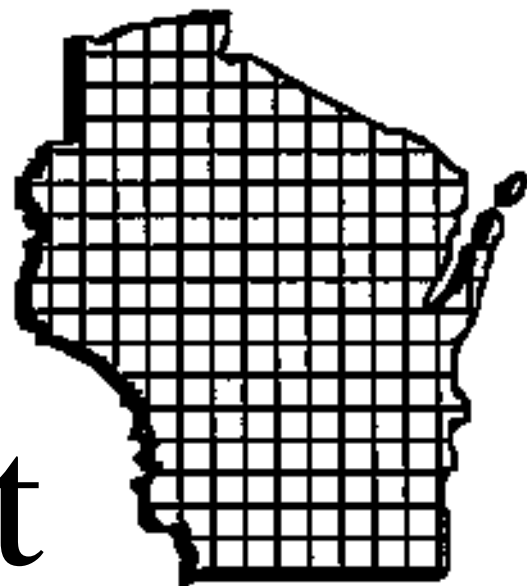


Wisconsin

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Research
Institute

Report



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**THE
ROARING
NINETIES**

*WISCONSIN'S REGIONAL
EMPLOYMENT GROWTH*

REPORT FROM THE PRESIDENT:

This is the third study we have done in the last decade measuring metropolitan economic development in Wisconsin. As in the last two times, this project was developed by the Center for Urban Initiatives and Research at the University of Wisconsin-Milwaukee under the direction of Professor Sammis White. It is the only institution in the state that has access to the jobs data from the State of Wisconsin, Department of Workforce Development.

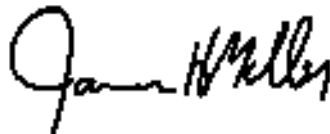
In this study we examine the largest metropolitan areas in the state, measuring job growth between 1991 and 1999. The good news is that employment in Wisconsin grew by 21% over the last decade, compared to 13% nationally — 462,000 jobs.

The bad news is that the lack of workers in the state may be kicking in, producing a slow down in growth from 1995-1999 as compared to earlier in the decade. The fact that certain areas such as Dane and Waukesha County have had unemployment rates under 2% is an indicator of the problems with the supply side of workers.

The other clear message in this study is the continuing slide in job creation in Milwaukee. In the last decade there were 105,000 jobs created in the Milwaukee metropolitan area, but only 4,000 of those were in the city of Milwaukee. That is compared to Green Bay and Madison who added over 30,000 jobs each between 1991 and 1999. One does not have to be an academic in order to realize that when a city like Green Bay, one sixth the size of Milwaukee, creates over seven times as many jobs as Milwaukee, something is seriously wrong with economic development in the central city.

The point of this study is to provide serious quantitative research so that policy makers can get a grasp of what is needed in the state. Job growth is the engine that drives Wisconsin's economy. If it stalls, social programs will suffer because spending is directly linked to taxes. Few states spend and tax more than Wisconsin. If our economy weakens, we could return to the malaise of the early 1980s.

Finally we would like to thank the Cornerstone Foundation of Northeastern Wisconsin, Inc. and the Norman Bassett Foundation for supplying funding for this project.



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THE ROARING NINETIES

Wisconsin's Regional Employment Growth

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EXECUTIVE SUMMARY

The 1990s were very good to Wisconsin. Between 1991 and 1999 employment in the state grew by 21%, far surpassing the nation's 13% growth. The state's unemployment rate remained below the nation's throughout the period and is still below 4% in 2000. Some areas of the state, such as Dane and Waukesha Counties, have unemployment rates below 2%. The one down side is that the economy added employment more rapidly in the first half of the decade; growth has slowed since 1995. It appears that the limited supply of labor, as evidenced by the very low unemployment rates, is currently limiting the rate of growth.

Two questions need to be answered. The first is whether all areas of the state participated in this growth. The second, and more comprehensive, is what factors were responsible for the growth. This report explores answers to both questions for 1991 to 1999, using the state's Unemployment Compensation data.

All areas did participate, but some areas grew much more rapidly than did others. The areas that grew the fastest in terms of employment were Brown County (34%), the Fox Cities (29%), and Kenosha (27%). The slowest growers were Racine (8%) and Milwaukee (15%). The non-metropolitan areas of the state, referred to as the "rest of the state," grew faster, on average (25%), than the metropolitan areas.

The private sector grew much more quickly (23%) than did the public (11%).

Manufacturing employment grew by 14%, but this growth was eclipsed by Services (35%) and Retail (17%). Manufacturing growth was not universal: for example, the city of Milwaukee lost over 10,600 manufacturing jobs over the decade.

Growth came from a wide variety of industries. But a few common industries are among the fastest growing across the state. These fast growers include Business Services, led by Help Supply Services; Health and Allied Services, led by General Hospitals and Doctors' Offices; and Educational Services, led by Elementary and Secondary Education.

Certain areas like La Crosse, Kenosha, and Racine lost Retail employment in the 1995-1999 period, so the 1990s added modestly to their retail employment. In Milwaukee, Retail employment grew only 3% in the decade, suggesting retail saturation. But elsewhere Retail ruled. In Dane County, Retail employment grew by 19%, and in the rest of the state Retail employment grew by an amazing 28% over the 1991-1999 period.

High-tech employment exists in state, ranging from a high of 6% of all employment in Dane to 1% in Rock. The state added close to 25,000 high-tech jobs, 1991 to 1999.

The majority of net employment gains in most areas came from establishments that added 50 or more employees. The biggest exceptions were Kenosha and La Crosse, where 29% and 37%, respectively, of net employment growth came from the large growers. New additions to the employer ranks and more universal growth were more important in these two areas than elsewhere.

Establishments that were independent played a smaller and smaller role in contributing to net employment growth. The national surge toward mergers and multiple sites swept Wisconsin as well. Employment in single-site employers grew most (12%) in Kenosha while multi-site employment grew fastest in Brown County (72%). The slowest growth of multi-site employment was still a remarkable 35% in Dane County.

In 1999 some 50% of all employment in the state was attributable to employers with fewer than 100 employees. But this varied from a low of 43% in the Fox Cities to a high of 54% in Kenosha and the rest of the state.

The vast majority of areas added the most employment in establishments that had between 20 and 99 employees. The one exception was the rest of the state outside the eight largest metro areas. There the largest employers, those with 500 or more employees, added the most jobs.

In most areas, employers that were in existence in both 1991 and 1999 accounted for between 30% and 46% of net employment growth. One exception, Racine, realized only 12% of its growth from employers that were in place in 1991. This economy grew little, and the growth that did occur is attributable to new entrants to that economy.

Two central cities added substantially to their employment base. Green Bay and Madison each added over 30,000 jobs during the eight years. Milwaukee, by contrast, added only 4,000 of the 105,000 jobs gained in its metropolitan area.

Net migration of firms between central cities and their suburbs has had very little impact on the net number of jobs in either location. Firm migration should be a non-issue in most metropolitan areas.

Average earnings per worker in 1999 varied across the geographic areas, from a high in Milwaukee (\$31,908) to a low (\$23,936) in the rest of the state. But average earnings rose in inflation adjusted dollars in all areas over the 1991-1999 period. Earnings' growth was led by Kenosha (+14%) and Milwaukee (+11%). The single-largest industry gain was over \$15,000 per worker in FIRE (Finance, Insurance and Real Estate) in Milwaukee.

The gains in earnings among service-sector workers has added substantially to the number of individuals whose average earnings exceed \$25,000 per year. In all areas but one, the number of service-sector workers whose average earnings exceed \$25,000 per year exceeds the number of workers in manufacturing with comparable earnings. Manufacturing is not the only place to find decent paying jobs.

There are common elements to the growth patterns across the state. But if one is to really understand the local economies, one must look at the details of what is responsible for the changes that have been occurring. Policy interventions and private sector initiatives would be better served with a more informed understanding of the dynamics of each of the local economies. This report seeks to contribute to that.

INTRODUCTION

The Wisconsin economy in the 1990s benefited from the long period of growth experienced by the US economy. And just like the US economy, some parts of the state have benefited more than others. If we look at recent unemployment rates, as one measure of economic activity, we note unemployment rates below 2% in Madison and Dane County and rates below 4% in the Metropolitan Milwaukee region, with rates below 2% in Waukesha County within the region. Other parts of the state are generally between these end points (only two areas exceed 4% unemployment). These low rates were thought to be unattainable ten years ago.

How did we get to where we are today? Where did the many jobs come from? And was it just the creation of jobs that has contributed to the low unemployment rates? The bulk of this report focuses on answering the question of who created the jobs. Once again, we look to see what geographic areas, what industries, what size employers and the like have been contributing the most to the net employment growth in the state during the 1990s. The report breaks out the eight largest metropolitan areas of the state for special attention and lumps the rest of the state into a ninth category. Each is examined in detail as to the sources of employment growth. By the conclusion of the report the reader will have a thorough understanding of the relative role of a number of factors in employment growth.

On the second question, that of whether the growth in employment was sufficient to create the low levels of unemployment, the answer, unfortunately, is no. One of the main reasons why Wisconsin has low unemployment rates, rates well below the national average, is that we have concurrently experienced a decline in the rate of growth of the work force. We have relatively fewer individuals coming into the labor force seeking work. In fact, in some parts of the state the number of persons turning 16 years old is smaller than the number of individuals who are retiring from employment. This mismatch leads to enviably low unemployment rates, but the low rates and the modest increments to the labor force also lead to slower employment growth. The areas of the state that have experienced the fastest employment growth also have experienced the fastest growth of population. For example, Brown County's population grew 12% between 1990 and 1998; Dane County's grew 11%; and Kenosha's grew 10%.

The rest of the report will attempt to inform the reader of the many changes that have been occurring in the metropolitan economies of the state in the 1990s. These results should inform and help individuals and communities decide what steps they might take to further spur their local economy to greater growth. To aid in this understanding, we have divided the decade of the 1990s into two equal parts, 1991 to 1995 and 1995 to 1999. This will allow us to see whether growth has been symmetrical or whether the state and its parts benefited more from the difficulties elsewhere in the nation in the early 1990s. The two periods of analysis should also give greater insights into what is responsible for the changes in the economy. We do not often display these two periods of analysis; instead we make references to differences between them in the text.

THE DATA

The data used in the analysis are the Unemployment Insurance data collected by the State of Wisconsin. All employers of one or more individuals are supposed to report quarterly such information as their name, address, industry, number of employees, payroll, ownership, and the like. We use the data to gain a more complete picture of who is participating in the economy, and how that economy is changing over time. The State uses these data for their official counts of employment.

We use the March data from each year as the measure of employment for the year. We have chosen that date historically because we thought that it gave the most representative picture of the economy. The other quarters of the year tend to have greater fluctuations in employment due to seasonal work. Another reason is that the data have approximately a nine-month lag between their calendar date and their availability for analysis. Thus, as we started the year 2000, the most recent data we could obtain were for the first quarter of 1999.

As we have done in previous reports, we have focused on the eight largest metropolitan areas of the state. We have also combined the numbers for the rest of the state to see how it compares with the more urbanized sections. The less urbanized areas contain the smaller metropolitan areas, such as Fond du Lac, Oshkosh, Eau Claire, Sheboygan, Manitowoc, and the rural and semi-rural sections of the state.

One change from our previous reports is that we have made a special effort in certain counts to be much more precise about separating public and private employment. For example, if we are counting jobs by specific industry,

we will include all employment in education, a field that is dominated by public institutions, as educational services, without reference to public or private. But when we want to see just what role and what changes have occurred in overall employment or private sector employment by industry, we have then included public education in the "government" section and private education in the "private" count of employment. Thus, for the initial discussion of employment by industry and change of employment by industry (Tables 1 and 2), we have put all public sector employment in the industry titled "Government." This should give readers more insight into the strength and direction of each sector.

The period of analysis is the 1991 to 1999 period. The start date was chosen over 1990 because of the increased accuracy of the data beginning in 1991. The end date of 1999 was chosen because it is the most current year we can access.

The data are of high quality, but they are not perfect. We have made an effort to verify and, where necessary, correct the data for obvious imperfections. But despite our best efforts there are likely to be undercounts (non-reports or incomplete reports) from some employers. We warn the reader that although the data are the best available, some error is likely to remain, especially when one examines small geographic areas. We should also note that these data do not contain information on self-employment, an activity that has gotten increasingly popular, and the data also may not reflect family members in small businesses nor small businesses who struggle and do not report because they choose (illegally) not to.

TOTAL EMPLOYMENT BY INDUSTRY

The big question for the state and its sub-parts is how fast is each geographic area growing in terms of employment. A second question is what is the quality of the employment that is being added. We get to the second question much later in the report. Most of the initial exploration is that of the scale of employment and employment change and what is responsible for those numbers.

Table 1 reveals the level of employment, by industry, in the state and each of the nine sub-areas in March of 1999. The industry list includes a "not classifiable," a term that refers to those employers who did not report their industry. Fortunately, that number is very small. We should also note that the counts are actually of the number of employees. But to make the reading more enjoyable, we use "employment," "employees," and "jobs" interchangeably, ignoring that in a few circumstances the same person may hold more than one job. Since most other users of these data interpret the numbers the same way, our usage should not cause any confusion.

In 1999, the state of Wisconsin experienced record levels of employment. Total employment in March of that year was some 2.65 million jobs. The largest metropolitan area, Milwaukee, reported 827,071 jobs. Dane County had

TABLE 1 EMPLOYMENT BY INDUSTRY, 1999

Industry	Brown County	Dane County	Fox Cities	Kenosha County	LaCrosse County	Metro Milwaukee	Racine County	Rock County	Rest of State
<i>Agri & Mining</i>	809	2,558	832	416	310	4,621	644	552	14,582
<i>Construction</i>	6,729	12,341	7,917	2,168	2,257	29,077	3,119	2,587	39,793
<i>Manufacturing</i>	29,870	29,740	38,889	12,904	11,107	178,327	25,085	20,066	269,065
<i>Trans/Utilities</i>	11,148	9,389	6,233	1,843	2,703	39,870	2,358	3,017	47,247
<i>Wholesale trade</i>	7,367	12,263	5,236	2,780	3,960	49,527	3,277	2,998	48,405
<i>Retail trade</i>	24,603	45,890	21,087	10,137	12,470	129,251	13,728	13,173	211,415
<i>FIRE</i>	9,889	22,339	7,743	1,488	2,854	56,161	2,300	1,707	37,116
<i>Services</i>	33,533	65,026	30,319	11,423	18,777	254,523	19,566	14,576	207,185
<i>Government</i>	13,167	65,964	9,314	7,676	8,019	85,643	9,252	8,608	152,922
TOTAL	137,120	265,516	127,576	50,838	62,457	827,071	79,332	67,314	1,031,911

Source: Center for Urban Initiatives and Research, UWM, ES202 Longitudinal Database, 1991 - 1999

265,516 jobs. Kenosha County had almost 51,000 jobs. Collectively, the eight, largest metropolitan areas contained 1.6 million jobs or 61% of the state's employment.

The eight areas also contained 56% of the state's manufacturing employment, 57% of the government employment, counted as including all public employment, and 68% of Services employment (not to be confused with service-sector employment that is a more inclusive figure, combining all employment except Agriculture and Mining, Construction, and Manufacturing). Predictably, the eight areas contained only 42% of the state's reported Agriculture and Mining employment. Actually, the percentage of this industry's employment located in urban areas is considerably smaller, relatively, but farms with fewer than 10 employees need not report their employment and wages to the state and, therefore, do not appear in these data.

In terms of employment by industry, it is clear that three industries dominate: Services, Manufacturing, and Retail. They are responsible for 25%, 23% and 18%, respectively, of the state's employment. What is also clear from a quick glance at the numbers is that metropolitan areas differ in terms of the composition of their employment by industry. For example, in Racine manufacturing employment accounts for 32% of total employment; in Dane it accounts for only 11%. In Milwaukee, Services account for 30% of employment while in Kenosha and Rock counties they account for 22%. The variation may not always be dramatic, but the differences do define the local economies and reveal that there are differences within the state.

CHANGES IN EMPLOYMENT BY INDUSTRY AND LOCATION

Table 2 reveals the absolute changes in employment by industry and geographic area of the state for the 1991-99 period. To help put these changes in perspective, the discussion of each area will note the rates of change for both the 1991-95 and the 1995-99 periods. If the reader is interested, a simple mathematical step is all that is needed to calculate the specific changes in employment.

The state as a whole had 2,649,135 jobs in March of 1999. This number had increased from 2,187,387 in 1991 and 2,441,259 in 1995. Thus, over the eight years from March 1991, the state employment base had grown by a healthy 21%. During the first four years employment grew faster (+12%) than in the second four (+9%). But both showed substantial growth, markedly different from the struggles of the early and mid 1980s. For contrast, the US economy grew by 13% over the 1991-99 period, with the majority of its growth occurring in the second four years.

TABLE 2 ABSOLUTE CHANGE IN EMPLOYMENT BY INDUSTRY, 1991 - 1999

Industry	Brown County	Dane County	Fox Cities	Kenosha County	La Crosse County	Metro Milwaukee	Racine County	Rock County	Rest of State
<i>Agri & Mining</i>	308	677	289	177	68	1,575	151	115	4,676
<i>Construction</i>	2,695	5,012	2,639	440	909	5,334	871	664	14,043
<i>Manufacturing</i>	7,021	4,689	5,242	3,633	581	9,523	-932	4,746	42,024
<i>Trans/Utilities</i>	2,548	1,848	1,354	401	464	5,052	9	757	10,175
<i>Wholesale trade</i>	1,655	2,747	904	1,503	357	5,638	766	695	4,921
<i>Retail trade</i>	4,258	7,328	5,064	328	865	4,300	190	2,070	46,753
<i>FIRE</i>	3,847	2,350	1,911	191	991	4,580	61	109	6,229
<i>Services</i>	10,300	19,097	9,237	2,492	4,803	65,566	4,093	2,617	51,875
<i>Government</i>	2,255	5,217	1,697	1,609	1,225	3,453	960	1,537	19,032
TOTAL	34,892	48,971	28,343	10,777	10,263	105,092	6,172	13,340	203,898
% Change	34	23	29	27	20	15	8	25	25

Source: Center for Urban Initiatives and Research, UWM, ES202 Longitudinal Database, 1991 - 1999

The growth was led by the private sector. Private sector employment grew by some 23% over the 1991-99 period while the public sector grew by 36,985 jobs or 11%. The public sector growth was led by an expansion of teachers in school districts across the state as the baby boomlet entered the school systems and challenged the existing teacher corps. Other forms of government employment experienced more modest growth.

The growth in the 1990s was also not uniform across the state geographically. Some areas such as Brown County (+34%) and the Fox Cities (+29%) grew much faster than the state average. Racine (+8%) and Milwaukee (+15%) grew more slowly. The largest area, "the rest of the state" grew at a faster rate (+25%) than did the metropolitan areas. Thus, it is clear that the smaller communities and more rural areas added employment faster than the larger communities, on average. In fact, only the three, fastest-growing metro areas exceeded the growth rate of the rest of the state. This suggests that the economic forces that have tended to push for urbanization, especially those pushing for the expansion of larger communities, are not as strong as they have been in the past. Perhaps the freedoms created by the new technologies and better transportation are truly creating greater freedom of location for economic activity.

The big winner absolutely was the "rest of the state." It added over 203,000 jobs to a base of 828,000 in 1991. The economic engine was running, adding 25% to the 1991 job base. Unlike most of the metropolitan areas, the second half of the study period was only modestly slower growth than the 1991-95 period, 10% versus 13% for the early period.

Within the eight metropolitan areas, the absolute winner was the largest metropolitan area, Milwaukee. It added just over 105,000 jobs. Dane County, an economy one-third the size of Milwaukee's, added almost 49,000 jobs. Racine County, at the other end of the spectrum, added a more modest 6,172 jobs.

One other point that should be made is that across the state all industries have been growing. The one exception by area is manufacturing in Racine: it lost 932 jobs. The largest gainers statewide were: Services (+170,080), Manufacturing (+76,527), and Retail (+71,156). The Services industries include education, but for this count the expansion of employment in public education is included in Government, not Services. Thus, the figure on Services growth could be even larger (by four percentage points or 20,000 jobs). As it was, Services had a 35% growth rate over the eight years. This rate was double that of retail, 17%, and even greater than manufacturing, 14%. Nevertheless, these are the industries that were the sources for much of Wisconsin's growth.

THE METROPOLITAN AREAS

Brown County experienced a booming economy in the 1990s. Overall employment grew by 34%, the highest rate in the state, far exceeding the state rate of 21%. Brown County added 19% to its jobs base in the 1991-95 period and gained an additional 13% in the 1995-99 period. It was the second-fastest growing area in the first period and the fastest growing area in the second period. Just like the state as a whole, the growth was led by gains in Services, Manufacturing, and Retail. Employment in these three industries increased by 44%, 31%, and 21% over the 1991-99 period.

When Brown County is compared with the metro area that is very similar in size, The Fox Cities, several differences are noted. Not only did Brown County grow faster, it had substantially larger gains in employment in several industries: Finance, Insurance and Real Estate, known in the vernacular as FIRE (1,936), Manufacturing (1,779), Transportation/Communication/Utilities (1,194), and Services (1,063). The Fox Cities added more jobs in but one sector, Retail (806). These numbers help to illustrate that these communities do have somewhat different economies that responded to the forces of the 1990s in somewhat different ways.

Despite not equaling the growth rate of Brown County, the Fox Cities were the second-fastest growing area in the 1991-99 period at 29%. The first part of the 1990s were kinder to the Fox Cities (+16%) than the second (+11%), but both were near the top. As expected, Services, Manufacturing, and Retail employment led the growth list. In the 1995-99 period, it was Services that added at least twice as many jobs (4,404) as any other industry. In fact, the second-fastest absolute growth (and fastest relative growth: 50%) came in Construction, adding a surprising 2,033 jobs. This tripling of the amount of growth in Construction between 1991-1995 and 1995-1999 suggests that space has been built for additional employment growth in the near future.

Over the 1991-1999 period, Services was the clear leader, adding over 9,200 jobs, followed by both Manufacturing and Retail, with gains of over 5,000 jobs each. When rates of growth are examined, it is Services that leads the list at 44%, followed by FIRE at 33% and Retail at 32%. Manufacturing brings up the rear with a 16% gain.

Dane County grew faster than the state as a whole in the 1991-1999 period. It added close to 49,000 jobs (+23%). As was noted above, the growth was very similar in scale throughout the eight-year period. But within that period, some industries added many more jobs in the first half. Manufacturing added 3,106 in 1991-95 and only 1,583 in 1995-99. Wholesale trade added 2,164 in 1991-95 and only 583 in 1995-99. Retail trade gains dropped from 5,032 to 2,296 between the two periods. On the other hand, FIRE employment gains went from 355 in 1991-95 to 1,995 in 1995-99, and Government employment gains went from 1,112 to 4,105 between the two periods. Different industries responded in different ways to the changes in the economy.

What should be noted are the significant gains in construction employment. Dane added as many jobs in Construction as were added in all of Milwaukee over the 1991-99 period. The 5,012 additional jobs added 68% to the construction employment base in Dane. This increase indicates space should be available in the coming years for even more employment growth in other industries.

When we examine the rates of change by industry in other industries over the longer 1991-99 period, we see that some industries have grown quickly both absolutely and relatively. Most notable is Services with a 42% gain. Wholesale Trade grew by 29%. Both Retail and Manufacturing, which added over 5,000 jobs each, grew by a more modest 19% each.

Kenosha is clearly the winner in Southeastern Wisconsin. It added 10,777 jobs and grew by 27% over the 1991-99 period. That growth, however, was not evenly split between the four-year periods. Kenosha added 7,052 jobs 1991-95 and a less robust 3,725 jobs in the 1995-99 period. Part of the reason for the difference is a decline in retail employment of some 1,323 jobs in the 1995-99 period. Such a decline is hard to explain, but it may have to do with different staffing patterns in retail. At any rate, Kenosha was one of two areas to have the employment gains in manufacturing exceed that in all other industries for the 1991-99 period. Manufacturing gains are at least 1,500 employees larger than those in Services and Retail, and almost twice those in Government and Wholesale.

The relative rates of growth in some industries in Kenosha were among the top of any area of the state. At the top of the list is Wholesale Trade, an industry that has expanded by 118% in the 1990s. No other area has a growth rate in any industry that comes close. The appeal of the I-94 location has been recognized by a number of firms. Second on the list, but with a very small employment base, is Agriculture and Mining (+74%). Manufacturing (+39%) is third, followed by Services (+28%). Only Retail Trade (+3%) and FIRE (+15%) have been lagging.

La Crosse County grew at about the same rate as the state as a whole for the 1991-99 period. The La Crosse economy did grow markedly faster in the first four years than in the second. The community added over 6,000 jobs between 1991 and 1995, but only 4,200 between 1995 and 1999. Services led the growth, adding 4,803 jobs over the eight years. Government employment gains were a very distant second. Like Kenosha, it also lost a number of jobs (1,205) in Retail in the 1995-99 period. But La Crosse still managed to add 865 jobs in Retail over the longer study period, having added almost 2,100 such jobs in the first four years. And it added 1,101 more Services jobs in the latter four years than in the former, indicating a more dynamic industry in the later 1990s.

When we look at relative rates of growth, we find that the fastest growing industries in La Crosse were Construction (+67%), FIRE (+53%), and Services (+34%). Manufacturing (+6%) and Retail (+7%) were at the other end of the spectrum. As in other communities that experienced a rapid gain in construction employment, it seems likely that additional employment gains should follow in order to utilize the newly constructed spaces.

Milwaukee is the gorilla economy of the state. In 1999 the Milwaukee economy contained over three times more employment than the next largest economy, Dane County. Unfortunately for those of us in Milwaukee, Milwaukee's growth (+15%) did not match the relative growth rate of Dane (+23%) nor that of the state (+21%) for the 1991-99 period. Milwaukee did add over 105,000 jobs. And its employment gains in Services, 65,566, were far larger than growth anywhere else and are larger than the total economies of either Kenosha or La Crosse. In fact, Milwaukee's absolute employment gains were larger than the gains in similar industries in all but two cases. Milwaukee's gains in Retail trade were smaller than the retail gains in both Dane and the Fox Cities, and the gains in Government were smaller than the gains in Dane County. While the latter may be expected, given that Dane houses the State government, the smaller growth in Retail is surprising. It may well be due to the saturation of the retail market in Milwaukee and the relatively slow population growth that has occurred there.

In terms of relative growth rates Milwaukee has none that lead the state. This is not surprising, given that it is the second-slowest growing area. Milwaukee's fastest growth rate outside of Agriculture and Mining (+52%) is in Services (+35%). The only other rate that is higher than the state's is Construction at +22%. Manufacturing, one of Milwaukee's mainstays, grew at only 6%. The small gains come because of manufacturing job losses (10,600) in the

central city. FIRE grew at a modest 9%. And Retail in Milwaukee grew at about one-sixth the state rate, 3% versus 17%. Milwaukee did manage to add employment across all industries in the 1990s, but the rates and scale of most of the growth cannot compare with the gains elsewhere in the state.

Racine County is the one metropolitan area to grow more slowly than Milwaukee. Racine grew 8% between 1991 and 1999, a growth-claim it could not make for the 1980s. As with much of the state, the gains were larger in the first four years of the 1990s. The larger gains came in the early years despite the net losses of employment in Manufacturing (-483), Wholesale Trade (-447), and FIRE (-50). Racine continued to lose in manufacturing, netting a loss of 932 jobs for 1991-99. Additionally, there were marginal gains (+9) in Transportation, et al. The savior for Racine has been dramatic growth (4,903) in Services (+26%) and even greater relative growth in Wholesale (+31%) and Construction (+39%). These latter two industries have expanded together, as construction of new warehouse facilities has proliferated.

Rock County has experienced a more volatile 1990s than any other area of the state. Due to some dramatic gains in Manufacturing (5,716) and Services (2,176) in the 1991-95 period, Rock County grew faster (+21%) during the early 1990s than any other part of the state. Unfortunately, that pattern did not hold in the second half of the 1990s. Manufacturing employment declined by 970 jobs and FIRE lost 135. These losses, combined with very modest gains in the other industries, led Rock to gain but 3% in the 1995-99 period. The net gain for 1991-99 was an impressive 25%, but the recent trajectory is not encouraging. Not only did the losses occur, but the gains in Services, Retail Trade, and Government were largely realized in the 1991-95 period.

The only industry not to realize a double-digit gain over the 1991-99 period was FIRE at 7%. The others ranged from a low of 19% (Retail) to a high of 35% (Construction). Transportation/Communication/Utilities grew at 33%; Manufacturing, 21%; Wholesale Trade, 30%; and Government, 22%. The rates of gain are impressive. It is unfortunate that the gains were not realized in both periods of analysis.

The Rest of the State (ROS) is an area that contained 39% of the state employment in 1999. Milwaukee, by contrast, contained 31% and Kenosha contained 2%. The ROS is a mix of smaller cities, villages, and townships. It may seem like a motley collection, but as a whole it is a dynamic economy. It grew faster than the combined metropolitan areas. And in two industries it added a disproportionate share of the employment growth. In Manufacturing, the ROS was home to 42% of manufacturing employment in 1991, but it was responsible for 55% of the growth 1991 to 1999. Retail growth was even more concentrated in the less populated areas of the state. Although ROS had 40% of the Retail employment in 1991, it contained 65% of the Retail employment growth between 1991 and 1999. These two industries are increasingly shifting to the non-urban areas of the state. In contrast, although the ROS area added some 51,875 Services jobs over the same period, the area rate of growth for Services just matched that of the state as a whole (33%).

In relative terms these industries are not the leaders. The fastest growing industries were, in fact, Construction (+55%) and Agriculture and Mining (+47%). Services was third fastest-growing industry at 33%, and Retail was fourth at 28%. The slowest growing industries were Wholesale Trade (11%) and Government (14%).

INDUSTRIES WITH THE LARGEST EMPLOYMENT GAINS

Having just learned of the employment gains across major industries, an obvious next topic would be a more detailed examination of the specific industries that are growing most rapidly in each geographic area. That appears at the next-most-detailed level, the two-digit SIC (Standard Industrial Classification) level. Table 3 on the next page lists the fastest growing industries in each of the nine geographic areas along with the absolute net growth achieved for the 1991-1999 period. We then move on to even more detail, examining industries at the four-digit SIC level. In the meantime the two-digit level reveals some of the common names that have been contributing the most to local growth. The summary of just how many jobs the top ten growers have contributed allows us to learn just how central these industries have been to area growth.

An interesting calculation is the ratio of the contribution of the top ten growers to the total net employment growth for each region for the 1991-1999 period. In all but one area, these top ten growers are absolutely central to the employment growth. The one exception is the ROS, where the top ten account for 48% of all net growth. That is still a substantial contribution, but it cannot match the roles in the other areas. The other areas range from 57% in Brown to 67% in the Fox Cities, to 77% in Kenosha to 79% in La Crosse, 80% in Milwaukee, and 83% in Rock, to

TABLE 3 INDUSTRIES WITH THE LARGEST GAIN IN EMPLOYMENT BY TWO-DIGIT SIC, 1991 - 1999

Rank	BROWN COUNTY			DANE COUNTY			FOX CITIES			KENOSHA COUNTY		
	SIC	Industry	Gain	SIC	Industry	Gain	SIC	Industry	Gain	SIC	Industry	Gain
1	73	Business Services	3,721	73	Business Services	8,713	73	Business Services	3,443	3*	Manufacturing	1,454
2	58	Eating & Drinking Places	2,640	91	General Government, nec	5,143	80	Health & Allied Services	2,563	82	Educational Services	1,080
3	42	Trucking & Warehousing	2,003	80	Health & Allied Services	3,688	17	Special Trade Contractors	2,164	58	Eating & Drinking Places	941
4	17	Special Trade Contractors	1,898	83	Social Services	3,157	58	Eating & Drinking Places	2,002	30	Fabricated Rubber & Plastic Products	831
5	80	Health & Allied Services	1,748	59	Miscellaneous Retail Stores	2,957	26	Paper & Paper Products	1,927	51	Wholesale Trade, Nonurable Goods	782
6	79	Amusement & Recreation Services	1,723	82	Educational Services	2,916	82	Educational Services	1,548	73	Business Services	743
7	64	Insurance Agents, Brokers & Service	1,638	17	Special Trade Contractors	2,759	36	Electronic & Other Electric Equipment	1,540	50	Wholesale Trade, Durable Goods	721
8	82	Educational Services	1,516	15	General Building Contractors	1,698	42	Trucking & Warehousing	1,412	35	Industrial Machinery & Equipment	695
9	35	Industrial Machinery & Equipment	1,472	58	Eating & Drinking Places	1,686	83	Social Services	1,201	80	Health & Allied Services	572
10	63	Insurance Carriers	1,456	50	Wholesale Trade, Durable Goods	1,642	20	Food & Kindred Products	1,192	78	Motion Picture & Video Services	530
Totals			19,815			34,359			19,992			8,349

Rank	LA CROSSE COUNTY			METRO MILWAUKEE			RACINE COUNTY			ROCK COUNTY			REST OF STATE		
	SIC	Industry	Gain	SIC	Industry	Gain	SIC	Industry	Gain	SIC	Industry	Gain	SIC	Industry	Gain
1	73	Business Services	1,590	73	Business Services	29,489	73	Business Services	1,565	3*	Manufacturing	3,644	73	Business Services	12,244
2	80	Health & Allied Services	1,467	80	Health & Allied Services	13,518	17	Special Trade Contractors	842	25	Furniture & Fixtures	1,164	82	Educational Services	12,199
3	82	Educational Services	896	83	Social Services	9,038	53	Retail, General Merchandise	750	80	Health & Allied Services	955	58	Eating & Drinking Places	11,611
4	27	Printing & Publishing	778	82	Educational Services	6,325	36	Electronic & Other Electric Equipment	742	82	Educational Services	927	53	Retail, General Merchandise	11,443
5	60	Banking	615	45	Air Transportation	6,022	80	Health & Allied Services	665	73	Business Services	884	80	Health & Allied Services	10,235
6	58	Eating & Drinking Places	604	50	Wholesale Trade, Durable Goods	5,681	37	Transportation Equipment	629	42	Trucking & Warehousing	863	35	Industrial Machinery & Equipment	9,637
7	55	Automotive Dealers & Service Stations	568	17	Special Trade Contractors	4,206	28	Chemicals & Chemical Products	616	58	Eating & Drinking Places	791	17	Special Trade Contractors	8,617
8	79	Amusement & Recreation Services	537	87	Engineering & s Management Service	3,801	91	General Government, nec	535	53	Retail, General Merchandise	722	55	Automotive Dealers & Service Stations	7,652
9	17	Special Trade Contractors	503	27	Printing & Publishing	3,371	83	Social Services	524	50	Wholesale Trade, Durable Goods	638	59	Miscellaneous Retail Stores	7,377
10	35	Industrial Machinery & Equipment	500	34	Fabricated Metal Products	2,908	50	Wholesale Trade, Durable Goods	494	59	Miscellaneous Retail Stores	528	24	Wood Products, except Furniture	6,804
Totals			8,058			84,339			7,362			11,116			97,819

* General SIC code is used to protect firm anonymity
 Source: Center for Urban Initiatives and Research, UWM, ES202 Longitudinal Database, 1991 - 1999

90% in Dane and finally to 119% in Racine. Clearly these ten industries in each area have been critical to growth in the 1990s.

The question that then arises is whether it is the same industries that are powering the growth across the state. The answer is largely no. A few industries are commonly found on all lists. These include Business Services and Health and Allied Services that appear on all lists and Educational Services that appear on eight area lists. Special Trade Contractors and Eating and Drinking Places appear on seven lists. But it is a sharp drop from there. Industrial Machinery and Equipment appears on four lists. Three industries appear on three, and so forth. In all, 52 different industries are on the fastest-growing list. This suggests that these economies share some common elements but that much of the growth is being driven by a disparate group of industries across the state. Such diversity may well be a strength: too many eggs in one basket is not a safe bet for economic growth and sustainability.

Brown County's growth cannot be attributed to any one industry. In fact, its fastest growing industry, Business Services, accounts for 11% of the net growth in the 1990s. Its tenth fastest-growing industry is responsible for 4% of the net growth. Growth has been occurring across most industries, indicating a balanced economy. This spread of leadership is even truer as one looks at the early and later years of the decade. Four industries appear on the ten fastest-growing list for Brown County for 1995-1999 that were not on the list for 1991-1995. Business Services were on both lists, but industries such as Health and Allied Services and Insurance Carriers were not. And SIC 64, Insurance Agents, appears on the eight-year list but on neither of the four-year lists. The Amusement and Recreation Services, probably related to the casino, grew rapidly in the early years of the decade, and the growth was enough to put it on the list for eight years, despite it not making the second, four-year list. The Brown County economy is both growing and changing.

The Dane County economy is certainly growing, but it is not changing quite as much as Brown County. The ten fastest-growing industries in Dane did account for 58% of the net growth in the 1991-1999 period. These were the dominant, growth industries. The two that were most dominant, Business Services and Health and Allied Services, grew quickly. Their growth of 12,400 jobs accounts for more than one-quarter of all growth in the County. Other industries, such as Social Services, contributed, as did Miscellaneous Retail, Special Trade Contractors, and General Building Contractors. But these latter four industries collectively do not match the contribution of the top two growers. One aspect that sets Dane aside from the other areas is that not one of the fast growers is in manufacturing.

The Fox Cities' growth pattern is a little more similar to Brown County than Dane County. The 19,000 jobs that the fastest-growing industries contributed account for 67% of the net growth experienced by the region in the 1991-1999 period. No single industry predominates. Business Services, the fastest-growing industry, is responsible for only 12% of the total growth for the eight years. The tenth-fastest grower, Food and Kindred Products, added 4% of the net, total, employment growth. The list for the 1995-99 period contains seven of the industries that appear on the 1991-1995 list, suggesting less change among the leaders than has been occurring in Brown County. One unique condition in the Fox Cities is that four of the top ten industries were manufacturing. The other areas had only two manufacturing growers, at best.

Kenosha County has had a different experience. The ten fastest-growing industries have contributed some 77% of the total employment growth. Transportation Equipment leads the list, accounting for 13% of the total growth. That industry appeared on the list for both of the four-year periods. But it is almost alone. Seven industries that were on the list for the 1995-1999 period were not on for 1991-1995. However, seven that were on for 1995-1999 were also on the full eight-year list. The growth in the second half of the 1990s collectively was not as great as in the first four years, but individually the industries that emerged as faster growing had experienced some growth in both periods.

La Crosse had almost as much churning in industries as Kenosha. Six industries that appear in 1995-1999 were not on the list for the preceding four years. And three of these new listings made the list for the eight-year period. Change is afoot, so to speak. The fastest grower, Business Services, accounts for 15% of the net growth. Its growth quadrupled in the second four years over the first. Health employment's rate of growth in the second four years was two and one-half times that in the first. These are what appear to be leading the economy. The ten, top growers together account for some 79% of all net growth over the 1991-1999 period. Two somewhat surprising entries on the list are Amusement and Recreation Services and Automotive Dealers. La Crosse shares the first listing with Brown County and its Oneida Casino. The auto link appears on two other lists and indicates the increased sales of autos in the robust economy of the 1990s.

Metro Milwaukee is a large economy. It does not change direction or scale quickly. Its growth is being driven by a few industries that dominated the growth in both periods of the 1990s. Business Services and Health and Allied

Services together account for 41% of the growth in the 1991-1999 era. The gains here outdistance those in any other industry. The ten fastest growers, however, do equal 80% of all net growth for the eight years. All but two are service-sector industries. One industry that is unique to the area is Air Transportation, an industry that has grown in both cargo and passenger traffic. Much of its growth has been realized since 1995. The other unique winner is Printing and Publishing, an industry that has received a great deal of publicity for its success.

Racine County is different from the others in that its total employment gains from its ten fast growers exceed the total employment gain for 1991-1999. In fact, the 7,362 jobs added by the fast growers are 119% of the net gain. What this indicates is that some industries were concurrently losing employment. But assisting Racine's growth most were Business Services, accounting for one quarter of the net growth of the Racine economy, and Special Trade Contractors. The latter reflects a new level of construction activity in Racine. Perhaps on a more negative side, Racine shares the rapid growth of Social Services with Milwaukee and Dane Counties. On the other hand, seven of the fastest growing industries 1995 to 1999 were not on the list for 1991-1995. Not all had gains large enough to put them on the list for the eight years, but three did make the list.

Rock County, an area that grew by 25% during the 1991-1999 period, realized 83% of its growth from the top ten, fastest-growing industries. Only one of these industries dominated in terms of growth, Transportation Equipment. Transportation Equipment was responsible for 27% of the net employment growth in the county for the period. Furniture and Fixtures at 9% was a distant second. But it was not just a couple of industries that grew. Some 16 different industries were listed among the fastest growing for the two, four-year periods. The ten finalists were among these.

The ROS had a much more varied economy than did the individual metro areas. This is to be expected, since the ROS is an amalgam of the urban and rural areas of the rest of the state. The fastest growing industries collectively were responsible for only 48% of the total employment growth realized by the area. None dominated. Business Services, at the top of the list, equals but 6% of the net employment growth of area. That is far below the percentage found in any of the metro areas. Thus, individual parts of the ROS may have been dominated by individual industries, but collectively growth appears to come from a very broad group of industries. Like Rock County, some 16 different industries appeared on the two lists of the growers in the four-year periods. And like Dane, La Crosse, and Milwaukee, the top ten growers contributed a larger number of jobs in the 1995-99 than the 1991-1995 period. And, similarly, only two industries were in manufacturing.

Growth Within Manufacturing

Manufacturing industries appeared on the growth lists of eight of the nine areas. But only in the Fox Cities did the number exceed two. Manufacturing is growing in terms of value of products sold, but it is raising output with only modest increases in labor input. The result is a very healthy manufacturing sector, unaccompanied by large employment gains. Nevertheless, there are a number of specific, four-digit industries that have been growing rapidly. These we attempt to identify by examining the fastest-growing manufacturing industries in each geographic area. The list of these industries appears in Table 4.

One of the first points to note is that there are not many common industries on the list. This may, in part, be due to our need to disguise the four-digit names of some of the industries, since they have too few firms in them or one firm accounts for more than 80% of the employment in that industry in a particular location. But the more important reason that there is little overlap is that these area economies are built on different industries. All of Wisconsin does not do the same thing. Yes, manufacturing employment is still about 40% more common in Wisconsin than in the nation. But a variety of industries accounts for that employment and the growth experienced.

There are a few shared industries. One is Commercial Printing, Lithographic (SIC 2752) that appears in four different areas. A second is Plastic Products, not elsewhere classified (SIC 3089), that appears in three areas. Another that appears three times is Motor Vehicles and Equipment. Wisconsin has benefited from the boom times in the auto industry in the 1990s. Beyond these, there is little sharing of the reasons for employment growth.

Brown County and Racine's manufacturing have been growing fastest in some concentrated industries, hence the disguises on four of the five listings. Dane County, Fox Cities, and the ROS have but one of the disguises. Kenosha, La Crosse, and Racine have three. Only Milwaukee's economy is large enough to not be troubled by the concentration of growth. The presence of the concentration in so many other areas indicates that success has come to a few, specific firms.

TABLE 4 MANUFACTURING INDUSTRIES WITH THE LARGEST GAIN IN EMPLOYMENT BY FOUR-DIGIT SIC, 1991 - 1999

Rank	SIC	Industry	BROWN COUNTY			DANE COUNTY			FOX CITIES			KENOSHA COUNTY					
			Gain	SIC	Industry	Gain	SIC	Industry	Gain	SIC	Industry	Gain	SIC	Industry			
1	25*	Furniture & Fixtures	1,069	371*	Motor Vehicles & Equipment	931	3679	Electronic Components, nec	1,375	371*	Motor Vehicles & Equipment	1,397	371*	Motor Vehicles & Equipment			
2	3555	Printing Trades Machinery	617	3089	Plastics Products, nec	495	20*	Food & Kindred Products	1,058	3089	Plastics Products, nec	580	3089	Plastics Products, nec			
3	201*	Meat Products	550	2752	Commercial Printing, Lithographic	456	2672	Paper Coated & Laminated, nec	1,000	355*	Special Industry Machinery	485	355*	Special Industry Machinery			
4	373*	Ship & Boat Building & Repairing	528	2836	Biological Products exc. Diagnostic	451	2621	Paper Mills	476	3423	Hand & Edge Tools, nec	427	3423	Hand & Edge Tools, nec			
5	27*	Printing & Publishing	510	3523	Farm Machinery & Equipment	447	3554	Paper Industries Machinery	401	367*	Electronic Components & Accessories	306	367*	Electronic Components & Accessories			
6	2759	Commercial Printing, nec**	496	361*	Electric Distribution Equipment	397	2676	Sanitary Paper Products	372	336*	Nonferrous Foundries (Castings)	270	336*	Nonferrous Foundries (Castings)			
7	2621	Paper Mills	464	3599	Industrial Machinery, nec	373	22*	Textile Mill Products	360	289*	Miscellaneous Chemical Products	242	289*	Miscellaneous Chemical Products			
8	201*	Meat Products	427	384*	Medical Instruments & Supplies	344	2396	Automotive & Apparel Trimmings	338	342*	Cutlery, Handtools & Hardware	229	342*	Cutlery, Handtools & Hardware			
9	267*	Miscellaneous Converted Paper Prods.	292	3826	Analytical Instruments	343	2741	Miscellaneous Publishing	330	3599	Industrial Machinery, nec	168	3599	Industrial Machinery, nec			
10	347*	Metal Services, nec	181	2541	Wood Partitions & Fixtures	265	27*	Printing and Publishing	279	201*	Meat Products	159	201*	Meat Products			
Totals			5,134			4,502			5,989			4,263					
Rank	SIC	Industry	LA CROSSE COUNTY			METRO MILWAUKEE			RACINE COUNTY			ROCK COUNTY			REST OF STATE		
			Gain	SIC	Industry	Gain	SIC	Industry	Gain	SIC	Industry	Gain	SIC	Industry	Gain	SIC	Industry
1	358*	Refrigeration & Service Machinery	463	2752	Commercial Printing, Lithographic	4,085	363*	Household Appliances	711	37*	Transportation Equipment	2,567	3089	Plastics Products, nec	5,731	3089	Plastics Products, nec
2	2759	Commercial Printing, nec	417	3469	Metal Stampings, nec	1,822	284*	Scap, Cleaners, & Toilet Goods	600	37*	Transportation Equipment	926	2431	Millwork	3,436	2431	Millwork
3	2752	Commercial Printing, Lithographic	332	3089	Plastics Products, nec	1,490	3714	Motor Vehicle Parts & Accessories	542	25*	Furniture & Fixtures	743	3499	Fabricated Metal Products, nec	3,057	3499	Fabricated Metal Products, nec
4	344*	Fabricated Structural Metal Products	228	3751	Motorcycles, Bicycles & Parts	1,271	399*	Miscellaneous Manufactures	342	346*	Metal Forgings & Stampings	590	357*	Computer & Office Equipment	2,578	357*	Computer & Office Equipment
5	243*	Millwork, Plywood & Structural Members	174	3679	Electronic Components, nec	1,097	364*	Electric Lighting & Wiring Equipment	300	342*	Cutlery, Handtools & Hardware	320	2752	Commercial Printing, Lithographic	2,560	2752	Commercial Printing, Lithographic
6	205*	Bakery Products	166	2013	Sausages & other Prepared Meats	1,042	3599	Industrial Machinery, nec	274	332*	Iron & Steel Foundries	311	3599	Industrial Machinery, nec	2,206	3599	Industrial Machinery, nec
7	346*	Metal Forgings & Stampings	137	3544	Special Dies, Tools, Jigs & Fixtures	791	356*	General Industrial Machinery	157	251*	Household Furniture	301	3321	Gray & Ductile Iron Foundries	1,912	3321	Gray & Ductile Iron Foundries
8	399*	Miscellaneous Manufactures	95	3321	Gray & Ductile Iron Foundries	749	3823	Process Control Instruments	97	203*	Preserved Fruits & Vegetables	235	343*	Plumbing & Heating, except Electric	1,663	343*	Plumbing & Heating, except Electric
9	209*	Miscellaneous Food & Kindred Prod.	81	3499	Fabricated Metal Products, nec	674	3469	Metal Stampings, nec	93	356*	General Industrial Machinery	217	3679	Electronic Components	1,640	3679	Electronic Components
10	3544	Special Dies, Tools, Jigs & Fixtures	54	3599	Industrial Machinery, nec	645	367*	Electronic Components & Accs.	76	3949	Sporting & Athletic Goods, nec	202	3081	Unsupported Plastics Film & Sheet	1,494	3081	Unsupported Plastics Film & Sheet
Totals			2,147			13,666			3,192			6,412			26,277		

* General SIC code is used to protect firm anonymity

** not elsewhere classified

Source: Center for Urban Initiatives and Research, UWM, ES202 Longitudinal Database, 1991 - 1999

Brown County manufacturing growth was led by an industry subsumed under SIC 25, Furniture and Fixtures. But like five other fast-growing industries in Green Bay, the exact industry cannot be divulged because the growth is concentrated in a very few firms. What can be said is that printing and paper are leading the manufacturing expansion. Five of the ten categories relate to these areas; two are printing, two deal with paper and one is printing machinery. Meat Products is another industry that has been growing. And shipbuilding has been expanding. Collectively, the top ten, fastest-growing manufacturing industries account for over 70% of the total manufacturing growth.

Dane County, a county that has less manufacturing employment than any other metro area, still managed to experience manufacturing growth. The industries leading that growth are quite varied. The largest related to the auto industry. Others, like Plastics, nec, may as well. But unlike some areas, Madison has growth from some higher tech industries. Biological Products, Medical Instruments, and Analytical Instruments are normally counted as "high-tech." Having three such industries is more than in any other area. As a whole, the ten fast-growing industries account for 90% of the total, net manufacturing employment growth for the 1991-1999 period in Dane.

The Fox Cities, which have a smaller economy than Dane's, had almost 1,500 more jobs created by its largest manufacturing growers than occurred in Dane. The Fox Cities' manufacturing growth was led by a newer industry, Electronic Components, not elsewhere classified. It added 1,375 jobs over the eight years. A food products industry was second in growth. But the growth in both was dominated by the growth related to the paper industry. Six of the ten fastest-growing manufacturing industries were related to paper and publishing. They collectively added 2,858 more jobs. The paper valley seems to be adding to its base employment.

Kenosha also added to its traditional base, autos. Motor Vehicles and Equipment added more than twice as many jobs as the next largest category, Plastic Products, nec. What is also apparent is that in a smaller economy, growth tends to be highly concentrated: seven of the ten fast-growth industries have to be disguised because of the concentration of their growth. There is some variety of industries, but the growth is limited to a few firms.

La Crosse is another smaller economy. Its manufacturing is concentrated in a few firms across ten industries. No one industry's growth dominates. Seven industries are disguised. And to identify ten fast growers, we have had to go down to two-digit SIC growth. Manufacturing employment grew only 6% overall; we should not expect many industries to have grown quickly.

Metro Milwaukee also experienced a net 6% manufacturing employment growth for the 1991-1999 period. Despite that, six industries added at least 1,000 employees each and one added over 4,000. The clear winner was Lithographic Printing, an industry that has grown throughout the decade. And it appears from recent expansion announcements that it will continue to grow over the next several years. Another point that must be made is to note that five of the ten industries identified as fast growing have their names followed by nec, not elsewhere classified. This means that the products they produce are newer than the last edition of the SIC. This speaks well for the health of the industries and suggests that they may well be around for more years. Also on the list are traditional Milwaukee industries: Motorcycles, Sausages, and Foundries. These industries are also flourishing.

Racine County overall lost employment in manufacturing over the 1991-1999 period. But it still was home to several growing manufacturing industries. Few of these industries involved multiple employers. In fact, six industries have to be disguised. The good news is that at least ten industries can be identified and that three of them realized gains of over 500 employees.

Rock County's manufacturing growth is even more concentrated than Racine's. Eight of the ten industries that experienced rapid growth have to be disguised. Obviously, at least two are involved in the auto industry and others may well be. The leader dominates the growth (+2,567); all other industries pale in comparison. But the auto industry may well be carrying others along with it. Preserved Fruits and Mattress and Bedsprings are not likely to be included, but many others could be. Given the small and focused economy, only two industries can be identified with four-digit SIC detail.

With manufacturing employment growing 19% in the ROS, it is not surprising that the ten fastest growers added over 26,000 employees. All of the identified industries added over 1,000 workers, and the industry that added the most, Plastic Products, nec, added over 5,700. Two pairs of related industries are on the list: plastics and fabricated metals. The others are spread over several industries. Three names are followed by nec, indicating again that these are newer products. Also on that list of new products should be SIC 357, Computer and Office Equipment. The ROS is not relying on old-line products; it is changing with the times in a seemingly very healthy fashion. And it is benefiting from growth in six of the same fast-growth industries that Milwaukee is, suggesting that these industries do not necessarily seek a particular urban or rural location.

Growing Services Industries

As we have already noted, the state's economy is largely growing because of its service sector. True, manufacturing and construction have contributed. But the real driving force is services. The task in this section is to note the specific service industries that have added the most jobs absolutely in each geographic area of the state. Table 5 lists the industries by name, SIC, and employment gain.

As the reader scans the lists, it is immediately obvious that there are some industries that are growing well in numerous areas of the state. The two industries that have been growing rapidly in all areas but one are SIC 7363, Help Supply Services, otherwise known as temporary help, and SIC 8211, Elementary and Secondary Schools. The former industry has added over 30,500 workers in the eight years from 1991 to 1999. The latter industry added just over 20,000. The temporary help gain alone outdistances the total employment gains in five of the nine areas and almost matches the sixth. The schools' gain is larger than the total employment gain in four metro areas.

Growth in temporary workers is found in the less urbanized as well as the very urbanized areas of the state. And it occurred in all nine areas in both the early and later periods of the nineties. The industry itself has evolved. Many employers are now using temporary workers as a way to screen workers to find those whom they want to offer permanent jobs. This method of hiring increases the count of employees in the industry because some workers are on the payroll for limited periods before they are placed in other industries. Thus, the count here may not be similar in character to industries that tend to hire workers for longer periods of time. Nonetheless, the counts do reflect a very active industry.

The gains in the employment in schools reflect the need for the schools to grow to serve the baby "boomlet" (an increase in the number of children of the baby boomers) that is moving through the schools of many communities. Formerly closed schools are being reopened, and others are newly built. The school staffs are expanding, resulting in across-the-board gains in education employment.

Two industries — Eating and Drinking Places and Offices and Clinics of Medical Doctors — are the next most common growers. Growth in these industries is on the list in six of the nine areas. Eating and Drinking growth reflects the increasing tendency to eat outside the home. The growth in doctors' office staff reflects the continued effort to move medical treatment away from the more expensive hospital setting.

Two industries have grown sufficiently in five areas to make the fastest-growing lists. These are Non-local Trucking and Hospitals. Trucking employment has been growing to move the goods of the booming economy. Despite gains in efficiency by the railroads, the volume carried by trucks has grown throughout the 1990s. Hospital employment has grown after previous declines. Hospitals have been reorganized, but they still need to be staffed. And health care has been and will remain for decades a growing industry, given the aging baby boomers.

Beyond these six industries, no others were growing in at least half of the geographic areas of the state. There are some that are seen in several places, such as Business Services, not elsewhere classified, Gas Stations, and New Car Dealers, but none are as universal as those mentioned above. The many different industries that lead growth in the nine areas indicate that these economies are different. They are being led by a range of industries. All, no doubt, are benefiting from the general growth of the economy. But each area of the state has some unique economic characteristics.

Brown County has seven service industries that have experienced employment gains of at least 1,000 workers. Its fastest grower, Eating and Drinking Places, leads with over 2,600 new employees. Such growth equals that found in its four fastest growers in manufacturing, combined. Brown County is home to the most common of the six fastest-growing service industries, but it also has three unique ones, Amusement and Recreation, nec, likely related to the casino development, Insurance Agents, Brokers & Service, and Child Day Care Services. The industries on the list are evolving: four of the names on the list for 1995-1999 were not on the list for 1991-1995 nor on the one for 1991-1999. Thus, we might expect yet a different list when this analysis is done again in a few years.

Dane County hosts only two of the most common, fast-growing service industries, temporary help and doctors' offices. The county's other growers are not unique to Dane but are less common. A few stand out: Prepackaged Software, Computer Programming Services, and Residential Care. These cover the breadth of the economy and illustrate the range of low- to high-wage (low-tech to high-tech) industries that are growing concurrently. Temporary Help leads numerically by far. The others have grown by 1,000 to 1,800 employees over the 1991-1999 period. Eight of the industries that appear for eight years were also on the 1991-1995 list. The 1995-1999 list contains three changes,

TABLE 5 SERVICE SECTOR INDUSTRIES WITH THE LARGEST EMPLOYMENT GAIN, 1991 - 1999

		BROWN COUNTY			DANE COUNTY			FOX CITIES			KENOSHA COUNTY					
Rank	SIC	Industry	Gain	SIC	Industry	Gain	SIC	Industry	Gain	SIC	Industry	Gain				
1	581	Eating & Drinking Places	2,621	8221	Colleges & Universities	14,680	7363	Help Supply Services	2,258	581	Eating & Drinking Places	941				
2	4213	Trucking, except Local	1,749	7363	Help Supply Services	4,319	581	Eating & Drinking Places	2,002	8211	Elementary & Secondary Schools	935				
3	6411	Insurance Agents, Brokers, & Service	1,638	8011	Offices & Clinics of Medical Doctors	1,760	8011	Offices & Clinics of Medical Doctors	1,720	514*	Groceries & Related Products	688				
4	7363	Help Supply Services	1,617	581	Eating & Drinking Places	1,686	8211	Elementary & Secondary Schools	959	5065	Electronic Parts & Equipment	555				
5	7999	Amusement & Recreation, nec	1,460	8299	Schools & Educational Services, nec	1,640	6311	Life Insurance	931	781*	Motion Picture Production & Services	521				
6	7389	Business Services, nec	1,283	7371	Computer Programming Services	1,351	4213	Trucking, except Local	820	7363	Help Supply Services	500				
7	8211	Elementary & Secondary Schools	1,211	5311	Department Stores	1,282	5311	Department Stores	733	6022	State Commercial Banks	279				
8	632*	Medical Service & Health Insurance	1,133	8361	Residential Care	1,234	7389	Business Services, nec	681	8361	Residential Care	217				
9	806*	Hospitals	654	7372	Prepackaged Software	1,045	7349	Building Maintenance Services, nec	661	4213	Trucking, except Local	203				
10	8351	Child Day Care Services	481	8322	Job Training & Related Services	1,001	8331	Job Training & Related Services	545	7349	Building Maintenance Services, nec	194				
Totals			13,847			29,998			11,310			5,033				
<hr/>																
		LA CROSSE COUNTY			MILWAUKEE AREA			RACINE COUNTY			ROCK COUNTY			REST OF STATE		
Rank	SIC	Industry	Gain	SIC	Industry	Gain	SIC	Industry	Gain	SIC	Industry	Gain	SIC	Industry	Gain	
1	7389	Business Services, nec	1,126	7363	Help Supply Services	14,154	7363	Help Supply Services	1,823	806*	Hospitals	1,185	5311	Department Stores	12,002	
2	806*	Hospitals	788	8062	General Medical & Surgical Hospitals	6,160	5311	Department Stores	871	5311	Department Stores	959	581	Eating & Drinking Places	11,576	
3	8211	Elementary & Secondary Schools	742	8211	Elementary & Secondary Schools	4,048	806*	Hospitals	535	4213	Trucking, except Local	925	8211	Elementary & Secondary Schools	10,883	
4	581	Eating & Drinking Places	604	8011	Offices & Clinics of Medical Doctors	3,972	5199	Nondurable Goods, nec	400	7363	Help Supply Services	849	8641	Civic & Social Associations	5,328	
5	603*	Savings Institutions	508	4513	Air Courier Services	3,910	7011	Hotels & Motels	386	8211	Elementary & Secondary Schools	849	7363	Help Supply Services	5,065	
6	8011	Offices & Clinics of Medical Doctors	452	7371	Computer Programming Services	3,788	8211	Elementary & Secondary Schools	386	581	Eating & Drinking Places	778	8011	Offices & Clinics of Medical Doctors	4,823	
7	5541	Gasoline Service Stations	370	7374	Data Processing & Preparation	3,155	8351	Child Day Care Services	357	5013	Motor Vehicle Supplies & New Parts	349	4213	Trucking, except Local	4,589	
8	7542	Carwashes	301	8322	Job Training & Related Services	2,966	5012	Automobiles & Other Motor Vehicles	311	8351	Child Day Care Services	238	5541	Gasoline Service Stations	4,481	
9	5311	Department Stores	298	8361	Residential Care	2,468	5082	Construction & Mining Machinery	258	7011	Hotels & Motels	228	5961	Catalog & Mail-order Houses	4,395	
10	4813	Telephone Comm., exc. Radio	279	7379	Computer Related Services, nec	2,437	7532	Top & Body Repair & Paint Shops	168	596*	Nonstore Retailers	220	8361	Residential Care	3,820	
Totals			5,468			47,058			5,495			6,580			66,962	

* General SIC code is used to protect firm anonymity
 Source: Center for Urban Initiatives and Research, UWM, ES202 Longitudinal Database, 1991 - 1999

indicating further evolution of the economy. But if we look for a particular influence of the presence of UW in Madison, we cannot find it, aside from its presence as part of the tenth fastest-growing, service-sector industry. Otherwise, unlike manufacturing, there are no unique, rapidly growing service industries in Dane that might be traced to the presence of UW. The one visible influence of UW has been its ability to provide labor so that Dane could grow as rapidly in 1995-1999 as it had in 1991-1995.

The Fox Cities have benefited from the growth of four of the fastest-growing industries. In fact, its service-sector growth has been led by Help Supply Services, Eating and Drinking Places, Doctors' Offices, and teachers and staffs. None really dominates the growth the way it has happened in some other communities. The other fast gainers are more unique to the area, for example, Life Insurance and Building Maintenance Services. But like Dane, it has experienced growth in Department Stores and Job Training and Related Services. The booming economy and welfare reform have combined to create growth in jobs in workforce preparation.

Kenosha County's growing industries were quite consistent over the eight-year period. Nine of the ten industries appeared on the list in both sub-periods. Leading all growers were Eating and Drinking Places and Elementary and Secondary Schools. A quick glance at Kenosha from I-94 would suggest that Eating and Drinking is a likely industry to have grown. Several other industries are shared with at least one other area. But unique are Wholesale Distribution (SIC 5065), State Commercial Banks, and Services Allied to Motion Pictures. What is somewhat surprising is that the total employment added by the ten fastest-growing service industries in Kenosha is virtually the same as the number added by the ten fastest-growing manufacturing industries. This occurs elsewhere only in Rock County. Otherwise we see service growth outpacing manufacturing growth by a margin of two- or three-to-one.

In La Crosse the top service industries outgrew the top manufacturing industries by a two-to-one margin. Leading both groups is Business Services, nec. Following this are some favorites, Hospitals, Elementary and Secondary Education, and Eating and Drinking places. The unique fast growers include Federal Savings Institutions, Car Washes, and Telephone Communications. Most on the top-ten list appear initially in the 1995-1999 period, suggesting continuing churning in the La Crosse economy.

Milwaukee's growth in service industries dwarfs that in any other metro area. But there are common elements. These include temporary help, health care, primary and secondary education, computer related (two industries), and job training. What is unique is Air Courier Services. Air Courier growth is attributable to the rapid expansion of the need for the rapid reception of an increasing number of items, be they manufacturing parts or retail. The rapid growth in Temporary Help is attributable to a reformation in how many employers chose employees. As explained above, temp firms have become the employee screening agencies for many businesses. Temp workers are no longer filing in vacancies on a short-term basis; they are undergoing tryouts for the more permanent positions. This is a far different role for temp firms and raises their employee turnover, as well. Residential care growth is related to the growing elderly population that needs to be assisted and is being assisted in their homes.

Racine County's service industries have grown in three wholesale industries. One might guess this by looking at the new industrial parks in the County near I-94. But the combination of jobs added in these three industries cannot match the growth in Help Supply Services. Employment gains there are more than double those in the second-fastest growing industry, Department Stores. Other gains are more modest; collectively the top ten gainers have added close to 5,500 new employees.

Rock County's service sector growers can all be found on other areas' lists. None are unique to Rock County. Leading the list are Hospitals, Department Stores, Trucking, and Temporary Help. All grew at more than 100 employees per year. What is interesting is that five of the names on the list were not on for the 1995-1999 period. And by implication, five of the industries on the 1995-1999 list grew but not fast enough to get on the 1991-1999 list. This suggests that there is change afoot and that we are likely to see yet a different listing in four years. Rock County's economy is evolving, as are many others in the state.

The ROS has also seen dramatic growth in its service industries. In fact, the total growth of the ten fastest growers eclipses the employment growth realized in metro Milwaukee. At the top of the list for the ROS are Department Stores, Eating and Drinking Places, and Elementary and Secondary education. These industries are growing in the smaller metro areas and in the less urbanized areas. Part of the non-education growth is likely attributable to the proliferation of Wal-Marts and similar stores in smaller communities. Interestingly, though, many of the other, fastest-growing industries in the ROS are found in many of the metro areas. A few exceptions do exist, however. Among them are Civic and Social Associations and wholesale distribution of Lumber and other building materials. What is clear is that service growth is ubiquitous. What differs modestly is the exact composition of that growth.

EXPORT VERSUS CONSUMER-BASED INDUSTRIES

Viewing the distribution of employment and employment gains by industry and geographic area gives the reader a sense of the sources of employment growth within the state. Further insight can be gained, however, by combining some of the changes in employment into two categories that may be more memorable. The two are Export - Base and Consumer- Base. Export-base refers to industries that are more likely to sell products and services outside the immediate metropolitan area (but not necessarily outside the country). Consumer-base refers to industries that are aimed at the immediate residential market. Not all firms included in the definition may conform, but the general statement is accurate.

Consumer-base is defined narrowly as Personal Services, Retail, and small scale (less than 20 employees) Business Services. Export-base includes all of Manufacturing and large scale (20 or more) Business Services. Basic economic theory asserts that it takes growth in Export-base employment to bring additional income into a region. Therefore, the greater the growth in Export-base employment, the healthier the local economy. Consumer-base is just a way of judging how active that part of the market is.

We look at each of the nine areas (Table 6) to see to what degree each has experienced growth in Export or Consumer demand.

As one scans the nine areas, it is clear that the areas are different. Seven of the nine areas have Export-base employment gains that exceed those from consumer demand. But two have the opposite. From what we just heard of theory, we might expect employment to be growing faster where export gains exceed consumer based employment gains. But that is not necessarily the case; there is no clear pattern between rates of employment growth and rates of Export-base employment growth across areas.

If we look at rates of change in each area for the two types of employment growth, we also learn that there is no set pattern. In six of the nine areas there is some similarity between the contributions of the two sources. Yet in three there are substantial differences. Kenosha has experienced about five times more net growth from Export-base industries than from Consumer-base. In Milwaukee the ratio is closer to three times more jobs from Export-base. And in Rock the ratio is over two. But these differences do not relate in a consistent pattern to growth, size, or any other easily identifiable characteristic of the local economies.

One occurrence that should be noted is that a few of the areas have realized greater employment gains in Export-base jobs in the most recent period. Brown, Dane, Kenosha and La Crosse have realized larger Export-base employment growth in 1995-1999 than in 1991-1995. That speaks well for the economies. The gains have largely come from large-scale Business Services. What has seemingly put the other areas at a disadvantage is losses or only modest gains in manufacturing employment.

HIGH-TECH EMPLOYMENT

One of the more compelling questions today in Wisconsin is that of the role of high-tech industries in the state. This is a difficult question to answer because of the difficulty of identifying such industries. There is no set definition of high technology industries. Many researchers have attempted to define it, using SIC codes. But most efforts have stumbled. Additionally, most industries today are using technology. Does this make them high-tech or does it merely muddy the waters?

To overcome some of the definitional problems, we shall use the definition used by the Milken Institute in its study of *America's High-Tech Economy*.¹ The Institute identified fourteen, three-digit SIC industries that many would agree are high-tech. Nine of these industries are manufacturing; five are service industries. Among the manufacturing industries are: Drugs; Computers and Office Equipment; Communications Equipment; Electronic Components and Accessories; Aircraft and Parts; Search, Detection, and Navigation Equipment; Laboratory Apparatus and Analytical, Optical, Measuring, and Control Equipment; and Surgical, Medical, and Dental Instruments and Supplies. The service industries include Telephone Communications; Computer Programming, Data Processing, and Related; Motion Picture Production and Allied Services; Engineering, Architectural, and Surveying Services; and Research, Development and Testing Services.

1. Ross C. DeVol. *America's High-Tech Economy*. Santa Monica, CA: Milken Institute, July 1999.

TABLE 6 CHANGE IN EMPLOYMENT IN CONSUMER BASED AND EXPORT BASED INDUSTRIES

	Number of Employees											
	Brown County			Dane County			Fox Cities			Kenosha County		
	91 - 95	95 - 99	91 - 99	91 - 95	95 - 99	91 - 99	91 - 95	95 - 99	91 - 99	91 - 95	95 - 99	91 - 99
Residential Demand	3,988	2,535	6,523	6,664	4,189	10,853	3,755	2,474	6,229	1,790	-963	827
Personal Services	-22	71	49	-57	337	280	116	225	341	27	54	81
Retail	3,889	2,012	5,901	5,684	3,315	8,999	3,403	2,080	5,483	1,709	-1,135	574
Small Scale Business Services	121	452	573	1,037	537	1,574	236	169	405	54	118	172
Export Base	5,319	5,367	10,686	5,564	7,781	13,345	5,209	3,407	8,616	2,093	2,252	4,345
Manufacturing	3,828	3,193	7,021	3,107	1,582	4,689	3,719	1,523	5,242	1,657	1,976	3,633
Large Scale Business Services	1,491	2,174	3,665	2,457	6,199	8,656	1,490	1,884	3,374	436	276	712
Totals	9,307	7,902	17,209	12,228	11,970	24,198	8,964	5,881	14,845	3,883	1,289	5,172

	Number of Employees														
	La Crosse County			Milwaukee Area			Racine County			Rock County			Rest of State		
	91 - 95	95 - 99	91 - 99	91 - 95	95 - 99	91 - 99	91 - 95	95 - 99	91 - 99	91 - 95	95 - 99	91 - 99	91 - 95	95 - 99	91 - 99
Residential Demand	2,664	-458	2,206	6,644	4,545	11,189	471	390	861	1,940	357	2,297	23,393	35,428	58,821
Personal Services	42	26	68	175	-636	-461	52	64	116	-43	-84	-127	498	321	819
Retail	2,488	-543	1,945	4,850	3,608	8,458	509	49	558	1,913	476	2,389	21,593	32,788	54,381
Small Scale Business Services	134	59	193	1,619	1,573	3,192	-90	277	187	70	-35	35	1,302	2,319	3,621
Export Base	411	1,430	1,841	24,393	15,208	39,601	872	22	894	6,575	-1,009	5,566	34,389	18,313	52,702
Manufacturing	295	286	581	9,194	329	9,523	-449	-483	-932	5,716	-970	4,746	30,956	11,071	42,027
Large Scale Business Services	116	1,144	1,260	15,199	14,879	30,078	1,321	505	1,826	859	-39	820	3,433	7,242	10,675
Totals	3,075	972	4,047	31,037	19,753	50,790	1,343	412	1,755	8,515	-652	7,863	57,782	53,741	111,523

Definitions
 Personal Services: SIC 72;
 Retail: SICs 52 - 59, 75 - 76, 78 - 79;
 Small Scale Business: SICs 73, 87 (Employment <20);
 Manufacturing: SICs 20 - 39;
 Large Scale Business: SICs 73, 87 (Employment >20)
 Source: Center for Urban Initiatives and Research, UWM, ES202 Longitudinal Database, 1991 - 1999

The questions we sought to answer dealt with the relative role of high-tech in the Wisconsin economies and the changes that have been experienced during the 1990s. The most critical numbers related to these questions appear in Table 7. These are the summary figures by geographic area. These are not broken out by specific industry because there are a number of instances in which the employment in a given industry in a given location is small to non-existent. More critical to the question of the role of high-tech is whether high-technology is even an element of the economies of Wisconsin and whether its role is indeed growing. This we can see in Table 7.

TABLE 7 EMPLOYMENT AND CHANGE IN EMPLOYMENT IN HIGH-TECH INDUSTRIES, 1991 - 1999

	Brown County	Dane County	Fox Cities	Kenosha County	La Crosse County	Metro Milwaukee	Racine County	Rock County	Rest of State
<i>High-Tech Employment, 1999</i>	2,867	14,631	4,740	1,680	1,293	42,246	1,573	725	24,271
<i>Absolute Change 1991 - 1999</i>	604	4,501	1,866	683	755	10,006	420	-464	6,032
<i>Relative Change 1991 - 1999</i>	27%	44%	65%	69%	140%	31%	36%	-39%	33%
<i>% of Total Employment, 1999</i>	2	6	4	3	2	5	2	1	2

The first point to note is that there is some high-tech employment in Wisconsin. Over 94,000 jobs can be said to be in these fourteen high-tech industries in the state. The leader by far is Milwaukee. Second is the rest of the state. Second among metro areas is Dane County, with about one-third the number of high-tech jobs as Milwaukee. That is the good news. The not-so-good news is that the absolute number of high-tech jobs in some of the geographic areas is pretty small.

But all metro areas except Rock County added high-tech jobs between 1991 and 1999. Together the eight areas with growth added close to 25,000 such jobs in the 1991-1999 period. The rates of high-tech growth exceeded the general growth rate for each area. In some cases, such as La Crosse and Racine, high-tech employment grew several times faster than overall employment. One must, however, put these rates into perspective by seeing the absolute growth was between 400 and 800 jobs for four of the metro areas. Nevertheless, the trend is in an advantageous direction.

Clearly, high-tech employment is not yet a major contributor to the Wisconsin economy. High-tech is most important in Dane, where it is 6% of total employment, and in Milwaukee, where it is 5% of total employment. Fox Cities is third, with 4% of employment being high-tech. Such employment levels are not inconsequential: all of metro Milwaukee's high-tech employment, for example, is equivalent to the employment in Retail in the City of Milwaukee alone. Or, for Milwaukee, high-tech employment is the equivalent of about one-quarter of all metro manufacturing employment.

Fortunately, rates of employment growth in high-tech have ramped up dramatically during the 1990s. There was very limited growth in the 1991-95 period. Growth rates in several areas were just above zero, and two areas were negative. But since 1995, growth rates have jumped, again with the exception of Rock County. For the 1995-1999 period, growth rates ranged from a low of 21% in the Fox Cities to a high of 93% in Kenosha. Milwaukee and Dane grew at about the same rate, 29% and 27%, respectively. The dramatic upturn in recent years does bode well.

As we examine the entire 1991-1999 period, we see gains outside of Rock County ranging from 27% to 140%. The relative winner is La Crosse, but that absolute gain is only 755 jobs. At the high end absolutely are Milwaukee and Dane. They added 10,006 and 4,501 high-tech jobs, respectively, growing by 31% and 45%. The vast majority of gain in both was in Computer Programming, Data Processing, and Other Computer Related Services. Not too surprisingly, Milwaukee's net gain would have been higher were it not for the loss of a large number of jobs in two high-tech industries, Telephone Communications and Search, Detection, Navigation, Guidance & Aeronautical Instruments and Equipment. Large gains in the ROS were led by Electronic Components and Accessories and by Computer Programming. Gains elsewhere in the state were not dominated by any one industry.

The small high-tech employment base suggests that the rate of gain must go even higher, if Wisconsin is to significantly benefit from high-tech employment growth. The directions are generally positive, but the scale is below that which many seek.

CONTRIBUTIONS OF AUTONOMOUS VS. MULTI-SITE EMPLOYERS

In an era of corporate mergers and acquisitions (M&A), it should not be surprising to learn that an entrenched trend in Wisconsin is the increasing proportion of employment that is accounted for by employers that have multiple locations. The autonomous, single-site firm is playing a lesser role. The M&A trend contributes heavily to the growth of multi-site employment, but what also contributes is the economic rationale to do whatever one does well in several places. Thus, we have chain retail outlets, multiple-location wholesale outlets, consolidation of financial services, multiple holdings of health care facilities, and just-in-time manufacturing factories. The result is an increasing concentration of employment in fewer employers.

The question we explore is whether this move to consolidation is similar in all geographic areas of the state. We also wondered whether the change was such that the majority of employment was now in multi-site employers in all areas. Tables 8A and 8B shed light on these two questions. The questions are important for economic development because it is harder at the local level to deal with company headquarters and the lead decision makers if they are not located in one's community, or if decisions on local operations are based on decisions pertaining to operations elsewhere.

TABLE 8A TOTAL EMPLOYMENT BY FIRM TYPE, 1999

Firm Type	Brown County	Dane County	Fox Cities	Kenosha County	La Crosse County	Metro Milwaukee	Racine County	Rock County	Rest of State
<i>Single-site</i>	61,035	127,293	48,578	31,340	28,069	420,406	40,562	30,362	518,826
<i>Multi-site</i>	76,085	138,223	78,998	19,498	34,388	406,665	38,770	36,952	513,085
<i>% Single-site</i>	45	48	38	62	45	51	51	45	50
<i>% Multi-site</i>	55	52	62	38	55	49	49	55	50

Source: Center for Urban Initiatives and Research, UWM, ES202 Longitudinal Database, 1991 -1999

TABLE 8B CHANGE IN TOTAL EMPLOYMENT BY FIRM TYPE, 1991 - 1999

	Brown County	Dane County	Fox Cities	Kenosha County	La Crosse County	Metro Milwaukee	Racine County	Rock County	Rest of State
Single-site									
<i>Employment</i>	3,143	13,504	1,359	3,471	-1,267	-16,254	-4,009	2,120	29,790
<i>Rate of Change</i>	5%	12%	3%	12%	-4%	-4%	-9%	8%	6%
Multi-site									
<i>Employment</i>	31,749	35,467	26,984	7,306	11,530	121,346	10,181	11,220	174,108
<i>Rate of Change</i>	72%	35%	52%	60%	50%	43%	36%	44%	51%

Source: Center for Urban Initiatives and Research, UWM ES202 Longitudinal Database, 1991 -1999

The good news is that the move to multi-site employment by area is not yet complete. The majority of all employment in 1999 was in multi-site employers in five of the nine geographic areas. By contrast, in 1991 only one area had the majority of its employment in multi-site employers. But it appears that the transition to multi-site will soon be more complete: one of the areas is currently 50/50 and two are 51/49, single to multi-site. Only Kenosha with

a 62/38 split is still firmly in the single-site majority camp. At the other end of the spectrum is the Fox Cities with a 38/62 split. The Fox Cities' split is probably due to such employers as those in paper and insurance. Three other areas, Brown, La Crosse, and Rock Counties, have a 45/55 split, and these areas have experienced substantial movement in the direction of greater employment in multi-location employers.

The transition to more and more multi-site employers and employment is progressing rapidly. Table 8B shows just how many of the employment gains realized in 1991-99 have come from employers with multiple locations. As one scans the rates of employment growth in single-site employers by geographic area, it is soon clear that little or none has occurred. The greatest growth (12%) in single-site employment occurred in Dane and Kenosha Counties. Rock County is next at eight percent.. Racine, by contrast, realized a nine percent employment loss in its single-site employers. Milwaukee and La Crosse realized four percent losses among their single-site employers. With the exceptions of these three counties, the transition to greater reliance on multi-site employment came because multi-site employment grew much more rapidly than did single-site employment.

The more rapid growth of single-site employment in Madison (Dane) raises the possibility that this community may be a "new age" economy. It may be that what is reflected in the numbers is the creation of more new businesses than are being created elsewhere. Growth in single-site business employment has occurred since 1991, further suggesting that this may be a new phenomenon. Even the proportion of employers that are single-site increased over the decade.

Multi-site employment grew from a low of +35% in Dane County to a high of +72% in Brown County. There is little question but that multi-site employers have been leading employment growth. Given the strength of the trend and the universality of the trend, there is little doubt that this is a condition that must be accepted for a number of years to come. It is not all bad. One of the main reasons multiple sites have proven successful is that such employers often have more resources to invest to make their operations successful. Thus, although multiple locations can make dealing with non-local employers more difficult, the trade-off is often more investment to make local operations more efficient, bigger, and even better. Time will tell if the efficiencies of size do yield greater local benefits.

A point that should be noted is that the move to multi-site employment is not uniform, nor does it occur on a linear basis. Kenosha County had a greater concentration of employment in multi-site employers in 1995 (41%) than in 1999 (38%), but both figures are markedly larger than was the case in 1991 (30%). Racine and Rock have the same 45/55 split in 1995 and 1999; there is no movement. Brown County had 43% of its employment in multi-site establishments in 1991, 46% in 1995, and 55% in 1999. Milwaukee had 40%, 47%, and 49% multi-site employment across the three years. Thus, the net effect overall is toward greater concentration of employment in multi-site employers. But the path in that direction is a varied one.

ESTABLISHMENT ATTRITION

Survival is a precondition of business success. An issue that is often explored is the rate of survival of employers. Table 9 examines just what percentage of private employers (individual business establishments) survived for either four or eight years during the 1990s. The two rows in bold list the number of establishments at the start of each period, either starting in 1991 or 1995. Below in each case are the percentages of those establishments appearing in the initial year that survived until the year noted on the left. Thus, in Brown County 72% of the establishments that were in existence in 1991 also were going entities in 1995, and 48% of them were still going in 1999. Of those establishments that were in existence in 1995, regardless of start date, some 62% were still listed as establishments in 1999.

The lower survival rate for the second four years from the first may or may not be grounds for concern. The lower survival rate may reflect greater competition and weeding out of weaker competitors. Or it may merely reflect greater consolidation. Our data are reported by account number. A firm that has been acquired will lose its individual entity and become a subsidiary of another employer. Thus, it appears to have gone out of existence. If a viable firm moves out of the state, it appears to have died. Actually, it has merely left the reporting area. And there may be employers who have changed ownership or name and account number. In all such cases the employer appears to not have survived when, in fact, it has. Despite these shortcomings the data in Table 9 do give a reasonable reflection of the basic longevity of employers in each of the nine areas during the 1990s.

As one looks across the nine areas, several points seem evident. One is that there is modest variation across geographic area in terms of rate of survival. Granted, Kenosha, Racine, and Rock are lower than the others, but the gap

TABLE 9 NUMBER OF EMPLOYERS IN 1991, 1995 AND PERCENT PRESENT IN 1995, 1999

Firms	Brown County	Dane County	Fox Cities	Kenosha County	La Crosse County	Metro Milwaukee	Racine County	Rock County	Rest of State
1991	4,547	9,518	4,237	2,455	2,434	34,164	3,707	2,830	54,553
% Present, 1995	72	71	70	66	71	68	64	67	68
% Present, 1999	48	47	49	44	48	47	44	45	48
1995	5,300	11,258	4,793	2,844	2,743	38,647	3,989	3,183	60,432
% Present, 1999	62	60	62	57	63	60	60	59	62

Source: Center for Urban Initiatives and Research, UW-M, ES202 Longitudinal Database, 1991 - 1999

is not large. Second, the rates of survival, around two-thirds in the early 1990s and just about three-fifths in the second four-year period, may well reflect a change in the economy. We note below the increasing growth in employment in multi-location employers. Third, the eight-year survival rate of between 44% and 48% suggests a rather dynamic economy: establishments are coming and going, albeit the losses per year are lower as establishments age.

One standard used is that approximately 10% of new businesses disappear each year after their birth. At that rate we would expect about 66% of these establishments to be in place after four years and 43% to be there after eight years. Only one area has a survival rate below the expected 66%. That may be due to the fact that Wisconsin had a very strong economy in these years, without a labor shortage. Since these communities have a higher rate than expected after eight years, it could well be good fortune or that the 10% rate of removal is just an approximation.

If we were to include the government sector in these tables, we would find that their inclusion does little to affect the outcomes. As one might suspect, the percentage of surviving entities is higher across almost all areas and time periods. But the difference in the vast majority of cases is one or two percentage points. In other words, the changes in the number of surviving establishments is more modest in number if one uses only private-sector employers, and the percentage of employment affected is also virtually the same, whether or not one includes government employers.

NET EMPLOYMENT GAINS FROM EXISTING EMPLOYERS, 1991-1999

Employment gains come from new establishments, newly immigrated establishments, and existing establishments. More dynamic economies tend to have a higher percentage of employment gains come from the first two categories. To get at this indicator, we use the obverse, the percentage of net employment gains that comes from existing establishments. Once again we need a caveat: we measure only those employers that were in place in 1991 and did not change their UC account numbers. Some employers who were around in 1991 are counted as new because they changed their account number for some reason, such as having acquired another firm, having been acquired, having changed ownership and the like. We end up with an approximation of the proportion of net employment growth that is attributable to the stable employers.

Table 10 shows the number of jobs and proportion of net employment growth for three periods — 1991-1995, 1995-1999, and 1991-1999 — that is attributable to establishments that were in place in 1991. These counts differ from Table 9 that reveals the durability of the establishments, not their net employment change. A quick glance across the cells, especially the net change cells, reveals some very different dynamics, depending on the location.

One thing that is quite stable is the number of jobs lost per geographic area per time period. That contrasts with the employment growth per period per area. In terms of growth, the 1995-1999 period is always smaller than the gains in 1991-1995 in each area. But the ratio between the two, four-year periods are quite different across areas. For example, the jobs added among existing employers in La Crosse in 1995-1999 were 89% of the jobs added in the 1991-1995 period. In Rock County the jobs added in the later period were 44% of those in the former.

The net changes are quite different in an absolute sense both within and across communities. The net gains in each community were smaller in all cases in the 1995-1999 period than the 1991-1995 period, except for La Crosse. And the number of jobs existing employers contributed to each area varied widely across the state. But what is more telling is the proportion of net growth that these numbers represent. If the employers existing in 1991 are still responsible for a larger portion of the net growth for 1991-1999, then it suggests a smaller contribution from new establishments.

TABLE 10 JOBS ADDED AND LOST BY EMPLOYERS IN PLACE IN 1991

	Brown County	Dane County	Fox Cities	Kenosha County	La Crosse County	Metro Milwaukee	Racine County	Rock County	Rest of State
Jobs Added									
1991 - 1995	15,584	29,090	13,721	5,032	5,383	87,618	7,455	10,005	117,673
1995 - 1999	9,823	17,949	8,829	3,354	4,795	61,647	4,829	4,408	78,682
1991 - 1999	19,239	33,956	15,685	7,236	7,665	106,837	7,691	7,631	144,626
Jobs Lost									
1991 - 1995	-6,676	-12,975	-6,055	-3,014	-3,122	-56,383	-5,111	-3,314	-55,565
1995 - 1999	-6,074	-11,071	-6,013	-2,433	-2,064	-50,142	-5,039	-3,348	-46,082
1991 - 1999	-6,737	-11,579	-6,340	-3,086	-2,897	-63,194	-6,975	-3,586	-52,661
Net Change									
1991 - 1995	8,908	16,115	7,666	2,018	2,261	31,235	2,344	6,691	62,108
1995 - 1999	3,749	6,878	2,816	921	2,731	11,505	-210	1,060	32,600
1991 - 1999	12,502	22,377	9,345	4,150	4,768	43,643	716	4,045	91,965
Percent of Employment Growth Attributable to Employers in Place in 1991									
1991 - 1995	46	65	49	29	37	53	63	58	58
1995 - 1999	24	29	22	25	65	25	-9	57	33
1991 - 1999	36	46	33	39	46	42	12	30	45

Source: Center for Urban Initiatives and Research, UWM, ES202 Longitudinal Database, 1991 - 1999

Fortunately, except for the 1995-1999 period in Racine, all sub-periods are positive, that is, gains outnumbered losses in all cases. What is not as evident is any pattern across communities in the proportion of net employment gains that came from the existing employers. For the first four years areas such as Dane County (65%), Racine (63%), Rock (58%), and the ROS (58%) were greatly dependent on the surviving employers for a large proportion of their net employment growth. Actually, only Kenosha (29%) and La Crosse (37%) were far from the other areas.

In the second four years, we see a very different pattern. La Crosse suddenly had 65% of its growth attributable to employers in place in 1995, and Rock had 57%. The other communities were largely in the twenties. Racine was a real exception with -9% of its employment growth coming from existing employers. Obviously, older employers lost employment while new ones gained or came into existence.

Despite the switches in some communities between the periods, many communities did realize between 30% and 46% of their net employment growth in the 1991-1999 period from existing employers. The one large exception was Racine, a community that realized only 12% of its modest, net growth from previously existing employers. The problem was that several employers in existence in 1991 died, moved, or just downsized. The implication for the other economies is that those with the lowest percentage of employment gains from existing employers, Rock, the Fox Cities, and Brown County, might be characterized as the most dynamic. But to be more accurate, we would have to remove Rock, since in the most recent four years, its growth has been very dependent upon previously existing employers. Thus, the honors must go to the Fox Cities and Brown County, two of the fastest-growing areas of the state.

PREVALENCE AND CONTRIBUTION OF LARGE GROWERS (50+)

Another aspect of the growth issue is the role that a few employers may play in the net growth achieved. Do a few employers that have grown dramatically, measured by having added 50 or more employees over the period of analysis, account for the bulk of the employment growth or is the growth attributable to numerous employers, few of

whom have experienced dramatic, absolute growth? The answer to this suggests whether a local economy is dominated by a few big gainers or whether it is many employers contributing. Table 11 shows the contributions of the large growers by area for each of the three periods of analysis.

TABLE 11 NUMBER OF EMPLOYERS WHO ADDED 50+ EMPLOYEES

	Brown County	Dane County	Fox Cities	Kenosha County	La Crosse County	Metro Milwaukee	Racine County	Rock County	Rest of State
# of Employers									
1991 - 1995	52	85	51	14	20	278	23	18	323
1995 - 1999	47	88	55	24	15	305	20	25	296
1991 - 1999	70	123	68	23	17	402	29	28	466
Jobs Added									
1991 - 1995	7,498	12,783	5,392	1,650	2,171	39,511	2,451	6,036	41,962
1995 - 1999	6,567	11,038	6,513	2,048	2,430	35,114	2,728	3,774	44,523
1991 - 1999	10,919	19,023	8,202	4,061	3,844	53,731	3,068	3,677	74,504
Percent of Employment Growth Attributable to Large Growth Employers									
1991 - 1995	39	51	34	23	36	67	66	53	39
1995 - 1999	43	46	52	55	58	76	112	202	46
1991 - 1999	31	39	29	38	37	51	50	28	37

Source: Center for Urban Initiatives and Research, UWM, ES202 Longitudinal Database, 1991 - 1999

The first section of Table 11 shows just how few employers in each area in each time period added at least 50 jobs. Aside from Milwaukee and the ROS, the numbers are quite small. But to put these numbers into perspective, one must look at the numbers of jobs they generated and then just how important these contributions were to the net growth in employment for each period. One pattern of note is that the absolute contributions of the large growers were quite similar in each area for each four-year period. These large growers did not change much in their absolute contribution over time, except for Rock County.

But what did change was their relative contribution, largely because of the different contributions of the other employers. Thus, over the 1991-1995 period compared to the 1995-1999 period, the contribution of the large growers changed from 23% of the growth to 55% of the growth in La Crosse or 53% to 202% of the growth in Rock County between the two periods.

The net contribution of the large growers also varies across geographic area for the nineties. The large growers accounted for 50% of the net employment growth in Racine and 51% of the net growth in Milwaukee for the 1991-1999 period. That is substantially more than the 28% role in Rock County, the 29% role in the Fox Cities, or the 31% role in Brown County. In these latter three and even in the remaining areas, the smaller contributors are playing a much more substantial role than a limited number of large gainers. It appears that Milwaukee and Racine have somewhat different economies from the others. One could guess this, since Racine grew at 8% while Milwaukee grew by 15% over this time period. These two economies grew more slowly than the others, perhaps because they were more dependent upon a few large growers.

We cannot say, however, that benefiting from the growth of a few rather than many employers is necessarily bad. Finland, for example, has benefited tremendously from the growth of Nokia. What we can say is that the conditions exist: some areas get a much larger portion of their growth from a few, large-growth employers.

EMPLOYMENT BY ESTABLISHMENT SIZE

The US and Wisconsin economies are undergoing dramatic changes, as evidenced by the topics in this report. One that is more visible than others is the changing size of economic endeavor. On the one hand we see increasing consolidation that forms larger and larger, multi-site operations. On the other, we see increasing interest in self-employment and entrepreneurship and the downsizing or obliteration of very large, old-economy factories. Where do these many trends lead? Which prevail in the creation of jobs? The data available give us some insights.

To gain these insights, we start by examining the distribution of employment by size of individual employer establishment. We need to first learn whether employment is now concentrated in larger or smaller work places. Then we look to see just how quickly that distribution is changing.

The reader needs to be reminded that we are talking "establishment," the place of work, not the overall structure of the business. Thus, a multi-site employer might employ 2,000 workers and be deemed a very large employer. But if those workers are spread across 10 sites, 10 different establishments, that same employer will appear as a "relatively small" employer when we use establishment level data, as we do. Thus, our measure is one of the scale of employment in individual establishments, not a measure of the consolidation of industry. While a bit confusing, it does tell those in economic and real estate development the common scale of needs for buildings. If employment is growing in the largest establishments, then it would suggest very large buildings would be needed. If the growth is in 100 to 249 worker spaces, then a considerably smaller space is required.

Overall in the state, employment is concentrated in relatively small establishments. Some 50% of employment is concentrated in establishments that contain fewer than 100 workers. Over 27% of employment is in establishments of between 100 and 499 employees. The largest establishments, those with at least 500 employees, combine to contain less than one quarter (23%) of the employment in the state. (The reader should also be aware that these figures do not include the self-employed or their spouses, if they work in their own family business. If they were also counted, we would see an even larger proportion of workers in the under 100 category.)

TABLE 12 EMPLOYMENT BY FIRM SIZE, 1999

Firm Size by Number of Employees	Number of Employees								
	Brown County	Dane County	Fox Cities	Kenosha County	La Crosse County	Metro Milwaukee	Racine County	Rock County	Rest of State
1 - 19	23,701	47,065	21,655	11,060	11,953	151,374	16,365	13,253	253,580
20 - 99	38,889	74,199	33,288	16,105	17,261	237,079	23,381	18,178	307,641
100 - 249	24,199	44,415	22,629	9,752	11,286	147,960	14,540	11,455	177,008
250 - 499	11,795	27,475	16,355	4,185	5,261	92,650	7,235	9,125	100,109
500+	38,536	72,362	33,649	9,736	16,696	198,008	17,811	15,303	193,573
TOTAL	137,120	265,516	127,576	50,838	62,457	827,071	79,332	67,314	1,031,911

Source: Center for Urban Initiatives and Research, UWM, ES202 Longitudinal Database, 1991 - 1999

A first glance at the table reveals an impression that employment is not concentrated in any one employment category. And it seems that there is not likely to be much variation across communities in the relative distribution. That proves to be the case. The percentage of employment in establishments of less than 100 employees ranges from a low of 43% in the Fox Cities to a high of 54% in the ROS and in Kenosha. Among the larger employers, the range of employment of those with at least 500 employees varies between 28% in Brown County to 19% in Kenosha and the ROS. These latter two communities appear to have a clearly different distribution from the other communities. Why this is the case is not clear. Perhaps they are more reflective of the "new economy" with its emphasis on "lean" operations for greater flexibility.

To gain greater insight, we need to look at just what has been happening in the 1990s. Has employment growth in these two areas in particular been faster at the smaller scale (less than 100 workers)? Table 13 reveals the net

TABLE 13 NET CHANGE IN EMPLOYMENT BY FIRM SIZE, 1991 - 1999

Firm Size by Number of Employees	Number of Employees								
	Brown County	Dane County	Fox Cities	Kenosha County	La Crosse County	Metro Milwaukee	Racine County	Rock County	Rest of State
1 - 19	4,509	6,984	3,318	1,064	1,425	14,903	1,113	1,301	40,559
20 - 99	10,716	17,014	8,731	4,909	4,167	42,375	3,958	3,019	66,026
100 - 249	6,661	10,960	5,394	4,519	2,558	29,098	1,926	2,715	32,506
250 - 499	3,341	9,027	6,450	996	277	12,541	494	3,195	15,324
500+	9,665	4,986	4,450	-711	1,836	6,175	-1,319	3,110	49,483
TOTAL	34,892	48,971	28,343	10,777	10,263	105,092	6,172	13,340	203,898

Source: Center for Urban Initiatives and Research, UWM, ES202 Longitudinal Database, 1991 - 1999

changes in employment by establishment size for the 1991-99 period. We can see where most employment gains occurred by size and location. This is useful knowledge to those wanting to anticipate building needs and to the financial sector that is attempting to target businesses that may need additional capital for further growth.

Brown County, which in 1999 had more of its employment in establishments over 500 employees than any other added the most new jobs in the 20-99 category, 10,716. But a very close second was the 500 and over category, 9,665. Third-fastest growing was the 100-249 category with 6,661. There is no particular pattern here.

Dane County was somewhat similar. It added more jobs in the 20-99 category (17,014) than in any other. In second place was 100-249, with a gain of 10,960. Third was 250-499, adding 9,027. The largest and smallest employers added the least employment.

The Fox Cities added the most jobs in the 20-99 employee category (8,731). But its second-fastest growing category was 250-499, +6,450. Third fastest-growing category was 100-249 employees, (5,394). Again it is the mid-sized establishments that have been adding the most employment.

Kenosha's economy is more heavily composed of less than 100 employee establishment than any other metro area in the state, and its greatest employment gains came in the 20-99 category, adding 4,909 employees. The 100-249 category was a close second (4,519). Employers with 500 or more employees actually lost employment (-711) over the eight-year period.

La Crosse experienced pretty average growth across all size categories. Its largest growth (4,167) again came in the 20-99 category, followed by the 100-249 category, +2,558.

Milwaukee added more employees to all categories. As with seven other locations, the largest growth came from those with between 20 and 99 employees (42,375). These employers added 22% to their 1991 employment base. The category that realized the second largest growth was that of 100-249 employees, adding 29,098. Third were establishments in the 1-19 category, 14,903. The largest employers, those with 500 or more employees, added the least new employees, 6,175 or 3%.

Racine also favored smaller establishments for growth. Some 82% of its growth in the 1991-99 period occurred in employers with less than 100 employees. Most growth (3,958) came from employers with 20 to 99 employees. While the rate of growth was not as fast as in most other communities, the pattern of smaller establishment growth certainly predominates. This was exaggerated by losses of employment (-1,319) among those with 500 or more employees.

Rock County experienced a great surge of employment growth among the largest employers in the first half of the decade. But since 1995 that growth has been largely realized in smaller establishments. The net result is that three categories, 20-99, 250-499, and 500+ experienced virtually the same absolute growth. And the 100-249 category grew almost as much. This is the only geographic area that had similar growth across four categories.

The ROS certainly reflects the importance of smaller establishments. Not only does the majority of employment reside in establishments of less than 100 employees, the growth since 1991 has been predominately (52%) in these

size categories. But unlike the metro areas, employment in these establishments with 500 or more employees grew by nearly 50,000 employees or 34%. Only the rate of growth (27%) in the 20-99 category came close. The role of the largest employers suggests growth from more established employers than in most of the metro areas.

CITIES VERSUS THE SUBURBS

One of the issues that has taken the popular press by storm is "sprawl." There is no one definition of sprawl that has been agreed to, but one of the images of sprawl is the unbound growth occurring outside central cities. The area of the state that gets the most press on this issue is either Milwaukee, because of its size, or Dane, because of its county executive's outspoken interest. In either case the issue is whether a disproportionate amount of development, in this case employment growth, is occurring in the suburbs rather than the central city. We explore this issue in two ways.

The first is to examine just what proportion of employment is located in each metro area's central city. The second is to see just how much this proportion has changed over the 1990s. Because of our conception of the Fox Cities as an amalgam of several communities, we cannot include this in the analysis. Nor can we include the ROS. So we focus on the remaining seven metro areas.

TABLE 14 PERCENT OF EMPLOYMENT IN CENTRAL CITY AND REST OF AREA, 1999

Area	Brown County	Dane County	Fox Cities	Kenosha County	La Crosse County	Metro Milwaukee	Racine County	Rock County	Rest of State
Central City	80	74	--	76	77	41	67	85	--
Rest of Area	20	26	--	24	23	59	33	15	--
Total	137,120	265,516	--	50,838	62,457	827,071	79,332	67,314	--

Source: Center for Urban Initiatives and Research, UWM, ES202 Longitudinal Database, 1991 - 1999

Table 14 shows the central city and suburban proportions of employment in each of the seven areas in 1999. Five of the seven have employment highly concentrated in the central cities. Janesville and Beloit in Rock County contain a high of 85% of the county's employment. Next most concentrated is Brown County employment in Green Bay (80%). Then we see La Crosse, Kenosha, and Madison around 75%. Racine is not far off the mark at 67%. But what is a very different picture is that in Milwaukee. In 1999 only 41% of total metro employment was located in the City of Milwaukee. A century earlier that percentage was closer to 90%. The question is what is the pattern of recent change in all of these communities. Is Milwaukee city the exception in its declining role as the source of employment?

The 1990s have not been as kind as they might have to the roles of central cities. All cities did add absolutely to their employment, but many did not add enough to maintain their relative role in their metro area. Milwaukee has suffered the most in terms of its relative decline. In 1991 it contained 47% of the metro employment. By 1999, that figure had dropped to 41%. The cities of La Crosse and Kenosha both lost a comparable six percentage points. Racine lost five points. The central cities of Rock County maintained their 85% share, and Green Bay, the real exception, grew from 77% to 80% of its metro employment. Madison is an anomaly of a different sort. It lost share of the metro employment base in 1991-95 but gained back two points between 1995 and 1999.

Changes in Employment in Cities and Suburbs, 1991-1999

Table 15 reveals the extent of employment growth in each of the metro areas, divided into central city and suburbs. As was just noted, all central cities added employment over the 1991-1999 period. Two cities, Green Bay and Madison, added substantially to their employment base. Each added over 30,000 jobs. Such growth far eclipsed all other cities. It also clearly eclipsed the growth of their suburbs. Madison's growth was over 60% greater than its suburbs. Green Bay added more than seven times the number of jobs its suburbs added.

TABLE 15 CHANGE IN EMPLOYMENT IN CENTRAL CITY AND REST OF AREA, 1991 - 1999

Area	Brown County	Dane County	Fox Cities	Kenosha County	La Crosse County	Metro Milwaukee	Racine County	Rock County	Rest of State
Central City	30,604	30,421	--	6,066	4,685	4,057	1,027	11,473	--
Rest of Area	4,288	18,550	--	4,711	5,578	101,035	5,145	1,867	--
Totals	34,892	48,971	--	10,777	10,263	105,092	6,172	13,340	--

Source: Center for Urban Initiatives and Research, UWM, ES202 Longitudinal Database, 1991 - 1999

Janesville and Beloit were able to add over 11,000 jobs, but that is about a third the absolute growth in Madison and Green Bay. Nevertheless, Janesville and Beloit added more than six times the number of jobs as their suburbs. At the low end absolutely and relatively is Racine. Its net growth was over 1,000 jobs, but this came about despite an employment loss of close to 800 jobs between 1995 and 1999. It was the only city to lose employment in either of the four-year periods. Meanwhile, Racine's suburbs were growing, adding about 2,000 jobs in the 1991-1995 period and over 3,000 over the 1995-1999 period.

The city that stands out the most is Milwaukee. It did add employment. But of the 105,000 jobs added in the metro area over the 1991-1999 period, only 4,057 were added in the city. Clearly, the suburbs are the growth engine of the metro area. Milwaukee is experiencing the deconcentration of its economy to a far greater degree than any other city in Wisconsin.

Communities Responsible for 50% of Suburban Employment

Despite there being but one area in which a majority of all employment is located in the suburbs, an interesting question concerns the relative role of the various suburban communities in each metro area. Does one community dominate as the home of suburban employment or is the suburban employment spread over several, often-competing suburbs? Table 16 lists the names of the suburbs in each area that collectively are responsible for at least one half of the suburban employment. As one might expect, the list of such suburbs is much longer in Milwaukee than it is elsewhere in the state.

Kenosha shares the shortest list, two communities, with two other areas. Pleasant Prairie has grown to be a dominant suburb because of the development of Wispark. This business park has grown dramatically in the 1990s, as it added both retail and industrial employment. The City of Kenosha still dominates the local economy, but this one suburb has continued to flourish. As recently as 1996, three communities were included in our listing of those that together contained half the suburban employment. Now only two communities are required.

Brown and La Crosse Counties also each have two communities responsible for at least half of the suburban employment. The suburbs of Green Bay need only to contain just over 13,000 jobs to capture half the suburban development. De Pere almost does this by itself. In La Crosse the two suburbs need to contain just over 7,000. Onalaska almost does this by itself.

Racine and Rock Counties each need three suburbs to contain over 5,000 jobs in order to be responsible for half of the suburban employment. In Racine the three contain over 15,000 jobs. None of the three, however, is immediately adjacent to Racine; all exist in the county, largely on their own. The three largest suburbs in Rock County contain over 5,000 jobs in order to be responsible for half of the suburban employment. This contrasts rather sharply with the two central cities that contain over 57,000 jobs.

Dane County, a county experiencing dramatic growth and heated debate as to where that growth should occur, requires five communities to account for at least 50% of the county employment that is located outside of Madison. Middleton is by far the largest. The number of communities is not surprising. It was the same in 1996. What did change was the addition of Waunakee. The surprise is that the proportion of employment that is suburban has not changed.

The same cannot be said for Milwaukee. The proportion of employment in the central city continues to decline. But the suburbs that contain the most employment remain the same. Not all are growing, but they still remain the largest. Among them are Wauwatosa and Waukesha. Each contains close to 50,000 jobs. Waukesha city itself has

TABLE 16 COMMUNITIES RESPONSIBLE FOR AT LEAST 50% OF SUBURBAN EMPLOYMENT, 1999

	BROWN COUNTY EMPLOYMENT		DANE COUNTY EMPLOYMENT		FOX CITIES	KENOSHA COUNTY EMPLOYMENT		
Number	2	15,271	5	34,475	**	2	7,147	
Communities	Ashwaubenon	4,767	De Forest	3,629		Pleasant Prairie	5,760	
	De Pere	10,504	Middleton	12,351		Bristol	1,387	
			Stoughton	6,588				
			Sun Prairie	7,931				
			Wauwaukee	3,976				
Total Suburban Percent		27,405 56		67,644 51			11,976 60	

	LA CROSSE COUNTY EMPLOYMENT		METRO MILWAUKEE EMPLOYMENT		RACINE COUNTY EMPLOYMENT		ROCK COUNTY EMPLOYMENT		REST OF STATE
Number	2	9,015	7	240,138	3	15,359	3	5,805	**
Communities	Onalaska	6,322	Brookfield	44,003	Burlington	7,501	Edgerton	2,372	
	West Salem	2,693	Menomonee Falls	27,710	Sturtevant	5,343	Evansville	1,878	
			New Berlin	21,660	Union Grove	2,515	Milton	1,555	
			Waukesha	51,297					
			Wauwatosa	47,380					
			West Allis	30,843					
			West Bend	17,245					
Total Suburban Percent		14,227 63		484,453 50		25,983 59		10,075 58	

** Not calculated

Source: Center for Urban Initiatives and Research, UWM, ES202 Longitudinal Database, 1991 – 1999

more employment than all of Kenosha County, and Waukesha grew by over 9,600 jobs between 1991 and 1999. Combined, Waukesha's and Wauwatosa's employment eclipses four of the largest metro areas of the state. But not all Milwaukee suburbs are growing. For example, West Allis lost a net of 263. Brookfield, on the other hand, added close to 15,000 employees, surpassing the net growth of four of the state's metropolitan areas.

Autonomous Firm Migration To or From the Central City

One way that the suburbs can grow is from the out-migration of employers from the central cities. Whether this is an important source of growth is the next subject to be explored. Unfortunately, given the data, we can explore only a portion of the question. We can only track autonomous, single-site firms. Those with multiple sites are a problem because an employer may start a suburban business and later close a city branch. That transaction is impossible to track with our data. So we focus on just individual firms that at the outset have a city address and end up by 1999 with a suburban address. But to make the calculation fairer, we also look to see how many firms move from the suburbs to the central cities over the same period. The moves are not just in one direction.

Table 17 reveals the moves of single-site firms into the central city in each area and those that moved into the suburbs, by area and time period. As one scans the table, it is quickly clear that the percentage of employers who moved in either direction is small, often very small. The smallest rate of movement was from the City of Kenosha from 1991 to 1995, a miniscule .4%. The amount of employment moved was .5%. The largest percentage moved occurred in Brown County from 1995 to 1999: some 8.9% of the firms changed from the suburbs to the city. These moves added 2.5% to the 1995 employment in Green Bay.

The largest absolute number of jobs that moved happened, quite naturally, in Milwaukee. Some 13,000 employees (almost 4% of city employment) moved to the suburbs between 1991 and 1999. Between 4% and 5% of the single-site employers moved in each four-year period. On the other hand, a significantly lower percentage of employers (1% to 2%) moved into the city over the same eight years. But these employers brought with them employment that totaled over 10,000 employees. Thus, the city did lose employment to out-migration during the 1990s, but the net loss was about .1% of the city's employment. This is not an issue.

TABLE 17 FIRM MOVEMENT TO AND FROM CENTRAL CITIES

Central City Firms	Brown County	Dane County	Fox Cities	Kenosha County	La Crosse County	Metro Milwaukee	Racine County	Rock County	Rest of State
Moved From Central City									
1991 - 1995	12	66	**	6	9	475	24	4	**
% 1991 Firms ¹	0.5	1.4	**	0.4	0.7	4.4	1.2	0.3	**
1995 Employment	67	1714	**	165	99	7056	400	37	**
1995 - 1999	37	98	**	17	16	396	38	9	**
% 1995 Firms ¹	2.2	3.2	**	1.6	1.7	5.9	3.0	0.9	**
1999 Employment	598	1403	**	710	330	6267	1944	181	**
Moved To Central City									
1991 - 1995	35	42	**	17	14	196	11	13	**
% 1991 Firms ²	3.4	1.5	**	3.6	2.8	1.1	0.9	2.1	**
1995 Employment	513	519	**	240	286	4101	91	96	**
1995 - 1999	65	68	**	14	13	270	23	21	**
% 1995 Firms ²	8.9	3.7	**	4.4	3.9	2.2	3.0	4.8	**
1999 Employment	2299	1506	**	243	77	5931	443	208	**

¹ ** Not calculated

² Percent of single-site, central city firms

² Percent of single-site, rest of area firms

Source: Center for Urban Initiatives and Research, UWM, ES202 Longitudinal Database, 1991 - 1999

Four of the other metro areas had more employment move out to the suburbs than moved into the central city. Brown County and Rock County were the exceptions. But it was only Green Bay that experienced a gain on the order of 2,200 jobs because of the change in address. In Rock County it was almost a wash.

Of the four areas that did lose employment because of net out-migration of employment, the differences were not very large in Kenosha or La Crosse. Madison, however, did lose just under 1,000 jobs. And Racine had a net loss of 1,810 jobs because of differences in migration. This amounts to about 3.4% of the city of Racine's 1991 employment.

The lesson to be learned here is that there is employer and employment movement both into and out of central cities. The net impact of that movement in most instances is very small. Therefore, most suburban employment growth cannot be said to come from the migration of firms formerly located in the central cities.

DIFFERENCES IN EARNINGS PER WORKER

The focus of the report up to this point has been on changes in the number of employees. At least as important as the number of persons working is the earnings those workers realize. The goal for all economies is gains in real income for more workers. To explore what has happened in the eight-year period of the 1990s, we use four measures of earnings. The first is the average earnings per worker in each major industry for 1999. The second is change in average earnings per worker by industry in real dollars over the 1991-1999 period. The third and fourth measures are distributional in nature. One examines the percentage of workers in each industry that earned more than \$25,000, on average, in 1999. The other looks at the percentage and number of service-sector workers who earned more than \$25,000, on average, in 1999. This last measure allows us to comment on the allegation that service-sector jobs are less desirable than manufacturing jobs because of the availability of fewer, higher-paying opportunities.

Average Earnings Per Worker

The average earnings per worker is the name given to the calculation that divides the total payroll of an employer by the total number of workers. These figures are then merged into a weighted average. But it is not a calculation of an average wage. It is a figure that combines the earnings of all employees from the CEO to the lowest laborer and both full-time and part-time employees. The result is not compatible with common wage rates. But it does give a good relative view of what the average earnings are per worker by industry. Thus, it is very clear that a manufacturing worker who commonly works full time has substantially higher earnings, on average, than a person working in retail with its combination of part-time work and low wages.

Table 18 below lists the average earnings per worker by industry and area. All are expressed in 1999 dollars. The most immediately obvious point is that the average earnings per worker varies across geographic areas of the state. Workers in Milwaukee are at the high end with average earnings of \$31,908. At the low end are workers in the rest of the state at \$23,936. This is a difference of just under \$8,000 per year. Economic theory and experience would both suggest this discrepancy. Less expected may be the finding that the Fox Cities has the second highest average in the state. Dane County, the second largest economy, is fourth, following Brown County. At the low end is La Crosse County, the second smallest metro economy. These discrepancies from the expected pattern may be due to the distribution of employment by industry as well as wage and salary differences.

TABLE 18 AVERAGE ANNUAL EARNINGS PER WORKER BY INDUSTRY, 1999

Industry	Brown County	Dane County	Fox Cities	Kenosha County	La Crosse County	Metro Milwaukee	Racine County	Rock County	Rest of State
<i>Agri & Mining</i>	\$19,466	\$22,517	\$23,888	\$13,632	\$19,007	\$20,342	\$17,823	\$21,746	\$20,053
<i>Construction</i>	\$33,690	\$36,505	\$37,990	\$37,212	\$33,055	\$36,781	\$31,725	\$35,779	\$28,327
<i>Manufacturing</i>	\$37,785	\$35,209	\$41,982	\$44,646	\$31,214	\$39,524	\$41,403	\$42,789	\$30,657
<i>Trans/Utilities</i>	\$38,146	\$34,312	\$34,898	\$30,247	\$30,690	\$36,379	\$27,046	\$31,675	\$28,689
<i>Wholesale trade</i>	\$34,542	\$36,045	\$34,179	\$36,407	\$33,973	\$41,148	\$28,012	\$30,485	\$32,752
<i>Retail trade</i>	\$15,838	\$14,746	\$13,471	\$12,432	\$12,154	\$15,759	\$12,491	\$13,989	\$12,921
<i>FIRE</i>	\$31,332	\$39,355	\$40,271	\$30,769	\$34,165	\$50,856	\$27,669	\$30,770	\$32,343
<i>Services</i>	\$25,602	\$25,114	\$22,652	\$21,026	\$22,851	\$26,926	\$21,247	\$21,304	\$19,738
<i>Government</i>	\$31,416	\$34,183	\$30,388	\$30,232	\$28,958	\$34,334	\$31,717	\$28,592	\$26,031
<i>Nonclassifiable</i>	\$18,446	\$34,367	\$34,014	\$16,667	**	\$21,738	\$16,933	\$17,832	\$22,032
TOTAL	\$29,336	\$29,239	\$30,693	\$28,788	\$24,898	\$31,908	\$28,348	\$28,881	\$23,936

** Not calculated

Source: Center for Urban Initiatives and Research, UWM, ES202 Longitudinal Database, 1991 - 1999

For the discussion we shall ignore the average earnings for two industries, Agriculture and Mining and Unclassifiable. The Agriculture and Mining industry will be ignored because it contains so few workers (see Table 1) in most metropolitan areas. The earnings' figure for the ROS area is useable, given the size of that employment. Unclassifiable should also be ignored most places, since sizeable numbers of these workers are found only in the ROS. The average earnings elsewhere are meaningless. Given those caveats, we can proceed to examine notable patterns.

One that surfaces immediately is the enormous difference in average earnings per worker by industry within any geographic area. In Milwaukee, for example, there is a \$35,000 average earnings difference between Retail and FIRE. In the Fox Cities there is a \$28,000 difference between Retail and Manufacturing workers. A similar size difference exists in Rock County between these same industries. The smallest gaps exist in La Crosse (\$22,000) and the ROS (\$20,000).

A related general finding is that the same industry does not have the highest average earnings per worker across all areas. Manufacturing has the highest earnings in the Fox Cities, Kenosha, Racine, and Rock. But Transportation/Communication/Utilities leads in Brown County, FIRE leads in Dane, La Crosse, and Milwaukee, and Wholesale Trade leads in the ROS. What these differences suggest is that the composition of each industry varies by location, as does the wage competition.

Furthermore, the average earnings per worker by industry vary considerably by industry. One with great variation is FIRE. Milwaukee's average, \$50,856, reflects Milwaukee's place as a leading financial center with a very different industry and occupational distribution from the rest of the state. Even Madison has an average that is more than \$10,000 less. Places like Kenosha and Rock have averages that are \$20,000 less. In manufacturing, the differences exceed \$10,000 per worker. Kenosha is at the top end with \$44,646; La Crosse is the lowest metro area at \$31,214; and the ROS comes in at \$30,657. Other industry differences are not as great. But it is still evident that the collection of employers by geographic area does vary substantially.

Brown County has the third-highest overall average earnings per worker. It leads all areas in terms of the earnings in Transportation et al. and Retail and is second in earnings in Services. Within the County the highest earnings are among the Transportation et al. workers, followed closely by manufacturing workers. It is clear, given its leading rate of employment growth in the state, that being on the higher side in terms of earnings per worker has not inhibited its growth.

The average earnings per worker in Dane County are just below those found in Brown County. One of the differences between the two areas is that the Dane economy is twice the size of Brown, yet there is similarity in many earnings figures. Of the eight specific industry groups, earnings in Dane are larger in only four. Again differences between the composition of the industries helps to account for the differences in earnings.

The Fox Cities have the second-highest average earnings per worker. This is in part due to its heavier concentration of manufacturing workers and its somewhat higher earnings per worker in manufacturing. It also has somewhat proportionately fewer Retail and Services workers, preventing these lower paid workers from pulling down the average. The Fox Cities do have the highest earning per worker among construction workers and the second highest earnings per worker of the nine areas among workers in FIRE. Again, they have FIRE jobs with a national, rather than a local, focus.

Kenosha has average earnings per worker that are in the middle of the pack. This is a bit surprising, given that it has a higher proportion of manufacturing workers and these workers have higher earnings here than elsewhere in the state. Wholesale earnings per worker are second highest in the state, but there are relatively few workers. Additionally, these higher earnings per worker are offset by the lowest earnings in Retail, the second-lowest earnings in Services, and some middle-of-the-road earnings in several other industries. As the reader may recall, Kenosha lost some retail employment between 1995 and 1999; it may well be due to the modest earnings workers are able to achieve in retail in Kenosha.

The earnings in La Crosse are much more similar to those in the ROS than they are to the other metropolitan areas. Manufacturing earnings are second lowest. Retail earnings per worker are the lowest; and government-worker earnings are third lowest. None are the highest. The net result is an average earnings per worker that is the lowest among the metro areas.

Milwaukee Metro has the highest overall average earnings per worker. This is not surprising, given the size and composition of its economy. But Milwaukee's averages are the highest in only three of the industries. Leading the industries is FIRE, at an average of \$50,586. This average exceeds any other average in Milwaukee or the rest of the state. The presence of the headquarters of multi-state banks, national insurance companies, national mutual funds, and regional brokerages all contribute to this higher figure. Interestingly, it is only \$6,000 greater than the manufacturing average in Kenosha, the second highest, specific-industry average in the state.

A surprise may be that the second-highest average in Milwaukee, \$41,148, is found in Wholesale Trade. Manufacturing is third. Services, the fastest growing industry, is far behind, with an average of \$26,926, just over half that in FIRE. It is not surprising, then, that some analysts decry the move to Services, given the relatively low average earnings. But the questions that must be asked in Milwaukee and elsewhere are what is the distribution of these earnings and are there not a number of well-paying jobs hidden by the combination with low-paying jobs. The answers are given below in a section on higher-paid service workers.

Racine's average earnings per worker are on the low end of the pack of the metropolitan areas. That is surprising, given the predominance of manufacturing employment in the economy (32%) and the fact that it is a larger economy than three other metro areas. But the earnings in many industries are below those found in most other places. Transportation/Utilities/Communication, Wholesale Trade, and FIRE have the lowest averages, and two others are the second lowest. The result puts Racine's earnings only ahead of La Crosse and the ROS area.

Rock County, a smaller economy, has a higher average earnings per worker than Racine. Rock is aided by the second-highest manufacturing earnings in an industry that employs more than any other. The earnings in the other industries are not at all comparable. Although these earnings are not the lowest, they are often close. The result is a lower, overall average that is markedly above that found in La Crosse.

Clearly, the lowest average occurs in the ROS area. This area is a lower cost area in which to live. And it has a slightly higher proportion of retail workers. Add to this the lowest averages in four of the industries, and the result is a ranking at the bottom. Manufacturing wages pulled many areas up. In ROS manufacturing wages are considerably below those found in most metro areas. That may well be a reason that so much manufacturing employment and manufacturing employment growth are found in ROS areas. Also hurting the average is the fact that the Services average is \$1,500 less than anywhere else. This combines with the fact that Services is one of the major employers in this geographic area. The positive side of these lower average earnings is the role that such averages have played in creating additional employment opportunities for residents of this area.

Changes in Average Earnings

The good news for Wisconsin is that all areas of the state experienced gains in real earnings, earnings that have been adjusted to take into account the rate of inflation. At the top of the list are Kenosha and Milwaukee, with earnings per worker having gained 14% and 11% respectively over the 1991-99 period (Table 19). These may have been seen as two of the least likely candidates at the beginning of the decade, given their experiences in the 1980s. But the areas did gain the most, for very different reasons.

Kenosha was greatly helped by its \$5,753 average earnings gain per worker in manufacturing, its largest industry. The scale of that earnings gain per worker is almost twice that for any other area and much more than twice the gains found in some areas. Kenosha also gained due to its new role as a wholesale center. Earnings per worker went up over \$9,000, about three times faster than the next closest area. And even though it did not lead in FIRE earnings' gains, its \$7,772 contributed to the overall average. Kenosha's average increase was limited by its decline in Retail earnings. But since this sector did not grow at all 1991 to 1999, the loss was not of great consequence. What may have pulled down the average for the County was a decline in Government earnings per worker. A decline was found

TABLE 19 CHANGES IN EARNINGS PER WORKER, WISCONSIN'S REGIONS, 1991-1999

Industry	Brown County	Dane County	Fox Cities	Kenosha County	La Crosse County	Metro Milwaukee	Racine County	Rock County	Rest of State
<i>Agri & Mining</i>	-\$1,484	-\$1,717	\$6,787	\$1,019	\$646	\$41	-\$167	\$407	-\$2,475
<i>Construction</i>	\$3,584	\$4,138	\$2,876	\$2,655	\$2,753	\$2,454	\$341	\$3,764	\$1,788
<i>Manufacturing</i>	-\$677	\$1,280	\$2,435	\$5,753	-\$121	\$2,367	\$2,988	\$2,903	\$993
<i>Trans/Utilities</i>	\$3,346	\$82	\$1,191	\$3,503	\$2,031	\$1,905	-\$2,236	-\$1,620	\$2,292
<i>Wholesale trade</i>	\$1,381	\$3,393	\$397	\$9,164	\$3,226	\$5,494	\$885	\$3,074	\$3,776
<i>Retail trade</i>	\$1,682	\$1,360	\$866	-\$497	\$608	\$2,090	\$481	\$628	\$1,394
<i>FIRE</i>	\$6,308	\$8,615	\$6,786	\$7,772	\$7,727	\$15,205	\$3,808	\$5,286	\$6,190
<i>Services</i>	\$4,216	\$1,674	\$1,607	\$2,533	\$1,680	\$3,266	\$1,431	\$2,695	\$1,892
<i>Government</i>	\$1,576	\$1,853	\$338	-\$1,940	\$2,664	\$197	\$443	-\$840	\$685
<i>Nonclassifiable</i>	\$18,446	\$34,367	\$34,014	\$16,667	**	\$21,738	\$16,933	\$17,832	-\$10,992
TOTAL	\$2,326	\$2,119	\$1,410	\$3,485	\$1,757	\$3,181	\$1,042	\$2,201	\$1,291
% Change	9	8	5	14	8	11	4	8	6

** Not Calculated

Source: Center for Urban Initiatives and Research, UWM, ES202 Longitudinal Database, 1991 - 1999

only in Kenosha and Rock Counties. Kenosha's decline was twice that found in Rock. In several metro areas the gains were limited, but Kenosha was an exception in scale of decline.

Unfortunately for many who live in Milwaukee, the area's gain of 11% in real earnings was not uniform across industries. The big winner was FIRE. The average gain of over \$15,000 per worker is impressive and is more than double all other gains in the state but the gain in the same industry in Dane County. Wholesale trade workers also made substantial gains (\$5,494), and Retail workers had the largest gain in that industry (\$2,090). Services workers' gains were second only to those found in Brown County. But manufacturing earnings' gains were less than 9%, and Government workers had virtually no gain at all. The overall result is impressive, but many individuals were not included.

Several metro areas — Brown, Dane, La Crosse, and Rock — were in the 8-9% growth-in-earnings range. All but Rock had an industry in which the eight-year gain was the greatest of the nine areas. Brown County benefited from the \$4,216 gain in its fastest growing industry, Services. Dane County experienced the most rapid gain in Construction (\$4,138). And La Crosse had the largest gain in government employment (\$2,664). Several other industries in each realized reasonable earnings' gains. On the other hand, Brown County had a decline in average Manufacturing earnings (\$-677); Dane had a negative in Agriculture and Mining and almost no growth in Transportation/Utilities/Communication; La Crosse had a decline in manufacturing; and Rock workers lost ground in both government and Transportation/Utilities/Communication. Despite these losses, the areas and their workers still prospered, on average.

Three areas experienced more modest growth in average earnings per worker: the ROS, the Fox Cities, and Racine. As the reader will recall, Racine had the smallest employment gain 1991-1999. Certainly, rapidly rising earnings per worker was not the cause. The area workers had losses in real terms in Agriculture and Mining and in Transportation et al. and only three digit gains in four of the seven other industries. In 1991 Racine had the third-highest average earnings per worker; by 1999, it had dropped to third from the bottom. Its slower rate of growth may have been due to its higher wage and salary costs. But it now appears that this problem has been cured.

The Rock County economy looks rather similar to Racine's in terms of size and distribution by industry. Even average earnings per worker are quite similar. But Rock's earnings' average grew at more than twice the rate of Racine. Much larger gains were seen in Rock in Construction, Wholesale Trade, FIRE, and Services. The economies must differ in some important respects, not reflected in these characteristics.

The ROS experienced only one industry loss in earnings per worker, Agriculture and Mining. That contributed in only a modest way to the small overall growth in earnings per worker. What contributed more are very modest gains (\$993) in the areas' largest industry, Manufacturing, and larger, but still modest, gains relative to other areas in Services. Earnings per worker are rising, but not at the pace of many of the metro economies.

Workers Earning More Than \$25,000 Per Year

When we examine how much groups of individuals earn, we often look at two different measures. One is the average, as we just did. A second is some measure of the distribution to see the degree to which an average might be distorted by very high or very low members of the group. In this section we examine the percentage of workers in each industry and geographic area who, on average, earn above some minimum sum. In this case we have chosen \$25,000, a sum that is just above 185% of poverty for a family of four. Such a number is said by many to represent the minimum that such a family needs to have a "decent" standard of living.

The good news is that seven of the nine areas have at least half of the employees earning at least \$25,000 a year, on average. Only La Crosse, with 47%, and the ROS, with 42%, have less than half. Milwaukee, Dane, and the Fox Cities all have about 60% of the employees above the \$25,000 mark. The other areas range from a low of 50% in Kenosha to 56% in Brown County.

As the reader scans the table, a pattern emerges by industry: some industries consistently have more than 50% of the workers averaging over \$25,000 annually, and a couple are consistently below. Clearly at the bottom in all areas is Retail Trade. Retail workers are affected by a combination of low wages and short hours. That makes it very difficult to earn the modest \$25,000 standard. Services is another industry that pays better than retail but which has between 30% and 40% of workers who average at or above \$25,000. All other industries have at least 50% of the workers in every area at or above the \$25,000 mark, providing we ignore Agriculture and Mining that has fewer than 1,000 workers in six of the areas. The presence of the majority with earnings over \$25,000 is a very positive condition.

TABLE 20 PERCENT OF WORKERS THAT EARN \$25,000+ ANNUALLY BY INDUSTRY, 1999

Industry	Brown County	Dane County	Fox Cities	Kenosha County	La Crosse County	Metro Milwaukee	Racine County	Rock County	Rest of State
<i>Agri & Mining</i>	24	37	53	4	33	26	21	32	25
<i>Construction</i>	67	79	78	77	56	76	69	67	53
<i>Manufacturing</i>	77	86	86	78	68	87	81	83	65
<i>Trans/Utilities</i>	84	67	78	51	69	70	50	61	61
<i>Wholesale trade</i>	71	75	71	77	77	82	56	56	55
<i>Retail trade</i>	15	14	10	6	7	14	9	15	7
<i>FIRE</i>	79	76	74	47	59	78	48	50	52
<i>Services</i>	37	41	37	28	44	43	33	31	26
<i>Government</i>	84	84	80	81	56	88	89	83	58
TOTAL	56	59	59	50	47	60	54	54	42

Read: of all manufacturing workers in Brown County, xx% earn \$25,000+ per year

Source: Center for Urban Initiatives and Research, UWM, ES202 Longitudinal Database, 1991 – 1999

Fortunately for the workers of the state the percentage of workers who have average earnings over \$25,000 has increased in all areas but one since 1991. Only in the Fox Cities has the percentage of workers earning more than our standard remained the same. Given the growth in employment in the Fox Cities, more workers absolutely are earning at higher levels. But the percentage has not changed.

By contrast, in La Crosse the percentage earning at or above \$25,000 has risen from 36% to 47%. That is an increase of almost one third. No other area comes close to that large an increase. In fact, the area with the second fastest growth, Rock County, has grown by but seven percentage points, from 47% to 54%. Increases of four percentage points were realized by Brown County and Milwaukee Metro. Three point gains were achieved in Kenosha and the ROS. The others had one or two point gains.

Despite the rather modest gains overall in the percentage earning at or greater than \$25,000, there were several specific industries in specific locations that experienced dramatic gains. Construction workers in Dane County went from 68% to 79% earning at least the \$25,000. Comparable percentage point gains were realized in FIRE in Racine and Manufacturing in Rock County. The percentage of manufacturing workers earning \$25,000 or more in Dane went up 13 percentage points as did the proportion of Government workers in La Crosse. La Crosse experienced even larger gains in three other industries: FIRE (+17), Transportation/Communication/Utilities (+19), and Services (+20). But these were not the largest gains. That title goes to FIRE workers in Brown County. The percentage of workers that earn at least \$25,000 there went up 52 percentage points to 79%. Such a change suggests a rather dramatic transformation of this sector in Brown County in the 1990s.

Another change that should be noted is the fact that the percentage of workers in Retail in Kenosha with earnings of at least \$25,000 dropped from 9% in 1991 to 6% in 1999. This comes concurrent with a gain of only 328 jobs in retail over this period, suggesting that wages are not being used to expand employment in this industry in Kenosha. In only a couple of other instances has the percentage paying at least \$25,000 declined, and the size of those declines is very small.

Proportion of Higher-Paid Service Workers

With the advent of W-2, the issue of what jobs pay has become more visible across Wisconsin. Poverty was previously mentioned occasionally. But the high profile of W-2, the dramatic drop in the state's assistance roles, and the complaints from advocates for the poor have combined to increasingly focus attention on just how much jobs do pay their workers. A common accusation in this discussion is that employment in the service sector, the combination of all employment except that from agriculture and mining, construction, and manufacturing, pays markedly less than in manufacturing and, therefore, is much less desirable for communities and individuals.

As stated above, we do not have exact figures on earnings developed from individual worker earnings. But the figures we have created by dividing total payroll by total employment within each industry does give a reasonable surrogate for the otherwise unobtainable figure. If we compare the number of workers in each geographic area who earn above some minimum average to the number of manufacturing jobs, an industry in which a fairly high proportion of workers earn a decent living, we can see the degree to which the charges made against service employment are valid.

The number and proportion of service jobs in each geographic area that pay at or above \$25,000 annually appear in Table 21. What is first evident in the table is that at least one third of all service sector jobs provide earnings above \$25,000 annually. In the metro areas the minimum figure is 41% found in Rock County. In Dane County some 55% of all service sector jobs provide earnings of at least \$25,000, and in Milwaukee the percentage is still a significant 51%. These percentages suggest that even in the ROS, where only one third of the jobs provide average earnings at this level, service jobs are not without some benefits for their holders. And in the largest economies at least half the service sector jobs will meet the minimum standard.

TABLE 21 NUMBER AND PERCENT OF MANUFACTURING AND SERVICE-SECTOR WORKERS THAT EARN \$25,000+ ANNUALLY, 1999

	Brown County	Dane County	Fox Cities	Kenosha County	La Crosse County	Metro Milwaukee	Racine County	Rock County	Rest of State
Manufacturing									
Number	22,861	25,488	33,383	10,085	7,556	155,779	20,356	16,569	175,454
Percent	77	86	86	78	68	87	81	83	65
Service Sector									
Number	49,242	120,941	35,046	13,868	21,317	314,108	19,931	18,039	233,976
Percent	49	55	44	39	42	51	39	41	33

Service-Sector includes Transportation/Utilities/Communications, Wholesale and Retail Trade, FIRE, Services, and Government industry classifications

Source: Center for Urban Initiatives and Research, UWM, ES202 Longitudinal Database, 1991 - 1999

The table also reveals that the percentage of manufacturing jobs that pay more than \$25,000 is markedly higher in every area of the state. In some instances it is as high as 87%. That makes manufacturing jobs very alluring.

But when we then compare the absolute number of jobs in the service sector that provide average earnings of at least \$25,000 with the number of manufacturing jobs that do the same by geographic area, we see that in every geographic area except Racine, better paying service sector jobs outnumber decent paying manufacturing jobs. In two communities, Milwaukee and Brown County, there are about twice the number of decent paying service jobs. In La Crosse the ratio is three to one. And in Dane, decent paying service sector jobs outnumber manufacturing jobs by almost a factor of five to one. What we do not know is what the education requirements are for each and whether manufacturing still offers greater opportunity for those who have not gone far with their education. But the central message is that in all parts of the state the cry for manufacturing jobs as the only way to help individuals earn a decent living is mistaken. This is fortunate because service sector employment is growing much more rapidly than manufacturing employment. And the current trend is even stronger in this direction.

CONCLUSION

Wisconsin's employment has grown dramatically in the 1990s. Like much of the US, its growth was largely attributable to gains in the service sector. But unlike the US that has lost manufacturing employment, Wisconsin has gained, adding over 76,000 jobs. Despite the growth, manufacturing employment today is a smaller portion of the state's economy than it was in 1991 because the non-manufacturing sectors have grown so much faster. Nevertheless, manufacturing is a critical part of the economy because it tends to pay well and because it demands the utilization of so many other industries in the state. How long this manufacturing growth trend will buck the larger national trend, time will tell. To date, it has been a boon to Wisconsin.

What has also been a boon are some rapidly growing service-sector industries. These include temporary help, teachers, and health care. It looks like all of these industries are poised for longer-term gains.

Another positive trend is the gain in real earnings per worker that Wisconsin has enjoyed. While some indicators (such as that of per capita income) show the state's incomes have not been rising as rapidly as those in some other states, the good news is that incomes did rise in all areas of the state and in virtually all industries in all areas of the state over the 1991-1999 period. The gains were not dramatic (Kenosha had the top gain at 14%), but unlike the 1980s the trend was positive.

The gains in employment each geographic area of the state has experienced have somewhat different roots. A few industries are shared. The trend toward more employment coming from multi-site employers is shared. But depending on the area, different specific industries are growing fastest, different size establishments are growing the fastest, the largest employers are playing different roles, and so forth. To better understand just what is happening in any local economy, one must look locally; the broader trends do not always apply. With such knowledge interventions in local labor markets can be more wisely made.

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ABOUT THE INSTITUTE

The **Wisconsin Policy Research Institute** is a not-for-profit institute established to study public-policy issues affecting the state of Wisconsin.

Under the new federalism, government policy increasingly is made at the state and local levels. These public-policy decisions affect the life of every citizen in the state. Our goal is to provide nonpartisan research on key issues affecting Wisconsinites, so that their elected representatives can make informed decisions to improve the quality of life and future of the state.

Our major priority is to increase the accountability of Wisconsin's government. State and local governments must be responsive to the citizenry, both in terms of the programs they devise and the tax money they spend. Accountability should apply in every area to which the state devotes the public's funds.

The Institute's agenda encompasses the following issues: education, welfare and social services, criminal justice, taxes and spending, and economic development.

We believe that the views of the citizens of Wisconsin should guide the decisions of government officials. To help accomplish this, we also conduct regular public-opinion polls that are designed to inform public officials about how the citizenry views major statewide issues. These polls are disseminated through the media and are made available to the general public and the legislative and executive branches of state government. It is essential that elected officials remember that all of the programs they create and all of the money they spend comes from the citizens of Wisconsin and is made available through their taxes. Public policy should reflect the real needs and concerns of all of the citizens of the state and not those of specific special-interest groups.