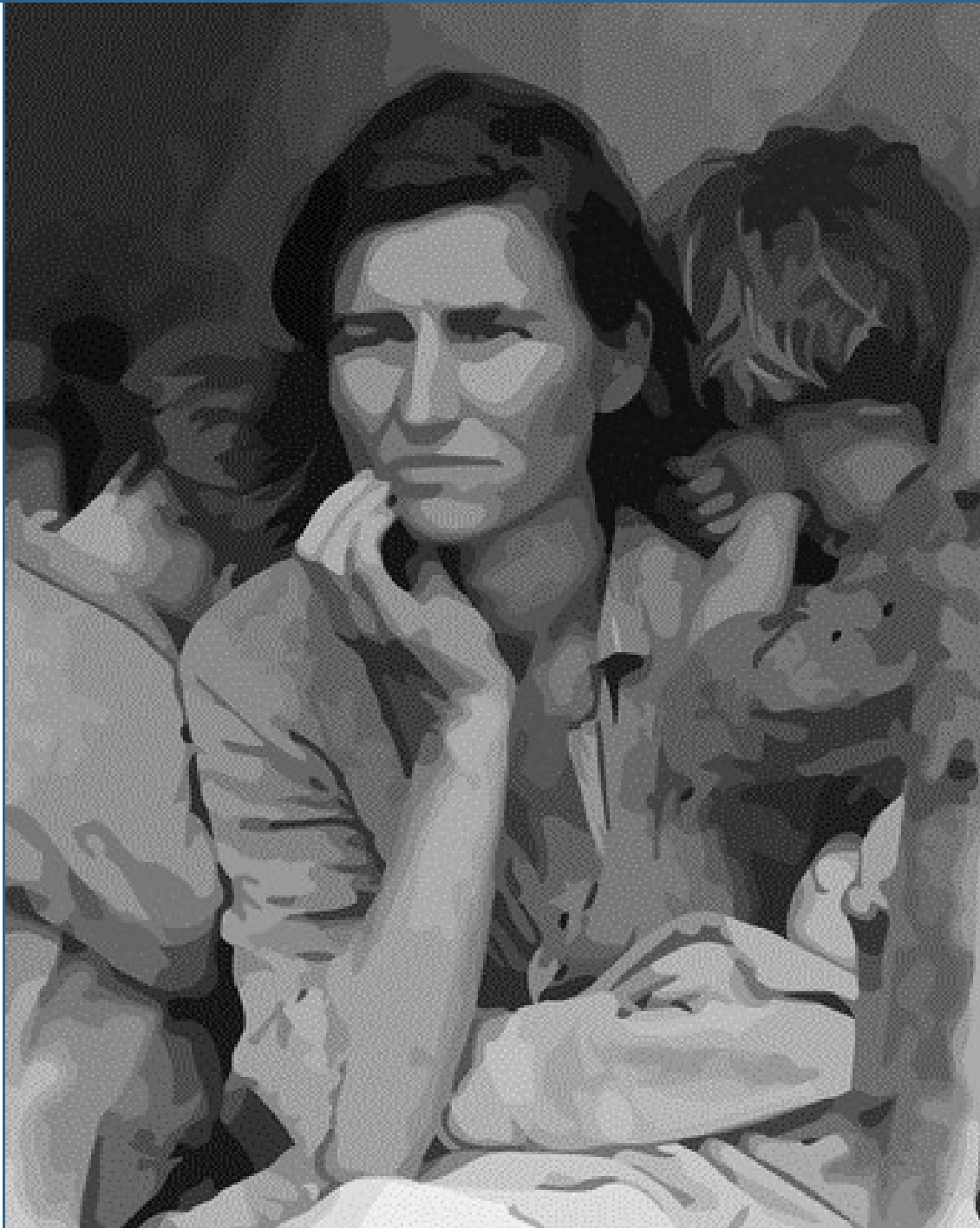


# Montana Poverty Report Card

December 2011



Royalty-free clipart picture of a lady in thought, her children hugging her shoulders, original titled Migrant Mother by Dorothea Lange. Image #33706, Illustrator #0013 Image by JVPD at <http://ClipartOf.com/33706>

## Introduction

The Montana Poverty Report Card presents a state summary and county-level description and assessment of poverty. The first section of the report compares the poverty situation in Montana with the U.S. and surrounding states and examines poverty indicators in the 56 Montana counties. The second section assesses the relationship between poverty measures and other important poverty indicators, such as the unemployment rate, median household income, personal income (especially, transfer payments), Medicaid, selected demographic characteristics; and benefits and assistance programs. The third section discusses several public policy concerns, including the impact of the recent recession, changes in federal budget priorities, demographic changes, housing and transportation costs and other issues. The fourth section briefly discusses the sources of information and analytical methods employed in this study. The fifth section reports a detailed description of the poverty situation in each county ([www.montana.edu/extensionecon/poverty.html](http://www.montana.edu/extensionecon/poverty.html)).

The document is a reference document with a two-fold purpose: (1) To provide an objective picture of poverty and other financial and economic stress in Montana counties; and (2) To examine the use of benefits and other assistance to determine where areas of unmet need, or overutilization, might exist. It's our hope that this reference document will be useful to those engaged in program planning and policy development.

## Poverty Indicators

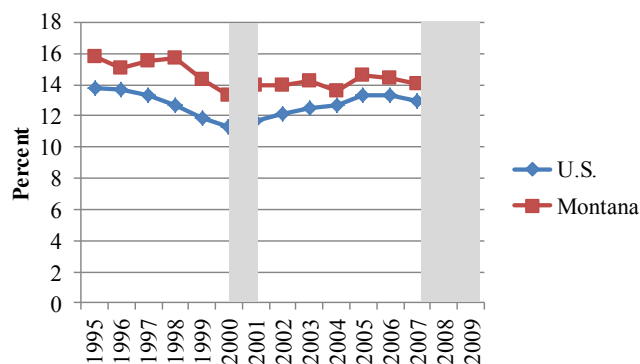
The most important variable in this study is the poverty rate. The most widely used measure of poverty in the U.S. is federal poverty measure reported by the Census Bureau. This income-based measure was established by the Office of Management and Budget and is updated each year using the consumer price index for all urban consumers. The poverty threshold utilized by Census reports poverty thresholds based on non-elderly and elderly for one- and two-person households and households with three persons or more. The official poverty definition uses money income before taxes and does not include capital gains or noncash benefits, such as public housing, Medical care or food stamps. Other poverty guidelines, such as those issued by the U.S. Department of Health and Human Services (HHS).

These guidelines are essentially a simplification of the thresholds reported used by Census, where they don't distinguish between non-elderly and elderly persons. Since the poverty thresholds used by Census aren't reported in their final form until late summer of the following calendar year, the poverty guidelines are often utilized as the federal poverty level. Many federal programs use these poverty guidelines to determine eligibility for their programs.

## Poverty Rate

The individual poverty rate in Montana has remained above 14 percent since 2005 (Chart 1). Montana has had a higher poverty rate than the U.S. since 1995. The highest poverty rate occurred in 1995 (15.8%) and lowest rate poverty was realized in 2000 (13.3%). In 2009, the Montana poverty rate was 0.7 percent higher than the U.S. poverty rate. During the last two recessions the poverty rates in Montana and the U.S. have trended upward with the U.S. poverty rate increasing at a faster rate than the Montana poverty rate from 2000 to 2009. In 2009, Montana had an estimated 142,000 people living in poverty.

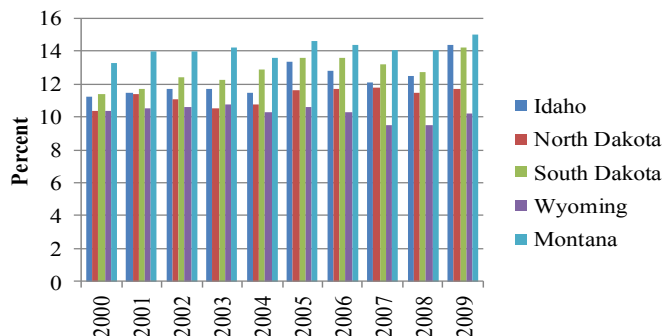
**Chart 1:** Poverty Rate for Montana and U.S., 1995 to 2009 (shaded area is recession)



Source: U.S. Census Bureau, Small Area Income and Poverty Estimates (SAIPE)

Montana has had a higher poverty rate than any of the adjacent states (Idaho, North Dakota, South Dakota and Wyoming) since 2000 (Chart 2). All of the states realized a substantial decline in the poverty rate between 1995 through 2000; however, from 2000 to 2009 poverty rates have been stable to increasing. Wyoming has consistently had the lowest poverty rate in the region.

**Chart 2: Poverty Rate for Montana and Surround-**

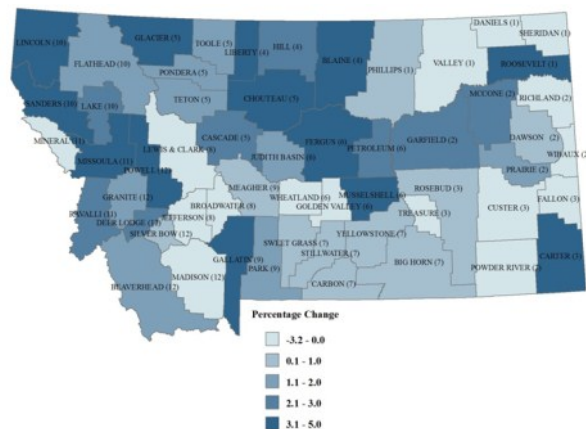


Source: U.S. Census Bureau, Small Area Income and Poverty Estimates (SAIPE)

Poverty rates for individual counties are less reliability estimated than for the state as a whole (see Section 4). However, the available evidence indicates that poverty rates changed substantially from 2000 to 2009 for several counties (Map 1). The poverty rate declined in the western Montana counties of Lewis and Clark, Broadwater, Jefferson, Madison and Mineral; central Montana counties of Golden Valley and Wheatland; and, eastern Montana counties of Treasure, Custer, Powder River, Fallon, Wibaux, Richland, Sheridan, Daniels and Valley.

The poverty rate increased by over 3 percentage points in 11 counties (Lincoln, Sanders, Missoula, Powell, Glacier, Gallatin, Liberty, Choteau, Blaine, Fergus, Musselshell, Roosevelt and Carter).

**Map 1: Percentage Point Changes in Individual Poverty Rates from 2000 to 2009**

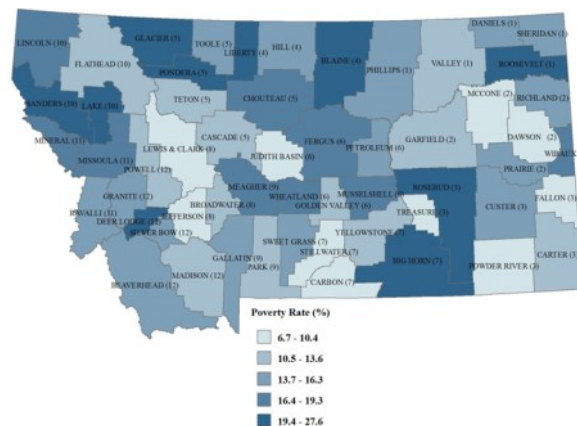


Source: U.S. Census Bureau, SAIPE

The highest poverty rates, over 25 percent, were in Glacier, Blaine and Roosevelt counties in 2009. A second tier of counties (Lincoln, Sanders, Lake, Powell, Petroleum, Musselshell, Golden Valley, Big Horn and Carter) had poverty rates between 20 and

25 percent. Only three counties had poverty rates less than 10 percent (Fallon, Jefferson and Stillwater).

**Map 2: Individual Poverty Rates, 2009**



Source: U.S. Census Bureau, American Community Survey

The poverty rate for individuals under 18 years of age was higher in Montana (19.6%) than in the U.S. (18.6%). Five counties (Sanders, Pondera, Musselshell, Liberty, Blaine and Wheatland) had poverty rates of over 35 percent, while Jefferson, Sheridan and Granite had poverty rates of less than 10 percent for this age group (Chart 3).

**Table 1: Poverty rates by age for Montana and U.S.**

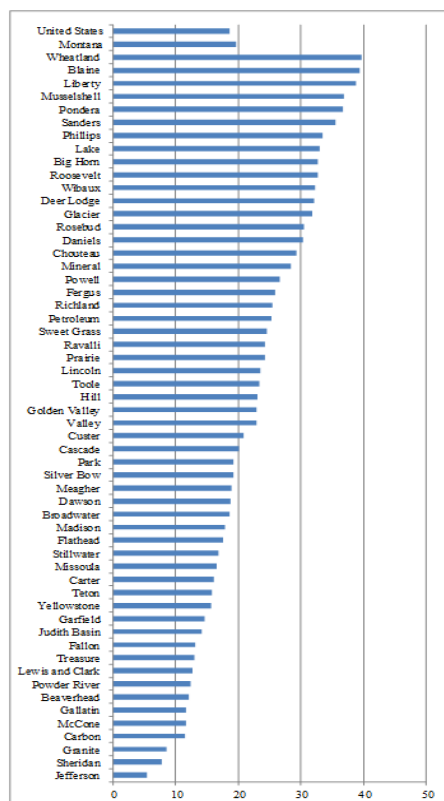
Age	U.S.	Montana
Less than 18	18.6	19.6
18 - 64	12.2	14.1
65 and older	9.8	9.2

Source: American Community Survey, 2005-2009

The poverty rate for individuals between 18 and 64 was higher in Montana (14.1%) than in the U.S. (12.2%). Seven counties (Missoula, Sanders, Pondera, Glacier, Deer Lodge, Roosevelt and Blaine) had poverty rates of over 20 percent, while Fallon, Treasure and Stillwater had poverty rates of less than 7 percent for this age group (Chart 4).

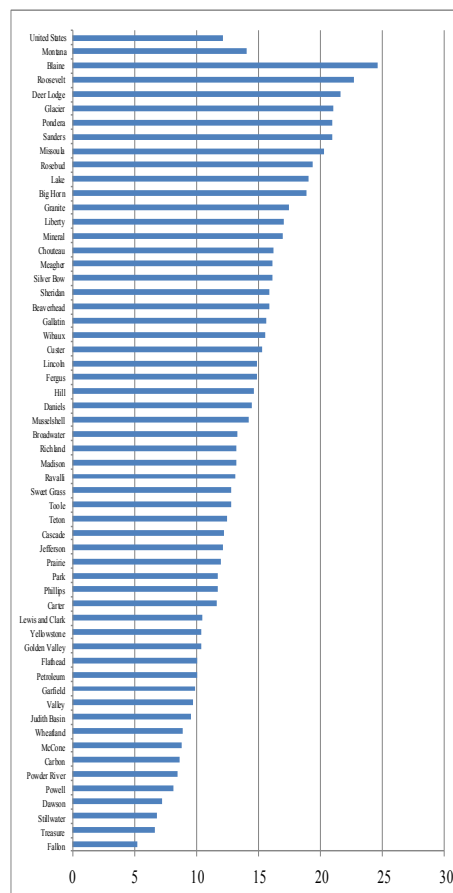
The poverty rate for individuals 65 years of age and older was lower in Montana (9.2%) than in the U.S. (9.8%). The highest poverty rates were realized in Rosebud and Wheatland counties, where poverty rates exceeded 20 percent; while the lowest poverty rates were realized in Phillips, Fallon, Mineral, Treasure and Stillwater, where poverty rates were less than 5 percent for this age group (Chart 5).

**Chart 3:** Poverty rate for individuals less than 18 years old



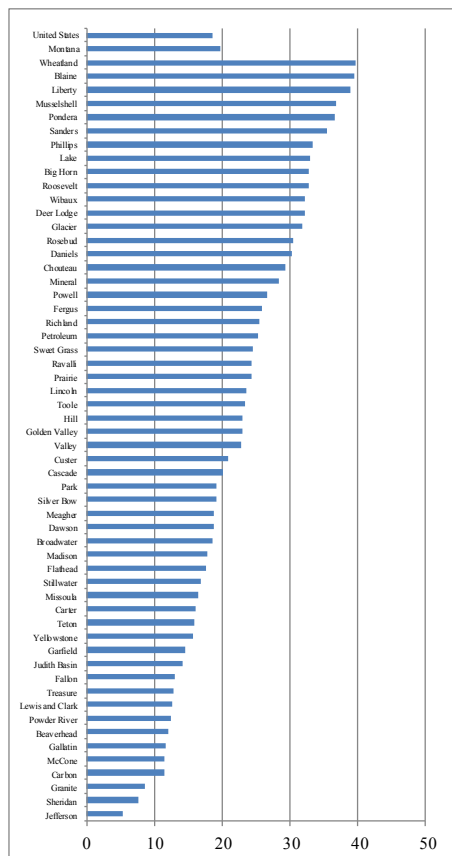
Source: American Community Survey, 2005-2009

**Chart 5:** Poverty rates for individuals 65 years of age and older



Source: American Community Survey, 2005-2009

**Chart 4:** Poverty rates for individuals 18 to 64 years of age



Source: American Community Survey, 2005-2009

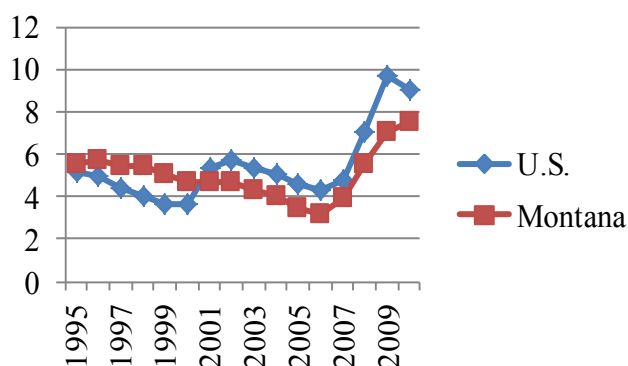
The percentage of individuals in poverty by age group is very similar for Montana and the U.S. Of the total number of people in poverty in Montana, 31 percent are less than 18 years old (versus 34% in the U.S.), 60 percent are 18 to 64 years of age (versus 57% in the U.S.) and 9 percent are 65 years of age and older (versus 9% in the U.S.). These percentages by age group have remained stable since 2000.

### Unemployment

Employment is a critical factor in discussing poverty. Long-term economic changes in Montana have been very similar to those experienced in the U.S. as a whole. Employment has shifted from manufacturing- and natural resource-based industries to more knowledge- and service-based industries. Many of those with less education who previously held higher paying jobs in manufacturing- and natural resource-based employment are having to accept lower paying service industry positions.

The unemployment rate is based primarily on information collected in the Current Population Survey by the Census Bureau and Montana Department of Labor and Industry. The unemployment rate measures the percentage of individuals within the work force that are actively seeking employment, but remain unemployed. The unemployment rate does not include discouraged workers who have dropped out of the labor force. The Montana unemployment rate was higher than the U.S. unemployment rate from 1995 through 2000; however, Montana unemployment was lower than U.S. unemployment from 2001 through 2010 (Chart 6).

**Chart 6:** Unemployment Rate for Montana and U.S., 1995 to 2010 (December)



Source: Montana Department of Labor and Industry and Bureau of Labor Statistics

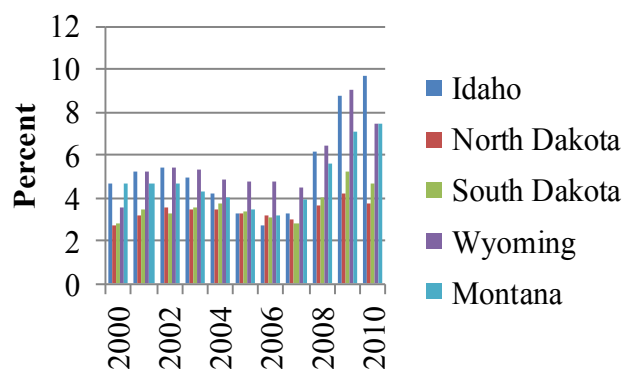
The unemployment rate in Montana has been impacted by the recession that began in 2007. Since 2007, the unemployment rate has nearly doubled from 3.9 percent in 2007 to 7.5 percent in 2010. The state’s unemployment rate in December 2010 was the highest it has been in many years.

Montana’s unemployment rate was higher than all surrounding states from 1995 through 2000 and remained higher than North and South Dakota from 2001 through 2010 (Chart 7). In 2010, Idaho had the highest unemployment rate (9.7%) and North Dakota had the lower unemployment rate (3.8%) in the region.

There were major differences in the change in unemployment among Montana counties from 2000 to 2009 (Map 3). Sanders, Lincoln, Flathead and Mineral counties realized the largest percentage increase in unemployment during the most recent recession (2007 to 2010) with increases of 7 percent or more. Six counties (Prairie, McCone, Golden

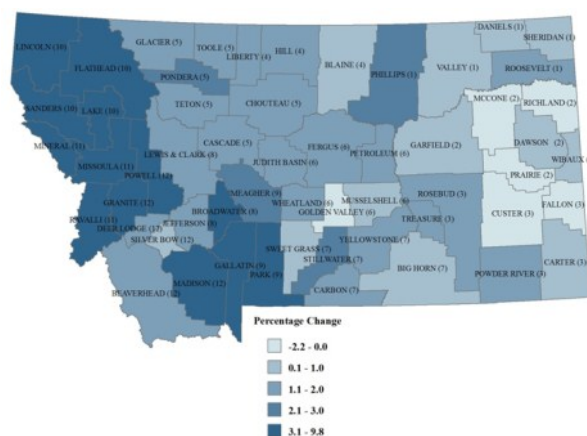
Valley, Richland, and Fallon) realized an improved unemployment picture from 2000 to 2009 as the unemployment rate declined.

**Chart 7:** Unemployment Rate for Montana and Surrounding States, 2000 to 2010



Source: Montana Department of Labor and Industry and Bureau of Labor Statistics

**Map 3:** Changes in Unemployment Rates from 2000 to 2010

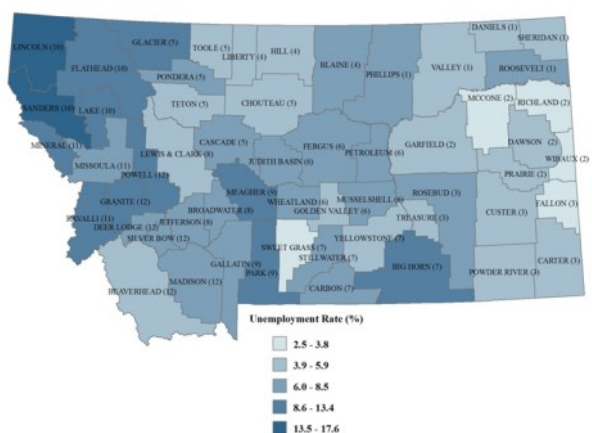


Source: Montana Department of Labor and Industry

As in previous years, there were major differences in unemployment among Montana counties (Map 4). Lincoln and Sanders counties had the state’s highest unemployment rates (greater than 17%) in 2010. Seven other counties (Mineral, Big Horn, Flathead, Glacier, Granite, Lake and Ravalli) had unemployment rates exceeding 10 percent. The lowest unemployment rates were in the oil producing counties in eastern Montana (Fallon, Richland, McCone and Wibaux) and a mining county (Sweet Grass) in south-central Montana.



**Map 4: Unemployment Rates in 2010**



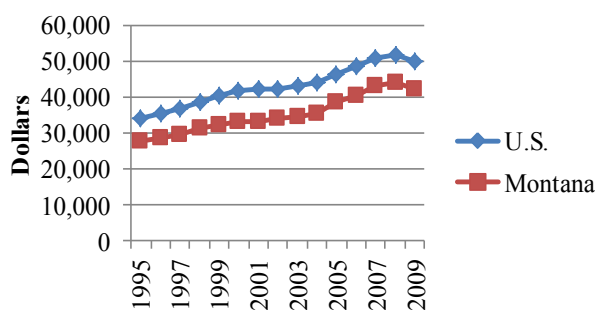
Source: Montana Department of Labor and Industry

**Median Household Income**

Median household income refers to the middle value of household incomes. Fifty percent of household incomes fall below the median income value and fifty percent of household incomes fall above the median amount. Median household income is not adjusted for inflation in this section.

The median household income in 2009 for the U.S. was over \$50,000, while the median household income for Montana was just over \$42,000 (Chart 8). Montana’s median household income has been below U.S. median household income; however, it has followed the same upward trend since 1995.

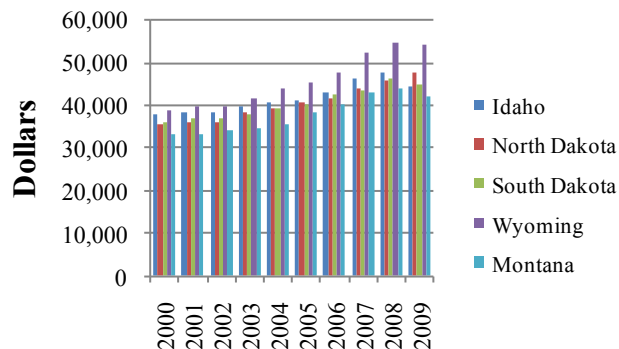
**Chart 8: Median Income for Montana and U.S., 1995 to 2009**



Source: U.S. Census Bureau, Small Area Income and Poverty Estimates (SAIPE)

Montana’s median household income has been below the surrounding states since 2000 (Chart 9). Since 2000, Wyoming has had the highest level of median income and has increased at a somewhat faster rate than other states in the region. In 2009, Wyoming’s median household income exceeded all surrounding states by over \$6,500.

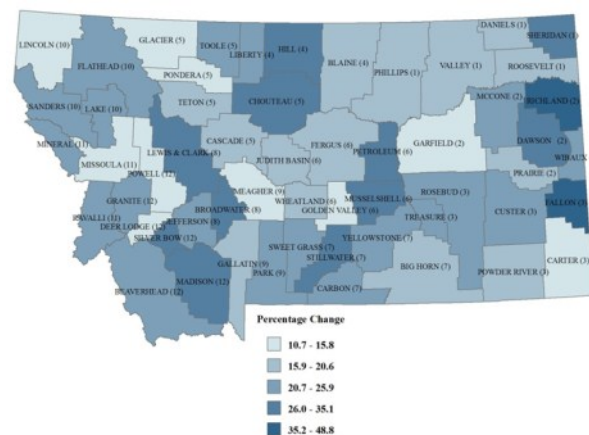
**Chart 9: Median Household Income for Montana and the Surrounding States, 1995 to 2009**



Source: U.S. Census Bureau, Small Area Income and Poverty Estimates (SAIPE)

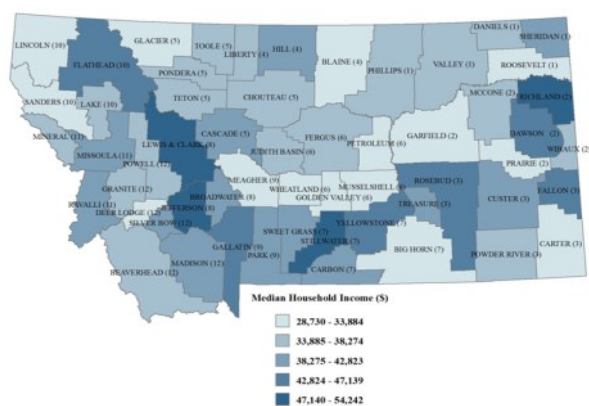
While Montana median household income increased by nearly 27 percent from 2000 to 2009, two oil-rich counties (Richland and Fallon) realized increases of over 45 percent. Four other counties (Dawson, Sheridan, Madison and Lewis and Clark) realized increases of 30 percent or more. The county with the slowest growth in median household income was Glacier (10.7%).

**Map 5: Percentage Change in Median Household Income from 2000 to 2009**



Source: U.S. Census Bureau, Small Area Income and Poverty Estimates (SAIPE)

Jefferson county, a natural-resource rich county, had the highest median income (\$54,242) in 2009 (Map 6). Three other counties (Stillwater, Lewis and Clark and Richland) had median household incomes of over \$50,000. Wheatland and Glacier county’s median household incomes were the lowest and nearly 50 percent less than the highest median household income county (Jefferson).

**Map 6: Median Household Income 2009**

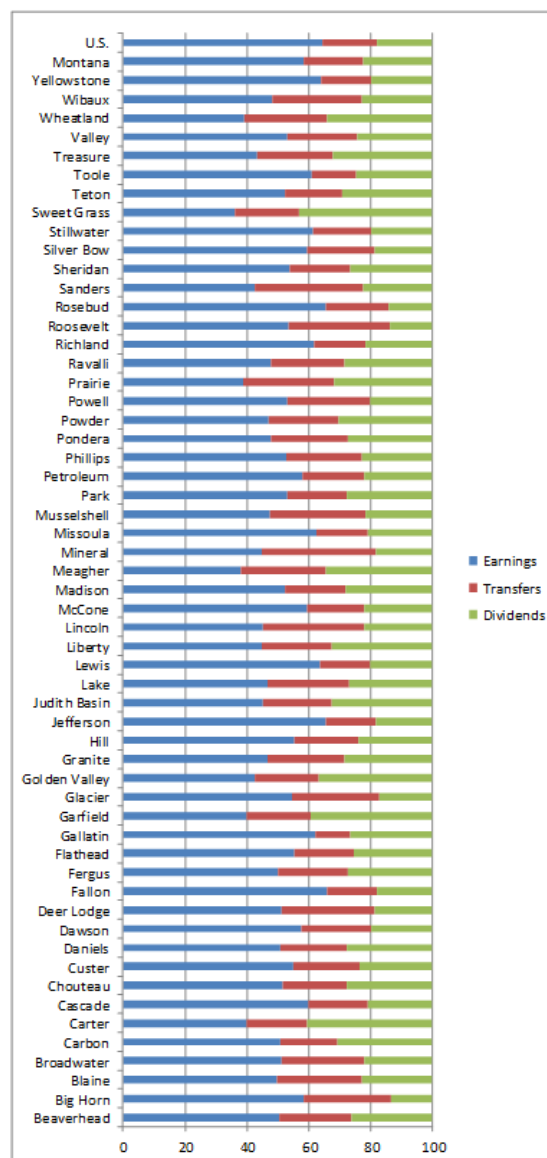
Source: U.S. Census Bureau, Small Area Income and Poverty Estimates (SAIPE)

## Personal Income

Personal income is generally considered the most comprehensive measure of income received by persons. According to Bureau of Economic Analysis, personal income of an area represents all types of income (both cash and non-cash) received by individuals within an area of residence. Personal income includes net earnings (from wages and self-employment), investments (dividends, interest, and rent), and transfer payments. Transfer payments are payments by local, state, and federal governments and by businesses when no current services are rendered. A review of personal income, especially transfer payments, in each county can provide a measure of the economic stress or well-being.

Nationally, income from net earnings comprised 64.5 percent, income from investments comprised 17.5 percent and transfer payments comprised 18 percent of personal income in 2009. In Montana, income from net earnings was substantially lower (58.4%), while income from investments (19.1%) and transfer payments (22.5%) were higher.

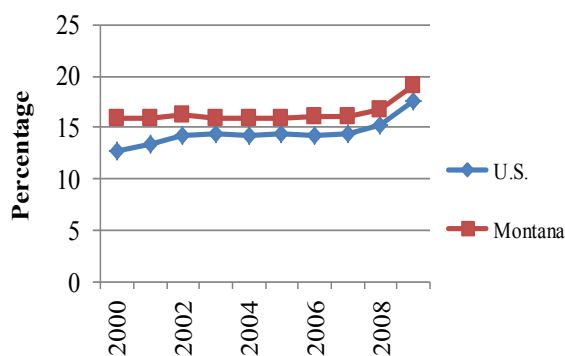
There are substantial differences among counties in the relative proportion of income derived from these three sources (net earnings, investments and transfer payments). The mineral-rich counties of Fallon (66.1%), Rosebud (65.8%) and Jefferson (65.4%) had the highest proportion of income from net earnings (Chart 10). Sweet Grass (36.3%) had the lowest proportion of income from net earnings; but, the highest proportion of investment income (43%). Mineral county had the highest percentage of transfer payments (36.9%).

**Chart 10: Personal Income by source for U.S. Montana and Montana Counties, 2009**

Source: Bureau of Economic Analysis, Table CA30

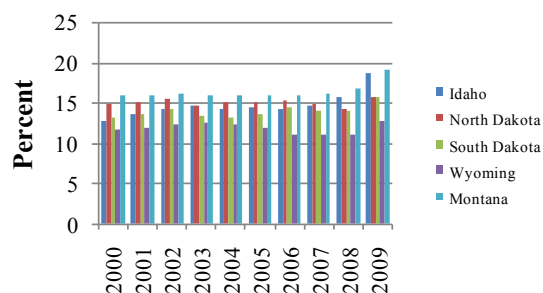
Montana has followed the same trajectory of increases in the percentage of transfer payments as the U.S. economy since 2000. Since 2000, the percentage of transfer payments has increased from 15.9% to 19.1% of personal income in Montana (Chart 11). Montana has had a higher percentage of transfer payments than the other surrounding states since 2000 (Chart 12). Wyoming has had a lower percentage of transfer payments; most recently, over 7 percentage points lower than Montana.

**Chart 11:** Transfer Payments as a Percentage of Personal Income for Montana and U.S. 2000 to 2009



Source: Bureau of Economic Analysis, Table CA30

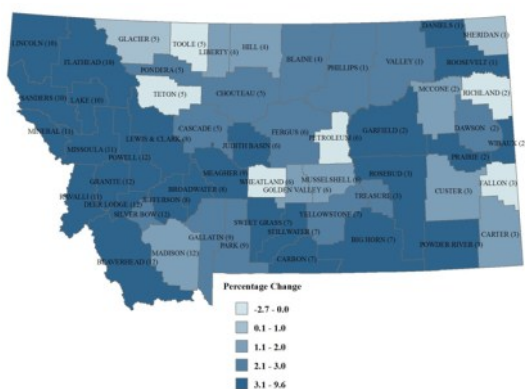
**Chart 12:** Transfer Payments as a Percentage of Personal Income for Montana and Surrounding States 2000 to 2009



Source: Bureau of Economic Analysis, Table CA30

The percentage of transfer payments in personal income has increased in all but six counties (Toole, Teton, Petroleum, Wheatland, Richland, and Fallon) since 2000 (Map 7). Four western Montana counties (Sanders, Mineral, Powell and Lincoln) have realized increases of 7 percent in the percentage of transfer payments. For instance, transfer payments in Sanders county increased from 25.6% in 2000 to 35.2% in 2009.

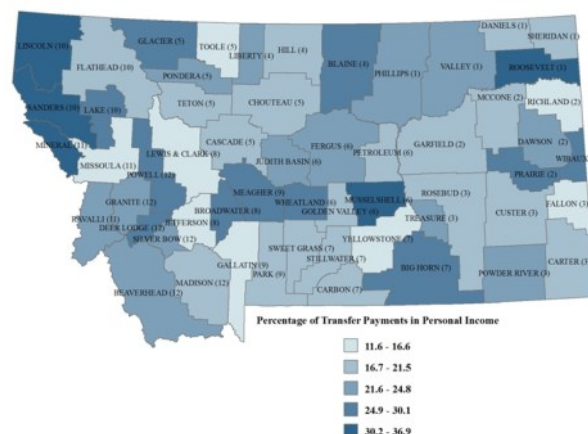
**Map 7:** Changes in Transfer Payments Percentage of Personal Income 2000 to 2009



Source: Bureau of Economic Analysis, Table CA30

In 2009, the wood products dependent counties (Mineral, Sanders, Lincoln had the highest proportion of transfer payment income, 32% or more (Map 8). The lowest proportion of transfer payment income was realized in Gallatin (11.6%) and Toole (14.3%) counties.

**Map 8:** Transfer Payments Percentage of Personal Income



Source: Bureau of Economic Analysis, Table CA30

Table 2 summarizes the percentage of total transfers allocated to each major expenditure category. While medical benefits comprise a substantially large portion of total transfer payments in the U.S. and Montana, these transfer payments are paid directly to providers, not the individual receiving the treatment. Thus, medical benefits are not counted as income for determining individual poverty status. Nationally, medical benefits are the largest share of transfer payments (32.8%); however, in Montana, retirement and disability insurance benefits comprise the largest share (39.9%) with medical benefits comprising the second largest share (36.9%). Retirement and disability insurance benefits account for nearly one-half of the transfer payments for several counties (Prairie, Petroleum, Madison, Granite, Judith Basin, Treasure, Carbon, and Golden Valley); and less than one-quarter for three counties with younger populations residing on Native American Reservations within their borders (Glacier, Big Horn, and Roosevelt). Medical benefits comprised nearly one-half of the transfer payments for Roosevelt, Liberty and Daniels counties, while comprising less than one-third of transfer payments for Gallatin, Golden Valley, Petroleum, Granite, Toole, Jefferson and Lewis and Clark counties. These two types of transfer payment comprise between 88.8 percent of transfer payments for Liberty county and 64.8 percent for Big Horn county.



**Table 2: Transfer payments by type, percentage, 2009**

County	Retirement and disability insurance benefits	Medical benefits	Income maintenance benefits	Unemployment insurance compensation	Veterans benefits	Education and training assistance	Other transfer receipts of individuals from governments	Current transfer receipts of nonprofit institutions	Current transfer receipts of individuals from businesses
Beaverhead	37.6	41.3	5.8	3.5	3.4	4.8	1.1	1.4	1.0
Big Horn	22.5	42.3	20.7	5.0	1.6	2.5	2.7	1.6	1.1
Blaine	29.1	43.3	13.2	3.1	3.9	2.7	2.2	1.5	1.0
Broadwater	41.9	37.0	6.1	4.2	6.0	1.2	1.4	1.3	0.9
Carbon	47.4	34.9	4.9	4.0	3.2	1.4	1.4	1.6	1.1
Carter	46.0	38.3	3.1	3.2	3.5	1.6	1.5	1.7	1.2
Cascade	37.7	39.2	7.5	3.3	6.4	2.2	1.3	1.4	1.0
Chouteau	43.1	40.7	4.2	2.6	3.5	1.4	1.8	1.6	1.1
Custer	41.0	38.5	6.6	3.2	4.2	2.6	1.2	1.5	1.1
Daniels	41.4	46.8	3.0	2.0	2.5	1.1	1.0	1.3	0.9
Dawson	46.4	37.1	4.8	3.0	2.8	2.3	1.1	1.5	1.0
Deer Lodge	40.2	41.2	6.8	4.2	3.4	1.1	1.2	1.2	0.8
Fallon	43.5	41.3	4.2	3.0	2.4	1.5	1.1	1.7	1.2
Fergus	43.0	40.3	5.1	3.2	3.6	1.2	1.2	1.4	1.0
Flathead	41.4	34.1	6.9	7.6	3.7	2.0	1.6	1.6	1.1
Gallatin	42.8	27.2	6.3	7.9	3.9	5.8	1.6	2.6	1.9
Garfield	43.2	41.0	3.9	3.0	2.6	1.7	1.4	1.9	1.3
Glacier	21.4	44.1	19.0	4.8	2.4	3.6	2.3	1.4	1.0
Golden Valley	47.4	30.9	5.0	3.6	7.5	1.4	1.4	1.6	1.1
Granite	48.0	31.6	5.2	5.0	5.1	1.3	1.5	1.4	1.0
Hill	36.0	39.0	10.3	3.5	2.9	4.5	1.5	1.4	1.0
Jefferson	45.3	32.9	5.1	4.9	5.6	1.6	1.5	1.8	1.3
Judith Basin	47.8	34.2	4.1	3.5	5.0	1.4	1.4	1.5	1.1
Lake	37.5	37.7	9.9	4.5	3.2	2.9	1.8	1.5	1.0
Lewis and Clark	42.6	33.3	7.7	3.8	5.9	2.4	1.3	1.7	1.2
Liberty	41.0	47.8	2.7	1.9	2.5	1.1	0.9	1.2	0.9
Lincoln	41.2	36.0	7.5	6.4	4.6	1.0	1.4	1.1	0.8
McCone	43.8	39.2	7.0	2.9	1.3	1.6	1.2	1.7	1.2
Madison	48.1	35.2	2.9	4.6	3.6	1.4	1.4	1.6	1.1
Meagher	43.1	37.6	6.4	4.2	3.9	1.2	1.3	1.4	1.0
Mineral	40.6	38.7	8.3	4.5	4.0	0.9	1.3	1.0	0.7
Missoula	37.5	36.3	8.5	5.1	3.5	4.7	1.3	1.8	1.3
Musselshell	38.7	41.5	6.7	3.5	5.0	1.1	1.2	1.3	0.9
Park	44.2	34.4	6.3	5.9	3.5	1.5	1.4	1.7	1.2
Petroleum	49.3	31.1	5.1	3.9	4.6	1.5	1.5	1.5	1.5
Phillips	38.5	44.7	6.3	3.4	2.3	1.2	1.3	1.3	0.9
Pondera	34.8	45.6	8.9	2.9	3.1	1.2	1.3	1.3	0.9
Powder River	45.6	36.7	4.6	3.5	3.2	1.7	1.5	1.9	1.3
Powell	39.9	38.7	6.0	4.6	5.1	1.5	1.4	1.6	1.1
Prairie	49.9	35.1	3.5	2.3	4.4	1.2	1.4	1.3	0.9
Ravalli	43.5	35.0	6.6	5.1	4.5	1.3	1.4	1.5	1.0
Richland	40.9	42.8	4.9	3.6	2.4	1.5	1.2	1.6	1.1
Roosevelt	22.6	48.8	17.1	3.3	1.5	2.6	2.0	1.3	0.9
Rosebud	33.8	37.3	14.9	3.9	2.8	2.6	2.0	1.6	1.1
Sanders	41.4	35.9	6.7	6.2	5.3	1.1	1.5	1.2	0.8
Sheridan	44.2	43.1	4.0	2.5	1.8	1.1	1.2	1.3	0.9
Silver Bow	38.8	40.3	8.1	3.5	3.4	2.6	1.2	1.3	0.9
Stillwater	46.5	35.4	4.3	4.2	3.8	1.5	1.4	1.7	1.2
Sweet Grass	46.4	33.5	4.1	4.4	5.4	1.6	1.4	1.8	1.3
Teton	43.8	38.6	5.0	3.1	4.3	1.4	1.3	1.6	1.1
Toole	46.6	32.3	7.3	3.7	3.3	1.9	1.4	2.1	1.5
Treasure	47.7	39.4	3.4	3.2	1.9	1.1	1.3	1.2	0.8
Valley	41.1	42.3	6.7	2.9	2.5	1.1	1.3	1.2	0.9
Wheatland	41.1	42.3	4.4	3.4	3.9	1.3	1.2	1.4	1.0
Wibaux	43.2	41.8	4.5	3.3	2.5	1.2	1.2	1.3	0.9
Yellowstone	41.4	37.3	7.6	3.8	3.3	2.4	1.3	1.7	1.2
Montana	39.9	36.9	7.8	4.7	4.0	2.6	1.4	1.6	1.1
U.S.	32.8	41.9	10.2	6.1	2.4	2.7	1.3	1.5	1.1

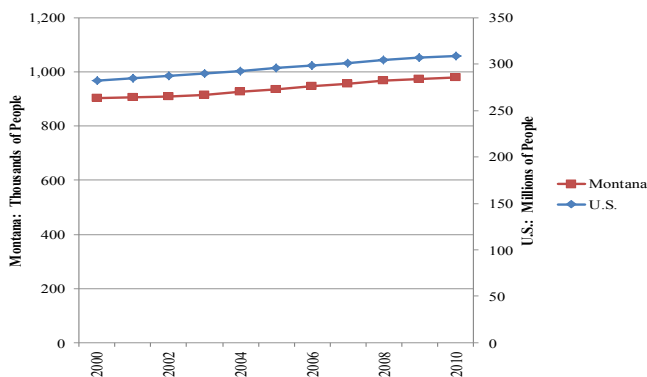
Source: Bureau of Economic Analysis, Table CA30

The remainder of transfer payments is allocated to income maintenance (7.8% in Montana), unemployment insurance compensation (4.7% in Montana), Veterans benefits (4.0%) and other benefits (6.7% in Montana). Counties receiving a higher percentage of income maintenance benefits all have Native American reservations within their borders. Counties with high unemployment insurance compensation benefits have been adversely impacted by the decline in the wood products or construction industries (Gallatin, Flathead, Lincoln, Sanders, Park, Missoula, and Ravalli). The percentage of transfer payments allocated to Veterans benefits is higher in Montana than in the U.S. In three counties (Golden Valley, Cascade and Broadwater) Veterans benefits comprise more than 6 percent of transfer payments.

**Population**

According to estimates from the Census Bureau, the population in the U.S. grew by 9.5 percent, or 26.9 million people, while the Montana population grew by 8.5 percent, or 76,860 people from 2000 to 2010 (Chart 13). Since 2000, Montana has grown at a slower pace than the U.S. Among the surrounding states, Montana has grown at faster pace than only North and South Dakota (Chart 14). Both Idaho and Wyoming have grown substantially faster than Montana.

**Chart 13:** Population for Montana and U.S., 2000 to 2010

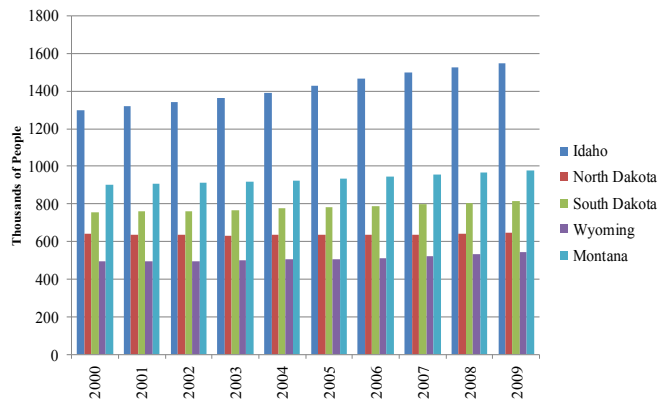


Source: Census Bureau

Map 9 shows the changes in total county population between 2000 and 2010. Within Montana, 35 of 56 counties lost population from 2000 to 2010 with the largest population declines occurring in Treasure (29.7%), Sheridan (22.0%), Wibaux (19.4%) and Liberty (18.5%). The most rapid population growth

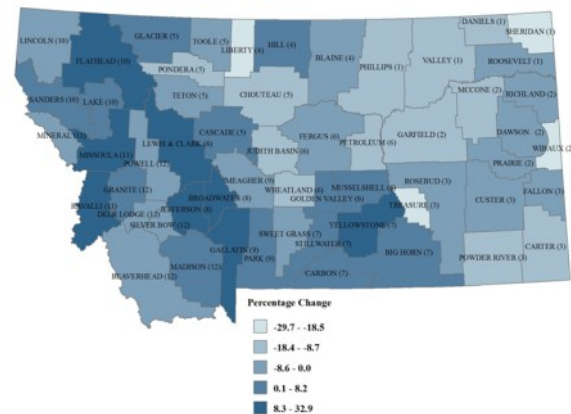
occurred in Gallatin (32.9%) and Flathead (20.0%), two of the counties most severely impacted by the recent recession.

**Chart 14:** Population for Montana and Surrounding States, 2000 to 2010



Source: Census Bureau

**Map 9:** Changes in Population in Montana, 2000 to 2010



Source: Census Bureau

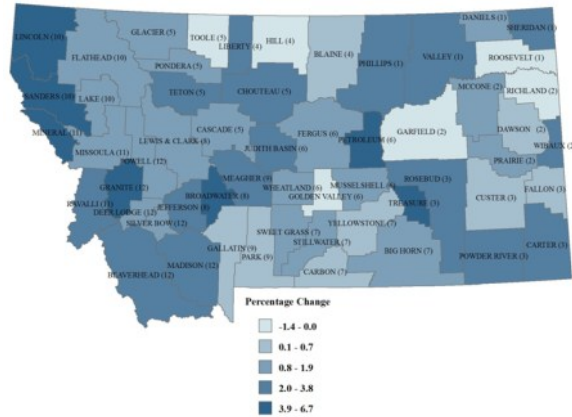
*Aging Population*

The Montana population is aging as people live longer and our birth rate has declined. From 2000 to 2009, the percentage of people 65 years of age or older increased from 13.4% to 14.6%. Montana has a higher percentage of people 65 years or older than any of the surrounding states, except North Dakota. Both Wyoming (12.3%) and Idaho (12.1%) have markedly lower percentages of people 65 years of age and older than Montana.

Map 10 shows the change in the percentage of people 65 years of age and older from 2000 to 2009. Only six counties had a smaller percentage of people 65 years of age and older in 2009 than 2000 (Toole, Garfield, Golden Valley, Roosevelt, Hill and Richland). The highest percentage growth in people

65 and years of age and older occurred in Mineral (6.7 % points), Treasure (6.0% points) and Granite (5.9% points) counties.

**Map 10:** Changes in Population, People 65 years of age and older, 2000 to 2009



Source: Census Bureau, 2000 Census and American Community Survey 2005/2009

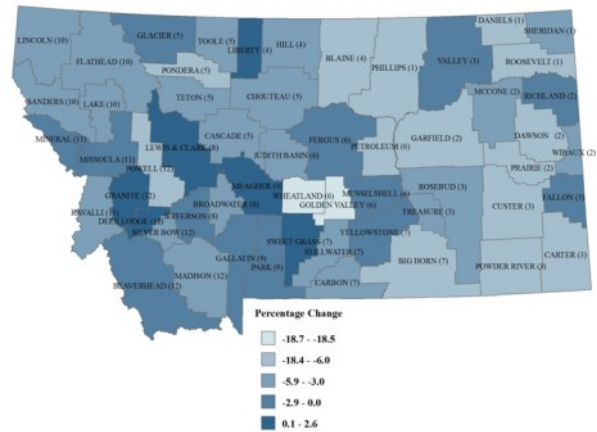
**Educational Attainment (less than high school)**

Education is an important indicator of the human capital available in the county, where increases in human capital are associated with lower levels of poverty and higher gross domestic production growth rates. According to the American Community Survey, over 90 percent of Montanans 25 years of age and older have at least a high school diploma. From 2000 to the most recent American Community Survey (covering 2005 to 2009), the percentage of Montanans 25 years of age and older with less than a high school diploma has declined by 3.1 percentage points from 12.7 to 9.6 percent.

The most dramatic decreases in low educational attainment occurred in Wheatland and Golden Valley counties with reductions of over 18 percentage points (Map 11). Only six counties (Sweet Grass, Liberty, Granite, Meagher, Lewis and Clark and Deer Lodge) realized increases in the percentage of adults 25 years and older with less than a high school diploma.

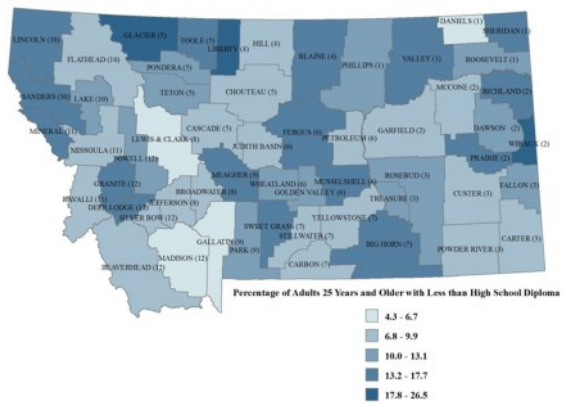
Two counties (Liberty and Glacier) have over 20 percent of adults 25 years and older without a high school diploma (Map 12). Gallatin (4.3%) and Daniels (5.3%) have the lowest percentage of adults without a high school diploma.

**Map 11:** Percentage Points Changes in Adults 25 years of Age and Older with Less than High School Diploma, 2000 to 2005/2009



Source: Census Bureau, 2000 Census and American Community Survey 2005/2009

**Map 12:** Percentage of Adults 25 years of Age and Older with Less than High School Diploma 2005/2009



Source: Census Bureau, American Community Survey 2005/2009

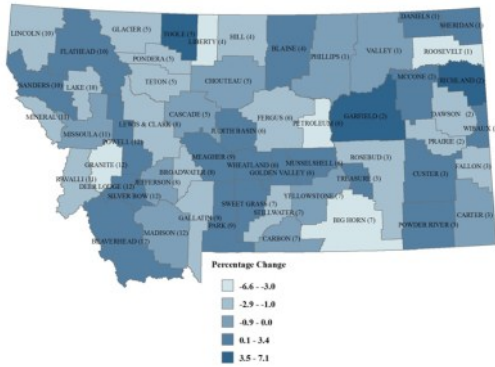
**Single Female Households with Children**

One of the most significant indicators of poverty in a county is the percentage of female, no husband present, households with children under 18, hereafter called single female households with children. From 2000 to 2005/2009 the percentage of single female households with children declined from 8.9 to 8.7 percent.

Twenty-four of Montana’s 56 counties realized declines in the percentage of single female households with children from 2000 to 2005/2009 (Map 13). The percentage of single female households with children declined by over three percentage points in Petroleum (6.6%), Big Horn (4.3%), Liberty (3.7%), Granite (3.3%), Roosevelt

(3.0%) from 2000 to 2005/2009. The largest increases in single female households with children occurred in two counties, Richland (7.1%) and Toole (4.8%).

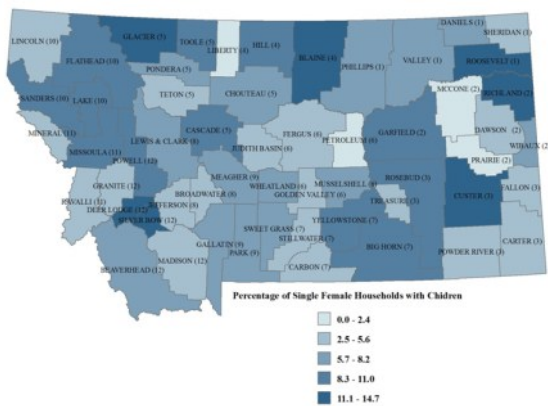
**Map 13:** Percentage Change in Single Female Households with Children, 2000 to 2005/2009



Source: Census Bureau, 2000 Census and American Community Survey 2005/2009

Four relatively sparsely populated counties, Petroleum (0%), Prairie (0%), Liberty (1.8%) and McCone (2.4%) have the lowest rates of single female households with children (Map 14). Richland (14.7%), Roosevelt (13.7), Silver Bow (13.5%), Blaine (13.5%) and Custer (13.4%) have the highest rates of single female households with children.

**Map 14:** Percentage of Single Female Households with Children, 2005/2009



Source: Census Bureau, American Community Survey 2005/2009

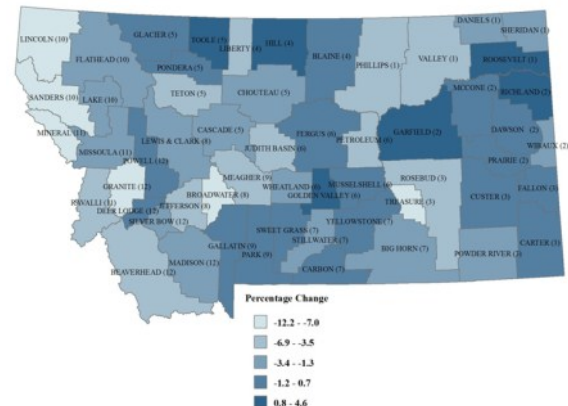
**Old-Age Dependency Ratio (OADR)**

Dependency ratio for a given group is the economically dependent portion (under age 18 and 65 years of age and older) of the population to the potentially employable portion (age 18 to 64 years of age) of the same population. The most important

concern in Montana is the old age dependency ratio, the ratio of those 65 years of age and older divided by those 18 to 64 years of age.

The most substantial percentage point increases in the Old Age Dependency Ratio (OADR) occurred in Toole (4.6%) and Garfield (3.5%) counties (Map 15). Forty-four of Montana’s 56 counties realized decreases in the OADR with the largest decreases occurring in Mineral (12.2%), Granite (9.0%), Broadwater (8.4%) and Treasure (8.1%) counties.

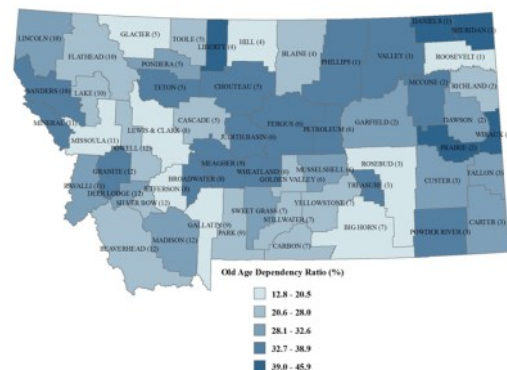
**Map 15:** Percentage Change in Old Age Dependency Ratio, 2000 to 2009



Source: Census Bureau, 2000 Census and American Community Survey 2005/2009

The OADRs for Montana and U.S. were 23.1 and 20.5 percent, respectively. The lowest OADRs are in the two major university counties, Gallatin (12.8%) and Missoula (16.2%) and in the five counties (Big Horn, Glacier, Roosevelt, Rosebud and Hill) with Native American reservations within their borders (Map 16). All other counties in Montana have OADRs that are higher than the U.S. The highest OADRs are in four eastern Montana counties dominated by agriculture, Sheridan (45.9%), Daniels (45.4%), Wibaux (43.8%) and Prairie (42.7%).

**Map 16:** Old Age Dependency Ratio, 2009



Source: Census Bureau, American Community Survey 2005/2009



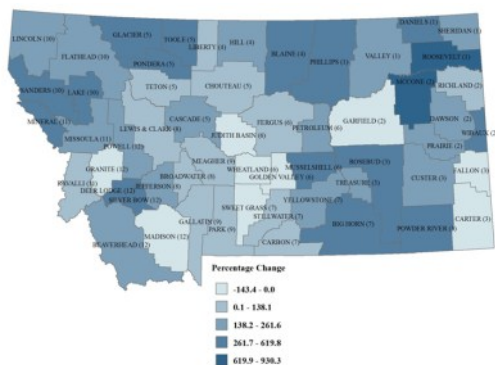
## Benefits and Assistance

Poverty is often assessed by analyzing the incidence and level of benefits provided to the low-income population. The challenge with this approach is that only those receiving benefits are counted; hence, only those demanding and receiving services are counted and no assessment of unmet need is estimated. In this section of the report, we examine those receiving benefits from medical services supplied through Medicaid, earning income tax credits (EITC), Supplemental Nutritional Assistance Program (SNAP), Temporary Assistance for Needy Families (TANF), Low Income Home Energy Assistance Program (LIHEAP) and Free and Reduced-Priced School Lunch Program (FRSL).

### Medicaid

The Medicaid program is administered by the Department of Public Health and Human Services. It is designed to help qualifying individuals and families obtain physical and mental health care. This study examines the largest component of Medicaid, physical health care. In 2010, Medicaid physical health care expenditures comprised 68 percent of total Medicaid expenditures with mental health (11%) and other payments and adjustments made outside of the Medicaid claims systems (21%) comprising the remaining expenditures. Wheatland, Fallon, Madison and Golden Valley realized reductions in Medicaid per capita expenditures of \$20 or more from 2002 to 2010. Garfield, Judith Basin, Granite, Carter and Sweet Grass realized small reductions in Medicaid expenditure per capita, while all other counties realized increases (Map 17). The largest increases occurred in Roosevelt (\$930) and McCone (\$862) counties.

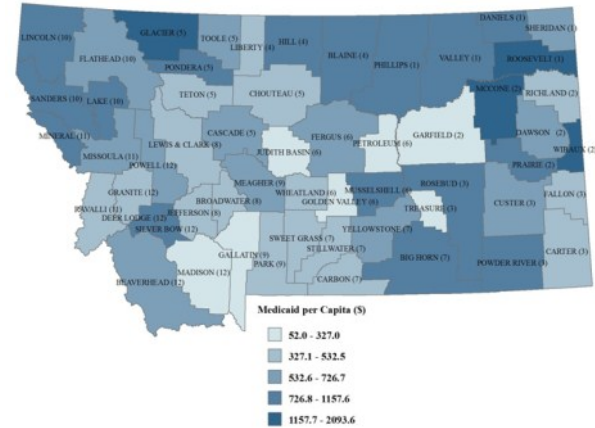
**Map 17:** Percentage Change in Physical Health Medicaid Expenditures per capita, 2002 to 2010



Source: Montana Department of Health and Human Services

The largest Medicaid expenditures were in McCone, Roosevelt, and Glacier counties with expenditures of over \$1,500 per capita (Map 18). The lowest Medicaid expenditures were in Madison county with expenditures of \$52 per capita. Several other counties (Judith Basin, Golden Valley, Gallatin, Treasure, and Garfield) had expenditures of less than \$300 per capita.

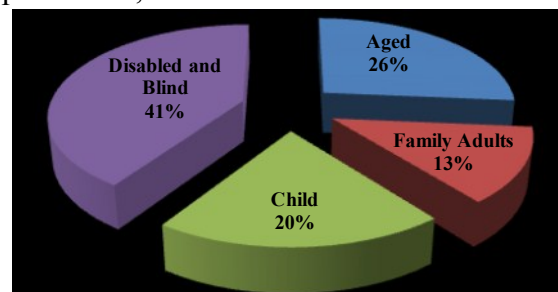
**Map 18:** Physical Health Medicaid Expenditures per Capita, 2010



Source: Montana Department of Health and Human Services

The allocation of Medicaid funds is dominated by expenditures on the disabled and blind (41%) and aged (26%) in 2010. Since 2002, the share of Medicaid expenditures to the aged has declined from 32 percent to 26 percent and Medicaid expenditures to children has increased from 14% to 20 percent. There was substantial variation across counties. Expenditures on the aged varied from less than 10 percent in Petroleum, Treasure, and Golden Valley counties to over 70 percent in the eastern Montana counties of Daniels, Prairie, and Carter. Expenditures on children varied from less than 6 percent in Powder River and Petroleum to over 30 percent in Roosevelt, Wibaux, and Rosebud.

**Chart 13:** Allocation of Medicaid Physical Health Expenditures, 2010

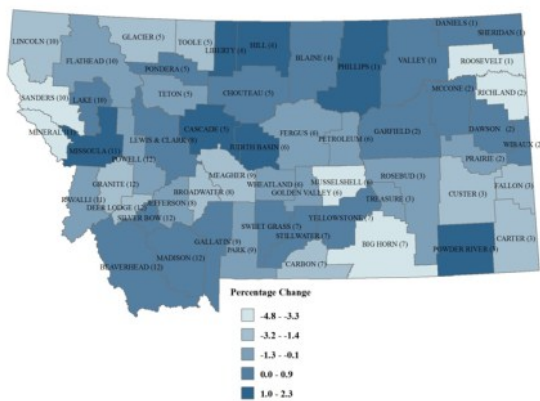


Source: Montana Department of Health and Human Services

## Earned Income Tax Credits

Nationally, 16 to 17 percent of tax filers claim earned income tax credits (EITC). However, a somewhat smaller percentage, between 13 and 14 percent of tax filers claim EITC in Montana. Since 2000, 25 Montana counties have realized increases in the percentage of tax filers claiming EITC with the highest percentage point increases realized in Judith Basin (2.3%), Liberty (1.8%) and Phillips (1.7%) counties (Map 19). These three counties realized an increase of over 50 percent in EITC funds per capita from 2000 to 2007, substantially exceeding the Montana average increase of 29%. The remaining 31 counties realized decreases in the percentage of tax filers claiming EITC with Richland (4.8%) and Big Horn (4.1%) realizing the largest percentage point decreases.

**Map 19:** Percentage Changes in Proportion of EITC Filers from 2000 to 2007



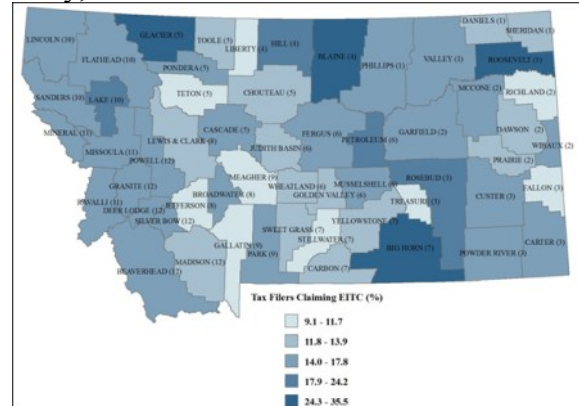
Source: Brookings Institution

The counties with Native American Reservations within their borders have over 20 percent of tax filers who claim EITC. Big Horn (35.5%), Glacier (34.1%), Roosevelt (30.5%) and Blaine (29.2%) have the highest proportion of tax filers claiming EITC (Map 20). These counties received over \$200 per capita in EITC funds, which substantially exceeded the Montana average of \$140 per capita. Liberty, Fallon, Stillwater, Gallatin, Jefferson, Teton, and Richland have less than 11 percent of tax filers claiming EITC.

According to Brookings Institution scholars and the Internal Revenue Service, between 80 and 85 percent of tax filers who are eligible for the EITC claim the credit. Given that EITC can provide a family with a significant cash benefit and because a broader range of working families are eligible for

the EITC than for other means-tested programs, local organizations, such as Montana Extension have devoted substantial resources to alerting potential recipients of the benefits of EITC. Many EITC filers are also eligible for the Additional Child Tax Credit (ACTC), the refundable version of the Child Tax Credit. In fact, about 60 percent of the ACTC dollars allocated in 2007 went to EITC filers.

**Map 20:** Percentage of Tax Filers Claiming EITC by county, 2007



Source: Brookings Institution

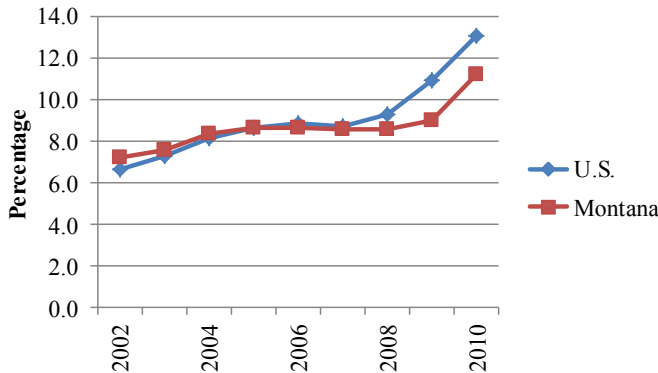
## Supplemental Nutrition Assistance Program (SNAP)

The Supplemental Nutrition Assistance Program (SNAP) aids low income families in the purchase of food to gain the nourishment they need. SNAP was formerly referred to as the Food Stamp Program. During grocery checkout, a qualifying household can utilize a Montana Access Electronic Benefit Transfer (EBT) card to pay for food electronically. This card works much like an ATM card, and required the customer to enter their pin number for processing. Items that are not considered food products, such as tissues, cannot be purchased using the SNAP transfer funds.

In Montana, the percentage of individuals receiving SNAP increased from 7.2 percent in 2002 to 9.0 percent in 2010; and total expenditures on SNAP increased over three fold from \$56.4 million in 2002 to \$170.2 million in 2010 (Charts 14 and 15). The increases were much more dramatic at the national level, where SNAP participation rates doubled from 6.6 percent in 2002 to over 13 percent in 2010; and total expenditures on SNAP increased by more 3.5 times from \$18.3 billion in 2002 to \$64.7 billion in 2010. The average SNAP value

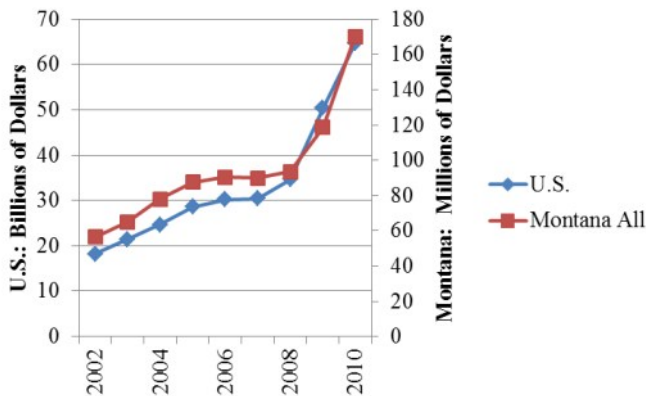
was \$130 per month for recipients of SNAP in Montana in 2010.

**Chart 14:** SNAP Participation in Montana and



Source: Montana Department of Health and Human Services and USDA, Food and Nutrition Service

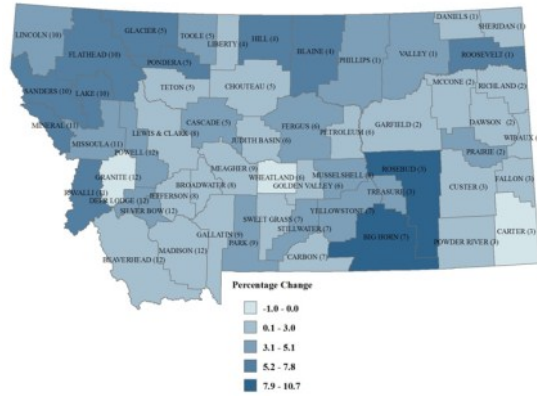
**Chart 15:** SNAP Expenditures in Montana and U.S., 2002 to 2010



Source: Montana Department of Health and Human Services and USDA, Food and Nutrition Service

Wyoming had had the lowest SNAP participation rates and expenditures among the surrounding states since 2002. Most recently, Idaho has realized the most significant changes in participation rates, moving from 6.2 percent and expenditures of \$100.1 million dollars in 2006 to 12.4 percent and expenditures of nearly \$300 million in 2010. Four counties (Wheatland, Carter, and Granite) realized lower SNAP participation rates in 2010 than 2002, while all other counties realized modest to substantial increases (Map 21). The largest increases were realized in Rosebud (10.7%), Big Horn (9.5%), Mineral (7.8%) and Hill (7.1%) counties.

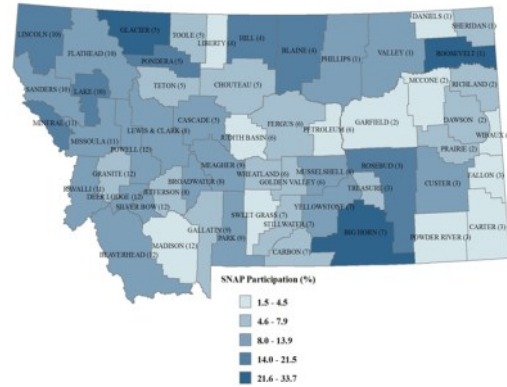
**Map 21:** Percentage Point Changes in SNAP Participation Rates from 2002 to 2010



Source: Montana Department of Health and Human Services

SNAP participation rates are lowest in Carter, Powder River, Garfield, McCone and Daniels counties at less than 3 percent (Map 22). The highest SNAP participation rates are in the counties with Native American reservations within their borders (Glacier, Roosevelt, Big Horn, Rosebud, Blaine, Hill and Lake) and Mineral county. These counties have SNAP participation rates exceeding 17 percent.

**Map 22:** SNAP Participation Rates, 2010

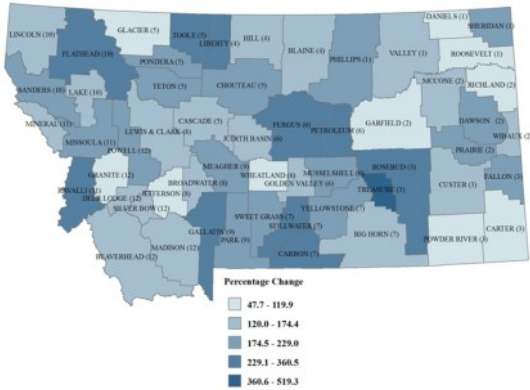


Source: Montana Department of Health and Human Services

Changes in SNAP expenditures were somewhat similar to changes in SNAP participation rates from 2002 to 2010 (Map 23). Wheatland, Carter, Daniels and Granite counties realized the smallest increases in expenditures at less than \$100 per capita. The largest increases in expenditures were realized in the Treasure and Stillwater counties with increases exceeding \$350 per capita.



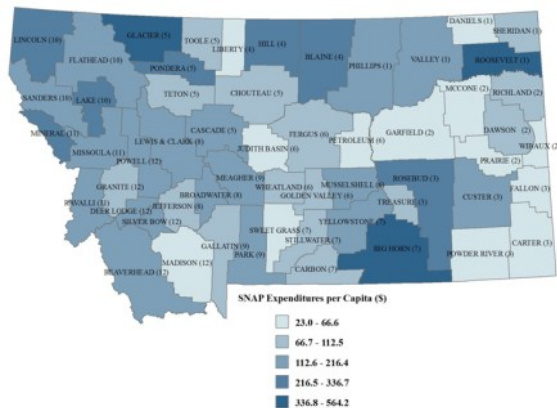
**Map 23:** Changes in SNAP Expenditures per Capita, 2002 to 2010



Source: Montana Department of Health and Human Services

County rankings of SNAP expenditures per capita and SNAP participation rates are very similar (Map 24). The same counties with low participation rates also have low SNAP expenditures per capita (Carter, Powder River and Garfield). These counties have SNAP expenditures less the \$35 per capita. The highest SNAP expenditures per capita are in Glacier, Roosevelt, Big Horn, Mineral, Rosebud, Blaine, Hill and Lake counties, where these counties have expenditures exceeding \$280 per capita.

**Map 24:** SNAP Expenditures per Capita, 2010



Source: Montana Department of Health and Human Services

**Temporary Assistance for Needy Families**

Temporary Assistance for Needy Families (TANF) offers cash assistance to eligible participants on a monthly basis for up to 60 months, unless exemption criteria apply. Benefit amounts are based on income and household size.

TANF’s monthly cash benefit is less restrictive than the SNAP benefit regarding what items may be

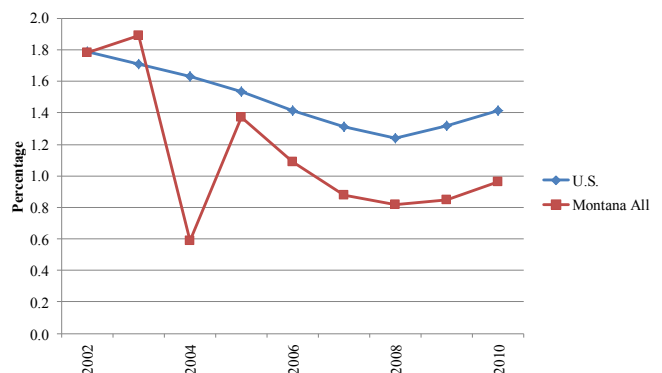
purchased. Once allocated, TANF funds may be used by the program participant to purchase both food and nonfood items. There are three ways that cash assistance can be issued to a participant. Funds can be distributed by check, direct deposit, or through the Montana Access EBT card.

Eligible households must be willing to meet various requirements of the TANF program. For example, Montana adults who are considered “work-eligible” must meet or exceed weekly work requirements and attempt to collect child support if it is safe to do so through the Child Support Enforcement Division. Work-eligible individuals can receive other services to help them partake in job related activities and employment. These supportive services can include, but are not limited to, child care, transportation and clothing assistance.

In 2010, the average amount of funds received by TANF recipients (adults and children) in Montana was \$168 per month.

TANF participation in Montana and U.S. have followed similar trajectories with TANF participation declining from around 1.8 percent of the population in 2002 to 1.4 percent and 1.0 percent of the populations in U.S. and Montana in 2010, respectively (Chart 16). TANF expenditures in Montana fell dramatically from \$33 million in 2003 to \$14.8 million in 2006 (Chart 17). Budget issues and tighter participant eligibility standards caused a very substantial expenditure decline in 2004. Since 2006, TANF expenditures have been relatively stable at \$15 million. TANF expenditures in the U.S. declined at much slower pace falling from about \$6 billion in 2002 to \$4.5 billion in 2009.

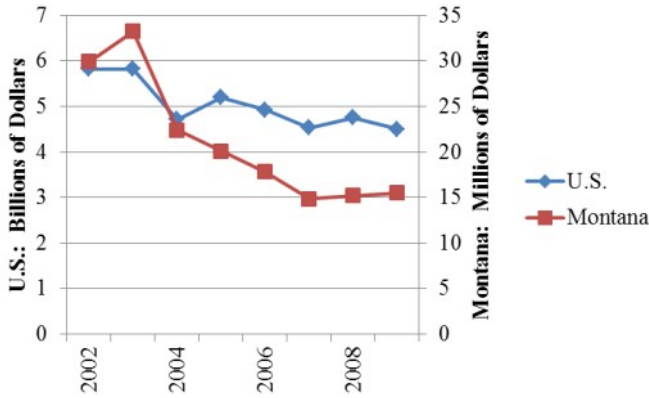
**Chart 16:** TANF Participation in Montana and U.S., 2002 to 2010



Source: Montana Department of Health and Human Services , U.S. Department of Health and Human Services, Administration for Children and Families



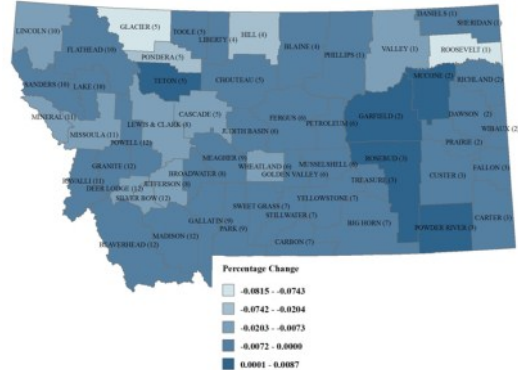
**Chart 17: TANF Expenditures in Montana and U.S., 2002 to 2009**



Source: Montana Department of Health and Human Services, U.S. Department of Health and Human Services, Administration for Children and Families

All counties realized some reduction in TANF participation, except Garfield, Powder River, McCone, Teton and Rosebud counties, which realized minimal increases (Map 25). The most significant reductions in TANF participation were realized in Roosevelt (8.2%), Glacier (7.4%) and Hill (3.2%) counties.

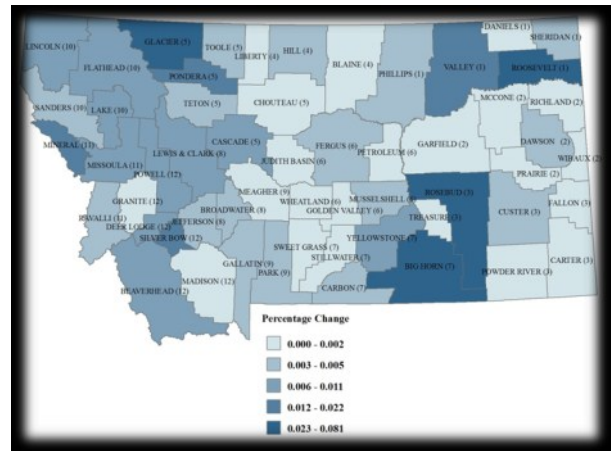
**Map 25: Percentage Point Changes in TANF Participation Rates from 2002 to 2010**



Source: Montana Department of Health and Human Services

In general, TANF participation rates are very low; less than 1 percent in 47 of 56 counties (Map 26). The highest TANF participation rates are in Big Horn (8.1%), Roosevelt (7.7%), Glacier (6.3%) and Rosebud (5.3%).

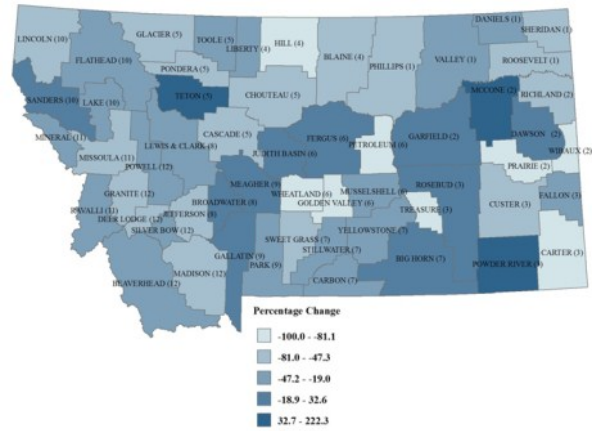
**Map 26: TANF Participation Rates, 2010**



Source: Montana Department of Health and Human Services

TANF expenditures per capita declined in all counties, except McCone, Teton, Powder River, Garfield, Rosebud, Judith Basin, and Big Horn counties from 2002 and 2010 (Map 27). Substantial increases in TANF expenditures per capita were realized in McCone (\$222), Teton (\$81) and Powder River (\$72).

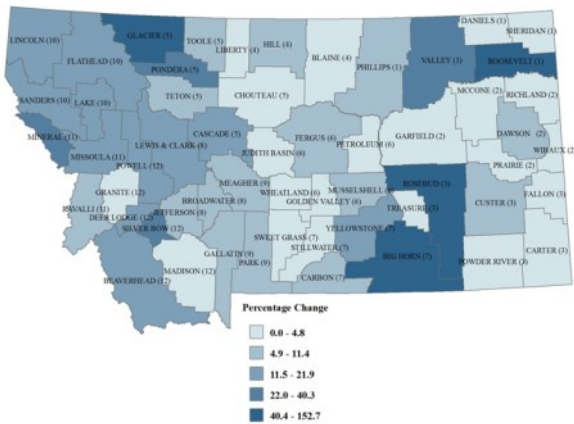
**Map 27: Changes in TANF Expenditures per Capita, 2002 to 2010**



Source: Montana Department of Health and Human Services

Map 28 examines TANF expenditures per capita. TANF expenditures per capita were less than \$30 for all but five counties (Roosevelt, Big Horn, Glacier, Rosebud and Pondera) in 2010. Several counties had no TANF expenditures (Prairie, Wibaux, Carter and Treasure). The highest TANF expenditures per capita were realized in Roosevelt (\$153), Big Horn (\$150), Glacier (\$120), and Rosebud (\$106) counties.

**Map 28:** TANF Expenditures per Capita, 2010



Source: Montana Department of Health and Human Services

**Low Income Home Energy Assistance Program**

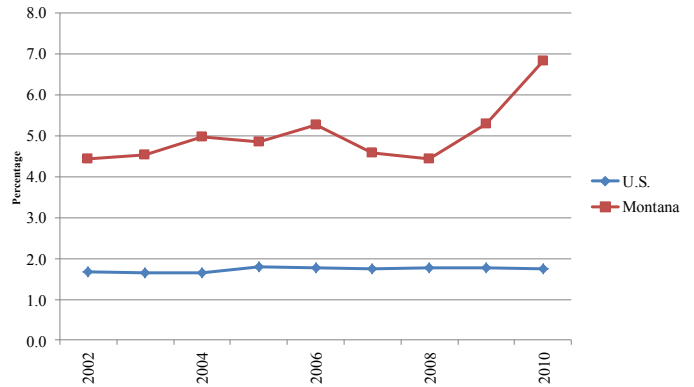
The State of Montana offers two Low Income Home Energy Assistance Programs (LIHEAP) that assist qualifying families in reducing their home energy costs. The weatherization program helps make a client’s home more energy efficient. The heat assistance program reduces participant heating energy costs by contributing funds directly to their energy provider. Both homeowners and renters can qualify for these LIHEAP programs. This study addresses the heating assistance program only.

Due to the nature of heat assistance funding, families with the greatest need are served first. If supplemental funds become available, a second payment may be made to energy providers on behalf of LIHEAP heat assistance households.

LIHEAP participation rates remained steady from 2002 through 2008 in Montana; however, they increased substantial in the past two years from 4.4 percent in 2008 to 6.8 percent in 2010 (Chart 18). Nationally, LIHEAP participation rates have remained steady at 1.7 to 1.8% from 2002 to 2010.

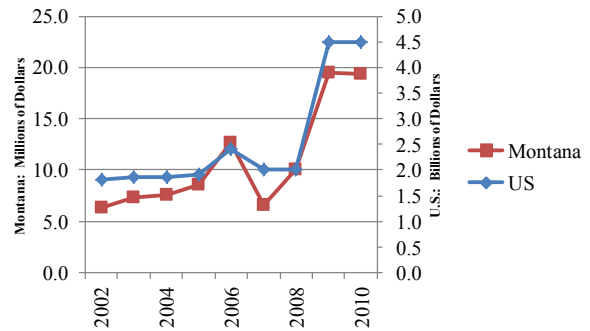
LIHEAP expenditures have increased in Montana and U.S. since 2008 (Chart 19). Montana LIHEAP expenditures have increased by nearly two-fold from \$10 million in 2008 to nearly \$20 million in 2010, while U.S. LIHEAP expenditures have increased by over two-fold from \$2 billion in 2008 to \$4.5 billion in 2010.

**Chart 18:** LIHEAP Participation Rates for Montana and U.S., 2002 to 2010



Source: Montana Department of Health and Human Services , U.S. Department of Health and Human Services, Administration for Children and Families

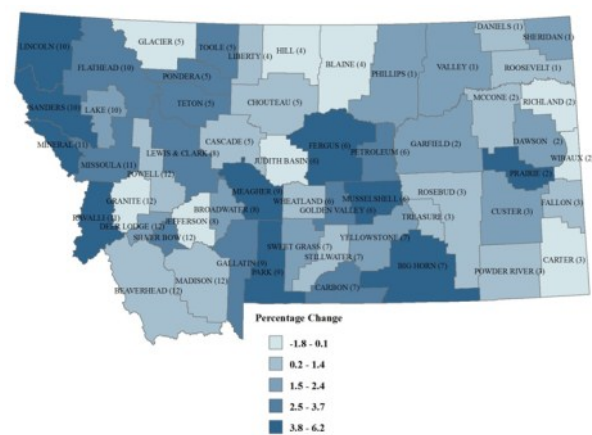
**Chart 19:** LIHEAP Expenditures for Montana and U.S., 2002 to 2010



Source: Montana Department of Health and Human Services , U.S. Department of Health and Human Services, Administration for Children and Families

LIHEAP participation rates have increased in all Montana counties, except Blaine, Granite and Hill (Map 29). The largest percentage point increases have occurred in Meagher (6.2%), Musselshell (6.1%), Sanders (4.6%), Mineral (4.6%) and Big Horn (4.6%).

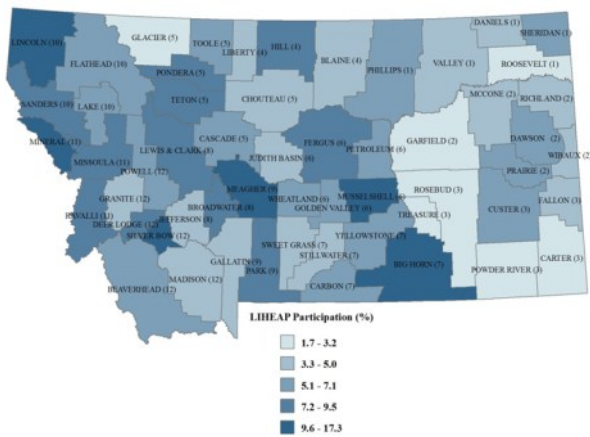
**Map 29:** Percentage Point Changes in LIHEAP Participation Rates from 2002 to 2010



Source: Montana Department of Health and Human Services

LIHEAP participation rates in 2010 were highest in Mineral (17.3%), Big Horn (15.7), Lincoln (14.0%) Silver Bow (13.0%), and Musselshell (12.8%) counties (Map 30). The lowest LIHEAP participation rates were in Roosevelt (1.7%), Glacier (2.2%) and Carter (2.2%) counties, although LIHEAP is not distributed by MDPHHS to American Indians living on reservations in Roosevelt and Glacier counties.

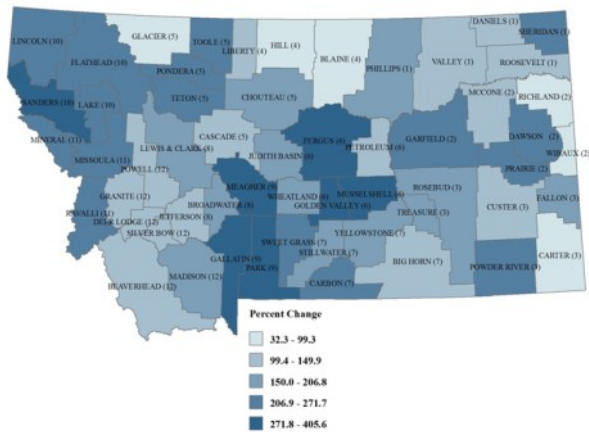
**Map 30:** LIHEAP Participation Rates, 2010



Source: Montana Department of Health and Human Services

LIHEAP expenditures have increased in all counties since 2002. The smallest per capita increases occurred in Blaine (\$32), Carter (\$72), Hill (\$81) and Richland (\$88) counties (Map 31). Again, LIHEAP is distributed by the MDPHHS to American Indians living on the Crow Reservation in Big Horn county only. The largest per capita increases occurred in Gallatin (\$405), Meagher (\$376) and Musselshell (\$361) counties.

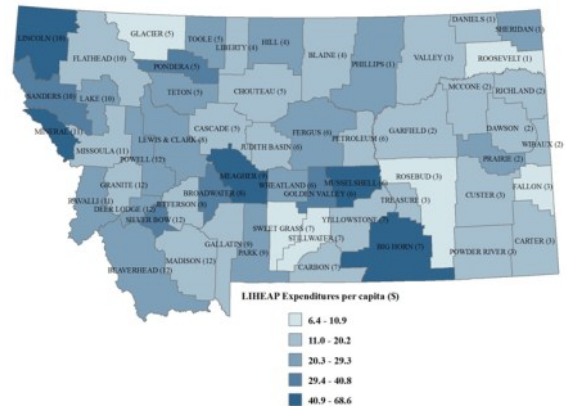
**Map 31:** Percentage Changes in LIHEAP Expenditures from 2002 to 2010



Source: Montana Department of Health and Human Services

LIHEAP expenditures per capita follow very closely with participation rates in the county. Roosevelt, Glacier and Rosebud had the lowest LIHEAP expenditures with less than \$8 per capita; however, no LIHEAP funds are distributed to American Indians living on reservations in these counties (map 32). Mineral, Meagher, Musselshell, Lincoln and Big Horn counties had the highest LIHEAP expenditures, which exceed \$50 per capita.

**Map 32:** LIHEAP Expenditures per Capita, 2010



Source: Montana Department of Health and Human Services

**Free and Reduced School Lunch**

Federal funds help qualifying families provide reduced-price lunches and after-school snacks to school-aged children when schools partner with the United States Department of Agriculture (USDA). To access Federal subsidies, schools must serve meals and snacks that meet or exceed Federal guidelines. These items must be available to students at a free or reduced price during in-school and after-school educational programs.

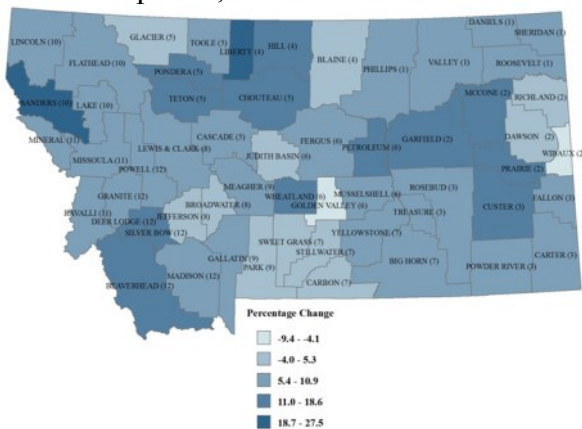
In Montana, the USDA estimated that about 87,500 children participated in the school lunch program in 2010. Nationally, over 31.7 million children participated in the program in 2010. Within Montana’s public schools, about 41 percent of school-aged children were eligible for free and reduce school lunches in 2010. Montana schools received \$22.9 million in cash payments to support school lunches in 2010. In addition, commodities valued at \$3.0 million were provided to the schools.



Any child at a participating school may purchase a meal through the National School Lunch Program. Children from families with incomes at or below 130 percent of the poverty level are eligible for free meals. Those with incomes between 130 percent and 185 percent of the poverty level are eligible for reduced-price meals, for which students can be charged no more than 40 cents. (For the period July 1, 2010, through June 30, 2011, 130 percent of the poverty level is \$28,665 for a family of four; 185 percent is \$40,793.) Children from families with incomes over 185 percent of poverty pay a full price, though their meals are still subsidized to some extent. Local school food authorities set their own prices for full-price (paid) meals, but must operate their meal services as non-profit programs

From 2002 to 2010, FRSL participation increased from 32.9 percent in 2002 to 41.0 percent in 2010 (Map 33). Participation rates declined in only three counties (Wibaux, Golden Valley and Richland). The largest percentage point increases occurred in Sanders (27.5%) and Liberty (26.1%).

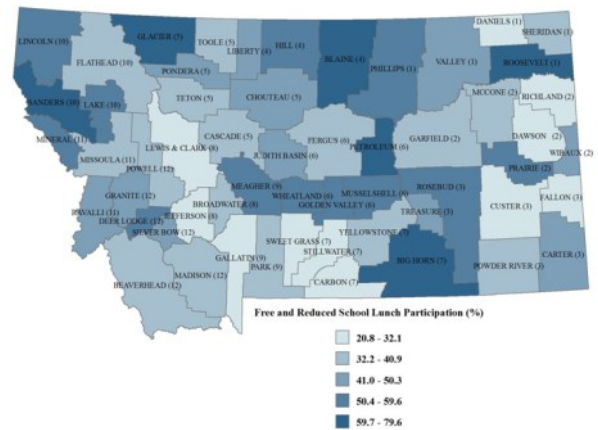
**Map 33:** Changes in Free and Reduced School Lunch Participation, 2002 to 2010



Source: Montana Office of Public Instruction, IRIS Reports

FRSL participation in 2010 ranged from under 30 percent in Stillwater, Fallon, Gallatin, Sweet Grass, Jefferson, Richland and Dawson counties to over 70 percent in Big Horn, Sanders, Roosevelt and Glacier counties (Map 34).

**Map 34:** Free and Reduced Lunch Participation, 2010



Source: Montana Office of Public Instruction, IRIS Reports

## Statewide Analysis

This analysis section utilizes scatterplots and linear regression analysis to examine the determinants of poverty and assess the utilization of benefit programs in each county. The first part of this section assesses the relationship between several demographics, economic base and poverty rate. The second part of this section examines the relationship among youth, working adults and elderly poverty rates. And finally, the third part of this section examines the utilization of the means-tested benefit programs.

## Poverty, Demographics and Economic Base

Chart 20 displays a scatter plot of county poverty rates against the percentage of the population that is American Indian. Two points are noteworthy. First, poverty is positively and significantly associated with American Indian population ( $p = .0000$ ).<sup>1</sup> Blaine County with a 28 percent poverty rate is about one-half American Indian, and Roosevelt, Glacier, and Big Horn counties also have high poverty rates and Indian populations. The regression line indicates that a one percentage point increase in the proportion of the population that is American Indian is associated with a 0.22 percentage point increase in the poverty rate. Second, poverty is not confined to these “reservation counties.” Liberty, Sanders and Deer Lodge counties all have poverty rates in excess of 20 percent. Clearly, poverty depends on other factors in addition to Indian population.

<sup>1</sup> The “p” values denote levels of statistical significance. For example, a p value of .01 indicates that the probability that the relationship occurred by chance is 1 percent. A p value of .0000 indicates that there is less than a .01 percent chance that the relationship occurred by chance. A p value of .1 or .05 is generally considered to be statistically significant.

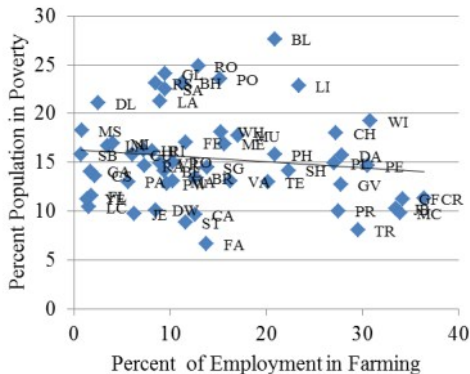




Some individual counties are “outliers”- relatively far from the regression line. For example, Powell County’s measured poverty rate of 12.8 percent is almost 2 points below the Montana average, even though its employment rate of 54 percent is the lowest in the state (Chart 25). As discussed in the methods section, county-level poverty rates are estimates based on samples rather than “true” magnitudes. The alternative SAIPE estimate of poverty in Powell County is considerably higher – 20.3 percent – which would put it much closer to the regression line. Thus, the average relationship between poverty and employment, as represented by the regression line, is more reliable than focusing on individual counties.

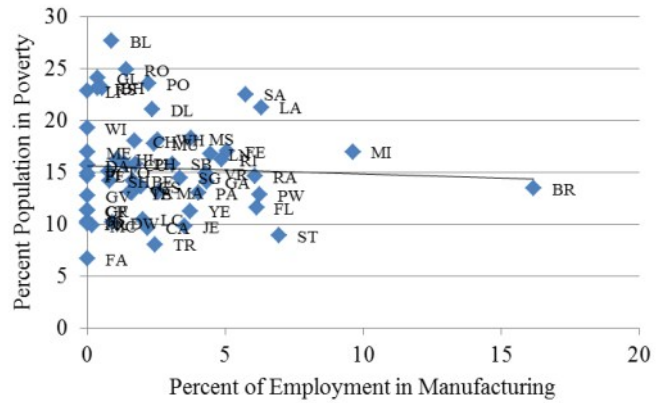
In contrast to the previous strong relationships, poverty is *not* significantly associated with the importance of farming in a county. Chart 24 shows a slight negative relationship between poverty and the percentage of employment which is in farming. However, the relationship is not statistically significant ( $p=.2404$ ), nor is the magnitude (-0.06) of practical importance.<sup>3</sup>

**Chart 24: Poverty and Farm Employment**

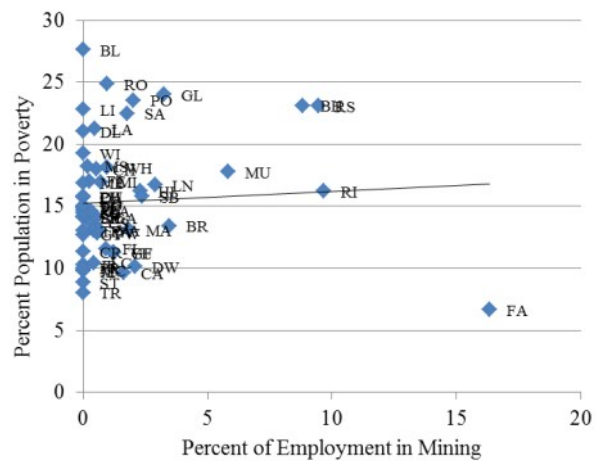


Similarly there is no significant relationship between poverty and the share of manufacturing in total employment ( $p = .63$ ), or the share of mining employment ( $p = .78$ ) (Charts 25 and 26). Broadwater has the highest percentage of employment in manufacturing, and Fallon the highest percentage in mining.

**Chart 25: Poverty and Manufacturing Employment**



**Chart 26: Poverty and Mining Employment**



A number of Montana counties have been affected by reductions in timber harvests and associated wood products production. Chart 27 shows the relationship between current (2005-09) poverty and the percentage of county personal income that was derived from wood products in 1985-89, the period in which timber production was at its peak. The chart demonstrates that Lincoln, Mineral, Granite and Sanders counties were very dependent on wood products 20 years ago, but there is no significant relationship to poverty today in the ACS data ( $p = .29$ ).

<sup>3</sup> Similarly, poverty is unrelated to the Rural Urban Continuum as defined by USDA.



**Table 3:** Determinants of the poverty rate without economic base considerations

Dependent Variable: Poverty Rate ACS

Variable	Coefficient	Standard	t-Statistic	P-value
Constant	16.38	5.77	2.84	0.0065
American Indian, %	0.13	0.04	3.68	0.0006
Employment, %	-0.13	0.07	-1.76	0.0849
Adults, less than high school education, %	0.42	0.10	4.20	0.0001
Single female household with children, %	0.27	0.12	2.39	0.0207
Adjusted R-squared	0.64			

These results suggest several conclusions. First, single parent family status and especially low education are more strongly associated with poverty than either employment rates or American Indian population. These results are not surprising, because education is such an important determinant of opportunities in the labor market, and family status such an important determinant of the number of potential earners in a family.<sup>5</sup> At the same time, American Indian population and employment remain associated with poverty, even controlling for family status and education. American Indian population may be important because it reflects opportunities and incentives associated with conditions on reservations, and employment is clearly important whatever the levels of education and family status.

Table 4 reports the estimation results when employment is broken out by key sectors: farm, manufacturing, and mining as well as personal income from wood products in the late 1980s. The coefficient on total employment loses about half its value and becomes statistically insignificant when these additional variables are included. Among the individual sector variables, only mining employment is statistically significant. However the overall explanatory power of the regression ( $R^2$ ) remains the same, and a test of the joint hypothesis that all of the sector variables are equal to zero cannot be rejected ( $p = .51$ ). Thus, the sector variables do not add significant additional information beyond the overall level of employment.

<sup>5</sup> See footnote 2 for references.

<sup>6</sup> SNAP and other program data are averages of fiscal years 2004-2005 through 2009-2010.

**Table 4:** Determinants of poverty with economic base considerations

Dependent Variable: Poverty Rate ACS

Variable	Coefficient	Standard Error	t-Statistic	P-value
Constant	11.78	7.27	1.62	0.1119
American Indian, %	0.15	0.04	3.73	0.0005
Employment, %	-0.08	0.09	-0.82	0.4173
Adults, less than high school education, %	0.46	0.11	4.08	0.0002
Single female household with children, %	0.33	0.13	2.43	0.0192
Farm employment, %	0.02	0.05	0.38	0.7035
Manufacturing employment, %	0.07	0.11	0.62	0.5376
Mining employment, %	-0.22	0.14	-1.62	0.1127
Wood products employment, %	0.04	0.09	0.47	0.6379
Adjusted R-squared	0.64			

### Program Utilization

This section examines the relationship between poverty and utilization of government programs including the Supplemental Nutrition Assistance Program, Temporary Assistance for Needy Families, Low Income Home Energy Assistance Program, Free and Reduced-Price Student Lunches, Medicaid which provides assistance with health care, and the Earned Income Tax Credit.

Chart 30 shows the plots the percentage of population receiving SNAP against the percentage in poverty.<sup>6</sup> Utilization of food stamps increases nearly one for one with the poverty rate, once an initial poverty rate of about 6.5 percent is reached. Thus a county with a 10 percent poverty rate has on average about 3.5 percent of the people using food stamps, and a county with a 20 percent poverty rate has on average about 13.5 percent of the people using food stamps. Several counties have exceptionally high SNAP utilization rates relative to their poverty levels, including Glacier, Roosevelt, Big Horn, Mineral and Hill. Other counties have exceptionally low utilization rates, including Lincoln, Wibaux, Sanders and Choteau. Differences



in utilization may occur for several reasons, including lack of information, perceived social stigma, and the somewhat complex eligibility rules.<sup>7</sup>

**Chart 30: SNAP and Poverty**

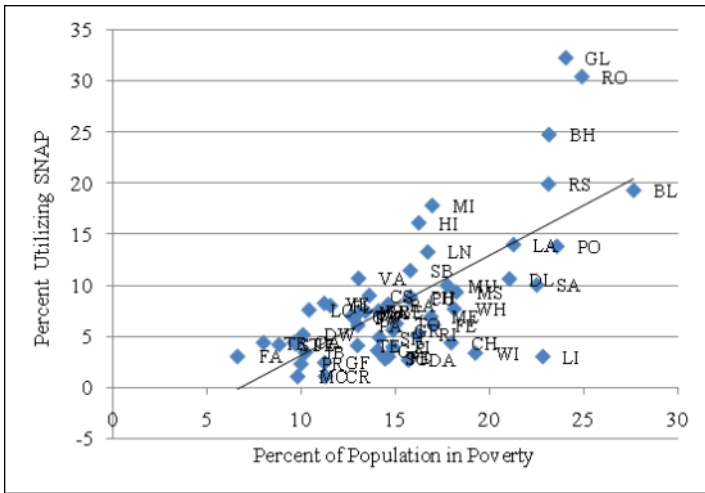
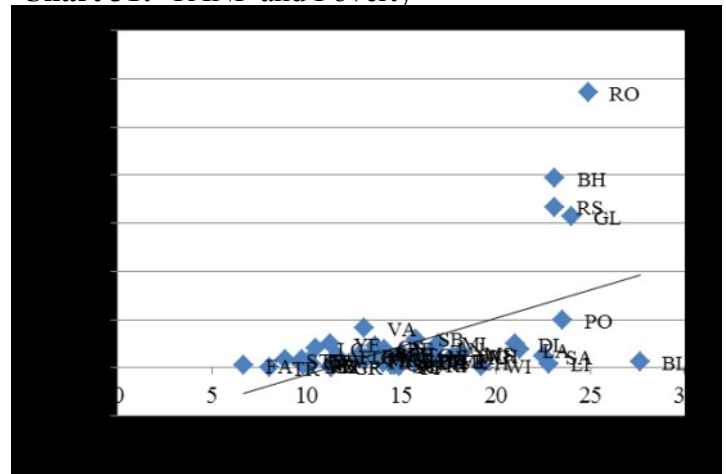


Chart 31 plots the percentage of people receiving Temporary Assistance for Needy Families (TANF) against the poverty rate. TANF provides temporary financial assistance to needy families. The receipt of TANF cash assistance is limited to 60 months in an adult's lifetime.<sup>8</sup> Only about 1 percent of people statewide received assistance from TANF during fiscal years 2005-10, in contrast to the 8.5 percent utilization rate for SNAP.<sup>9</sup> On average a one percentage point increase in the county poverty rate is associated with an increase in TANF utilization of only about 0.1 percent, far less than the approximately one for one relationship seen for SNAP. Roosevelt, Big Horn, Rosebud and Glacier counties have exceptionally high rates of TANF utilization, while Blaine, Liberty, Sanders and Lake Counties have exceptionally low utilization rates relative to the poverty rate.

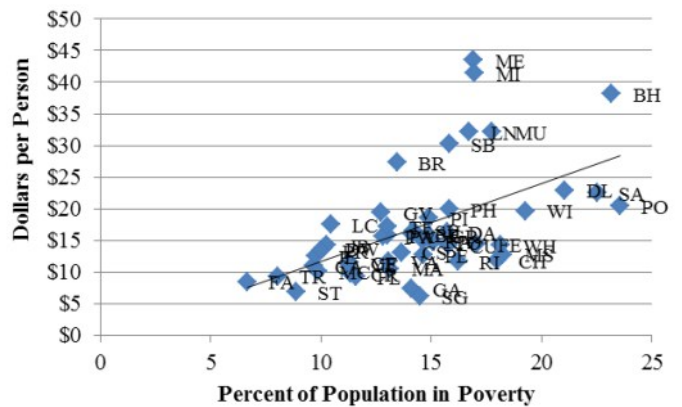
Chart 32 displays the relationship between poverty and spending on the Low Income Home Energy Assistance Program. Blaine, Glacier, Hill, Lake, Liberty, Roosevelt, and Rosebud counties are omitted from this chart, because reservations in these counties have separate programs that are not

**Chart 31: TANF and Poverty**



included in these data. The vertical axis measures dollars of expenditure per person based on total county population. The regression line indicates that spending rises \$1.23 per person for each increase in the poverty rate of one percentage point ( $p = .0001$ ). Spending is exceptionally high in Meagher, Mineral, Big Horn, Lincoln, Musselshell, Silver Bow and Broadwater counties, and exceptionally low in Choteau, Gallatin, Missoula, Pondera, Richland, Sweet Grass and Wheatland counties. These exceptions are not explained by total population, the percent elderly, nor "ruralness" as measured by the USDA's Rural-Urban Continuum variable.

**Chart 32: LIHEAP and Poverty**



<sup>7</sup> Eligibility for SNAP depends on income in relation to family size, earnings, day care and housing expenses, and other factors such as receipt of SSI or TANF payments and other resources such as savings accounts. Gross income is limited to 130% of the poverty level. [www.dphhs.mt.gov/hcsd/snap/index.shtml](http://www.dphhs.mt.gov/hcsd/snap/index.shtml)

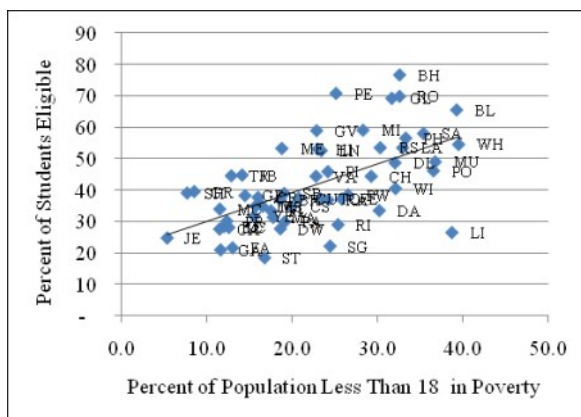
<sup>8</sup> Basic eligibility rules are described at [www.dphhs.mt.gov/hcsd/tanf/tanfeligibility.shtml](http://www.dphhs.mt.gov/hcsd/tanf/tanfeligibility.shtml)

<sup>9</sup> The SNAP utilization rate reached 11.2 percent by fiscal year 2010. The 60 month limit is waived if the jobless rate is greater than 50 percent. These data do not include TANF program information for Ft. Belknap, Rocky Boys, and Flathead Reservations, which have their own programs.

Eligibility for weatherization and fuel assistance is based on income and assets. To be eligible, a household must make no more than 200 percent of the federal poverty level. Both homeowners and renters may apply for these programs. If a household receives benefits from Supplemental Security Income (SSI) or the Temporary Assistance to Needy Families (TANF) program, it may qualify automatically for weatherization or fuel assistance.<sup>10</sup>

The Free and Reduced-Price School Lunch (FRSL) program provides subsidized lunches and in some districts breakfasts and/or after school snacks to students from poor households. The basic eligibility criterion is household income which must be below 130% of the poverty level for free meals or below 185% of the poverty level for reduced price meals.<sup>11</sup> Chart 33 displays the percent of students who have applied for and been determined to be eligible for FRSL plotted against the poverty rate for persons less than 18 years of age.<sup>12</sup> A one percentage point increase in the poverty rate is associated with a 0.91 percentage point increase in eligibility, and the relationship is statistically significant ( $p = .0000$ ). Big Horn, Roosevelt, Glacier and Petroleum Counties have exceptionally high FRSL rates relative to their poverty rates, while the FRSL rate is exceptionally low in Liberty County. The relationship is much the same if the overall county poverty rate is used instead of the youth poverty rate.

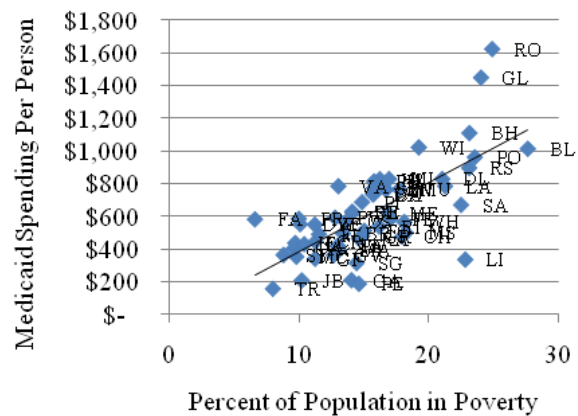
**Chart 33: FRSL and Poverty**



additional limits on “resources” such as bank accounts, equity in cars, etc.<sup>13</sup> As Chart 34 shows, spending on Medicaid is closely related to county poverty rates. On average spending rises by about \$42 per person in a county when the poverty rate rises by one percentage point ( $p = .0000$ ).

Medicaid pays for health care expenses for low income families and individuals. The program includes payments for children under Healthy Montana Kids (or Children’s Health Insurance Program, CHIP), their families, nursing home care for the elderly, and health care for women who are pregnant or diagnosed with breast cancer, and people who are blind or disabled. Most programs have income limits ranging from 33 to 133 percent of the federal poverty line, and some programs have additional limits on “resources” such as bank accounts, equity un cars, etc.<sup>13</sup> As Chart 34 shows, spending on Medicaid is closely related to county poverty rates. On average spending rises by about \$42 per person in a county when the poverty rate rises by one percentage point ( $p = .0000$ ).

**Chart 34: Medicaid and Poverty**



The Earned Income Tax Credit (EITC) provides a reduction or refund of income taxes for certain low to moderate income workers. The EITC is aimed primarily at families although single individuals over age 25, members of the military and clergy, those receiving disability benefits and those impacted by disasters may qualify under special

<sup>10</sup> See [www.dphhs.mt.gov/programsservices/energyassistance/index.shtml](http://www.dphhs.mt.gov/programsservices/energyassistance/index.shtml).

<sup>11</sup> See [www.opi.mt.gov/pdf/SchoolFood/Forms/09IncomeEligGuidelines.pdf](http://www.opi.mt.gov/pdf/SchoolFood/Forms/09IncomeEligGuidelines.pdf). Students may also be directly certified as eligible via participation in SNAP.

<sup>12</sup> Students who may be eligible but who did not apply are not included in these data. Andy Boehm, OPI, phone conversation June 20, 2011.

<sup>13</sup> See [www.dphhs.mt.gov/hcsd/medicaid.shtml](http://www.dphhs.mt.gov/hcsd/medicaid.shtml).

rules.<sup>14</sup> The EITC first increases with worker earnings to a maximum level, and then decreases to zero as earnings increase further. For example in 2010 the EITC for a family with two qualifying children amounted to 40 cents for each dollar of earned income up to \$12,550 for a maximum credit of \$5,036. The credit remained constant for earnings up to \$16,450, and then declined by 21 cents for each additional dollar of earnings until it reached zero at earnings of \$40,363.

Chart 35 displays the relationship between the amount of the EITC per person and the county poverty rate. On average a one percent increase in poverty is associated with a \$7.84 increase in the EITC amount per person in a county ( $p = .0000$ ). Treasure, Glacier, Big Horn, Roosevelt and to a lesser extent Blaine counties have exceptionally high EITC amounts relative to their poverty rates. EITC amounts are exceptionally low in Liberty and Madison counties.

**Chart 35:** Earned Income Tax Credit (EITC per Person) and Poverty

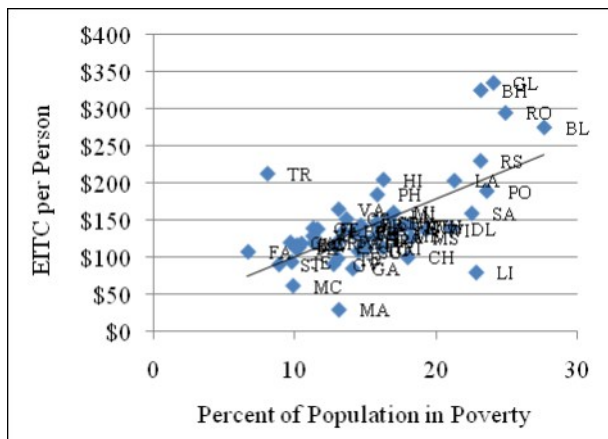
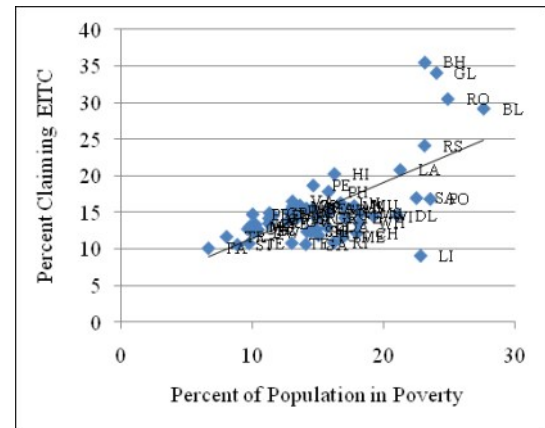


Chart 36 shows the relationship between poverty and the percentage of IRS tax returns on which the EITC is claimed.<sup>15</sup> A one percent increase in the poverty rate is associated with a 0.76 percent increase in the percent of returns claiming the EITC ( $p = .0000$ ). Big Horn, Glacier, Roosevelt and Blaine counties have unusually high rates of claim, while Liberty county's rate is unusually low.

**Chart 36:** Earned Income Tax Credit (Percent Claiming EITC) and Poverty



## Policy Considerations

This section examines the impact of demographic changes, the current recession, budget negotiations underway at the state and federal level and other changes in the economy on the supply and demand for poverty programs. Demographic changes, especially aging, are likely to have important impacts on social services in the next couple of decades. The current recession has created a historically high demand for social service programs. Current budget negotiators at all levels are closely examining social services programs and recommending funding cuts. In addition, rising transportation (gasoline) and rental housing prices have disproportionately high impacts on the poor.

## Demographic Changes

### *Aging population*

Montana's population is expected to age at a somewhat faster rate than nationally over the next several decades. However, the poverty rate among the elderly is lower than for other age groups, largely because of transfer payments from the federal government (Old Age and Survivor Insurance, or OASI; Supplemental Security Income, or SSI; and Medicare). Thus, an aging population is expected to put downward pressure on the state's overall poverty rate, if nothing else changes. Working in the opposite direction, budget pressures described below may result in reduced transfer payments from the Federal government. In addition, the changing demographics in Montana will affect state and local government budgets in several ways. Between now and 2030, expenditures on K-12 and higher education and

<sup>14</sup> See [www.irs.gov/individuals/article/0,,id=96406,00.html](http://www.irs.gov/individuals/article/0,,id=96406,00.html)

<sup>15</sup> See [www.brookings.edu/projects/EITC.aspx](http://www.brookings.edu/projects/EITC.aspx).

corrections are expected to fall, while Medicaid spending on the elderly is expected to increase (Haynes, Young & Watts, 2008). On the revenue side, residential property taxes are expected to increase, while income taxes are expected to fall. In effect, the impacts of more elderly on Medicaid and lower income tax revenues (fewer employed) are largely offset by the impacts of fewer young people on education and corrections expenditures, and on higher residential property tax revenues.

### *Low levels of education*

Low levels of educational attainment, particularly the lack of a high school diploma or equivalent, are an important determinant of poverty. Those counties with low levels of educational attainment (Liberty and Glacier) have higher poverty rates than counties with high levels of educational attainment (Gallatin and Daniels). Most importantly, individuals with low levels of education are likely to earn less money over their lifetime and create less wealth (Bureau of Labor Statistics, 2011; Bricker, Bucks, Kennickell, Mach & Moore, 2011). In addition, persons with low educational attainment have a significantly higher probability of being unemployed and living in poverty.

Based on a recent National Council on Education study, about 5 percent of Montana students (2,270 students) drop out of high school, which is a somewhat higher rate than the national average of 4.1 percent of all high school students (Stillwell, Sable & Potts, 2011). A significant percentage of these students will never return to any formal education or training. More effort needs to be expended to “catch these students before they begin to fall” and channel them into appropriate education and training opportunities.

If those individuals with more education are more likely to migrate out of the county, while those individuals with less education remain, “brain drain” could be an important factor contributing to poverty. Providing incentives for individuals to receive additional education or training is important.

### *Single parent (female-headed) households*

The number of children in single parent (female-headed) households has increased dramatically over the last four decades with some research suggesting that single-parent families are a major factor driving

the increase in child poverty (Mather, 2010). Regardless of whether children born into these households are planned or unplanned, they pose a significant burden in the short- and long-term. In the short-term, these mothers are out of the workforce, often have limited education or work experience, have inadequate childcare and little or no child support from the father; and, in the long-term, have few financial resources to build human capital in their children. Children from these families have a higher risk of dropping out of school, disconnecting from the labor force, going to jail and becoming teen parents themselves. All of these results contribute to higher poverty rates as these individuals realize significant barriers to success in school and work.

The most recent single-mother household news is encouraging, because the percentage of single-mother households has stabilized at around 8.5 percent in Montana. Although, substantial differences exist across Montana counties, from less than 1 percent in some sparsely populated counties in eastern Montana (Petroleum, Prairie and Liberty) to over 10 percent in Richland, Roosevelt, Silver Bow, Blaine and Custer counties. Policy makers could consider providing support to these single-mother families allowing the mother to either engage in education or work-related opportunities for a few hours each day and enable the child to thrive.

### *American Indian Population*

The percentage of American Indians in selected counties is a significant factor in increasing the poverty rate, and poverty rates on American Indian reservation remain high. Anderson and Parker (2008), Cornell and Kalt (2000) and others have argued that institutional constraints severely impact business investment on American Indian reservations. Thus, institutional changes within reservation communities may promote more business investment and job growth. In addition, policy makers may consider incentives to encourage American Indians with high levels of education and valuable experience to remain in the reservation communities. As discussed above, continued “brain drain” from these communities will further exacerbate poverty.



## Employment

Given the emphasis of the poverty rate measurements on income, employment is a critical factor in reducing the poverty rate. New private-sector employment opportunities require that either existing businesses expand or entrepreneurs start new businesses. Healthy businesses and their owners make substantial contributions to the local community through the wages paid to their employees and their other investments in the community. In this study, the *composition* of employment – mining, manufacturing, agriculture or wood products – was not a statistically significant predictor of poverty, but poverty is strongly related to *total* employment. Policies to encourage business expansion or new business activity in Montana would likely increase income and reduce the poverty rate. Policy makers could consider providing incentives to attract businesses that hire employees and provide well-paying jobs with benefits. However, tax and other incentives for particular businesses or industries are costly in terms of lost revenue to provide other services such as education and/or higher taxes on other sectors. The evidence on the net effectiveness of tax incentives is very mixed, with some studies indicating positive effects and others little or no effect (Buss, 2001; Hanson and Rohlin, 2011).

In addition some authors (Tasci & Zaman, 2010) argue that the U.S. may have a new, higher, long-term rate of unemployment. If a higher long-term rate of unemployment is a reality, then one would expect the poverty rate to increase, too.

## Great Recession

The most recent recession started in 2007 and ended in the second quarter of 2009; however, the economic stress caused by the recession lingers through a very slow recovery phase. With this slow rate of economic growth, unemployment rates and the use of social service programs will likely remain near their historical highs for the next few years. Simulation modeling by the Brookings Institution suggests that if the current growth trajectory continues, poverty rates will remain above the 2007 level beyond 2015 (Monea & Sawhill, 2009).

A recent report by the Board of Governors of the Federal Reserve System on the recession suggests that the largest impact was on household wealth, especially

changes in the value of homes, stock and business equity (Bricker, Bucks, Kennickell, Mach & Moore, 2011). For those living near or below the poverty line, these types of changes in wealth were less important, because they had little wealth to lose. However, families with little equity in their homes may have seen their net worth change from modestly positive to negative and now face foreclosure and/or bankruptcy.

Even though wealth considerations are less important for the poor, this recession has had a significant impact on lower wage workers as more workers have become unemployed and the duration of unemployment has increased (Tasci & Zaman, 2010). Unemployed workers may fall behind on their mortgage and other debt payments. When a low wage worker becomes unemployed, he or she is no longer eligible for the EITC (because it depends on earned income); hence, the poverty rate for these workers increases. Unfortunately, no time trend data is available for Montana from 2007 through the recession to assess the impact of higher unemployment rates on EITC filings. This study suggests that additional tax filing education may be needed for workers eligible for EITC. If income taxes aren't filed then EITC opportunities are lost. Liberty and Madison counties have especially low levels of EITC utilization relative to their poverty rates.

Additionally, SNAP participation and expenditures have risen rapidly since 2007 and brought SNAP to the forefront of the Federal budget debate. SNAP participation has risen from 8.6 percent in 2007 to 11.2 percent in 2010, effectively adding 29,000 additional participants each month; while SNAP expenditures have nearly doubled from \$90 million in 2007 to \$170 million in 2010 in Montana.

## Federal, State and Local Budgets

Given the current federal debt challenges, there is a high probability that spending on social services programs will decline, at least as a share of income. This possibility raises several “what if” scenarios that warrant discussion: What if spending on social insurance programs, such as Old-Age and Survivor Insurance (commonly called Social Security), Disability Insurance, Unemployment Insurance, Worker’s Compensation and Medicare declines? What if spending on means-tested programs, such as TANF, SNAP, SSI, Medicaid and EITC, declines? A

recent study by the Institute for Research on Poverty addresses both of these questions (Ben-Shalom, Moffitt & Sholz, 2011). Medicaid and Medicare, basically non-cash benefits, are excluded from this analysis.

The Institute for Research on Poverty study using 2004 data estimates that without any social insurance or means-tested programs the U.S. poverty rate would have been about 29 percent, rather than 13.5 percent as reported by the Census Bureau in 2004. The most dramatic decline in poverty results from Social Security, which alone reduces the estimated poverty rate for the elderly with some work experience from around 55 percent to near zero; and, reduces the estimated overall poverty rate by about 8 percentage points to around 21 percent. Unemployment insurance reduces the poverty rate by about 1 percentage point to 20 percent. Social Security Disability Insurance, Worker's Compensation and Veteran's Benefits reduce the poverty rate by another 2.5 percentage points to 17.5 percent. The EITC drops the poverty rate another percentage point to around 16.5 percent. The other means-tested programs (TANF, SNAP, SSI, child tax credit, housing assistance and WIC), together reduce the poverty rate about 2 percentage points to around 14.5 percent. The remaining one percent is attributed to rounding and other errors in these estimates.

Medicare and Medicaid are not included in these calculations, because they are transfer payments directly to medical providers, in which the individual never receives any cash benefit. However, if the individuals covered by these programs were responsible for the full-cost of their medical care, there would be substantial increases in poverty. In fact, the Institute for Research on Poverty study suggests that the value of the Medicare benefit exceeds the OASI benefit and the value of the Medicaid benefit is only exceeded by Medicare and OASI. Clearly, scenarios where individuals would be required to incur additional out-of-pocket cash expenditures for medical services covered by Medicare and Medicaid would have profound impacts on the poverty rate. If reimbursement rates to providers are decreased, it would likely result in fewer providers being willing to supply medical services to Medicare and Medicaid recipients, and subsequently, lower health status and/or higher expenses for those people who depend on these programs.

The Medicaid debate has been a hot political topic in Montana over the past several months and has other health care implications. A recent study suggests that the percentage of total State Medicaid expenditures for the elderly will increase from 24 percent in 2005 to over 40 percent in 2030 (Haynes, Young & Watts, 2008). State Medicaid expenditures for the elderly are expected to increase from nearly \$49 per capita in 2005 to nearly \$110 per capita in 2030, an increase of over 124 percent. The largest share of State Medicaid expenditures for the elderly is paid to nursing homes, assisted living and swing bed facilities. Cuts in state Medicaid funding will lead to substantial changes in how the elderly will receive long-term care. With these cuts the number of beds available for long-term care will decline and more elder care will be provided by family members and friends.

Changes in the OASI are likely; however, the changes recommended vary across the board from increasing the age of eligibility to actually cutting OASI benefits. Increasing the age of eligibility will encourage older workers to remain in the workforce. As these workers "hang-on" to their jobs there may be fewer opportunities for young workers to find good-paying jobs.. Thus, the poverty rate for younger families may increase. Cutting OASI benefits could move some of the elderly below the poverty line and make them eligible for means-tested transfers, effectively trading OASI, for other means-tested, benefits.

### **Housing and Transportation Costs**

Bureau of Labor Statistics Consumer Expenditure data (BLS, 2009) show that the 20% of "consumer units" (approximately, "households") with the lowest incomes spend a larger proportion of their expenditures on housing than higher income groups, 41.5% versus 34.4% overall. House prices have declined, but utilities, fuels and public services are not, where the lowest 20% spend 10.4% of their expenditures, versus 7.4% for all consumer units. The poorest 20% of consumer units spend 4.3% of their expenditures on gasoline and motor oil, versus 4.0% for all consumer units. The gasoline and motor oil share may be higher in Montana because of long distances.

## Other Considerations

This study found that poverty is highly correlated with the percentage of employed adults, percentage of adults with a low level of education (less than a high school diploma), percentage of households headed by a single female with children and percentage of American Indians in the county. This ranking suggests that Glacier, Big Horn, Mineral, Blaine and Roosevelt are the counties most at risk for poverty. This result is consistent with a recent demographic and economic risk analysis conducted by the Rural Poverty Institute (Iowa State University) which identified nine Montana counties at high risk – Big Horn, Glacier, Rosebud, Wibaux, Roosevelt, Daniels, Valley, Phillips, and Sanders counties (Heflin & Miller, 2011). Additional effort should be focused on these counties.

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## Methods

### Poverty Estimates

This Montana Poverty Report Card depends on several sources of secondary data. This section discusses each of the indicators used in this study and identifies the source of the data.

There are two principal sources of data on poverty rates at the county level in Montana. One is the American Community Survey (ACS), and the other is the Small Area Income and Poverty Estimates (SAIPE). Both series suffer from the same problem: small samples at the county level. Both data series are *estimates* – rather than true population values – produced by the US Bureau of Census and both rely at least in part on the monthly American Community Survey.<sup>16</sup> These monthly data are combined to produce annual estimates based on 12, 36 or 60 months of survey data. Because of limited sample sizes in the monthly data, 12 month estimates are considered to be reliable only for places with populations of 65,000 or more, and the estimates based on 36 months of data are considered reliable for populations of 20,000 or more. Based on these standards, the 36 months data are not reliable for 47 of Montana’s 56 counties. The 60 month estimates are viewed as reliable for places of almost any population size, but they remain estimates rather than true population values and thus are subject to sampling error. The ACS data used in this paper are based on the 60 month estimates.

One difficulty with the 60 month ACS data is that they are always 2½ years old on average, in addition to the lag in reporting. For example, the latest ACS data available in the spring of 2011 are for 2009, and so the 60 month estimates are centered on 2006-07. The ACS data are also a relatively new series, so it is difficult to discern either long term or short term trends. However, the ACS data are appropriate for making comparisons across counties when the emphasis is on long term differences rather than trends.

The SAIPE data are intended to specifically address the issue of time lags. “The main objective of this program is to provide updated estimates of income and poverty statistics for the administration of federal programs and the allocation of federal funds to local jurisdictions. Estimates for 2009 were released in December 2010. These estimates combine data from administrative records, intercensal population estimates, and the decennial census with direct estimates from the American Community Survey to provide consistent and reliable single-year estimates. These model-based single-year estimates are more reflective of current conditions than multi-year survey estimates.”<sup>17</sup>

The SAIPE estimates are produced by a regression model predicting the number of people in poverty based on detailed 2000 Census data, IRS tax return data, and Supplemental Nutrition Assistance Program (SNAP) data, the latter two from the year previous to the estimates. While the SAIPE estimates are more current and use additional information sources beyond the ACS estimates, they remain estimates with associated Margins of Error. In addition, the relationships between poverty on the one hand and tax return and SNAP data on the other hand may be different in rural Montana counties than in many other parts of the county, which would lead to biased estimates for Montana. Finally, one objective of this study is to examine SNAP utilization in relation to poverty, and since SNAP data are used to construct the SAIPE poverty measure, this would create spurious correlation.

Table 7 compares the ACS 60 month and SAIPE estimates for 2009. The Bureau of the Census provides estimated Margins of Error (MoE), standard errors and/or confidence intervals which vary from county to county according to a formula based on the sizes of the samples drawn in each county.<sup>18</sup> The Margin of Error can be used to construct a 90 percent confidence interval by adding and subtracting it from each estimate. For example, the 90 percent confidence interval for the ACS poverty rate in Beaverhead County is 14.1 +/- 2.8, or from 11.3 to 16.9.

Table 7 has several implications for the analysis. First, differences between the ACS and SAIPE poverty estimates are sometimes large; in 11 counties the difference exceeds 5 percentage points.

<sup>16</sup> [www.census.gov/acs/www/about\\_the\\_survey/american\\_community\\_survey/](http://www.census.gov/acs/www/about_the_survey/american_community_survey/)

<sup>17</sup> [www.census.gov/did/www/saipe](http://www.census.gov/did/www/saipe)

<sup>18</sup> For a standard normal variable, the Margin of Error = 1.64 times the standard error.



**Table 7: ACS and 2008 SAIPE Poverty Rate by County**

County	ACS 2005-09		SAIPE 2009		Difference	
	Percent	MoE +/-	Percent	MoE +/-	SAIPE-ACS	
					Percent	MoE +/-
Beaverhead	14.1	2.8	16.2	4.0	2.1	1.2
Big Horn	23.1	4.3	24.0	5.8	0.9	1.5
Blaine	27.6	3.5	27.6	5.3	(0.0)	1.8
Broadwater	13.4	4.9	12.1	3.1	(1.3)	(1.8)
Carbon	9.7	1.9	12.1	2.9	2.4	1.0
Carter	11.3	3.3	20.1	4.9	8.8	1.6
Cascade	13.6	1.4	15.1	2.3	1.5	0.9
Chouteau	18.0	3.1	18.1	4.2	0.1	1.1
Custer	15.8	3.9	14.2	3.5	(1.6)	(0.4)
Daniels	15.7	6.3	13.5	3.3	(2.2)	(3.0)
Dawson	10.1	3.2	12.6	2.9	2.5	(0.3)
Deer Lodge	21.1	5.3	17.0	3.9	(4.1)	(1.4)
Fallon	6.7	4.8	9.1	2.3	2.4	(2.5)
Fergus	17.0	4.7	16.3	3.2	(0.7)	(1.5)
Flathead	11.6	1.6	13.5	2.5	1.9	0.9
Gallatin	14.1	1.3	13.4	1.7	(0.7)	0.4
Garfield	11.3	4.4	17.4	4.3	6.1	(0.1)
Glacier	24.0	4.5	30.5	6.3	6.5	1.8
Golden Valley	12.7	5.4	21.7	5.7	9.0	0.3
Granite	14.9	3.3	17.4	4.0	2.5	0.7
Hill	16.3	2.6	19.1	4.2	2.8	1.6
Jefferson	9.8	3.4	8.3	2.2	(1.5)	(1.2)
Judith Basin	10.3	3.2	16.1	4.0	5.8	0.8
Lake	21.3	3.3	20.9	4.4	(0.4)	1.1
Lewis and Clark	10.4	1.8	10.1	2.3	(0.3)	0.5
Liberty	22.8	7.5	18.3	4.1	(4.5)	(3.4)
Lincoln	16.7	3.2	20.4	4.2	3.7	1.0
McCone	9.8	3.3	17.2	4.4	7.4	1.1
Madison	13.1	3.4	11.6	2.9	(1.5)	(0.5)
Meagher	16.9	4.9	19.0	4.5	2.1	(0.4)
Mineral	17.0	3.7	16.9	4.2	(0.1)	0.5
Missoula	18.2	1.4	16.9	2.6	(1.3)	1.2
Musselshell	17.8	3.9	20.5	4.4	2.7	0.5
Park	13.0	2.9	13.3	2.8	0.3	(0.1)
Petroleum	14.6	8.5	20.3	5.3	5.7	(3.2)
Phillips	15.8	4.3	17.0	4.2	1.2	(0.1)
Pondera	23.6	4.2	19.1	4.5	(4.5)	0.3
Powder River	10.0	3.8	13.0	3.3	3.0	(0.5)
Powell	12.8	3.6	20.3	4.9	7.5	1.3
Prairie	14.9	6.1	15.3	3.8	0.4	(2.3)
Ravalli	14.6	2.5	15.6	3.1	1.0	0.6
Richland	16.2	3.8	10.3	2.3	(5.9)	(1.5)
Roosevelt	24.9	3.6	30.7	6.1	5.8	2.5
Rosebud	23.1	3.6	17.2	4.5	(5.9)	0.9
Sanders	22.5	2.9	21.8	4.0	(0.7)	1.1
Sheridan	14.2	6.2	11.6	2.7	(2.6)	(3.5)
Silver Bow	15.8	2.2	14.6	3.2	(1.2)	1.0
Stillwater	8.9	1.9	9.3	2.3	0.4	0.4
Sweet Grass	14.5	3.7	11.5	2.9	(3.0)	(0.8)
Teton	13.0	3.5	15.3	3.4	2.3	(0.1)
Toole	15.1	5.2	16.5	4.0	1.4	(1.2)
Treasure	8.0	3.9	12.2	3.1	4.2	(0.8)
Valley	13.1	3.0	14.3	3.6	1.2	0.6
Wheatland	18.1	7.6	19.5	4.9	1.4	(2.7)
Wibaux	19.3	7.5	12.9	3.3	(6.4)	(4.2)
Yellowstone	11.3	0.9	11.7	1.8	0.4	0.9
Montana All	14.7	0.5	15.0	0.6	0.3	0.1

These large differences occur mostly in the smaller counties where the Margins of Error in either the ACS or SAIPE (or both) data are relatively large. Second neither the ACS nor SAIPE data is clearly superior to the other as judged by the size of the Margins of error, with 32 of the counties having smaller Margins of Error in the ACS data and 24 in the SAIPE data. Based on the considerations in the prior three paragraphs it appears that the ACS data are the better choice for the cross-county analysis of poverty and program utilization, while the SAIPE data are better for examining trends. It should be noted, however, that the Margins of Error in both sets of estimates are sometimes fairly large, and thus considerable caution should be exercised in examining individual data points for particular counties.

The fact that the poverty data are estimates rather than true population figures also has implications for the methods of statistical analysis. In particular the poverty data can be viewed as estimates of the true population figures that are subject to random measurement error.<sup>19</sup> Furthermore, the variance of the measurement error varies from county to county depending on sample size and other factors, as indicated by the varying Margins of Error. One portion of the cross-county analysis estimates regression models with poverty rate as the left hand side (dependent) variable and various demographic and economic base factors as right hand side (independent) variables,  $x$ :

$$\text{Poverty Rate}_i = \beta_0 + \beta_1 * x_i + u_i,$$

where the coefficients  $\beta$  are to be estimated based on the counties  $i = 1, \dots, 56$ , and  $u_i$  is the disturbance term. The measurement error on the poverty rate implies that ordinary least squares estimates of the coefficients are unbiased, but the estimates of their standard errors must be adjusted for heteroskedasticity (variance differing from county to county). In this paper that adjustment is done using the White correction method.<sup>20</sup>

Another portion of the analysis uses the poverty rate as a right hand side variable to predict program utilization. For example, when considering SNAP uptake, the equation is:

$$\text{SNAP}_i = \beta_0 + \beta_1 * \text{Poverty Rate}_i + u_i.$$

Measurement error on the poverty rate is potentially more serious in this case, because it biases the estimate of the slope coefficient,  $\beta_1$ , toward zero. The degree of bias depends on the variance of the measurement error relative to the variance of the regression disturbance. It is difficult to determine the degree of bias, because the disturbance variance is not directly observable.

#### Sources of other data are indicated below:

Poverty rate, SAIPE, 1995 to 2009 – Montana, U.S. and surrounding states

Source: U.S. Bureau of the Census, Small Area Income and Poverty Estimates

Type of data: Point-in-time estimate

Year(s): 1995 – 2009

Definition: County population

Web address: [www.census.gov/did/www/saipe/data/statecounty/index.html](http://www.census.gov/did/www/saipe/data/statecounty/index.html)

Poverty rate, ACS, 2005 to 2009 – Montana, U.S. and surrounding states

Source: U.S. Bureau of the Census, American Community Survey

Type of data: Point-in-time estimate

Year(s): 2005 – 2009

Definition: County population

Web address: [factfinder.census.gov/servlet/DCGeoSelectServlet?ds\\_name=ACS\\_2009\\_5YR\\_G00\\_](http://factfinder.census.gov/servlet/DCGeoSelectServlet?ds_name=ACS_2009_5YR_G00_)

The unemployment rate used in this study is for December of each year. The following sources were used for the unemployment rate estimates:

Unemployment Rate, 1995 to 2010 - Montana  
Source: Montana Department of Labor and Industry

Type of data: Point-in-time estimate

Year(s): December 1995 to December 2010

Definition: County population

Web address: [ceic.mt.gov/Employ\\_Unem.asp](http://ceic.mt.gov/Employ_Unem.asp)

<sup>19</sup> For a discussion of measurement error and its statistical consequences, see William H. Greene, *Econometric Analysis*, Prentice Hall, 7th Edition, 2008.

<sup>20</sup> Regression analysis is performed using Eviews 3.1 from Quantitative Micro Software.

Unemployment Rate, 1995 to 2010 – U.S.  
 Source: Bureau of Labor Statistics  
 Type of data: Point-in-time estimate  
 Year(s): December 1995 to December 2010  
 Definition: National and state populations  
 Web address: [data.bls.gov/timeseries/LNS14000000](http://data.bls.gov/timeseries/LNS14000000)

Unemployment Rate, 1995 to 2010 – U.S. and surrounding states  
 Source: Bureau of Labor Statistics  
 Type of data: Point-in-time estimate  
 Year(s): December 1995 to December 2010  
 Definition: National and state populations  
 Web address: [www.bls.gov/lau](http://www.bls.gov/lau)

Median income is collected in the ACS and reported in both the ACS and SAIPE databases. The following sources were used for the median income estimates:

Median Household Income, SAIPE, 1995 to 2009 – Montana, U.S. and surrounding states  
 Source: U.S. Bureau of the Census, Small Area Income and Poverty Estimates  
 Type of data: Point-in-time estimate  
 Year(s): 1995 – 2009  
 Definition: County population  
 Web address: [www.census.gov/did/www/saipe/data/statecounty/index.html](http://www.census.gov/did/www/saipe/data/statecounty/index.html)

Median Household Income, ACS, 2005 to 2009 – Montana, U.S. and surrounding states  
 Source: U.S. Bureau of the Census, American Community Survey  
 Type of data: Point-in-time estimate  
 Year(s): 2005 – 2009  
 Definition: County population  
 Web address: [factfinder.census.gov/servlet/DCGeoSelectServlet?ds\\_name=ACS\\_2009\\_5YR\\_G00\\_](http://factfinder.census.gov/servlet/DCGeoSelectServlet?ds_name=ACS_2009_5YR_G00_)

Personal income estimates are utilized to determine the percentage of total income from transfer payments. Retirement and disability insurance benefits consist of old-age, survivors and disability insurance, railroad retirement and disability and workers' compensation benefits. In addition, it consists largely of temporary disability payments, pension benefit guaranty payments, black lung payments, and Panama Canal construction annuity payments. Medical benefits consist of Medicare benefits, Medicaid and other medical vendor payments and military medical

insurance benefits (including of payments made under the TriCare Management Program, formerly called CHAMPUS, for the medical care of dependents of active duty military personnel and of retired military personnel and their dependents at nonmilitary medical facilities). Income maintenance benefits consist of SSI, family assistance (through 1995, consists of emergency assistance and Aid to Families with Dependent Children (ADFC). Beginning with 1998, consists of benefits-- generally known as Temporary Assistance for Needy Families (TANF)-- provided under the Personal Responsibility and Work Opportunity Reconciliation Act of 1996. For 1996-97, consists of payments under all three of these programs.), SNAP and other income maintenance benefits (consists largely of general assistance; expenditures for food under the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC); other needs assistance; refugee assistance; foster home care and adoption assistance; Earned Income Tax Credits (EITC); Child Tax Credits; and energy assistance). Unemployment insurance compensation includes state unemployment insurance compensation, unemployment compensation for Federal civilian employees, railroad employees and veterans. In addition, other employment compensation consists of Trade Adjustment Assistance, Redwood Park benefit payments, public service employment benefit payments, and transitional benefit payments. Veterans benefits consist of veterans pension and disability benefits, readjustment benefits (which are veterans' readjustment benefit payments, educational assistance to spouses and children of disabled or deceased veterans, payments to paraplegics, and payments for autos and conveyances for disabled veterans), life insurance benefits and other assistance (including state and local government payments to veterans). Education and training assistance consists of federal fellowship payments (National Science Foundation fellowships and traineeships, subsistence payments to state maritime academy cadets, and other federal fellowships), interest subsidy on higher education loans, Pell Grants, Job Corps payments, education exchange payments, and state education assistance payments. Other transfer receipts of individuals from governments consists largely of Bureau of Indian Affairs payments; Alaska Permanent Fund dividend payments; compensation of survivors of public safety officers; compensation of victims of crime; disaster relief payments; compensation for Japanese internment; the Economic Stimulus Act of

2008 rebates; the American Recovery and Reinvestment Act of 2009 funded Federal Additional Compensation for unemployment, COBRA premium reduction, and the Economic Recovery lump sum payment; and other special payments to individuals. Current transfer receipts of nonprofit institutions consist of receipts from the federal, state and local governments and receipts from businesses. Current transfer receipts of individuals from businesses consist of personal injury payments to individuals other than employees and other business transfer payments. The following sources were used for the personal income estimates:

Personal Income, 2000 to 2009 – Montana, U.S. and surrounding states  
 Source: Bureau of Economic Analysis, Table CA30  
 Type of data: Point-in-time estimate  
 Year(s): 2000-2009  
 Definition: National, state and county populations  
 Web address: [www.bea.gov/iTable/iTable.cfm?reqid=70&step=1&isuri=1&acrdrn=5](http://www.bea.gov/iTable/iTable.cfm?reqid=70&step=1&isuri=1&acrdrn=5)

Personal Income (transfer payments), 2009 – Montana  
 Source: Bureau of Economic Analysis, Table CA35  
 Type of data: Point-in-time estimate  
 Year(s): 2009  
 Definition: National, state and county populations  
 Web address: [www.bea.gov/iTable/iTable.cfm?reqid=70&step=1&isuri=1&acrdrn=5](http://www.bea.gov/iTable/iTable.cfm?reqid=70&step=1&isuri=1&acrdrn=5)

Population changes are important determinant to consider is estimating changes in the poverty rate. The following sources were used for the population estimates:

Population, 2000-2010 – Montana, U.S. and surrounding states  
 Source: Census Bureau  
 Type of data: Point-in-time estimate  
 Year(s): 2002-2010  
 Definition: National, state and county populations  
 Web address: [www.census.gov/popest/eval\\_estimates/eval\\_est2010.html](http://www.census.gov/popest/eval_estimates/eval_est2010.html)

Population by Age Group, 2005/2009 – Montana  
 Source: Census Bureau, American Community Survey  
 Type of data: Point-in-time estimate  
 Year(s): 2005/2009  
 Definition: County populations

Web address: [factfinder.census.gov/servlet/DCGeoSelectServlet?ds\\_name=ACS\\_2009\\_5YR\\_G00\\_](http://factfinder.census.gov/servlet/DCGeoSelectServlet?ds_name=ACS_2009_5YR_G00_)

This study utilized the percentage of population over 25 years of age with four levels of educational attainment (less than high school diploma, high school diploma, some college and college degree). In this study, we were most interested in those with less than a high school diploma, who are classified as low education. The following sources were used for the educational attainment estimates:

Population by Educational Attainment, 2005/2009 – Montana  
 Source: Census Bureau, American Community Survey  
 Type of data: Point-in-time estimate  
 Year(s): 2005/2009  
 Definition: County populations  
 Web address: [factfinder.census.gov/servlet/DCGeoSelectServlet?ds\\_name=ACS\\_2009\\_5YR\\_G00\\_](http://factfinder.census.gov/servlet/DCGeoSelectServlet?ds_name=ACS_2009_5YR_G00_)

Single female households are identified in the ACS as female householder, no husband present with own children under 18 years. The following sources were used for the single female households estimates:

Population by Single Female Households with Children, 2005/2009 – Montana  
 Source: Census Bureau, American Community Survey  
 Type of data: Point-in-time estimate  
 Year(s): 2005/2009  
 Definition: County populations  
 Web address: [factfinder.census.gov/servlet/DCGeoSelectServlet?ds\\_name=ACS\\_2009\\_5YR\\_G00\\_](http://factfinder.census.gov/servlet/DCGeoSelectServlet?ds_name=ACS_2009_5YR_G00_)

The population in Montana is aging as mortality rates decline and birth rates remain low. This study utilized the old age dependency ratio, which is the number of people 65 years of age and older divided by the number of people 18 to 64 years of age (working adults). The following sources were used for the dependency ratio estimates:



### Dependency Ratio, 2005/2009 - Montana

Source: Census Bureau, American Community Survey

Type of data: Point-in-time estimate, calculated as 65 and older population divided by 18-64 population (old age dependency ratio)

Year(s): 2005/2009

Definition: County populations

Web address: [factfinder.census.gov/servlet/DCGeoSelectServlet?](http://factfinder.census.gov/servlet/DCGeoSelectServlet?ds_name=ACS_2009_5YR_G00_)

DCGeoSelectServlet?

ds\_name=ACS\_2009\_5YR\_G00\_

Even though Medicaid expenditures are paid directly to the provider, rather than the individual on Medicaid, it provides important benefits to the poor. This study utilized previously discussed population data to estimate Medicaid expenditures per capita. The following sources were used for the Medicaid estimates:

#### Medicaid, 2009 – Montana

Source: Montana Department of Health and Human Services, Tables 1 and 6

Type of data: Point-in-time estimate

Year(s): 2002-2010

Definition: State and county populations

Web address: [www.dphhs.mt.gov/statisticalinformation/tanfstats/tanfstatistics.shtml](http://www.dphhs.mt.gov/statisticalinformation/tanfstats/tanfstatistics.shtml)

Earned income tax credits have become a major source of benefits for the working poor. This study utilized previously discussed population data to estimate EITC expenditures per capita. The Brookings Institution data only covered 2000 to 2007. The following sources were used for the EITC estimates:

#### Earned Income Tax Credits, 2000 to 2007 – Montana

Source: Brookings Institution

Type of data: Point-in-time estimate

Year(s): 2000 to 2007

Definition: County populations

Web address: [www.brookings.edu/projects/EITC.aspx](http://www.brookings.edu/projects/EITC.aspx)

SNAP is the most widely used benefit program. This study utilized previously discussed population data to estimate SNAP expenditures per capita. The following sources were used for the SNAP estimates:

#### Supplemental Nutrition Assistance Program (SNAP), 2002 - 2010 – Montana

Source: Montana Department of Health and Human

#### Services, Table 7

Type of data: Point-in-time estimate

Year(s): 2002-2010 (July, 2010)

Definition: County populations

Web address: [www.dphhs.mt.gov/statisticalinformation/tanfstats/tanfstatistics.shtml](http://www.dphhs.mt.gov/statisticalinformation/tanfstats/tanfstatistics.shtml)

#### Supplemental Nutrition Assistance Program (SNAP), 2004 - 2010 – U.S. and surrounding states

Source: USDA, Food and Nutrition Service

Type of data: Point-in-time estimate

Year(s): 2004-2010

Definition: National and state populations

Web address: [www.fns.usda.gov/pd/snapmain.htm](http://www.fns.usda.gov/pd/snapmain.htm)

TANF (9,365 recipients per month) is used by fewer recipients than SNAP (109,330 recipients per month). This study utilized previously discussed population data to estimate TANF expenditures per capita. The following sources were used for the TANF estimates:

#### Temporary Assistance for Needy Families (TANF), 2002 - 2010 – Montana

Source: Montana Department of Health and Human Services, Table 7

Type of data: Point-in-time estimate

Year(s): 2002-2010 (July, 2010)

Definition: County populations

Web address: [www.dphhs.mt.gov/statisticalinformation/tanfstats/tanfstatistics.shtml](http://www.dphhs.mt.gov/statisticalinformation/tanfstats/tanfstatistics.shtml)

#### Temporary Assistance for Needy Families (TANF), 2002 - 2010 – U.S. and surrounding states

Source: USDA, Food and Nutrition Service

Type of data: Point-in-time estimate

Year(s): 2004-2010

Definition: National and state populations

Web address: [www.acf.hhs.gov/programs/ofa/data-reports/caseload/caseload\\_current.htm](http://www.acf.hhs.gov/programs/ofa/data-reports/caseload/caseload_current.htm)

LIHEAP is allocated by the MDPPHS to all eligible Montanans, except American Indian livings on the Blackfeet, Flathead, Northern Cheyenne, Ft. Peck, Ft. Belknap and Rocky Boys American Indian Reservations. This study utilized previously discussed population data to estimate LIHEAP expenditures per capita. The following sources were used for the LIHEAP estimates:

Low Income Home Energy Assistance Program (LIHEAP), 2002 – 2010 - Montana  
 Source: Montana Department of Health and Human Services, Table 7  
 Type of data: Point-in-time estimate  
 Year(s): 2002-2010 (July, 2010)  
 Definition: County populations  
 Web address: [www.dphhs.mt.gov/statisticalinformation/tanfstats/tanfstatistics.shtml](http://www.dphhs.mt.gov/statisticalinformation/tanfstats/tanfstatistics.shtml)

Low Income Home Energy Assistance Program (LIHEAP), 2002 - 2010 – U.S.  
 Source: USDA, Food and Nutrition Service  
 Type of data: Point-in-time estimate  
 Year(s): 2004-2010  
 Definition: National and state populations  
 Web address: *participation* – [www.acf.hhs.gov/programs/ocs/liheap/guidance/information/memoranda/2008\\_notebook1.pdf](http://www.acf.hhs.gov/programs/ocs/liheap/guidance/information/memoranda/2008_notebook1.pdf) - table 3-21 *expenditures* - [liheap.ncat.org/Funding/lhemhist.htm](http://liheap.ncat.org/Funding/lhemhist.htm)

The last means-tested benefits program examined by this study is FRSL. This study utilized previously discussed population data to estimate FRSL expenditures per capita. The following sources were used for the FRSL estimates:

Free and Reduced School Lunch (FRSL), 2002 – 2010 - Montana  
 Source: Office of Public Instruction  
 Type of data: Point-in-time estimate  
 Year(s): 2002-2010  
 Definition: County populations  
 Web address: [data.opi.mt.gov/IRISReports/](http://data.opi.mt.gov/IRISReports/)

Free and Reduced School Lunch (FRSL), 2010 – U.S.  
 Source: USDA, Food and Nutrition Service  
 Type of data: Point-in-time estimate  
 Year(s): 2010  
 Definition: National populations  
 Web address: [www.fns.usda.gov/fns/data.htm](http://www.fns.usda.gov/fns/data.htm) and [www.fns.usda.gov/cnd/lunch/AboutLunch/NSLPFactSheet.pdf](http://www.fns.usda.gov/cnd/lunch/AboutLunch/NSLPFactSheet.pdf)

## Analytical Models

This study utilizes linear regression models to examine the determinants of poverty, assess correlations among youth, adult working age and elderly population and examine the relationship between the poverty rate and use of benefit programs. The first model regresses the poverty rate on the percentage of American Indians, single female households with children, individuals 25 years of age and older with less than a high school diploma, employment, and economic activity from farming, manufacturing, mining and wood-products industries. The second model regresses the percentage of working age population (18-64) on percentage of youth and elderly. The third model regresses the poverty rate on the percentage of population participating in SNAP and TANF, percentage of students eligible for FRSL, percentage of income tax filers filing an EITC, expenditures per capita for LIHEAP, Medicaid and EITC.



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