, the industry rebounded between 2010 and 2013 adding nearly 2,100 jobs, producing a net gain in employment of 1,800 jobs or 5.8 percent. BLS industry employment projections expect below average growth in this sector of the nation’s economy in the coming decade.

Table 13:  
Change in Annual Average Private Covered Employment by Major Industry Sector in South Dakota, during the Recession and Recovery

Industry	2008-2010 Q1Q2 Recession	2010-2013 Q1Q2 Recovery	2008-2013 Q1Q2 Net Change
Total, all industries	-12318	17134	4816
AMU*	51	574	625
Construction	-2851	480	-2371
Manufacturing	-6348	5162	-1186
Wholesale Trade	-317	1331	1014
Retail Trade	-632	1546	914
Transportation and Warehousing	-553	251	-302
Information	-405	-545	-950
Finance and Insurance	-1834	343	-1491
Real Estate and Rental and Leasing	-301	121	-180
Professional and Business	-937	2111	1174
Educational Services	320	340	660
Health Care and Social Assistance	2173	3427	5600
Arts, Entertainment, and Recreation	-208	-318	-526
Accommodation and Food Services	-259	2078	1819
Other Services (except Public Administration)	-163	236	73

\*Covered wage and salary jobs in agricultural production, mining and utilities

Source: U.S. Bureau of Labor Statistics, *Quarterly Census of Employment and Wages*, various years.

Like accommodation and food services industry, the consumer service oriented retail trade sector also was able to add modestly to its employment levels between 2008 and 2013, despite losses during the downturn in 2008-2010. Despite its secular growth (in part associated with gains in the size of the state’s resident population in recent years), BLS projections for the

nation expect below average gains as the rate of population increase in the country continues to slow.

Finally, the wholesale trade industry was able to add a net gain of about 1000 jobs over the 2008-2013 period; the product of modest job losses during the recession combined with a robust recovery. Gains in wholesale trade sector employment are sometimes closely connected to growth in manufacturing output and employment.

## **Most Important Industry Sources of Job Creation**

The discussion above provides a context for assessing job creation in South Dakota in recent years. In the following sections we will explore developments in ten specific industries within the state that have been the most important source of new job creation. During 2010 these ten industries accounted for about one-third of all private sector covered employment in the state, yet they were able to generate two-thirds of the net new jobs gained in South Dakota since the end of the jobs recession in 2010.

Unsurprisingly four of these ten industries are in the state's manufacturing sector, primarily concentrated in durable goods production. Fabricated metal manufacturing posted a strong rebound from the recession increasing payroll employment levels by one-third in just three years. Machinery manufacturing producers in South Dakota saw employment rise 1,100 jobs, a one-fifth increase between the first half of 2010 and 2013. Transportation equipment manufacturers also experienced a rapid pace of new job creation in recent years. Over the course of the jobs recovery these firms raised their payroll employment levels by more than one quarter adding more than 595 jobs. All three of these durable goods producers compete for workers with similar occupational proficiencies. Rapid jobs growth in these areas suggests a greater chance of labor supply problems in key occupational areas.

We noted that the health and social services industry has been an essential source of new job creation in South Dakota for a number of years. Over the course of the current jobs recovery in the state, the hospital component of the health care and social services industry has posted the greatest job gains adding nearly 3,000 jobs to its payroll over the last 3 years. Increase in Hospital employment accounted for more than one in six new jobs created in the state since the first half of 2010.

Table 14:  
Change in Annual Average Private Covered Employment by Major Industry Sector in South Dakota, during the and Recovery

NAICS code	Industry	2010 Q1Q2	2013 Q1Q2	Absolute Change	Relative Change
622	Hospitals	20626	23599	2974	14.4%
722	Food Services and Drinking Places	27581	29226	1646	6.0%
541	Professional, Scientific, and Technical Services	11140	12318	1178	10.6%
332	Fabricated Metal Product Manufacturing	3387	4537	1150	33.9%
333	Machinery Manufacturing	5188	6291	1103	21.3%
311	Food Manufacturing	7533	8506	974	12.9%
423	Merchant Wholesalers, Durable Goods	7906	8837	931	11.8%
441	Motor Vehicle and Parts Dealers	6309	6971	663	10.5%
336	Transportation Equipment Manufacturing	2158	2753	595	27.6%
524	Insurance Carriers and Related Activities	6647	7197	550	8.3%

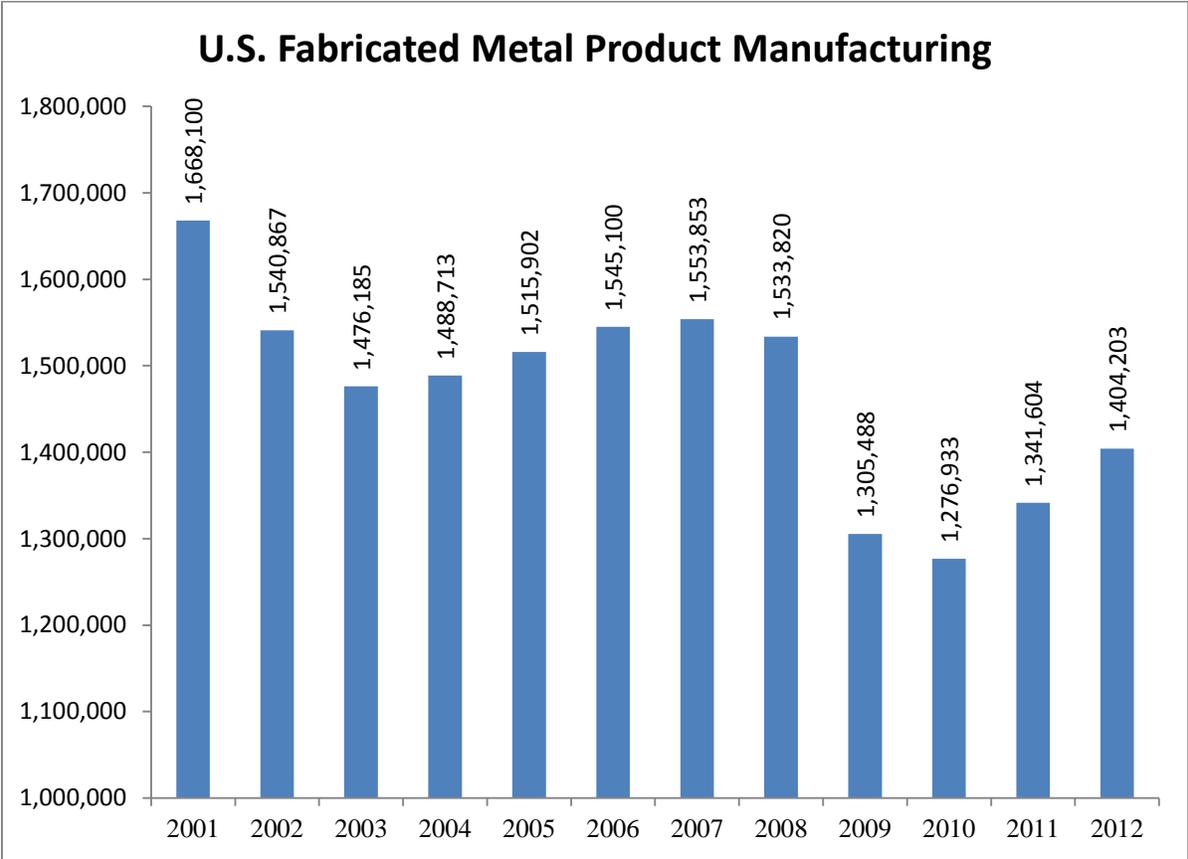
Source: U.S. Bureau of Labor Statistics, *Quarterly Census of Employment and Wages*, Various years.

The professional scientific and technical services industry has been a key component of the overall growth in South Dakota’s professional and business services industry, contributing about 55 percent of the net employment gain in the industry. We observed earlier that over the past decade South Dakota has posted strong employment gains in a number of professional fields outside the health arena. Computer science, engineering and related professional fields were among the most rapidly growing in the state. Part of the rising demand for workers in these fields is likely associated with job growth in the professional, scientific and technical services industry. Below we will take a closer look at some of the key job market trends in these high growth industries both in the state and the nation, assess the recent labor market situation based on both our review of the data as well as discussions with South Dakota employers in these industries and provide an assessment of likely growth prospects and labor supply issues in the future.

### ***Durable Goods Manufacturing Labor Markets***

Fabricated metal producers engage in forging, stamping and machining a variety of metals to shape metals and engage in welding and assembling these shaped metals into any of a variety of intermediate or final products. Like much of the nation’s durable goods manufacturing sector, fabricated metal producers have had a difficult decade. During the dot.com bust and

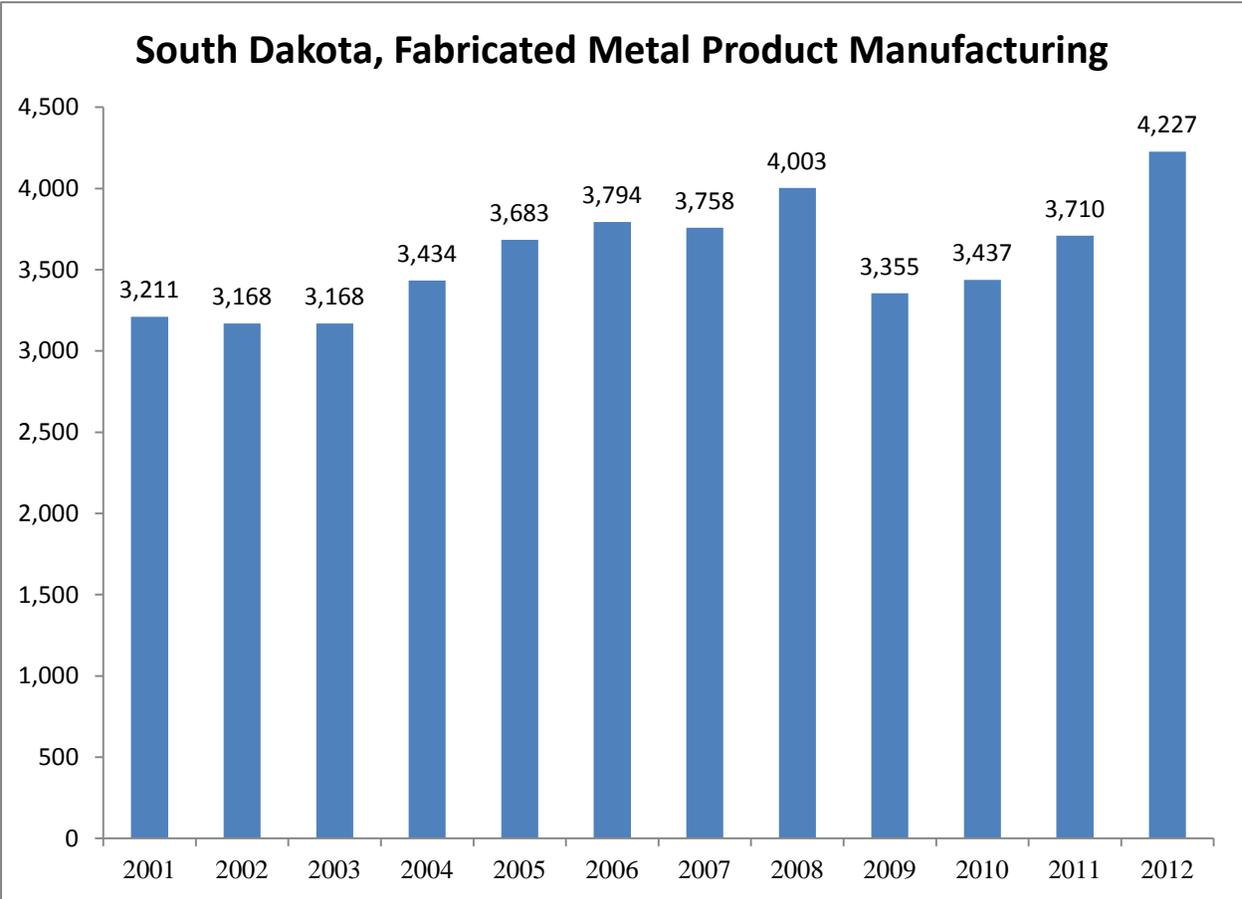
subsequent recovery the fabricated metal industry in the U.S. saw employment drop from 1.668 million in 2001 to a pre-recession peak employment of 1.554 million by 2007, a level of employment that was 114,000 jobs below its 2001 level. During the Great Recession fabricated metal industry employment levels plunged to 1.276 million, a loss of nearly 277,000 jobs by 2010. The national recovery in fabricated metal manufacturing employment has been slow, the industry had been able to gain back less than half of the jobs lost in the Great Recession with 2012 annual average employment in the industry standing at 1.404 million, about 150,000 jobs below the industry’s pre-recession peak in 2007.



Source: U.S. Bureau of Labor Statistics, *Quarterly Census of Employment and Wages*, Various years.

The pattern of job growth and decline in South Dakota’s fabricated metal manufacturing industry is much different than that observed in the nation as a whole. South Dakota’s fabricated metal industries have experienced much less severe payroll employment losses and much more robust job growth during recoveries than fabricated metal firms in the nation. The state’s

fabricated metal producers lost very few jobs during the dot.com bust of 2001-2003 (-1.3 percent, while their counterparts in the nation shed more than 11 percent of their jobs over the period. The recovery for the dot.com bust was especially robust for South Dakota-based fabricated metal producers who saw their payrolls rise by more than 18 percent, a rate of gain that was three times that of their counterparts in the nation. During the recession of 2007 to 2010 the state’s fabricated metals producers did experience a considerable volume of job loss, shedding 8.5 percent of jobs between 2007 and 2010. However, this pace of decline was just half that of the nation’s fabricated metals industry where covered employment fell by nearly 18 percent. The pace of recovery in the South Dakota fabricated metals industry has been impressive with payroll employment rising by 23 percent in just two years; more than double the pace of recovery in the nation.



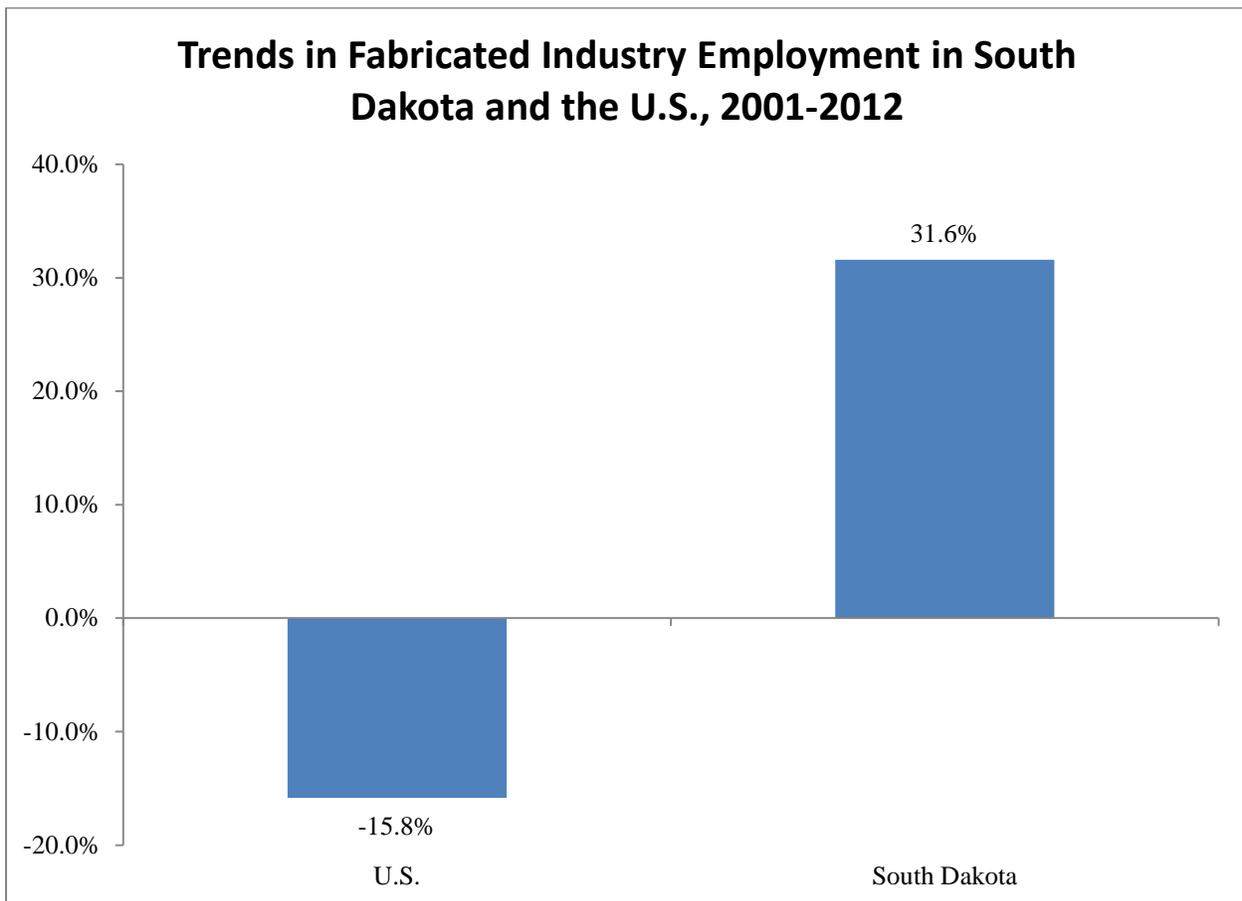
Source: U.S. Bureau of Labor Statistics, *Quarterly Census of Employment and Wages*, Various years.

The fabricated metals industry in the nation has been on a long-term secular employment decline. Since 2001, the nation’s fabricated metals industry has shed more than 260,000 jobs, a

Table 15:  
Trends in the Rate of Change in Annual Average Fabricated Metals  
Industry Covered Employment South Dakota and the U.S.

Time period	South Dakota	U.S.
2001-2003	-1.3%	-11.5%
2003-2007	18.6%	5.3%
2007-2010	-8.5%	-17.8%
2010-2012	23.0%	10.0%

Source: U.S. Bureau of Labor Statistics, *Quarterly Census of Employment and Wages*, Various years.

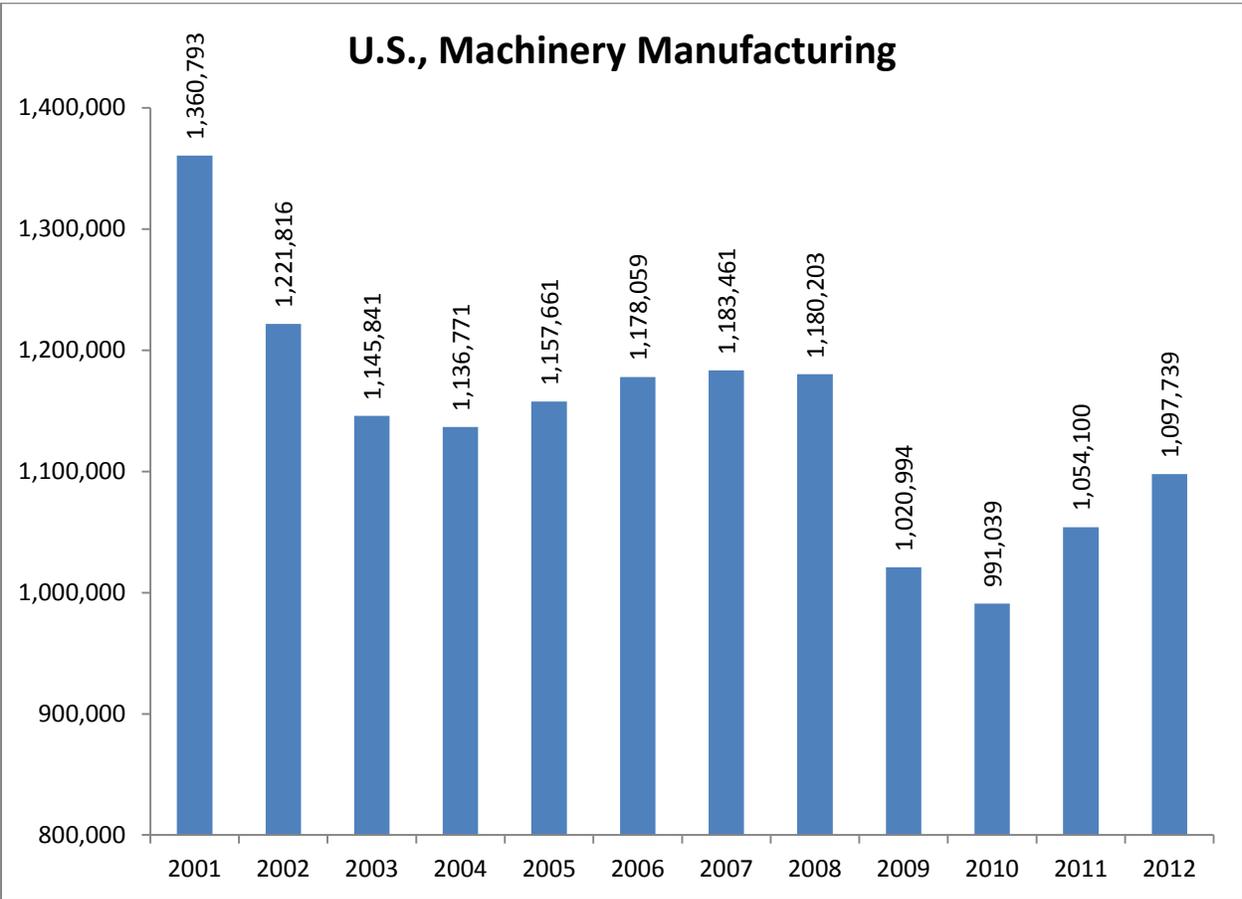


Source: U.S. Bureau of Labor Statistics, *Quarterly Census of Employment and Wages*, Various years

decline of about 16 percent over the period. New BLS projections of employment in fabricated metal manufacturing industries suggest very slow jobs gains of just 5.8 percent (a total employment gain of just 81,000 between 2012 and 2022 for the nation). It is important to note that while BLS appears pessimistic about employment growth in the industry, the inflation-adjusted value of output produced by fabricated metal producers in the nation is expected to rise

by 29 percent. This suggests that rapid gains in labor productivity are anticipated for the fabricated metals industry in the U.S.

The machinery manufacturing industry produces a variety of complex machines and machine components that are used in a variety of industries including industrial manufacturing agriculture, construction and mining, as well as HVAC and power equipment. The machinery manufacturing industry has a history of large changes in output and employment over the business cycle; however, since 2001 the machinery manufacturing industry also appears to be experiencing a longer-term secular employment decline. Machinery manufacturers lost a large number of jobs during the dot.com bust followed by a weak recovery that by 2007, left payroll employment levels in the industry 177,000 jobs below their 2001 level. This was followed by a loss of more than 192,000 jobs between 2007 and 2010. Since then the machinery manufacturing sector's recovery has been quite slow, adding just 107,000 jobs by 2012, equal to just half the jobs lost in the industry during the Great Recession.



Source: U.S. Bureau of Labor Statistics, *Quarterly Census of Employment and Wages*, Various years

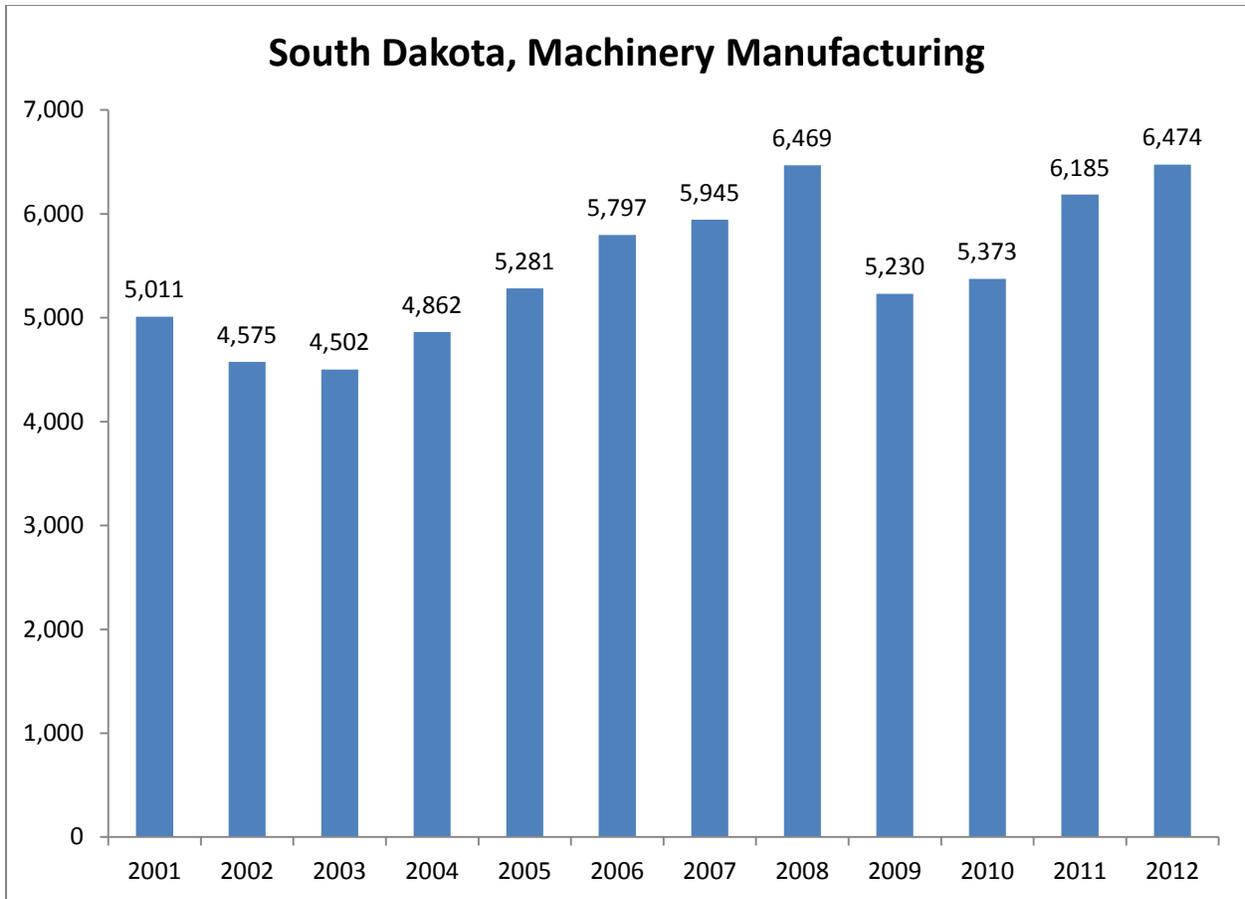
South Dakota’s machinery manufacturing industry’s job creation performance also reveals that it is a cyclically sensitive industry subject to the boom and bust of the business cycle. Yet the magnitude of job losses in the state’s machinery manufacturing industry is much more moderate than that of the nation, while the pace of job gains in recovery have been much greater than the nation as a whole. Between 2001 and 2003 the state’s machinery manufacturing payroll employment level declined by about 500 jobs. This decline was quite substantial, equal to about 10 percent of the industry’s 2001 employment level. However, the pace of machinery equipment decline in the state was equal to just two third the rate of the industry’s nationwide employment decline of about 16 percent in the industry’s employment level.

Table 16:  
Trends in the Rate of Change in Annual Average Machinery Manufacturing Industry Covered Employment South Dakota and the U.S.

Time period	South Dakota	U.S.
2001-2003	-10.2%	-15.8%
2003-2007	25.4%	3.3%
2007-2010	-4.8%	-16.3%
2010-2012	20.5%	10.8%

Source: U.S. Bureau of Labor Statistics, *Quarterly Census of Employment and Wages*, Various years

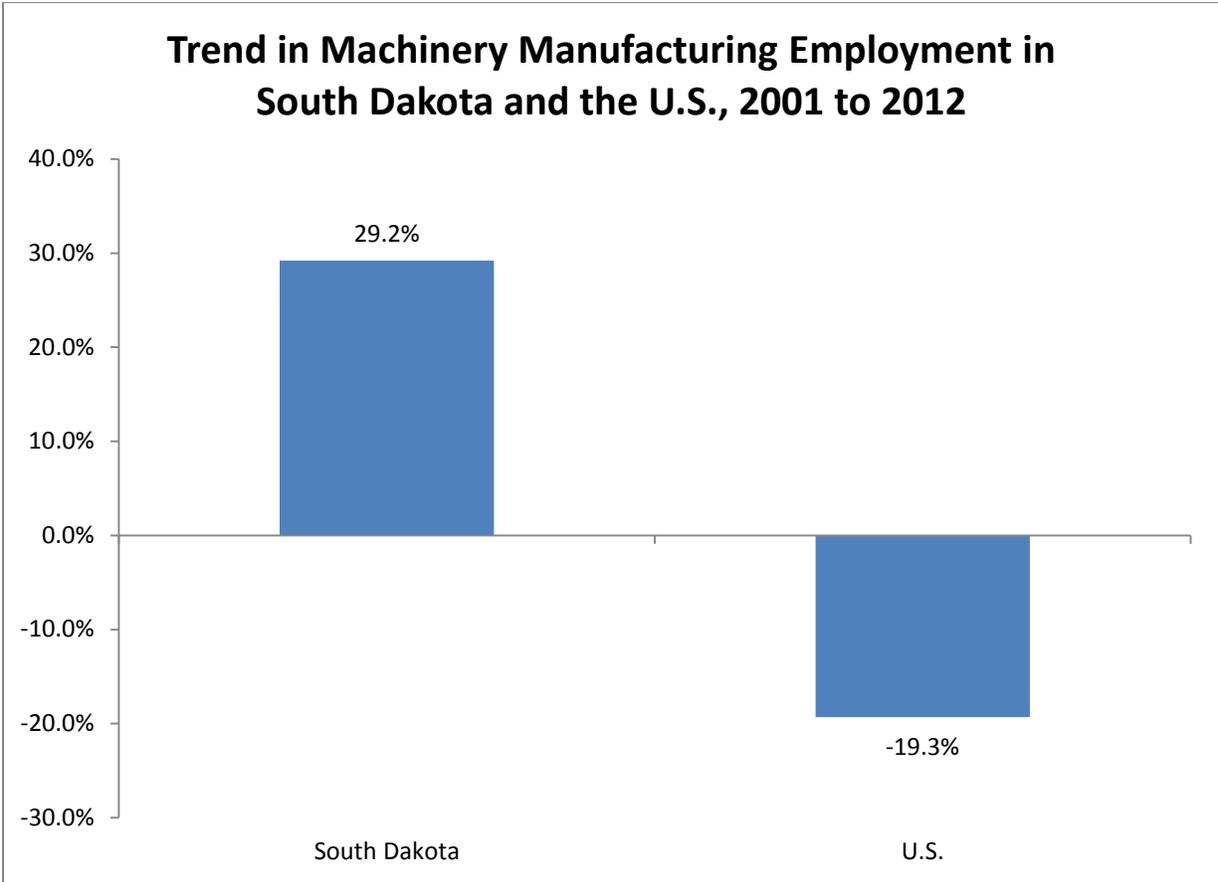
The national recovery of jobs in the machinery manufacturing industry from the dot.com recession was quite poor. U.S. employment in the industry rose by just over 3 percent between 2003 and 2007, but the recovery of machinery manufacturing in South Dakota was extraordinarily strong. South Dakota’s machinery manufacturing industry grew by a remarkable 25 percent in just 3 years. The onset of the Great Recession saw machinery manufacturing employment levels fall sharply as they did in South Dakota as well. Between 2007 and 2010 the state’s machinery manufacturing industry saw employment fall by nearly 5 percent, but the nationwide rate of job loss in the industry was more than three times that of the state with job losses in excess of 16 percent of the industry’s pre-recession employment levels. The machinery manufacturing industry job gains in South Dakota during the current recovery have been quite strong. Between 2010 and 2012 the industry was able to add about 1,250 jobs representing a rise of 20 percent while the U.S experienced new job growth of 10 percent over the same period of time.



The long-term employment growth path of South Dakota's machinery manufacturing industry is vastly different than that of the industry nationwide. Overall payroll employment levels in the nation's machinery manufacturing industry has declined by more than 263,000 jobs since 2001, a net loss of 19 percent over the period. These losses in the long-term indicate an industry that has experienced considerable secular employment decline since the end of the expansion of the 1990s. South Dakota's record of job growth in the machine manufacturing industry since 2001 is impressive, increasing payroll employment levels by a remarkable 29 percent-in the face of large relative employment declines in the industry across most of the rest of the nation.

BLS projections to 2022 paint a picture of continued job losses in the machinery manufacturing industry in the U.S. The BLS forecast suggests that employment in the industry will fall by about 7 percent over the next decade. These losses are projected despite a nearly 33 percent increase in the inflation-adjusted value of output produced by the industry by 2022. The gap between growth in output and the number of workers is expected to be filled by rising labor

productivity associated with the increased substitution of sophisticated capital production technologies in place of workers in the production process.

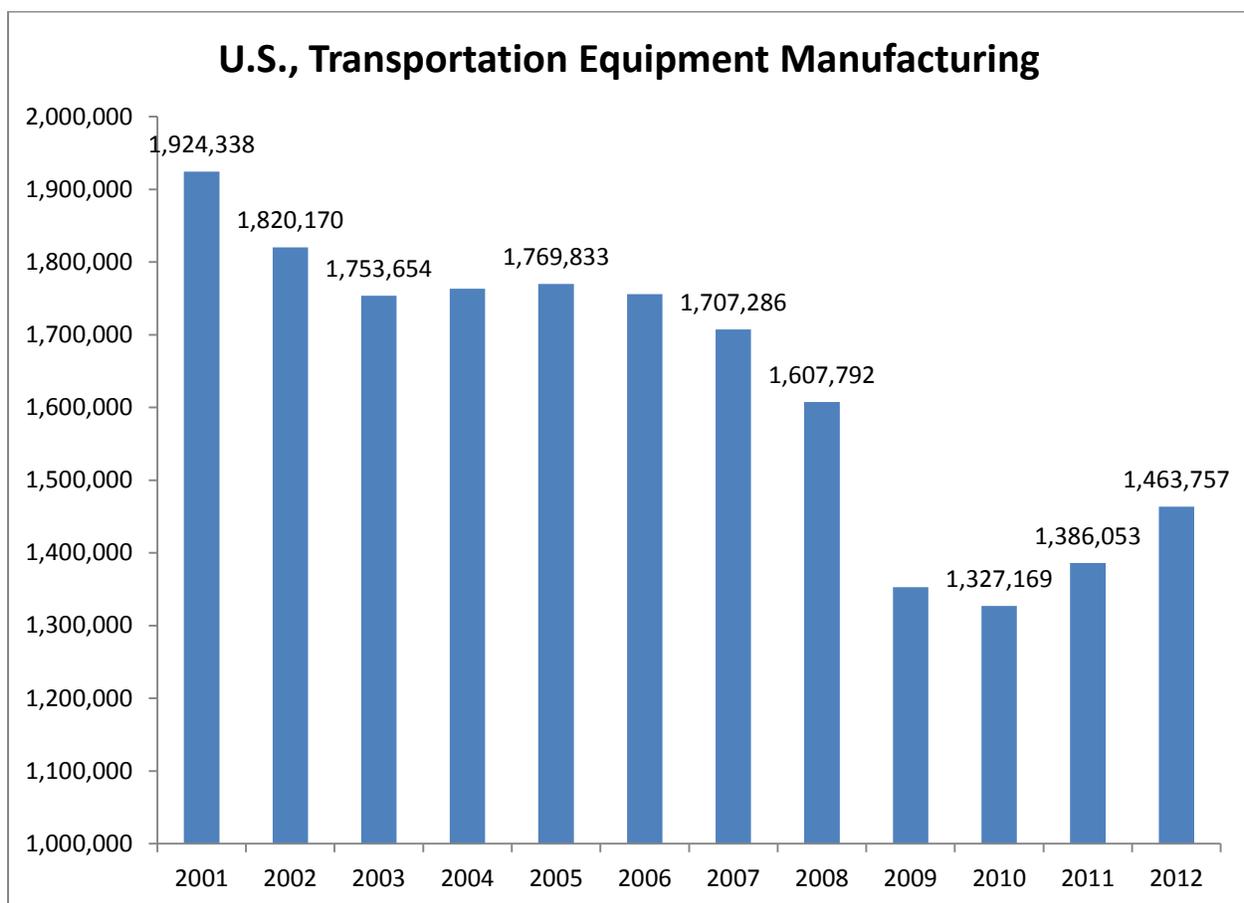


Source: U.S. Bureau of Labor Statistics, *Quarterly Census of Employment and Wages*, various years

The third durable goods manufacturing industry that has generated large gains in employment in South Dakota in recent years is the transportation equipment manufacturing industry. Transportation manufacturers use production processes that are similar to those employed in both fabricated metals and machinery manufacturing industries including welding machining and heavy assembly. Firms in this industry produce road, air, rail, and water transportation equipment. Because firms in this industry produce so-called big-ticket items whose final purchase is both interest rate as well as income sensitive, firms in this industry typically experiences large swings in output and employment over the business cycle.

Employment levels in the nation’s transportation equipment manufacturing industry sustained substantial declines over the course of the dot.com recession of 2001 to 2003, declining by more than 170,000 jobs or by 9 percent over the period. The jobs recovery from the 2001 to

2003 by transportation producers in the nation was quite poor with further job losses of 46,000 jobs during the recovery. By 2007 employment in the transportation equipment manufacturing industry in the nation had declined by 217,000 jobs, a very substantial loss of about 11 percent of pre-recession employment over the entire dot.com cycle of recession and subsequent recovery. Job losses among transportation equipment producers across the nation were very substantial during the Great Recession with employment falling from an already low 1.707 million during 2007 to just 1.327 million by 2010, a loss of 380,000 jobs. The recovery of jobs since 2010 in the transportation equipment manufacturing industry has been slow.



Source: U.S. Bureau of Labor Statistics, *Quarterly Census of Employment and Wages*, various years

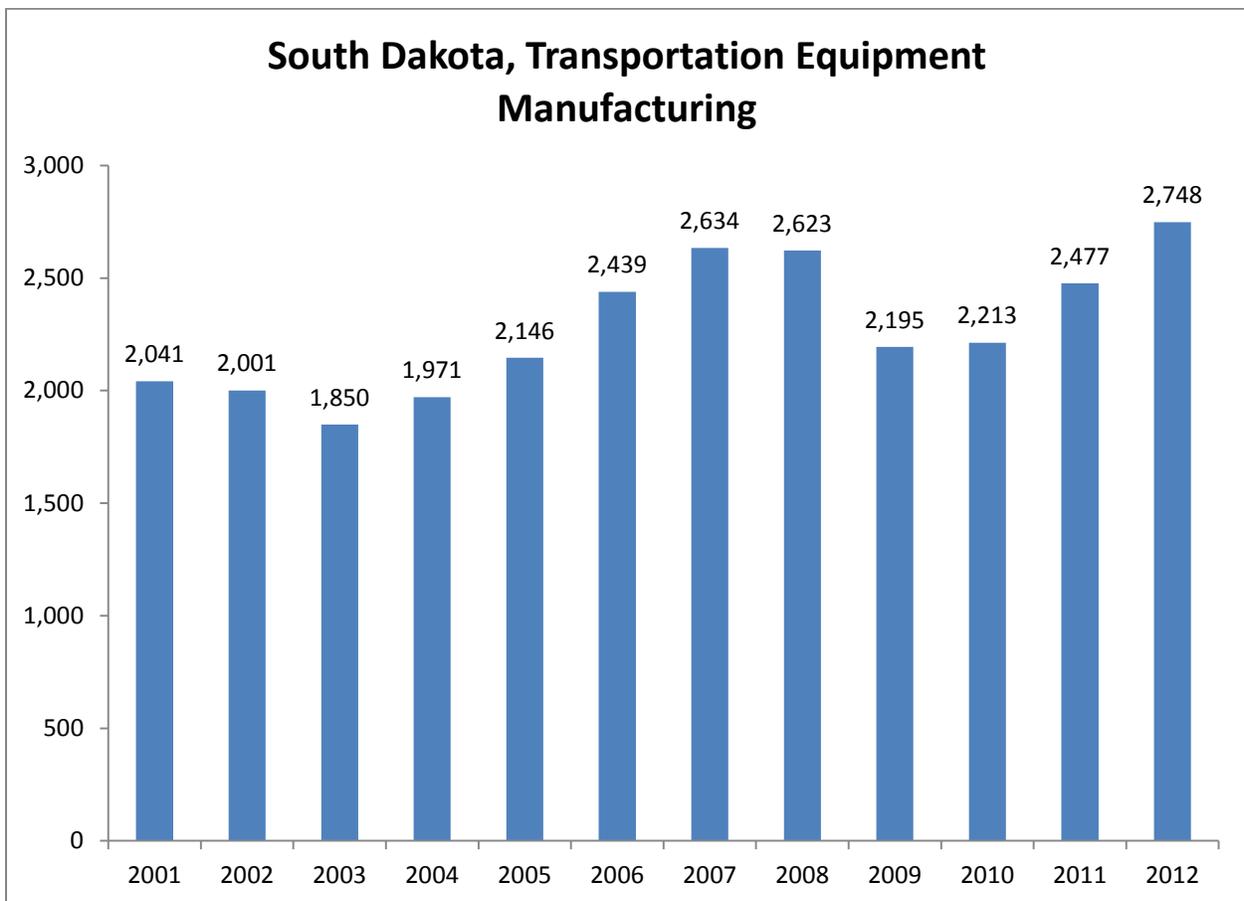
Once again we see a markedly different pattern of job trends, this time in transportation equipment manufacturing in South Dakota compared to the U.S. South Dakota transportation equipment producers, with the exception of the dot.com recession during 2001 to 2003. At that time South Dakota's transportation equipment producers lost about 200 jobs about a 9 percent

decline and nearly the same rate of job loss as the industry in the nation as a whole. During the subsequent recovery while transportation equipment firms in the nation continued to shed jobs, payroll employment in the industry in South Dakota skyrocketed; adding nearly 800 new jobs by 2007, an increase of 42 percent over the period. The jobs recession of 2007 to 2010 had a strong

Table 17:  
Trends in the Rate of Change in Annual Average Transportation Equipment Manufacturing Industry Covered Employment South Dakota and the U.S.

	South Dakota	U.S.
2001-2003	-9.4%	-8.9%
2003-2007	42.4%	-2.6%
2007-2010	-16.0%	-22.3%
2010-2012	24.2%	10.3%

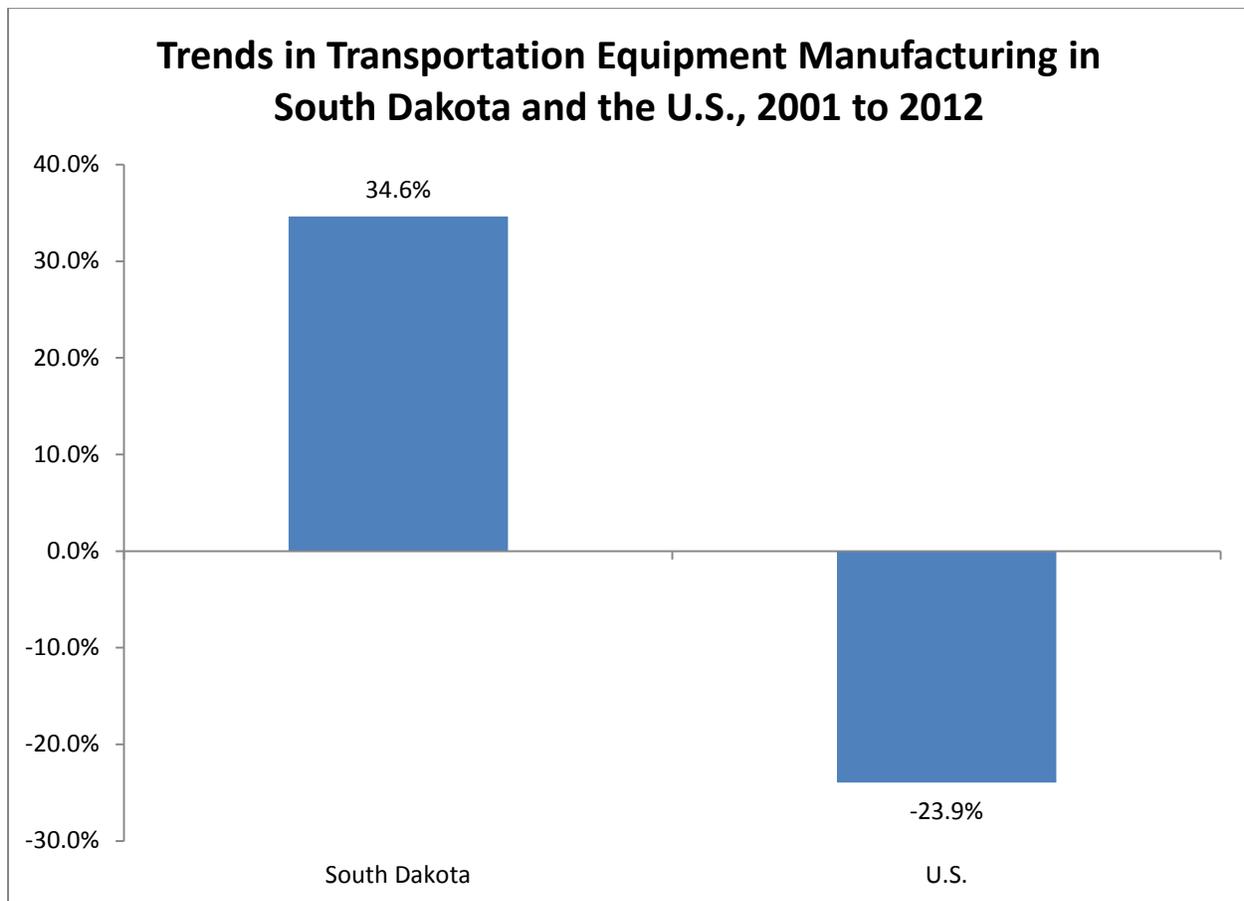
Source: U.S. Bureau of Labor Statistics, *Quarterly Census of Employment and Wages*, various years



Source: U.S. Bureau of Labor Statistics, *Quarterly Census of Employment and Wages*, various years

adverse effect on both the South Dakota as well as the overall U.S. transportation manufacturing industry. The state's transportation equipment firms saw payroll employment plunge by about 15 percent while their counterparts around the nation experienced a 22 percent decline in payroll jobs.

The recovery from the recession over the 2010 to 2012 period saw strong job growth among South Dakota producers who with a 24 percent increase over the two year period were able to wipe-out all of the losses from the prior three years and add additional workers as well. The U.S. transportation equipment industry grew by 10 percent between 2010 and 2012, adding about 137,000 jobs, recovering just over one in three jobs lost during the recession.



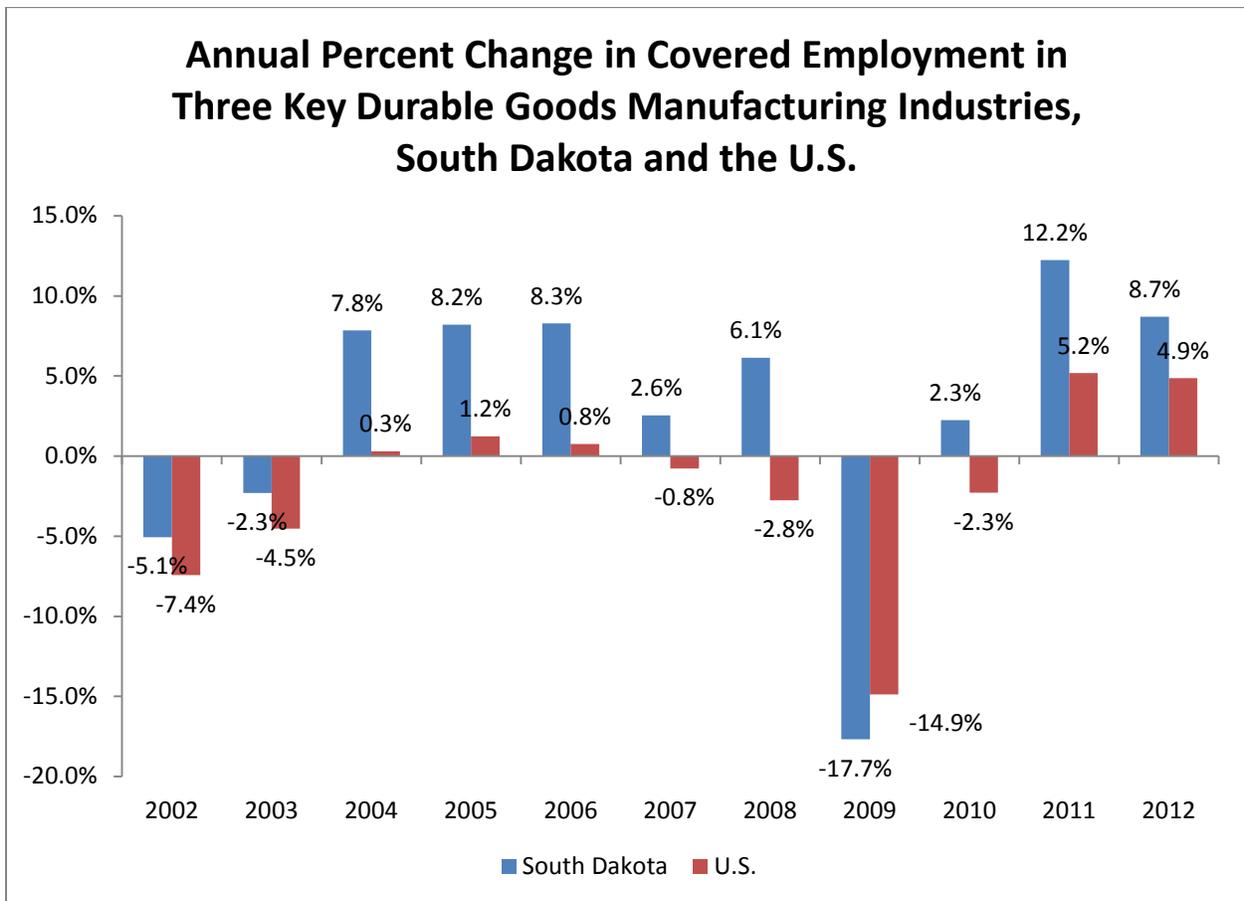
Source: U.S. Bureau of Labor Statistics, *Quarterly Census of Employment and Wages*, various years

The transportation equipment industry in the nation has seen employment in the long run decline very sharply, losing more than 460,000 jobs between 2001 and 2012, a loss of nearly one in four jobs in just 11 years. The rate of decline is much more marked during periods of national

economic recession, but jobs recoveries in the industry have been either weak or non-existent. Yet in South Dakota, transportation equipment producers have prospered expanding employment levels by one-third over the period.

The outlook for new job creation across the nation in the transportation equipment industry is not bright despite strong expected growth in the value of output produced by the industry. BLS employment projections forecast essentially no increase in the overall level of employment among transportation equipment producers in the nation even as the inflation-adjusted value of output in the industry is expected to rise by more than 200 billion dollars by 2022, an increase in the value of production of nearly one-third with no increase in the number of workers required to produce the much higher level of output.

The findings of our analysis of the 3 rapidly growing durable goods industries in South Dakota paint a picture of sustained new job creation over an extended period of time that differs



Source: U.S. Bureau of Labor Statistics, *Quarterly Census of Employment and Wages*, various years

radically from employment trends in the nation. In those years in which the U.S job market declined the magnitude of job losses in the state of South Dakota were much lower than was the case for the U.S as whole (with the single exception of 2009). Similarly, the pace of new job creation in South Dakota during periods of economic expansion among these three durable goods producers was far greater than the national recovery.

South Dakota is one of the few states in the nation that has essentially been able to maintain the absolute number of goods-producing jobs, in large measure because of the extraordinary performance of fabricated metals, machinery and transportation equipment manufacturers in generating new jobs. Overall employment levels in these three industries have increased by 3,200 jobs between 2001 and 2012, a 31 percent increase. At the same time these three durable goods producers in the nation shed 987,000 jobs, a 20 percent decline. Clearly South Dakota has become a haven for firms that engage in heavy durable goods production and the state offers a set of advantages that create jobs that simply do not exist in most other states—that have not been able to hold onto the durable goods jobs that they had at the end of the 1990s. The result is that as we observed in a previous section of this paper, the overall unemployment rate in durable manufacturing in the state stood at just 2.8 percent during 2012-2013, an unemployment rate that characterizes this industry as full employment and high potential labor shortage sector of the state economy.

Our review of the data and discussions with employers lead us to suspect that part of the reason that these durable goods producers have performed so differently than their counterparts in the nation is associated with their smaller size and their continued reliance on more labor-intensive production processes and reduced use of technologies more often found in larger production facilities. Relatively plentiful low cost labor, with likely other advantages the state offers with respect to other costs including land, energy, transportation and taxation has contributed to the growth in employment in this industry, despite national developments. South Dakota's manufacturing sector's employment history stands in sharp contrast to that of the nation during much of the post dot.com bust period. As the nation's manufacturing industries shed very large numbers of jobs, manufacturing employment in South Dakota has been able to maintain its manufacturing employment base. Between January 2001 and November 2013, employment in the nation's manufacturing sector declined by 5.2 million, a stunning 30 percent reduction in the number of manufacturing jobs in the nation. Almost none of this loss occurred in

South Dakota where manufacturing employment levels declined by 3 percent over the same period, a measure of the relative strength and stability of the state’s manufacturing producers as national manufacturing payroll employment collapsed.

### Occupational Requirements in Durable Goods Production

An examination of the staffing patterns of these three industries reveals that their employment is very heavily concentrated in blue-collar production jobs. Blue-collar, non-supervisory production jobs account for an average of 63 percent of the staffing across all three of the key durable goods manufacturers in the state. Transportation and material moving blue-collar jobs account for an additional 14 percent of employment. Clerical occupations make up about 7 percent of the staff of these industries, while engineers account for about 3 percent of all workers in these three industries.

The strong job creation performance that has occurred in these industries would be expected to primarily increase the demand for blue-collar production workers. Since the production processes in these industries is somewhat similar, employers in these three heavy durable goods producing industries compete in the same local labor market for welders, welding machine setters and operators, machinists, cutting and press machine operators and a variety of assembly-related occupations. These occupations are primarily concentrated in Job Zone 2 requiring some prior knowledge and experience with training of a few months up to a year and a high school diploma or some post-secondary vocational preparation.

Table 18:  
Occupational Staffing Patterns of the Three Key Durable Goods  
Manufacturing Firms in South Dakota, 2012

Occupation	Fabricated Metal Mfg.	Machinery Mfg.	Transportation Equip. Mfg.	3 Key Durables
All Occupations	100%	100%	100%	100%
Production Occupations	57%	70%	68%	63%
Transportation and Material Moving Occupations	23%	7%	6%	14%
Office and Administrative Support Occupations	6%	10%	8%	7%
Architecture and Engineering	0%	3%	6%	3%
Sales and Related Occupations	2%	3%	3%	2%

Source: U.S Bureau of Labor Statistics, Occupational Employment Statistics Program, South Dakota Researcher Estimates.

Our discussions with a number of South Dakota employers that employ workers in these production occupations revealed that these firms did require workers with work experience, and formal or informal training to be considered for employment. Almost unanimously these producers reported that they could not hire a worker with no background in heavy manufacturing as a welder, machinist or other production worker in the industry. Thus the labor supply problem these producers faced is associated not with a lack of applicants, but instead applicants with the experience and/or education that provide them with sufficient occupational knowledge to become productive workers in a relatively short period of time after hiring. Because of the cyclical nature of durable goods manufacturing sales, during economic expansions new orders for products often increase very rapidly, requiring relatively large volumes of hiring in a short period of time.

One firm in located in the Mitchell area has increased its employment of production workers by 25 percent in the previous year. We found that all of the local manufacturers in the area were competing against one another for a dwindling pool of experienced and knowledgeable welders, machinists, assemblers and machine operatives. One local employer put it most clearly noting, “Mitchell is at full employment.” Another employer noted that...”we’re not real picky right now” as a way of describing the problem of hiring production workers. We found that problems existed in hiring blue-collar production workers across the state.

A key issue is the way that employers adjusted to the problems of hiring production workers. From the employers view, the inability to hire workers meant that in some way they were losing revenue that they could make from sales, but may have difficulty in delivering a quality product on time because they did not have sufficient number of productive blue-collar workers to meet the rising demand for output in their respective product markets. In short most durable goods manufacturing employers we spoke with thought they were giving up revenues that they could generate if they had more skilled production workers.

Employers adjusted to these labor supply problems in a variety of ways. Some firms actively recruited production workers from other local firms, a practice commonly referred to as “pirating” employees from one firm to another—often associated with offering improved wages and benefits. Employers also expanded recruitment efforts through on-line recruiting services and through workforce development and population/labor force migration programs such as those offered under the South Dakota Workforce Initiative (WINS). Other firms have put in

place on-the job training efforts, but a number of employers of production workers have opted not to engage in OJT since it diminishes the output of their experienced welding and machinist staffs when they must devote time to instructing new hires. The result is that at least some employers saw OJT as too costly since it entailed diminished output in the short-run with the potential (and associated risk) of hypothetical gains in the longer term.

Many firms have attempted with greater or lesser levels of success to build connections with the state's two-year post-secondary technical institutions, with some firms (notable in Mitchell) reporting strong connection and cooperation with local programs. The Mitchell Technical Institute has built some very strong connections to local manufacturers and often works in partnership with local businesses in organizing and delivering education and training services. Some employers make both cash (in the form of tuition subsidies) and in-kind equipment and materials contributions to various shops at the state technical institutes and local workforce development technical training centers. Additionally, the technical colleges have organized employer advisory committees for each of its occupational shops that connect students with local employers as well as provide the chance for employers to work with instructors on curricula and related technical instruction issues.

While staffing patterns of these high growth durable goods manufacturing firms are dominated by production occupations, the labor supply problems that firms in these industries experience also extend to engineering and related technical fields associated with the design production and installation of the products produced by firms in these industries. As observed in a previous section of this paper, the unemployment rate in South Dakota's engineering labor market during 2012-2013 was extraordinarily low 1.0 percent. Our discussion with durable goods manufacturing employers indicated that they experienced substantial difficulty in recruiting and hiring engineers. They noted that they were competing in national labor markets for engineering talent at the four-year college and university level and that a variety of non-wage amenities not always available in South Dakota served as blandishments for engineers to locate in other more metropolitan regions of the nation.

Stepped up recruitment of engineers from other parts of the country has become an important way of these manufacturing producers to hire qualified engineers, in some instances working with the state WINS program. At least one firm has begun to utilize the federal H-1B visa program in an effort to hire foreign engineering students enrolled in U.S. colleges.

Graduates of two-year engineering technology programs, while not perfect substitutes for those with four-year degrees, have also been important to production in these durable goods manufacturing industries.

The findings above provide a strong indication of widespread labor supply problems that have inhibited the expansion of output and employment in the state’s three key goods producing industries. Relatively modest job losses in during economic recession with strong job growth during periods of recovery has meant that these durable goods industries in South Dakota have been able to grow and prosper in ways that their counterparts in most of the rest of the nation have be unable to achieve. Firms are adjusting in a variety of ways to current labor shortage problems in both production and engineering and related technical fields, but they these adjustments, while useful, have not resolved the shortage of skilled workers and the associated output and employment losses that result from these shortages in these industries across the state.

The high degree of cyclical volatility contributes to labor supply problems in the industry, since during economic downturn lay-offs of workers break firms’ internal training pipeline and discourage students from enrolling in manufacturing related fields in educational institutions and training organizations. Compounding this problem are a wide ranging set of advances in a variety of technologies including robotic and 3D printing technologies and associated software and materials science that have contributed to a dramatic substitution of capital for labor in durable goods production, raising productivity and reducing and altering labor requirements in production.

Recently released national projections of the constant value of output and employment for the 3 key durable manufacturing industries suggest that technological advances will continue

Table 19:  
 Projections of U.S. Output and Employment in Fabricated Metal, Machinery  
 and Transportation Equipment Industries, 2012 to 2022

	2012	2022	Absolute Change	Relative Change
	<b>Output (in Billions of 2005 Dollars)</b>			
Sum of Three Key Durable Goods Industries	1224.3	1604.7	380.4	31.1%
	<b>Employment in thousands</b>			
Sum of Three Key Durable Goods Industries	3965.7	3967.4	1.7	0.0%

Source: Richard L. Henderson, “Industry Employment and Output Projections to 2022,” *Monthly Labor Review*, December 2013.

to bolster productivity in firms in this industry. Indeed, the BLS projections summarized in Table 19 suggest that in the next ten years the value of output in these three industries will rise by a remarkable 31 percent, with no gains in employment.

Our discussion with durable goods producers in the state reveal that many have already begun the process of substituting capital for labor in production. Some of the firms we spoke with have already purchased robotic equipment to undertake welding processes previously done by experienced welders and they plan on additional purchases of this equipment in the future. While labor shortages clearly exist in many blue-collar occupations in South Dakota and the long-term revenue outlook for South Dakota durable producers appears bright, the need for labor in future will not be as high because technological gain outpaces the contributions of labor in production.

In the future it seems likely that firms in this industry will increasingly substitute capital for labor as the cost of new technological approaches to metal and related input fabrication and assembly declines. Such technological changes frequently not only reduce the overall level of labor requirements in the industry but often alter the industry's staffing structure. In the past such change has tended to reduce the level of demand for unskilled and semiskilled workers and increase the demand for those with specific technical knowledge related to the new technologies hardware and software, often requiring post-secondary levels of educational attainment. Thus the paradox for firms in South Dakota is how to meet their short-term labor/skill requirements in a cyclically sensitive context, where current revenues and sales are robust but where an economic recession lurks somewhere in the next few years.<sup>24</sup> And long term competitive cost pressures that are likely to shift production towards a more capital intensive production process that is less reliant on labor inputs and will require different sets of skills to effectively utilize the new technologies.

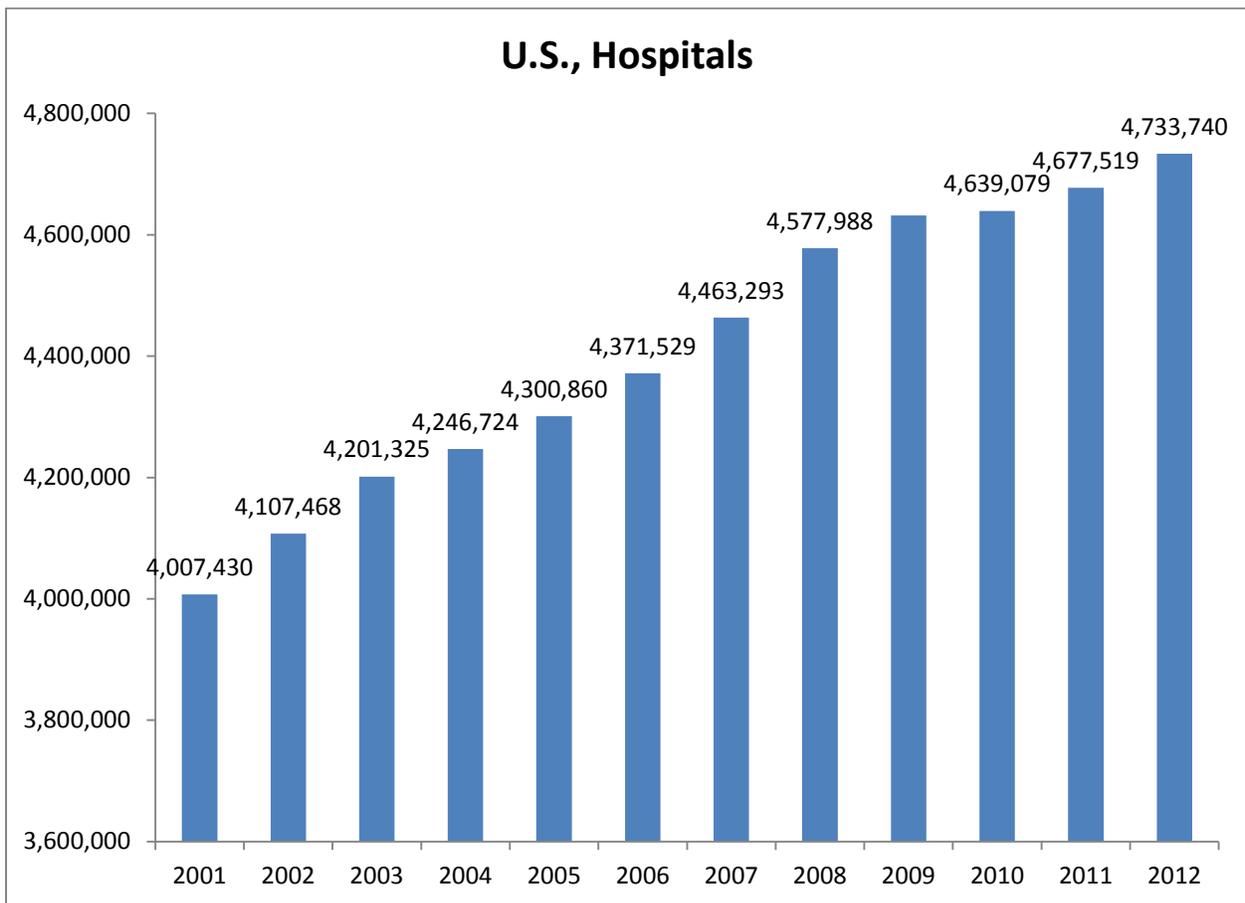
### ***Hospital and Health Labor Markets***

The health and social services industry in the U.S., as we noted earlier, has been a mainstay of employment stability and job creation across the nation since the end of expansion

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<sup>24</sup>The U.S economy is already into the 54<sup>th</sup> month of the recovery, the average post WW II recovery has lasted 58 months. Although the recoveries since 1980 have been much longer, including the 106 month recovery in the 1980s, a 120 month recovery in the 1990s and 73 month recovery from the dot.com recession. National Bureau of Economic Research Business Cycle Dating Committee, *U.S. Business Cycle Expansions and Contractions*, NBER Cambridge, 2014

of the 1990s. In South Dakota, the health and social services industry accounted for about 40 percent of private sector job creation in the state. The aging of the state and national population combined with technological advances have combined to produce rapid increases in the demand for services. Nationally, the most rapid gains in employment in the healthcare sector have been in the ambulatory care services industry. However, in South Dakota the hospital component of the health care sector has been the leading source of new job creation in the state. The state’s ambulatory care providers have added just a few hundred positions over the course of the current recovery; the nursing and residential care facilities industry has actually experienced small employment losses since 2010. In contrast the state’s hospital industry has displayed strong job growth adding nearly 2300 jobs, a gain of 10 percent between 2010 and 2010. The pattern of new job creation over the last several years within the state’s healthcare sector differs markedly from the nation’s healthcare system. It would be of considerable use for both health leaders and elected officials to better understand the sources of this divergent growth path.



Source: U.S. Bureau of Labor Statistics, *Quarterly Census of Employment and Wages*, various years

The hospital industry across the nation has shown consistent employment growth since the end of the expansion of the 1990s despite two economic recessions since that time. Hospital employment in the nation increased in every year since 2001. During the dot.com recession, annual average employment in the nation’s health sector rose by 195,000 between 2001 and 2003. Similarly, during the Great Recession, the nation’s hospital industry added more than 175,000 positions to its overall employment level. Hospitals have been able to maintain and expand their payroll employment levels, regardless of overall business cycle conditions, in a fashion that most other industries in the nation have not been able to achieve.

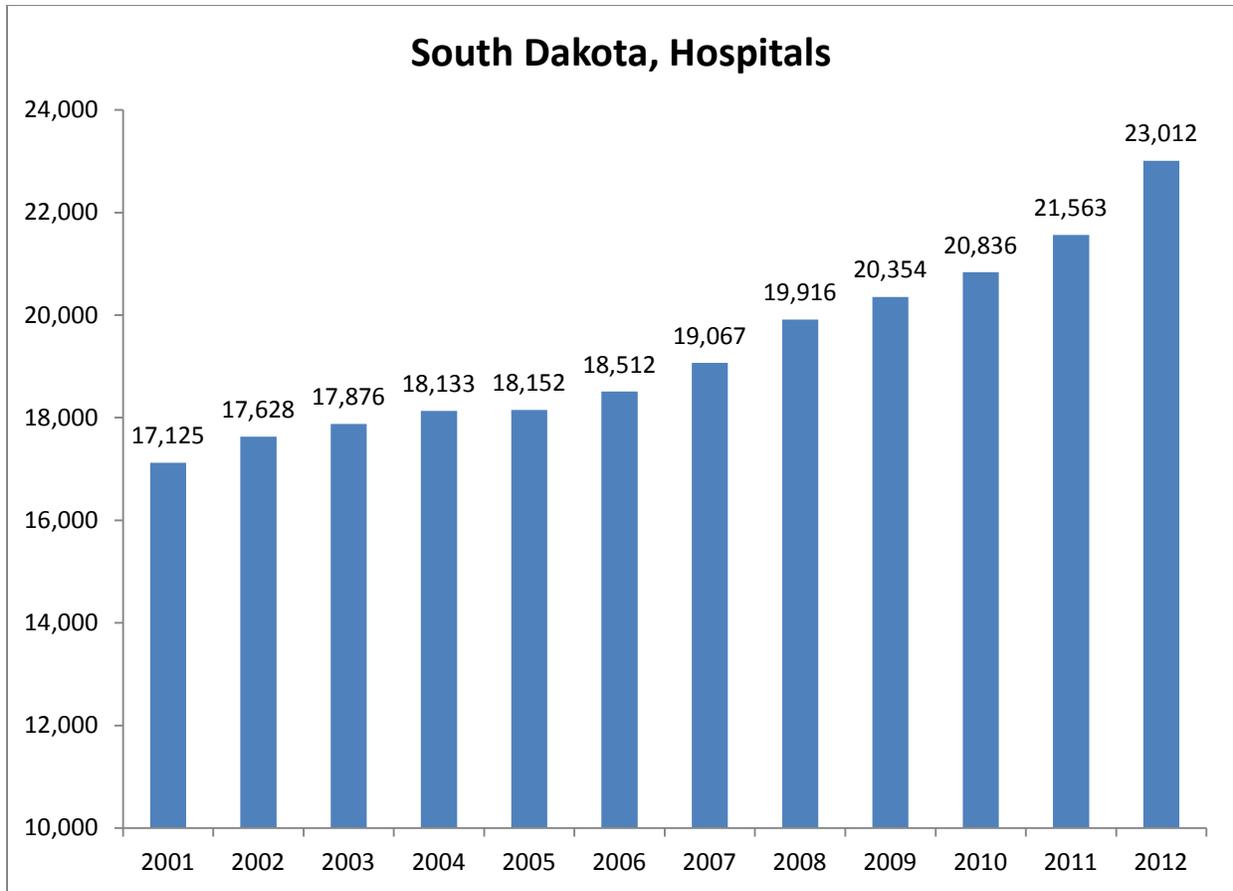
South Dakota’s hospital industry has displayed a similar level of cyclical stability in employment. Since 2001, South Dakota’s hospital industry has added jobs each year up to the present. Moreover, the pace of new job creation in the state’s hospital industry has accelerated considerably in recent years. During the dot.com recession and subsequent recovery the pace of job growth in the state’s hospitals was about the same as that achieved by the hospital industry in the nation as a whole.

Table 20:  
Trends in the Rate of Change in Annual Average Hospital Employment  
Industry Covered Employment South Dakota and the U.S.

	South Dakota	U.S
2001-2003	4.4%	4.8%
2003-2007	6.7%	6.2%
2007-2010	9.3%	3.9%
2010-2012	10.4%	2.0%
2001--2012	34.4%	18.1%

Source: U.S. Bureau of Labor Statistics, *Quarterly Census of Employment and Wages*, various years

The staffing structure of the hospital industry in South Dakota is dominated by health care practitioner occupations, with more than one quarter (28 percent) of all those employed by South Dakota hospitals working in the registered nurse occupation. LPN positions are not very prominent in the hospital industry accounting for just 2 percent of employment in the industry, nursing and medical assistants account for an additional 11 percent of the staff. Together health care practitioners and support workers account for nearly two thirds of hospital staff. Clerical and administrative support workers including medical coding clerks account for about 12 percent

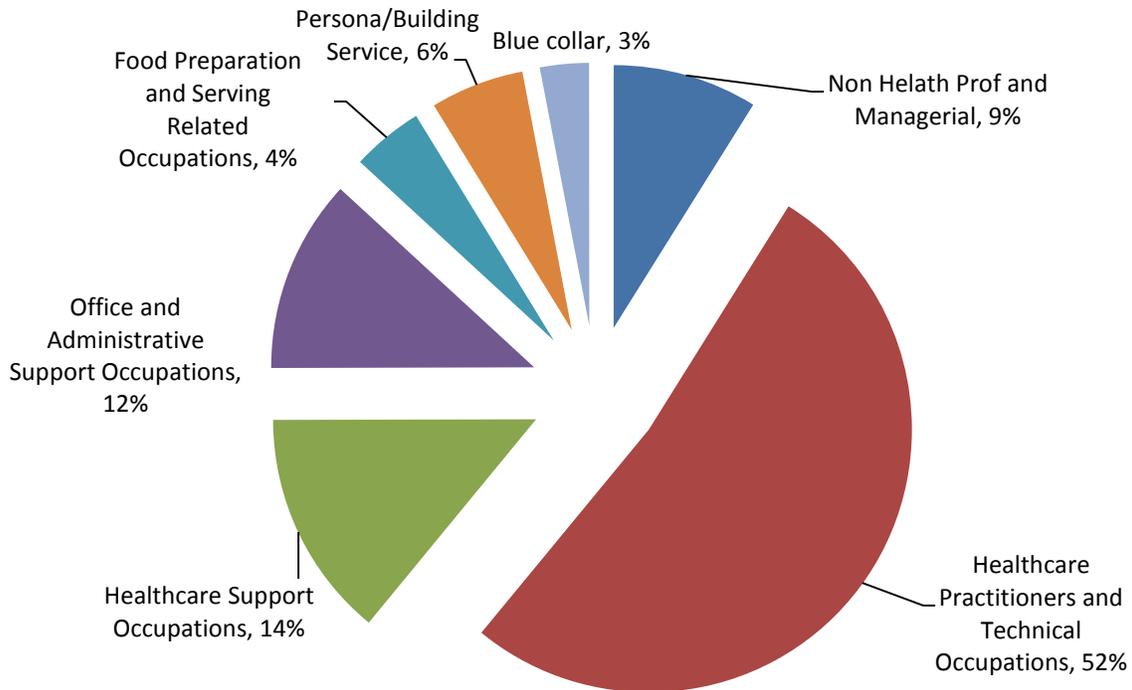


Source: U.S. Bureau of Labor Statistics, *Quarterly Census of Employment and Wages*, various years

of employment in hospitals, we expect that as administrative reporting burdens increase in the industry, especially related to insurance and payment issues, that the demand for health industry specific clerical skills will increase.

As we found earlier the overall unemployment rate for health care practitioners in South Dakota was 1.2 percent during 2012- 2013, suggesting very tight job market conditions. While employers in the Sioux Falls area reported that they were able to hire workers, they also noted employing high level professionals in more rural parts of the state is a problem, indeed the increased reliance on local nurse practitioner generalists supported by hospital-based physician experts is a response to this geographic imbalance problem. The state's higher education system has increased the number of degree awards in the health fields, but pressure of more high level health professionals especially in the nurse practitioner and physician assistant area may increase.

## Distribution of Hospital Employment Across Occupations in South Dakota, 2012



Source: U.S Bureau of Labor Statistics, Occupational Employment Statistics Program, South Dakota Researcher Estimates

The pace of new job creation in the state’s hospital sector since the end of the 1990s expansion has been quite rapid. South Dakota’s hospitals have increased their payroll employment levels by 34 percent, a rate of increase that is about 1.9 times that observed for the nation as a whole. The employment outlook for the health sector and the hospital industry is quite positive, with the inflation-adjusted value of output produced by the nation’s health sector expected to increase by \$537.8 billion, to about 37 percent between 2012 and 2012. This very large increase in the value of output will not result from a high degree of substitution of capital for labor. Instead, much of the output gains generated by the U.S. health sector will come from hiring many more workers. Health care employment is expected to rise by more than 4 million jobs through 2022, a 28 percent rise.

Table 21:  
Projections of U.S. Output and Employment in Healthcare Industries, 2012 to 2022

	2012	2022	Absolute Change	Relative Change
	<b>Output (in Billions of 2005 Dollars)</b>			
Ambulatory health care services	745.3	1,070.9	325.6	43.7%
Hospitals, private	535.5	683.3	147.8	27.6%
Nursing and residential care facilities	184.7	249.1	64.4	34.9%
Health	1,465.5	2,003.3	537.8	36.7%
	<b>Employment in thousands</b>			
Ambulatory health care services	6318	8781.8	2463.8	39.0%
Hospitals, private	4791	5605.8	814.8	17.0%
Nursing and residential care facilities	3193.5	3954.2	760.7	23.8%
Health	14302.5	18341.8	4039.3	28.2%

Source: Richard L. Henderson, "Industry Employment and Output Projections to 2022," *Monthly Labor Review*, December 2013.

With above average growth in the South Dakota's population in recent years that is expected to continue into the future as the state's in-migration of population increases and out migration slows, the demand for workers in the health care industry will remain robust through the next decade. Up until now South Dakota has differed from the rest of the nation in that its health care job growth has almost been exclusively concentrated in the hospital industry. In contrast national health care growth has been primarily concentrated in ambulatory care service. Federal and state efforts to reduce health care expenditures, complemented by technological advances are expected to increasingly shift health care employment into ambulatory care services rather than hospitals.

The BLS projections to 2022 suggest that employment in ambulatory care will grow at a very rapid pace increasing by 39 percent over the decade. Hospital employment growth will remain quite strong, but is expected to increase by 17 percent by 2022, less than half the rate of new job creation in the ambulatory care industry. Our discussion with health and hospital employers in South Dakota (as well as in Massachusetts and Pennsylvania) indicated that some uncertainty remains about what parts of the health care sector will grow and in which occupations. This uncertainty is largely associated with a set of yet-to-be-made decisions about

health care finance and the nature of the funding and payment system under future federal and state health care programs.

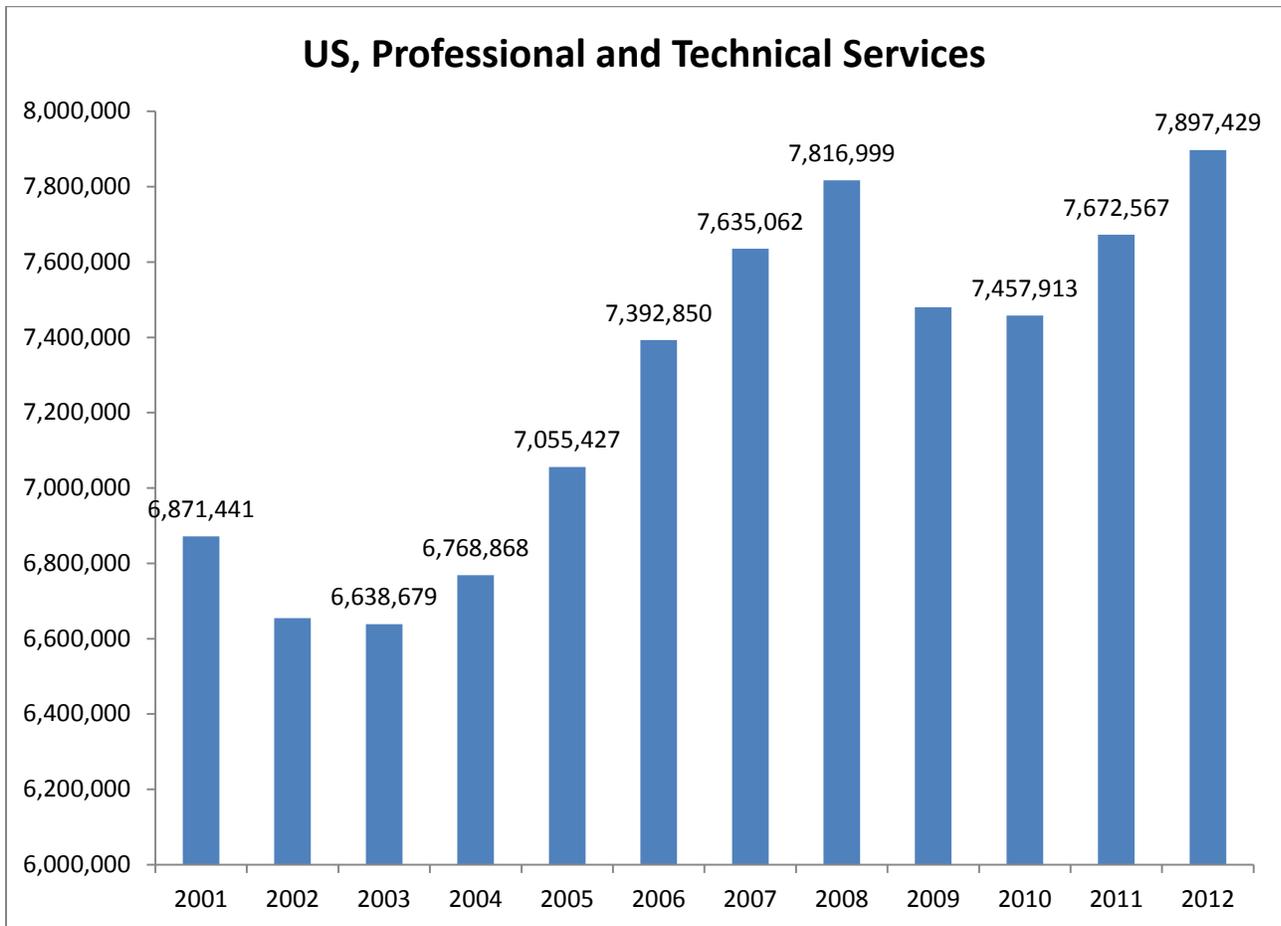
### *Professional Scientific and Technical Services*

This industry is composed of firms that provide a very wide range of professional, scientific and technical (PST) services ranging from legal, accounting and management consulting to engineering and scientific consulting and research support. Firms in this industry use very little physical capital in production of their services. Instead, firms in this industry recruit and hire individuals with strong human capital traits with respect to cognitive ability, content knowledge, skills and behavioral traits. In essence, this industry is the heart of the knowledge economy of a state or region. Employment in this industry has increased by about 10 percent between 2010 Q1Q2 and 2013 Q1Q2 adding about 1,200 jobs, placing it within the ten most important sources on new job creation in the state. The overall unemployment rate in South Dakota in this industry averaged just 1.4 percent during 2012 and 2013.

Nationally, employment in the industry has been on a long-term upward trajectory since the end of the expansion of the 1990s, although it sustained substantial losses during the dot.com recession as well as during the Great Recession. Between 2001 and 2003 the PST services industry in the nation lost 233,000 jobs, but a very strong post-recession recovery saw employment rise to 7.817 million jobs by 2008, an increase of about 1.179 million jobs. The PST industry lost 359,000 jobs between 2008 and 2010 but recovered all of those jobs and increased its employment level to 7.897 million by 2012.

The PST industry in South Dakota, with the exception of the dot.com recession during 2001 to 2003, has been able to post net job growth in every year since the end of the 1990s national economic expansion. Part of this loss (during the dot.com recession) was associated with declines among computer and systems design and related engineering service firms within the PST industry. The state's PST industry recovery from that downturn was especially strong with firms in this industry expanding their payrolls by 25 percent between 2003 and 2007; double the pace of the industry nationwide. The PST industry suffered some relatively modest employment declines in the U.S. during the Great Recession, with employment falling by 2.3 percent over the period. In contrast the industry continued to grow in South Dakota expanding payroll employment levels by 6.6 percent over the course of the downturn. In the last few years

the pace of new job creation has slowed somewhat, but the industry remains a top source of new job creation.

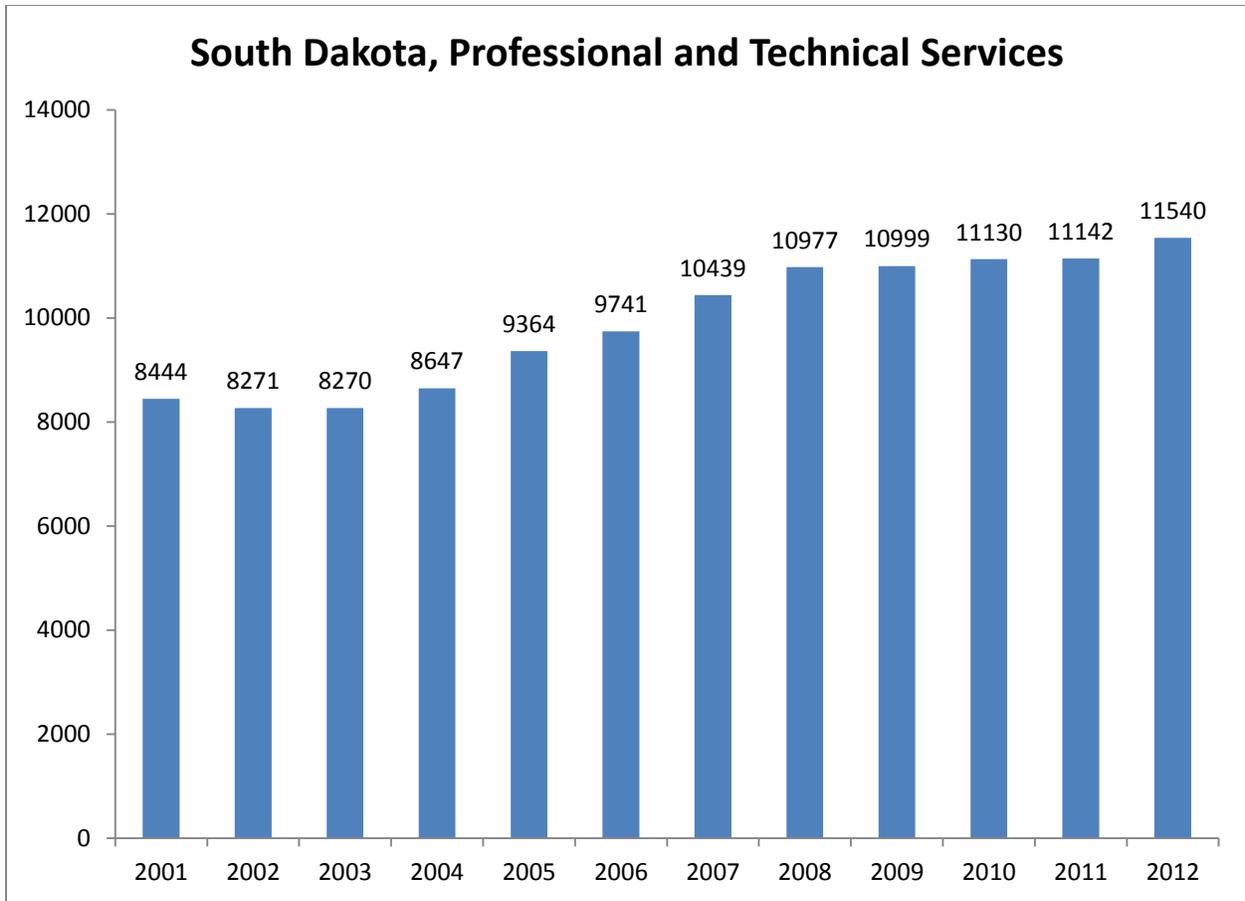


Source: U.S. Bureau of Labor Statistics, *Quarterly Census of Employment and Wages*, various years

Table 22:  
Trends in the Rate of Change in Annual Average Professional  
Scientific and Technical Services Industry Employment  
Industry Covered Employment South Dakota and the U.S.

	South Dakota	U.S.
2001-2003	-2.1%	-3.4%
2003-2007	25.1%	12.8%
2007-2010	6.6%	-2.3%
2010-2012	3.7%	5.9%
2001-2012	36.7%	14.9%

Source: U.S. Bureau of Labor Statistics, *Quarterly Census of Employment and Wages*, various years.



Source: U.S. Bureau of Labor Statistics, *Quarterly Census of Employment and Wages*, various years

The outlook for the PST industry in the nation is quite positive. The value of output produced by the industry is expected to rise by \$528 billion, representing a rise of 37 percent.

Table 23:  
Projections of U.S. Output and Employment in the Professional Scientific and Technical Services Industry, 2012 to 2022

	2012	2022	Absolute Change	Relative Change
<b>Output (in Billions of 2005 Dollars)</b>				
Professional Scientific and Technical Services	1416.2	1944.4	528.2	37.3%
<b>Employment in thousands</b>				
Professional Scientific and Technical Services	7892.4	9716.2	1823.8	23.1%

Source: Richard L. Henderson, "Industry Employment and Output Projections to 2022," *Monthly Labor Review*, December 2013.

Much of this growth will be achieved by hiring knowledge workers who possess the human capital proficiencies upon which industry revenues are built. The BLS expects a disproportionate share of the rise in output and employment in this industry to be derived from computer and systems design firms and engineering and architectural consulting organizations. Below average growth is expected for legal and accounting services, although management-consulting firms are also expected to post above average growth in employment and output over the next decade.

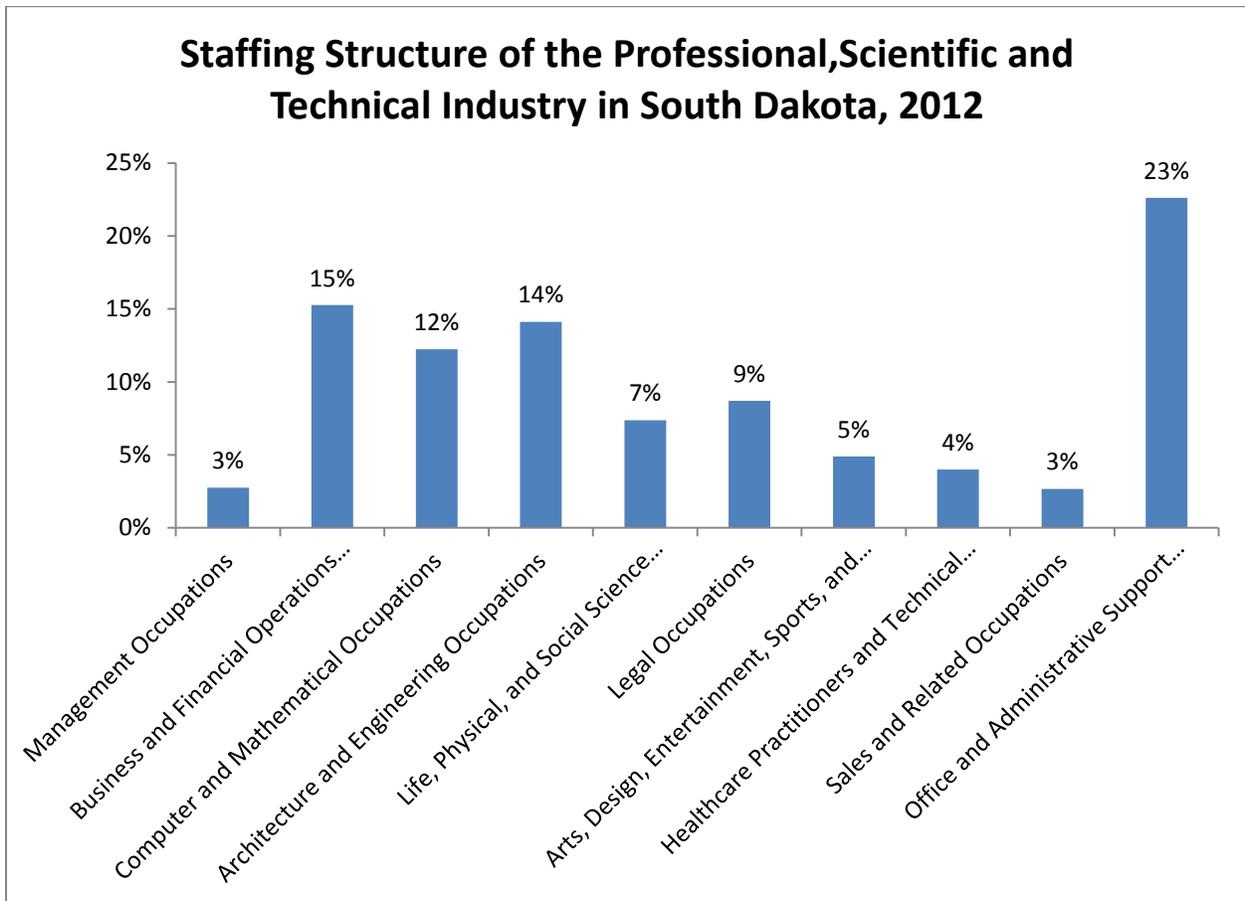
### **Occupational Requirements in the Professional Scientific and Technical Services Industry**

Engineering and computer and mathematical occupations make up about one-quarter of employment in the South Dakota PST industry. The employers we spoke with who provide engineering and/or computer-related research, development and consulting services reported substantial problems of labor supply problems to these occupations. But they saw their most severe labor supply problems among workers who both earned the appropriate educational credentials and had 3 to 5 years of experience in the occupation. Like their counterparts in the manufacturing industries, these companies were competing in national labor markets for professionals with four-year and even two-year degrees in these fields. They reported some luck in hiring individuals, who had once lived in South Dakota; left the state and decided to move back, reporting that the WINS program was helpful in this regard.

While employers thought that the graduates of the state's higher education system were well qualified, they also were recruited in national markets often by large firms that pay top wages and can offer life style amenities less available in South Dakota. In order to develop workers with some work experience, firms are anxious to work with the state's colleges and universities to develop more work experience opportunities for undergraduates to build their proficiencies and for firms to try-out prospective permanent new hires. One employer described this approach as a 'rent to own' recruitment system.

One of the important discussions we had with employers in this industry was with a very sophisticated energy research, development and consulting firm. The firm employs large numbers of engineers and scientists at the master's and doctor's degree level. This firm does hire young engineers and scientists from undergraduate programs, but funnels those new grads that they identify as high potential into advanced degree programs financed by the firm. The costs to the firm are quite substantial, but this is the way they have developed an in-house talent pipeline.

Part of the reason for developing this costly alternative is that it is very difficult to get persons with advanced degrees in technical and scientific fields to move to South Dakota.



Source: U.S Bureau of Labor Statistics, Occupational Employment Statistics Program, South Dakota Researcher Estimates

With extraordinarily low unemployment in the PST industry, a strong long-term record of job growth with only modest cyclical swings in employment and very bright national outlook, we believe that the prospects for growth in this industry are quite bright in South Dakota. The basic constraint on this growth will be access to qualified professionals. Moreover, we suspect that increasingly advanced degrees in technical fields will become more an important part of the staffing structure in South Dakota. This may mean developing a set of efforts to bolster graduate enrollments within the state’s engineering, computer science and physical science higher education system.