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Milwaukee's QUIET CRISIS:

Ten years later

By George Lightbourn and Stephen Agostini

Wisconsin Policy Research Institute

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Milwaukee's Quiet Crisis: 10 years later

by George Lightbourn and Stephen Agostini

President's Notes

America is getting smarter.

Nearly a third of adults over the age of 24 in the country's 50 largest cities now, on average, have a four-year degree, and that translates into better jobs and higher incomes across the entire economic spectrum.

Unfortunately, Milwaukee is lagging far, far behind.

Ten years ago, when George Lightbourn and Steve Agostini wrote "Wisconsin's Quiet Crisis," only 18 percent of the over-24 population in Milwaukee had a four-year degree. Today, the authors report in an update based on 2011 figures, it's still only 21 percent – half the percentage in thriving, dynamic urban centers like Boston and San Diego.

Yes, Milwaukee is making progress – but not nearly enough. Were Milwaukee merely average, the city's residents would have over 36,000 additional bachelor's degrees and, Lightbourn and Agostini conclude, a whole lot more per capita income.

In a knowledge economy, there's simply too little knowledge.

Many feel that Milwaukee is on the cusp of a new vitality. As local leaders ponder how to move forward, they must keep in mind that long-term prosperity will continue to elude Wisconsin's largest city unless they find a way to grow or attract more college graduates. Every decision that is made, the authors of this report rightly conclude, must be made with that critical goal in mind.

Mike Nichols
President

Table of Contents

Executive Summary

Here we go again. Ten years ago we teamed up to write a report about how Milwaukee compared to the other 50 largest U.S. cities. It would be understandable to ask if we really need another report on the Milwaukee economy. Based on what we have found, the answer is yes. The data show that Milwaukee has continued to fall behind the 49 other cities we studied.

Ten years ago, our research showed that for 30 years, Milwaukee had been falling further behind the average large U.S. city. In the years since our first report, the gap has actually widened. Specifically, the data show Milwaukee falling further behind in population (most cities are growing faster than Milwaukee), employment (the average city employment *grew* by 74% since 1970, Milwaukee's *shrank* by 13%) and income (since 1970, the per capita income in the average city has grown by 50% more than it grew in Milwaukee).

It is now increasingly clear what makes some cities more prosperous than others: the educational attainment of the population. Specifically, the 40 years of data we gathered on the 50 largest U.S. cities show that those cities with a *higher percentage of their population holding a college degree or better* and those cities that experience *higher-than-average growth in their college-educated populations* have higher per capita incomes. The message is unmistakable. Milwaukee has fallen behind its large-city peers in both income and education. Why are some cities more prosperous than others? The answer lies in the educational attainment of a city's population.

Readers of this report should have two concerns. First, since this trend of falling behind other cities has continued for 40-years-plus, acceptance may have set in. The majority of the people living in Milwaukee have not known a time when Milwaukee ranked among the most prosperous cities. Second, many people simply do not realize that having a more educated population is good for the overall economic prospects of Milwaukee. Our first report on this subject, published 10 years ago, with its message of attracting a more educated population, did not rest easy on many ears. It was interpreted as being too negative, too academic. We were not able to convince average citizens that attracting more college-educated people would benefit the whole city.

Since then, University of California-Berkeley economist Enrico Moretti has documented why everyone in the city of Milwaukee, the Milwaukee metro area and Wisconsin should care about adding to Milwaukee's college-educated population. His research found that for every innovation job in a city, five additional jobs are created (lawyers, nurses, waiters, carpenters, etc.). In the current environment — in which job creation is paramount — this message is critical. But Moretti's research addresses not just jobs but also income. He found that increasing the percentage of college graduates will increase salaries for all workers in a city. In fact, the most significant impact is on those workers who are high school dropouts.

Increasing jobs and increasing incomes is the goal of every community leader. A surefire way to accomplish both is to increase the number of college graduates. We offer a handful of ideas that will help move Milwaukee in that direction. Yet the most important step is the first one: acknowledging the importance of and fully committing to a strategy of increasing the number of college graduates in Milwaukee.

Introduction

In 2004, we published research that examined the Milwaukee economy from 1970 through 2000. We examined not only the Milwaukee economy but compared Milwaukee with the other cities that make up the 50 most populous cities in America. (Hereinafter, this paper will refer to these as the largest cities.) In that study we addressed two principal questions: Over the 30 years examined, which cities experienced the most economic growth and, more important, what caused the growth? While our research incorporated all of the 50 largest U.S. cities, our primary focus was Milwaukee.

This report is an update of that research incorporating the next period, from 2000 to 2011.[1] Our long-term, structural approach might seem somewhat quaint in this era in which each monthly employment report is dissected and analyzed. However, to fully understand a city's economy, it helps to understand both the forest and the trees. The perspective of this study is the forest. With that basic orientation, let's proceed.

Cities do not stand still. They are living, breathing organisms. While we might fix a particular impression of a city in our mind, cities will surprise us. Cities continue to evolve. Anyone who has been away from his or her hometown for several years will always find a return home a somewhat disquieting experience. People change, old buildings are torn down and new ones are built, values evolve and economies change. Very few elements of a city are static.

Most commonly, cities as they exist today are compared to themselves, the way they were in a previous time. As time passes, has the economy grown, has it changed? While this approach is useful, this study takes a different approach to examining Milwaukee. We include data on key changes in Milwaukee, but our analytic approach is to measure Milwaukee's changes in the context of America's 50 largest cities. We ask two basic questions. First, how has Milwaukee changed economically according to some key measures? Second, how have the changes in Milwaukee compared to other large U.S. cities?

This report updates *Wisconsin's Quiet Crisis*,[2] which documented a 30-year decline of the Milwaukee economy. While Milwaukee was once an average large city in terms of per capita income, that report found that Milwaukee's stature among American cities was in decline. It was a city finding it difficult to adjust to new economic circumstances. While the growth of the U.S. economy — and thus the economies of its large cities — was directly attributable to the increased productivity that came from a more educated work force, the educational profile of Milwaukee's population was not keeping pace. As a result, the city's economic growth suffered; and, since Milwaukee is Wisconsin's economic engine, this meant that the overall economy of Wisconsin suffered.

Our 2004 report picked up the story of Milwaukee in 1970. We knew that 1970 was an era when the U.S. economy had begun to shift. Something was happening that would lead some cities to prosper and would cause others to lag. Much in that report surprised us. For example, in 1970, metro Milwaukee was a peer to metro San Diego and metro Seattle in its share of total U.S. personal income. However, by 2000 both San Diego and Seattle had substantially increased their contribution to the U.S. economy (Seattle's grew by 45% and San Diego's grew by 48%). During that period, metro Milwaukee's contribution had declined by 24%[3]. Many more examples of this relative decline were included in that earlier report.

What no one could have seen in 1970 was that Milwaukee was concluding its economic golden period, a 100-year-plus run that had pressed an indelible stamp into the economic psyche of the city. Milwaukee was a proud, successful blue-collar city. However, in the 1970s, the formula for success was changing. Beginning in the 1970s, human capital would fuel a budding knowledge economy that would grow in significance, to the point where it now determines success or failure in virtually every corner of the U.S. economy. Overall, the U.S. economy has become less oriented toward manufacturing and increasingly oriented toward knowledge.

Any discussion of urban economies generally begins by reciting the myriad of factors that are unique to urban America: poverty, troubled schools, crime, etc. While there are surely many factors that confront cities, this study, in building on our earlier work, assumes a broader perspective in defining why some cities prosper and others do not. We are analyzing only high-level data: per capita personal income, jobs and population. As with our earlier work, this perspective provides an insight into what causes some cities to flourish and others to wither.

Finally, we should address a comment we heard often about our 2004 report. Our analysis examined city data. Some people would have preferred that we would use metro data. In this report we continue to use city data for two reasons. First, we wanted to compare results with that earlier report, especially since we wanted to incorporate the impact of the very unusual period we experienced in the 2000-2011 period. What impact did the

two recessions of that period have on urban economies?

Second, we do not dismiss the importance of analyzing metro data and view metro and city economies as inextricably linked, something we discussed extensively in our earlier report. Rarely, if ever, will you find a flourishing metro economy whose principal city is struggling. While the outer ring might be doing much better than the principal city, the overall growth and health of the metro area is largely determined by that principal city. If the economic growth of the principal city is stunted, the growth of the metro area will be stunted as well.

One final area we should address before we proceed with the body of this report is a chicken and egg question. It is reasonable to ask whether having more college graduates will improve a city's economy or whether college grads move to where the economy is already thriving. Does a large college grad population cause economic growth or is there simply a correlation between a large college grad population and higher incomes? This is an important strategic question for Milwaukee and other cities that are deciding whether they should focus on attracting college grads or focus on attracting businesses that employ college grads.

The methodology that underpins this report speaks only to the correlation between the educational makeup of a city's population and its per capita income. We cannot say beyond a shadow of a doubt that increasing the population of college graduates will cause incomes in Milwaukee to rise. However, consider two findings of our research. In 2011, five cities (Nashville, New Orleans, Columbus, Albuquerque, and Omaha) had educational attainment higher than the 50-city average, but lower per capita income than the 50-city average. In each of these cases, though, the growth in college grads was lower than the 50-city average. In the 40 years covered by our analysis, we have not found many instances among the 50 largest U.S. cities where a city with lower-than-average per capita income has either a higher-than-average percentage of college grads or a higher-than-average growth in college grads. Also, we have found the correlation between the percentage of college grads 10 years earlier and income to be 0.9 in the most recent decade. The data are substantial: having more college grads in the population of large cities usually results in higher incomes.

As to the strategic question of whether Milwaukee should focus on attracting college grads or attracting businesses that hire college grads, our data suggest that Milwaukee should focus on both. The city needs to continue to thicken its supply of college-educated workers that the contemporary economy needs, and it should do what it can to attract businesses that employ large numbers of college grads.

The important message is that cities must ensure that they are attractive places to college grads, both homegrown and those who relocate from other places. Politicians, business groups, social service agencies and others should do all they can to encourage businesses that employ college grads, including technology businesses, biosciences, advanced manufacturing and others. There needs to be an understanding of the economic value of college grads and an explicit focus on attracting them.

What is behind the economic value of college graduates? While there have been numerous sophisticated studies published to answer that question, the answer is rather simple. Beginning in the 1970s, the American economy has placed a premium on productivity and innovation. We have seen a revolution in materials and processes in manufacturing. We have also seen the creation of new things or services that, in 1970 we didn't know we would need or value. Think about Google, EMC Corp., Apple, eBay, Cisco, Yahoo, etc. These are all major parts of our contemporary economy, and all owe their development and growth to innovation. Cities that are home to more college graduates tend to be home to more innovative businesses across all sectors of the economy. Businesses looking to relocate or to expand favor cities that have deep pools of innovative, college-educated workers. They understand that human capital more than any other ingredient is responsible for economic growth and that most of that human capital is the product of American universities.

Population

A trademark of democracies is that its people are free to relocate, to follow opportunity. From its inception, the profile of the United States has been shaped and reshaped by a population seeking economic opportunity. We've seen migration from the East to the West, and more recently from the Northcentral and Northeast to the Sun Belt.

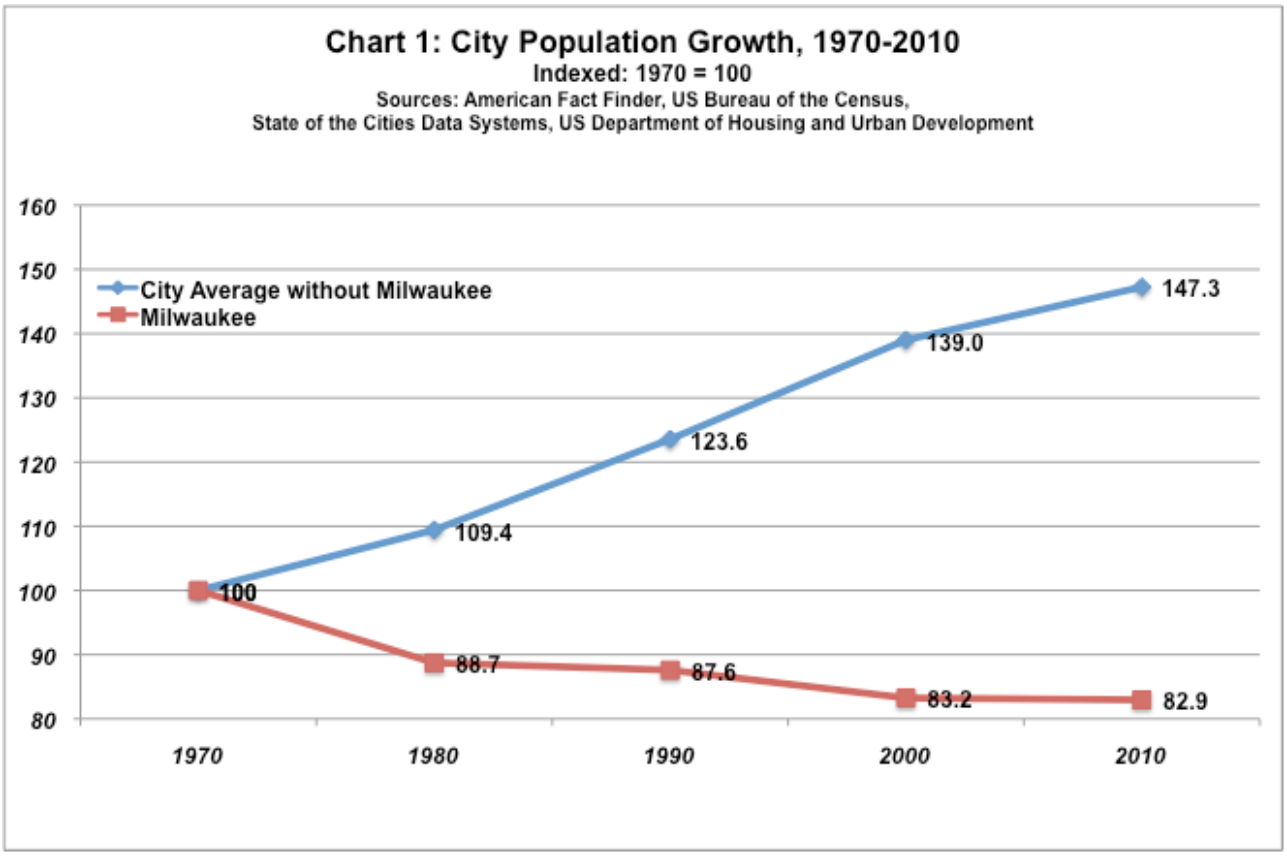
Most importantly, we've seen the movement into cities as people seek economic opportunity. People have moved off the farm and away from rural towns and villages to work in factories, banks, accounting firms, etc., located in cities. It is not an overstatement to observe that cities and suburbs have defined the economic prosperity of the United States.

The recent experience of the 50 largest American cities represents a bellwether for the U.S. economy. Our first data point is 1970, a time in which the migration to the cities was already well along. What could not have been understood at the time was the way the service and knowledge economy would cut into the muscle of industrial prowess. From our vantage point in 2014, we can see how this reshaping and redefinition of economic success affected cities in very different ways.

In 1970, Milwaukee was home to 717,099 people, placing it 12th largest among American cities.[4] In our earlier study we noted that the 2000 census showed Milwaukee's population had declined to 596,974. In that 30-year period, the city was buffeted by many forces, including the out-migration to the suburbs, the general U.S. population's migration toward the South and the West, as well as the changing economy that accelerated the importance of the service economy. Milwaukee did not fare well in this period.

In the period from 2000 to 2011, Milwaukee's population stabilized. It saw a decline of just 2,141 people to stand at 594,833. In some ways, the stabilization of Milwaukee's population is surprising. After all, the 2000-2011 period began with a mild recession and ended with a significant one. As the reader of this report understands, the U.S. economy is still shaking off the effects of the latter recession.

However, the fact that Milwaukee's population stabilized during an economically challenging decade is hardly a cause for celebration. In the context of Milwaukee's recent history, a stabilized population might seem encouraging. However, in the context of what was occurring in other large cities, a stable population represents somewhat disappointing news. A review of the information in Chart 1 will demonstrate this point.



In Chart 1, we see the percentage gain or loss in population for Milwaukee and for the average city in our data set. Chart 1 shows that in 2000 Milwaukee had experienced a 17% decline in population in the 30 years between 1970 and 2000. And we see that between 2000 and 2011, the population decline had stabilized. However, contrast this with the average city in our data set. In the 30 years between 1970 and 2000, that average city had increased its population by 39%. During the 2000-2011 period, the average city continued to add people and by 2011, the average city was nearly 50% larger than it was in 1970.

So while Milwaukee's population was stable during the most recent decade, the average large U.S. city grew another 11% beyond its 2000 population. If a city's population is reflective of people following opportunity, it would seem that they are increasingly finding opportunity in cities other than Milwaukee.

We have to admit, the fact that Milwaukee's population did not decline during the 2000-2011 period, in light of other data presented in this report, was puzzling. So why did Milwaukee's population stabilize? The answer is likely explained in a 2011 Brookings Institute study authored by William Frey.[5] The study notes a gradual slowing of long-distance migration, which in March of 2009 had dropped to 1.4%, "lower than any year since … 1948." As explained in the study, this slowdown was directly related to the bursting of the housing bubble and the tight job market. Prior to the recession it seems that the college-educated population, the most mobile segment of the population, relocated to both pursue a job as well as to take advantage of escalating housing prices.

In short, as the migration of young college-educated people slowed, many of the cities, like Milwaukee, began to hold on to this population. As opportunities shrank elsewhere, there was a renewed emphasis on retention. So, the fact that Milwaukee stabilized its population is likely due to the overall decline in migration nationally. By the end of 2011 Milwaukee's population ranked 28th nationally.[6]

Per Capita Income

Perhaps the most comprehensive measure of a city's economic vitality is per capita personal income (PCPI). As with the other measures examined in this report, we look at per capita personal income from two perspectives: Has it been growing or shrinking for Milwaukee, and how does it compare with the average of the other 50 largest American cities?

As we noted in our earlier study, in 1970 the per capita personal income in Milwaukee was near average for large American cities. Chart 2 shows that since 1970 Milwaukee experienced growth in real inflation-adjusted dollars in its per capita personal income. In 2011, Milwaukee PCPI stood 22% higher than 1970 PCPI. That is the good news.

However, Chart 2 is troubling in two ways. First, the growth in PCPI in Milwaukee has consistently lagged the growth in the average city in our data set. In 2000, the average city in our data set had $6,702 more income per capita than Milwaukee. By 2011 that gap had grown to $8,695 (the gap is measured in constant 2013 U.S. dollars). Milwaukee incomes fell behind those in other cities in every decade since 1970. The stubborn endurance of the gap suggests there is a structural problem with the Milwaukee economy. A later section of this report will suggest an explanation for the most significant structural flaw in the Milwaukee economy.

The second important conclusion to draw from Chart 2 is what it shows about the 2000-2011 period for cities generally. Obviously, the recession had a significant impact on the economy of large cities everywhere. After four decades of steady growth in per capita incomes, in the most recent decade, the growth in per capita personal income screeched to a halt. Yet the recessionary period of 2000-2011 was particularly harsh on Milwaukee, which saw its real per capita personal income drop by 8%. Any drop in the purchasing power of a city's people is cause for concern. The magnitude of the drop — 8% in inflation-adjusted dollars — in Milwaukee's PCPI shows how harshly the recession treated the city. While Milwaukee's population stabilized, incomes surely did not.

Before we move away from PCPI, let's look at the rest of the cities in our group. Table 1 shows the five top performing cities (in terms of PCPI growth) during the most recent decade. It also shows the bottom five cites, those that were most severely affected by the recession. While the average city saw a 0.2% increase — the flat growth in Chart 2 — there was quite a difference among cities as to how they weathered the decade. It is surprising to see Oakland and Baltimore among the top performers. The list of cities that did poorly during the decade holds few surprises. With the exception of Charlotte, it is a list of cities that have struggled in a post-industrial economy. The 8% decline in Milwaukee's per capita personal income placed the city among the bottom performers in the decade.

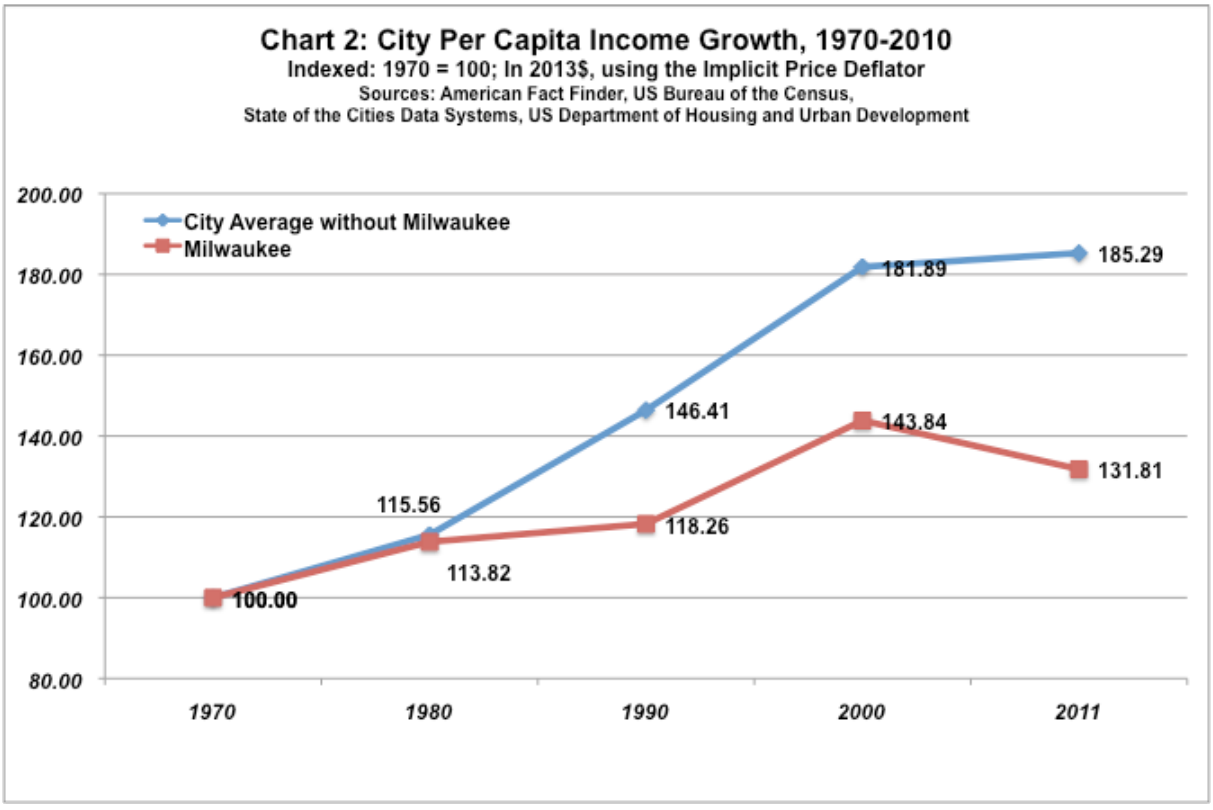


Table 1:
Best and Worst Performing Real City Per Capita Income Growth from 2000 to 2011 for Most Populous Cities

City	2000 Census PCI (in 2013 $)	2011 ACS PCI (5 Yr Est) (in 2013 $)	Percentage Change in PCI 2000-'11 (2013 $)
Washington, D.C.	$38,151	$45,439	19%
Baltimore	$22,601	$26,702	18%
New Orleans	$22,974	$26,511	15%
Oakland	$29,201	$32,716	12%
Boston	$31,087	$34,248	10%
Milwaukee	$21,540	$19,739	-8%
Charlotte	$35,707	$32,708	-8%
Cleveland	$19,024	$17,213	-10%
Columbus	$27,223	$24,394	-10%
Indianapolis	$28,807	$25,233	-12%
Detroit	$19,591	$15,762	-20%
Average	$27,958	$28,489	2%

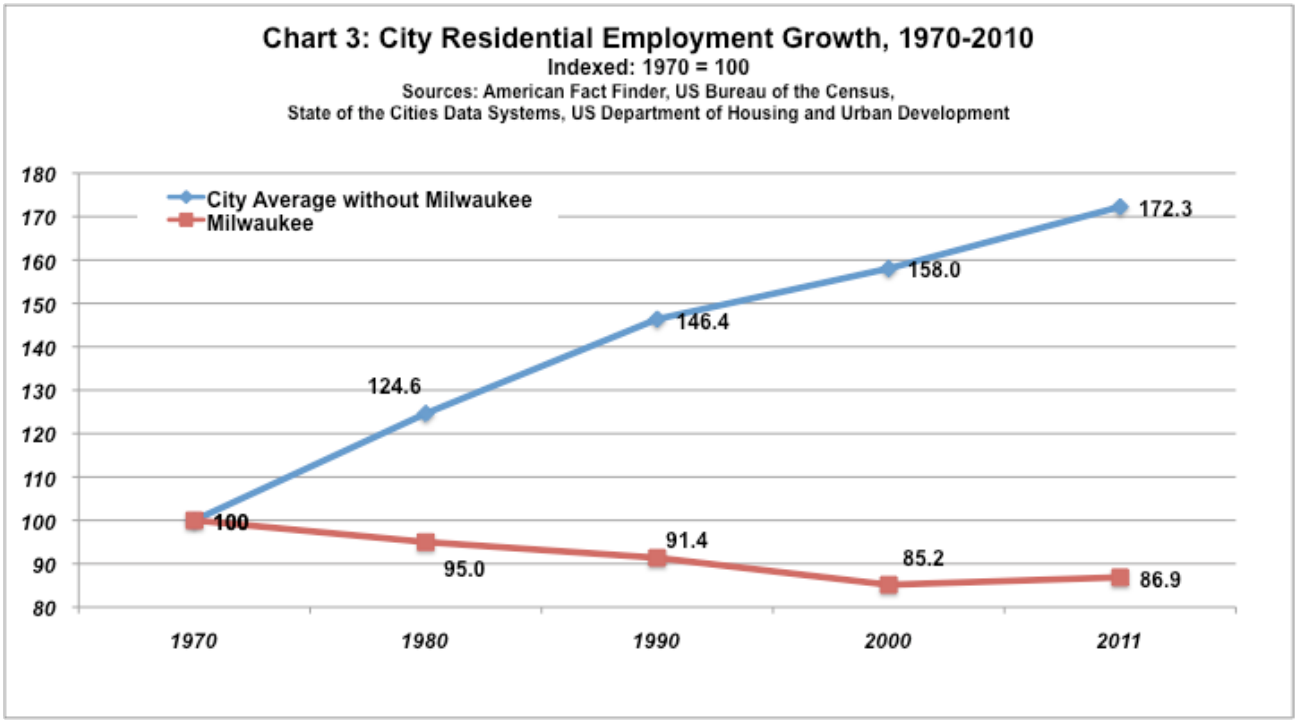
Source: *American Community Survey, U.S. Census Bureau*

In 2011, Milwaukee's per capita personal income stood at $19,739, which ranked Milwaukee 47th among the 50 largest cities, a drop from 44th in 2000. Through the 40 years covered in this review, through all the changes affecting national, state and local economies, Milwaukee has continued to fall further and further behind other cities. Imagine what this track record has done to the public psyche. The public has had 40 years to adjust to the lower-than-average performance. It's unlikely that many citizens of Milwaukee would find it surprising that per capita incomes in Milwaukee rank among lowest of the 50 largest American cities. Most current citizens probably cannot recall a time when Milwaukee's economic performance rivaled that of other great American cities. There is a general acceptance of Milwaukee's flagging economic performance.

Employment

Turning to our data set of the 50 largest U.S. cities, we see something rather surprising. We might have expected to find the 2000-'11 period to have been a difficult one for large cities. However, we found that during the decade, among the 50 cities in our database, average employment rose by 9%. (Of course, it should be noted that this measure simply counts the number of jobs, not the quality of those jobs.)

By contrast, the period was not good for Milwaukee employment. During the period, employment in Milwaukee grew by 2% from 256,244 to 261,400. Chart 3 shows that this marginally reverses the trend of slow, steady job loss since 1970. However, it also shows that Milwaukee continued to fall behind the job growth experienced by the average large city.



Economic Growth Theory

From the data presented in the previous section, we have seen Milwaukee slide down the ranks of the cities in our database. The slide began in the 1970s and continued through every decade since, including the period that ended in 2011. Our earlier study pointed to two explanations for why some cities prosper and others fall behind.

Past is Prologue

The best predictor of a city's future success is its past economic performance. So if a city's economy is on the upswing, that trend is likely to continue in the future. Unfortunately, for many cities the reverse is also true. In short, prosperous cities tend to become even more prosperous over time while other cities fall further and further behind. Researchers Edward Glaeser and Jesse Shapiro highlighted this phenomenon,[7] writing that there has been an "extremely strong relationship in city growth across decades. Cities that grew fast in the 1980s grew fast in the 1990s."

Through the decades, economically successful cities have had elements that are important to the broad contemporary economy, e.g. Milwaukee's success in the first half of the 20th century due to its capacity to supply the machinery that fueled the world's economy. In addition, successful cities are likely able to best adapt to changing external economic factors, e.g. globalization. Economists describe successful cities as having thick job markets and a thick supply of talent. Both employers and workers have a wide range of opportunities. Not surprisingly, employers, entrepreneurs and talented workers are increasingly drawn to these thick marketplaces to the detriment of other cities.

Does that mean that cities like Milwaukee are doomed, caught in a downward spiral with no hope for recovery? No. There have been notable exceptions to the trend. In our 2004 report we cited cities like Austin, Seattle and Charlotte, all of which had experienced greater economic growth than would have been predicted. While we see these places today as centers of innovation, it wasn't always so. In 1970, the first year for which we collected data, residents of these cities could not have foreseen the growth that was about to occur. All of these cities underwent transformations of their economies in ways that made them productive contributors to the new economy. Yet, these cities are outliers among the 50 cities we studied. The growth or contraction of most cities was more predictable.

Consider Seattle. It is difficult to recall that in 1970, metro Milwaukee and metro Seattle had comparable cachet and economic muscle; Seattle ranked 17th and Milwaukee 18th in their shares of U.S. personal income.[8] This was an era before Microsoft, before Amazon and before Seattle's climb up America's ladder of successful cities. In 1971, The Economist called Seattle the "city of despair," adding, "Many people think (Seattle) is the worst example of urban decline in any sector of America since the Great Depression."[9] Accompanying the article was a picture of a billboard proclaiming, "Will the last person leaving Seattle turn out the lights." The point is that cities can and do change.

Let's examine the actual performance of cities in our database during the most recent decade. Between 2000 and 2011, the average city saw its inflation-adjusted per capita personal income increase by 2%. Table 2 shows the 10 cities in the database with the lowest per capita income in 2000. If it is true that past performance is a predictor of future success, we would expect that cities with low per capita incomes would have below-average income growth in the 2000-'11 period. And, for the most part, that is what the data show. Cities in this group experienced among the lowest income growth, e.g. Detroit (-20%), Cleveland (-10%), Milwaukee (-8%). However, there are notable exceptions. For example, Baltimore experienced 18% growth, the second highest of all the cities in our database. Less dramatic is the income growth in Miami (6%), Fresno (3%) and Philadelphia (2%). We caution against over-interpreting short-term numbers, because 10 years is the blink of an eye in the economic life of a city. However the point is that, while it is a challenge for a city to turn around its economic fortunes, it is not impossible.

The Power of Human Capital

The second factor that determines the economic success of cities is the educational profile of the city, that is, the percentage of the population holding a college degree or better. In academic circles, this is referred to as the city's human capital. While cities can do nothing to affect past economic performance, they can take action to add to their inventory of human capital.

We developed a model of economic growth in our earlier study.[10] The model, which was based on tracking the performance of 50 cities for 30 years, found there to be two similar but distinct human capital measures that influence — and, we would argue, determine — a city's economic prosperity. Cities that outperformed the average city in the 1970-2000 period were those that had a higher-than-average percentage of the population holding a college degree or cities that experienced higher-than-average *growth* in the percentage of the population holding a college degree or better. In other words, cities that have adapted to the new economy, one based on innovation and productivity related to human capital, have reaped the economic benefits. This also explains why a handful of cities in our database have improved their economic

Table 2:
Growth in Per Capita Personal Income 2000-'11
Among Cities with the Lowest Per Capita Personal Income in 2000

Rank	City	2000 Census PCI (in 2013 $)	Percentage Change in PCI 2000-'11 (2013 $)
41	Baltimore	$22,601	18%
42	Philadelphia	$21,977	2%
43	Tucson	$21,728	-2%
44	Milwaukee	$21,540	-8%
45	St. Louis	$21,443	6%
46	Miami	$20,138	6%
47	Fresno	$19,981	3%
48	Detroit	$19,591	-20%
49	El Paso	$19,153	1%
50	Cleveland	$19,024	-10%
	Average	$27,958	2%

Source: *American Community Survey, Census Bureau*

performance much more than average. They are the ones that added more college graduates to their populations than would have been expected.

In our earlier study, we noted that Austin, Charlotte, Portland, San Francisco, San Jose and Seattle had all dramatically increased their college-educated populations in the 1990s and were all reaping the rewards. Similarly, in the 2000-2011 period, Baltimore increased its per capita income by 18% and Miami had improved by 6%, both well above average. In 2000, both cities were in the bottom 10 of our database in terms of income, yet both experienced income growth well above average. A good deal of the credit should be attributed to their addition of human capital. While the average city experienced a 4.4% increase in its college-educated population over age 25, Baltimore and Miami grew their college-educated populations over 25 by 6.7% and 6.2%, respectively. While this increase in human capital might not completely explain why these cities did as well as they did, our pervious analysis suggests it was a major contributing factor.

To sum up, every city has a legacy, a panel of characteristics that make it unique. Moving forward, it is more likely that a city will reinforce that legacy rather than adopting a new one. Thus, cities tend to reinforce economic trends: The rich get richer and the poor get poorer. However, in recent decades, those cities that have risen up the ranks of economic prosperity are those that have broken free of their legacy and adapted to the major economic trend of our time. The prosperity of a city is much more determined by the educational profile of its workers than it is by geographic location or even the demand for products that are produced there. Cities that are able to overcome the rich-get-richer maxim are those that do a better job than other cities in attracting a college-educated population.

How does Milwaukee Measure Up?

While a handful of cities have shaken off their legacies and begun to climb the economic ladder, at the end of 2011 many cities, including Milwaukee, had not. Milwaukee can only look longingly toward Austin, Seattle, Charlotte, Baltimore and nearly every other large American city. Milwaukee is a city with a 100-year history as a blue-collar manufacturing center, a heritage that has proven to be a heavy burden as it attempts to catch up to its former peers in the race to prosperity. Milwaukee's continued sluggish economic performance surprised us, because the city, the region and the state have made great efforts to adapt Milwaukee's economy to the new economy. The region has formalized a coordinated approach to economic development; there has been a concerted effort to support a very innovative water initiative; and the downtown has witnessed a burst of condo and apartment development, much of which is home to young professionals. Yet by the end of 2011 (and we suspect continuing until the present), we have not yet seen a positive manifestation of these developments in our data.

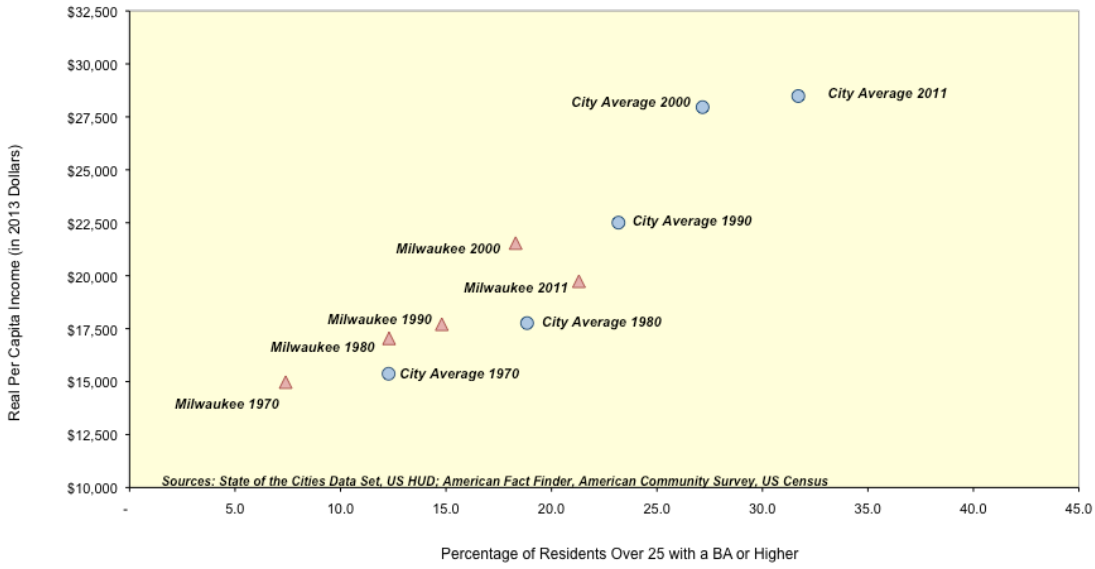
Most telling is Milwaukee's inability to keep pace with other cities in attracting college-educated workers. This is not to say that the number of college graduates in Milwaukee is declining. It is not. In 2000, Milwaukee had 64,742 college graduates living in the city, which represented 18.3% of the over-25 population. By 2011, Milwaukee had 75,282 college-educated residents, which represented 21.3% of its over-25 population. While Milwaukee made progress in attracting college-educated residents, the gain was less than other cities in our database.

Census data show that in 2000, the percentage of college graduates in the average city in our database (excluding Milwaukee) represented 27.2% of the over-25 population. By 2011 the percentage of college graduates had increased to 31.7% of the over-25 population. Chart 4 shows the relationship between the percentage of college-educated population with the per capita personal income over the period 1970-2011. The chart plots the relationship for Milwaukee as well as for the average of the other 49 cities in our database. Per capita incomes are stated in inflation-adjusted dollars.

The message from the chart is clear. Since the 1970s, there has been a seismic shift in the economic landscape for American cities. Human capital is what determines the wealth of a city. Why? Because human capital drives the innovation and improved productivity that allow industries to efficiently produce the goods and services that are in demand in the United States and abroad. Where cheap land and cheap labor once fueled urban growth, the education of a city's citizens is now the key determinant of growth and prosperity.

So let's look at what the chart tells us. First, looking at the vertical axis, we see a dramatic upward climb in PCPI for the 49-city average (the database without Milwaukee included) over time. Per capita income has nearly doubled in inflation-adjusted dollars. This trend reflects both the growth of the U.S. economy in general and the movement of people and economic activity into urban centers.

Chart 4: Milwaukee Compared to the Avergae Most Populous City, 1970-2011
Real PCI and Educational Attainment



However, the upward trend was stalled in the 2000-'11 period. As we've noted, incomes were nearly flat in a period that experienced both a mild and a severe recession.

Contrast this with what happened in Milwaukee. In 1970, Milwaukee per capita income was nearly equal to incomes of the 49-city average. Since then, Milwaukee's performance has diverged from the average city. In the 2000-'11 period, the divergence significantly increased. The average city weathered the period of recession by holding incomes steady. By contrast, real per capita income in Milwaukee actually declined.

Now let's turn to the horizontal axis, which tracks the percentage of the population with a college degree. Here we see that in 1970, the average city had 12.5% of its over-25 population holding a college degree. By 2011, that had grown to 31.7%. In the 2000-'11 period, Milwaukee, too, saw its college-educated population grow, from 18.3% to 21.3% of the over-25 population.

Recall from our earlier discussion that two factors determine the importance of the college-educated population of a city. The first is the percentage of the population holding a college degree or better. Milwaukee lags the average city in our database by about 10 percentage points, which is a large gap. The second factor is the rate of increase of the college-educated population. In the 2000-'11 period, Milwaukee increased its population of college-educated residents over 25 by 3 percentage points. The average city in our database increased its college-educated population by 4.5 percentage points (from 27.2% in 2000 to 31.7% in 2011). So for both factors, Milwaukee comes up short.

It is also interesting to see the variety of cities that appear to benefitting from growing their college-educated populations. Table 3 shows the 10 cities in our database that experienced the most significant growth in per capita personal income during the 2000-'11 period. While the average city in the database saw inflation-adjusted income grow by just 2% (the overall US economy shrank by 0.5%), the top performing cities saw their incomes grow by 8.0% to 19.1%.

Since we are examining the impact of a college-educated population, for each of these top-performing cities we have also shown the percentage of their over-25 population holding a college degree. We have also shown the growth of the college-educated population in the 2000-'11 period. You will notice that there is a wide variation in the percentage of population with college degrees, ranging from 25.8% in Baltimore to 50.5% in Washington, D.C. However, when we look at the column on the far right, we see what these cities have in common. They all had higher-than-average growth in the percentage of their population holding college degrees. Nine of the top 10 cities in terms of economic growth experienced above-average growth in their college-educated populations. The table also shows that, while Milwaukee saw its college-educated population grow by 3 percentage points, the growth was below average among cities in our database.

Table 3:
Top 10 Cities in Per Capita Income Growth 2000-'11

City	Percentage change in PCI 2000-'11 (2013 $)	2011 ACS: % of 25 or older with a bachelor's or higher	2000-'11 percentage point change in people over 25 with a bachelor's or higher
Washington, D.C.	19.1%	50.5	11.4
Baltimore	18.1%	25.8	6.7
New Orleans	15.4%	32.3	6.5
Oakland	12.0%	37.2	6.3
Boston	10.2%	42.8	7.2
Long Beach	10.0%	28.7	5.0
Virginia Beach	9.6%	32.3	4.2
San Diego	8.9%	41.0	6.0
New York	8.8%	33.7	6.3
Atlanta	8.0%	46.1	11.5
Milwaukee	-8.4%	21.3	3.0
Average	4.9%	31.7	4.5

Why the Average Citizen Should Care About the College Graduate Population

The matter of a city's economic growth might seem an abstract concept. But the economic vitality of a city affects the incomes of all citizens and therefore goes right to the heart of its quality of life. A city's economic growth touches all citizens, the college-educated as well as the broader population. It seems obvious that a thriving economy holds the prospect of benefiting all citizens, yet policy discussions too often stray from this simple concept.

In our earlier report we examined what impact having a more educated population has on the rest of the city. For an answer we looked to the work of Matthew Drennan, a University of California-Los Angeles professor who wrote about the relationship between a city's per capita income (our measure of prosperity) and poverty. Drennan found that a 1% increase in metro per capita income yields a 1% drop in central city poverty.[11] He even suggested that all municipal agencies charged with improving the life chances for the city poor should focus on general economic growth in the city.

While Drennan's work was published in 2002, a more recent study examined just how much an educated population benefits a city's broader population. University of California-Berkeley labor economist Enrico Moretti reviewed how various cities recovered from the 2008 recession.[12] His study, which is based on data from 320 metro areas, echoes and expands on the findings in our 2004 report. He focused on what he describes as "the divide." He writes, "This divide — I will call it the Great Divergence — has its origins in the 1980s, when American cities started to be increasingly defined by their residents' levels of education."[13] This latter category of cities experienced a milder recession and saw more substantial job growth in the post-recession period.

Too often, the link between education and a city economy seems little more than an academic exercise. People don't see how it affects them and their quality of life. After our earlier report was published, we often heard the comment that Milwaukee doesn't need more yuppies to get the economy growing. Moretti's research lays out two powerful reasons why all people in Milwaukee and other cities should care about having a more educated population. First, having a more educated work force will create more jobs of all kinds. Summarizing this point in a *Wall Street Journal* piece,[14] Moretti notes that, "for each new innovation job in a city, five additional jobs are created — not only in professional occupations but also nonprofessional occupations (waiters, hairdressers, carpenters)."

In addition, Moretti, drawing on earlier research, notes that having more college-educated people in a city will have the effect of increased salaries for other workers in the city.[15] The smallest impact is on workers with college degrees. For every 1% increase in the college-educated population in a city, the salary for a college-educated worker in that city will be 0.4% higher. The impact on salaries paid to those with a high school diploma will be four times as great, and for high school dropouts, salaries will be increased by 1.9%. This might seem counterintuitive, but the impact of increasing the college-educated population is actually five times greater for a high school dropout than for a person with a college degree. In short, having a more educated, innovation-oriented work force will create more jobs and will result in higher pay for jobs throughout the income spectrum.

Of course it is not possible to attribute robust economic growth solely to the growth in the college-educated population. However, our analysis shows that it is clearly the most important factor. It should be emphasized that the growth in a college-educated population was important in two very different decades: the 1990s, a decade marked by robust growth, and the 2000s, a decade defined by recession and no economic growth. The educational makeup of a city's population has become the fuel that supports economic growth in contemporary urban economies, regardless of the overall condition of the national economy.

Steps Toward a New Milwaukee

As already noted, by 2011, 31.7% of the 25-and-over population of an average city held a college degree. Milwaukee lags far behind. In the 2000-'11 period, Milwaukee saw its college-educated population grow from 64,742 (18.3% of the 25-and-over population) to 75,282 (21.3% of the 25-and-over population) — an increase of 10,540 over 11 years.

Increasing the number of people with bachelor's degrees by almost 1,000 per year (958 to be exact) might seem acceptable, or even promising. But the highly educated population of other cities has been growing far more rapidly.

The math is revealing. By 2011, Milwaukee had 352,687 people 25 years old or older. Had Milwaukee been merely average in 2011, 31.7% of those over 25 would have had a bachelor's degree — or approximately 111,800 people. The city, in other words, would have had an additional 36,500 people 25 or older with a bachelor's degree.

In sum, between 2000 and 2011, Milwaukee increased its number of people 25 or older with a bachelor's degree by 958 per year. Assuming its overall population remains steady, Milwaukee could quintuple that number and it would still take nearly a decade just to be average — and that would be only if all competitor cities stayed still, i.e. if "only" 31.7% of their 25-and-over population continued to have a bachelor's degree.

Looked at another way, Milwaukee — if it is to catch up to other large cities where nearly a third of the population has a bachelor's degree — must, at a minimum, start keeping or attracting several thousand additional college graduates each year for the next decade.

That sort of change would yield a Milwaukee that is very different from the Milwaukee of today. Key to this transformation is for the business and political leadership to acknowledge that such a change would improve Milwaukee's economy.

Our analysis and that of other objective observers pegs the Milwaukee economy in the lower tier of major U.S. cities. As a nation, we have become all too familiar with the political divide that separates us from each other. Less understood is the economic divide that separates us based on where we live. Residents in some cities simply make more money. Those cities have prospered because they have collected more college graduates and as a result they have more jobs and the jobs pay higher wages. Successful cities have more college graduates, while less successful cities have fewer college graduates. Milwaukee is in the latter category.

Our data show that Milwaukee has made strides in increasing the number of college-educated residents. However, compared to other large U.S. cities, the pace has been too slow. If we liken Milwaukee's economic challenge to a competition — and it surely is a competition — we see how far behind Milwaukee is. Milwaukee's performance (in terms of per capita income) is about where the performance of other cities was in the mid-1980s. Similarly, Milwaukee's storehouse of college-educated residents is about where other cities' storehouse was in the mid-1980s. The city simply does not have the thick market for college graduates that the U.S. economy demands.

The relative shortage of college grads in Milwaukee is a structural problem, one that has been decades in the making. Structural problems do not lend themselves to quick turnaround, and we should not expect that any single fix will solve the problem. What is needed is an array of strategies that will grow organically from the citizens of Milwaukee. None of the following recommendations will, by itself, create more workers with college degrees. Rather, we hope these recommendations will lead to new approaches that in turn will help lead to more college graduates living in Milwaukee.

- **Incorporate the goal of increasing Milwaukee's college graduate population into every economic strategy, plan and initiative.**

There is no shortage of economic development plans and strategies that apply to Milwaukee. At both the state and local level, we find public and private sector plans and strategies for Wisconsin and for Milwaukee. They include the "Be Bold" initiative from Competitive Wisconsin, "The Future Wisconsin Project" from Wisconsin Manufacturers and Commerce, and several initiatives from the Wisconsin Economic Development Corporation. More specific to Milwaukee are the "Framework for Economic Growth" from Milwaukee 7, a regional economic organization; "The Comprehensive Milwaukee Plan" from the city of Milwaukee Economic Development Commission; the Metropolitan Milwaukee Association of Commerce's benchmarking effort; and many initiatives supported by the Greater Milwaukee Committee. In addition, many other organizations have addressed how to improve Milwaukee's economic future.[16]

We will not address the soundness of any of these efforts, but we find that each has merit. However, in none of these plans and initiatives did we find an explicit reference to increasing the college-educated population of Milwaukee. Given what our research says about the importance of attracting this population, we would suggest that each of the plans and initiatives incorporate adding to the college-educated population. Adding college graduates should not replace or diminish the many objectives we found on the planning front, but rather this goal should be incorporated into every aspect of economic planning affecting Milwaukee.

- **Focus on both jobs growth and income growth.**

As we emerge from the 2008 recession, our business and government leaders have been uniquely fixated on the growth of jobs. Monthly and quarterly jobs reports have been as well read in the halls of government as *The Almanac of American Politics* once was. This fixation on jobs is understandable given how the recession affected so many Wisconsin families. However, for a city like Milwaukee that is struggling to climb the ladder of successful American cities, a fixation on job growth alone could run counter to the city's long-range economic interest. There must be equal attention to measuring and tracking income growth. As we said in our 2004 report, a focus on income growth "recognizes that all jobs do not contribute equally to the city's economy." Those jobs that yield income growth (jobs that are predominantly filled by college-educated workers) should be especially targeted.

- **Urge state and local political leaders to make a commitment to increasing the college-educated population.**

While the public sector is a contributor to economic growth, its impact is limited. The landscape is littered with well-intentioned government programs that have spent a good deal of money with very limited results. Workers and employers in the private sector make most decisions that will affect economic growth. Effective government programs can be catalytic, but long-term economic growth is the province of the private sector. Yet government is quick to create programs to lure a business, encourage capital expansion or promote hiring. Wisconsin state and local governments have a wide range of economic development "tools" to encourage private sector growth. The list includes enterprise zones, tax-incremental districts, tax credits of all kinds, loans, grants and even direct investment in selected businesses.

We are not suggesting the creation of yet another program. What we are suggesting is a commitment by state and local leaders to increase the college-educated population of Milwaukee. Such an explicit commitment by the governor, mayor and county executive would undoubtedly reorient the machinery of government, including tax and investment policies, to further that goal. While some existing government programs are aimed at encouraging "innovation" businesses and, therefore, more college-educated workers, the goal of increasing Milwaukee's college-educated workers is not explicitly claimed by any elected leaders. If government leaders are serious about growing the Milwaukee economy, that must change.

- **Improve support for the University of Wisconsin-Milwaukee.**

Universities can play an important role in a city's economic growth because the presence of a university increases the supply of college graduates to that city and because having a university attracts others from outside. However, it is not enough just to have a university unless that university is positioned to maximize its economic development potential. Milwaukee is home to numerous universities. While many of them play a role in enhancing the Milwaukee economy, we will restrict our recommendation to UWM.

The leader of UWM recently moved to Marquette University, a move that naturally cast a light on perceived and real deficiencies at UWM. The primary focus has been the financial support provided to UWM. This is a healthy development. Frankly, we believe that a dollar invested in UWM can have a greater economic development impact because of where the university is — Milwaukee. Just because of its size, improving the Milwaukee economy stands to have an outsized impact on the Wisconsin economy. Yet the state's allocation of higher-education dollars does not reflect Milwaukee's disproportionate potential impact on the Wisconsin economy.

In particular, UWM should have the capacity to fend off raids on its current star faculty as well as the capacity to attract star faculty from other universities. The foundation of any top university is an ability to attract the best in the field. UWM should have such a capacity if it is to maximize its impact on the Milwaukee economy.

In addition, graduates of UWM are more likely to stay in the Milwaukee area to work. A study by Lightbourn **and White found that graduates of UW schools overwhelmingly (60%) return to their home region after**

and White[17] found that graduates of UW schools overwhelmingly (60%) return to their home region after graduation. "The draw is especially powerful in the Milwaukee region, where fully 72% of students remain in metro Milwaukee after graduation. UWM will always play a significant role in supplying the human capital to support the Milwaukee economy."

As an aside, an increased state government investment in UWM would send three interesting signals. First, it would signal an end to the counterproductive battle between Milwaukee and the rest of the state that has raged in the state Capitol for decades. Second, it would signal that Wisconsin recognizes just how firmly the state's economic prospects are tied to the success of the state's only first-class city.

Third, it would signal that Wisconsin's leaders recognize the important role a university can play in growing a city's economy.

These are but four of perhaps dozens of steps that could be taken to further the goal of increasing Milwaukee's college-educated population. However, we feel they embody a commitment to that clear goal.

Appendix

In our earlier study, we constructed a model predicting city per capita income, suggesting that past economic growth and past human capital stock in a city were the significant determinants of a city's subsequent per capita income level.[18] In that model, 80% of a city's per capita income level was explained by three variables: prior educational attainment levels; the change in educational attainment over the previous 10 years; and a city's per capita income growth 10 years earlier. For our update, we re-tested the model to see if those relationships continued into 2011. What we found was interesting. Nearly 81% of a city's per capita income was explained by just one variable: educational attainment in a city 10 years earlier. In our update, per capita income from 10 years prior explained an additional 5% of a city's per capita income level, and the change in educational attainment

Our re-test of the model suggests that the importance of educational attainment to city per capita income has continued over the last 10 years and may have become slightly more pronounced during that time period, with prior levels of educational attainment or "stock" becoming more important as time goes by. Of course, elevating the educational profile of a city will not *guarantee* higher-than-average growth in per capita incomes. However, knowing only the percentage of college-educated residents in a city 10 years earlier goes a long way (83%) toward explaining the considerable distinction between cities, why some cities thrive economically and others do not. In other words, a city that attracted more college graduates a decade ago will be much more likely to see incomes increase over those 10 years.

Appendix Table 1: Predicting City PCI Regressions

Predicting City Real Per Capita Income, 2014 Version 1	**Coefficient**	**T-Value**	**Significant at:**
Intercept	9531.6	17.7	0.00
1. City Educational Attainment 10 years earlier (% of residents over 25 with a bachelor's or higher)	719.1	29.1	0.00
Adjusted R-Square	0.81		
Durbin-Watson	1.73		
F-Value	848.7		
Number of Observations	200		
Predicting City Real Per Capita Income, 2014 Version 2	**Coefficient**	**T-Value**	**Significant at:**
Intercept	8619.16	17.62	0.00
1. City Educational Attainment 10 years earlier (% of residents over 25 with a bachelor's or higher)	688.76	31.1	0.00
2. Per Capita Income Change 10 years earlier	0.5	7.6	0.00
Adjusted R-Square	0.85		
Durbin-Watson	1.91		
F-Value	573.81		
Number of Observations	200		
Predicting City Real Per Capita Income, 2014 Version 3	**Coefficient**	**T-Value**	**Significant at:**
Intercept	8329.41	15.0	0.00
1. City Educational Attainment 10 years earlier (% of residents over 25 with a bachelor's or higher)	687.76	31.05	0.00
2. Per Capita Income Change 10 years earlier	0.472	6.7	0.00
3. Change in City Educational Attainment, current year (% of residents over 25 with a bachelor's or higher)	81.0	1.1	0.28
Adjusted R-Square	0.85		
Durbin-Watson	1.94		
F-Value	383.28		
Number of Observations	200		

Appendix Table 2: Change in Educational Attainment 2000-'11 for the 50 Most Populous U.S. Cities

City	State	2000 Census: People over 25	2011 ACS (5 YR EST): People over 25	2000 Census: People 25 or > with a bachelor degree or Greater	2011 ACS: People 25 or > with a bachelor degree or Greater	2000 Census: % of 25 or > with a bachelor degree or Greater	2011 ACS: % of 25 or > with a bachelor degree or Greater	2000 to 2011 change in People with a bachelor degree or Greater	2000 to 2011 % change in People with a bachelor degree or Greater
Tucson	AR	301,036	326,587	68,863	79,902	22.9	24.5	11,039	16.0%
Phoenix	AR	795,297	890,425	180,443	225,969	22.7	25.4	45,526	25.2%
Mesa	AR	245,104	284,236	52,929	66,933	21.6	23.5	14,004	26.5%
San Francisco	CA	595,805	616,042	267,992	316,462	45.0	51.4	48,470	18.1%
San Diego	CA	779,242	847,910	272,785	347,639	35.0	41.0	74,854	27.4%
San Jose	CA	570,755	616,157	180,122	225,635	31.6	36.6	45,513	25.3%
Oakland	CA	261,402	268,205	80,777	99,724	30.9	37.2	18,947	23.5%
Los Angeles	CA	2,308,887	2,472,041	589,061	754,243	25.5	30.5	165,182	28.0%
Long Beach	CA	277,410	289,444	66,424	83,112	23.9	28.7	16,688	25.1%
Sacramento	CA	254,921	297,212	61,042	86,854	23.9	29.2	25,812	42.3%
Fresno	CA	236,704	280,985	44,999	56,413	19.0	20.1	11,414	25.4%
Denver	CO	374,478	402,665	129,065	166,175	34.5	41.3	37,110	28.8%
Colorado Springs	CO	228,576	265,705	76,702	95,935	33.6	36.1	19,233	25.1%
Washington D.C.		384,535	407,756	150,237	205,651	39.1	50.5	55,414	36.9%
Jacksonville	FL	468,364	533,912	98,991	129,359	21.1	24.2	30,368	30.7%
Miami	FL	252,504	283,881	41,004	63,538	16.2	22.4	22,534	55.0%
Atlanta	GA	268,426	276,974	92,929	127,684	34.6	46.1	34,755	37.4%
Honolulu	HI	267,587	243,089	83,207	81,608	31.1	33.6	-1,599	-1.9%
Chicago	IL	1,815,896	1,772,555	462,783	583,180	25.5	32.9	120,397	26.0%
Indianapolis	IN	502,549	526,011	127,608	142,246	25.4	27.1	14,638	11.5%
Wichita	KS	216,488	239,282	54,962	66,760	25.3	27.9	11,798	21.5%
New Orleans	LA	300,568	212,143	77,407	68,594	25.8	32.3	-8,813	-11.4%
Boston	MA	377,574	389,917	164,252	166,991	35.6	42.8	32,739	24.4%

Baltimore	MD	419,581	407,022	80,324	105,171	19.1	25.8	24,847	30.9%
Detroit	MI	563,979	455,297	61,836	55,561	11.0	12.2	-6,275	-10.1%
Minneapolis	MN	243,409	250,683	91,027	112,024	37.4	44.7	20,997	23.1%
Kansas City	MO	287,046	302,860	73,824	91,210	25.7	30.1	17,386	23.6%
St. Louis	MO	221,951	210,822	42,338	58,431	19.1	27.7	16,093	38.0%
Omaha	NE	247,260	260,977	70,896	83,736	28.7	32.1	12,840	18.1%
Las Vegas	NV	313,205	381,426	56,989	81,838	18.2	21.5	24,849	43.6%
Albuquerque	NM	291,485	353,279	92,635	113,920	31.8	32.2	21,285	23.0%
New York	NY	5,276,946	5,505,880	1,446,833	1,855,137	27.4	33.7	408,304	28.2%
Charlotte	NC	352,546	467,711	128,427	184,913	36.4	39.6	56,486	44.0%
Columbus	OH	440,987	492,273	128,058	159,200	29.0	32.3	31,142	24.3%
Cleveland	OH	296,898	262,301	33,949	36,095	11.4	13.8	2,146	6.3%
Tulsa	OK	253,054	252,639	71,568	74,623	28.3	29.5	3,055	4.3%
Oklahoma City	OK	323,219	368,727	77,502	102,692	24.0	27.9	25,190	32.5%
Portland	OR	363,851	409,486	118,698	171,909	32.6	42.0	53,211	44.8%
Philadelphia	PA	966,197	973,241	172,641	220,398	17.9	22.6	47,757	27.7%
Nashville	TN	360,563	395,925	107,230	133,360	29.7	33.7	26,130	24.4%
Memphis	TN	398,824	408,405	83,219	94,156	20.9	23.1	10,937	13.1%
Austin	TX	401,137	496,404	161,937	220,990	40.4	44.5	59,053	36.5%
Dallas	TX	734,162	752,118	203,004	216,654	27.7	28.8	13650	6.7%
Houston	TX	1,201,154	1,321,370	324,039	375,477	27.0	28.4	51,438	15.9%
Fort Worth	TX	324,605	439,442	72,313	113,640	22.3	25.9	41,327	57.2%
San Antonio	TX	696,022	811,201	150,680	193,480	21.6	23.9	42,800	28.4%
El Paso	TX	334,043	383,149	61,217	83,826	18.3	21.9	22,609	36.9%
Virginia Beach	VA	266,627	283,791	74,949	91,768	28.1	32.3	16,819	22.4%
Seattle	WA	409,582	438,782	193,322	244,885	47.2	55.8	51,563	26.7%
Milwaukee	WI	353,305	352,687	64,742	75,282	18.3	21.3	10,540	16.3%

Endnotes

[1]The Bureau of the Census implemented the American Community Survey after the 2000 Decennial Census to replace the "long form" survey previously included in the decennial census questionnaire. See *American Community Survey Information Guide*, U.S. Department of Commerce, Economics and Statistics Administration, U.S. Census Bureau, https://www.census.gov/acs/www/about_the_survey/acs_information_guide/

[2]George Lightbourn and Stephen Agostini, *Wisconsin's Quiet Crisis: Why Building a New Milwaukee Economy Matters to Wisconsin*. Wisconsin Policy Research Institute, January 2004.

[3]In 1970 GDP in metro Milwaukee accounted for .77% of U.S. GDP. By 2000 GDP in metro Milwaukee accounted for .59% of U.S. GDP, a decline of 24%.

[4]*Population of the 100 Largest Urban Places*, U.S. Census Bureau, June15, 1998.

[5]William Frey, Migration Declines Further: Stalling Brain Gains and Ambitions, Brookings Institution, January 2011.

[6]Fact Monster, Top 50 in the U.S. by Population and Rank, http://www.factmonster.com/ipka/A0763098.html.

[7]Edward Glaeser and Jesse Shapiro, *City Growth and the 2000 Census: Which Places Grew and Why*, The Brookings Institution, May 2001.

[8]George Lightbourn and Stephen Agostini, *Wisconsin's Quiet Crisis: Why Building a New Milwaukee Economy Matters to Wisconsin*. WPRI, January, 2004.

[9]City of Despair, *The Economist,* May 22, 1971

[10]The model is discussed on pages 12 and 13 of the earlier study. A detailed statistical description of the model is included in Appendix 1 of the report.

[11]Matthew P. Drennan, *The Information Economy And American Cities*, The Johns Hopkins University Press, Baltimore, Md., 2002.

[12]Enroco Moretti, *The New Geography of Jobs*, Houghton Mifflin Harcourt, 2012.

[13]Moretti's work focuses primarily on "innovation jobs," a wide range of jobs, almost all of which require a college education. The relationship between Moretti's "innovation jobs" and the college degree that is the focus of this report is strong enough that we are citing his research on the value of college-educated people to the Milwaukee economy.

[14]Enrico Moretti, *Where the Good Jobs Are — and Why,* Wall Street Journal, September 17, 2013.

[15]Enrico Moretti, E*stimating the Social Return of Higher Education: Evidence from Longitudinal and Repeated Cross-Sectional Data*, Journal of Econometrics, 2004.

[16]For a more complete listing of economic development plans and initiatives see, *Assembling the Parts: An Examination of Milwaukee's Economic Development Landscape*, The Public Policy Forum, November 2011.

[17]George Lightbourn and Sammis White, *Moving the Milwaukee Economy Forward: The Five Steps Necessary for Success*, WPRI, May 2008, p. 18.

[18]George Lightbourn and Stephen Agostini, *Wisconsin's Quiet Crisis: Why Building a New Milwaukee Economy Matters to Wisconsin*. WPRI, January, 2004, Appendix 1, pp. 28-31.

About the Authors

Stephen J. Agostini was Fiscal and Budget Administrator for Milwaukee County between 2004 and 2006, held various senior positions in Wisconsin state government between 1998 and 2003, and was Budget Director for the City of Milwaukee from 1994 to 1997. He has also worked in a senior finance capacity for the cities of Philadelphia, San Francisco, and Seattle. Since 2011 Mr. Agostini has served as the Chief Financial Officer for the US Consumer Financial Protection Bureau.

George Lightbourn retired as President of the Wisconsin Policy Research Institute in June of 2013 after serving as President since 2009. Prior to that, Mr. Lightbourn served two governors as Secretary of the Wisconsin Department of Administration. He has also served on numerous boards including the Wisconsin Investment Board, the UW Hospital and Clinics Authority Board, the Board of Directors of CMC Heartland Partners based in Chicago, the Monona Community Development Authority and the board of WCA Services, Inc. Mr. Lightbourn received a B.A. and M.A. from the University of Wisconsin-Madison. He is married and has three grown children.