AN ANALYSIS OF WAGE GROWTH IN

Rutherford County

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Highlights

- Rutherford County is large and fast-growing with a large manufacturing presence; these characteristics make the county unique among the 3,100 counties in the U.S.
- Rutherford's high prevalence of payroll in manufacturing makes the county structurally very different from the Nashville MSA.
- An analysis of Rutherford County's average pay performance should compare with counties of similar size, job growth, and industrial structure.
- Rutherford County's pay growth meets or exceeds that of a peer group of counties with similar characteristics.
- During the 10-year period prior to the Great Recession (1998-2008), Rutherford County's average pay was nearly identical to that of the Nashville MSA, and the rate of growth of average pay was very similar.
- The Great Recession affected Rutherford County more than the Nashville MSA, causing slower growth in average pay and wage reductions in some important manufacturing sectors.
- Rutherford County has generated thousands of above-average paying manufacturing jobs since 2009, particularly in the manufacturing sector.

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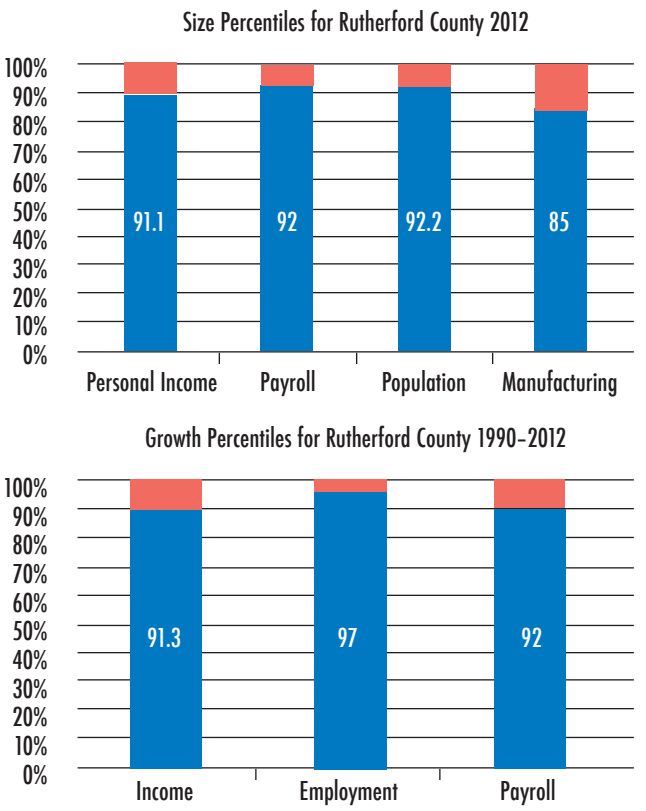
Introduction

The goal of securing new, well-paying jobs is bound to be among the most important objectives of just about any economic developer in the country. Not infrequently in recent years, a given county will have difficulty achieving either job growth or pay growth. Some few fortunate counties can accomplish both goals simultaneously, as did Rutherford County prior to the Great Recession. This study examines trends in average pay and reasons explaining pay growth in Rutherford County.

The study takes a comparative approach, contrasting the pay growth of Rutherford County with that of the Nashville MSA, Tennessee, and a peer group of counties. The first section that follows examines salient growth and structural characteristics of Rutherford County. The next section contrasts Rutherford County with a peer group, and the last section examines the county's performance relative to the Nashville MSA and Tennessee.

Figure 1 Growth and Size Percentiles for Rutherford County among All 3,100 Counties



Growth and Structural Characteristics of Rutherford County

Rutherford County Has a Large, Rapidly Growing Population.

The county's population more than doubled from 119,847 to 274,454 between 1990 and 2012, placing the county at the 92nd percentile in size among the 3,100 counties in the United States. The county's population growth rate has also been very high, placing it at the 99th percentile during the most recent 10 years (2002–2012).

Rutherford County Has a Large Payroll.

More than $3.7 billion in 2012, private sector payroll in Rutherford County exceeds that of 92% of all counties in the U.S. (Figure 1).

Manufacturing Continues to Be a Large Contributor to Total Payroll in Rutherford County.

Manufacturing is a very large contributor to private sector payroll in the county, generating 39 percent of all private payroll dollars in 2012. While this proportion is large, as recently as the mid-1990s manufacturing was even more important for Rutherford County, generating over half of all private sector payroll (Figure 2). The importance of manufacturing declined steadily during the next decade until 2004, leveling off at about 40 percent. The Great Recession took its toll on manufacturing in Rutherford County, causing a sharp decline in manufacturing as a share of total payrolls, falling to 35 percent 2009–2011. More recently, manufacturing payrolls have grown faster than other sectors, causing the percentage to improve to 39 percent in 2012. Preliminary figures for 2013 show manufacturing holding at about 39 percent of total private sector payroll.

Rutherford County ranks at the 92nd percentile in the percent of total payroll in manufacturing. This means that just 292 of all 3,100 counties have a larger manufacturing presence than Rutherford County. Manufacturing is large, has been large, and will be large for the foreseeable future in Rutherford County.

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Counties with a Large Manufacturing Presence

One measure of an industry's relative size, or presence, is the location quotient (LQ). An LQ is the ratio of a county's share of total payroll in manufacturing divided by the U.S. share of total payroll in manufacturing. This means that if the LQ is equal to one, the county has the same share of total payroll in manufacturing as the U.S. An LQ less than one means that manufacturing is less important in comparison with the average U.S. county.

Manufacturing LQ matters for long-term average pay growth for a county. Long-term growth rates for average pay tend to be higher for counties with a low manufacturing LQ and lower for counties with a high manufacturing LQ. Figure 3 shows that average wage growth is substantially higher in counties where manufacturing is a small share of payroll (LQ = 0.5 or less). During 1990–2007, average pay rose 1.32 percent annually for these counties. The wage growth rate drops considerably for counties with a higher manufacturing LQ, falling to 1.1 percent for an LQ of 0.5–1.0 and 1.0 percent for an LQ of 1.0–2.0. The point is that counties with a large manufacturing presence have faced a strong tendency for slower wage growth in the past two decades.

The 2012 manufacturing LQ for Rutherford County is 3.0, meaning that manufacturing's share of total payroll is three times larger than the U.S. average. Given the previous discussion, one would expect that average pay growth for the county will be somewhat lower than for counties with a smaller manufacturing presence. Indeed, Rutherford County's average wage growth 1990–2007 is 1.09 percent, slightly higher than the average county (1.08 percent) but lower than the small-manufacturing counties.

Figure 2 Manufacturing as Percent of Total Payroll in Rutherford County

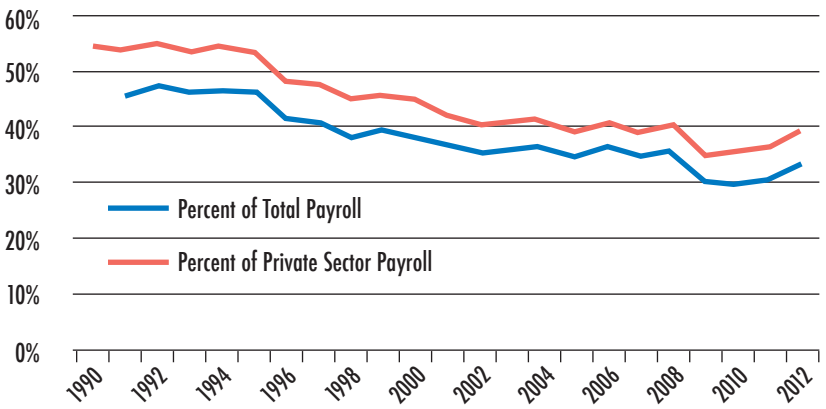
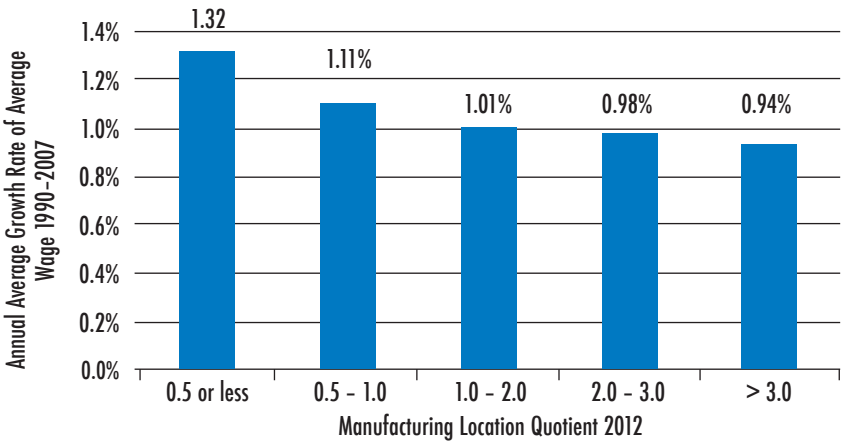


Figure 3 Wage Growth Rates and Manufacturing Location Quotient (LQ)



Rutherford County Is Unique.

Hundreds of counties are large in terms of payroll, have large manufacturing sectors, and have experienced rapid employment growth. However, very few, including Rutherford County, have all three characteristics.

Rutherford's Industrial Structure Differs Significantly from the Nashville MSA and Tennessee.

The industrial structure of a county is an important factor explaining wage rates, wage growth, and sensitivity to cyclical ups and downs of economic activity. Rutherford County's very large manufacturing base makes its industrial structure quite different from that of the Nashville MSA and Tennessee (Table 1). At 39 percent, manufacturing's share of total private sector payroll is more than double that of Tennessee, which is known as a manufacturing-heavy state.

Rutherford's share in manufacturing is three times that of the Nashville MSA and the U.S. Due to the large relative size of manufacturing in the county, shares for just about all other industries are smaller by comparison. As we shall see, manufacturing pays substantially more than many other industries but can be more susceptible to economic downturns.

Rutherford County Compared with Its Peers

Perhaps the most valid way to evaluate Rutherford County's wage growth is against other counties that exhibit similar characteristics. We call these the "peer" counties.

Identifying the Peer Counties

Identifying the peer counties entails sorting through all 3,100 U.S. counties to find those that meet these criteria:

- above-averagewployment growth,
- a large payroll similar to Rutherford County, and
- a large percentage of total payroll in manufacturing, similar to Rutherford County.

Selecting the Peer Counties

Rutherford County's employment grew very rapidly over the past two decades, so a peer county should exhibit rapid job growth. Rutherford's job growth rate was so large that only a handful of U.S. counties matched. Consequently, we set the job growth criterion at a minimum of 1.3 percent for the period 1990–2007 with the end date set prior to the beginning of the Great Recession. This growth rate is somewhat above the median job growth rate for the U.S.

Next, we selected counties that exhibit an industrial structure similar to Rutherford County as measured by the percentage of total private wages in the manufacturing sector. We set the manufacturing threshold at 25 percent or more, substantially lower than Rutherford County but much higher than the median county.

Finally, the peer counties should be similar to Rutherford County in size. using total payroll by place of work as the measure. In 2012, Rutherford County employers paid $3.7 billion in wages to employees. We set the size criteria at $2.2 billion to $5.2 billion, producing a range +/- 40 percent of Rutherford County total private sector payroll for 2012. Table 2 shows the selection criteria.

None of the criteria are selective considered individually. Almost half (1,369) of U.S. counties meet the employment growth criteria, 942 have 25 percent or more of total payroll in manufacturing, and 157 have total payrolls between $2.5 billion and $5.2 billion. However, just 13 counties satisfy all three criteria. These counties are deemed to be the most similar to Rutherford County and are designated the Peer Group.

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Table 1 Share of Private Sector Payroll by Industry, 2012

	Rutherford County	Nashville MSA	Tennessee	U.S.
Natural Resources and Mining	0.1%	0.3%	0.4%	2.0%
Construction	3.7%	4.8%	5.0%	5.4%
Manufacturing	39.3%	11.5%	17.3%	13.2%
Trade, Transportation, and Utilities	20.3%	19.6%	23.2%	19.2%
Information	4.1%	3.9%	2.5%	4.0%
Financial Activities	6.2%	10.4%	8.8%	11.0%
Professional and Business Services	9.8%	21.0%	17.5%	21.2%
Education and Health Services	10.9%	19.5%	17.7%	16.1%
Leisure and Hospitality	4.2%	6.7%	5.4%	5.1%
Other Services	1.5%	2.3%	2.1%	2.5%
Goods-Producing	43.1%	16.7%	22.7%	20.6%
Service-Providing	56.9%	83.3%	77.3%	79.4%

Table 2 Applying the Peer Group Selection Criteria

	Growth	Structure	Size	
	Average Employment Growth 1990–2007	Manufacturing Share of Total Payroll 2012	Total Private Sector Wages 2012	Number of Counties
Peer Group				
Selection criteria	≥ 1.3%	≥ 25%	$2.2–$5.2 billion	13
Median	1.86%	31%	$3.5 billion	
Rutherford County	3.70%	39%	$3.6 billion	1

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Figure 4 shows how rare it is to find counties with growth, size, and structure somewhat similar to Rutherford County. Many counties exhibit relatively high job growth or a large portion of total wages in manufacturing, but not many have both, as shown by the small area where growth and structure overlap. When we overlay the 157 counties that are similar in size to Rutherford, just 13 make the cut.

Data used for this analysis are from the Quarterly Census of Employment and Wages (QCEW), Bureau of Labor Statistics. The QCEW consists of a quarterly census of jobs and payroll for all payroll-paying establishments, public and private. The self-employed are excluded.

Figure 4 Selection of the Peers for Rutherford County

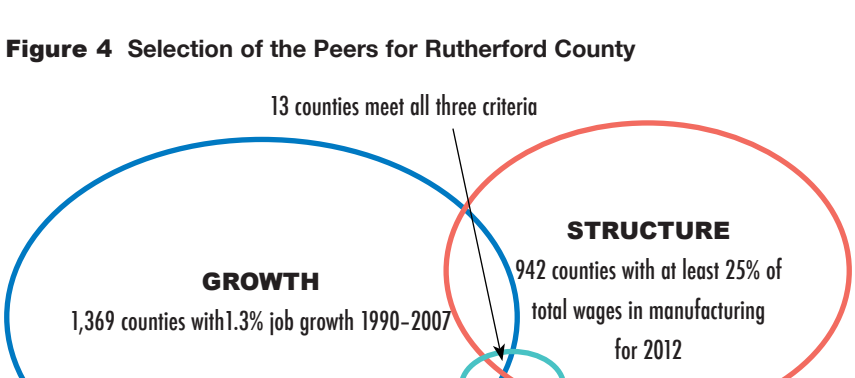

Figure 5 Percentage of Total Payroll by Industry 2012

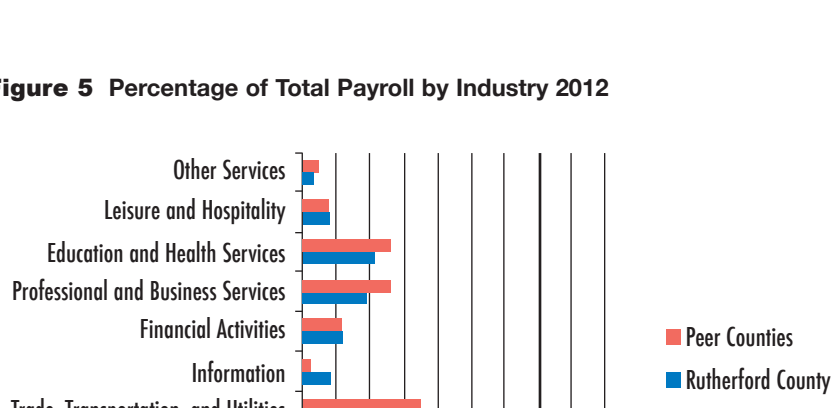

Table 3 provides details for the peer-group counties. Just four are in the South: one in Alabama, one in Georgia, and two in Texas. The remaining counties are in the industrial Midwest: two in Illinois, one each in Indiana, Iowa, Michigan, and Minnesota, and three in Wisconsin. Employment for 2012 is larger than Rutherford County in five counties and smaller in eight. All the counties have above-average job growth compared with all U.S. counties, but none has anywhere near Rutherford's rate of private-sector job growth of 4.78 percent 1990–2007. Hall County, Georgia, is the nearest at 3.21 percent. Compared with Rutherford County, three have a larger manufacturing sector and two have greater total payroll for 2012.

Comparative Structure

Largely by design, the industrial structure of the Peer Group is very similar to that of Rutherford County, as measured by the percentage of total payroll by industry (Figure 5). Rutherford County has somewhat larger manufacturing and trade sectors, while education and health and the construction sector are relatively larger in the Peer Group. These differences are not large, however, and we may conclude that the industrial structure of Rutherford County is very similar to that of the Peer Group.

Comparative Average Pay

Average pay in Rutherford County compares favorably with the Peer Group. Figure 6 shows trends for 1990–2012 in average pay, defined as total payroll divided by employment for the private sector. Rutherford County's average pay exceeded the Peer Group's in several years, particularly 1990–1997. From 1998 through 2005 average pay tracked very closely to the Peer Group, growing faster in 2006. The Great Recession had a larger impact in Rutherford County, pushing average pay 3.8 percent lower from 2008 to 2009 compared with a 1.1 percent decline for the Peer Group. Following this adjustment, the two trends converged again for 2011 and 2012.

Table 3 Final Peer Group of Counties

	Payroll Employment			Growth	Structure	Size
County	1990	2007	2012	Private Sector Employment Growth 1990-2007	Total Wages in Manufacturing (%)	Total Wages 2012 (million $)
Tuscaloosa County, Alabama	45,208	65,782	63,716	2.23	29.5	2,560
Hall County, Georgia	37,311	63,816	61,503	3.21	26.2	2,490
McHenry County, Illinois	54,186	88,788	79,122	2.95	27.9	3,275
Tazewell County, Illinois	41,809	53,941	53,808	1.51	60.4	3,519
Elkhart County, Indiana	92,873	116,282	101,030	1.33	56.5	4,002
Black Hawk County, Iowa	49,242	62,310	64,397	1.39	36.0	2,668
Ottawa County, Michigan	70,969	97,099	95,246	1.86	45.7	3,688
Anoka County, Minnesota	67,236	100,596	96,259	2.40	35.0	4,369
Brazoria County, Texas	55,434	69,383	74,728	1.33	31.3	3,712
McLennan County, Texas	64,047	85,836	84,470	1.74	25.2	3,343
Marathon County, Wisconsin	44,956	63,658	57,887	2.07	30.0	2,229
Outagamie County, Wisconsin	66,936	94,637	92,239	2.06	25.9	3,737
Winnebago County, Wisconsin	62,340	79,149	78,546	1.41	40.3	3,574
MEDIAN	55,434	79,149	78,546	1.86	31.3	3,519
Rutherford County, Tennessee	39,006	86,213	87,113	4.78	39.3	3,765

Source: Quarterly Census of Employment and Wages, Bureau of Labor Statistics

Assessing average wage growth from 1998 forward, Rutherford County compares favorably with the Peer Group (Figure 7). Rutherford County experienced substantially more pay growth in the 10 years prior to the Great Recession (1998–2008), 3.68 percent on average compared with 3.03 percent for the Peer Group. If we include the Great Recession and extend the time frame to 2012, the pay growth rates become more similar, but Rutherford County still shows a slight advantage, 2.9 percent compared with 2.8 percent for the Peer Group.

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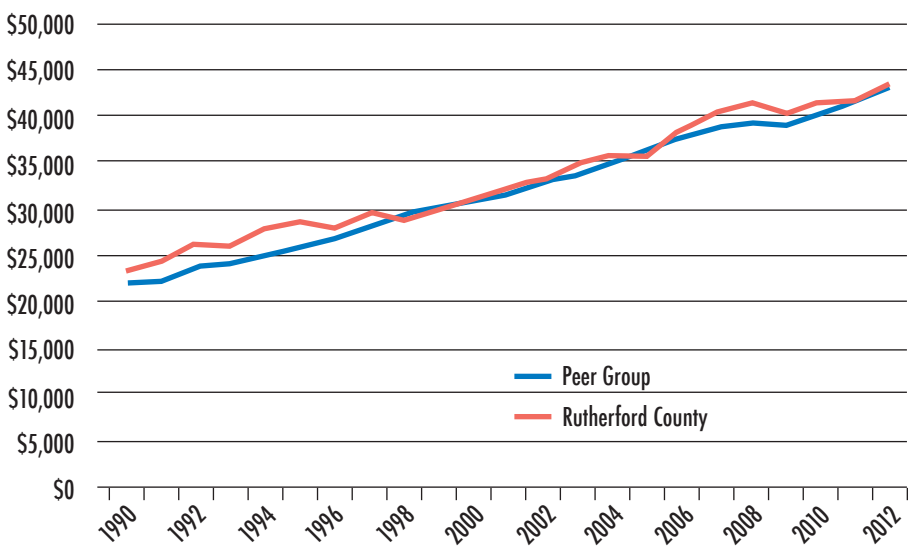
Figure 6 Trends for Average Pay, 1990-2012, Peer Counties and Rutherford County



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Average Pay by Industry, Rutherford County and the Peer Group

Rutherford County's average private sector pay is about the same as the Peer Group: $43,217 compared with $43,038 in 2012 (Figure 8). Pay in the goods-producing industries is 6 percent higher in Rutherford, while pay in the services-providing industries is 0.5 percent lower. By specific industry, pay is higher in Rutherford in manufacturing, trade, information, financial activities, education and health services, and other services. Rutherford's average pay is lower than the Peer Group in natural resources, construction, and leisure and hospitality and far lower in the professional and business services sector.

Figure 7 Growth Rates for Average Pay (Annual Average Rate)

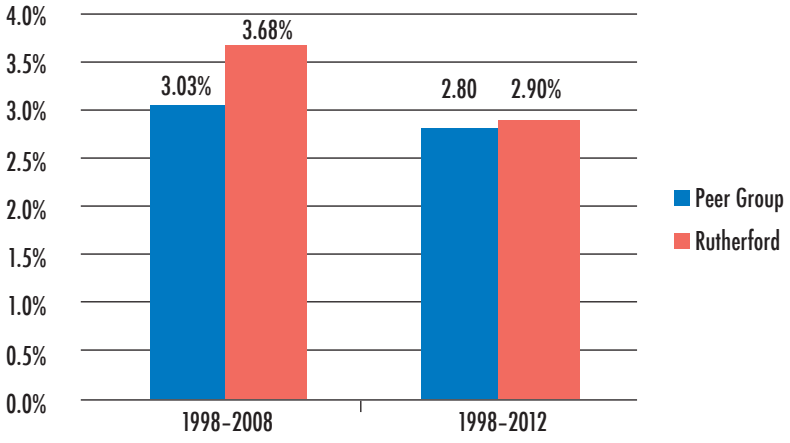
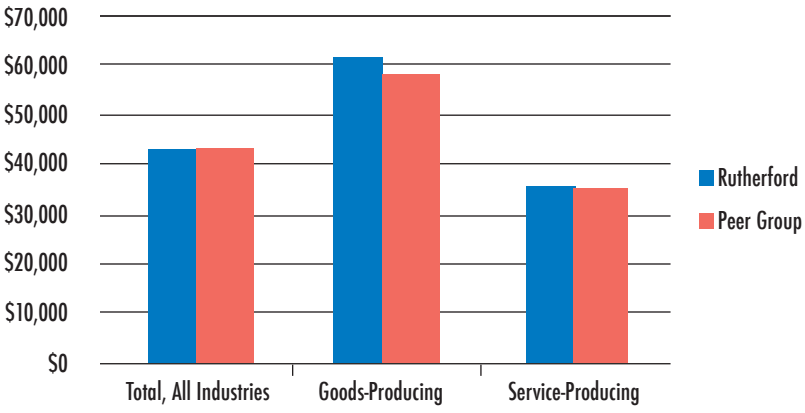


Figure 8 Private Sector Average Pay, Peer Counties and Rutherford County 2012



Rutherford County Compared with Nashville MSA

Figure 9 shows the trend for average pay in Rutherford County and the Nashville MSA. The data have been scaled using an index with the base year set at 1998. The figure shows that Rutherford County pay growth was nearly identical to the Nashville MSA for a full 10 years, 1998–2008, with the correspondence interrupted by the onset of the Great Recession, causing a sharp drop in 2009. Average pay fell in the Nashville MSA but even more in Rutherford County.

Average pay in Rutherford County grew slowly in the early- to mid-1990s, with 1998 showing little change from two years earlier. On average, pay increased $711 per year during this early period. A 10-year growth spurt for Rutherford County began in 1998, ending with the onset of the Great Recession in 2008. Average pay rose $1,241 per year during this period. It is noteworthy that pay rose at the same rate as the Nashville MSA: 3.7 percent per year.

The decade-long growth trend was interrupted by the Great Recession, marking the most severe economic crisis since the Great Depression. Not surprisingly, Rutherford County was affected more than the Nashville MSA due to its large manufacturing concentration. The Great Depression caused a structural change in average pay for the county, shifting to a lower trend from 2008 to 2009. Since 2009, pay for the county has grown more slowly than the Nashville MSA.

About half the difference in growth rate 2009–2012 has to do with falling manufacturing wages in two industries in Rutherford County, generating something of a paradox. Between 2009 and 2012 Rutherford County added 4,960 jobs and $315 million in new payroll in transportation equipment manufacturing, including the subsectors of vehicle assembly and auto parts manufacturing. The paradox is that average pay in manufacturing hardly budged during this period, growing by just 1 percent per year compared with 2.7 percent for the Nashville MSA. The key is that even though the new manufacturing jobs paid far more than the county average, they paid less than in 2009. The result is a marked slowdown in overall pay growth.

This effect is shown dramatically in Figure 10. Employment in the county rose 9.6 percent and average pay 8.1 percent from 2009 to 2012. If we keep employment and payroll in transportation equipment manufacturing at 2009 levels and recalculate employment and average pay growth rates, the result is much lower job growth but a much greater rise in average pay.

It is important to note that Rutherford County, especially the auto sector, must respond and adapt to national and international market conditions. The Great Recession began with the near-destruction of the domestic auto industry, with two of the three domestically based producers on the brink of bankruptcy and supply chains threatened for all producers, domestic and foreign. Remarkably, the industry pulled through largely intact but with fewer employees and a very different pay scale: new hires were paid substantially less than more experienced workers, in both nonunion and union establishments.

In Rutherford County, employment in the transportation equipment industry, including auto assembly and parts manufacturing, began a four-year decline in 2006, two years before the financial meltdown leading to the Great Recession. By 2010, this sector's employment had dropped 32 percent, a loss of 3,500 above-average paying jobs. Total wages did not begin to fall until 2008, falling very sharply for a year; in 2009, total wages were 27% lower than the previous year (Figure 11).

The sharp decline in jobs and payroll experienced by the auto industry in Rutherford County sets the stage for

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Figure 9 Average Pay Trends, Rutherford County, Nashville MSA, 1990–2012

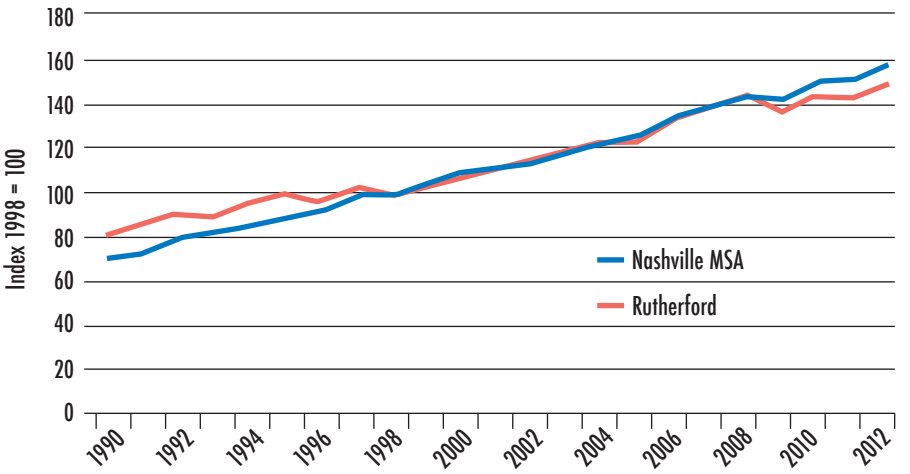


Figure 10 Employment and Average Pay Growth Rates in Rutherford County (2009–2012)

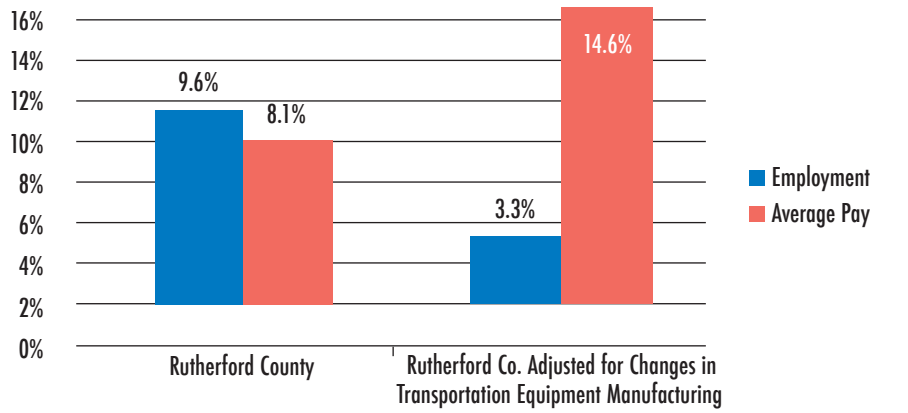
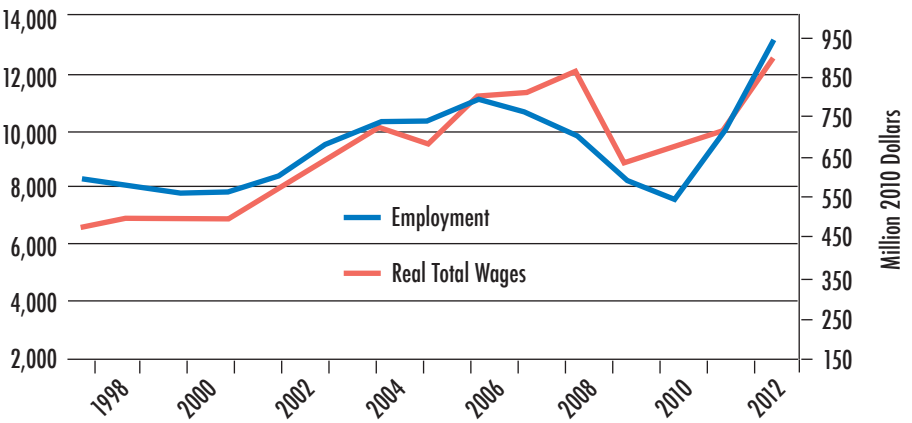


Figure 11 Total Payroll and Employment in Transportation Equipment Manufacturing, Rutherford County



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the remarkable, and equally rapid, turnaround. Benefiting from pent-up demand for new vehicles among households, auto assembly plants and parts manufacturers began hiring once again but at a lower wage than before the recession. Both employment and total wages rose rapidly in Rutherford County, and the industry has more than recovered the losses experienced during the recession. In 2012 jobs had increased to 13,200 and total wages to $939.4 million, both figures representing all-time highs for the county. It is very likely that total payroll in the transportation equipment sector in Rutherford County will exceed $1 billion in 2013.

While both total payroll and jobs experienced growth in 2011 and 2012, the number of jobs grew more quickly than total payroll. Consequently, average pay in the auto manufacturing sector dipped from the peak of $89,100 in 2010 to $71,100 in 2012 (Figure 12). Judging from the figure, average pay increased steadily from 1998 until 2005, then experienced a large, volatile, increase. The pay figures for 2008 and 2010 in particular are far above trend, suggesting these years were unsustainably high pay years for auto manufacturing. By 2011 and 2012, the pay bubble had burst. It is important to note that while down from its 2010 level, pay for auto workers remains far higher than for the average private sector employee in Rutherford County.

The lower pay scale for auto workers is a consequence of conditions in the market for labor. Demand for autos had plummeted, causing layoffs and putting a great deal of downward pressure on the wage rate. Without labor concessions on wages, the job losses would have been even deeper and lasted much longer. According to economics textbooks, this is how markets work: when the demand for labor declines, falling wage rates will help reduce the extent of layoffs. When wages are not flexible, the impact of a downturn on labor demand for a particular industry will create many more job losses.

For Rutherford County, the lower wage rate for auto manufacturing accelerated the pace of job recovery for the industry and the county. That is, the lower wage helped facilitate the large number of new jobs created in auto manufacturing in Rutherford County for 2011 and 2012.

A second major sector added jobs during 2009–2012 but also experienced falling average pay. This sector, plastic and rubber parts, includes the tire manufacturing industry in Rutherford County. Employment rose from 1,202 in 2009 to 1,264 in 2012, but the average pay declined from $60,599 to $58,184 in 2012 (Table 4).

Figure 12 Average Pay, Private Sector and Transportation Equipment Manufacturing, Rutherford County

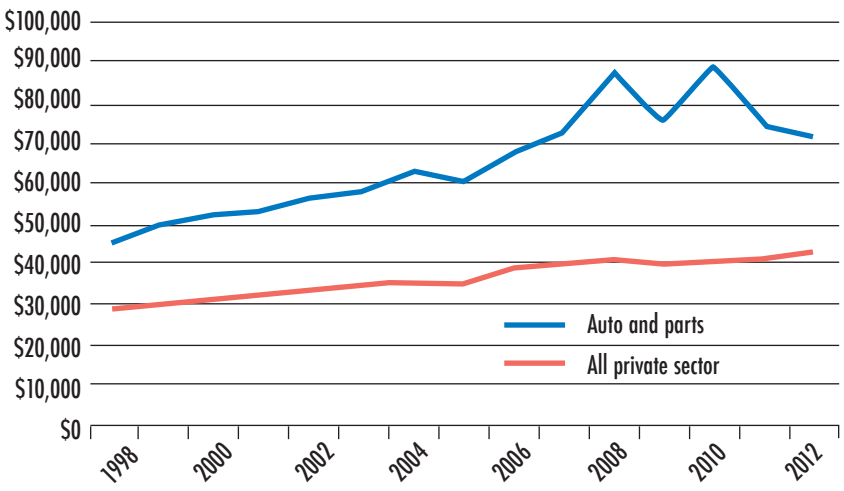

Table 4 Payroll and Employment for Transportation Equipment and Plastics and Rubber Parts, Rutherford County, 2009 and 2012

	2009		2012		Average Pay		Annual Avg Rate of Growth %		
	Wages ($)	Employment	Wages ($)	Employment	2009	2012	Wages	Employment	Avg Pay
Private sector total	3,179,775,079	79,512	3,764,798,661	87,113	39,991	43,217	5.8%	3.1%	2.6%
Transportation equipment	623,466,791	8,250	939,402,492	13,210	75,572	71,113	14.6%	17.0%	-2.0%
Plastics and rubber parts	72,840,306	1,202	73,544,898	1,264	60,599	58,184	0.3%	1.7%	-1.3%

The impact of lower pay in auto manufacturing and plastic and rubber parts manufacturing can be estimated by calculating total payroll for 2012 but keeping average pay for auto manufacturing and plastic and rubber parts constant at the 2009 level. The result shows total 2012 payroll for the county would have been $62 million higher, boosting average pay growth for 2009–2012 to 3.18% compared with 3.54% for the Nashville MSA (Figure 13). Thus, holding constant average pay for just two sectors, Rutherford County's overall average pay grows at 90 percent of the Nashville MSA rate instead of 74 percent.

The point here is that these two industries added more than 5,000 jobs from 2009–2012 that pay well above the county average but lower than in 2009. The pay declines had to do with national and international auto market conditions well beyond the control of any economic developer in Tennessee or anywhere else. The drop in pay for these two industries alone explains most of the difference between pay growth in the Nashville MSA relative to Rutherford County 2009–2012.

A lingering question is *when will auto manufacturing pay begin to rise?* This question is difficult to answer, as it depends on a variety of factors, but it is clear that little pressure for higher pay will surface as long as the industry operates with unused capacity.

Figure 14 shows capacity utilization trends for auto manufacturing in the U.S., showing the large decline in 2008 and subsequent increase. Current capacity utilization is near the pre-recession high, reflecting increased usage of existing facilities and more hiring since 2008. As capacity utilization rises higher, pressures will increase to expand existing plants or build new plants, with either resulting in increased demand for labor.

So far, average real pay in auto manufacturing has shown little upward movement except for 2013. It is clear, however, that pay has stabilized after falling in 2008 and 2009. With rising capacity utilization, pressure on pay in the industry will eventually change from neutral to positive, but this may take several years.

1998—A Transition Year

The trend for Rutherford County average pay shows very little growth from 1992 through 1998, due primarily to significant manufacturing job losses that affected average pay for the county (Figure 15). Jobs lost during this period include food manufacturing (328 jobs and $6.8 million pay-

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Figure 13 Average Pay Growth Rates, Rutherford County and Nashville MSA, 2009–2012

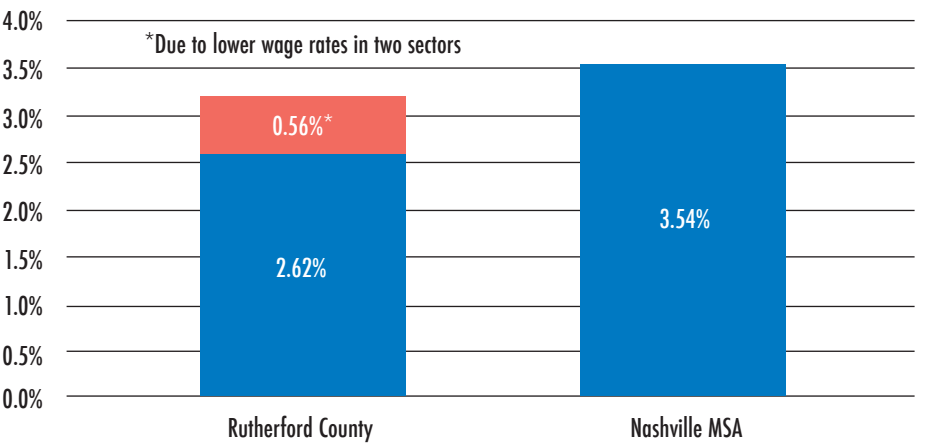
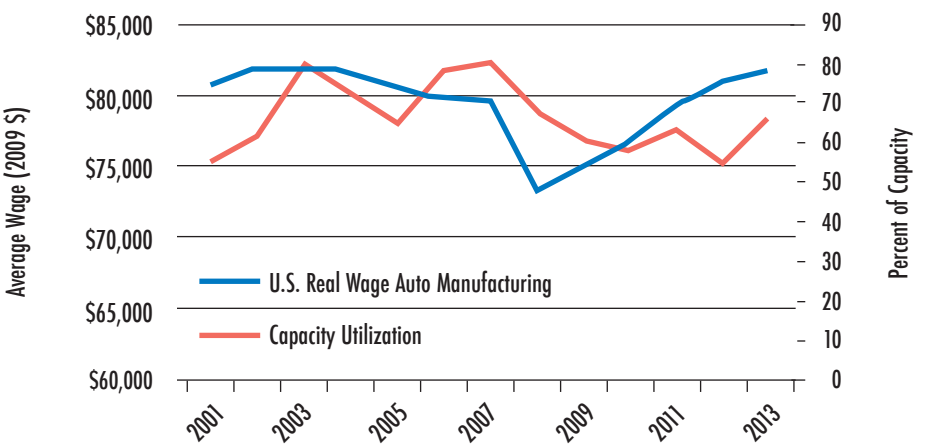


Figure 14 Real Pay and Capacity Utilization Rates, U.S. Auto Manufacturing 2001–2013



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roll), paper manufacturing (201 jobs and $5.9 million payroll), and electrical equipment manufacturing (451 jobs and $9.7 million payroll). In total, manufacturing lost 1,351 jobs, a 6% decline, and manufacturing payroll dropped 3.4%.

Growth of average pay picked up substantially in 1999 and later years (Figure 15). We argue that 1998 marks a transition for the Rutherford County manufacturing sector toward less diversity but greater specialization, particularly in auto-related manufacturing. Before the transition, manufacturing was more diversified but vulnerable to competition; afterward, manufacturing became more specialized and competitive. Due to the very different trend established in 1999 and after, average pay growth rates for the county should be calculated with 1998 as the base year.

Rutherford County Compared with Tennessee

Average pay for Rutherford County nearly mirrors Tennessee average pay from 1998 to 2008 (Figure 16). In fact, just before the onset of the Great Recession in 2008, Rutherford County average pay was 3.8 percent higher than the state average. During the 10-year span, Rutherford County experienced higher pay growth than the state, rising 3.7 percent annually compared with 3.5 percent for the state.

Rutherford County saw a significant decline in average pay from 2008 to 2009 while the state experienced a small gain. Beginning in 2009, falling pay in transportation equipment manufacturing caused Rutherford County average pay to rise more slowly than the state, growing 2.6 percent per year 2009–2012 compared with 3.2 percent for the state.

The effect of falling wages in transportation equipment manufacturing can be clarified by an experiment: hold both employment and wages for the sector constant at their 2009 levels, then recalculate average pay growth for the county. The result is that county average pay growth rate would have been 4.6 percent over the three years instead of 2.6 percent. This means that average pay rose rapidly indeed in Rutherford County coming out of the recession, with the exception of the transportation equipment industry.

Figure 15 Average Private Sector Pay, Rutherford County, 1995-2012

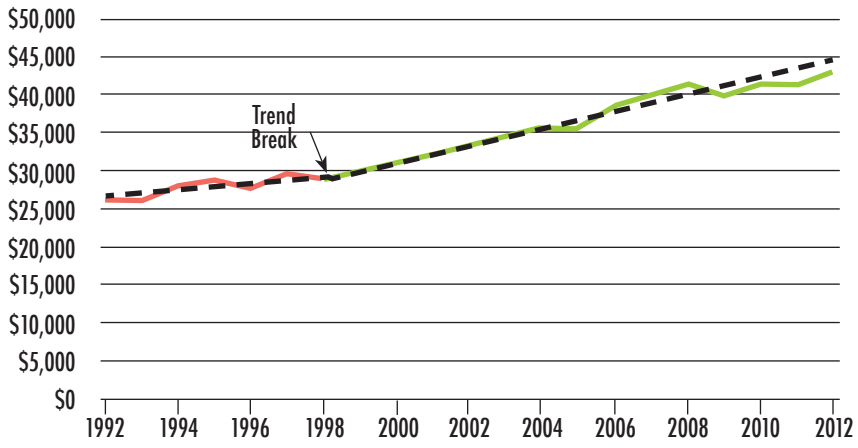
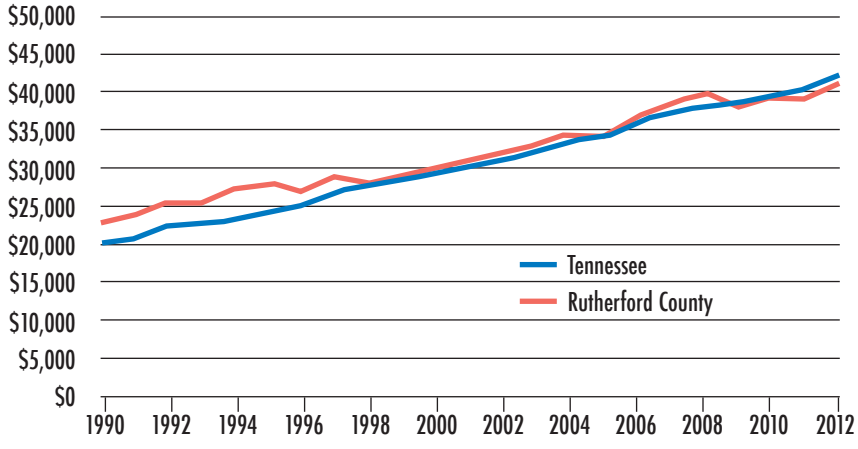


Figure 16 Average Pay Trends, Rutherford County and Tennessee, 1990–2012



National Auto Manufacturing Pay Trend

Rutherford County is not alone in terms of lower pay for auto workers, as pay has declined nationally as a result of the Great Recession. Lower pay has manifested in two ways.

First, union contracts have allowed two-tier pay scales, with new hires receiving significantly lower pay than more experienced workers. Second, increased hiring of temporary workers on a lower pay scale than permanent workers has shifted average pay lower. The consequence is lower pay per worker.

Figure 17 Median Hourly Wages and Employment in Auto Assembly, U.S.

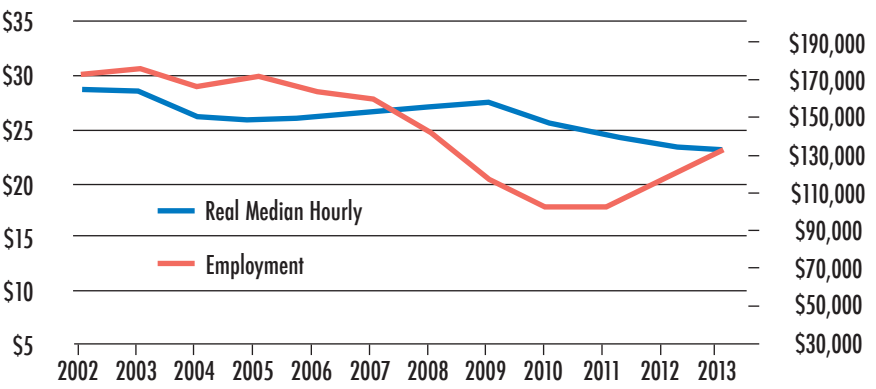


Figure 17 shows evidence for the national market: real median wages for auto assembly workers peaked at $27.28 (2009 dollars), then declined in the years 2010–2013. By 2013, real wages were down 15 percent from the 2009 peak, reflecting decreased demand for labor as demonstrated by the sharp drop in employment. Net hiring began to rise in 2011, buoyed by government support, nascent economic recovery, and lower wage costs. While auto sector employment shifted higher in 2012 and 2013, median real wages continued to fall but at a slower pace.

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Table 5 Peer Group of Counties Using CBP Data

	Employment			Growth	Structure	Size
County	**1990**	**2008**	**2011**	**Private Sector Employment Growth 1990-2008**	**Total Wages in Manufacturing 2011 (%)**	**Total Payroll 2011 (million $)**
Tuscaloosa County, Alabama	48,523	73,483	70,099	2.33	24.9	2,727
Hall County, Georgia	40,042	65,212	59,760	2.75	26.1	2,292
McHenry County, Illinois	58,007	94,223	83,244	2.73	25.5	3,278
Elkhart County, Indiana	94,406	121,566	102,109	1.41	54.0	3,669
Black Hawk County, Iowa	47,126	62,716	64,875	1.60	29.8	2,363
Linn County, Iowa	87,000	113,109	113,621	1.47	25.8	4,953
Boone County, Kentucky	32,033	68,679	62,816	4.33	24.9	2,374
Calcasieu Parish, Louisiana	50,815	71,020	68,049	1.88	24.8	2,601
Ottawa County, Michigan	71,073	97,277	90,369	1.76	38.7	3,383
Anoka County, Minnesota	68,234	111,783	105,135	2.78	24.3	5,216
Brazoria County, Texas	52,080	76,051	72,007	2.13	33.8	3,094
Marathon County, Wisconsin	46,224	69,802	59,017	2.32	30.1	2,210
MEDIAN	51,448	74,767	71,053	2.22	26.0	2,911
Rutherford County, Tennessee	46,110	87,948	82,596	3.65	24.7	3,202

Source: County Business Patterns, Census Bureau

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Peer Analysis Using Data from County Business Patterns

This section selects a peer group as detailed above but using a different data source. County Business Patterns (CBP) is an annual business survey performed by the U.S. Census Bureau that includes most private sector employers and collects information on employment and payroll during a given year. The most recent year available in the CBP series is 2011.

A peer group of counties was selected that are most similar to Rutherford County in growth, structure, and size. The selection criteria are as follows:

- **Growth:** annual employment growth rate of at least 1.4 percent 1990-2008,
- **Structure:** manufacturing at least 24 percent of total private sector payroll, and
- **Size:** total payroll of $2.2 billion–$6 billion for 2011.

The employment growth minimum of 1.4 percent per year was chosen because it is the average rate of growth for all counties for this period. The time interval ends at 2008 at the beginning of the Great Recession, which affected counties very differently depending on industrial structure. The 24 percent threshold for manufacturing was chosen because this is Rutherford County's ratio of manufacturing payroll to total payroll in 2011 using the CBP data.

The resulting peer group consists of 12 counties, nine of which appeared previously using QCEW data. Table 5 shows the characteristics of these counties along with Rutherford County.

Figure 18 Average Pay Trends for Rutherford County and the Peer Group Using CBP Data, 1990–2011

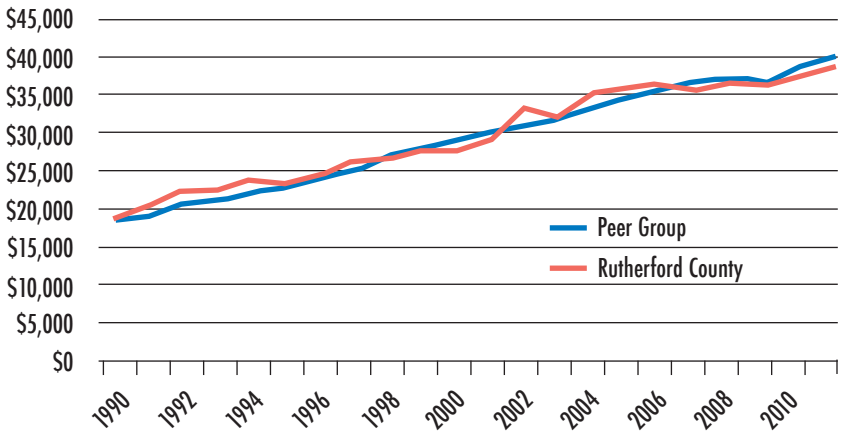
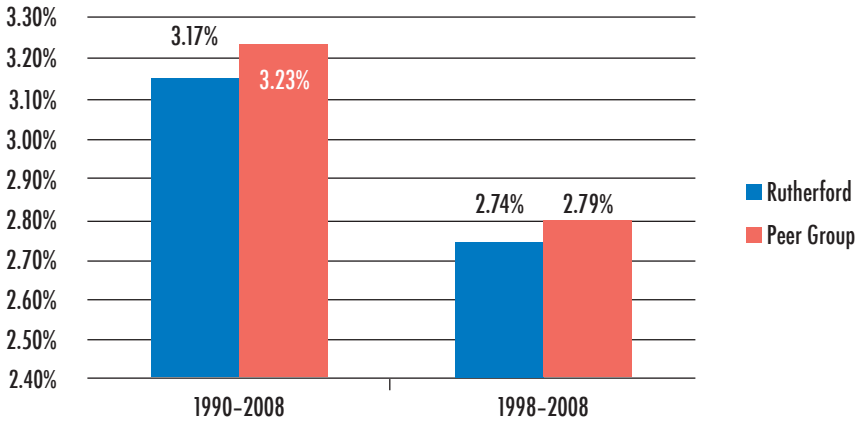


Figure 19 Growth Rates for Average Pay: Rutherford County and the Peer Group Using CBP Data



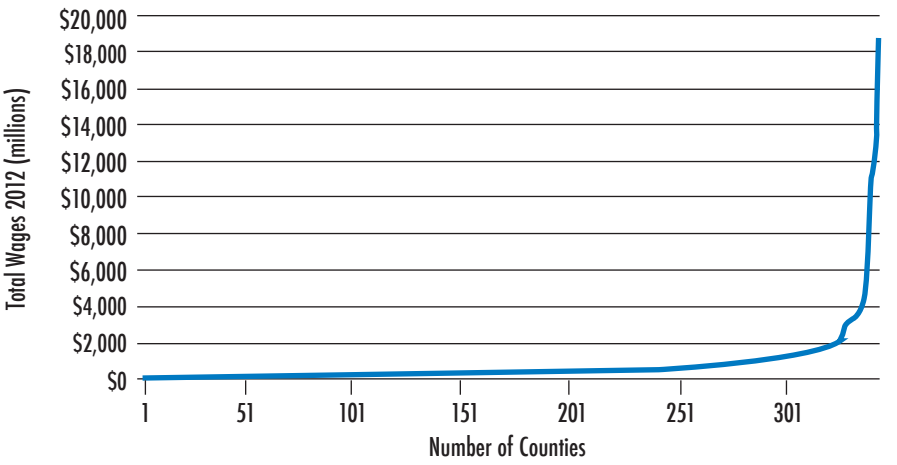
Comparative Average Pay Using CBP Data

Average wage trends for Rutherford County and the Peer Group are shown in Figure 18. The two trends follow fairly closely, with Rutherford County higher than the Peer Group during the early 1990s and early 2000s but the Peer Group higher during the 2001 recession and the Great Recession 2008–2011. The "break" in average pay observed in 1998 using QCEW data occurs earlier with this data, with the transition year 1996 instead of 1998.

Growth rates for average pay are similar up to the Great Recession, with Rutherford County slightly lower than the Peer Group (Figure 19). During 1990–2008, Rutherford County pay grew an average of 3.17 percent per year, very close to the Peer Group growth rate of 3.23 percent. The rates of growth are even closer during the 10 years preceding the Great Recession, 2.74 percent for Rutherford County compared with 2.79 percent for the Peer Group.

We may conclude that after controlling for employment growth rate, industrial structure, and size, Rutherford County performs about as well as a Peer Group of counties in terms of average pay level and growth rate using CBP data. Also, these results using a different data source confirm the earlier results that rely on QCEW employment and wage data.

Figure 20 Distribution of Counties by Payroll Size 2012 (among High Job Growth and Manufacturing-Intensive Counties)



Conclusion

Rutherford County has experienced very rapid payroll and employment growth and a large, growing, manufacturing sector with a payroll approaching $2 billion annually, representing 39 percent of all private payroll dollars paid to workers employed in Rutherford County. Across the U.S., counties with large manufacturing sectors tend to show slower average wage growth over the long run than other counties and are more sensitive to recessions.

An apples-to-apples analysis of wage growth in Rutherford County should compare with other counties of similar industrial structure, employment growth, and size. Controlling for these factors, Rutherford's wage growth equals or exceeds that of a Peer Group of counties from 1998 through 2012.

Though Rutherford County's industrial structure is very different from the Nashville MSA's, average pay growth was equal from 1998 through 2008. The Great Recession more negatively impacted Rutherford County than Nashville, causing private sector wages to grow more slowly in 2009 and after.

Rutherford County gained thousands of jobs in transportation equipment manufacturing since 2009, paying much more than the county average but less than in 2009. Wage cuts in transportation equipment and plastic and rubber parts manufacturing account for most of the wage growth difference with the Nashville MSA 2009–2012.

After adjusting for growth, structure, and size characteristics, Rutherford County's average pay outperforms a Peer Group over the long run. ■

Appendix: Sensitivity Analysis of Payroll Size in Peer Selection

Screening counties in the Peer Group that have total wages of $2 billion to $5.2 billion is somewhat arbitrary. Clearly, the two other criteria (growth of at least 1.3 percent and manufacturing share of total wages of at least 25 percent) are much more inclusive and less arbitrary. What if the payroll size criteria were relaxed?

Using the 2012 figures, 344 counties satisfy the growth and structure criteria mentioned above. Of these, just 13 have total wages of between $2 billion and $5.2 billion. What of the other 342 counties?

Figure 20 shows the distribution of counties by total wages in 2012 for the 345 counties that meet the growth and structure thresholds. A natural break in the distribution occurs at $2 billion, with 322 counties below and 22 above.

Aggregating counties into two groups, one group with payrolls less than $2 billion and the other with payrolls at least $2 billion, the results show that the larger counties tended to show greater pay growth. Rutherford County's private sector pay growth is higher than either of the two groups for the 10-year trend 1998–2008. Extending the time interval four more years through 2012, Rutherford still outperforms the smaller counties and is only somewhat lower than the large counties. The conclusion from this sensitivity analysis is that using a size criterion of $2 billion–$5.2 billion has little impact on the analysis detailed above using QCEW data. ■