

# Teacher Salaries in Wyoming

Competitive Enough to Retain the Best?



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**Wyoming Department of Workforce Services**  
Joan Evans, Director

**Internet Address: <http://doe.state.wy.us/LMI/>**

**Research & Planning**  
Tom Gallagher, Manager

**Authors:** David Bullard, Tom Gallagher, Tony Glover, Patrick Harris, Michele Holmes, Lisa Knapp, and Patrick Manning

**Graphics and Pagination by:** Michael Moore, Research Analyst

**Methodology by:** Tony Glover, Workforce Information Supervisor

**Edited by:**

David Bullard, Valerie A. Davis, Phil Ellsworth, Michele Holmes, Michael Moore, and Carol Toups

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**Research & Planning**  
P.O. Box 2760  
Casper, WY 82602  
Phone: (307) 473-3807  
Fax: (307) 473-3834

**R&P Website: <http://doe.state.wy.us/LMI/>**

**URL for this publication and the full report: [http://doe.state.wy.us/LMI/education\\_costs.htm](http://doe.state.wy.us/LMI/education_costs.htm)**

**“Your Source for Wyoming Labor Market Information”**

## Introduction and Methodology

In *Monitoring School District Human Resource Cost Pressures 2013*, Research & Planning presents an examination of the labor market for teachers in Wyoming. We focus on the percentage of teachers in Wyoming approaching retirement age, their earnings, and the potential impacts of their retirement. This summary report takes a closer look at some of the findings presented in *Monitoring School District Human Resource Cost Pressures 2013 (Monitoring)*, and discusses the distribution of school district employees by age, regional employment growth, and drivers of demand for teaching occupations in Wyoming. The structure of this report differs from other occasional papers produced by R&P, and is designed to offer the reader an overview of R&P's findings while pointing the interested reader to more detailed information where desired. A table of contents is provided on page 2.

The contents of the report are meant to answer, in part, questions raised by the Wyoming State Legislature. R&P is in the process of developing strategies to understand the labor market more broadly, and the concepts here can be applied to other occupations, such as nurses or those working in public

administration. R&P's related research on nursing employment in Wyoming can be found at <http://doe.state.wy.us/LMI/nursing.htm>.

The *Monitoring School District Human Resource Cost Pressures (Monitoring)* reports produced annually by R&P go into greater detail about the local and national

context in which Wyoming school districts operate, while this report focuses more on the aging of teachers in Wyoming and the increased demand for new teachers Wyoming may experience as baby boomers retire. In this report, the term *cost pressure* refers to those factors influencing

the level of compensation leading to the "recruitment and retention of a staff capable of producing superior work in a public school setting" (Gallagher, 2013). The five cost pressures outlined here represent a portion of the findings presented in the *Monitoring* reports, and are presented as an introduction to the larger body of teacher compensation analysis produced annually by R&P.

The *Monitoring* reports can be found at [http://doe.state.wy.us/LMI/education\\_costs.htm](http://doe.state.wy.us/LMI/education_costs.htm).

### Who We Are

Research & Planning (R&P) functions as an exclusively statistical entity within the Wyoming Department of Workforce Services. R&P collects, analyzes, and publishes timely and accurate labor market information (LMI) meeting established statistical standards. We work to make the labor market more efficient by providing the public and the public's representatives with the information needed for evidence-based, informed decision making.



## Methodology

Research for *Monitoring* drew on several sources of information, many of which are not publically available, or are only available to state employees, such as those at R&P, working under contract to the U.S. Bureau of Labor Statistics. One major source used for wage information was the Occupational Employment Statistics (OES) program, which is a state-federal partnership. The OES program is the only source of reliable occupational-based wage estimates in the country.

R&P produced school district wage estimates using confidential OES files for Wyoming and surrounding states (Gallagher, 2013). The OES survey permitted reliable estimates of teacher wages at the state and national levels. Developing information on school districts at the county level required another approach: using Wyoming Department of Education 602 (WDE 602) files, which provided us with detailed information on the contract wages of teachers and other staff hired.

For *Monitoring*, R&P analyzed records from several administrative databases, including Unemployment Insurance (UI) employer accounts, UI wage records, Wyoming Department of Transportation drivers' license files, and Wyoming Department of Education (WDE) staffing files. R&P also obtained access to licensing files from the Professional Teaching Standards Board (PTSB), an "independent professional licensing board that governs teacher licensure in the state of Wyoming" (PTSB, n.d.). The PTSB files were combined with R&P's administrative databases to better understand the current supply of teachers available for school districts.

As demonstrated in Appendix A of the *Monitoring 2013* report, the current licensed potential supply of teachers extends beyond Wyoming's borders. Linking PTSB licensing files to UI payroll accounts in other states can only be accomplished by Labor Market Information sections of state workforce agencies. R&P knows of no other state or government entity which has analyzed teacher licensing files in this manner. This strategy facilitates a rigorous and meaningful analysis of school districts' multi-dimensional labor supply.

## Section 1: Cost Pressures

**Cost Pressure #1  
Teacher Supply  
in Wyoming: Can  
We Replace Those  
Retiring?**

During the 2012/13 school year, more than one in five Wyoming teachers (21.9%) was age 55 or older (see **Figure 1**). In some specialized teaching

occupations, the percentage of teachers age 55 and older was even higher; for example, among all middle school special education teachers, 28.7% were age 55 or older (Knapp, 2013).

In 2012/13, 13.7% of all teachers in Wyoming were eligible for retirement, a proportion that will continue to grow. Given the large percentage of Wyoming teachers at or nearing the traditional retirement age of 65, succession planning may be necessary for Wyoming’s school districts.

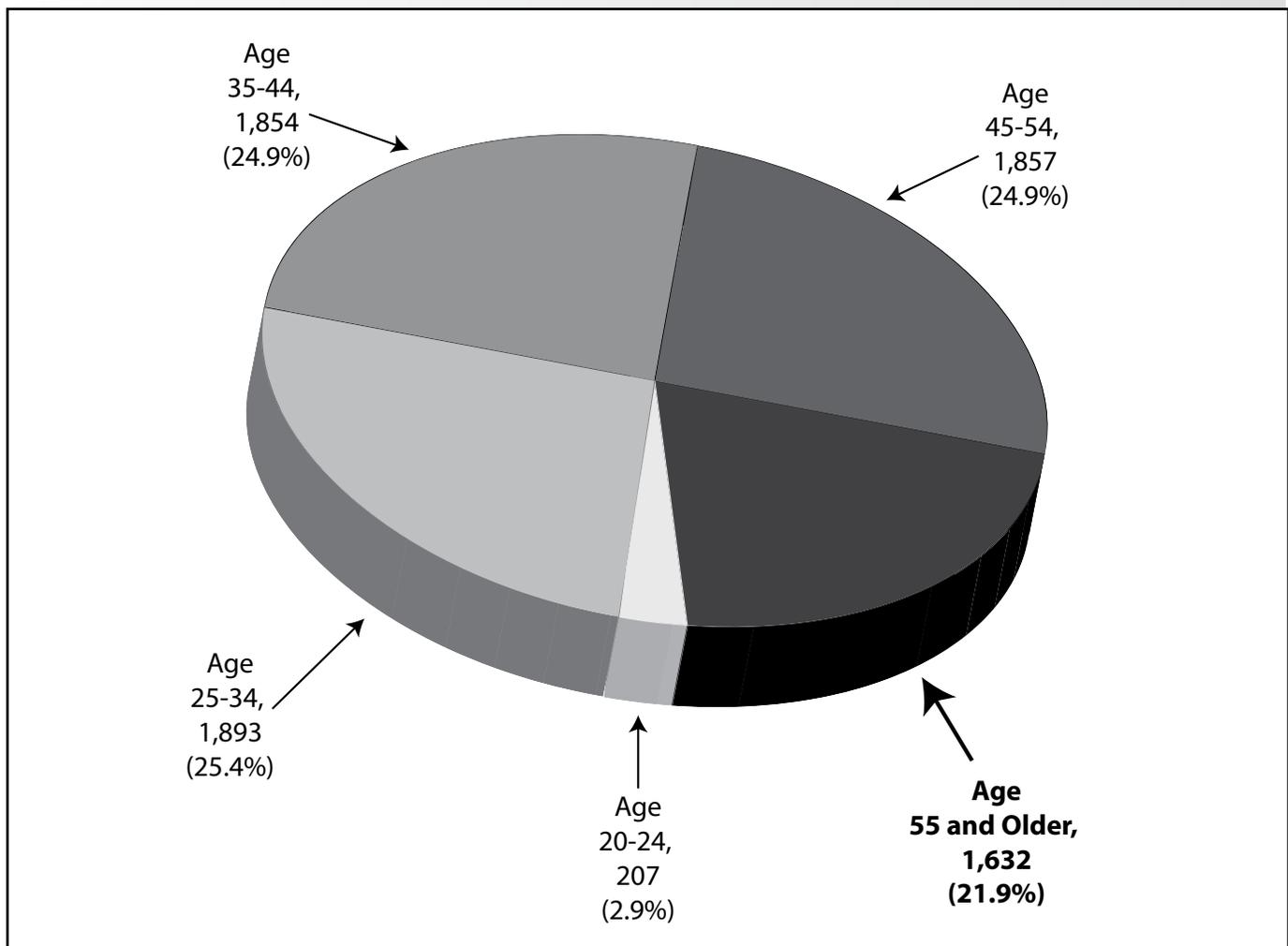


Figure 1: All Primary, Secondary, & Special Education Teachers (SOC 25-2000) Working in Public Schools by Age Group, 2012/13

Across all industries and occupations, Wyoming had a greater proportion of workers age 55 and older (26.0%) than the national average (22.7%). In Wyoming, the proportion of workers age 55 and older was even greater in industries such as educational services, information, health care & social assistance, and public administration. According to R&P's studies, a large proportion of workers age 55 and older working in these industries will be presumably leaving Wyoming's workforce in the next 10 years as they reach the traditional retirement age of 65.

Nowhere was this more evident than in Wyoming's educational services industry, where **29.6%** of all workers were age 55 and older and **65.7%** had at least a bachelor's degree (see **Figure 2**). The phenomenon of large numbers of Wyoming residents with a bachelor's degree or higher approaching retirement age is not limited to teachers, but the educational services industry has the highest proportion of workers age 55 and older.

Given the more rapid aging of the

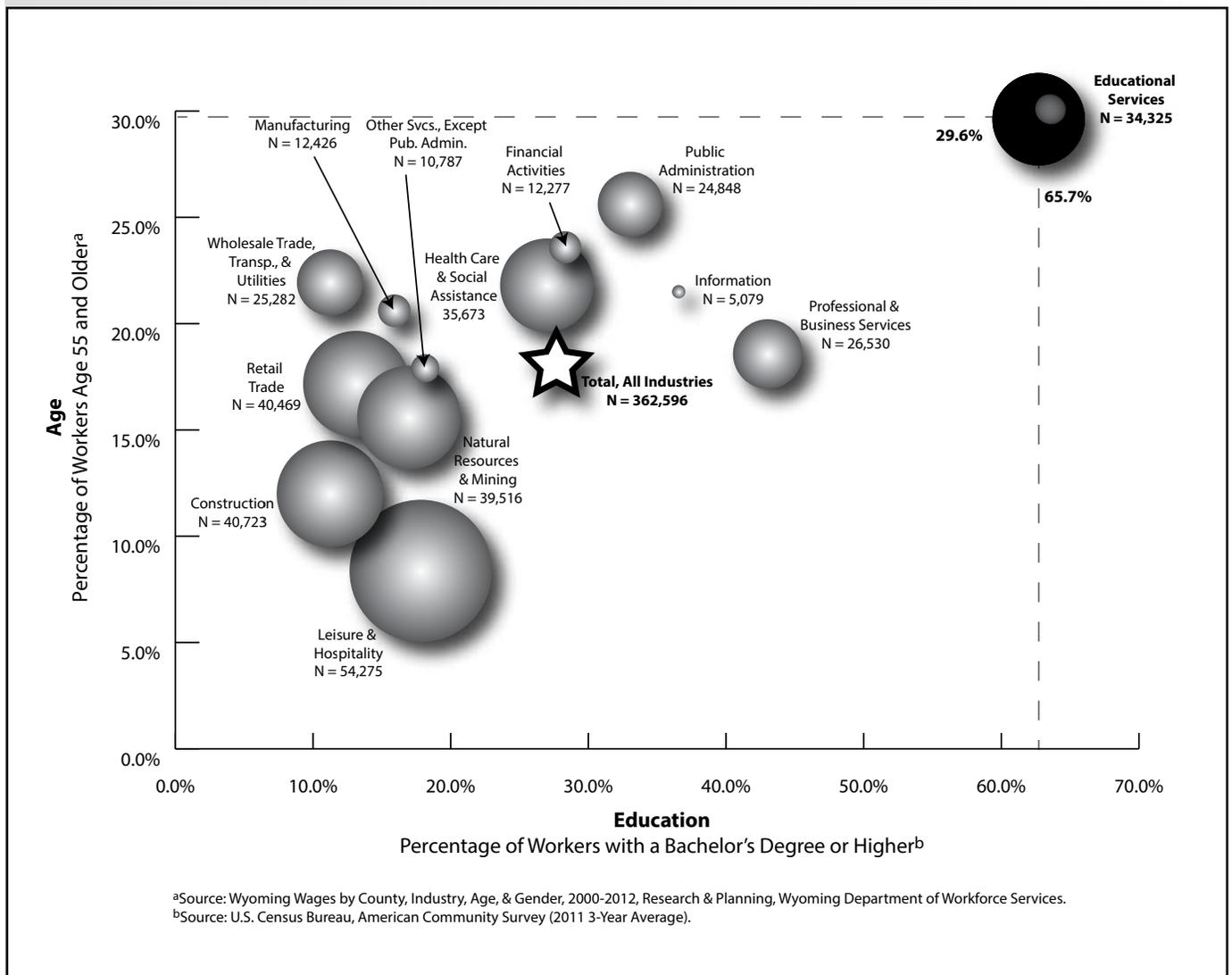


Figure 2: Percentage of Workers Age 55 and Older and Percentage of Workers with a Bachelor's Degree or Higher by Industry in Wyoming, 2011

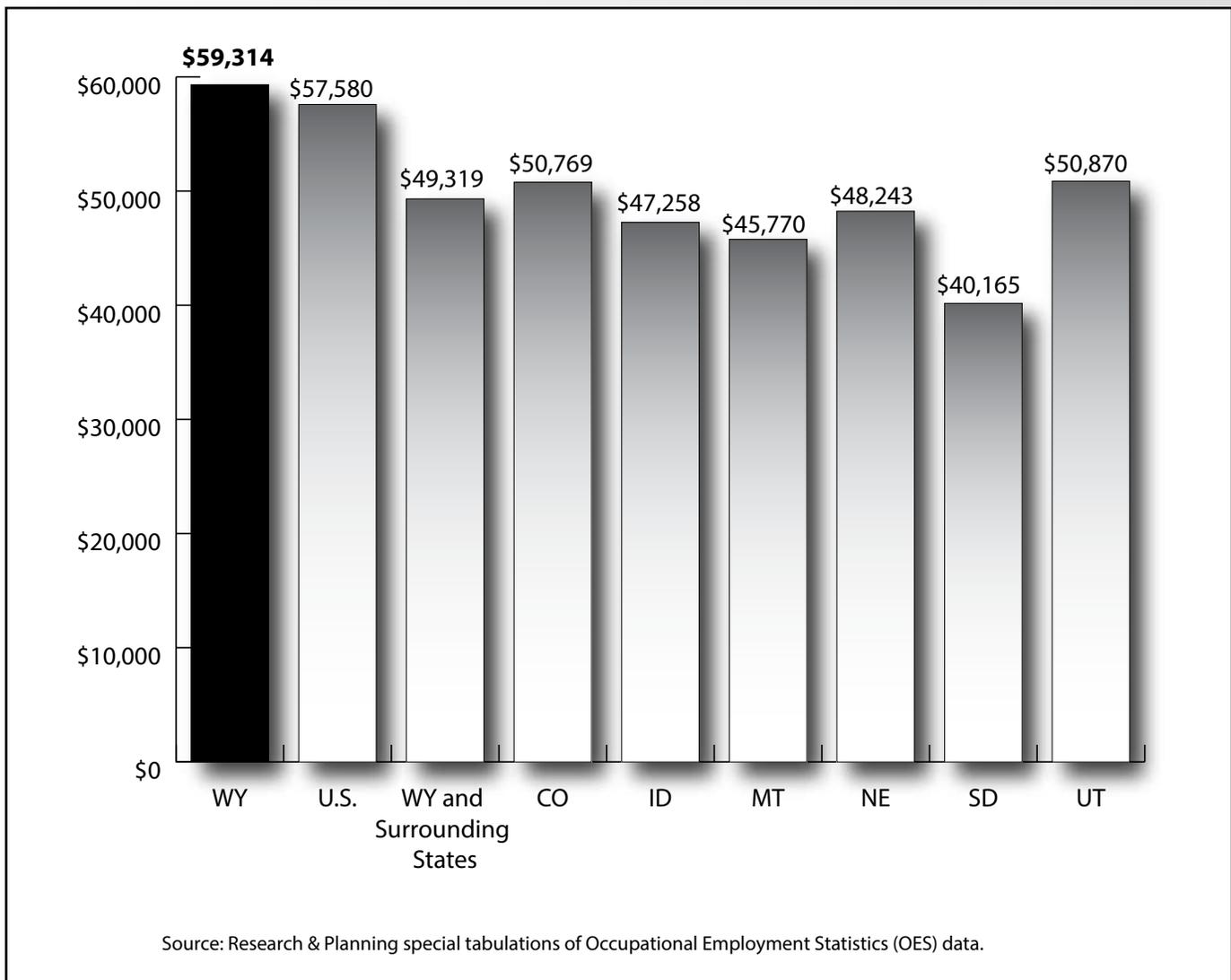
workforce in industries requiring post-high school degrees, circumstances may lead to significant competition for qualified employees (Knapp, 2013).

**Cost Pressure #2  
What Teachers Earn**

**Figure 3** compares the average annual wages of teachers in public schools in Wyoming to those in other states. During the 2011/12 school year, the average wage

for all primary, secondary, and special education teachers (SOC 25-2000) in public schools in Wyoming was **\$59,314** (Manning, 2013). The average annual wage for teachers in Wyoming was higher than in all surrounding states and the national average (\$57,580).

The difference in average wage for teachers between Wyoming and surrounding states is substantial. Of all surrounding states, Utah had the highest average annual wage for teachers (\$50,870). This was \$8,444 less than



**Figure 3: Average Annual Wage for All Primary, Secondary, and Special Education School Teachers (25-2000) Working in Public Schools in Wyoming, the U.S., and Surrounding States, 2011/12**

the average annual wage for teachers in Wyoming. South Dakota had the lowest average annual wage for teachers at \$40,165, or 32.3% less than Wyoming.

Teachers' wages are higher in Wyoming than in surrounding states for the majority of specialized teaching occupations. **Table 1** shows the average annual wage for Wyoming kindergarten teachers in the 2011/12 school year was \$54,850, nearly \$16,000 more than in South Dakota and nearly \$15,000 more than in Utah. In almost all specialized teaching occupations, Wyoming had the highest annual average wages, with the exception of preschool teachers not in special education. Colorado preschool teachers in the 2011/12 school year earned on average, \$2,530 more than in Wyoming. The average annual wage

for preschool teachers in the U.S. was \$48,860, or \$4,440 more than the Wyoming annual average.

Wyoming school districts currently face negligible cost pressure on salaries in relation to competition from surrounding states (Manning, 2013).

The earnings of those working in educational services — specifically teachers — may have had a significant impact on Wyoming's economy. According to the 2012 Consumer Expenditure Survey (CES), the national average annual expenditure for persons holding at least a bachelor's degree (as most teachers in Wyoming do) was \$63,135; for persons holding a master's degree or higher, the average annual expenditure was \$82,606. According to the CES,

**Table 1: Average Annual Wage for Specialized Teaching Occupations in Public Schools for Wyoming, Surrounding States, and the U.S., 2011/12**

State	All Primary, Secondary, and Special Education School Teachers (25-2000)	Preschool Teachers, Except Special Education (25-2011)	Kindergarten Teachers, Except Special Education (25-2012)	Elementary School Teachers, Except Special Education (25-2021)	Middle School Teachers, Except Special and Vocational Education (25-2022)	Vocational Education Teachers, Middle School (25-2023)	Secondary School Teachers, Except Special and Vocational Education (25-2031)	Vocational Education Teachers, Secondary School (25-2032)	Special Education Teachers, Preschool, Kindergarten, and Elementary School (25-2041)	Special Education Teachers, Middle School (25-2053)	Special Education Teachers, Secondary School (25-2054)
WY	\$59,314	\$44,420	\$54,850	\$58,690	\$61,400	n/d	\$60,480	\$59,890	\$57,620	\$62,690	\$57,760
U.S.	\$57,580	\$48,860	\$55,590	\$57,290	\$56,930	\$56,550	\$58,540	\$57,180	\$57,392	\$59,940	\$60,627
Region	\$49,319	\$42,018	\$46,439	\$49,453	\$49,758	\$49,409	\$49,778	\$50,457	\$48,976	\$49,540	\$50,680
CO	\$50,769	\$46,950	\$48,480	\$50,490	\$49,930	n/d	\$51,800	\$53,620	\$51,750	\$51,990	n/d
ID	\$47,258	\$41,550	\$43,000	\$48,770	\$48,410	n/d	\$46,420	\$45,490	n/d	\$49,740	n/d
MT	\$45,770	\$26,210	\$43,300	\$46,620	\$45,730	n/d	\$47,880	\$47,570	n/d	\$45,420	n/d
NE	\$48,243	\$41,190	\$46,550	\$47,720	\$49,590	n/d	\$48,490	\$51,030	\$46,347	\$48,920	n/d
SD	\$40,165	\$35,210	\$39,030	\$40,160	\$40,470	n/d	\$40,490	\$42,090	n/d	\$40,510	\$40,710
UT	\$50,870	\$33,610	\$40,250	\$50,950	\$53,320	n/d	\$51,650	\$50,550	n/d	\$41,730	n/d

Source: Research & Planning special tabulations of Occupational Employment Statistics (OES) data.  
 Region = Wyoming and surrounding states.  
 n/d = Not discloseable due to confidentiality.  
 Red text indicates wage lower than Wyoming's.

nearly 74% of those with a bachelor’s degree or higher owned their homes, compared to 59% for those with a high school diploma (CES, 2012). As shown in **Figure 4**, **65.7%** of those working in educational services in Wyoming held at least a bachelor’s degree in 2011, and all but **5.3%** were state residents.

In other words, a large proportion of those who worked in Wyoming’s educational services industry in 2011 held at least a bachelor’s degree, and were

likely to earn and spend more money than those in industries with a lower proportion of persons holding at least a bachelor’s degree, such as construction or leisure & hospitality. Likewise, the majority (94.7%) of those working in educational services were identified as residents of Wyoming, and were more likely to own a home.

By comparison, the characteristics of those who worked in leisure & hospitality may indicate that earnings

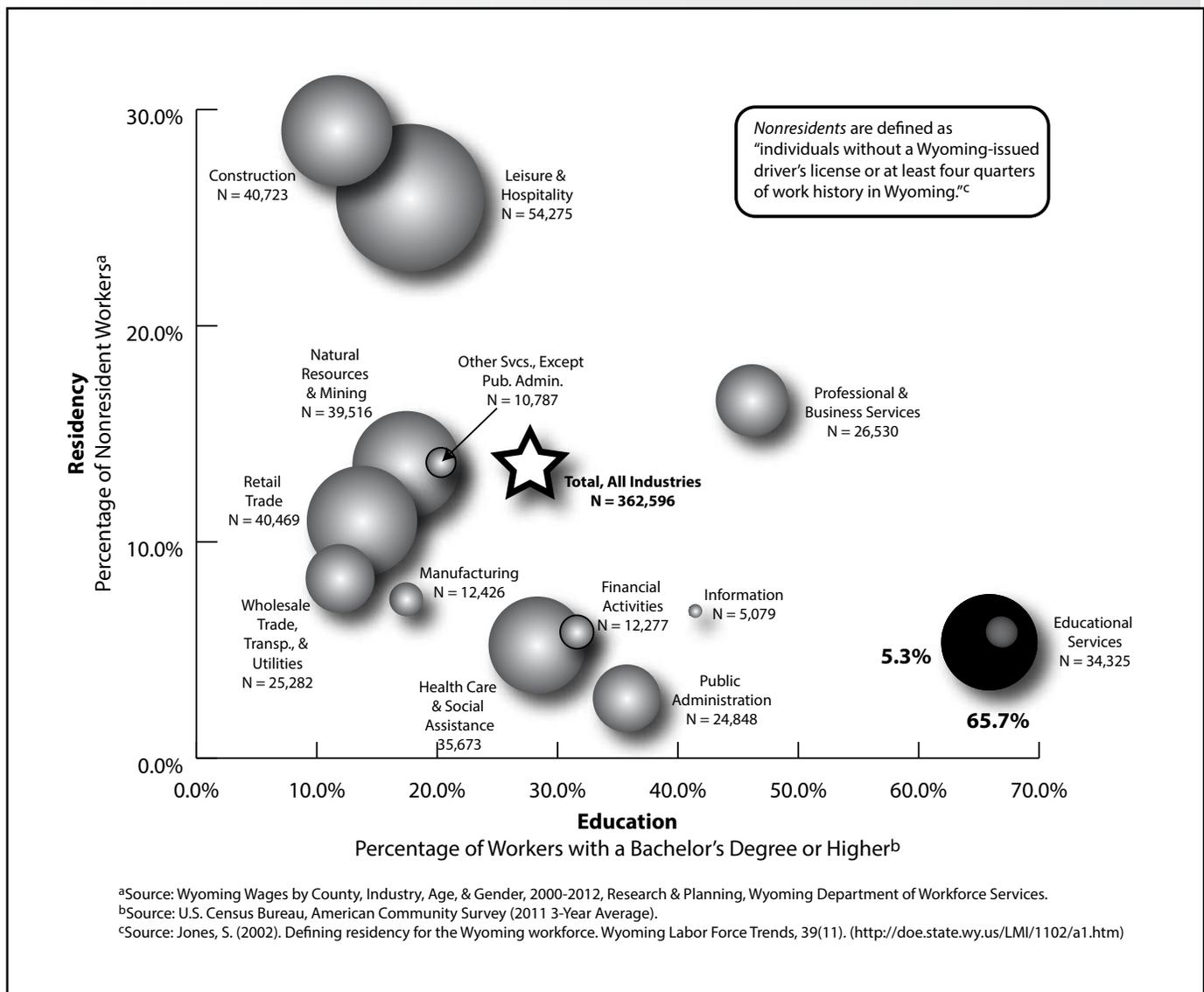


Figure 4: Percentage of Nonresident Workers and Percentage of Workers with a Bachelor’s Degree or Higher by Industry in Wyoming, 2011

from that industry had less of an impact on Wyoming’s economy: lower wages, fewer workers who held at least a bachelor’s degree, lower average annual expenditures, a higher percentage of nonresident workers (see Figure 4 for a definition), and fewer homeowners.

The differences in average earnings for teachers in the public and private sectors drove the methodology in this report. Published OES data do not distinguish employment or wages by ownership. In other words, published OES data do not differentiate between teachers working in public schools and those working in private schools. In order to better understand cost pressures on teachers’ mean annual wages, we used special tabulations of OES data and separated teachers into public, private, and total ownerships.

data, we would still see that Wyoming compensates its teachers at a greater level across all ownerships compared to surrounding states, as seen in **Figure 5** (see page 11).

**Table 2** shows the number of teachers employed in the U.S., Wyoming, and surrounding states and their mean annual wage by ownership levels for the 2011/12 school year. In Wyoming, the mean annual wage for the **7,527** teachers working in public schools was **\$59,314**. For the **667** teachers working in private schools in Wyoming, the mean annual wage was **\$34,295**, showing that teachers working in private schools in Wyoming earned **\$25,019** less (or **-42.2%**) than teachers in public schools on average. Table 2 shows that teachers in the public sector were paid a higher annual wage on average than those in the private sector

If we were to rely solely on OES survey

(Text continued on page 12)

**Table 2: Estimated Employment and Mean Wage for All Primary, Secondary, and Special Education School Teachers (SOC 25-2000) by Location and Ownership, 2011/12 School Year**

State	Local Public Schools			Private Sector					Total, All Ownerships <sup>a</sup>				
	Employment		Average Annual Wage	Employment		Average Annual Wage			Employment		Average Annual Wage		
	N	Row %	\$	N	Row %	\$	Difference <sup>b</sup>		N	Row %	\$	Difference <sup>b</sup>	
							\$	%				\$	%
Wyoming	<b>7,527</b>	90.6%	<b>\$59,314</b>	<b>667</b>	<b>8.0%</b>	<b>\$34,295</b>	<b>-\$25,019</b>	<b>-42.2%</b>	8,308	100.0%	\$56,940	-\$2,374	-4.0%
U.S.	3,334,130	82.7%	\$57,580	653,830	16.2%	\$39,233	-\$18,347	-31.9%	4,033,290	100.0%	\$54,545	-\$3,035	-5.3%
WY & Surrounding States	158,020	88.4%	\$49,396	18,977	10.6%	\$33,294	-\$16,102	-32.6%	178,816	100.0%	\$47,590	-\$1,806	-3.7%
Colorado	62,864	88.1%	\$50,841	7,996	11.2%	\$32,532	-\$18,309	-36.0%	71,365	100.0%	\$48,685	-\$2,156	-4.2%
Idaho	14,610	89.4%	\$47,323	1,650	10.1%	\$31,884	-\$15,439	-32.6%	16,342	100.0%	\$45,679	-\$1,644	-3.5%
Montana	11,779	84.4%	\$46,048	1,837	13.2%	\$30,931	-\$15,117	-32.8%	13,953	100.0%	\$43,781	-\$2,267	-4.9%
Nebraska	24,145	94.5%	\$48,102	1,111	4.3%	\$32,866	-\$15,236	-31.7%	25,547	100.0%	\$47,585	-\$517	-1.1%
South Dakota	11,399	90.1%	\$40,229	1,020	8.1%	\$29,090	-\$11,139	-27.7%	12,645	100.0%	\$39,287	-\$942	-2.3%
Utah	25,696	83.8%	\$50,955	<b>4,696</b>	<b>15.3%</b>	\$36,848	-\$14,107	-27.7%	30,656	100.0%	\$48,687	-\$2,268	-4.5%

<sup>a</sup>Total = Sum of federal, state, local (public) schools, and private sector. Federal and state estimates are not presented in this table but are available in Tables 1-4 at [http://doe.state.wy.us/lmi/education\\_costs.htm](http://doe.state.wy.us/lmi/education_costs.htm).

<sup>b</sup>Difference = Compared to average annual wage for local public schools.

Source: Research & Planning (R&P) special tabulations of Occupational Employment Statistics (OES) data.

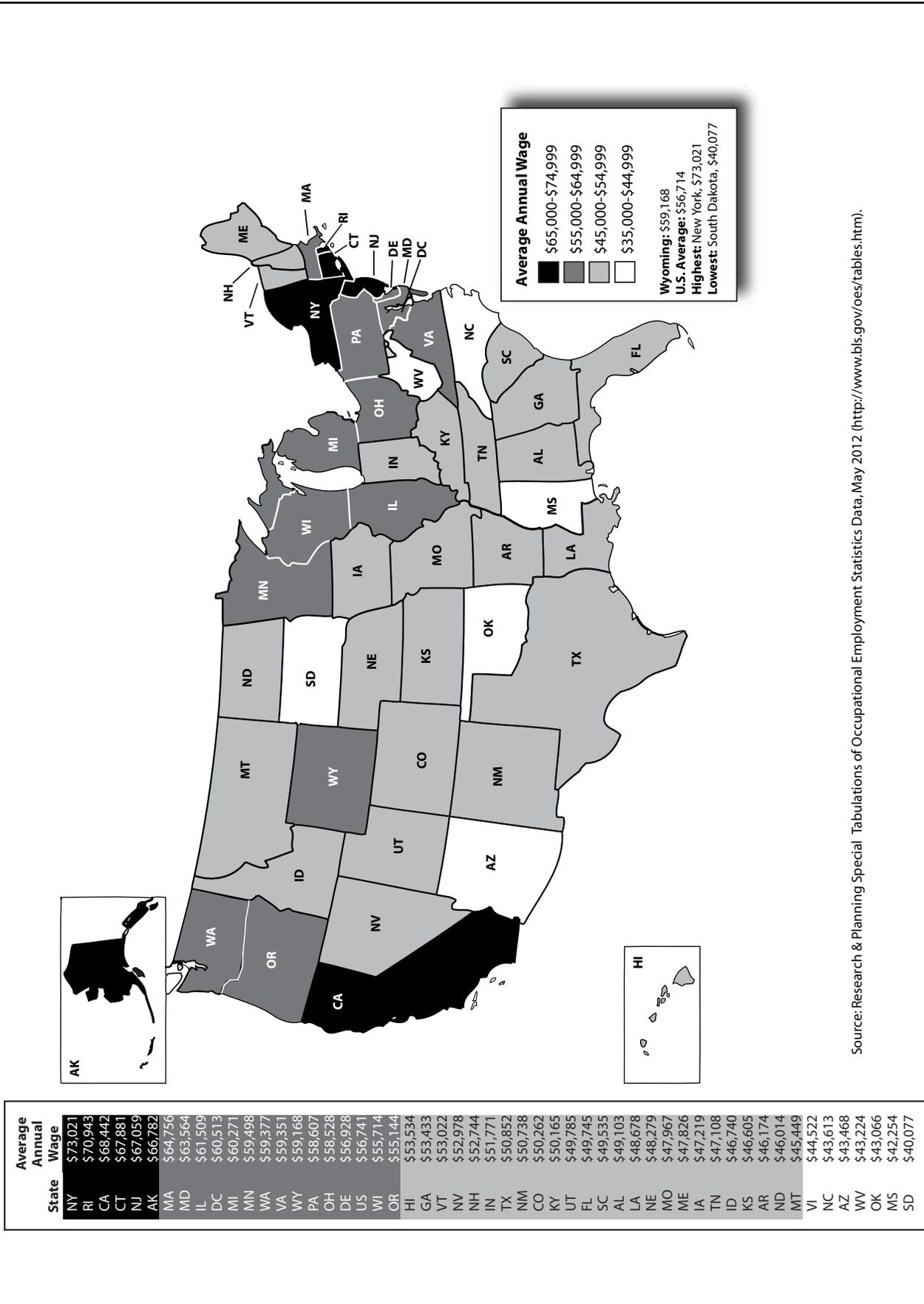


Figure 5: Average Annual Wage for Primary, Secondary, and Special Education School Teachers (SOC 25-2000) Across All Ownerships by State, 2012

(Text continued from page 10)

in all of the surrounding states (Glover, 2013). This difference suggests that employers of teachers in the public sector were not experiencing pressure from competition from private schools, but rather from other public schools.

Table 2 also shows that the distribution of teachers by ownership varies from state to state. In Wyoming, for example, the 667 teachers working in the private sector accounted for **8.0%** of all teachers. In Utah, the **4,696** teachers working in the private sector accounted for **15.3%** of all teachers.

**Cost Pressure #3  
Increased Student  
Enrollment**

In addition to the rapid aging of much of the teaching workforce in Wyoming, student enrollment in public schools is projected to increase. The combination of teachers aging out of the workforce and a projected growth in public school enrollment means that Wyoming may face a future shortage of teachers.

As seen in **Figure 6**, projections indicate that student enrollment and

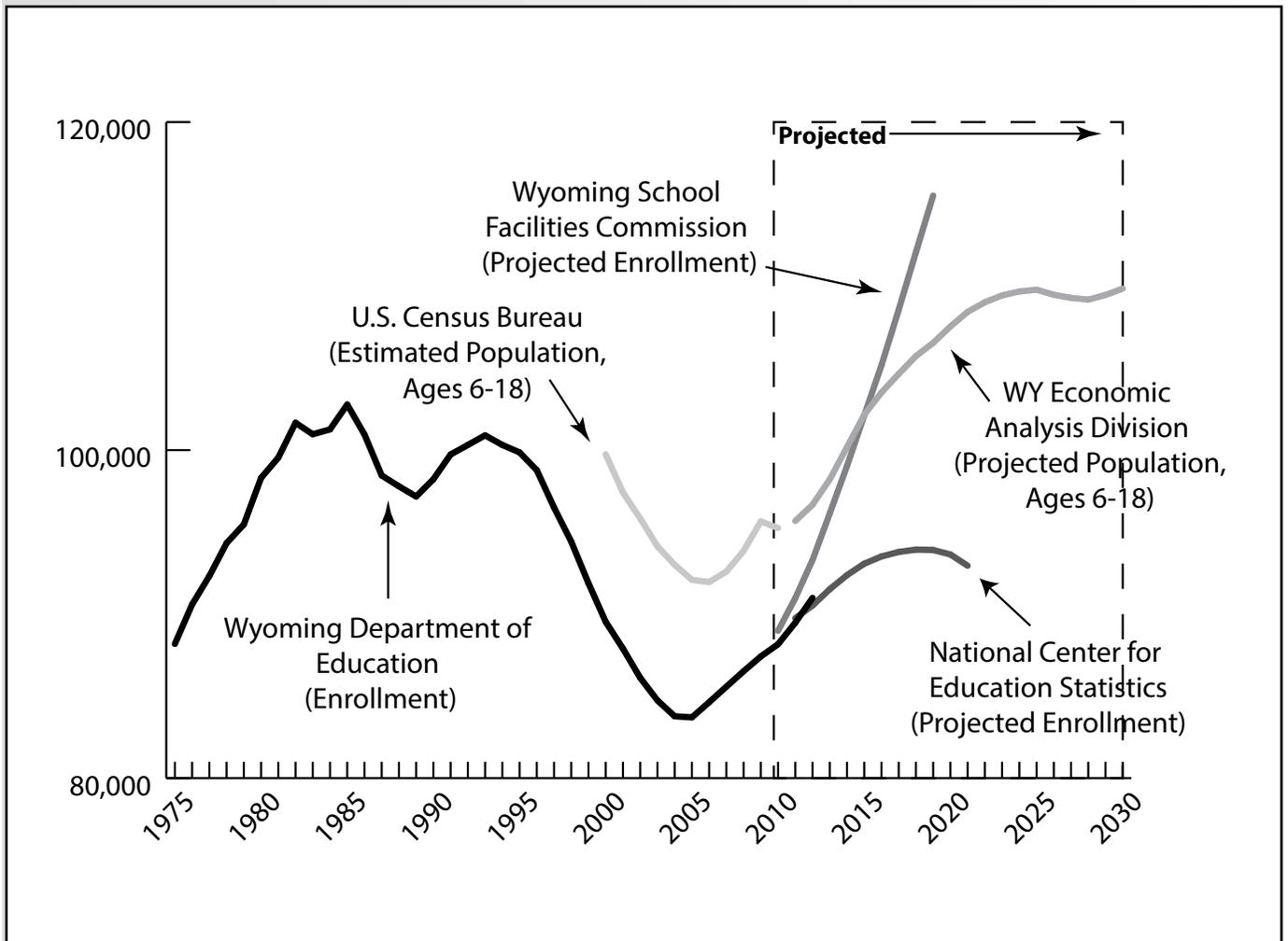


Figure 6: Wyoming Student Enrollment, Population (Ages 6-18), and Projections, 1975-2030

the population of those ages 6-18 are expected to increase, which should increase the demand for teachers (Manning, 2013).

Nationally, total public school enrollment is projected to grow at the rate of 0.6% per year through 2021 and the number of full-time equivalent (FTE) teachers is projected to increase from 3,209,637 in 2010 to 3,694,080 in 2021 (NCES, 2012).

#### **Cost Pressure #4 Teacher Turnover**

The question of where teachers went and what they earned when they left employment with a Wyoming school district is important to understanding school district human resource cost pressures. During the 2010/11 and 2011/12 school years combined, 1,389 teachers left a contract job with a public school employer. As demonstrated by Glover (2013), teachers in the 2011/12 school year always lost wages when they left their contract jobs with public schools, no matter what their destination industries.

R&P's research shows that younger teachers in Wyoming have a high rate of turnover, which is consistent with previous national findings (Robinson & Strunk, 2006). **Figure 7** (see page 14) shows the age distribution for the 1,389 teachers who left contracted employment in Wyoming's public schools for the combined 2010/11 and 2011/12 school years. This graphic also illustrates Robinson & Strunk's statement (on a local level) that younger teachers "have a higher rate of turnover, which decline

as teachers hit middle age/experience, and then rise again as teachers near retirement" (2006).

The largest destination industry for teachers who left employment with a Wyoming school district was another school district (Glover, 2013). Because teachers moved from district to district (or county to county, in many cases) replacement need varied by county. For **teachers**, the greatest replacement needs were found in Hot Springs (23.3%), Albany (15.7%), and Goshen (13.7%) counties; the lowest replacement needs were in Niobrara (5.6%), Lincoln (6.1%), and Park (6.5%) counties. Laramie and Natrona counties were tied at 6.7% (Glover, 2013).

The top three counties with the greatest replacement need for **all public school occupations** were Hot Springs (24.2%), Albany (21.3%), and Sublette (19.4%); the lowest three replacement needs were in Niobrara (8.4%), Laramie (9.3%), and Natrona (9.5%) counties.

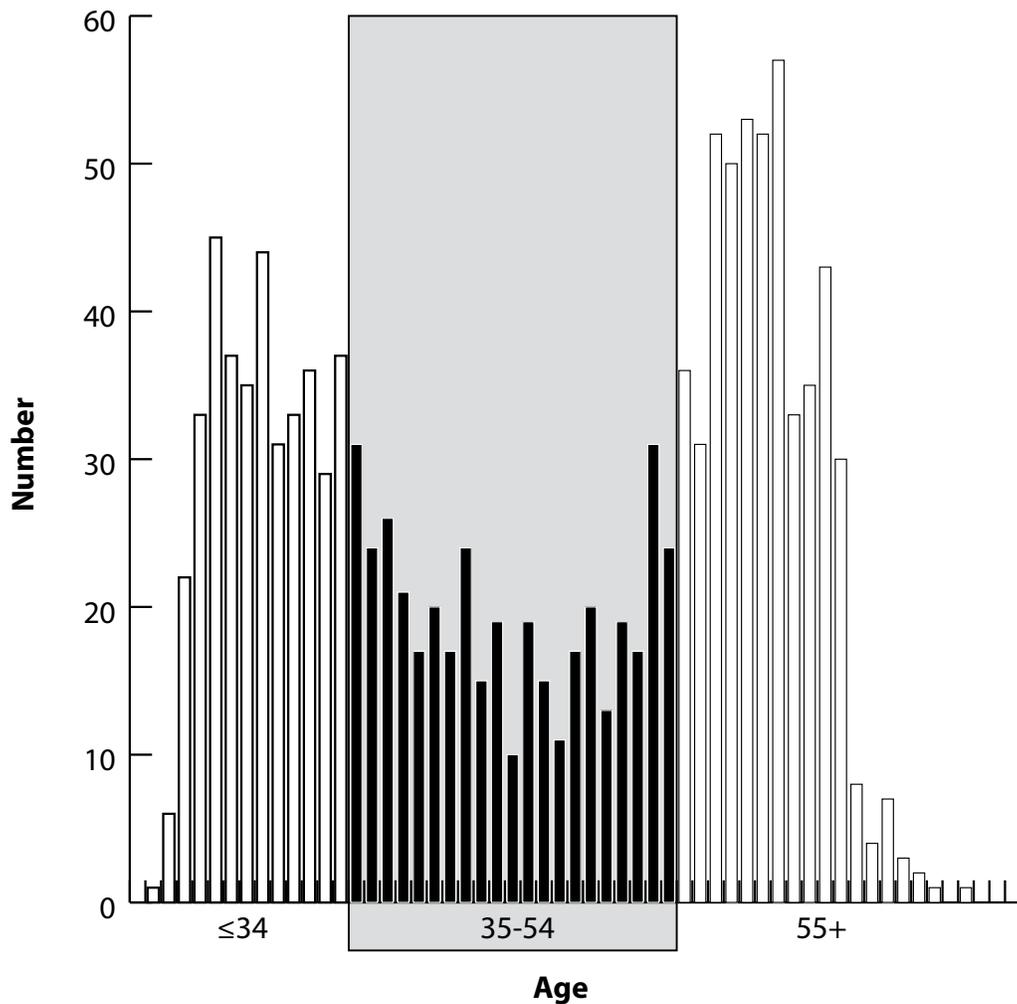
One hypothesis regarding the larger replacement needs in particular counties is that the population of teachers is older in those areas. As the leading edge of the baby boom generation begins to retire, some Wyoming counties may face significant intra- and interstate competition for experienced teachers.

#### **Cost Pressure #5 Pressures from Surrounding States**

National and regional employment growth opportunities affecting Wyoming's market have been slow in developing since

the end of the Great Recession, which lasted from December 2007 to June 2009 (NBER, 2010). At the same time, employment in the region has grown more rapidly than in Wyoming (Gallagher, 2013). **Box 1** (see pages 18-21) details the job growth in surrounding states as compared to Wyoming.

Wage competition must also be “considered in the context of migration decisions made by households rather than individuals, and it is not without historic precedent for more stable and diversified labor markets to prove attractive to more highly educated residents of Wyoming” (Gallagher, 2013). **Figure B3** (see pages



**14,853:** Total number of contracted teachers in public schools for the combined 2010/11 and 2011/12 school years

**1,389:** Total number of teachers who left contracted employment in public schools during 2010/11 and 2011/12

Figure 7: Number of Teachers Who Left Employment in Wyoming Public Schools by Age Group, Combined 2010/11 and 2011/12

20-21) shows the over-the-year percentage change in number of total jobs covered by unemployment insurance for Wyoming and the surrounding states from 2005 to 2012. According to Bullard (2013), “Approximately 92% of wage & salary jobs in the state are covered by state unemployment insurance, while 2.6% of jobs are covered by federal unemployment insurance, and 0.9% are covered by unemployment insurance administered by the railroad retirement board. There are several categories of non-covered jobs, and together they account for approximately 5% of wage & salary jobs in the state. Some examples of non-covered employment include elected officials, students working at educational institutions, employees of churches, and workers at small nonprofit organizations.”

These figures demonstrate the pace and consistency with which surrounding states are recovering from the Great Recession. Tracking the recovery of surrounding states is critical if Wyoming is to avoid reacting after the fact to market changes.

### **The Complete Cost Pressures Project**

In 2001, the Wyoming Supreme Court directed the legislature to “design the best educational system by identifying the ‘proper’ educational package each Wyoming student is entitled to have whether she lives in Laramie or in Sundance,” and then “take the necessary action to fund that package” (State of Wyoming, et al., v. Campbell County School District, et al., 2001). The legislature, in keeping with the Campbell decision, immediately hired a consulting

firm to determine the “services which must be made available to all Wyoming school children and which the legislature codified as a list of core knowledge and skills areas” (State v. Campbell 2001).

*Monitoring 2013* is the second report in an annual series, and represents a response to the legislative directive to “the department of workforce services, office of research and planning, to conduct data collection and analysis necessary for the education resource block grant model monitoring” (General Government Appropriations, Chapter 26, Section 326[d], March 2012). *Monitoring 2013* carefully examines the Wyoming school district labor market in an effort to better understand the factors involved in attracting and retaining experienced teachers in the state – a key component of the services offered to children in public schools. *Monitoring 2013* expands the study of school district compensation and labor supply by incorporating analysis of the Professional Teaching Standards Board (PTSB) licensing information to better understand which subjects and grade levels will drive the need for teachers in the future (Harris, 2013). The complete *Monitoring 2013* report can be found at: [http://doe.state.wy.us/LMI/education\\_costs.htm](http://doe.state.wy.us/LMI/education_costs.htm).

Understanding the demographics of the public school labor supply is a key consideration of this report. Throughout much of the labor market, baby boomers have held onto jobs in industries with a substantial number of jobs that require post-secondary education, such as educational services. Because of this, young workers may have difficulty finding jobs in these industries, or may choose to work outside of Wyoming. The economy of surrounding states has grown more

rapidly than in Wyoming, making it necessary to consider wage competition in the historical context of more stable and

diversified labor markets proving attractive to educated residents of Wyoming (Gallagher, 2012).

## Section 2: Findings

### **Findings from 2013 Monitoring School District Human Resource Cost Pressures**

- During the 2010/11 school year, the average annual wage for all primary, secondary, and special education teachers in public schools in Wyoming was \$59,314, an increase in the estimated mean of \$2,245 over the 2009/10 school year. This salary was higher than in surrounding states and in the U.S. as a whole (Chapter 1).
- Teacher wages in Wyoming on average were competitive with surrounding states and the nation, but this was not the case in all of Wyoming's counties (Chapter 2).
- Replacement need represents a recruitment cost, and the replacement rate for vacancies created by individuals leaving employment in public schools varied from 11.0% in 2008/09 to 13.2% in 2010/11, (Chapter 3).
- Wyoming may become increasingly

dependent on importing teachers as the baby boom generation retires. More than one-quarter of special education teachers are approaching traditional retirement age of 65, and represent the most immediate replacement need (Chapter 4).

- Given the rapid aging of the workforce in industries requiring post-high school degrees, school districts may encounter significant competition for experienced employees (Chapter 5).

### **Findings from Appendix Staff Reports**

- A significant portion of individuals (33.5%) can teach in at least two content areas, allowing a district to employ teachers in varying content areas during a given school year (Appendix A).
- In each age group, males' average yearly wages were greater. It is therefore of interest that the largest earnings gains from 2011/12 to 2012/13 were found among younger females who remained in the same district but changed occupations (Appendix B).

## Section 3: Recommendations

- Report findings indicated a need for succession planning, and R&P suggests that the Wyoming Department of Education (WDE), potentially in conjunction with the College of Education at the University of Wyoming, engage school districts on this topic. While it appears that the University of Wyoming is producing enough new teachers to meet replacement need, it is not clear if the teachers produced hold endorsements in the subject areas that will meet the most current and future demands.
- R&P recommended that files from the Wyoming State Retirement Board be made available to provide accurate, historic and current identifiable trends in credentials of those retiring from public schools.
- WDE 602 files should contain position numbers and related job descriptions to facilitate determining what districts require at a basic minimum to perform certain tasks and how positions evolve over time.
- R&P recommended the standardization of data collection for the WDE teacher recruitment files in order to measure the duration of job openings and estimate the recruitment difficulty for specific endorsements.
- R&P recommended use of this report by policymakers, school districts, jobseekers, and other parties to effectively address labor supply issues and allow for the framing of future research questions in the context of empirical results.

## Section 4: Selected Key Questions from Legislators During Testimony to the Joint Education and Joint Appropriations Committees of the Wyoming State Legislature, October 2013

1. What is the difference between the total actual compensation offered teachers and the amount listed on the contract?

2. How tight of a correlation exists between teacher quality and teacher salary?

3. What can we do in order to get better information on how we project growth in the student population?

4. Why do the average county salaries have such a wide disparity?

5. Will we hear today about the quality of the staff? Teacher quality will be very significant in the progress we make toward building the best education system.

A complete summary of R&P's testimony to the Joint Education Committee may be found at <http://legisweb.state.wy.us/interimCommittee/2013/04MIN1024.pdf>.

A complete summary of R&P's testimony to the Joint Appropriations Committee can be found at <http://legisweb.state.wy.us/interimCommittee/2013/02MIN1028.pdf>.

## Section 5: Future Research

Future research using administrative databases is needed to explore the specific circumstances under which school district employees change districts or occupations. R&P will also incorporate data from the Wyoming Retirement Board into future analyses to identify current and historical trends in retirement, and to identify the level of district use of substitute teachers. R&P will also continue its work with PTSB licensing files, including linking them to UI payroll accounts in other states – work that can only be accomplished by Labor Market Information sections of state workforce agencies. Additionally, R&P has started research using databases to create household level data which will be used to explore the relationship between leavers and their partners. R&P views the teacher compensation analysis as a valuable tool in the recruitment and retention of professionals in other occupations, as the methodology used can be applied to other educated professionals in Wyoming.

National and regional employment growth opportunities affecting Wyoming's market will need to be monitored, in order to better understand the competition our school districts face from neighboring states. R&P notes the recommendations of the National Center for Education Statistics' Teacher Compensation Survey (TCS) Panel, in particular the recommendation to "explore obtaining the financial information for the TCS from unemployment insurance (UI) or other records held by state workforce or tax agencies" (NCES, 2013).

Finally, cost pressure analysis using administrative databases is a relatively new concept and practice in this country. Naming conventions for the types of phenomena we describe in this report are not established. Future research will include improving the lexicon of administrative database research, so that a common language may be employed.

## Section 6: References

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## Box 1: Wyoming Lags Behind Surrounding States in Job Growth

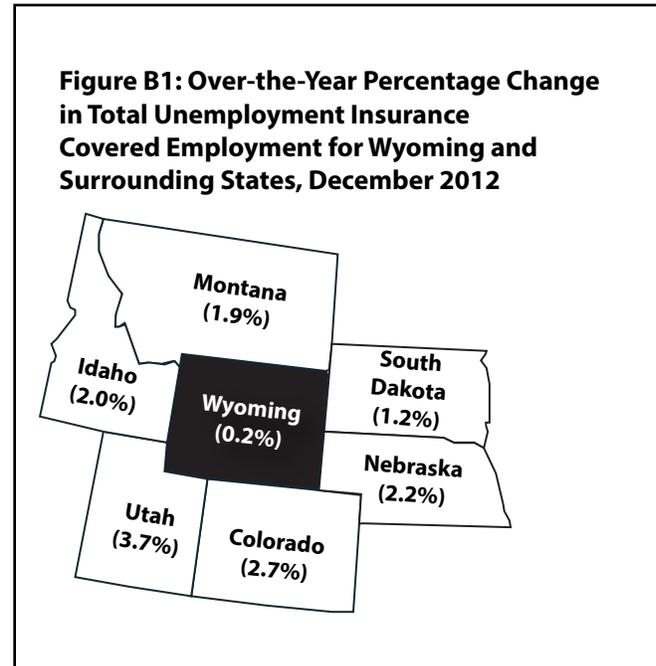
by: David Bullard, Senior Economist, and Michael Moore, Research Analyst

**B**ased on the most recent Unemployment Insurance (UI) covered wage and salary employment estimates, job growth in surrounding states like Colorado and Utah is outpacing job growth in Wyoming.

During the second half of 2012, the over-the-year percentage change in employment in Wyoming was lower than that of all surrounding states (Colorado, Idaho, Montana, Nebraska, South Dakota, and Utah) and the U.S. (see **Figure B1**). In December 2012, Utah (3.7%) and Colorado (2.7%) experienced the greatest increase in UI covered wage and salary employment compared to December 2011. States with large urban areas – such as Colorado and Utah – experienced the most growth, while more rural states experienced a slow, steady increase in employment.

Job growth in Wyoming, its surrounding states, and the U.S. from 2005 to 2012 is shown in **Figure B3** (see pages 20-21). The Great Recession lasted from December 2007 to June 2009 (NBER, 2010), and most states entered the recession several months before Wyoming. Before the Great Recession, Wyoming’s job growth was generally higher than its surrounding states. During 2008, high oil and natural gas prices spurred energy development in Wyoming, while holding back economic growth in the nation as a whole.

During the recession, a sharp drop in energy prices caused larger job losses in Wyoming than were seen in most surrounding states. Wyoming added jobs at a healthy pace early in the recovery, but in the second half of 2012 job growth slowed to very low levels. It is clear that Wyoming’s



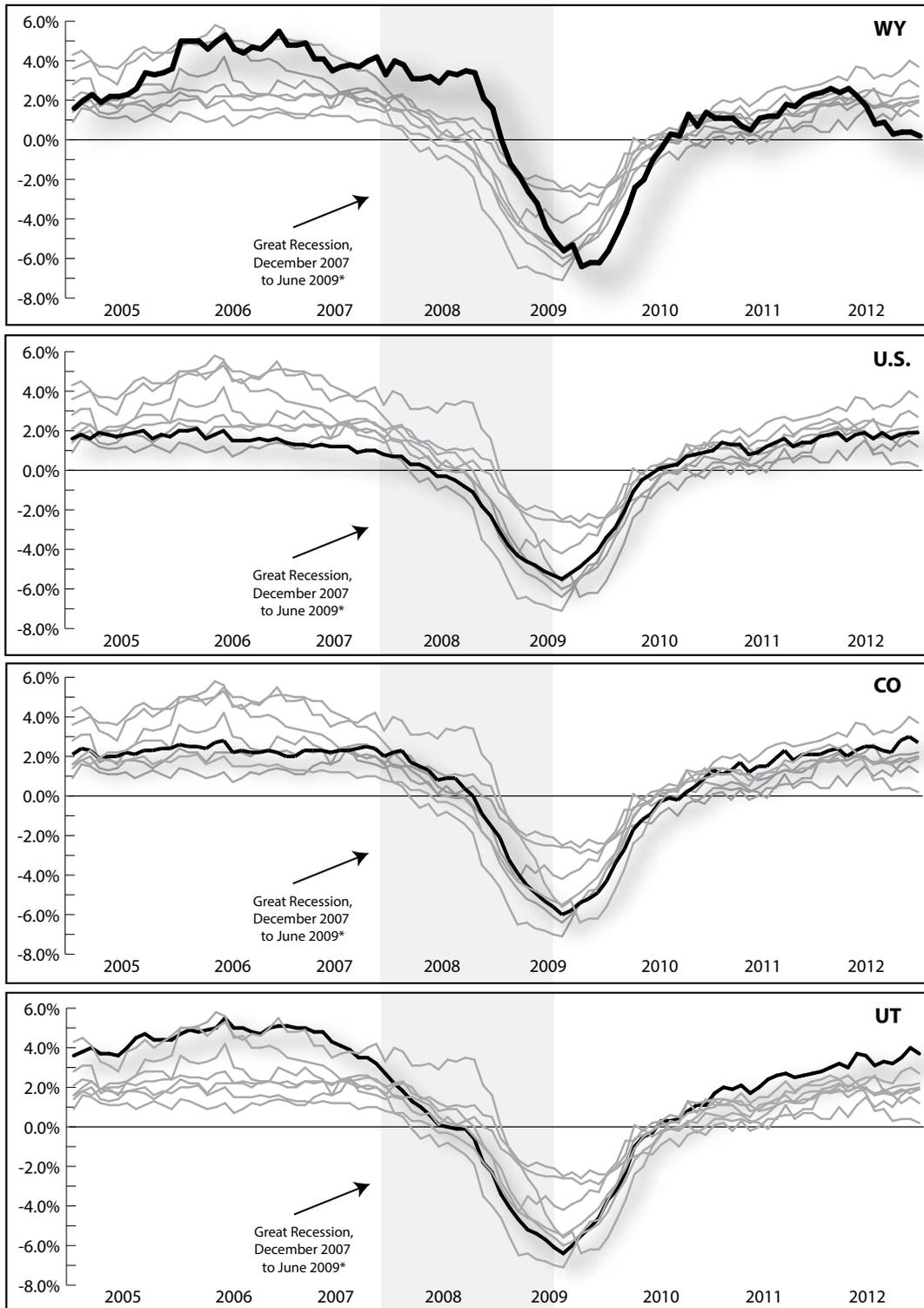
job growth has been lagging behind other states in the region.

**Figure B2** (see page 19) shows Wyoming’s average annual unemployment rate and its employment-to-population ratio from 2005 to present. Before the recession, as employment was increasing, the unemployment rate fell to 2.8% in 2007. Then, as workers lost their jobs during the recession, the employment to population ratio fell (down from 70% to 65%) and the unemployment rate rose, hitting 7.0% in 2010.

In the recent recovery the unemployment rate has steadily decreased, while the employment to population ratio has remained largely flat. It seems that a large part of the decrease in the unemployment rate is related to people dropping out of the labor force, rather than returning to work.

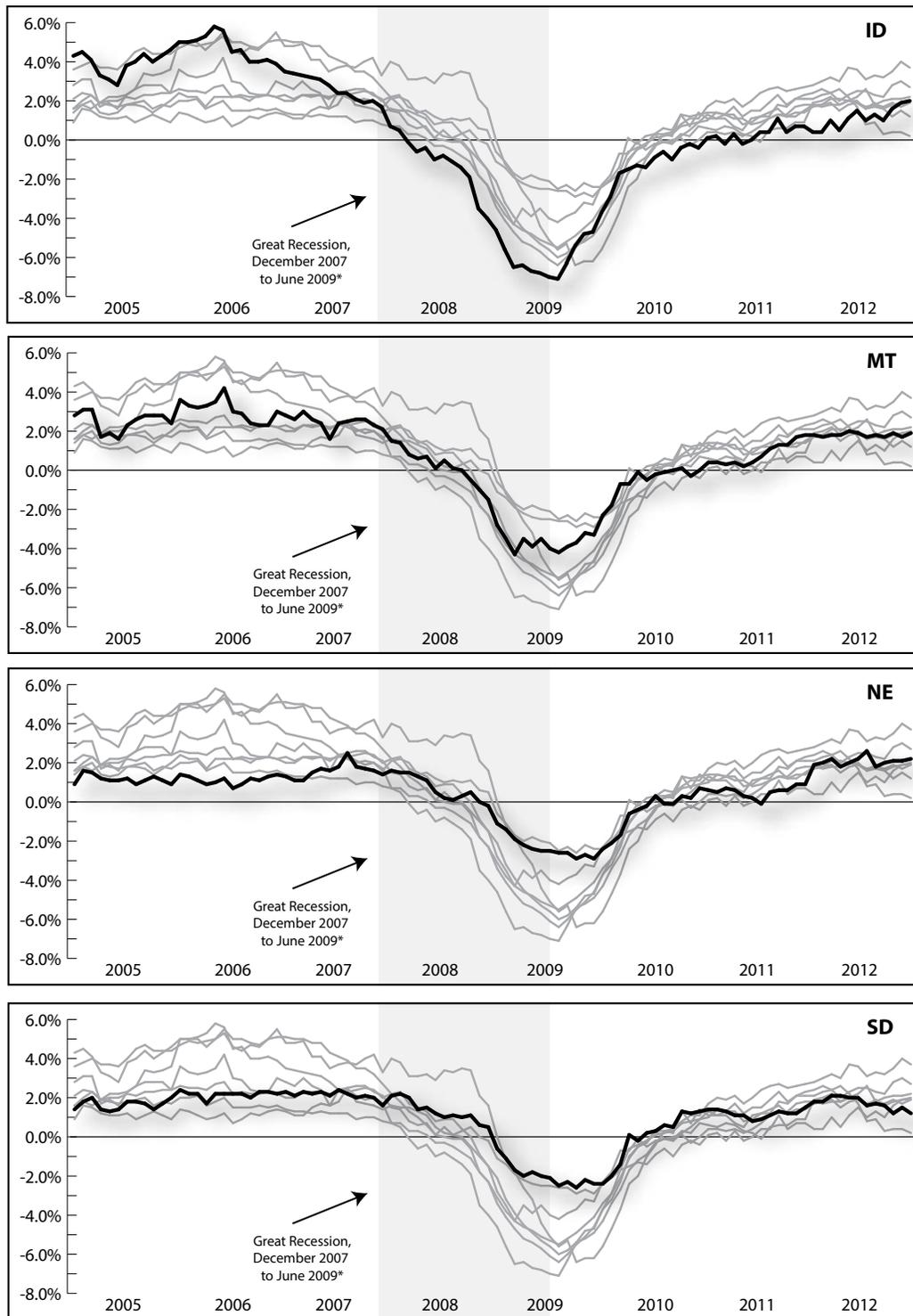
(Box 1 text continued on page 22)

**Figure B3: Over-the-Year Percentage Change in Total Unemployment Insurance Covered Employment for Wyoming, Surrounding States, and the U.S., 2005-2012**



Source: Quarterly Census of Employment and Wages (QCEW).  
\* Source: National Bureau of Economic Research (2010).

**Figure B3: Over-the-Year Percentage Change in Total Unemployment Insurance Covered Employment for Wyoming, Surrounding States, and the U.S., 2005-2012 (continued)**



Source: Quarterly Census of Employment and Wages (QCEW).  
 \* Source: National Bureau of Economic Research (2010).

(Box 1 text continued from page 19)

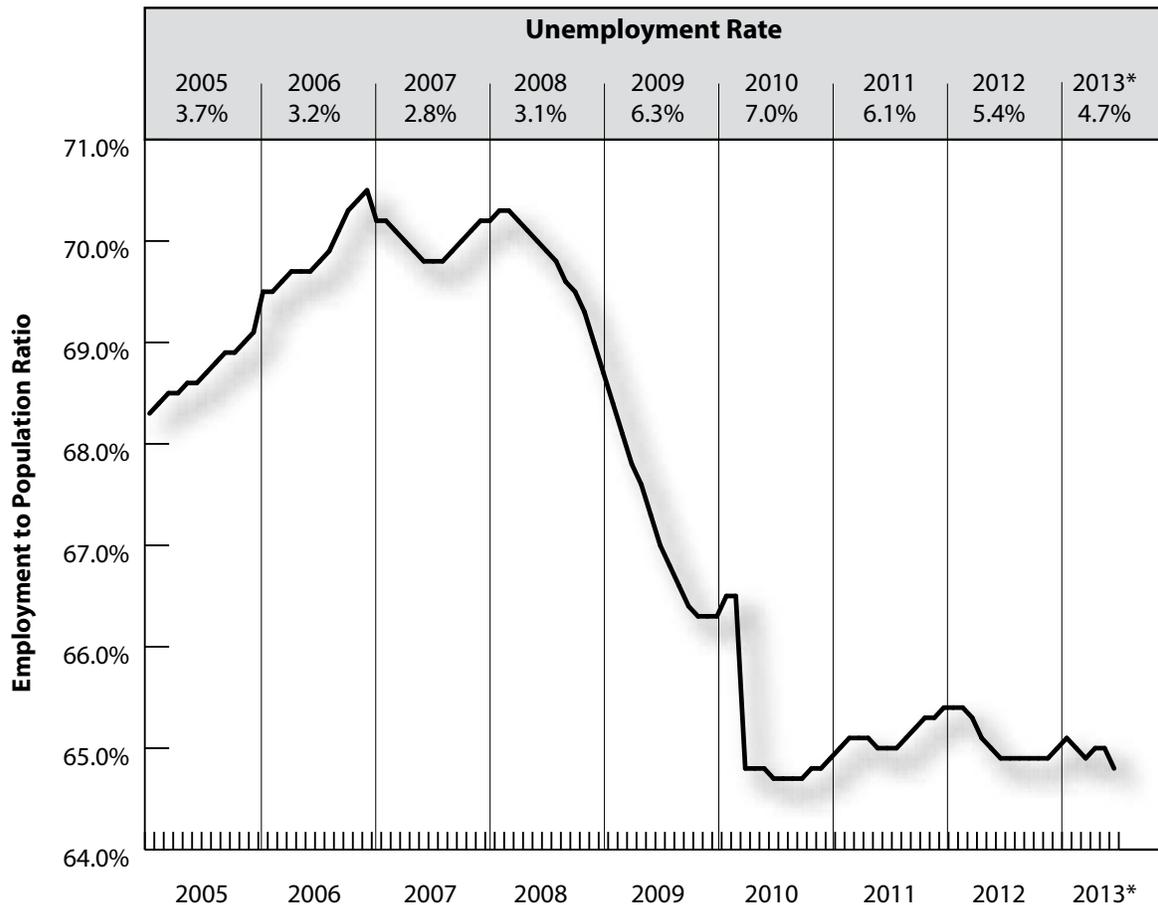
One way to interpret the stagnant employment-to-population ratio is that employment and population are increasing at roughly the same rate, and therefore the ratio between the two is fairly constant. This is in direct contrast to the situation in 2005 and 2006, when employment increased faster than population, raising the

employment-to-population ratio and driving the unemployment rate down.

**References**

National Bureau of Economic Research. (2010). Retrieved September 17, 2013, from <http://www.nber.org/cycles/sept2010.html>

**Figure B2: Seasonally Adjusted Employment to Population Ratio and Annual Unemployment Rate for Wyoming, 2005-2013**



Series break in April 2010 is related to the introduction of new population estimates.  
 \*2013 = January-July.  
 Employment to Population Ratio = Employment/Population.  
 Source: Local Area Unemployment Statistics.  
 Prepared by Bullard, D., and Moore, M. Research & Planning, WY DWS, 9/17/2013.



**Research & Planning  
Wyoming DWS**

**Wyoming Department of Workforce  
Services, Research & Planning  
P.O. Box 2760  
Casper, WY 82602**

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