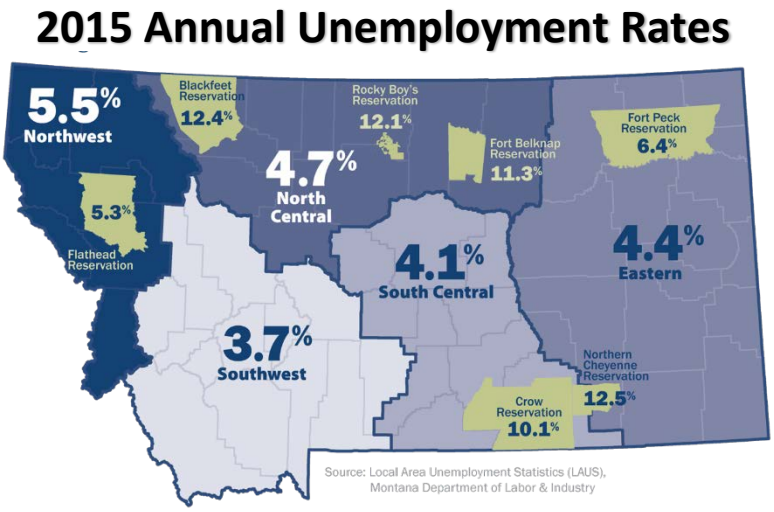
Montana Department of LABOR & INDUSTRY

Fact Sheet: Reservation Unemployment Rates

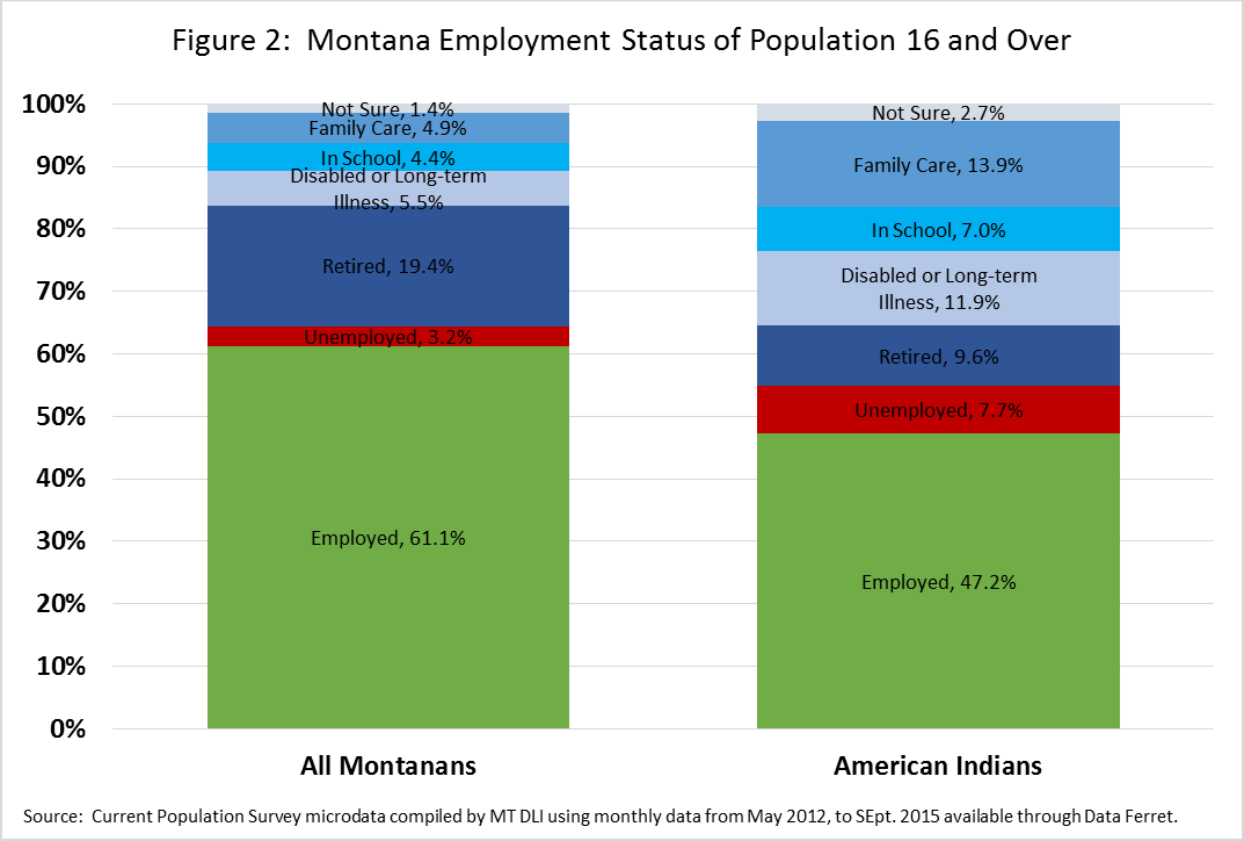


The Montana Department of Labor & Industry produces monthly and annual unemployment rates for Montana's seven reservation areas using the same methodology and definitions used to generate labor market information for counties and cities across the state and nation. Because these monthly unemployment rates are produced using the official methodology, the unemployment rates can be compared to other geographies or across time, allowing for greater research on reservation economies. Most states do not provide employment and unemployment rates for their reservation areas. Montana produces these rates in recognition of the important role reservation areas have in our state's economy. Average wage rates and some industry employment information is also available.

The unemployment rate measures how hard it is to find a job <u>if you are looking for a job</u>. This criteria helps the metric remain focused on measuring economic changes in the economy, rather than on demographic or cultural shifts that can influence other labor force metrics over time. Yet on some reservations, the economic conditions have been persistently poor for long enough that some workers may have become discouraged and stopped looking for work. These workers are not included in the unemployment rate because they are no longer actively seeking employment. Other metrics, including the labor force participation rate or the employment to population ratio, include these discouraged workers and are more appropriate to examine what portion of the economy is actively engaged in the labor market.

Figure 2 illustrates these three different labor force metrics using data from May 2012 to September 2015 for the population over 16 years of age.[i] For all Montanans over the age of 16, about 61% are employed. This employment to population ratio is above the national average, placing Montana in the top 20 states for this metric. The percent of unemployed is shown in red at roughly 3% for the population as a whole. The much higher unemployment levels of about 8% for Native Americans suggests that the lower employment to population ratio is due to a lack of available work, with more people becoming discouraged by a lack of job opportunities and instead choosing to pursue other life goals.

The remainder of the population, shown in the blue categories, are out of the labor force. These individuals include the elderly, retired workers, family caregivers, students, or disabled workers. These individuals are not looking for work and are therefore not included in the unemployment rate. The labor force participation rate is the employed and unemployed as a percent of the population, or about 64% for the total population compared to about 55% for the American Indian population. Other estimates put the American Indian labor force participation rate closer to the rate for all Montanans, at about 57% to 60%.[ii]



Both the employment to population ratio and the labor force participation rate vary both because of economic conditions and demographics. For example, as the baby boomers move into retirement age, a greater share of our population will move out of the labor market. If other age groups don't increase their labor force participation in order to accommodate large number of retirements, Montana's labor force will decline without any changes in economic performance. The employment to population ratio also has the same problem of responding to both demographic shifts and economic performance. In contrast, the unemployment rate is designed to measure only changes in economic performance (not demographic shifts), and therefore must focus solely on the population of people working or actively seeking work. Further, unemployment rates are more consistently produced over time and across geographies, allowing for comparisons and for research on changes in the economy.

Why are the unemployment rates produced by the Department of Labor & Industry different from those produced by other federal agencies?

There are three federally-produced sources of employment information for reservation areas. While at first glance, the three data sources have very different numbers, all three sources of information have very similar measurements of the number of people employed, available for work but not working, and unemployed. The differences arise in what types of workers get placed in which category. Other differences include the year, the sampling frame, and whether the data source includes information on race or tribal affiliation.

The first is the Department of Labor & Industry, which produces unemployment rates and employment levels in conjunction with the Bureau of Labor Statistics (BLS). Department of Labor & Industry statistics are BLS statistics, so the rest of this section will refer to these rates as BLS statistics. The BLS produces reservation statistics on a monthly basis in a manner that provides apples-to-apples comparisons to other states, counties, and the national unemployment rate. In addition, these statistics provide employment trends throughout the year, providing more updated data on changes in reservation economies. Reservation employment and unemployment levels are available through www.lmi.mt.gov.

Figure 3: 2010 Employment to Population Ratios, and Population Not Working from BIA 2013 American Indian Population and Labor Force Report

	Percent of the Tribal Service Population Over 16 who are working in Civilian Jobs	Percent of the Population over 16 who are Available for Work, but Not Working
Montana	47.8	19.5
Blaine, Fergus, Garfield, Petroleum, and Phillips	38.1	29.1
Chouteau and Hill	48.2	19.1
Northeastern Montana	51.0	16.3
Using only Reservation Areas, and ALL AIAN-AOIC		
Assiniboine and Sioux Tribes of the Fort Peck Indian Reservation	50.7	
Blackfeet Tribe of the Blackfeet Indian Reservation of Montana	51.2	
Chippewa-Cree Indians of the Rocky Boy's Reservation	46.7	
Confederated Salish and Kootenai Tribes of the Flathead Reservation	50.1	
Fort Belknap Indian Community of the Fort Belknap Reservation of Montana	36.3	
Crow Tribe of Montana	43.6	
Northern Cheyenne Tribe of the Northern Cheyenne Indian Reservation	43.5	

The second source is the U.S. Census Bureau, which provides both demographic and economic information for reservation areas through the American Community Survey (ACS). While this data source provides valuable information about age, race, poverty status, and other metrics not available from other sources, the sample size is too small to produce data on a monthly or annual basis. The sample responses must be combined over a five-year period to get publishable data for the reservations. Although essential data, the ACS data is not particularly timely and does not change very quickly when economic circumstances change. However the ACS data is used in both of the other two data sources for reservation employment information, and therefore is very important for accurate statistics.

The ACS also collects data by both reservation geography and by race (although not both at the same time), also providing useful information on American Indian employment status in Montana. BLS data is only available for geographies, and includes all persons living on the reservation in the reservation unemployment rate, regardless of race or tribal affiliation. Census data is available through the factfinder.census.gov website.

The third source is the Bureau of Indian Affairs, which provides data roughly every five years using a combination of their own survey data plus data from the U.S. Census Bureau. The most recent publication of the BIA was for 2010, published in 2014. The BIA data is very critical because it is the only source of federally-produced data that collects data by tribal affiliation. However, the BIA does not provide unemployment rate information, and argues that "none of the statistics provided in [their] report should be seen as reflecting or representing estimates of unemployment. Anyone who …infers any statement about unemployment …will be misinterpreting and misrepresenting the findings of [the] report" (pg 9).[iii]

The BIA does provide an estimate of the percentage of the tribal service population who are working, which was roughly 47.8% in Montana in 2010. Note that this statistic is very similar to the American Indian employment percentage provided by the Current Population Survey in Figure 2 above. The BIA also provides an estimate for the tribal population over 16 that is available for work, but not working. This BIA definition is very close to an unemployment rate concept, but does not require the individual to be searching for work. In 2010, the estimated percent of the tribal population available for work by not working in Montana was 19.5%. Note that this statistic is fairly similar to the data illustrated in Figure 2 above if you add both the unemployed and those involved in family care (who would likely be available for paid work if offered).

The most recent BIA data from 2010 is illustrated in Figure 3 and available at www.bia.gov/cs/groups/public/documents/text/idc1-024782.pdf. The BIA does not provide estimates of the population not working but available for work for reservations, but does for some counties that surround reservation areas. The employment to population figures included in Figure 3 only include American Indians, excluding non-Indians living within reservation boundaries.

Which Estimate Should I Use?

The three sources differ by the intended use and estimate timeframes. The U.S. Census data is a snapshot of the population over a given timeframe, but their estimates are not designed to indicate trends over multiple years. In contrast, the BLS estimates are designed to measure whether the employment situation is improving or deteriorating, with less focus on the exact measure at any particular point in time. Therefore, the Census estimates likely better describe the population at any given point in time, and the BLS estimates are likely better at describing changes in circumstances. That being said, both estimates are federally produced official statistics and are both viewed as legitimate sources.

The BIA data measures a different concept of employment, not following the conventional definition of unemployed meaning someone who is actively seeking work. While there are many reasons why this method may be more appropriate for reservation areas that often have fewer job openings, it is not comparable to the other two methods. The BIA data also includes information on tribal affiliation living on or near the reservation areas, making it much different than the approaches taken by the Census and BLS to measure all people on reservations regardless of race or tribal affiliation. Therefore, the BIA estimates shouldn't be used to compare reservation areas to the state, nation, or to other counties in an apples-to-apples comparison, but they do provide valuable information for tribal leadership and others concerned about the employment status of tribal members on reservation areas.

Which Source is More Accurate?

Because both the Census data and the BLS data include sample-based surveys, both sources could include error. That being said, the BLS uses many more data sources and includes a much larger sample than the ACS, which suggests that the BLS estimates are likely more accurate. In short, the ACS only provides unemployment and employment data for reservation areas for a five year timeframe because the sample is too small to get reliable estimates over a shorter timeframe. In contrast, BLS methodology and data sources allow the estimates to be produced monthly. The table below illustrates the data sources and sample used for each source.

Data Sources for the American Community Survey	Data Sources for the Reservation Unemployment Rates Using BLS Methodology
1. Household sample collected by in-person, mail, and telephone interviews reaching between 2% and 7% of reservation population over a five-year timeframe.[1]	1. Sample of 740 households across the state each month, or 44,000 over a five-year timeframe. It is difficult to determine how many of these household are on a reservation, but similar stratification is used for the Current Population Survey as the ACS. 2. Sample of 3,600 businesses every month reporting employment levels, or 216,000 over a five-year timeframe. It is difficult to determine how many of these businesses are on reservation areas, but national businesses like McDonalds or Walmart report nationally, so we know that at least some reservation employers are included. 3. Unemployment insurance claims by county and area. One of Montana's reservations runs its own UI system, but the claim levels are often small (< 50), so the exclusion likely doesn't influence unemployment rates by a large amount (although it does increase error). Also, layoffs often impact both reservation and off-reservation workers, so increases in the claims amount by non-tribal members likely would enter the model. 4. Employment data reported to the MT DLI for the unemployment insurance program, which should cover 96% of all Montana payroll employment. 5. Census population data on the level of unemployed and employed people in Census tracts on and off the reservation, which is used to divvy up the number of unemployed/employed people in each county to on-reservation and off-reservation areas. This data comes from the ACS, so concerns about bias in the ACS are a concern for the ACS data as well.

How are the unemployment rates for reservation areas produced?

The challenge in producing economic statistics in Montana (and in every rural area) is one of small population and the statistical difficulty in getting a consistent and unbiased estimate from such a small sample size. Further, the costs of gathering the information must also be considered. In order to balance the estimate accuracy with the costs, the process to create the unemployment rates for Montana and local areas within

[1] See www2.census.gov/programs-surveys/acs/methodology/design_and_methodology/acs_design_methodology_report_2014.pdf for a description of the sampling methodology for the ACS. Any errors mis-representing the sampling design are unintentional.

Montana begins with the national unemployment rate. Every month, the Bureau of Labor Statistics conducts a national telephone survey including 60,000 households (about 740 in Montana) called the Current Population Survey. This survey is used to develop the estimates for total employment and unemployment at the national level. The large sample allows for the national rate to be fairly accurate, especially when statistical models to use data from the previous and future months are also included to reduce volatility.

Once accurate employment data is generated at the national level, the employment is allocated to each state based on data from three sources: 1) the state-level data in the Current Population Survey, 2) unemployment insurance claim trends, and 3) the survey data from the Current Employment Statistics. The Current Employment Statistics is a monthly survey of employers, including about 3,600 Montana employers, that generates payroll employment estimates by industry. These data sources are combined in a complex statistical non-linear regression model that has developed and refined by elite statisticians over the 40-year history of producing unemployment rates for Montana. In concept, the LAUS model behaves as an autoregressive model with the trend dependent on the three data sources mentioned above, smoothed with a Kaufmann filter, and seasonally adjusted with an ARIMA model.[iv]

After the employment and unemployment figures are set for the state as a whole, the number of jobs and unemployed are divvied up among the 56 counties based on the survey and claims data, along with last year's employment data from the Quarterly Census of Employment and Wages (QCEW). The QCEW data comes from the mandatory reporting of employment and wages by employers for the unemployment insurance program. Because this data is a census of all employers, rather than an estimate based on a survey sample, the QCEW data is considered the most accurate of employment data at the state level. However, because it takes time for employers to report information, then analysts to compile the data, the data availability lags behind the actual employment by about six months, making it in appropriate for use as an input in the monthly unemployment rate model. However, the data is utilized for benchmarking at the end of the year, and to determine ratios for allocating state employment to local areas. The final data source used in allocating employment to counties is the Census Population Estimates. Because unemployment rates cannot be less than zero, the employment totals in each county must be less than the estimated population.

The final step in creating reservation unemployment rates is to allocate county employment to the reservations using data from the American Community Survey (ACS) 5-Year estimates. The ACS produces estimates of the number of employed and unemployed in each county and on each reservation in Montana, but these estimates are only produced annually and as a five-year average. The long timeline included in the estimate makes it inappropriate for measuring changes in the economy in a timely manner. However, the knowledge from this data source is used by the BLS to produce monthly data for reservation areas. Briefly, the ACS data is used to create a ratio for allocating what portion of a reservation county's employment lies within the reservation versus off the reservation. For example, Fort Belknap Reservation lies within two counties, Blaine and Phillips County. According to the 2012 5-year ACS data, employment on the Fort Belknap reservation comprises 19% of the total employment in both Blaine and Philips Counties, while on-reservation unemployment represents 43% of the two-county total. These ratios are then used to allocate the monthly estimates from the BLS methodology, assuming that 19% of Blaine County's monthly employment level and 19% of Philips County's employment level lies within the reservation, with similar calculations done for the 43% unemployment in each county. The data is then used to develop an unemployment rate for Fort Belknap Reservation.

At the end of each year, the state and local data are updated with additional data, and with the employment counts from the Quarterly Census of Employment and Wages. This process, referred to as benchmarking, reduces variance and results in more accurate allocation to local areas.

Would improvements to data sharing between DLI and tribal governments about unemployment insurance claims impact reservation unemployment rates?

Yes, but only marginally, like moving an unemployment rate less than one percentage point. One reservation currently operates its own UI system. Better data sharing would likely decrease estimate error, but is not likely to alter the estimate itself because UI claims are only one input into the unemployment rate model. Other data is more influential in estimating unemployment, including monthly surveys of 740 households and 3,600 Montana businesses.

That being said, other statistics would likely improve from better reporting from the reservation areas. The reservation areas that have their own UI programs do not report employment and wages to DLI, thus that employment would not be included in employment and wage statistics. Although better employment reporting would not have a large impact on unemployment rates, better reporting would improve the accuracy of other economic metrics, such as average wages, GDP, and personal income. The statistical programs attempt to adjust for the lack of data, but it is difficult to determine whether these adjustments are adequately capturing economic activity.

Background on the Monthly Publishing of MT DLI reservation unemployment rates

As you know, reservation areas have not traditionally been included in the types of unemployment rates produced by the Bureau of Labor statistics nationally. MT DLI recognizes the importance of reservation communities in our overall economy, and the dire need for better information to help shape economic development efforts in what are some of Montana's most economically-sensitive communities. Therefore, in 2006, the MT DLI started to produce annual unemployment rates for reservations. However, these annual rates were not widely published, and were not published monthly with similar unemployment rates for counties, the state, and the nation. During the 2015 session, Representative Kipp requested that the MT DLI begin to produce monthly unemployment rates and employment data for reservation areas consistent with the information produced for counties and the state. Governor Bullock and Commissioner Bucy sent a letter to BLS requesting that reservation rates be produced on a monthly basis. In the summer of 2015, MT DLI started to produce monthly reservation unemployment information and to disseminate the data using the same processes used for county, state, and national employment data.

The process is not yet perfect. Montana reservations and counties are rural and have small populations, and the estimates are fairly volatile with wide errors consistent with other small areas. Further, while the reservations are recognized as official labor market areas by the state, the national BLS has not yet started to include the reservation data on the national website. Montana's reservations would likely have better ability to compare themselves to other reservations across the nation if the national BLS officially recognized all reservation areas as publishable geographies.

Why does it seem so challenging to get good statistics for reservation communities?

Statistics are best at measuring large populations. The smaller a population gets, either in levels or as a percentage of the total population, the larger the standard error for the estimate. For example, it is difficult to get accurate data on the pay gap by gender for each occupation in Montana. Overall, there are about 500,000 working people in Montana. There are 840 possible occupations, so the average within each occupation is about 600, or about 0.1% of the population. In order to get an accurate statistical estimate that was statistically different than zero, nearly all 600 people working within the occupation would have to be surveyed.

Likewise, only about 6% of Montana's labor force lives on one of our seven reservations. The reservation with the largest population is the Flathead reservation, but even their 13,000 workers only represent roughly 2.5% of the population. Unemployment rates divide this 2.5% of the state's population into three categories, with the smallest group (unemployed) being approximately 0.3% of the total population. While that 0.3% is a meaningful population for us as a state, it is a very small percentage of the total. It is very difficult to get an accurate statistical estimate from such a small comparative population.

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[i] This timeframe was used because of a change on the definition in May 2012. September 2015 was the most recent month of data available at the time this factsheet was written. Please note that the standard errors of the estimates for the categories out of the labor force are very high and do not necessarily represent significant differences in the two populations compared. Better data on the level of disabled workers, students, and caregivers are available from the American Community Survey.

[ii] 2013 American Community Survey 5-year estimates, S2301, U.S. Census Bureau

[iii] The 2103 American Indian Population and Labor Force Report is available at http://www.bia.gov/cs/groups/public/documents/text/idc1-024782.pdf.

[iv] Additional information on the monthly estimating model for the state unemployment rate can be found on the LAUS Estimation Methodology page at www.bls.gov/lau/laumthd.htm. A simplified equation can be found in Pfeffermann and Tiller, 2002 at http://eprints.soton.ac.uk/98/1/198-01.pdf.