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local insights

southeast

An economic and labor market analysis of the Southeast Utah Area

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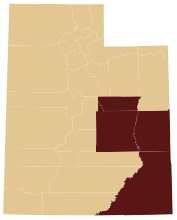
in this issue:

Important Industries
and the Unique Economies in Southeast Utah



BY ERIC MARTINSON, ECONOMIST

Key employment and wage statistics, gathered through the Quarterly Census of Employment and Wages (QCEW) program, provide industry detail based on the North American Industry Classification System (NAICS) and illuminate an economic profile of national, regional and local (county-level) geographies. Important nonfarm industries of the Castle Country region (Carbon and Emery counties) as well as the Southeast region (Grand and San Juan counties) of Utah can be measured by employment, wages and other factors. The movements over time of these industries within the Castle Country and Southeast regions tell an interesting story.

Industry Share of Employment

The importance of an industry to a particular region can be defined in different ways, the most obvious of which is by the share of total jobs an industry employs. It should be noted that the term "employment" here and throughout this article refers to private (except for government and public education categories) nonfarm payroll employment, unless otherwise stated. As is the case within many rural areas, government is one of the largest employers of the Castle Country and Southeast regions. It accounted for 13.6 percent of employment in Castle Country in 2012, the leading share of employment by industry category. Retail trade (12.6 percent) provides Castle Country's second highest share of 2012 industry employment, followed by public education at 10.6 percent and mining at 9.8 percent. Other employment-important industries in Castle Country include health care and social assistance (private sector), construction, and transportation and warehousing. These eight industries account for 74 percent of all nonfarm payroll employment in Castle Country (Figure 1).

In the Southeast region, the leisure and hospitality industry dominates industry employment. In 2012, this tourism- and recreation-driven industry provided one out of every four jobs in the area. As in Castle Country, government employment provides a high proportion of regional employment. It accounted for 19.2 percent of the total in 2012, the region's second-highest ranked job provider by industry. Another industry driven by the tourism-based economy of the Southeast region, retail trade, provided the third-highest share of industry employment at 11.8 percent, followed by public education at 9.8 percent. Other important industry job providers in the area include health care and social assistance (private sector), mining, construction, and transportation and warehousing. All told, these

Important Industries (continued)

industries account for approximately six out of seven jobs.

Figure 1 paints a big chunk of the important-industries picture for Castle Country and the Southeast and gives a good idea of the degree of specialization that these two adjacent economies offer. However, there are more details to add to the portrait.

Wages

Since money is typically the main medium of exchange within an economy, the more money an industry introduces into an economy through compensation, the more potential impact that industry makes in its local economy: wages drive purchasing power within local economies, largely determining aggregate spending; taxes on wages contribute to public goods and services; etc. An industry that employs a large share of the region's workers or pays a large share of the region's wages typically helps drive economic viability or sustainability in that area.

In 2012, the Castle Country mining industry generated one in every five dollars paid in wages. Government paid 12 percent of total area wages, followed by construction at 8 percent of total area wages in 2012. Following the pattern of employment share by industry, other wage-important industries for Castle Country include public education, health care and social assistance (private sector), retail and wholesale trade, and transportation and warehousing. Utilities also plays an important industry role in the Castle Country region both in terms of employment and especially in terms of total area wages (and average annual wages). The details of this industry are not, however, releasable given individual

Figure 1: Castle Country and Southeast Industry Employment
as a Percentage of Total Area Nonfarm Employment, 2012

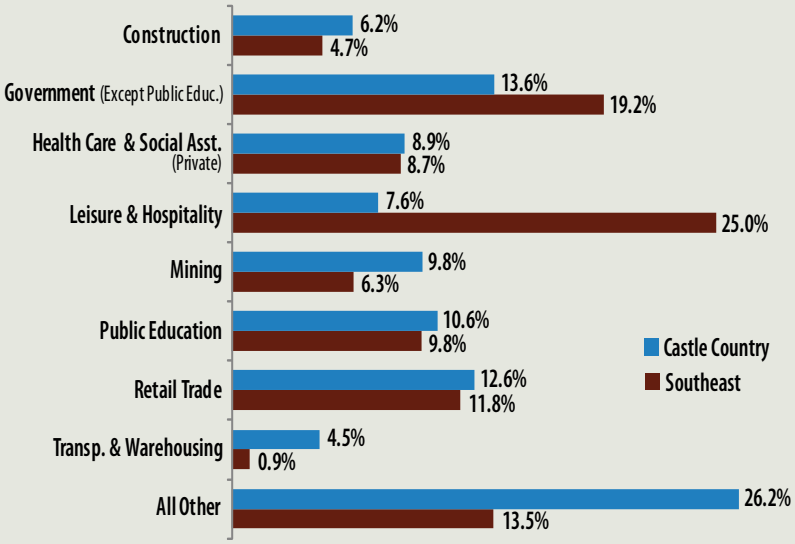
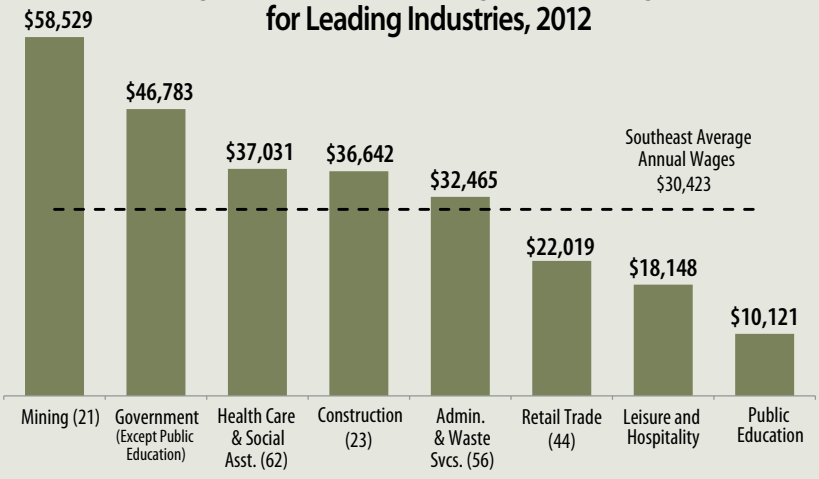


Figure 2: Castle Country Average Annual Wages for Leading Industries, 2012

**The utilities industry is another important industry in the Castle Country region whose employment and wages information are not releasable at the private industry level due to firm-specific confidentiality constraints.*

Figure 3: Southeast Average Annual Wages for Leading Industries, 2012



firm disclosure standards. Nevertheless, by any of the standards used to evaluate Castle Country's important industries, utilities should not to be overlooked.

In the Southeast, those industries that had higher shares of total area employment were also typically those that paid higher shares of total area wages. Although leisure and hospitality provided the largest share of employment in Southeast, in terms of total area wages paid, its share was ranked second (15 percent). Total wages in leisure and hospitality measured only half of those wages paid to first-ranked government employees (30 percent). This should be of no surprise considering that leisure and hospitality, in the aggregate, typically pay below-average wages, may be seasonal or may be part-time positions. By share of total area wages, the third-highest ranked industry in 2012 was mining at 12 percent, followed by health care and social services (private sector) at 11 percent.

While share of total industry wages for an area gives a definite flavor for that area's important industries, some may wish to determine which industries in particular pay higher average wages to their employees (Figures 2 and 3).

The average annual wage for Castle Country in 2012 was just under $40,000. In all, six industries paid above average annual wages for the area, including utilities (the industry with the highest annual average wages in 2012). The annual average wage for mining (the second highest) measured $82,430. The third-ranked wholesale trade's annual average wage equaled $59,992, followed by construction, $50,492, and transportation and warehousing, $42,872. All other industries in Castle Country paid below the $40,000 average in 2012.

Together, wages and the level of employment show which industries are important to a particular locality. So far in Castle Country, government and mining seem to stand out with the highest levels of employment combined with highest total and average wages. Leisure and hospitality as well as government stand out in the Southeast. Yet there is still at least one other important metric for evaluating an industry's importance to an area: location quotient.

Location Quotients

Location quotients (LQs) are a regularly used method for regional analysis of labor market conditions. A location quotient can be generated from different variables, such as occupational employment, industrial output, revenue, etc., but are most often generated using industry employment. This location quotient measures the relative concentration of a given industry in a given locality. The LQ can be relative to the nation (which is most often the case), the state in which a locality resides or even a sub-state region. These quotients are used to identify potential sources of competitive advantage or areas of regional specialization. LQs provide a basis of determining which industries of a particular local economy are basic or export industries.

Industry employment LQs are calculated by simply dividing the ratio of regional industry employment as a percentage of total regional employment by the ratio of the same at the national level. As a good rule of thumb, an LQ of 1.2 or higher indicates some degree of specialization, an LQ between 0.8 and 1.2 indicates a normal distribution of an industry within the region (relative to the national spread of industry employment) and an LQ lower than 0.8 may indicate a potential scarcity of that industry in that particular region. These thresholds will always depend on the size of a particular region or the nature of a particular industry. As an example, if a region's LQs are all at or near 1, this would signify that the region has an economy that closely resembles the national economy (if calculated relative to the nation), i.e., that the region may be sufficiently diversified.

In line with its importance in terms of employment and wages paid, mining is also important based on its LQ of 17.3. In fact, based on location quotient, nothing really compares to mining. The nice feature about a location quotient is that it separates those industries that cater to the local population from those industries that are export-based, and it provides which industries ultimately give purpose to the rest of that particular local economy. Utilities also enjoys a relatively high location quotient of 10.0. Apart from these major export industries, most industries either fall close to an LQ of 1 or below.

In the Southeast region, mining carries the highest LQ, 11.0. Leisure and hospitality's LQ is second highest at 2.3, followed by public education at 1.3. All other industries have an LQ below 1.2, indicating that economic specialization mainly resides in leisure and hospitality (and, to a growing extent, mining).
Figures 4 and 5 synthesize these three metrics into an easy-to-identify visualization of the Castle Country's and Southeast's most important industries in 2012, respectively. The location of the industry bubble on the chart is determined by the x and y axes. The x-axis measures the share of industry employment as a percentage of total area employment. The y-axis measures industry wages as a percentage of total area wages. The relative size of the bubble indicates the degree of the industry's specialization in the

Important Industries (continued)

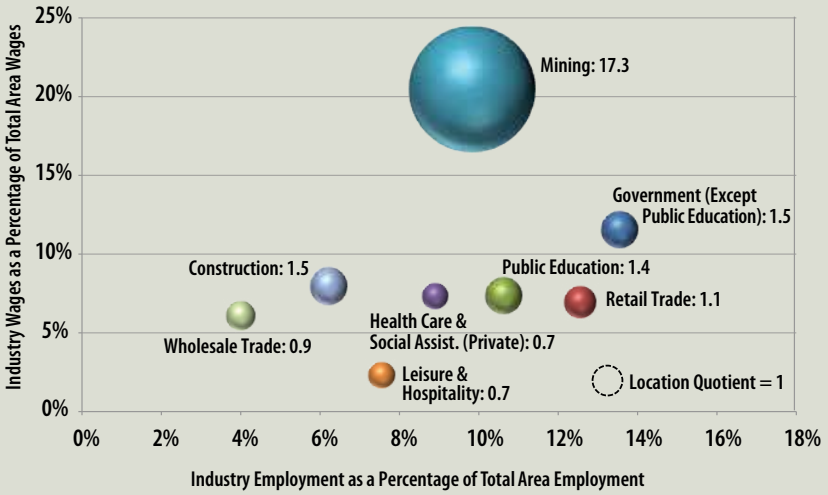
region: the higher the location quotient, the more specialized that given industry was in 2012, and the larger the bubble. This visualization helps to make the leading industries stand out according to each of the three metrics that have been analyzed.

In Castle Country (Figure 4), the elephant in the room is mining. In 2012, mining paid the highest share of total area wages and was the largest export industry in the region. It also ranked highly in share of industry employment. Other relatively important industries are government, construction and public education. Recall that utilities should also be shown given its importance but is non-publishable because of confidentiality standards. For the Southeast region (Figure 5), leisure and hospitality services jump out as well as government. Both have relatively high LQs and shares of total area employment and wages. The size of mining's LQ bubble also grabs the reader's attention, but its share of total area employment and wages are less spectacular than public education, government, and leisure and hospitality.

Employment, wages and location quotient paint a detailed picture of any given local economy. It details important industries that drive and support the local region and may even help identify some potentially deficient industries as opportunities to help diversify and strengthen the local economy. The large players in Castle Country are mining, government and public education. The Southeast economy boasts of an economy centered on leisure and hospitality, government and, to a growing extent, mining.

Figure 4: Castle Country Important Industries, 2012

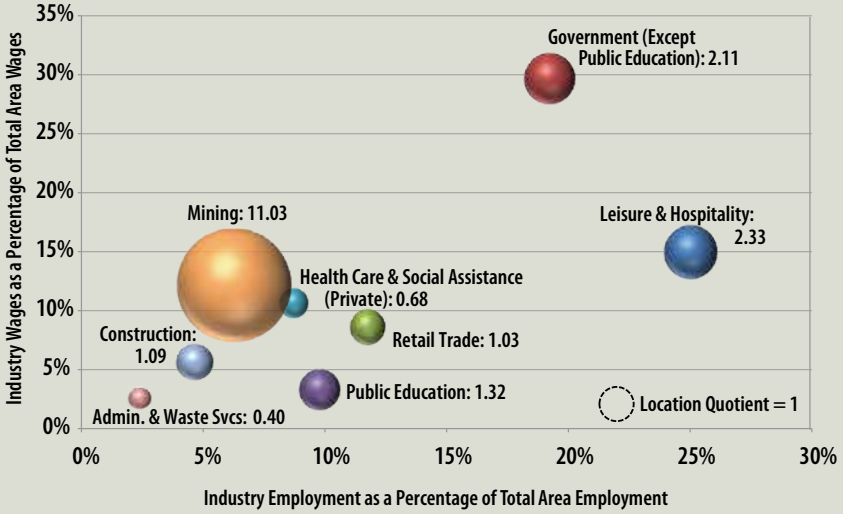
Share of Employment, Share of Total Wages and Location Quotient



**The utilities industry is another important industry in the Castle Country region whose employment and wages information are not releasable at the private industry level due to firm-specific confidentiality constraints.*

Figure 5: Southeast Important Industries, 2012

Share of Employment, Share of Total Wages and Location Quotient



The Effects of the Recent Spike

in Professional, Scientific and Technical Services in Emery County

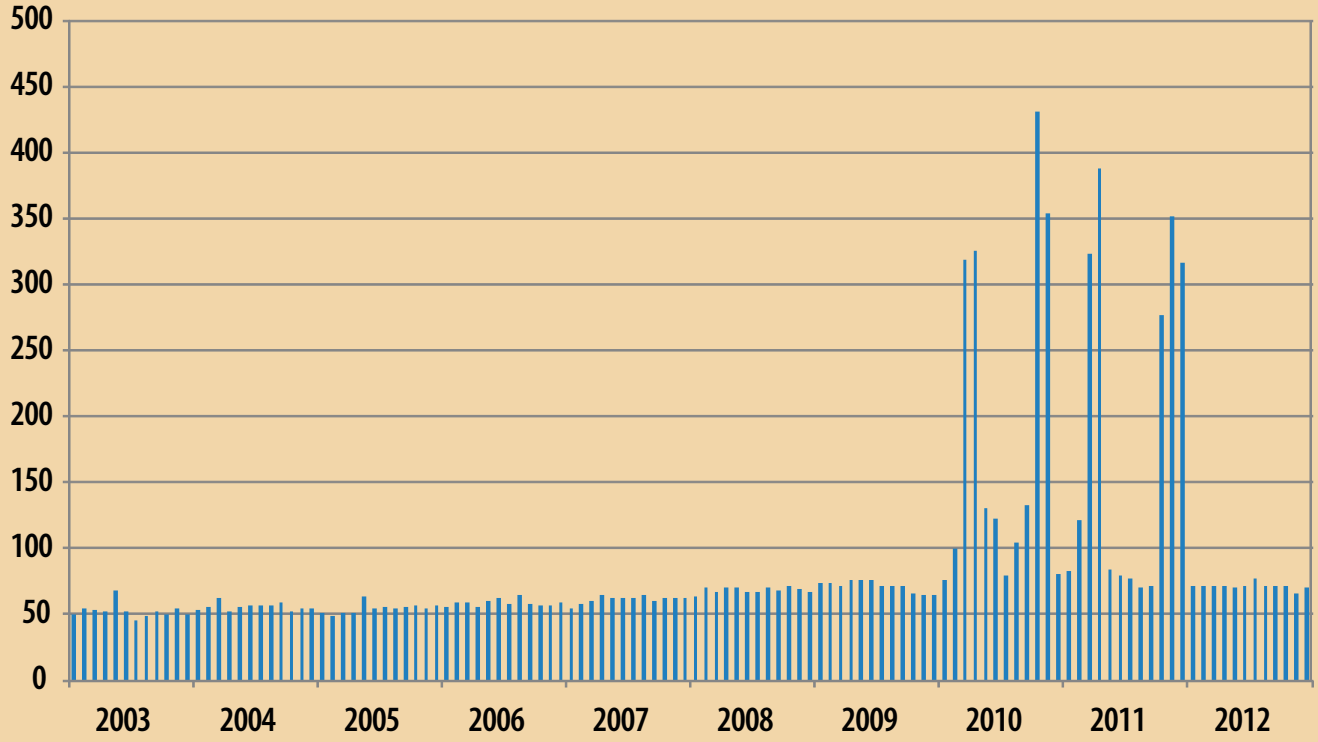
BY ERIC MARTINSON, ECONOMIST

Emery County has the distinction of generating the highest proportion of Utah's electricity-generator nameplate capacity. The nameplate capacity is the maximum rated output of a generator, prime mover or other electric power production equipment under specific conditions designated by the manufacturer. As of September 2012, the Hunter and Huntington power plants, located in Emery County, together were responsible for generating over 30 percent of the state's generator nameplate capacity. These power plants, powered mostly by coal (although natural gas has been increasingly replacing coal as an input source for power generation) are highly complex and require ongoing maintenance and outfitting to ensure optimum operating efficiency while complying with federal and state environmental standards. As with any capital-intensive production, there is the occasional need to re-service equipment on a large scale.

Compared to other rural counties in the state, average annual wages for Emery County have been relatively higher since the 1970s, a period during which the construction of large coal-fired power plants in Castle Dale and Huntington took place. This, in turn, led to expanding coal mines in order to feed the increased demand for electric generation. Higher coal production also led to an expanding transportation industry. As a result, wages and the standard of living have typically been higher in Emery County compared to other rural counties in the state.

Figure 6 shows monthly employment for Emery County's professional and technical services industry from January 2003 to December 2012. What is anomalous is very obvious: data bars extend like four skyscrapers far above the normal employment level. The usual suspects, data and coding errors, are not, however, to blame for the anomaly.

Figure 6: Professional and Technical Services Employment Emery County, 2002–2012



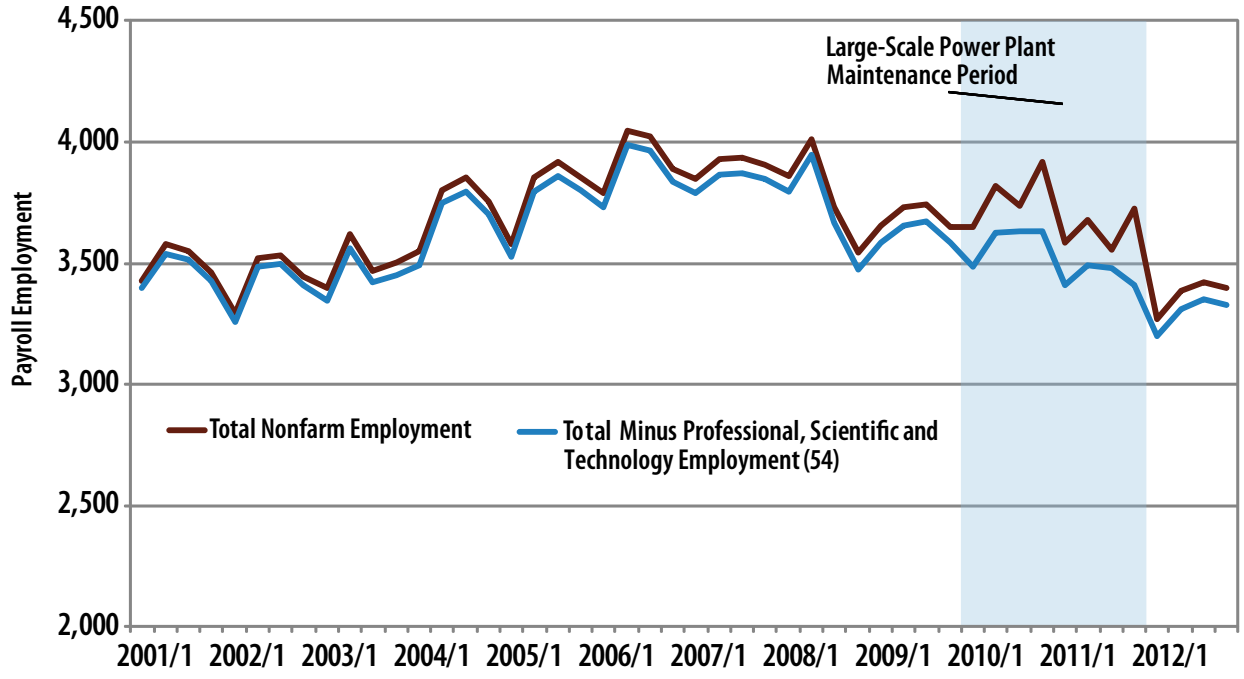
The Effects of the Recent Spike (continued)

During intermittent quarters throughout 2010 and 2011, a couple of large-scale maintenance projects occurred in Emery County, employing a surge of contractors within the professional, scientific and technical industry. As a result, what we see in Figure 1 is striking: sharp spikes in employment over a two-year period. Some reasonable questions to ask given these spikes in an otherwise understated part of Emery County's labor market is "What effect does this have on the county's overall labor economy? Would this really make a difference in the aggregate?"

The red curve in Figure 7 illustrates actual Emery County total quarterly nonfarm employment since 2001. The blue curve represents this historical employment series when professional, scientific and technical industry employment is subtracted from the total mix. The gap between the red and the blue curves shows the boost in overall employment this maintenance period (shaded blue region) gave the county. The gain is considerable given the fact that the professional, scientific and technical industry in Emery County typically provides an average of only 1.5 percent of total employment. This average jumped to 5.0 percent between 2010 and 2011. For these overhauls during the maintenance period, 200–300 employees were hired to work during intermittent quarters. This resulted in employment for the professional, scientific and technical services industry rising and falling sharply from as low as 70 employees in one quarter to as high as 431 employees the next quarter, only to fall back down to 70 again (referring again to Figure 6).

What Figure 7 also demonstrates is the recent struggle Emery County is having with employment trends overall. Given the increased supply glut of national natural gas reserves due to new extraction technologies, the demand for coal has dropped considerably. This has had no small impact on Emery County's main export-based industry employment source, coal mining. While this effect can be seen on a quarterly basis beginning roughly in late-2007 or early-2008, when the boost in professional, scientific and technical employment in the county is removed, the decreasing trend in overall employment shows an even more distressing reality.

Figure 7: Total Quarterly Employment Comparison in Emery County, 2001–2012



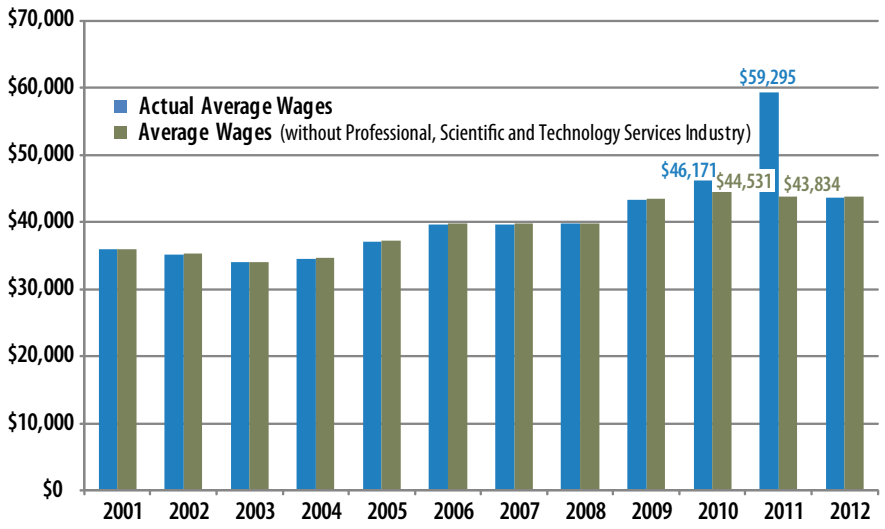
In addition to hiding an even more troubling employment reality, the level of employment is directly related to another essential economic indicator for any locality: wages. This is of great importance to rural economies that may qualify for government funding to help bolster local economies, particularly during recovery from recessions. Emery County's economy has suffered deep setbacks since the Great Recession and has yet to show signs of meaningful recovery. When grants and assistance funding aims to lessen the damage of such recessions while helping struggling rural economies recover, such funding is typically designed with thresholds, such as annual average household income or average annual wages. Exceeding these thresholds precludes a locality from qualifying for potentially crucial funding. In fact, this is precisely what the maintenance projects in Emery County caused. Emery County could not qualify for what local leaders considered critical funds in the midst of a declining coal mining sector, all while trying to recover from a severe recession.

While the effects on overall employment numbers are significant, a cursory glance at annual average wages for all industries combined in Emery County makes quickly apparent the actual impact on average wages of the maintenance period, as shown in Figure 8. Using the same approach as in Figure 6, Figure 7 compares Emery County's actual average annual wages with what they would be if professional, scientific and technical were subtracted from the total. Average wages under both scenarios are virtually identical until 2010, where the actual annual average wage in Emery County jumped, relative to what would have been the annual average when accounting for the maintenance period. Because a major contract finally completed in the fourth quarter 2011, the bulk of the total wages were paid out at that time, which is why the annual average wage for Emery County spiked in 2011. The total wages paid as a result of the completion of these large projects was enough to propel the county's average annual wage to $59,295, over $15,000 higher than without those project wages. The data points for 2012 show a return to parity between actual average wages and wages without accounting for the professional, scientific and technical industry average wages.

Knowing the historical norms for employment and wages in Emery County can help leaders to identify the anomalous behavior within employment and wages. Being able to describe these anomalies will likely help Emery County seek assistance funds to bolster its struggling economy. Moreover, and even more importantly, it also becomes supportive to county economic development experts in explaining to potential businesses seeking to open, relocate or expand operations and services why the aggregate wage level was significantly higher in 2010 and 2011.

Figure 8: Emery County Total Annual Wage Comparison

Actual Nonfarm Total Annual Wage (Blue) vs. Total Annual Wage When Professional, Scientific and Technical Services Industry Wages are Subtracted (Green)



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The Dynamics of Industry Data

BY MELAUNI JENSEN, LMI ANALYST

Labor Market Information (LMI) is a powerful resource that provides people with a variety of information pertaining to the workforce. LMI can show information about an industry as well as current local economic conditions. It can help policy makers and economic developers understand the productivity of the workforce, economic activity and the overall health of the economy, information that is important for estimating tax revenue and modifying county or city services. It can also demonstrate to educators and economic developers the employment and wage outcomes of graduates and what industries are strongest in local areas.

Every state in the U.S. partners with the Bureau of Labor Statistics (BLS) to gather and produce complete employment and wage information that represents workers covered by state Unemployment Insurance (UI) laws. This data program is called the Quarterly Census Employment and Wages (QCEW). Used to track the establishment levels, these quarterly statistics are important to many other federal and state programs, as it is an accurate reflection of the size of the workforce. Employment data represents the number of covered workers who worked during the pay period or received pay. It does not include those in the military, those who are self-employed, domestic workers, unpaid family workers and railroad workers already covered by the railroad UI system. Wages represent total compensation paid during that quarter, regardless of whether the work was completed at that same period of time, and including vacation or other paid leave, bonuses and tips.

QCEW data is the most comprehensive and respected economic database available, giving the best picture of the economy. QCEW includes data on the number of business establishments and their monthly employment and wages for each quarter. The data is categorized by industry, county and ownership. In accordance with BLS policy, data is not published at the individual firm level, but instead is aggregated and reported for specific statistical uses.

Our economists analyze this data after collection using the North American Industry Classification System. NAICS, as it is often referred to, was developed with Canada and Mexico in an effort to improve the comparability of employment in industries, thus improving the reflected economic activities. This powerful coding system categorizes each establishment into a detailed industry profile based on what they produce or the service they provide and gives five levels of categorized detail.

QCEW data can be used to show the dynamics of businesses: how they open and close and how they expand and retract. It can also show job creation, terminations and layoffs. Here in Utah, we comply with an agreement with the federal government to disseminate this information in a variety of ways. The data is used in products such as FirmFind and Industry Employment and Wages, both interactive tools on our website at jobs.utah.gov/jsp/wi/utalmis/default.do. We also use this data in the Labor Market Information annual report and the analyses contained in this publication. For a further breakdown of NAICS, visit census.gov/eos/www/naics/.