



## *Montana Regional Economic Analysis Project*



### *A Web-Based Tool for Diagnosing the Performance of Our State & Local Economies*

An Overview of the  
*Montana Regional Economic Analysis Project*  
Web Site

(<http://www.pnreap.org/Montana>)

Monitoring Montana:  
Analyzing Local Economies through BEA Data

Bureau of Business and Economic Research  
*University of Montana*

May 9th, 2007  
The University of Montana  
Gallagher Building, Room 213

Gary W. Smith  
Director  
*Pacific Northwest Regional Economic Analysis Project*



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- ✓ "If we could first know where we are, and whither we are tending, we could better judge what to do and how to do it." ~ Abraham Lincoln
- ✓ "It ain't what you don't know that gets you into trouble. It's what you know for sure that just ain't so." ~ Mark Twain
- ✓ "Collecting data on the local economy from the internet is akin to drinking water from a fire hydrant." ~ Paul Zelus, Idaho State University





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#### ✓ **Setting:**

- Forces of change continue to undermine the vitality, diminish the prosperity and even threaten the survival of many rural areas in Montana and throughout the entire West.
- Federal, state and local area leaders must mobilize, organize and become better informed to more effectively cope with the challenges posed by the economic transitions confronting their communities.
- All too often regional and local economic development efforts focus on energizing and mobilizing local leaders and development organizations without first building from a sound base of information, a good diagnosis of local area problems and a establishing well-grounded understanding of local area trends.
- Policies may be misdirected and misguided in the absence of establishing a sound diagnosis and collective understanding of the local economy:
  - How it works!
  - How it is changing!
  - How it can be changed!





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#### ✓ **Situation:**

- Even though local leaders may well appreciate the importance and need for better information and understanding of trends and developments within their local economy they frequently lack the resources and staff trained to know:
  - Where to look for and access the pertinent data; and
  - How to manipulate, organize, synthesize, analyze, interpret and portray the data once they have it. (This, is what the PNREAP web site is all about!)
- Rural areas are especially limited in their capacity to initiate and undertake the applied research needed to establish a sound baseline of information and analysis for building a broad collective understanding of where they've been, where they are, and where they are going.
- Even more affluent larger communities and jurisdictions can make better use of scarce and limited resources if they could access and use web-based tools for doing regional economic analysis to diagnose and assess changing local area economic conditions and trends.



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#### ✓ **PNREAP & Montana Regional Economic Analysis Project Goals:**

- To strengthen and improve regional and local area planning and economic development decision-making throughout Montana.
- To broaden and enhance the depth of analysis and understanding of local and regional economic conditions and trends against the backdrop of a dynamic and ever-changing national economy.
- To adopt and exploit web-enabled technologies to expedite the distillation, delivery, portrayal and interpretation of regional economic information, analysis and research results.
- To present and explain web-accessible regional economic analysis and research results that general audiences can readily and independently generate, understand, share with others, adopt and apply.



## *Montana Regional Economic Analysis Project*



### *A Web-Based Tool for Diagnosing the Performance of Our State & Local Economies*

- ✓ **The Cornerstone of PNREAP: The BEA Data**
  - The cornerstone for the data used on PNREAP are the state and county level income, earnings, employment and transfer payments data compiled and updated annually by the Regional Economic Measurement Division of the Bureau of Economic Analysis, U.S. Department of Commerce (REMD/REIS - BEA, DOC).
  
- ✓ **THE 6 C's - In combination, the BEA regional data are among the most:**
  - **Comprehensive**
  - **Comparable**
  - **Consistent**
  - **Congruent**
  - **Current**
  - **Credible**
  - **Plus....CASH -- (The Income Side of the Local Economic Equation)**



## *Montana Regional Economic Analysis Project*



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- ✓ BEA Data + "VALUE ADDED" = PNREAP
- ✓ The VALUE ADDED Components of PNREAP...In Combination:
  - Retrieval
  - Manipulation
  - Organization
  - Distillation
  - Synthesis
  - Analysis
  - Interpretation
  - Portrayal
  - Delivery
  - At...the click of a mouse!





## *Montana Regional Economic Analysis Project*



### *A Web-Based Tool for Diagnosing the Performance of Our State & Local Economies*

- ✓ **The 3 Rules Underlying PNREAP:**
  - 1 - CONTEXT
  - 2 - CONTEXT
  - 3 - CONTEXT
  
- ✓ **PNREAP - Regional Coverage**
  - Regional coverage of the PNREAP web site encompasses all the 250 individual counties of Nevada (17), Washington (39), Oregon (36), Idaho (44), **Montana (56)**, and California (58).
  - National coverage for the individual states and DC (51).
  
- ✓ **And NOW....off to Montana Regional Economic Analysis Project we go!**





## *Montana Regional Economic Analysis Project*



### *A Web-Based Tool for Diagnosing the Performance of Our State & Local Economies*

#### ✓ Recent Enhancements

- ▶ Recent update of data through 2005.
- ▶ All Tables as well as Briefing Reports are now Dynamically Generated.
  - Faster turn around for updating
  - More readily extend to other states
- ▶ Addition of California
- ▶ New Navigation Features
- ▶ New Modules
  - "Comparative Trends Analysis - State to State, 1969-2005"
  - "Major Components of Personal Income, 1969-2005"
- ▶ Modules Revised or Under Revision
  - "Shift-Share Analysis of Employment Growth" now available for the NAICS classification.
  - "Comparative Trends Analysis - County to County, 1969-2005"



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#### ✓ **Future Enhancements**

- ▶ Bolster Factor Analysis
- ▶ Cyclical Analysis
- ▶ Projections
- ▶ Graphics Analysis of Rural Conditions & Trends - State by State
- ▶ Comparative Analysis by Industry
- ▶ Geographic Map Integration
- ▶ Integration of Most Recently Released State Level Data
- ▶ A Northwest Region Combining State and Provincial (Canadian) Data
- ▶ Extending PNREAP to Other States or... Go Nationwide?
- ▶ More Active Outreach Activity and Programming
- ▶ Garnering \$ Support... A Public Goods Issue?
- ▶ Suggestion? Recommendations? Items to Add to Wish list?

# PNREAP Snippets from the Comparative Trends Analysis Module – United States



## Comparative Trends Analysis State to State

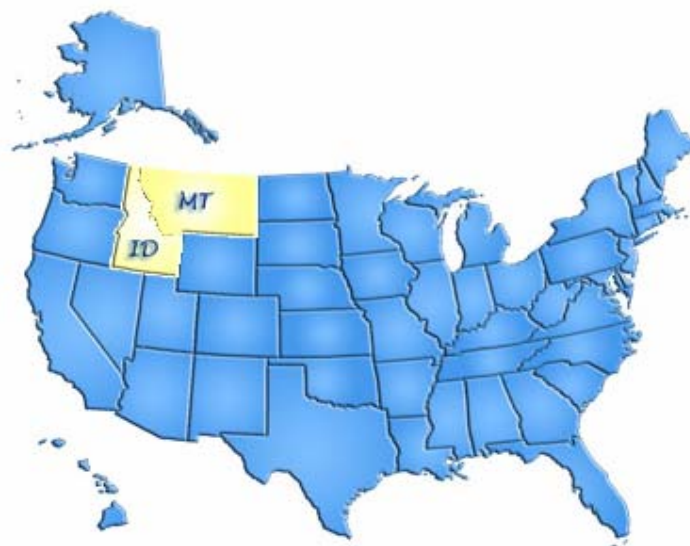


1969-2005

- California
- Idaho
- Montana
- Nevada
- Oregon
- Washington
- United States

- Comparative Trends Analysis
- Comparative Economic Indicators
- Shift-Share Analysis
- Industry Analysis
- Selected Economic Indicators
- Personal Income by Major Source
- Full & Part-Time Employment
- Transfer Payments
- BEARFACTS (BEA Regional Facts)

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*"If we could first know where we are, and whither we are tending, we could better judge what to do and how to do it."*

- Abraham Lincoln

**Comparative Trends Analysis - State to State, 1969-2005** - Generate graphic analysis and summary reports comparing state to state growth and change. Compare state to state and nationwide economic trends focusing on the following key indicators: population, personal income, per capita income, employment, industry earnings and average earnings per job.

Choose two states to compare with the United States. Select the desired indicator and click the "Generate & Display Output" button.

**Primary State:**

**Secondary State:**

**Indicators:**

- Population
- Personal Income
- Per Capita Income
- Employment
- Total Industry Earnings
- Average Earnings Per Job

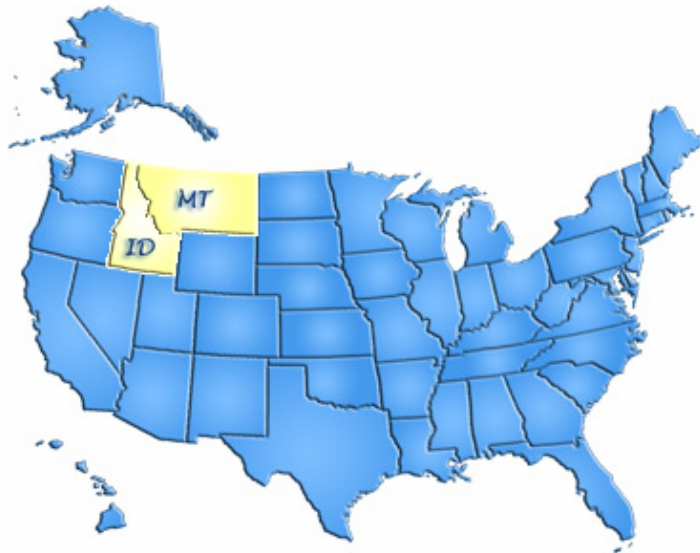
**Output:**

**Generate & Display Output**



# PNREAP Snippets from the Comparative Trends Analysis Module – United States

## PNREAP: Comparative Trends Analysis: Montana vs. Idaho, Population Growth and Change, 1969 - 2005



### Briefing Report Outline:

1. [Table - Montana and Idaho: Population, 1969 - 2005](#)
2. [Introduction](#)
3. [Graph - Montana Population, 1969 - 2005](#)
4. [Graph - Population Indices: Montana, Idaho and United States, 1969 - 2005](#)
5. [Graph - Population as a Percent of the U.S. Total: Montana and Idaho, 1969 - 2005](#)
6. [Graph - Montana Population: Annual Percent Change, 1969 - 2005](#)
7. [Graph - Montana Population: Annual Percent Change, 1969 - 2005 by decade](#)
8. [Graph - Population Growth: Average Annual Percent Change, 1969 - 2005](#)

### Montana and Idaho: Population, 1969-2005

Year	Montana				Idaho			
	Population	Index <sup>1</sup>	Percent Change	Percent of U.S. Total	Population	Index <sup>1</sup>	Percent Change	Percent of U.S. Total
1969	694,000	100.0	.	0.34	707,000	100.0	.	0.35
1970	697,172	100.5	0.46	0.34	717,255	101.5	1.45	0.35
1971	711,037	102.5	1.99	0.34	738,749	104.5	3.00	0.36
1972	719,138	103.6	1.14	0.34	763,229	108.0	3.31	0.36
1973	727,389	104.8	1.15	0.34	782,061	110.6	2.47	0.37
1974	737,203	106.2	1.35	0.35	807,973	114.3	3.31	0.38
1975	749,208	108.0	1.63	0.35	831,981	117.7	2.97	0.39
1976	758,521	109.3	1.24	0.35	856,979	121.2	3.00	0.39
1977	771,354	111.1	1.69	0.35	883,446	125.0	3.09	0.40
1978	784,043	113.0	1.65	0.35	910,962	128.8	3.11	0.41
1979	789,167	113.7	0.65	0.35	932,636	131.9	2.38	0.42
1980	788,752	113.7	-0.05	0.35	947,983	134.1	1.65	0.42
1981	795,325	114.6	0.83	0.35	962,204	136.1	1.50	0.42
1982	803,984	115.8	1.09	0.35	973,719	137.7	1.20	0.42
1983	814,029	117.3	1.25	0.35	981,866	138.9	0.84	0.42
1984	820,904	118.3	0.84	0.35	990,841	140.1	0.91	0.42
1985	822,320	118.5	0.17	0.35	994,052	140.6	0.32	0.42
1986	813,738	117.3	-1.04	0.34	990,222	140.1	-0.39	0.41
1987	805,064	116.0	-1.07	0.33	984,997	139.3	-0.53	0.41
1988	800,200	115.3	-0.60	0.33	985,661	139.4	0.07	0.40
1989	799,634	115.2	-0.07	0.32	994,422	140.7	0.89	0.40
1990	800,204	115.3	0.07	0.32	1,012,384	143.2	1.81	0.41
1991	809,680	116.7	1.18	0.32	1,041,316	147.3	2.86	0.41
1992	825,770	119.0	1.99	0.32	1,071,685	151.6	2.92	0.42
1993	844,761	121.7	2.30	0.33	1,108,768	156.8	3.46	0.43
1994	861,306	124.1	1.96	0.33	1,145,140	162.0	3.28	0.44
1995	876,553	126.3	1.77	0.33	1,177,322	166.5	2.81	0.44
1996	886,254	127.7	1.11	0.33	1,203,083	170.2	2.19	0.45
1997	889,865	128.2	0.41	0.33	1,228,520	173.8	2.11	0.45
1998	892,431	128.6	0.29	0.32	1,252,330	177.1	1.94	0.45
1999	897,507	129.3	0.57	0.32	1,275,674	180.4	1.86	0.46
2000	903,631	130.2	0.67	0.32	1,299,811	183.8	1.89	0.46
2001	906,148	130.6	0.29	0.32	1,321,446	186.9	1.66	0.46
2002	910,357	131.2	0.46	0.32	1,344,266	190.1	1.73	0.47
2003	917,193	132.2	0.75	0.32	1,367,428	193.4	1.72	0.47
2004	926,345	133.5	1.00	0.32	1,394,524	197.2	1.98	0.47
2005	934,737	134.7	0.91	0.32	1,429,367	202.2	2.50	0.48

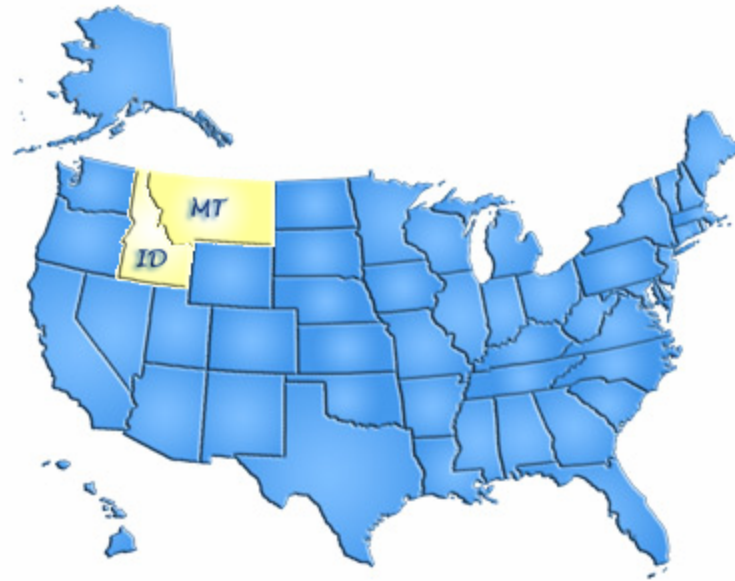
<sup>1</sup> Values are expressed as 100% for 1969 (2000 Dollars) and as a percent of 1969 for the following years.

Source: U.S. Department of Commerce, Bureau of Economic Analysis and calculations by the author.  
Prepared by Gary W. Smith, Economist and PNREAP Director.



# ***PNREAP Snippets from the Comparative Trends Analysis Module – United States***

## **Introduction**



Attracting and retaining people to live, work, raise a family, and retire underlies the economic growth of any region. Population growth is both a cause--and a consequence--of economic growth. Patterns of population growth and change reflect differences among regions to attract and retain people both as producers and consumers in their economy.

The following graphs offer a broad overview of trends in the pattern of population growth and change of Montana with comparisons to Idaho and the nation. The data used are those compiled by the Bureau of Economic Analysis, U.S. Department of Commerce.

# PNREAP Snippets from the Comparative Trends Analysis Module – United States

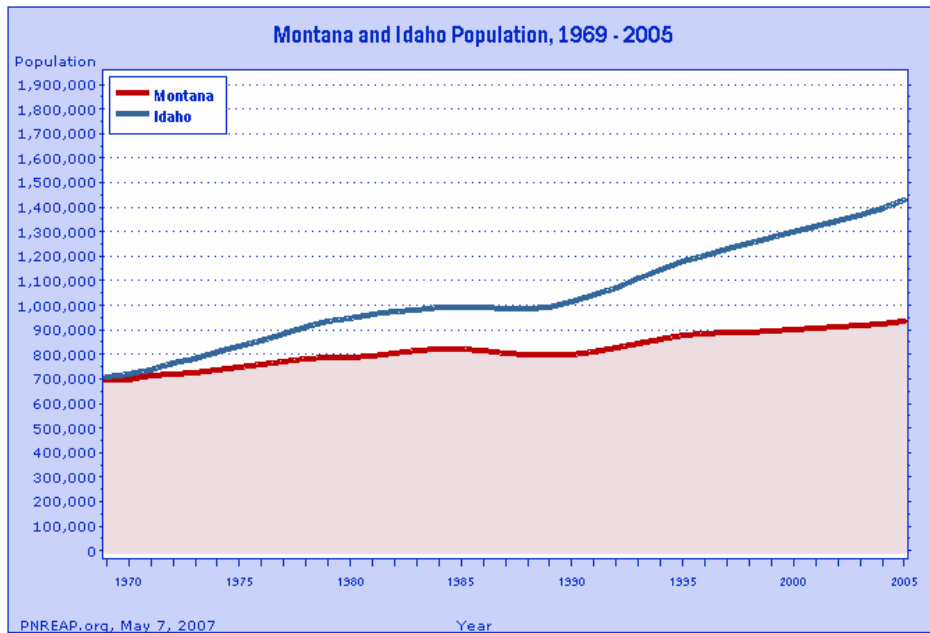


Figure 1.

Figure 1 traces Montana's annual population over 1969-2005 to illustrate the pattern of growth over time. Over the entire 37-year period, Montana's population rose from 694,000 in 1969 to 934,737 in 2005, for a net gain of 240,737, or 34.7%. In turn, Idaho's population increased from 707,000 in 1969 to 1,429,367 in 2005, for a net gain of 722,367, or 102.2%.

The county and state population totals reported by the Bureau of Economic Analysis (BEA) are from the Bureau of Census midyear (July 1) estimates. It should be noted that these estimates might differ from those that are independently prepared in some states by various agencies and/or universities.

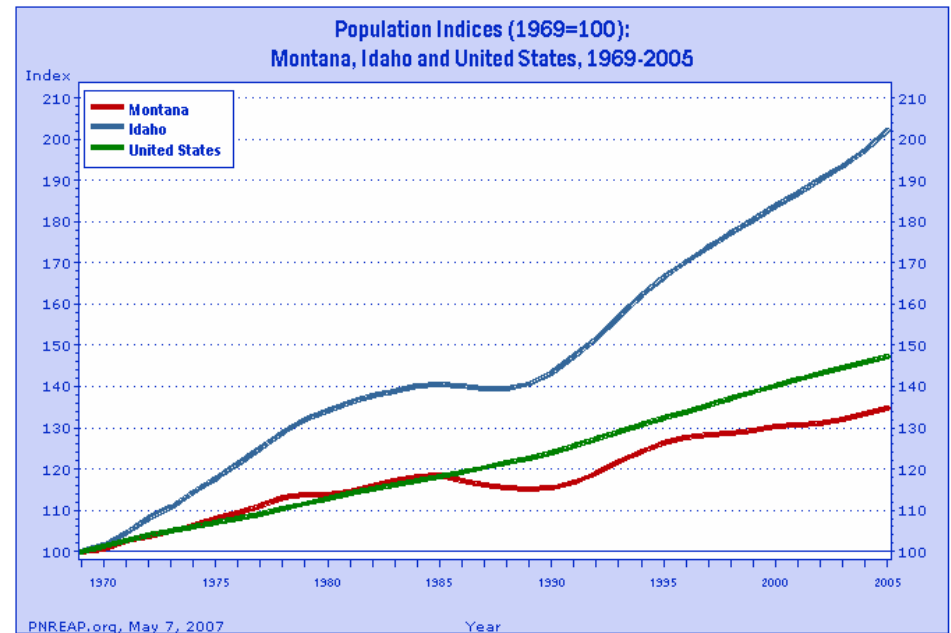


Figure 2.

Figure 2 shows Montana's population growth compared with Idaho and the nation in a more long-term context. Growth indices express each region's population in 1969 as 100, and the populations in later years as a percent of 1969. They allow for a direct comparison of the differences in population growth between regions although they may differ vastly in size.

Montana's overall population growth of 34.7% over 1969-2005 trailed Idaho's increase of 102.2%, and fell below the national increase of 47.3%.

# PNREAP Snippets from the Comparative Trends Analysis Module – United States

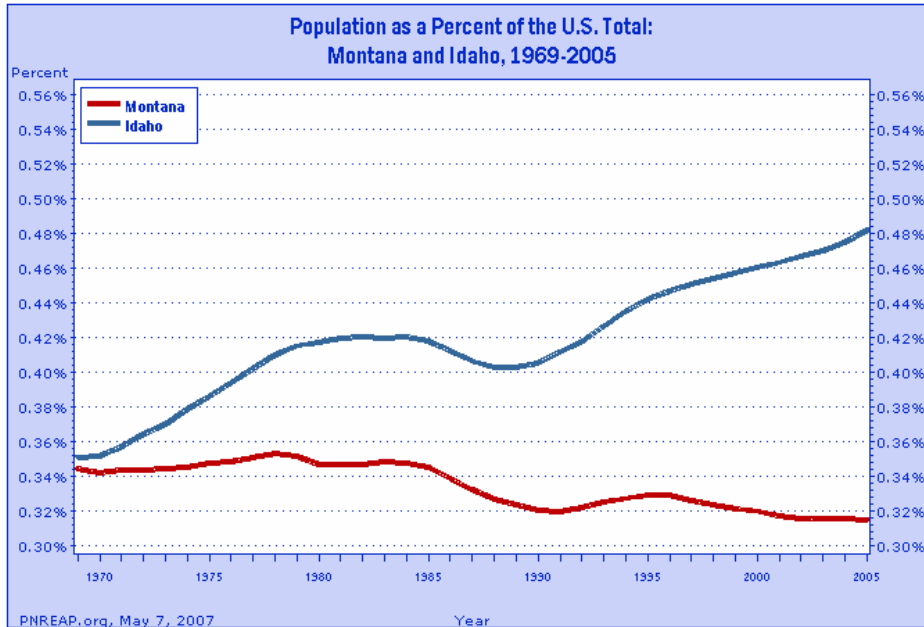


Figure 3.

Another way of highlighting the growth of Montana and Idaho's population compared with the United States is to trace their share of total U.S. population over time as shown in Figure 3. A rising share means a state's population grew faster--or declined less--than the United States population, while a declining share shows it grew more slowly.

In 1969, Montana's population comprised 0.34% of the United States population; in 2005, it comprised 0.32%. Similarly, in 1969, Idaho's population consisted of 0.35% of the nation's population; in 2005, it accounted for 0.48%.

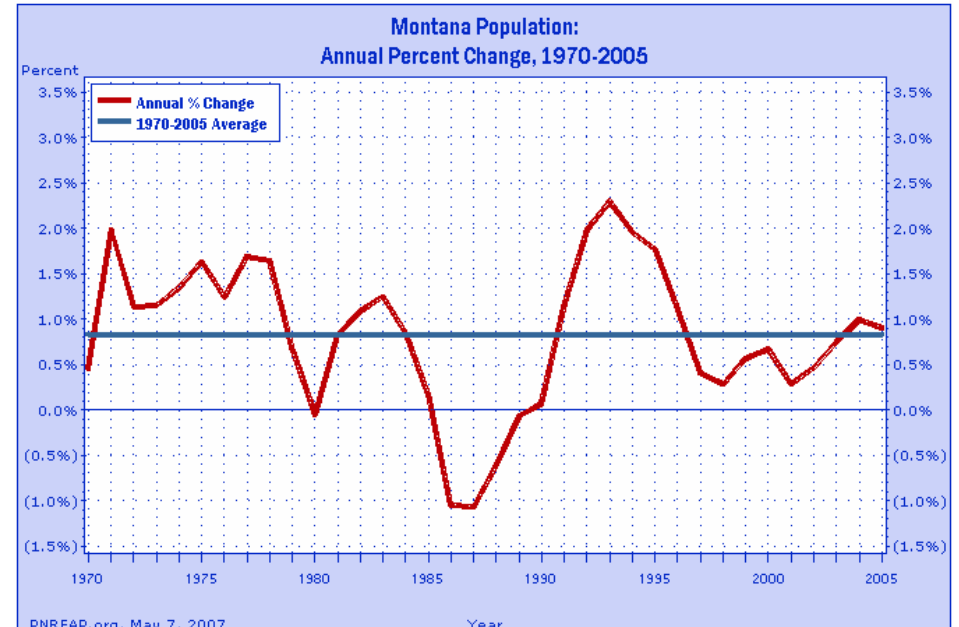


Figure 4.

Figure 4 highlights the short-run pattern of Montana's population growth by tracking the year-to-year percent change over 1969-2005. The average annual percent change for the entire 37-year period is also traced on this chart to provide a benchmark for gauging periods of relative high--and relative low--growth against the long-term trend.

Montana's population grew on average at an annual rate of 0.83% over 1969-2005.

## PNREAP Snippets from the Comparative Trends Analysis Module – United States

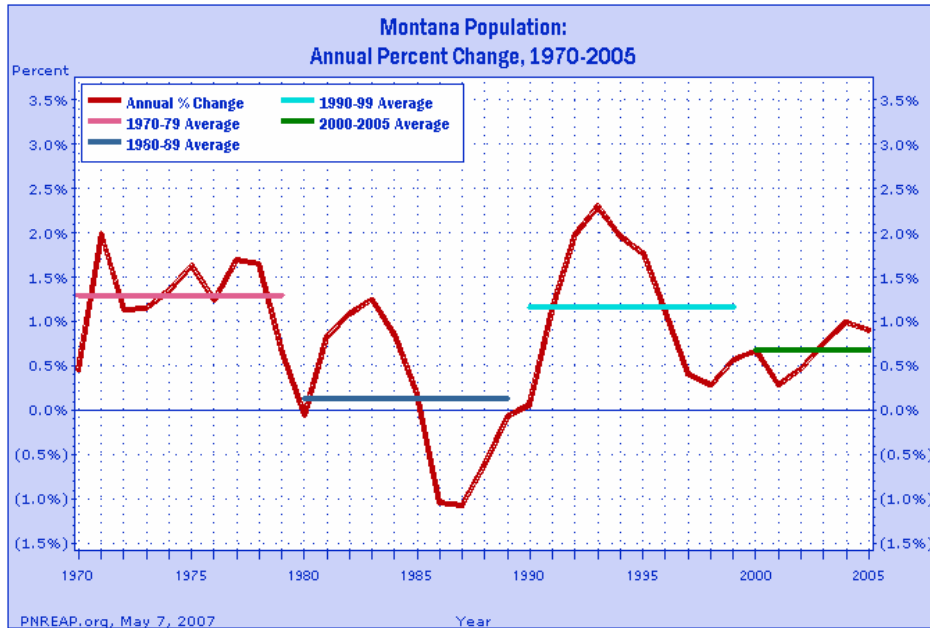


Figure 5.

Over the past three decades some counties, regions, and states have experienced extreme swings in growth, and often such swings have tended to coincide with the decades themselves. Figure 5 again traces the annual percent change in Montana population since 1969, but this time they are displayed with average growth rates for the decade of the 1970s, 1980s, the 1990s, and 2000-2005.

During the 1970s, Montana's annual population growth rate averaged 1.29%. It averaged 0.14% during the 1980s, 1.16% in the 1990s, and 0.68% thus far this decade (2000-2005).

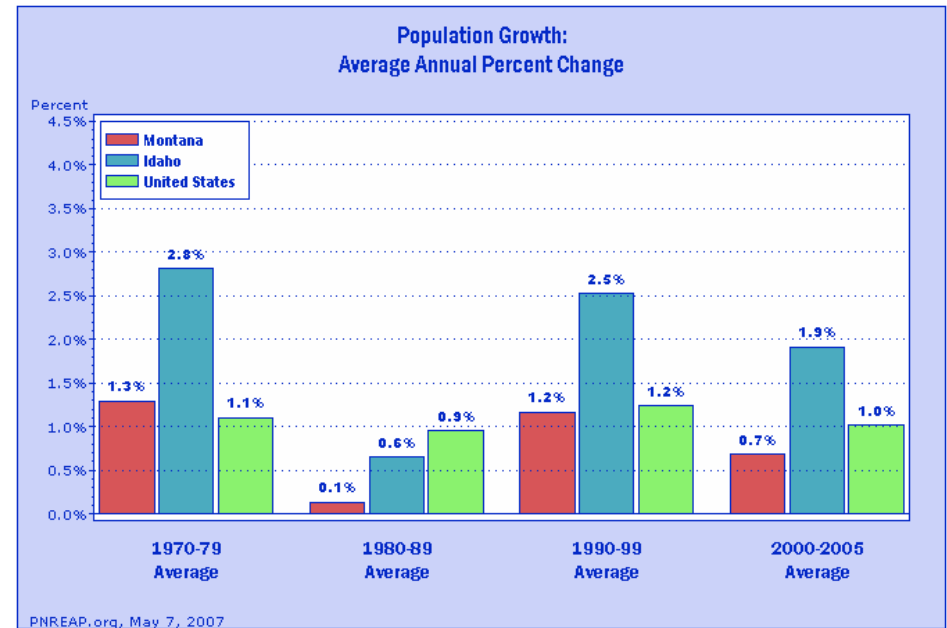


Figure 6.

Figure 6 compares the decade average growth rates for Montana noted in the previous graph with the corresponding decade averages for Idaho and the nation. As the chart reveals, Montana's average population growth fell below Idaho's average during the 1970s (1.29% vs. 2.81%), trailed Idaho's average during the 1980s (0.14% vs. 0.65%), fell below Idaho's average during the 1990s (1.16% vs. 2.52%), and amounted to less than Idaho's average over the 6 year period for this decade, 2000-2005 (0.68% vs. 1.91%).

Relative to nationwide population growth trends, Montana led the nation during the 1970s (1.29% vs. 1.10%), trailed the nation in the 1980s (0.14% vs. 0.95%), posted below the nation in the 1990s (1.16% vs. 1.23%), and recorded underneath the nation from 2000-2005 (0.68% vs. 1.02%).

Population Growth: Average Annual Percent Change					
	1970-2005	1970-79	1980-89	1990-99	2000-2005
Montana:	0.83%	1.29%	0.14%	1.16%	0.68%
Idaho:	1.98%	2.81%	0.65%	2.52%	1.91%
United States:	1.08%	1.10%	0.95%	1.23%	1.02%



# PNREAP Snippets from the Comparative Indicators Module – United States



## Comparative Economic Indicators



1969-2005

- California
- Idaho
- Montana
- Nevada
- Oregon
- Washington
- United States** ▶

- Comparative Trends Analysis
- Comparative Economic Indicators** ▶
- Shift-Share Analysis
- Industry Analysis
- Selected Economic Indicators
- Personal Income by Major Source
- Full & Part-Time Employment
- Transfer Payments
- BEARFACTS (BEA Regional Facts)

- Upcoming Conferences
- PNREC Outlook Presentations
- PNREAP/BEA Workshops



**Comparative Economic Indicators, 1969-2005** - In contrast to the Selected Economic Indicators tables that trace changes for individual counties year-over-year, the maps and tables generated by this PNREAP module compare the growth and relative standing of all counties and regions in terms of per capita income, population, total personal income, employment, total industry earnings, and average earnings per job.

**Ranking By County:**

- Population
- Personal Income
- Per Capita Income
- Employment
- Total Industry Earnings
- Average Earnings Per Job

1969 ▼ vs. 2005 ▼

**Generate & Display Output**

**Growth by County and Region, 1970-2005:**

- Population
- Personal Income
- Per Capita Income
- Employment
- Total Industry Earnings
- Average Earnings Per Job

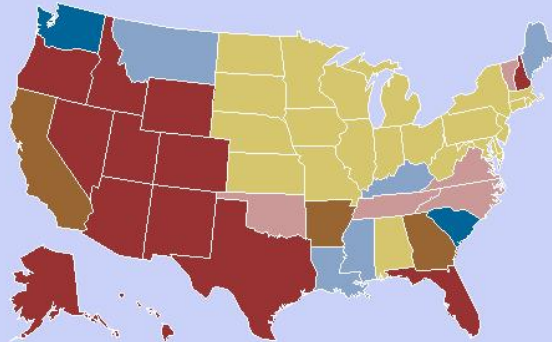
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# PNREAP Snippets from the Comparative Trends Analysis Module – United States

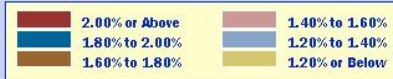
To view a specific decade, click on the desired interval below:

1970 - 2005   1970 - 1979   1980 - 1989   1990 - 1999   2000 - 2005   2005

United States Total Population Growth:  
Average Annual Percent Change 1970 - 1979



U.S. = 1.10%

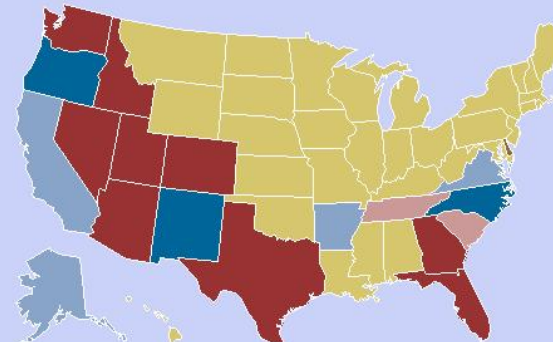


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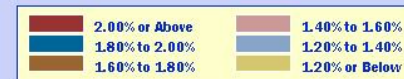
To view a specific decade, click on the desired interval below:

1970 - 2005   1970 - 1979   1980 - 1989   1990 - 1999   2000 - 2005   2005

United States Total Population Growth:  
Average Annual Percent Change 1990 - 1999



U.S. = 1.23%

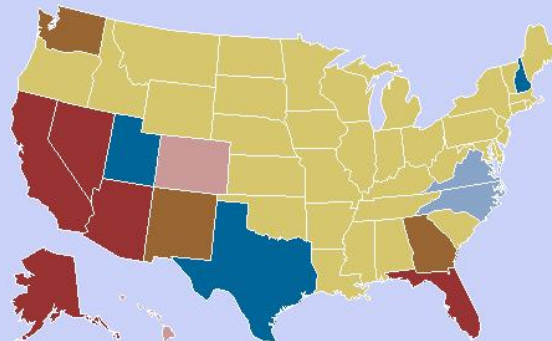


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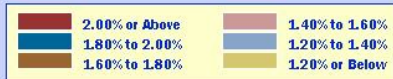
To view a specific decade, click on the desired interval below:

1970 - 2005   1970 - 1979   1980 - 1989   1990 - 1999   2000 - 2005   2005

United States Total Population Growth:  
Average Annual Percent Change 1980 - 1989



U.S. = 0.95%

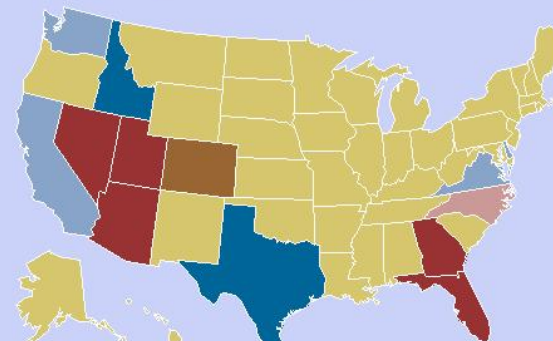


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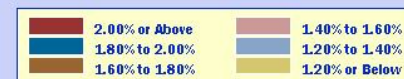
To view a specific decade, click on the desired interval below:

1970 - 2005   1970 - 1979   1980 - 1989   1990 - 1999   2000 - 2005   2005

United States Total Population Growth:  
Average Annual Percent Change 2000 - 2005



U.S. = 1.02%



PNREAP.org - May 7, 2007

# PNREAP Snippets from the Comparative Trends Analysis Module – United States

United States Total Population by State: Average Annual Percent Change, 1970-2005												
County	1970 - 2005		1970 - 1979		1980 - 1989		1990 - 1999		2000 - 2005		2005	
	Percent	Rank	Percent	Rank	Percent	Rank	Percent	Rank	Percent	Rank	Percent	Rank
Nevada	4.59	1	4.78	1	4.05	1	5.46	1	3.75	1	3.42	2
Arizona	3.49	2	4.28	2	3.22	2	3.33	2	2.87	2	3.61	1
Florida	2.78	3	3.62	3	2.93	4	2.23	7	2.02	5	2.31	5
Utah	2.44	4	3.07	6	1.88	8	2.59	3	2.06	4	2.84	3
Alaska	2.29	5	3.17	5	3.13	3	1.34	18	1.00	19	0.98	19
Colorado	2.16	6	2.78	8	1.41	13	2.58	4	1.66	8	1.41	10
Texas	2.05	7	2.32	12	1.93	7	2.04	9	1.84	7	1.82	7
Idaho	1.98	8	2.81	7	0.65	24	2.52	5	1.91	6	2.50	4
Georgia	1.95	9	1.71	17	1.75	9	2.30	6	2.13	3	2.21	6
New Mexico	1.81	10	2.39	10	1.62	11	1.86	12	1.06	17	1.33	13
Washington	1.78	11	1.85	15	1.70	10	2.10	8	1.24	13	1.39	11
California	1.70	12	1.67	18	2.31	5	1.38	16	1.28	12	0.87	21
New Hampshire	1.66	13	2.33	11	1.94	6	1.02	23	1.12	15	0.68	26
Oregon	1.59	14	2.26	13	0.80	21	1.98	10	1.17	14	1.38	12
North Carolina	1.52	15	1.44	23	1.24	15	1.93	11	1.46	9	1.66	8
Hawaii	1.51	16	2.49	9	1.43	12	1.01	24	0.85	21	1.11	17
South Carolina	1.41	17	1.85	14	1.14	16	1.41	15	1.11	16	1.25	14
Virginia	1.38	18	1.44	22	1.40	14	1.35	17	1.30	11	1.23	15
Delaware	1.24	19	1.04	31	0.95	19	1.65	13	1.39	10	1.57	9
Wyoming	1.24	20	3.23	4	0.18	38	0.71	38	0.57	31	0.65	28
Tennessee	1.19	21	1.52	20	0.69	23	1.51	14	0.92	20	1.19	16
Arkansas	1.04	22	1.72	16	0.34	34	1.23	19	0.76	23	1.05	18
Maryland	1.03	23	0.88	32	1.14	17	1.06	22	1.04	18	0.65	27
Vermont	0.99	24	1.47	21	0.98	18	0.81	32	0.48	38	0.26	42
Oklahoma	0.94	25	1.60	19	0.61	25	0.88	31	0.51	37	0.59	32
Minnesota	0.87	26	0.72	33	0.72	22	1.17	20	0.85	22	0.64	30
Montana	0.83	27	1.29	26	0.14	39	1.16	21	0.68	25	0.91	20
Maine	0.79	28	1.27	27	0.82	20	0.38	46	0.67	27	0.33	39
Alabama	0.78	29	1.18	29	0.41	32	0.95	25	0.44	40	0.68	25
Mississippi	0.75	30	1.23	28	0.26	36	0.95	26	0.47	39	0.55	33
Kentucky	0.74	31	1.31	25	0.09	41	0.89	29	0.63	28	0.78	23
Wisconsin	0.65	32	0.64	34	0.40	33	0.94	27	0.60	30	0.52	34
Missouri	0.62	33	0.53	37	0.41	31	0.88	30	0.69	24	0.78	22
Louisiana	0.62	34	1.35	24	0.28	35	0.48	43	0.17	49	0.26	41
Kansas	0.57	35	0.49	40	0.52	27	0.80	34	0.43	41	0.36	38
New Jersey	0.57	36	0.39	42	0.47	28	0.79	36	0.67	26	0.31	40
Indiana	0.55	37	0.63	35	0.09	42	0.91	28	0.60	29	0.69	24
Nebraska	0.49	38	0.60	36	0.07	43	0.80	35	0.52	36	0.64	29
Connecticut	0.43	39	0.33	44	0.58	26	0.31	48	0.56	32	0.19	44
South Dakota	0.41	40	0.31	45	0.11	40	0.75	37	0.54	34	0.61	31
Illinois	0.41	41	0.34	43	-0.01	47	0.80	33	0.54	33	0.41	35
Rhode Island	0.40	42	0.27	46	0.45	30	0.39	45	0.53	35	-0.50	51
Michigan	0.39	43	0.52	38	0.01	45	0.68	39	0.34	44	0.07	48
Massachusetts	0.36	44	0.17	48	0.46	29	0.49	41	0.30	45	-0.04	49
Ohio	0.23	45	0.22	47	0.03	44	0.46	44	0.20	47	0.08	47
New York	0.18	46	-0.26	50	0.20	37	0.49	42	0.38	42	0.13	46
Iowa	0.16	47	0.39	41	-0.51	50	0.52	40	0.27	46	0.40	37
Pennsylvania	0.15	48	0.11	49	-0.01	46	0.33	47	0.19	48	0.23	43
West Virginia	0.11	49	1.06	30	-0.70	51	0.03	49	0.02	50	0.18	45
North Dakota	0.06	50	0.49	39	-0.08	48	-0.03	50	-0.25	51	-0.20	50
District of Columbia	-0.74	51	-1.49	51	-0.49	49	-0.90	51	0.34	43	0.40	36
United States	1.08		1.10		0.95		1.23		1.02		0.98	
Metro	1.17		1.09		1.11		1.32		1.15		1.09	
Nonmetro	0.68		1.13		0.24		0.83		0.39		0.44	

Source: U.S. Department of Commerce, Bureau of Economic Analysis and calculations by the author.  
Prepared by Gary W. Smith, Economist and PNREAP Director.



# PNREAP Snippets from the Graphic Trends Module – Missoula County, Nevada



## Graphic Trend Analysis of Per Capita Income

1969-2005



- California
- Idaho
- Montana**
  - Graphic Trend Analysis
    - Population
    - Personal Income
    - Per Capita Income**
    - Employment
    - Total Industry Earnings
    - Average Earnings Per Job
  - Comparative Economic Indicators
  - Major Components of Personal Income
  - Shift-Share Analysis
  - Industry Analysis
  - Selected Economic Indicators
  - Personal Income by Major Source
  - Full & Part-Time Employment
  - Transfer Payments
  - BEARFACTS (BEA Regional Facts)
- Nevada
- Oregon
- Washington
- United States
- Upcoming Conferences
- PNREC Outlook Presentations
- PNREAP/BEA Workshops



*"If we could first know where we are, and whither we are tending, we could better judge what to do and how to do it."*

- Abraham Lincoln

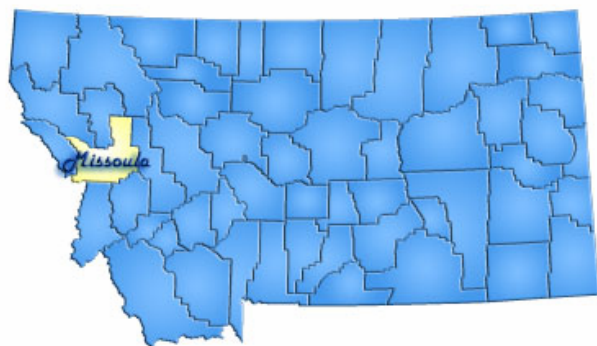
**Graphic Trend Analysis of Per Capita Income, 1969-2005** - Generate graphic analysis and summary reports of local area growth and change. Compare local, state and nationwide economic trends focusing on per capita income. Per Capita Personal Income is the total personal income of an area divided by its resident population as of July 1st.

Per Capita Income	
<a href="#">Beaverhead</a>	<a href="#">Madison</a>
<a href="#">Big Horn</a>	<a href="#">Meagher</a>
<a href="#">Blaine</a>	<a href="#">Mineral</a>
<a href="#">Broadwater</a>	<a href="#">Missoula</a>
<a href="#">Carbon</a>	<a href="#">Musselshell</a>
<a href="#">Carter</a>	<a href="#">Park</a>
<a href="#">Cascade</a>	<a href="#">Petroleum</a>
<a href="#">Chouteau</a>	<a href="#">Phillips</a>
<a href="#">Custer</a>	<a href="#">Pondera</a>
<a href="#">Daniels</a>	<a href="#">Powder River</a>
<a href="#">Dawson</a>	<a href="#">Powell</a>
<a href="#">Deer Lodge</a>	<a href="#">Prairie</a>
<a href="#">Fallon</a>	<a href="#">Ravalli</a>
<a href="#">Fergus</a>	<a href="#">Richland</a>
<a href="#">Flathead</a>	<a href="#">Roosevelt</a>
<a href="#">Gallatin</a>	<a href="#">Rosebud</a>
<a href="#">Garfield</a>	<a href="#">Sanders</a>
<a href="#">Gallatin</a>	<a href="#">Sheridan</a>
<a href="#">Golden Valley</a>	<a href="#">Silver Bow</a>
<a href="#">Granite</a>	<a href="#">Stillwater</a>
<a href="#">Hill</a>	<a href="#">Sweet Grass</a>
<a href="#">Jefferson</a>	<a href="#">Teton</a>
<a href="#">Judith Basin</a>	<a href="#">Toole</a>
<a href="#">Lake</a>	<a href="#">Treasure</a>
<a href="#">Lewis &amp; Clark</a>	<a href="#">Valley</a>
<a href="#">Liberty</a>	<a href="#">Wheatland</a>
<a href="#">Lincoln</a>	<a href="#">Wibaux</a>
<a href="#">McCone</a>	<a href="#">Yellowstone</a>
<a href="#">Metropolitan Montana</a> <a href="#">Nonmetropolitan Montana</a>	



# PNREAP Snippets from the Graphic Trends Module – Missoula County, Montana

## PNREAP: Graphic Trend Analysis: Missoula County Per Capita Income, 1969 - 2005



### Briefing Report Outline:

1. [Table - Missoula County Per Capita Income Growth and Change, 1969 - 2005](#)
2. [Introduction](#)
3. [Graph - Missoula County Per Capita Income, 1969 - 2005, Current vs. Constant 2000 Dollars](#)
4. [Graph - Real Per Capita Income Indices: Missoula County, Montana, and United States, 1969 - 2005](#)
5. [Graph - Per Capita Income as a Percent of the Statewide Average: Missoula County, 1969 - 2005](#)
6. [Graph - Missoula County Real Per Capita Income: Annual Percent Change, 1969 - 2005](#)
7. [Graph - Missoula County Real Per Capita Income: Annual Percent Change, 1969 - 2005 by decade](#)
8. [Graph - Real Per Capita Income Growth: Average Annual Percent Change, 1969 - 2005](#)

### Missoula County and Montana: Per Capita Income, 1969-2005

Year	Missoula County					Montana					
	Current Dollars (1,000s)	2000 Dollars <sup>1</sup> (1,000s)	Index <sup>2</sup>	Percent Change <sup>1</sup> (2000 \$)	Percent of U.S. Average	Percent of State Average	Current Dollars (1,000s)	2000 Dollars <sup>1</sup> (1,000s)	Index <sup>2</sup>	Percent Change <sup>1</sup> (2000 \$)	Percent of U.S. Average
1969	3,264	12,924	100.0	.	85.09	99.54	3,279	12,984	100.0	.	85.48
1970	3,441	13,010	100.7	0.67	84.24	95.29	3,611	13,653	105.2	5.15	88.40
1971	3,733	13,538	104.8	4.06	85.97	98.91	3,774	13,687	105.4	0.25	86.92
1972	4,076	14,288	110.6	5.54	86.41	94.09	4,332	15,185	117.0	10.94	91.84
1973	4,340	14,428	111.6	0.98	82.97	87.03	4,987	16,579	127.7	9.18	95.34
1974	4,741	14,284	110.5	-1.00	83.07	88.55	5,354	16,131	124.2	-2.70	93.81
1975	5,276	14,674	113.5	2.73	85.48	90.93	5,802	16,137	124.3	0.04	94.01
1976	5,899	15,545	120.3	5.94	87.34	95.28	6,191	16,314	125.6	1.10	91.66
1977	6,805	16,840	130.3	8.33	91.90	102.84	6,617	16,375	126.1	0.37	89.36
1978	7,823	18,089	140.0	7.42	94.88	102.26	7,650	17,689	136.2	8.02	92.78
1979	8,533	18,133	140.3	0.24	93.30	104.15	8,193	17,410	134.1	-1.58	89.58
1980	9,090	17,455	135.1	-3.74	89.88	100.35	9,058	17,393	134.0	-0.10	89.56
1981	9,603	16,931	131.0	-3.00	85.39	94.02	10,214	18,008	138.7	3.54	90.82
1982	10,187	17,018	131.7	0.51	85.35	95.62	10,654	17,798	137.1	-1.17	89.27
1983	10,895	17,450	135.0	2.54	86.34	98.45	11,067	17,725	136.5	-0.41	87.71
1984	11,853	18,293	141.5	4.83	85.33	101.26	11,706	18,066	139.1	1.92	84.27
1985	12,366	18,474	142.9	0.99	83.79	103.84	11,909	17,792	137.0	-1.52	80.70
1986	12,702	18,524	143.3	0.27	82.26	101.86	12,470	18,186	140.1	2.21	80.75
1987	13,257	18,686	144.6	0.87	81.63	102.15	12,978	18,293	140.9	0.59	79.91
1988	13,957	18,923	146.4	1.27	80.53	104.97	13,296	18,027	138.8	-1.45	76.72
1989	14,814	19,246	148.9	1.71	79.99	101.18	14,641	19,021	146.5	5.51	79.06
1990	15,766	19,586	151.5	1.77	80.95	102.06	15,448	19,191	147.8	0.89	79.31
1991	16,388	19,845	152.0	0.30	82.38	100.43	16,318	19,561	150.7	1.93	82.03
1992	17,312	20,172	156.1	2.68	83.02	102.64	16,867	19,653	151.4	0.47	80.88
1993	17,939	20,431	158.1	1.28	84.04	100.95	17,770	20,238	155.9	2.98	83.25
1994	18,533	20,672	160.0	1.18	83.59	103.76	17,861	19,922	153.4	-1.56	80.56
1995	19,065	20,819	161.1	0.71	82.62	103.90	18,349	20,037	154.3	0.58	79.52
1996	19,802	21,168	163.8	1.68	81.91	103.96	19,047	20,361	156.8	1.62	78.79
1997	20,535	21,588	167.0	1.98	81.06	103.31	19,877	20,896	160.9	2.63	78.46
1998	21,878	22,795	176.4	5.59	81.38	103.54	21,130	22,015	169.6	5.36	78.60
1999	22,564	23,125	178.9	1.45	80.76	104.54	21,585	22,121	170.4	0.48	77.26
2000	24,381	24,381	188.6	5.43	81.70	106.34	22,928	22,928	176.6	3.65	76.83
2001	26,491	25,948	200.8	6.43	86.68	107.36	24,675	24,169	186.1	5.41	80.74
2002	27,295	26,361	204.0	1.59	88.63	108.89	25,066	24,209	186.5	0.17	81.40
2003	28,253	26,755	207.0	1.49	89.79	107.18	26,360	24,963	192.3	3.11	83.77
2004	29,520	27,239	210.8	1.81	89.21	106.03	27,841	25,690	197.9	2.91	84.14
2005	30,608	27,453	212.4	0.79	88.79	105.49	29,015	26,024	200.4	1.30	84.17

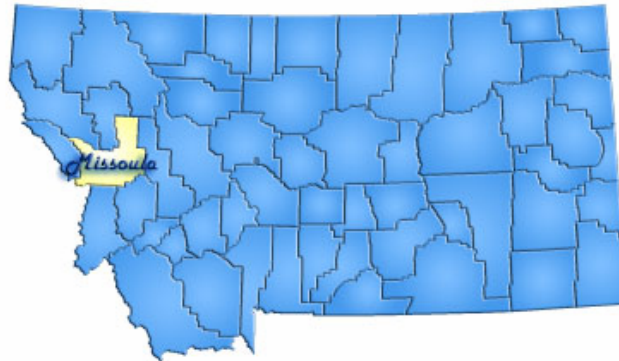
<sup>1</sup> 2000 constant dollar estimates determined using the chain-weight Implicit Price Deflator for Personal Consumption.

<sup>2</sup> Values are expressed as 100% for 1969 (2000 Dollars) and as a percent of 1969 for the following years.

Source: U.S. Department of Commerce, Bureau of Economic Analysis and calculations by the author.  
Prepared by Gary W. Smith, Economist and PNREAP Director.

# PNREAP Snippets from the Graphic Trends Module – Missoula County, Montana

## Introduction



Per Capita Income is one of the most widely used indicators for gauging the economic performance and changing fortunes of local economies. It is used as a yardstick to assess the economic well being of a region's residents and the quality of consumer markets. It serves as a barometer for calibrating the economic performance of a region over time and to judge differences in relative economic prosperity between regions. Shifting trends in local per capita income growth have important social and political ramifications and significant implications in formulating local economic development strategies and initiatives.

Definition: **Per Capita Personal Income** is the total personal income of an area divided by its resident population as of July 1. Use and interpret per capita income estimates with care in consideration of factors such as the following:

Personal income is measured as a flow throughout the year, while the measurement of population is at one point in mid-year. Therefore, per capita income is distorted if a significant change in population occurs during the year.

For smaller counties in particular, per capita income in any given year may be exceptionally high or low for the short run because of unusual local conditions, such as a bumper crop, a catastrophe, or a major construction project as the building of a dam or nuclear power plant.

Farm incomes are notorious for being especially volatile year-to-year, owing to changing weather, work market conditions, and alterations in government programs. Therefore, the per capita income of farm-dependent counties may exhibit sharp fluctuations over time.

The presence of large institutional populations--such as residents attending a local college or the residents of a local prison or state mental institution--can significantly lower the per capita income estimates of an area. Such results may not reflect the relative economic well being of the non-institutional population and may mislead if care is not given to their interpretation.

# PNREAP Snippets from the Graphic Trends Module – Missoula County, Montana

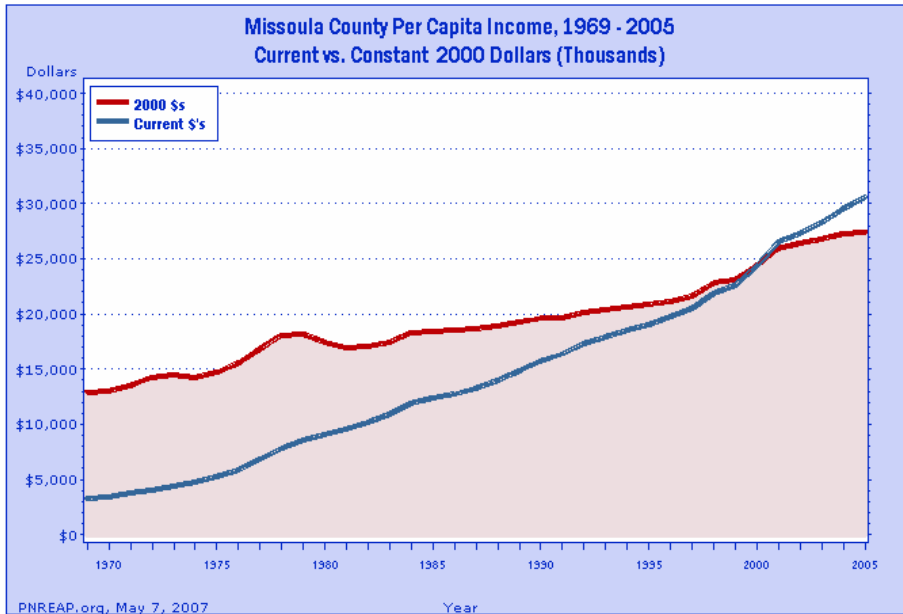


Figure 1.

Figure 1 depicts Missoula County's annual per capita income over 1969-2005 in current and constant (2000) dollars. Constant dollar measurements remove the effects of inflation. They allow for comparison of changes in the real purchasing power of per capita income over time.

When measured in current dollars, Missoula County's per capita income increased 837.7%, from \$3,264 in 1969 to \$30,608 in 2005. When measured in constant 2000 dollars to adjust for inflation, it advanced 112.4%, from \$12,924 in 1969 to \$27,453 in 2005.

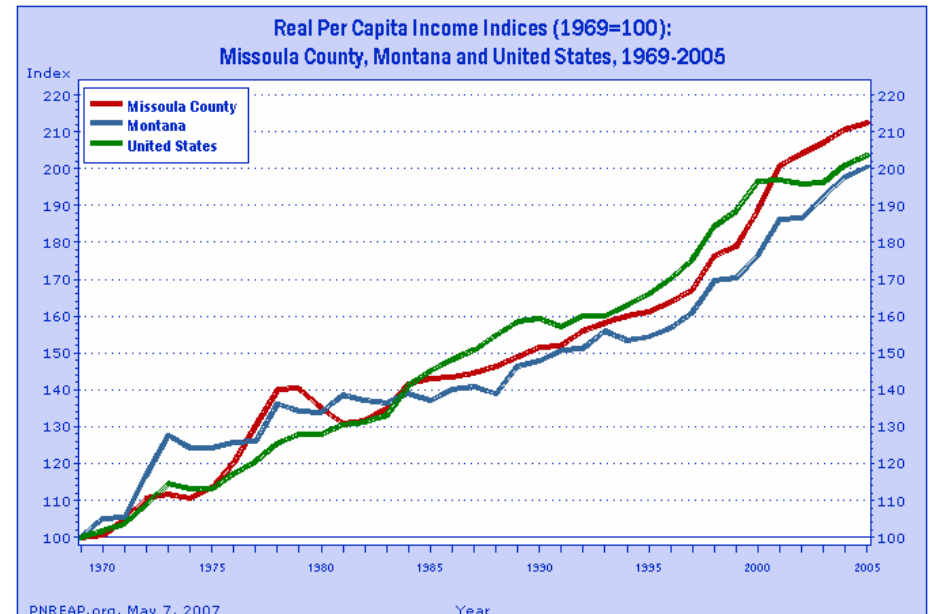


Figure 2.

The long-term growth of Missoula County's real per capita income is compared with that of Montana and the nation in Figure 2. Cumulative growth indices express each region's real per capita income as 100 for the base year 1969, and the per capita income of subsequent years as a percent of 1969. These indices allow a direct comparison of the differences in cumulative growth in per capita income for Missoula County, Montana, and the nation.

Missoula County's real per capita income climbed 112.4% over 1969-2005, surpassed the gain by Montana (100.4%), and outpaced the increase nationally (103.6%).

# PNREAP Snippets from the Graphic Trends Module – Missoula County, Montana

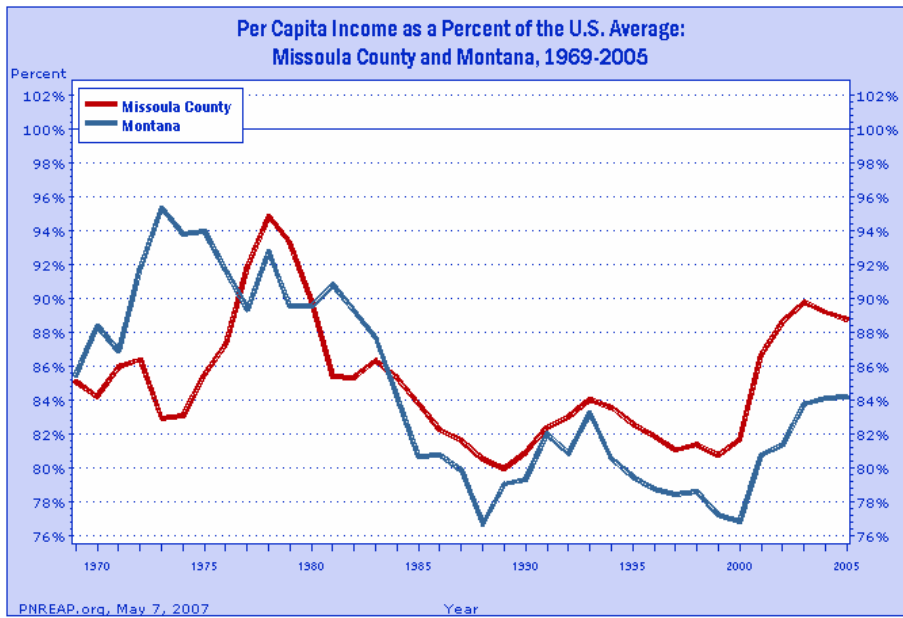


Figure 3.

Figure 3 highlights Missoula County and Montana per capita income relative to national trends by tracking their per capita incomes as a percent of the national average over 1969-2005.

In 1969, Missoula County's per capita income amounted to 85.09% of the national average; in 2005, it comprised 88.79%. Similarly, in 1969, Montana's per capita income totaled 85.48% of the national average; in 2005 it consisted of 84.17%.

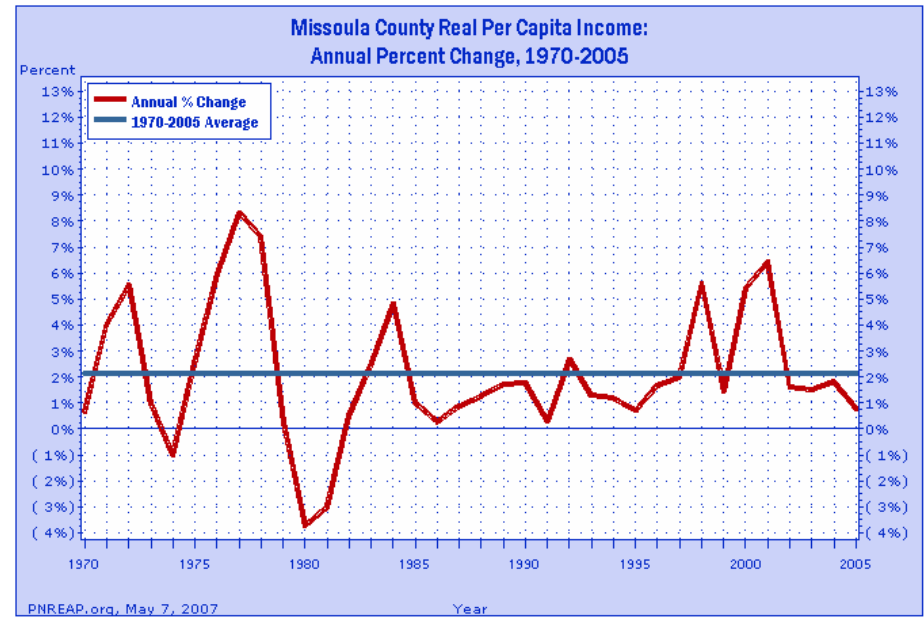


Figure 4.

Figure 4 highlights the short-run pattern of growth in Missoula County's real per capita income by tracking its percent change year-to-year since 1969. The overall average annual percent change for the 37-year period is plotted to serve as a reference for identifying periods of relative high- and relative low-growth against the long-term trend.

Missoula County's real per capita income grew on average at an annual rate of 2.15% over 1969-2005.



# PNREAP Snippets from the Graphic Trends Module – Missoula County, Montana

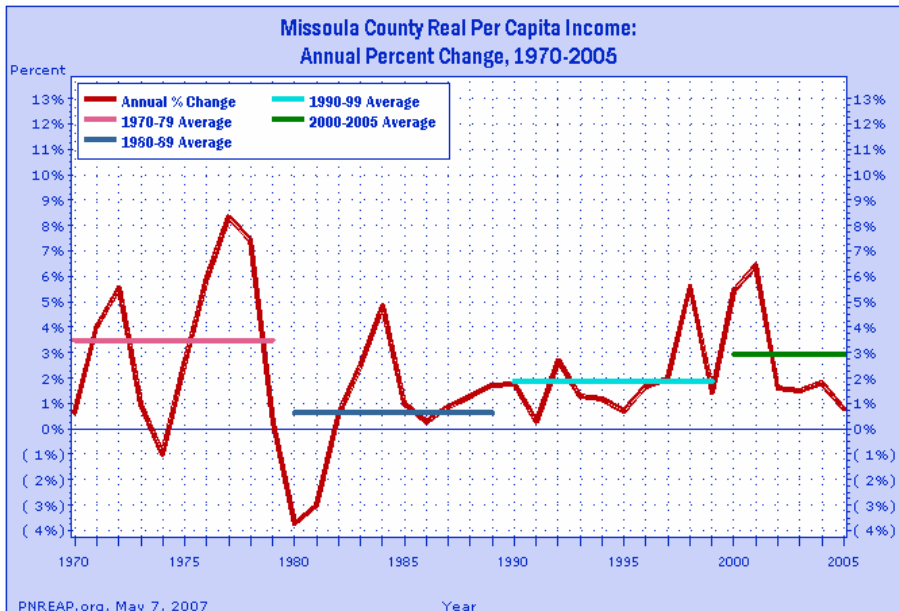


Figure 5.

Over the past three decades, some counties, regions and states have experienced extreme swings in growth, and often such swings have tended to be partitioned about the decades themselves. Figure 5 again traces the annual percent changes in Missoula County's real per capita income since 1969, but this time they are displayed with average growth rates for the decade of the 1970s, 1980s, 1990s, and 2000-2005.

During the 1970s, growth rate of Missoula County's real per capita income averaged 3.49%. It averaged 0.63% during the 1980s, 1.86% in the 1990s, and 2.92% thus far this decade (2000-2005).

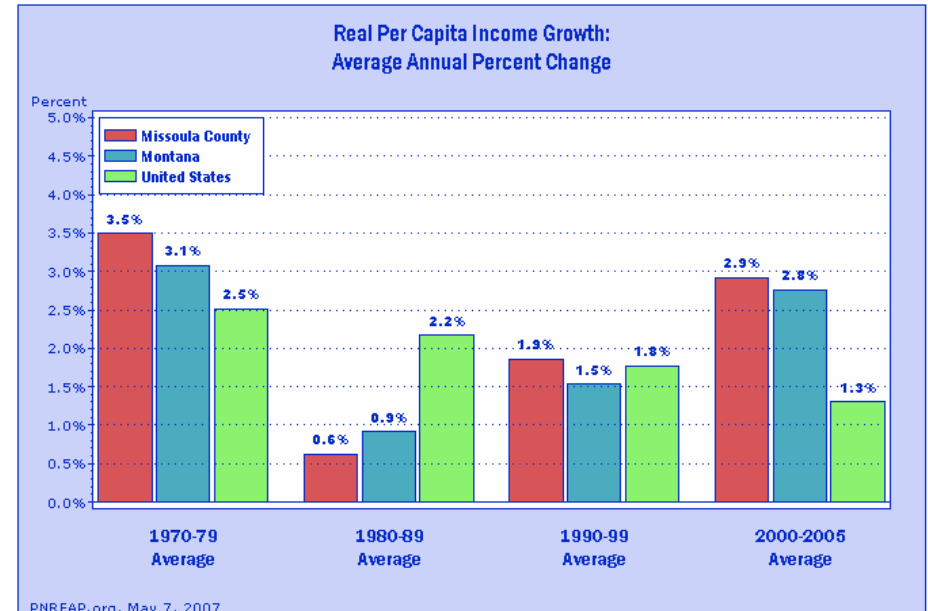


Figure 6.

Figure 6 compares the decade average growth rates for Missoula County noted in the previous graph with the corresponding decade averages for Montana and the nation. As the chart reveals, Missoula County's average annual real per capita income growth outpaced Montana's average during the 1970s (3.49% vs. 3.08%), trailed Montana's average during the 1980s (0.63% vs. 0.91%), topped Montana's average during the 1990s (1.86% vs. 1.54%), and equaled higher than Montana's average over the 6 year period for this decade, 2000-2005 (2.92% vs. 2.76%).

Relative to nationwide real per capita income growth trends, Missoula County led the nation during the 1970s (3.49% vs. 2.51%), trailed the nation in the 1980s (0.63% vs. 2.17%), exceeded the nation in the 1990s (1.86% vs. 1.77%), and tallied over the nation from 2000-2005 (2.92% vs. 1.30%).

Real Per Capita Income Growth: Average Annual Percent Change					
	1970-2005	1970-79	1980-89	1990-99	2000-2005
Missoula County:	2.15%	3.49%	0.63%	1.86%	2.92%
Montana:	2.00%	3.08%	0.91%	1.54%	2.76%
United States:	2.01%	2.51%	2.17%	1.77%	1.30%

# PNREAP Snippets from the Comparative Indicators Module – Montana



## Comparative Economic Indicators

1969-2005



- California
- Idaho
- Montana

- Graphic Trend Analysis
- Comparative Economic Indicators**
- Major Components of Personal Income
- Shift-Share Analysis
- Industry Analysis
- Selected Economic Indicators
- Personal Income by Major Source
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**Comparative Economic Indicators, 1969-2005** - In contrast to the Selected Economic Indicators tables that trace changes for individual counties year-over-year, the maps and tables generated by this PNREAP module compare the growth and relative standing of all counties and regions in terms of per capita income, population, total personal income, employment, total industry earnings, and average earnings per job.

**Ranking By County:**

- Population
- Personal Income
- Per Capita Income
- Employment
- Total Industry Earnings
- Average Earnings Per Job

1999 vs. 2005

**Generate & Display Output**

**Growth by County and Region, 1970-2005:**

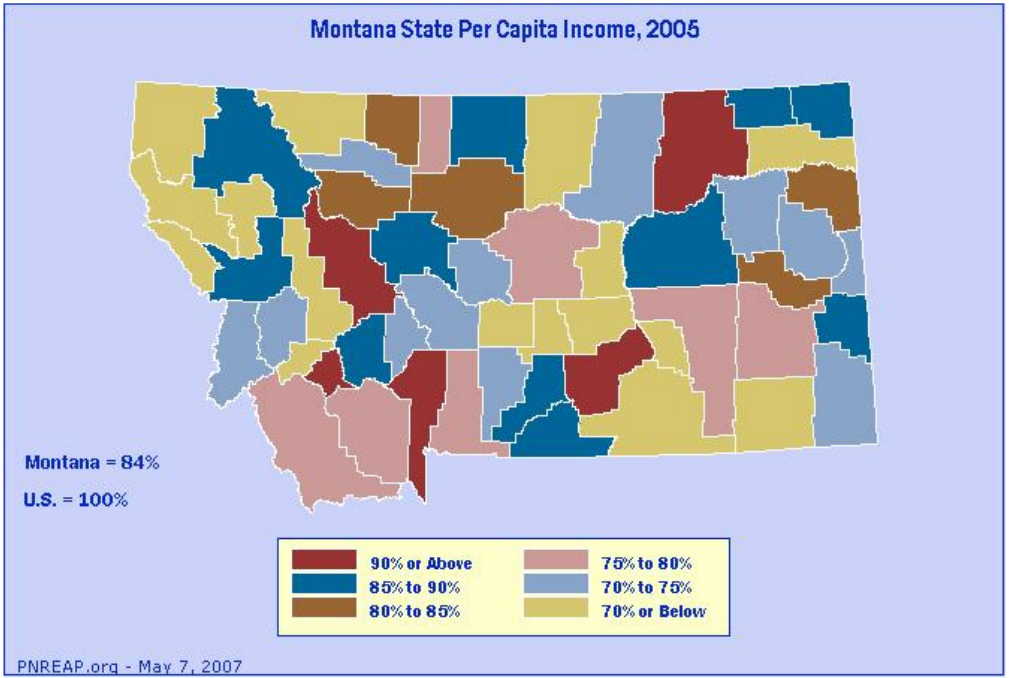
- Population
- Personal Income
- Per Capita Income
- Employment
- Total Industry Earnings
- Average Earnings Per Job

**Generate & Display Output**

# PNREAP Snippets from the Comparative Indicators Module – Montana

Select a measurement and then click on the preferred year:

Actual
  Percent of U.S. Average



### Montana Per Capita Income by County and Region: 2005 vs. 1999 (Current Dollars)

County	2005				1999				1999 - 2005	
	Per Capita Income	Difference from U.S. Average	Percent of State	Rank	Per Capita Income	Difference from U.S. Average	Percent of State	Rank	Change	Rank Change
Yellowstone	33,215	-1,256	96.36	1	24,774	-3,165	88.67	2	8,441	1
Gallatin	32,434	-2,037	94.09	2	23,138	-4,801	82.82	7	9,296	5
Valley	31,328	-3,143	90.88	3	23,247	-4,692	83.21	6	8,081	3
Silver Bow	31,324	-3,147	90.87	4	21,648	-6,291	77.48	13	9,676	9
Lewis and Clark	31,151	-3,320	90.37	5	23,986	-3,953	85.85	3	7,165	-2
Cascade	30,647	-3,824	88.91	6	23,276	-4,663	83.31	5	7,371	-1
Missoula	30,608	-3,863	88.79	7	22,564	-5,375	80.76	10	8,044	3
Stillwater	30,582	-3,889	88.72	8	21,782	-6,157	77.96	12	8,800	4
Fallon	30,425	-4,046	88.26	9	20,281	-7,658	72.59	27	10,144	18
Garfield	30,103	-4,368	87.33	10	21,471	-6,468	76.85	16	8,632	6
Flathead	30,008	-4,463	87.05	11	22,164	-5,775	79.33	11	7,844	0
Carbon	29,493	-4,978	85.56	12	22,825	-5,114	81.70	9	6,668	-3
Jefferson	29,488	-4,983	85.54	13	22,929	-5,010	82.07	8	6,559	-5
Sheridan	29,373	-5,098	85.21	14	23,728	-4,211	84.93	4	5,645	-10
Daniels	29,363	-5,118	85.15	15	28,249	310	101.11	1	1,104	-14
Hill	29,348	-5,123	85.14	16	21,269	-6,670	76.13	17	8,079	1
Prairie	29,269	-5,202	84.91	17	21,524	-6,415	77.04	14	7,745	-3
Richland	29,112	-5,359	84.45	18	21,052	-6,887	75.35	18	8,060	0
Toole	28,161	-6,310	81.69	19	21,516	-6,423	77.01	15	6,645	-4
Teton	27,679	-6,792	80.30	20	20,584	-7,355	73.67	20	7,095	0
Chouteau	27,610	-6,861	80.10	21	21,049	-6,890	75.34	19	6,561	-2
Fergus	27,436	-7,035	79.59	22	20,106	-7,833	71.96	30	7,330	8
Beaverhead	27,382	-7,089	79.43	23	20,164	-7,775	72.17	29	7,218	6
Rosebud	27,374	-7,097	79.41	24	20,517	-7,422	73.43	21	6,857	-3
Madison	27,181	-7,290	78.85	25	18,587	-9,352	66.53	37	8,594	12
Park	26,745	-7,726	77.59	26	20,478	-7,461	73.30	24	6,267	-2
Liberty	26,471	-8,000	76.79	27	20,180	-7,769	72.23	28	6,291	1
Custer	26,240	-8,231	76.12	28	20,404	-7,535	73.03	25	5,836	-3
Wibaux	25,742	-8,729	74.68	29	17,920	-10,019	64.14	41	7,822	12
Sweet Grass	25,402	-9,069	73.69	30	19,383	-8,556	69.38	32	6,019	2
Pondera	25,286	-9,185	73.35	31	19,613	-8,326	70.20	31	5,673	0
McCone	25,224	-9,247	73.17	32	20,499	-7,440	73.37	23	4,725	-9
Carter	25,209	-9,262	73.13	33	19,139	-8,800	68.50	33	6,070	0
Meagher	24,785	-9,686	71.90	34	20,514	-7,425	73.42	22	4,271	-12
Ravalli	24,758	-9,713	71.82	35	18,764	-9,175	67.16	36	5,994	1
Dawson	24,714	-9,757	71.70	36	20,307	-7,632	72.68	26	4,407	-10
Granite	24,652	-9,819	71.52	37	18,914	-9,025	67.70	34	5,738	-3
Judith Basin	24,537	-9,934	71.18	38	18,219	-9,720	65.21	40	6,318	2
Broadwater	24,398	-10,073	70.78	39	18,857	-9,082	67.49	35	5,541	-4
Phillips	24,156	-10,315	70.08	40	17,288	-10,651	61.88	44	6,868	4
Deer Lodge	23,945	-10,526	69.46	42	18,543	-9,396	66.37	38	5,402	-4
Treasure	23,945	-10,526	69.46	42	16,999	-10,940	60.84	47	6,946	6
Powder River	22,826	-11,645	66.22	43	18,389	-9,550	65.82	39	4,437	-4
Wheatland	22,472	-11,999	65.19	44	15,065	-12,874	53.92	54	7,407	10
Glacier	22,091	-12,380	64.09	45	15,077	-12,862	53.96	53	7,014	8
Petroleum	22,058	-12,413	63.99	46	17,164	-10,775	61.43	45	4,894	-1
Mineral	22,057	-12,414	63.99	47	15,823	-12,116	56.63	50	6,234	3
Lincoln	21,769	-12,702	63.15	48	16,601	-11,338	59.42	49	5,168	1
Lake	21,726	-12,745	63.03	49	17,494	-10,446	62.61	43	4,232	-6
Golden Valley	21,640	-12,831	62.78	50	17,094	-10,845	61.18	46	4,546	-4
Powell	21,624	-12,847	62.73	51	16,795	-11,144	60.11	48	4,829	-3
Musselshell	21,215	-13,266	61.54	52	14,880	-13,059	53.26	55	6,335	3
Blaine	20,893	-13,578	60.61	53	15,303	-12,636	54.77	52	5,590	-1
Big Horn	20,866	-13,605	60.53	54	14,427	-13,512	51.64	56	6,439	2
Roosevelt	20,755	-13,716	60.21	55	17,535	-10,404	62.76	42	3,220	-13
Sanders	20,164	-14,307	58.50	56	15,717	-12,222	56.25	51	4,447	-5
Montana	29,015	-5,456	84.17		21,595	-6,354	77.26		7,430	
Metro	31,676	-2,795	91.89		23,662	-4,277	84.69		8,014	
Nonmetro	27,591	-6,880	80.04		20,469	-7,470	73.26		7,122	
United States	34,471	0	100.00		27,939	0	100.00		6,532	
Metro	36,140	1,669	104.84		29,402	1,463	105.24		6,738	
Nonmetro	26,161	-8,310	75.89		20,974	-6,965	75.07		5,187	

Source: U.S. Department of Commerce, Bureau of Economic Analysis and calculations by the author.  
Prepared by Gary W. Smith, Economist and PNREAP Director.



# PNREAP Snippets from the Major Components Module – Ravalli County, Montana



## Major Components of Personal Income

1969-2005



- California
- Idaho
- Montana

- Graphic Trend Analysis
- Comparative Economic Indicators
- Major Components of Personal Income**
- Shift-Share Analysis
- Industry Analysis
- Selected Economic Indicators
- Personal Income by Major Source
- Full & Part-Time Employment
- Transfer Payments
- BEARFACTS (BEA Regional Facts)

- Nevada
- Oregon
- Washington
- United States

- Upcoming Conferences
- PNREC Outlook Presentations
- PNREAP/BEA Workshops



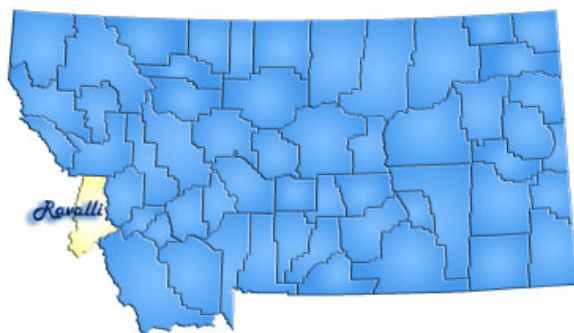
**Understanding Growth and Change Among the Major Components of Personal Income: Earned Income, Property income and Transfer Payments, 1969-2005.** Unless there is a sound understanding of the make-up of local personal income, and an awareness of how each components has grown or declined in relative importance over time, one can not gauge or appreciate the underlying character or complexion of growth and change of the local economy. This web page is for monitoring and analyzing the changing composition of local area personal income.

- ### Major Components of Personal Income
- |                                   |                              |
|-----------------------------------|------------------------------|
| <a href="#">Beaverhead</a>        | <a href="#">Madison</a>      |
| <a href="#">Big Horn</a>          | <a href="#">Meagher</a>      |
| <a href="#">Blaine</a>            | <a href="#">Mineral</a>      |
| <a href="#">Broadwater</a>        | <a href="#">Missoula</a>     |
| <a href="#">Carbon</a>            | <a href="#">Musselshell</a>  |
| <a href="#">Carter</a>            | <a href="#">Park</a>         |
| <a href="#">Cascade</a>           | <a href="#">Petroleum</a>    |
| <a href="#">Chouteau</a>          | <a href="#">Phillips</a>     |
| <a href="#">Custer</a>            | <a href="#">Pondera</a>      |
| <a href="#">Daniels</a>           | <a href="#">Powder River</a> |
| <a href="#">Dawson</a>            | <a href="#">Powell</a>       |
| <a href="#">Deer Lodge</a>        | <a href="#">Prairie</a>      |
| <a href="#">Fallon</a>            | <a href="#">Ravalli</a>      |
| <a href="#">Fergus</a>            | <a href="#">Richland</a>     |
| <a href="#">Flathead</a>          | <a href="#">Roosevelt</a>    |
| <a href="#">Gallatin</a>          | <a href="#">Rosebud</a>      |
| <a href="#">Garfield</a>          | <a href="#">Sanders</a>      |
| <a href="#">Gallatin</a>          | <a href="#">Sheridan</a>     |
| <a href="#">Golden Valley</a>     | <a href="#">Silver Bow</a>   |
| <a href="#">Granite</a>           | <a href="#">Stillwater</a>   |
| <a href="#">Hill</a>              | <a href="#">Sweet Grass</a>  |
| <a href="#">Jefferson</a>         | <a href="#">Teton</a>        |
| <a href="#">Judith Basin</a>      | <a href="#">Toole</a>        |
| <a href="#">Lake</a>              | <a href="#">Treasure</a>     |
| <a href="#">Lewis &amp; Clark</a> | <a href="#">Valley</a>       |
| <a href="#">Liberty</a>           | <a href="#">Wheatland</a>    |
| <a href="#">Lincoln</a>           | <a href="#">Wibaux</a>       |
| <a href="#">McCone</a>            | <a href="#">Yellowstone</a>  |
- [Metropolitan Montana](#)
- [Nonmetropolitan Montana](#)



# PNREAP Snippets from the Major Components Module – Ravalli County, Montana

## PNREAP Analysis of Growth and Change Among the Major Components of Personal Income within Ravalli County: 1969-2005



### Briefing Report Outline:

1. [Table 1 - Earned Income and Property Income: Ravalli County, 1969 - 2005](#)
2. [Table 2 - Transfer Payments and Total Personal Income: Ravalli County, 1969 - 2005](#)
3. [Introduction](#)
4. [Graph - Major Components of Personal Income: Ravalli County, 1969-2005](#)
5. [Graph - Major Income Components as a Percent of Total Personal Income](#)
6. [Graph - Income Growth Indices, Ravalli County, 1969-2005](#)
7. [Graph - Major Income Components as a Percent of Total Personal Income: Ravalli County, 1969-2005](#)
8. [Graph - Shifts in Share of Total Personal Income among Major Income Components](#)
9. [Graph - Earned Income as a Percent of Total Personal Income: Ravalli County, Montana, and U.S.](#)
10. [Graph - Earned Income by Place of Residence: vs. Place of Work](#)
11. [Graph - Property Income as a Percent of Total Personal Income: Ravalli County, Montana, and U.S.](#)
12. [Graph - Transfer Payments as a Percent of Total Personal Income: Ravalli County, Montana, and U.S.](#)
13. [Graph - Indices of Structural Change among the Major Components of Income](#)
14. [Graph - Major Components Contributions to Real Total Personal Income Growth](#)
15. [Graph - 2005 vs. 1969 and Component Contributions to Real Income Growth, 1969-2005: Ravalli County](#)

### Major Components of Personal Income: Earned Income and Property Income Ravalli County, Montana (1969-2005)

Year	Earned Income				Property Income			
	Current Dollars (1,000s)	2000 Dollars <sup>1</sup> (1,000s)	Index <sup>2</sup>	Percent Change <sup>1</sup> of Total Income	Current Dollars (1,000s)	2000 Dollars <sup>1</sup> (1,000s)	Index <sup>2</sup>	Percent Change <sup>1</sup> of Total Income
1969	26,181	103,667	100.0	.	8,136	32,215	100.0	.
1970	27,813	105,161	101.4	1.44	9,934	37,560	116.6	16.59
1971	31,346	113,680	109.7	8.10	10,998	39,885	123.8	6.19
1972	38,088	133,511	128.8	17.44	12,558	44,020	136.6	10.37
1973	42,936	142,735	137.7	6.91	15,396	51,182	158.9	16.27
1974	49,358	148,709	143.4	4.19	18,724	56,413	175.1	10.22
1975	48,691	135,422	130.6	-8.93	21,291	59,216	183.8	4.97
1976	57,974	152,772	147.4	12.81	23,500	61,927	192.2	4.58
1977	66,480	164,464	158.6	7.65	27,296	67,548	209.7	9.08
1978	80,033	185,056	178.5	12.52	32,926	76,133	236.3	12.71
1979	88,438	187,930	181.3	1.55	40,509	86,081	267.2	13.07
1980	92,593	177,797	171.5	-5.39	48,822	93,748	291.0	8.91
1981	95,035	167,551	161.6	-5.76	59,625	105,122	326.3	12.13
1982	96,404	161,052	155.4	-3.88	66,633	111,317	345.5	5.89
1983	105,929	169,660	163.7	5.35	70,815	113,420	352.1	1.89
1984	119,774	184,851	178.3	8.95	77,525	119,647	371.4	5.49
1985	128,827	192,463	185.7	4.12	80,849	120,786	374.9	0.95
1986	136,282	198,752	191.7	3.27	82,340	120,083	372.8	-0.58
1987	141,173	198,984	191.9	0.12	81,890	115,424	358.3	-3.88
1988	147,711	200,273	193.2	0.65	85,546	115,987	360.0	0.49
1989	154,782	201,089	194.0	0.41	93,644	121,660	377.6	4.89
1990	168,504	209,327	201.9	4.10	102,236	127,004	394.2	4.39
1991	187,338	224,575	216.6	7.28	108,230	129,743	402.7	2.16
1992	212,172	247,218	238.5	10.08	115,895	135,038	419.2	4.08
1993	236,899	269,804	260.3	9.14	120,804	137,584	427.1	1.89
1994	257,915	287,678	277.5	6.62	133,466	148,868	462.1	8.20
1995	270,124	294,969	284.5	2.53	142,511	155,619	483.1	4.53
1996	292,551	312,732	301.7	6.02	150,640	161,031	499.9	3.48
1997	304,913	320,543	309.2	2.50	165,672	174,164	540.6	8.16
1998	332,768	346,713	334.4	8.16	181,386	188,987	586.6	8.51
1999	359,319	368,249	355.2	6.21	180,410	184,894	573.9	-2.17
2000	401,747	401,747	387.5	9.10	193,000	193,000	599.1	4.38
2001	460,668	451,219	435.3	12.31	215,433	211,014	655.0	9.33
2002	461,978	446,174	430.4	-1.12	213,624	206,316	640.4	-2.23
2003	479,290	453,886	437.8	1.73	239,201	226,523	703.1	9.79
2004	517,844	477,835	460.9	5.28	235,770	217,554	675.3	-3.96
2005	552,800	495,816	478.3	3.76	237,342	212,876	660.8	-2.15

<sup>1</sup> 2000 constant dollar estimates determined using the chain-weight Implicit Price Deflator for Personal Consumption.

<sup>2</sup> Values are expressed as 100% for 1969 (2000 Dollars) and as a percent of 1969 for the following years.

Source: U.S. Department of Commerce, Bureau of Economic Analysis and calculations by the author.  
Prepared by Gary W. Smith, Economist and PNREAP Director.

# PNREAP Snippets from the Major Components Module – Ravalli County, Montana

## Major Components of Personal Income: Transfer Payments and Total Personal Income Ravalli County, Montana (1969-2005)

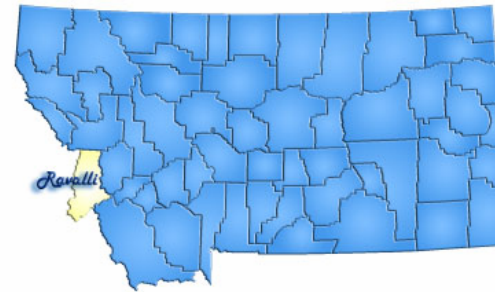
Year	Transfer Payments				Total Personal Income				
	Current Dollars (1,000s)	2000 Dollars <sup>1</sup> (1,000s)	Index <sup>2</sup>	Percent Change <sup>1</sup> (2000 \$s)	Percent of Total Income	Current Dollars (1,000s)	2000 Dollars <sup>1</sup> (1,000s)	Index <sup>2</sup>	Percent Change <sup>1</sup> (2000 \$s)
1969	5,096	20,178	100.0	.	12.9	39,413	156,060	100.0	.
1970	6,156	23,276	115.4	15.35	14.0	43,903	165,997	106.4	6.37
1971	7,186	26,061	129.2	11.96	14.5	49,530	179,626	115.1	8.21
1972	8,090	28,358	140.5	8.82	13.8	58,736	205,889	131.9	14.62
1973	9,551	31,751	157.4	11.96	14.1	67,883	225,667	144.6	9.61
1974	11,291	34,018	168.6	7.14	14.2	79,373	239,140	153.2	5.97
1975	13,974	38,865	192.6	14.25	16.6	83,956	233,503	149.6	-2.36
1976	15,510	40,872	202.6	5.16	16.0	96,984	255,571	163.8	9.45
1977	16,844	41,683	206.6	1.98	15.2	110,600	273,695	175.4	7.09
1978	18,671	43,172	214.0	3.57	14.2	131,630	304,361	195.0	11.20
1979	21,834	46,397	229.9	7.47	14.5	150,781	320,408	205.3	6.27
1980	26,657	51,187	253.7	10.32	15.9	168,072	322,731	206.8	0.72
1981	32,036	56,481	279.9	10.34	17.2	186,696	329,154	210.9	1.99
1982	35,468	59,253	293.6	4.91	17.9	198,505	331,621	212.5	0.75
1983	38,299	61,341	304.0	3.52	17.8	215,043	344,421	220.7	3.86
1984	42,514	65,613	325.2	6.96	17.7	239,813	370,110	237.2	7.46
1985	45,982	68,695	340.4	4.70	18.0	255,658	381,944	244.7	3.20
1986	49,404	72,050	357.1	4.88	18.4	268,026	390,885	250.5	2.34
1987	51,990	73,280	363.2	1.71	18.9	275,053	387,688	248.4	-0.82
1988	55,441	75,169	372.5	2.58	19.2	288,698	391,428	250.8	0.96
1989	60,948	79,182	392.4	5.34	19.7	309,374	401,931	257.5	2.68
1990	68,030	84,511	418.8	6.73	20.1	338,770	420,843	269.7	4.71
1991	73,854	88,534	438.8	4.76	20.0	369,422	442,851	283.8	5.23
1992	82,739	96,405	477.8	8.89	20.1	410,806	478,661	306.7	8.09
1993	91,964	104,738	519.1	8.64	20.5	449,667	512,126	328.2	6.99
1994	94,353	105,241	521.6	0.48	19.4	485,734	541,787	347.2	5.79
1995	102,274	111,681	553.5	6.12	19.9	514,909	562,269	360.3	3.78
1996	111,064	118,725	588.4	6.31	20.0	554,255	592,488	379.7	5.37
1997	114,916	120,807	598.7	1.75	19.6	585,501	615,513	394.4	3.89
1998	119,988	125,016	619.6	3.48	18.9	634,142	660,716	423.4	7.34
1999	122,838	125,891	623.9	0.70	18.5	662,567	679,034	435.1	2.77
2000	138,900	138,900	688.4	10.33	18.9	733,647	733,647	470.1	8.04
2001	150,997	147,900	733.0	6.48	18.3	827,098	810,134	519.1	10.43
2002	160,060	154,585	766.1	4.52	19.2	835,662	807,075	517.2	-0.38
2003	168,660	159,720	791.6	3.32	19.0	887,151	840,129	538.3	4.10
2004	180,075	166,162	823.5	4.03	19.3	933,689	861,551	552.1	2.55
2005	195,755	175,576	870.1	5.67	19.9	985,897	884,268	566.6	2.64

<sup>1</sup> 2000 constant dollar estimates determined using the chain-weight Implicit Price Deflator for Personal Consumption.

<sup>2</sup> Values are expressed as 100% for 1969 (2000 Dollars) and as a percent of 1969 for the following years.

Source: U.S. Department of Commerce, Bureau of Economic Analysis and calculations by the author. Prepared by Gary W. Smith, Economist and PNREAP Director.

### Introduction

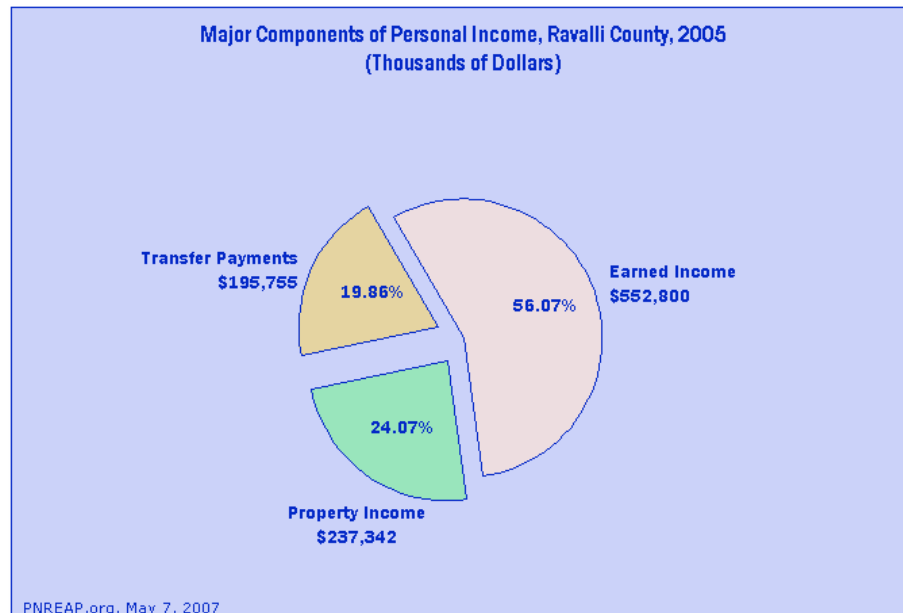


Paralleling a nationwide trend, the composition of Ravalli County's total personal income has undergone dramatic change over the past three decades. With few exceptions, transfer payments and property income have increased in their importance, while labor-related earned income declined in relative share. But within this trend there notable and sometimes very extreme differences among individual counties and regions as to the extent of the shift in the composition of personal income among the three income components.

The annual total personal incomes estimates compiled by the *Bureau of Economic Analysis*, (BEA) are among the most comprehensive, consistent, comparable and timely measures of economic activity available on the county and statewide level. Personal income estimates are also the best available local level indicator of general purchasing power, and are therefore central to tracking and comparing county patterns of economic growth and change. Yet, unless there is understanding of the degree and magnitude of the pattern of growth and shifting composition among the three major components that underlie total personal income one cannot gauge or appreciate the underlying character of income as a barometer for the economic performance of the local economy. This report offers a comparative perspective by examining the changing structure and composition of Ravalli County's personal income in relation to the state and nation at large.

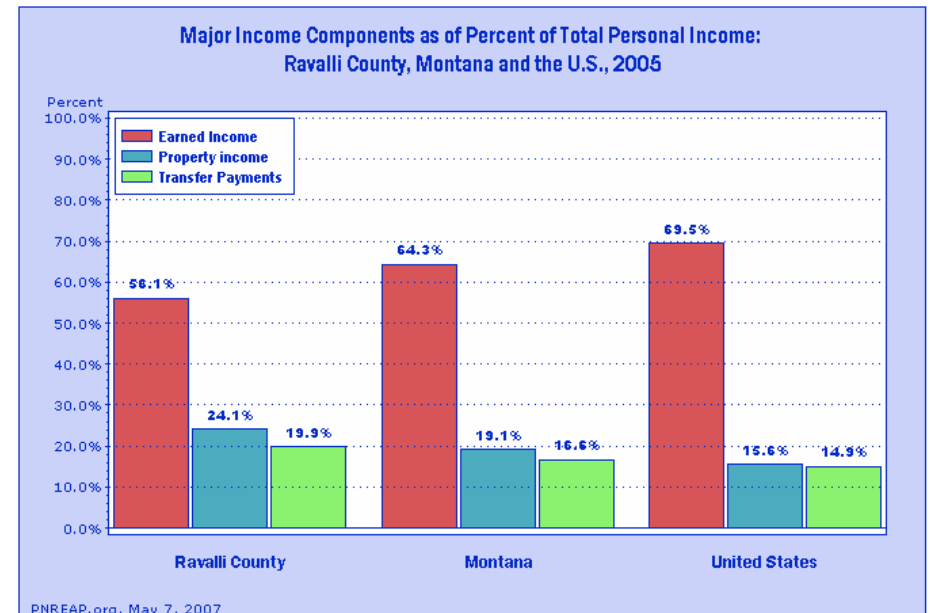
**Earned income** can be view as compensation for labor services. **Property income** represents payments in the form of dividends, interest and rent for the services of capital owned by persons. In contrast to the other two components of income, **Transfer Payments** are by definition payments that are not related to the provision of services. Various aspects of each income component will be further defined and explained as this discussion and analysis unfolds.

# PNREAP Snippets from the Major Components Module – Ravalli County, Montana



PNREAP.org, May 7, 2007  
Figure 1.

Figure 1 depicts the composition of Ravalli County's personal income among the three major components for 2005. Net earnings amounted to \$552,800,000 or 56.1% of total personal income; property income totaled \$237,342,000 or 24.1%, and transfer payments summed to \$195,755,000 comprising 19.9% of Ravalli County's personal income in 2005. For every \$100 of personal income that accrued to the residents of Ravalli County in 2005, about \$44 derived from property income and transfer payments.



PNREAP.org, May 7, 2007  
Figure 2.

What are the differences in personal income composition between Ravalli County, Montana and the United States? Figure 2 illustrates three major income components—earned income, property income, and transfer payments as a percent of total personal income. The share of Ravalli County's personal income that originates as property income (24.1%) is above the share nationally (15.6%). The share of Ravalli County's personal income that stems from transfer payments (19.9%) is above the national average (14.9%).

In combination, property income and transfer payments amounted to 43.9% (24.1% + 19.9%) of Ravalli County's income in 2005. Earned income made up the balance (56.1%) of personal income, which amounted to a substantially smaller share than the corresponding 69.5% for earned income nationwide.

# PNREAP Snippets from the Major Components Module – Ravalli County, Montana

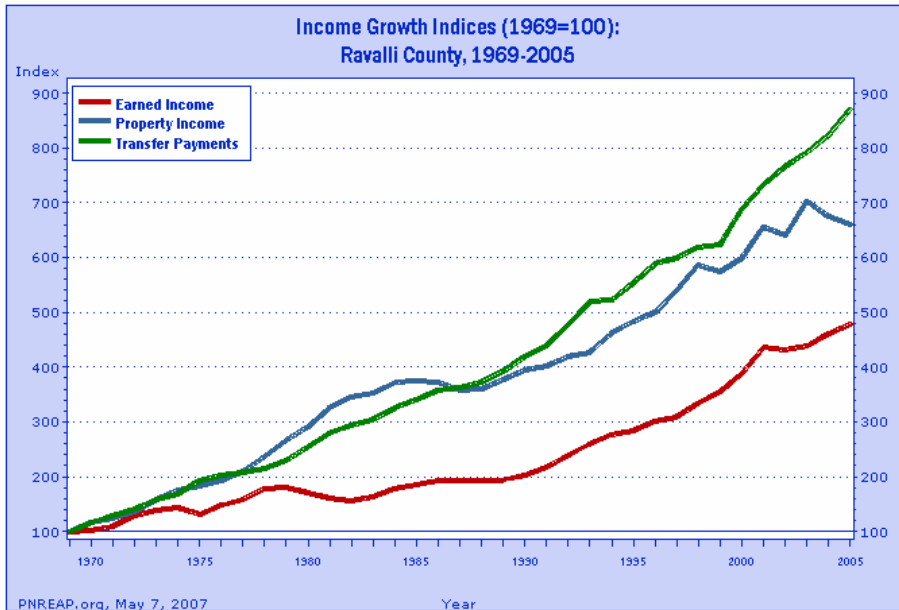


Figure 3.

One of the key objectives of this report is to highlight the growing importance over the past several decades of property income and transfer payments and to illustrate their emergence as more prominent components of local area personal income. Figure 3 compares the real (that is, removing the effects of inflation) cumulative growth of the three major components of personal income for Ravalli County over 1969-2005. The cumulative growth indices express each income component as 100 for the base year of 1969, and represent each component in subsequent years as a percent of their level in 1969. The indices enable a direct comparison of the differences in the cumulative percentage growth of the earned income, property income, and transfer payments for Ravalli County over more than three decades.

Over the 1969-2005 period, earned income in Ravalli County grew by 378.3%. Property income, however, increased by 560.8%, while transfer payments rose 770.1%. As a general rule, the growth of property income and transfer payments outpaced the growth of earned income. As a result, earned income declined as a share of total personal income, while property income and transfer payments increased.

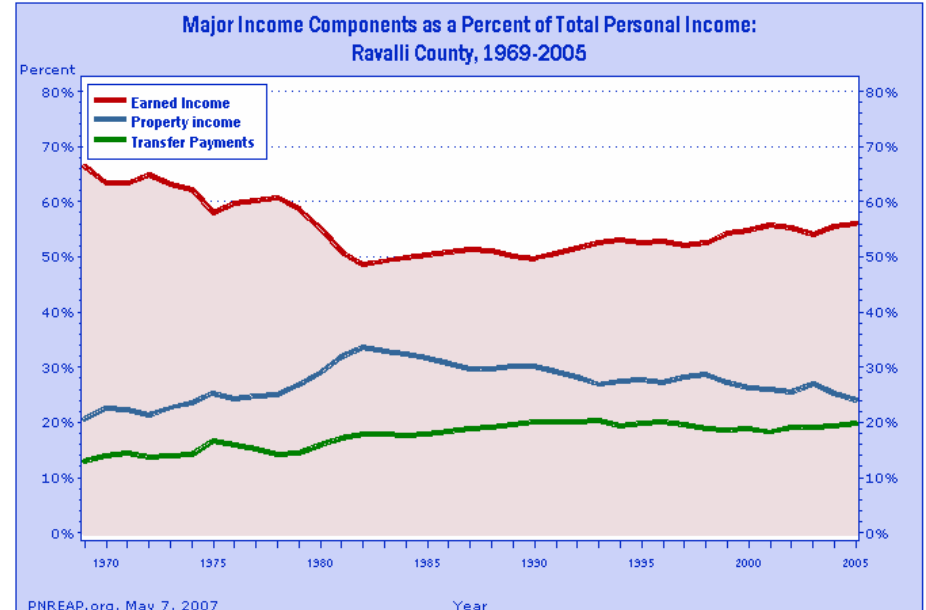


Figure 4.

While the previous graph illustrates the degree of growth among the three major components of personal income, the above figure traces their changing share and relative importance over time. Differences in growth among the three components income translates the changes in their relative share as shown here. Earned income as a share of Ravalli County's personal income declined from 66.4% in 1969 to 56.1% in 2005, a shift in relative share of -10.3%. Offsetting this decline was a 3.5% increase in property income's share from 20.6% in 1969 to 24.1% in 2005; and a 7.0% advance in transfer payments share, from 12.9% to 19.9% over the same period.



# PNREAP Snippets from the Major Components Module – Ravalli County, Montana

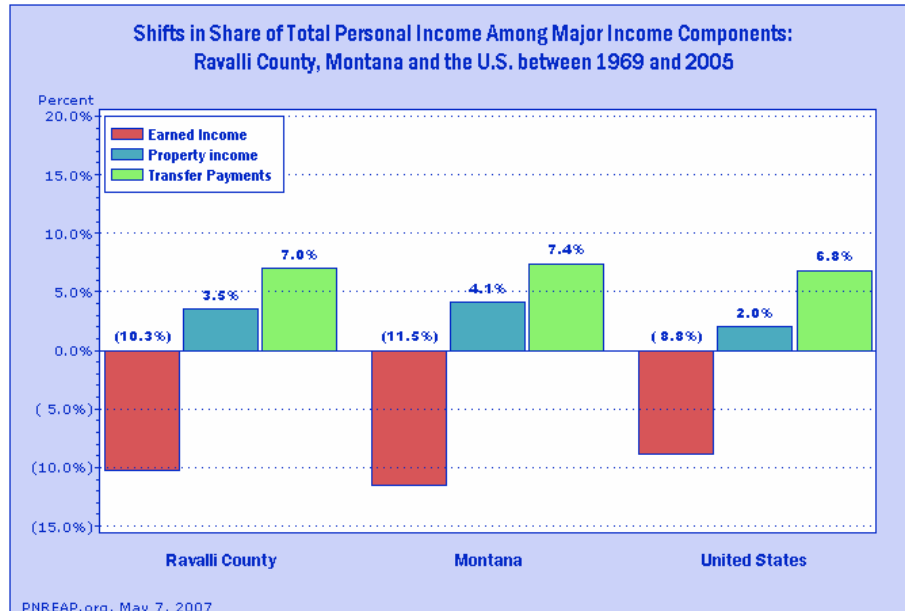


Figure 5.

How does the shift in personal income composition for Ravalli County compare with the shifts in share among the three major components for Montana and the United States over 1969 to 2005? In the above figure, earned income's share statewide and nationally declined by -11.5% and -8.8%, respectively, whereas earned income's share decline by -10.3% in Ravalli County over 1969-2005. Nationally the shift in share of property income and transfer amounted to 2.0% and 6.8%, respectively, while the corresponding shifts in share in Ravalli County amounted to 3.5% and 7.0%, respectively.

When a notable increase in property income's share is observed often this associates with a county or region that experienced an influx of relatively affluent retirees.

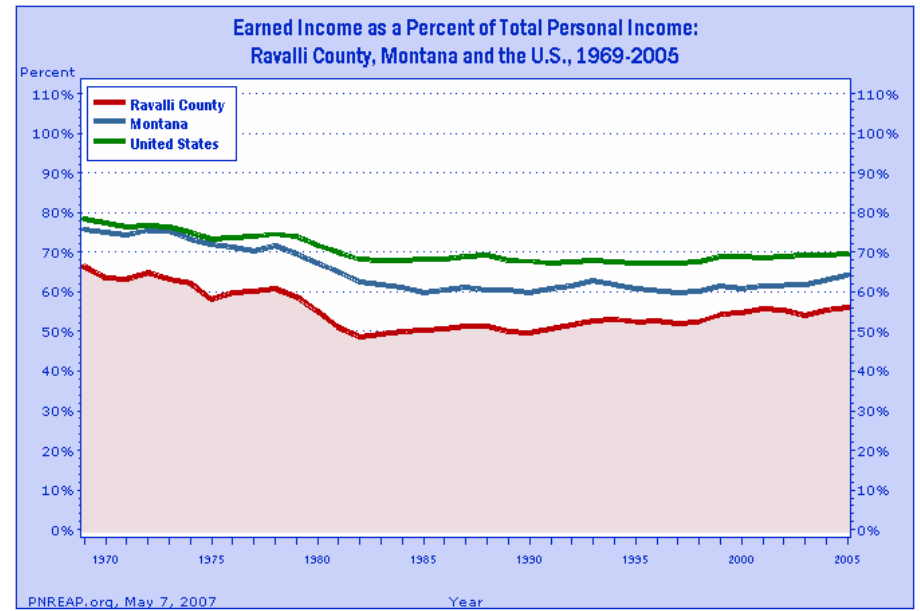


Figure 6.

Figure 6 above traces earned income as a percent of personal income for Ravalli County, the state and nation over 1969-2005. Generally, local as well as state and national earned income share declines were most prominent from 1979 to the mid-1980s.

Some localities and regions experienced pronounced short-term swings in earned income because earnings generation was concentrated in industries especially sensitive to major cyclical swings in the national economy. Mining, wood products and durable goods producing manufacturing, such as primary metal and transportation (including air and motor vehicle equipment), are among the most notable cyclically sensitive industries.

Agricultural dependent regions are especially subject to pronounced swings in earned income owing to the influence of weather on output and production, international swing in commodity prices, changes in government programs, as well as general cyclical conditions and trends. Finally, other factors that have induced abnormal short-term swings in earned income include major natural catastrophes and very large-scale private or government construction project such as the building dams and power plants.

# PNREAP Snippets from the Major Components Module – Ravalli County, Montana

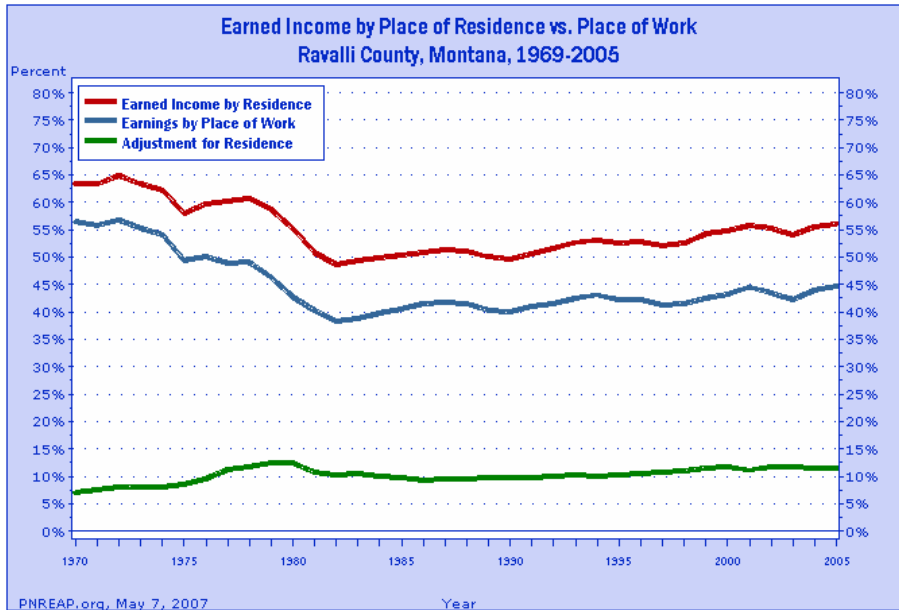


Figure 7.

Figure 7 focuses on a very important dimension of earned income that needs to be addressed and explained. Personal income, and its three major components, is intended to measure the incomes of the residents of a region. Accordingly, the earned income data reported and presented in this report are "by place of residence." But in fact, earnings data are first collected and reported as "earnings by place of work." That is, they reflect earnings on the basis of where workers work, and not on the basis of where they live. To develop an estimate of earned income based on where workers live, the *Bureau of Economic Analysis* develops an "adjustment for residence" to take into account the earnings of such intercounty commuters.

In addition to showing "earned income by place of residence" as a share of total income, Figure 7 also displays "earnings by place of work," as well as the residence adjustment which accounts for the difference between the two. This positive adjustment for residence of 11.47% as a percent of total personal income in 2005 reflects an estimated net inflow of earnings dollars owing to the overall net effect of workers commuting to and from Ravalli County in 2005. So, in 2005 11.47% of Ravalli County's personal income derived from workers who reside locally but who generated earnings from jobs held outside the county.

Put another way, the residence adjustment is a fairly significant factor in shaping the personal income of Ravalli County. For every \$100 of personal income reported for Ravalli County residents in 2005, \$11.47 derived from jobs held and earnings garnered from outside the county.

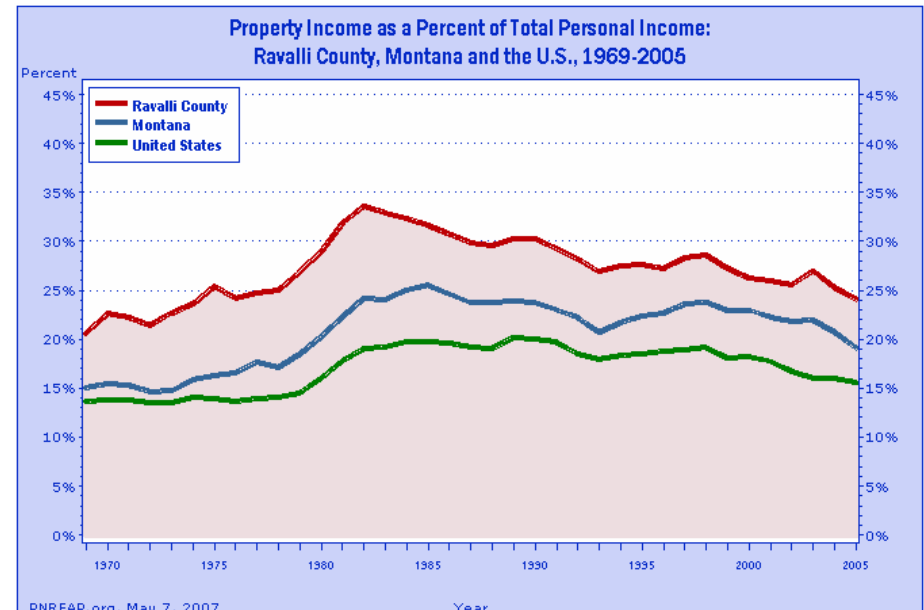


Figure 8.

Figure 8 tracks property income as a share of personal income locally, statewide and nationally over 1969-2005. Common to all three was the discernable rise and advance to another plateau in property's income share over 1979-82. This period was plagued by double-digit rates of inflation and associated double-digit rates of interest. As interest income is an important part of property income they played a leading role in the growth and rise in share of property income over 1979-82. Moreover, contained within the period 1979-82 were two back-to-back recessions. Unlike many recessions, the early 1980s recessions were widely dispersed regionally so declines in earned incomes share declines were oftentimes observed, which further served to bolster property income's share during this period.

# PNREAP Snippets from the Major Components Module – Ravalli County, Montana

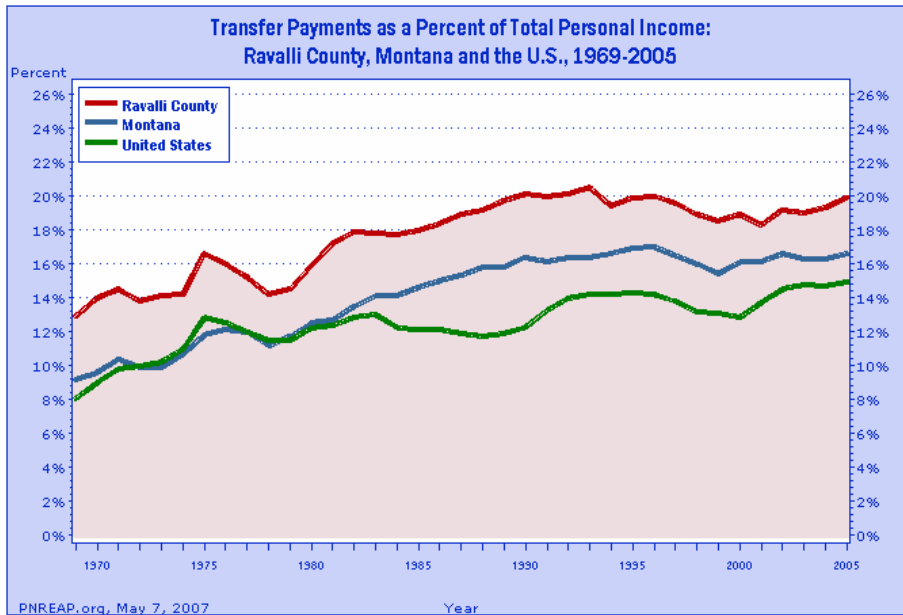


Figure 9.

People receive personal income either for participating in current production, or from transfer payments. Earned income and property income represent payments received for participating in production. Transfer payments, sometimes misleadingly referred to as "unearned income," are payments made by government to individuals "for which no current services are performed."

Compared with the trend nationwide, transfer payments have played a fairly comparable role in the changing composition of Ravalli County's personal income. Nationally, transfer payments as a share of personal income advanced from 8.07% in 1969 to 14.94% in 2005, for a net gain of 6.87%. For Ravalli County, transfer payments rose from 12.90% to 19.90% over 1969-2005, for a net gain of 7.00%.

There are vast differences in the mix of transfer payments counties receive, the particulars of which are beyond the scope of this report. As a general rule social security and government pension incomes make up the largest general category of transfer payments. Next in order of importance typically comes medical payments for such programs as Medicare, and Medicaid. Medical payments have driven much of the rapid growth in transfer payments over the past decade. Further down the scale of importance are payments for income maintenance programs such as Family Assistance, Food Stamps and Supplemental Security Income (SSI). Unemployment Insurance Payments is another category, often its relative size and importance is shaped by local economic conditions and more generally by the ebb and flow of business cycles. Finally, Veterans Benefits Payments is the remaining category of importance. Generally veteran's pension and disability payments dominate this group. You may obtain a detail tabulation of the transfer payments received by Ravalli County residents over 1969-2005 by [clicking here](#).

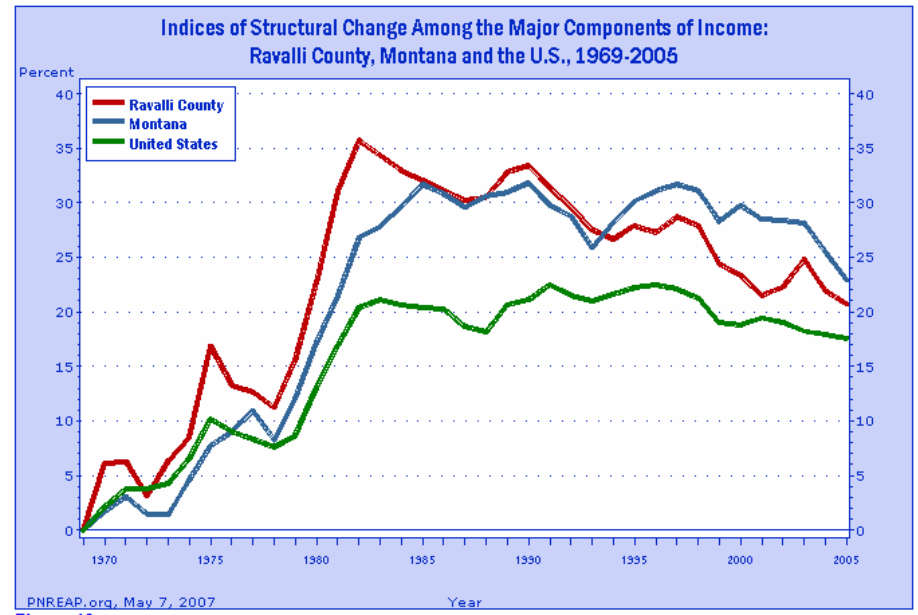


Figure 10.

Over the past several decades one of the more heralded changes that has transformed the character of our economy has been the structural shift in employment and earnings from goods-producing toward services-producing activities. Though far less widely publicized and less popularly understood, another change of major significance was the widespread shifts in the composition of personal income addressed in this briefing report.

The "index of structural change" shown in Figure 10 calibrates the timing and magnitude of change in the composition of Ravalli County's personal income among the three major components compared with the state and nation over 1969-2005. The period of most dramatic change held in common by Ravalli County, Montana and the nation spanned the period of the late 1970s to the mid-1980s.

Structural change is defined and measured here as the composite change in income shares among the three income components. Changes in shares are based on differences between each component's share in 1969, and its share of personal income for each year since. Index values equal the sum of the absolute value of the share changes among the three income components year-over-year relative to 1969. A rise in the index indicates that in composition of income among the three major components deviated further away from their 1969 distribution. **Note:** Figure 5 displayed the share shifts among the three income components over the interval 1969-2005. Accordingly, the 2005 value of the structural change indices for the county, state and nation are simply the sum of the absolute values of share shifts reported in Figure 5:

	Index Value (2005)	Shift-In-Share		
		Earned Income	Property Income	Transfer Payments
Ravalli County:	20.8%	= [-10.3]	+ [3.5]	+ [7.0]
Montana:	23.0%	= [-11.5]	+ [4.1]	+ [7.4]
United States:	17.6%	= [-8.8]	+ [2.0]	+ [6.8]

# PNREAP Snippets from the Major Components Module – Ravalli County, Montana

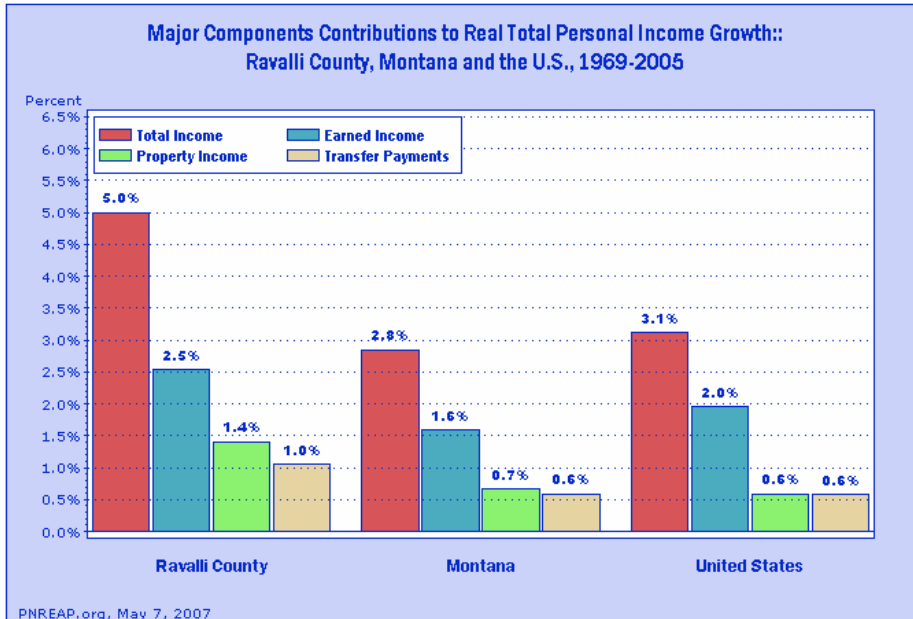


Figure 11.

This report thus far has centered primarily on examining and comparing changes in the composition of Ravalli County's personal income compared with the state and nation over 1969-2005. Figure 11 focuses attention on how much each income component contributed individually to Ravalli County's real personal income growth over the 37-year period. The annual growth rate of Ravalli County's real (inflation adjusted) personal income averaged 5.00% over 1969-2005. Each component's individual contribution to this total amounted to 2.54% for earned income, 1.41% for property income and 1.05% for transfer payments, all of which sum to 5.00%.

In order to gauge each component's contribution to total real income growth the table below displays each component's overall contribution to growth as a percent of total growth. Note, for example, transfer payments' overall percentage contribution to the average total growth over 1969-2005 of 21.0% was derived by:  $21.0\% = (1.05\%/5.00\%) \times 100$ .

		Earned Income	Property Income	Transfer Payments
Ravalli County:	5.00% =	2.54% (50.8%)	+ 1.41% (28.2%)	+ 1.05% (21.0%)
Montana:	2.85% =	1.59% (55.8%)	+ 0.67% (23.5%)	+ 0.59% (20.7%)
United States:	3.11% =	1.95% (62.7%)	+ 0.58% (18.6%)	+ 0.58% (18.6%)

\*Percent figures may not add due to rounding by a factor of ± 0.1%.

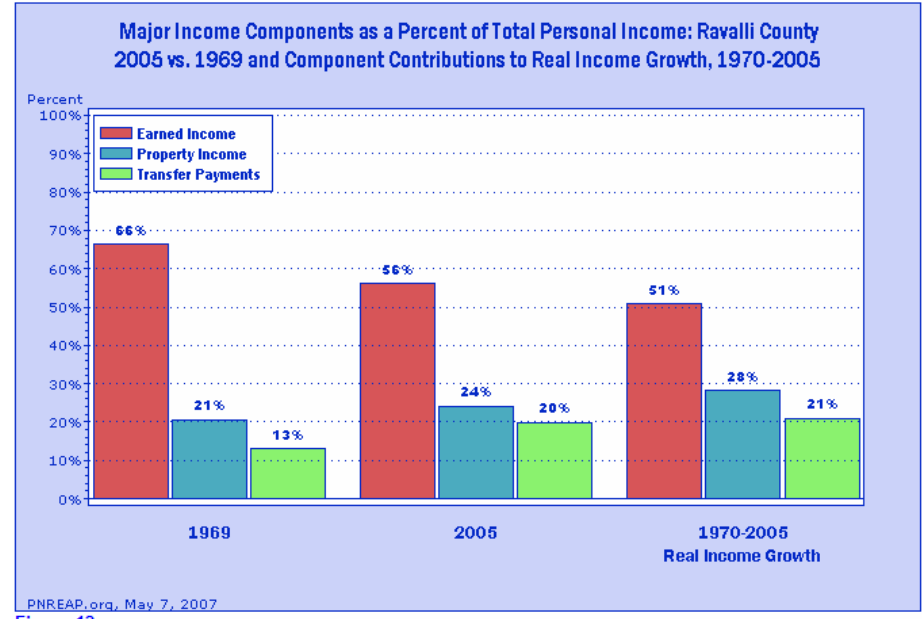


Figure 12.

Figure 12 recaps the theme and distills the results presented throughout this briefing report. In 1969 earned income comprised 66.4% of Ravalli County's total personal income. However, over the following 37-year period 1969-2005 earned income accounted for only 50.8% of the annual real growth in Ravalli County's personal income. As a result, by 2005 earned income's share declined to 56.1%.

Because property income alone accounted for 28.2% Ravalli County's total personal income growth over 1969-2005, its share rose from 20.6% in 1969 to 24.1% in 2005. Transfer payments, in turn, advanced from 12.9% to 19.9% over the same period owing to its 21.0% contribution to the growth of Ravalli County's total personal income.



# PNREAP Snippets from the Shift-Share Analysis Module – Missoula County, Montana



## Shift-Share Analysis of Employment Growth

1969-2005



- ☒ California
- ☒ Idaho
- ☒ **Montana** ▶

- Graphic Trend Analysis
- Comparative Economic Indicators
- Major Components of Personal Income
- Shift-Share Analysis** ▶
- Industry Analysis
- Selected Economic Indicators
- Personal Income by Major Source
- Full & Part-Time Employment
- Transfer Payments
- BEARFACTS (BEA Regional Facts)

- ☒ Nevada
- ☒ Oregon
- ☒ Washington
- ☒ United States

- ☒ Upcoming Conferences
- ☒ PNREC Outlook Presentations
- ☒ PNREAP/BEA Workshops



**Shift-Share Analysis of Employment Growth, 1969-2005** - Shift-share analysis produces results that can be valuable for diagnosing, describing and building understanding of major differences between the industry pattern of employment growth locally and nationwide trends. Choose from Montana's 56 counties, select any time interval between 1969-2000 or 2001-2005, and initiate a web-enabled program that generates shift-share results of local employment growth compared with the nation at large. The program will compile and output a tabular summary of shift-share results based on the options you choose, a tailored report on how the results may be interpreted, and a customized technical summary of how the results are derived.

From the following options select a county, the beginning year, and end year you wish to examine in your analysis.

Missoula County ▼

NAICS (2001-2005)  
 SIC (1969-2000)

Beginning Year: 2001 ▼

End Year: 2005 ▼

Output: Tables & Narrative ▼

**Generate & Display Output**

# PNREAP Snippets from the Shift-Share Analysis Module – Missoula County, Montana

## 2001-2005 Shift-Share Analysis Results for Missoula County, Montana

The shift-share analysis results compiled in this briefing report are for evaluating employment change in the Missoula County economy over 2001-2005. They pinpoint important differences between the industry compositions of employment growth locally versus growth in the nation at large. The results shown in the table below are explained in the brief discussion that follows. For many purposes the results reported in Table 1 may suffice. The shift-share results shown in Table 2 are intended for those interested in comparing and examining the industry pattern of local employment growth in greater depth.

**Table 1: Missoula County Employment Growth, 2001 - 2005**

Industry	Employment				Actual Growth		Standardized Growth <sup>2</sup>		Employment <sup>3</sup> 2005
	2001		2005		Percent	Net	Percent	Net	
	Level	Share <sup>1</sup>	Level	Share <sup>1</sup>					
Farm	683	1.0	673	0.9	-1.46	-10	-4.65	-32	651
Forestry, Fishing, & Other	768	1.1	823	1.1	7.16	55	-1.01	-8	760
Mining	64	0.1	87	0.1	35.94	23	1.06	1	65
Utilities	168	0.2	178	0.2	6.95	10	-3.99	-7	161
Construction	4,373	6.3	5,045	6.8	15.37	672	10.15	444	4,817
Manufacturing	3,118	4.5	3,124	4.2	0.19	6	-12.66	-391	2,727
Wholesale Trade	2,347	3.4	2,397	3.2	2.13	50	2.04	48	2,395
Retail Trade	9,371	13.6	10,097	13.5	7.75	726	2.23	209	9,580
Trans. & Warehousing	2,711	3.9	2,623	3.5	-3.25	-88	0.66	18	2,729
Information	1,682	2.4	1,436	1.9	-14.63	-246	-11.76	-198	1,484
Finance & Insurance	2,517	3.7	2,539	3.4	0.87	22	4.43	111	2,628
Real Estate, Rent. & Leasing	2,403	3.5	3,043	4.1	26.63	640	24.91	599	3,002
Prof. & Tech. Services	4,225	6.1	5,240	7.0	24.02	1,015	8.63	365	4,590
Management of Comp. & E.	338	0.5	230	0.3	-31.95	-108	4.37	15	353
Admin. & Waste Services	3,109	4.5	3,180	4.3	2.28	71	10.64	331	3,440
Educational Services	755	1.1	906	1.2	20.00	151	16.17	122	877
Health Care & Social Asst.	8,974	13.0	9,582	12.8	6.78	608	10.61	952	9,926
Arts, Ent., & Rec.	2,051	3.0	2,324	3.1	13.31	273	8.45	173	2,224
Accom. & Food Services	5,464	7.9	6,148	8.2	12.52	684	8.34	456	5,920
Other Services	4,083	5.9	4,411	5.9	8.03	328	7.84	320	4,403
Federal, Civilian	1,403	2.0	1,456	2.0	3.78	53	2.27	32	1,435
Federal Military	520	0.8	498	0.7	-4.23	-22	-3.43	-18	502
State Government	4,553	6.6	5,238	7.0	15.05	685	1.61	73	4,626
Local Government	3,265	4.7	3,352	4.5	2.66	87	4.40	144	3,409
<b>TOTAL</b>	<b>68,945</b>	<b>100.0</b>	<b>74,630</b>	<b>100.0</b>	<b>8.25</b>	<b>5,685</b>	<b>5.45</b>	<b>3,758</b>	<b>72,703</b>

<sup>1</sup> Share: The percentage share of total employment by industry.

<sup>2</sup> Standardized Growth: at the same rate as its counterpart at the national level, ad each industry grown

<sup>3</sup> Standardized Employment, 2004: The 2004 level of employment in each industry had it grown at the same rate as its counterparts at the national level since 2001.

Note: Percent growth figures may not add due to rounding by a factor of ± 0.01%.

## Notes on Interpreting Table 1: Missoula County Employment Growth, 2001 - 2005

### Employment

Table 1 enumerates the employment levels and percent share of total employment for 2001 and 2005 by major industry group. The employment estimates compiled by the Bureau of Economic Analysis (BEA) measure the number of full- and part-time employees, plus the number of proprietors of unincorporated businesses. People holding more than one job are counted in the employment estimates for each job they hold. This means BEA employment estimates represent a job count, not a number-of-people employed count. Also, BEA employment is by place-of-work, rather than by place-of-residence. Therefore, the jobs held by residents of a neighboring county who commute to work in Missoula County are included in the employment (or job) count for Missoula County.

### Actual Growth

The next two columns of Table 1 listed under "actual" growth report the percent and net change in the total number of jobs for each industry category. Over 2001-2005 a net total of 5,685 jobs were added to the Missoula County economy, amounting to an increase of 8.25%. The percent change results by industry permit you to distinguish between the faster and slower sectors irrespective of their relative importance, while the net change results highlight those industries that contributed most to the total net change overall.

### Standardized Growth

The standardized percent and net growth numbers reported in Table 1 are hypothetical in nature. They post the changes in Missoula County employment that would have occurred over 2001-2005 had each industry grown at the same rate as its national counterpart. The standardized "percent" growth column identifies the growth rate for each industry nationally, while the standardized "net" growth column simulates the resulting net changes in employment locally. The data not only allow one to directly compare local with national industry employment growth rates, they also translate national industry growth rates into hypothetically comparable changes in employment locally.

Although the standardized percent change reported for each industry identifies industry growth rates nationally, it should be noted that the "TOTAL" standardized percent change of 5.45% exceeded the growth rate for total employment nationally of 4.33%. This arises because the proportional industry distribution or mix of employment in Missoula County was tilted toward faster growing industries. In other words, simply by virtue of its industry mix Missoula County was favorably disposed toward experiencing faster employment growth than the nation at large over 2001-2005.

### Standardized Employment, 2005

Standardized employment for 2005 is the resulting level of employment in each industry for Missoula County had each grown at the same rate as its national counterpart since 2001. This presents a hypothetical profile of the industry composition and level of local employment that would have occurred had the county directly followed national industry trends.

# PNREAP Snippets from the Shift-Share Analysis Module – Missoula County, Montana

## Shift-Share Components of Missoula County Employment Growth, 2001-2005

The underlying purpose of shift-share analysis is to perform a numerical sort on the data that offers a construct for describing two key differences between the growth of employment in Missoula County and the nation at large. The objective is to answer two different but interrelated questions. First, did the difference in employment growth arise because of initial dissimilarities in the industry composition of employment? Or, second, did the difference arise because of disparities in the performance of local industries in contrast with their national counterparts?

Table 2 contains the crux of the shift-share results. Differences between the extent and composition of local employment growth with comparison to the nation are broken down into the hypothetical components: national growth, industry mix, and regional shift. Each component attempts to account for a separate aspect of the disparity between the overall growths of employment locally vs. nationally over 2001-2005.

**Table 2: Shift-Share Components of Missoula County Employment Growth, 2001 - 2005**

Industry	National Growth <sup>1</sup>		Industry Mix <sup>2</sup>		Region Shift <sup>3</sup>	
	Percent	Net	Percent	Net	Percent	Net
Farm	4.33	30	-8.98	-61	3.18	22
Forestry, Fishing, & Other	4.33	33	-5.34	-41	8.17	63
Mining	4.33	3	-3.27	-2	34.88	22
Utilities	4.33	7	-8.32	-14	9.94	17
Construction	4.33	189	5.81	254	5.22	228
Manufacturing	4.33	135	-16.89	-527	12.75	397
Wholesale Trade	4.33	102	-2.29	-54	0.09	2
Retail Trade	4.33	408	-2.11	-197	5.52	517
Trans. & Warehousing	4.33	117	-3.67	-100	-3.91	-106
Information	4.33	73	-16.09	-271	-2.87	-48
Finance & Insurance	4.33	109	0.09	2	-3.55	-89
Real Estate, Rent. & Leasing	4.33	104	20.58	495	1.72	41
Prof. & Tech. Services	4.33	183	4.30	182	15.39	650
Management of Comp. & E.	4.33	15	0.03	0	-36.32	-123
Admin. & Waste Services	4.33	135	6.31	196	-8.36	-260
Educational Services	4.33	33	11.84	89	3.83	29
Health Care & Social Asst.	4.33	389	6.27	563	-3.83	-344
Arts, Ent., & Rec.	4.33	89	4.12	85	4.86	100
Accom. & Food Services	4.33	237	4.01	219	4.18	228
Other Services	4.33	177	3.51	143	0.20	8
Federal, Civilian	4.33	61	-2.06	-29	1.50	21
Federal Military	4.33	23	-7.76	-40	-0.80	-4
State Government	4.33	197	-2.72	-124	13.44	612
Local Government	4.33	141	0.07	2	-1.73	-57
<b>TOTAL</b>	<b>4.33</b>	<b>2,987</b>	<b>1.12</b>	<b>771</b>	<b>2.80</b>	<b>1,927</b>

<sup>1</sup> National Growth: The change in local employment that would have occurred for a specific industry had it grown at the national growth rate of all industries combined.

<sup>2</sup> Industry Mix: The additional gain (or loss) in local employment that would have occurred for a specific industry (additional to the national growth effect) due to the industry growing faster (or slower) nationally than the rate of all industries combined.

<sup>3</sup> Regional Shift: The additional gain (or loss) in local employment for a specific industry beyond the national growth and industry mix effects resulting from the industry growing faster (or slower) than the same industry nationally.

Note: Percent growth figures may not add due to rounding by a factor of ± 0.01%.

## Notes on Interpreting Table 2: Shift-Share Components of Missoula County Employment Growth, 2001-2005

### National Growth

This component is the most straightforward. It calibrates the growth in Missoula County employment that may be attributed to overall national conditions and trends. If the industry composition and growth of employment had been the same locally as nationally, then Missoula County's employment growth over 2001-2005 would have matched the overall national rate of 4.33%.

### Industry Mix

The industry mix component seeks to address and answer the question: "Did Missoula County employment growth of 8.25% outpace the overall national average (4.33%) because employment was more concentrated toward faster growing industries when compared to the nation?" That is, did the Missoula County employment growth over 2001-2005 outperform the nation simply because its industry mix was weighted more heavily toward industries that experienced faster growth at the national level?

The results are derived by multiplying local employment in each sector for 2001 by the difference between the national growth rate for each sector and the total national employment growth rate (4.33%). The industry mix results report positive values for those industries that experienced employment growth above the 4.33% national average, while negative values are posted for those industries that grew at rates less than 4.33%.

The most crucial result from the industry mix calculation is the "TOTAL" derived from summing over all industries. The positive values reported reveal that the industry composition employment for Missoula County was tilted toward faster growing industries. Negative results would have indicated just the opposite.

### Regional Shift

The third shift-share component, tagged the "Regional Shift", computes the gain (or loss) in local employment from an industry growing faster (or slower) than the same industry nationally. When employment in a local industry grows faster (or declines less) than its counterpart nationally there occurs a positive "shift" in the net "share" of national employment captured by that industry locally. The "TOTAL" reported for the regional-shift component is 1,927, showing that Missoula County employment grew an additional 2.80% because a larger proportion of industries grew more quickly locally than nationally.

### Summary of the Shift-Share Results

Shift-share analysis provides a framework for describing the growth of local employment relative to the nation at large. Results for Missoula County may be highlighted as follows:

<b>Actual Growth</b>	=	<b>National Growth</b>	+	<b>Industry Mix</b>	+	<b>Regional Shift</b>
8.25%		4.33%		1.12%		2.80%
(5,685)		(2,987)		(771)		(1,927)

Note that the shift-share identity can be rearranged to focus on identifying the difference between local (actual) and national growth rates as the sum of the industry mix and regional shift components:

<b>Actual Growth - National Growth</b>	=	<b>Industry Mix</b>	+	<b>Regional Shift</b>
3.91%		1.12%		2.80%
(2,698)		(771)		(1,927)

Missoula County's employment growth over 2001-2005 of 8.25% surpassed the 4.33% growth of employment nationally by 3.91%. Accounting for this difference was an industry mix inclined toward industries that experienced faster growth, coupled with the fact that a large share of local industries outperformed their counterparts nationally.

\*Percent growth figures may not add due to rounding by a factor of ± 0.01%.



# PNREAP Snippets from the Shift-Share Analysis Module – Missoula County, Montana

## Frequently Asked...and Sometimes Not So Frequently Asked...Questions

**Question #1:** Some of the industry categories are abbreviated. Would you explain what they stand for?

**Answer:** To conserve space some of the titles for the industry categories were shortened. The industry categories in their entirety are listed as follows:

North American Industry Classification System (NAICS) Industry Categories
Industry
Farm
Forestry, Fishing, Related Activities & Other*
Mining
Utilities
Construction
Manufacturing
Wholesale Trade
Retail Trade
Transportation & Warehousing
Information
Finance & Insurance
Real Estate, Rental & Leasing
Management of Companies & Enterprises
Administrative & Waste Services
Educational Services
Health Care & Social Assistance
Arts, Entertainment & Recreation
Accommodations & Food Services
Other Services, Except Public Administration
Professional & Technical Services
Federal Civilian
Federal Military
State Government
Local Government

\* "Other" consists of the number of jobs held by U.S. residents employed by international organizations and foreign embassies and consulates in the United States.

**Question #2:** An industry category labeled "Unreported" appeared in my table. What's this?

**Answer:** It is not uncommon to encounter suppressed data for selected industries, especially in small counties. Data are suppressed to avoid disclosure of confidential information regarding individual firms. Even though the concern for confidentiality may relate to only one industry, data for at least two must be suppressed as summing over the reported data and subtracting from the total yields data for the suppressed category. The program, which compiles these shift-share results, performs such a computation when suppressed data are encountered, and reports them in the "Unreported" category. For consistency, the program also contrives a corresponding "Unreported" industry category for the nation at large. Often data for the "Mining", "Manufacturing", or the "Wholesale Trade" industry categories are suppressed, and you will find that their data are paired as "Unreported" in the table.

**Question #3:** Where could I get more information about what activities are included under each industry category?

**Answer:** Bureau of Economic Analysis (BEA) employment data over 2001-2005 are reported on the basis of NAICS (North American Industrial Classification Standard) definitions. NAICS definitions, principles, and procedures were developed to promote comparability of national and regional economic statistics. They are prepared by the Office of Management and Budget (OMB), and were last updated and reported in the [North American Industrial Classification Standard Manual, \(2002\)](#), U.S. Government Printing Office. Most libraries should have a copy of the latest NAICS Manual.

If you plan on using economic data sometime in the foreseeable future, you should know that the decades old SIC system was replaced by the new North American Industry Classification System (NAICS, pronounced "nakes"). NAICS provides a more contemporary classification of business activity given the new and emerging changes that are reshaping our economy. It was developed by the U.S., Canada, and Mexico to produce comparable data across North America. Data reported on a NAICS basis began to appear in 1999. For more information about NAICS check out Census Bureau's NAICS internet site at <http://www.census.gov/naics>.

**Question #4:** Would the shift-share results be much different if the industry data were available in greater detail?

**Answer:** Yes! Greater industry detail would divulge a lot more insight as to the differences between the composition and growth of industry employment locally versus in the nation at large. A redistribution of the shift-share results between totals for industry mix and regional shift components should be expected. However, without the actual data it is impossible to say what the outcome might be. The results produced here are a good starting point for identifying changes and trends in employment growth locally, but greater industry detail will generally always be more useful and offer more insight.

**Question #5:** Where can I get a look at the BEA employment data for Missoula County over all the years 1969-2005? This would give me a better idea of the time interval that might be most suitable for performing the shift-share analysis.

**Answer:** The BEA employment data for Missoula County is available on the PNREAP web site. Click on the following Link:

[Table CA25/CA25N - Missoula County - Full-time and Part-time Employment by Major Industry](#)



# PNREAP Snippets from the Shift-Share Analysis Module – Missoula County, Montana

**Question #6:** Although you discuss how the shift-share results are derived, would you show more explicitly how they are constructed using an example for Missoula County from the table above?

**Answer:** Let's begin by looking at how the results are derived for an individual industry category. We'll use "Retail Trade" for illustration, since data for this sector led the employment numbers for Missoula County in 2005.

We will use the subscript "i" as general notation for an individual industry. Shift-share analysis describes the net change in employment ( $\Delta E_i$ ) for each industry (i) as the sum of three individual components: National Growth ( $NG_i$ ), Industry Mix ( $IM_i$ ), and Regional Shift ( $RS_i$ ). Using the data for Missoula County's Retail Trade sector from the table above we have:

Actual Growth	=	National Growth	+	Industry Mix	+	Regional Shift
$\Delta E_i$	=	$NG_i$	+	$IM_i$	+	$RS_i$
(726)	=	(406)	+	(-197)	+	(517)

The National Growth ( $NG_i$ ) component for Retail Trade is computed as the product of employment in Retail Trade for the beginning year (2001), e.g., (i.e.,  $E_{i,2001} = 9,371$ ), and the overall growth rate of employment nationally over 2001-2005 ( 4.33%):

$$NG_i = E_{i,2001} \times (4.33\%)$$

(406)	(9,371)	(4.33%)
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[ Note: Growth rates are rounded to 2 digits. Totals are derived from unrounded values. ]

The Industry Mix ( $IM_i$ ) component is calculated by multiplying local Retail Trade employment in the beginning year (2001), (i.e.,  $E_{i,2001} = 9,371$ ), by the difference in the national growth rate for Retail Trade employment (2.23%) and the national growth rate for total employment ( 4.33%):

$$IM_i = E_{i,2001} \times (2.23\% - 4.33\%)$$

(-197)	(9,371)	(-2.11%)
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The Regional Shift ( $RS_i$ ) component is computed by multiplying local Retail Trade employment in the beginning year (19101), (i.e.,  $E_{i,2001} = 9,371$ ), by the difference in Missoula County's growth rate for Retail Trade employment (7.75%) and the growth of Retail Trade nationally (2.23%):

$$RS_i = E_{i,2001} \times (7.75\% - 2.23\%)$$

(517)	(9,371)	(5.52%)
-------	---------	---------

After results for each industry are derived they are summed ( $\Sigma$ ) to determine the total effect for each component:

Actual Growth	=	National Growth	+	Industry Mix	+	Regional Shift
$\Sigma (E_i)$	=	$\Sigma (NG_i)$	+	$\Sigma (IM_i)$	+	$\Sigma (RS_i)$
(5,685)	=	(2,987)	+	(771)	+	(1,927)

**Question #7:** I'd like to learn more about shift-share analysis. Are there some textbooks, manuals, or articles you would recommend?

**Answer, Part 1:** If you are interested in other explanations and illustrations of the "conventional" approach to shift-share analysis as presented above, you should find the following references helpful:

Bendavid-Val, Avrom. "Relative Regional Industrial Composition Analysis." Chapter 5. *Regional and Local Economic Analysis for Practitioners*, New York: Praeger Publishers, 1983.

Hustedde, Ron, Ron Shaffer, and Glen Pulver. *Community Economic Analysis: A How-To Manual*. North Central Regional Center for Economic Development, Iowa State University, Ames, Iowa, 1993. [Click here to link to a pdf document of this report.](#)

**Answer, Part 2:** Over the past several decades a number of alternative approaches and formulations of shift-share have been proposed and debated in the regional economics literature. Articles that would serve as good points of entry to this literature include:

Loveridge, Scott and Anne C. Selting. "A Review and Comparison of Shift-Share Identities." *International Regional Science Review*, Vol. 21, No. 1, 1998:37-58.

Stevens, Benjamin H. and Craig L. Moore. "A Critical Review of the Literature on Shift-Share as a Forecasting Technique." *Journal of Regional Science*, Vol. 20, No. 4, November 1980:419-437.

**Answer, Part 3:** Should you wish to get a more detailed overview of some of the journal articles on this topic I recommend you perform a subject search on the phrase "shift-share" at the *EconLit* web site. *EconLit* is an online database copyrighted by the American Economics Association that is produced and maintained by the *Journal of Economic Literature*.

# PNREAP Snippets from the Industry Analysis Module – Flathead County, Montana



## Industry Analysis of Structure & Performance

2001-2005



- California
- Idaho
- Montana ▶
  - Graphic Trend Analysis
  - Comparative Economic Indicators
  - Major Components of Personal Income
  - Shift-Share Analysis
  - Industry Analysis** ▶
  - Selected Economic Indicators
  - Personal Income by Major Source
  - Full & Part-Time Employment
  - Transfer Payments
  - BEARFACTS (BEA Regional Facts)
- Nevada
- Oregon
- Washington
- United States
  
- Upcoming Conferences
- PNREC Outlook Presentations
- PNREAP/BEA Workshops



County Growth by Industry, 2001-2005

Flathead County

Indicators:

- Employment
- Earnings
- Average Earnings Per Job

**Generate & Display Output**

Industry Analysis of Structure & Performance, 2001-2005 -

# PNREAP Snippets from the Industry Analysis Module – Flathead County, Montana

**Employment by Major Industry:  
Flathead County, 2001 - 2005**

Major Industry	2005			2001-2005 Averages		2001-2005 Share Shift
	Employment	Percent of Total	Location Quotient	Percent of Total	Location Quotient	
Farm Employment	1,108	1.9	1.15	2.1	1.17	-0.27
Forestry, Fishing & Related Activities	842	1.5	2.62	1.7	2.75	-0.28
Mining	394	0.7	1.46	0.6	1.38	0.08
Utilities	212	0.4	1.08	0.4	1.02	0.02
Construction	6,671	11.6	1.86	10.4	1.74	2.03
Manufacturing	3,657	6.4	0.75	6.9	0.75	-1.89
Wholesale Trade	1,289	2.2	0.61	2.1	0.56	0.39
Retail Trade	7,488	13.0	1.20	13.3	1.21	-0.41
Transportation & Warehousing	1,339	2.3	0.74	2.5	0.79	-0.43
Information	804	1.4	0.68	1.4	0.64	-0.04
Finance & Insurance	2,238	3.9	0.83	3.8	0.81	0.36
Real Estate & Rental & Leasing	3,083	5.4	1.35	5.0	1.37	0.71
Professional & Technical Services	2,960	5.1	0.78	5.8	0.91	-1.52
Management of Companies & Enterprises	124	0.2	0.20	0.2	0.22	-0.03
Administrative & Waste Services	3,826	6.6	1.09	5.9	1.01	1.16
Educational Services	635	1.1	0.54	1.0	0.52	0.20
Health Care & Social Assistance	5,444	9.5	0.95	9.3	0.96	0.72
Arts, Entertainment & Recreation	2,134	3.7	1.84	3.5	1.73	0.48
Accommodation & Food Services	5,035	8.8	1.30	9.0	1.36	-0.54
Other Services, Except Public Admin.	3,346	5.8	1.04	5.9	1.05	0.05
Federal Civilian	839	1.5	0.91	1.6	0.99	-0.18
Federal Military	410	0.7	0.61	0.8	0.63	-0.08
State Government	582	1.0	0.34	1.1	0.35	-0.11
Local Government	3,078	5.3	0.67	5.6	0.70	-0.40
<b>TOTAL</b>	<b>57,538</b>	<b>100.0</b>	<b>1.00</b>	<b>100.0</b>	<b>1.00</b>	

Source: U.S. Department of Commerce, Bureau of Economic Analysis and calculations by the author.  
Prepared by Gary W. Smith, Economist and PNREAP Director.

**Employment Growth by Major Industry:  
Flathead County, 2005**

Major Industry	Employment Growth 2005			
	Growth Rate	Component Contribution	National Growth Rate	Local - National Growth Rate
Farm Employment	0.45	0.01	-1.19	1.64
Forestry, Fishing & Related Activities	-2.77	-0.04	-0.30	-2.48
Mining	9.14	0.06	5.68	3.46
Utilities	2.91	0.01	1.02	1.89
Construction	11.67	1.27	5.28	6.38
Manufacturing	3.77	0.24	-0.30	4.08
Wholesale Trade	6.27	0.14	2.49	3.78
Retail Trade	2.97	0.39	1.50	1.47
Transportation & Warehousing	-1.47	-0.04	2.01	-3.48
Information	1.64	0.02	0.42	1.22
Finance & Insurance	1.13	0.05	1.39	-0.26
Real Estate & Rental & Leasing	8.79	0.45	7.26	1.53
Professional & Technical Services	6.36	0.32	4.66	1.80
Management of Companies & Enterprises	10.71	0.02	1.94	8.77
Administrative & Waste Services	16.97	1.01	4.96	12.01
Educational Services	6.72	0.07	3.60	3.12
Health Care & Social Assistance	3.97	0.38	2.41	1.57
Arts, Entertainment & Recreation	10.97	0.39	1.49	9.48
Accommodation & Food Services	2.80	0.25	2.50	0.30
Other Services, Except Public Admin.	1.36	0.08	0.70	0.66
Federal Civilian	-6.78	-0.11	-0.21	-6.56
Federal Military	-1.20	-0.01	-2.41	1.20
State Government	3.19	0.03	0.57	2.62
Local Government	0.98	0.05	1.00	-0.02
<b>TOTAL</b>	<b>5.07</b>	<b>5.07</b>	<b>2.19</b>	<b>2.88</b>

Source: U.S. Department of Commerce, Bureau of Economic Analysis and calculations by the author.  
Prepared by Gary W. Smith, Economist and PNREAP Director.

# PNREAP Snippets from the Industry Analysis Module – Flathead County, Montana

## Employment Growth by Major Industry: Flathead County, 2002 - 2005

Major Industry	Employment Growth 2002-2005			
	Average Annual Growth Rate	Component Contribution	National Average Annual Growth Rate	Local - National Annual Growth Rate
☐ Farm Employment	-0.15	-0.00	-1.18	1.03
☐ Forestry, Fishing & Related Activities	-0.81	-0.02	-0.19	-0.62
☐ Mining	6.77	0.04	0.45	6.31
☐ Utilities	4.85	0.02	-1.00	5.84
☐ Construction	8.38	0.86	2.48	5.90
☐ Manufacturing	-3.00	-0.26	-3.26	0.26
☐ Wholesale Trade	8.31	0.17	0.52	7.79
☐ Retail Trade	2.43	0.32	0.55	1.88
☐ Transportation & Warehousing	-0.96	-0.03	0.18	-1.14
☐ Information	2.66	0.04	-3.02	5.68
☐ Finance & Insurance	5.78	0.22	1.09	4.69
☐ Real Estate & Rental & Leasing	7.00	0.34	5.74	1.26
☐ Professional & Technical Services	-3.08	-0.21	2.12	-5.20
☐ Management of Companies & Enterprises	0.82	0.00	1.10	-0.28
☐ Administrative & Waste Services	8.38	0.49	2.58	5.80
☐ Educational Services	8.58	0.09	3.82	4.76
☐ Health Care & Social Assistance	5.29	0.49	2.55	2.74
☐ Arts, Entertainment & Recreation	6.93	0.24	2.05	4.88
☐ Accommodation & Food Services	1.71	0.15	2.03	-0.32
☐ Other Services, Except Public Admin.	3.46	0.20	1.91	1.54
☐ Federal Civilian	0.39	0.01	0.58	-0.18
☐ Federal Military	0.38	0.00	-0.86	1.24
☐ State Government	0.56	0.01	0.40	0.16
☐ Local Government	1.36	0.08	1.08	0.28
<b>TOTAL</b>	<b>3.24</b>	<b>3.24</b>	<b>1.07</b>	<b>2.17</b>

Source: U.S. Department of Commerce, Bureau of Economic Analysis and calculations by the author.  
Prepared by Gary W. Smith, Economist and PNREAP Director.

### Explanatory Notes - Working Draft

**Employment** - The employment estimates compiled by the Bureau of Economic Analysis (BEA) measure the number of full- and part-time employees, plus the number of proprietors of unincorporated businesses. People holding more than one job are counted in the employment estimates for each job they hold. This means BEA employment estimates represent a job count, not a number-of-people employed count. Also, BEA employment is by place-of-work, rather than by place-of-residence. Therefore, the jobs held by residents of a neighboring county who commute to work in Flathead County are included in the employment (or job) count for Flathead County.

**Major Industry** - The industry categories portraying BEA employment estimates over 2001 - 2005 in the above tables correspond with the general sector-level categories of economic activity of the 2002 NAICS (North American Industry Classification System), see:

<http://www.census.gov/epcd/www/naics.html>

The ☐ symbol associated with each industry category will link you to its corresponding definition as posted on the BEA web site.

**Unreported** - For some counties an industry category labeled "Unreported" may appear in the tables generated by this PNREAP module. It is not uncommon, especially for smaller counties, to encounter suppressed data for selected industries. Data are suppressed to avoid disclosure of confidential information regarding individual firms. Even though the concern for confidentiality may relate to only one industry, data for at least two must be suppressed as summing over the reported data and subtracting from the total yields data for the suppressed category. The PNREAP program that compiles this table performs this computation when suppressed data are encountered, and reports them in the "Unreported" category. For consistency, the program also contrives a corresponding "Unreported" industry category for the nation at large. Often data for the "Mining", "Manufacturing", or the "Wholesale Trade" industry categories are suppressed, and you will find that their data are paired as "Unreported" in the table.

**Percent of Total** - The percent share of total employment for each major industry category.

**Location Quotient** - The location quotient is the ratio of the share of local employment in a given industry locally to the corresponding industry share nationwide. It helps gauge the extent to which various industries are more or less concentrated locally when compared with the nation at large. If an industry's share of total employment is the same as the national share, then its location quotient is equal to one. If an industry is concentrated in a region, its local employment share will be larger than the share nationally, and its location quotient will correspondingly be greater than one. Conversely, the location quotient for an industry not concentrated in the region will fall between zero and one.

**2001 - 2005 Averages** - Four-year averages for percent shares and location quotients over 2001 - 2005 are reported in order to avoid having a unique single-year event in 2005 skew the results.

**2001 - 2005 Share Shift** - This records the difference between each industry share of total employment between 2001 and 2005. Industries that experienced growth above the overall average over this interval will realize a positive share-shift, while a negative share-shift is posted by those industries whose growth was less than the total.

**Growth Rate** - Growth rate refers to simple percent changes over the previous year. Average annual growth rates are simply the average of the percent changes year-over-year during the interval 2002 - 2005.

**Component Contribution** - This isolates and records each industry's individual contribution to the total growth of employment in Flathead County over 2005, and 2002 - 2005, respectively. When summed over all industries the component contribution will match Flathead County's TOTAL employment growth rate.

**National Growth Rate** - The growth rate of each industry category nationwide.

**Local - National Growth Rate** - To readily compare Flathead County's employment growth within each industry relative to their counterparts nationwide this records the difference between the two.



# PNREAP Snippets from the Industry Analysis Module – Arts, Entertainment, & Recreation

Arts, Entertainment & Recreation Employment by County:  
Montana, 2002 – 2005

County	2005			2002-2005 Averages			2001-2005
	Employment	Percent Share	Location Quotient	Percent of State Total	Percent Share	Location Quotient	Share Shift
Beaverhead	\$	\$	\$	\$	\$	\$	\$
Big Horn	157	2.42	1.20	0.88	2.08	1.04	0.63
Blaine	\$	\$	\$	\$	\$	\$	\$
Broadwater	55	2.29	1.14	0.31	2.25	1.13	0.16
Carbon	255	4.66	2.31	1.42	4.67	2.33	0.43
Carter	\$	\$	\$	\$	\$	\$	\$
Cascade	1,475	2.94	1.46	8.23	2.84	1.42	0.50
Chouteau	56	1.76	0.87	0.31	1.66	0.83	0.36
Custer	212	2.93	1.45	1.18	2.54	1.27	0.80
Daniels	30	2.02	1.00	0.17	1.96	0.98	0.70
Dawson	\$	\$	\$	\$	\$	\$	\$
Deer Lodge	143	3.26	1.62	0.80	3.36	1.68	-0.39
Fallon	\$	\$	\$	\$	\$	\$	\$
Fergus	190	2.47	1.22	1.06	2.21	1.10	0.49
Flathead	2,134	3.71	1.84	11.91	3.47	1.73	0.48
Gallatin	2,443	3.85	1.91	13.63	3.85	1.93	0.06
Garfield	\$	\$	\$	\$	\$	\$	\$
Glacier	\$	\$	\$	\$	\$	\$	\$
Golden Valley	\$	\$	\$	\$	\$	\$	\$
Granite	\$	\$	\$	\$	\$	\$	\$
Hill	218	2.19	1.09	1.22	2.08	1.04	0.26
Jefferson	124	2.22	1.10	0.69	2.70	1.35	-0.81
Judith Basin	\$	\$	\$	\$	\$	\$	\$
Lake	280	1.99	0.99	1.56	1.92	0.96	0.08
Lewis and Clark	1,198	2.90	1.44	6.88	2.85	1.42	0.18
Liberty	18	1.42	0.70	0.10	1.27	0.64	0.11
Lincoln	244	2.80	1.29	1.36	2.33	1.16	0.58
McCone	\$	\$	\$	\$	\$	\$	\$
Madison	236	5.01	2.48	1.32	3.82	1.90	2.48
Meagher	\$	\$	\$	\$	\$	\$	\$
Mineral	\$	\$	\$	\$	\$	\$	\$
Missoula	2,324	3.11	1.64	12.97	3.10	1.55	0.14
Musselshell	\$	\$	\$	\$	\$	\$	\$
Park	406	4.16	2.06	2.27	3.92	1.96	0.42
Petroleum	\$	\$	\$	\$	\$	\$	\$
Phillips	\$	\$	\$	\$	\$	\$	\$
Pondera	\$	\$	\$	\$	\$	\$	\$
Powder River	\$	\$	\$	\$	\$	\$	\$
Powell	82	2.26	1.12	0.46	2.15	1.07	0.31
Prairie	\$	\$	\$	\$	\$	\$	\$
Ravalli	642	3.26	1.61	3.58	3.04	1.52	0.42
Richland	127	1.85	0.91	0.71	1.42	0.71	0.58
Roosevelt	70	1.31	0.65	0.39	1.26	0.63	0.16
Rosebud	213	3.52	1.74	1.19	3.29	1.64	0.88
Sanders	103	1.84	0.91	0.57	1.62	0.81	0.45
Sheridan	\$	\$	\$	\$	\$	\$	\$
Silver Bow	665	3.30	1.64	3.71	2.97	1.48	0.57
Stillwater	99	1.88	0.93	0.55	1.73	0.86	0.64
Sweet Grass	78	2.68	1.33	0.44	2.60	1.30	-0.01
Teton	61	1.70	0.84	0.34	1.93	0.96	-0.33
Toole	\$	\$	\$	\$	\$	\$	\$
Treasure	\$	\$	\$	\$	\$	\$	\$
Valley	36	0.75	0.37	0.20	0.64	0.32	0.10
Wheatland	\$	\$	\$	\$	\$	\$	\$
Wibaux	\$	\$	\$	\$	\$	\$	\$
Yellowstone	2,571	2.62	1.30	14.35	2.49	1.24	0.39
Montana	17,922	2.92	1.45	100.00	2.79	1.39	0.35
Metro	6,625	2.90	1.44	36.97	2.82	1.41	0.33
Nonmetro	U	U	U	U	U	U	U
United States	3,517,300	2.02	1.00		2.00	1.00	0.08
Metro	3,116,992	2.10	1.04		2.09	1.04	0.08
Nonmetro	400,308	1.53	0.76		1.50	0.75	0.07

Source: U.S. Department of Commerce, Bureau of Economic Analysis, and calculations by the author.

Prepared by Gary W. Smith, Economist.

Arts, Entertainment & Recreation Employment Growth by County:  
Montana, 2005

County	Arts, Entertainment & Recreation Employment Growth 2005		
	Growth Rate	Component Contribution	Local - U.S. Growth Rate
Beaverhead	\$	\$	\$
Big Horn	10.56	0.25	9.07
Blaine	\$	\$	\$
Broadwater	-3.51	-0.09	-6.00
Carbon	1.59	0.07	0.10
Carter	\$	\$	\$
Cascade	-0.74	-0.02	-2.23
Chouteau	-1.75	-0.03	-3.24
Custer	8.72	0.24	7.23
Daniels	-15.67	-0.40	-18.16
Dawson	\$	\$	\$
Deer Lodge	-0.69	-0.02	-2.18
Fallon	\$	\$	\$
Fergus	9.83	0.23	8.34
Flathead	10.97	0.39	9.48
Gallatin	6.59	0.25	5.10
Garfield	\$	\$	\$
Glacier	\$	\$	\$
Golden Valley	\$	\$	\$
Granite	\$	\$	\$
Hill	3.81	0.08	2.32
Jefferson	-21.02	-0.60	-22.51
Judith Basin	\$	\$	\$
Lake	1.82	0.04	0.33
Lewis and Clark	0.67	0.02	-0.82
Liberty	12.50	0.16	11.01
Lincoln	9.42	0.23	7.93
McCone	\$	\$	\$
Madison	17.41	0.80	15.92
Meagher	\$	\$	\$
Mineral	\$	\$	\$
Missoula	0.43	0.01	-1.05
Musselshell	\$	\$	\$
Park	4.37	0.18	2.88
Petroleum	\$	\$	\$
Phillips	\$	\$	\$
Pondera	\$	\$	\$
Powder River	\$	\$	\$
Powell	-15.46	-0.42	-16.95
Prairie	\$	\$	\$
Ravalli	14.44	0.42	12.95
Richland	38.04	0.54	36.55
Roosevelt	6.06	0.07	4.57
Rosebud	-4.05	-0.14	-5.54
Sanders	4.04	0.07	2.55
Sheridan	\$	\$	\$
Silver Bow	10.65	0.32	9.16
Stillwater	-10.00	-0.21	-11.49
Sweet Grass	1.30	0.04	-0.19
Teton	-4.69	-0.09	-6.18
Toole	\$	\$	\$
Treasure	\$	\$	\$
Valley	0.00	0.00	-1.49
Wheatland	\$	\$	\$
Wibaux	\$	\$	\$
Yellowstone	3.17	0.08	1.68
Montana	4.19	0.12	2.70
Metro	1.25	0.04	-0.24
Nonmetro			
United States	1.49	0.03	0.00
Metro	1.38	0.03	-0.11
Nonmetro	2.35	0.04	0.86

Source: U.S. Department of Commerce, Bureau of Economic Analysis, and calculations by the author.

Prepared by Gary W. Smith, Economist and PNREAP Director.

Arts, Entertainment & Recreation Employment Growth by County:  
Montana, 2002 – 2005

County	Arts, Entertainment & Recreation Employment Growth 2002 – 2005		
	Average Annual Growth Rate	Component Contribution	Local - U.S. Annual Growth Rate
Beaverhead	\$	\$	\$
Big Horn	10.94	0.22	8.88
Blaine	\$	\$	\$
Broadwater	6.38	0.11	4.33
Carbon	4.57	0.19	2.52
Carter	\$	\$	\$
Cascade	5.79	0.15	3.74
Chouteau	6.48	0.10	4.43
Custer	9.30	0.22	7.24
Daniels	11.14	0.14	9.08
Dawson	\$	\$	\$
Deer Lodge	-1.09	-0.05	-3.15
Fallon	\$	\$	\$
Fergus	6.64	0.14	4.59
Flathead	6.93	0.24	4.88
Gallatin	4.55	0.17	2.60
Garfield	\$	\$	\$
Glacier	\$	\$	\$
Golden Valley	\$	\$	\$
Granite	\$	\$	\$
Hill	4.36	0.09	2.30
Jefferson	-2.92	-0.11	-4.97
Judith Basin	\$	\$	\$
Lake	2.38	0.04	0.32
Lewis and Clark	3.35	0.09	1.30
Liberty	4.21	0.04	2.15
Lincoln	8.38	0.19	6.33
McCone	\$	\$	\$
Madison	23.63	0.80	21.58
Meagher	\$	\$	\$
Mineral	\$	\$	\$
Missoula	3.20	0.10	1.15
Musselshell	\$	\$	\$
Park	5.71	0.22	3.66
Petroleum	\$	\$	\$
Phillips	\$	\$	\$
Pondera	\$	\$	\$
Powder River	\$	\$	\$
Powell	6.15	0.09	4.09
Prairie	\$	\$	\$
Ravalli	6.87	0.20	4.81
Richland	13.82	0.19	11.77
Roosevelt	3.89	0.04	1.84
Rosebud	9.17	0.25	7.11
Sanders	9.47	0.15	7.41
Sheridan	\$	\$	\$
Silver Bow	6.73	0.20	4.68
Stillwater	10.56	0.15	8.50
Sweet Grass	5.74	0.12	3.69
Teton	-2.56	-0.05	-4.62
Toole	\$	\$	\$
Treasure	\$	\$	\$
Valley	9.17	0.03	7.11
Wheatland	\$	\$	\$
Wibaux	\$	\$	\$
Yellowstone	6.31	0.15	4.26
Montana	5.30	0.14	3.24
Metro	4.97	0.13	2.92
Nonmetro			
United States	2.05	0.04	0.00
Metro	2.04	0.04	-0.01
Nonmetro	2.15	0.03	0.09

Source: U.S. Department of Commerce, Bureau of Economic Analysis, and calculations by the author.

Prepared by Gary W. Smith, Economist and PNREAP Director.



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