

# local insights



An economic and labor market analysis of the Wasatch Front North Area

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## Economic Diversity in Wasatch Front North



BY TYSON SMITH, ECONOMIST

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*How industrial diversity can impact the economy.*

Many economists contend that economic diversification promotes stability in local markets because having several strong industries in a region provides a variety of employment and training opportunities. This is particularly helpful for workers that have been affected by structural or cyclical downturns in other parts of the labor market. The Hachman Index empirically measures economic diversity by establishing how closely the employment distribution of a specific region resembles that of a larger, more diverse geography, like the United States. The index value ranges from zero to one. The closer the index value is to one, the more the region's employment distribution among industries resembles the employment patterns of the national economy.

Figure 1 underscores the relative economic diversity of the state. Utah was the fourth most diverse economy in the nation in 2012, posting a Hachman Index of 0.97. The index values for two of the three Wasatch Front North (WFN) counties ranked among the top five counties in Utah, with Weber (0.89) and Davis (0.84) ranking second and fourth, respectively. In

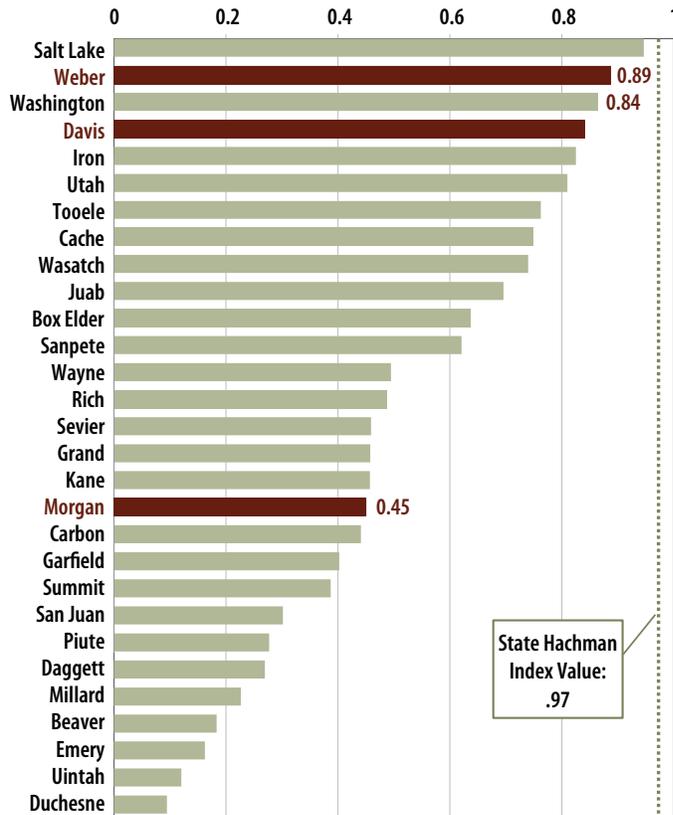
total, the WFN economy was quite diverse in 2012 with a Hachman Index of 0.88

It is difficult to determine exactly what index value constitutes a highly diversified region when there are large differences in total employment. However, if a county's Hachman Index ranks considerably higher than its total employment count – relative to the other counties in the state – that is an indication that the county is relatively diverse. Using this method reveals that Morgan County had the eighteenth highest Hachman Index and the 25th largest employment base in the state, making it more diverse than counties of similar size. Both Davis and Weber's index values ranked similarly to their total employment ranks of third and fourth, respectively.

The Hachman Index is derived from the weighted average of the industry Location Quotients (LQ) in a region. A LQ measures the regional concentration of employment in a given industry relative to a larger geography. As a rule of thumb, an LQ of 1.2 or higher represents an industry with a relatively high concentration of regional employment,

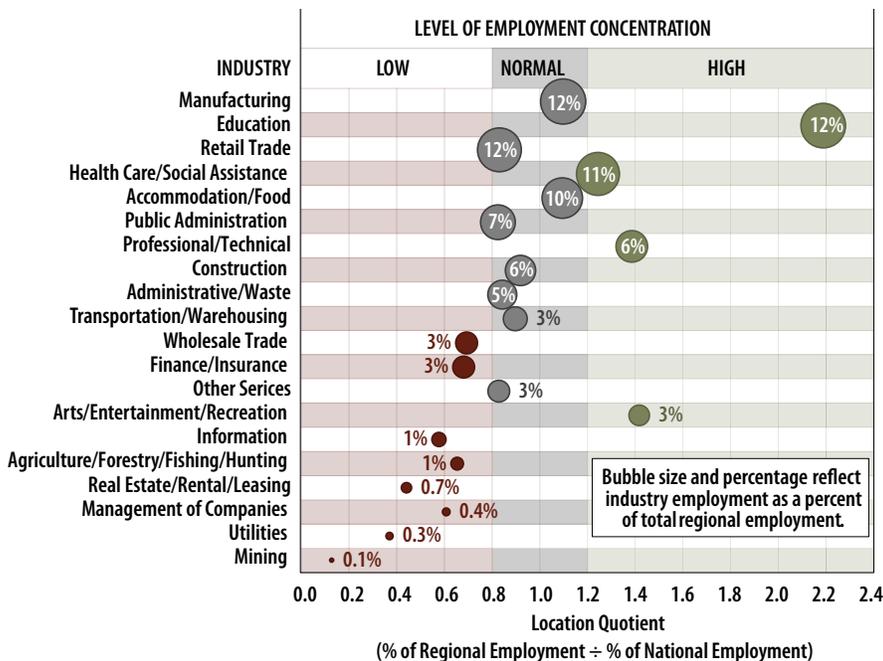


Figure 1: 2012 Utah Hachman Index Values



Source: U.S. Bureau of Labor Statistics

Figure 2: 2012 Wasatch Front North Employment Distribution\*



\*Employment that is covered by the Quarterly Census of Employment and Wages

Source: U.S. Bureau of Labor Statistics

while a score of 0.8 or lower indicates sparse regional employment. The bubble chart in Figure 2 identifies the proportion and density of employment among the major industries in the WFN region. Breaking the Hachman Index into individual components provides insight into the distribution of employment in a local economy.

In the WFN, eight of the 20 industry LQs fit within the normal range of employment concentration in 2012. These industries constituted 58.5 percent of the regions employment. Applying Utah's 2012 industry employment to the same chart, 15 of the 20 LQs fell within the normal range, and the employment totals from those industries represented 79.3 percent of the jobs in the state that year. Far fewer of the statewide LQs fell outside the normal range than for the WFN region, which explains the significant difference in Hachman Index values between the two geographies.

There were a few industries in the WFN where employment percentages diverged notably from national trends. Public administration, manufacturing, construction, and, arts/entertainment/recreation made up a total of 32.0 percent of employment in the region, posting LQs of 2.2, 1.2, 1.4 and 1.4, respectively. On the other hand, eight industries – representing 9.4 percent of total regional employment – had LQs below the 0.8 threshold. The largest low-density industries in the region were finance/insurance and wholesale trade.

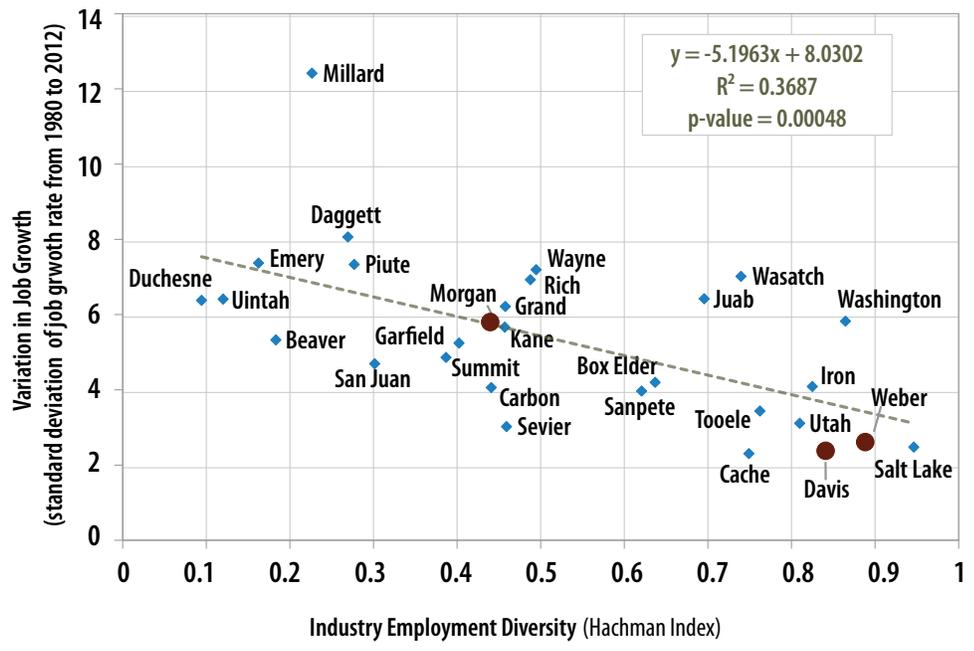
Each county in Utah has responded differently to economic conditions over the last few decades. Structural and cyclical events have impacted growth in every region of the state regardless of the breadth of industrial employment in those areas. In the short term, some geographic comparative advantages have buoyed employment during periods of economic contraction, e.g. the Uintah Basin's natural gas boom during the Great Recession. However, the data show that over the last 30 years Utah's more specialized counties have experienced greater economic volatility.

Figure 3 illustrates the relationship between economic diversity and employment variability. The vertical axis measures average standard deviation, which estimates the ranges of year-over-year percent change in employment for each county since 1980. Counties with higher average standard deviations demonstrated more volatility in employment growth rates than those with lower standard deviations. The horizontal axis

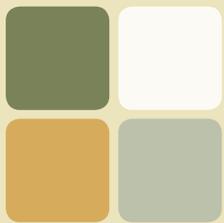
is the corresponding Hachman Index value for each area. The relationship between variation in job growth and economic diversity is not perfectly linear ( $R^2 = 0.37$ ), but the inverse correlation is statistically significant. In other words, counties with higher levels of industrial diversity tends to also have more stable growth rates.<sup>1</sup> This relationship is exemplified by the three WFN counties.

<sup>1</sup> Variability will also be a function of a geography's population—a very small population will show more volatile changes in employment because the gain or loss of one job proportionally will be greater for small areas than large ones.

Figure 3: Variation in Job Growth as a Function of Industry Diversity



Source: U.S. Bureau of Labor Statistics



# Wasatch Front North Employment Review

## Annual and Fourth Quarter Trends

BY TYSON SMITH, ECONOMIST

### Regional Overview

From 2012 to 2013 the Wasatch Front North (WFN) region added an annual average of 5,629 nonfarm payroll jobs, a 2.8 percent year over increase. Figure 4 highlights the positive annual trends in total employment for the region. The region grew employment at a slower rate than the rest of the state, which grew 3.3 percent over the year.

In the fourth quarter of 2013 employment growth accelerated slightly to 2.9 percent from 2012. The late-year uptick in growth is a positive sign that the region's economy will continue to add employees at a moderate pace through the first half of 2014.

### Industry Employment

Aligning firms and organizations that perform similar functions provides a construct for examining employment and the economy. Total nonfarm employment contains 12 industry

groups that can be clustered into two sectors: goods-producing (mining, construction and manufacturing) and service-providing (trade/transportation/utilities, information, financial activities, professional/business services, educational/health/social services, leisure/hospitality, other services, non-classified, and government). Figure 5 illustrates how these sectors grew from 2012 to 2013.

**Goods-Producing:** In 2013, private employment in goods-production grew at a rate of 3.7 percent per year, adding an annual average of 1,313 jobs. Construction employment grew by 5.6 percent, the fastest rate among the industry groups in the good-producing sector. Manufacturing employment increased at a less brisk 2.9 percent from 2012 to 2013, but added an average of 664 jobs nearly identical to the 669 jobs added in construction. During the fourth quarter of 2013 the goods-producing sector grew at a 4.0 percent rate, 0.3 percentage points quicker than the annual average for the region.

**Service-Providing:** Private employment in this sector increased by 4,703 jobs, or 3.9 percent, from 2012 to 2013. The professional/business services, educational/health/social services, and leisure/hospitality industry groups added an average of 2,526, 974 and 577 jobs, respectively; the largest annual increases in the region. The fourth quarter of 2013 mirrored annual averages in service-providing employment growth. Quarterly and annual retail trade employment did not make significant gains, adding approximately 0.1 percent in over both periods. The lack of growth in retail trade employment is a drag on growth, because this industry reflects one-fifth of the service-providing jobs in the region.

**Government:** Government employment is generally classified in the service-providing group; however, the government sector functions differently than the for-profit private sector and is therefore evaluated here separately. Government jobs represent nearly one-fourth of the total employment in the region. Annual

government employment in Wasatch Front North shrank by 0.8 percent year over. Federal and local government employment decreased by an average of 424 and 18 employees respectively from last year, while the number of state government jobs decreased by 54 positions. During the fourth quarter, federal government employment shrank less dramatically than the annual average, 1.5 percent versus 2.2 percent, while local government decreased 0.7 percent during the fourth quarter compared to 0.1 percent over the year.

Figure 6 shows the percentage change from 2012 to 2013 for each of the 12 major industry groups.

### Davis County

Total nonfarm employment in Davis increased 2.5 percent year-over-year. From 2012 to 2013 Davis added 2,715 nonfarm jobs, resulting in an annual average employment total of 110,727. Fourth quarter year-over employment growth was over half a percentage point higher than the annual average. The region added jobs

at a 3.1 percent rate from the prior year from October through December.

**Goods-Producing:** Annual goods-producing employment increased 4.1 percent, or an average of 733 jobs, from 2012 to 2013. Manufacturing, the county's largest industry, added an average of 370 jobs, up 3.5 percent from 2012. In the fourth quarter of 2013 construction experienced a 6.0 percent surge that outpaced the annual average of 5.2 percent. In late 2013, there was a quarterly average of 443 more construction jobs in the region than the fourth quarter of 2012.

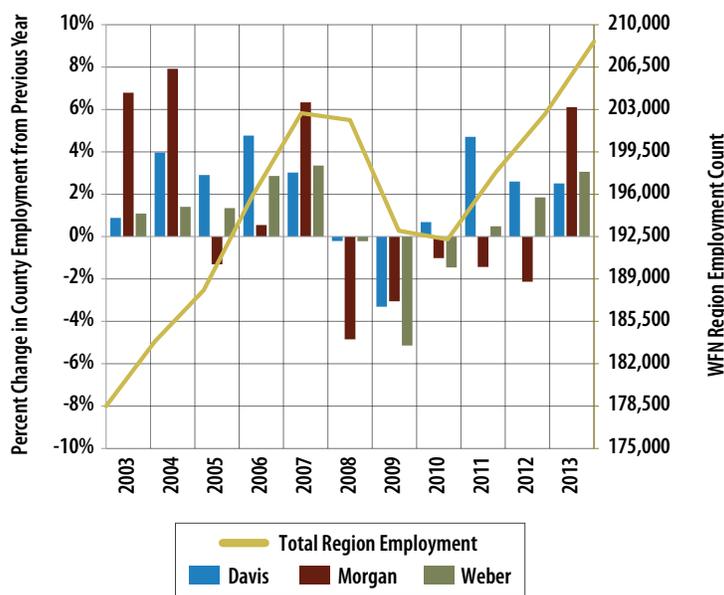
**Service-Providing:** From 2012 to 2013 the service-providing sector added 2,289 jobs year-over-year, a growth rate of 3.6 percent. The professional/business services and the educational/health/social services groups tallied an annual average of 1,280 and 763 new jobs, respectively. The Davis trade/transportation/utilities industry group had the largest employment decrease in the region, losing 312 jobs (1.5 percent). Year-over growth of 9.7 percent in professional and business services understates the progress of this industry group from 2012 to 2013. In the fourth quarter of 2013 the industry increased by 14.9 percent, finishing the year with a quarterly average of 15,574 jobs.

**Government:** Government employment fell 1.1 percent from 2012 to 2013. Federal government, which lost an annual average of 305 employees, was responsible for over 90 percent of the decline in government jobs in the region. Federal government job losses stabilized in the fourth quarter of 2013, falling 2.0 percent from the previous year, compared to the annual average decline of 2.4 percent.

### Morgan County

Total nonfarm employment in Morgan grew 6.1 percent from 2012 to 2013. Morgan added an average of 107 nonfarm jobs year-over-year, resulting in total employment of 1,856 for the year. Morgan experienced the largest difference between annual and quarterly employment growth rates in the region. While Davis and Weber added jobs at a similar rate during the fourth quarter

Figure 4: Annual Wasatch Front North Employment Trends



Source: U.S. Bureau of Labor Statistics

2013, year-over employment growth in Morgan decreased 2.2 percentage points during the last three months of the year compared to the annual average.

**Goods-Producing:** Goods-producing employment increased by an annual average of 17 jobs, or 3.4 percent, from 2012 to 2013. Construction added approximately 23 jobs or 7.8 percent. In the fourth quarter of 2013, the annual trend reversed. Although quarterly construction employment increased from the prior year, the growth was less robust at 1.7 percent. Moreover, total goods-producing employment fell 0.1 percent from the fourth quarter of 2012.

**Service-Providing:** Over the last year, service-providing employment in Morgan grew 10.0 percent, adding an average of 79 jobs. Trade/transportation/utilities and professional/business services increased 12.5 percent and 18.2 percent, respectively. Retail trade alone added 34 jobs, an annual increase of 20.4 percent. From the fourth quarter 2012 to the fourth quarter 2013, the service-providing sector grew at a slightly slower pace of 9.1 percent.

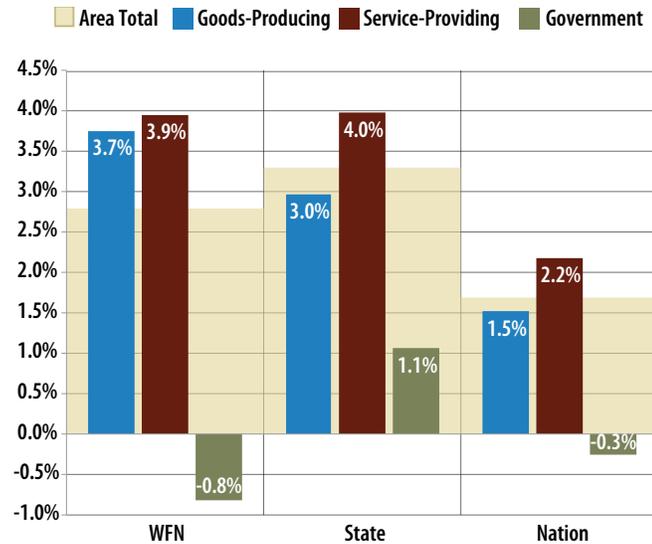
**Government:** The annual average of government employment rose from 456 in 2012 to 467 in 2013. From year-to-year, the local government added an average of 9 employees and federal government added 2 jobs to the county. The annual average government employment increase of 2.4 percent overshadows the fourth quarter swoon in which employment in this sector fell 0.6 percent. Quarterly government employment growth was driven down by a local government employment cuts.

**Weber County**

Year over total nonfarm employment in Weber increased 3.1 percent from 2012 to 2013. Average total employment in 2013 was 94,647, a 2,808 job increase from the previous year. Fourth quarter employment reached a post-recession high of 95,476, and increased 2.6 percent from the fourth quarter of 2012.

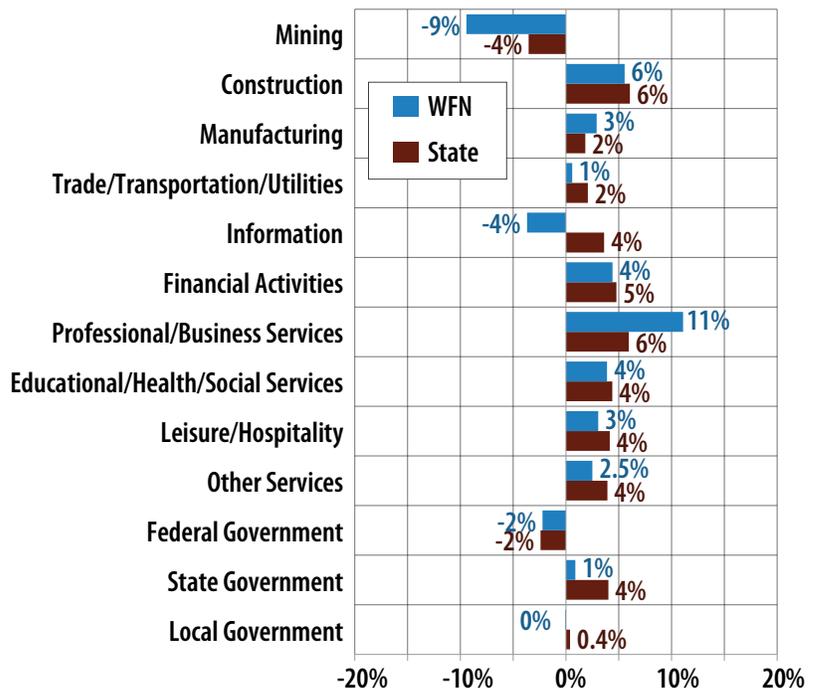
**Goods-Producing:** On average, employment in this sector increased by 564 total jobs (3.4 percent) from

Figure 5: Change in Sector Employment from 2012 to 2013



Source: U.S. Bureau of Labor Statistics

Figure 6: Change in Industry Group Employment from 2012 to 2013



Source: U.S. Bureau of Labor Statistics

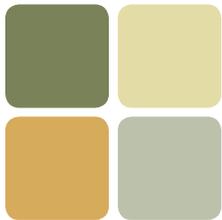
2012. Manufacturing, which makes up approximately 72 percent of all goods-producing jobs in the county, added 299 jobs over the year. In the fourth quarter 2013, goods-producing and manufacturing growth both accelerated faster than the annual average. Fourth quarter goods-producing employment grew 4.0 percent, compared to 3.4 percent for the year, and fourth quarter manufacturing employment grew 3.2 percent compared to the annual average of 2.5 percent.

**Service-Providing:** This sector added an average of 2,336 jobs from 2012 to 2013 for a

growth rate of 4.3 percent. Over the year, the professional/business services and the trade/transportation/utilities groups increased by 1,232 and 484 jobs, respectively. Growth in trade/transportation/utilities was even more substantial in the fourth quarter. A year-over increase in quarterly employment in transportation/warehousing (6.4 percent), wholesale trade (4.2 percent), and retail trade (2.8 percent) drove the upward change in trade/transportation/utilities.

**Government:** Government employment shrank by 0.5 percent from 2012 to 2013, which equates to an annual average of

95 jobs. Federal and local government employment fell 1.9 and 0.6 percent, respectively, while state government increased approximately 84 jobs over the year. Federal and local government employment experienced slower rates of decline in the fourth quarter of 2013. Year-over quarterly growth for those two sectors was negative 0.4 and 0.3 percent.



## The Journey to Work

BY TYSON SMITH, ECONOMIST

Where people work, and how they travel to and from work, are important aspects of the labor market. Commuter patterns are used by the Bureau of Labor Statistics to determine local area labor force totals and without accurate estimates of the employed population, the Department of Workforce Services could not produce county-level unemployment rates. Policymakers, economic developers, transit authorities and business owners all use commuter patterns to make investment decisions in public goods (roads and public transportation) and private goods (store locations and workforce availability).

The U.S. Census Bureau recognized the economic value of tracking and reporting commuting patterns; and through 2000, it collected this information via the long form during the decennial Censuses. In 2010, the Bureau reengineered the decennial census and discontinued the long form. At that time, the methodology for collecting detailed socioeconomic information, like commuter patterns, transitioned to the American Community Survey (ACS). The survey provides five year commuter estimates for all counties and large cities every year, rather than once every 10 years.

The ACS can illuminate the flow of labor into, and out of, a county. Some counties are net labor importers, while other counties are net labor exporters. Salt Lake County for example,

sees an estimated 97,063 workers commute into the county for work, compared to an estimated 33,869 working residence that commute out of the county, making it the state's largest net labor importer. All three Wasatch Front North (WFN) counties export more workers than they import, as shown in Figure 7. Nearly one third of Davis County's total employment commutes into the county; this is the highest percentage of in-commuter workers in the WFN. Morgan and Weber counties import 28.3 and 26.2 percent of their respective county employment. In comparison, a larger percent of working residents commute out of WFN counties: 61.3 percent (Morgan), 47.0 percent (Davis) and 33.7 percent (Weber).

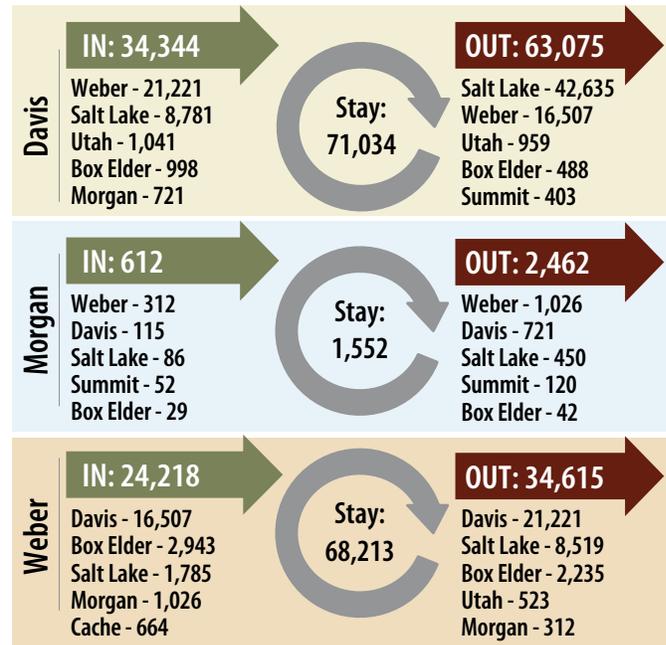
Tangential counties are more likely to share workforces. In Davis County 61.8 percent of the in-commuters come from Weber County (21,221), while 67.6 percent of out-commuters go to Salt Lake County for work (42,635). Over 60 percent of Weber's in-commuters (16,507 workers) and out-commuters (21,221 residents) are shared with Davis County. The highest percentage of in-commuters (51.0 percent) and out-commuters (41.7 percent) in Morgan County came from Weber County, 312 workers and 1,026 residents, respectively. Understanding that a county's workforce is not a closed ecosystem, bound by county lines, is a valuable piece of information for decision makers looking to invest in a specific geography.

Still, the majority of the total employment in a given geography normally comes from residents that live and work in the same county. County residents account for between 67.4 percent (Davis) and 73.8 percent (Weber) percent of employment in the WFN.

Proximity to work affects the commuting habits in other ways that are also captured by the ACS. Figure 8 highlights the difference in commute time for workers that worked outside their county of residence and those that worked inside their county of residence. As expected, commuters that worked in the county in which they live had much shorter commutes than those who worked outside their county of residence.

Figure 9 shows the different means of transportation for WFN workers depending on the location of the job (in the county, outside the county and outside the state). The proportion of workers who carpool is much greater for workers that travel outside their county or state of residence for work. In contrast, over 84 percent of the WFN commuters that work and live in the same county drive alone to their job.

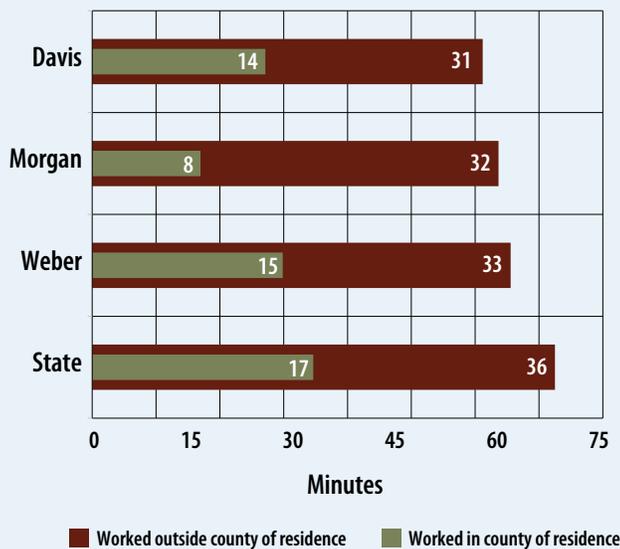
Figure 7: In-commuter/Out-commuter Employment Counts



Source: Census Bureau; American Community Survey

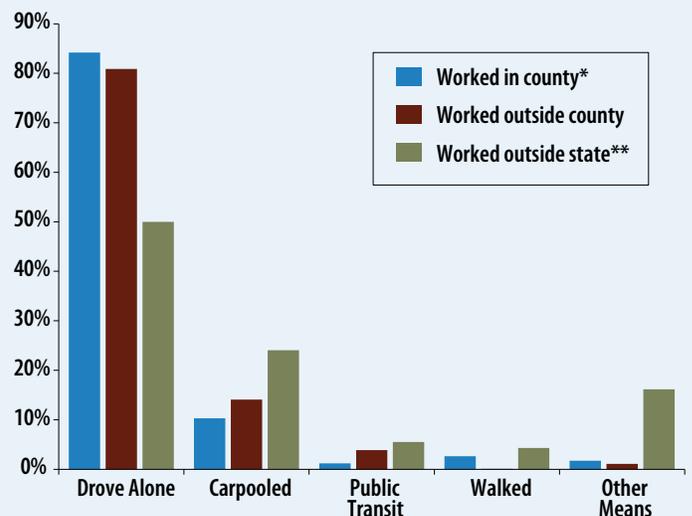
<sup>1</sup> Some data are released less frequently than every year, which is the case for the counts in Figure 7 (Table 3: 2006-2010)

Figure 8: Interstate Mean Travel Time to Work



Source: Census Bureau; American Community Survey

Figure 9: Wasatch Front North Means of Transportation by Place of Work



\*Exclude those residents who worked at home (approx. 5% of in-county employment)  
\*\*Estimates have margins of error, use with caution

Source: Census Bureau; American Community Survey



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# The Influence of Industrial Diversity

BY MELAUNI JENSEN, LMI ANALYST

Labor market economists don't always agree about the most favorable structure for a thriving economy; all theories, tools and applications have their pluses and minuses. The same holds true for the discussion about industrial diversification and its influence on local economies.

A diverse economy has a broad and balanced variety of industries and doesn't rely on related businesses that provide or produce the same products or services. As we saw in the Summer 2013 issue of Local Insights, industry data provide important information about local conditions. The Quarterly Census of Employment and Wages (QCEW) derived from Utah employer's Unemployment Insurance (UI) reports provides us with this view. This comprehensive database quantifies business establishments, shows an accurate reflection of Utah employment and allows us to profile a geographic area and evaluate its diversity.

Industry diversity can lead to lower unemployment in an area. Less diverse local economies are more prone to experience higher employment instability. Diversity on the other hand, offers more options. For instance, a worker who is unemployed from one industry may find work in another industry desiring their skill set. Occupations such as accountants or sales

representatives could work in many different industries and may have an easier time finding opportunities than those who are skilled for specific industries like coal miners and skin care specialists. When one industry loses workers, the others in the area may be adding jobs. Industrial diversity can minimize this risk of unemployment and temper a downturn, or recession in the economy.

To measure industry diversity, DWS economists look to the Hachman Index. This tool was developed by Frank Hachman, an economics professor from the University of Utah. Using QCEW data and its industry classification coding system (NAICS) to identify industries, the Hachman Index compares the variety of industries in a local economy to the national variety. Economists use this formula to calculate the variable comparisons.

Utah currently ranks fourth in the nation for industrial diversity. This diversity has been a contributing factor to Utah's relatively speedy economic recovery.

Industrial diversity is one tool economists use to evaluate the underlying strength and performance of a local economy. In this issue of Local Insights, industrial diversity will be looked upon at the county level, and some revealing factors will emerge.