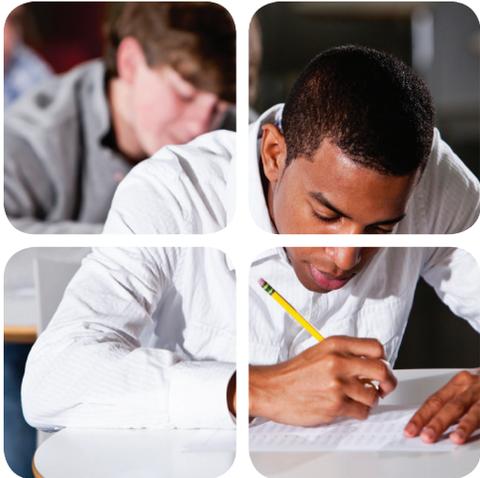




An economic and labor market analysis of the State of Utah

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## Training Works: the Impact of DWS Job Training Services



BY JOHN KRANTZ, ECONOMIST

Federal job training programs have recently been the subject of both criticism and concern as a result of large federal budget deficits and widespread joblessness in our current economic situation. A report from the Government Accountability Office (GAO) criticized the apparently wasteful overlap in federal job training programs and claimed that “little is known about the effectiveness of the employment and training programs we identified because only 5 reported demonstrating whether outcomes can be attributed to the program through an impact study.”<sup>1</sup> While the tenor of this report suggests a wasteful excess of federal

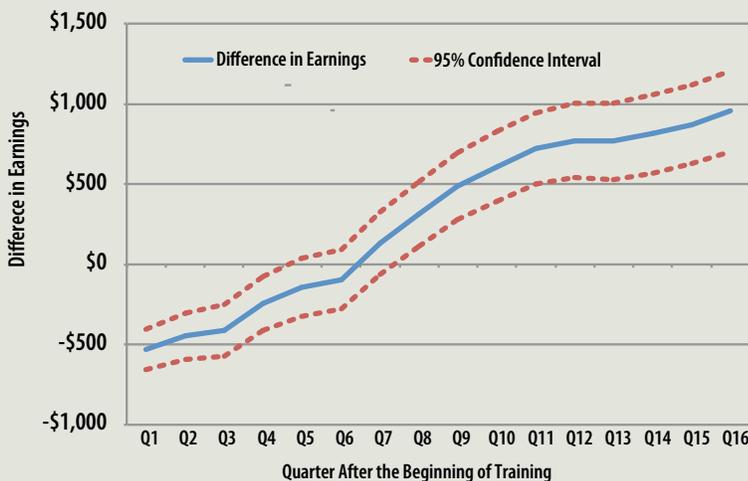
job training funds, particularly if the effectiveness of these programs is uncertain or doubtful, others lament the dearth of federal training dollars. A recent article reported that even though federal funding for job training services is 18 percent lower today in real terms as compared to 2006, far more people are presently unemployed and in need of job training services to help them acquire the skills that employers demand.<sup>2</sup> The policy-relevant concerns in these articles ultimately depend on the answer to a fundamental question: Is job training effective in improving earnings and employment?

Utah’s Department of Workforce Services (DWS) recently sought to answer precisely this question through an extensive analysis of the outcomes of job training services. Even though the GAO appears to be unaware, a voluminous body of academic job-training research exists that shows job training is generally effective in improving labor market outcomes. Nevertheless, DWS was interested in measuring the effectiveness of the job training services provided under its own administration. The research was carried out using statistical techniques and an analytical design consistent with many of the studies found in the academic job training literature. The results showed that several job training services produced large and positive impacts, a few displayed mixed results and one had essentially no impact. However, five of six job training service groups studied have the potential to significantly improve earnings and employment outcomes for trainees.

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Graph 1: Degree Programs—Quarterly Earning Differences for Females





## Training Works: Cont.

A summary of the statewide results taken from the research embodied in the complete DWS job training report is presented below.<sup>3</sup> The main federal programs that fund job training are briefly characterized first, followed by a description of the job training services provided by DWS. The research methodology, data, and analytical issues are subsequently discussed. The results are then presented, succeeded by concluding commentary on the policy-relevant issues that follow from the analysis.

### Federal Job Training Programs

The federal funding that was used to provide job training services for the individuals in the study came from four main programs. The Workforce Investment Act (WIA) of 1998 established two core job training programs: the adult program and the dislocated worker program. The WIA adult program provides job training funds with priority given to low-income individuals and public-assistance recipients. The WIA dislocated worker program provides funding primarily to those recently laid off from a job in a declining industry or in a declining occupation and does not give preference to workers based on income levels. A third source of federal training dollars is the North American Free Trade Act Transitional Adjustment Assistance (NAFTA-TAA) program. These funds are available to workers that have lost their jobs due to international trade with Canada or Mexico. Finally, the fourth main source of federal funding was the Temporary Assistance for Needy Families (TANF) program. TANF funding

primarily goes to single mothers with very low incomes.

In the job training research conducted by DWS, over 32,000 individuals who had received job training services at some time within a four-and-a-half-year period were the subjects of the analysis. Approximately \$17.5 million in federal funds were used to provide these services through DWS. The distribution of funding was nearly equal across the four federal jobs programs mentioned above, with each contributing roughly a quarter of the total. On average, the federal funding per person was just under \$550. While the federal jobs programs merely supply funding, DWS is tasked with determining who is eligible for training, developing appropriate job training plans, allocating funds to job training service providers and, in some cases, directly providing the training.

### DWS Job Training Services

All of the job training services investigated in the research were grouped into six categories. Three of the service categories

— degree programs, occupational training and high school diplomas/GEDs — represent different types of classroom-based education, often referred to as “human capital development” services in the job training literature. Two other job training service categories, paid and unpaid internships, are intended to assist individuals in developing valuable occupational skills through on-the-job training. The last category is the life skills service, which consists of a group of basic services aimed at helping individuals manage various aspects of their households and personal lives.

Degree programs include individuals who are pursuing an associate, a bachelor’s or a master’s degree. With job training services limited to only two years, individuals applying for bachelor’s or master’s degree services must demonstrate they have completed roughly half of the required coursework for their degree and show that they can complete the program within the two-year limit. The distribution of enrollment across degree programs found

Graph 2: Degree Programs—  
Quarterly Earning Differences for Males

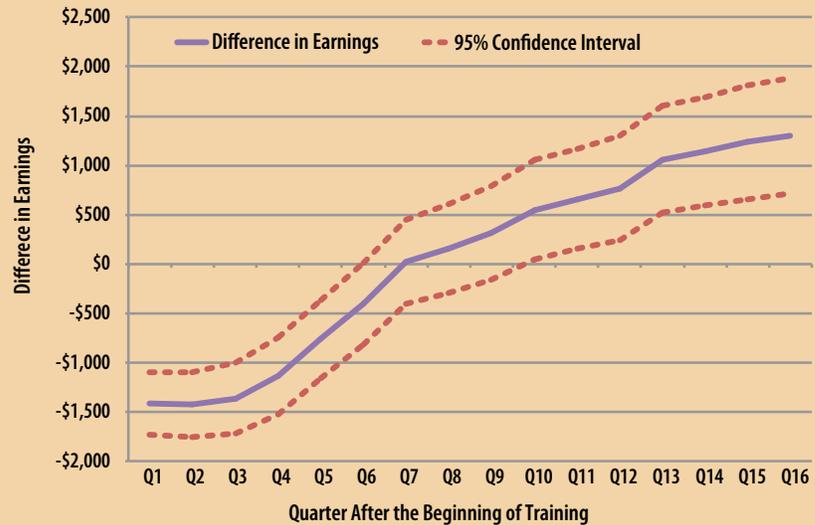


Table 1: Earnings and Employment Outcomes  
Four Years After the Start of Training

Training Program	Difference in Earnings (Annual Average)				Difference in Employment (Percentage Points)			
	Male		Female		Male		Female	
	Total Cohort	Completers Only	Total Cohort	Completers Only	Total Cohort	Completers Only	Total Cohort	Completers Only
Degree Programs	\$4,744	\$10,063	\$3,409	\$9,547	9.0	13.7	9.3	18.9
Occupational Training	\$2,075	\$4,537	\$1,209	\$3,304	6.6	11.1	8.3	13.9
HS Diploma/GED	-\$212	\$3,896	-\$161	\$2,318	7.5	17.6	6.3	17.3
Paid Internships	\$1,528	\$9,449	\$437	\$3,473	6.6	23.6	3.6	15.1
Unpaid Internships	-\$959	\$564	-\$1,045	\$514	2.6	7.3	0.0	7.2
Life Skills	-\$1,052	-\$1,200	-\$860	-\$310	1.2	-0.8	1.5	3.3

69 percent in an associate, 30 percent in a bachelor's and 1.5 percent in a master's degree program. Overall, degree programs accounted for roughly 8 percent of all individuals included in the training study.

Occupational training includes short-term vocational certificate programs and cases where individuals take a few courses at a community college, technical college or university to update or develop new occupational skills. Because of the short duration of this service and the relatively low average cost per trainee, occupational training was the largest of the six service groups studied. Nearly 9,400 individuals received occupational training services during the period of investigation in our study, which constituted 29 percent of all training services administered.

The third educational job training category includes high school diplomas and general education development (GED) certificates. As most of the costs associated with this service are the responsibility of the Utah State Office of Education, funds spent by

DWS on this service amounted to only 1 percent of all direct training expenditures during the study period. Individuals enrolled in this service category accounted for about 14 percent of all trainees.

In contrast to education-related training services, the paid and unpaid internship services promote occupational skill development through direct on-the-job experiences. While both types of internships have associated administrative costs, paid internships also include direct expenditures by DWS whereas unpaid internships do not. The paid internship services category was the smallest of the six training services groups studied, accounting for only 4 percent of all trainees. The unpaid internship services category, on the other hand, was considerably larger, amounting to 21 percent of all training services provided.

The life-skills training category is quite different in that it does not focus primarily on occupational skill development. Nevertheless, it is a federally approved job training service. The rationale behind

the life-skills service is that individuals can only be successful in the labor market if first they can effectively manage their households and personal matters. The types of activities found in this training service include money management, parenting and nutrition courses, along with a few workshops involving related issues. Like unpaid internships, life-skills services do not involve direct expenditures on the part of DWS. Life-skills trainees made up about 25 percent of the total.

### Methodology

The job training analysis was based on DWS administrative data. The analysis focused on a total of 32,475 individuals who received job training services between January 2002 and June 2006. Upon entering into a training service, each individual's quarterly wages and employment were tracked over a period of four years. A large number of variables were used to control for differences among individuals in the study, including gender, race, ethnicity, geographical location, past earnings, past employment,



## Training Works Cont.

past industry of employment and the receipt of various forms of public assistance. Due to missing data and obvious miscoding errors, some individuals were removed from the data set. However, the analysis includes over 86 percent of all individuals in the above-mentioned training services during the four-and-a-half-year study period.

Using administrative data to analyze the impacts of job training services presents a number of difficulties. Ideally, the measurement of the effectiveness of job training could be achieved through the use of a randomized experimental design, where individuals are randomly assigned to a training group or a control group. After verifying that the training and control groups have the same overall characteristics and are truly comparable, the differences in earnings and employment between the two groups could be measured at some future date to ascertain the magnitude of the impacts of job training. While this method might be ideal, its application within a social setting raises moral, legal, and practical difficulties.

The use of administrative data can circumvent many of the problems associated with randomized experimental designs, but it has its own set of issues. The most serious potential problem is self-selection bias. Within the context of job training, self-selection bias can occur when individuals are permitted to enter a job training program by choice and those who choose to enter the program are also very highly motivated individuals. If these highly motivated individuals are compared to a control group of less motivated individuals, job training will show strong effect when, in fact, it is merely a consequence of the differences in motivation.

A considerable body of research has been developed over the last several decades to address the problems associated with the analysis of administrative or observational

data. One of the most widely used techniques, and the one used in our analysis, is propensity score matching. In essence, the method selects a control group that best matches the characteristics of the training group such that, on average, the two groups are identical. Balancing the characteristics across the two groups produces a much

**When individuals complete services, five of the training services produce significant improvements in both earnings and employment.**

stronger inferential basis for attributing differences in earnings and employment to job training. Propensity score matching has been shown to produce results very comparable to randomized experiment designs, particularly in applications to job training research.<sup>4</sup>

### The Results

The impacts of job training were measured by taking the average quarterly wage and average percentage of quarterly employment for those receiving training and subtracting

the corresponding averages of the control group. These differences were measured for 16 quarters after the individuals started training. The two graphs provide examples of these measurements for males and females enrolled in degree programs. The center line represents the estimate of the difference of average quarterly wages between the training and control groups and the dashed lines represent a 95 percent confidence interval for the estimates.

The graphs show a typical pattern for classroom-based educational job training. Because individuals are still in training during the first several quarters, a lower level of participation in the labor market should be expected, resulting in lower wages and lower employment. The graphs illustrate that as individuals transition from training to the labor market, differences in wages progressively increase. By the sixth or seventh quarter, both males and females are back to earning the same amount as the control group. From about the eighth quarter forward, the trainees increasingly earn more than those who did not receive training.

The results for the six training service groups are summarized in the table as earnings and employment differences in the fourth year after initiating training. The focus here is on the results for the total cohorts, while the results for completers are referred to in the next section. The two education-based training services, degree programs and occupational training, generally had the largest impacts for earnings and employment. Paid internships also produced positive impacts for both earnings and employment. Perhaps it is curious that high school diplomas and GEDs did not produce positive earnings results, even though they did lead to a higher level of employment. The explanation for this peculiar result will be seen when

considering the completion rate for this service in the next section. Two training services that did not produce improvements in earnings and only slight increases in employment were unpaid internships and life skills. Although the impacts of these services were unknown prior to conducting the research, large impacts were not expected given the nature of these services.

### Policy Implications

While the full body of results from the job training research contains a great number of interesting insights, just two issues of policy importance are presented here. The first issue concerns a “quality-quantity” tradeoff that must be faced by any agency administering job training services, and the second issue focuses on the differences between job training completers and non-completers.

Across the three education-related training service groups, earnings differences were positively related to the amount of funding trainees received. Thus, the more invested in training, the greater the future wages. However, the availability of funds per person can vary depending on economic conditions. These facts reveal a “quality-quantity” tradeoff: the higher the quality of education-related training, the smaller the quantity of individuals who can receive training. For example, consider the differences between degree programs and occupational training. In the “Total Cohort” columns of the results table, earnings and employment outcomes for both males and females are significantly higher for degree programs as compared to occupational training.

On average, degree program trainees received about \$2,100 in funding, whereas those in occupational training received roughly \$1,100. These results suggest a reasonable policy rule: When economic conditions are poor and many individuals are competing for scarce

job training funds, a larger proportion of individuals should be directed toward occupational training rather than degree programs; when the economy is performing well and fewer individuals are in need of training funds, degree programs should be emphasized over occupational training.

Another important policy-related issue discovered in the course of the research was that fewer than half of all job training service recipients completed their services. The rather disappointing completion rates for the six training service groups are as follows: 29 percent for degree programs, 59 percent for occupational training, 15 percent for HS diplomas/GEDs, 44 percent for paid internships, 26 percent for unpaid internships and 47 percent for life skills. The importance of completion can be seen in the table of results. Earnings and employment outcomes for service completers are much higher than for the entire groups. Moreover, for training completers, each of the job training service groups except life skills showed remarkably strong earnings and employment impacts. Based on these results, improving completion rates would obviously improve outcomes, but determining who will complete their services prior to enrollment is nearly impossible. Completion rates could potentially be improved using post-enrollment strategies and discovering the best strategies is a current area of investigation at DWS.

The results of the study show that three types of training improve earnings and four improve employment, regardless of whether individuals complete the service. However, when individuals complete their services, five of the training services produce very significant improvements in earnings and employment. DWS is currently attempting to increase completion percentages across all job training services and, if successful, the gains to trainees and society should prove considerable. ■

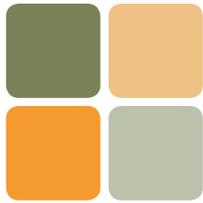
### Notes

1. Government Accountability Office. (2011). Multiple employment and training programs. Retrieved from <http://www.gao.gov/new.items/d1192.pdf>.

2. Rich, M. (2012, April 8). Federal funds to train the jobless are drying up. The New York Times. Retrieved from <http://www.nytimes.com>

3. The complete report is available at <https://jobs.utah.gov/wi/trainingstudy>

4. See Card, D. et al. (2010). Active labour market policy evaluations: A meta-analysis. *Economic Journal*, 120, F452-F477, and Mueser, P. et al. (2007). Using state administrative data to measure program performance. *Review of Economics and Statistics*, 89, 761-783.



## Statewide Economic Indicators

BY MARK KNOLD, CHIEF ECONOMIST

### The Utah economy is slowly climbing up and out of the recession's employment setback.

Even though the state's current employment growth rate (2.5 percent) is better than most, it is still below what will repair Utah's labor force. Unfortunately, Utah's slow employment growth suggests that the economy will continue to operate below potential for much of 2012.

The state's average yearly growth rate across the past 50 years was 3.1 percent, last achieved in 2007. Utah will likely be unable to reach that level of employment growth this year as economic headwinds persist, but will likely reach and possibly even surpass that level in 2013 and 2014.

The consequences of the recession linger. The housing market is not yet making any contribution to Utah's employment picture. However, it appears that home sales are finally on the rise even though housing prices still inch downward. The market believes deterioration is done and that the housing environment is expected to return to a position where it can grow, expected in 2013, but the timing is uncertain.

There is also a high level of non-unemployment, or idle-but-potential workers. They are not included in the official unemployment rate: one must be actively looking for a job. The official unemployment rate therefore reflects an underutilization of Utah labor and this non-participating group's drag upon the economy. The U.S. Bureau of Labor Statistics data suggests that there are more people who were once working in Utah who have stopped looking than who were working and are still looking for work (the officially unemployed). It is

assumed that many of these idle workers would come back if the labor market were more accommodating, but it may not be for several more years. As their skill sets are not being utilized, they may become obsolete in a progressing workplace. A segment of the potential labor force may permanently remain idle, which would hold back earning and spending potential and raise the possibility of lingering social costs.

The weak United States economy also restrains Utah's economy. Utah floats on the tide of the United States economy, and though it usually rides higher than most other states, it is still subject to the ebb and flow of the United States economy and national factors such as in-migration. People are free to move about the United States economy, whether it is from industry to industry or state to state. When the United States economy is operating normally, Utah generally receives new workers from other states, or in-migration. Utah's aesthetics, relative under-population and the advancement of a technology-based economy make for a section of the United States that is accessible, desirable and economical. But the labor movement within the United States has been restrained in large part by the upside-down housing market. Some people cannot move from their restricted economic state or region to a more vibrant state like Utah because they cannot sell their home.

The Federal Reserve is not expected to step into the United States economy and implement any additional easing. Though it

remains a possibility, the Federal Reserve's recent actions and comments suggest it believes the current United States economic growth, while tepid, is healthy enough to stop receiving emergency assistance.

Considering these restraints, Utah is not expected to generate job growth above the current 2.5–3 percent level in 2012. Much of the state's employment growth of the past year was likely a catch-up after severe employment cuts during and immediately after the recession. Employment growth over the past several months has leveled off, suggesting this phase is subsiding, so Utah's employment growth is hitting a short-term ceiling. It is as good as can be expected right now, yet Utah may not have the internal economic resources to break beyond the greater United States economic restraints this year.

The rise in gasoline prices over the past six months has not helped either as they squeeze consumer spending power. Gasoline prices act like a tax, reaching into the deepest corners of the economy. While gasoline prices themselves don't make or break an economy—after all, the prices were quite low during the depths of the recent recession and did not stimulate us out—they can and do have a rising impact on both prices and consumer sentiment, so rising prices can dampen economic performance.

Utah's economy will likely rise above 3.1 percent growth in 2013 and 2014. Economic headwinds should weaken and restraining factors will lose their power. The housing market will add home-building workers. The United States economy should be more recovered and start supplying more trickle-down benefits. Still, the number of non-employed will not be significantly reduced, as a yearly growth rate of 3.1 percent is not sufficiently higher than the amount of new Utah labor force growth each year. Significantly reducing recession-induced non-employment is an exercise that may take multiple years to address.

Utah's current economic rebound is sluggish due partly to an unevenness of employment expansion across the state. Utah's metropolitan corridor is seeing employment gains, while many of Utah's rural counties continue to encounter job loss. Most of the western and central counties in Utah have seen employment setbacks over the past year. The state's growth is largely along the Wasatch Front extending into northeastern Utah. The strongest growth is occurring in the Uintah Basin—Duchesne and Uintah counties, the energy-extraction counties—and recent price increases have spurred economic activity.

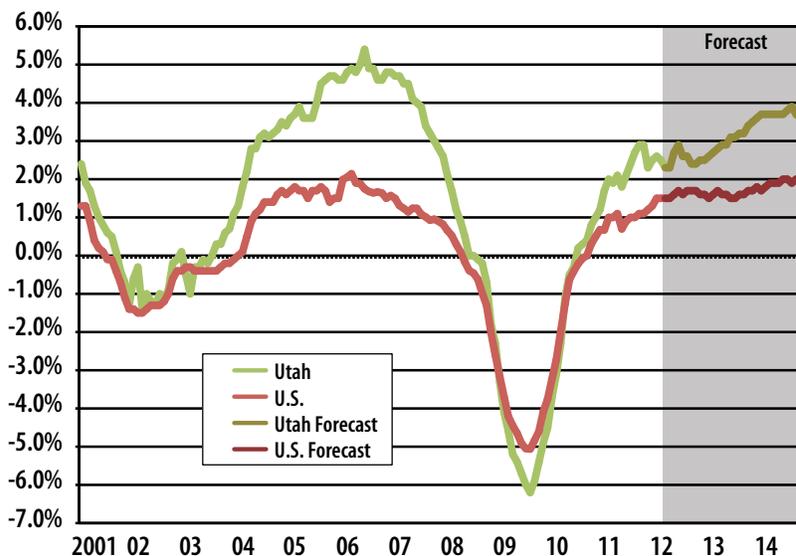
When looking at Utah from the start of the recession in 2007 to December 2011, one still sees a state in employment deficit with many employment levels significantly below their pre-recession thresholds. Six counties (Tooele, Davis, Summit, Duchesne, Uintah and Carbon) have managed to raise their employment counts, but the remaining 23 have fewer jobs as of late 2011 than when the recession began.

Some counties have quite noticeable employment setbacks. Significant and steady manufacturing job losses have occurred throughout the recession, and the most recent snapshot shows that employment levels are still falling.

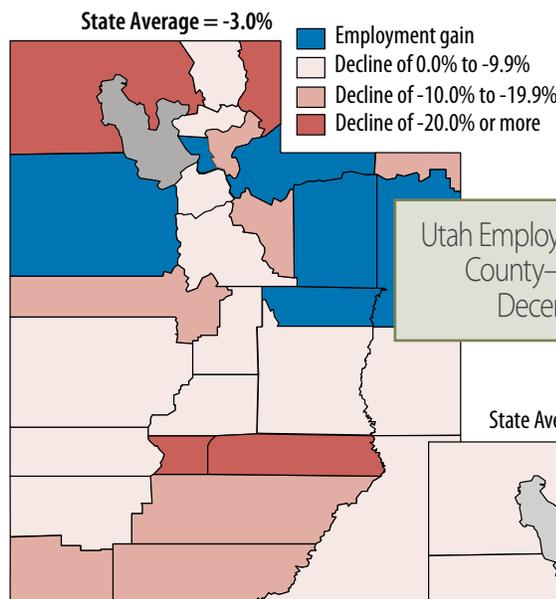
Washington County, Utah's Sunbelt expanse centered on the St. George metropolitan area, has employment levels 12 percent below where they were at the recession's onset even though the county has had no employment setbacks across at least the past 30 years.

Utah's employment rebound is underway, but it lacks the vivacity that has accompanied all other recessions since the Great Depression. The economic headwinds from the recession are still affecting the United States economy, which in turn restricts Utah's economy. Utah's economic rebound is metropolitan-centric and not trickling down to many of Utah's rural counties and communities. Once this economic expansion broadens its reach beyond the metropolitan corridor, then Utah's rebound will be more inclusive, sustaining and invigorating.

Employment Percentage Change—Utah and U.S. 2001–2012  
Utah Forecast—2012–2014

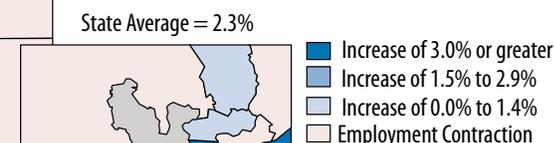


U.S. Forecast by IHS Global Insights ; Utah forecast by Utah Department of Workforce Services.



Source: Utah Department of Workforce Services. Reflects the employment environment since the recession began to date.

Utah Employment Change Rates by County—Recession Impact December 2007–2011



Utah Employment Change Rates by County—March 2011–2012

Source: Utah Department of Workforce Services. Growth is calculated between March 2011 and March 2012.



## utahinsights

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# Economic Analysis

Studies have shown that the world economy has been going through extraordinary changes in its organization, structure, integration and interdependency. Accelerating technological change has increased the intensity of business competition and economic development, forcing continual adjustments to a changing environment. Economies benefit from this technological change only when local chambers of commerce, government, businesses and others involved in economic development are able to accurately assess relevant economic factors to develop policies geared at boosting local economies in accordance with said technological advancements. With the power of economic information, policies are designed to maintain and help the local economy to grow, be more competitive in earnings and provide better job opportunities to give residents and employees a valuable tie to their community or business.

To gain a better understanding of an area and its economy, it is important to recognize current local and regional trends and conditions. Knowledge of the local economy typically comes from some sort of analysis. This kind of insight is part of the necessary preparation for an area to create an effective strategy in the decision-making process. Understanding what is happening in the area and why it is happening allows local chambers, government and businesses to make better choices. Every region in Utah has its own unique strengths and challenges and is typically different from any of the surrounding areas. Each area or business needs certain tools to answer necessary questions that will enable it to influence its job and income situation.

Workforce Research and Analysis (WRA), a division of the Utah Department of Workforce Services, understands the need for decision makers to have as much information as possible to improve the welfare of the resident population and promote opportunity. In an effort to strengthen the understanding of local economic areas, WRA uses the knowledge and experience of the department staff's economists. Years of education and experience working with labor statistics and local economic data give these economists the expertise to answer complex questions. WRA gathers data that include employment and payroll information through surveys and employer reporting, allowing the economists to shed light on how each area's economy is functioning. They are able to determine the strengths, weaknesses, trends and overall shape of the local economy and work to apply those ideas into indications about the future economy.

WRA produced this new quarterly publication focused on local economic analysis to provide relevant information for decision-making in the areas of regional planning, local economic development and policy design. Issues are available about the statewide economy and eight different sub-state areas: Bear River, Castle Country/Southeast, Central Utah, Mountainland, Southwest, Wasatch Front North, Wasatch Front South, and Uintah Basin. The statewide version will focus on items affecting the entire state of Utah, including job-training strategies, re-employment and labor exchange activities. All will provide the reader with an in-depth look at the economy. Each issue will also inform the reader of notable DWS policy changes and focus, explaining why it affects each area.

We hope you enjoy your experience with this publication.