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The Gap in Employment of High-Income Professionals in Wisconsin

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Wisconsin's per-capita income is several percentage points below the national average. Every measure of aggregate income confirms this conclusion though the exact size of the reported shortfall differs a bit from one survey to another. For example, the reported percentage of Wisconsin's income gap depends on whether one is looking at income from work vs. income from all sources, or income of those who work vs. income of the population, or family income vs. individual income, or whether the data come from tax returns or sample surveys. In recent years, the gap has been about 3 percent.

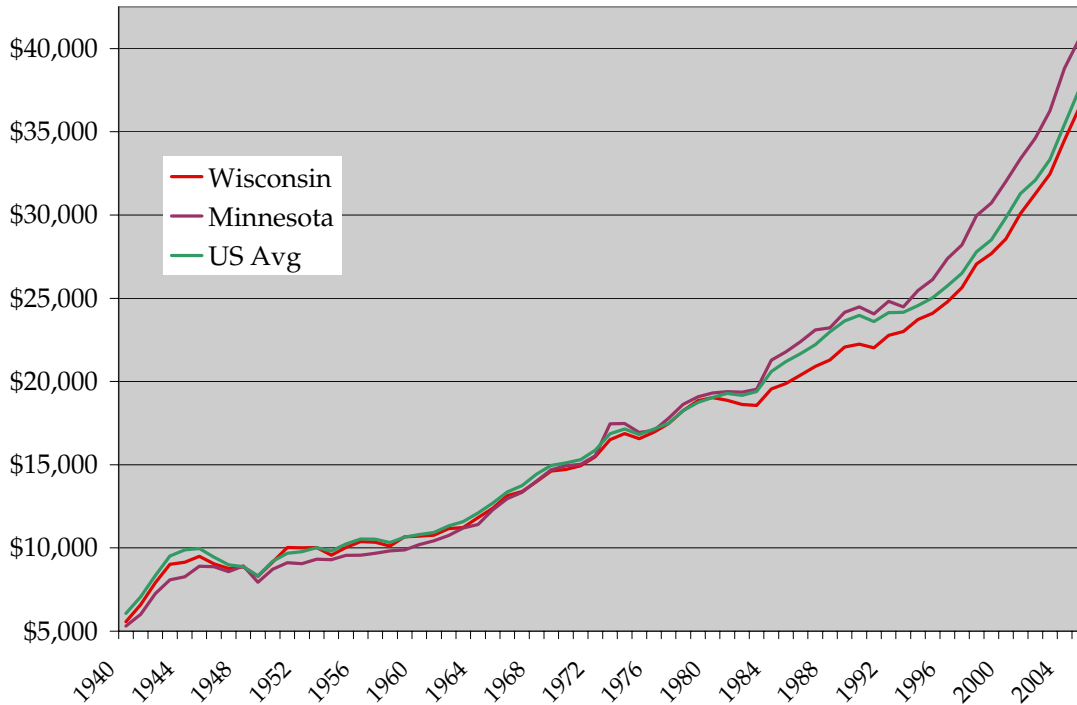
Explanations of the shortfall have been widely sought. In this report I identify a shortfall in employment of high-income professionals in Wisconsin. I attribute this shortfall to the absence of a megacity with a large financial and business services sector. The shortfall is large enough to explain the 3 percent gap.

Figure 1 shows that Wisconsin's average personal income was roughly equal to the national average until the deep 1980-82 recessions. The double recessions of 1980-82 were especially severe in manufacturing and were accompanied by the emergence of Japan as a major competitor in Wisconsin's most important industrial sector, the machinery industry. In the early 1980s, Wisconsin's income fell 5 percent below the national average, and it has never fully recovered. In recent years the gap has averaged 3 percent.

Minnesota, in contrast, has fared well in recent years. Minnesota has a different concentration of industries—more heavily into electronics than machinery—and it has Minneapolis/St. Paul, which has emerged as an important financial center at a time when finance has become increasingly important as a source of high-income jobs. Minnesota's per-capita personal income has pulled well ahead of the national average while Wisconsin has remained a bit behind.

Figure 1

Per Capita Incomes, 2000 Constant Dollars



In this paper, I identify several patterns of Wisconsin's distribution of employment that suggest some of the causes of Wisconsin's personal income shortfall in 2006. Specifically, I look at the shortfall using the Bureau of Labor Statistics' Occupational Earnings Statistics, which report the number of workers and the average rate of pay earned in 711 occupations for each state and major metropolitan area. From these data, one can compute a measure of the overall shortfall in Wisconsin's earnings, though the data are intended to reflect differences in occupational earnings and employment, not total income.

What I find after ranking the 711 occupations from the highest paid to the lowest paid is that the greatest part of Wisconsin's income gap derives from two sources: (1) Wisconsin residents in the most highly paid occupations earn less than their national counterparts; and (2) Wisconsin employs less than its share of people in those highly paid occupations.

I compute these estimates by dividing the national workforce into 10 equal components or deciles. Starting with the number of workers in the most highly paid occupations, I then add to it the number of workers in the second most highly paid occupation. I proceed in similar manner to the third most highly paid occupation, and so forth, adding together the number of workers in each of these occupations until I have accumulated 10 percent of the workforce. I call this the top decile, and I compute the (weighted) average rate of pay in the occupations in that decile.

Then I compute the next decile in a similar way until all workers and occupations have been accounted for in one of the 10 deciles.

I find that for the nation as a whole, the 10 percent of the workforce employed in the most highly paid occupations are paid on average \$81,432. Workers in these same occupations in Wisconsin earn on average \$71,732.

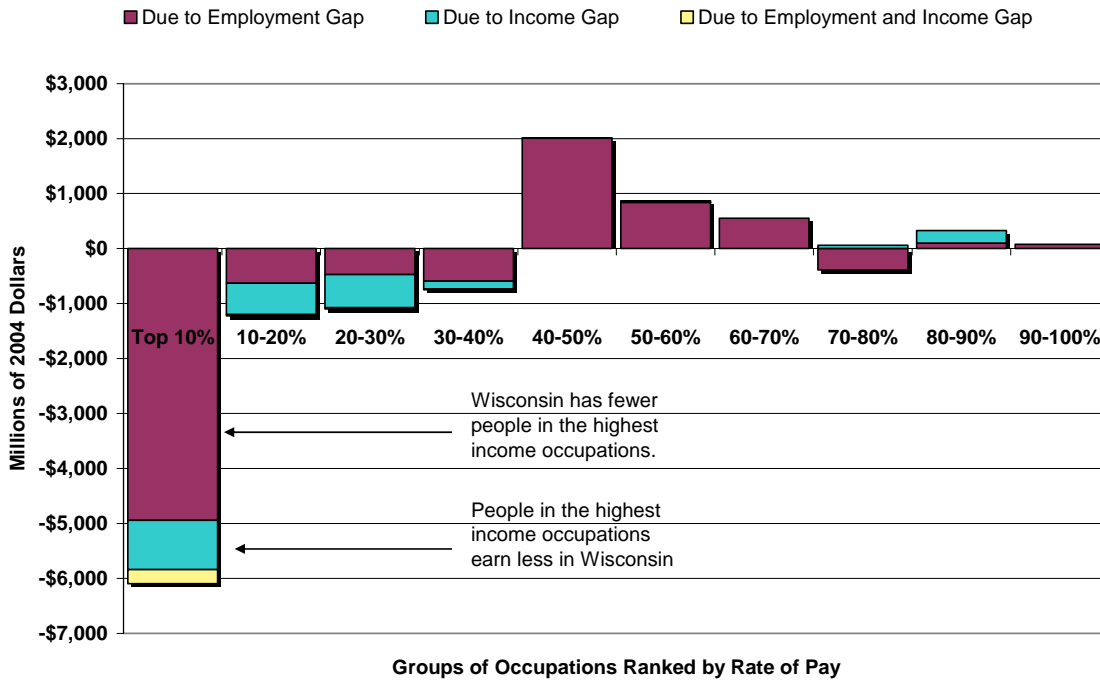
Only 7.44 percent of Wisconsin's workforce is employed in these highly paid occupations rather than the 10 percent that is employed in the nation as a whole. Put differently, Wisconsin has an employment gap of 65,000 people in the most highly paid 10 percent of all occupations.

If Wisconsin had 65,000 more people working in these highly paid occupations, and if these workers had earned \$81,432 on average rather than \$71,732, Wisconsin's overall income would have been \$6.3 billion higher in 2002. Because Wisconsin's total earnings shortfall as measured by these data was only \$6.4 billion in 2004, it is fair to say that the entire shortfall of Wisconsin's average income appears in the 10 percent of occupations that have the highest rates of pay. By Wisconsin's total earnings shortfall, I mean the amount by which Wisconsin's earnings fell short of what they would be if Wisconsin's total workforce had a rate of pay equal to the national average.

These results are illustrated in Figure 2. Results for the other nine deciles are illustrated as well. Figure 2 divides Wisconsin's income shortfall into 10 components, one for each decile. What the figure shows is that the top decile has a huge gap while the others do not. Except for occupations in the top 10 percent, most of the rest of Wisconsin's people—the people employed in the remaining 90 percent of the occupations—earn about as much in Wisconsin as they would earn in the rest of the country. If we look in detail at the occupations below the top tenth in income, we find that there are individual differences, of course, between Wisconsin's and the nation's rates of pay for each occupation. And there are rather large differences in the numbers of workers employed in each kind of job. For example, Wisconsin's heavy dependence on manufacturing provides it with a much larger share of employees earning middle level incomes than we see in the nation as a whole. This means a much larger share of Wisconsin's income is derived from the middle income groups. Wisconsin's workers are paid somewhat higher than average in these middle income occupations as well.

Figure 2

Sources of Wisconsin's Income Shortfall Compared to U.S.

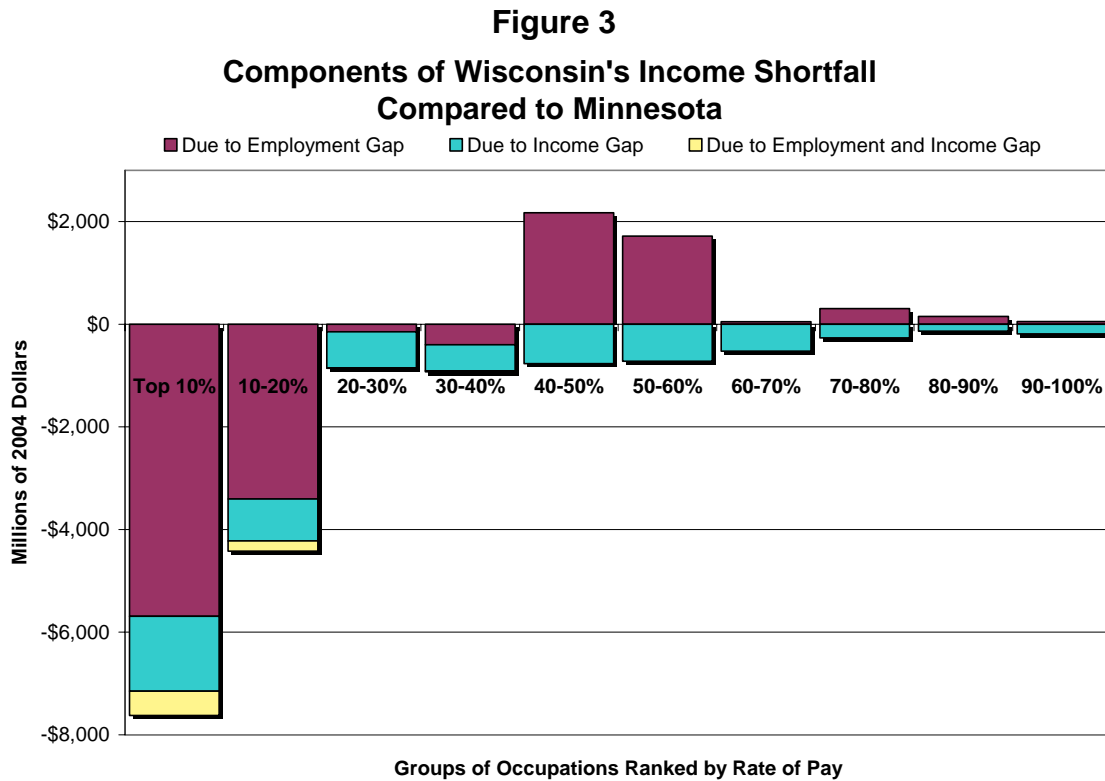


Wisconsin Compared to Minnesota

Wisconsin shares many features with its neighbor Minnesota. Both are high-tax, high-education states with large agricultural sectors. Minnesota's economic performance is often compared to Wisconsin's, especially in recent years when Minnesota seems to have done quite well.

Figure 1 shows that Minnesota's average income was similar to Wisconsin's until the early 1980s. Following the deep recession of 1980-82, Minnesota recovered more quickly than Wisconsin and to a higher level. Moreover, Minnesota continued its rapid growth into the 1990s and has now out-distanced much of the rest of the nation as well.

Figure 3 compares Wisconsin's earnings to Minnesota's in each of the 10 deciles of occupational groups.

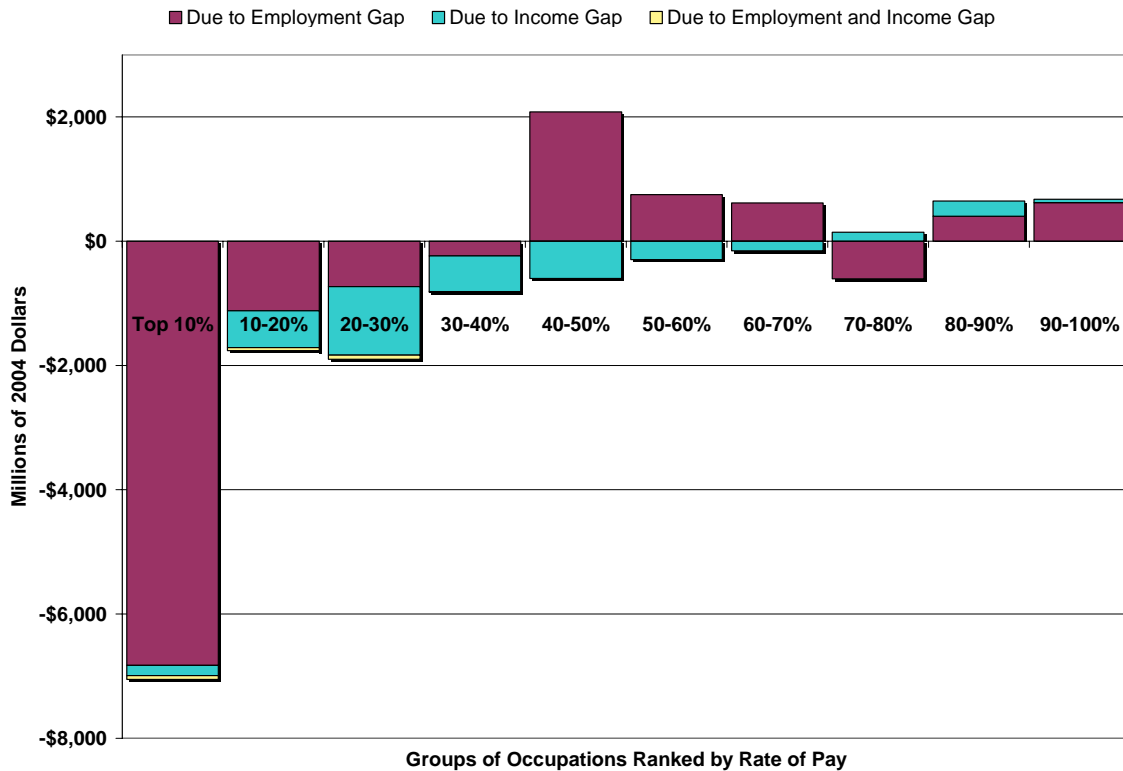


The occupational data show that the difference between incomes in Wisconsin and Minnesota follows roughly the same pattern as that between Wisconsin and the rest of the nation, which is that Minnesota's workers earn more than Wisconsin's in high-income occupations and roughly the same as Wisconsin's in the remaining 90 percent of occupations. Moreover, 9.5 percent of Minnesota's workers are in the top 10 percent of occupations, compared to 7.4 percent for Wisconsin.

Wisconsin Compared to Illinois

The same pattern emerges when comparing Wisconsin to Illinois (Figure 4), though the presence of Chicago makes Illinois a less natural measuring rod when judging the performance of Wisconsin's economy. Wisconsin's income gap is concentrated in occupations in the most highly paid 10 percent when compared to Illinois.

Figure 4
Components of Wisconsin's Income Shortfall
Compared to Illinois



Occupational Groups

Above I ranked the 711 occupations according to the average earnings received by workers in each occupation. An alternative way to group occupations is by the nature of their work. For example, managerial occupations might include a group of occupations involved in the process of management regardless of the industry in which the managers work or the different rates of pay for different managerial occupations.

The Bureau of Labor Statistics provides 22 occupational groups of this kind. That is, the bureau groups all 711 occupations into 22 broader categories. Examples of these broad categories include "health-care practitioner and technical," "construction and extraction" and "installers and repairers." Each of these groups would

include on average about 30 detailed occupational titles. Examples would be “pharmacists,” “upholsterers” or “electrical power-line installers and repairers.”

In this section, I rank the 22 broad categories by average compensation of the entire group. Note that some individual occupations in each group might have high or low pay and therefore be included in the high or low deciles of Figure 2. I perform the same comparison as before, which is to see which group of occupations is paid less well in Wisconsin and which has a lower percentage of workers in Wisconsin. The main result of this analysis is the same as before, as Figure 5 shows. Wisconsin’s shortfall is again found to lie in the highest paid groups. In fact, Wisconsin has an income gap in all the highly paid occupational groups and has quite a large gap in three of the six most highly paid groups, namely “management,” “computer and mathematical occupations” and business and financial operations.”

As before, I compare Wisconsin not only to the nation as a whole, but also to Minnesota, and I find the same gaps in the state-to-state comparisons as in the national comparison, as Figure 6 shows.

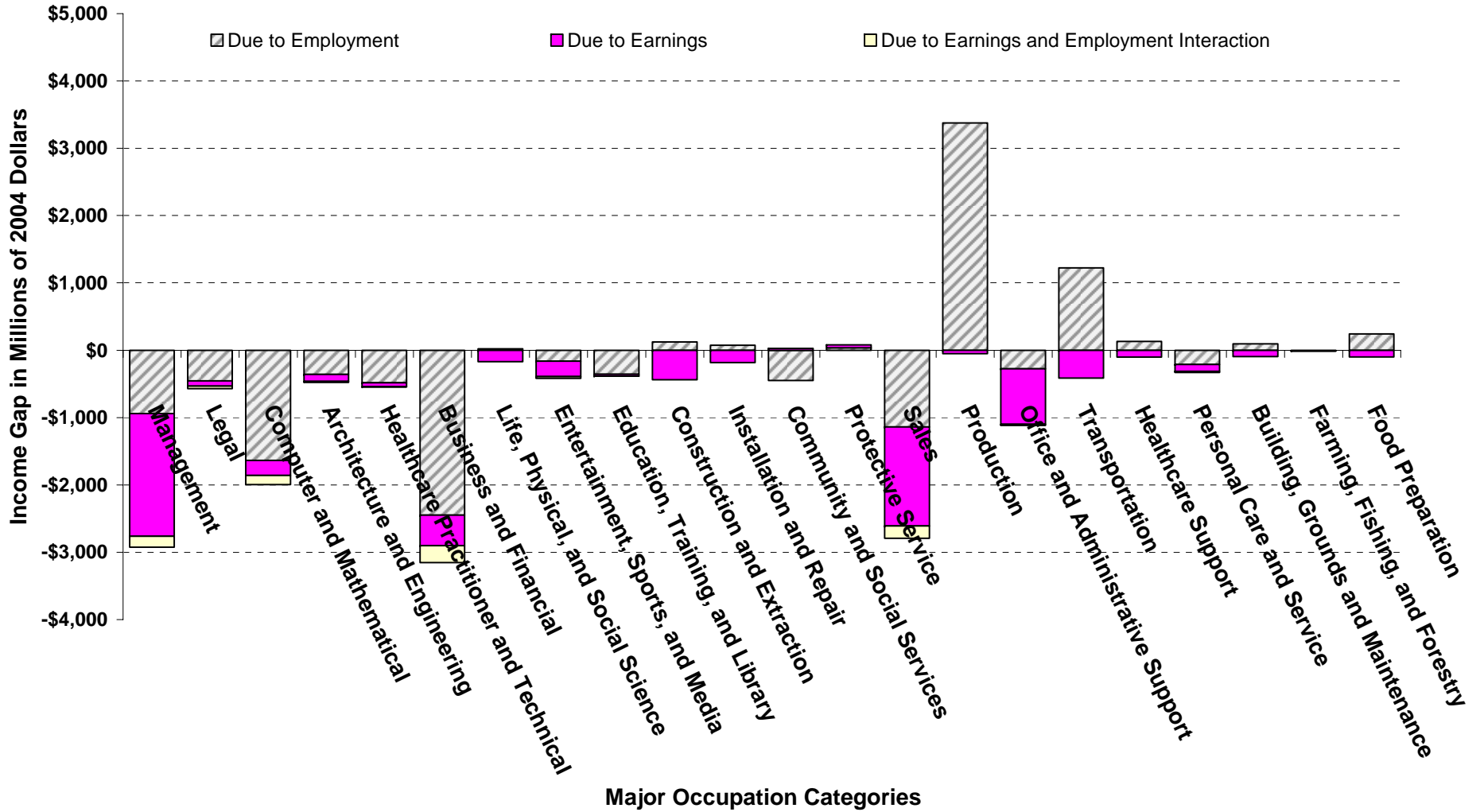
Figure 5

Earnings and Employment in Groups of Occupations in Wisconsin Compared to U.S.



Figure 6

Earnings and Employment in Groups of Occupations in Wisconsin Compared to Minnesota



A Shortage of Highly Paid People in Business Headquarters and Office Professions

The largest two of these income gaps are in management and in business and finance operations. In my view, these gaps reflect Wisconsin's lack of a megacity where these occupations predominate. The tall office buildings of major cities like Chicago are filled by people whose occupations are in management or business and finance. In recent years, the consolidation of the financial industry into a smaller number of really big firms has led to a loss of corporate headquarters in Wisconsin of its mid-sized financial institutions. Larger firms headquartered in larger cities have bought many of Wisconsin's banks and insurance companies.

Further supporting the "office work" hypothesis is that the third largest earnings gap is in "sales" and the fifth largest gap is in "office and administrative support" occupations. While not among the highly paid occupational groups, employment in these two sets of occupations is so much higher in Minnesota than in Wisconsin that a large earnings gap exists for this group. This gap is due to the fact that many more workers do office work in Minnesota than in Wisconsin.

A major finding of this study confirms what observers have long suspected simply by looking at the amount of office space in Chicago, Minneapolis and Milwaukee, namely that Wisconsin has less than its share of workers in highly paid office positions. Specifically, Wisconsin's shortage of highly paid workers is concentrated in managerial, sales and finance positions, and in their office support staffs.

Milwaukee, Minneapolis and Chicago

The Occupational Earnings Statistics are also reported for metropolitan areas. This permits comparisons to be made between Milwaukee and Minneapolis and between Milwaukee and Chicago. First I compare Milwaukee to Minneapolis and Chicago for the 10 groups of occupations ranked by income, i.e. for the most highly paid 10 percent of occupations, etc. As can be seen in figures 7 and 8, Milwaukee indeed has far fewer workers than the other two large cities in the most highly paid occupations and far more workers in the middle income occupations which predominate in manufacturing.

Next I compare Milwaukee to Minneapolis/St. Paul and Chicago for the 22 large groups of occupations defined by the Bureau of Labor Statistics. The grouped occupations confirm this finding. Milwaukee has a far greater percentage of its workforce in occupations in the group called "production" and far smaller percentages in the "finance," "managerial" and "sales" occupations than the other two large metropolitan areas.

Figure 7
Components of Milwaukee's Income Shortfall
Compared to Minneapolis/St. Paul

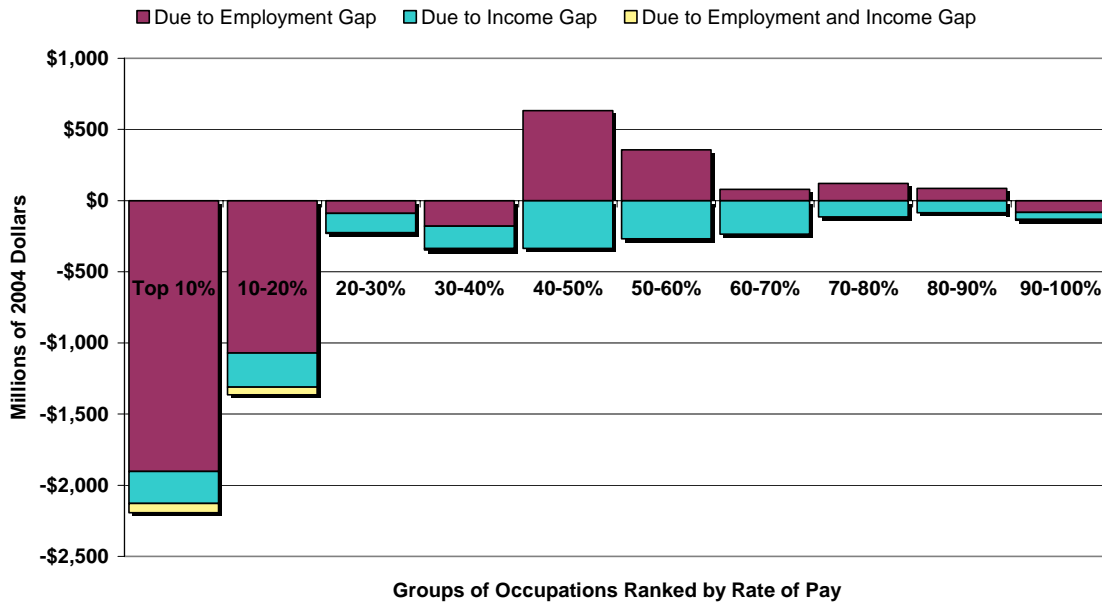
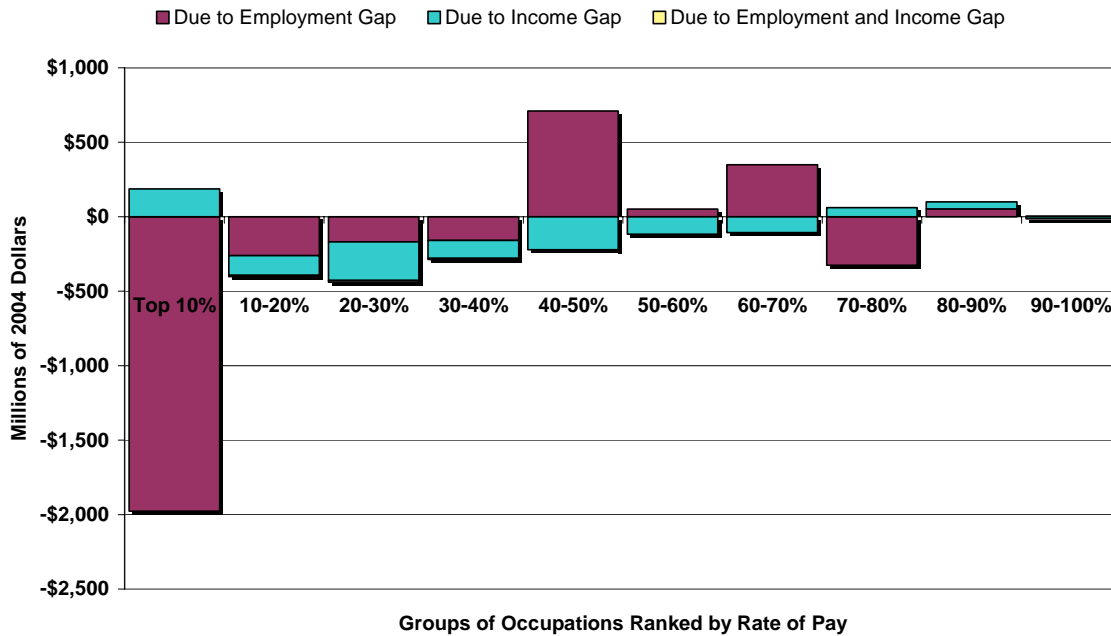


Figure 8
Components of Milwaukee's Income Shortfall
Compared to Chicago



When Milwaukee, Chicago and Minneapolis/St. Paul employees are subtracted from their respective states, no gaps remain. That is, what we might call the income earned in the rest of state, Wisconsin's average income is as high as Minnesota's and Illinois's. The occupational distributions vary across the states, but there is no pattern I can see in figures 9 and 10 that would lead one to suspect that there is a major difference between Wisconsin and its neighbors, nor do the data report such a difference. Put differently, outside of its biggest city, Wisconsin's income is doing fine. No culprit need be found to explain a shortfall in performance in the rest of the state because there is no shortfall.

Figure 9

Components of Wisconsin's Income Shortfall Compared to Illinois after Subtracting Milwaukee and Chicago

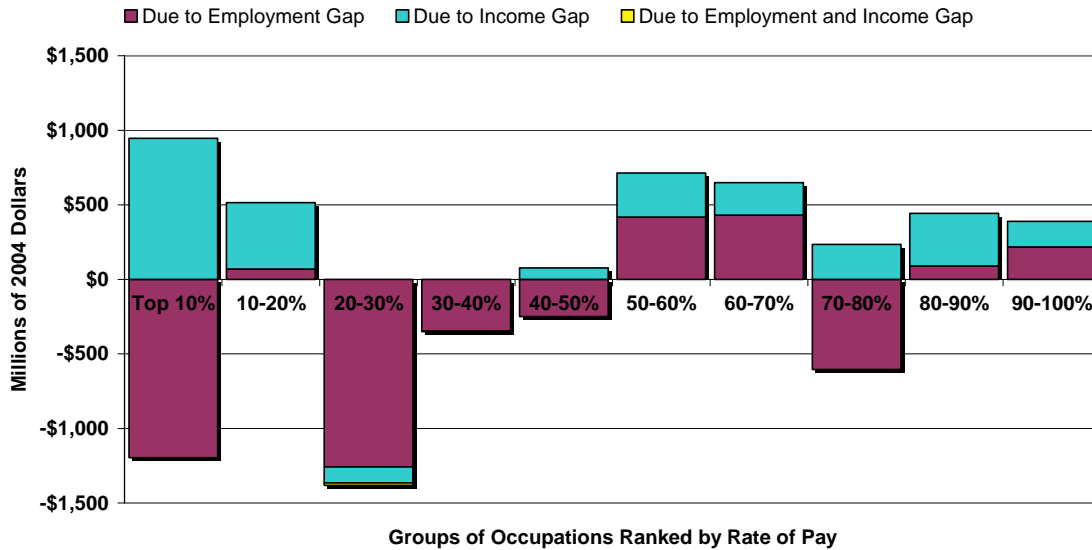
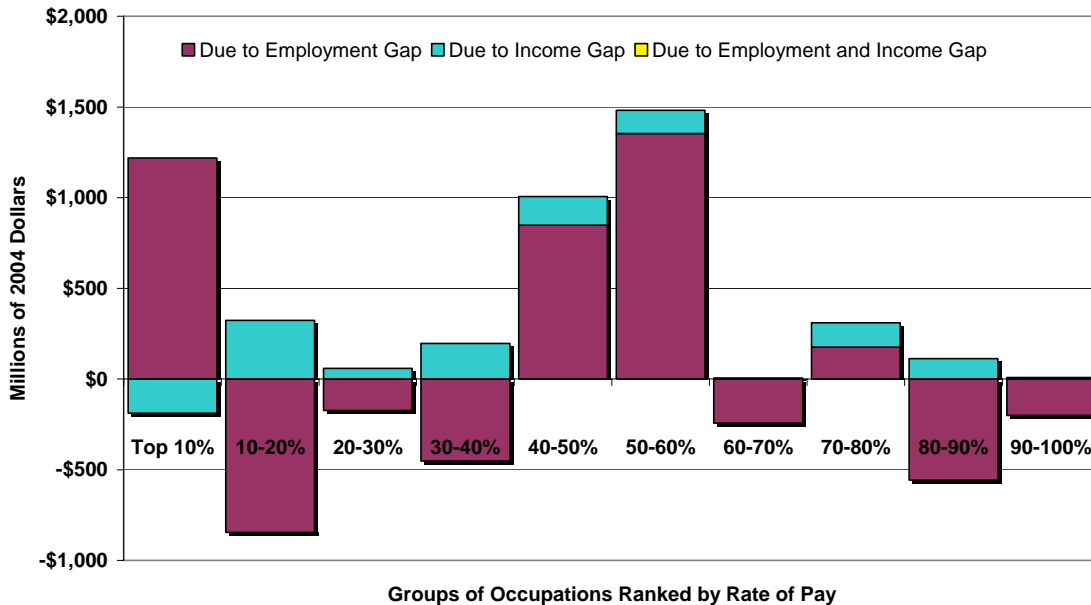


Figure 10
Components of Wisconsin's Income Shortfall
Compared to Minnesota After Subtracting Milwaukee
and Minneapolis-St. Paul



While this analysis seems to point the finger at an underperformance of Milwaukee as the cause of Wisconsin's problem, these data cannot be used to reach such a finding. I have not compared Milwaukee to cities of similar age and size, and it may well be that Milwaukee is not under-performing compared to a suitable group.

In the paper "Choosing the Right Pond: What Are Appropriate Comparison Cities for Wisconsin's Metropolitan Areas?" Karl Scholz and Yeri Lopez have performed such a comparison and find that Milwaukee is doing fine when compared to cities with similar characteristics. The Scholz-Lopez paper is available on the La Follette School web site.

Wisconsin's income shortfall appears to be due to the simple fact that it does not have a city as big as Minneapolis/St. Paul or Chicago, not that its major city is underperforming compared to other cities of its size. As the nation's financial institutions have merged and consolidated, many mid-sized cities other than Milwaukee may have lost part of their financial base.

A Shortage of Highly Paid Technical and Scientific Workers

The shortfall in office occupations does not explain the shortfall in computer and mathematical occupations that I also found in the comparisons. Wisconsin's earnings from computer and mathematical occupations are far lower than Minnesota's. This gap most likely reflects the composition of Wisconsin's

industries, not the size of its major city. Some of these occupations may be concentrated in large cities, but mid-sized cities can also be a home to a concentration of science based work.

Wisconsin has a lower than average share of the computer industry and of the technical side of the communications industry. It has no national lab or spin-offs from a national lab that might lead to the employment of computer or mathematical specialists. Wisconsin's universities are not behind their national counterparts in their volume of research, but the state's private sector does far less than an average amount of research.

Second, Minnesota had the good fortune to be the home of some major electronics and science-based firms, namely Control Data, Honeywell and 3M, when science- and computer-based employment began to grow rapidly a few decades back. It also had a large IBM facility. These large companies became the anchors to a cluster of smaller high-tech businesses. These small firms began in Minneapolis and thrived there in part because the larger firms were there. The smaller ones sold components to and bought components from the larger ones, but most importantly they shared with the larger ones a highly educated technical workforce in an active labor market. Such an environment generates new firms and ideas.

Minnesota's computer industry boomed in the 1980s and 1990s while Wisconsin's machinery industry grew slowly. Moreover, the computer industry employed more highly educated, highly paid professionals than the machinery industry did.

Many states have made it a policy to compete for firms and industries in scientific and technical industries that employ computer and mathematical specialists. Many of the policies of these states to attract such industries revolve around their universities. The results of these attempts have been mixed.

The two earliest geographic concentrations of scientific industries were clustered around Stanford and the Massachusetts Institute of Technology. Economic development was not the dominant motive behind the establishment of these scientific complexes. In later decades, however, when it became clear that high-end science and engineering was somewhat footloose and could drive local economic development, other states decided to encourage employment in such occupations. North Carolina and Texas stand out as two states that took actions decades ago to help their universities grow and to use their universities to help their states grow. Wisconsin did not enter the fray in a big way, despite starting from a far higher base with a much better university. Other states have decided to compete in recent years, though it is too early to tell if these later efforts will be successful.

What Explains Minnesota's Recent Growth?

That Minneapolis/St. Paul employs more people in highly paid business-type occupations than Milwaukee and the history of Minnesota as home to technology firms long before the boom of the late 20th century are two of the forces that worked in Minnesota's favor over the last 25 years. In combination with the third trend I outline below, these forces explain Wisconsin's income shortfall. The nature of these forces suggests that Minnesota's recent surge beyond Wisconsin in the income rankings was not due to a conscious policy on Minnesota's part to support economic development.

A third force that I believe is important is that beginning in the 1980s, the income distribution for the nation as a whole began to widen. Highly paid occupations became even more highly paid relative to the average. So when the income distribution widened, states with lots of employment in the highly paid occupations moved ahead of states like Wisconsin whose workers were concentrated in middle-income occupations. Meanwhile, the big geographic concentrations of financial firms became even bigger as firms moved and merged, and as the top-end legal and financial firms clustered together. Scientific and technical clusters also grew more rapidly than average and firms in these industries moved from states with low scientific densities to states with high scientific densities.

Hence, three answers are provided here to explain why Minnesota's income growth outpaced Wisconsin's in recent years. (1) Minnesota has a large metropolis that provides employment to a much larger fraction of highly paid professionals than Wisconsin's cities do. (2) Highly paid professionals as a group have had larger than average pay increases in recent years. (3) Minnesota's employment has been much greater in a rapidly growing sector, namely a sector that employs highly paid professionals in mathematical and computer occupations.