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Choosing the Right Pond: What are Appropriate Comparison Cities for Wisconsin's Metropolitan Areas?

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Choosing the Right Pond: What Are Appropriate Comparison Cities for Wisconsin's Metropolitan Areas?

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Often development planners compare their cities to the cities they admire rather than their homes' true peers. This habit of comparing "up" rather than "across" may be problematic amongst slower growth cities. Inappropriate comparisons may overemphasize a city's shortcomings in relation to criteria that are not always pertinent.

The purpose of this project is to rigorously define a set of sensible comparison metropolitan areas for four Wisconsin metropolitan statistical areas (Milwaukee, Madison, Green Bay and Appleton/Fox River Valley). This exercise is important for at least two reasons. First, efforts to improve almost any aspect of behavior require one to soberly and realistically assess strengths and weaknesses. These assessments are best made by making comparisons with metropolitan areas (or individuals) with comparable innate characteristics. Second, once appropriate comparisons are made, useful, realistic policy initiatives can be developed to allow one jurisdiction to replicate successful experiences of comparable jurisdictions. It makes little sense, for example, to propose that Milwaukee should develop more beaches and highways so it can emulate Los Angeles's growth. Identifying appropriate comparisons should facilitate a more sensible discussion of feasible policy initiatives than what would take place without appropriate comparisons.

Our methods are described in greater detail in Appendix 1 and are only briefly summarized here. To identify comparison metropolitan statistical areas (MSAs), we use variables from the 1980 and 1990 censuses, along with crime data from the Federal Bureau of Investigation. Intuitively, we "match" MSAs graded on baseline characteristics in 1980 and changes in these characteristics between 1980 and 1990. The characteristics that we focus on are MSA population; yearly per-capita income; median house-price-to-income ratio; number of workforce in manufacturing; crime as measured by the number of reported crimes; urban population; population per square mile; number of African Americans; population with at least a bachelor's degree; population below the poverty line; and central county population. In short, we attempt to identify, out of all 362 MSAs in the country, those that are the closest matches to Milwaukee, Madison, Appleton/Fox River Valley and Green Bay based on their characteristics in 1980 and how these characteristics evolved by 1990.

After identifying comparison MSAs, we then look at three performance measures of the comparable MSAs: changes between 1990 and 2000 in population growth, yearly per-capita income growth and crime. We think yearly per-capita income growth is the single best measure of MSA economic performance.

Our results are presented in some detail below, but we first note two common themes:

- The two largest Wisconsin MSAs, Milwaukee and Madison, have roughly average to slightly above average per-capita income growth relative to their peers, even though they had slower population growth than their peers.
- The biggest surprises (to us) had to do with Wisconsin's principal small MSAs, Green Bay and Appleton/Fox River Valley. They demonstrated rapid growth that far passed the national averages. We informally dubbed them "Wisconsin tigers" and they suggest that the rest of the state, outside of Milwaukee and Madison MSAs, is doing quite well.

Milwaukee

Table 1 lists the 20 closest comparison MSAs to Milwaukee, along with the 1990-2000 changes in population growth, per-capita income and crime. As expected, Milwaukee's top 10 closest comparisons were predominantly historically manufacturing-intensive Midwestern/Rustbelt cities.¹

Overall, when compared to its 10 closest comparison MSAs, Milwaukee was sixth (out of 11) in yearly per-capita income growth and ninth out of 11 in population growth. Milwaukee's per-capita income growth is above the mean growth rate for the 10 most comparable MSAs, above the mean for the next 10 most comparable MSAs, is above the national average MSA for per-capita income growth rate, and is above the average for all MSAs with populations within 50 percent of Milwaukee's population.

Madison

While geographically more disparate, Madison's list of comparisons (shown in Table 2) had proximity to colleges or universities in common. With the exception of Palm Bay, Florida, Madison's top 10 comparison MSAs contain universities or colleges.

Per-capita income growth in Madison is fifth out of the 11 top comparisons, though the annual rate of 5.2 percent was considerably lower than Milwaukee's growth rate of 6 percent. Madison's per-capita income growth rate was also somewhat lower than the national average of 5.6 percent and the growth rate for MSAs with population within 50 percent of Madison's, which was 5.7 percent.

¹ The Milwaukee comptroller's office provided us a list of comparison MSAs that it uses for internal analyses. The list included Cincinnati, Cleveland, Columbus and Toledo, in Ohio; Oklahoma City; Charlotte, North Carolina; Sacramento, California; Pittsburgh, Pennsylvania; and Portland, Oregon. Four of the cities, Oklahoma City, Cincinnati, Portland and Columbus, appear in our top 10. Four cities are not in the top 20, and Sacramento is our No. 18.

Green Bay and Appleton/Fox River Valley

The smaller Wisconsin MSAs of Green Bay and Appleton/Fox River Valley did quite well relative to their 20 closest comparison MSAs. From 1990 to 2000, as shown in Table 3, Green Bay's population grew 16 percent, while its yearly per-capita income grew at 6.1 percent, ranking it fourth out of the 11 top comparisons. For the same time period, as Table 4 shows, Appleton/Fox River Valley had a population growth rate of 15.3 percent, putting it third out of 11, and a yearly per-capita income growth rates of 6.7 percent, posting it second of the top 11 comparisons. These growth numbers are considerably larger than the national average and the growth rates of MSAs with populations within 50 percent of the smaller Wisconsin MSAs.

A striking aspect of this analysis is that the closest comparisons to these MSAs were often other Wisconsin MSAs. For instance, four of Green Bay's top 10 comparisons were within Wisconsin, as were five of Appleton's.² All these Wisconsin MSAs featured rapid yearly per-capita income growth rates, ranging from 5.4 percent to 6.7 percent.

Wisconsin's small MSAs grew substantially faster than their closest comparison MSAs and also faster than the national averages. Relative to other states, there also appear to be a lot of these smaller, rapidly growing communities.

In Closing

The economic performance of Wisconsin's two largest MSAs (Milwaukee and Madison) is similar to or slightly better than the average performance of the most comparable MSAs (based on historical data) in the country. Wisconsin's small MSAs (Green Bay and Appleton/Fox River Valley) are doing very well. Maintaining and expanding this asset might be one natural focus for a potential statewide development plan.

All the Wisconsin MSAs reported substantial reductions in crime.

A natural next step for this project would be to examine factors correlated with rapid per-capita income growth in counties comparable to the Wisconsin counties considered in this analysis.

² Specifically, Wausau, Janesville, Oshkosh-Neenah, Sheboygan. Fond du Lac and Janesville would be included in the "Wisconsin tigers" grouping.

Table 1: MILWAUKEE MSA

MILWAUKEE MSA COMPARISON RESULTS, BASED ON 1980-90 CHANGES IN LEVELS
and (+/-) 50% of 1980 MSA Population, and (+/-) 50% of Central County Population

Rank	MSA NAME	Population Growth 1990-2000	Rank	Yearly Per Capita Income Growth 1989-1999	Rank	Change in Total Crime 1990-2000	Rank
10	Birmingham-Hoover, AL	9.97%	7	6.48%	1	-25.75%	3
7	Indianapolis-Carmel, IN	17.84%	1	6.10%	2	-20.85%	5
4	New Orleans-Metairie-Kenner,	4.12%	10	6.07%	3	-32.91%	1
9	Columbus, OH	14.77%	2	6.06%	4	-3.03%	10
3	Cincinnati-Middletown, OH-K	8.93%	8	6.00%	5	-19.97%	6
5	Louisville-Jefferson County, K	10.04%	6	5.93%	7	-17.93%	8
2	Kansas City, MO-KS	12.19%	4	5.81%	8	-26.84%	2
8	Dayton, OH	0.51%	11	5.40%	9	-19.37%	7
1	Oklahoma City, OK	12.81%	3	4.78%	10	-9.76%	9
6	Portland-Vancouver-Beavertor	10.50%	5	4.74%	11	3.88%	11
	1st Ten Avg:	10.17%		5.74%		-17.25%	
	Milwaukee	4.79%	9	5.96%	6	-23.08%	4
13	Memphis, TN-MS-AR	12.92%		6.60%		9.67%	
20	San Antonio, TX	21.59%		5.96%		-24.15%	
14	Jacksonville, FL	21.35%		5.62%		-18.52%	
18	Sacramento--Arden-Arcade--R	21.32%		5.44%		-20.74%	
11	Buffalo-Niagara Falls, NY	-1.61%		5.37%		-34.32%	
17	Providence-New Bedford-Fall	4.85%		5.34%		-31.92%	
16	New Haven-Milford, CT	2.46%		5.13%		-43.28%	
15	Hartford-West Hartford-East F	2.22%		4.85%		-37.06%	
12	Rochester, NY	3.53%		4.84%		-24.07%	
19	Tampa-St. Petersburg-Clearwa	15.86%		4.71%		-20.07%	
	2nd Ten Avg:	10.45%		5.39%		-24.45%	
	NATIONAL	13.68%		5.58%		-32.06%	
	Average of +/- 50% Population Avg:	12.92%		5.63%			

Table 2: MADISON MSA

MADISON MSA COMPARISON RESULTS, BASED ON 1980-90 CHANGES IN LEVELS and (+/-) 50% of 1980 MSA Population, and (+/-) 50% of Central County Population							
Rank	MSA NAME	Population Growth 1990-2000	Rank	Yearly Per Capita Income Growth 1989-1999	Rank	Change in Total Crime 1990-2000	Rank
2	Colorado Springs, CO	31.26%	2	5.64%	1	-12.71%	7
5	Des Moines-West Des Moines,	15.62%	9	5.60%	2	-18.55%	5
1	Boise City-Nampa, ID	45.45%	1	5.60%	3	13.76%	8
9	Albuquerque, NM	21.73%	3	5.20%	4	15.79%	10
4	Spokane, WA	15.66%	8	5.15%	6	14.75%	9
3	Lexington-Fayette, KY	17.19%	6	4.81%	7	-36.18%	3
7	Eugene-Springfield, OR	14.16%	10	4.73%	8	18.98%	11
8	Deltona-Daytona Beach-Ormor	19.59%	4	4.19%	9	-18.32%	6
6	Ann Arbor, MI	14.12%	11	4.17%	10	-37.66%	2
10	Palm Bay, FL	19.36%	5	4.00%	11	-41.57%	1
1st Ten Avg:		21.41%		4.91%		-10.17%	
Madison		16.06%	7	5.18%	5	-28.64%	4
19	Columbia, SC	18.02%		5.77%		-9.40%	
17	Rockford, IL	12.86%		5.72%		-43.47%	
14	Wichita, KS	11.75%		5.64%		-20.19%	
16	York-Hanover, PA	12.42%		5.62%		-19.61%	
18	Harrisburg-Carlisle, PA	7.34%		5.37%		-20.53%	
15	Peoria, IL	2.33%		5.34%		-35.02%	
20	Davenport-Moline-Rock Island	2.14%		5.12%		-49.92%	
12	Bakersfield, CA	21.74%		4.94%		-25.30%	
13	Knoxville, TN	15.17%		4.87%		9.35%	
11	Sarasota-Bradenton-Venice, FL	20.53%		2.84%		-25.37%	
2nd Ten Avg:		12.43%		5.12%		-23.95%	
NATIONAL		13.68%		5.58%		-32.06%	
Average of +/- 50% Population		Avg: 12.81%		5.67%			

Table 3: GREEN BAY MSA

GREEN BAY MSA COMPARISON RESULTS, BASED ON 1980-90 CHANGES IN LEVELS and (+/-) 50% of 1980 MSA Population, and (+/-) 50% of Central County Population							
Rank	MSA NAME	Population Growth 1990-2000	Rank	Yearly Per Capita Income Growth 1989-1999	Rank	Change in Total Crime 1990-2000	Rank
4	Appleton, WI	15.33%	5	6.66%	1	-25.58%	3
2	Wausau, WI	9.04%	9	6.53%	2	-29.24%	2
9	Janesville, WI	9.17%	8	6.12%	3	-21.38%	4
1	Sioux Falls, SD	21.88%	1	5.75%	5	-5.09%	7
8	Topeka, KS	6.80%	10	5.71%	6	16.69%	10
3	Oshkosh-Neenah, WI	11.72%	7	5.42%	7	-36.31%	1
6	Lincoln, NE	16.45%	3	4.62%	8	2.95%	8
7	Columbia, MO	19.39%	2	4.45%	9	-18.82%	5
5	Lafayette, IN	12.40%	6	3.49%	10	10.89%	9
10	Champaign-Urbana, IL	3.66%	11	3.23%	11	N/A	
1st Ten Avg:		12.58%		5.20%		-11.77%	
Green Bay		15.96%	4	6.06%	4	-15.23%	6
15	Bloomington, IN	12.02%		3.45%		-0.56%	
11	Bloomington-Normal, IL	16.45%		4.37%		N/A	
19	Cedar Rapids, IA	12.62%		5.65%		-19.11%	
18	Evansville, IN-KY	5.53%		5.40%		-21.98%	
16	Lexington-Fayette, KY	17.19%		4.81%		-36.18%	
12	Mansfield, OH	2.15%		5.67%		-20.17%	
17	Montgomery, AL	13.55%		6.14%		30.55%	
20	Sioux City, IA-NE-SD	8.91%		6.17%		-6.43%	
14	Springfield, OH	-1.90%		6.19%		-24.71%	
13	Williamsport, PA	1.12%		5.23%		-29.58%	
2nd Ten Avg:		8.77%		5.31%		-14.24%	
NATIONAL		13.68%		5.58%		-32.06%	
Wisconsin MSA's Avg:		11.32%		6.18%		-28.13%	
Average of +/- 50% Population		Avg: 12.92%		5.63%			

Table 4: FOX RIVER (APPLETON) MSA

FOX RIVER (APPLETON) MSA COMPARISON RESULTS, BASED ON 1980-90 CHANGES IN LEVELS OF PER CAPITA INCOME AND (+/-) 50% OF 1980 MSA POPULATION, AND (+/-) 50% OF CENTRAL COUNTY POPULATION

Rank	MSA NAME	Population Growth 1990-2000	Rank	Yearly Per Capita Income Growth 1989-1999	Rank	Change in Total Crime 1990-2000	Rank
3	Monroe, MI	9.24%	6	7.20%	1	-26.55%	3
8	Sheboygan, WI	8.44%	8	6.63%	3	-22.03%	5
5	Fond du Lac, WI	8.01%	9	6.40%	4	-30.66%	2
2	Janesville, WI	9.17%	7	6.12%	5	-21.38%	6
9	Green Bay, WI	15.96%	2	6.06%	6	-15.23%	9
4	Topeka, KS	6.80%	10	5.71%	7	16.69%	10
10	Mansfield, OH	2.15%	11	5.67%	8	-20.17%	7
7	Cedar Rapids, IA	12.62%	4	5.65%	9	-19.11%	8
6	Elkhart-Goshen, IN	17.03%	1	5.53%	10	31.48%	11
1	Oshkosh-Neenah, WI	11.72%	5	5.42%	11	-36.31%	1
1st Ten Avg:		10.11%		6.04%		-14.33%	
Fox River Valley		15.33%	3	6.66%	2	-25.58%	4
19	Columbia, SC	18.02%		5.77%		-9.40%	
17	Rockford, IL	12.86%		5.72%		-43.47%	
14	Wichita, KS	11.75%		5.64%		-20.19%	
16	York-Hanover, PA	12.42%		5.62%		-19.61%	
18	Harrisburg-Carlisle, PA	7.34%		5.37%		-20.53%	
15	Peoria, IL	2.33%		5.34%		-35.02%	
20	Davenport-Moline-Rock Isl	2.14%		5.12%		-49.92%	
12	Bakersfield, CA	21.74%		4.94%		-25.30%	
13	Knoxville, TN	15.17%		4.87%		9.35%	
11	Sarasota-Bradenton-Venice,	20.53%		2.84%		-25.37%	
2nd Ten Avg:		12.43%		5.12%		-23.95%	
NATIONAL		13.68%		5.58%		-32.06%	4
Wisconsin MSA's Avg:		10.66%		6.13%		-25.12%	
Average of +/- 50% Population		Avg: 12.92%		5.63%			

Appendix 1: Matching Methodology

Data

The majority of our data for the 3,143 U.S. counties from the 1990 and 2000 censuses were obtained by download from www.factfinder.census.gov and from other census software. Variables were primarily chosen from STF-1 and STF-3.

Additional data for each county's crime levels were downloaded from the Inter-University Consortium for Political and Social Research's web site, www.icpsr.umich.edu, which compiles Federal Bureau of Investigation Uniform Crime Reporting Program Data.

Variables

Although we had a number of variables to choose from, we focused on the following:

- Metropolitan statistical area population (based on December 2005 definitions)
- Yearly per-capita income
- Median house price to income ratio
- Number of workforce in manufacturing
- Number of reported crimes
- Urban population
- Population per square mile
- Number of African Americans
- Population with at least a bachelor's degree
- Population below the poverty line
- Central county population

A few of these variables merit further explanation. First, as the casual observer of OMB definitions might know, the composition and nature of MSA boundaries has changed dramatically since the 1980 Census. To facilitate analysis, we chose to apply the current MSA definitions to the 1980, 1990 and 2000 Census data.

Only one measure of ethnic diversity was included in the data analysis, as we considered it to most likely be the most stable measure of ethnic composition, in light of migration patterns over the last two decades.

Methods

Our primary units of analysis were the Micropolitan and Metropolitan MSAs, as defined according to the OMB's December 2005 definitions. Because we were retrospectively applying the 2005 definitions, each of the variables above were either summed to create a MSA total (e.g., total MSA crime levels), or summed according to their respective population weight (e.g., yearly per-capita income).³

The 1980-1990 change in each of these variables was then measured, in levels whenever possible, and recorded.

Both the 1980 "static" measurements and the 1980-1990 change in levels for each variable was then standardized by the sample's standard deviation. Using these standardized values, we squared the difference between each MSAs value and that of our MSAs of interest (Milwaukee, Madison, Appleton/Fox River Valley and Green Bay). Summing these squares, we created a measure of how "far" each MSA was from our MSAs of interest and ranked these according to the sum of their squared differences.

To ensure that our matches were of comparable size (i.e. that the change in levels in each variable did not overwhelm the 1980 "static" measurements), we cut off our comparison counties at +/- 50 percent of 1980 MSA and central county populations.

The final list of comparisons was then "tracked" along three variables of principle interest: yearly per-capita income, population growth and crime levels.

³ We believe that the amount of bias introduced into the sample through retrospective application of MSA definitions is small, for a few reasons: 1. Most of the dramatic changes in MSA definitions occurred in a few big eastern cities and in the rapid growers of the south-southwest. 2. Because we weighted each county's contribution to the MSA sum by population fraction, those counties who were small in, say, the 1980 Census but then grew to a significant size in 1990 or 2000 and then included in the MSA definition would still not count for much, by weight, in 1980.