Midwest Struggles To Shake Off Rust

Chicago and Minneapolis prove diversified economies are the key to sustaining growth, while the Midwest's overall dependence on manufacturing has caused the region to fall behind the national pace.

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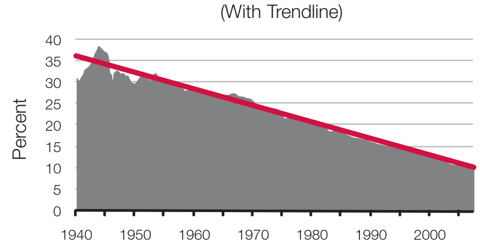
Ten years ago, the upper Midwest region had enough economic growth to almost shake off its distinction as part of the “Rust Belt.” Today economic growth in the region has once again fallen behind the nation and the culprit is clear: The region’s reliance on manufacturing keeps pushing it back into the “Rust Belt” category.

Manufacturing industries drive fluctuations in the region’s overall economic growth. As such, the region is more sensitive to global shifts in manufactured goods. Even as the country’s overall economy is rebounding, the six states in the upper Midwest--Illinois, Indiana, Michigan, Minnesota, Ohio and Wisconsin--face significant challenges on several fronts such as increasing unemployment, job creation and a growing per capita income gap between metro and non-metropolitan areas.

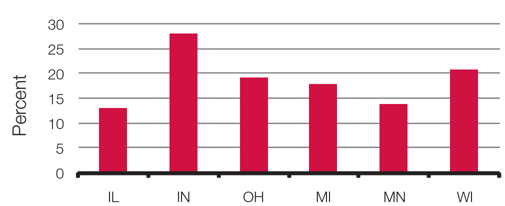
Beginning in 2000, more than half the cities in the region projected modest job growth and nearly a quarter of them did expand, but still a majority of the cities fell short of their expected job growth. These shortfalls reflect a tie between manufacturing and other industries. For example, business service firms in the region also underperformed because their clients are manufacturers. Even though the region may be trying to attract other industries to build a more service-oriented economy, the reliance on manufacturing is still high.

Manufacturing as a % of Total Employment
(With Trendline)



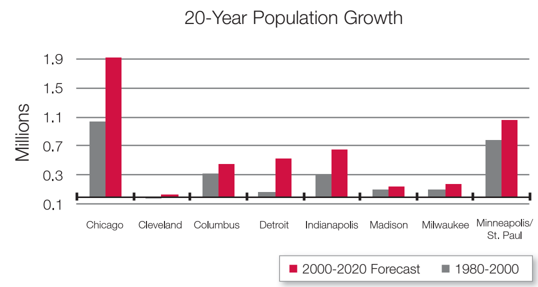
It is important to note that the decline in manufacturing is not a new phenomenon, but a long trend of at least 60 years. As with the decline in agricultural employment in the first half of the 20th century, the net loss of manufacturing jobs has been driven by technological improvements and steep productivity increases. In fact, manufacturing output continues to increase on an absolute scale, but requires fewer workers producing more efficient output.

Manufacturing as a Percent of State GDP

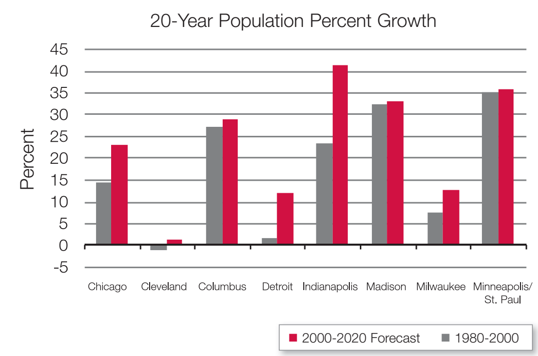


Demographic Trends. Our analysis indicates moderate-low growth in the upper Midwest region of the United States. In the 2007 white paper that I wrote with my

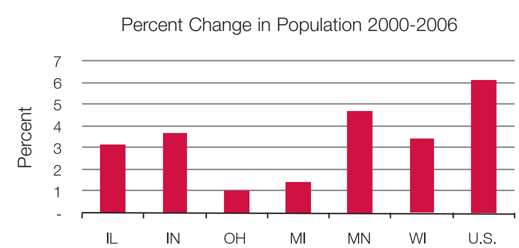
Wharton colleague, Dr. Albert Saiz, we indicate that the upper Midwest region of the U.S. will substantially lag behind the nation in population growth through 2020. This conclusion is based on demographic, fiscal, climatological and geographic variables. As such, the demographic trends and the lack of strong economic growth are unable to drive long-term real estate development opportunities in many parts of the region.



High unemployment rates, extreme climate and disproportionate dependence on manufacturing all hinder the region's growth. People are moving away from the upper Midwest for a better quality of life. The lion's share of U.S. economic growth is taking place in the southern and western portions of the country.



Innovation in the context of economic growth can come in the form of technological change or improvements that increase productivity levels, thereby propelling economic growth. Due to the upper Midwest's dependence on manufacturing, agriculture and unions, innovation in the region has been diminishing over time.



Education and skill level of the population are indicators of long-term growth. Research by Glaeser of Harvard and Saiz of Wharton (2003) has shown that in the last century educational achievements have been an explanatory factor for urban population growth. We find the same to be true for states and regions. In essence, regions with greater amounts of human capital, as reflected by the education levels in the workforce, grow significantly faster. Specifically, metropolitan areas with better educated workforces are more productive, and in turn attract population inflow. Regions like the Northeast and the West have the highest proportion of college graduates and are thus in the forefront of innovation. It is the ability of these regions to continue to attract, develop and retain the skilled workforce that drives growth. The upper Midwest's education levels--26% of population with a college degree--are below the national average of 28%, and thus per capita income growth also lags, while regional unemployment rates surpass the national average of 4.6%. Education programs that were once well above normal have eroded to mediocre by U.S. standards. An entrepreneurial spirit has become a dependency spirit mired in destructive union work rules.

One of the major disadvantages of the upper Midwest is the weather. Americans are increasingly leaving cold, damp and snowy areas for sunnier, drier climates. This attraction to areas based on physical and social environments represents a critical shift from people following jobs to jobs being relocated or created where people want to live.

MSA vs. U.S. Correlation. In an article that appeared in the Spring 2007 issue of the *Wharton Real Estate Review*, Linneman Associates examined how metropolitan area economies have performed in comparison to the U.S., in terms of employment growth, unemployment rates and median home price growth. As described in that paper, "For each MSA, we estimated a 'beta' that summarizes how a 100 basis point (bps) change at the national variable affects the local indicator. By definition, the beta for the U.S. is equal to one. Thus, an MSA with a beta of one registers (on average) an increase of 100 bps in employment growth (around its trend), when U.S. employment rises by 100 bps. A beta of 0.5 means that local growth rises by 50 bps (above trend) when the national rate increases by 100 basis points. If an MSA's beta is 1.5, it means that when the U.S. rises or falls by 100 basis points, the local area responds 50 percent more (around its mean). Hence, a beta that is less than one indicates that the MSA does not boom (or bust) to as great an extent as the national economy. The estimated betas provide a simple indicator of how coincident each MSA's economy is with movements of the national economy. As such, they provide insight on the demand volatility around trend (pro forma) during unusual boom or bust times (which occur, but are never modeled in pro formas)."

Based on Figure 1, we see that all of the indicated markets move in the same direction as the nation for all three metrics; employment growth, unemployment rate and median home price growth. That is, when U.S. employment is rising or falling, MSA employment also rises or falls, respectively.

Detroit's high employment and unemployment betas indicate job growth volatility notably greater than the nation. Therefore, it generally booms when the nation is adding jobs, but suffers badly on the downside.

It is interesting to note that while most MSA home prices correlate by the same magnitude, whether the national housing market is strengthening or weakening,

Figure 1

MSA Employment Growth Betas

MSA	Average Growth	Reaction to Rising National Employment	Reaction to Falling National Employment
U.S.	1.98%	1.00	-1.00
Chicago	1.27%	1.08	-1.08
Cleveland	0.50%	1.06	-1.06
Columbus	2.53%	0.95	-0.95
Detroit	1.01%	1.74	-1.74
Indianapolis	2.21%	1.19	-1.19
Minneapolis	2.17%	1.16	-1.16

Based on up to 40 years of employment and unemployment data through 2Q06.

MSA Unemployment Rate Betas

MSA	Average Unemployment Rate	Reaction to Rising National Unemployment	Reaction to Falling National Unemployment
U.S.	4.80%	1.00	1.00
Chicago	6.78%	1.29	-1.29
Cleveland	6.36%	1.30	-1.35
Columbus	4.05%	0.59	-0.59
Detroit	7.38%	1.95	-1.95
Indianapolis	3.61%	0.58	-0.58
Minneapolis	3.56%	0.65	-0.59

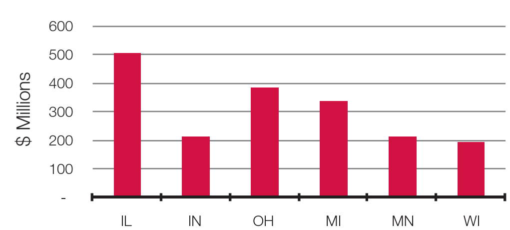
Based on up to 40 years of employment and unemployment data through 2Q06.

Real Home Prices (2006 $)

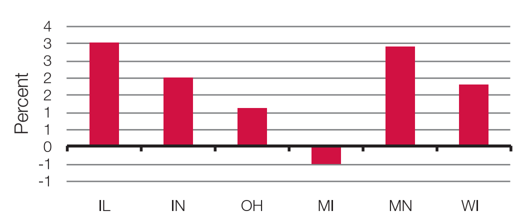
MSA	Average Median Price ($ 000s)	Reaction to Rising National Home Prices	Reaction to Falling National Home Prices
U.S.	$224.8	1.00	1.00
Chicago	$201.6	0.92	-0.92
Cleveland	$137.5	1.02	-2.18
Columbus	$141.8	1.02	-1.02
Detroit	$148.6	1.08	-1.08
Indianapolis	$125.6	1.02	-1.02
Minneapolis	$169.1	0.71	-0.71

Home price analysis uses average of median home prices from 1Q89-2Q06.

State GDP



Percent Change in State GDP 2005-2006



Cincinnati and Cleveland exhibit statistically asymmetric housing price betas. The disparities are 90 bps (Cincinnati) and 154 bps (Cleveland) greater in a declining national housing market versus a strengthening national market.

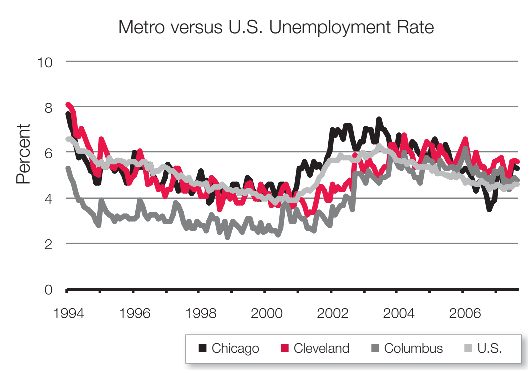
Economic Trends. The variety of economic conditions in the upper Midwest region has resulted in moderate growth. Michigan and Ohio appear to lag behind the rest of the region in terms of employment, population growth and percentage change in GDP, whereas Minnesota seems to be the most economically stable state.

The economy of **Illinois** is the strongest and most diverse in the upper Midwest region. It is driven by agriculture, manufacturing, mining and services and fueled by Chicago entrepreneurship. The Chicago metropolitan area is home to large companies such as Boeing, McDonald's and United Airlines, as well as the Chicago Mercantile Exchange. However, the state of Illinois has an overall unemployment rate of 5.4%. As of August 2007, layoffs had risen by over 52%.

A high percentage of **Indiana's** income comes from manufacturing and agriculture. Approximately 75% of the land is used for agricultural purposes and the high-tech wave that has positively impacted the nation has largely bypassed the state. And while the state's unemployment rate was 4.9% as of August 2007, its share of the nation's wealth has been shrinking. Good jobs are flowing out of Indiana and are being replaced by lower-paying positions.

Manufacturing still accounts for 30% of **Michigan's** economic production and 15% of jobs, more than twice as much as any other sector. The manufacturing of automobiles and transportation equipment is by far the state's chief industry even though the industry is now in dramatic decline throughout the state and the country. Michigan's historic lack of manufacturing diversity has made it particularly susceptible to the fluctuations of the national economy. The state's job losses, distressed real estate market and declining population appear to be worsening. Last year, Michigan was the only state to have a negative GDP growth of 0.5%, while the unemployment rate reached 7.4%.

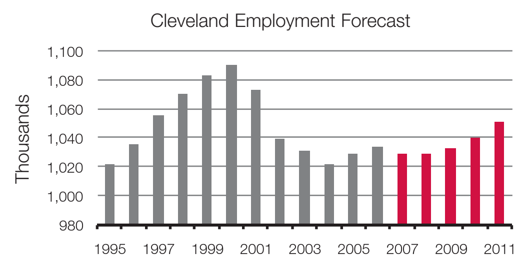
Of all the upper Midwestern states, **Minnesota** seems to be the most economically stable, which can be attributed to its diversity. The economic outputs of the state's



various business sectors, closely match the outputs of the country as a whole. The unemployment rate of the state matches the U.S. average at 4.6% and population growth is the highest of all the upper Midwestern states at 5%.

Despite its shrinking size, manufacturing is still the dominant contributor to **Ohio's** GDP. Its economy, which once paced the country, now trails national averages in job creation and income growth. After Michigan, Ohio has the lowest year-over-year change in GDP, a population growth of 1.1% and an unemployment rate of 6.1%. The economy faces structural challenges and job creation seems to be somewhat of a hurdle. Once strong, education and entrepreneurship are now long gone in Ohio.

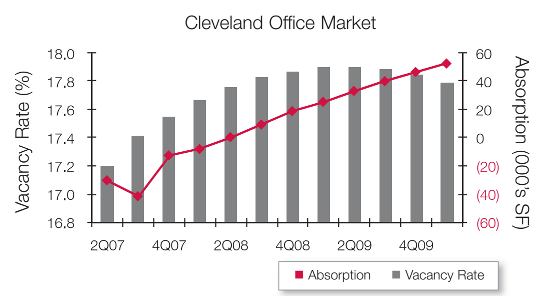
The economy of **Wisconsin** is driven by manufacturing and agriculture. It ranks first in the nation in the production of paper products, with Kimberly-Clark and Georgia-Pacific ranking among the state's top ten employers. Wisconsin faces three primary economic challenges: a tightening labor market, falling per capita income levels and unfavorable educational levels. The percent change in GDP over the last year was only 1.8%, with an unemployment rate of 5.3% as of August 2007.



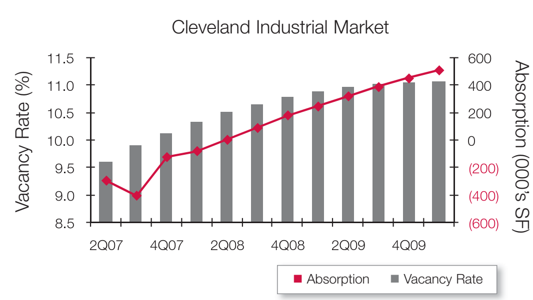
Key Metropolitan Statistical Areas

Cleveland Metropolitan Area

Cleveland is located on the southern shore of Lake Erie and has an MSA population of approximately 2.1 million. The city's location, coupled with rail links, has helped establish it as a major manufacturing center and has been a key factor in its historical growth. The median age is 33 years (versus 36.2 years for the U.S.), and approximately 59% of the population is between ages 18-65 (versus 33% for the U.S.).



Efforts to diversify the economy have been largely unsuccessful thus far and the economy is growing slower than most other cities. Cleveland, built on a foundation of manufacturing, has not enjoyed the rapid economic growth of the service sector and information age. The government has failed to attract the concentrations of high-tech companies that are so popular across the country and expenditure to attract and retain business activities in the area is next to nothing. Regional retailers and manufacturers reported "sluggish" sales and auto sales were weak.

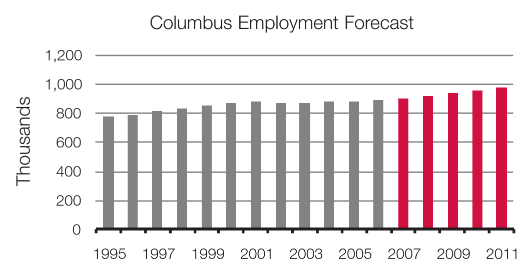


The area faces continuing challenges, such as poverty in many neighborhoods and low quality public education. Per capita income in the Cleveland metro area is a mere $14,291 and over 27% of the population falls below the poverty level. Cleveland was rated the poorest major city in the U.S. in 2006 and is struggling to move away from its dependence on manufacturing.

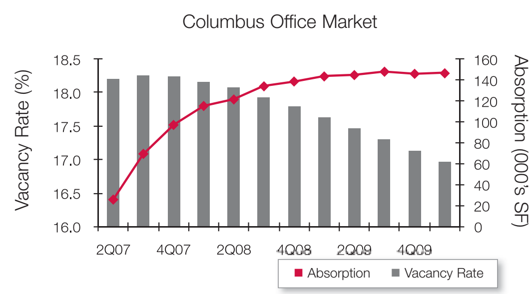
The city has an unemployment rate of 5.6% as of August 2007. Employment fell from 1,034,442 in 2006 to 1,029,588 in 2007 and is forecasted to slowly increase by only 2% to 1,051,191 by 2011. Cleveland office and industrial vacancy rates are expected to show increases between 2007 and 2008, from 17.2% to 17.8% and 9.6% to 11.1% respectively.

Columbus Metropolitan Area

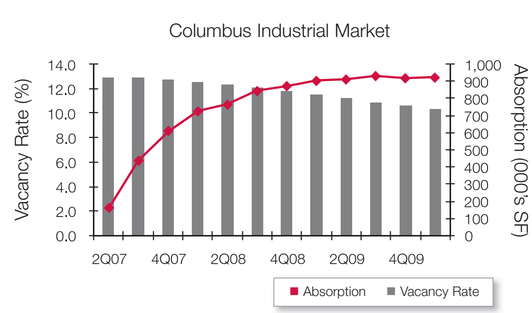
Columbus is the capital and largest MSA in Ohio. The city has experienced a wave of immigration in the 20th century, which has put pressure on social services such as public schools and health care. As the state capital, the government has a large presence and provides the largest single source of employment within the state. The median age is 31 years and 66% of the population is between ages 18-65.



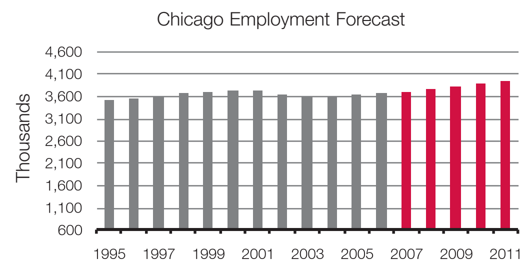
As of August 2007, the city's unemployment rate was approximately 5%, which is higher than the national average of 4.5% but lower than Ohio's 6.1%. Professional services and leisure employment grew at a better rate than average, but these gains were offset by weakness in construction, financial services, transportation and retail. Current employment in Columbus is 897,915 and is expected to show slow growth through 2011 pushing employment only to 973,422, still under the million mark.



Construction is suffering, as the housing market softens and vacancy rates are high in both the office and industrial markets. However, office and industrial vacancy rates are projected to fall from 18.2% and 12.9% in 2007 to approximately 17% and 10% by 2009 respectively. Financial services and manufacturing also suffer from negative growth and a significant slowdown is expected in the leisure and hospitality sectors.

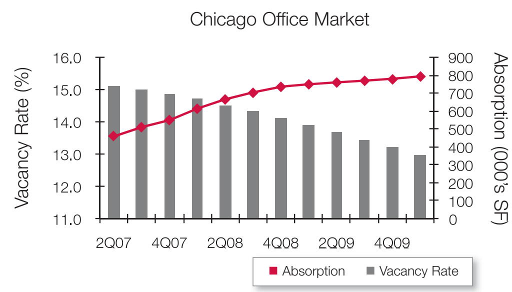


Columbus is a college town with over 30% of the population having a bachelor's degree. Local companies need people with engineering, chemistry and business degrees, but the brain-drain is quite apparent. Although there have been several efforts to strengthen the area's labor pool, they have not been very successful to date.



Chicago Metropolitan Area

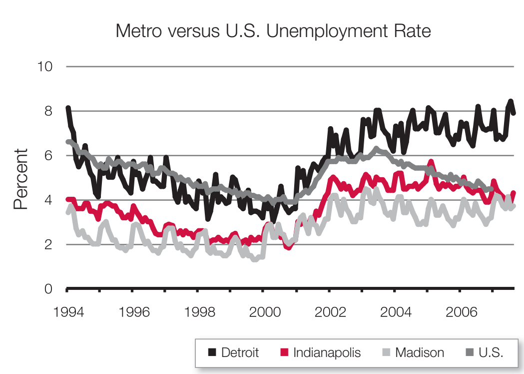
Chicago is the largest city in Illinois as well as the upper Midwest region. With a population of 2.9 million, it is the third largest city in the U.S. Situated between the Great Lakes and the Mississippi River, it has become the transportation, business and financial capital of the Midwest. The population of the metro area is 7.9 million, with a median age of 32 years, and 62% of the population between ages 18-65.



The Chicago metro GDP is approximately $400 billion, making it the third largest in the country. It is one of the most important business centers of the U.S. due to the high level of diversification in the economy, thus attracting companies such as Boeing to move to the area. The city is headquarters to four major financial and futures exchanges–the Chicago Mercantile Exchange, the Chicago Stock Exchange, the Chicago Board of Trade and the Chicago Board of Options Exchange. The Chicago metro economy is driven by efficient government under the leadership of Mayor Daley and entrepreneurship.

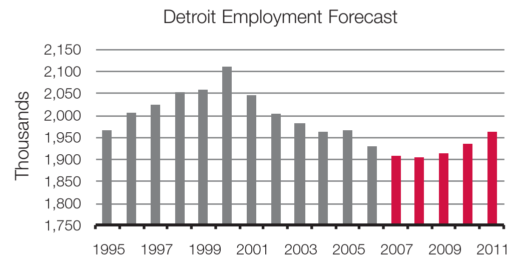
Although manufacturing plays a major role in the state's economy, Chicago does not rely on it. The city has the largest high-tech and information-tech industry in the state. However, the metro area's unemployment rate of 5.3% exceeds the national average and over 21% of the population falls below the poverty line.

Chicago metro employment growth is forecasted to increase at a steady pace through 2011, slowly increasing from 3,705,067 in 2007, to 3,944,561 in 2011. Vacancy rates for both the office and industrial markets are projected to decrease by 2009, going from 15.1% to 12.9% and 10% to 7.8% respectively.



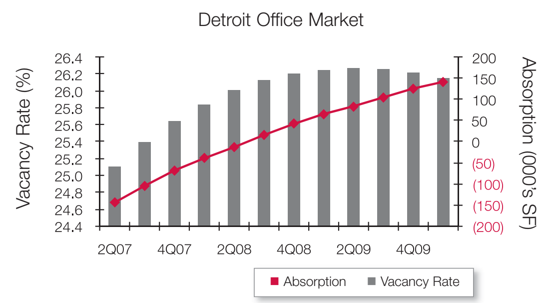
Of all the upper Midwestern cities, Chicago shows the best economic conditions. However, Chicago's pace of growth cannot keep up with cities in the South and Southwest like Atlanta, Dallas and Houston.

Detroit Metropolitan Area

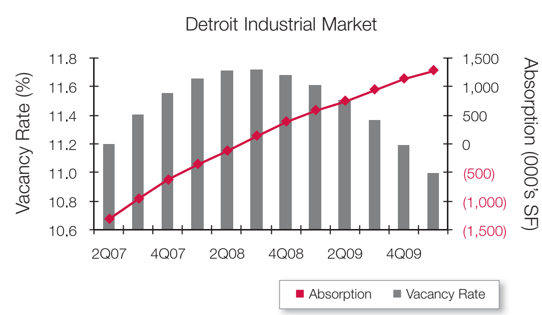


Detroit is the largest city in Michigan and is known as the country's automotive center. During the first half of the century, the city experienced a six-fold population increase due to immigration. The second half of the century saw a large population shift out of the city. The median age is 31 years and 57% of the population is between ages 18-65.

Detroit is a manufacturing powerhouse and is home to the three biggest U.S automobile companies – General Motors, Ford and Chrysler – all of whom have struggled for sometime. The automobile industry either directly or indirectly accounts for a majority of the city's economy. With such a high dependence on the industry, Detroit is vulnerable to any changes in the automotive industry nationally, as well as globally. And although the auto industry itself is doing well, the Big Three automakers are doing badly due to poor products and a high cost structure–the combination of which has crippled them.



Detroit's Big Three automakers have lost market share to foreign rivals, negatively impacting the area economy. As a result of rising oil prices, vehicle sales and production in the U.S. decreased during the three quarters of 2007, and auto and light truck employment reported a 5.2% year-over-year drop through September.

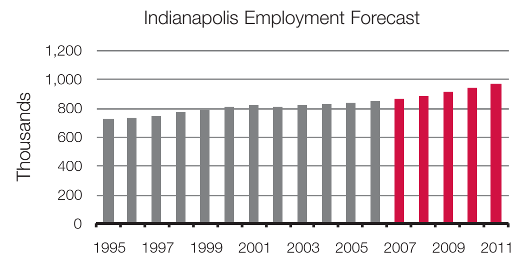


Detroit has a per capita income of less than $14,000 and approximately 33% of the population is below the poverty level. Low education levels are a contributing factor to the city's high unemployment and sluggish growth. Only 11% of the population has received a bachelor's degree.

Detroit has an unemployment rate of 7.9% as of August 2007, and employment fell from 1,964,598 in 2005 to 1,906,548 in 2007 and is forecasted to slowly increase to 1,963,413 by 2011, higher than 2007 levels but still lower than 2005. The Detroit office market is expected to show an increase in vacancy rates from 25.1% in 2007 to 26.1% in 2009. The industrial market is also forecasted to show an increase in vacancy rates going from 11.2% in 2007, to 11.7% in the third quarter of 2008 and then decreasing to 10.9% by end of 2009.

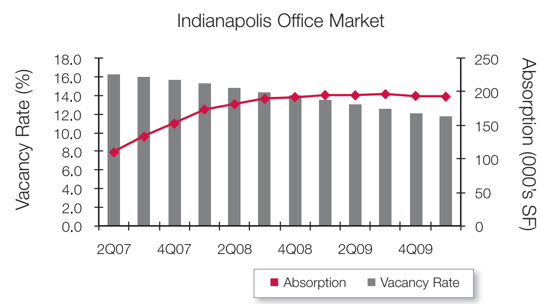
The city has made efforts to attract high-growth companies by offering business tax incentives, construction of residential high rises and wireless internet zones, however these efforts have not had very much success.

Indianapolis Metropolitan Area

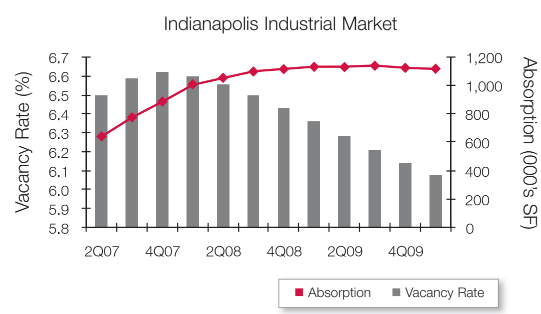


Indianapolis is the capital of Indiana and is Indiana's most populous city with over 780,000 residents (1.9 million in the MSA). The Indianapolis metro is one of the primary industrial, commercial, and transportation centers for the upper Midwest and is situated in proximity to the agricultural region known as the Corn Belt. Manufacturing continues to be the strongest economic sector in Indianapolis. The median age is 34 years and 62% of the population is between ages 18-65.

The city has attempted to cast off its image as a Rust Belt city by putting in place an aggressive downtown revitalization campaign. Laptops are replacing lunchboxes in Indianapolis, as the city slowly makes progress to turn the "brain drain" into a "brain gain." However, income for households in the metro are shrinking and over 16% of the population is below the poverty line. The city has little dynamic growth in the local economy and higher paying jobs are decreasing, as many corporate headquarters are either relocating out of the area or going bankrupt.



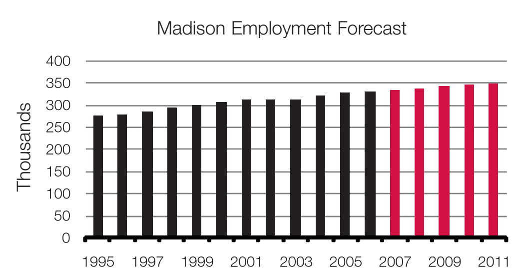
In 2005 and 2006, the real estate capacity has steadily increased at three times the rate of population growth. The metro area has an office vacancy rate of 15.9%, an industrial vacancy rate of 6.5% and an unemployment rate of 4.3%. Employment in the area is forecasted to show slow growth through 2011, increasing from 861,895 to 961,793. The current economy remains dependent on non-vibrant industries and continues to fall behind the nation.



Madison Metropolitan Area

Madison is the capital of Wisconsin and has a population of about 215,000 people. Madison's economy grew about three times faster than Milwaukee's in the recovery from the last recession, although it remains less than half as large. The median age is 31 years, and 72% of the population is between ages 18-65.

The government and the University of Wisconsin-Madison are the top two employers in the area. Many businesses are attracted to Madison's extensive skill base due to high levels of education. Over 52% of the population has a bachelor's degree. However, the government has recently been shedding jobs and businesses are moving to the suburbs. The economy is trying to evolve from a government-based and manufacturing-dependent economy to one that focuses on consumer services and high-tech. With a current job base of 332,000, we project that Madison metro area employment will increase by only 15,000 in aggregate over the next four years.

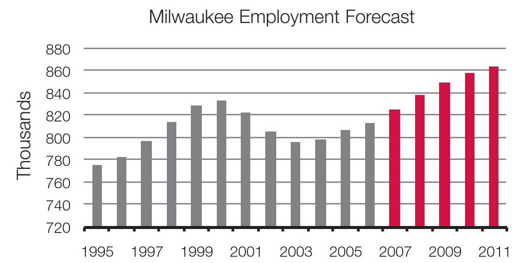


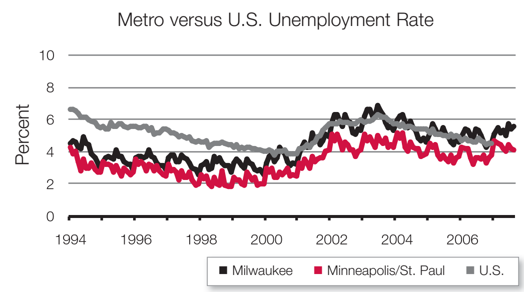
The Madison metro area economy is slowly chugging along and faces many challenges. The population is expanding and changing. Many new arrivals have no money, little education and do not speak English. As a result, poverty is increasing, with over 15% of the area's population falling below the poverty line. There is a widening gap between the rich and the poor, steadily eliminating the middle class.

Milwaukee Metropolitan Area

Milwaukee is the largest city in Wisconsin and is known as a brewing and manufacturing powerhouse. Milwaukee's industrial-based economy is having problems adapting to the 21st century and has an unemployment rate of 5.6%. The median age is 31 years and 60% of the population is between ages 18-65.

Manufacturing no longer dominates Milwaukee's economy, but remains a primary engine. As the state's leader in industrial manufacturing, Milwaukee has given Wisconsin a positive foreign trade balance. The decline in manufacturing, especially in the automotive industry, has negatively impacted the area. Milwaukee has seen its manufacturing base only slowly recover from the recession, with employment still not at 2000 levels. Over 22% of the workforce is involved in manufacturing, which is far higher than the national average of 15%. In lieu of the wavering manufacturing industry, local officials are making an effort to shift the economy toward a high-growth, high-tech economy. Milwaukee employment hit a low point in 2003 and we believe that the metro area will continue to grow, adding about 40,000 total jobs through 2011.

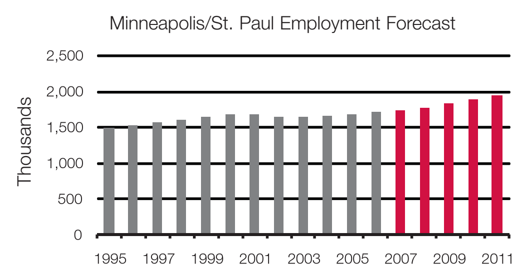


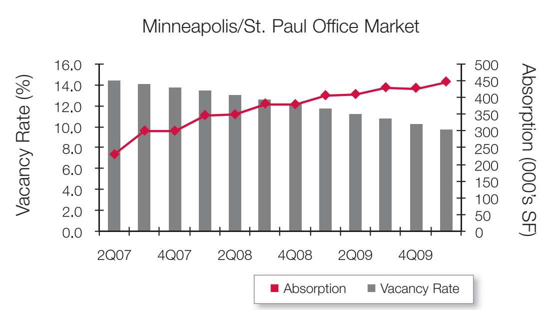


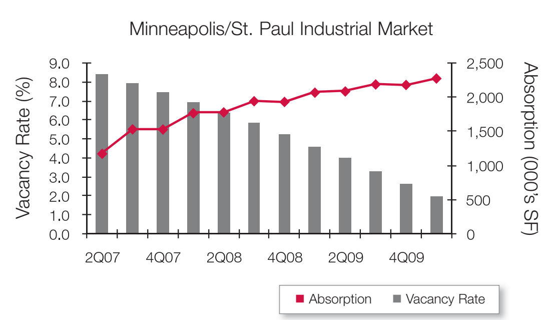
Minneapolis/St. Paul Metropolitan Area

Minneapolis/St. Paul, also known as the "Twin Cities", are the most populous in Minnesota. The population of Minneapolis has shown a 2.6% drop since 2000. The economy is the most diverse of all the upper-Midwestern cities, based on commerce, finance, healthcare and high-tech industries. The median age is 34 years and 69% of the population is between ages 18-65.

The Twin Cities metro area contributes over 63% of Minnesota's GDP, and the June 2007 unemployment rate of 4.1% is less than the national average. Employment is forecasted to increase at a steady rate between 2007 and 2009, going from 1,731,777 to 1,931,537. The office and industrial market are expected to improve with vacancy rates decreasing from 14.4% to 9.8% and 8.4% to 2% respectively.







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