

# Once and Future Changes in the Composition of Personal Income in the Northwest

Ask Not Where the 1% Stash their Cash Besides the Cayman Islands:  
Rather Ask Where they Reside and Collect their Property Income?  
(Or, Does Property Income Exacerbate Regional Per Capita Income Inequality?)

For presentation at the:

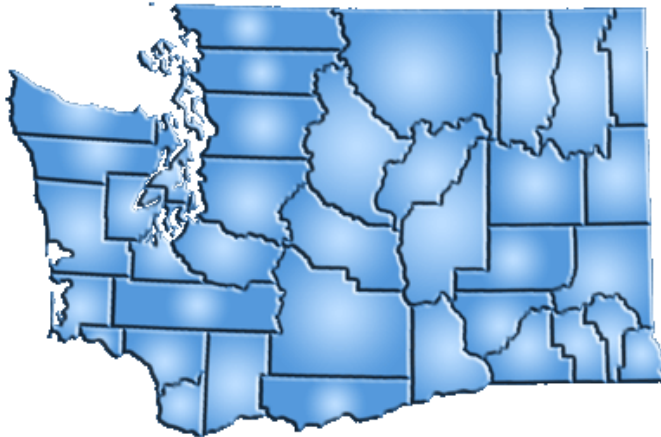
**46th Annual Pacific Northwest Regional Economic Conference**

Presented by:

**Gary W. Smith, PNREAP Director**

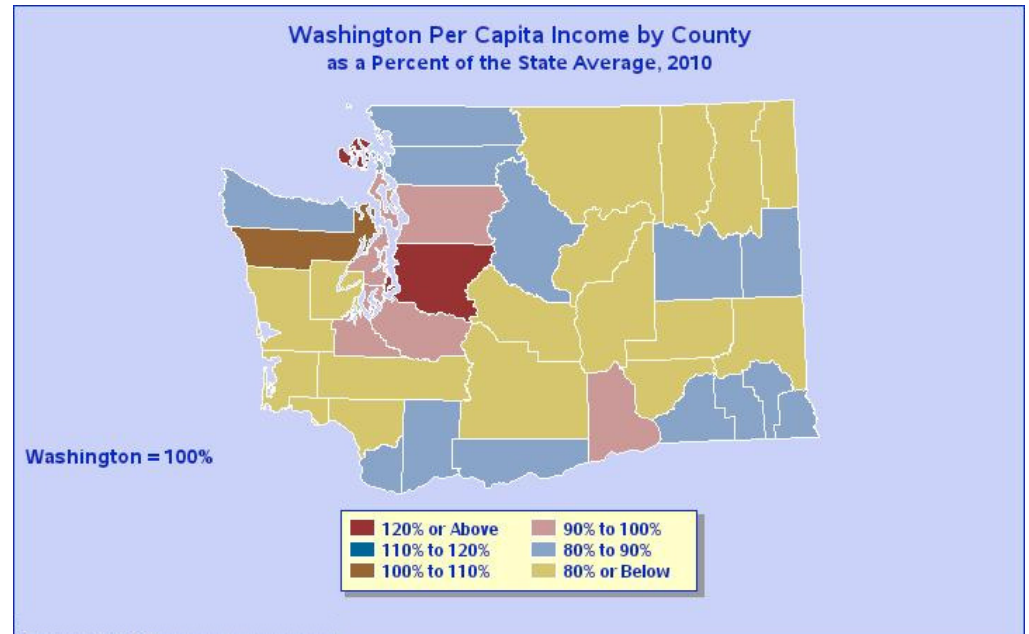


**County Per Capita Income Inequality:  
An Analysis of Trends in the State of Washington, 1969-2010**



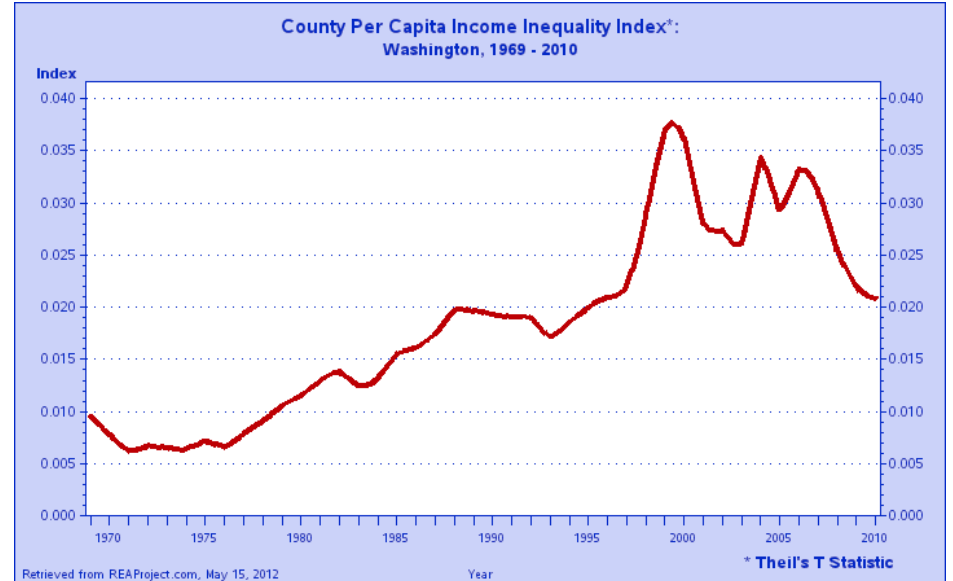
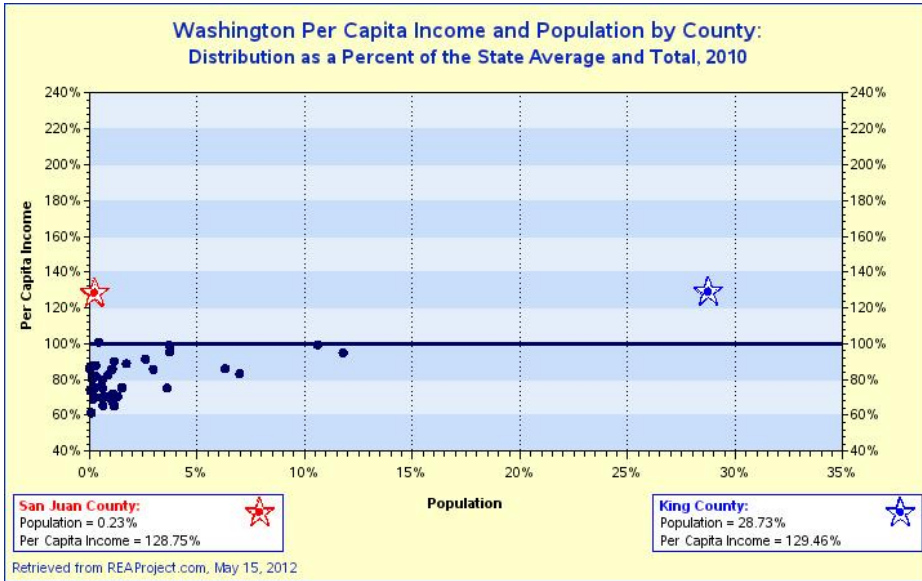
This WA-REAP vignette explores the topic of whether there has been any discernible trends toward convergence, or divergence, in the per capita income across Washington's 39 counties over the past several decades. That is, the question we address here is: Have disparities in the per capita income among the counties of Washington become increasingly worse, or have they tended to change for the better?

We will first approach our assessment by taking stock of the disparities in their per capita income across Washington's 39 counties for the most recent period in which data are reported (2010).



**Washington Per Capita Income by County  
Distribution as a Percent of the State Average, 2010**

	80% or Below	80% to 90%	90% to 100%	100% to 110%	110% to 120%	120% or Above	Total
County Distribution	17	13	6	1	0	2	39



### Washington Per Capita Income and Population by County: Distribution as a Percent of the State Average and Total, 2010

	80% or Below	80% to 90%	90% to 100%	100% to 110%	110% to 120%	120% or Above	County Distribution
0% - 5%	17	11	4	1	0	1	34
5% - 10%	0	2	0	0	0	0	2
10% - 15%	0	0	2	0	0	0	2
15% - 20%	0	0	0	0	0	0	0
20% - 25%	0	0	0	0	0	0	0
25% - 30%	0	0	0	0	0	1	1
30% - 35%	0	0	0	0	0	0	0
<b>County Distribution</b>	<b>17</b>	<b>13</b>	<b>6</b>	<b>1</b>	<b>0</b>	<b>2</b>	<b>39</b>

The index of per capita income inequality across counties used throughout this analysis is the "Theil's T Statistic." If, on balance, county per capita incomes are converging toward the Washington average, the inequality index becomes smaller over time. The index would tend toward zero (0.00) if the per capita income of all 39 counties converging toward the statewide average. Conversely, the index becomes much larger as the per capita income gap among counties increases.

\* The analysis presented here draws upon the ongoing work at the University of Texas Center for Inequality under the leadership of Dr. James Galbraith.

### Calculation of County Theil Elements in Washington Theil's T Statistic

2010

County	Theil Element	Rank	$\left(\frac{P_c}{P_s}\right)$	Rank	$\left(\frac{Y_c/P_c}{Y_s/P_s}\right)$	Rank	$\ln\left(\frac{Y_c/P_c}{Y_s/P_s}\right)$	Rank			
Adams	-0.00069010	16	=	0.00279077	31	X	0.70370283	33	X	-0.35139912	33
Asotin	-0.00052407	14	=	0.00321862	28	X	0.81988307	21	X	-0.19859355	21
Benton	-0.00210646	28	=	0.02617133	10	X	0.91587030	8	X	-0.08788052	8
Chelan	-0.00139402	21	=	0.01078964	18	X	0.86059781	15	X	-0.15012801	15
Clallam	-0.00141012	22	=	0.01060560	19	X	0.85616004	17	X	-0.15529796	17
Clark	-0.00810220	38	=	0.06332748	5	X	0.86207706	14	X	-0.14841061	14
Columbia	-0.00007091	5	=	0.00061012	37	X	0.87571908	12	X	-0.13270992	12
Cowlitz	-0.00320019	32	=	0.01519646	12	X	0.75721430	25	X	-0.27810897	25
Douglas	-0.00142160	23	=	0.00572257	26	X	0.70194182	34	X	-0.35390476	34
Ferry	-0.00033458	10	=	0.00112058	36	X	0.81576933	39	X	-0.48488285	39
Franklin	-0.00325485	34	=	0.01174783	14	X	0.85514569	37	X	-0.42289763	37
Garfield	-0.00004263	4	=	0.00033724	39	X	0.86386156	13	X	-0.14634275	13
Grant	-0.00325333	33	=	0.01330293	13	X	0.70788232	30	X	-0.34547742	30
Grays Harbor	-0.00282622	31	=	0.01080684	17	X	0.88118528	36	X	-0.38392094	36
Island	-0.00107549	17	=	0.01166789	15	X	0.90295616	9	X	-0.10208127	9
Jefferson	0.00004986	3	=	0.00443604	27	X	1.01117659	3	X	0.01111460	3
King	0.09603299	1	=	0.28728628	1	X	1.29460659	1	X	0.25820686	1
Kitsap	-0.00025248	7	=	0.03733351	7	X	0.99321421	5	X	-0.00680892	5
Kittitas	-0.00129864	19	=	0.00608621	25	X	0.75334006	27	X	-0.28323854	27
Klickitat	-0.00034011	11	=	0.00302538	30	X	0.89008641	11	X	-0.12773519	11
Lewis	-0.00263053	30	=	0.01119569	16	X	0.72232267	29	X	-0.32528333	29
Lincoln	-0.00027661	9	=	0.00156682	35	X	0.80253117	22	X	-0.21998458	22
Mason	-0.00222555	29	=	0.00901119	20	X	0.70417244	32	X	-0.35073201	32
Okanogan	-0.00109838	18	=	0.00611839	24	X	0.79870389	23	X	-0.22476500	23
Pacific	-0.00065037	15	=	0.00309983	29	X	0.75829440	24	X	-0.27688358	24
Pend Oreille	-0.00049135	12	=	0.00192349	33	X	0.69092958	35	X	-0.36971737	35
Pierce	-0.00664149	36	=	0.11795594	2	X	0.95094978	7	X	-0.05029403	7
San Juan	0.00076036	2	=	0.00233711	32	X	1.28749208	2	X	0.25269620	2
Skagit	-0.00180116	27	=	0.01736569	11	X	0.88999507	10	X	-0.11653936	10
Skamania	-0.00026358	8	=	0.00164572	34	X	0.82319378	20	X	-0.19456365	20
Snohomish	-0.00049207	13	=	0.10608977	3	X	0.99535091	4	X	-0.00465993	4
Spokane	-0.01062740	39	=	0.07001060	4	X	0.83350161	18	X	-0.18211965	18
Stevens	-0.00178823	26	=	0.00645178	23	X	0.65495785	38	X	-0.42318439	38
Thurston	-0.00159647	24	=	0.03752141	6	X	0.95649111	6	X	-0.04448378	6
Wahkiakum	-0.00012918	6	=	0.00058995	38	X	0.74547418	28	X	-0.29373478	28
Walla Walla	-0.00137822	20	=	0.00873846	21	X	0.82622273	19	X	-0.19089089	19
Whatcom	-0.00389645	35	=	0.02989997	9	X	0.85928291	16	X	-0.15165706	16
Whitman	-0.00164056	25	=	0.00664546	22	X	0.70433680	31	X	-0.35049863	31
Yakima	-0.00771152	37	=	0.03624942	8	X	0.75423231	26	X	-0.28205485	26

**T = 0.02090609**

#### Theil's T Statistic Equation

$$T = \sum_{c=1}^n \left\{ \left( \frac{P_c}{P_s} \right) * \left( \frac{Y_c/P_c}{Y_s/P_s} \right) * \ln \left( \frac{Y_c/P_c}{Y_s/P_s} \right) \right\}$$

Where:

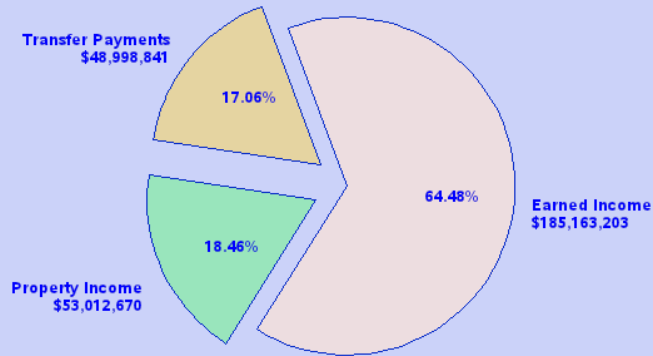
$P_c$  = Population of County c (where c=1 to 39)

$P_s$  = Population of State (Washington)

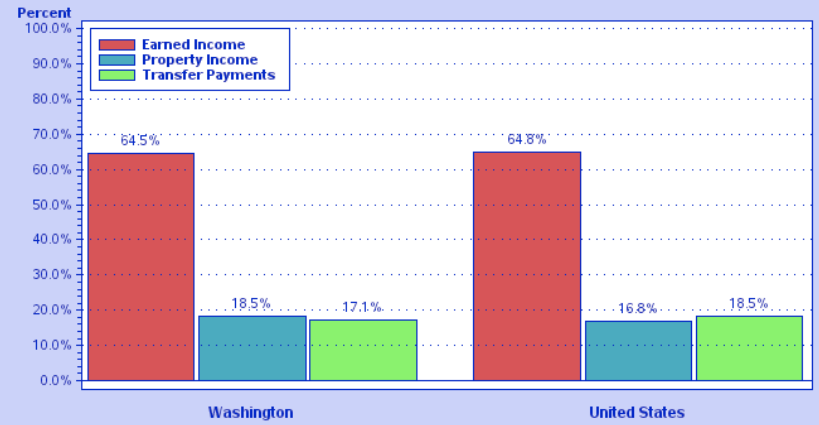
$Y_c$  = Total Personal Income of County c (where c=1 to 39)

$Y_s$  = Total Personal Income of State (Washington)

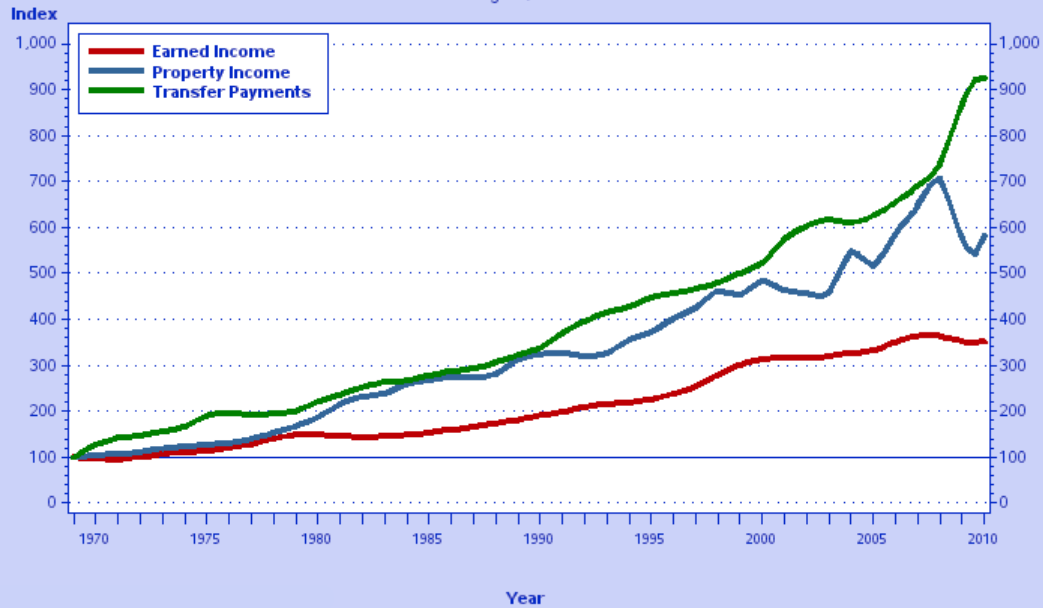
**Major Components of Personal Income, Washington, 2010**  
(Thousands of Dollars)



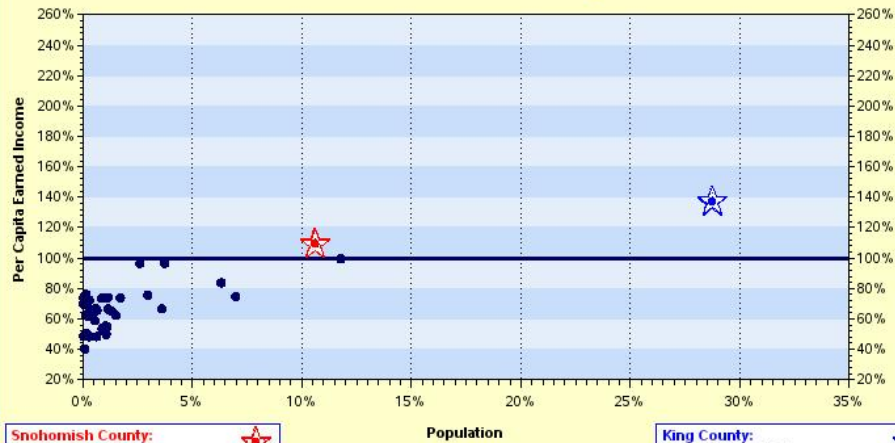
**Major Income Components as of Percent of Total Personal Income: Washington and United States, 2010**



**Income Growth Indices (1969=100):**  
Washington, 1969-2010



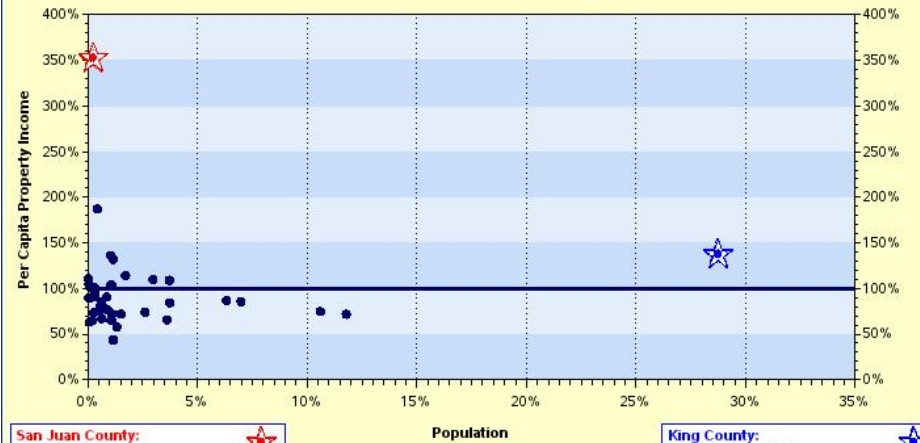
Washington Per Capita Earned Income and Population by County:  
Distribution as a Percent of the State Average and Total, 2010



**Snohomish County:**   
Population = 10.61%  
Per Capita Earned Income = 109.85%

**King County:**   
Population = 28.73%  
Per Capita Earned Income = 137.75%

Washington Per Capita Property Income and Population by County:  
Distribution as a Percent of the State Average and Total, 2010



**San Juan County:**   
Population = 0.23%  
Per Capita Property Income = 353.6%

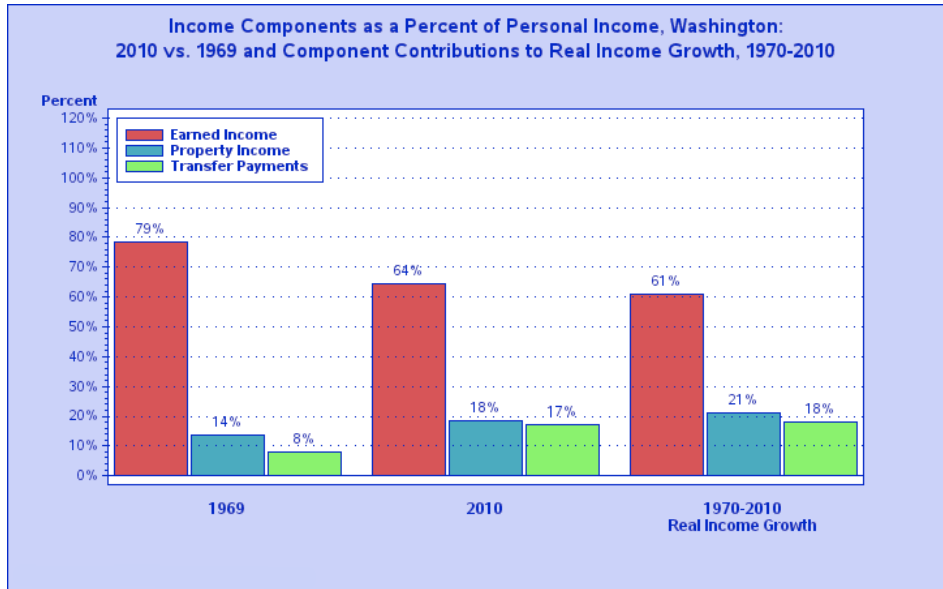
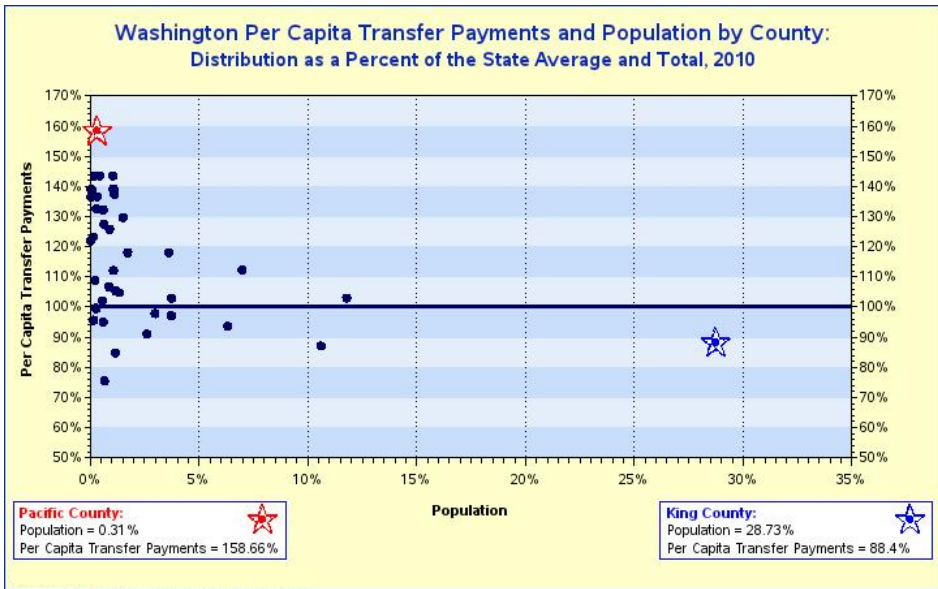
**King County:**   
Population = 28.73%  
Per Capita Property Income = 138.48%

Washington Per Capita Earned Income and Population by County:  
Distribution as a Percent of the State Average and Total, 2010

	80% or Below	80% to 90%	90% to 100%	100% to 110%	110% to 120%	120% or Above	County Distribution
0% - 5%	31	0	3	0	0	0	34
5% - 10%	1	1	0	0	0	0	2
10% - 15%	0	0	1	1	0	0	2
15% - 20%	0	0	0	0	0	0	0
20% - 25%	0	0	0	0	0	0	0
25% - 30%	0	0	0	0	0	1	1
30% - 35%	0	0	0	0	0	0	0
<b>County Distribution</b>	<b>32</b>	<b>1</b>	<b>4</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>39</b>

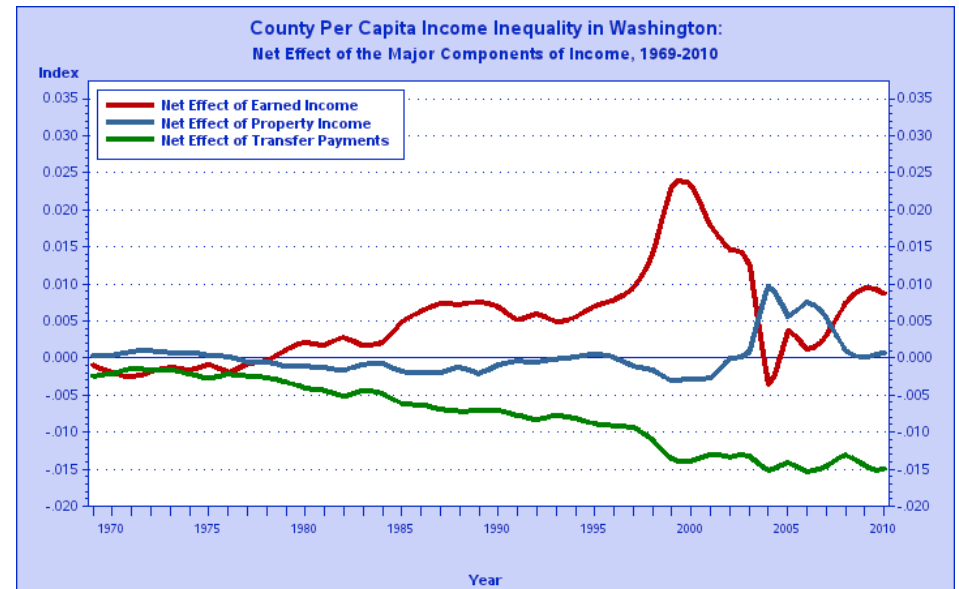
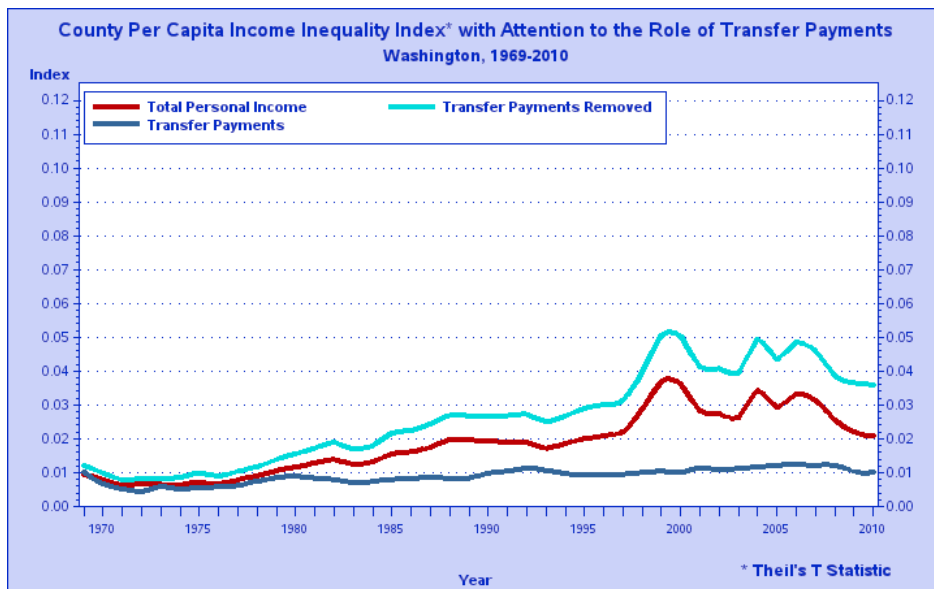
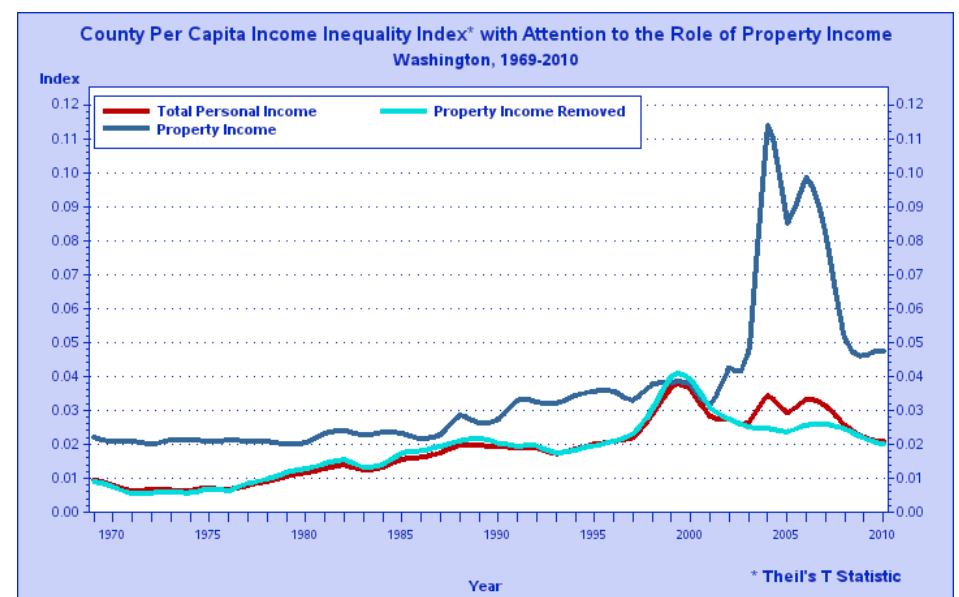
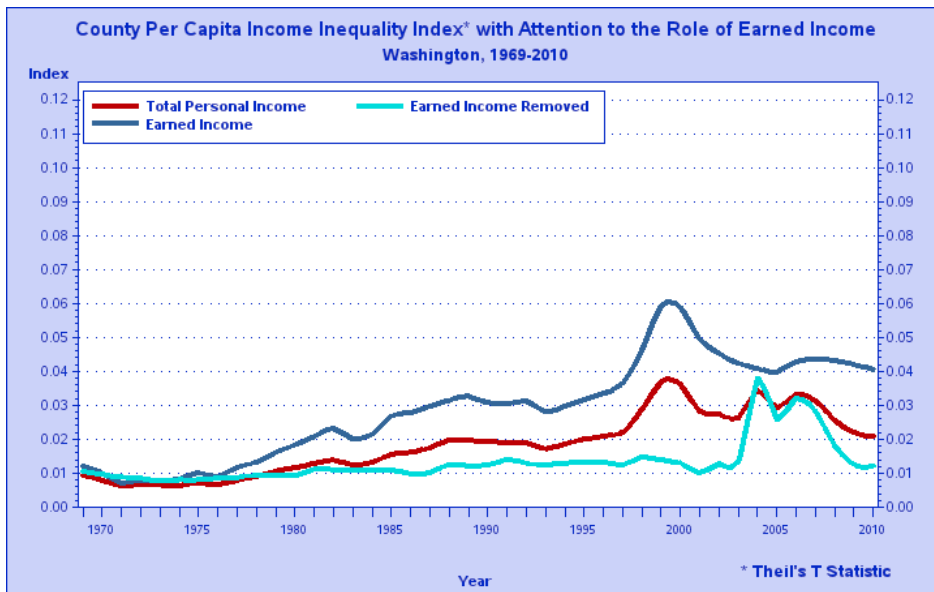
Washington Per Capita Property Income and Population by County:  
Distribution as a Percent of the State Average and Total, 2010

	80% or Below	80% to 90%	90% to 100%	100% to 110%	110% to 120%	120% or Above	County Distribution
0% - 5%	14	4	4	5	3	4	34
5% - 10%	0	2	0	0	0	0	2
10% - 15%	2	0	0	0	0	0	2
15% - 20%	0	0	0	0	0	0	0
20% - 25%	0	0	0	0	0	0	0
25% - 30%	0	0	0	0	0	1	1
30% - 35%	0	0	0	0	0	0	0
<b>County Distribution</b>	<b>16</b>	<b>6</b>	<b>4</b>	<b>5</b>	<b>3</b>	<b>5</b>	<b>39</b>



### Washington Per Capita Transfer Payments and Population by County: Distribution as a Percent of the State Average and Total, 2010

	80% or Below	80% to 90%	90% to 100%	100% to 110%	110% to 120%	120% or Above	County Distribution
0% - 5%	1	1	6	6	3	17	34
5% - 10%	0	0	1	0	1	0	2
10% - 15%	0	1	0	1	0	0	2
15% - 20%	0	0	0	0	0	0	0
20% - 25%	0	0	0	0	0	0	0
25% - 30%	0	1	0	0	0	0	1
30% - 35%	0	0	0	0	0	0	0
<b>County Distribution</b>	<b>1</b>	<b>3</b>	<b>7</b>	<b>7</b>	<b>4</b>	<b>17</b>	<b>39</b>





**Washington Data Components by County  
for Computation of Summary Theil's T Statistic**

2010

County	Population			Total Personal Income			Per Capita Income		
	Population	Percent of State	Rank	Current Dollars (1000s)	Percent of State	Rank	Current Dollars	Percent of State Average	Rank
Adams	18,818	0.28	31	563,980	0.20	32	29,970	70.37	33
Asotin	21,703	0.32	28	757,821	0.26	30	34,918	81.99	21
Benton	176,472	2.62	10	6,883,488	2.40	10	39,006	91.59	8
Chelan	72,754	1.08	18	2,666,562	0.93	15	36,652	86.06	15
Clallam	71,513	1.06	19	2,607,575	0.91	16	36,463	85.62	17
Clark	427,014	6.33	5	15,677,813	5.46	5	36,715	86.21	14
Columbia	4,114	0.06	37	153,435	0.05	37	37,296	87.57	12
Cowlitz	102,469	1.52	12	3,304,488	1.15	12	32,249	75.72	25
Douglas	38,587	0.57	26	1,153,542	0.40	27	29,895	70.19	34
Ferry	7,556	0.11	36	198,159	0.07	36	26,225	61.58	39
Franklin	79,215	1.17	14	2,210,241	0.77	18	27,902	65.51	37
Garfield	2,274	0.03	39	83,662	0.03	39	36,791	86.39	13
Grant	89,701	1.33	13	2,704,290	0.94	14	30,148	70.79	30
Grays Harbor	72,870	1.08	17	2,114,033	0.74	19	29,011	68.12	36
Island	78,676	1.17	15	3,025,539	1.05	13	38,456	90.30	9
Jefferson	29,912	0.44	27	1,288,169	0.45	25	43,065	101.12	3
King	1,937,157	28.73	1	106,806,333	37.19	1	55,136	129.46	1
Kitsap	251,738	3.73	7	10,648,565	3.71	6	42,300	99.32	5
Kittitas	41,039	0.61	25	1,316,677	0.46	24	32,084	75.33	27
Klickitat	20,400	0.30	30	764,640	0.27	29	37,482	88.01	11
Lewis	75,492	1.12	16	2,322,339	0.81	17	30,763	72.23	29
Lincoln	10,565	0.16	35	361,101	0.13	35	34,179	80.25	22
Mason	60,762	0.90	20	1,822,254	0.63	21	29,990	70.42	32
Okanogan	41,256	0.61	24	1,403,350	0.49	22	34,016	79.87	23
Pacific	20,902	0.31	29	675,037	0.24	31	32,295	75.83	24
Pend Oreille	12,970	0.19	33	381,650	0.13	34	29,426	69.09	35
Pierce	795,371	11.80	2	32,212,709	11.22	2	40,500	95.09	7
San Juan	15,759	0.23	32	864,111	0.30	28	54,833	128.75	2
Skagit	117,096	1.74	11	4,438,417	1.55	11	37,904	89.00	10
Skamania	11,097	0.16	34	389,051	0.14	33	35,059	82.32	20
Snohomish	715,358	10.61	3	30,324,620	10.56	3	42,391	99.54	4
Spokane	472,078	7.00	4	16,757,662	5.84	4	35,498	83.35	18
Stevens	43,504	0.65	23	1,213,480	0.42	26	27,894	65.50	38
Thurston	253,005	3.75	6	10,306,397	3.59	7	40,736	95.65	6
Wahkiakum	3,978	0.06	38	126,299	0.04	38	31,749	74.55	28
Walla Walla	58,923	0.87	21	2,073,374	0.72	20	35,188	82.62	19
Whatcom	201,614	2.99	9	7,378,285	2.57	9	36,596	85.93	16
Whitman	44,810	0.66	22	1,344,161	0.47	23	29,997	70.43	31
Yakima	244,428	3.62	8	7,851,405	2.73	8	32,122	75.42	26
Washington	6,742,950	100.00	—	287,174,714	100.00	—	42,589	100.00	—

This booklet was prepared  
for demonstration by



at the

46th Annual

Pacific Northwest Regional Economic Conference

For further information contact:

**Gary W. Smith**, PNREAP Director

Phone: (253) 219-6604 Email: [gsmith@pnreap.org](mailto:gsmith@pnreap.org)

<http://www.reaproject.org/>

