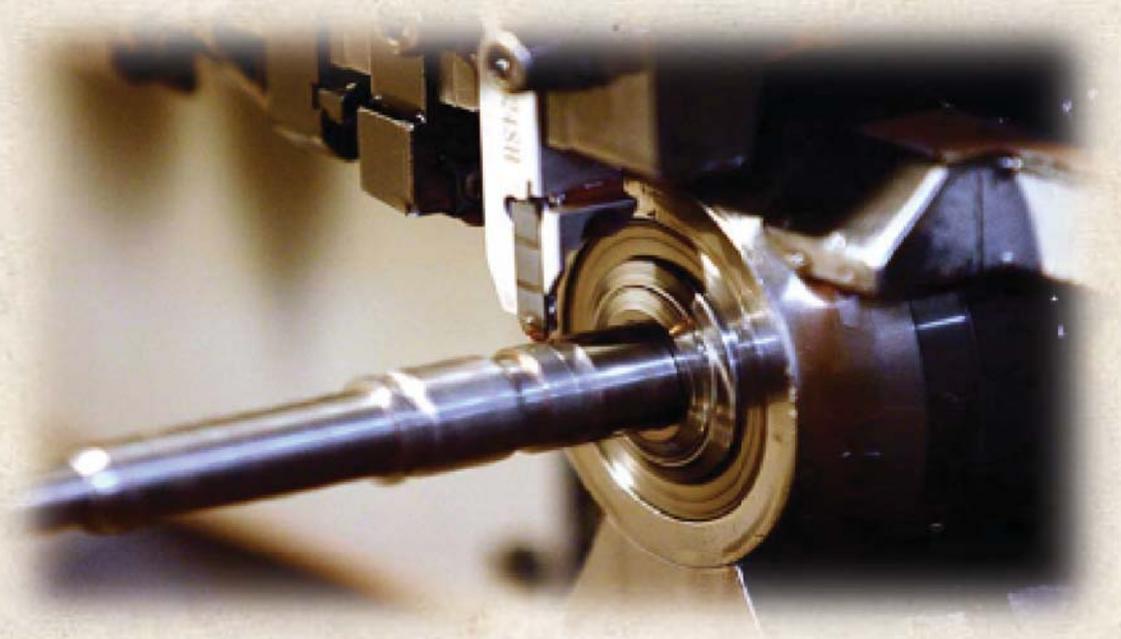


ADVANCED MANUFACTURING in IDAHO



Idaho Department of Labor
Communications & Research
Spring 2012

ADVANCED MANUFACTURING IN IDAHO

Spring 2012



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ADVANCE MANUFACTURING IN IDAHO

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MANUFACTURING IN IDAHO

INTRODUCTION

Idaho's Manufacturing Industry and Advanced Manufacturing Occupations

Manufacturing provides good jobs for American workers, both those with formal education and those who prefer to get their education through experience. In Idaho, 16.5 percent of the population has a bachelor's degree compared to 17.5 percent nationwide,¹ meaning Idaho must take full advantage of manufacturing's contribution to upwardly mobile middle-class jobs. For decades, manufacturing has been declining as a share of Gross Domestic Product and employment.² Jobs have been shipped overseas to take advantage of lower labor costs. But the decline in manufacturing's contribution to gross product is not solely the result of low-wage foreign competition.

The objectives of this study are to:

- Define manufacturing and advanced manufacturing
- Compare Idaho's manufacturing sector to the nation, surrounding states and regions
- Assess Idaho's strengths
- Provide available manufacturing projections

¹ EMSI: Complete Employment, 2011.2

² National Science Foundation, Fact Sheet, "Manufacturing Our Future" http://www.nsf.gov/news/news_summ.jsp?cntn_id=123174&WT.mc_id=USNSF_51&WT.mc_ev=click, Feb 13, 2012

KEY FINDINGS

Manufacturing accounts for 6.7 percent of Idaho's employment, just under the national average of 7.0 percent. Idaho ranks 30th nationally³ in percent of employment in manufacturing. Before the recession in 2007, Idaho's manufacturing industry was growing at 2.4 percent a year. But the recession halted manufacturing growth both in Idaho and nationwide and subjected the sector to significant job losses. Overall, only 15 other states were hit harder by the recession.

From 2007 to 2010, Idaho lost 5,700 jobs in the computer industry, which was the state's highest paying, and 3,300 in wood product manufacturing, which pays almost \$10,000 more than the all-industry average wage. Idaho's total loss of manufacturing jobs was 18.8 percent, greater than most states.

On average, Idaho manufacturing workers earned \$57,286 in 2010 – \$18,186 higher than the all industry earnings of \$39,100, underscoring manufacturing's importance to the Idaho economy. At the same time, manufacturing earnings were higher than "all industry" earnings in every state except Alaska and Hawaii.

In 2008, food manufacturing overtook the computer industry to become Idaho's leading manufacturing employer. During the recession when most other manufacturers were losing employment, Idaho's food manufacturers added just under 1,000 jobs. Food manufacturing, with Idaho's accessible supply chain, is a stable provider of jobs and is projected to continue to grow.

Small business owners continue to be a vital part of the state's economy, and the manufacturing sector is no exception. Half the state's manufacturing establishments employ fewer than 10 people. But while employing a small number individually, collectively they provide 4,294 jobs – 8.0 percent of all manufacturing employment. Idaho's fourth largest industry, fabricated metal product manufacturing, is projected to continue growing into 2018, and 78 percent of their employers have payrolls under 50.⁴

Forty-two occupations were identified and examined as part of the advanced manufacturing analysis. Despite decreases in the manufacturing industry, 37 of the 42 occupations appeared on the Department of Labor's "High Demand Occupations" list. Despite high unemployment, highly skilled jobs in advanced manufacturing can be difficult to fill for employers.

The advanced manufacturing occupations are more stable than others in manufacturing. There were 37,095 people working in the identified advanced manufacturing occupations in 2010. By 2018 that figure is expected to grow to 41,658, an increase of 12.3 percent.⁵ In drastic contrast, manufacturing overall is projected to decline 2.5 percent by 2018.

³ EMSI: Complete Employment, 2011.2

⁴ Quarterly Census of Employment and Wages, Employers for 2010 (Size Class)

⁵ EMSI Complete Employment 2011.2

NATIONAL INDUSTRY ANALYSIS

National Comparisons: Employment (Jobs), Earnings per Worker (EPW) and Establishments⁶

Since we live, work and compete in a global economy, it is helpful to compare Idaho’s manufacturing industry to the rest of the nation. Many manufacturing companies export to other states and some to other countries so where Idaho stands in comparison to the rest of the United States is vital.

Share of National Employment⁷

California, the nation’s largest state in population and total jobs, leads the nation with 11 percent of its manufacturing workforce. In contrast, Hawaii, Alaska and Wyoming combined account for just 0.3 percent of the nation’s manufacturing workforce, the smallest shares. Idaho ranks 37th, supplying about 0.5 percent – the same as its portion of the U.S. population.

When comparing the northwestern states, Washington leads the way, supplying 2.2 percent of the nation’s manufacturing jobs followed by Oregon, Utah, Idaho, Nevada, Montana and Wyoming.

Concentration of Manufacturing Industry Employment			Percent of National Population	
State	2010 ratio	Rank	2010 ratio	Rank
Washington	2.2%	15	2.2%	14
Oregon	1.4%	24	1.2%	27
Utah	1.0%	34	0.9%	34
Idaho	0.5%	37	0.5%	39
Nevada	0.3%	41	0.9%	34
Montana	0.2%	47	0.3%	44
Wyoming	0.1%	50	0.2%	50

Source: EMSI Complete Employment 2011.2

⁶ Manufacturing and All Industry tables discussed in this section are in the Appendices.

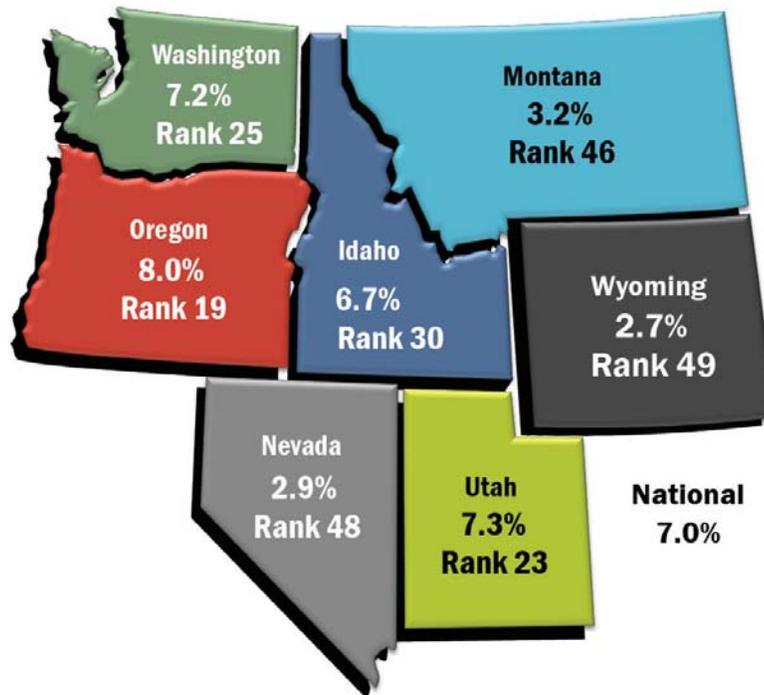
⁷ “Relative Size” and “Relative Growth” components are in Appendix 2.

Relative Size⁸

In 2010, 6.7 percent of Idahoans worked in manufacturing compared to 7.0 percent nationwide. This ranked Idaho 30th in the nation for manufacturing employment. In 2002, at the beginning of the study period, relative employment was 8.8 percent. Unfortunately, most of this 2.1 percentage point decline occurred in the highest paying industry, computer and electronic product manufacturing, which lost 7,285 jobs during the eight-year period. Wood products manufacturing, Idaho's third largest goods-producing industry, also sustained large losses – 2,931. Indiana at 13.1 percent and Wisconsin at 12.9 percent are the two powerhouses of manufacturing employment. Hawaii has the least manufacturing at just 2.0 percent of total employment.

Idaho ranks in the middle compared to neighboring states. However, the three states that are higher are at most 1.3 percentage points higher. The three states that are lower are far lower with Wyoming's relative employment three percentage points below Idaho.

Relative Size Manufacturing Job Concentration in Idaho and Surrounding States



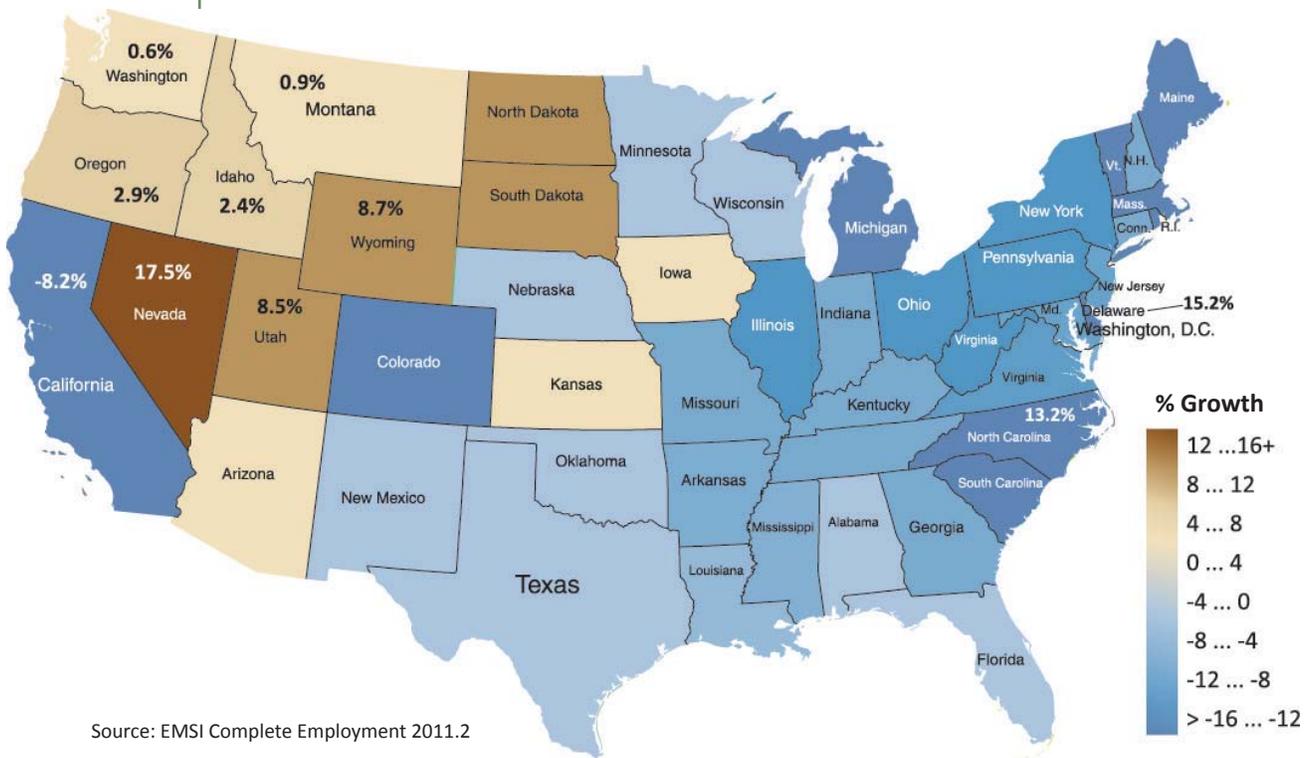
Source: EMSI Complete Employment 2011.2

⁸Relative Size component of Appendix 3

Relative Growth 2002-2006⁹

From 2002 to 2006 following the 2001 recession, Idaho and the bordering states had growing manufacturing industries. In the eastern United States, however, jobs were already being shipped overseas to cheaper labor markets. Delaware suffered the greatest loss in this at 15.2 percent. In North Carolina, a 13.2 percent decline was seen mainly in textiles. Textile mills, textile product mills and apparel manufacturing (NAICS codes 313, 314, 315) lost over 51,000 jobs.

Nevada recorded the greatest growth in the nation through gains in nonmetallic mineral product manufacturing and fabricated metal production. Wyoming's biggest increase also was in fabricated metal production. However, since Wyoming is such a small state, the 8.7 percent growth only translated to 939 jobs while Idaho's 2.4 percent growth rate meant 1,679 jobs. Interestingly that growth came mostly from transportation equipment manufacturing.



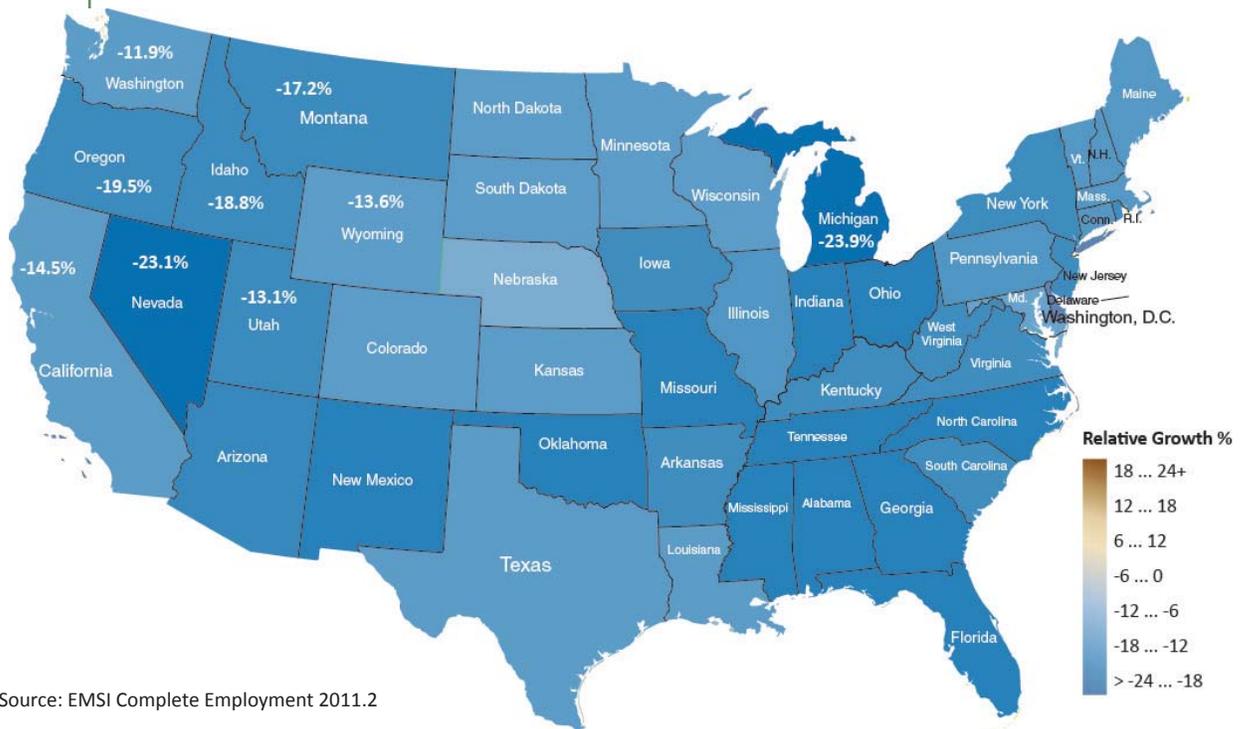
Source: EMSI Complete Employment 2011.2

⁹Relative Size" component of Appendix 2

Relative Growth 2007-2010¹⁰

The Recession's Devastating Effects on Manufacturing

No state escaped the employment losses of 2007 to 2010, and most states experienced large losses. The blue areas on the map show job loss rates. The darker the blue, the greater the loss.



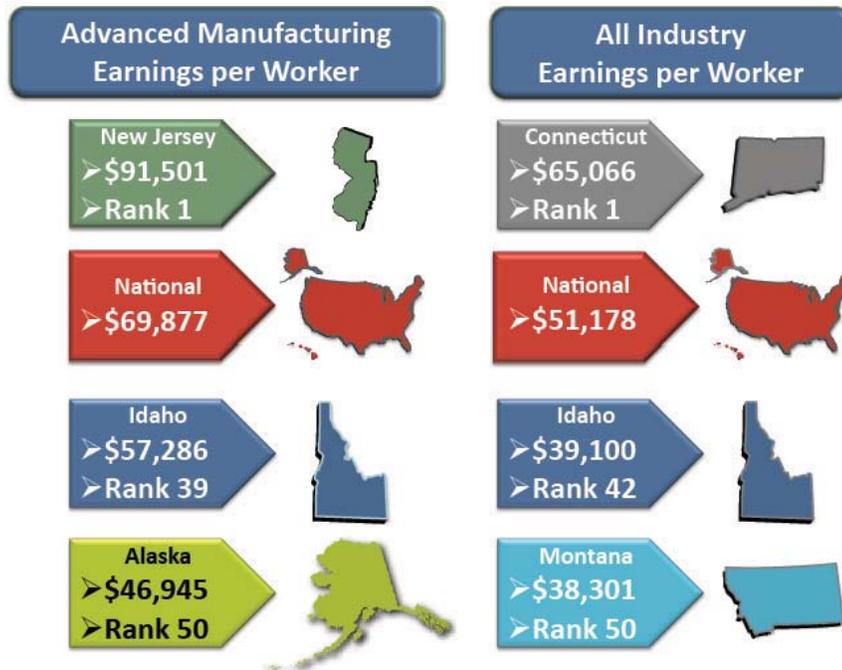
Source: EMSI Complete Employment 2011.2

Michigan had the largest decline at 23.9 percent. Their auto industry lost significant employment during the recession. Michigan's transportation equipment manufacturing industry lost 72,000 jobs in three years. Nevada's manufacturing employment dropped 23.1 percent, primarily in the two industries that posted significant growth before the recession. Fabricated metal and nonmetallic mineral product manufacturing lost almost 4,000 jobs. Idaho's big losses during the recession came from the computer and electronic product industry at 5,700 and wood product manufacturing at 3,300. Oregon lost almost 10,000 jobs in wood product manufacturing, 5,600 in computers and 7,000 in transportation equipment manufacturing. Washington also had large losses in wood products at over 6,000 jobs. The state also lost 3,000 jobs in fabricated metal, machinery, computers, transportation equipment and furniture and related product manufacturing.

¹⁰ "Relative Growth" component of Appendix 2

Earnings¹¹

Economic Modeling Specialists Inc. defines earnings per worker, or EPW, as the “total annual earnings of a regional industry in wages, salary, profits, benefits and other compensation divided by the number of jobs in the industry.” At nearly \$22,000 more than the national average, New Jersey ranked first in 2010 followed by Connecticut and Massachusetts in average earnings for work in advanced manufacturing. The average EPW for Idaho’s manufacturing employees was \$57,286, ranking 39th nationally and roughly \$18,000 more than the average for all Idaho workers. Alaska ranks last for manufacturing EPW, nearly \$23,000 less than the national average.

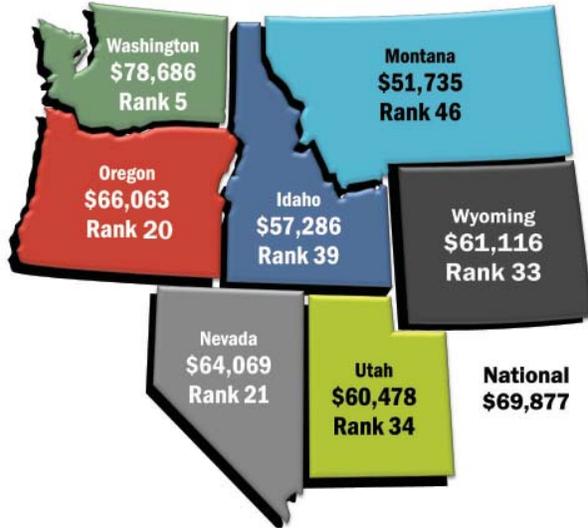


Source: EMSI Complete Employment 2011.2

¹¹Earnings per Worker component of Appendix 2

In the Northwest, Washington's average earnings were highest at \$78,686 followed by Oregon and Nevada. Montana was the only state below Idaho, ranking 46th to Idaho's 39th. Appendix 3 on page 43 provides a comprehensive comparison of earnings per worker.

Earnings Per Worker in Advanced Manufacturing

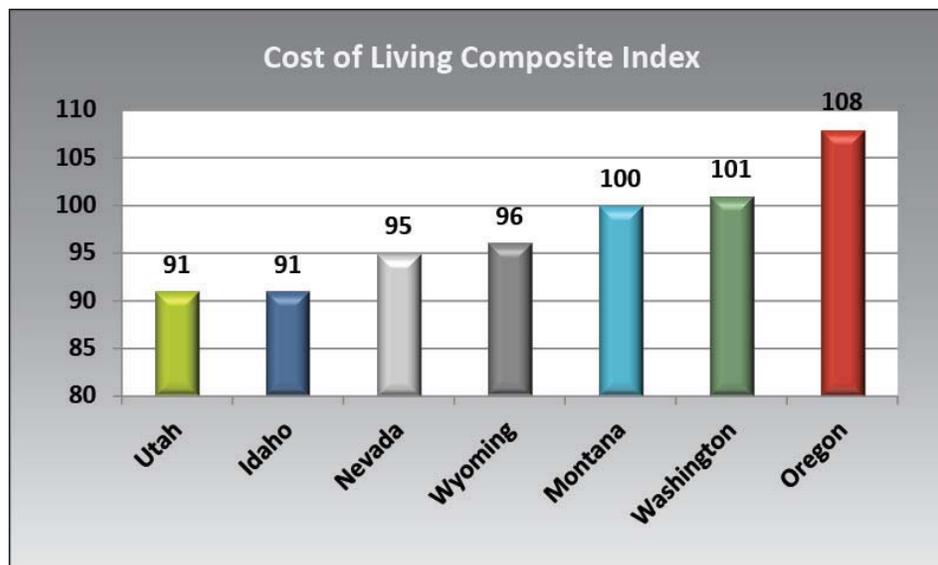


Source: EMSI Complete Employment 2011.2

Idaho manufacturing workers make an average of \$12,591 below the national average, but a lower cost of living can be seen to offset that difference.

Idaho's cost of living for the third quarter of 2011 was the sixth lowest in the nation.

The cost of living index is comprised of grocery items, housing, utilities, transportation, health care and miscellaneous goods and services. The rating comes out every quarter from the Missouri Economic Research and Information Center.



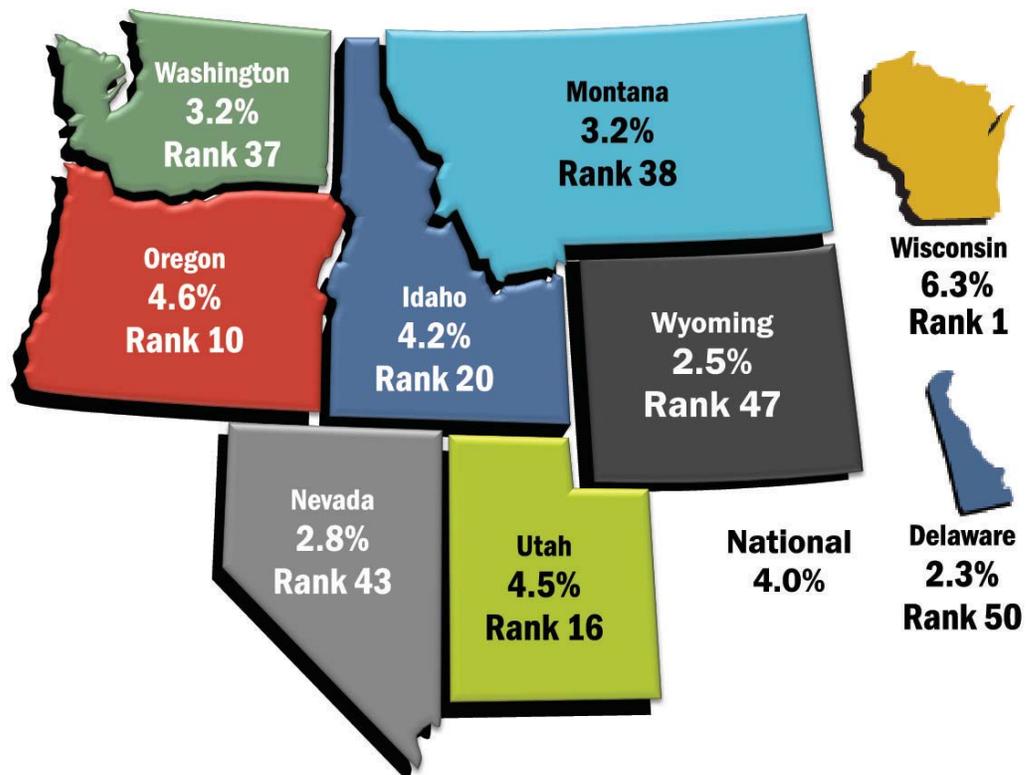
Source: MERIC: Missouri Economic Research and Information Center, 3rd Quarter 2011

Establishments¹²

Idaho's 2,317 manufacturing establishments comprise 4.2 percent of total establishments in the state, putting Idaho in the top 20 in the nation in manufacturing concentration. Wisconsin has the highest concentration at 6.3 percent. Delaware's concentration was 1.7 percentage points lower than the national average, ranking it 50th among the states.

Three states in Idaho's region – Oregon, Utah and Idaho – ranked in the top 20 in manufacturing establishment concentration at rates slightly higher than the national average of 4 percent. Wyoming has the lowest concentration in the region at just 2.5 percent and ranks near the bottom nationally at 47th.

Manufacturing Establishments to State Total Establishments

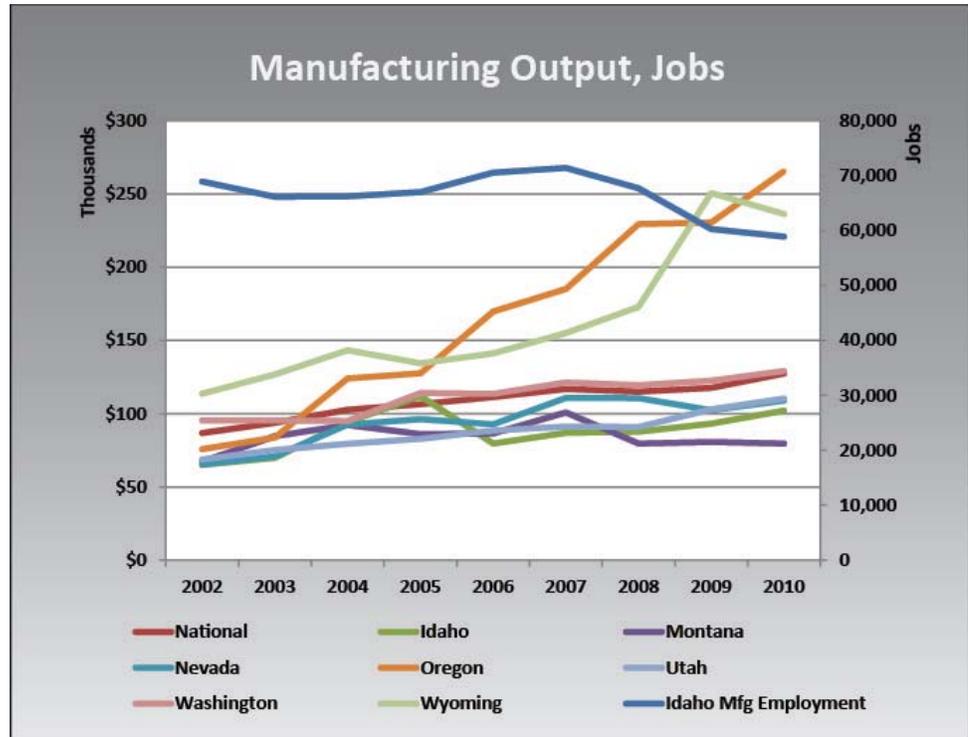


Source: US Bureau of Economic Analysis

¹²"Relative Establishments" component of Appendix 3

Manufacturing Productivity

Productivity measures the efficiency of manufacturing. It is the amount of output per unit of input. In this case the amount of real manufacturing Gross Domestic Product relative to manufacturing employment. Chart x below compares Idaho's manufacturing productivity to surrounding states and the nation from 2002 through 2010. In Idaho, productivity climbed through 2004, declined sharply through 2006 and then returned to incremental gains through 2010. As manufacturing productivity in Idaho gains momentum, manufacturing employment continues to experience declines.



Source: U.S. Bureau of Economic Analysis

Closer Look: Idaho's Productivity vs. the Nation's

Productivity	2002	2003	2004	2005	2006	2007	2008	2009	2010
National	\$86,712	\$93,818	\$102,614	\$106,458	\$111,422	\$116,799	\$115,040	\$117,678	\$127,369
Idaho	\$65,071	\$69,856	\$94,230	\$111,910	\$79,604	\$86,941	\$87,615	\$93,142	\$102,070

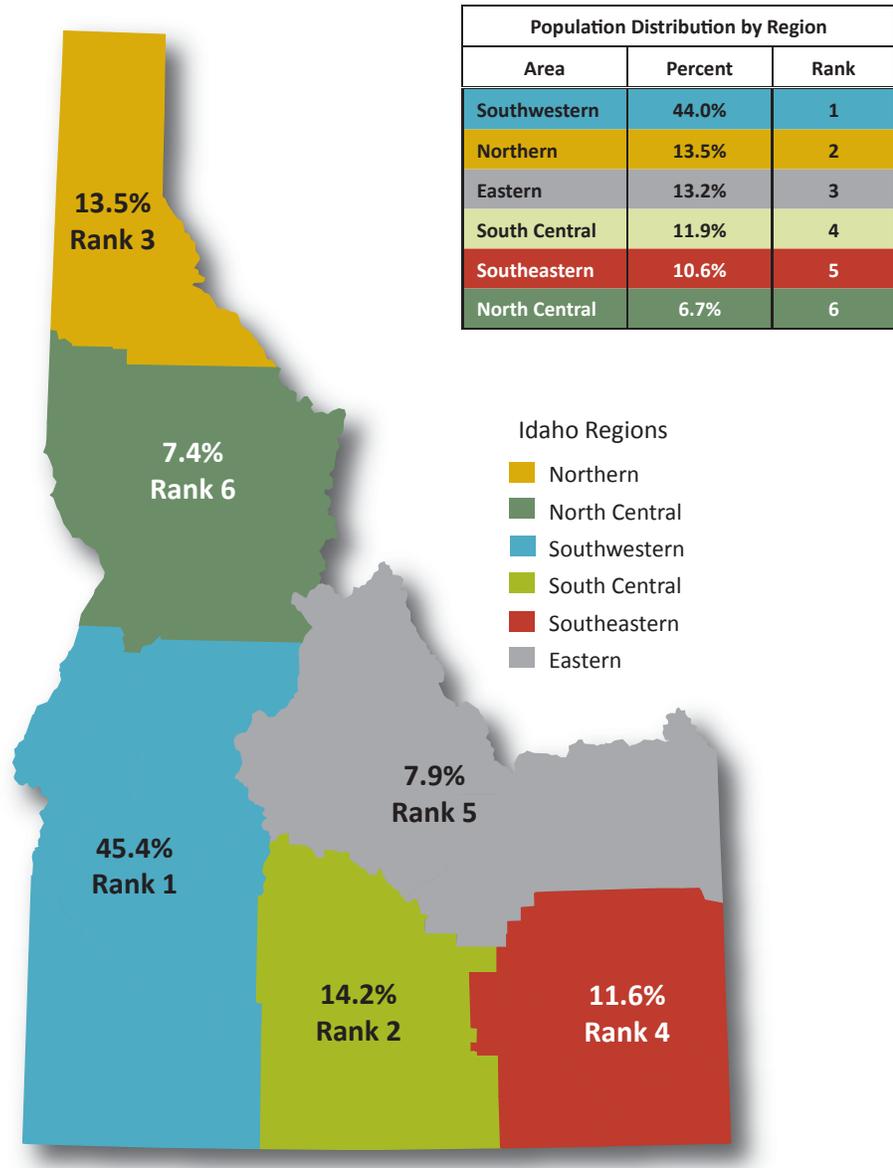
Source: U.S. Bureau of Economic Analysis

INDUSTRY ANALYSIS—REGIONAL COMPARISON

Relative Size

With the largest population and largest number of jobs, the southwestern region of Idaho had the highest concentration of manufacturing employment at 45.4 percent. While eastern Idaho had roughly 13.2 percent of the population, its share of manufacturing employment was only 7.9 percent. North Central Idaho with the smallest regional population also had the lowest share of manufacturing employment at 7.4 percent.

Regional Manufacturing Employment to Total Regional Employment

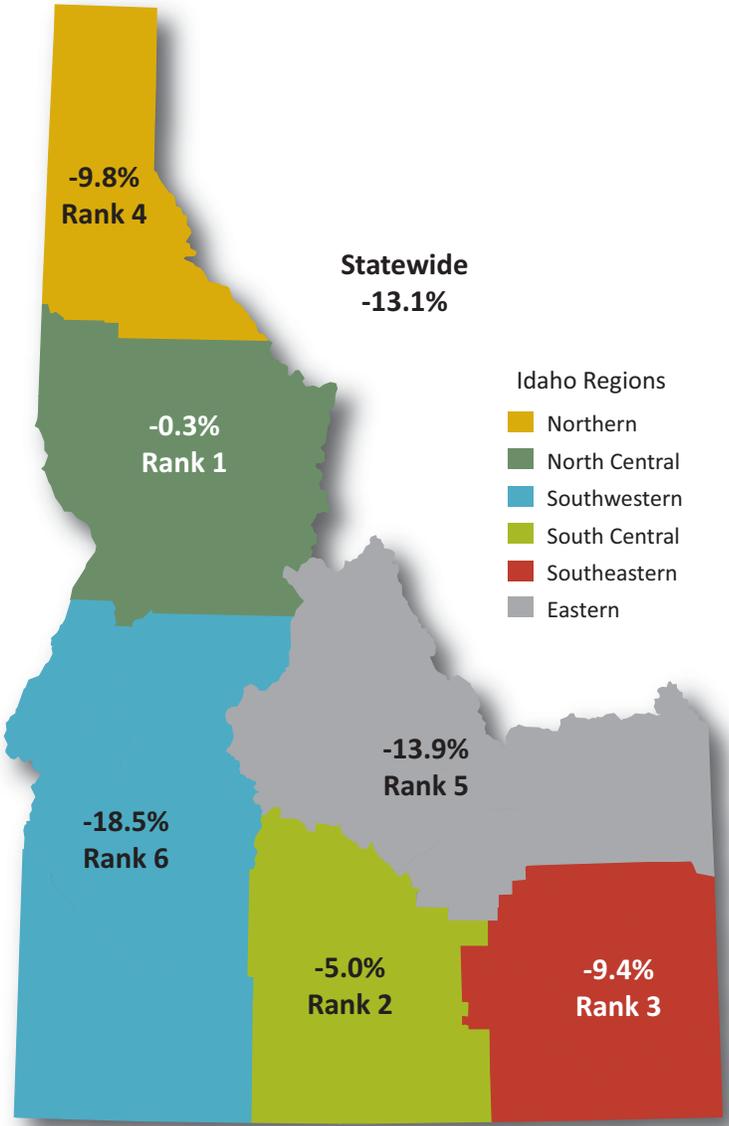


Source: EMSI Complete Employment 2011.2

Relative Growth

With its heavy concentration in manufacturing employment it's not surprising that the south-western region of the state experienced the largest declines in manufacturing between 2008 and 2010, losing 18.5 percent. In contrast, North Central Idaho with the lowest reliance on manufacturing experienced only a 0.3 percent decline during this same time period.

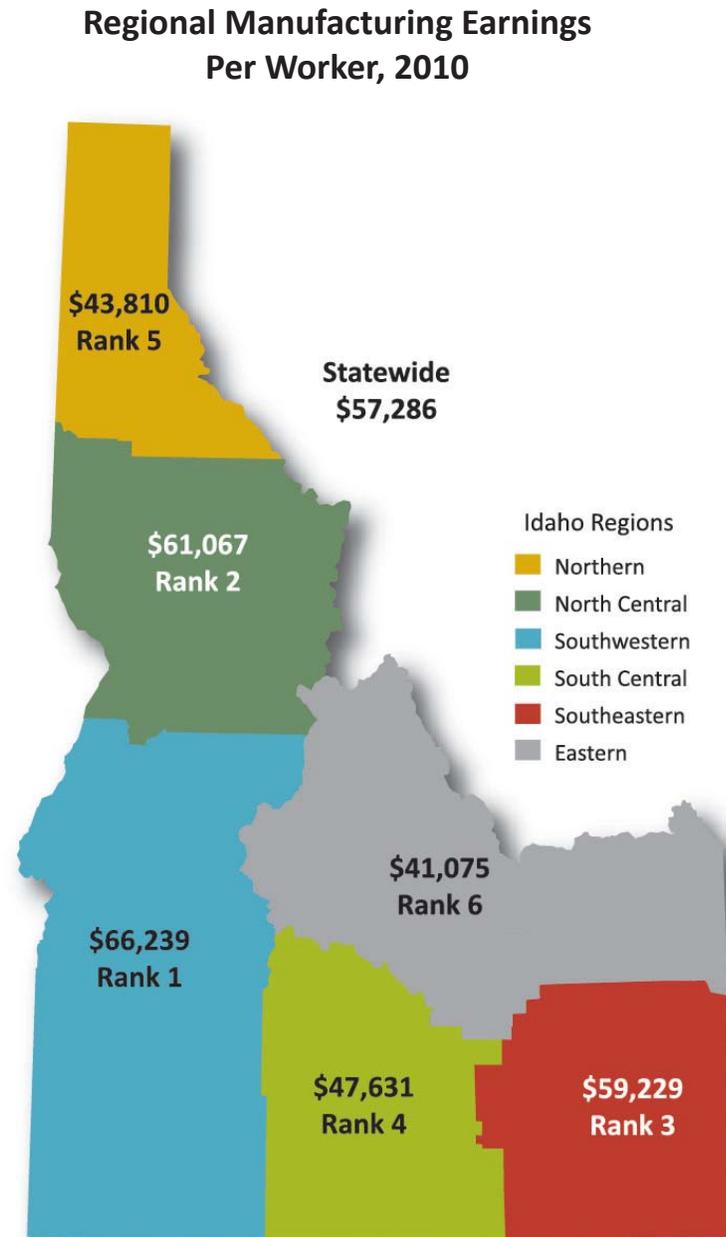
Regional Growth Rate of Manufacturing Employment



Source: EMSI Complete Employment 2011.2

Earnings

Both the southwestern and northern regions of the state had manufacturing earnings higher than the state average of \$57,286. On average manufacturing working in that area earned nearly \$9,000, most likely driven by the earnings in the computer and electronic sector. Eastern and northern Idaho had the lowest earnings per worker in manufacturing, both areas reporting less than \$46,000.



Source: EMSI Complete Employment 2011.2

Only in south central Idaho did average earnings of workers in nondurable manufacturing exceed those in durable manufacturing. Nondurable goods include food, clothing, bedding and canned goods that not intended to last longer than three years. Durable goods include furniture, automobiles, computers, cell phones and all items intended to last for three or more years.

The type of manufacturing varies by region and has an impact on worker earnings. In south-eastern Idaho, for example, average earnings in manufacturing overall of almost \$61,000 masks the fact that workers in durable manufacturing on average earn nearly \$13,300 more while their counterparts in nondurable manufacturing earn nearly \$15,000 less.

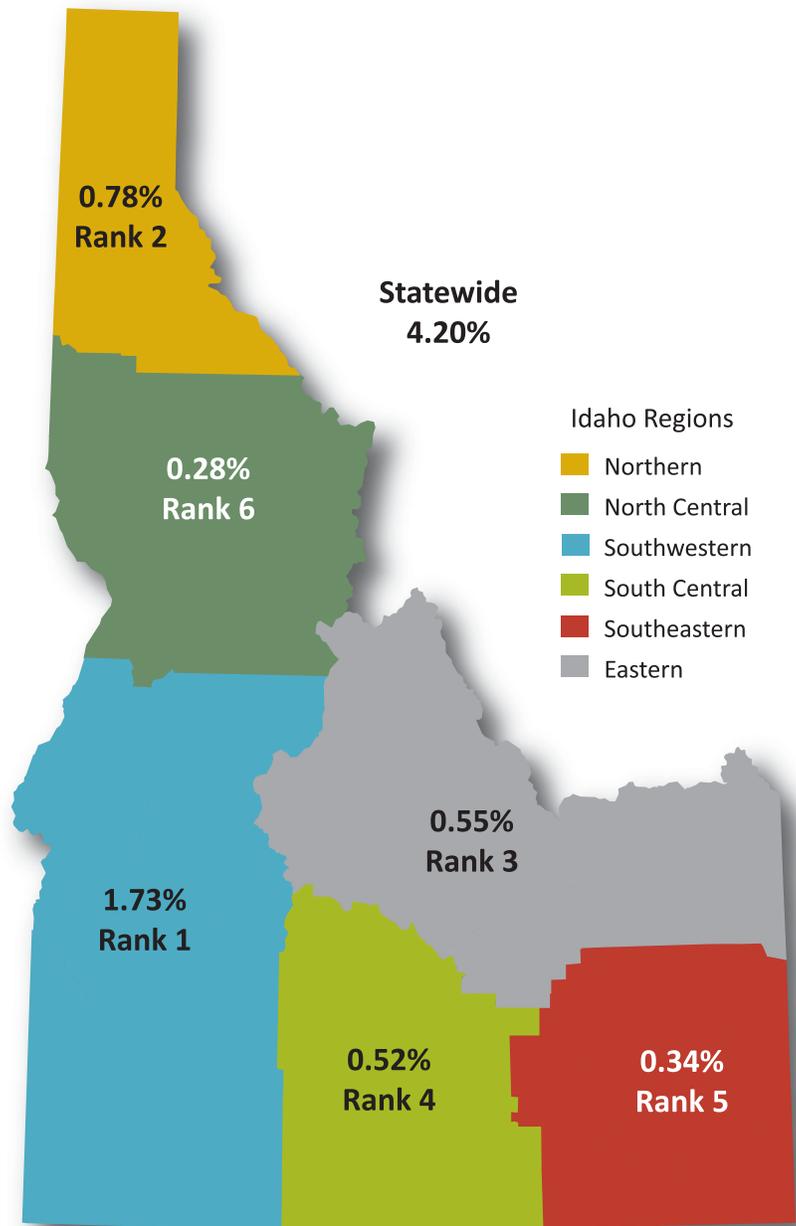


Source: EMSI Complete Employment 2011.2

Establishments

Southwestern Idaho has the highest concentration of manufacturing jobs so it is no surprise that it has the highest concentration of manufacturing establishments. North central Idaho with the lowest concentration of manufacturing jobs also has the lowest concentration of manufacturing establishments at 0.28 percent of the statewide total.

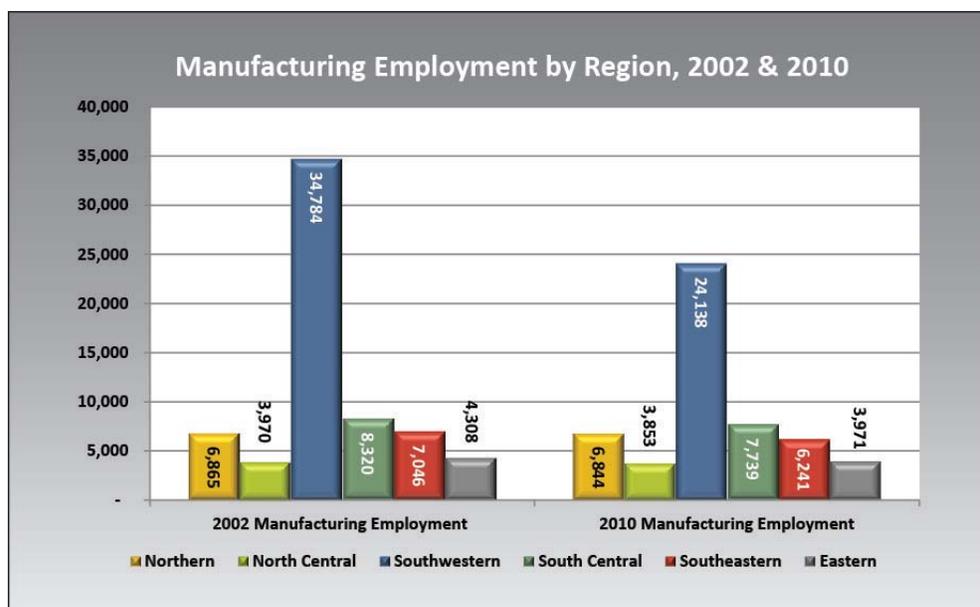
Regional Manufacturing Establishments to Total Employment



Source: EMSI Complete Employment 2011.2

Drivers of Regional Manufacturing

The manufacturing components driving regional employment in that sector differ from region to region and since the 2001 recession.



Source: Idaho Department of Labor Quarterly Census of Employment and Wages 2011

- Northern Idaho experienced the most profound losses in wood products manufacturing, where 1,295 jobs were lost, a 42 percent decline. Still the industry's overall loss from 2002 through 2010 was only 0.3 percent, the smallest loss of any region. Offsetting growth was spread over several manufacturing industries including primary metals, which added 219 jobs; fabricated metals, which added 371 jobs and transportation equipment, which added 265 jobs.
- North central Idaho suffered heavier overall losses with a decline of 739 jobs in the wood products sector leading the way. Overall the region's manufacturing employment fell 2.9 percent, or 116 jobs. Growth offsetting wood products losses came in small arms production, which added 390 jobs – a 55 percent increase.
- Southwestern Idaho saw a 30.6 percent decline in manufacturing from 2002 to 2010. This region is heavily dependent on the computer industry, which shed over 7,000 jobs alone. An additional 1,000 jobs were lost in wood products and 509 in machinery manufacturing. Very few industries added jobs. Chemical manufacturing added 149 and electrical equipment and component manufacturing 135.
- The South Central region lost 7 of its manufacturing employment from 2002 to 2010, primarily because of 500 jobs dropped in food manufacturing. This region also forfeited almost half its printing and related products jobs, losing 137. Gains were seen in the transportation equipment, which contributed 156 jobs.

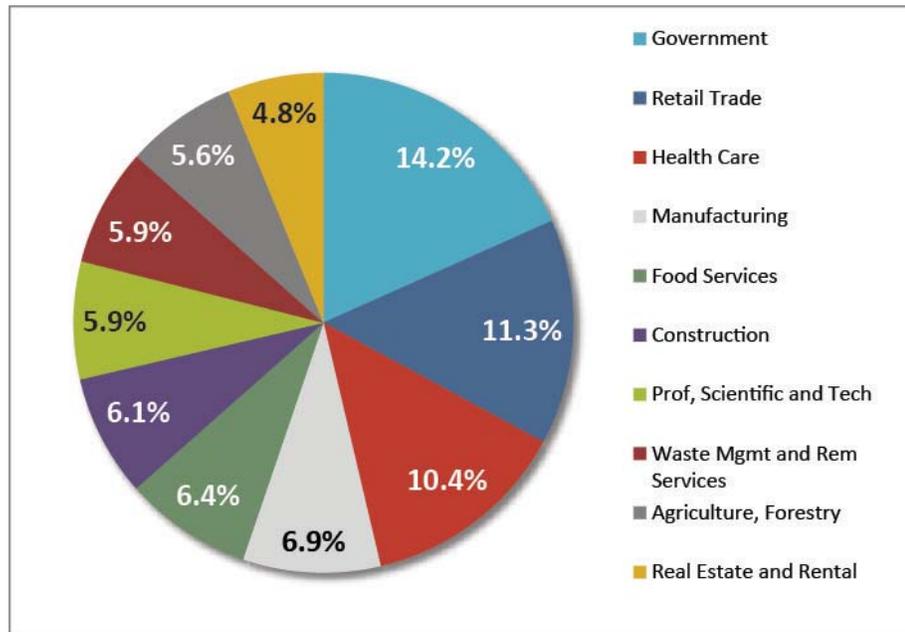
- Southeastern Idaho's 11.4 percent loss of manufacturing jobs was spread over a variety of industries. Most were in the miscellaneous category at just over 300. Computer and electronic product manufacturing lost 200, chemical production 157 and transportation equipment 107. Machinery manufacturing gained 203 jobs, and fabricated metals increased by 91.
- Eastern Idaho's manufacturing sector lost nearly 8 percent of its employment from 2002 to 2010 or 337 jobs. The Printing and Support Industry lost 50 percent of its employment during the study period — 368 jobs. Furniture and Related Products lost 37 percent and Animal Slaughtering dropped 46 percent. This was offset by an increase in the Chemical Manufacturing industry of 42 percent (178 jobs); Plastics and Rubber Manufacturing increased employment as did Miscellaneous Manufacturing.

DEFINING IDAHO'S STRENGTH

The Size of Manufacturing in Idaho

Manufacturing is Idaho's fourth largest economic sector with 58,750 jobs. Despite following the national trend of declining employment, manufacturing remains an important provider of jobs in the state.

Idaho's Economic Sectors by Percentage



Source: EMSI Complete Employment 2011.2

Employment Opportunities Still Exist

Despite decreases in manufacturing, businesses are still hiring qualified employees. The Department of Labor surveyed over 5,000 Idaho businesses to pinpoint vacancies by industry and occupation. In 2010 manufacturing employers identified 83 different occupations with 748 vacancies. A quarter were newly created jobs, 34 percent required education beyond high school and 43 percent required related experience. In 2011, the survey turned up essentially the same situation – 760 vacancies were reported but half were new jobs. Again just over a third, 35 percent required education beyond high school, but 70 percent required related experience, substantially more than a year earlier.

Idaho's Top Five Manufacturing Industries

Food Manufacturing

Food manufacturing is now Idaho's largest manufacturing industry, taking over from computer and electronic product manufacturing in 2008. This industry performed counter cyclically, dropping 10.3 percent of its jobs during 2002 to 2006 when many other manufacturers were adding jobs but adding almost 1,000 jobs from 2007 through 2010 while other manufacturers cut payrolls. This industry is predicted to continue growing into 2018. Its growth during the recession is testament to the stability and long-term viability of Idaho's food industry.

Computer and Electronic Product Manufacturing

The computer industry was the highest paying manufacturing industry in 2010 with average earnings per worker of \$98,593. Computer and electronic product manufacturing began losing employment during the 2001 recession and continued losing jobs, albeit at a far slower rate in the last few years. By 2014, job loss is projected to end. Idaho has not been alone in sustaining declines in this important industry although its percentage loss was greater than any of the surrounding states. Some losses can undoubtedly be attributed to increases in innovation and productivity, but most were not.

Computer and Electronic Product Manufacturing				
State	2002-2006 Growth	Jobs Lost	2007-2010 Growth	Jobs Lost
Oregon	-3.8%	1,685	-15.4%	6,313
Idaho	-7.0%	1,264	-35.3%	5,756
Washington	-14.1%	3,713	-16.2%	3,773
Utah	-5.8%	712	-2.9%	370
Nevada	-12.8%	480	-9.3%	313
Wyoming	-17.3%	70	-34.3%	115
Montana	-5.2%	32	-7.9%	46

Source: EMSI Complete Employment 2011.2

Wood Product Manufacturing

From 2002 to 2006 the wood products manufacturing enjoyed a 9 percent increase in employment as housing boomed. But the recession and the crumbling of the housing market affected the industry greatly. Construction was down so demand for wood products plunged. From 2007 to 2010 there was a 39.8 percent decline in employment – a loss of over 3,300 jobs. These jobs paid an average of \$47,122, which is \$8,022 over Idaho’s all industry average of \$39,100.

Fabricated Metal Product Manufacturing

Fabricated metal production is the fourth largest manufacturing industry in the state, accounting for over 5,500 jobs. Seventy-eight percent of all employers in the industry had payrolls of under 50. This is the largest share of small employers of any of the manufacturing categories. During the recession while other industries were losing a tremendous number of jobs, this industry only lost 365 jobs, about 7 percent. The fabricated metal industry is projected to resume growing into 2018. The sector fits well with Idaho’s affinity towards small businesses. Even nationally, fabricated metal machine shops are often run by small business owners. The ratio of jobs to establishments is less than 22 compared to all manufacturing at over 33.¹³ In Idaho, the ratio of fabricated metal manufacturing jobs to establishments is less than 15 compared to overall manufacturing at 25. During the period before the recession, 2002 to 2006, this sector gained 21.6 percent.

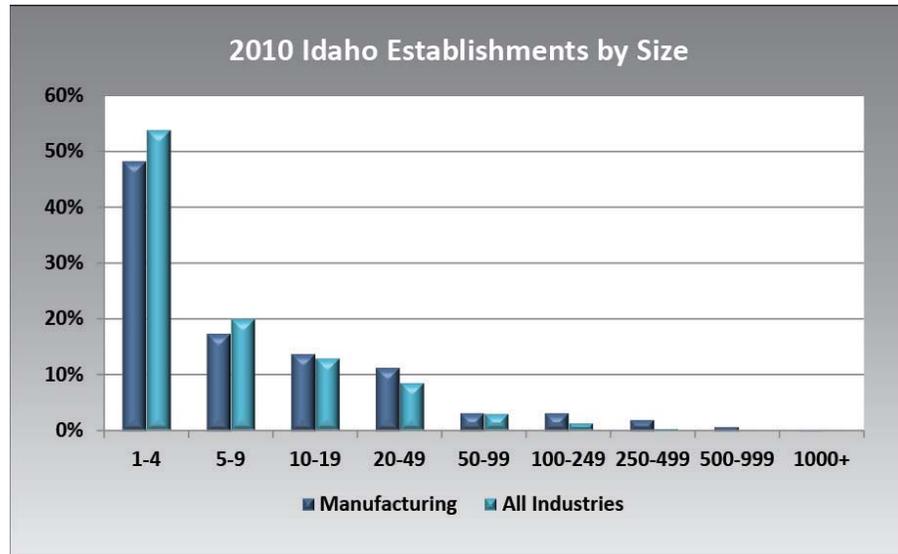
¹³EMSI Complete Employment, 2011.2

Machinery Manufacturing

Machinery Manufacturing is an industry which employs almost three thousand people; our fifth largest manufacturing sector. Prior to the recession this industry gained 115 jobs. During the 2007 to 2010 period the sector lost 467 jobs or -14.2 percent.

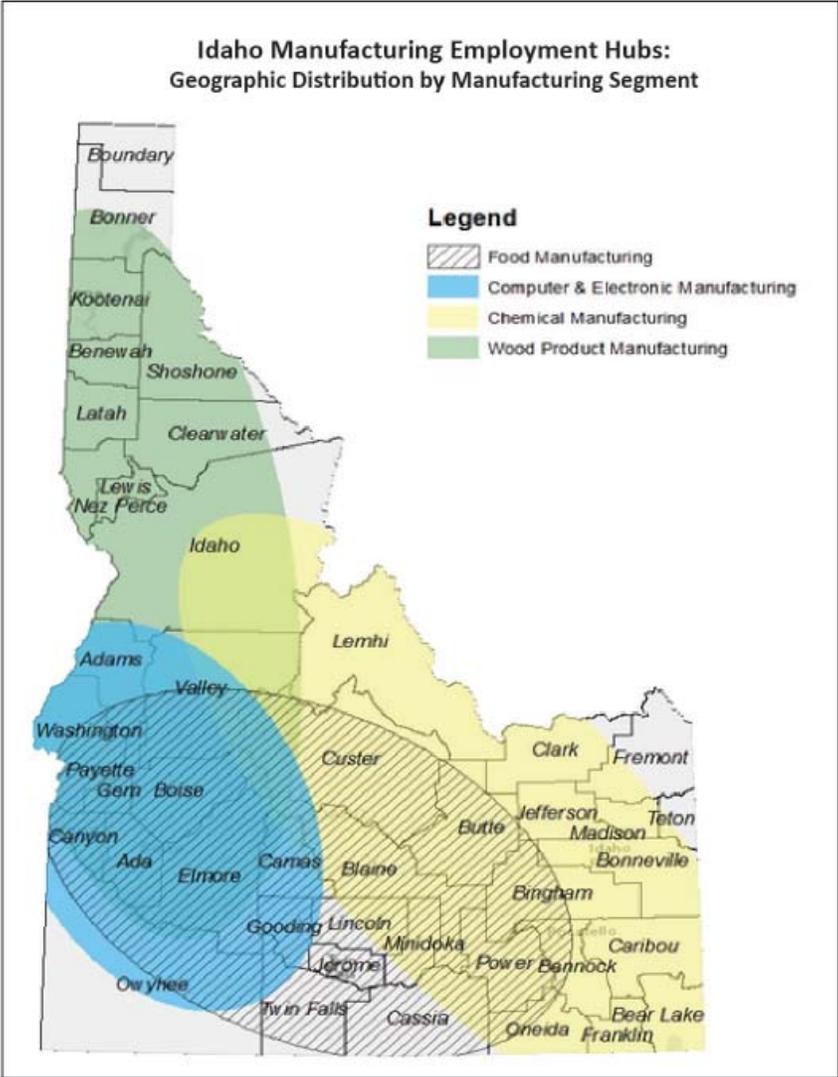
Small Business Owners

Small business owners continue to be a vital part of the state's economy. More than half of the state's manufacturing establishments employed less than 10 people in 2010. Even though individually they employ a small number of people, collectively they provide 4,294 jobs; 8 percent of manufacturing employment.



Source: Idaho Department of Labor Quarterly Census of Employment and Wages, September 2011

The map below helps explain what segments of manufacturing are driving the strongest clusters. Northern and north central Idaho's cluster is being driven by wood products manufacturing. Southwestern Idaho is being driven by a combination of computer and electronic product and food manufacturing. South central is the most diverse with three of the four manufacturing segments driving its cluster. Southeastern and eastern Idaho clusters are dominated by chemical manufacturing and food manufacturing.



Source: Idaho Department of Labor, Quarterly Census of Employment and Wages, September 2011

Twenty-five manufacturing industries posted job growth from 2002 through 2010, adding a total of 3,034 jobs, and 55.6 percent of the increase was food related. Many of the raw materials used in food processing are grown or raised in Idaho, providing for low cost inputs and a stable industry.

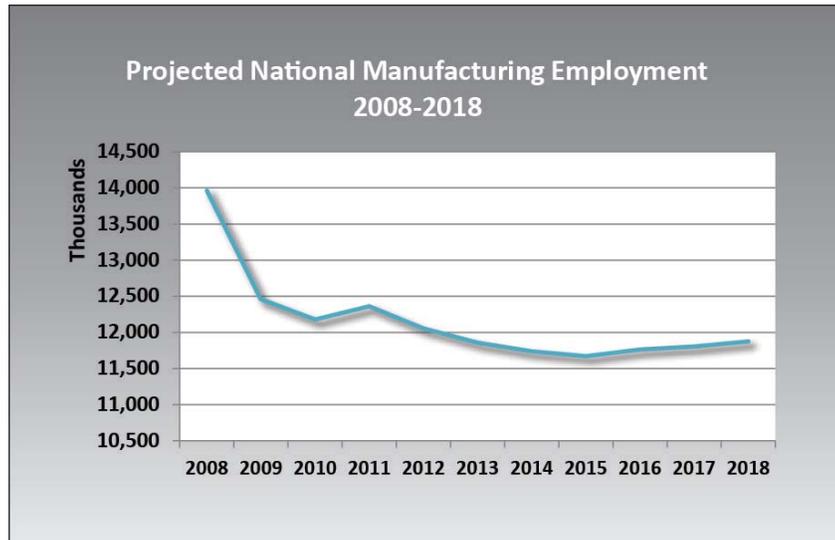
Top Ten Growing Idaho Manufacturing Industries 2002-2010		
NAICS	Industry Name	Rank
311513	Cheese Manufacturing	1
311412	Frozen Specialty Food Mfg.	2
332992	Small Arms Ammunition	3
326111	Plastics Bag and Pouch Mfg.	4
332420	Metal Tank (Heavy Gauge) Mfg.	5
311991	Perishable Prepared Food	6
339950	Sign Manufacturing	7
312130	Wineries	8
332710	Machine Shops	9
311941	Mayonnaise, Dressing and Other Sauces	10

Source: EMSI Complete Employment 2011.2

PROJECTIONS

Nationwide

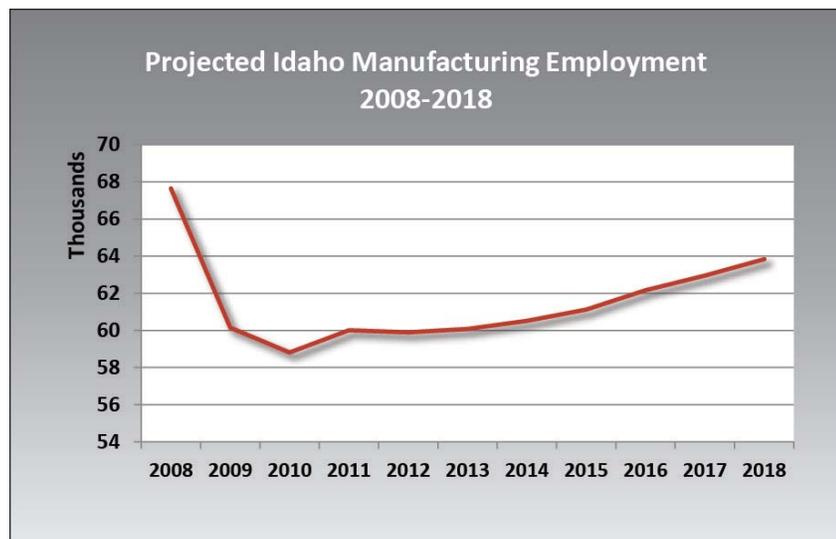
According to EMSI, national manufacturing jobs will continue to decline until 2015, when they will begin to stabilize. Incremental increases are expected from 2015 to 2018 in a wide variety of industries.



Source: EMSI Complete Employment 2011.4

Idaho

Idaho's manufacturing industries have a brighter future than the nation's, regaining a higher percentage of jobs lost during the recession. Idaho's losses were largely in computer and wood products production. Together these two industries lost 5,663 jobs between 2008 and 2010. Increased manufacturing jobs are projected in transportation equipment, machinery, fabricated metal and food production.



Source: EMSI Complete Employment 2011.4

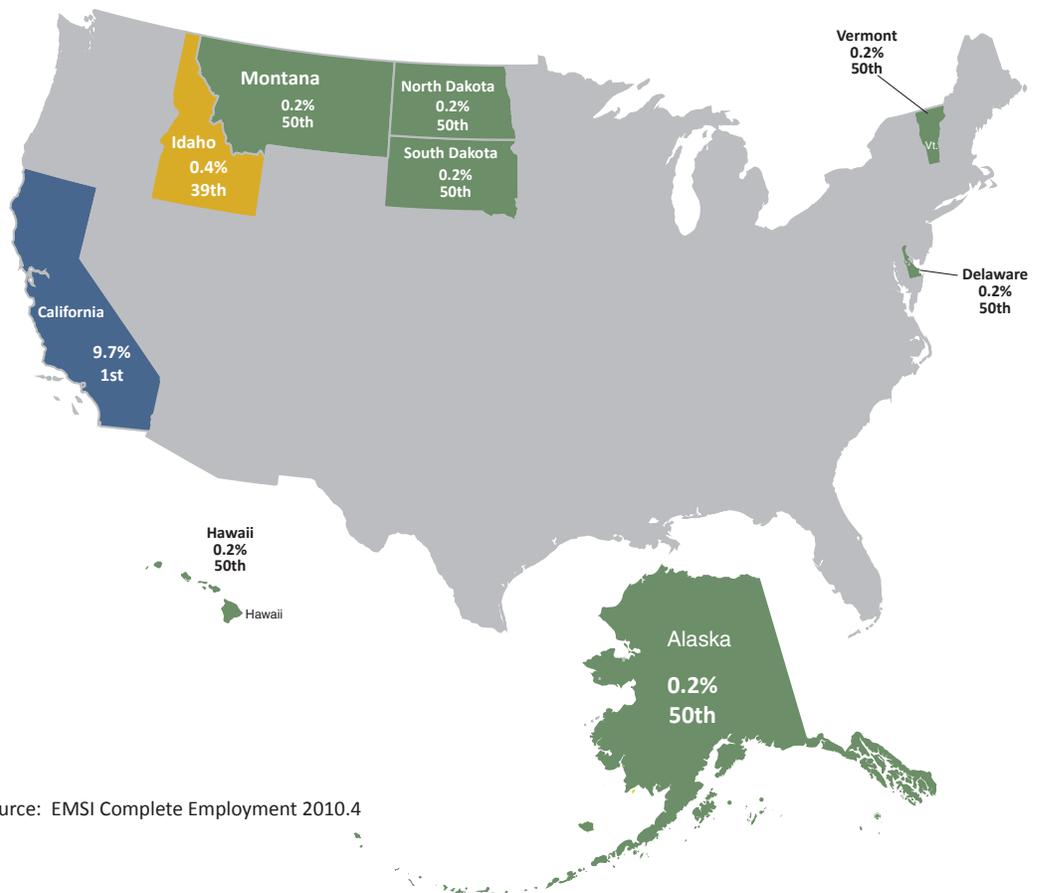
ADVANCED MANUFACTURING OCCUPATIONAL ANALYSIS

While this analysis examined how Idaho manufacturing compared to the rest of the nation, its strengths and where the sector is headed, it cannot determine whether a business uses advanced manufacturing processes or techniques. A more focused look at occupations, keying on the kind of work performed offers a better avenue for exploring advanced manufacturing employment both at the state and national levels. This report, however, does look at advanced manufacturing from the occupation level.¹⁴ These occupations, a subset of manufacturing, tend to have higher productivity potential and greater innovation potential, thus leading to greater job stability for workers.

NATIONAL OCCUPATION ANALYSIS

Share of National Employment

As with all manufacturing, California leads the nation with nearly 10 percent of national employment in advanced manufacturing occupations. Idaho with 0.4 percent of advanced manufacturing occupational employment ranks 39th, slightly lower than the 37th ranking it had with 0.5 percent of all manufacturing employment. Eight states had an advanced manufacturing employment of 0.2 percent or less.



Source: EMSI Complete Employment 2010.4

¹⁴Occupational analysis includes employment regardless of industry attachment.

Relative Size

The highest ratio of advanced manufacturing workers to all workers in a state goes to Indiana at 8.8 percent. In comparison, Idaho's ratio is 4.2 percent, ranking it 36th among the states in concentration of advanced manufacturing jobs. Nationally about 5.1 percent of workers are employed in an advanced manufacturing occupation. Hawaii, which ranks last in its share of the nation's advanced manufacturing jobs, also ranks last in the ratio of advanced manufacturing to all jobs at 2.4 percent.

Compared to the region, four of the six surrounding states have slightly higher concentrations of advanced manufacturing employment than Idaho's 4.2 percent.

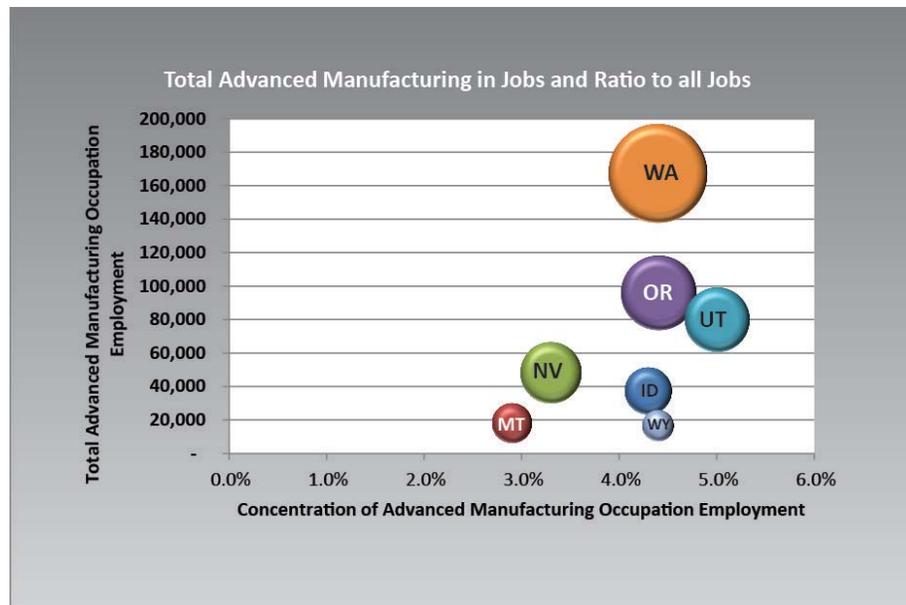
Nationwide the relative ratio of advanced manufacturing to all jobs is 5.1 percent. Idaho, in blue, comes in at 4.2 percent. Of the surrounding states, Washington has the largest number of workers, but the ratio is still just 4.4 percent. Utah in turquoise has the largest ratio at 5 percent.

National Share of Advanced Manufacturing Occupation Employment		
State	Percent	Rank
Washington	1.9%	20
Oregon	1.1%	32
Utah	0.9%	34
Nevada	0.6%	36
Idaho	0.4%	39
Montana	0.2%	48
Wyoming	0.2%	49
National	100%	--

Source: EMSI Complete Employment 2010.4

Concentration of Advanced Manufacturing Occupation Employment		
State	Percent	Rank
National	5.1%	--
Utah	5.0%	21
Washington	4.4%	31
Oregon	4.4%	30
Wyoming	4.4%	33
Idaho	4.2%	36
Nevada	3.3%	47
Montana	2.9%	49

Source: EMSI Complete Employment 2010.4



Source: EMSI Complete Employment 2010.2

Relative Growth

Prior to the recession, Wyoming lead the nation with 22.2 percent growth in advanced manufacturing employment between 2002 and 2006. Idaho was near the top at 8.1 percent growth, ranking 10th. At the same time, advanced manufacturing employment was falling 0.4 percent nationally with Delaware taking the hardest hit at 10.4 percent. Then the recession hit, and advanced manufacturing jobs plunged 12.5 percent between 2007 and 2010. Idaho went from 10th to 33rd with a decline of 12.6 percent. Michigan recorded the worst loss at 20.9 percent. Alaska was the only state to experience growth in advanced manufacturing jobs.

Growth Rate of Advanced Manufacturing Occupation Employment				
State	2002-2006	Rank	2007-2010	Rank
Wyoming	22.2%	1	-4.9%	3
Nevada	20.2%	2	-15.7%	43
Utah	12.1%	6	-9.9%	18
Montana	9.4%	9	-7.4%	11
Idaho	8.1%	10	-12.6%	33
Oregon	6.7%	12	-15.7%	42
Washington	5.9%	15	-8.4%	13
National	-0.4%	NA	-12.5%	--

Source: EMSI Complete Employment 2010.4

From 2002 to 2006 the northwestern states were all ranked in the top 15 in advanced manufacturing growth. Washington had the slowest growth in the region at 5.9 percent. But none of the seven states was immune from the recession's grip. While Wyoming only dropped from first to third in national rankings, its advanced manufacturing employment dropped from 22.2 percent growth to a 4.9 percent loss during the recession and its aftermath. Of the remaining states in the region, Nevada was hardest hit, falling from second in pre-recession growth of 20.2 percent to 43rd in recession decline at 15.7 percent. Only seven other states had larger losses.

Wages

Nationally the median hourly wage for workers employed in advanced manufacturing occupations was \$20.98 in 2010. Alaska, which has the smallest concentration of employment in advanced manufacturing occupations at 0.2 percent, had the highest median wage at \$25.47 per hour. Idaho ranked 36th at \$19.60 an hour. This means Idaho is far from keeping up with the national average for workers in these occupations. But it also means the state has plenty of room for growth in these fields. In fact, 37 of the 42 advanced manufacturing occupations appear on the "High Growth Occupations" list for the state of Idaho. South Dakota has the lowest median annual wage for advanced manufacturing occupations at \$17.18 per hour.

2010 Median Hourly Wage		
State	Wage	Rank
Washington	\$23.81	2
Wyoming	\$21.80	9
Oregon	\$21.32	15
National	\$20.98	--
Nevada	\$20.76	19
Utah	\$19.79	34
Idaho	\$19.60	36
Montana	\$18.25	49

Source: EMSI Complete Employment 2010.4

In the Northwest, Washington led the way with a median wage of \$23.81. Compared to its neighboring states, only Montana's lags behind Idaho in the median hourly wage for workers in advanced manufacturing occupations.

Average median hourly wages in advanced manufacturing occupations for all northwestern states are higher on average than the all occupation wages. Not only are wages for advanced manufacturing higher than all occupations, they are higher than the average wage for manufacturing overall because advanced manufacturing typically requires more skill.



Source: EMSI Complete Employment 2010.4

¹⁵EMSI Complete Employment 2011.2

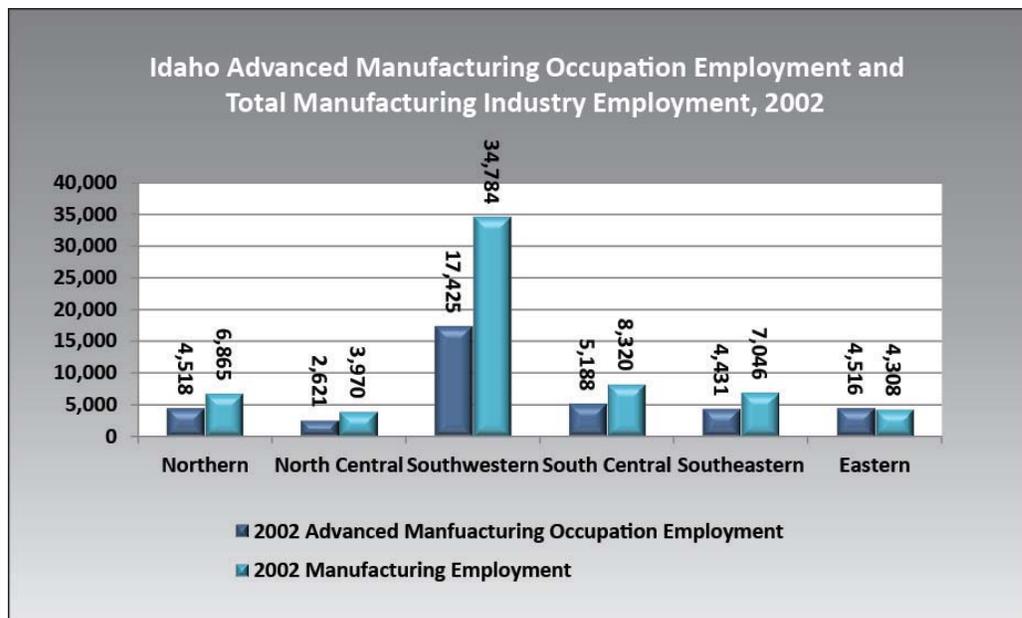
Projected Employment

There were 37,095 people working in advanced manufacturing occupations in 2010. By 2018 that figure is expected to grow to 41,658, a 12.3 percent increase.¹⁵ Overall, manufacturing is projected to lose 2.5 percent of its jobs by 2018, a drastically different picture. Advanced manufacturing occupations offer a worker's best chance for employment security.

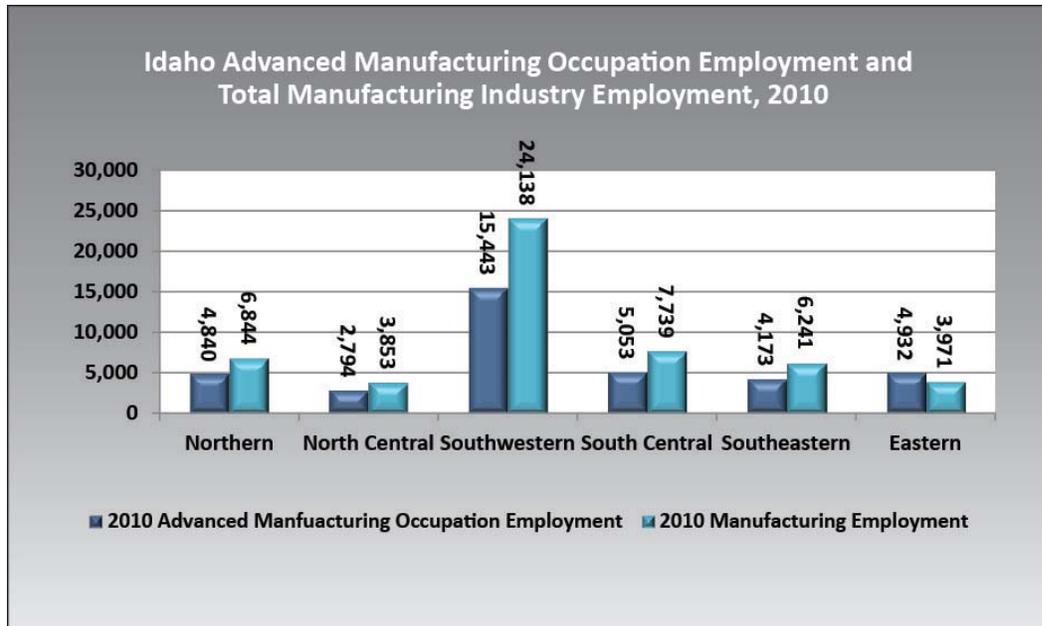
OCCUPATION ANALYSIS - REGIONAL COMPARISON

Although the southwestern region of Idaho consistently employs the largest number workers in advanced manufacturing occupations, it experienced an 11.4 percent decline in advanced manufacturing jobs between 2002 and 2010. North central Idaho grew 6.6 percent over the same years but still employs the smallest numbers of workers in advanced manufacturing occupations. Eastern Idaho experienced the largest growth between 2002 and 2010, 9.2 percent. Although statewide job losses occurred for advanced manufacturing occupations, the losses were less severe than those suffered by the overall manufacturing sector.

All regions posted losses for all manufacturing jobs, and southwestern Idaho had the largest at 30.6 percent. The advanced manufacturing occupations clearly show more stable employment patterns.



Source: EMSI Complete Employment 2010.4 and 2011.2



Source: EMSI Complete Employment 2010.4 and 2011.2

Education and Training, Wages and Employment

Advanced manufacturing occupations typically require additional education and sometimes experience. All but five of the 42 advanced manufacturing occupations were listed on the Idaho Department of Labor’s “High Demand Occupations” list, which ranks occupations by projected annual openings between 2008 and 2010. Additionally, seven jobs made the department’s “Hot Jobs” list¹⁶ – purchasing agents, industrial engineers, maintenance and repair workers, first-line supervisors, team assemblers, machinists and welders.

¹⁷Hot Jobs are those that on average rank high in three major criteria – the abundance of jobs in the economy, jobs which are growing the fastest and jobs with the highest pay.

High Demand Occupations and their Projections				
SOC Code	Occupational Title	Annual Openings	% Change	Median Wage
LONG-RANGE PREPARATION OCCUPATIONS				
Bachelor's Degree				
17-2141	Mechanical Engineers	42	4.04%	\$39.50
17-2112	Industrial Engineers	35	17.98%	n/a
19-2031	Chemists	15	16.90%	\$34.36
17-2131	Materials Engineers	8	22.02%	\$40.52
17-2041	Chemical Engineers	3	14.29%	\$54.95
MID-RANGE PREPARATION OCCUPATIONS				
Associate's Degree				
17-3023	Electrical and Electronic Engineering Technicians	24	-0.56%	\$25.46
17-3026	Industrial Engineering Technicians	15	20.73%	\$20.45
17-3027	Mechanical Engineering Technicians	14	-19.58%	\$23.87
19-4031	Chemical Technicians	5	14.67%	\$14.62
17-3025	Environmental Engineering Technicians	2	10.45%	\$21.94
Work Experience in a Related Occupation				
51-1011	First-Line Supervisors/Managers of Production	81	10.35%	\$21.65
11-3051	Industrial Production Managers	33	9.08%	\$35.12
Vocational Training				
51-4121	Welders, Cutters, Solderers and Brazers	148	18.75%	\$14.44
49-2094	Electrical and Electronics Repairers	7	12.98%	\$23.87
51-4122	Welding, Soldering and Brazing Machine Setters	5	16.84%	\$13.49
Long-Term On-the-Job Training				
51-4041	Machinists	52	21.67%	\$16.83
13-1023	Purchasing Agents	45	24.55%	\$22.49
49-9041	Industrial Machinery Mechanics	43	18.27%	\$19.50
49-9044	Millwrights	9	-6.81%	\$20.30
51-4111	Tool and Die Makers	1	-5.19%	\$25.27

High Demand Occupations and their Projections (cont.)				
SOC Code	Occupational Title	Annual Openings	% Change	Median Wage
SHORT-RANGE PREPARATION OCCUPATIONS				
Moderate-Term On-the-Job Training				
49-9042	General Maintenance and Repair Workers	210	20.92%	\$14.28
51-2092	Team Assemblers	170	21.55%	\$12.45
43-5061	Production, Planning and Expediting Clerks	46	14.52%	\$17.28
51-9061	Inspectors, Testers, Sorters, Samplers & Weighers	33	10.87%	\$12.52
51-4031	Cutting, Punching and Press Machine Setters	16	6.27%	\$14.88
49-9043	Maintenance Workers, Machinery	14	18.90%	\$15.64
51-4011	Computer-Controlled Machine Tool Operators, Metal	12	39.13%	\$15.32
51-4033	Grinding, Lapping, Polishing and Buffing Machine	5	8.79%	\$20.39
51-4022	Forging Machine Setters, Operators and Tenders	2	14.29%	\$9.62
51-4023	Rolling Machine Setters, Operators and Tenders	2	35.14%	\$11.50
51-4034	Lathe and Turning Machine Tool Setters, Operators	1	-1.72%	\$14.57
51-4035	Milling and Planing Machine Setters, Operators	1	-4.29%	\$14.76
51-4081	Multiple Machine Tool Setters, Operators and Tenders	1	2.74%	\$11.02
SHORT PREPARATION OCCUPATIONS				
Short-Term On-the-Job Training				
43-5071	Shipping, Receiving and Traffic Clerks	88	5.63%	\$12.15
51-9111	Packaging & Filling Machine Operators & Tenders	59	6.34%	\$12.59
51-9198	Helpers--Production Workers	47	10.07%	\$12.52
43-5111	Weighers, Measurers and Samplers	7	-2.55%	\$13.66

Source: Idaho Department of Labor 2008 – 2018 Occupation Projections

Advanced Manufacturing Employment Opportunities

According to research conducted by the Department of Labor, job opportunities in advanced manufacturing occupations increased 63.5 percent between 2010 and 2011, jumping from 296 openings to 484 openings. The table below highlights some of the advanced manufacturing occupations with job opportunities identified by Idaho employers:

SOC	Occupation	2010	2011
13-1023	Purchasing Agents	6	22
17-2112	Industrial Engineers	38	19
17-2141	Mechanical Engineers	22	17
17-3026	Industrial Engineering Technicians	1	23
43-5071	Shipping and Receiving Clerks	15	44
51-1011	First-Line Supervisors Workers	21	17
51-4011	Computer-Controlled Machine Tool Operators	1	22
51-4041	Machinists	17	54
51-4121	Welders	32	69
51-9111	Packaging and Filling Machine Operators	5	34
51-9198	Production Workers	40	28

Source: Idaho Department of Labor Job Vacancy Survey Report, 2010, 2011

CONCLUSION

Manufacturing continues to be important to the Idaho economy. Workers in the manufacturing industry make 33.6 percent more than the all-industry average wage. Despite lowered employment, exports are higher than they have ever been, approaching \$6 billion in 2011.¹⁷ Productivity also continues to rise as technological advances continue in this industry.

Advanced manufacturing occupations saw much smaller employment declines at 3.4 percent than the overall industry at 15.9 percent, and the Job Vacancy Survey results support this. In 2010 the total vacancies for advanced manufacturing occupations was 296. In 2011 it rose to 484.¹⁸ These occupations not only provide an employee the best protection from unemployment, they will continue to become more necessary and, therefore, more in demand to employers as technology continues to generate increased productivity.

Small manufacturers are a resource Idaho cannot afford to neglect. With 50 percent of the state's manufacturing establishments employing fewer than 10 people, these small manufacturers need to be made aware of any resources that may be helpful to them. The Idaho Procurement Technical Assistance Center, the Idaho Small Business Development Center, Innovation Research Grants and any other resources available to a particular business should be promoted.

Manufacturing has become increasingly challenging over the years, and Idaho must do everything possible to encourage and support its manufacturers. From the small producer to large semiconductor maker, they are all vital to the economy.

¹⁷www.worldtradestatics.com/state/

¹⁸Idaho Department of Labor, Job Vacancy Study, 2010, 2011

APPENDIX 1: MANUFACTURING VS. ADVANCED MANUFACTURING

Industry Methodology

There is no standard definition of the advanced manufacturing industry. Various studies have selected a wide array of industries and occupations, generally tailored to the given region’s prominent industries. Most definitions focus on the use of technology to improve products and processes. This is not to suggest that advanced manufacturing is synonymous with “high-tech manufacturing” or requires fully automated processes. In 2005, the U.S. Department of Labor, Employment and Training Administration, after much deliberation, came up with the following definition:

Advanced Manufacturing “refers to – and is limited to – activities, processes and job categories centered on the manufacturing plant. The emphasis here is on those activities, processes and job functions that should, and should not, be considered within the scope of the manufacturing plant. For example, in addition to actual production activities, this formulation includes product design, process engineering and software support as well as product packaging, shipping (though not the actual transportation), inventory management and maintenance of capital equipment.”

NAICS Titles	
NAICS	Title
311	Food Manufacturing
312	Beverage and Tobacco Product Manufacturing
313	Textile Mills
314	Textile Product Mills
315	Apparel Manufacturing
316	Leather and Allied Product Manufacturing
321	Wood Product Manufacturing
322	Paper Manufacturing
323	Printing and Related Support Activities
324	Petroleum and Coal Products Manufacturing
325	Chemical Manufacturing
326	Plastics and Rubber Products Manufacturing
327	Nonmetallic Mineral Product Manufacturing
331	Primary Metal Manufacturing
332	Fabricated Metal Product Manufacturing
333	Machinery Manufacturing
334	Computer and Electronic Product Manufacturing
335	Electrical Equipment, Appliance, and Component Manufacturing
336	Transportation Equipment Manufacturing
337	Furniture and Related Product Manufacturing
339	Miscellaneous Manufacturing

APPENDIX 1: MANUFACTURING VS. ADVANCED MANUFACTURING (CONT.)

The Advanced Manufacturing Initiative specifically excluded such functions as market research, sales, accounting and other “back office” activities as well as activities involving raw materials, product transportation, dealerships and aftermarket operations like product repair.¹⁹

This definition excludes 23 industries including NAICS 321 Wood Product Manufacturing, a significant industry in Idaho.

A survey of 12 current advanced manufacturing studies was conducted. Results were varied, however. The more current the study, the more likely it included all manufacturing. The Idaho Department of Labor, like many of the other studies, concluded that all manufacturing industries have the potential to be advanced. Without contacting each manufacturer, it is not possible to determine if a manufacturer is “advanced” simply from NAICS industry code. Therefore, for this study all three digit NAICS manufacturing codes are included.

Occupation methodology

Standard Occupational Classification codes are assigned based on work performed and, in some cases, on the skills, education and training needed to perform the work at a competent level. Examining the work performed at an establishment can show whether a business is likely participating in advanced manufacturing practices. All available advanced manufacturing business scans were surveyed and the most common occupations were chosen for this model. Forty-two stood out again and again. These occupations are retained by companies that use more advanced processes in their manufacturing or participate in manufacturing new products based on innovation from these advanced technologies.

The President’s Council of Advisors on Science and Technology defines advanced manufacturing as:

“A family of activities that (a.) depends on the use and coordination of information, automation, computation, software, sensing and networking, and/or (b.) makes use of cutting edge materials and emerging capabilities enabled by the physical biological sciences, for example nanotechnology, chemistry and biology. This involves both new ways to manufacture existing products and especially the manufacture of new products emerging from new advanced technologies.”²⁰

¹⁹“Advanced Manufacturing Industry Report,. U.S. Department of Labor, Employment and Training (ETA), 2004.

¹⁹<http://www.doleta.gov/brg/pdf/Advanced%20Manufacturing%20Report%2011.1.05.pdf>, p. 10

²⁰“President’s Council of Advisors on Science and Technology. Washington DC: White House (US); 2011 June; p. ii

APPENDIX I: MANUFACTURING VS. ADVANCED MANUFACTURING (CONT.)

The following Standard Occupation Codes are included in this section of the report:

Advanced Manufacturing SOC Codes	
SOC Code	Occupational Title
11-3051	Industrial Production Managers
13-1023	Purchasing Agents, Except Wholesale, Retail and Farm Products
17-2041	Chemical Engineers
17-2112	Industrial Engineers
17-2131	Materials Engineers
17-2141	Mechanical Engineers
17-3023	Electrical and Electronic Engineering Technicians
17-3025	Environmental Engineering Technicians
17-3026	Industrial Engineering Technicians
17-3027	Mechanical Engineering Technicians
19-2031	Chemists
19-4031	Chemical Technicians
43-5061	Production, Planning and Expediting Clerks
43-5071	Shipping, Receiving and Traffic Clerks
43-5111	Weighers, Measurers, Checkers and Samplers, Recordkeeping
49-2094	Electrical and Electronic Engineering Technicians
49-9041	Industrial Machine Mechanics
49-9042	Maintenance and Repair Workers, General
49-9043	Maintenance Workers, Machinery
49-9044	Millwrights
51-1011	First-line Supervisors/Managers of Production and Operating Workers
51-2011	Aircraft Structure, Surfaces, Rigging and Systems Assemblers
51-2092	Team Assemblers
51-4011	Computer-Controlled Machine Tool Operators, Metal and Plastic
51-4012	Numerical Tool and Process Control Programmers
51-4021	Extruding and Drawing Machine Setters, Operators and Tenders, Metal and Plastic
51-4022	Forging Machine Setters, Operators and Tenders, Metal and Plastic
51-4023	Rolling Machine Setters, Operators and Tenders, Metal and Plastic
51-4031	Cutting, Punching and Press Machine Setters, Operators and Tenders, Metal and Plastic
51-4033	Grinding, Lapping, Polishing and Buffing Machine Tool Setters, Operators and Tenders
51-4034	Lathe and Turning Machine Tool Setters, Operators and Tenders, Metal and Plastic
51-4035	Milling and Planning Machine Setters, Operators and Tenders, Metal and Plastic
51-4041	Machinists
51-4081	Multiple Machine Tool Setters, Operators and Tenders, Metal and Plastic
51-4111	Tool and Die Makers
51-4121	Welders, Cutters, Solders and Brazers
51-4122	Welding, Soldering and Brazing Machine Setters, Operators and Tenders
51-4192	Lay-out Workers, Metal and Plastic
51-4193	Plating and Coating Machine Setters, Operators and Tenders, Metal and Plastic
51-9061	Inspectors, Testers, Sorters, Samplers and Weighers
51-9111	Packaging and Filling Machine Operators and Tenders
51-9198	Helpers--Production Workers

APPENDIX 2: MANUFACTURING INDUSTRY EMPLOYMENT COMPARISON STATES & NATION 2010

Employment				Relative Growth						Average Wage						State Establishments		
Ratio of State to Nation			% of State Total		2002-2010 Growth		2002-2006 Growth		2007-2010 Growth		Manufacturing Average Wage 2010		Compared to Nat'l Mfg Average		Compared to State Avg for All Jobs		Mfg as % of Total	
State	Ratio	Rank	Percent	Rank	Percent	Rank	Percent	Rank	Percent	Rank	State Avg	Rank	Difference	Rank	Difference	Rank	Percent	Rank
National	100.0%	—	7.0%	—	-23.4%	—	-6.7%	—	-16.7%	—	\$69,877	—	\$0	—	\$18,699	—	4.0%	—
Alabama	2.0%	19	10.0%	47	-22.4%	25	-1.5%	17	-19.6%	42	\$58,911	38	(\$10,966)	38	\$14,857	34	4.5%	15
Alaska	0.1%	49	3.2%	6	12.1%	1	15.0%	2	-3.9%	1	\$46,945	50	(\$22,932)	50	(\$9,559)	50	2.6%	46
Arizona	1.3%	28	5.1%	38	-17.4%	16	2.4%	9	-17.9%	32	\$74,872	9	\$4,995	9	\$26,754	5	3.4%	35
Arkansas	1.4%	27	10.8%	3	-24.6%	33	-6.8%	30	-15.3%	24	\$49,120	48	(\$20,757)	48	\$8,063	47	4.0%	26
California	11.0%	1	6.7%	29	-23.1%	28	-8.2%	33	-14.5%	19	\$85,803	4	\$15,926	4	\$27,793	4	3.5%	32
Colorado	1.1%	31	4.4%	42	-22.5%	26	-9.2%	34	-14.1%	16	\$71,856	14	\$1,979	14	\$20,477	16	3.2%	36
Connecticut	1.4%	25	8.1%	18	-20.7%	21	-7.8%	32	-13.2%	9	\$89,504	2	\$19,627	2	\$24,438	7	4.5%	14
Delaware	0.2%	45	5.3%	37	-32.0%	48	-15.2%	50	-19.9%	46	\$72,147	12	\$2,270	12	\$19,122	19	2.3%	50
Florida	2.8%	12	3.5%	44	-21.3%	23	-0.1%	14	-19.5%	39	\$63,285	24	(\$6,592)	24	\$18,167	24	3.0%	41
Georgia	3.0%	11	7.0%	27	-25.2%	35	-3.7%	22	-19.8%	44	\$60,301	36	(\$9,576)	36	\$12,990	39	4.0%	25
Hawaii	0.1%	48	2.0%	50	-12.0%	10	-0.5%	15	-14.8%	22	\$48,788	49	(\$21,089)	49	(\$770)	49	2.6%	45
Idaho	0.5%	37	6.7%	30	-15.9%	15	2.4%	8	-18.8%	36	\$57,286	39	(\$12,591)	39	\$18,186	22	4.2%	20
Illinois	4.8%	5	8.0%	20	-25.5%	36	-9.3%	35	-17.2%	30	\$71,627	15	\$1,750	15	\$17,620	26	5.3%	6
Indiana	3.8%	8	13.1%	1	-24.0%	32	-3.7%	23	-19.0%	38	\$68,109	16	(\$1,768)	16	\$24,364	8	5.6%	4
Iowa	1.7%	23	10.6%	4	-11.9%	9	1.8%	10	-13.1%	7	\$60,268	37	(\$9,609)	37	\$18,071	25	4.4%	17
Kansas	1.4%	26	9.2%	10	-11.3%	8	1.1%	11	-13.9%	14	\$62,262	27	(\$7,615)	27	\$17,492	28	3.8%	27
Kentucky	1.8%	21	9.3%	9	-23.7%	31	-4.9%	27	-18.2%	34	\$61,958	29	(\$7,919)	29	\$18,263	21	4.1%	21
Louisiana	1.2%	29	5.8%	34	-13.3%	13	-4.8%	26	-12.2%	5	\$74,826	10	\$4,949	10	\$28,282	2	3.6%	29
Maine	0.5%	38	7.0%	28	-23.5%	29	-10.7%	40	-13.9%	15	\$54,970	42	(\$14,907)	42	\$14,060	35	3.7%	28
Maryland	1.0%	33	3.7%	43	-24.8%	34	-12.2%	44	-11.9%	4	\$77,729	6	\$7,852	6	\$21,803	13	2.4%	48
Massachusetts	2.2%	17	6.5%	31	-26.1%	38	-13.4%	47	-13.8%	13	\$86,142	3	\$16,265	3	\$23,833	10	3.5%	31
Michigan	4.1%	6	9.9%	7	-36.8%	50	-13.7%	48	-23.9%	50	\$75,932	8	\$6,055	8	\$27,890	3	5.9%	2
Minnesota	2.5%	14	9.0%	11	-17.6%	17	-2.8%	20	-14.4%	18	\$67,860	17	(\$2,017)	17	\$18,610	20	5.4%	5
Mississippi	1.2%	30	9.6%	8	-26.6%	39	-6.3%	29	-19.0%	37	\$52,719	45	(\$17,158)	45	\$12,579	40	2.3%	49
Missouri	2.1%	18	7.3%	22	-23.6%	30	-4.4%	25	-18.4%	35	\$62,129	28	(\$7,748)	28	\$17,253	30	4.1%	23
Montana	0.2%	47	3.2%	46	-14.5%	14	0.9%	12	-17.2%	31	\$51,735	46	(\$18,142)	46	\$13,434	37	3.2%	38
Nebraska	0.8%	35	7.9%	21	-12.4%	11	-3.2%	21	-9.5%	2	\$53,065	44	(\$16,812)	44	\$9,981	44	3.4%	34
Nevada	0.3%	41	2.9%	48	-8.7%	7	17.5%	1	-23.1%	49	\$64,069	21	(\$5,808)	21	\$15,757	33	2.8%	43
New Hampshire	0.6%	36	8.6%	15	-21.4%	24	-7.1%	31	-15.2%	23	\$71,975	13	\$2,098	13	\$22,091	11	4.5%	13
New Jersey	2.2%	16	5.5%	36	-28.3%	43	-10.9%	41	-17.1%	29	\$91,501	1	\$21,624	1	\$29,587	1	4.1%	24
New Mexico	0.3%	43	3.3%	45	-21.1%	22	-1.6%	19	-19.8%	45	\$56,650	41	(\$13,227)	41	\$12,285	41	3.0%	40
New York	4.0%	7	4.5%	41	-28.5%	44	-12.3%	45	-17.0%	28	\$72,524	11	\$2,647	11	\$8,223	46	3.5%	33
North Carolina	3.7%	9	8.8%	14	-31.9%	47	-13.2%	46	-19.6%	41	\$62,321	26	(\$7,556)	26	\$17,242	31	4.6%	9
North Dakota	0.2%	46	4.8%	40	-4.2%	4	9.6%	3	-13.2%	10	\$54,914	43	(\$14,963)	43	\$12,199	42	3.1%	39
Ohio	5.3%	3	10.1%	5	-29.3%	46	-9.5%	37	-19.7%	43	\$66,508	19	(\$3,369)	19	\$20,828	15	5.9%	3
Oklahoma	1.1%	32	6.1%	33	-18.4%	19	-1.6%	18	-18.1%	33	\$57,149	40	(\$12,728)	40	\$13,238	38	4.5%	12
Oregon	1.4%	24	8.0%	19	-17.8%	18	2.9%	7	-19.5%	40	\$66,063	20	(\$3,814)	20	\$20,841	14	4.6%	10
Pennsylvania	4.9%	4	8.3%	16	-25.5%	37	-11.2%	42	-14.7%	21	\$66,529	18	(\$3,348)	18	\$16,020	32	4.5%	11
Rhode Island	0.4%	40	7.3%	24	-34.1%	49	-15.0%	49	-20.1%	47	\$61,337	31	(\$8,540)	31	\$10,722	43	5.3%	7
South Carolina	1.8%	22	8.9%	12	-27.8%	42	-12.0%	43	-16.8%	27	\$60,359	35	(\$9,518)	35	\$19,213	18	4.4%	18
South Dakota	0.3%	42	7.0%	26	-3.9%	3	8.0%	6	-12.5%	6	\$49,854	47	(\$20,023)	47	\$9,916	45	3.6%	30
Tennessee	2.6%	13	8.9%	13	-29.0%	45	-6.0%	28	-21.0%	48	\$63,465	23	(\$6,412)	23	\$18,169	23	4.9%	8
Texas	7.1%	2	6.2%	32	-13.2%	12	-1.2%	16	-13.3%	11	\$76,104	7	\$6,227	7	\$23,964	9	4.1%	22
Utah	1.0%	34	7.3%	23	-1.8%	2	8.5%	5	-13.1%	8	\$60,478	34	(\$9,399)	34	\$17,566	27	4.5%	16
Vermont	0.3%	44	8.1%	17	-22.9%	27	-10.4%	38	-14.2%	17	\$63,691	22	(\$6,186)	22	\$22,012	12	4.4%	19
Virginia	2.0%	20	5.1%	39	-26.9%	40	-9.5%	36	-16.7%	26	\$61,793	30	(\$8,084)	30	\$6,334	48	2.7%	44
Washington	2.2%	15	7.2%	25	-8.4%	6	0.6%	13	-11.9%	3	\$78,686	5	\$8,809	5	\$25,281	6	3.2%	37
West Virginia	0.4%	39	5.7%	35	-27.4%	41	-10.6%	39	-16.6%	25	\$62,364	25	(\$7,513)	25	\$19,216	17	2.9%	42
Wisconsin	3.7%	10	12.9%	2	-18.5%	20	-3.8%	24	-14.7%	20	\$61,266	32	(\$8,611)	32	\$17,429	29	6.3%	1
Wyoming	0.1%	50	2.7%	49	-5.7%	5	8.7%	4	-13.6%	12	\$61,116	33	(\$8,761)	33	\$13,838	36	2.5%	47

Source: EMSI Complete Employment - 2nd Quarter 2011

APPENDIX 3: MANUFACTURING INDUSTRY EMPLOYMENT COMPARISON NORTHWESTERN STATES 2010

Employment				Relative Growth						Average Wage						Establishments		
Ratio of State to Nation 2010		% of State Total		2002-2010 Growth		2002-2006 Growth		2007-2010 Growth		Manufacturing Average Wage 2010		Compared to Nat'l Mfg Average		Compared to State Avg for All Jobs		Mfg as % of Total		
State	2010 ratio	Rank	Percent	Rank	Percent	Rank	Percent	Rank	Percent	Rank	2010 EPW	Rank	2010 ratio	Rank	Percent	Rank	Percent	Rank
National	100.0%	NA	7.0%	NA	-23.4%	NA	6.7%	NA	-16.7%	NA	\$69,877	NA	100.0%	NA	136.5%	NA	4.0%	NA
Idaho	0.5%	37	6.7%	30	-15.9%	15	2.4%	8	-18.8%	36	\$57,286	39	82.0%	39	146.5%	10	4.2%	20
Montana	0.2%	47	3.2%	46	-14.5%	14	0.9%	12	-17.2%	31	\$51,735	46	74.0%	46	135.1%	31	3.2%	38
Nevada	0.3%	41	2.9%	48	-8.7%	7	17.5%	1	-23.9%	50	\$64,069	21	91.7%	21	132.6%	35	2.8%	43
Oregon	1.4%	24	8.0%	19	-17.8%	18	2.9%	7	-19.5%	40	\$66,063	20	94.5%	20	146.1%	11	4.6%	10
Utah	1.0%	34	7.3%	23	-1.8%	2	8.5%	5	-13.1%	8	\$60,478	34	86.5%	34	140.9%	18	4.5%	16
Washington	2.2%	15	7.2%	25	-8.4%	6	0.6%	13	-11.9%	3	\$61,116	33	112.6%	5	129.3%	39	3.2%	37
Wyoming	0.1%	50	2.7%	49	-5.7%	5	8.7%	4	-13.6%	12	\$78,686	5	87.5%	33	147.3%	8	2.5%	47

Source: EMSI Complete Employment 2011.2

Third Quarter 2011 Cost of Living								
State	Rank	Composite Index	Grocery Items	Housing	Utilities	Transportation	Health Care	Misc Goods & Services
Utah	5	90.9	95.1	81.3	87.6	95.0	88.7	97.9
Idaho	6	91.1	94.7	79.7	92.6	101.1	95.3	95.6
Nevada	18	95.3	101.6	87.8	88.2	101.3	103.7	98.6
Wyoming	21	95.7	105.1	93.2	90.0	93.3	95.0	96.8
Montana	31	99.7	109.0	94.8	90.6	100.7	103.3	102.4
Washington	33	101.2	103.4	101.2	88.7	105.3	112.8	101.5
Oregon	38	108.0	100.6	118.5	94.9	112.8	113.4	103.7

Source: MERIC: Missouri Economic Research and Information Center, 3rd Quarter 2011

APPENDIX 4: MANUFACTURING INDUSTRY EMPLOYMENT COMPARISON IDAHO REGIONS 2010

Employment			Relative Growth						Average Wages				Establishments		Population					
Area	% of All Idaho Mfg Jobs		% of All Regional Jobs		Rate of Growth 2002-2010		Rate of Growth 2002-2006		Rate of Growth 2007-2010		Avg Manufacturing Wage		Compared to Avg State Mfg Wage		Compared to Avg for All Jobs in Region		Mfg as % of All Regional Establishments		Percentage of Population by Region	
	Percent	Rank	Percent	Rank	Percent	Rank	Percent	Rank	Percent	Rank	Region Avg	Rank	Percent	Rank	Percent	Rank	Percent	Rank	Percent	Rank
Statewide	100.0%	NA	6.7%	NA	-15.9%	NA	2.4%	NA	-18.8%	NA	\$57,286	NA	100.0%	NA	136.5%	NA	4.2%	NA	100.0%	NA
Eastern	7.9%	5	4.0%	6	-6.1%	4	14.7%	2	-21.1%	5	\$41,075	6	103.0%	6	103.0%	6	4.1%	4	13.2%	3
North Central	7.4%	6	7.0%	4	-2.0%	2	0.9%	3	-6.9%	2	\$61,067	2	168.2%	1	168.2%	3	4.2%	2	6.7%	6
Northern	13.5%	3	7.1%	3	0.5%	1	18.0%	1	-16.2%	4	\$43,810	5	126.7%	5	126.7%	5	5.2%	1	13.5%	2
South Central	14.2%	2	7.7%	2	-26.8%	6	-1.7%	5	-5.5%	1	\$47,631	4	131.4%	4	131.4%	4	3.8%	6	11.9%	4
Southeastern	11.6%	4	8.0%	1	-4.8%	3	-2.8%	6	-8.4%	3	\$59,229	3	164.7%	2	164.7%	2	4.1%	5	10.6%	5
Southwestern	45.4%	1	6.9%	5	-7.5%	5	-0.3%	4	-26.1%	6	\$66,239	1	157.0%	3	157.0%	1	4.1%	3	44.0%	1

Source: EMSI Compete Employment - 2011.2

APPENDIX 5: ADVANCED MANUFACTURING OCCUPATION COMPARISON STATES & NATION 2010

Employment					Relative Growth				Median Wages					
Ratio of State to nation			% of State Total		2002-2006 Growth		2007-2010 Growth		Adv Mfg Median Hourly Wage		Adv Mfg Median Wage as % of Median Wage for All Jobs		Wage At 10th Percentile	
State	Percent	Rank	Percent	Rank	Percent	Rank	Percent	Rank	Wage	Rank	Percent	Rank	Wage	Rank
National	100.0%	NA	5.1%	NA	-0.4%	NA	-12.5%	NA	\$20.98	NA	119.1%	NA	\$13.32	NA
Alabama	1.9%	21	6.6%	7	7.1%	11	-13.2%	36	\$19.32	41	119.7%	23	\$12.74	41
Alaska	0.2%	50	3.1%	48	9.9%	8	3.6%	1	\$25.47	1	120.9%	15	\$15.69	1
Arizona	1.7%	23	4.7%	27	10.9%	7	-14.1%	37	\$20.10	30	117.6%	30	\$13.00	33
Arkansas	1.2%	31	6.7%	6	-2.2%	37	-11.9%	28	\$18.30	48	119.0%	24	\$12.13	49
California	9.7%	1	4.3%	35	-1.5%	33	-12.1%	29	\$22.12	7	109.2%	46	\$14.17	9
Colorado	1.2%	29	3.5%	43	1.3%	23	-10.2%	21	\$21.57	12	118.2%	26	\$14.12	12
Connecticut	1.3%	28	5.2%	20	-4.2%	42	-10.7%	25	\$22.93	4	111.0%	44	\$15.04	3
Delaware	0.2%	44	4.0%	40	-10.4%	50	-12.4%	30	\$23.28	3	115.4%	39	\$14.54	7
Florida	3.8%	8	3.4%	45	5.9%	16	-17.7%	49	\$18.85	46	113.3%	43	\$12.16	48
Georgia	2.9%	12	4.9%	24	2.6%	19	-16.4%	48	\$19.15	43	113.4%	42	\$12.76	40
Hawaii	0.2%	46	2.4%	50	13.2%	4	-6.3%	4	\$21.79	10	120.7%	18	\$13.84	16
Idaho	0.4%	39	4.3%	36	8.1%	10	-12.6%	33	\$19.60	36	124.3%	6	\$12.83	39
Illinois	4.7%	5	5.6%	14	-3.7%	39	-14.2%	39	\$21.03	16	114.0%	41	\$13.66	21
Indiana	3.5%	9	8.8%	1	-1.2%	31	-16.1%	44	\$20.25	29	124.9%	4	\$13.49	25
Iowa	1.4%	25	6.4%	10	5.5%	17	-10.1%	20	\$19.87	33	127.1%	1	\$13.40	27
Kansas	1.2%	30	5.7%	13	2.2%	20	-11.5%	26	\$20.62	24	124.8%	5	\$13.49	24
Kentucky	1.8%	22	6.6%	9	1.9%	21	-14.2%	38	\$19.57	38	120.5%	19	\$12.89	38
Louisiana	1.5%	24	5.3%	19	0.5%	28	-7.1%	7	\$20.62	23	121.7%	13	\$12.96	36
Maine	0.4%	40	4.4%	32	-4.5%	43	-7.3%	9	\$20.73	21	126.8%	2	\$13.98	14
Maryland	1.3%	27	3.4%	44	-1.0%	30	-6.7%	5	\$22.82	5	116.8%	34	\$14.84	5
Massachusetts	2.0%	18	4.3%	34	-6.3%	47	-10.2%	22	\$22.61	6	105.8%	49	\$14.85	4
Michigan	4.3%	7	7.6%	3	-9.8%	49	-20.9%	50	\$21.76	11	121.4%	14	\$14.16	10
Minnesota	2.1%	17	5.4%	17	1.0%	24	-10.0%	19	\$21.42	13	117.1%	33	\$14.68	6
Mississippi	1.0%	33	6.0%	12	0.9%	25	-14.5%	41	\$18.39	47	122.9%	10	\$12.30	45
Missouri	2.1%	16	5.4%	18	0.7%	26	-13.0%	35	\$20.37	27	121.8%	12	\$13.24	29
Montana	0.2%	48	2.9%	49	9.4%	9	-7.4%	11	\$18.25	49	118.0%	27	\$11.50	50
Nebraska	0.7%	35	4.8%	26	1.4%	22	-8.1%	12	\$18.98	45	117.3%	32	\$12.47	42
Nevada	0.6%	36	3.3%	47	20.2%	2	-15.7%	43	\$20.76	19	123.2%	8	\$13.72	19
New Hampshire	0.4%	38	4.7%	28	-1.7%	34	-10.4%	24	\$20.66	22	116.3%	37	\$14.13	11
New Jersey	2.3%	14	4.0%	38	-5.2%	46	-11.9%	27	\$21.97	8	106.5%	48	\$14.03	13
New Mexico	0.4%	41	3.3%	46	6.6%	13	-9.2%	14	\$19.97	31	117.8%	28	\$12.98	34
New York	4.6%	6	3.7%	42	-4.7%	44	-9.5%	15	\$21.37	14	102.9%	50	\$13.75	18
North Carolina	3.3%	10	5.6%	16	-3.4%	38	-14.4%	40	\$19.42	40	115.1%	40	\$12.97	35
North Dakota	0.2%	43	4.2%	37	13.2%	5	-3.7%	2	\$19.14	44	117.4%	31	\$12.29	46
Ohio	5.2%	3	7.1%	5	-4.9%	45	-16.1%	45	\$20.73	20	119.9%	21	\$13.57	22
Oklahoma	1.4%	26	5.6%	15	3.6%	18	-12.4%	32	\$19.27	42	123.7%	7	\$12.46	43
Oregon	1.1%	32	4.4%	30	6.7%	12	-15.7%	42	\$21.32	15	117.7%	29	\$14.37	8
Pennsylvania	4.9%	4	6.0%	11	-4.0%	40	-10.3%	23	\$21.01	18	120.4%	20	\$13.84	15
Rhode Island	0.3%	42	4.9%	23	-7.8%	48	-16.3%	47	\$20.43	26	106.7%	47	\$13.55	23
South Carolina	2.0%	19	7.2%	4	-1.8%	35	-12.4%	31	\$19.92	32	126.2%	3	\$13.23	30
South Dakota	0.2%	45	3.7%	41	13.5%	3	-7.4%	10	\$17.18	50	118.7%	25	\$12.39	44
Tennessee	2.7%	13	6.6%	8	-1.5%	32	-16.2%	46	\$19.53	39	123.1%	9	\$12.95	37
Texas	8.1%	2	5.0%	22	6.5%	14	-7.0%	6	\$20.55	25	116.7%	35	\$13.14	32
Utah	0.9%	34	5.0%	21	12.1%	6	-9.9%	18	\$19.79	34	122.8%	11	\$13.20	31
Vermont	0.2%	47	4.7%	29	-4.0%	41	-9.6%	17	\$19.59	37	116.3%	38	\$13.39	28
Virginia	2.2%	15	4.0%	39	0.6%	27	-9.6%	16	\$21.02	17	110.4%	45	\$13.76	17
Washington	1.9%	20	4.4%	31	5.9%	15	-8.4%	13	\$23.81	2	116.5%	36	\$15.67	2
West Virginia	0.5%	37	4.8%	25	-1.9%	36	-7.1%	8	\$19.60	35	120.7%	17	\$12.18	47
Wisconsin	3.0%	11	7.6%	2	0.1%	29	-12.6%	34	\$20.27	28	120.8%	16	\$13.72	20
Wyoming	0.2%	49	4.4%	33	22.2%	1	-4.9%	3	\$21.80	9	119.8%	22	\$13.44	26

Source: EMSI Complete Employment 2010.4

APPENDIX 6: ADVANCED MANUFACTURING INDUSTRY OCCUPATION COMPARISON NORTHWESTERN STATES 2010

Employment				Relative Growth				Wages						
Ratio of State to Nation		% of State Total		Growth 2002-2006		Growth 2007-2010		Adv Mfg 2010 Median Hourly Wage		Adv Mfg Median Wage as % of Median for all Jobs		Wage At 10th Percentile		
State	Percent	Rank	Percent	Rank	Percent	Rank	Percent	Rank	Wage	Rank	Percent	Rank	10 Pct	Rank
National	100%	NA	5.1%	NA	-0.4%	NA	-12.5%	NA	\$20.98	NA	119.1%	NA	\$13.32	NA
Idaho	0.4%	39	4.2%	36	8.1%	10	-12.6%	33	\$19.60	36	124.3%	6	\$12.83	39
Montana	0.2%	48	2.9%	49	9.4%	9	-7.4%	11	\$18.25	49	118.0%	27	\$11.50	50
Nevada	0.6%	36	3.3%	47	20.2%	2	-15.7%	43	\$20.76	19	123.2%	8	\$13.72	19
Oregon	1.1%	32	4.4%	30	6.7%	12	-15.7%	42	\$21.32	15	117.7%	29	\$14.37	8
Utah	0.9%	34	5.0%	21	12.1%	6	-9.9%	18	\$19.79	34	122.8%	11	\$13.20	31
Washington	1.9%	20	4.4%	31	5.9%	15	-8.4%	13	\$23.81	2	116.5%	36	\$15.67	2
Wyoming	0.2%	49	4.4%	33	22.2%	1	-4.9%	3	\$21.80	9	119.8%	22	\$13.44	26

Source: EMSI Complete Employment 2010.4

APPENDIX 7: ADVANCED MANUFACTURING INDUSTRY OCCUPATION COMPARISON IDAHO REGIONS 2010

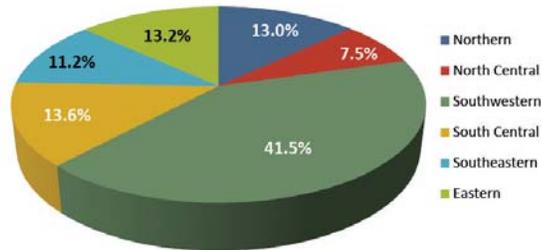
Employment				Relative Growth				Wages						
Ratio of State to Nation		% of State Total		Growth 2002-2006		Growth 2007-2010		Adv Mfg 2010 Median Hourly Wage		Adv Mfg Median Wage as % of Median for all Jobs		Wage at 10th Percentile		
Area	Percent	Rank	Percent	Rank	Percent	Rank	Percent	Rank	Wage	Rank	Percent	Rank	10 Pct	Rank
Statewide	100.0%	NA	4.3%	NA	8.2%	NA	-13.0%	NA	\$19.60	NA	112.3%	NA	\$12.83	NA
Eastern	13.2%	3	4.3%	4	10.6%	2	-4.6%	2	\$22.27	1	136.0%	1	\$13.59	1
North Central	7.5%	6	4.5%	3	1.3%	6	1.1%	1	\$18.02	2	119.3%	3	\$11.90	2
Northern	13.0%	4	4.3%	4	15.1%	1	-11.1%	5	\$15.25	5	106.6%	5	\$10.59	5
South Central	13.6%	2	4.6%	2	3.4%	4	-8.6%	3	\$14.93	6	102.6%	6	\$9.75	6
Southeastern	11.2%	5	4.9%	1	2.6%	5	-11.0%	4	\$17.14	4	119.9%	2	\$11.12	4
Southwestern	41.5%	1	4.0%	5	9.7%	3	-19.6%	6	\$17.45	3	107.1%	4	\$11.74	3

Source: EMSI Complete Employment 2011.4

APPENDIX 8: ADVANCED MANUFACTURING DASHBOARD

State Totals	
Total Idaho Adv Mfg Jobs	37,235
Median Wage	\$17.46
Growth 2002-2006	8.2%
Growth 2007-2010	-13.0%
Relative Size	4.3%

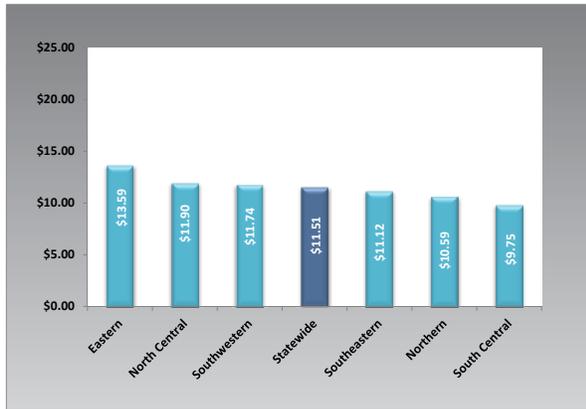
Statewide Manufacturing Employment 2010



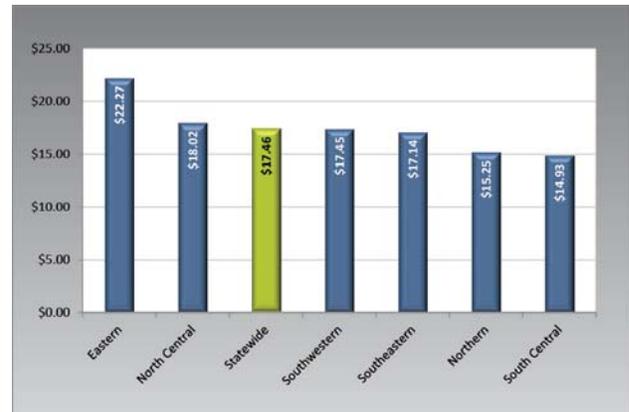
Advanced Manufacturing Regional Report

Region	Employment		Wages		Growth			
	2010 Jobs	% of Total Jobs	2011 Median Wage	Rank	Growth 2002-2006	Rank	Growth 2007-2010	Rank
Northern	4,840	13.0%	\$15.25	5	15.1%	1	-11.1%	2
North Central	2,794	7.5%	\$18.02	2	1.3%	6	1.1%	1
Southwestern	15,443	41.5%	\$17.45	3	9.7%	3	-19.6%	6
South Central	5,053	13.6%	\$14.93	6	3.4%	4	-8.6%	4
Southeastern	4,173	11.2%	\$17.14	4	2.6%	5	-11.0%	5
Eastern	4,932	13.2%	\$22.27	1	10.6%	2	-4.6%	3

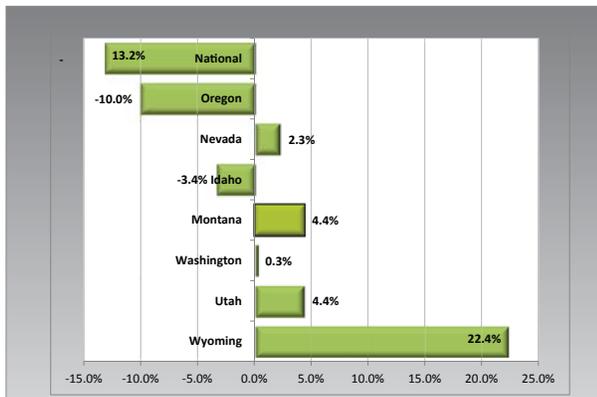
10 Percent Wages, Idaho Regions



Median Wages, Idaho Regions



Relative Employment Growth 2002-2010



Education / Experience

