



## *Washington Regional Economic Analysis Project*



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

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

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

Calibrating the Washington:  
Data & Tools for Assessing Our State & Local Economies

Center for Economic and Business Research  
*Western Washington University*

May 11th, 2007  
Skagit Valley Casino  
Skagit Valley, Washington

Gary W. Smith  
Director

*Pacific Northwest Regional Economic Analysis Project*



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

- ✓ "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 Washington 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 & Washington Regional Economic Analysis Project Goals:**
  - To strengthen and improve regional and local area planning and economic development decision-making throughout Washington.
  - 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.



## *Washington 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)**



## *Washington Regional Economic Analysis Project*



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

- ✓ 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!





## *Washington 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 Washington Regional Economic Analysis Project we go!**





## *Washington 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

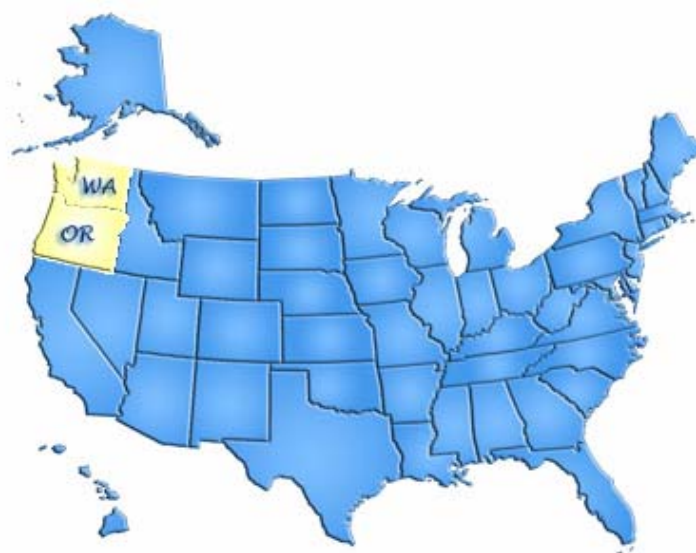
1969-2005



- 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)

- Upcoming Conferences
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*"If we could first know where we are, and wither 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

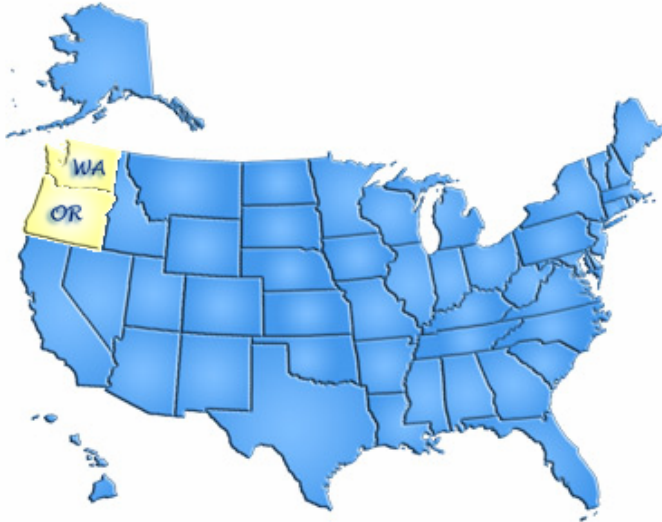
**Output:**

**Generate & Display Output**



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

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



### Briefing Report Outline:

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

### Washington and Oregon: Population, 1969-2005

Year	Washington				Oregon			
	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	3,343,000	100.0	.	1.66	2,062,000	100.0	.	1.02
1970	3,417,362	102.2	2.22	1.68	2,100,388	101.9	1.86	1.03
1971	3,446,958	103.1	0.87	1.67	2,149,890	104.3	2.36	1.04
1972	3,446,815	103.1	-0.00	1.65	2,195,219	106.5	2.11	1.05
1973	3,477,227	104.0	0.88	1.65	2,238,878	108.6	1.99	1.06
1974	3,547,877	106.1	2.03	1.66	2,280,956	110.6	1.88	1.07
1975	3,618,824	108.3	2.00	1.68	2,324,622	112.7	1.91	1.08
1976	3,690,561	110.4	1.98	1.70	2,372,155	115.0	2.04	1.09
1977	3,772,360	112.8	2.22	1.72	2,439,355	118.3	2.83	1.11
1978	3,886,191	116.2	3.02	1.75	2,509,609	121.7	2.88	1.13
1979	4,012,831	120.0	3.26	1.79	2,578,312	125.0	2.74	1.15
1980	4,154,678	124.3	3.53	1.83	2,641,218	128.1	2.44	1.16
1981	4,235,728	126.7	1.95	1.85	2,667,985	129.4	1.01	1.16
1982	4,276,551	127.9	0.96	1.85	2,664,919	129.2	-0.11	1.15
1983	4,300,269	128.6	0.55	1.84	2,653,071	128.7	-0.44	1.13
1984	4,343,657	129.9	1.01	1.84	2,666,589	129.3	0.51	1.13
1985	4,400,096	131.6	1.30	1.85	2,672,648	129.6	0.23	1.12
1986	4,452,724	133.2	1.20	1.85	2,683,526	130.1	0.41	1.12
1987	4,531,903	135.6	1.78	1.87	2,700,996	131.0	0.65	1.11
1988	4,639,894	138.8	2.38	1.90	2,741,297	132.9	1.49	1.12
1989	4,746,315	142.0	2.29	1.92	2,790,579	135.3	1.80	1.13
1990	4,903,043	146.7	3.30	1.96	2,860,375	138.7	2.50	1.15
1991	5,026,624	150.3	2.50	1.99	2,928,507	142.0	2.38	1.16
1992	5,160,757	154.4	2.69	2.01	2,991,755	145.1	2.16	1.17
1993	5,278,842	157.9	2.29	2.03	3,060,367	148.4	2.29	1.18
1994	5,375,161	160.8	1.82	2.04	3,121,264	151.4	1.99	1.19
1995	5,481,027	164.0	1.97	2.06	3,184,369	154.4	2.02	1.20
1996	5,569,753	166.6	1.62	2.07	3,247,111	157.5	1.97	1.21
1997	5,674,747	169.8	1.89	2.08	3,304,310	160.2	1.76	1.21
1998	5,769,562	172.6	1.67	2.09	3,352,449	162.6	1.46	1.22
1999	5,842,564	174.8	1.27	2.09	3,393,941	164.6	1.24	1.22
2000	5,912,036	176.8	1.19	2.09	3,431,530	166.4	1.11	1.22
2001	5,995,397	179.3	1.41	2.10	3,474,183	168.5	1.24	1.22
2002	6,070,176	181.6	1.25	2.11	3,523,529	170.9	1.42	1.22
2003	6,130,323	183.4	0.99	2.11	3,561,155	172.7	1.07	1.22
2004	6,205,535	185.6	1.23	2.11	3,589,168	174.1	0.79	1.22
2005	6,291,899	188.2	1.39	2.12	3,638,871	176.5	1.38	1.23

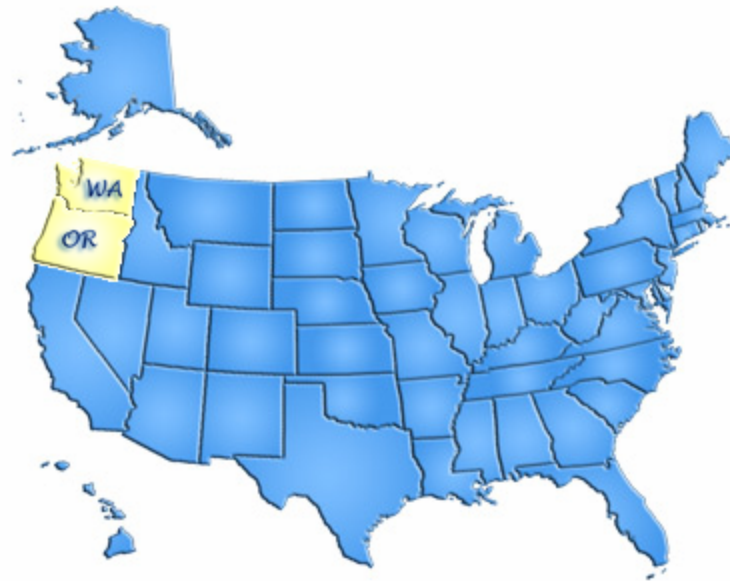
<sup>1</sup> Values are expressed as 100% for 1969 (2000 Dollars) and as a percent of 1969 for the following years.

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 Washington with comparisons to Oregon 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

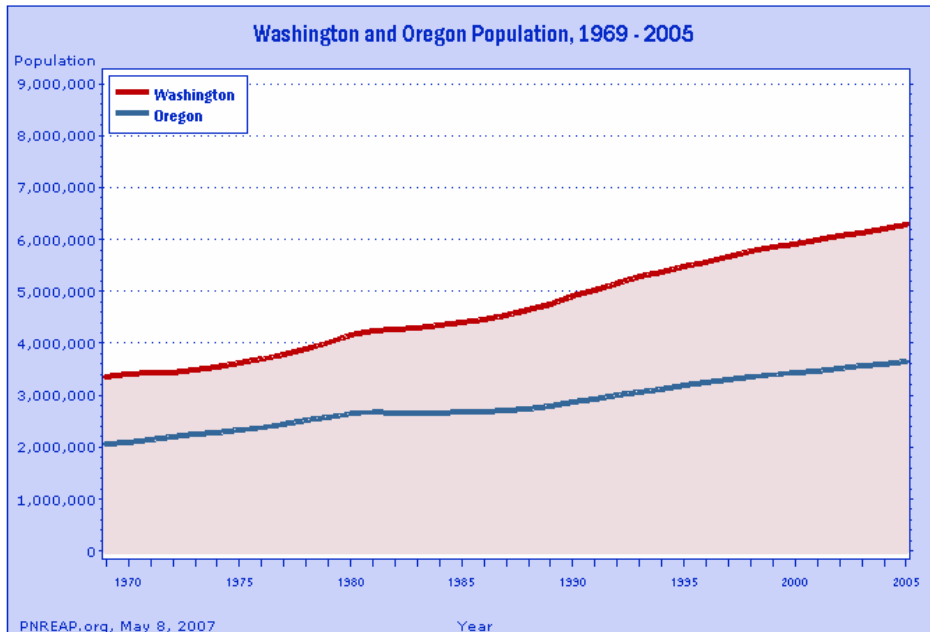


Figure 1.

Figure 1 traces Washington's annual population over 1969-2005 to illustrate the pattern of growth over time. Over the entire 37-year period, Washington's population rose from 3,343,000 in 1969 to 6,291,899 in 2005, for a net gain of 2,948,899, or 88.2%. In turn, Oregon's population increased from 2,062,000 in 1969 to 3,638,871 in 2005, for a net gain of 1,576,871, or 76.5%.

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.

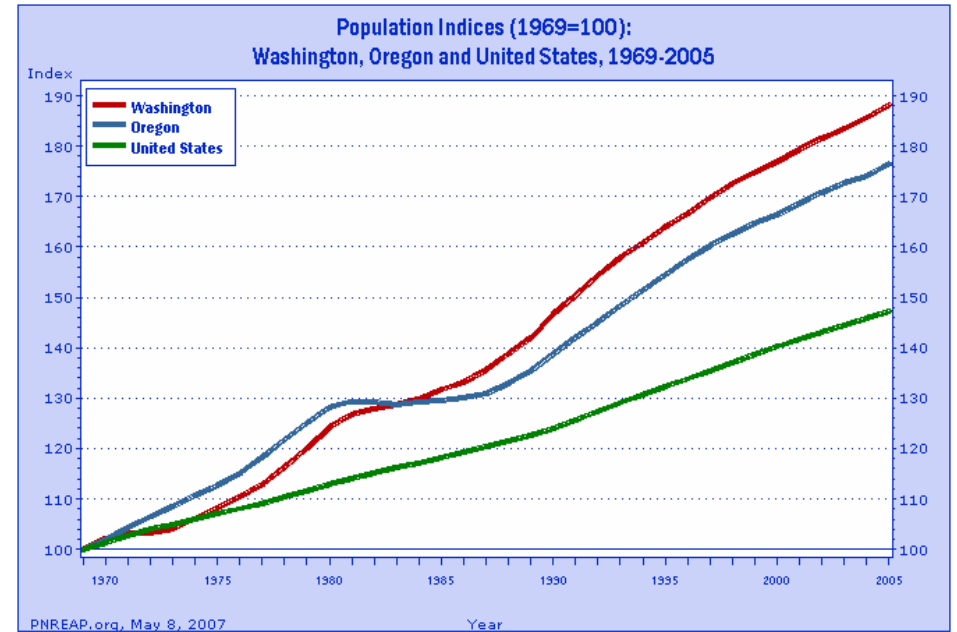


Figure 2.

Figure 2 shows Washington's population growth compared with Oregon 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.

Washington's overall population growth of 88.2% over 1969-2005 surpassed Oregon's increase of 76.5%, and outpaced the national increase of 47.3%.

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

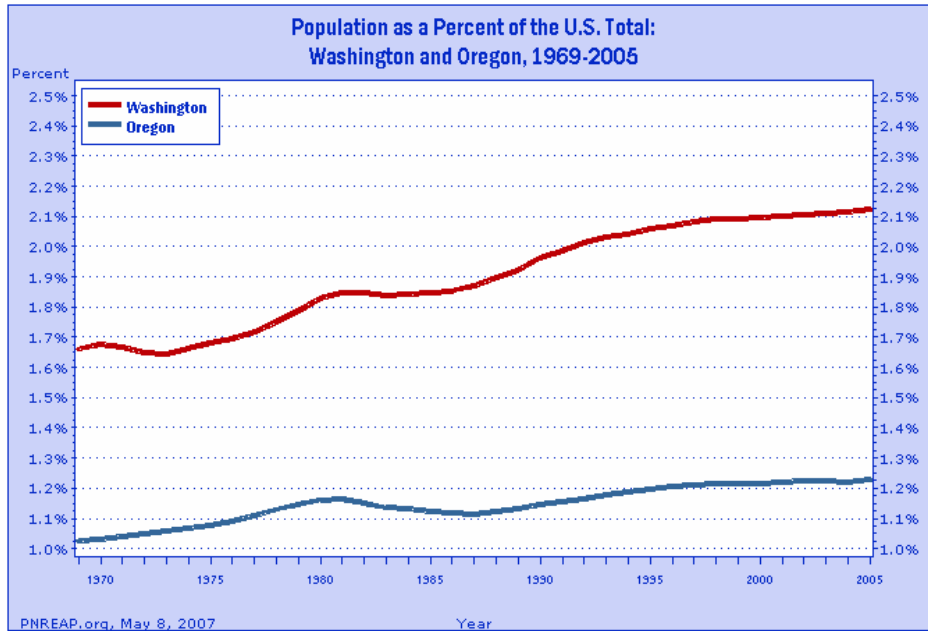


Figure 3.

Another way of highlighting the growth of Washington and Oregon'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, Washington's population comprised 1.66% of the United States population; in 2005, it comprised 2.12%. Similarly, in 1969, Oregon's population consisted of 1.02% of the nation's population; in 2005, it accounted for 1.23%.

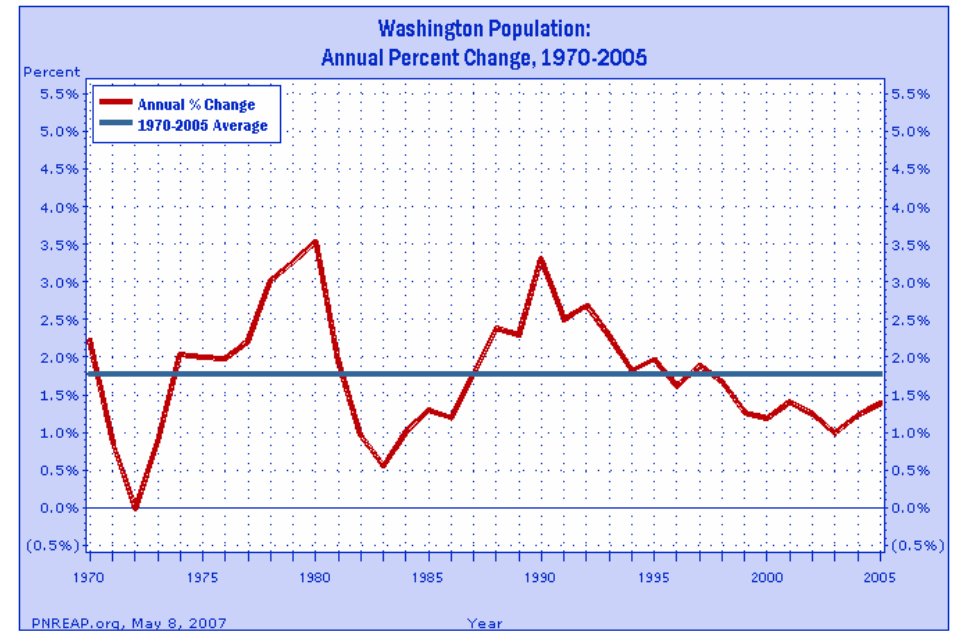


Figure 4.

Figure 4 highlights the short-run pattern of Washington'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.

Washington's population grew on average at an annual rate of 1.78% over 1969-2005.

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

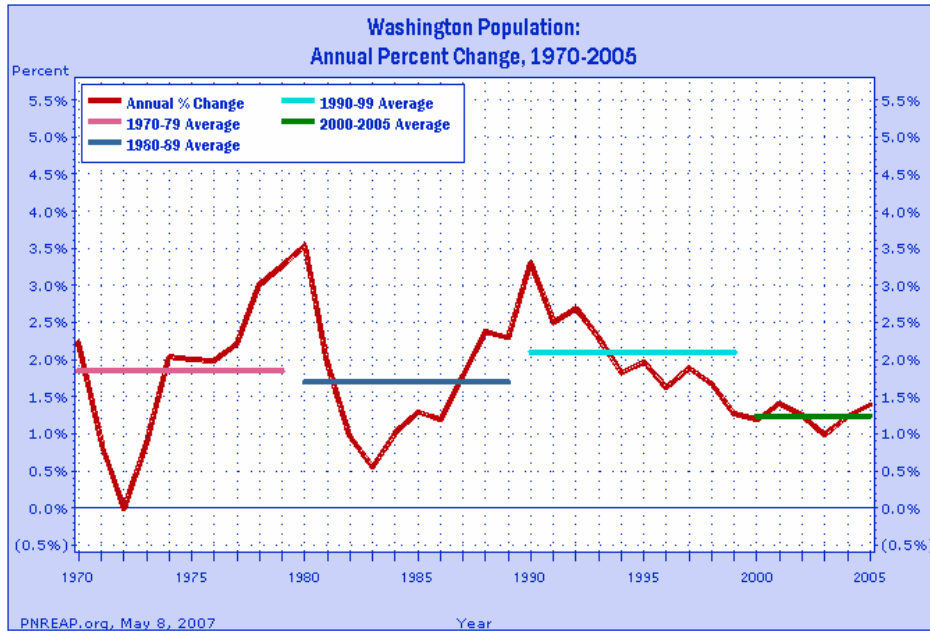


Figure 5.

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 Washington 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, Washington's annual population growth rate averaged 1.85%. It averaged 1.70% during the 1980s, 2.10% in the 1990s, and 1.24% thus far this decade (2000-2005).

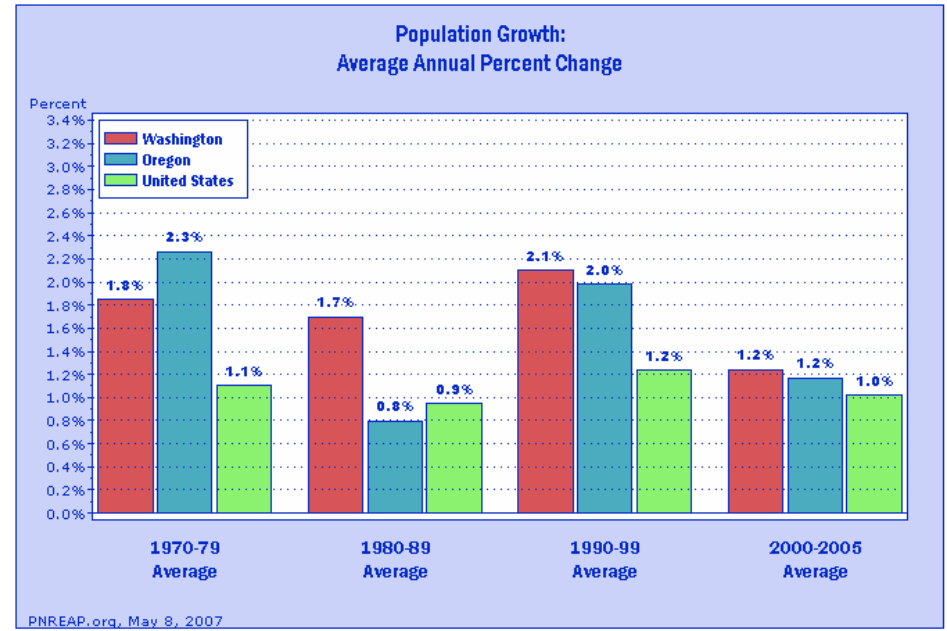


Figure 6.

Figure 6 compares the decade average growth rates for Washington noted in the previous graph with the corresponding decade averages for Oregon and the nation. As the chart reveals, Washington's average population growth fell below Oregon's average during the 1970s (1.85% vs. 2.26%), surpassed Oregon's average during the 1980s (1.70% vs. 0.80%), topped Oregon's average during the 1990s (2.10% vs. 1.98%), and equaled higher than Oregon's average over the 6 year period for this decade, 2000-2005 (1.24% vs. 1.17%).

Relative to nationwide population growth trends, Washington led the nation during the 1970s (1.85% vs. 1.10%), registered above the nation in the 1980s (1.70% vs. 0.95%), exceeded the nation in the 1990s (2.10% vs. 1.23%), and tallied over the nation from 2000-2005 (1.24% vs. 1.02%).

Population Growth: Average Annual Percent Change					
	1970-2005	1970-79	1980-89	1990-99	2000-2005
Washington:	1.78%	1.85%	1.70%	2.10%	1.24%
Oregon:	1.59%	2.26%	0.80%	1.98%	1.17%
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
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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

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

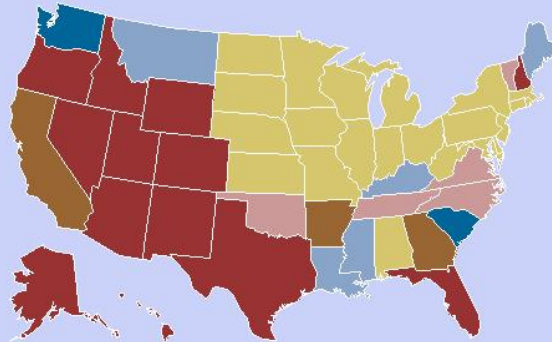
**Generate & Display Output**

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

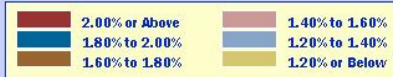
To view a specific decade, click on the desired interval below:

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%

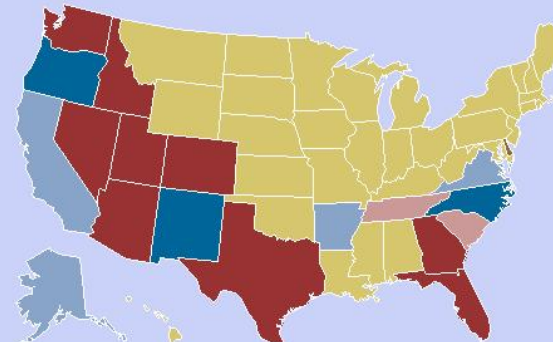


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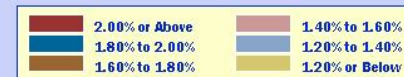
To view a specific decade, click on the desired interval below:

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%

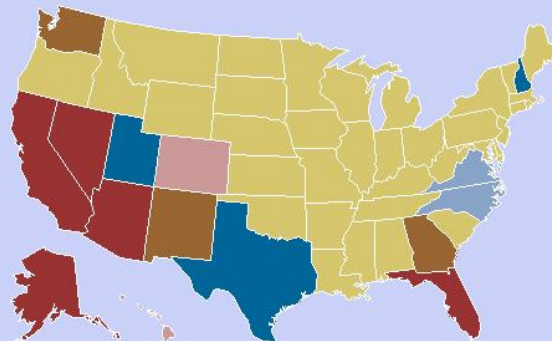


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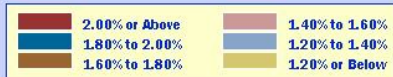
To view a specific decade, click on the desired interval below:

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%

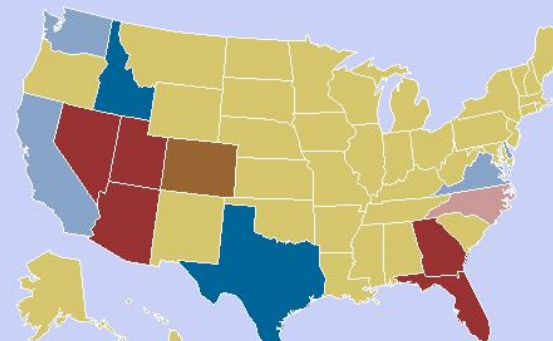


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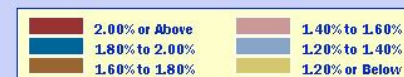
To view a specific decade, click on the desired interval below:

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	2.69	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	2.68	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	0.67	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 – Whatcom County, Washington



## Graphic Trend Analysis of Per Capita Income 1969-2005



- California
- Idaho
- Montana
- Nevada
- Oregon
- Washington**

- 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)

- 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="#">Adams</a>	<a href="#">Lewis</a>
<a href="#">Asotin</a>	<a href="#">Lincoln</a>
<a href="#">Benton</a>	<a href="#">Mason</a>
<a href="#">Chelan</a>	<a href="#">Okanogan</a>
<a href="#">Clallam</a>	<a href="#">Pacific</a>
<a href="#">Clark</a>	<a href="#">Pend Oreille</a>
<a href="#">Columbia</a>	<a href="#">Pierce</a>
<a href="#">Cowlitz</a>	<a href="#">San Juan</a>
<a href="#">Douglas</a>	<a href="#">Skagit</a>
<a href="#">Ferry</a>	<a href="#">Skamania</a>
<a href="#">Franklin</a>	<a href="#">Snohomish</a>
<a href="#">Garfield</a>	<a href="#">Spokane</a>
<a href="#">Grant</a>	<a href="#">Stevens</a>
<a href="#">Grays Harbor</a>	<a href="#">Thurston</a>
<a href="#">Island</a>	<a href="#">Wahkiakum</a>
<a href="#">Jefferson</a>	<a href="#">Walla Walla</a>
<a href="#">King</a>	<a href="#">Whatcom</a>
<a href="#">Kitsap</a>	<a href="#">Whitman</a>
<a href="#">Kittitas</a>	<a href="#">Yakima</a>
<a href="#">Klickitat</a>	

[Metropolitan Washington](#)  
[Nonmetro Washington](#)

**Regions**

[Western Washington](#)  
[Metro Western Washington](#)  
[Nonmetro Western Washington](#)  
[Eastern Washington](#)  
[Metro Eastern Washington](#)  
[Nonmetro Eastern Washington](#)



# PNREAP Snippets from the Graphic Trends Module – Whatcom County, Washington

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



### Briefing Report Outline:

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

## Whatcom County and Washington: Per Capita Income, 1969-2005

Year	Whatcom County					Washington					
	Current Dollars (1,000s)	2000 Dollars <sup>1</sup> (1,000s)	Index <sup>2</sup>	Percent Change <sup>1</sup> (2000 \$s)	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 \$s)	Percent of U.S. Average
1969	3,392	13,431	100.0	.	88.43	83.10	4,082	16,163	100.0	.	106.41
1970	3,779	14,288	106.4	6.38	92.51	90.17	4,191	15,846	98.0	-1.96	102.59
1971	4,187	15,185	113.1	6.28	96.43	95.86	4,368	15,841	98.0	-0.03	100.60
1972	4,231	14,831	110.4	-2.33	89.70	89.60	4,722	16,552	102.4	4.49	100.11
1973	4,728	15,718	117.0	5.98	90.38	89.31	5,294	17,599	108.9	6.33	101.20
1974	5,266	15,866	118.1	0.94	92.27	89.22	5,902	17,782	110.0	1.04	103.42
1975	5,814	16,170	120.4	1.92	94.20	88.83	6,545	18,203	112.6	2.37	106.04
1976	6,499	17,126	127.5	5.91	96.22	90.59	7,174	18,905	117.0	3.86	106.22
1977	7,018	17,367	129.3	1.41	94.77	89.89	7,807	19,319	119.5	2.19	105.43
1978	7,745	17,908	133.3	3.12	93.94	87.73	8,828	20,413	126.3	5.66	107.07
1979	8,591	18,256	136.9	1.94	93.93	87.12	9,861	20,955	129.6	2.66	107.82
1980	9,095	17,464	130.0	-4.34	89.92	83.96	10,832	20,800	128.7	-0.74	107.10
1981	9,739	17,170	127.8	-1.68	86.60	82.02	11,874	20,934	129.6	0.64	105.58
1982	10,139	16,938	126.1	-1.35	84.95	81.31	12,470	20,832	128.9	-0.49	104.48
1983	10,973	17,575	130.9	3.76	86.96	83.27	13,177	21,105	130.6	1.31	104.43
1984	11,718	18,085	134.7	2.90	84.36	83.33	14,063	21,704	134.3	2.84	101.24
1985	12,363	18,470	137.5	2.13	83.77	83.79	14,755	22,043	136.4	1.56	99.98
1986	13,130	19,149	142.6	3.68	85.03	84.48	15,542	22,666	140.2	2.83	100.65
1987	13,762	19,398	144.4	1.30	84.74	84.90	16,210	22,848	141.4	0.80	99.82
1988	14,367	19,479	145.0	0.42	82.90	83.69	17,166	23,274	144.0	1.86	99.05
1989	15,649	20,331	151.4	4.37	84.50	84.32	18,558	24,110	149.2	3.59	100.21
1990	17,259	21,440	159.6	5.45	88.61	86.88	19,865	24,678	152.7	2.36	101.99
1991	18,007	21,586	160.7	0.68	90.52	87.04	20,689	24,801	153.4	0.50	104.01
1992	18,300	21,323	158.8	-1.22	87.75	84.30	21,709	25,295	156.5	1.99	104.10
1993	18,420	20,979	156.2	-1.61	86.29	82.92	22,214	25,300	156.5	0.02	104.07
1994	19,122	21,329	158.8	1.67	86.24	83.36	22,938	25,585	158.3	1.13	103.45
1995	19,771	21,589	160.7	1.22	85.68	83.46	23,690	25,869	160.1	1.11	102.66
1996	20,903	22,345	166.4	3.50	86.47	83.37	25,073	26,803	165.8	3.61	103.71
1997	21,561	22,666	168.8	1.44	85.11	81.50	26,454	27,810	172.1	3.76	104.42
1998	22,674	23,624	175.9	4.23	84.34	79.88	28,384	29,573	183.0	6.34	105.58
1999	23,278	23,857	177.6	0.99	83.32	77.50	30,037	30,783	190.5	4.09	107.51
2000	24,237	24,237	180.5	1.59	81.22	76.28	31,775	31,775	196.6	3.22	106.47
2001	25,407	24,886	185.3	2.68	83.13	78.72	32,274	31,612	195.6	-0.51	105.60
2002	25,483	24,611	183.2	-1.11	82.75	78.34	32,528	31,415	194.4	-0.62	105.63
2003	26,823	25,401	189.1	3.21	85.24	81.02	33,105	31,350	194.0	-0.21	105.21
2004	28,116	25,944	193.2	2.14	84.97	80.43	34,956	32,255	199.6	2.89	105.64
2005	29,561	26,514	197.4	2.20	85.76	83.32	35,479	31,822	196.9	-1.34	102.92

<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 – Whatcom County, Washington

## 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 – Whatcom County, Washington

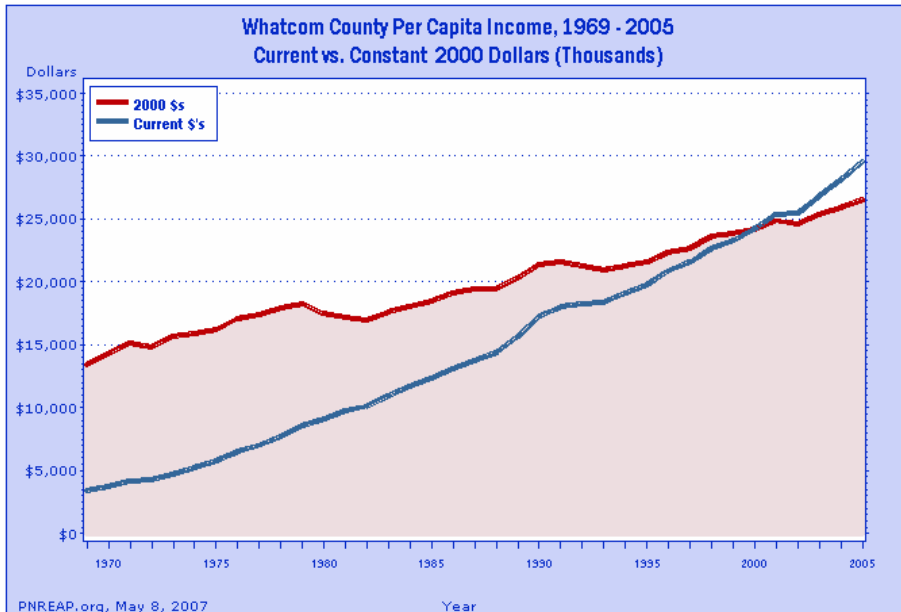


Figure 1.

Figure 1 depicts Whatcom 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, Whatcom County's per capita income increased 771.5%, from \$3,392 in 1969 to \$29,561 in 2005. When measured in constant 2000 dollars to adjust for inflation, it advanced 97.4%, from \$13,431 in 1969 to \$26,514 in 2005.

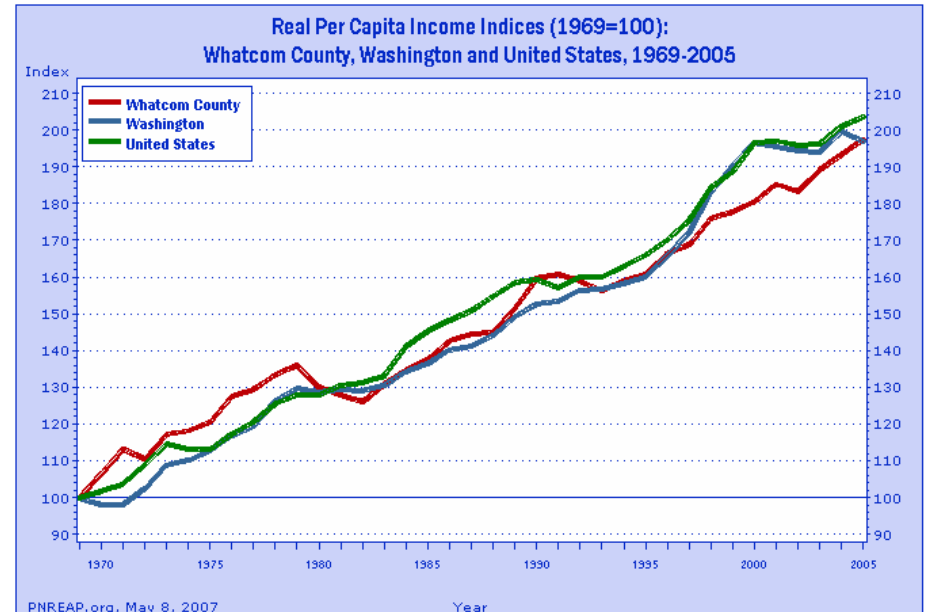


Figure 2.

The long-term growth of Whatcom County's real per capita income is compared with that of Washington 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 Whatcom County, Washington, and the nation.

Whatcom County's real per capita income climbed 97.4% over 1969-2005, surpassed the gain by Washington (96.9%), and fell below the increase nationally (103.6%).

# PNREAP Snippets from the Graphic Trends Module – Whatcom County, Washington

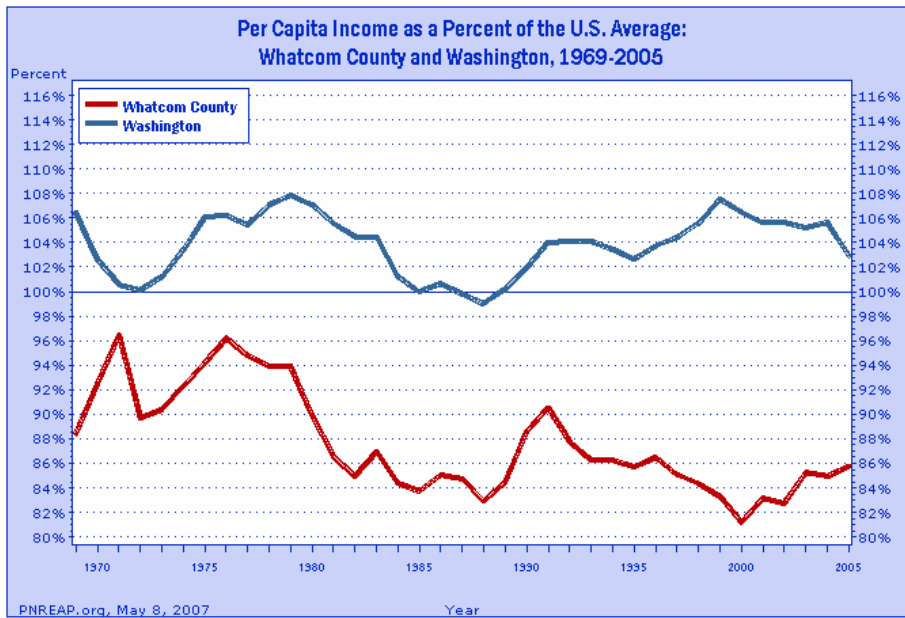


Figure 3.

Figure 3 highlights Whatcom County and Washington 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, Whatcom County's per capita income amounted to 88.43% of the national average; in 2005, it comprised 85.76%. Similarly, in 1969, Washington's per capita income totaled 106.41% of the national average; in 2005 it consisted of 102.92%.

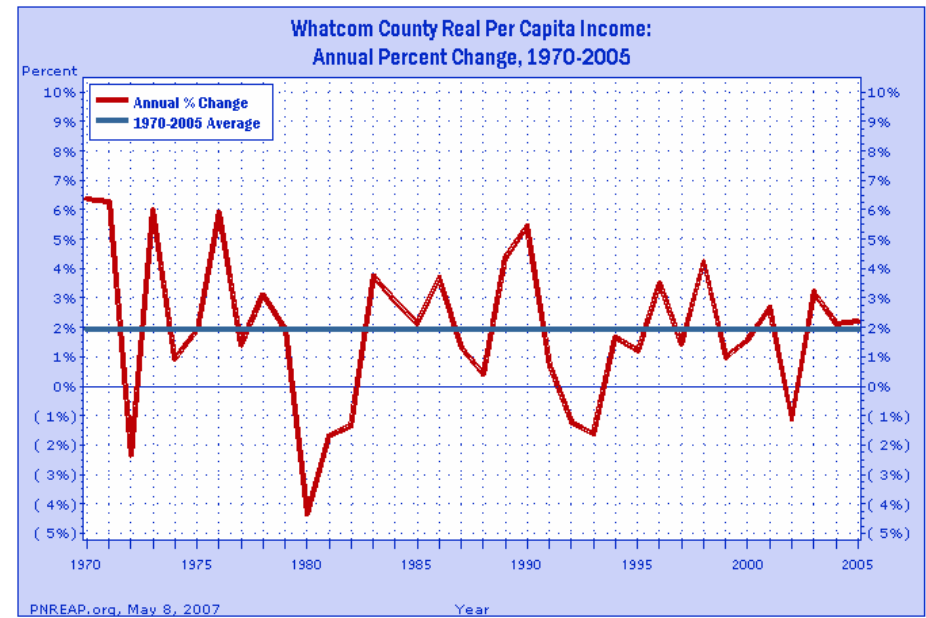


Figure 4.

Figure 4 highlights the short-run pattern of growth in Whatcom 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.

Whatcom County's real per capita income grew on average at an annual rate of 1.94% over 1969-2005.



# PNREAP Snippets from the Graphic Trends Module – Whatcom County, Washington

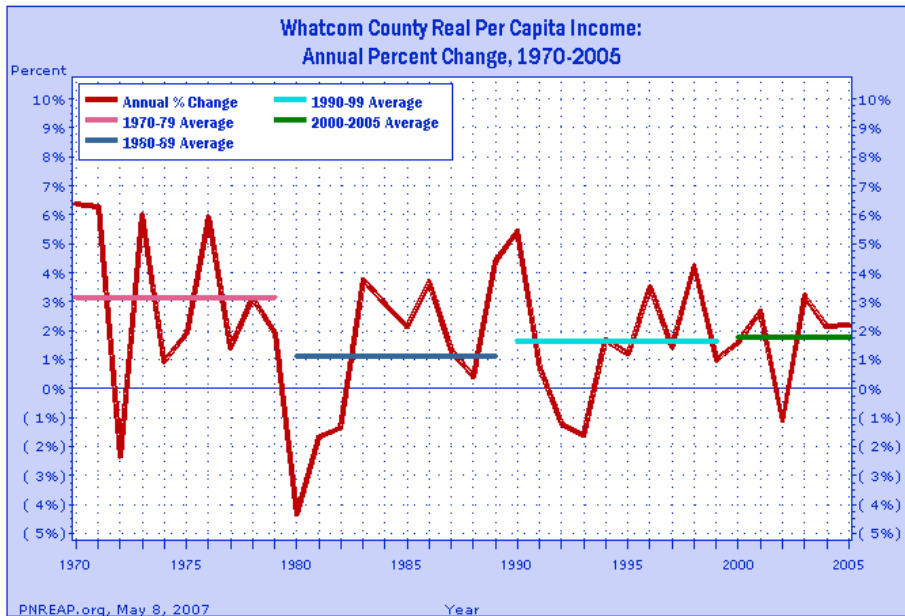


Figure 5.

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 Whatcom 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 Whatcom County's real per capita income averaged 3.15%. It averaged 1.12% during the 1980s, 1.63% in the 1990s, and 1.79% thus far this decade (2000-2005).

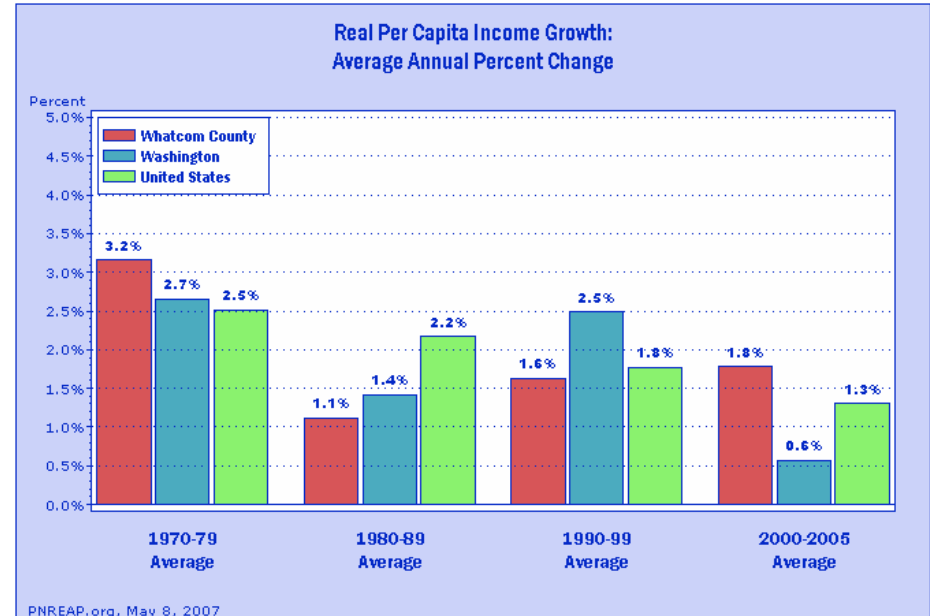


Figure 6.

Figure 6 compares the decade average growth rates for Whatcom County noted in the previous graph with the corresponding decade averages for Washington and the nation. As the chart reveals, Whatcom County's average annual real per capita income growth outpaced Washington's average during the 1970s (3.15% vs. 2.66%), trailed Washington's average during the 1980s (1.12% vs. 1.42%), fell below Washington's average during the 1990s (1.63% vs. 2.49%), and equaled higher than Washington's average over the 6 year period for this decade, 2000-2005 (1.79% vs. 0.57%).

Relative to nationwide real per capita income growth trends, Whatcom County led the nation during the 1970s (3.15% vs. 2.51%), trailed the nation in the 1980s (1.12% vs. 2.17%), posted below the nation in the 1990s (1.63% vs. 1.77%), and tallied over the nation from 2000-2005 (1.79% vs. 1.30%).

Real Per Capita Income Growth: Average Annual Percent Change					
	1970-2005	1970-79	1980-89	1990-99	2000-2005
Whatcom County:	1.94%	3.15%	1.12%	1.63%	1.79%
Washington:	1.92%	2.66%	1.42%	2.49%	0.57%
United States:	2.01%	2.51%	2.17%	1.77%	1.30%

# PNREAP Snippets from the Comparative Indicators Module – Washington



## Comparative Economic Indicators

1969-2005



- California
- Idaho
- Montana
- Nevada
- Oregon
- Washington

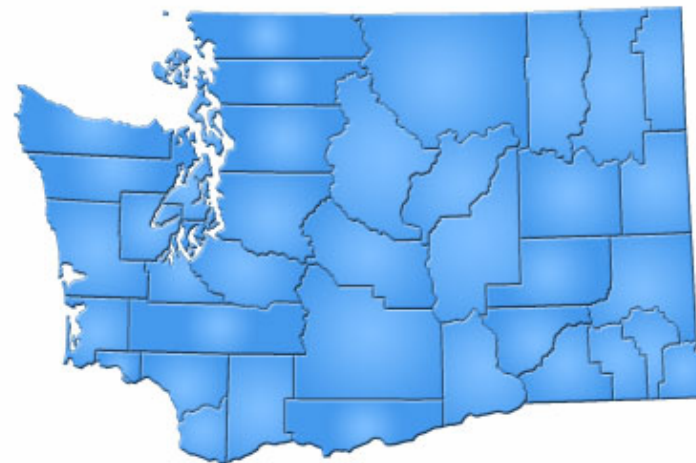
- Graphic Trend Analysis
- Comparative Economic Indicators**
- Major Components of Personal Income
- Shift-Share Analysis
- Industry Analysis
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- BEARFACTS (BEA Regional Facts)

United States

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

1999 vs. 2005

**Generate & Display Output**

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

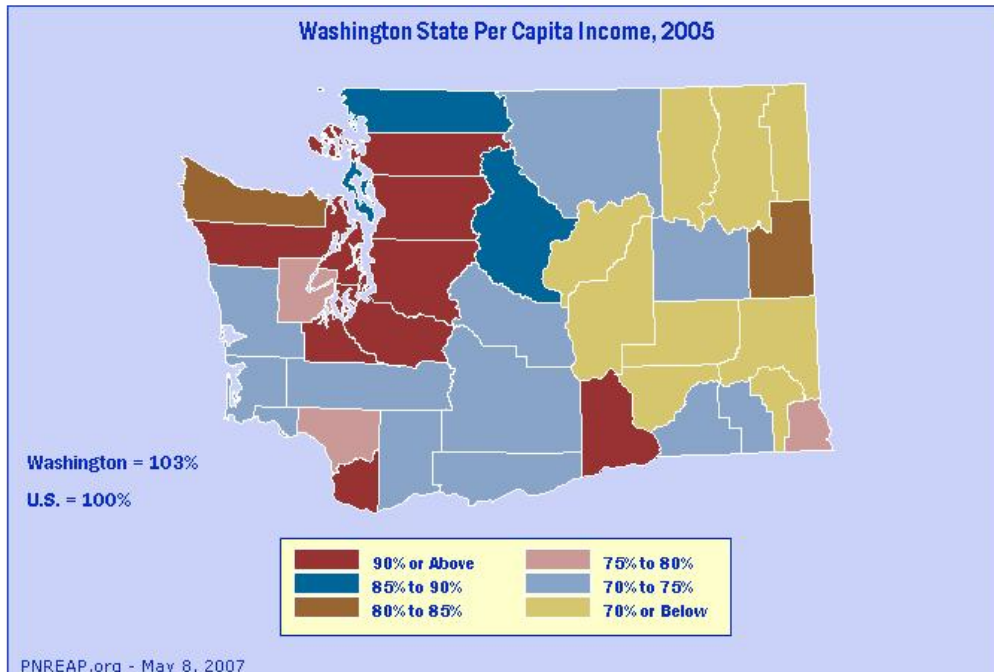
- Population
- Personal Income
- Per Capita Income
- Employment
- Total Industry Earnings
- Average Earnings Per Job

**Generate & Display Output**

# PNREAP Snippets from the Comparative Indicators Module – Washington

Select a measurement and then click on the preferred year:

Actual
  Percent of U.S. Average



### Washington 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
King	48,216	13,745	139.87	1	42,218	14,279	151.11	1	5,998	0
San Juan	44,063	9,582	127.80	2	36,977	9,038	132.36	2	7,076	0
Kitsap	36,616	1,145	103.32	3	27,159	-780	97.21	5	8,457	2
Jefferson	36,319	848	102.46	4	27,667	-372	98.67	4	7,752	0
Snohomish	33,999	-472	98.63	5	28,580	641	102.29	3	5,419	-2
Thurston	33,745	-726	97.89	6	26,672	-1,267	96.47	7	7,073	1
Pierce	32,448	-2,023	94.13	7	26,071	-1,868	93.31	9	6,377	2
Skagit	31,754	-2,717	92.12	8	25,970	-1,969	92.96	10	5,784	2
Benton	31,433	-3,038	91.19	9	25,152	-2,787	90.02	11	6,281	2
Clark	31,098	-3,373	90.21	10	26,924	-1,015	96.37	6	4,174	-4
Island	30,665	-3,806	88.96	11	26,331	-1,608	94.24	8	4,334	-3
Chelan	29,657	-4,814	86.03	12	23,823	-4,116	85.27	14	5,834	2
Whatcom	29,561	-4,910	85.76	13	23,278	-4,661	83.32	16	6,283	3
Clallam	29,267	-5,204	84.90	14	23,436	-4,603	83.88	15	5,831	1
Spokane	29,203	-5,268	84.72	15	24,107	-3,832	86.28	12	5,096	-3
Asotin	27,469	-7,002	78.69	16	22,544	-5,395	80.69	18	4,925	2
Mason	26,645	-7,826	77.30	17	21,776	-6,163	77.94	21	4,869	4
Cowlitz	26,258	-8,203	76.20	18	22,550	-5,359	80.82	17	3,688	-1
Okanogan	26,850	-8,621	74.99	19	19,780	-8,159	70.80	33	6,070	14
Skamania	26,817	-8,654	74.89	20	21,822	-6,117	78.11	20	3,995	0
Lincoln	26,762	-8,709	74.74	21	21,133	-6,806	76.64	25	4,629	4
Klickitat	26,766	-8,715	74.72	22	21,353	-6,586	76.43	24	4,403	2
Wahkiakum	26,529	-8,942	74.06	23	21,549	-6,390	77.13	22	3,980	-1
Kittitas	26,370	-9,101	73.60	24	21,880	-6,059	78.31	19	3,490	-5
Yakima	26,336	-9,135	73.50	25	20,875	-7,064	74.72	27	4,461	2
Columbia	26,248	-9,223	73.24	26	24,031	-3,908	86.01	13	1,217	-13
Lewis	26,070	-9,401	72.73	27	21,483	-6,456	76.89	23	3,587	-4
Walla Walla	24,982	-9,489	72.47	28	21,045	-6,894	75.32	26	3,937	-2
Grays Harbor	24,701	-9,770	71.66	29	20,756	-7,183	74.29	28	3,945	-1
Pacific	24,366	-10,105	70.69	30	20,310	-7,629	72.69	30	4,056	0
Douglas	24,047	-10,424	69.76	31	19,783	-8,156	70.81	32	4,264	1
Adams	23,575	-10,896	68.39	32	19,867	-8,072	71.11	31	3,708	-1
Pend Oreille	22,896	-11,575	66.42	33	19,632	-8,307	70.27	34	3,264	1
Grant	22,538	-11,933	65.38	34	19,408	-8,531	69.47	35	3,130	1
Stevens	21,900	-12,571	63.53	35	18,477	-9,462	66.13	37	3,423	2
Whitman	21,219	-13,252	61.56	36	17,511	-10,428	62.68	38	3,708	2
Franklin	20,573	-13,898	59.68	37	18,485	-9,454	66.16	36	2,088	-1
Ferry	20,093	-14,378	58.29	38	16,933	-11,006	60.61	39	3,160	1
Garfield	18,928	-15,543	54.91	39	20,316	-7,623	72.72	29	-1,388	-10
Washington	35,479	1,008	102.92		30,037	2,098	107.61		5,442	
Metro	36,817	2,346	106.81		31,232	3,293	111.79		5,585	
Nonmetro	26,123	-8,348	75.78		21,736	-8,203	77.80		4,387	
Westside	37,938	3,467	110.06		32,289	4,350	115.67		5,649	
Metro	39,174	4,703	113.84		33,429	5,490	119.66		5,745	
Nonmetro	28,302	-6,169	82.10		23,411	-4,528	83.79		4,891	
Eastside	26,798	-7,673	77.74		22,143	-5,796	79.25		4,655	
Metro	27,988	-6,483	81.19		23,089	-4,860	82.64		4,899	
Nonmetro	24,661	-9,810	71.54		20,483	-7,466	73.31		4,178	
Regions										
North Coast	31,035	-3,436	90.03		24,615	-3,324	88.10		6,420	
South Coast	24,623	-9,848	71.43		20,660	-7,289	73.91		3,973	
North Sound	31,064	-3,407	90.12		24,929	-3,010	89.23		6,136	
Central Sound	40,960	6,479	118.80		35,014	7,075	125.32		5,936	
South Sound	30,896	-3,575	89.63		24,829	-3,110	88.87		6,067	
Lower Columbia	29,879	-4,592	88.68		25,679	-2,260	91.91		4,200	
Upper Columbia	27,256	-7,215	79.07		21,711	-6,228	77.71		5,545	
Yakima Valley	25,340	-9,131	73.51		21,005	-8,934	75.18		4,335	
Columbia Basin	23,006	-11,465	66.74		19,667	-8,282	70.36		3,349	
Two Rivers	27,644	-6,827	80.19		22,906	-5,033	81.89		4,738	
Northeast	21,893	-12,588	63.48		18,518	-9,421	66.28		3,365	
Spokane	29,203	-5,268	84.72		24,107	-3,832	86.28		5,096	
Southeast	23,333	-11,138	67.69		19,524	-8,415	69.88		3,809	
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 – San Juan County, Washington



## Major Components of Personal Income

1969-2005



- California
- Idaho
- Montana
- Nevada
- Oregon
- Washington

- 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)

- 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="#">Adams</a>        | <a href="#">Lewis</a>        |
| <a href="#">Asotin</a>       | <a href="#">Lincoln</a>      |
| <a href="#">Benton</a>       | <a href="#">Mason</a>        |
| <a href="#">Chelan</a>       | <a href="#">Okanogan</a>     |
| <a href="#">Clallam</a>      | <a href="#">Pacific</a>      |
| <a href="#">Clark</a>        | <a href="#">Pend Oreille</a> |
| <a href="#">Columbia</a>     | <a href="#">Pierce</a>       |
| <a href="#">Cowlitz</a>      | <a href="#">San Juan</a>     |
| <a href="#">Douglas</a>      | <a href="#">Skaagit</a>      |
| <a href="#">Ferry</a>        | <a href="#">Skamania</a>     |
| <a href="#">Franklin</a>     | <a href="#">Snohomish</a>    |
| <a href="#">Garfield</a>     | <a href="#">Spokane</a>      |
| <a href="#">Grant</a>        | <a href="#">Stevens</a>      |
| <a href="#">Grays Harbor</a> | <a href="#">Thurston</a>     |
| <a href="#">Island</a>       | <a href="#">Wahkiakum</a>    |
| <a href="#">Jefferson</a>    | <a href="#">Walla Walla</a>  |
| <a href="#">King</a>         | <a href="#">Whatcom</a>      |
| <a href="#">Kitsap</a>       | <a href="#">Whitman</a>      |
| <a href="#">Kittitas</a>     | <a href="#">Yakima</a>       |
| <a href="#">Klickitat</a>    |                              |

[Metropolitan Washington](#)

[Nonmetro Washington](#)

#### Regions

[Western Washington](#)

[Metro Western Washington](#)

[Nonmetro Western Washington](#)

[Eastern Washington](#)

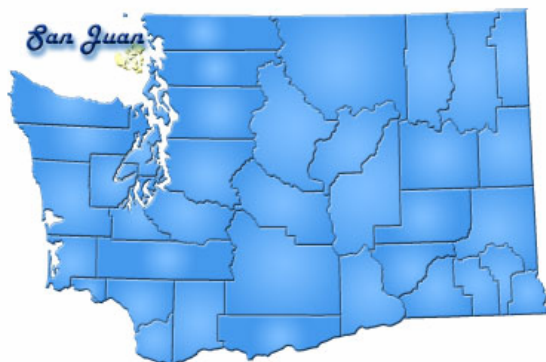
[Metro Eastern Washington](#)

[Nonmetro Eastern Washington](#)



# PNREAP Snippets from the Major Components Module – San Juan County, Washington

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



### Briefing Report Outline:

1. [Table 1 - Earned Income and Property Income: San Juan County, 1969 - 2005](#)
2. [Table 2 - Transfer Payments and Total Personal Income: San Juan County, 1969 - 2005](#)
3. [Introduction](#)
4. [Graph - Major Components of Personal Income: San Juan County, 1969-2005](#)
5. [Graph - Major Income Components as a Percent of Total Personal Income](#)
6. [Graph - Income Growth Indices, San Juan County, 1969-2005](#)
7. [Graph - Major Income Components as a Percent of Total Personal Income: San Juan 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: San Juan County, Washington, 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: San Juan County, Washington, and U.S.](#)
12. [Graph - Transfer Payments as a Percent of Total Personal Income: San Juan County, Washington, 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: San Juan County](#)

## Major Components of Personal Income: Earned Income and Property Income San Juan County, Washington (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 (2000 \$) Income	Percent 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 (2000 \$) Income	Percent of Total Income
1969	8,820	34,924	100.0	.	54.0	5,854	23,180	100.0	.	35.8
1970	10,109	38,222	109.4	9.44	52.3	7,123	26,932	116.2	16.19	36.9
1971	11,436	41,474	118.8	8.51	51.6	8,209	29,771	128.4	10.54	37.1
1972	13,331	46,730	133.8	12.67	52.4	9,411	32,989	142.3	10.81	37.0
1973	15,724	52,272	149.7	11.86	52.0	11,280	37,499	161.8	13.67	37.3
1974	17,537	52,837	151.3	1.08	50.2	13,451	40,526	174.8	8.07	38.5
1975	19,679	54,732	156.7	3.59	51.3	13,762	38,276	165.1	-5.55	35.9
1976	23,964	63,150	180.8	15.38	51.9	16,796	44,261	190.9	15.64	36.3
1977	26,903	66,575	190.6	5.42	49.9	20,675	51,163	220.7	15.60	38.3
1978	32,178	74,403	213.0	11.76	50.4	24,463	56,564	244.0	10.66	38.3
1979	37,385	79,443	227.5	6.77	50.6	28,212	59,950	258.6	5.99	38.2
1980	40,628	78,014	223.4	-1.80	46.9	36,007	69,141	298.3	15.33	41.5
1981	41,997	74,043	212.0	-5.09	41.5	47,406	83,579	360.6	20.88	46.8
1982	41,920	70,031	200.5	-5.42	38.9	52,490	87,689	378.3	4.92	48.7
1983	48,172	77,154	220.9	10.17	40.8	55,012	88,109	380.1	0.48	46.6
1984	54,615	84,289	241.4	9.25	40.4	64,351	99,315	428.5	12.72	47.6
1985	58,070	86,755	248.4	2.93	40.6	66,963	100,040	431.6	0.73	46.8
1986	62,196	90,706	259.7	4.55	40.7	71,055	103,626	447.1	3.58	46.5
1987	68,799	96,972	277.7	6.91	42.2	73,625	103,775	447.7	0.14	45.1
1988	82,265	111,538	319.4	15.02	42.1	91,064	123,468	532.7	18.98	46.6
1989	90,662	117,656	336.9	5.48	40.8	108,291	140,689	607.0	13.95	48.7
1990	109,000	135,407	387.7	15.09	45.3	105,755	131,376	566.8	-6.62	44.0
1991	115,896	138,932	397.8	2.60	44.2	118,223	141,722	611.4	7.88	45.1
1992	126,398	147,276	421.7	6.01	43.7	131,523	153,247	661.1	8.13	45.4
1993	134,976	153,724	440.2	4.38	42.5	146,996	167,414	722.2	9.24	46.3
1994	140,125	156,295	447.5	1.67	39.6	176,574	196,950	849.7	17.64	49.9
1995	146,264	159,717	457.3	2.19	40.6	173,255	189,191	816.2	-3.94	48.1
1996	149,150	159,439	456.5	-0.17	38.5	194,471	207,886	896.8	9.88	50.2
1997	166,995	175,555	502.7	10.11	39.1	214,441	225,433	972.6	8.44	50.3
1998	184,176	191,894	549.5	9.31	38.8	242,913	253,092	1091.9	12.27	51.2
1999	211,104	216,350	619.5	12.74	41.5	246,682	252,813	1090.7	-0.11	48.5
2000	218,446	218,446	625.5	0.97	41.0	258,375	258,375	1114.7	2.20	48.5
2001	226,327	221,685	634.8	1.48	41.2	261,065	255,710	1103.2	-1.03	47.5
2002	224,966	217,270	622.1	-1.99	40.1	268,794	259,599	1119.9	1.52	47.9
2003	237,272	224,696	643.4	3.42	40.1	283,482	268,456	1158.2	3.41	47.9
2004	255,388	235,656	674.8	4.88	40.1	307,316	283,572	1223.4	5.63	48.2
2005	267,502	239,927	687.0	1.81	39.9	323,849	290,466	1253.1	2.43	48.3

<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 – San Juan County, Washington

## Major Components of Personal Income: Transfer Payments and Total Personal Income San Juan County, Washington (1969-2005)

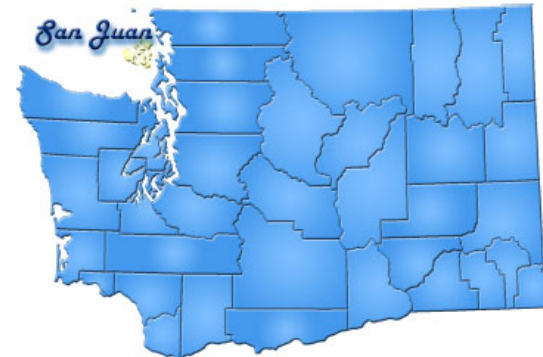
Year	Transfer Payments				Total Personal Income			
	Current Dollars (1,000s)	2000 Dollars <sup>1</sup> (1,000s)	Index <sup>2</sup>	Percent Change <sup>1</sup> of Total (2000 \$s) Income	Current Dollars (1,000s)	2000 Dollars <sup>1</sup> (1,000s)	Index <sup>2</sup>	Percent Change <sup>1</sup> (2000 \$s)
1969	1,869	6,609	100.0	.	16,343	64,712	100.0	.
1970	2,085	7,883	119.3	19.29	19,317	73,038	112.9	12.87
1971	2,497	9,056	137.0	14.87	22,142	80,300	124.1	9.94
1972	2,675	9,377	141.9	3.55	25,417	89,095	137.7	10.95
1973	3,247	10,794	163.3	15.12	30,251	100,565	155.4	12.87
1974	3,954	11,913	180.3	10.36	34,942	105,276	162.7	4.68
1975	4,888	13,595	205.7	14.12	38,329	106,603	164.7	1.26
1976	5,452	14,367	217.4	5.68	46,212	121,777	188.2	14.23
1977	6,382	15,793	239.0	9.93	53,960	133,531	206.3	9.65
1978	7,170	16,579	250.9	4.97	63,811	147,547	228.0	10.50
1979	8,260	17,552	265.6	5.87	73,857	156,946	242.5	6.37
1980	10,073	19,342	292.7	10.20	86,708	166,496	257.3	6.09
1981	11,916	21,008	317.9	8.61	101,319	178,630	276.0	7.29
1982	13,426	22,429	339.4	6.76	107,836	180,150	278.4	0.85
1983	14,820	23,736	359.2	5.83	118,004	189,000	292.1	4.91
1984	16,233	25,053	379.1	5.55	135,199	208,657	322.4	10.40
1985	17,994	26,882	408.8	7.30	143,027	213,677	330.2	2.41
1986	19,504	28,444	430.4	5.81	152,755	222,776	344.3	4.26
1987	20,745	29,240	442.5	2.80	163,169	229,987	355.4	3.24
1988	22,154	30,037	454.5	2.73	195,483	265,044	409.6	15.24
1989	23,371	30,363	459.4	1.08	222,224	288,708	446.1	8.93
1990	25,774	32,018	484.5	5.45	240,529	298,801	461.7	3.50
1991	28,196	33,800	511.5	5.57	262,315	314,455	485.9	5.24
1992	31,575	36,790	556.7	8.85	289,496	337,314	521.3	7.27
1993	35,319	40,225	608.7	9.34	317,291	361,363	558.4	7.13
1994	36,826	41,076	621.5	2.12	353,525	394,322	609.3	9.12
1995	40,512	44,238	669.4	7.70	360,031	393,146	607.5	-0.30
1996	43,428	46,424	702.5	4.94	387,049	413,748	639.4	5.24
1997	45,141	47,455	718.1	2.22	426,577	448,443	693.0	8.39
1998	47,542	49,534	749.5	4.38	474,631	494,521	764.2	10.28
1999	51,086	52,356	792.2	5.70	508,872	521,519	805.9	5.46
2000	55,843	55,843	845.0	6.66	532,664	532,664	823.1	2.14
2001	62,504	61,222	926.4	9.63	549,896	538,617	832.3	1.12
2002	67,124	64,828	981.0	5.89	560,884	541,697	837.1	0.67
2003	70,504	66,767	1010.3	2.99	591,258	559,919	865.2	3.36
2004	74,251	68,514	1036.7	2.62	636,955	587,743	908.2	4.97
2005	78,922	70,787	1071.1	3.32	670,273	601,179	929.0	2.29

<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

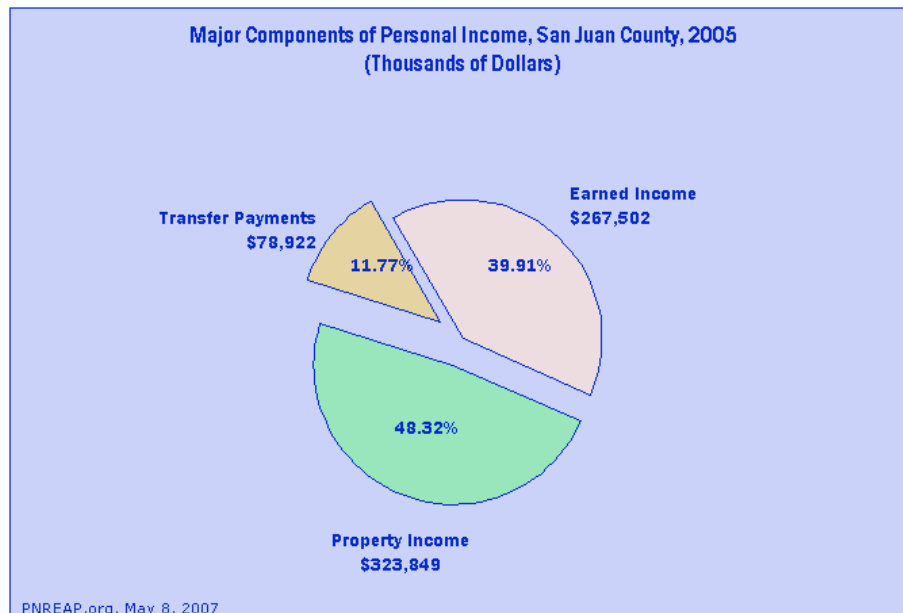


Paralleling a nationwide trend, the composition of San Juan County's total personal income has undergone dramatic change over the past three decades. With few exceptions, transfer payments and property income have increased in their importance, while labor-related earned income declined in relative share. But within this trend there are 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 San Juan County's personal income in relation to the state and nation at large.

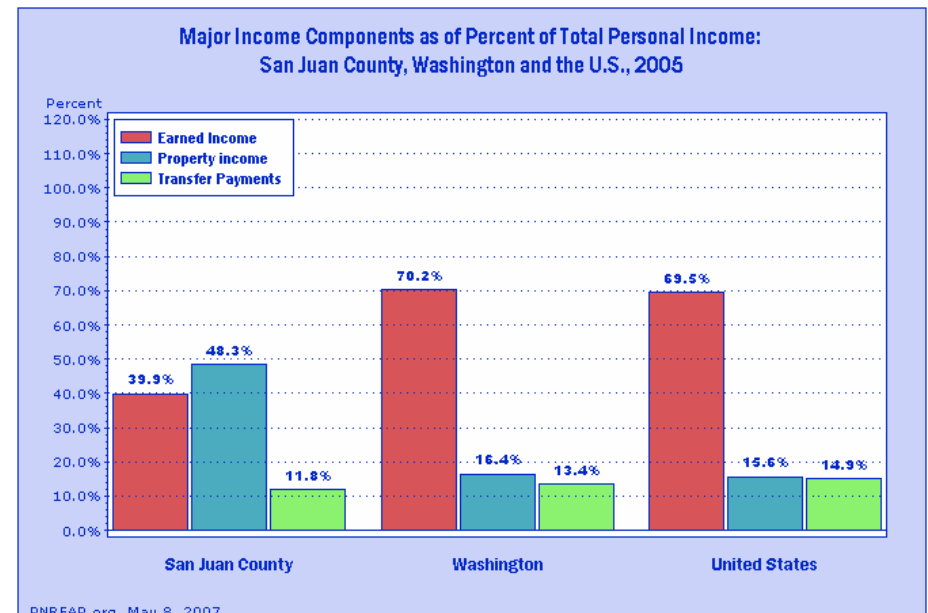
**Earned income** can be viewed as compensation for labor services. **Property income** represents payments in the form of dividends, interest and rent for the services of capital owned by persons. In contrast to the other two components of income, **Transfer Payments** are by definition payments that 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 – San Juan County, Washington



PNREAP.org, May 8, 2007  
Figure 1.

Figure 1 depicts the composition of San Juan County's personal income among the three major components for 2005. Net earnings amounted to \$267,502,000 or 39.9% of total personal income; property income totaled \$323,849,000 or 48.3%; and transfer payments summed to \$78,922,000 comprising 11.8% of San Juan County's personal income in 2005. For every \$100 of personal income that accrued to the residents of San Juan County in 2005, about \$60 derived from property income and transfer payments.



PNREAP.org, May 8, 2007  
Figure 2.

What are the differences in personal income composition between San Juan County, Washington 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 San Juan County's personal income that originates as property income (48.3%) is well above the share nationally (15.6%). The share of San Juan County's personal income that stems from transfer payments (11.8%) is below the national average (14.9%).

In combination, property income and transfer payments amounted to 60.1% (48.3% + 11.8%) of San Juan County's income in 2005. Earned income made up the balance (39.9%) 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 – San Juan County, Washington

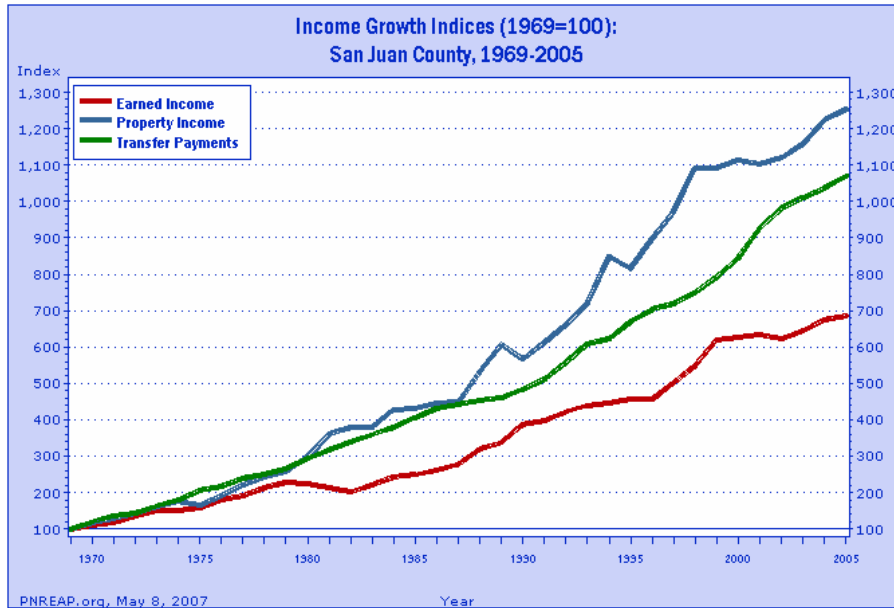


Figure 3.

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 San Juan 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 San Juan County over more than three decades.

Over the 1969-2005 period, earned income in San Juan County grew by 587.0%. Property income, however, increased by 1153.1%, while transfer payments rose 971.1%. 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.

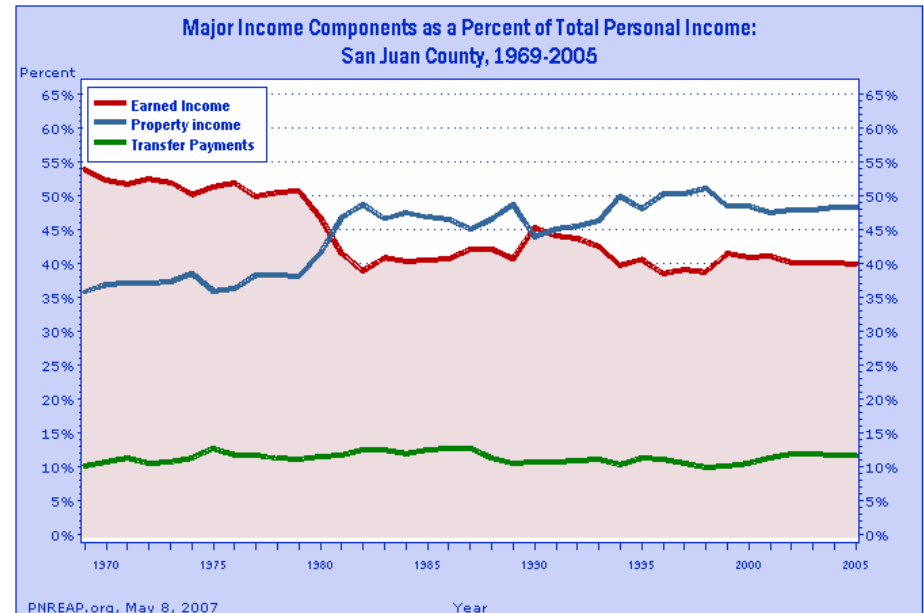


Figure 4.

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 San Juan County's personal income declined from 54.0% in 1969 to 39.9% in 2005, a shift in relative share of -14.1%. Offsetting this decline was a 12.5% increase in property income's share from 35.8% in 1969 to 48.3% in 2005; and a 1.6% advance in transfer payments share, from 10.2% to 11.8% over the same period.

# PNREAP Snippets from the Major Components Module – San Juan County, Washington

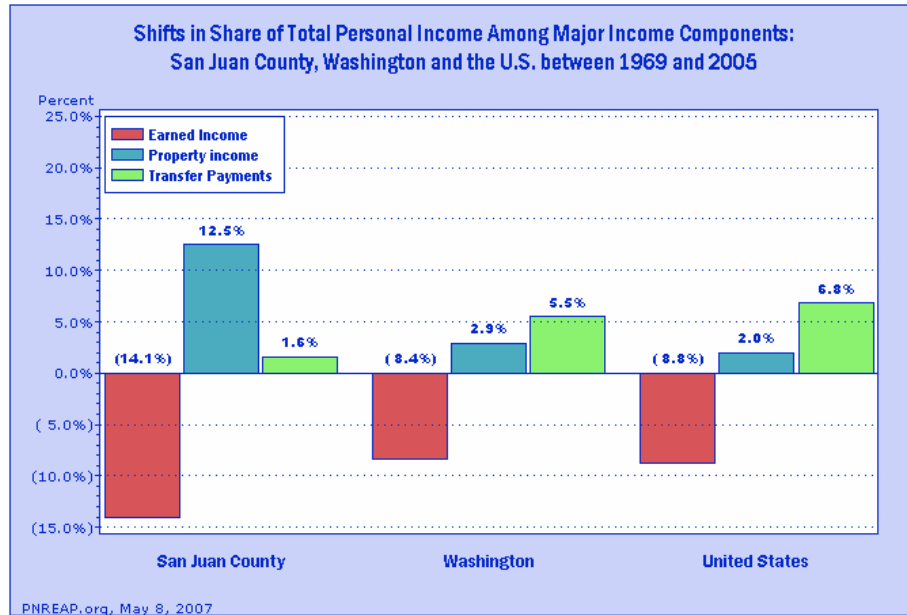


Figure 5.

How does the shift in personal income composition for San Juan County compare with the shifts in share among the three major components for Washington and the United States over 1969 to 2005? In the above figure, earned income's share statewide and nationally declined by -8.4% and -8.8%, respectively, whereas earned income's share decline by -14.1% in San Juan County over 1969-2005. Nationally the shift in share of property income and transfer payments amounted to 2.0% and 6.8%, respectively, while the corresponding shifts in share in San Juan County amounted to 12.5% and 1.6%, 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.

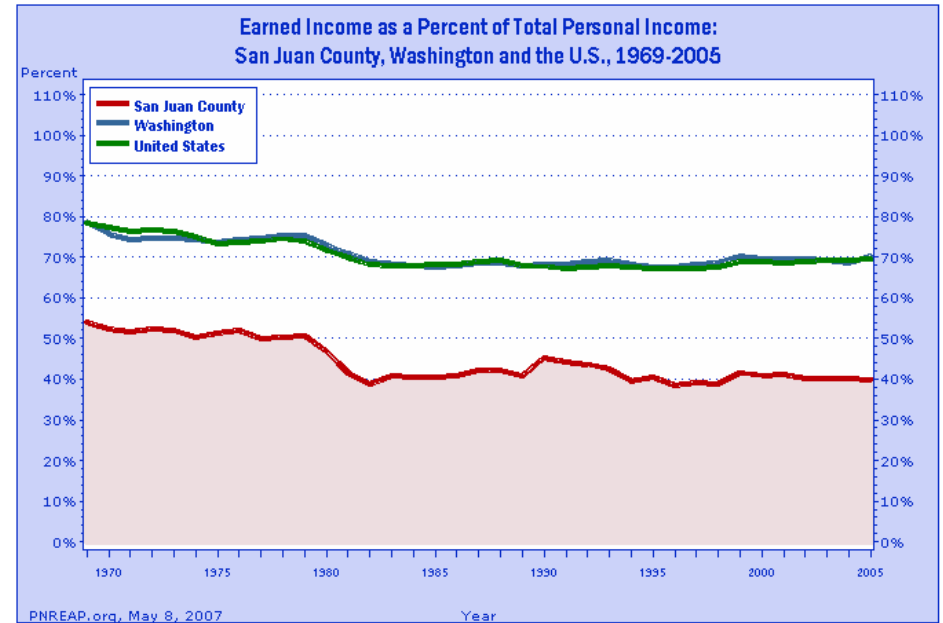


Figure 6.

Figure 6 above traces earned income as a percent of personal income for San Juan 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 – San Juan County, Washington

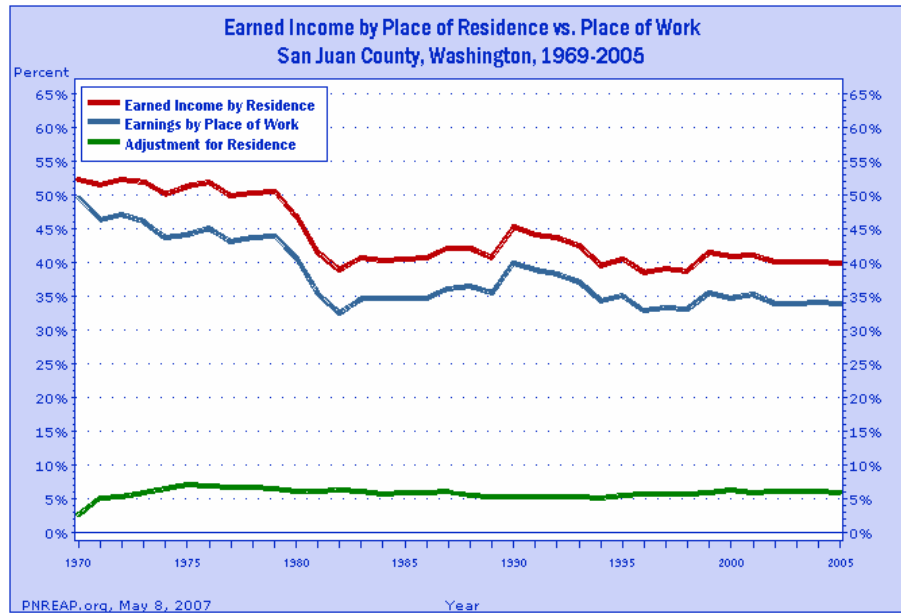


Figure 7.

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 the residence adjustment which accounts for the difference between the two. This positive adjustment for residence of 6.01% 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 San Juan County in 2005. So, in 2005 6.01% of San Juan 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 San Juan County. For every \$100 of personal income reported for San Juan County residents in 2005, \$6.01 derived from jobs held and earnings garnered from outside the county.

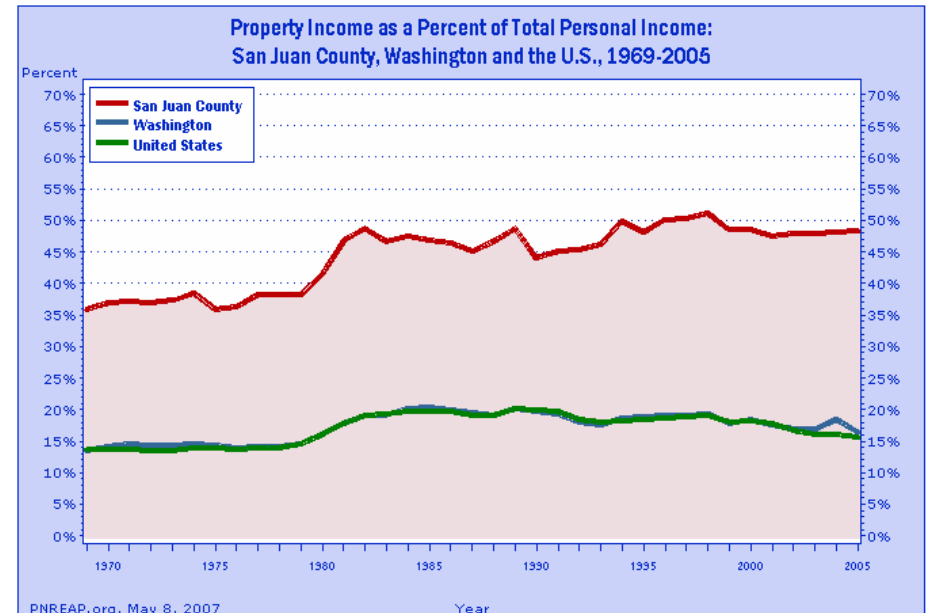


Figure 8.

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 – San Juan County, Washington

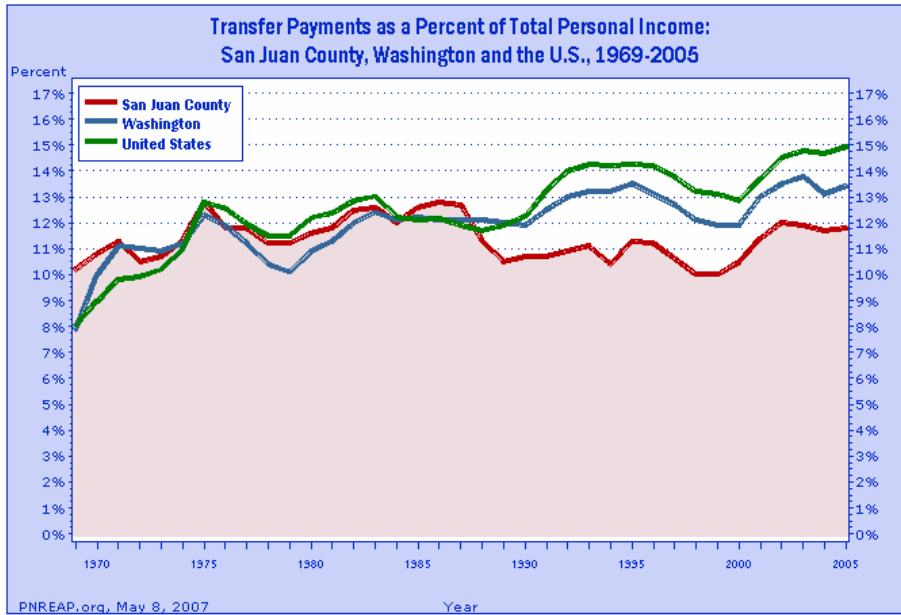


Figure 9.

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 important role in the changing composition of San Juan 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 San Juan County, transfer payments rose from 10.20% to 11.80% over 1969-2005, for a net gain of 1.60%.

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 San Juan County residents over 1969-2005 by [clicking here](#).

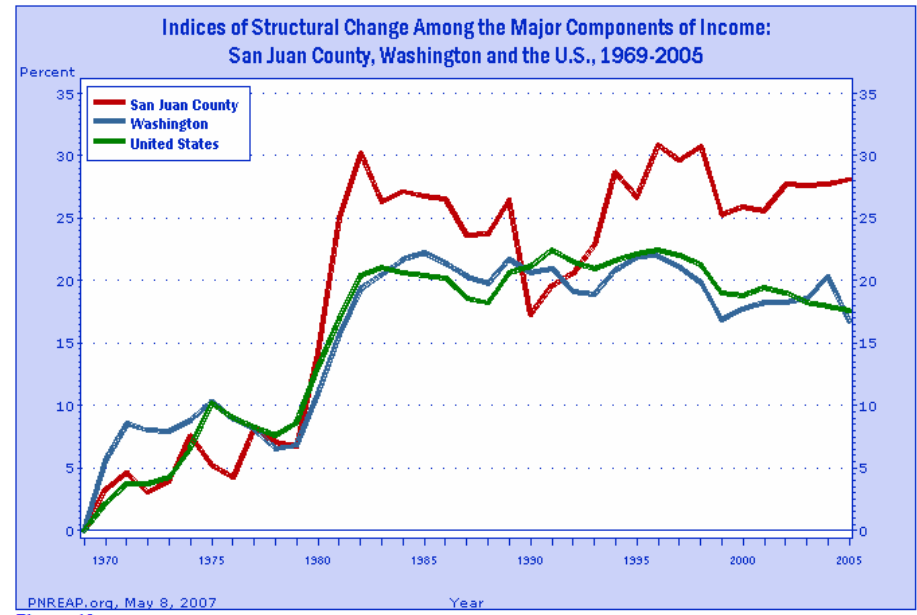


Figure 10.

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 San Juan 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 San Juan County, Washington 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 components 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
San Juan County:	28.2%	=  -14.1	+  12.5	+  1.6
Washington:	16.8%	=  -8.4	+  2.9	+  5.5
United States:	17.6%	=  -8.8	+  2.0	+  6.8

# PNREAP Snippets from the Major Components Module – San Juan County, Washington

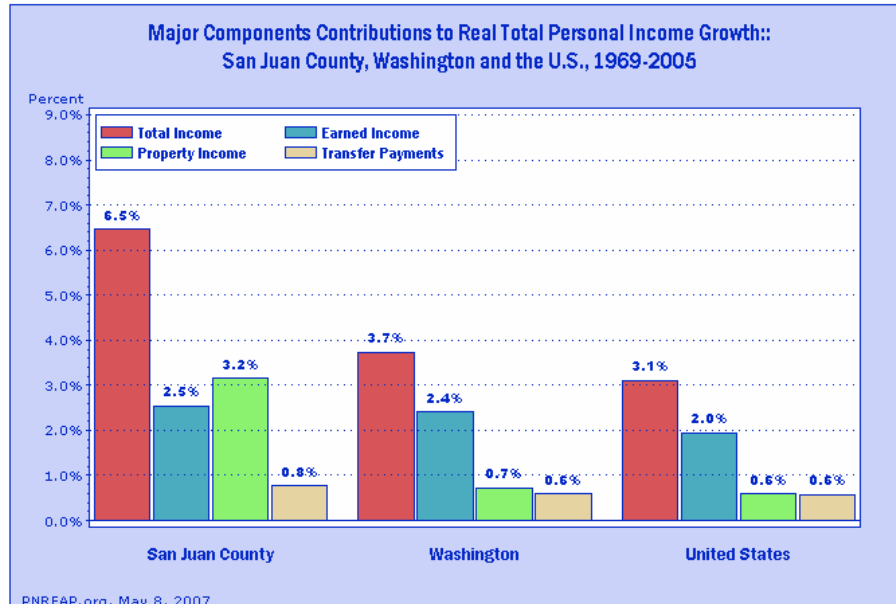


Figure 11.

This report thus far has centered primarily on examining and comparing changes in the composition of San Juan 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 San Juan County's real personal income growth over the 37-year period. The annual growth rate of San Juan County's real (inflation adjusted) personal income averaged 6.46% over 1969-2005. Each component's individual contribution to this total amounted to 2.54% for earned income, 3.16% for property income and 0.77% for transfer payments, all of which sum to 6.46%.

In order to gauge each component's contribution to total real income growth the table below displays each components 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 11.9% was derived by:  $11.9\% = (0.77\%/6.46\%)\times 100$ .

		Earned Income	Property Income	Transfer Payments
San Juan County:	6.46% (100%)	= 2.54% (39.3%)	+ 3.16% (48.9%)	+ 0.77% (11.9%)
Washington:	3.73% (100%)	= 2.40% (64.3%)	+ 0.73% (19.6%)	+ 0.60% (16.1%)
United States:	3.11% (100%)	= 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%.

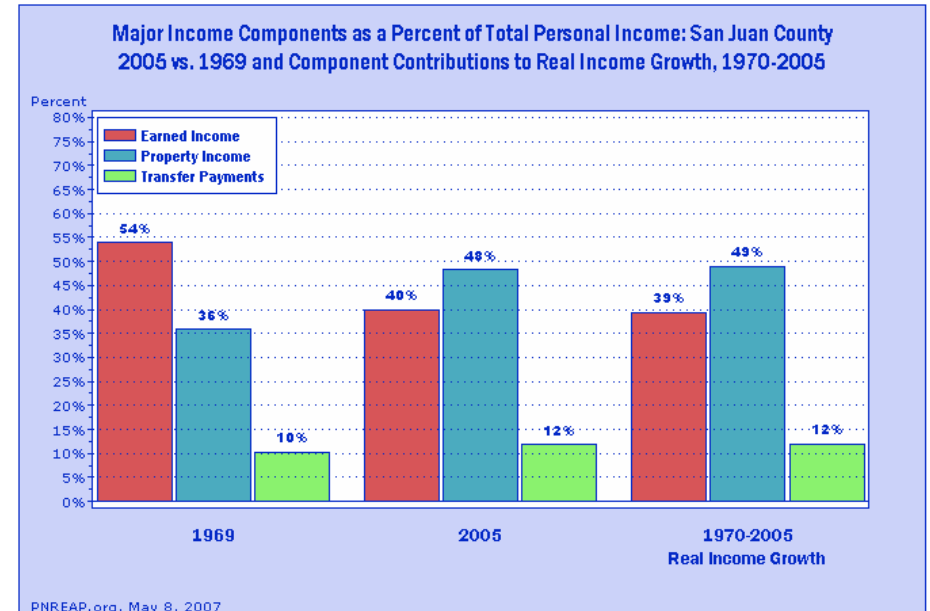


Figure 12.

Figure 12 recaps the theme and distills the results presented throughout this briefing report. In 1969 earned income comprised 54.0% of San Juan County's total personal income. However, over the following 37-year period 1969-2005 earned income accounted for only 39.3% of the annual real growth in San Juan County's personal income. As a result, by 2005 earned income's share declined to 39.9%.

Because property income alone accounted for 48.9% San Juan County's total personal income growth over 1969-2005, its share rose from 35.8% in 1969 to 48.3% in 2005. Transfer payments, in turn, advanced from 10.2% to 11.8% over the same period owing to its 11.9% contribution to the growth of San Juan County's total personal income.

# PNREAP Snippets from the Shift-Share Analysis Module – Whatcom County, Washington



## Shift-Share Analysis of Employment Growth

1969-2005



- California
- Idaho
- Montana
- Nevada
- Oregon
- Washington**

- 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)

United States

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



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

Whatcom County

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

Beginning Year: 2001

End Year: 2005

Output: Tables & Narrative

Generate & Display Output

**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 Washington's 39 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.



# PNREAP Snippets from the Shift-Share Analysis Module – Whatcom County, Washington

## 2001-2005 Shift-Share Analysis Results for Whatcom County, Washington

The shift-share analysis results compiled in this briefing report are for evaluating employment change in the Whatcom 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.

## Notes on Interpreting Table 1: Whatcom 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 Whatcom County are included in the employment (or job) count for Whatcom 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 13,280 jobs were added to the Whatcom County economy, amounting to an increase of 14.00%. 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 Whatcom 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 4.38% narrowly exceeded the growth rate for total employment nationally of 4.33%. This arises because the proportional industry distribution or mix of employment in Whatcom County was slightly tilted toward faster growing industries. In other words, simply by virtue of its industry mix Whatcom County was disposed toward experiencing slightly 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 Whatcom 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.

Table 1: Whatcom County Employment Growth, 2001 - 2005

Industry	Employment				Actual Growth		Standardized		
	2001 Level	2001 Share <sup>1</sup>	2005 Level	2005 Share <sup>1</sup>	Percent	Net	Growth <sup>2</sup> Percent	Net	Employment <sup>3</sup> 2005
Farm	3,374	3.6	3,184	2.9	-5.63	-190	-4.65	-157	3,217
Forestry, Fishing, & Other	1,778	1.9	1,596	1.5	-10.24	-182	-1.01	-18	1,760
Mining	174	0.2	217	0.2	24.71	43	1.06	2	176
Utilities	235	0.2	226	0.2	-3.83	-9	-3.99	-9	226
Construction	7,938	8.4	9,998	9.2	25.95	2,060	10.15	805	8,743
Manufacturing	8,819	9.3	8,911	8.2	1.04	92	-12.56	-1,107	7,712
Wholesale Trade	2,951	3.1	3,780	3.5	28.09	829	2.04	60	3,011
Retail Trade	11,576	12.2	13,070	12.1	12.91	1,494	2.23	258	11,834
Trans. & Warehousing	2,232	2.4	2,356	2.2	5.56	124	0.66	15	2,247
Information	2,027	2.1	2,120	2.0	4.59	93	-11.76	-238	1,789
Finance & Insurance	2,562	2.7	2,863	2.6	11.75	301	4.43	113	2,675
Real Estate, Rent. & Leasing	3,347	3.5	4,148	3.8	23.93	801	24.91	834	4,181
Prof. & Tech. Services	5,163	5.4	6,085	5.6	17.86	922	8.63	446	5,609
Management of Comp. & E.	591	0.6	637	0.6	-9.14	-54	4.37	26	617
Admin. & Waste Services	3,876	4.1	4,734	4.4	22.14	858	10.64	413	4,289
Educational Services	906	1.0	1,291	1.2	42.49	385	16.17	147	1,053
Health Care & Social Asst.	8,796	9.3	10,574	9.8	20.21	1,778	10.61	933	9,729
Arts, Ent., & Rec	2,462	2.6	2,900	2.7	17.79	438	8.45	208	2,670
Accom. & Food Services	6,696	7.1	8,257	7.6	23.31	1,561	8.34	559	7,255
Other Services	6,729	6.0	6,151	5.7	7.37	422	7.84	449	6,178
Federal, Civilian	845	0.9	1,166	1.1	37.99	321	2.27	19	864
Federal Military	652	0.7	656	0.6	0.61	4	-3.43	-22	630
State Government	4,084	4.3	4,095	3.8	0.27	11	1.61	66	4,150
Local Government	8,024	8.5	9,202	8.5	14.68	1,178	4.40	353	8,377
<b>TOTAL</b>	<b>94,837</b>	<b>100.0</b>	<b>108,117</b>	<b>100.0</b>	<b>14.00</b>	<b>13,280</b>	<b>4.38</b>	<b>4,152</b>	<b>98,989</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 and 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%.

# PNREAP Snippets from the Shift-Share Analysis Module – Whatcom County, Washington

## Shift-Share Components of Whatcom 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 Whatcom 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 Whatcom 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	146	-8.98	-303	-0.98	-33
Forestry, Fishing, & Other	4.33	77	-5.34	-95	-9.23	-164
Mining	4.33	8	-3.27	-6	23.65	41
Utilities	4.33	10	-8.32	-20	0.16	0
Construction	4.33	344	5.81	461	15.81	1,255
Manufacturing	4.33	382	-16.89	-1,489	13.60	1,199
Wholesale Trade	4.33	128	-2.29	-68	26.05	769
Retail Trade	4.33	501	-2.11	-244	10.68	1,236
Trans. & Warehousing	4.33	97	-3.67	-82	4.90	109
Information	4.33	88	-16.09	-326	16.35	331
Finance & Insurance	4.33	111	0.09	2	7.32	188
Real Estate, Rent. & Leasing	4.33	145	20.58	689	-0.98	-33
Prof. & Tech. Services	4.33	224	4.30	222	9.23	476
Management of Comp. & E.	4.33	26	0.03	0	-13.50	-80
Admin. & Waste Services	4.33	168	6.31	245	11.49	445
Educational Services	4.33	39	11.84	107	26.32	238
Health Care & Social Asst.	4.33	381	6.27	552	9.61	845
Arts, Ent., & Rec.	4.33	107	4.12	102	9.34	230
Accom. & Food Services	4.33	290	4.01	269	14.97	1,002
Other Services	4.33	248	3.51	201	-0.47	-27
Federal, Civilian	4.33	37	-2.06	-17	35.72	302
Federal Military	4.33	28	-7.76	-51	4.04	26
State Government	4.33	177	-2.72	-111	-1.34	-55
Local Government	4.33	348	0.07	5	10.28	825
<b>TOTAL</b>	<b>4.33</b>	<b>4,108</b>	<b>0.05</b>	<b>44</b>	<b>9.63</b>	<b>9,128</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 Whatcom County Employment Growth, 2001-2005

#### National Growth

This component is the most straightforward. It calibrates the growth in Whatcom 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 Whatcom 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 Whatcom County employment growth of 14.00% 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 Whatcom 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 Whatcom 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 9,128, showing that Whatcom County employment grew an additional 9.63% 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 Whatcom County may be highlighted as follows: \*

<b>Actual Growth</b>	=	<b>National Growth</b>	+	<b>Industry Mix</b>	+	<b>Regional Shift</b>
14.00%		4.33%		0.05%		9.63%
(13,280)		(4,108)		(44)		(9,128)

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>
9.67%		0.05%		9.63%
(9,172)		(44)		(9,128)

Whatcom County's employment growth over 2001-2005 of 14.00% surpassed the 4.33% growth of employment nationally by 9.67%. 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 – Whatcom County, Washington

## 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 Whatcom 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 Whatcom County is available on the PNREAP web site. Click on the following Link:

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

# PNREAP Snippets from the Shift-Share Analysis Module – Whatcom County, Washington

**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 Whatcom 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 Whatcom 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 Whatcom County's Retail Trade sector from the table above we have:

Actual Growth	=	National Growth	+	Industry Mix	+	Regional Shift
$\Delta E_i$	=	$NG_i$	+	$IM_i$	+	$RS_i$
(1,494)	=	(501)	+	(-244)	+	(1,236)

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.,  $E_{i,2001} = 11,576$ ), and the overall growth rate of employment nationally over 2001-2005 ( 4.33%):

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

(501)	(11,576)	(4.33%)
-------	----------	---------

[ 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.,  $E_{i,2001} = 11,576$ ), by the difference in the national growth rate for Retail Trade employment (2.23%) and the national growth rate for total employment ( 4.33%):

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

(-244)	(11,576)	(-2.11%)
--------	----------	----------

The Regional Shift ( $RS_i$ ) component is computed by multiplying local Retail Trade employment in the beginning year (1910), (i.e.,  $E_{i,2001} = 11,576$ ), by the difference in Whatcom County's growth rate for Retail Trade employment (12.91%) and the growth of Retail Trade nationally (2.23%):

$$RS_i = E_{i,2001} \times (12.91\% - 2.23\%)$$

(1,236)	(11,576)	(10.68%)
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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
$\Sigma (E_i)$	=	$\Sigma (NG_i)$	+	$\Sigma (IM_i)$	+	$\Sigma (RS_i)$
(13,280)	=	(4,108)	+	(44)	+	(9,128)

**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*. You can access it by clicking [here](#).



# PNREAP Snippets from the Industry Analysis Module – Whatcom County, Washington



## Industry Analysis of Structure & Performance

2001-2005



- California
- Idaho
- Montana
- Nevada
- Oregon
- Washington

- 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)

United States

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



Industry Analysis of Structure & Performance, 2001-2005 -

County Growth by Industry, 2001-2005

Whatcom County

Indicators:

- Employment
- Earnings
- Average Earnings Per Job

Generate & Display Output

# PNREAP Snippets from the Industry Analysis Module – Whatcom County, Washington

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

Major Industry	2005			2001-2005 Averages		2001-2005
	Employment	Percent of Total	Location Quotient	Percent of Total	Location Quotient	Share Shift
Farm Employment	3,184	2.9	1.76	3.3	1.84	-0.61
Forestry, Fishing & Related Activities	1,596	1.5	2.54	1.7	2.77	-0.40
Construction	9,998	9.2	1.49	8.6	1.44	0.88
Manufacturing	8,911	8.2	0.97	8.6	0.94	-1.06
Wholesale Trade	3,780	3.5	0.95	3.3	0.89	0.38
Retail Trade	13,070	12.1	1.11	12.1	1.10	-0.12
Transportation & Warehousing	2,356	2.2	0.69	2.2	0.70	-0.17
Information	2,120	2.0	0.96	2.0	0.90	-0.18
Finance & Insurance	2,863	2.6	0.66	2.7	0.67	-0.05
Real Estate & Rental & Leasing	4,148	3.8	0.96	3.6	1.01	0.31
Professional & Technical Services	6,085	5.6	0.85	5.5	0.86	0.18
Management of Companies & Enterprises	637	0.5	0.47	0.5	0.50	-0.13
Administrative & Waste Services	4,734	4.4	0.72	4.2	0.71	0.29
Educational Services	1,291	1.2	0.69	1.1	0.66	0.24
Health Care & Social Assistance	10,574	9.8	0.99	9.6	0.98	0.51
Arts, Entertainment & Recreation	2,900	2.7	1.33	2.6	1.32	0.09
Accommodation & Food Services	8,257	7.6	1.13	7.5	1.14	0.58
Other Services, Except Public Admin.	6,161	5.7	1.02	5.9	1.06	-0.35
Federal Civilian	1,166	1.1	0.67	1.0	0.62	0.19
Federal Military	656	0.6	0.52	0.7	0.54	-0.08
State Government	4,095	3.8	1.29	4.1	1.37	-0.62
Local Government	9,202	8.5	1.07	8.7	1.08	0.05
Unreported	443	0.4	0.50	0.4	0.50	-0.02
<b>TOTAL</b>	<b>108,117</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:  
Whatcom County, 2005**

Major Industry	Employment Growth 2005			
	Growth Rate	Component Contribution	National Growth Rate	Local - National Growth Rate
Farm Employment	4.12	0.12	-1.19	5.31
Forestry, Fishing & Related Activities	-4.20	-0.07	-0.30	-3.91
Construction	11.66	1.00	6.28	6.28
Manufacturing	3.80	0.32	-0.30	4.10
Wholesale Trade	7.54	0.26	2.49	5.05
Retail Trade	4.73	0.67	1.50	3.22
Transportation & Warehousing	3.74	0.08	2.01	1.73
Information	9.67	0.18	0.42	9.25
Finance & Insurance	2.18	0.06	1.39	0.78
Real Estate & Rental & Leasing	7.46	0.28	7.26	0.20
Professional & Technical Services	6.12	0.34	4.66	1.56
Management of Companies & Enterprises	-5.29	-0.03	1.94	-7.23
Administrative & Waste Services	10.79	0.45	4.96	5.83
Educational Services	5.99	0.07	3.60	2.39
Health Care & Social Assistance	3.77	0.37	2.41	1.36
Arts, Entertainment & Recreation	3.50	0.09	1.49	2.01
Accommodation & Food Services	4.44	0.34	2.50	1.94
Other Services, Except Public Admin.	1.47	0.09	0.70	0.77
Federal Civilian	2.55	0.03	-0.21	2.77
Federal Military	-3.10	-0.02	-2.41	-0.69
State Government	0.64	0.03	0.57	0.07
Local Government	1.60	0.14	1.00	0.60
Unreported	9.93	0.04	3.67	6.25
<b>TOTAL</b>	<b>4.74</b>	<b>4.74</b>	<b>2.19</b>	<b>2.55</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 – Whatcom County, Washington

## Employment Growth by Major Industry: Whatcom 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	-1.28	-0.05	-1.18	-0.11
☐ Forestry, Fishing & Related Activities	-2.49	-0.05	-0.19	-2.30
☐ Construction	6.00	0.51	2.48	3.52
☐ Manufacturing	0.30	0.02	-3.26	3.56
☐ Wholesale Trade	6.40	0.21	0.52	5.88
☐ Retail Trade	3.09	0.37	0.55	2.54
☐ Transportation & Warehousing	1.45	0.03	0.18	1.27
☐ Information	1.30	0.02	-3.02	4.33
☐ Finance & Insurance	2.82	0.08	1.09	1.73
☐ Real Estate & Rental & Leasing	5.58	0.20	5.74	-0.16
☐ Professional & Technical Services	4.22	0.23	2.12	2.10
☐ Management of Companies & Enterprises	-1.69	-0.01	1.10	-2.78
☐ Administrative & Waste Services	5.18	0.21	2.58	2.60
☐ Educational Services	9.28	0.10	3.82	5.46
☐ Health Care & Social Assistance	4.72	0.45	2.55	2.16
☐ Arts, Entertainment & Recreation	4.20	0.11	2.05	2.15
☐ Accommodation & Food Services	5.43	0.40	2.03	3.41
☐ Other Services, Except Public Admin.	1.79	0.11	1.91	-0.12
☐ Federal Civilian	8.54	0.08	0.58	7.97
☐ Federal Military	0.17	0.00	-0.86	1.04
☐ State Government	0.10	0.00	0.40	-0.30
☐ Local Government	3.51	0.30	1.08	2.42
☐ Unreported	2.13	0.01	-0.22	2.34
TOTAL	3.33	3.33	1.07	2.26

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 Whatcom County are included in the employment (or job) count for Whatcom 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 Whatcom County over 2005, and 2002 - 2005, respectively. When summed over all industries the component contribution will match Whatcom County's TOTAL employment growth rate.

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

**Local - National Growth Rate** - To readily compare Whatcom 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:  
Washington, 2002 – 2005**

County	2005			2002-2005 Averages			2001-2005 Share Shift
	Employment	Percent Share	Location Quotient	Percent of State Total	Percent Share	Location Quotient	
Adams	S	S	S	S	S	S	S
Asotin	202	2.43	1.20	0.24	2.97	1.49	-0.73
Benton	1,785	2.02	1.00	2.10	2.07	1.04	-0.03
Chelan	925	1.77	0.88	1.09	1.75	0.88	0.09
Clallam	714	1.99	0.98	0.84	1.90	0.95	0.13
Clark	4,242	2.39	1.18	4.98	2.53	1.26	-0.17
Columbia	S	S	S	S	S	S	S
Cowlitz	888	1.88	0.93	1.04	1.83	0.91	0.31
Douglas	389	3.03	1.50	0.46	2.89	1.44	0.64
Ferry	S	S	S	S	S	S	S
Franklin	429	1.47	0.73	0.50	1.30	0.65	0.68
Garfield	S	S	S	S	S	S	S
Grant	497	1.22	0.80	0.58	1.19	0.59	0.16
Grays Harbor	535	1.59	0.79	0.83	1.57	0.79	0.08
Island	950	2.61	1.29	1.12	2.50	1.25	0.20
Jefferson	490	3.24	1.61	0.58	3.34	1.67	-0.02
King	39,220	2.71	1.34	46.05	2.65	1.32	0.25
Kitsap	3,010	2.38	1.18	3.53	2.30	1.15	0.24
Kittitas	488	2.59	1.28	0.57	2.23	1.11	0.52
Klickitat	186	1.97	0.98	0.22	1.80	0.90	0.43
Lewis	603	1.69	0.84	0.71	1.46	0.73	0.32
Lincoln	95	1.88	0.93	0.11	1.69	0.85	0.27
Mason	384	1.90	0.94	0.45	1.93	0.97	0.17
Okanogan	379	1.59	0.79	0.45	1.52	0.76	0.14
Pacific	210	2.11	1.04	0.25	2.03	1.01	0.11
Pend Oreille	S	S	S	S	S	S	S
Pierce	6,982	1.90	0.94	8.20	2.03	1.01	-0.21
San Juan	541	5.05	2.50	0.64	5.27	2.64	-0.38
Skagit	1,260	1.96	0.97	1.48	2.09	1.04	-0.10
Skamania	58	1.94	0.96	0.07	2.00	1.00	-0.34
Snohomish	6,088	2.02	1.00	7.15	1.90	0.95	0.32
Spokane	5,268	2.00	0.99	6.19	1.97	0.99	0.15
Stevens	244	1.52	0.75	0.29	1.56	0.78	-0.02
Thurston	2,318	1.86	0.92	2.72	1.82	0.91	0.15
Wahkiakum	S	S	S	S	S	S	S
Walla Walla	533	1.59	0.79	0.63	1.38	0.69	0.36
Whatcom	2,900	2.68	1.33	3.41	2.64	1.32	0.09
Whitman	312	1.37	0.68	0.37	1.17	0.59	0.38
Yakima	1,837	1.52	0.75	2.16	1.43	0.71	0.28
Washington	85,160	2.28	1.13	100.00	2.25	1.12	0.15
Metro	77,801	2.33	1.15	91.36	2.30	1.15	0.15
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:  
Washington, 2005**

County	Arts, Entertainment & Recreation Employment Growth 2005		
	Growth Rate	Component Contribution	Local - U.S. Growth Rate
Adams	S	S	S
Asotin	-12.55	-0.36	-14.04
Benton	-0.28	-0.01	-1.77
Chelan	3.47	0.08	1.98
Clallam	9.17	0.17	7.69
Clark	1.53	0.04	0.04
Columbia	S	S	S
Cowlitz	-1.33	-0.03	-2.82
Douglas	-5.35	-0.18	-6.84
Ferry	S	S	S
Franklin	-0.69	-0.01	-2.18
Garfield	S	S	S
Grant	0.81	0.01	-0.68
Grays Harbor	-1.47	-0.02	-2.96
Island	4.97	0.13	3.48
Jefferson	1.87	0.06	0.38
King	-0.76	-0.02	-2.25
Kitsap	3.44	0.08	1.95
Kittitas	14.82	0.34	13.33
Klickitat	7.51	0.14	6.03
Lewis	13.13	0.20	11.64
Lincoln	7.95	0.14	6.47
Mason	5.79	0.11	4.30
Okanogan	6.16	0.09	4.67
Pacific	7.14	0.14	5.65
Pend Oreille	S	S	S
Pierce	-0.46	-0.01	-1.95
San Juan	-1.99	-0.11	-3.48
Skagit	-3.30	-0.07	-4.79
Skamania	1.75	0.03	0.27
Snohomish	6.21	0.12	4.72
Spokane	4.30	0.08	2.81
Stevens	-4.69	-0.07	-6.18
Thurston	3.44	0.06	1.95
Wahkiakum	S	S	S
Walla Walla	21.14	0.28	19.65
Whatcom	3.50	0.09	2.01
Whitman	4.00	0.05	2.51
Yakima	0.71	0.01	-0.78
Washington	1.06	0.02	-0.43
Metro	0.66	0.02	-0.83
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:  
Washington, 2002 – 2005**

County	Arts, Entertainment & Recreation Employment Growth 2002 – 2005		
	Average Annual Growth Rate	Component Contribution	Local - U.S. Annual Growth Rate
Adams	S	S	S
Asotin	-5.01	-0.15	-7.06
Benton	1.82	0.04	-0.24
Chelan	3.36	0.06	1.31
Clallam	4.58	0.09	2.53
Clark	0.89	0.02	-1.17
Columbia	S	S	S
Cowlitz	4.74	0.08	2.88
Douglas	10.30	0.26	8.24
Ferry	S	S	S
Franklin	22.54	0.20	20.48
Garfield	S	S	S
Grant	4.52	0.05	2.47
Grays Harbor	2.96	0.04	0.91
Island	4.08	0.10	2.03
Jefferson	2.60	0.09	0.54
King	2.67	0.07	0.61
Kitsap	5.37	0.12	3.31
Kittitas	7.85	0.17	5.80
Klickitat	6.97	0.12	4.91
Lewis	6.64	0.10	4.59
Lincoln	3.32	0.05	1.27
Mason	6.44	0.11	4.39
Okanogan	3.77	0.06	1.71
Pacific	2.61	0.05	0.55
Pend Oreille	S	S	S
Pierce	-0.28	-0.01	-2.34
San Juan	0.14	0.01	-1.91
Skagit	0.76	0.01	-1.29
Skamania	-1.41	-0.04	-3.46
Snohomish	6.01	0.11	3.96
Spokane	3.49	0.07	1.43
Stevens	0.36	0.01	-1.70
Thurston	4.89	0.09	2.84
Wahkiakum	S	S	S
Walla Walla	8.09	0.10	6.04
Whatcom	4.20	0.11	2.15
Whitman	10.43	0.11	8.38
Yakima	6.09	0.08	4.03
Washington	2.99	0.07	0.93
Metro	2.89	0.07	0.84
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.





*Washington Regional  
Economic Analysis Project*



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

