

STATE OF MONTANA  
**LABOR DAY REPORT**

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2016



# STATE OF MONTANA **LABOR DAY REPORT**

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## 2016

SEPTEMBER 6, 2016

### **STATE OF MONTANA**

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Mike Cooney, Lieutenant Governor

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Montana Department of  
**LABOR & INDUSTRY**

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Governor Steve Bullock:

As the Commissioner of the Montana Department of Labor & Industry, it is my privilege to present the 2016 Labor Day Report to you and the citizens of Montana. Montana's economy had a successful year in 2015 with continued growth and diversification, providing ample opportunities for people to join the workforce.

In the last year, Montana's industries added thousands of workers to grow and expand their businesses. Our unemployment rate of 4.2 percent continues to be better than the national average of 4.9 percent. More Montanans are working than ever before, with wage growth at historic highs.

This year's Labor Day Report spotlights the achievements of Montana's economy, including:

- The fifth fastest GDP growth in the nation in 2015, despite the slowdown in mining, a testament to the resilience of our diverse economy.
- Payroll employment growth nearly two times faster than the historic average.
- Wage growth across industries, adding up to the strongest gain in real wages ever recorded.
- First in the nation for business startups, with a high success rate.
- Ample opportunities for Montanans to join the workforce in new or high wage jobs due to continued job growth combined with many upcoming retirements among the aging population.

The state's exceptional growth in 2015 highlights one of Montana's greatest assets – our diversity. Agriculture and mining supported the state's economy during the recession and recovery, keeping unemployment low and wages growing. The situation has now reversed with the rest of the state's industries providing growth, while the natural resource sectors mitigate lower commodity prices. The resilience, determination, and entrepreneurialism of Montanans demonstrated throughout this period has made our state successful, and is the key to our future success.

These characteristics shared by Montanans are what gives me confidence in our economic future. While we may not know the shape of our economy in future years, our well-educated and enterprising workforce will use their ingenuity to seek out opportunities, transforming and adapting our businesses. With your leadership to help guide our state through future challenges, Montana's businesses and working families will enjoy prosperity in the next year and beyond.

Governor Bullock, thank you for your leadership and dedication to Montana's workers, businesses, and communities.

Sincerely,

Handwritten signature of Pam Bucy in blue ink.

Pam Bucy, Commissioner  
Montana Department of Labor & Industry

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## Executive Summary

On Labor Day 2016, Montanans can enjoy the benefits of a year of exceptional growth during 2015. Workers have experienced an extended period of high wage growth, continued job gains, and low inflation. Montanans continue to be among the best in the nation for entrepreneurialism and dynamic business conditions. Businesses have increased profits with strong GDP growth. The U.S. economy is also on solid footing, with unemployment rates below five percent. Well into the seventh year of continued economic growth, businesses and consumers are gaining confidence in the promise of economic activity.

This Labor Day, Montana's economy has posted:

- The fastest annual real payroll wage growth ever recorded since the data series started in 1990, at 2.9%. Real wage growth implies that wages are growing faster than inflation, allowing Montanans to increase their standard of living.
- The 6th fastest wage growth in the nation over the last ten years, with Montana's wages increasing by 3.2% annually on average compared to only 2.7% for the nation.
- The average annual payroll wage in 2015 increased 3.0% to \$40,065.
- Montana's payroll employment increased by 2.1% over the year, nearly twice the average growth rate.
- Montana's entrepreneurs continue to be among the best in the nation, ranking 1st among states for business openings rate in 2015, and 2nd in the nation for net business openings.
- Montana had the 5th fastest GDP growth in 2015.
- Montana has outperformed the U.S. economy in personal income growth on an annual basis in eight of the last ten years (with 2013 and 2014 as exceptions). Montana ranks 9th among states for the fastest personal income growth since 2005.
- Montana's industry diversification has helped the state have high levels of GDP and employment growth, despite concerns in the energy industry.

Yet, slow economic growth among our global trading partners has reduced demand for our exports and resulted in low commodity prices, particularly for agriculture and energy products, with negative impacts in Eastern Montana. Despite weakness in these sectors, the remainder of the state's economy was strong enough to post impressive results for 2015.

Montana's robust economic growth has maintained our low unemployment rate, which has hovered at the ideal levels of 4.0% to 4.3% throughout 2015 and 2016. As the state's baby boomer population retires without enough younger workers to replace them, unemployment rates are likely to decrease further, resulting in tight labor markets.

While a worker shortage has several positive benefits for workers, such as strong wage growth and plentiful job opportunities, a constrained labor supply can also restrict economic growth if businesses cannot find workers to produce their product.

- Nearly 6.5% of Montana's labor force is already over 65 years of age, the second highest share in the nation. An additional 96,000 workers are between the ages of 55 and 64 and close to retirement.
- While many Montanans continue to work past retirement age, there are still expected to be at least 120,000 retirements in the next ten years.
- Montana's typical working age population (those aged 16 to 64) is only projected to grow by about 475 people annually.
- In-migration and increased labor force participation are expected to help ease labor market tightness. However, the Montana Department of Labor & Industry projects only 4,500 workers will be added to the economy each year – roughly half of the number of workers needed to fuel the 2015 job growth of roughly 9,200 jobs, resulting in very low unemployment rates.

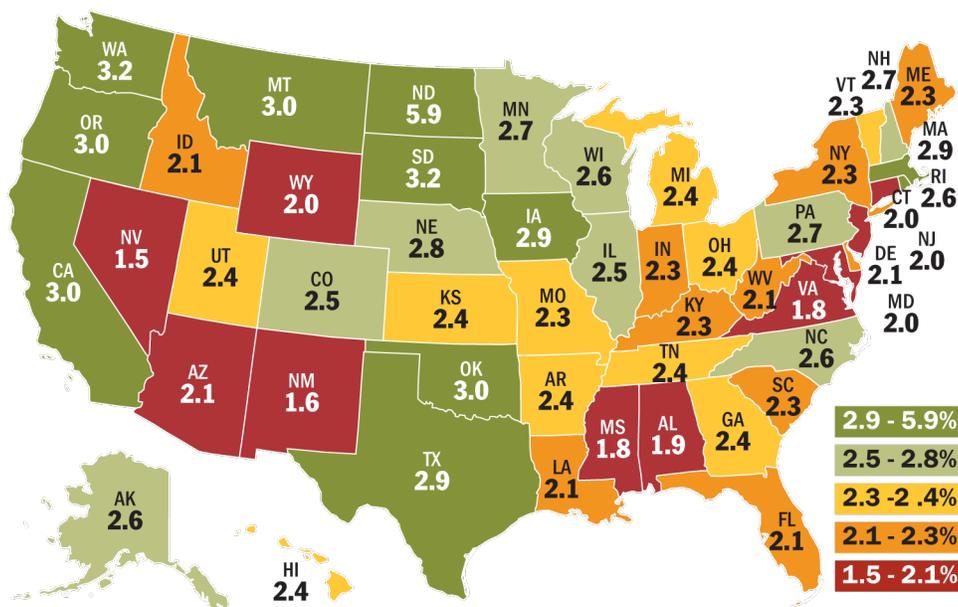
Montana must react to the tighter labor supply by finding innovative ways to increase labor force participation above expected levels and by increasing productivity, allowing businesses to continue to increase their production with a limited labor supply. Efforts already are underway to address Montana's worker shortages at the state policy level, including streamlining worker training systems to reduce training times; increasing work-based learning to give workers the ability to earn while they learn; expanding dual enrollment programs and greater career preparedness to allow students to identify their career interests at a younger age; and enhancing the matching between training programs and the needs of employers.

Higher wages and more job opportunities will attract more workers into the labor market and increase labor participation rates, but these natural market forces may not be enough to fill the demand for workers. Policy makers and businesses are implementing strategies to encourage greater labor force contributions by individuals with traditionally low labor force participation rates, such as mothers and family caregivers, the disabled population, and workers with low levels of education and training. Businesses that successfully implement creative recruitment and retention strategies will have a competitive edge in our future economy.

## 2015 Real Wage Growth is Highest Recorded

Montana workers experienced very strong wage growth in 2015, with the average wage increasing by 3% up to \$40,065. Montana's wages have been increasing faster than the nation's for most of the last ten years, with Montana's wages increasing by 3.2% annually since 2005 compared to only 2.7% for the nation. In fact, Montana ranks 6th among states for the fastest wage growth over the 2005 to 2015 timeframe. In dollar terms, the average wage has increased by \$10,900 over the last ten years and \$1,170 over the last year. **Figure 1** illustrates the average wage growth among states since 2005.

**FIGURE 1**  
**Five-Year Average Annual Wage Growth**  
 2010-2015

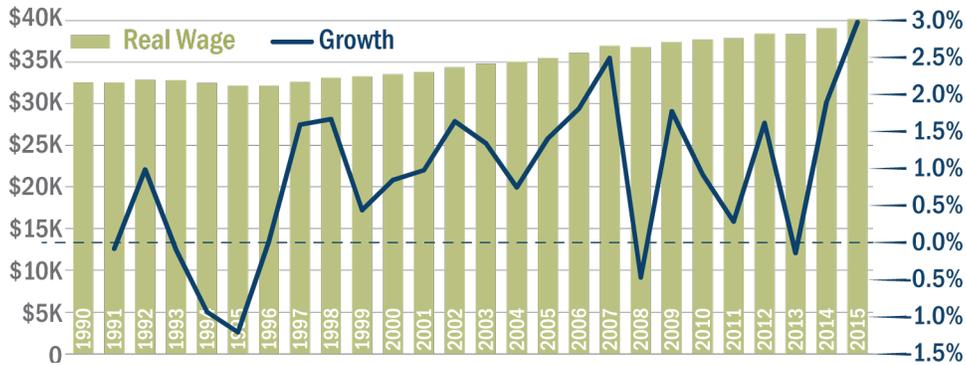


Source: Quarterly Census of Employment and Wages, Montana Department of Labor & Industry, Bureau of Labor Statistics

What makes Montana's recent wage growth remarkable is the real wage gains. With inflation at only 0.1% for 2015, Montana had real wage gains of 2.9% in 2015, which is the fastest gain in real wages ever recorded since the data series began in 1990. Real wage gains are increases that occur above the rate of inflation, which signal that workers are able to increase their standard of living with their work earnings. Montanans can now afford more goods and services with their wage earnings than ever before. Montana's real average annual wages are illustrated in **Figure 2**, with the growth rate over the prior year shown on the right hand axis.

## FIGURE 2 Fastest Real Wage Growth Recorded

Montana's Real Wages (2015 dollars) and Real Wage Growth



Source: Quarterly Census of Employment and Wages (QCEW), U.S. Bureau of Labor Statistics. Inflated using the CPI-U.

Over the last five years, average wage growth has been fastest in the private sector, increasing at an average of 3.3% annually since 2010. In comparison, government wages increased at an average pace of 2.7% annually for federal government workers, and 2.3% annually for state and local workers. Over the last year, however, private sector average wage growth slowed to 3.0%, with faster growth in federal and state government. Slower private average wage growth occurred due to strong employment growth in low-wage industries combined with job losses among the high-wage oil and gas mining jobs.

**Montana had real wage gains of 2.9% in 2015, the fastest gain in real wages ever recorded.**

A stronger economy, tighter labor markets, and industry mix all explain why Montana's wage growth has outpaced the nation over the last decade. The industries of health and education, trade and transportation, and leisure activities all have had strong wage growth in the last five years, and are some of the largest employing industries in the state. These industries, as well as mining and utilities, are more concentrated in Montana than in the nation and have helped a large share of Montana workers obtain wage increases that outpaced their national counterparts.

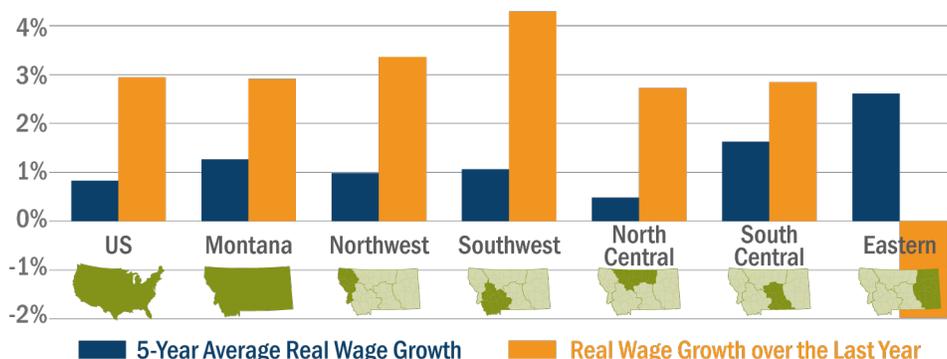
In addition, Montana's economy outperformed the national economy during the recession (partially due to strong prices for agriculture and energy products), which kept wages growing in Montana while they stagnated nationally. The better performance both during and exiting the recession kept Montana's unemployment rate relatively low, keeping upward pressure on wages. In particular, Eastern Montana experienced very tight labor markets due to the boom in energy

development, resulting in rapid wage growth across all industries. Average wages in Eastern Montana have increased by over \$8,100 over the last five years, and the region has the highest average wages among all regions at \$42,477.

Regionally, wage growth over the last five years has been concentrated in the eastern portions of Montana that have been impacted by the oil and gas development, but that situation has now changed with the strong economic growth in the western portion of Montana. **Figure 3** illustrates the wage growth in the U.S., Montana, and in Montana's five regions for the five-year and one-year timeframes. For the past five years, wage growth in Eastern Montana averaged 2.6% per year, with growth of 1.6% annually in the South Central region surrounding Billings. The low oil prices, which declined in mid-2014, have taken their toll in the eastern half of the state, with negative employment and wage growth over the last year. However, wages remain significantly higher than their 2010 level, with an average of \$42,477 in 2015 compared to \$34,351 in 2010. The U.S. Energy Information Administration expects oil prices to recover towards the end of 2016, with prices forecasted to increase to \$51.58 per barrel in 2017 compared to \$41.16 in 2016.<sup>1</sup>

### FIGURE 3 Real Wage Growth

*Comparison among US, Montana, and Montana's Regional Economies*



Source: Quarterly Census of Employment and Wages (QCEW), U.S. Bureau of Labor Statistics.

The Southwest and Northwest regions have compensated for the wage and employment losses in Eastern Montana, plus some, with wage growth exceeding 4% in the Southwest Region surrounding Bozeman and Butte. Strong economic growth in the more populated half of the state has supported the overall economy and pushed state real wage growth in 2015 to the highest recorded values.

Rapid wage growth over the past few years has helped Montana's wages catch up to those in the rest of the nation. Montana's average wage of \$40,056 is increasing to move closer to parity with other states. The average private sector job in Montana paid about a thousand dollars less than the overall average at \$39,013.

Montana sank to this low wage ranking over a long period, with our average wage relative to the national average declining for most of the second half of the 20th century, hitting an all-time low in 2000. In 2000, Montana's average wage was only 69% of the national average wage. Since the turn of the century, Montana wages have been recovering relative rest of the nation, with average wages now equal to 76% of the U.S. average wage.<sup>2</sup>

Montana's lower wage levels can be partially explained by the prevalence of part-time work. The average wage calculation is based on payroll jobs, which may or may not be full-time jobs. The average private sector payroll job in Montana had a workweek of only 32.6 hours in 2015 – the shortest work week in the nation.<sup>3</sup> But Montanans are known for being hardworking, and many people work multiple jobs or have their own business to compensate for lower earnings. Montana has the 4th highest rate of multiple jobholding among states in 2015, with 7.8% of workers holding multiple jobs.<sup>4</sup> Once hours from multiple jobs are included, the typical Montanan works 38.3 hours per week, moving the state to the middle of the pack in terms of hours worked per week.<sup>5</sup> Comparing hourly wages adjusts for differences in the number of hours worked. Montana's wages rank better when comparing hourly wages, ranking 45th among states.<sup>6</sup>

Although full-time work is typically preferred by workers, the prevalence of part-time work in Montana may become an asset to our economy as labor markets continue to tighten. Part-time work allows older workers, students, and caretakers to balance work with other life demands, such as medical appointments, caring for family members, obtaining education, or retirement activities. Seasonal and part-time positions provide opportunity for these types of workers to remain working when they would otherwise be out of the labor force.

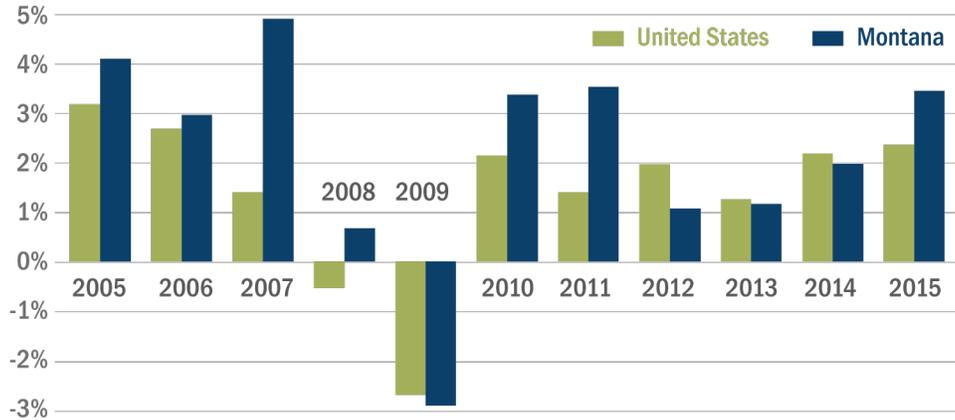
## Montana 5th Among States for Overall Economic Growth

Montana posted yet another year of solid economic growth in 2015, posting the 5th highest real GDP growth among states, with a growth rate of 3.5% compared to only 2.8% nationally. GDP measures the overall value of economic activity in the economy. **Figure 4** illustrates Montana and U.S. GDP growth over the last ten years. During this time, the Montana economy has outpaced the U.S. economy in terms of real GDP growth, posting an average growth of 2.0% per year compared to 1.2% for the U.S. Montana ranks as the 7th fastest state for real GDP growth over the last five years and 9th fastest growth over the last 10 years.

Montana's rapid GDP growth in the last year has been coming from growth in the manufacturing, agriculture, and financial activities sectors, with sectors related to oil and gas development creating a drag on growth. The industry contribution to 2015 GDP and GDP growth is illustrated in **Figure 5**. The largest contributor to Montana's GDP is the financial activities sector, with nearly 18% of GDP.

## FIGURE 4 Real Gross Domestic Product (GDP)

Montana and the U.S.



Source: Bureau of Economic Analysis, Real GDP in 2015 Dollars

The financial activities sector includes financial institutions, insurance companies, and real estate, with most of the value of the sector coming from real estate. Appreciation in home values or other real estate assets are realized as GDP when the home, land, or real estate asset is sold. Real estate added \$211 million in GDP in 2015, with \$224 million added for the full financial activities sector. The gain represents a growth of 3.2% for the sector.

## FIGURE 5 2015 GDP by Industry and Performance

Industry	2015 GDP		2015 GDP GROWTH OVER PRIOR YEAR		
	Millions \$	Share of Total	Growth Rate	Millions \$	Percent of Total Growth
Ag and forestry	1,706	4.1%	13.7%	205	14.9%
Manufacturing	2,645	6.4%	12.5%	293	21.3%
Construction	2,370	5.8%	7.9%	173	12.6%
Other	1,852	4.5%	4.3%	77	5.6%
Business services	2,980	7.2%	4.2%	121	8.8%
Trade	5,092	12.4%	4.0%	194	14.1%
Health care and education	3,910	9.5%	3.7%	141	10.3%
Financial activities	7,236	17.6%	3.2%	224	16.3%
Leisure activities	1,984	4.8%	2.8%	54	3.9%
Government	6,005	14.6%	1.8%	109	7.9%
Transportation	1,756	4.3%	-4.7%	(86)	-6.3%
Mining and utilities	3,353	8.2%	-5.3%	(188)	-13.7%
<b>All industry total</b>	<b>41,109</b>	<b>100.0%</b>	<b>3.5%</b>	<b>1,374</b>	<b>100.0%</b>

Source: Bureau of Economic Analysis, Real GDP in 2015 Dollars

However, the largest contributors to over-the-year real GDP growth are two smaller industries, agriculture and manufacturing. The manufacturing industry added \$293 million in GDP over the last year—a 12% increase—a sizable feat for a relatively small industry. Manufacturing represents only 6.4% of total real GDP, but the gains over the last year comprise 21% of the total state’s gain. The real GDP for detailed manufacturing sectors is not yet available, but data from prior years suggests that this large gain is likely coming from the petroleum and coal manufacturing sector (the two products are combined for GDP reporting). Petroleum and coal manufacturing is the primary driver for manufacturing growth during the 2010 to 2014 timeframe, adding \$319 million to state real GDP during those four years.

Agriculture also had a strong year in 2015, adding \$209 million in real GDP for a large 13.7% increase. Agriculture represents a fairly small amount of our overall economy at about 4% of total real GDP, but is an important exporting industry and the primary source of new investment in many rural areas. The strong growth in agriculture has been ongoing over the past five years. Agriculture averaged annual real GDP growth of 4.4% since 2010, double the growth rate for the state as a whole (averaging 2.2% per year since 2010). Agriculture also posted 8.5% employment growth over the last year and 4.4% average gains per year for the last five years.

Despite having very strong recent GDP growth in recent years, agriculture GDP growth declined during the 4th quarter of 2015 and the 1st quarter of 2016. Agriculture tends to be quite volatile in its GDP delivery, and regularly posts quarters of negative growth followed by large gains. Additional data is needed before determining if agriculture is slowing to its long-term growth path, or if the rapid growth in recent years can be sustained.

**FIGURE 6**  
**Personal Income Growth by Quarter**

*Montana and the U.S.*



Source: U.S. Bureau of Economic Analysis

Mining, particularly oil and gas mining, has been a drag on growth in 2015. Mining real GDP was \$156 million lower in 2015 than 2014, illustrating the impact of low oil prices. The losses in real GDP over the year for the transportation industry of roughly \$86 million are likely related to the decreased demand for trucking and rail to haul fracturing fluids and crude oil to and from the drill site. Even with the recent losses, mining GDP remains above the 2010 level by over \$238 million.

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***Industry diversification has been the key to Montana's outperformance compared to the national economy.***

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The declines in mining and agriculture in the 4th quarter of 2015 were large enough to result in negative GDP and personal income growth for the state as a whole (although the state still posted large gains on an annual basis). The quarterly personal income growth for the U.S. and Montana is shown in [Figure 6](#). Since 2010, Montana has posted only two quarters of negative personal income growth. The first was in the first quarter of 2013 when both Montana and the U.S. has negative growth due to the large cutback in government spending referred to as the fiscal cliff. The most recent decline was in the fourth quarter of 2015, where losses in the mining and transportation sectors combined with volatility in agriculture to overcome the gains in other sectors. However, personal income regained positive ground in the first quarter of 2016, indicating an overall return to growth despite continued losses in the mining industry. Quarterly GDP data (not shown) indicates negative growth extending into the first quarter of 2016, although the first quarter data is still preliminary. Payroll employment data for the first quarter remains positive, echoing indications of temporary weakness with a bounce back similar to the personal income data.

Despite temporary weakness in the 4th quarter, Montana's real GDP and personal income growth in 2015 remain strong. It is a testament to the strong growth in the rest of the economy that Montana posted strong GDP and personal income growth during 2015 despite the losses in agriculture and mining. Although agriculture and oil and gas development supported the state's economy throughout the recession and in recovery, the situation has now reversed with the rest of Montana's industries providing growth while the natural resource sectors struggle with lower commodity prices and reduced export demand. Both now and then, industry diversification has been the key to Montana's outperformance compared to the national economy.

Montana's personal income grew 4.4% in 2015, equal to the nation and ranking 16th among states. Montana has outperformed the U.S. economy in personal income growth on an annual basis in eight of the last ten years (with 2013 and 2014 as exceptions). Montana ranks 9th among states for the fastest personal income growth since 2005.<sup>7</sup>

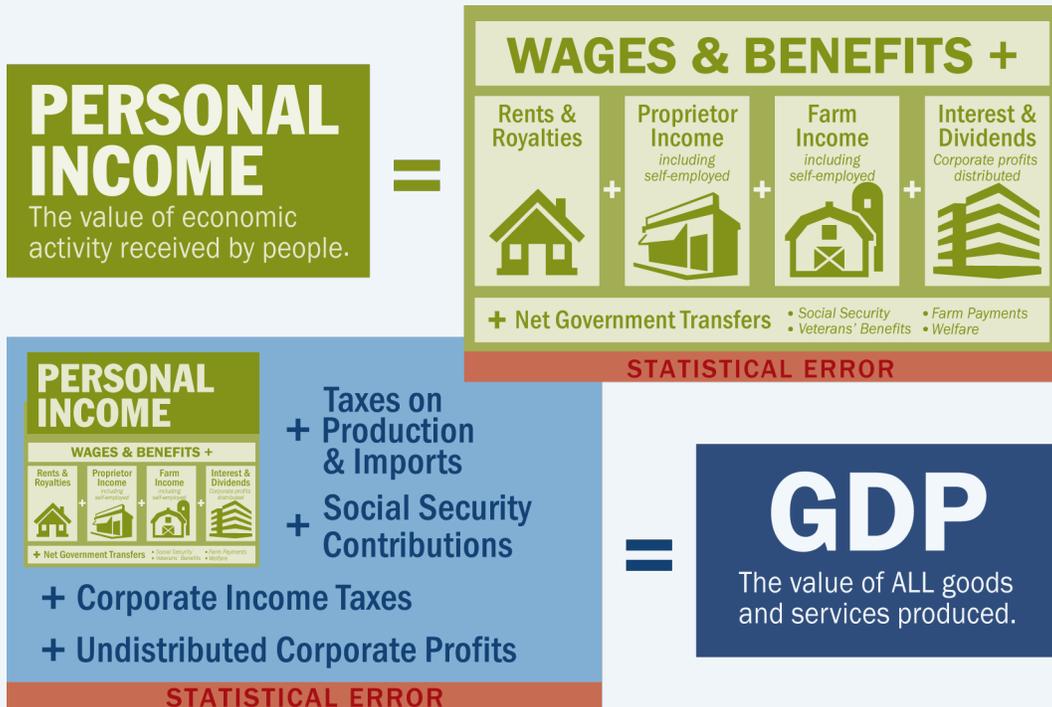
## WHAT'S THE DIFFERENCE BETWEEN GDP AND PERSONAL INCOME?

Gross Domestic Product (GDP) is the total value of all goods and services produced by economic activity in an economy. GDP is equal to the total amount of sales from Montana businesses, minus the total non-wage input costs. Personal income is how much money is received by people in an economy from their economic activity. Personal income includes wages, benefits, proprietor income, dividends, interest, rent, and transfer payments like Social Security and veteran's benefits. The two concepts are related, and typically show very similar trends. When GDP increases, personal income will also increase. However, these two concepts also have differences.

As an example, a Montana business, Barb's Bacon, buys some meat from an Iowa pig farmer. The butcher slices and cures the meat, and the sales clerk sells the bacon to customers. The amount of GDP added by Barb's Bacon to the Montana economy is the total sales amount minus the input cost of the bacon (which is received by the Iowa farmer and included in Iowa's GDP) and minus the costs of any other non-wage inputs (perhaps rent and utilities for the store).

The amount of personal income from the activity would include the wages paid to the butcher and the sales clerk, plus the profits earned by Barb from the business.

What if Barb's Bacon was actually owned by someone from North Dakota? Then the wages for the local workers would be included in Montana's personal income and GDP, but the profits would be included in North Dakota's personal income (but in Montana's GDP). Therefore, there can be slight differences in GDP and personal income, even though they are similar concepts. The figure below further illustrates the components and relationships between GDP and personal income.



Personal income is often measured on a per capita basis, with Montana's per capita income of \$41,280 ranking 37th in the nation. Per capita income can be thought of as a similar metric as the average wage, but per capita income also includes income from entrepreneurs and business owners, dividends, rents, and other non-wage income sources. Per capita income also spreads income across all Montanans, not just workers, and therefore provides a metric for the economic well-being of retirees and children in addition to working adults. Montana's per capita income increased by 3.5% over the year, led by strong growth among both wages and proprietor income. The state has a higher rank for per capita income than for wages because of a high rate of entrepreneurial activity. Proprietor income constitutes 9.6% of Montana's personal income, higher than the 9% in the nation as a whole and ranking 13th in the nation.

## National and Global Influences Impacting Montana's Economy

Montana's economy has outperformed the U.S. economy over the last ten years with stronger job growth, faster real GDP and personal income growth, and lower unemployment than the national average. However, the U.S. economy has been gaining strength to match the Montana economy. Greater national growth is good news to Montana, helping to stabilize our economic growth.

Steady GDP and job growth nationally has led the Federal Reserve's Federal Open Market Committee to increase interest rates slightly from the record low levels during the recession. The Federal Reserve uses the interest rate to keep the economy at a steady growth rate and to prevent excessive inflation. While the incentive for tighter monetary policy is typically high inflation, inflation has been negligible in 2015 only 0.1%. Instead, the Federal Reserve is attempting to gradually increase rates in order to regain the ability to react to future economic difficulties. Leaving the rate low could remove the primary policy tool used to protect the economy from outside shocks. Interest rates are expected to increase in the next few years, but rate increases will likely be slow and gradual because of tepid global growth and other political events (such as Brexit) that have reduced confidence in global economic markets.<sup>8</sup>

The hesitation in increasing rates results from slow growth both globally and in the U.S. Domestic GDP growth rates have not yet reached the growth rates typical of an economic expansion. Growth rates prior to the 2007 recession were at or above 3% growth, while growth rates during the 1990s and 1980s often exceeded 4% on an annual basis. The highest GDP growth rate achieved by the U.S. economy in the post-2010 timeframe was 2.6% in 2015.

Some economists have expressed concern that the growth rates in the U.S. have permanently moderated, possibly because the large number of baby boomers retiring has resulted in a restricted labor supply and a slowed growth rate, or perhaps

because technology growth has not increased the trajectory of our long-term growth path.<sup>9</sup> However, other economists argue that the current methodology used to calculate GDP may not be accurately measuring technological advancements in today's economy, particularly in the use of crowdsourcing applications on smart phones. For example, the development of internet and application-based services (such as Netflix or AirBnB) have reduced costs to consumers. Consumers may be receiving more value and convenience for their money, but because consumers are not paying additional dollars for the convenience, this advancement is not included as a gain in GDP. Mismeasurement of GDP also impacts our understanding of productivity growth rates.<sup>10</sup>

Finally, other economists argue that growth rates have not permanently slowed, but are just temporarily impacted by the many shocks to our economy over the last ten years, including fairly severe cutbacks in government spending in the U.S. and other countries, a drop in oil prices due to technological advances expanding the supply of oil, multiple temporary shocks such as severe weather and political instability, and increased uncertainty in global financial markets due to terrorism and increased nationalism. Economists will continue to debate these issues as additional information becomes available.

The largest challenge to the Montana economy has been slow global growth and a strong dollar combining to result in low commodity demand for agriculture and energy. Global growth in 2015 is estimated by the International Monetary Fund to be 3.1%, lower than the 3.4% in 2014. Growth is expected to accelerate in the upcoming years, led by stronger growth in emerging markets and developed countries, but China and other Asian countries are expected to have slower growth rates for several years.<sup>11</sup> The Asian markets are particularly important for Montana's agricultural producers, with Korea, China, and Japan all in the top destinations for our grain exports.<sup>12</sup>

In addition to generally lowering demand, the relative strength of the U.S. economy compared to our global trading partners (along with higher interest rates) has increased the strength of the dollar. A stronger dollar makes our goods and services more expensive compared to our foreign competitors. Commodity producers can be particularly impacted by a stronger dollar because foreign customers can easily replace the goods with commodities produced by other countries. The impact of the stronger dollar and the slower global demand has influenced the GDP growth for agriculture and energy in recent quarters, although these industries are still exhibiting strong growth over the five-year timeframe.

Low oil prices are not just a result of slower global growth, however, but are also caused by a large expansion in the oil supply due to the development of shale oil production techniques, including those used in Montana. Oil and gas development in Eastern Montana and North Dakota has benefited the Montana economy in the last few years, and was critical to Montana's economic and fiscal stability during the recession. Workers throughout Montana found good-paying employment in the

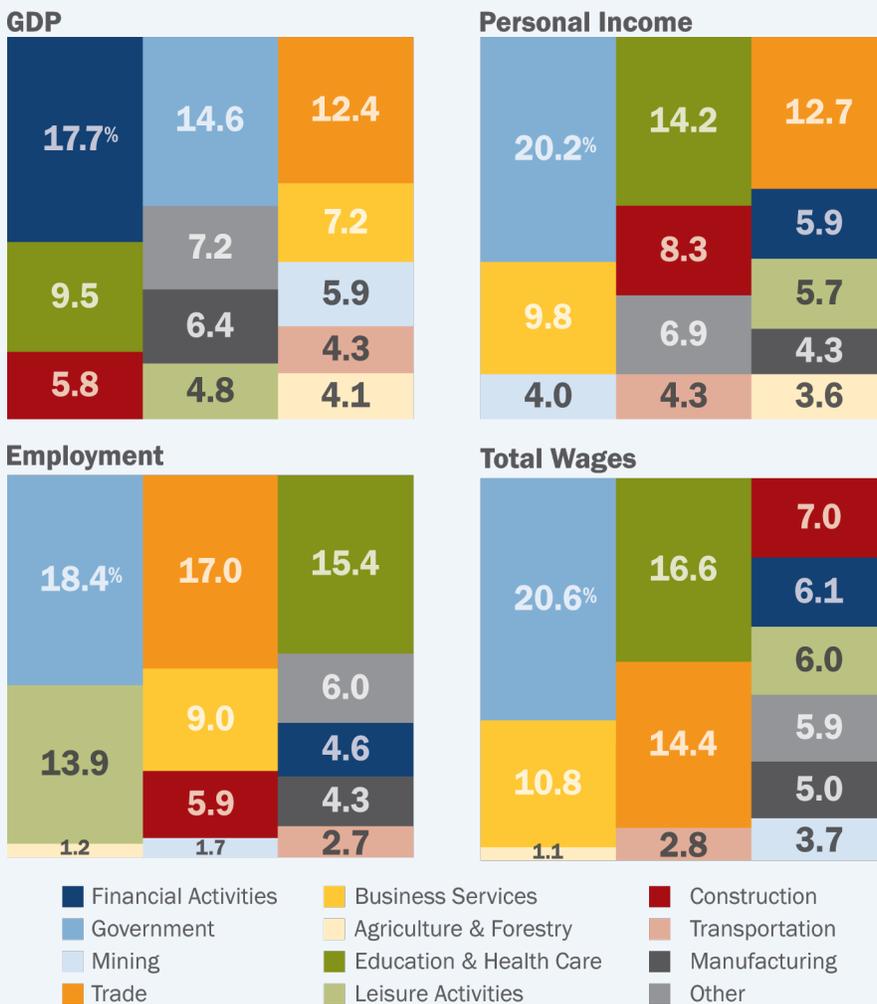
## SIZE OF MONTANA'S INDUSTRIES

Montana's largest industry depends on which metric is used to measure size. The figure below illustrates the contribution of Montana's industries to employment, GDP, total wages, and personal income earned from work. Each of these metrics give a slightly different understanding of the economy. Healthcare, leisure activities, and trade are large employing industries in Montana and require large numbers of workers to fill open positions. However, financial activities is the largest industry in terms of GDP.

Regardless of size, all industries are essential for the proper functioning of Montana's economy. For example, the information industry provides internet services throughout Montana. While it is one of the smallest industries in terms of both GDP and employment, all other industries rely on its services. All industries work together to make the economy grow.

### Montana Industrial Composition

by GDP, Personal Income, Employment, and Total Wages

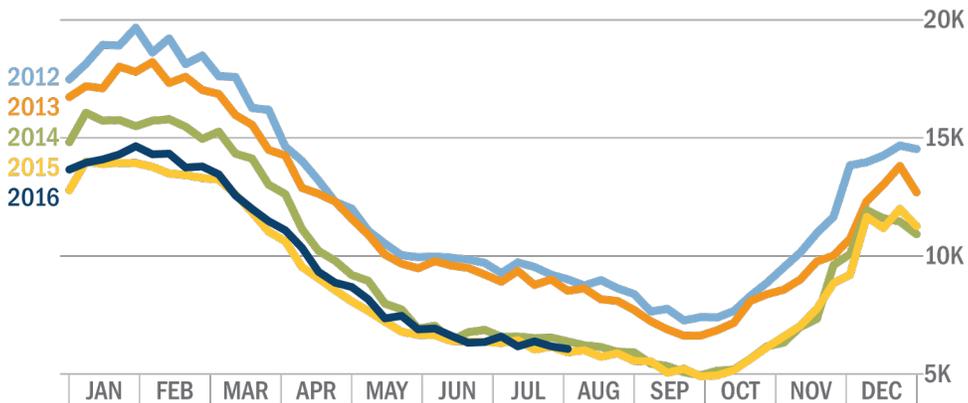


Source: Bureau of Economic Analysis and Quarterly Census of Employment and Wages

Bakken until employment in their own local economies improved, while increased tax revenues from oil production helped counter the decline in other types of tax revenues. The oil fields have also been an important customer for transportation, construction, and professional service businesses, who otherwise faced lower demand during the recession.

When the oil price declined in the second half of 2014, Montana's employment growth was affected, particularly in the eastern region of the state, but a large backlog kept many workers employed long after the prices declined. Montana unemployment insurance claims increased in November 2014 after the oil price dropped, bringing the number of claims up to the 2013 level, but the impacts dissipated after a few months, with claims continuing to decline over the prior year.<sup>13</sup> However, starting in the 4th quarter of 2015, claims levels have stopped their long-term decline, with the level of claims in 2016 being slightly higher than the 2015 levels. It is the first time that claims have not declined over the year since the end of the recession. The continued claims levels since 2012 are illustrated in **Figure 7**. The majority of the unemployment insurance claims stem from two industries – construction and oil and gas – that have been impacted by reduced drilling in Eastern Montana. However, the economic losses appear to be constrained to the eastern side of Montana, with the remainder of the state continuing job gains.

**FIGURE 7**  
**Unemployment Insurance Claims**



Source: Montana Department of Labor & Industry, Unemployment Insurance continued claims

It remains unclear how long the oil price will remain low, and when communities in the eastern part of the state can expect the oil boom to resume. Many of the wells in the Bakken region have lower production costs, allowing for oil production to resume profitably at a fairly low price.<sup>14</sup> The International Energy Agency recently announced that the global oil supply had shrunk in the first quarter of 2016, suggesting a potential end to the global over-supply.<sup>15</sup>

Another challenge for Montana's energy industry is how to respond to the global warming and the high share of our electricity that comes from coal-fired generation. Employment in coal mining is relatively small on a statewide basis, at 1,145 in 2015, but these jobs are concentrated in a few communities that will bear the brunt of the impact.<sup>16</sup> Additional jobs in fossil fuel power generation and transmission will also be affected. Coal-fired electricity also comprises roughly 50% of Montana's electricity generation.<sup>17</sup> Replacing this generation will require large investments into alternative power sources that may ultimately be passed on to consumers and businesses through higher electricity prices. Coal is also one of Montana's largest export goods, with roughly half of Montana's coal production sent to other states, and roughly three-tenths exported to other countries.<sup>18</sup>

However, consumer demand for coal and coal-fired power has declined, with part of that decline due to increased market and consumer pressure to address the large carbon emissions from burning coal. Montana's economy faces significant risks on both sides of the global warming debate, as agriculture and tourism also face large costs if global temperatures continue to rise.

Montana's coal industry has weathered these pressures thus far, steadily growing in employment over the last ten years at 10 to 50 jobs per year, while coal mining employment in other areas of the country has declined by over 17,000 jobs (21%) since 2010.<sup>19</sup> However, Montana is not immune to the market environment; coal posted job losses of roughly 80 in the first quarter of 2016 (although the first quarter is typically a low-employment quarter). A partial shutdown of Colstrip's coal-fired power plant is already scheduled.<sup>20</sup> It is still unknown how Montana's economy will adapt to replace the lost electricity generation and related employment. As the 2007 recession demonstrated, poor economic conditions can be devastating to Montana's working families, but entrepreneurs and workers find ways to adapt and succeed. As always, Montana's economic strength will depend on our ability to adjust to changing consumer demands, and to innovate and implement new technologies that keep our state on the forward edge of progress.

## Montana Job Growth Continues at Strong Pace

Employment levels made strong gains in 2015, adding 9,200 jobs for a growth rate of 2.1% — roughly twice the historic average growth of about 1%. This strong job growth thrust Montana's total employment level over half-million jobs in 2015 for the first time in our state's history. Job growth in 2015 builds on the strong job growth our state has posted in the last four years, with employment growth in Montana over 2% in 2012 and 2013. Since 2010, Montana job growth has averaged 1.6% per year, faster than the 1.4% per year nationally and ranking 14th fastest among states. Montana also has the 14th fastest total employment growth rate over the ten-year period from 2005 to 2015. Total employment data includes payroll employment and the self-employed.

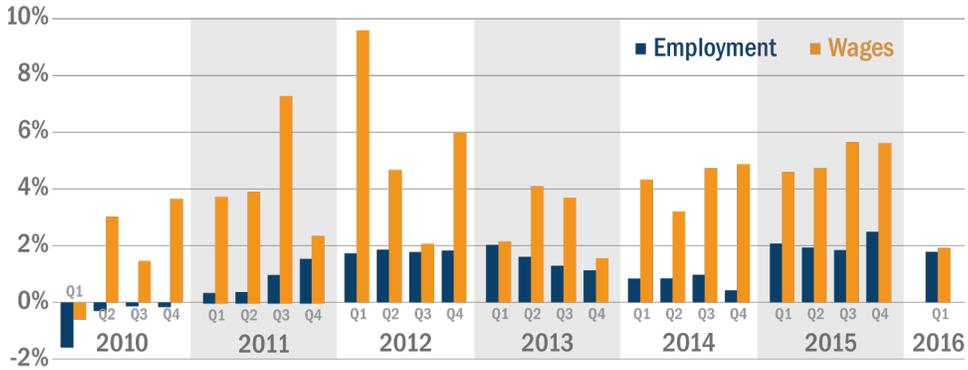
Preliminary data on total employment growth in the first six months of 2016 has been sluggish. However, more dependable data sources suggest solid job gains continuing. Payroll data, which is much more reliable than the data from the total employment model, indicates solid job gains of nearly 7,800 (1.8% growth) for the year ending in the first quarter of 2016. Administrative changes to the total employment model have decreased its sensitivity, with other states of similar size to Montana also having concerns with sluggish growth despite positive indications from other sources. The total employment numbers (and the model) are updated and revised annually, resulting in a long wait for economists who are eager for better employment data.

Payroll employment posted strong growth in 2015, adding 9,173 jobs for a growth rate of 2.1%, ranking Montana 19th among states for payroll employment growth. Payroll employment data comes from the mandatory reporting of employment and wages for the unemployment insurance program, and therefore is a more reliable source of data than the survey-based estimates. **Figure 8** illustrates Montana's payroll employment and total wage growth by quarter since 2009, measured as the gain in employment and wages from the same quarter in the prior year. Total wages include all wages paid by Montana employers to payroll workers. Employment and wage growth maintained a high pace throughout 2015, with growth in the 4th quarter hitting 2.5%. Private payroll growth exceeded 2.4%, adding 8,570 jobs.

Employment and wage growth slowed in the first quarter of 2016 because of fairly large employment losses in the oil and gas mining industry. Mining has lost over 1,584 jobs from 2015 1st quarter to 2016 1st quarter, with the majority of these job losses in the oil and gas mining industry. With an average salary of \$87,800 in 2015, the loss of roughly 1,600 jobs in the mining industry created a drag on state wage growth. Strong job growth in other sectors helped to maintain positive employment growth for the state as a whole. The accommodation and food service industry was the largest contributor to employment growth in 2015, adding over 2,000 jobs for a gain of 4.1%. Construction and retail trade also gained over 1,000 jobs in 2015.

## FIGURE 8 Employment and Wage Growth

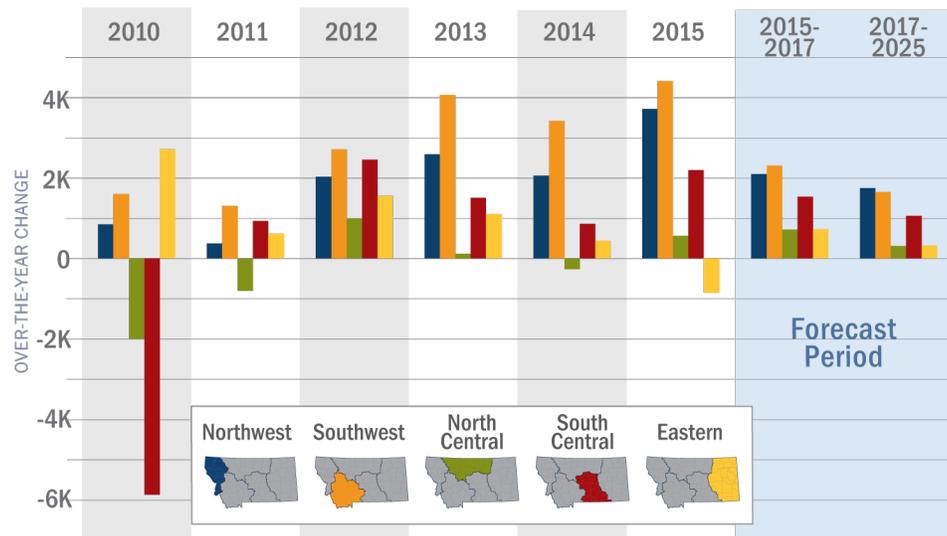
Over-the-Year Payroll Employment and Wage Growth by Quarter



Source: Quarterly Census of Employment and Wages (QCEW), U.S. Bureau of Labor Statistics.

Even though the state as a whole posted strong wage and employment growth throughout 2015 and continuing into the 1st quarter of 2016, economic prosperity is not evenly split across all areas. **Figure 9** illustrates the employment growth over the last five years by region, along with the projected average growth over the next ten years. Both the Southwest and the Northwest Regions of Montana posted the best job growth in the last five years, with the South Central region around Billings also posting impressive growth. However, Eastern Montana has 840 fewer people employed in 2015 than in 2014. Payroll jobs in the Eastern Region declined even further, with 1,065 fewer payroll jobs and \$72.4 million less in payroll wages in

## FIGURE 9 Regional Employment Growth



Source: Montana Department of Labor & Industry, Local Area Unemployment Statistics, and Employment Forecasts

2015 compared to the prior year. The limited employment data available for 2016 suggests that the oil and gas industry is continuing to have a negative impact in Eastern Montana. While the volatility is certainly unwelcome, the declines thus far have only eroded about one year of employment and wage gains in the region. The 2015 levels in the Eastern Region for employment are roughly equal to the employment in 2012, and the total wages paid are roughly equal to the 2013 levels.

Both the Northwest and the Southwest Regions posted very strong gains in 2015, with both areas adding roughly 2.8% for payroll employment growth, and total wage gains at 6.4% and 7.4% respectively. The gains in total wages were higher than expected and translate into adding over \$600 million more dollars in wages paid in the western half of the state compared to 2014. Both western regions continue to have rapid job growth in 2016, with employment gains of over 3% for the year ending in the 1st quarter of 2016.

The South Central region surrounding Billings also had strong job growth in 2015, adding 2,557 jobs over the year for 2.5% job growth and 5.5% gains in total wages paid. However, preliminary data from the first quarter of 2016 indicate that the oil and gas slowdown has affected wage growth in the Billings area. Wage and employment growth in the first quarter of 2016 was lower than in prior quarters, but more data is needed to determine if the impact is temporary. The North Central region of Montana has experienced unsteady growth since the end of the recession, adding only 510 to total employment in 2014, but gaining roughly \$72.8 million of additional wages paid for payroll jobs for total wage growth of 3.6%.

## Montana Entrepreneurs Continue to Lead Nation

Much of Montana's superior economic performance can be credited to our entrepreneurs, many of whom are workers who have their own business on the side. Montana is one of the top states in the nation for entrepreneurialism. Montana's business openings rate was at 7.4% of existing businesses in 2015, ranking 1st among states. Business closures were only at 5.7%, making Montana's net business opening rate of 1.7% the second highest rate in the nation.<sup>21</sup>

Montana's entrepreneurialism is reaping rewards for our economy. Businesses less than five years old have added 43,835 jobs to the state's economy, or roughly 12.2% of total private employment. The industries with the highest job growth from new firms include leisure activities, trade, and health care.<sup>22</sup> Montana business owners received \$4.1 billion in proprietor income in 2015, suggesting that owning a business in Montana remains a viable path to economic prosperity for both owners and workers.<sup>23</sup>

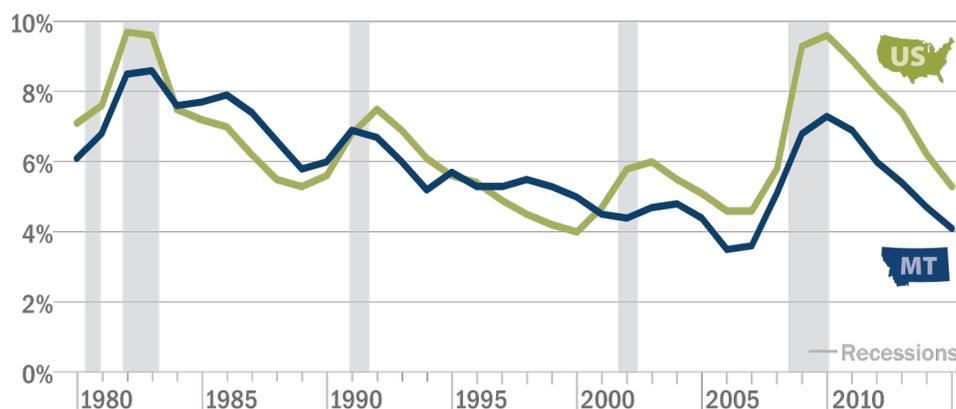
## Unemployment in Montana at Ideal Levels

Montana's unemployment rate is at ideal levels, sitting in the 4% to 4.3% range for all of 2015 and 2016. Economists generally consider unemployment rates between four to five percent as "normal" unemployment, which is the level of unemployment that provides a healthy balance of workers being able to find jobs at reasonable pay and businesses being able to find workers with the right skills and experience to do the job. Unemployment rates higher than the normal level indicate workers will find it difficult to find jobs, causing financial stress to families and ultimately reducing demand for Montana's products due to lower wage income available for spending. Unemployment rates lower than the normal level suggest worker shortages, where businesses have a difficult time finding workers to fill positions. Without workers, businesses are unable to produce goods and services, slowing the growth of our state's economic production.

Montana's annual unemployment rate of 4.1% in 2015 was the 11th lowest in the nation. Montana's unemployment rate has been lower than the U.S. rate since the 2001 recession, hitting its all-time low of 2.9% in 2007. **Figure 10** illustrates the U.S. and Montana unemployment rates since 1980 with the recessions highlighted. The 2007 recession caused unemployment to spike up by four and a half percentage points, hitting a recessionary high of 7.4% in 2010 before Montana's economy started recovery. However, with strong employment growth since 2010, those high unemployment rates are long behind us.

### FIGURE 10 Unemployment Rates since 1980

Montana and the U.S.

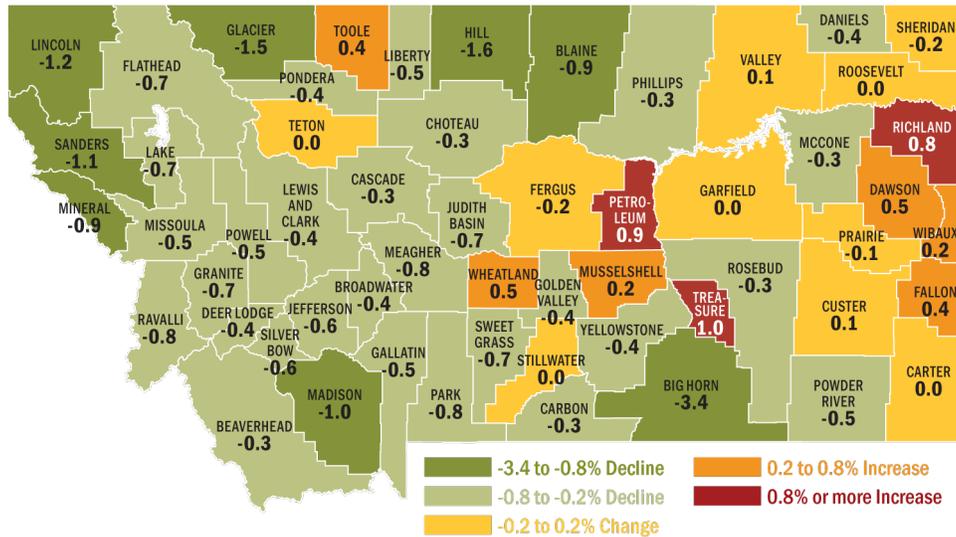


Source: Bureau of Labor Statistics, Current Population Survey. Montana Department of Labor & Industry, Local Area Unemployment Statistics.

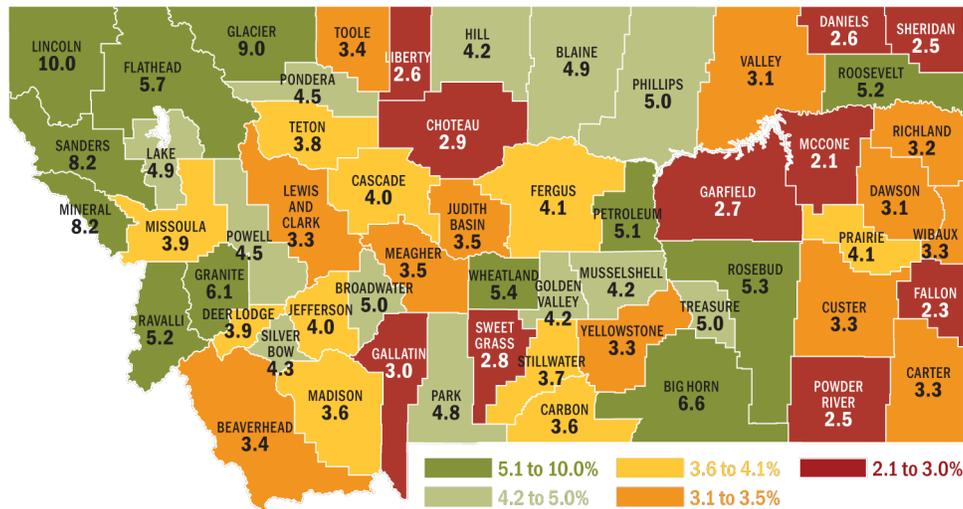
Regionally, all areas of the state had decreasing unemployment over the past year except the Eastern Region. **Figure 11** illustrates the change in unemployment rates from 2014 to 2015 and the 2015 annual rate. Most areas of the state posted declining unemployment rates, with unemployment rates in the northwest corner of the state declining by more than a full percentage point. However, some counties on the eastern edge of Montana posted increasing unemployment rates over the year, as did Petroleum and Treasure Counties. Even with the recent changes, the eastern portion of Montana still has the lowest unemployment rates in the state, and the northwest corner still has unemployment rates higher than the state average.

### FIGURE 11 Unemployment Rates by County

Over-the-Year Change, 2015



2015 Unemployment Rates



Source: Montana Department of Labor & Industry, Local Area Unemployment Statistics

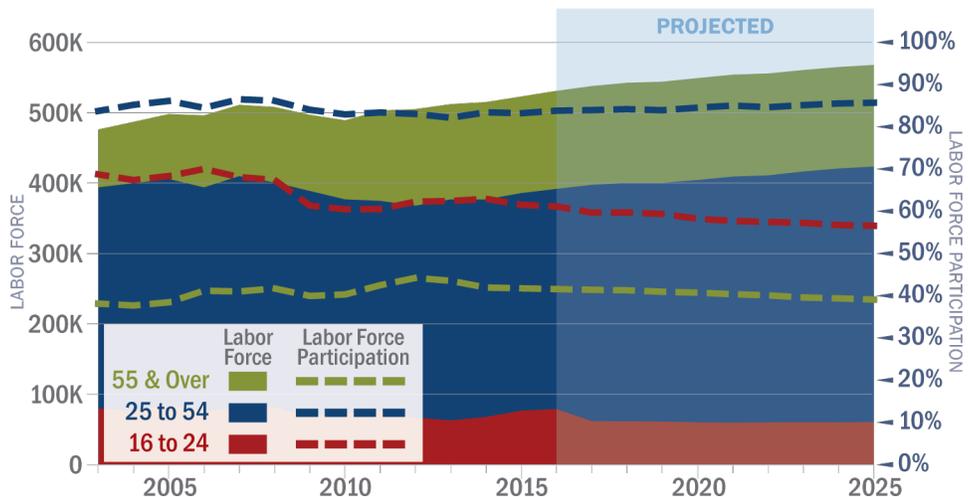
## Greater Labor Force Participation Needed to Fill Job Demands

The strong job growth over the past five years has reduced unemployment and increased wages. Montanans have also reacted to the stronger economy by increasing labor force participation rates from the recession levels. Roughly 64% of Montana’s population over 16 is in the labor market, the 20th highest labor force participation rate among states in 2015.<sup>24</sup> However, Montana’s population continues to age, creating tightness in the labor market as the large baby boomer generation retires.

Montana’s population 65 and older is expected to grow by approximately 7,000 people each year, while the typical working age population (those aged 16 to 64) is only projected to grow by about 475 people annually. With such little population growth among younger age groups, growth of the labor force needs to come from increased labor force participation and in-migration. As continued job growth pushes the unemployment rate below current levels, wages will increase and job openings will continue to rise. These positive economic conditions will encourage more Montanans to join the labor force.

The Montana Department of Labor & Industry forecasts both employment and labor force levels for ten years forward. These forecasts rely on population estimates published by the Montana Census and Economic Information Center, with the Department of Labor & Industry providing forecasts for labor force participation by age and gender.<sup>25</sup> **Figure 12** depicts changes in the participation rates of the prime working age population, or those aged 25 to 54, compared to young workers 24 and younger and workers 65 and older. **Figure 12** illustrates both the labor force participation rate (right hand axis) and the total number of workers expected to be in the labor force by age group (left hand axis).

**FIGURE 12**  
**Labor Force Participation and Counts by Age**



Source: Montana Department of Labor & Industry, Labor Force Forecasts

Workers aged 25 to 54 make up the core of the working age population. Workers 25 to 54 comprised approximately 60% of Montana's workforce in 2015 and are the group expected to fuel increases in labor force participation in future years. Although the recession discouraged workers and decreased labor force participation rates, the strong job growth since then has helped participation rates rebound. However, this increase has been slow, and the labor force participation among workers aged 25 to 54 is not expected to return to the 2007 peak until 2025. In particular, people aged 25 to 34 have been sluggish in their response to improving economic conditions, perhaps having already reduced their lifetime work and earnings expectations after having graduating from college during the 2007 downturn.<sup>26</sup> Even with slow increases to participation, the core group of workers aged 25 to 54 is expected to bring 5,400 added workers to the labor force each year through 2025.

However, the number of 16 to 24 year olds in the labor force is expected to shrink over the next ten years, decreasing the total number of workers added to the labor force. Population growth for 16 to 24 year olds is projected to be negligible over the next ten years, and the long-term trend of young people prioritizing education over entry-level jobs is expected to continue. The investment into education by younger workers is likely to have long-run economic gains, however, as higher education levels will lead to improved productivity after their delayed entry into the labor force.<sup>27</sup>

The share and number of workers over the age of 55 is also expected to increase in the future, with more workers continuing to work past traditional retirement age. Both the labor force participation rates for the late working age (55 to 64) and the post-retirement age (65 and older) will likely increase as life expectancy and economic opportunities for this age group continue to improve. However, the combined labor force participation rate of the full 55 and older group is anticipated to slowly decline because the average age of this population group will slowly increase with the large baby boomer generation moving fully into retirement.

Overall, Montana's workforce is projected to grow by approximately 45,000 workers over the next ten years to 2025, adding an average of 4,500 workers each year. This rate will be achieved if workers aged 25 and older respond to more positive working situations and increase labor force participation rates. Of course, in order for workers to realize the more positive economic conditions, they must visually see the changes in their own communities. Geographical differences in the location of jobs compared to the location people who are not working will create labor market frictions and reduce the impact of strong economic growth on labor force participation rates.

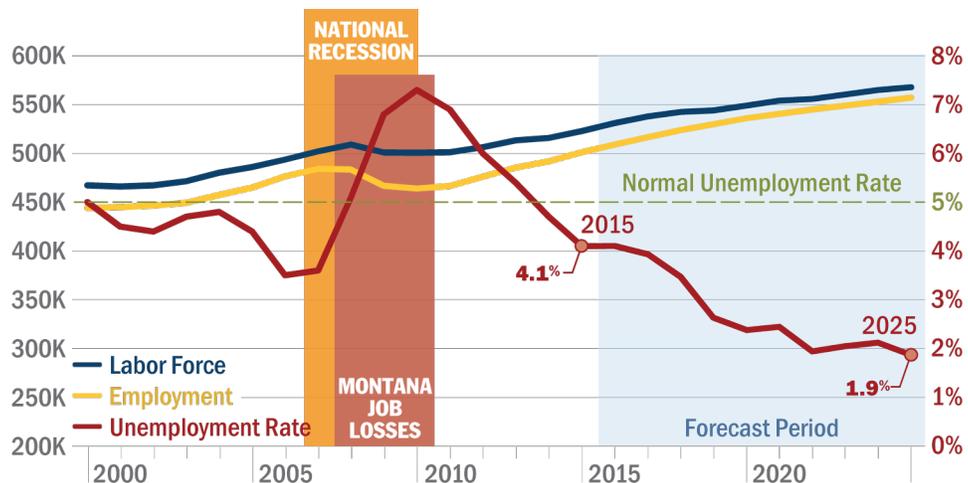
## Montana's Looming Worker Shortage

While Montana's labor force is expected to slowly grow, Montana's economy is projected to continue to expand. Overall, the Montana Department of Labor & Industry projects that only 4,500 workers will be added to the economy each year – roughly half of the number of workers needed to fuel the 2015 job growth of roughly 9,200 jobs—resulting in unemployment rates at very low levels around 2%.

The expected labor market tightness is due primarily to demographics. Nearly 6.5% of Montana's labor force is already over 65 years of age, the second highest share in the nation. An additional 96,000 workers are between the ages of 55 and 64 and close to retirement. While many Montanans continue to work past the typical retirement age, there is still expected to be at least 120,000 retirements among the baby-boomer population within the next ten years. The economy has always relied on an ever increasing supply of labor to fuel economic growth, but the labor force is expected to be restricted in the future. Assuming Montana's job growth continues, Montana could see unemployment rates under 2% by 2025.

Because of these tight labor markets, the Montana Department of Labor & Industry's employment forecasts expect a slowing of job growth in the upcoming years. **Figure 13** shows the projected labor force, employment, and resulting unemployment rates for the next ten years. Employment is expected to grow by 1.1% over the next ten years, adding roughly 7,300 jobs per year for the next two years, then slowing as labor markets tighten further. The expected job growth is expected to be slower than the 2.1% employment growth in 2015, and even slower than the 1.7% growth from the last ten years including the 2007 recession. Even with slower job growth, unemployment rates are expected to hit 1.9% at the end of the projected timeframe in 2025.

**FIGURE 13**  
**Labor Force, Employment, and Unemployment Rate**



Source: Montana Department of Labor & Industry, Labor Force and Employment Forecasts

In this low-unemployment scenario, workers who are flexible and able to meet the skill needs of employers will have significant opportunities to improve their wages and hold consistent employment. Tight labor markets caused by worker shortages can provide economic benefits for workers because jobs are easy to find and wages increase rapidly. However, economic growth will be constrained if businesses cannot find the right workers, or enough workers, to produce their goods. Employers will need to expend more effort to locate and retain their skilled employees, including increasing pay and benefits. Businesses unable to increase pay rates will need to find creative ways to recruit and retain workers, or identify processes to automate and reduce worker needs.

## Solutions to Montana's Worker Shortage

Montana is pursuing a number of policy directives to address the upcoming worker shortage, with many of the efforts enhancing or working with market forces to increase the availability of labor. The first option is to increase the number of in-migrants to Montana. Montana already has a net in-migration of roughly 4,000 each year, who are already included in labor force projections.<sup>28</sup> These in-migrants often bring fresh perspectives and new ideas into our state, helping us to increase productivity levels. However, significantly increasing the number of in-migrants enough to meet worker needs will be a difficult task when other states also offer promising careers.

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***Montana's workforce and education systems will need to continue efforts to make worker training more affordable, easily accessible, and aligned with the needs of our economy.***

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Another solution is to increase the number of hours worked by each worker. Montana has a high share of part-time employment. Among Montana workers aged 16 to 64, roughly 21% work less than 35 hours per week – the seventh highest percentage of part-time workers in the nation.<sup>29</sup> While part-time jobs can be a benefit to semi-retired workers, students, and others who choose to only work part-time while pursuing life goals, many other part-time workers would prefer full-time employment.

Together, Montana's private and public sectors need to pursue efforts to increase labor productivity, thus producing more output for every hour worked. Labor productivity is not determined by how hard a worker works, but is instead determined by how efficiently a worker works. Enhancing productivity is achieved with better workforce education that allows workers to continuously upgrade skills and knowledge, and by businesses learning about and implementing the latest cutting edge technologies and practices. Better productivity requires more

## SKILL SHORTAGE VS. WORKER SHORTAGE

Many people use the terms 'skill shortage' and 'worker shortage' interchangeably to generally describe a situation where businesses are having trouble finding the right workers. But to a labor economist, these terms are very distinct, and refer to two separate problems.

A skill shortage refers to when the skills needed to fill open positions do not match the skills of the workforce. Skill shortages can often result after recessions because the industry mix of the economy changes. For example, in the last recession, the construction industry lost nearly 30% of its employment levels, and has been slow to regain jobs. In contrast, the healthcare industry added jobs throughout the recession, requiring more workers to fill openings. Because unemployed construction workers are unlikely to have the skill sets required in the health care industry, significant retraining is needed to update the workforce for the new economy. The Montana Department of Labor & Industry, along with other workforce education and training partners, has worked to address this skills gap by retraining unemployed workers into in-demand jobs. Many of Montana's businesses have made efforts to address skill shortages by improving communications with local community colleges to provide on-the-job training specific to the employer's needs.

In a worker shortage, a lack of skills is not the only problem. A worker shortage means that there simply aren't enough people to fill open positions. A worker shortage can also be a result of changes in the economy from a recession when the geographical distribution of job growth is different from the original job losses. For example, during the last recession, the Northwestern region of the state experienced the greatest job losses, but jobs were growing in Eastern Montana related to the oil fields. There was a geographical mismatch between the open jobs and the available workers, resulting in a worker shortage in the east, but high unemployment in the west.

The worker shortage expected in the next ten years is due primarily to demographic factors, where the growth of the population of working-age people is limited. One of the solutions to a worker shortage, however, is exactly the same as a skills shortage. With workers in short supply, each individual worker is valuable to our economy. Workforce and education systems must streamline training efforts to ensure the worker is trained quickly, reducing the time spent out of the workforce for education. The Montana Department of Labor & Industry is working with Montana employers and the higher education system to expand apprenticeship programs and other on-the-job training opportunities so that Montana workers and businesses can upgrade worker skills without taking time off the job

communication and networking with researchers who are identifying best practices, and communication with upstream and downstream businesses to identify ways to save labor hours. Employers will need to continue to work closely with local colleges to implement more work-based learning programs across the state, and to make these opportunities available to Montana's workforce.

Some productivity enhancing investments will occur naturally in response to market forces. For example, as labor becomes more expensive, businesses will invest in productivity-enhancing machines and technologies to allow each worker to produce more output. The new technologies will produce more output with fewer labor hours, allowing economic growth to continue despite the labor shortage. Ultimately, Montana's growth depends on our ability to increase technology, productivity, and innovation.

Montana's workforce and education systems will also need to continue efforts to make worker training more affordable, easily accessible, and aligned with the needs of our economy. More efficient education and training systems, particularly those for adults already in the labor force, are necessary to give working professionals the opportunity to earn income while learning new skills. Businesses must also have greater involvement in the training systems, providing more work-based learning

## MONTANA REGISTERED APPRENTICESHIP

*Apprenticeships are a time-honored training model used to educate the next generation of Montana's workforce. With this type of work based learning, apprentices are able to earn a paycheck while learning the technical (hard) and business culture (soft) skills employers need to grow their operations.*



*With over 700 business sponsors across the state offering apprenticeships in over 50 occupations, the expansion of apprenticeships is becoming a vital training method to address the retirements of baby boomers in Montana's industry sectors.*

*As a business, it is simple to start your own apprenticeship program with the assistance of the Montana Registered Apprenticeship (MRA) program. It starts with scheduling a visit with one of the MRA specialists at the Montana Department of Labor & Industry. These specialists will sit down to discuss crafting a customized apprenticeship program with the business.*

*For more information about the Montana Registered Apprenticeship program, please contact Darrell Holzer at (406) 444-3556 or via email at [dholzer@mt.gov](mailto:dholzer@mt.gov). You can also visit the Montana Registered Apprenticeship website at [apprenticeship.dli.mt.gov](http://apprenticeship.dli.mt.gov)*

to perfect worker skills and working with the education systems to ensure that curriculums teach the right skills for the job. These efforts will steadily increase the productivity levels of Montana's workforce so that each worker can achieve their highest level of success.

Montana's workforce is fairly well-educated compared to other states. For people 25 years and older, 92.6% of Montanans have a high school degree—the second highest percentage in the nation. For bachelor's degrees, Montana is about equal to the national average, with 29.3% of people 25 and older holding bachelor's degrees or higher education, ranking 22nd among the 50 states. However, Montana's educational attainment slips behind other states for graduate degrees, with only 9.8% of the population 25 and older having a graduate degree, ranking 29th in the nation and behind the national average of 11.4%. In comparison, over 18% of the population over 25 has graduate degrees in Massachusetts. Montanans with higher levels of education also face lower unemployment rates, lower poverty rates, and earn higher wages. Well-educated workers are also more likely to become entrepreneurs and to recommend productivity enhancing processes to their employers.

Finally, Montana will also need to identify ways to increase labor force participation beyond the expected levels in order to avoid a worker shortage. Increased employment opportunities and higher wages will naturally provide more incentives for workers to enter the workforce. The impacts of these market incentives are included in the labor force forecasts, yet Montana will still reach unemployment

## **INCREASING THE LABOR FORCE PARTICIPATION RATES OF CAREGIVERS AND WOMEN**

*Caregivers who have left the workforce to care for children or aging parents are a good target for businesses to find workers. Often, caregivers were successfully working in a career before leaving the workplace for family needs. These workers, who are most commonly women, are already educated, trained, and experienced in their chosen careers, requiring little additional education and training before they are ready to work.*

*Economic studies suggest that access to paid family leave after the birth of a child significantly increases the likelihood that workers will return to work, with most employers reporting positive or neutral costs of providing leave because the reduced turnover costs compensated for the costs of the leave.<sup>30</sup> In 2014, about 13,000 Montana workers became parents of a newly born or newly adopted child.<sup>31</sup> Although this population is small compared to the overall population of workers, it also represents nearly twice the annual worker demand expected in the future. Retaining these parents in the workforce would certainly make a dent in worker needs and also provide some support for parents during a critical period when they face high medical costs and significant demands on their time.*

rates of 2% or less. There is a solution available to low unemployment rates by activating the pockets of workers with labor force participation rates, which could increase the labor force above the expected levels.

**Figure 14** shows the differing labor force participation rates of worker subgroups in Montana's economy. Women, particularly those who maintain families caring for children or aging parents, have lower labor force participation rates than men. American Indians have lower labor force participation rates than all Montanans. Disabled Montanans, many who are veterans, have lower labor force participation rates than the Montana average. These populations can be targeted with additional efforts to bring them into the labor force. For example, disabled workers may need special accommodations with equipment and work hours in order for them to be most productive at work. In rural areas, better transportation infrastructure can help workers get to work sites, while better internet infrastructure would allow for more work-at-home opportunities. Significant changes to the culture of Montana's workplaces may be necessary in the future to maximize the employment contribution of every worker.

**FIGURE 14**  
**2015 Montana Labor Force Status by Demographics**

Group	Civilian Population (Non-institutional)	Labor Force Participation Rate	Percent of Montana Population	Percent of Employed	Unemp. Rate
Total Population 16+ Years	815,000	64.1%	100.0%	100.0%	4.1%
Men	406,000	68.2%	49.8%	52.5%	4.9%
Women	409,000	60.1%	50.2%	47.5%	3.2%
White	749,000	65.2%	91.9%	94.4%	3.7%
American Indian	48,300	52.5%	5.9%	4.3%	14.4%
Veteran (18 and Over)	106,000	48.6%	13.0%	9.8%	5.2%
Disabled	67,300	45.0%	8.3%	5.4%	9.9%
<b>AGE GROUP</b>					
16 to 19 years	51,000	46.2%	6.3%	4.4%	8.8%
20 to 24 years	72,000	73.5%	8.8%	9.8%	6.4%
25 to 34 years	130,000	83.5%	16.0%	20.8%	4.2%
35 to 44 years	113,000	87.3%	13.9%	19.2%	2.7%
45 to 54 years	123,000	83.5%	15.1%	19.8%	3.7%
55 to 64 years	160,000	65.5%	19.6%	20.0%	3.9%
65 years and over	167,000	19.2%	20.5%	6.2%	2.5%
<b>EDUCATIONAL ATTAINMENT (POPULATION 25 TO 64 YEARS ONLY)</b>					
Less than High School	33,200	57.4%	6.3%	4.4%	10.0%
High School Graduate	152,500	74.0%	29.0%	27.2%	5.8%
Some College or Associate's	180,600	77.8%	34.3%	34.3%	4.1%
Bachelor's or Higher	159,500	85.3%	30.3%	34.1%	1.6%

Source: Bureau of Labor Statistics, Current Population Survey, 2015. Information on education level, American Indian, and disabled workers from the 2014 American Community Survey 1-Year estimates and therefore are not directly comparable to other figures.

## Future Employment Growth

The Montana Department of Labor & Industry produces employment forecasts annually with the intent to predict the long-term employment mix that will be offered by future employers, and to determine what kinds of skills and educational credentials will be needed by future workers. The projections are not intended to predict the timing of expansions or recessions in the Montana economy. In fact, the projections are presented linearly in order to prevent the use of the projections for market timing. Rather, the employment projections are intended to be used for career counseling for students and workers, for strategic planning for education and training programs, and for economic development to ensure Montana's workforce is prepared to meet the needs of Montana employers. The Montana Department of Labor & Industry has a good track record for accuracy in the overall total employment projections. After one year, the 2014 projections were only 1,000 jobs off (0.3% of total employment), while the 2013 projections were only 2,000 jobs off (0.4% off the total employment level).

Over the next ten years, the Montana Department of Labor & Industry expects Montana's jobs to increase by roughly 7,300 jobs per year for the next two years, then 5,100 jobs after 2017 as labor markets tighten further. The expected job growth is expected to be only 1.1% for the next 10 years, slower than the 1.7% growth from the last ten years that including the 2007 recession.

### ADDRESSING THE GENDER PAY GAP

*Addressing the gender pay gap and providing greater opportunity for female workers would also increase women's labor force participation and increase the number of hours worked by each worker. The median earnings for Montana women who work full-time, year-round are only 74% of the median earnings for men, confirming that a gender pay gap exists in Montana.*

*Economic research has found many reasons for the differences in pay between men and women, including different career and education choices, differences in work experience, and also gender bias. Resume studies are a common type of gender pay bias research, where researchers send identical resumes to employers, but half of the resumes have a female name (Erin) and the other half list a male applicant (Aaron). These studies consistently find that employers are more likely to offer the job to the male, with starting salary offers 7% to 15% higher than those offered to females, despite identical qualifications listed.*

*Research has also found that the bias in male hiring increases with the salary level, so that women applying for low-wage jobs are 9% less likely to be hired compared to a similarly-qualified male applicant, but women are 50% less likely to be offered the job for a high-wage job. Both male and female managers are equally likely to demonstrate gender bias in hiring and pay, suggesting that the historic and cultural beliefs that result in gender pay bias are common to us all.<sup>33</sup>*

The employment growth is expected to be centered in the western portion of Montana, with the Northwest and Southwest Regions projected to grow by 1.2% annually through 2025. This growth results in an additional 1,790 jobs per year in the Southwest, and 1,820 jobs annually in the Northwest. The South Central region surrounding Billings is estimated to have the next largest employment gains, with 1,150 additional jobs per year (at a rate of 1.1%) through 2025. The North Central area of Montana has exhibited haphazard growth in recent years, posting growth followed by losses, and growth is expected to continue to be below the statewide average in the upcoming years. Finally, Eastern Montana is expected to regain their rapid growth when oil prices increase, but the losses in the next year will dampen the overall growth rate.

By industry, the large-employing industries of healthcare, construction, and accommodation and food service are projected to have the most employment growth through 2025. The construction industry is projected to grow the fastest of any industry in Montana, at 2.7% annually. Healthcare is projected to add 1,100 jobs every year through 2025, at a rate of 1.5% per year.

## Montana Industries

Topping the chart for both employment and GDP growth over the past year is agriculture. Agriculture comprises less than 2% of total payroll employment (farmers are typically self-employed, not payroll workers), so the addition of over 400 jobs places the growth rate of the industry at a rapid 8.7% in 2015. Both employment and GDP growth have been fairly strong over the last five years for agriculture, with extremely high gain of 13.5% for real GDP over the year. However, agriculture GDP declined in the last quarter of 2015 and the first quarter of 2016, dragging down overall growth. Such volatility in agriculture is not unusual on a quarter to quarter basis, so further information is needed before concluding whether agriculture is finally slowing to its long-run growth path after the past several years of rapid growth.

Growth in the construction industry over the past year is also notable. Construction has been slow to recover from the recession as the financial crisis depressed home buying and home building rates for several years. Construction growth over the years since the recession was concentrated first in Eastern Montana with the construction of drilling sites and other infrastructure in the Bakken-impacted counties. As the public works construction slowed in the east, construction activity picked up in the Bozeman area, which has been posting strong employment gains in all industries. Construction employment growth in 2015 has now spread to the Northwest (posting growth in the construction industry of 7.5% in 2015, adding over 500 jobs) and the South Central Regions. The South Central region surrounding Billings added nearly 700 construction jobs in 2015 for 11% growth. The Eastern region is now posting losses in the construction industry with the decline in drilling activity, although these losses have been outweighed by positive gains in the state as a whole.

Construction is a fairly large employing industry in Montana with nearly 6% of total employment, and the industry provides above average annual wages of about \$47,800 in 2015. The return of construction jobs provides excellent opportunities and returns on education for workers who are interested in apprenticeships, two-year degrees, or certificates that focus on applied skills.

For the first time in several years, health care was not the leading industry for job gains. Healthcare posted growth of 1.5% in 2015, a slowdown of employment growth from its five-year average. Healthcare still added roughly 1,000 jobs over the year. However, the industry with the largest job gains over the year was the leisure activities sector, adding over 2,400 jobs in 2015. Leisure services include hotels, restaurants, ski resorts, and tourism related businesses, in addition to bars, movie theaters, and other entertainment businesses. With a high percentage of part-time jobs and relatively low hourly wages, leisure activities only paid an average annual wage of \$17,370 in 2015. However, wage growth in the industry was 3.8% over the year, a reasonable pace. As the labor market tightens because of the expected worker shortage, low-wage, low-skilled jobs like many in the leisure activities industry are often the first to show rapid wage escalation.

The rapidly growing real GDP in manufacturing is also notable. Manufacturing added only 218 jobs in 2015 for a growth rate of 1.1%, but the gains in manufacturing GDP have been quite impressive since the end of the recession. Manufacturing GDP has increased by an average of 7.2% per year over the last five years. The gains in manufacturing is primarily attributable to the petroleum and coal products manufacturing sector, although other manufacturing products have also posted growth.

As described throughout this report, mining (particularly oil and gas mining) has been a drag on growth in 2015, with a loss of over 5% for real GDP and 9% for employment. Poor performance in mining has also impacted demand for transportation, which indicated declining real GDP and slow employment growth in 2015. Job losses in mining and transportation have continued in 2016. Mining comprises only about 2% of employment in Montana, but it represents a larger share of GDP (about 5%) because of its high annual wages –the highest of all industries in Montana.

**FIGURE 15**  
**Industry Performance in Employment, Wages, & GDP**

Industry	EMPLOYMENT			GDP			AVERAGE ANNUAL WAGE	
	2015 Level	1-Year Growth	5-Year Growth	2015 Level (Millions \$)	1-Year Growth	5-Year Growth	2015 Wage	1-Year Growth
Ag and Forestry	5,433	8.5%	4.4%	1,706	13.7%	4.4%	\$36,541	4.3%
Mining and Utilities	10,664	-9.0%	1.5%	3,353	-5.3%	0.9%	\$87,712	1.4%
Construction	26,462	5.9%	3.1%	2,370	7.9%	2.8%	\$47,829	3.5%
Manufacturing	19,113	1.2%	3.1%	2,645	12.5%	7.2%	\$47,193	3.2%
Trade	76,255	2.7%	1.6%	5,092	4.0%	2.9%	\$33,918	3.2%
Transportation	12,070	0.3%	3.0%	1,756	-4.7%	-0.3%	\$41,492	0.2%
Financial Activities	20,640	1.7%	0.6%	7,236	3.2%	2.5%	\$52,997	4.3%
Business Activities	40,307	2.6%	0.6%	2,980	4.2%	2.2%	\$48,420	4.2%
Healthcare and Education	69,184	1.7%	2.0%	3,910	3.7%	2.4%	\$43,183	4.9%
Leisure Activities	62,626	3.9%	2.5%	1,984	2.8%	3.1%	\$17,368	3.8%
Government	82,902	0.7%	-0.3%	6,005	1.8%	0.0%	\$44,656	3.2%
Other	23,691	2.3%	0.3%	1,852	4.3%	0.3%	\$33,281	3.8%

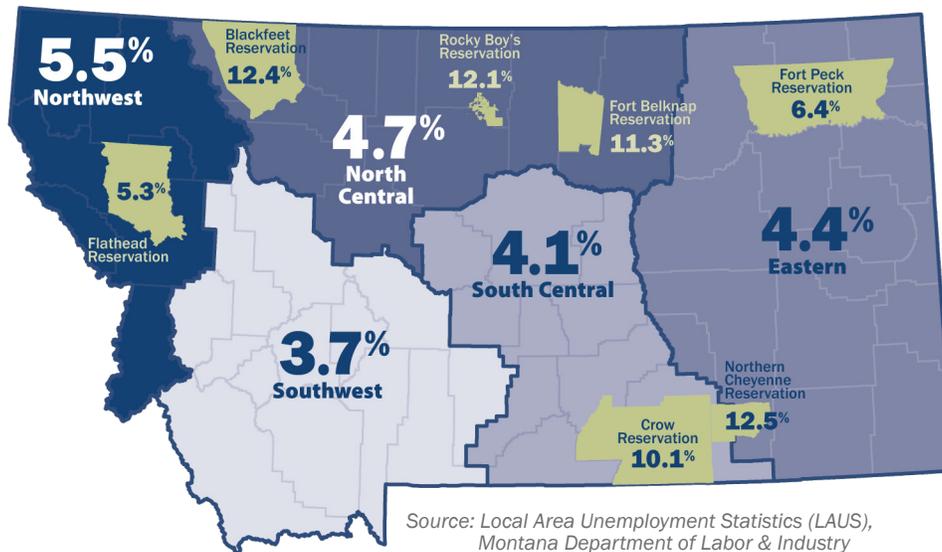
Source: Bureau of Labor Statistics. Bureau of Economic Analysis.

Government posted a small increase in employment over the last year of roughly 400 jobs, the majority of the job gain in the local government sector. In the past few years, the federal sequester, fiscal cliff, and other cuts in federal government spending have reduced government employment in Montana. In general, the government sector grows at the same pace as the overall population, but growth in this industry has been slower than population growth in recent years.

## Regional Growth

Throughout the recession and recovery, employment growth rates in Eastern Montana led the state because of the rapid expansion of oil and gas drilling. Lower prices for oil and agricultural commodities have slowed employment growth in the Eastern region of Montana, with employment gains slowly transitioning to job losses during 2015 and 2016. Now, the economic fortunes of the state's regions have switched, with the western half of the state posting strong growth, making up for the employment declines in the east.

**FIGURE 16**  
**Regional Unemployment Rates**  
*Including Reservations*



The change in the geographical pattern of economic growth is evident in the unemployment rate map, shown in **Figure 16**. After several years of having the lowest unemployment rates in the state, the Eastern region now has unemployment roughly equal to the state average at 4.4%. The Southwest region surrounding the fast-growing city of Bozeman has the lowest unemployment at only 3.7%.

The Bozeman area has been expanding in the businesses and professional services sector, which includes occupations like engineers, computer programmers and economists. Rapid employment growth in the professional and technical services industry is reflective of a general shift in Montana towards a more knowledge-based and service-based economy. The Southwest region added over 600 jobs in the business services sector in 2015, for growth of 5.1%. Other rapidly growing industries in the region were leisure activities (which includes hotels, restaurants, and ski resorts) and trade, with gains of roughly 800 and 700 respectively. In total, the Southwest region of the state added 4,400 jobs, with real wage growth of 4.3% over the year.

While still the highest unemployment rate in the state, the employment situation in Northwest Montana has improved dramatically over the last year, with 3,700 jobs added and 3.4% real wage growth in 2015. The industries with the largest gains were trade (adding roughly 900 jobs) and leisure activities (880 jobs gained over the year). The construction industry has returned to be a strong driver of growth in the Northwest Region, with 7.5% employment growth over the year, adding roughly 500 jobs.

The North Central region has posted a small decline to unemployment rates, but has the smallest real wage and employment growth among the five regions over the last five years. The North Central region has posted employment losses in 2011 and 2014, but employment gains in 2012, 2013, and 2015. The sporadic growth path has resulted in slow overall employment growth over the last five years of -0.2% and real wage growth at only 0.5% per year average since 2010. Over the last year, the largest job gain by industry in the North Central region was health care with 120 jobs added, followed by financial activities with 110 jobs. However, with a 6.8% gain in manufacturing employment over the past year, the North Central region may be finding greater industry diversity to help its economy become more robust in future years.

Finally, construction in Montana's most populated city of Billings has driven job growth in the South Central region in 2015. Construction added 700 jobs for growth of 11% in the region, with leisure activities adding another 700 jobs. Overall, the region added 2,560 payroll jobs in 2015 for growth of 2.5%. The South Central region has also benefited by the oil and gas industry in recent years, particularly with the expansion of the petroleum refineries in the Billings area. These jobs pay high wages, and put upward pressure on wages in the region. Similar to Eastern Montana, the South Central region had a slowdown in employment growth due to lower oil prices, but the diverse economy in the region is expected to weather the downturn well. The Billings region also serves as a healthcare hub for all of the central and eastern portions of Montana, and parts of Wyoming. The demand for these services is expected to increase in future years as the population ages.

Shown in **Figure 17** are unemployment rates for Montana's seven reservations. Montana's reservations are some of the most economically sensitive regions of our state, and unemployment rates on the reservations are often two to three times higher than their surrounding areas. **Figure 17** also provides job and wage growth by reservation over the last year. All of the reservations have improving

**FIGURE 17**  
**Labor Force Statistics for Indian Reservations in Montana**

Reservation	2015 Unemp. Rate	Change from 2014	2015 Employ.	Change from 2014	2015 Labor Force	Change from 2014	2015 Wages	Change from 2014
Blackfeet	12.4%	-1.9%	3,774	-0.6%	4,309	-2.8%	\$34,524	0.8%
Crow	10.1%	-4.8%	2,626	3.3%	2,921	-2.2%	\$36,954	1.9%
Flathead	5.3%	-0.7%	11,895	2.2%	12,563	1.5%	\$33,296	3.1%
Fort Belknap	11.3%	-1.4%	759	-0.1%	856	-1.7%	\$44,381	3.7%
Fort Peck	6.4%	0.1%	4,059	-2.2%	4,336	-2.1%	\$35,220	2.9%
Northern Cheyenne	12.5%	-1.8%	1,419	1.7%	1,622	-0.3%	\$36,597	2.0%
Rocky Boy's	12.1%	-3.1%	1,092	0.7%	1,243	-2.8%	\$41,883	-2.4%

Source: Local Area Unemployment Statistics (LAUS), Montana Department of Labor & Industry

unemployment rates over the last year except Fort Peck, with large declines on the Crow and Rocky Boy's reservation. The Fort Peck reservation had a small uptick in the unemployment rate, similar to the surrounding counties, with lower oil and gas development over the year.

However, not all of the declines in the unemployment rate were due to positive employment growth. Fort Belknap and Blackfeet reservations faced job losses over the year, but their unemployment rate declined because people left the labor force. Workers can often become discouraged by poor economic conditions and leave the labor force rather than continue searching for a job. Workers who are not actively searching for a job are not counted as unemployed, but are instead counted as "out of the labor force." This type of economic disengagement is a symptom of an economy where job opportunities have been scarce over a long period of time. Few job opportunities and low wages reduce economic engagement.

## WHAT'S IN AN UNEMPLOYMENT RATE?

### DIFFERENT METRICS USED TO MEASURE THE LABOR MARKET

*The unemployment rate is a metric used by economists to measure how hard it is to find a job, if a worker is looking for a job. About half of Montana's population is not interested in working because they are retired, too young for work, in school, disabled, or caring for their home or family. Individuals who are not actively looking for work are considered "out of the labor market" and are not included in unemployment rate published each month.*

*However, people "out of the labor market" ARE included in several other economic indicators, including labor force participation rates and employment to population ratios. Labor force participation rates indicate the percentage of the population that is in the labor force. Employment to population ratios measure what percent of the population is employed. Both of these metrics should be used with unemployment rates to get a well-rounded view of the economy.*

*However, both the labor force participation rate and the employment to population ratio are more affected by long-term demographic shifts than economic changes, making these metrics a poor choice for measuring the strength of the job market. As Montana's population ages, more people will move into retirement status instead of being at work. These demographic changes will bring down employment to population ratios and labor force participation rates regardless of whether the economy is performing well.*

## Montana's Economic Growth Expected to Continue

Montana's economy posted an exceptional year of economic growth in 2015. Wage and employment growth was strong, with the western half of Montana gaining robust job and wage growth to push the overall state numbers higher. The decline in oil prices has affected our state, slowing growth in the Eastern region of Montana in particular, but the economy is resilient and diversified enough to withstand these challenges. While low oil prices have influenced our employment and GDP during the turn of the year, the strong growth throughout 2015 was more than enough to compensate for the temporary losses. Montana's industry diversity has once again shown its mettle in lifting the state's economy to superior growth despite losses in the oil-impacted areas.

The path forward is not without challenges. With a stronger domestic economy and weakness overseas, the dollar will continue to appreciate in the next few years, slowing demand for Montana's exports. The Federal Reserve is expected to further increase interest rates over the next year, which will further strengthen the dollar and influence national growth. However, the U.S. and Montana economies have displayed strength and resilience in the face of these challenges over the last year, and this momentum is likely to continue.

Long term challenges present themselves with the aging of Montana's workforce and the lack of young people to replace retiring workers. Montana's limited working-age population will cause tightness in the labor market in the future, with unemployment rates expected to reach low levels within the next ten years. More job opportunities and higher wages will naturally bring more workers into the labor force, but these natural forces may not be enough to meet the labor demands of Montana's employers. Actions are being taken through private/public partnerships to streamline education and workforce training programs to allow workers to learn while on the job, reducing costly time out of the labor market.

The Montana Department of Labor & Industry continues to take the lead in addressing the worker shortage and other issues faced by the Montana economy. The Department will continue the collaboration with businesses to address worker shortages by developing apprenticeships and other programs to ensure workers are quickly trained with the right skills for today's economy. Workers will need to take advantage of these training programs to continuously upgrade skills. Businesses will need to make investments to upgrade production processes and improve human capital.

The Montana Department of Labor & Industry also will continue to be active in spreading best practices in employee retention and offering assistance in better job matching between workers and businesses. Businesses will also need to look for ways to attract workers from groups with lower labor force participation, which may require changes to the types of benefits offered or to hiring and promotion practices to remove unintended gender bias. These strategies will be important for Montana's businesses to compete in a global market with rising labor costs. With actions designed to improve training, hiring, and retention practices, Montana will meet these upcoming challenges and continue to outperform the nation and other states in our economic growth.

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