# REGIONAL DASHBOARD OF ECONOMIC INDICATORS 2008: COMPARATIVE PERFORMANCE OF MIDWEST AND NORTHEAST OHIO METROPOLITAN AREAS

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This report is the third update of the *Northeast Ohio Dashboard Indicators*.

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# TABLE OF CONTENTS

## LIST OF TABLES

## LIST OF FIGURES

# EXECUTIVE SUMMARY

## INTRODUCTION

This report describes the findings from the third study of dashboard indicators using the framework that was developed in the previous two studies. The framework resulted in a set of indicators that explains the dynamics of regional economic growth for large and mid-size metropolitan areas in the United States. This third study utilizes the same set of dashboard indicators and measures of economic growth and it includes the same sample of 136 metropolitan areas with population between 300,000 and 3.5 million that were included in the second study.

The objective of this study is to continue monitoring the performance of Northeast Ohio (NEO) metropolitan areas over time and in comparison to other metropolitan areas across the United States. This study updates the four measures of economic growth presented in the previous studies, as well as providing updates to the nine dashboard indicators and the variables that underlie each of them. The NEO region is represented by its four Metropolitan Statistical Areas (MSAs), including Akron, Canton-Massillon, Cleveland-Elyria-Mentor, and Youngstown-Warren- Boardman.

## REGIONAL PERFORMANCE BY MEASURES OF ECONOMIC GROWTH

The four measures of economic growth include the percentage change in per capita income, employment, gross metropolitan product, and productivity. Per capita income approximates the regional standard of living and is used by many economists as a critical gauge in assessing a region's economic performance.[1] Employment measures job opportunities available to people in the regional labor force, but it does not differentiate between low-skill, low-paying jobs and high-skill, high-paying jobs. Gross metropolitan product measures value-added output produced in the region and is the regional counterpart to the national gross domestic product. Productivity measures gross metropolitan product per employee and provides a proxy for regional competitiveness.

The report describes long-term (1996 to 2006) and short-term (2003 to 2006) trends in the four measures of economic growth and compares Northeast Ohio to all metro areas in the study (study sample), the sample average, and the United States. The long-term and short-term changes are then compared to the findings in the previous Dashboard Indicators study. Tables I and II compare the ranks of NEO MSAs in the four measures of economic growth during the 1996-2006 and 1995-2005 periods (long-term) and between 2003-2006 and 2002-2005 periods (short-term).

[1] Per capita personal income is calculated as the total personal income of all the residents of an area divided by the population of that area. Per capita income gives no indication of the distribution of that income within the region.

## Table I. Long-Term Changes of Rank by Measures of Economic Growth

| NEO MSAs | Per Capita Income | | Employment | | Gross Metro Product | | Productivity | |
|---|---|---|---|---|---|---|---|---|
| | 1995-2004 Rank | 1996-2006 Rank | 1995-2005 Rank | 1996-2006 Rank | 1995-2005 Rank | 1996-2006 Rank | 1995-2005 Rank | 1996-2006 Rank |
| Akron, OH | 87 | 101 | 105 | 108 | 102 | 105 | 91 | 94 |
| Canton-Massillon, OH | 116 | 128 | 130 | 131 | 131 | 130 | 119 | 99 |
| Cleveland-Elyria-Mentor, OH | 110 | 111 | 129 | 128 | 122 | 123 | 92 | 80 |
| Youngstown-Warren-Boardman, OH-PA | 133 | 120 | 132 | 130 | 135 | 135 | 133 | 134 |

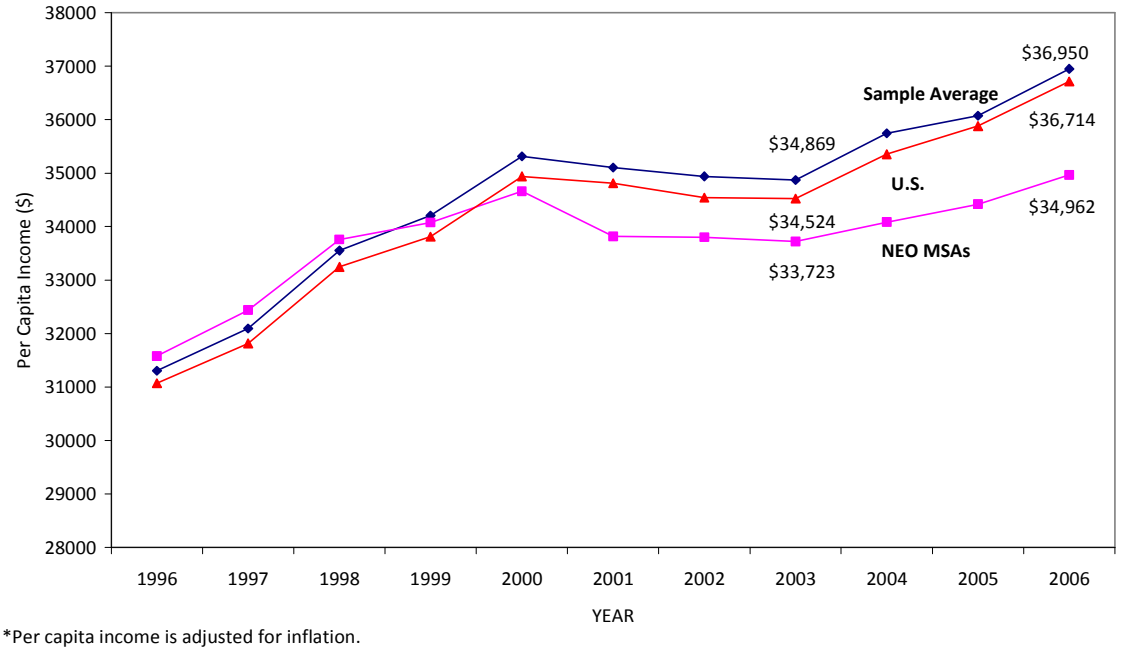
## Table II. Short-Term Changes of Rank by Measures of Economic Growth

| NEO MSAs | Per Capita Income | | Employment | | Gross Metro Product | | Productivity | |
|---|---|---|---|---|---|---|---|---|
| | 2001-2004 Rank | 2003-2006 Rank | 2002-2005 Rank | 2003-2006 Rank | 2002-2005 Rank | 2003-2006 Rank | 2002-2005 Rank | 2003-2006 Rank |
| Akron, OH | 43 | 105 | 39 | 79 | 74 | 90 | 96 | 92 |
| Canton-Massillon, OH | 108 | 129 | 132 | 135 | 128 | 122 | 74 | 36 |
| Cleveland-Elyria-Mentor, OH | 88 | 88 | 121 | 125 | 100 | 110 | 53 | 55 |
| Youngstown-Warren-Boardman, OH-PA | 69 | 122 | 116 | 130 | 131 | 131 | 130 | 123 |

## Growth in Per Capita Income

Northeast Ohio continued to perform below the United States and the sample average of the 136 MSAs included in this study (Figure I). The gap in per capita income between Northeast Ohio and the United States increased. In 1996, NEO's per capita income was 1.6 percent higher than the United States, but by 2006, NEO's per capita income fell to a level 4.8 percent below the United States. By 2006, the average per capita income in Northeast Ohio was $34,962, compared to $36,714 for the United States. The deterioration in per capita income is due to steep declines during the recession of the early 2000s and slower growth during the recovery.

**Figure I. Per Capita Income in Northeast Ohio, the Sample Average, and the United States, 1996-2006***




*Per capita income is adjusted for inflation.

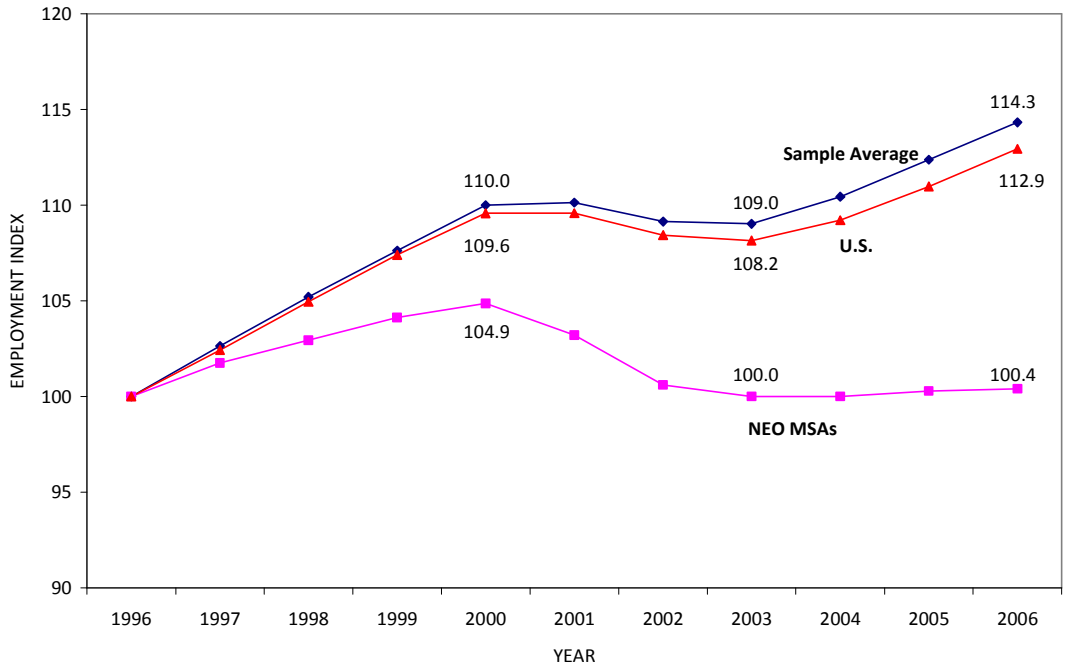
Among NEO MSAs, Akron was the only metro area ranked in the third quartile from 1996 to 2006; however, its rank dropped by 14 positions when compared to the previous time period of 1995 to 2004. The Canton, Cleveland, and Youngstown MSAs remained in the fourth quartile. Within the fourth quartile, the Youngstown area improved its ranking by 13 positions, while the Canton area lost 12 positions and Cleveland's ranking fell by one position. Among NEO MSAs, Akron and Cleveland had the highest growth in per capita income from 1996 to 2006 (12.3% and 10%, respectively), but these rates were significantly lower that the growth of the sample average (16.7%). If the Cleveland metro area had grown at the same rate as the sample average, per capita incomes in 2006 would have been higher by $2,246.

Comparing short-term changes (2001-2004 and 2003-2006) shows that the Cleveland metro area retained the same rank. The Cleveland area grew the fastest among NEO MSAs between 2003 and 2006, although Cleveland's growth rate of 3.9 percent was lower than the sample average of 4.7 percent. The Akron, Canton, and Youngstown MSAs lost more than 20 positions each. Moreover, Akron fell from the second quartile in 2001-2004 to the fourth quartile in 2003-2006 and Youngstown fell from the third quartile to the fourth.

## Employment Growth

Measured by employment trends over the past 10 years, Northeast Ohio continued to perform below the United States and the sample average (Figure II). Between 1996 and 2006, employment in Northeast Ohio grew very slightly (0.4%) compared to growth rates of 14.3 percent for the sample average and 12.9 percent for the United States. Employment growth in Northeast Ohio peaked in 2000—a year earlier than the sample average and the nation—before experiencing a much steeper decline. Moreover, the recession has lasted longer in Northeast Ohio and the recovery has been very slow; Northeast Ohio has still not reached the pre-recession employment levels.

**Figure II. Employment, 1996-2006**
1996=100




All four MSAs in Northeast Ohio remained in the fourth quartile in terms of employment growth between 1996 and 2006 in comparison to the 1995-2005 years. Moreover, all

MSAs except for the Akron area lost employment between 1996 and 2006; Akron grew at only one-half of the sample's average rate of 14.3 percent.

In addition, all of NEO MSAs lost ranks between 2003 and 2006 in comparison to the 2002-2005 years; the Cleveland, Canton, and Youngstown areas remain in the fourth quartile, while Akron fell from the second to the third quartile. The Akron metro area, the best performer in Northeast Ohio, experienced employment growth of 3.9 percent in comparison to the sample average of 4.9 percent.

## Growth in Gross Metropolitan Product

During the 1996-2006 years, the slow gross metropolitan product growth among NEO MSAs placed them in the fourth quartile. The Akron and Cleveland areas grew the most in Northeast Ohio (18.3% and 11.9%, respectively), but much slower than the sample average (33.2%). The ranks changed very slightly in comparison to the earlier 10-year period; the Akron MSA fell from the bottom of the third quartile in the 1995-2005 period to the top of the fourth quartile in the 1996-2006 years.

Comparing the short-term growth between the 2002-2005 and the 2003-2006 periods shows that Canton was the only NEO MSA that improved its ranking. Canton, Cleveland, and Youngstown were all ranked in the fourth quartile while Akron was ranked in the third quartile for the 2003-2006 period.

## Growth in Productivity

When measured in terms of productivity growth between 1996 and 2006, the Akron, Canton, and Cleveland MSAs were ranked in the third quartile. The Canton and Cleveland areas improved their ranking when comparing productivity growth during the 1995-2005 and the 1996-2006 periods. The Cleveland metro area grew the fastest among NEO MSAs (12.2%), followed by Akron (10.3%) and Canton (10%). The growth rate of the sample average was 16.5 percent.

Productivity growth between 2003 and 2006 placed two NEO MSAs in the second quartile. Canton grew by 6.5 percent and Cleveland by 5.2 percent, faster than the sample growth rate of 5.1 percent. While the Cleveland area did not improve its ranking in comparison to the 2002-2005 years, the Akron, Canton, and Youngstown metro areas improved their ranks by several positions.

## DASHBOARD INDICATORS AND THE PERFORMANCE OF NEO MSAS

The model of regional growth describes relationships between four measures of regional growth and nine regional indicators. The nine indicators vary in their relationship with the four measures of economic growth; furthermore, not all indicators are associated with every measure of economic growth.

Table III shows the rankings of the four NEO metropolitan areas for each dashboard indicator in 3 years: 2000, 2005, and 2006. Some of the rankings are excellent; in 2006, each of NEO MSAs ranked in the first or second quartile (above the sample average) in at least one indicator.[2] The Akron MSA ranked in the second quartile in four indicators: Skilled Workforce and R&D; Technology Commercialization; Locational Amenities; and Urban/Metro Structure. It also improved its ranks between 2000 and 2006 in two of these indicators. The Canton MSA ranked in the second quartile in two indicators: Racial Inclusion and Income Equality, and Urban/Metro Structure. The Cleveland MSA ranked in the first quartile in two indicators—Locational Amenities and Urban/Metro Structure—and it ranked in the second quartile in Skilled Workforce and R&D. The Youngstown MSA ranked in the first quartile in Urban/Metro Structure.

In addition, NEO MSAs improved their ranks in a few indicators between 2000 and 2006 and between 2005 and 2006. Between 2000 and 2006, the Akron and Canton MSAs improved rankings in three indicators, while the Cleveland and Youngstown MSAs improved ranks in four indicators. Between 2005 and 2006, the Akron and Cleveland MSAs improved their rankings in two indicators, Canton in one, and Youngstown MSA improved in four of the indicators.

**Table III. Comparison of Indicator Rankings of NEO MSAs among 136 Metropolitan Areas**

| | Akron | | | Canton | | | Cleveland | | | Youngstown | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Indicator** | **2000** | **2005** | **2006** | **2000** | **2005** | **2006** | **2000** | **2005** | **2006** | **2000** | **2005** | **2006** |
| Skilled Workforce and R&D | 74 | 58 | 68 | 119 | 117 | 123 | 66 | 64 | 65 | 128 | 129 | 127 |
| Technology Commercialization | 36 | 60 | 58 | 91 | 97 | 83 | 35 | 57 | 98 | 125 | 134 | 133 |
| Racial Inclusion and Income Equality | 69 | 76 | 79 | 40 | 37 | 41 | 119 | 119 | 121 | 81 | 83 | 84 |
| Urban Assimilation | 126 | 125 | 125 | 136 | 135 | 135 | 77 | 87 | 89 | 133 | 134 | 136 |
| Legacy of Place | 30 | 30 | 32 | 17 | 15 | 16 | 16 | 17 | 17 | 6 | 8 | 4 |
| Business Dynamics | 89 | 93 | 129 | 81 | 112 | 128 | 100 | 127 | 122 | 104 | 123 | 107 |
| Individual Entrepreneurship | 104 | 101 | 114 | 100 | 81 | 82 | 102 | 94 | 95 | 87 | 74 | 72 |
| Locational Amenities | 71 | 49 | 66 | 110 | 62 | 112 | 3 | 16 | 1 | 114 | 74 | 113 |
| Urban/Metro Structure | 38 | 66 | 65 | 32 | 42 | 42 | 35 | 23 | 33 | 18 | 16 | 17 |

[2] All NEO MSAs are ranked in the first quartile in Legacy of Place. However, as explained before, Legacy of Place is negatively associated with economic growth and high ranks suggest impediments to growth. As a result, these ranks are excluded from being described as highly ranked.

Skilled Workforce and R&D: This indicator describes the quality of the regional labor force and the region's advanced research activities. It is positively associated with growth in per capita income and productivity. In 2006, the Cleveland and Akron MSAs ranked in the second quartile, while the Canton and Youngstown metro areas ranked in the fourth quartile. The Cleveland area ranked the highest (#65) among NEO MSAs in 2006; however, it ranked below all other large Midwest MSAs. Between 2000 and 2006, Cleveland improved its rank by one position, while the Akron area improved its rank by six positions.

Technology Commercialization: This indicator is composed of three variables; two represent the process of innovation commercialization—venture capital per employee and number of patents per employee. This indicator is linked to growth in per capita income, gross metropolitan product, and productivity. The Akron metro area was the only NEO MSA to be ranked in the second quartile. All four MSAs in Northeast Ohio lost ranking between 2000 and 2005. The Akron and Youngstown areas recovered slightly in 2006, while the Canton area improved significantly to be the only MSA in Northeast Ohio that improved its rank between 2000 and 2006. The Cleveland area continued to lose rank, although it was ranked the highest among NEO MSAs in 2000 and 2005. The Cleveland area had the second lowest rank among large Midwest MSAs. The Akron area ranked the highest in 2006.

Racial Inclusion & Income Equality: This indicator includes variables that measure segregation, poverty, and income equality. It is the only indicator that is associated with growth in all four measures of economic growth. None of the NEO MSAs improved their ranks between 2000 and 2006 or between 2005 and 2006 for this indicator. Canton ranked the highest among NEO MSAs in all 3 years (second quartile), while Cleveland ranked the lowest. Cleveland also ranked the lowest among the large Midwest MSAs.

Urban Assimilation: This indicator describes ethnic diversity, percentage employed in minority-owned businesses, and productivity of the information sector. It is linked to increases in employment, gross metropolitan product, and productivity. The Cleveland MSA ranked in the third quartile, while Akron, Canton, and Youngstown ranked in the bottom of the fourth quartile in each of the 3 years. Akron and Canton improved their ranks by one position.

Legacy of Place: This indicator reflects business churning, as well as the demographic, social, and economic history of metropolitan areas. It is negatively related to growth in employment, gross metropolitan product, and productivity. All of the NEO MSAs ranked in the first quartile in each of the 3 years. Since this indicator is negatively associated with economic growth, such high rankings suggest large impediments to economic growth. Akron and Canton improved their relative positions slightly, which is a positive development.

Business Dynamics: This indicator is determined by one variable that calculates the ratio between business openings and business closings of single-site companies. It is positively associated with growth in employment and gross metropolitan product. By 2006, all four NEO MSAs were in the fourth quartile and had lost ranks between 2000 and 2006. Cleveland and Youngstown increased their ranks between 2005 and 2006, offsetting only some of the rank losses between 2000 and 2005. By 2006, the Cleveland MSA ranked lower than all other large Midwest MSAs.

Individual Entrepreneurship: This indicator describes the small business sector and it is associated with growth in employment and gross metropolitan product. Canton, Cleveland, and Youngstown, all ranked in the third quartile in 2006, improving their ranks between 2000 and 2006. Most of the improvements occurred between 2000 and 2005. By 2006, the Cleveland MSA was ranked the third highest among the large Midwest MSAs.

Locational Amenities: Locational amenities reflect the quality of life in a region and influence people's decisions about the places they want to live, work, and play. It is positively linked to only one measure of economic growth, per capita income. In 2006, the Cleveland metro area ranked #1 among all 136 MSAs (it ranked #3 in 2000). Four other large Midwest MSAs ranked among the top 10 MSAs.

Urban/Metro Structure: The Urban/Metro Structure indicator includes two variables: central city population as a percentage of metro population, and the rate of property crime. It is difficult to interpret this indicator, but is linked to growth in employment and gross metropolitan product. The Cleveland and Youngstown MSAs improved their ranks slightly between 2000 and 2006. By 2006, Cleveland ranked the third highest among large Midwest MSAs. The Cleveland and Youngstown areas were ranked in the first quartile, while Akron and Canton were in the second quartile.

## NEO PERFORMANCE BY VARIABLES THAT UNDERLIE THE INDICATORS

When the four metro areas are aggregated to describe NEO's performance as a region, the analyses show that from 2005 to 2006, the region had mixed results when measured by selected variables that underlie the indicators. Northeast Ohio improved in a few variables, such as university R&D expenditures, property crime rates, foreign-born population, and city poverty ratio. The region remained stable in the high educational attainment variables, self-employed population, and share of business establishments with less than 20 workers. Yet it declined when measured by variables such as industry R&D expenditures, violent crime rates, productivity in the information sector, Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) awards, venture capital, and patents. NEO still needs to complete its recovery process and improve these variables in order to move forward as a region; however, with the new initiatives underway, it is expected that the region will show improved results in the future.

## CONCLUDING COMMENTS

This study shows that the economic performance of Northeast Ohio continues to be modest in comparison to other regions of the country and even in comparison to other metropolitan areas in the Midwest that share a similar social and economic history with Northeast Ohio. Several new state and regional initiatives in Northeast Ohio began only a few years ago and the 2006 data used in this report are too recent to reflect the outcomes of those actions. Furthermore, we should not expect to be able to reverse regional growth patterns in 1–or even 5– years. With the increased momentum of the initiatives put in place in recent years and additional new plans to improve our region, we can expect that Northeast Ohio will improve its economic trajectory in the next 10-to-15 years. However, other regions have also been engaged in accelerating their economic progress, so NEO's future performance in comparison to other regions remains unknown. Therefore it is important to continue to invest in the economic transformation of Northeast Ohio and continue monitoring the progress of Northeast Ohio over time and in comparison to other regions in the United States.

# INTRODUCTION

Dashboard indicators are used to help monitor the economic performance of metropolitan areas and provide policy makers with a sound information base that can be used to design effective strategies and policy interventions. This report describes the findings from the third study of dashboard indicators.[3] The framework developed in the previous studies resulted in a set of indicators that explain the dynamics of regional economic growth for large and mid-size metropolitan areas in the United States. This study utilizes the same set of dashboard indicators and includes the same sample of 136 metropolitan areas that were included in the second study.

The objective of this study is to continue monitoring the performance of Northeast Ohio metropolitan areas over time and in comparison to other metropolitan areas across the United States. The previous study showed the degree to which the dashboard indicators are associated with economic growth. This study provides an update of the measures of economic growth as well as the dashboard indicators and the variables that underlie each of them.

The Fund for Our Economic Future has initiated and continues to maintain activities that monitor and track the performance of the NEO region in comparison to other regions across the country.[4] For that purpose, the Fund continues to sponsor updates of the set of dashboard indicators that best explain the dynamics of regional economic growth. The NEO region is represented by its four Metropolitan Statistical Areas (MSAs), including Akron, Canton-Massillon, Cleveland-Elyria-Mentor, and Youngstown-Warren-Boardman. It is expected that the dashboard indicators and the measures of economic growth will continue to be updated annually for policy makers, economic development planners, and political and civic leaders to enable them to track the progress of Northeast Ohio and adjust their strategies as needed.

This report contains six sections including this introduction. The second section briefly discusses the methodology used in the previous studies; this methodology also serves as

[3] The first report, *Dashboard Indicators for the Northeast Ohio Economy: Prepared for the Fund for Our Economic Future,* was authored by Randall Eberts, George Erickcek, and Jack Kleinhenz, April 2006. The report was published as Working Paper 06-05 by the Federal Reserve Bank of Cleveland. The second report, *An Update of the Regional Growth Model for Large and Mid-Size U.S. Metropolitan Areas: Dashboard Indicators for the Northeast Ohio Economy*, was prepared by Ziona Austrian, Iryna Lendel, and Afia Yamoah, August 2007.

[4] "The Fund for Our Economic Future is a multi-year ad-hoc coalition of organized philanthropy in Northeast Ohio formed to encourage and advance a common and focused regional economic development agenda that can lead to long-term economic transformation in ways that recognize the importance of core cities, inclusion/diversity, and quality of life. This will be accomplished by convening key stakeholders, educating and engaging the public, tracking overall progress, and backing key initiatives with grants." http://www.futurefundneo.org/page9066.cfm.

the base for the analysis presented in this report. It also introduces the new tasks undertaken in this study. The next section discusses regional performance in regards to measures of economic growth. It begins with a brief description of the growth trends in the four primary measures of economic growth: per capita income, employment, gross metropolitan product, and productivity. It ranks all metropolitan areas included in the study by each of the four economic growth measures and then compares the performance of NEO metropolitan areas to other areas in the Midwest, as well as against the average of all MSAs included in this study. The fourth section focuses on the indicators themselves. It describes each indicator, ranks the metropolitan areas using the 2006 scores, and compares the new ranking to the previous studies of 2000 and 2005. The standings of the four NEO metropolitan areas in comparison to other regions are highlighted. The fifth section tracks the performance of Northeast Ohio as a region. It uses selected variables which underlie the indicators to monitor the performance of Northeast Ohio between 2000 and 2006. The report concludes with comments and plans for future updates.

# METHODOLOGY

This report presents an analytical framework that has evolved over the course of the two previous studies. Initially developed by Upjohn Institute and Kleinhenz & Associates, the model of regional growth was then enhanced by the Center for Economic Development at Cleveland State University for the second study. The final framework establishes a statistical association between four measures of economic growth and nine indicators describing regional socioeconomic characteristics.

The updated framework is used to analyze changes in the nine factors using annual data for the variables that comprise the indicators. We refer to factors as "indicators" if they are associated with economic growth. It assumes that the structure of the economy did not change since 2000, the year in which most variables included in the final framework were collected. The final framework also describes the relationships between the four measures of economic growth and the nine indicators with the assumption that those relationships did not change since 2000. The majority of the variables for this update measure socioeconomic characteristics of regions in 2006; however, for some variables the most recent data are from 2005 or 2007. For a few variables, the data were not updated because they are not available annually.

## MODEL OF REGIONAL GROWTH AND REGIONAL INDICATORS

The relationships between the measures of economic growth and the regional indicators are based on data for 36 variables from 136 U.S. metropolitan areas with population between 300,000 and 3.5 million.[5] (A list of variables and data sources is included in Table A-1. in Appendix A.) Four NEO metropolitan areas are included in the study: Akron, Canton-Massillon, Cleveland-Elyria-Mentor, and Youngstown-Warren-Boardman. Their 2006 population ranges from 410,000 in the Canton metropolitan area to 2.1 million in the Cleveland metropolitan area.

A factor analysis was used to reduce the initial number of 36 variables to a smaller set of statistically significant factors that explain more than 88 percent of the variation in the included variables. These factors, referred to as "dashboard indicators" or simply "indicators," are:

- **Skilled Workforce and R&D**
- **Legacy of Place**
- **Urban Assimilation**
- **Racial Inclusion and Income Equality**
- **Locational Amenities**
- **Technology Commercialization**

[5] Population data for 2005 were used in selecting the 136 MSAs, and are based on the 2003 definition of metropolitan areas provided by the U.S. Office of Management and Budget.

- **Urban/Metro Structure**
- **Individual Entrepreneurship**
- **Business Dynamics**

The factors and the variables that define each factor are detailed in Appendix A, Table A-2.[6]

The descriptive characteristics of the 136 MSAs were mathematically grouped by factor analysis into eight statistically meaningful factors.[7] Highlighted variables associated with each factor have the highest loading scores that measure the correlation between a specific variable and a corresponding factor. The regional characteristics that these variables approximate collectively describe the unique dimension of each factor as an indicator that might play a role in regional growth (the association of each indicator with regional growth is explained in the next section). The ninth factor, Business Dynamics, was added to the group of dashboard indicators according to the theoretical framework of regional growth and the results of previous studies. The nine factors, or indicators, are described in detail in the following.

The **Skilled Workforce and Research & Development (R&D)** factor groups together seven variables (column 2 in Appendix A, Table A-2). These variables describe the quality of the regional labor force by its educational level (percentage of population with graduate or professional degrees and percentage of population with bachelor's degrees) and occupational level (percentage of population in professional and managerial occupations). This factor also includes three variables that describe the level of innovative activity in a region that closely correlates with advanced education and occupations. These variables are: the amount of industry R&D per employee; the amount of university R&D expenditures per employee; and Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) awards per employee. The industry R&D expenditures are approximated using state-level data. Due to volatility of university R&D expenditures, 2006 data measure the 3-year average of these expenditures from 2004 to 2006. These three variables are normalized by employment to eliminate the influence of MSA size on the variables. The last variable in this factor, population dependency, measures the structure of the regional labor force

[6] The factor loadings shown in Appendix A, Table A-2 describe the correlations between the variables (rows) and the factors (columns). The percentage of the variable's variance explained by the factor is calculated by the squared factor loading. For example, the Technology Commercialization factor explains 53 percent of the variance of venture capital (0.7306*0.7306=0.5338).

[7] Even though a factor analysis is a very powerful statistical tool, it is based purely on mathematical reasoning and does not take into consideration theoretical linkages between variables. A researcher's expertise is responsible for selecting the right variables and correctly operationalizing regional characteristics that the variables approximate. Sometimes variables are loaded with unexpected signs for the relationship with a factor or are loaded together with theoretically unrelated variables. The communality of a variables' variation is the only decisive factor that places variables together within the same mathematical dimension or statistical factor.

by capturing the share of the population that is typically not in the labor force – those younger than 18 and older than 65 years. A high ratio for this variable indicates a bigger burden on the economy to support nonworking dependents.

All variables except population density are directly correlated with the factor; the higher an individual variable's value, the stronger the corresponding indicator becomes in a corresponding region. For example, an increase in the percentage of population with graduate or professional degrees in an MSA will strengthen the Skilled Workforce and R&D indicator in that region. An increase in the dependent population in an MSA, which is inversely correlated with the indicator, will weaken this factor for the MSA.

The three variables with the highest loading scores in this factor include: percentage of the adult population with professional and managerial occupations (0.9434), graduate degrees (0.9344), and bachelor's degrees (0.8194). The higher the loading score of a variable with a corresponding factor, the stronger the association of this variable with that indicator. The three variables that describe the R&D component of this factor (industry R&D expenditures per employee, university R&D funding per employee, and SBIR and STTR awards per employee) also have relatively high factor loading scores ranging from 0.7223 to 0.4867. A seventh variable (population dependency), which is negatively related to the factor, has a loading score of 0.5942.

The Skilled Workforce and R&D factor captures the human capital input in the production function for goods and services. The academic and popular literature generally views human capital as one of the critical components of economic growth and postulates that regions with more educated workers experience faster-growing economies.

The **Legacy of Place** factor (column 3 in Appendix A, Table A-2) mathematically clusters together seven variables that describe different aspects of a region with a common underlying factor – its history. It is expressed by dynamics of business openings and closings (business churning), climate, segregation (dissimilarity index[8]), poverty (city poverty ratio estimated by the core city's share of poverty in the metropolitan area relative to the core city's share of the metropolitan population), old physical infrastructure (percentage of houses built before 1940), structure of government (number of governmental units per 10,000 population), and industrial heritage (share of manufacturing employment in total employment). These individual variables approximate regional history, industry mix, and are often presented in literature as associated with old industrial regions, poverty in the core city and segregation.

[8] Dissimilarity Index measures the percentage of the black population that would have to change residence for each neighborhood to have the same share of black population in the neighborhood as in the metropolitan area. The index ranges from 0 to 100, where 0 indicates complete integration and 100 shows complete segregation.

All of these variables have positive signs and can be interpreted as contributing to an increase in legacy cost. In contrast, business churning has an inverse relationship with the factor. Business churning is calculated by the summation of the number of businesses that opened and closed divided by total number of establishments. The combination of variables in the Legacy of Place factor suggests that metropolitan areas with high historical economic and social legacy costs have low business churning and places with low legacy costs experience high levels of business churning. Even though most of the individual variables in this factor increase the burden of legacy cost on a region, business churning has the second-highest loading with the factor (0.8479), indicating its significant influence on legacy cost. The variable with the highest loading – percentage of houses built before 1940 – can be improved by increasing the number of newly built houses and demolishing infrastructure built before 1940.

The Legacy of Place factor is interpreted as an indication of the historical social and economic burdens on regional economies. Consisting primarily of legacy costs, this factor is inversely affiliated with changes in measures of regional economic outcomes—employment, gross metropolitan product, and productivity.

**Urban Assimilation** constitutes the third strong group of variables distinguished by the factor analysis (column 4 in Appendix A, Table A-2). This factor describes regional diversity in terms of different ethnic and minority groups; and it shows a common variation of the presence of such populations in places that also have a strong share of minority-owned businesses and advanced information sector. Four of the five variables included in this factor describe ethnic diversity: percentage of Hispanic population, percentage employed in minority-owned businesses, percentage foreign-born population, and the percentage of Asian population. The variation of the Urban Assimilation indicator is clearly driven by the presence of the Hispanic population variable with the highest loading of 0.9184. Two other variables, share of minority business employment in total employment and percentage of foreign-born population in total population have the next highest loadings with the factor at 0.7908 and 0.7640, respectively, suggesting direct relationships between all variables and the indicator of Urban Assimilation.

Variables grouped in the **Racial Inclusion and Income Equality** factor have a distinctly different pattern of variation across the metropolitan areas from the variables that measure assimilation of different ethnicities and immigrants in society's social and economic life. Areas with a large black population have a different set of economic and social challenges and, therefore, a different path of development.

This factor (column 5 in Appendix A, Table A-2) accounts for five variables but is mainly driven by the two with the highest loadings: percentage of black population in the total

population (0.8754) and isolation index[9] for black population (0.8216). Two other variables, percentage of children living in high-poverty neighborhoods (approximated by the share of students in schools where more than 70 percent of students receive free lunch) and income inequality, reflect income distribution and poverty in a region. They also show comparably high loadings with the factor at 0.6672 and 0.6596, respectively. A fifth variable – violent crime rate – suggests that areas of high racial isolation and high poverty and income inequality are likely to have high rates of violent crime. All variables in this factor are negatively correlated with racial inclusion and income equality, suggesting that an increase in each individual variable is associated with a decrease in the indicator and a decline in inclusion and equality.

**Locational amenities** reflect the quality of life in a region and cluster together four variables describing transportation, arts, recreation, and healthcare indices (column 6 in Appendix A, Table A-2). These measures were developed by *Places Rated Almanac*, a publication that provides publicly available rankings of metropolitan areas based on multiple measures of quality of life. Each index is calculated based on several variables.[10] All variables are positively correlated with the indicator and the transportation index has the highest loading of 0.7792. The direct correlation of individual variables with the factor and their high loadings suggests that an increase of any index increases the regions' locational attractiveness for people and businesses.

Three variables loaded highly with the **Technology Commercialization** factor (column 7 in Appendix A, Table A-2)—venture capital per employee (0.7306), number of patents per employee (0.5913), and cost of living (0.5281). Research and development funding, patent awards, pre-seed funding, venture capital, and initial public offerings are all on a continuum from exploratory research to the introduction of new products and processes to the market. The patents and venture capital variables in this factor represent the process of innovation commercialization, reflecting the higher end of the continuum. The number of patents indicates successful research and the potential for commercialization, while venture capital shows that investors believe in the possible transformation of these potential innovations into marketable products.

The cost of living variable also loads highly with this factor, suggesting that many research facilities producing patents and many startup companies that are funded by venture capital are located in metropolitan areas with a high cost of living, primarily along the Eastern and Western coasts of the United States.

Two variables in the framework model have their highest loadings in the **Urban/Metro Structure** factor (column 8 in Appendix A, Table A-2): central city population as a

[9] The Isolation Index estimates the degree to which a minority group is exposed to a majority group in its neighborhood. Higher values of isolation indicate higher segregation.

[10] *Places Rated Almanac* by David Savageau and Ralph D'Agostino, 2000 and *Places Rated Almanac* by David Savageau, 2007. See previous reports for details on these variables.

percentage of metro population (0.6519) and the rate of property crime (0.5789). The clustering of these variables together suggests that the share of city population in MSA population has a similar distribution across the sample of metropolitan areas with the MSA's property crime rate. The inverse correlation of both variables with the factor suggests that they have a negative effect on urban/metro structure.

**Individual Entrepreneurship** (column 9 in Appendix A, Table A-2) groups together two variables: percentage of self-employed and the share of business establishments with less than 20 employees. It is driven by the first variable's higher loading with the factor (0.7343) and suggests that an increase in the percentage of self-employed constitutes higher levels of regional individual entrepreneurship. The second variable's loading (0.4556) shows that it also drives this factor.

**Business Dynamics** (column 12 in Appendix A, Table A-2) consists of a single variable that measures the ratio of openings over closings of businesses with a single establishment. It did not load within any of the other eight factors identified as statistically meaningful by the factor analysis. Nonetheless, business dynamics is part of the theoretical framework of regional growth and was a critical variable in the description of business dynamics in the first dashboard indicator study.

## REGIONAL INDICATORS AND MEASURES OF REGIONAL GROWTH

The model of regional growth describes relationships between four measures of regional growth and nine regional indicators. The four measures include the percentage change in:

- **Per capita income**
- **Employment**
- **Gross metropolitan product**
- **Productivity**

Per capita income approximates the regional standard of living and is used by many economists as a critical gauge in assessing a region's economic performance.[11] Employment measures job opportunities available to people in the regional labor force but it does not differentiate between low-skill, low-paying jobs and high-skill, high-paying jobs. Gross metropolitan product measures value-added output produced in the region and is the regional counterpart to the national gross domestic product. Productivity measures gross metropolitan product per employee and provides a proxy for a critical measure of regional competitiveness.

[11] Per capita personal income is calculated as the personal income of the residents of an area divided by the population of that area. Per capita income gives no indication of the distribution of that income within the region.

To estimate the relationships between the nine factors and the four measures of economic growth, four regressions were conducted using the factor scores as independent variables and the percentage change in each economic growth measure as the dependent variables. Factors that were statistically significant became the dashboard indicators.

The nine indicators vary in their relationship with the four measures of economic growth; furthermore, not all indicators are associated with every measure of economic growth. Based on a regression analysis, Table 1 shows the indicators that explain (but not necessarily cause) changes in each output measure.

**Table 1. Indicators' Impact on Regional Economic Growth**

| Per Capita Income | Employment | GMP | Productivity |
|---|---|---|---|
| Skilled Workforce and R&D | | | Skilled Workforce and R&D |
| Technology Commercialization | | Technology Commercialization | Technology Commercialization |
| Racial Inclusion and Income Equality | Racial Inclusion and Income Equality | Racial Inclusion and Income Equality | Racial Inclusion and Income Equality |
| | Urban Assimilation | Urban Assimilation | Urban Assimilation |
| | Legacy of Place* | Legacy of Place* | Legacy of Place* |
| | Business Dynamics | Business Dynamics | |
| | Individual Entrepreneurship | Individual Entrepreneurship | |
| Locational Amenities | | | |
| | Urban/Metro Structure | Urban/Metro Structure | |

* Denotes that the indicator is negatively related to the measure of economic growth.

The association between the indicators and economic growth reveals two patterns. The first pattern shows that some of the indicators that affect the growth of per capita income are also significant in productivity growth: Skilled Workforce and R&D; Technology Commercialization; and Racial Inclusion & Income Equality. The productivity-driven type of growth is less sensitive to regional legacy characteristics and socioeconomic factors of place. It can best be described by dynamic economies that are driven by the creativity of a skilled workforce paired with an abundance of research and development resources to result in the deployment of new technologies within a region.

The second pattern shows that six indicators are significant for growth of employment and gross metropolitan product: Racial Inclusion & Income Equality; Urban Assimilation; Legacy of Place (negatively related to economic growth); Business Dynamics; Individual Entrepreneurship; and Urban/Metro Structure. This type of regional growth is place-related and requires the right combination of socioeconomic characteristics and business dynamic factors for an economy to grow in size. The regions that experience primarily this type of growth may not be the fastest growing, but their size provides them with an opportunity for economic diversification, generating steady growth and compensating for declines during recessionary periods. They could succeed in

mitigating negative legacy costs through urban assimilation, racial inclusion, and income and social equality; however, the size alone does not guarantee economic diversity or growth in employment or in gross metropolitan product. Not every metropolitan area fits into one of the two patterns, and many MSAs experience both types of growth. Only one indicator, Racial Inclusion and Income Equality, is related to all four measures of economic performance.

Appendix A, Table A-3 describes the statistical association between each of the indicators and the measures of economic growth. [12] For example, the table suggests a statistical association between Technology Commercialization and growth in per capita income, but it does not necessarily mean that an increase in technology commercialization will cause an increase in regional per capita income.

## STUDY UPDATE

Using the research framework describing relationships between variables and indicators and between dashboard indicators and output measures that was established in the two previous studies, this report presents updated measures for each of the nine dashboard indicators and four measures of regional economic growth.

Of all the updated variables, 22 used 2006 data from sources such as American Community Survey (total of 12 variables: educational attainments, housing, city poverty, self-employment, and different categories of population), Moody's Economy.com (total of 3 variables: share of manufacturing employment, productivity in information sector, and cost of living index; and 3 measures of regional growth), U.S. Bureau of Economic Analysis on one measure of regional growth (per capita income), FBI Crime Reports (2 variables: violent and property crimes rates), Housing and Urban Development Data (HUD) on income inequality, Small Business Administration Data on SBIR and STTR awards, Thomson Financial data on venture capital, National Science Foundation's data on university R&D, and U.S. Patent and Trademark Office's data on the number of patents. [13]

One factor (Locational Amenities) is updated using data for 2007, including four variables from the Places Rated Almanac (2007). One variable that was not available for update – climate, used 2000 data from the previous report.

Seven updated variables use data from 2004 and 2005. They include industry R&D expenditures data from National Science Foundation's survey of industry R&D; business

[12] The indicators account for only a proportion of the variation in the measures of economic growth. Based on adjusted $R^2$ of the regression models, the indicators explain 47.1% of the variation in per capita income growth; 61.8% of the variation in employment growth, 67.6 % of the variation in gross metropolitan product growth, and 22.2% of the variation in productivity growth.

[13] Information on the data sources is included in Appendix A, Table A-1.

churning, business openings, and share of business establishments with under 20 workers from the U.S. Census (Longitudinal Establishment and Enterprise Microdata) and County Business Patterns; and variables approximated by school statistics (share of students at schools with more than 70% free lunches, and dissimilarity and isolation indices for black population) from the National Center for Educational Statistics.

Besides climate, two other variables were not available for update and include data from the previous study: number of government units per capita and share of minority business employment. The Census of Governments and U.S. Census' Survey of Business Owners are updated every 5 years and new data were not available.

To calculate the dashboard indicators, the study used the same coefficients that relate each variable to an appropriate indicator developed with the 2000 data. The current study assumes that there were no significant structural changes in the economy since these coefficients were established. Even though it imposes certain reservations about the study results, this technique allows us to compare the changes in the indicators between years and analyze what variables might affect such changes.

All 136 MSAs were ranked by the newly calculated factor scores. This study compares ranking for 3 years: 2000, 2005, and 2006. As in the previous studies, ranks are divided into quartiles, where the first quartile includes ranks #1-#34, the second quartile includes ranks of #35-#68, the third quartile consists of ranks #69-#102, and the fourth quartile includes ranks #103-#136. Changes in ranks across the years are analyzed using changes in the underlying variables.

The MSAs are also ranked by the four measures of economic growth using 10-year and 3-year growth rates.[14] The following sections present regional performance of the four economic growth measures and nine dashboard indicators.

[14] The rankings of the four measure of economic growth and the nine indicators are provided for all 136 MSAs in appendices B and C. In the ranking tables in appendices B and C, the apparent ties in percentage change in the measures of economic growth and the factor scores are only due to rounding of the numbers to two decimal places.

# REGIONAL PERFORMANCE BY MEASURES OF ECONOMIC GROWTH

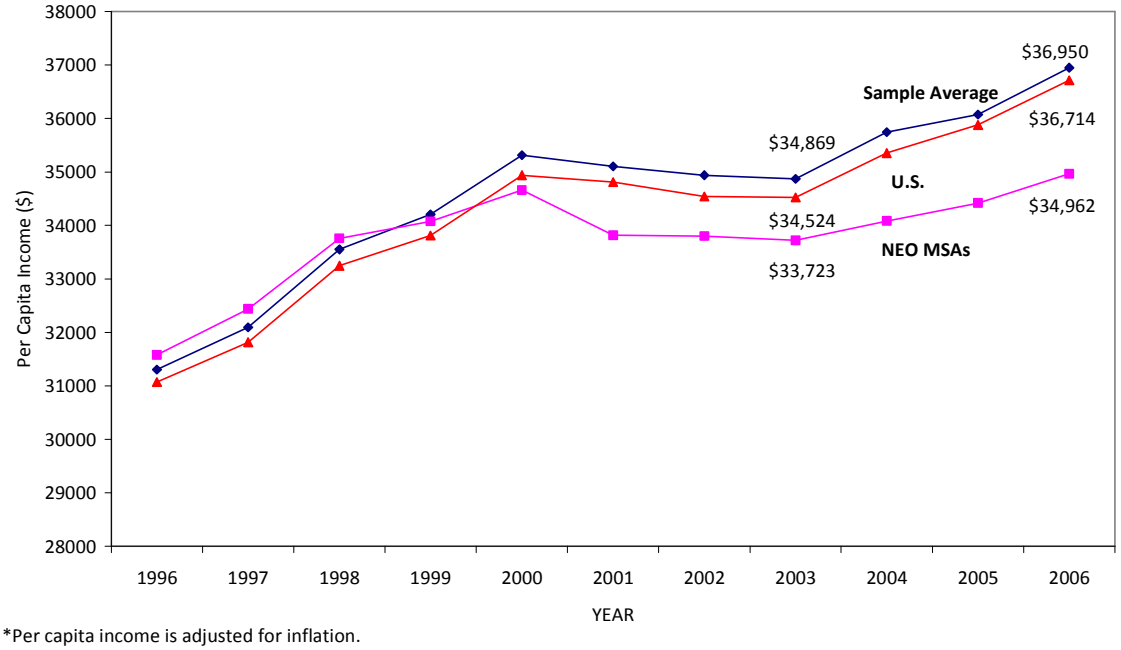
This section of the report describes long-term (1996 to 2006) and short-term (2003 to 2006) trends in the four measures of economic growth and compares Northeast Ohio to the average of all metro areas in the study (sample average) and the United States. The long-term and short-term changes are then compared to the findings in the previous Dashboard Indicators study (1995 to 2005 and 2002 to 2005). For each measure of economic growth, this section highlights the top three performing metro areas and discusses changes in large Midwest[15] and NEO metro areas. Detailed tables showing the long-term changes, short-term changes, and rankings of the four economic growth measures for all metro areas in the study are provided in Appendix B (Tables B-1 to B-8). Finally, for each economic growth measure we estimate how NEO MSAs would perform if they grew at the rate of high-performing, large Midwest metro areas or at the rate of the sample average.

## PER CAPITA INCOME

Figure 1 shows per capita income for Northeast Ohio, the sample average, and the United States from 1996 to 2006. The sample average and the United States follow a similar pattern over this time period. Per capita income for Northeast Ohio also followed the same trend as the United States from 1996 to 1998 and was higher than both the sample average and the nation during that time. By 1999, per capita income in Northeast Ohio had fallen below the sample average and below national levels by 2000. After 2000, per capita income declined for all three groups; however, Northeast Ohio declined at a faster rate and also experienced a lower rate of increase during the recovery that started in 2004. The gap in per capita income continued to increase and by 2006, NEO per capita income was 4.8 percent lower than in the United States. In 2006, the difference in per capita income between Northeast Ohio and the nation amounted to $1,752.

[15] We compared NEO metro areas to eight other Midwest metro areas that are comparable to the Cleveland MSA, according to their 2006 population. Later in the report we refer to this subset of Midwest MSAs as large Midwest metro areas.

**Figure 1. Per Capita Income in Northeast Ohio, the Sample Average, and the United States, 1996-2006***




*Per capita income is adjusted for inflation.

## Long-Term Changes in Per Capita Income

The metro areas with the highest growth in per capita income between 1996 and 2006 were New Orleans-Metairie-Kenner, LA (34.2%); San Diego, CA (34.1%); and Killeen-Temple-Fort Hood, TX (30.9%) (Appendix B, Table B-1). Only the San Diego metro area was in the top three from 1995 to 2004.[16] New Orleans and Killeen were ranked #49 and #15, respectively, in the previous study. Some of the highest growth rates in per capita income occurred in the Gulf Coast metro areas that were recovering from Hurricane Katrina (such as New Orleans). Metro areas with large military bases also grew rapidly due to military compensations during the wars in the Middle East, especially from 2003 to 2005.[17]

Among large Midwest metro areas, Pittsburgh ranked the highest (#22) with a per capita income growth rate of 21.7 percent and was the only metro area ranked in the first quartile from 1996 to 2006. In the previous study, three large Midwest metro areas were ranked in the first quartile: Minneapolis, Pittsburgh, and Cincinnati (Table 2). All the other large Midwest metro areas were ranked in the second or third quartile.

[16] The latest year available for per capita income in the previous Dashboard Indicators study was 2004. Thus the long-term period used for per capita income was 1995-2004 and the 3-year (short-term) period was 2001-2004.

[17] BEA News Release BEA 07-36. Personal Income for Metropolitan Areas, 2006. http://www.bea.gov/rels.htm.

Although Pittsburgh and Milwaukee improved in ranking, all the other large Midwest metro areas dropped in rank when compared to the previous time period of 1995 to 2004. Pittsburgh experienced significant improvements in its ranking for two indicators positively associated with per capita income growth: Technology Commercialization and Skilled Workforce and R&D.

**Table 2. Long-Term Growth in Per Capita Income, 1995-2004 and 1996-2006**

| Metropolitan Areas | Long-Term Change (1995-2004)* | | | Long-Term Change (1996-2006) | | |
|---|---|---|---|---|---|---|
| | Percent Change | Rank | Quartile | Percent Change | Rank | Quartile |
| **NEO MSAs** | | | | | | |
| Akron, OH | 12.7 | 87 | 3 | 12.3 | 101 | 3 |
| Canton-Massillon, OH | 7.7 | 116 | 4 | 6.2 | 128 | 4 |
| Cleveland-Elyria-Mentor, OH | 8.9 | 110 | 4 | 10.0 | 111 | 4 |
| Youngstown-Warren-Boardman, OH-PA | 3.9 | 133 | 4 | 7.7 | 120 | 4 |
| **Midwest MSAs** | | | | | | |
| Cincinnati-Middletown, OH-KY-IN | 17.7 | 32 | 1 | 14.2 | 81 | 3 |
| Columbus, OH | 15.9 | 48 | 2 | 15.1 | 76 | 3 |
| Indianapolis-Carmel, IN | 16.0 | 45 | 2 | 15.3 | 74 | 3 |
| Kansas City, MO-KS | 14.8 | 61 | 2 | 15.8 | 69 | 3 |
| Milwaukee-Waukesha-West Allis, WI | 16.4 | 43 | 2 | 18.4 | 42 | 2 |
| Minneapolis-St. Paul-Bloomington, MN-WI | 19.6 | 24 | 1 | 16.9 | 60 | 2 |
| Pittsburgh, PA | 18.4 | 27 | 1 | 21.7 | 22 | 1 |
| St. Louis, MO-IL | 14.0 | 74 | 3 | 13.2 | 94 | 3 |
| **Sample Average** | **14.0** | | | **16.7** | | |

*The latest year available for per capita income in the previous Dashboard study was 2004.

An analysis of Northeast Ohio shows that all NEO metro areas grew at a slower rate than the sample average (16.7%). Akron grew the fastest in Northeast Ohio (12.3%) and ranked in the third quartile. Even though Akron's per capita income grew, its ranking dropped by 14 positions from #87 to #101. All the other metro areas in Northeast Ohio ranked in the fourth quartile. Youngstown with per capita income growth of 7.7 percent improved its ranking from #133 to #120, while all the other NEO metro areas declined in ranking. Canton dropped by 12 positions and Cleveland lost only one position. Cleveland's per capita income grew at 10 percent ($33,960 in 1996 to $37,070 in 2006), a slower rate than all other large Midwest metro areas. If the Cleveland metro area had grown at the same rate as either the Indianapolis metro area or the sample average, per capita incomes in 2006 would have been higher by $1,775 and $2,246, respectively.

### Short-Term Changes in Per Capita Income

The metro areas with the highest growth in per capita income from 2003 to 2006 were New Orleans, LA (19.7%); Killeen, TX (14.2%); and Santa Barbara, CA (14.0%). Only Killeen was in the top three for 2001 to 2004. Other high per capita income growth

areas include Naples-Marco Island, FL; Tulsa, OK; Fayetteville, NC; and Oklahoma City, OK.

Table 3 compares the short-term rank, quartile and growth rate of per capita income for the 2003 to 2006 and 2001 to 2004 time periods. Three large Midwest metro areas improved in rank: Pittsburgh ranked in the first quartile (#31); Milwaukee in the second quartile (#63); and Kansas City in the third quartile (#90). All the other large Midwest metro areas were ranked in the fourth quartile and each declined in ranking across the two time periods. Several metro areas experienced large swings in ranking with the largest declines occurring in St. Louis (dropping by 74 positions), closely followed by Cincinnati (72 positions); Columbus (48 positions); and Minneapolis (46 positions). The drop in rankings indicates that, on average, metro areas in the sample of 136 MSAs grew at faster rates than the large Midwest metro areas. Only Pittsburgh (7.0%) and Milwaukee (5.1%) grew faster than the sample average (4.7%). Most of the metro areas that dropped in rank also declined in Technology Commercialization, the indicator with the greatest influence on per capita income.

**Table 3. Short-Term Growth in Per Capita Income, 2001-2004 and 2003-2006**

| Metropolitan Areas | Short-Term Change (2001-2004)* | | | Short-Term Change (2003-2006) | | |
|---|---|---|---|---|---|---|
| | Percent Change | Rank | Quartile | Percent Change | Rank | Quartile |
| **NEO MSAs** | | | | | | |
| Akron, OH | 3.3 | 43 | 2 | 2.8 | 105 | 4 |
| Canton-Massillon, OH | 0.0 | 108 | 4 | 0.4 | 129 | 4 |
| Cleveland-Elyria-Mentor, OH | 1.0 | 88 | 3 | 3.9 | 88 | 3 |
| Youngstown-Warren-Boardman, OH-PA | 2.3 | 69 | 3 | 1.4 | 122 | 4 |
| **Midwest MSAs** | | | | | | |
| Cincinnati-Middletown, OH-KY-IN | 3.5 | 39 | 2 | 2.4 | 111 | 4 |
| Columbus, OH | 1.8 | 73 | 3 | 1.5 | 121 | 4 |
| Indianapolis-Carmel, IN | 1.7 | 75 | 3 | 2.9 | 103 | 4 |
| Kansas City, MO-KS | 0.7 | 95 | 3 | 3.8 | 90 | 3 |
| Milwaukee-Waukesha-West Allis, WI | 1.1 | 86 | 3 | 5.1 | 63 | 2 |
| Minneapolis-St. Paul-Bloomington, MN-WI | 2.2 | 60 | 2 | 2.8 | 106 | 4 |
| Pittsburgh, PA | 3.1 | 52 | 2 | 7.0 | 31 | 1 |
| St. Louis, MO-IL | 3.3 | 45 | 2 | 1.7 | 119 | 4 |
| **Sample Average** | **1.9** | | | **4.7** | | |

*The latest year available for per capita income in the previous Dashboard study was 2004.

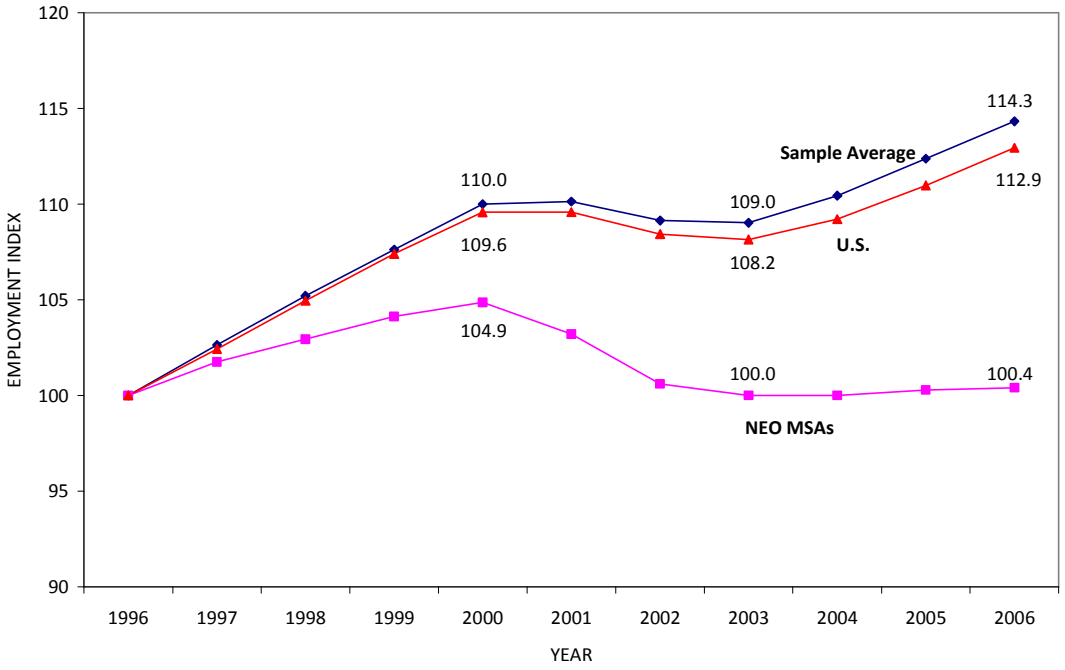
NEO metro areas also grew slower than the sample average and ranked in the third and fourth quartiles for 2003 to 2006. Cleveland was ranked the highest at #88, the same position as in the previous study. Comparing the 2001 to 2004 and 2003 to 2006 rankings shows that Akron dropped significantly from #43 (second quartile) to #105 (fourth quartile), followed by Youngstown which declined from #69 to #122. Cleveland grew faster (3.9%) than all other metro areas in Northeast Ohio and outpaced six of the

eight large Midwest metro areas. If the Cleveland metro area grew at the same rate as the Pittsburgh metro area, it would have had $1,122 more in per capita income by 2006.

## EMPLOYMENT

Figure 2 shows employment trends for NEO metro areas, the sample average, and the United States from 1996 to 2006. Employment trends for the sample average and the United States were very similar during this time period. Both experienced substantial growth from 1996 to 2001 followed by a decline in 2002 and 2003 and then renewed growth from 2004 through 2006. In contrast, employment growth in Northeast Ohio peaked in 2000, a year earlier than the sample average and the nation, before experiencing a much steeper decline. The recovery from the recession has been very slow for Northeast Ohio; by 2006 the region had still not reached the pre-recession level of 2000. NEO's employment growth has lagged the sample average and the nation throughout this 10-year period. Between 1996 and 2006, Northeast Ohio grew by a meager 0.4 percent compared to 14.3 percent for the sample average and 12.9 percent for the United States.

**Figure 2. Employment, 1996-2006**
1996=100




### Long-Term Employment Changes

From 1996 to 2006, the three metro areas that increased their employment the most were Las Vegas, NV (67.3%); Naples, FL (66.2%); and Cape Coral-Fort Myers, FL (55.3%).

Other top performers include McAllen-Edinburg-Mission, TX; Sarasota-Bradenton-Venice, FL; Port St. Lucie-Fort Pierce, FL; Orlando, FL; and Boise City-Nampa, ID (Appendix B, Table B-3). Most of the metro areas in the first quartile were located in the Western and Southern states. The top two metro areas retained their rankings in both time periods; 1995 to 2005 and 1996 to 2006 and the third ranked metro area in 1996 to 2006 improved slightly from the 4th rank. The top ten ranked metro areas remained the same for both time periods, except for changes within the ranks of some MSAs.

Among large Midwest metro areas, Indianapolis ranked the highest with an employment growth rate of 16.2 percent (#51 for 1996 to 2006, compared to #56 over 1995 to 2005); it was the only metro area ranked in the second quartile from 1996 to 2006 (Table 4). All the other Midwest metro areas were in the third or fourth quartile and experienced a drop in rank except Milwaukee which improved slightly from #120 to #119.

According to the study's framework, the indicators associated with employment growth are: Legacy of Place; Business Dynamics; Racial Inclusion and Income Equality; Individual Entrepreneurship; Urban Assimilation; and Urban Metro Structure. Indianapolis and Milwaukee experienced considerable rank improvements in Business Dynamics and Urban Assimilation. Furthermore, Indianapolis also improved its score for Individual Entrepreneurship between 2005 and 2006. With the exception of Indianapolis, all large Midwest metro areas had a slower rate of employment growth than the sample average. Between 1995 and 2005, three Midwest metro areas were ranked in the second quartile compared to only one in the 1996 to 2006 time period.

**Table 4. Long-Term Employment Growth, 1995-2005 and 1996-2006**

| Metropolitan Areas | Long-Term Change (1995-2005) | | | Long-Term Change (1996-2006) | | |
|---|---|---|---|---|---|---|
| | Percent Change | Rank | Quartile | Percent Change | Rank | Quartile |
| **NEO MSAs** | | | | | | |
| Akron, OH | 8.4 | 105 | 4 | 7.2 | 108 | 4 |
| Canton-Massillon, OH | 0.8 | 130 | 4 | -3.2 | 131 | 4 |
| Cleveland-Elyria-Mentor, OH | 0.8 | 129 | 4 | -0.2 | 128 | 4 |
| Youngstown-Warren-Boardman, OH-PA | -2.0 | 132 | 4 | -2.8 | 130 | 4 |
| **Midwest MSAs** | | | | | | |
| Cincinnati-Middletown, OH-KY-IN | 12.1 | 77 | 3 | 10.0 | 87 | 3 |
| Columbus, OH | 14.0 | 66 | 2 | 13.1 | 70 | 3 |
| Indianapolis-Carmel, IN | 16.3 | 56 | 2 | 16.2 | 51 | 2 |
| Kansas City, MO-KS | 8.6 | 103 | 4 | 7.4 | 104 | 4 |
| Milwaukee-Waukesha-West Allis, WI | 3.7 | 120 | 4 | 4.0 | 119 | 4 |
| Minneapolis-St. Paul-Bloomington, MN-WI | 14.0 | 65 | 2 | 13.0 | 71 | 3 |
| Pittsburgh, PA | 6.0 | 115 | 4 | 5.1 | 116 | 4 |
| St. Louis, MO-IL | 8.5 | 104 | 4 | 6.4 | 111 | 4 |
| **Sample Average** | **15.9** | | | **14.3** | | |

NEO metro areas performed considerably worse than the sample average in employment growth; all metro areas ranked in the fourth quartile. Akron performed the best among NEO metro areas (7.2%), growing at half the rate of the sample average (14.3%). Canton and Youngstown lost employment (-3.2% and -2.8%, respectively) while Cleveland remained virtually unchanged with a very small decline (-0.2%). Comparing the rankings in the two time periods shows that Cleveland and Youngstown improved their ranking slightly between 1995 to 2005 and 1996 to 2006. This improvement in ranking could be attributed to the improved ranking for both metro areas in Business Dynamics between 2005 and 2006, an indicator that is associated with employment growth.

In comparison to other large Midwest metro areas, Cleveland was ranked the lowest (#128). If Cleveland's employment had grown at the same rate as Indianapolis (16.2%), there would have been an additional 179,300 jobs in Cleveland by 2006. Instead, at its present rate (-0.2%), Cleveland lost more than 2,500 jobs between 1996 and 2006.

**Short-Term Employment Changes**

From 2003 to 2006, Cape Coral, FL (21.6%); Las Vegas, NV (20.7%); and Port St. Lucie, FL (17.6%) were the top three metro areas in employment growth. These three metro areas retained their rankings from the previous time period of 2002 to 2005. Other top performers in the short-term were Naples, FL (15.9%); Provo-Orem, UT (15.6%); Orlando, FL (15.5%); and Wilmington, NC (14.9%) (Appendix B, Table B-4).

As shown in Table 5, all large Midwest metro areas were in the third and fourth quartiles and grew slower than the sample average from 2003 to 2006. As in the long-term, Indianapolis was the highest ranked area in the short-term at #77 with a growth rate of 4 percent. Comparing rankings between the time periods of 2002 to 2005 and 2003 to 2006, all the other large Midwest metro areas declined in ranking except Milwaukee which moved from #114 to #108 and Kansas City (from #85 to #84). Milwaukee and Kansas City experienced improvements in rank between 15 and 31 positions in two of the factors that influence employment growth – Business Dynamics and Urban Assimilation. Although most of the metro areas declined in ranking, they all showed positive growth during this time period. The modest growth of the large Midwest MSAs lagged the short-term employment growth of the sample average.

**Table 5. Short-Term Employment Growth, 2002-2005 and 2003-2006**

| Metropolitan Areas | Short-Term Change (2002-2005) | | | Short-Term Change (2003-2006) | | |
|---|---|---|---|---|---|---|
| | Percent Change | Rank | Quartile | Percent Change | Rank | Quartile |
| **NEO MSAs** | | | | | | |
| Akron, OH | 4.7 | 39 | 2 | 3.9 | 79 | 3 |
| Canton-Massillon, OH | -2.8 | 132 | 4 | -2.7 | 135 | 4 |
| Cleveland-Elyria-Mentor, OH | -1.1 | 121 | 4 | 0.1 | 125 | 4 |
| Youngstown-Warren-Boardman, OH-PA | -0.6 | 116 | 4 | -0.6 | 130 | 4 |
| **Midwest MSAs** | | | | | | |
| Cincinnati-Middletown, OH-KY-IN | 2.6 | 73 | 3 | 2.1 | 107 | 4 |
| Columbus, OH | 1.0 | 97 | 3 | 2.3 | 105 | 4 |
| Indianapolis-Carmel, IN | 3.4 | 63 | 2 | 4.0 | 77 | 3 |
| Kansas City, MO-KS | 1.9 | 85 | 3 | 3.6 | 84 | 3 |
| Milwaukee-Waukesha-West Allis, WI | -0.5 | 114 | 4 | 2.0 | 108 | 4 |
| Minneapolis-St. Paul-Bloomington, MN-WI | 2.8 | 70 | 3 | 4.0 | 78 | 3 |
| Pittsburgh, PA | -0.6 | 117 | 4 | 0.1 | 124 | 4 |
| St. Louis, MO-IL | 1.4 | 91 | 3 | 2.0 | 109 | 4 |
| **Sample Average** | **3.4** | | | **4.9** | | |

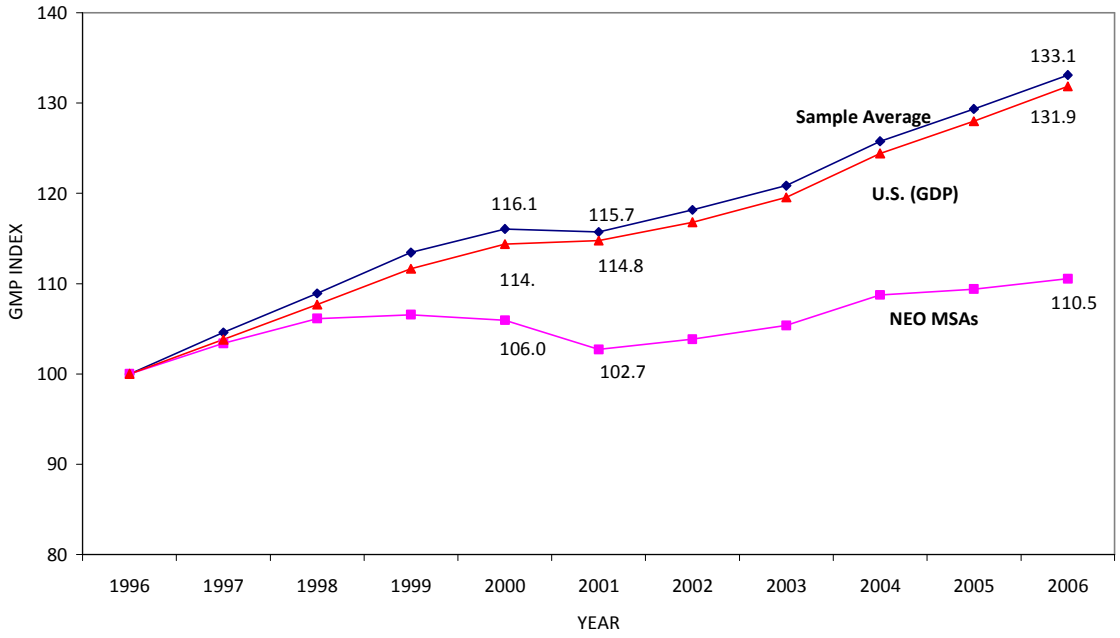
Metro areas in Northeast Ohio declined in rankings from 2002 to 2005 and 2003 to 2006. All the metro areas were in the lower portion of the fourth quartile for both time periods except Akron, which dropped from the second quartile to the third. Although Akron dropped in rank, it is the only NEO metro area that grew in employment (3.9%). Cleveland remained unchanged with a very low growth rate of 0.1 percent. If Akron and Cleveland had grown at the same rate as the sample average (4.9%) between 2003 and 2006, they would have had approximately 3,200 and 52,540 more employees by 2006, respectively. Instead, Akron and Cleveland added 16,200 and 760 jobs, respectively.

## GROSS METROPOLITAN PRODUCT

Figure 3 shows gross metropolitan product of Northeast Ohio from 1996 to 2006 compared to the sample average of the 136 metro areas and the nation. Although gross metropolitan product increased for all regions from 1996 to 2006, Northeast Ohio grew at a much slower pace than the sample average and the United States. Trends in gross metropolitan product were similar for the sample average and the United States; both grew from 1996 to 2000, declined slightly in 2001, and then resumed growth from 2002 to 2006. Northeast Ohio followed a similar growth pattern from 1996 to 1998 but started to decline a year earlier than the sample average and the United States. Although gross metropolitan product for Northeast Ohio started to expand again in 2002, the growth rate was very modest and decreased further from 2004 to 2006.

Comparing 2006 gross product to 1996 values show that Northeast Ohio has had a 10.5 percent increase, which is less than one third of the growth rate of the nation (31.9%) and the sample average (33.1%).

**Figure 3. Gross Metropolitan Product, 1996-2006**
1996=100




## Long-Term Gross Metropolitan Product Changes

From 1996 to 2006, the metro areas with the highest growth in gross metropolitan product were also the top three metro areas from 1995 to 2005[18]: Naples, FL (112.1%); Cape Coral, FL (100.7%); and Las Vegas, NV (81.0%). The top seven metro areas remained unchanged for the 1995 to 2005 and 1996 to 2006 rankings. The four other metro areas included in the top seven performing metro areas are: Fayetteville-Springdale-Rogers, AR-MO; Austin-Round Rock, TX; Port St. Lucie, FL; and McAllen, TX. These top performing metro areas were among the fastest growing in employment growth over the long-term (Appendix B, Table B-5).

[18] The data for gross metropolitan product and productivity were extensively revised by Cleveland State University in collaboration with the Brookings Institute to make it a more accurate reflection of the output of metro areas. Because of this change, all percentage change calculations for gross metropolitan product and productivity were recalculated for the tables used in the previous Dashboard Indicators report. This is to help us compare the metro area rankings from 1995 to 2005 to those from 1996 to 2006. The scores, rankings, and quartiles for the 1995 to 2005 data are recalculated values and so are different from the values in the previous Dashboard Indicators report.

Table 6 presents long-term changes in gross metropolitan product for large Midwest metro areas and Northeast Ohio, as well as the sample average. Three large Midwest metro areas were ranked in the second quartile: Indianapolis (#51); Minneapolis (#60); and Columbus (#65) with growth rates of 35.8 percent, 33.0 percent and 31.9 percent, respectively. Comparing the rankings between the two study periods shows that only Pittsburgh improved its position; Columbus and St. Louis remained unchanged; and the rest of the MSAs fell in ranking. Although still ranked very low at #107, Pittsburgh's advance from #112 could be due to improvements in the Technology Commercialization, Business Dynamics, and Urban Metro Structure indicators, which are associated with growth in gross metro product. All large Midwest metro areas grew at a lower rate than the sample average (33.2%) except Indianapolis, which grew at a rate of 35.8 percent.

**Table 6. Long-Term Growth in Gross Metropolitan Product, 1995-2005 and 1996-2006**

| Metropolitan Areas | Long-Term Change (1995-2005) | | | Long-Term Change (1996-2006) | | |
|---|---|---|---|---|---|---|
| | Percent Change | Rank | Quartile | Percent Change | Rank | Quartile |
| **NEO MSAs** | | | | | | |
| Akron, OH | 19.6 | 102 | 3 | 18.3 | 105 | 4 |
| Canton-Massillon, OH | 4.8 | 131 | 4 | 6.4 | 130 | 4 |
| Cleveland-Elyria-Mentor, OH | 11.3 | 122 | 4 | 11.9 | 123 | 4 |
| Youngstown-Warren-Boardman, OH-PA | -1.8 | 135 | 4 | -3.6 | 135 | 4 |
| **Midwest MSAs** | | | | | | |
| Cincinnati-Middletown, OH-KY-IN | 27.3 | 80 | 3 | 25.2 | 91 | 3 |
| Columbus, OH | 32.5 | 65 | 2 | 31.9 | 65 | 2 |
| Indianapolis-Carmel, IN | 37.9 | 42 | 2 | 35.8 | 51 | 2 |
| Kansas City, MO-KS | 30.2 | 74 | 3 | 28.2 | 79 | 3 |
| Milwaukee-Waukesha-West Allis, WI | 15.8 | 111 | 4 | 14.9 | 117 | 4 |
| Minneapolis-St. Paul-Bloomington, MN-WI | 36.5 | 54 | 2 | 33.0 | 60 | 2 |
| Pittsburgh, PA | 15.7 | 112 | 4 | 17.8 | 107 | 4 |
| St. Louis, MO-IL | 17.1 | 109 | 4 | 17.2 | 109 | 4 |
| **Sample Average** | **32.8** | | | **33.2** | | |

NEO metro areas were all in the fourth quartile from 1996 to 2006 and all grew at a much slower rate than the sample average. Whereas Canton improved slightly in ranking, Youngstown retained its ranking (even though its gross metropolitan product declined), while Cleveland and Akron dropped in ranking. The Cleveland area's gross metropolitan product grew by 11.9 percent between 1996 and 2006, the lowest rate of growth among large Midwest metro areas. If Cleveland had grown at the same rate as Columbus, OH, between 1996 and 2006, it would have had an additional $18.1 billion in output by 2006.

**Short-Term Gross Metropolitan Product Changes**

Over the short-term from 2003 to 2006, Port St. Lucie, FL (34.4%); Cape Coral, FL (32.4%); and Sarasota, FL (27.3%) grew the fastest. All the top three metro areas in the previous time period 2002 to 2005 were also from Florida. The top two remained the same for both time periods. Naples, FL, dropped from #3 in the previous time period to #6 between 1996 to 2006, while Sarasota, FL, improved from its previous ranking of #11 to #3. Other high performing MSAs include: Las Vegas, NV; Shreveport-Bossier City, LA; Wilmington, NC; and Boise City, ID (Appendix B, Table B-6).

Over the short-term, all large Midwest metro areas' gross product grew at a slower pace than the sample average (10.2%); they remained in the third and fourth quartiles for both periods (Table 7). Indianapolis grew the fastest (8.4%) among Midwest metro areas, followed by Minneapolis (7.5%) and Kansas City (6.8%). Kansas City improved its ranking by 12 positions, while Milwaukee improved seven positions and Minneapolis improved one position. The worst decline in rank was 11 positions for St. Louis, followed by Indianapolis (8 positions) and Cincinnati (5 positions).

**Table 7. Growth in Gross Metropolitan Product - Short-Term**

| Metropolitan Areas | Short-Term Change (2002-2005) | | | Short-Term Change (2003-2006) | | |
|---|---|---|---|---|---|---|
| | Percent Change | Rank | Quartile | Percent Change | Rank | Quartile |
| **NEO MSAs** | | | | | | |
| Akron, OH | 9.0 | 74 | 3 | 7.4 | 90 | 3 |
| Canton-Massillon, OH | 1.2 | 128 | 4 | 3.6 | 122 | 4 |
| Cleveland-Elyria-Mentor, OH | 5.9 | 100 | 3 | 5.2 | 110 | 4 |
| Youngstown-Warren-Boardman, OH-PA | 0.3 | 131 | 4 | 0.5 | 131 | 4 |
| **Midwest MSAs** | | | | | | |
| Cincinnati-Middletown, OH-KY-IN | 5.4 | 102 | 3 | 5.3 | 107 | 4 |
| Columbus, OH | 6.3 | 95 | 3 | 6.6 | 98 | 3 |
| Indianapolis-Carmel, IN | 8.8 | 76 | 3 | 8.4 | 84 | 3 |
| Kansas City, MO-KS | 5.1 | 107 | 4 | 6.8 | 95 | 3 |
| Milwaukee-Waukesha-West Allis, WI | 3.9 | 112 | 4 | 5.6 | 105 | 4 |
| Minneapolis-St. Paul-Bloomington, MN-WI | 7.4 | 89 | 3 | 7.5 | 88 | 3 |
| Pittsburgh, PA | 3.7 | 114 | 4 | 4.3 | 118 | 4 |
| St. Louis, MO-IL | 5.2 | 103 | 4 | 4.6 | 114 | 4 |
| **Sample Average** | **10.5** | | | **10.2** | | |

Among NEO metro areas, the Akron metro area experienced the largest increase in gross product (7.4 percent) and ranked the highest (#90) from 2003 to 2006. Although Cleveland grew by 5.2 percent, it dropped from the third quartile to the fourth quartile (#100 to #110). Canton improved its ranking by six positions but remained in the fourth quartile, while Youngstown's ranking was the same over the two time periods. NEO metro areas ranked low in some of the indicators associated with increase in gross

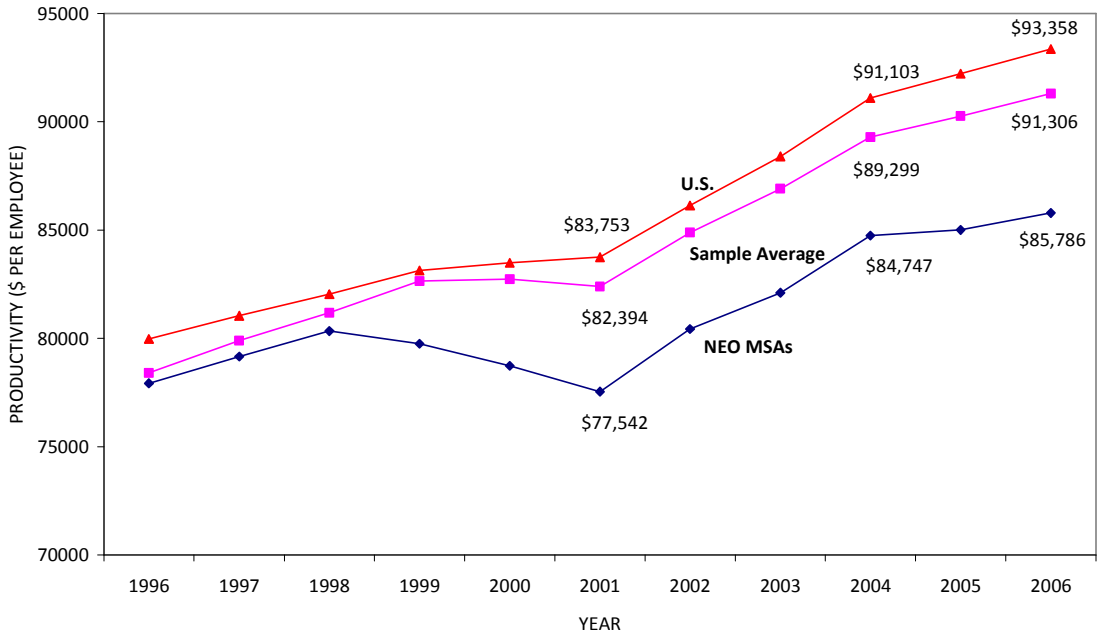
metropolitan product, such as Business Dynamics and Urban Assimilation. NEO MSAs ranked high in Legacy of Place, an indicator which is negatively related to changes in gross product.

Cleveland's gross product grew faster than that of Pittsburgh and St. Louis. If Akron and Cleveland metro areas had grown at the same rate as the sample average, gross metropolitan product in 2006 would have been $0.7 and $4.8 million higher, respectively.

## PRODUCTIVITY

Figure 4 shows productivity trends for Northeast Ohio, the sample average, and the United States between 1996 and 2006. The general trend in productivity was similar for the sample average and the nation. From 1996 to 1998, Northeast Ohio reflected the trends of the nation and sample before experiencing a decline in 1999, whereas the sample average and the nation continued to grow. NEO's productivity continued to decline through 2001 before reversing the trend with a steady increase at the national rate until 2004. In the last two years, NEO's rate of growth began to taper off. With the exception of the decline in 2001, the sample average and U.S. productivity have experienced high growth rates. Starting at similar levels of productivity in 1996 ($77,927 in Northeast Ohio and $79,970 in the nation), the productivity in the United States grew 16.7 percent to $93,358, while NEO's productivity grew only 10.1 percent to $85,786.

**Figure 4. Productivity, 1996-2006**



**Long-Term Productivity Changes**

Between 1996 and 2006, the top three metro areas with the highest growth in productivity were Peoria, IL (47.5%); New Orleans, LA (42.9%); and Austin, TX (33.3%). Other top performing metro areas were Durham, NC (32.9%), and San Jose, CA (31.8%). Four of the top five metro areas (excluding New Orleans, LA) in 1995 to 2005 were also in the top five in 1996 to 2006 (Appendix B, Table B-7).

Table 8 illustrates changes in productivity for large Midwest and NEO metro areas. Among large Midwest metro areas, only one ranked in the first quartile (Kansas City at #34), while three ranked in the second quartile: Minneapolis (#43); Indianapolis (#52); and Columbus (#53). These four metro areas grew at a faster rate than the sample average of 16.5 percent. The rest of the metro areas were ranked in the third quartile. Comparing the rankings between the two time periods 1995 to 2005 and 1996 to 2006, all the large Midwest metro areas dropped in ranking except Pittsburgh (improving from #94 to #81) and St. Louis (from #99 to #96). Pittsburgh's 13 position rank improvement is partly due to large improvements in the indicators associated with growth in productivity, such as Technology Commercialization and Skilled Workforce and R&D. St. Louis improved its position in Skilled Workforce and R&D, Urban Assimilation, and Legacy of Place. Indianapolis and Minneapolis experienced the largest drop in ranks (10 positions), possibly due to the very significant loss in Indianapolis' ranking in the Technology Commercialization indicator – an influential contributor to productivity – and Minneapolis' drop in ranking in the Legacy of Place indicator. The sample average grew at 14.3 percent in 1995 to 2005 compared to a rate of 16.5 percent in 1996 to 2006, indicating that average productivity increased faster in the latter time period.

**Table 8. Long-Term Productivity Growth, 1995-2005 and 1996-2006**

| Metropolitan Areas | Long-Term Change (1995-2005) | | | Long-Term Change (1996-2006) | | |
|---|---|---|---|---|---|---|
| | Percent Change | Rank | Quartile | Percent Change | Rank | Quartile |
| **NEO MSAs** | | | | | | |
| Akron, OH | 10.4 | 91 | 3 | 10.3 | 94 | 3 |
| Canton-Massillon, OH | 5.1 | 119 | 4 | 10.0 | 99 | 3 |
| Cleveland-Elyria-Mentor, OH | 10.3 | 92 | 3 | 12.2 | 80 | 3 |
| Youngstown-Warren-Boardman, OH-PA | 0.4 | 133 | 4 | -0.8 | 134 | 4 |
| **Midwest MSAs** | | | | | | |
| Cincinnati-Middletown, OH-KY-IN | 13.7 | 67 | 2 | 13.8 | 74 | 3 |
| Columbus, OH | 16.4 | 50 | 2 | 16.7 | 53 | 2 |
| Indianapolis-Carmel, IN | 18.5 | 42 | 2 | 16.9 | 52 | 2 |
| Kansas City, MO-KS | 20.3 | 28 | 1 | 19.3 | 34 | 1 |
| Milwaukee-Waukesha-West Allis, WI | 11.0 | 87 | 3 | 10.5 | 93 | 3 |
| Minneapolis-St. Paul-Bloomington, MN-WI | 19.9 | 33 | 1 | 17.7 | 43 | 2 |
| Pittsburgh, PA | 9.7 | 94 | 3 | 12.1 | 81 | 3 |
| St. Louis, MO-IL | 9.3 | 99 | 3 | 10.1 | 96 | 3 |
| **Sample Average** | **14.3** | | | **16.5** | | |

The Cleveland area is ranked the highest among NEO metro areas, followed by the other third quartile MSAs, Akron and Canton. Cleveland's growth rate was lower than five of the large Midwest metro areas. All NEO metro areas grew at modest rates of 10 – 12 percent except Youngstown, the only MSA to experience a decline in productivity in 1996 to 2006. Canton showed the highest rank improvement over the two time periods, possibly attributable to its improved ranking in Technology Commercialization – a contributing factor to productivity growth. If Cleveland grew at the same rate as Indianapolis (16.9%), productivity in 2006 would have been higher by $3,900 per employee.

**Short-Term Productivity Changes**

Over the shorter time period of 2003 to 2006, New Orleans, LA (30.5%), grew the fastest, followed by Shreveport, LA (18.6%), and Beaumont, TX (16.1%). These metro areas also performed well in the 2002 to 2005 time period. Peoria, IL (9.2%) is the only Midwest metro area that ranked in the first quartile in 2003 to 2006 (Appendix B, Table B-8).

Table 9 shows the changes in productivity from 2003 to 2006 in large Midwest metro areas and Northeast Ohio compared to changes from 2002 to 2005. All the large Midwest metro areas grew at a slower rate than the sample average and were ranked in the third quartile with one exception. St. Louis ranked in the fourth quartile and experienced the largest drop in rank (27 positions) due to a drop in its ranking from

2005 to 2006 in the Technology Commercialization indicator, which affects productivity significantly. Minneapolis experienced a slight decline in ranking (#89 to #91) over the two study periods. Apart from these two metro areas, all of the other large Midwest metro areas improved their rankings. Cincinnati experienced the highest improvement in ranking as it improved its scores in Urban Assimilation and Racial Inclusion and Income Equality indicators from 2005 to 2006.

**Table 9. Short-Term Productivity Growth, 2002-2005 and 2003-2006**

| Metropolitan Areas | Short-Term Change (2002-2005) | | | Short-Term Change (2003-2006) | | |
|---|---|---|---|---|---|---|
| | Percent Change | Rank | Quartile | Percent Change | Rank | Quartile |
| **NEO MSAs** | | | | | | |
| Akron, OH | 4.2 | 96 | 3 | 3.3 | 92 | 3 |
| Canton-Massillon, OH | 5.5 | 74 | 3 | 6.5 | 36 | 2 |
| Cleveland-Elyria-Mentor, OH | 6.9 | 53 | 2 | 5.2 | 55 | 2 |
| Youngstown-Warren-Boardman, OH-PA | 1.2 | 130 | 4 | 1.1 | 123 | 4 |
| **Midwest MSAs** | | | | | | |
| Cincinnati-Middletown, OH-KY-IN | 2.9 | 119 | 4 | 3.2 | 97 | 3 |
| Columbus, OH | 5.3 | 76 | 3 | 4.2 | 70 | 3 |
| Indianapolis-Carmel, IN | 5.2 | 78 | 3 | 4.2 | 72 | 3 |
| Kansas City, MO-KS | 3.5 | 112 | 4 | 3.1 | 100 | 3 |
| Milwaukee-Waukesha-West Allis, WI | 3.7 | 105 | 4 | 3.5 | 89 | 3 |
| Minneapolis-St. Paul-Bloomington, MN-WI | 4.7 | 89 | 3 | 3.4 | 91 | 3 |
| Pittsburgh, PA | 4.7 | 88 | 3 | 4.2 | 73 | 3 |
| St. Louis, MO-IL | 5.0 | 85 | 3 | 2.5 | 112 | 4 |
| **Sample Average** | **6.9** | | | **5.1** | | |

The Canton area grew the fastest (6.5%) among NEO metro areas and improved its ranking by 38 positions to be ranked at the top of the second quartile (#36). The Cleveland metro area also ranked in the second quartile with a growth rate of 5.2 percent, although it dropped from #53 to #55. These two metro areas grew faster than the sample average. Akron and Youngstown improved their rankings slightly over the study periods. Canton improved in Technology Commercialization, an important factor for growth in productivity.

# REGIONAL PERFORMANCE BY INDICATORS

This section briefly describes each of the nine dashboard indicators. For each indicator it shows the ranks for NEO MSAs, large Midwest MSAs, and the leading MSAs in 2006, the latest year available for many of the variables. It compares these recent ranks with ranks for 2000 and 2005 from the previous studies. This section also explains the change in ranks by examining the changes in the individual variables that underlie each indicator. Detailed tables showing scores and ranks for 2005 and 2006 for all 136 MSAs are included in Appendix C (Tables C-1 to C-9).

## SKILLED WORKFORCE AND R&D

The Skilled Workforce and R&D indicator describes the quality of the regional labor force and the region's advanced research activities. As the primary indicator for human capital, it is one of the critical components of economic growth. It incorporates seven variables that describe levels of educational attainment and high-level occupations. This indicator also describes the ability of a region to be engaged in technology-driven economic development based on industrial and university R&D and technology-related small business research. This indicator relies upon the notion that there is more scientific and technological research in metropolitan areas with large concentrations of highly educated residents—a characteristic that does not change quickly over time and requires years of development and persistent investment.

The three leading metropolitan areas in the Skilled Workforce and R&D indicator are Ann Arbor, MI; Durham, NC; and San Jose-Sunnyvale-Santa Clara, CA (Table 10). These three areas have held the top ranks in all 3 years (2000, 2005, and 2006). They are recognized as strongholds of a highly educated workforce and locations of prominent research universities. For example, Ann Arbor is ranked in first place for five of the variables that underlie this indicator: percentage of population with professional occupations, percentage of population with graduate or professional degrees, industry and university R&D expenditures, and share of the dependent population (less than 18 and more than 65 years old). Ann Arbor is also ranked second in SBIR/STTR awards per employee and fourth in the percentage of population with a bachelor's degree. Durham, NC, ranked second or third in four of the underlying variables, while San Jose, CA, ranked second in two variables and fourth in one. Other top-ranked metropolitan areas in the Skilled Workforce and R&D in 2006 include: Madison, WI; Trenton-Ewing, NJ; San Diego-Carlsbad-San Marcos, CA; Raleigh-Cary, NC; Austin, TX; Seattle-Tacoma-Bellevue, WA; and Bridgeport-Stamford-Norwalk, CT (Table C-1 in Appendix C).[19] Except for Seattle, all of these metro areas were ranked among the top 10 in 2005 for this indicator.

[19] Table C-1 in Appendix C shows not only ranking but also scores for each of the 136 metropolitan areas in our study for both 2005 and 2006.

**Table 10. Skilled Workforce and R&D**

| Metro Area | 2000 Rank | 2005 Rank | 2006 Rank |
|---|---|---|---|
| **Top Three MSAs** | | | |
| Ann Arbor, MI | 1 | 1 | 1 |
| Durham, NC | 2 | 2 | 2 |
| San Jose-Sunnyvale-Santa Clara, CA | 3 | 3 | 3 |
| **NEO MSAs** | | | |
| Akron, OH | 74 | 58 | 68 |
| Canton-Massillon, OH | 119 | 117 | 123 |
| Cleveland-Elyria-Mentor, OH | 66 | 64 | 65 |
| Youngstown-Warren-Boardman, OH-PA | 128 | 129 | 127 |
| **Midwest MSAs** | | | |
| Minneapolis-St. Paul-Bloomington, MN-WI | 22 | 16 | 15 |
| Columbus, OH | 26 | 26 | 25 |
| Kansas City, MO-KS | 40 | 34 | 39 |
| Indianapolis-Carmel, IN | 48 | 49 | 43 |
| Pittsburgh, PA | 68 | 55 | 49 |
| St. Louis, MO-IL | 60 | 53 | 50 |
| Milwaukee-Waukesha-West Allis, WI | 53 | 44 | 57 |
| Cincinnati-Middletown, OH-KY-IN | 54 | 59 | 59 |

Among the large Midwest MSAs, two ranked in the first quartile in 2006: Minneapolis which improved its ranking from #22 in 2000 to #16 in 2005 and to #15 in 2006, and Columbus which ranked #25 in 2006, following a slight improvement from its rank of #26 in both 2000 and 2005. Minneapolis improved its ranking in six of the seven variables underlying this indicator. Moreover, the only variable in which Minneapolis held its previous position is the percentage of population with a bachelor's degree; it was already highly ranked (#6) for all 3 years, with 24.7 percent of its adult population in 2006 holding a bachelor's degree. Columbus increased its percentage of population with a bachelor's degree, but lost relative ranking as other MSAs surpassed it. Columbus, however, experienced an increase in its ranks for the percentage of population with professional occupations, percentage of population with graduate or professional degrees, and university R&D.

The six other large Midwest MSAs were all ranked in the second quartile for Skilled Workforce and R&D. Six areas increased their rankings between 2000 and 2006, with the most improvement registered by Pittsburgh and St. Louis. Analyzing 1-year changes shows that five of the Midwest MSAs improved their ranking between 2005 and 2006; the largest gains occurred in Indianapolis and Pittsburgh (six positions), followed by St. Louis (three positions).

What triggered the jumps in ranking for the Pittsburgh MSA from #68 in 2000 to #55 in 2005 and #49 in 2006? Pittsburgh not only improved its own measures in six of the variables underlying the indicator, but it experienced relative improvements in its

ranking in comparison to other MSAs. For example, the percentage of population with professional occupations increased from 33.6 percent in 2000 to 34.8 percent in 2005 and to 36.2 percent in 2006.[20] That progress resulted in Pittsburgh's improved ranking from #56 in 2000 to #36 in 2006 for that variable. Another significant improvement was the percentage of people who have a bachelor's degree; Pittsburgh improved relative to other areas by increasing its own educational attainment. In 2000, Pittsburgh ranked #80 with 14.9 percent of its population having a bachelor's degree, moving to a rank of #64 in 2006 with 17.1 percent.

The St. Louis MSA provides an example of where rankings are subject to the relative standing of other MSAs. St. Louis increased its percentage of population with graduate and bachelor's degrees as well as its industry R&D. As a result, it increased its ranking in these three variables. Although university R&D expenditures in St. Louis also increased over the study period, its ranking declined, suggesting that other areas experienced larger increases in their university R&D.

Analysis of the metro areas in Northeast Ohio shows that Cleveland and Akron ranked in the second quartile in 2006, while Canton and Youngstown ranked in the fourth quartile. Although Youngstown ranked in the bottom of the fourth quartile, it was the only metro area in Northeast Ohio that improved its ranking slightly between 2005 and 2006. The Youngstown area shows some improvement in its percentage of population in professional occupations and university R&D per employee.[21] The Akron, Canton, and Cleveland MSAs experienced improvement in ranking between 2000 and 2005, but their ranks fell in 2006. The Cleveland metro area remained about the same (#66 in 2000, #64 in 2005, and #65 in 2006). The Akron metropolitan area improved its relative rankings from #74 in 2000 to #58 in 2005, only to see some of its gains disappear, ranking #68 in 2006. Nonetheless, between 2000 and 2006 Akron improved its overall ranking by six positions.

The variable with the highest correlation with the Skilled Workforce and R&D indicator is the percentage of population in professional occupations. In 2006, the Cleveland MSA ranked the highest for this variable in Northeast Ohio; while its percentage remained fairly stable (34%), its rank fell from #58 in 2000 to #64 in 2005 and 2006 because other MSAs increased the share of their population with professional

[20] The percentage of the population with professional occupations is determined by the size of the population 16 years old and over and the number of people in professional occupations. Both the population (16+) and the number of people in professional occupations increased in Pittsburgh between 2000 and 2006, contributing to the growth in this variable.

[21] The increase in Youngstown MSA in the percentage of population with professional occupations resulted from both an increase in the number of people with professional occupations and a decline in the population of 16 years old and over. The increase in university R&D per employee in the Youngstown MSA between 2000 and 2006 is a result of a large increase in university R&D and a decline in the number of employees.

occupations. The Akron area improved both its share and rank between 2000 (32%, #81) and 2005 (34.1%, #59), while it lost ground in 2006 (33%, #71). There is, however, a very large gap between the NEO MSAs and the leading areas: the top three leading areas in 2006 were Ann Arbor, MI (with 51.4% of its population in professional occupations), San Jose, CA (46.5%), and Trenton, NJ (44.3%). The highest large Midwest MSA was Minneapolis, MN (39.8%, #13), followed by Columbus, OH (38.5%, #19).

The percentage of population with a bachelor's degree is another underlying variable of the Skilled Workforce and R&D indicator. While the percentage in the Cleveland MSA increased from 15.2 percent in 2000 to 16.6 percent in 2005, it declined to 15.7 percent in 2006. During these years, other areas across the country improved their educational attainment at higher rates, leading to a drop in rank for the Cleveland area in this variable from #75 in 2000 to #90 in 2006. The Akron MSA's rates and ranks were higher than in Cleveland (16.2% in 2000, #56; 18.4% in 2005, #48; and 18.2% in 2006, #50). Again, there is a significant difference between Northeast Ohio and the leading MSAs for this variable. The top three MSAs with the highest percentage of their population with bachelor's degrees are Raleigh, NC (26.2%), Madison, WI (26.0%), and Austin, TX (25.7%).

Examining the correlations between the rank order of the Skilled Workforce and R&D indicator in 2000 and 2006, and between 2005 and 2006 reveals that the rankings in both pairs of years are highly correlated (0.97) and statistically significant. The high correlation and significance denotes strong agreement between the rankings, suggesting that the underlying data has a statistical relationship.

The Skilled Workforce and R&D factor is a critical indicator of economic growth, but moving the needle on each of the variables requires ongoing investments by the different sectors of the economy. The study's framework demonstrates that regions that have a highly skilled workforce and are engaged in R&D through their universities, federal labs, and corporations tend to have higher growth rates of both per capita personal income and productivity. The higher the score and rank that NEO metropolitan areas can achieve, the higher the probability that they will experience increased productivity and per capita income. However, as many regions across the country are also engaged in new initiatives to improve educational attainment, Northeast Ohio needs not only to improve in comparison to previous years, but to do so at rates that are similar to the U.S. average.

## TECHNOLOGY COMMERCIALIZATION

Many regions and communities are adopting strategies to foster innovation. Successful production of innovation requires investments in research and development that can lead to the introduction of new products and more efficient production processes. Traditionally, innovation was dominated by large companies with substantial R&D budgets. In recent years, smaller firms - some of which started as spin-offs from

university-based research or larger ventures – are commercializing new technologies. The Technology Commercialization indicator is composed of three variables—venture capital per employee, number of patents per employee, and cost of living. The variables for patents and venture capital represent the process of innovation commercialization. The number of patents reflects successful research and potential for commercialization, while venture capital shows that investors believe these innovations can be transformed into marketable products. The cost of living variable is also integrated into this factor, suggesting that many research facilities producing patents and many startup companies that are funded by venture capital are located in metropolitan areas with a high cost of living, primarily along the eastern and western coasts of the United States. (Appendix C, Table C-2).

The three leading MSAs are known as areas strong in innovation and commercialization: San Jose, CA; San Diego, CA; and Austin, TX (Table 11). San Jose was ranked #1 in all 3 years, while San Diego has improved its ranking from #7 in 2000 to #2 by 2006. Rankings in this indicator are relatively volatile because they are driven by the number of patents and venture capital - variables that fluctuate from one year to the next. San Jose was not only ranked first in each of the three variables, but it was far ahead of the second-ranked MSA in venture capital per employee and patents per employee. Austin was ranked #3 due to its high ranks for patents per employee and cost of living.

**Table 11. Technology Commercialization**

| Metro Area | 2000 Rank | 2005 Rank | 2006 Rank |
|---|---|---|---|
| **Top Three MSAs** | | | |
| San Jose-Sunnyvale-Santa Clara, CA | 1 | 1 | 1 |
| San Diego-Carlsbad-San Marcos, CA | 7 | 4 | 2 |
| Austin-Round Rock, TX | 4 | 13 | 3 |
| **NEO MSAs** | | | |
| Akron, OH | 36 | 60 | 58 |
| Canton-Massillon, OH | 91 | 97 | 83 |
| Cleveland-Elyria-Mentor, OH | 35 | 57 | 98 |
| Youngstown-Warren-Boardman, OH-PA | 125 | 134 | 133 |
| **Midwest MSAs** | | | |
| Cincinnati-Middletown, OH-KY-IN | 48 | 62 | 66 |
| Columbus, OH | 84 | 99 | 100 |
| Indianapolis-Carmel, IN | 57 | 47 | 94 |
| Kansas City, MO-KS | 54 | 64 | 69 |
| Milwaukee-Waukesha-West Allis, WI | 74 | 58 | 63 |
| Minneapolis-St. Paul-Bloomington, MN-WI | 23 | 32 | 29 |
| Pittsburgh, PA | 43 | 91 | 59 |
| St. Louis, MO-IL | 90 | 88 | 97 |

Minneapolis is the only area in the Midwest that ranked in the first quartile in 2006. It ranked in the first quartile throughout the 3 years, but it lost rank from #23 in 2000 to

#32 in 2005 before recovering some positions to be ranked #29 in 2006. Minneapolis was ranked in the first quartile in both venture capital per employee and patents per employee, experiencing improved ranking in venture capital over the study period.

Three large Midwest MSAs were ranked in the Technology Commercialization indicator in the second quartile: Pittsburgh (#59), Milwaukee (#63), and Cincinnati (#66). Of these areas, Milwaukee MSA is the only area that improved its ranking over the entire period; most of the improvement occurred between 2000 and 2005 (from #74 to #58) followed by a small loss in ranking between 2005 and 2006. Comparing 2000 and 2006, Milwaukee achieved higher ranking in both patents per employee (from #49 in 2000 to #39 in 2006) and cost of living (from #82 in 2000 to #71 in 2006). Kansas City, Indianapolis, and Columbus were ranked in the third quartile for this indicator in 2006; they all lost ranking between 2000 and 2006.

Among NEO MSAs, Akron was the only area ranked in the second quartile during the whole period, although it lost ranking from #36 in 2000 to #60 in 2005 before showing a small improvement to #58 in 2006. Although Akron improved its position in venture capital per employee, it lost in the other two variables, patents per employee and cost of living. The Canton and Cleveland MSAs were ranked in the third quartile in 2006. While Canton improved its ranking within the third quartile, the Cleveland MSA declined significantly; it first fell within the second quartile from #35 in 2000 to #57 in 2005, and then declined further to the bottom of the third quartile with a ranking of #98 in 2006. The Cleveland area declined in all three variables. The Youngstown area remained in the fourth quartile.[22]

The correlation in the rank order of the Technology Commercialization indicator is 0.78 between 2000 and 2006 and 0.86 between 2005 and 2006. Both are statistically significant.

The Technology Commercialization indicator is important because product innovation that attracts investment capital is linked to economic growth. More specifically, the indicator is positively associated with growth in per capita income, gross metropolitan product, and productivity. In the last year, venture capital firms have opened offices in Northeast Ohio prompting expectations that venture capital per employee will be growing. As a result, NEO MSAs may be moving into higher ranks.

[22] According to the data source (Thomson Financial) used for venture capital – one of the variables that underlie Technology Commercialization – there was a decline in venture capital activity in the Midwest. However, t*he 2007 Venture Capital Report for the Cleveland Plus Region* (February 2008) reports higher venture capital figures for the Midwest. This report was published by JumpStart Inc., BioEnterprise and NorTech with the support from the Fund for Our Economic Future. This suggests that there is under-reporting of venture capital activity in the Midwest areas by Thomson Financial. In the future it is expected that Thomson Financial will receive better information about Midwest companies to bridge the gap between their numbers and the numbers reported by JumpStart Inc.

## RACIAL INCLUSION & INCOME EQUALITY

Poverty, income, and racial segregation are often found in conjunction with high rates of crime and social welfare. The indicator includes variables that measure segregation, poverty, and income equality. Two variables included relate to racial patterns, percentage blacks and Black Isolation Index.[23] Two other variables measure poverty and distribution of income: the percentage of children living in high-poverty neighborhoods (approximated by the share of students in schools where more than 70 percent of students receive free lunch) and income inequality (measured as the ratio of personal income of people in the 90th percentile versus the 10$^{th}$ percentile). A fifth variable included in this indicator is violent crime rate, suggesting that areas that have high racial isolation, high poverty, and elevated levels of income inequality are likely to have high rates of violent crime. Although this indicator includes social and demographic variables, racial inclusion and income equality are shown to be related to economic growth.

The leading metropolitan areas include areas that have homogenous populations. The three highest ranked areas are the Provo-Orem and Ogden-Clearfield MSAs in Utah and Manchester-Nashua, NH (Table 12). Provo and Ogden have very low percentages of black population (0.4% and 1.1%, respectively) and thus have almost no segregation. Manchester has the lowest percentage of students in schools where more than 70 percent receive free lunch. All three of these leading MSAs have very low rates of violent crime.

[23] The Isolation Index estimates the degree to which a minority group is exposed to a majority group in its neighborhood. Higher values of isolation indicate higher segregation.

**Table 12. Racial Inclusion and Income Equality**

| Metro Area | 2000 Rank | 2005 Rank | 2006 Rank |
|---|---|---|---|
| **Top Three MSAs** | | | |
| Provo-Orem, UT | 1 | 1 | 1 |
| Ogden-Clearfield, UT | 5 | 2 | 2 |
| Manchester-Nashua, NH | 2 | 7 | 3 |
| **NEO MSAs** | | | |
| Akron, OH | 69 | 76 | 79 |
| Canton-Massillon, OH | 40 | 37 | 41 |
| Cleveland-Elyria-Mentor, OH | 119 | 119 | 121 |
| Youngstown-Warren-Boardman, OH-PA | 81 | 83 | 84 |
| **Midwest MSAs** | | | |
| Cincinnati-Middletown, OH-KY-IN | 85 | 98 | 92 |
| Columbus, OH | 80 | 84 | 86 |
| Indianapolis-Carmel, IN | 79 | 87 | 91 |
| Kansas City, MO-KS | 83 | 91 | 87 |
| Milwaukee-Waukesha-West Allis, WI | 87 | 106 | 116 |
| Minneapolis-St. Paul-Bloomington, MN-WI | 33 | 33 | 32 |
| Pittsburgh, PA | 63 | 75 | 76 |
| St. Louis, MO-IL | 112 | 115 | 117 |

Minneapolis was the highest ranked among the large Midwest MSAs. It maintained a rank of #33 in 2000 and 2005 and then improved slightly to #32 in 2006. Minneapolis was the only Midwest area to rank in the first quartile in 2006. In comparison to the other large Midwest MSAs, Minneapolis has the lowest percentage of black population (ranked #53), lowest segregation (#75), very low income inequality (#5), and low rate of violent crime (#34). By contrast, two large Midwest MSAs were ranked in the fourth quartile in 2005 and 2006: Milwaukee and St. Louis. Their low ranks in the Racial Inclusion and Income Equality indicator were mainly driven by higher rates of black population (16.3% and 18.1%, respectively) and high rates of segregation. Five other large Midwest MSAs were ranked in the third quartile in 2006. Cincinnati, Columbus, Indianapolis, and Kansas City all remained in the third quartile between 2000 and 2006, but they lost rank within the quartile. Pittsburgh fell from #63 in the second quartile in 2000 to #75 in the third quartile in 2005 and #76 in 2006.

Within Northeast Ohio, the metropolitan Canton area ranked at the top of the second quartile in 2006 (#41), just below its ranks in 2000 (#40) and 2005 (#37). Canton's high ranking is a result of low income inequality and lower rates of violent crime. Akron and Youngstown ranked in the third quartile for all 3 years, although Akron lost 10 positions between 2000 and 2006, falling from a rank of #69 in 2000 to #79 in 2006. This decline was a result of a higher crime rate (and a lower rank), a small increase in the percentage of black population (with the same rank) and improved isolation index (but lower rank). The Cleveland area ranked the lowest among NEO MSAs; not only did it rank in the fourth quartile in all 3 years, but its rank dropped slightly from #119 in both 2000 and

2005 to #121 in 2006. Among the five variables underlying the Racial Inclusion and Income Equality indicator, the Cleveland area ranked quite low in three of the variables. The Cleveland MSA ranked last (#136) in isolation index, ranked #115 in the percentage of students in schools where more than 70 percent of students receive free lunch (an indicator of high poverty), and #107 in the percentage of black population (19.5%).

The correlation in the rank order of the Racial Inclusion and Income Equality indicator is very high and statistically significant. It is 0.96 between 2000 and 2006 and 0.97 between 2005 and 2006.

The importance of this indicator is related to the conditions wherein economic growth is hindered when a large portion of the population is isolated or in low income brackets. Increased racial inclusion and income equality is linked to economic growth. This is the only indicator that is associated with expansion in all four measures of economic growth (per capita income, employment, gross metropolitan output, and productivity).

## URBAN ASSIMILATION

Assimilating minority and immigrant populations into the economy and social fabric of regions enhances regional growth. In distinction from the previous indicator, Urban Assimilation describes ethnic diversity (percentage Hispanic, percentage foreign-born, and percentage Asian), as well as percentage employed in minority-owned businesses. This indicator also includes a variable that measures productivity in the information sector, which means that the distribution of productivity in the information sector varies across metropolitan areas in a similar pattern as the four urban assimilation variables. However, the productivity variable is more volatile than the other variables.

Almost all of the 15 leading MSAs are in California and Texas. This is to be expected as these two states have relatively high percentages of Hispanics, Asians, and foreign-born residents. The leading three areas are: El Paso, TX; McAllen-Edinburg-Mission, TX; and San Jose (Table 13). These MSAs are among the top areas measured in terms of percentage of Hispanics, share of minority businesses, and percentage of foreign-born. San Jose, CA, is the only MSA to rank at the top in the percentage of Asians and in productivity in the information sector.

The highest ranked Midwest MSA in all 3 years is Kansas City (#53 in 2006), resulting from high scores relative to other Midwest areas in percentage of Hispanics (#65 with 6.7%), share of minority businesses (#68 with 1.8%), and productivity in the information sector (#9). Minneapolis and Milwaukee are also ranked in the second quartile. Cincinnati and Pittsburgh were ranked in the fourth quartile in all 3 years; both had low values in all of the variables underlying the Urban Assimilation indicator, except for productivity in the information sector (where they ranked in 2006 #41 and #43, respectively).

## Table 13. Urban Assimilation

| Metro Area | 2000 Rank | 2005 Rank | 2006 Rank |
|---|---|---|---|
| **Top Three MSAs** | | | |
| El Paso, TX | 2 | 1 | 1 |
| McAllen-Edinburg-Mission, TX | 1 | 2 | 2 |
| San Jose-Sunnyvale-Santa Clara, CA | 4 | 3 | 3 |
| **NEO MSAs** | | | |
| Akron, OH | 126 | 125 | 125 |
| Canton-Massillon, OH | 136 | 135 | 135 |
| Cleveland-Elyria-Mentor, OH | 77 | 87 | 89 |
| Youngstown-Warren-Boardman, OH-PA | 133 | 134 | 136 |
| **Midwest MSAs** | | | |
| Cincinnati-Middletown, OH-KY-IN | 107 | 106 | 112 |
| Columbus, OH | 70 | 84 | 87 |
| Indianapolis-Carmel, IN | 96 | 95 | 95 |
| Kansas City, MO-KS | 50 | 54 | 53 |
| Milwaukee-Waukesha-West Allis, WI | 61 | 64 | 66 |
| Minneapolis-St. Paul-Bloomington, MN-WI | 63 | 61 | 62 |
| Pittsburgh, PA | 122 | 121 | 118 |
| St. Louis, MO-IL | 68 | 85 | 86 |

Except for the Cleveland MSA, all other areas in Northeast Ohio were ranked in the bottom of the fourth quartile. Cleveland ranked in the third quartile in all 3 years; it lost rank from #77 in 2000 to #87 in 2005 and #89 in 2006. These low ranks are not surprising, since Northeast Ohio has relatively low percentages of Hispanics, Asians, and foreign- born residents. Cleveland had the highest productivity in the information sector among NEO MSAs, ranking #62 in 2006. However, this ranking was the lowest in comparison to the other large Midwest MSAs.

The correlation in the rank order of the Urban Assimilation indicator is very high and statistically significant. Between 2000 and 2006, the rank correlation is 0.98 and between 2005 and 2006, the correlation is 0.99.

Urban Assimilation is positively associated with growth in employment, gross metropolitan product, and productivity. It shows that diverse regions are linked to regional economic growth and that the immigration of highly-educated, highly-skilled people can contribute to economic growth.

## LEGACY OF PLACE

The Legacy of Place indicator reflects business churning (approximated by the rate of business openings and closings), and the demographic, social, and economic history of metropolitan areas. It includes variables that suggest aging physical infrastructure (approximated by the percentage of houses built before 1940), industrial heritage (share of manufacturing employment), racial and poverty concentrations in central cities (Black Dissimilarity Index, and the core city's share of poverty relative to its share of the metropolitan population). Other variables included in this indicator are climate and the number of governmental units per capita. Regions with high legacy costs and high poverty also have low business churning and slower economic growth.

This indicator describes the social and economic burdens on regional economies; it is negatively associated with economic growth. Metro areas are ranked from high legacy costs to low. A high ranking for this indicator is detrimental to regional growth and it is the only indicator in this study where it is desirable to have a low ranking; correspondingly, losing rank over time is a good outcome.

It is not surprising that among the 136 MSAs included in the study almost all of those ranked in the first quartile are located in the Northeast and Midwest regions of the country. The top three leaders, meaning those MSAs with the lowest rank and lowest legacy costs are MSAs in Nevada and Florida: Las Vegas-Paradise, Naples-Marco Island, and Cape Coral-Fort Myers (Table 14). Las Vegas is ranked among the leading five areas in several variables that indicate low legacy costs, including high levels of business churning, very low percentages of houses built prior to 1940, and very low black dissimilarity index, number of government units per capita, and share of manufacturing. Naples and Cape Coral are both ranked among the top five areas in three of the variables underlying the Legacy of Cost indicator.

Among the larger Midwest MSAs, four areas were ranked in the first quartile, showing high legacy costs: Pittsburgh, Milwaukee, Cincinnati, and St. Louis. The first three were ranked higher in 2006 than in 2000, suggesting increased legacy costs and more impediments to economic growth. In contrast, Kansas City and Minneapolis were in the second quartile and had lower ranks in 2006 compared to 2000, suggesting a lessening of the legal burden. Columbus had the lowest ranking and the lowest legacy costs among all Midwest MSAs. Its relative strength resulted from a lower share of manufacturing (which in this indicator is associated with negative influence on regional economic growth) and a higher rate of business churning. Many of the lowest rank MSAs - those that have the least legacy costs - are located in Florida and Nevada, places that have been rapidly expanding in the past couple decades.

**Table 14. Legacy of Place**

| Metro Area | 2000 Rank | 2005 Rank | 2006 Rank |
|---|---|---|---|
| **Top Three MSAs** | | | |
| Las Vegas-Paradise, NV | 136 | 136 | 136 |
| Naples-Marco Island, FL | 134 | 135 | 135 |
| Cape Coral-Fort Myers, FL | 135 | 133 | 134 |
| **NEO MSAs** | | | |
| Akron, OH | 30 | 30 | 32 |
| Canton-Massillon, OH | 17 | 15 | 16 |
| Cleveland-Elyria-Mentor, OH | 16 | 17 | 17 |
| Youngstown-Warren-Boardman, OH-PA | 6 | 8 | 4 |
| **Midwest MSAs** | | | |
| Cincinnati-Middletown, OH-KY-IN | 24 | 27 | 20 |
| Columbus, OH | 51 | 51 | 49 |
| Indianapolis-Carmel, IN | 52 | 49 | 48 |
| Kansas City, MO-KS | 43 | 43 | 46 |
| Milwaukee-Waukesha-West Allis, WI | 20 | 19 | 14 |
| Minneapolis-St. Paul-Bloomington, MN-WI | 39 | 40 | 43 |
| Pittsburgh, PA | 12 | 12 | 10 |
| St. Louis, MO-IL | 29 | 29 | 31 |

The four MSAs in Northeast Ohio are all in the first quartile. The Akron and Cleveland MSAs lost ranks by one or two positions over the period, thereby slightly improving their standing. The Youngstown area has the worst position in Northeast Ohio, ranking #4 in 2006; Youngstown has one of the highest legacy costs in the country. The higher ranks (indicating high legacy costs) in NEO MSAs stem from the underlying variables. All of the NEO MSAs had low rates of business churning but high percentage of old housing stock, high dissimilarity index, and a relatively large share of manufacturing. The Akron, Canton and Cleveland MSAs ranked in the middle in the measure of the number of government units per capita.

The rank correlations between 2000 and 2006 and between 2005 and 2006 were very high and statistically significant. The rank correlation between 2000 and 2006 of the Legacy of Place indicator is 0.98, while the rank correlation between 2005 and 2006 is 0.99.

Legacy costs are negatively associated with economic growth. High legacy costs are associated with lower growth in employment, gross metropolitan product, and productivity. Although some of this indicator's variables are not appropriate targets for shaping public policy, it is important to acknowledge the historic, social, and economic effects denoted by this indicator.

## BUSINESS DYNAMICS

The Business Dynamics indicator is determined by one variable that measures business dynamics in a metro area. It is calculated as the ratio between business openings and business closings of single-site companies. Metro areas with more business openings than closings have a healthier and more dynamic economy. This ratio, however, may be very volatile between years. Thus, there are very large swings in the rankings of MSAs for this indicator.

The nine highest ranked MSAs in the Business Dynamics indicator are all located in Florida, a fast-growing state. The top three include the Deltona-Daytona Beach-Ormond Beach, Port St. Lucie, and Orlando-Kissimmee MSAs (Table 15). All three increased their ratios between 2000 and 2006 to claim their top rankings.

**Table 15. Business Dynamics**

| Metro Area | 2000 Rank | 2005 Rank | 2006 Rank |
|---|---|---|---|
| **Top Three MSAs** | | | |
| Deltona-Daytona Beach-Ormond Beach, FL | 84 | 29 | 1 |
| Port St. Lucie, FL | 107 | 15 | 2 |
| Orlando-Kissimmee, FL | 31 | 6 | 3 |
| **NEO MSAs** | | | |
| Akron, OH | 89 | 93 | 129 |
| Canton-Massillon, OH | 81 | 112 | 128 |
| Cleveland-Elyria-Mentor, OH | 100 | 127 | 122 |
| Youngstown-Warren-Boardman, OH-PA | 104 | 123 | 107 |
| **Midwest MSAs** | | | |
| Cincinnati-Middletown, OH-KY-IN | 75 | 106 | 110 |
| Columbus, OH | 74 | 74 | 78 |
| Indianapolis-Carmel, IN | 80 | 76 | 51 |
| Kansas City, MO-KS | 50 | 56 | 40 |
| Milwaukee-Waukesha-West Allis, WI | 101 | 124 | 93 |
| Minneapolis-St. Paul-Bloomington, MN-WI | 13 | 34 | 39 |
| Pittsburgh, PA | 83 | 128 | 100 |
| St. Louis, MO-IL | 85 | 80 | 42 |

Among the eight large Midwest MSAs, four were ranked in the second quartile in 2006. Leading the group was Minneapolis with a ratio between business openings and business closings of single-site companies of 1.25 in 2006 (#39), followed closely by Kansas City (#40) and St. Louis (#42). Of the four highest ranked Midwest MSAs, three improved their ranks: St. Louis, Indianapolis, and Kansas City. Seven of the nine large Midwest MSAs (except for Cincinnati and Cleveland) experienced an increase in the ratio of business opening to business closings; however, only four improved their ranks.

In contrast to the Midwest, all four NEO MSAs were ranked in the fourth quartile in 2006. Moreover, they all declined in their ranks between 2000 and 2005 and the Akron and Canton areas continued to lose rank between 2005 and 2006. Cleveland and Youngstown experienced some improvement in their ranks between 2005 and 2006, but not enough to offset the earlier losses. Cleveland ranks fell from #100 in 2000 to #127 in 2005 and then improved to #122 in 2006. Youngstown ranks declined from #104 in 2000 to #123 in 2005 and then improved significantly to #107 in 2006. Overall, between 2000 and 2006, all NEO MSAs lost ranks in the Business Dynamics indicator and their ratios of business opening-to-closing showed small changes; the ratios in Akron and Canton declined slightly, while the ratios in Cleveland and Youngstown rose marginally. By 2006, the ratio between business openings and business closings of single-site companies was 1.03 in the Cleveland MSA and 1.08 in the Youngstown area, a sharp contrast to the leading MSAs that posted a ratio of about 1.60 (for each 10 companies that closed, 16 new were started).

The rank correlations points to the volatility in this variable and indicator. The rank correlation between 2000 and 2006 is only 0.26, while the correlation between 2005 and 2006 is 0.65. Both are statistically significant. In other words, the relationship between the indicator rankings for the indicated time periods is not strong.

The low ranking of NEO MSA in the Business Dynamics indicator is challenging because this indicator is tied to growth in employment and gross metropolitan product. It is obvious that regional leaders need to continue their efforts on growing new businesses and attracting businesses from other regions. Both strategies, already implemented in Northeast Ohio, will increase the number of business openings in the region. Strategies to retain existing firms are also critical to reducing the number of business closings.

## INDIVIDUAL ENTREPRENEURSHIP

This indicator describes the small business sector. The Individual Entrepreneurship indicator includes two variables: percentage of self-employed and the share of business establishments with fewer than 20 employees. It confirms researchers' projections for the increased role that small and personal businesses have in the economy.

Many of the MSAs that are ranked at the top are located in the Southern and Western regions of the country. Of the first three, Naples-Marco Island, FL and Sarasota-Bradenton-Venice, FL were ranked at the top in each of the 3 years (Table 16). The Wilmington, NC MSA jumped seven positions to reach the top in 2006.

The percentage of self-employed in the top three MSAs was twice as high as that for NEO and other Midwest MSAs. For example, the percentage of self-employed was 16.4 percent in Naples while it was 8.8 percent in Cleveland and 8.4 percent in Pittsburgh. The variation among all 136 MSAs in the percentage of business with less than 20 employees was much smaller, between a high of 90 percent to a low of 81.8 percent.

**Table 16. Individual Entrepreneurship**

| Metro Area | 2000 Rank | 2005 Rank | 2006 Rank |
|---|---|---|---|
| **Top Three MSAs** | | | |
| Naples-Marco Island, FL | 1 | 3 | 1 |
| Sarasota-Bradenton-Venice, FL | 2 | 2 | 2 |
| Wilmington, NC | 5 | 10 | 3 |
| **NEO MSAs** | | | |
| Akron, OH | 104 | 101 | 114 |
| Canton-Massillon, OH | 100 | 81 | 82 |
| Cleveland-Elyria-Mentor, OH | 102 | 94 | 95 |
| Youngstown-Warren-Boardman, OH-PA | 87 | 74 | 72 |
| **Midwest MSAs** | | | |
| Cincinnati-Middletown, OH-KY-IN | 126 | 126 | 130 |
| Columbus, OH | 130 | 127 | 125 |
| Indianapolis-Carmel, IN | 111 | 118 | 110 |
| Kansas City, MO-KS | 75 | 77 | 75 |
| Milwaukee-Waukesha-West Allis, WI | 135 | 134 | 135 |
| Minneapolis-St. Paul-Bloomington, MN-WI | 91 | 91 | 74 |
| Pittsburgh, PA | 89 | 80 | 102 |
| St. Louis, MO-IL | 110 | 107 | 113 |

Of the NEO or Midwest MSAs, none ranked in the first or second quartiles in the Individual Entrepreneurship indicator in 2006. The Youngstown MSA ranked the highest (#72) among all NEO and large Midwest metro areas due to a relatively high score in the percentage of businesses with less than 20 employees (85.3% with a rank #54). Closely ranked MSAs include Minneapolis (#74) and Kansas City (#75) which ranked near the top of the third quartile. Pittsburgh was ranked at the bottom of the third quartile (#102); it had very low rankings in the percentage of self-employed. All of the other large Midwest MSAs were ranked in the fourth quartile. Among the large Midwest areas, Minneapolis showed the most improvement in rank.

Three of NEO MSAs were ranked in the third quartile; only the Akron area was ranked in the fourth quartile. Moreover, the Canton, Cleveland, and Youngstown MSAs improved their ranks between 2000 and 2006, while Akron's rank deteriorated. The Cleveland area improved its rank because it improved both its percentage and rank in the percentage of employment with less than 20 employees. Cleveland's percentage of self-employed rose from 8.2 percent in 2000 to 8.8 percent in 2006 but it lost ranking in this variable because other areas experienced larger growth. Youngstown showed the best improvement among NEO MSAs in the Individual Entrepreneurship indicator, improving from #87 in 2000, to #74 in 2005 and #72 in 2006. Akron MSAs rank in the Individual Entrepreneurship indicator declined. The Akron area increased the percentage of self-employed between 2000 and 2006, but was surpassed by larger improvements in other MSAs, thus resulting in a decline in the rank for this variable from #84 in 2000 to #106 in

2006. The Akron area retained its score and rank in the percentage of businesses with less than 20 employees (#106 in both 2000 and 2006).

The rank correlations for this indicator are high and statistically significant. The correlation is 0.91 between 2000 and 2006 and 0.89 between 2005 and 2006.

The health and growth of the small business sector is linked to growth in both employment and gross metropolitan product. This indicator points to the importance of economic development initiatives that focus on growing small businesses.

## LOCATIONAL AMENITIES

Locational amenities reflect the quality of life in a region and influence people's decisions about the places they want to live, work, and play. Four measures define the Locational Amenities indicator, including transportation, arts, recreation, and healthcare indices. Each index is calculated based on several variables. This factor is important because regional amenities affect people's decisions on where to live, work, or start their businesses.

In 2006, the top ranked MSAs among the 136 metro areas included in the study were Cleveland, OH (#1); Seattle, WA; and Minneapolis, MN (Table 17). It should be noted that the data sources used for 2000 and 2006 are more consistent with each other than that for 2005. Cleveland and Minneapolis were also among the top three areas in 2000 along with Bridgeport, CT. High scores in the transportation and recreation indices contributed to the high rankings of the Cleveland and Minneapolis areas. Cleveland improved its ranking from #3 in 2000 to #1 in 2006 because of improvements in both the transportation and the health indices.

All of the large Midwest MSAs were ranked in the first quartile in the Locational Amenities indicator and four improved their rankings within the first quartile: St. Louis, Pittsburgh, Columbus, and Cincinnati. St. Louis improved its indicator ranking because of higher relative performance in the recreation and health indices. Pittsburgh and Cincinnati improved their ranking because of improvements in the recreation index, while Columbus improved its arts and health indices.

In Northeast Ohio, in addition to the Cleveland MSA that was ranked #1 in the Locational Amenities, the Akron area ranked in the bottom of the second quartile. The Akron MSA improved its ranking from #71 in 2000 to #66 in 2006 due to relative advancements in the transportation, recreation, and health indices. The Canton and Youngstown areas were ranked in the fourth quartile.

**Table 17. Locational Amenities**

| Metro Area | 2000 Rank | 2005 Rank | 2006 Rank |
|---|---|---|---|
| **Top Three MSAs** | | | |
| Cleveland-Elyria-Mentor, OH | 3 | 16 | 1 |
| Seattle-Tacoma-Bellevue, WA | 14 | 1 | 2 |
| Minneapolis-St. Paul-Bloomington, MN-WI | 1 | 5 | 3 |
| **NEO MSAs** | | | |
| Akron, OH | 71 | 49 | 66 |
| Canton-Massillon, OH | 110 | 62 | 112 |
| Cleveland-Elyria-Mentor, OH | 3 | 16 | 1 |
| Youngstown-Warren-Boardman, OH-PA | 114 | 74 | 113 |
| **Midwest MSAs** | | | |
| Cincinnati-Middletown, OH-KY-IN | 16 | 28 | 14 |
| Columbus, OH | 30 | 48 | 28 |
| Indianapolis-Carmel, IN | 10 | 52 | 15 |
| Kansas City, MO-KS | 20 | 18 | 27 |
| Milwaukee-Waukesha-West Allis, WI | 4 | 10 | 10 |
| Minneapolis-St. Paul-Bloomington, MN-WI | 1 | 5 | 3 |
| Pittsburgh, PA | 9 | 3 | 7 |
| St. Louis, MO-IL | 15 | 15 | 6 |

Examining the correlations between the rank order of the Locational Amenities indicator shows a higher correlation between 2000 and 2006 (0.78) than between 2005 and 2006 (0.61). This is consistent with the similarity between the data sources used. Both correlations are statistically significant.

Locational amenities are positively linked to economic growth. Among all of the nine indicators, it is the only indicator that is associated with only one measure of economic growth, per capita income. Since the MSAs in Northeast Ohio are already highly ranked, Northeast Ohio only needs to maintain its current strength and not close significant gaps with other regions of the country.

## URBAN/METRO STRUCTURE

Economic development literature suggests that metropolitan areas with healthy central cities have stronger economic growth over time. The Urban/Metro Structure indicator includes two variables: central city population as a percentage of metro population and the rate of property crime. This factor is more difficult to interpret since the larger share of population in a central city is considered a positive characteristic of metropolitan areas. At the same time, this variable is highly correlated with a high property crime rate, which is obviously considered a negative attribute. Having these two variables in the same factor suggests that they vary in similar patterns across metropolitan areas to the extent that larger cities (relative to their metro area) are likely to have higher property crime rates compared to smaller cities.

The leading MSAs are smaller areas with central cities that account for a relatively small share of their metropolitan area (Table 18). They include Poughkeepsie, NY (4.8%); Naples, FL (7.5%); and Harrisburg, PA (9.5%). There was no change in the indicator's ranking among the top three between 2005 and 2006.

Among the large Midwest MSAs, Pittsburgh and Minneapolis were ranked in the first quartile, experiencing similar rankings in all 3 years. Pittsburgh is ranked #6 in the Urban/Metro Structure indicator as a result of high ranking in both variables underlying this indicator. It ranked #17 in the share of the city in the MSA (12.5%) and it ranked #12 with low property crime rates. St. Louis and Cincinnati were ranked in the second quartile in 2006. St. Louis improved its ranking between 2000 and 2005 and then lost some rank between 2005 and 2006 for a total improvement over the whole period. St. Louis improved between 2000 and 2006 because of a reduction in its property crime that led to a much higher rank in that variable. Cincinnati lost rank from #30 in 2000 to #32 in 2005 to #40 in 2006.

**Table 18. Urban Structure**

| Metro Area | 2000 Rank | 2005 Rank | 2006 Rank |
|---|---|---|---|
| **Top Three MSAs** | | | |
| Poughkeepsie-Newburgh-Middletown, NY | 1 | 1 | 1 |
| Naples-Marco Island, FL | 20 | 2 | 2 |
| Harrisburg-Carlisle, PA | 3 | 3 | 3 |
| **NEO MSAs** | | | |
| Akron, OH | 38 | 66 | 65 |
| Canton-Massillon, OH | 32 | 42 | 42 |
| Cleveland-Elyria-Mentor, OH | 35 | 23 | 33 |
| Youngstown-Warren-Boardman, OH-PA | 18 | 16 | 17 |
| **Midwest MSAs** | | | |
| Cincinnati-Middletown, OH-KY-IN | 30 | 32 | 40 |
| Columbus, OH | 112 | 114 | 109 |
| Indianapolis-Carmel, IN | 85 | 100 | 104 |
| Kansas City, MO-KS | 69 | 50 | 72 |
| Milwaukee-Waukesha-West Allis, WI | 84 | 71 | 83 |
| Minneapolis-St. Paul-Bloomington, MN-WI | 27 | 21 | 26 |
| Pittsburgh, PA | 6 | 8 | 6 |
| St. Louis, MO-IL | 52 | 30 | 38 |

Both the Cleveland and Youngstown MSAs were ranked in the first quartile in 2005 and 2006. Ranked #33 in 2006, Cleveland improved its ranking significantly between 2000 (#35) and 2005 (#23) and then lost most of the higher ranking by 2006. These changes mirror the Cleveland MSA's ranks in property crime, which improved from #36 in 2000 to #21 in 2005 before dropping to #37 in 2006. These ranks are still very good, placing the Cleveland area at the top of the second quartile. With a rank of #17 in 2006, Youngstown was the highest ranked area among NEO MSAs and the second highest

ranked area when compared to the large Midwest MSAs. It retained its high ranking in all 3 years. The Youngstown MSA had higher ranks than the other three MSAs in Northeast Ohio in both variables. Canton and Akron were ranked in the second quartile and both lost ranking over the 3 years.

Examining the correlations between the rank order of the Urban/Metro Structure indicator shows very high correlations. There is a correlation of 0.94 between 2000 and 2006 and 0.98 between 2005 and 2006. Both correlations are statistically significant.

Urban/Metro Structure is positively associated with growth in employment and gross metropolitan product. The relative size of the central city results from population changes in the central city and its metropolitan area and it is affected by general global and local conditions such as population and employment migrations. This variable may be difficult to influence quickly. Property crime rate, the second variable in this indicator, results from broad socioeconomic conditions and may also be difficult to influence through economic development initiatives.

## DETAILED MONITORING OF NORTHEAST OHIO PERFORMANCE

This section describes in detail the performance of the NEO region as a whole in selected socioeconomic variables and highlights the individual NEO metro areas driving the changes occurring in the region. It focuses on the 1-year change from 2005 to 2006 but also highlights some longer term trends (2000 to 2005 and 2000 to 2006) where significant changes occurred. Table 19 shows a list of all variables used in the dashboard study, and by indicator, compares NEO average values for 3 years; 2000, 2005, and 2006. The NEO average is calculated as the mean of the values for the four metro areas; Akron, Canton-Massillon, Cleveland-Elyria-Mentor, and Youngstown-Warren-Boardman. For each of the four NEO metro areas, the list of values and rankings for all variables underlying the dashboard indicators are provided in Appendix D, Table D-1. Variables that improved in the NEO region are discussed first, followed by variables that remained unchanged, and finally those that declined.

University R&D expenditure per employee in Northeast Ohio improved considerably during the longer time period, increasing from $76.2 per employee in 2000 to $112 per employee in 2006; it also improved by $16.7 per employee over the 1-year period (2005 to 2006).[24] From 2000 to 2005, all NEO metro areas increased in university R&D except Canton, which showed no activity in both years. From 2005 to 2006, while Cleveland and Youngstown grew ($235.8 to $307.2 and $4.5 to $6.3, respectively), Akron's university R&D per employee declined ($140.8 to $134.5). Although university R&D increased in Cleveland and Youngstown from 2005 to 2006, rankings of this variable dropped by 13 and 25 positions, respectively. This indicates that although these NEO metro areas increased their university R&D per employee, other metro areas in the sample increased their university R&D by larger amounts. Thus, NEO metro areas have to increase their university R&D significantly more to move up in the rankings and be nationally competitive.

In the last year (2005 to 2006), property crime rates in the NEO region declined by 56.7 crimes per 100,000 population. The decline in NEO property crime was due to improvements occurring in the Akron, Canton, and Youngstown MSAs which experienced a drop in property crimes of 210.5, 210.1, and 177.7 per 100,000 population, respectively. Cleveland MSA, on the other hand, had a large increase in property crime rates from 2,759.1 to 3,130.8 crimes, a 371.7 jump, in the last year.

The percentage of the population that is foreign-born increased in both the NEO region as a whole (0.3% growth) and in all four NEO metro areas in the last year; NEO MSAs growth in percentage of foreign-born ranged from 0.1 to 0.5 percent.

[24] University R&D for each year is calculated as a 3-year average because the data is very volatile. Thus, for the university R&D 2000 column, the average of university R&D in 1998 to 2000 is used. Similarly, university R&D 2005 and 2006 is an average of university R&D in 2002 to 2004 and 2004 to 2006, respectively.

## Table 19. NEO Average by Variables

| Factors and Variables | NEO Average | | |
|---|---|---|---|
| | 2000 value | 2005 value | 2006 value |
| **Skilled Workforce & R&D** | | | |
| Pct. Of population in professional occupation | 31.6 | 32.3 | 32.2 |
| Pct. Of population with graduate or professional degree | 7.7 | 8.9 | 8.7 |
| Pct. Of population with bachelor's degree | 14.3 | 15.7 | 15.2 |
| Industry R&D per employee | 397.2 | 410.1 | 380.4 |
| SBIR & STTR awards per employee | 6.51 | 16.75 | 5.65 |
| Population dependency | 0.40 | 0.38 | 0.38 |
| University R&D per employee | 76.2 | 95.3 | 112.0 |
| **Technology Commercialization** | | | |
| Venture capital per employee | 550.4 | 141.5 | 24.3 |
| Number of patents per employee | 0.889 | 0.881 | 0.857 |
| Cost of living | 93.9 | 86.8 | 85.4 |
| **Racial Inclusion & Income Equality** | | | |
| Pct. Of black population | 15.0 | 15.2 | 15.4 |
| Isolation index for black population | 0.62 | 0.49 | 0.49 |
| Income inequality | 5.7 | 5.7 | 5.7 |
| Students at schools with over 70% with free lunches | 0.199 | 0.105 | 0.106 |
| Violent crime | 345.0 | 346.7 | 370.3 |
| **Urban Assimilation** | | | |
| Pct. Of hispanic population | 2.4 | 2.7 | 2.7 |
| Share of minority business employment (in total employment) | 0.014 | 0.014 | 0.014 |
| Pct. Of foreign-born population | 4.0 | 4.1 | 4.4 |
| Productivity in information sector | 97.5 | 147.3 | 138.2 |
| Pct. Of asian population | 1.1 | 1.4 | 1.5 |
| **Legacy of Place** | | | |
| Business churning | 0.168 | 0.167 | 0.167 |
| Climate | 14 | 14 | 14 |
| Pct. Of houses built before 1940 | 23.5 | 24.3 | 25.0 |
| Dissimilarity index for black population | 0.721 | 0.695 | 0.693 |
| City poverty ratio | 2.21 | 2.17 | 2.00 |
| No. Of government units per 10, 000 population | 1.355 | 1.355 | 1.369 |
| Share of manufacturing employment | 0.18 | 0.15 | 0.14 |
| **Business Dynamics** | | | |
| Single establishment business birth over death ratio | 0.995 | 1.014 | 1.001 |
| **Individual Entrepreneurship** | | | |
| Self employed (all industries except agriculture & mining) | 0.082 | 0.090 | 0.089 |
| Share of business establishments with under 20 workers | 0.840 | 0.846 | 0.847 |
| **Locational Amenities** | | | |
| Transportation index | 70.1 | n/c | 67.0 |
| arts index | 52.3 | n/c | 66.3 |
| recreation index | 79.7 | n/c | 64.5 |
| health index | 40.9 | n/c | 46.5 |
| **Urban/ Metro Structure** | | | |
| Share of city population in metro area population | 0.22 | 0.20 | 0.20 |
| Property crime | 3,240.4 | 3,370.5 | 3,313.8 |

* n/c means the data from 2005 are not comparable to data from 2000 and 2006.

Between 2005 and 2006, small improvements occurred in the NEO region in the city poverty ratio and dissimilarity index for the black population. The dissimilarity index improved slightly in Akron, Cleveland, and Youngstown, but worsened slightly in the Canton area. City poverty ratio improved slightly in all NEO metro areas except the Youngstown area which experienced a small deterioration.

All three variables measuring educational attainment remained virtually unchanged with slight decreases in the average numbers for the NEO region from 2005 to 2006. In both years, 32 percent of the population in the NEO region was in professional or managerial occupations, close to 9 percent had a graduate or professional degree, and fewer than 16 percent of the population had a bachelor's degree. The percentage of population in professional occupations grew in Youngstown (1 increase in percentage points), remained stable in Canton and Cleveland, but fell in Akron (1.1 decline in percentage points). Only Youngstown improved its ranking in the last year (#130 to #123) in this variable. The percentage of the population with graduate or professional degrees remained unchanged for Cleveland (10%) and Youngstown (5.6%) from 2005 to 2006; however, Akron declined from 9.7 percent to 9.2 percent and Canton showed a very slight decline. The percentage of population with bachelor's degrees also remained fairly stable in the region; Youngstown had a slight increase (11.7% to 11.9%), while there were marginal declines in Akron (18.4% to 18.2%), Canton (12.6% to 12.1%), and Cleveland (16.6% to 15.7%) from 2005 to 2006. While Youngstown slowly increased the percentage of population with bachelor's degrees from 2000 to 2005 and 2005 to 2006, the other three metro areas increased from 2000 to 2005 but decreased slightly over the last year.

The percentage of the population that is Hispanic remained unchanged in the region as a whole and in the individual NEO metro areas in the last year. Likewise, the Asian population in the region remained fairly stable with a very slight increase attributed to a small change in Akron and Canton (0.2 percentage point increase in both metro areas).

Another variable that remained unchanged in the NEO region from 2005 to 2006 is the percentage of the population that is self-employed and the share of businesses that employ less than 20 workers with values of approximately 9 percent and 85 percent, respectively for both years. The NEO metro areas also remained unchanged in both variables. Canton, Cleveland, and Youngstown improved their rankings in self-employed (#90 to #81, #110 to #105, and #113 to #91, respectively) but Akron dropped from #93 to #106. Cleveland improved in the share of businesses with less than 20 workers by one position (#75 to #74), while Akron dropped seven positions (#99 to #106), Canton dropped 12 positions (#88 to #76), and Youngstown dropped three positions (#51 to #54).

Unlike university R&D expenditures, which increased in Northeast Ohio, industry R&D per employee declined from $410.1 per employee in 2005 to $380.4 per employee in

2006.[25] The four metro areas in Northeast Ohio performed differently. Akron and Cleveland significantly increased their industry R&D expenditures by $75.8 and $31.5 per employee, respectively. Youngstown remained relatively stable, while Canton saw a 47.4 percent decline in the 1-year period. Akron's increase was reflected in a slight improvement in ranking from #74 to #73. The other three metro areas declined in their rankings.

SBIR and STTR awards per employee experienced a big declined in Northeast Ohio (from $16.8 to $5.7 per employee) from 2005 to 2006. SBIR and STTR awards per employee declined slightly in Akron ($6.5 to $4.7) and significantly in Cleveland ($26.6 to $15.2) over the period. Canton and Youngstown did not receive any SBIR and STTR awards in 2005 and 2006. Although the SBIR and STTR awards in Akron and Cleveland declined, their last year ranking improved from #62 to #35 and #23 to #8, respectively, indicating that there was an overall decline in SBIR and STTR awards for all metro areas in the sample within the same time period.

Venture capital per employee in the NEO region declined drastically from $550.4 to $24.3 per employee between 2000 and 2006; the region saw a fall from $141.5 to $24.3 in the last year alone, predominantly due to the decline in venture capital in Cleveland ($239.9 to $16.4) and Canton (to a lesser extent). Akron and Youngstown metro areas both experienced an increase in venture capital from 2005 to 2006 ($0 to $60.5 and $5 to $26.3, respectively).

Patents per employee showed a slight decline over the period of 2000 to 2006 and 2005 to 2006. This trend is driven mainly by the Cleveland metro area's steady decline over the same time periods. From 2005 to 2006, Akron, Canton, and Youngstown all increased the number of patents per employee with only Akron dropping slightly in rank (2 positions), despite the increase in patent activity.

The cost of living for the NEO region decreased from 93.9 in 2000 to 85.4 in 2006 and from 86.8 to 85.4 over the last year.[26] This trend was experienced by all four metro areas. The analysis in this report showed that metro areas with high cost of living are associated with areas with higher economic growth; NEO's low cost of living is therefore correlated with lower economic growth. All NEO metro areas dropped in rank in the last year except Youngstown's retention of its 2005 rank.

[25] Industry R&D was calculated as a 3-year average due to data volatility. For the industry R&D 2000 column, the average of industry R&D in 1998 to 2000 was used. Industry R&D 2005 column was an average of industry R&D in 2001 to 2003 and industry R&D 2006 column, consisted of an average of industry R&D in 2003 to 2005.

[26] The United States is indexed at 100. The cost of living in the NEO region is lower than in the United States.

Between 2005 and 2006, violent crime rates increased in the NEO region from 346.7 violent crimes per 100,000 population to 370.3. All NEO metro areas contributed to this change in violent crime rates; Cleveland increased by 57.8 violent crimes per 100,000 population, followed by Canton (14.4), Youngstown (12.0), and Akron (10.2).

Productivity in the information sector experienced a decline in the NEO region from $147,300 per employee in 2005 to $138,200 per employee in 2006. This was due to declines in Akron ($2,000 per employee), Canton ($1,600), and Youngstown ($9,000). Only the Cleveland metro area improved its productivity in the information sector, with a $3,500 per employee increase in the last year. All the four metro areas dropped in rank (between 2 and 10 positions) in this variable for the same time period.

The ratio of single establishment business openings over closings fell very slightly in the NEO region from 2005 to 2006. Within the four NEO metro areas, Cleveland and Youngstown improved their values and ranks from 2005 to 2006, but the declines in Akron and Canton (very little) more than offset the gains and resulted in the slight decrease for the region as a whole. The number of businesses that opened and closed was approximately the same in the region (a ratio of approximately one); Cleveland and Youngstown had more single establishment business births than deaths (a ratio greater than one) while Akron and Canton had more single establishment business deaths than births from 2005 to 2006.

In summary, when the four metro areas are aggregated to understand NEO's performance by selected variables, the analyses show that from 2005 to 2006, the region had mixed results. Northeast Ohio improved in a few variables, such as university R&D expenditures, property crime rates, foreign-born population, and city poverty ratio. The region remained stable in the high educational attainment variables, self-employed population, and share of business establishments with less than 20 workers. Yet it declined when measured by variables such as industry R&D expenditures, violent crime rates, productivity in the information sector, SBIR and STTR awards, venture capital, and patents. Northeast Ohio still has a long way to go and needs to improve these variables in order to move forward as a region; however, with the new initiatives underway, it is expected that the region will show improved results in the future.

# SUMMARY AND CONCLUDING COMMENTS

This study continues to respond to the three main questions raised during the development of the framework for regional growth: (1) how do we measure economic growth? (2) what factors are closely tied to economic growth? and (3) how do the Northeast Ohio and other regions perform?

This report uses the framework that was developed in the previous two studies with current updates to the data for the measures of economic growth and the variables that underlie the dashboard indicators. It compares the measures of economic growth and the indicators among NEO's metropolitan areas, selected Midwest areas, and the leading areas in each measure.

This new update moves the region further toward adopting a common language in the discussion of economic growth and the indicators that are linked to that growth. It also provides consistent metrics to track over time, which may assist regional leaders in monitoring existing interventions and designing new effective initiatives aimed at transforming the economy of Northeast Ohio. The study continues to show the complexity of the regional economy and how the region improves in some measures while it remains stable, or even worsens, in other measures.

## SUMMARY OF THE PERFORMANCE OF NEO MSAS IN ECONOMIC GROWTH MEASURES

Northeast Ohio performed below the United States and the sample average of the 136 MSAs included in this study. Between 1996 and 2006, employment in Northeast Ohio grew by a meager 0.4 percent compared to 14.3 percent for the sample average and 12.9 percent for the United States. Similarly, the gap in per capita income between Northeast Ohio and the United States increased. In 1995, NEO's per capita income was 3.3 percent higher than the United States, but by 2006, NEO's per capita income fell to a level 4.8 percent below the United States. Northeast Ohio grew at a comparatively slower rate in the late 1990s and then experienced steeper declines during the recession of the early 2000s. Moreover, the recession has lasted longer in Northeast Ohio and the recovery has been very slow; Northeast Ohio has still not reached the pre-recession levels.

Employment growth: All four MSAs in Northeast Ohio remained in the fourth quartile in terms of employment growth for 1996 to 2006 in comparison to 1995 to 2005. Moreover, except for the Akron area, all lost employment between 1996 and 2006, while the average of all MSAs in this study (sample average) experienced employment growth of 14.3 percent. Akron's growth was at one half the sample average rate.

From a short-term perspective, all NEO MSAs lost ranks between 2003 and 2006 in comparison to 2002 to 2005; the Cleveland, Canton, and Youngstown areas remain in

the fourth quartile, while Akron fell from the second to the third quartile. The Akron area, the best performer in Northeast Ohio, grew by 3.9 percent in comparison to the sample average of 4.9 percent.

Growth in Per Capita Income: The Youngstown area improved its ranking by 13 positions when comparing per capita growth during the 1995 to 2004 and 1996 to 2006 years. In contrast, the Akron and Canton areas lost more than 10 positions. Akron, however, was the only MSA in Northeast Ohio that is ranked within the third quartile, while the other three MSAs were ranked in the fourth quartile in both time periods. Cleveland's ranking only fell by one position. Among NEO MSAs, Akron and Cleveland had the highest growth in per capita income (12.3% and 10%, respectively), but these rates were significantly lower than the growth of the sample average (16.7%).

Comparing short-term changes (2001 to 2004 and 2003 to 2006) shows that the Akron, Canton, and Youngstown areas lost many ranks. Moreover, Akron fell from the second quartile to the fourth and Youngstown fell from the third quartile to the fourth. The Cleveland area retained the same rank and grew the fastest among NEO MSAs between 2003 and 2006. Cleveland's growth rate of 3.9 percent was lower than the sample average of 4.7 percent.

Growth in Gross Metropolitan Product: During the 1996 to 2006 years, the gross metropolitan product growth rate among NEO MSAs placed them all in the fourth quartile. The Akron and Cleveland areas grew the most in Northeast Ohio (18.3% and 11.9%, respectively), but much slower than the sample average (33.2%). The ranks changed very slightly in comparison to the earlier 10-year period; the Akron area was the only NEO MSA in the third quartile in the 1995 to 2005 period, however it fell to the fourth quartile for 1996 to 2006.

Comparing the short-term growth between 2002 to 2005 and 2003 to 2006, shows that Canton was the only NEO MSA that improved its ranking. However, as in the long-term trends, the Akron and Cleveland areas grew the fastest among NEO MSAs (7.4% and 5.2%, respectively), but slower than the sample average (10.2%).

Growth in Productivity: The Canton and Cleveland areas improved their ranking when comparing productivity growth between the 1995 to 2005 period and 1996 to2006 period. The Akron, Canton, and Cleveland areas were ranked in the third quartile in the latter period. The Cleveland area grew the fastest among NEO MSAs (12.2%), followed by Akron (10.3%) and Canton (10%). The growth rate of the sample average was 16.5 percent.

Productivity growth analyzed between 2003 and 2006 placed two NEO MSAs in the second quartile. Canton grew by 6.5 percent and Cleveland by 5.2 percent, faster that the sample growth rate of 5.1 percent. While the Cleveland area did not improve its

ranking in comparison to the 2002 to 2005 years, the Akron, Canton, and Youngstown improved their ranks by several positions.

## GROWTH PATTERNS, LEADING MSAS, AND NORTHEAST OHIO

The framework shows that there are two types of growth patterns in regional economies (although many regions follow both patterns). One reflects restructuring through research and technological innovations and results in growth of per capita income and productivity. The second pattern creates larger-scale economies through business dynamics and results in an increase of employment and gross metropolitan product.

Growth in per capita income and productivity are linked to three indicators, including Skilled Workforce and R&D, Technology Commercialization, and Racial Inclusion & Income Equality. The Locational Amenities indicator is linked only to growth in per capita income. In 2006, the leading MSAs in these indicators include San Jose, CA; San Diego, CA; Austin, TX; Portland, OR; Minneapolis, MN; and Baltimore, MD. These can be described as dynamic economies driven by a skilled workforce paired with research and development resources, resulting in the development of new technologies in the region.

The Cleveland and Akron areas hold a relatively good position in the Skilled Workforce and R&D indicator. Cleveland retained its second quartile rank between 2000 and 2006 (ranking #65 in 2006), while the Akron area improved its rank from #74 in 2000 to #68 in 2006. However, Cleveland ranked below all other large Midwest MSAs. The other two MSAs in Northeast Ohio did not fare as well; the Canton and Youngstown areas both ranked in the fourth quartile.

The Akron area ranked the highest (#58) in 2006 in the Technology Commercialization indicator. The Canton area improved its position while the Cleveland and Youngstown areas lost ranking. In 2006, the Cleveland area had the second lowest rank among large Midwest MSAs. The Cleveland area also ranked the lowest among Midwest MSAs in Racial Inclusion and Income Equality, but ranked #1 in Locational Amenities.

Growth in employment and gross metropolitan product are associated with six indicators: Racial Inclusion & Income Equality, Urban Assimilation, Legacy of Place (negative association), Business Dynamics, Individual Entrepreneurship, and Urban/Metro Structure. In 2006, the leading MSAs in these indicators included San Jose, CA; Austin, TX; Denver, CO; Seattle, WA; Boise City, ID; Oklahoma City, OK; Orlando, FL; Naples, FL; and Las Vegas, NV. These areas are growing and their size provides an opportunity for economic diversification, generating steady growth, and compensating for declines during recessionary periods.

In Urban Assimilation, NEO areas were below the sample average. The Cleveland area ranked in the third quartile, while the Akron, Canton, and Youngstown areas ranked in

the bottom of the fourth quartile. In Legacy of Place, all NEO MSAs ranked in the first quartile (indicating barriers to economic growth). In Business Dynamics, all four NEO MSAs performed poorly; they are in the fourth quartile and by 2006, the Cleveland MSA ranked lower than all other large Midwest MSAs.

In Individual Entrepreneurship, Canton, Cleveland, and Youngstown improved their ranks between 2000 and 2006. Although ranked relatively low (#95), by 2006 the Cleveland area was ranked the third highest among the large Midwest MSAs. In the Urban/Metro Structure, the Cleveland and Youngstown areas improved their ranks slightly from 2000 to 2006, and by 2006 Cleveland (#33) ranked the third highest among large Midwest MSAs.

This study shows that the economic performance of Northeast Ohio continues to be modest in comparison to other regions of the country, even when compared to other areas in the Midwest that share social and economic history with Northeast Ohio. Several new state and regional initiatives in Northeast Ohio began only a few years ago and the 2006 data used in this report are too recent to reflect the outcome of those actions. Furthermore, we should not expect to be able to reverse regional growth patterns in 1 – or even 5 – years. With the increased momentum of the initiatives put in place in recent years and additional new plans to improve our region, we can expect that Northeast Ohio will improve its economic trajectory in the next 10-to-15 years. However, other regions have also been engaged in accelerating their economic progress, so Northeast Ohio's future performance in comparison to other regions remains unknown. It is important, therefore, to continue monitoring the progress of Northeast Ohio over time and in comparison to other regions in the United States.

# APPENDICES

# APPENDIX A: DATA SOURCES, ELEMENTS OF FACTOR ANALYSIS, AND FACTORS' ASSOCIATION WITH REGIONAL GROWTH

## Table A-1. Variables and Data Sources

| Variable | Data Source | Year |
|---|---|---|
| **Economic Growth Variables** | | |
| Per capita income | U.S. Bureau of Economic Analysis (BEA) | 1996-2006 |
| Employment | Moody's Economy.com | 1996-2006 |
| Gross metropolitan product | Moody's Economy.com | 1996-2006 |
| Productivity | Moody's Economy.com | 1996-2006 |
| **Factor 1: Skilled Workforce and R&D** | | |
| Pct. of population in professional and managerial occupations | U.S. Census, American Community Survey (ACS) | 2006 |
| Pct. of population with graduate or professional degree | U.S. Census, American Community Survey (ACS) | 2006 |
| Pct. of population with bachelor's degree | U.S. Census, American Community Survey (ACS) | 2006 |
| Industry R&D 3 year average per employee | National Science Foundation | 2003-2005 |
| Total SBIR & STTR awards per employee | U.S. Small Business Administration/Moody's Economy.com | 2006 |
| Population dependency | U.S. Census, American Community Survey (ACS) | 2006 |
| University R&D 3 year average per employee | National Science Foundation | 2004-2006 |
| **Factor 2: Legacy of Place** | | |
| Business churning in all establishments | U.S. Census Longitudinal Establishment and Enterprise Microdata (LEEM) | 2003-2004 |
| Climate | Places Rated Almanac (Savageau, D.) | 2000 |
| Pct. of houses built before 1940 | U.S. Census, American Community Survey (ACS) | 2006 |
| Dissimilarity index for black population | National Center for Educational Statistics-CCD | 2005 |
| City poverty ratio | U.S. Census, American Community Survey (ACS) | 2006 |
| No. of government units per capita (10,000 2006 population) | U.S. Census of Governments | 2002 |
| Share of manufacturing employment | Moody's Economy.com | 2006 |
| **Factor 3: Urban Assimilation** | | |
| Pct. of Hispanic population | U.S. Census, American Community Survey (ACS) | 2006 |
| Share of minority business employment (in total emp) | Survey of Business Owners | 2002 |
| Pct. of foreign-born population | U.S. Census, American Community Survey (ACS) | 2006 |
| Productivity in information sector | Moody's Economy.com | 2006 |
| Pct. of Asian population | U.S. Census, American Community Survey (ACS) | 2006 |
| **Factor 4: Racial Inclusion and Income Equality** | | |
| Pct. of black or African American population alone | U.S. Census, American Community Survey (ACS) | 2006 |
| Isolation index for black population | National Center for Educational Statistics-CCD | 2005 |
| Income inequality | Housing and Urban Development | 2006 |
| Share of students at schools with more than 70% free lunches | National Center for Educational Statistics-CCD | 2005 |
| Violent crime rate (per 100,000 population ) | FBI Uniform Crime Report | 2006 |
| **Factor 5: Locational Amenities** | | |
| Transportation Index | Places Rated Almanac (Savageau, D.) | 2007 |
| Arts Index (Ambiance) | Places Rated Almanac (Savageau, D.) | 2007 |
| Recreation Index | Places Rated Almanac (Savageau, D.) | 2007 |
| Health Index | Places Rated Almanac (Savageau, D.) | 2007 |
| **Factor 6: Technology Commercialization** | | |
| Venture capital per employee, total investment | Thomson Financial | 2006 |
| Number of patents per thousand employees | U.S. Patent and Trademark Office | 2006 |
| Cost of living index | Moody's Economy.com | 2006 |
| **Factor 7: Urban/Metro Structure** | | |
| Share of city population in MSA population | U.S. Census, American Community Survey (ACS) | 2006 |
| Property crime rate (per 100,000 population) | FBI Uniform Crime Report | 2006 |
| **Factor 8: Individual Entrepreneurship** | | |
| Pct. of self employed (all industries except ag & mining ) | U.S. Census, American Community Survey (ACS) | 2006 |
| Share of business establishments with under 20 workers | US Census, County Business Patterns | 2005 |
| **Variable: Business Dynamics** | | |
| Business openings over business closings in single establishments (Bus Dynamics) | U.S. Census Longitudinal Establishment and Enterprise Microdata (LEEM) | 2003-2004 |

## Table A-2. Elements of the Regional Framework (2007 Factor Analysis Results Based on 2000 Data)

| | Factor | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Variable** | **Skilled Workforce & R&D** | **Legacy of Place** | **Urban Assimilation** | **Racial Inclusion & Income Equality** | **Locational Amenities** | **Technology Commercialization** | **Urban/ Metro Structure** | **Individual Entrepreneurship** | | | **Business Dynamics** |
| Column 1 | Column 2 | Column 3 | Column 4 | Column 5 | Column 6 | Column 7 | Column 8 | Column 9 | Column 10 | Column 11 | Column 12 |
| Pct. of population in professional occupations | 0.9434 | 0.0448 | -0.0111 | -0.0197 | 0.1877 | 0.1021 | 0.0084 | 0.0010 | 0.0531 | -0.0283 | 0.0715 |
| Pct. of population with graduate or professional degree | 0.9344 | 0.0604 | -0.0556 | -0.0048 | 0.1000 | 0.0613 | 0.0591 | 0.0981 | 0.0304 | -0.0502 | 0.0253 |
| Pct. of population with bachelor's degree | 0.8194 | -0.1672 | -0.2006 | 0.1266 | 0.2983 | 0.0816 | 0.0023 | 0.0297 | 0.0928 | -0.0177 | 0.0715 |
| Industry R&D per employee | 0.7223 | 0.0095 | 0.1621 | 0.0612 | -0.0405 | 0.3785 | 0.0315 | -0.0401 | 0.0852 | -0.0274 | -0.1250 |
| SBIR & STTR awards | 0.5242 | -0.0692 | 0.1143 | 0.0738 | -0.0619 | -0.0156 | 0.0415 | 0.0243 | -0.0095 | -0.0890 | -0.1793 |
| Population dependency | -0.5942 | 0.0878 | 0.3368 | 0.0745 | -0.1053 | -0.0406 | 0.1132 | 0.3179 | -0.0846 | 0.3817 | 0.0275 |
| University R&D per employee | 0.4867 | -0.0284 | 0.0043 | -0.0525 | 0.1281 | -0.0444 | -0.0722 | -0.0990 | -0.0795 | -0.1924 | 0.0000 |
| Business churning | 0.1342 | -0.8479 | 0.1313 | 0.0464 | 0.0526 | -0.0041 | 0.0009 | 0.1355 | -0.0707 | 0.0865 | 0.2656 |
| Climate | -0.0781 | -0.5485 | 0.4416 | -0.0588 | -0.1411 | 0.1226 | -0.0767 | 0.2889 | 0.2223 | -0.1203 | -0.0752 |
| Pct. of houses built before 1940 | 0.0435 | 0.8579 | -0.1738 | 0.2114 | 0.1457 | 0.0311 | 0.1474 | -0.0581 | -0.1004 | 0.0108 | 0.0583 |
| Dissimilarity index for Black population | 0.0874 | 0.6879 | -0.1595 | -0.3824 | 0.2106 | -0.1075 | 0.1585 | -0.0513 | -0.0566 | 0.1626 | 0.0785 |
| City poverty ratio | 0.1674 | 0.5727 | -0.1571 | 0.0093 | 0.1505 | 0.0115 | 0.4095 | -0.1117 | -0.0755 | 0.1977 | 0.0333 |
| No. of government units per capita | -0.1360 | 0.5401 | -0.1885 | 0.2867 | -0.1070 | -0.0217 | -0.2580 | 0.0145 | -0.1142 | 0.1277 | 0.1978 |
| Share of manufacturing employment | -0.1053 | 0.3918 | -0.2592 | 0.2329 | -0.0631 | 0.3852 | 0.0090 | -0.3076 | -0.1237 | 0.1219 | -0.3124 |
| Pct. of Hispanic population | -0.1329 | -0.1702 | 0.9184 | 0.1435 | -0.1354 | 0.0198 | -0.0966 | 0.0581 | -0.0891 | -0.0629 | 0.0139 |
| Share of minority business employment (in total emp) | -0.0459 | -0.2056 | 0.7908 | -0.0489 | -0.0406 | -0.0615 | -0.1095 | -0.1330 | 0.4109 | 0.0648 | -0.0866 |
| Pct. of foreign-born population | 0.0791 | -0.2380 | 0.7640 | 0.1891 | -0.0843 | 0.2732 | 0.1075 | 0.1711 | 0.2606 | -0.1512 | 0.1168 |
| Productivity in information sector | 0.0530 | 0.1061 | 0.4006 | 0.0394 | -0.0481 | 0.0755 | 0.1406 | 0.1931 | 0.0878 | -0.2675 | 0.0324 |
| Pct. of Asian population | 0.1775 | -0.0619 | 0.2161 | 0.0907 | 0.0309 | 0.1625 | -0.0040 | -0.0276 | 0.8779 | -0.1224 | 0.0259 |
| Pct. of Black population | 0.0365 | -0.1537 | -0.2567 | -0.8754 | 0.0201 | -0.0499 | -0.0301 | -0.1882 | -0.0243 | -0.0287 | -0.0801 |
| Isolation index for Black population | 0.0605 | 0.1996 | -0.3380 | -0.8216 | 0.1686 | -0.0902 | 0.0414 | -0.1557 | -0.0351 | 0.1581 | -0.0241 |
| Income inequality | -0.1273 | -0.1582 | 0.4501 | -0.6672 | -0.0311 | 0.0192 | -0.1280 | 0.1729 | -0.0528 | -0.1776 | -0.0056 |
| Share of students at schools with more than 70% free lunches | -0.2470 | 0.0744 | 0.3827 | -0.6596 | -0.1375 | -0.0686 | -0.1830 | 0.1139 | -0.0677 | -0.1388 | -0.0200 |
| Violent crime rate | -0.1685 | -0.2594 | 0.0722 | -0.5020 | 0.1805 | -0.0416 | -0.3598 | 0.0524 | -0.0233 | 0.0552 | 0.1988 |
| Transportation index | 0.2537 | 0.1571 | -0.0937 | -0.0599 | 0.7792 | -0.0226 | -0.0851 | -0.0922 | -0.0495 | -0.0992 | 0.1073 |
| Arts index | 0.4485 | 0.1683 | -0.1245 | -0.0009 | 0.6887 | 0.1056 | 0.0027 | -0.0669 | 0.0950 | -0.0054 | -0.0545 |
| Recreation index | 0.1962 | -0.0651 | -0.1686 | -0.1084 | 0.6323 | -0.0323 | 0.2323 | 0.0738 | 0.0826 | 0.2259 | 0.0053 |
| Health index | 0.3866 | 0.1429 | -0.2261 | -0.1703 | 0.5429 | 0.0542 | -0.0940 | 0.0855 | -0.0426 | -0.0871 | -0.1832 |
| Venture capital per employee | 0.4382 | -0.0427 | 0.1530 | 0.0499 | 0.0756 | 0.7306 | 0.0262 | -0.0064 | 0.1882 | 0.0147 | 0.0157 |
| Number of patents per employee | 0.5072 | 0.0891 | 0.0382 | 0.2027 | -0.0592 | 0.5913 | 0.0530 | -0.0421 | 0.0465 | 0.0960 | 0.1016 |
| Cost of living index | 0.3916 | -0.2393 | 0.1380 | 0.1008 | 0.1072 | 0.5281 | 0.1956 | 0.3200 | 0.3314 | -0.1188 | 0.0187 |
| Share of city population in MSA population | 0.0986 | -0.2455 | 0.2145 | -0.0812 | -0.0276 | -0.0285 | -0.6519 | -0.1581 | 0.0347 | -0.2763 | -0.1115 |
| Property crime rate | -0.1294 | -0.2794 | 0.0467 | -0.3794 | 0.0920 | -0.2156 | -0.5789 | -0.0610 | -0.0235 | 0.1338 | -0.0022 |
| Pct. self employed (all industries except ag & mining) | 0.0775 | -0.4358 | 0.1020 | 0.2370 | -0.0278 | 0.0392 | 0.0841 | 0.7343 | -0.0777 | 0.0971 | -0.0420 |
| Share of business establishments with under 20 workers | -0.0177 | -0.2343 | 0.0751 | 0.2045 | -0.1931 | -0.0684 | 0.0444 | 0.4556 | 0.0149 | 0.0518 | 0.2246 |
| Pct. of homeownership | -0.3118 | 0.1029 | -0.3117 | -0.0053 | -0.0276 | 0.0484 | 0.1216 | 0.0848 | -0.2722 | 0.6871 | -0.1023 |
| Business openings over business closings | 0.2402 | -0.1557 | 0.0186 | 0.3103 | 0.0372 | 0.1336 | 0.1531 | -0.0322 | 0.0770 | -0.2027 | 0.5486 |
| University enrollment per capita | 0.2114 | 0.0142 | -0.0677 | -0.2042 | -0.2144 | -0.0679 | -0.1826 | -0.0201 | -0.0183 | -0.0734 | -0.0459 |

Note: Highlighted variables associated with each factor have the highest leading scores that measure the correlation between a specific variable and a corresponding factor.

## Table A-3. Factors' Association with Regional Economic Growth

| Factor | Per Capita Income | Employment | GMP | Productivity |
|---|---|---|---|---|
| Skilled Workforce and R&D | 0.00333 | | | 0.00134 |
| Technology Commercialization | 0.00374 | | 0.00211 | 0.00232 |
| Racial Inclusion & Income Equality | 0.00104 | 0.00208 | 0.00357 | 0.00138 |
| Urban Assimilation | | 0.00143 | 0.00276 | 0.00126 |
| Legacy of Place | | -0.00748 | -0.00917 | -0.00136 |
| Business Dynamics | | 0.00237 | 0.00281 | |
| Individual Entrepreneurship | | 0.00200 | 0.00180 | |
| Locational Amenities | 0.00222 | | | |
| Urban/Metro Structure | | 0.00129 | 0.00218 | |

# APPENDIX B: ECONOMIC GROWTH MEASURES AND RANKS BY MSA (LONG-TERM AND SHORT-TERM TRENDS)



Note: In Tables B-1 to B-8, the apparent ties in percentage change values in the measures of economic growth are due to rounding of the numbers to two decimal places.

**Table B-1. Rank of Metropolitan Areas by Percentage Change in Per Capita Income, 1996 – 2006**

| Rank | Metropolitan Area | Percent Change |
|---|---|---|
| 1 | New Orleans-Metairie-Kenner, LA | 34.21 |
| 2 | San Diego-Carlsbad-San Marcos, CA | 34.06 |
| 3 | Killeen-Temple-Fort Hood, TX | 30.94 |
| 4 | Oklahoma City, OK | 30.08 |
| 5 | Baltimore-Towson, MD | 28.38 |
| 6 | Fayetteville, NC | 27.40 |
| 7 | Santa Barbara-Santa Maria-Goleta, CA | 27.28 |
| 8 | Charleston-North Charleston, SC | 27.01 |
| 9 | Vallejo-Fairfield, CA | 26.14 |
| 10 | Bridgeport-Stamford-Norwalk, CT | 25.80 |
| 11 | Tulsa, OK | 25.31 |
| 12 | Birmingham-Hoover, AL | 24.97 |
| 13 | San Jose-Sunnyvale-Santa Clara, CA | 24.85 |
| 14 | El Paso, TX | 24.48 |
| 15 | Naples-Marco Island, FL | 24.42 |
| 16 | Cape Coral-Fort Myers, FL | 23.99 |
| 17 | Virginia Beach-Norfolk-Newport News, VA-NC | 23.08 |
| 18 | Providence-New Bedford-Fall River, RI-MA | 22.42 |
| 19 | Santa Rosa-Petaluma, CA | 22.29 |
| 20 | Oxnard-Thousand Oaks-Ventura, CA | 22.26 |
| 21 | Beaumont-Port Arthur, TX | 21.90 |
| 22 | Pittsburgh, PA | 21.69 |
| 23 | Trenton-Ewing, NJ | 21.67 |
| 24 | Montgomery, AL | 21.66 |
| 25 | Madison, WI | 21.53 |
| 26 | Corpus Christi, TX | 21.34 |
| 27 | Palm Bay-Melbourne-Titusville, FL | 21.30 |
| 28 | Worcester, MA | 20.86 |
| 29 | Peoria, IL | 20.81 |
| 30 | Sacramento-Arden-Arcade-Roseville, CA | 20.62 |
| 31 | Denver-Aurora, CO | 20.48 |
| 32 | Shreveport-Bossier City, LA | 20.06 |
| 33 | Seattle-Tacoma-Bellevue, WA | 19.93 |
| 34 | Austin-Round Rock, TX | 19.91 |
| 35 | Salt Lake City, UT | 19.68 |
| 36 | Nashville-Davidson-Murfreesboro-Franklin, TN | 19.50 |
| 37 | Huntsville, AL | 19.49 |
| 38 | Omaha-Council Bluffs, NE-IA | 19.07 |
| 39 | Salinas, CA | 18.98 |
| 40 | Jacksonville, FL | 18.88 |
| 41 | Des Moines-West Des Moines, IA | 18.44 |
| 42 | Milwaukee-Waukesha-West Allis, WI | 18.42 |
| 43 | Sarasota-Bradenton-Venice, FL | 18.34 |
| 44 | Evansville, IN-KY | 18.33 |
| 45 | Albany-Schenectady-Troy, NY | 18.31 |
| 46 | Deltona-Daytona Beach-Ormond Beach, FL | 18.26 |
| 47 | Portland-South Portland-Biddeford, ME | 18.22 |
| 48 | Tallahassee, FL | 18.01 |
| 49 | Pensacola-Ferry Pass-Brent, FL | 17.90 |
| 50 | South Bend-Mishawaka, IN-MI | 17.67 |
| 51 | Savannah, GA | 17.59 |
| 52 | Hartford-West Hartford-East Hartford, CT | 17.59 |
| 53 | Jackson, MS | 17.51 |
| 54 | Little Rock-North Little Rock-Conway, AR | 17.49 |
| 55 | Tucson, AZ | 17.40 |
| 56 | Colorado Springs, CO | 17.28 |
| 57 | San Antonio, TX | 17.24 |
| 58 | Durham, NC | 16.96 |
| 59 | Richmond, VA | 16.93 |
| 60 | Minneapolis-St. Paul-Bloomington, MN-WI | 16.88 |
| 61 | Davenport-Moline-Rock Island, IA-IL | 16.71 |
| 62 | Charleston, WV | 16.67 |
| | Sample Average | 16.66 |
| 63 | Orlando-Kissimmee, FL | 16.56 |
| 64 | Manchester-Nashua, NH | 16.55 |
| 65 | Mobile, AL | 16.40 |
| 66 | Springfield, MA | 16.34 |
| 67 | Ogden-Clearfield, UT | 16.21 |
| 68 | Tampa-St. Petersburg-Clearwater, FL | 16.15 |
| 69 | Kansas City, MO-KS | 15.82 |
| 70 | Louisville-Jefferson County, KY-IN | 15.61 |
| 71 | Scranton-Wilkes-Barre, PA | 15.53 |
| 72 | Buffalo-Niagara Falls, NY | 15.51 |
| 73 | McAllen-Edinburg-Mission, TX | 15.39 |
| 74 | Indianapolis-Carmel, IN | 15.25 |
| 75 | Fayetteville-Springdale-Rogers, AR-MO | 15.16 |
| 76 | Columbus, OH | 15.10 |
| 77 | Lakeland, FL | 14.73 |
| 78 | Albuquerque, NM | 14.61 |
| 79 | New Haven-Milford, CT | 14.54 |
| 80 | Columbia, SC | 14.25 |
| 81 | Cincinnati-Middletown, OH-KY-IN | 14.18 |
| 82 | Syracuse, NY | 14.10 |
| 83 | Baton Rouge, LA | 14.07 |
| 84 | Charlotte-Gastonia-Concord, NC-SC | 14.06 |
| 85 | Reno-Sparks, NV | 13.87 |
| 86 | Brownsville-Harlingen, TX | 13.80 |
| 87 | Knoxville, TN | 13.80 |
| 88 | Memphis, TN-MS-AR | 13.65 |
| 89 | Spokane, WA | 13.65 |
| 90 | Poughkeepsie-Newburgh-Middletown, NY | 13.49 |
| 91 | Chattanooga, TN-GA | 13.37 |
| 92 | Boise City-Nampa, ID | 13.28 |
| 93 | Wilmington, NC | 13.26 |
| 94 | St. Louis, MO-IL | 13.24 |
| 95 | Augusta-Richmond County, GA-SC | 13.06 |
| 96 | Port St. Lucie, FL | 12.57 |
| 97 | Honolulu, HI | 12.50 |
| 98 | Eugene-Springfield, OR | 12.44 |
| 99 | Allentown-Bethlehem-Easton, PA-NJ | 12.39 |
| 100 | Springfield, MO | 12.33 |
| 101 | Akron, OH | 12.32 |
| 102 | Harrisburg-Carlisle, PA | 12.20 |
| 103 | Modesto, CA | 12.13 |
| 104 | Lexington-Fayette, KY | 11.95 |
| 105 | Anchorage, AK | 11.77 |
| 106 | Fresno, CA | 11.32 |
| 107 | Lancaster, PA | 10.92 |
| 108 | Las Vegas-Paradise, NV | 10.73 |
| 109 | Rochester, NY | 10.47 |
| 110 | Grand Rapids-Wyoming, MI | 10.12 |
| 111 | Cleveland-Elyria-Mentor, OH | 10.03 |
| 112 | Portland-Vancouver-Beaverton, OR-WA | 9.92 |
| 113 | Asheville, NC | 9.59 |
| 114 | Lansing-East Lansing, MI | 9.55 |
| 115 | Salem, OR | 9.42 |
| 116 | Raleigh-Cary, NC | 8.48 |
| 117 | Bakersfield, CA | 8.41 |
| 118 | Ann Arbor, MI | 7.89 |
| 119 | Dayton, OH | 7.83 |
| 120 | Youngstown-Warren-Boardman, OH-PA | 7.73 |
| 121 | Visalia-Porterville, CA | 7.49 |
| 122 | Greenville-Mauldin-Easley, SC | 7.43 |
| 123 | Greensboro-High Point, NC | 7.23 |
| 124 | Wichita, KS | 6.89 |
| 125 | Provo-Orem, UT | 6.88 |
| 126 | Toledo, OH | 6.54 |
| 127 | York-Hanover, PA | 6.43 |
| 128 | Canton-Massillon, OH | 6.23 |
| 129 | Kalamazoo-Portage, MI | 5.88 |
| 130 | Reading, PA | 5.77 |
| 131 | Winston-Salem, NC | 5.74 |
| 132 | Stockton, CA | 5.65 |
| 133 | Hickory-Lenoir-Morganton, NC | 5.27 |
| 134 | Fort Wayne, IN | 3.55 |
| 135 | Rockford, IL | -1.75 |
| 136 | Flint, MI | -6.42 |

Source: Bureau of Economic Analysis

## Table B-2. Rank of Metropolitan Areas by Percentage Change in Per Capita Income, 2003 – 2006

| Rank | Metropolitan Area | Percent Change |
|---|---|---|
| 1 | New Orleans-Metairie-Kenner, LA | 19.74 |
| 2 | Killeen-Temple-Fort Hood, TX | 14.19 |
| 3 | Santa Barbara-Santa Maria-Goleta, CA | 13.97 |
| 4 | Naples-Marco Island, FL | 13.21 |
| 5 | Tulsa, OK | 12.70 |
| 6 | Fayetteville, NC | 12.55 |
| 7 | Oklahoma City, OK | 11.15 |
| 8 | Peoria, IL | 10.79 |
| 9 | Bridgeport-Stamford-Norwalk, CT | 10.71 |
| 10 | Mobile, AL | 10.50 |
| 11 | Birmingham-Hoover, AL | 9.51 |
| 12 | Beaumont-Port Arthur, TX | 9.10 |
| 13 | San Diego-Carlsbad-San Marcos, CA | 9.08 |
| 14 | Sarasota-Bradenton-Venice, FL | 9.02 |
| 15 | Honolulu, HI | 8.99 |
| 16 | Oxnard-Thousand Oaks-Ventura, CA | 8.83 |
| 17 | Cape Coral-Fort Myers, FL | 8.60 |
| 18 | Savannah, GA | 8.40 |
| 19 | Baltimore-Towson, MD | 8.36 |
| 20 | Tucson, AZ | 8.12 |
| 21 | Salinas, CA | 8.02 |
| 22 | Montgomery, AL | 7.81 |
| 23 | Pensacola-Ferry Pass-Brent, FL | 7.62 |
| 24 | Corpus Christi, TX | 7.59 |
| 25 | Davenport-Moline-Rock Island, IA-IL | 7.52 |
| 26 | Deltona-Daytona Beach-Ormond Beach, FL | 7.50 |
| 27 | Durham, NC | 7.48 |
| 28 | Boise City-Nampa, ID | 7.42 |
| 29 | Las Vegas-Paradise, NV | 7.39 |
| 30 | Charleston-North Charleston, SC | 7.05 |
| 31 | Pittsburgh, PA | 6.96 |
| 32 | Tallahassee, FL | 6.82 |
| 33 | Vallejo-Fairfield, CA | 6.68 |
| 34 | El Paso, TX | 6.68 |
| 35 | Asheville, NC | 6.66 |
| 36 | Huntsville, AL | 6.51 |
| 37 | Salt Lake City, UT | 6.50 |
| 38 | Baton Rouge, LA | 6.44 |
| 39 | Lakeland, FL | 6.43 |
| 40 | Sacramento-Arden-Arcade-Roseville, CA | 6.41 |
| 41 | San Jose-Sunnyvale-Santa Clara, CA | 6.29 |
| 42 | Jacksonville, FL | 6.27 |
| 43 | Wilmington, NC | 6.23 |
| 44 | Port St. Lucie, FL | 6.21 |
| 45 | Eugene-Springfield, OR | 6.15 |
| 46 | Nashville-Davidson-Murfreesboro-Franklin, TN | 6.04 |
| 47 | Orlando-Kissimmee, FL | 6.03 |
| 48 | Shreveport-Bossier City, LA | 5.93 |
| 49 | Trenton-Ewing, NJ | 5.87 |
| 50 | Des Moines-West Des Moines, IA | 5.85 |
| 51 | Austin-Round Rock, TX | 5.79 |
| 52 | Palm Bay-Melbourne-Titusville, FL | 5.73 |
| 53 | Santa Rosa-Petaluma, CA | 5.61 |
| 54 | Worcester, MA | 5.60 |
| 55 | Albuquerque, NM | 5.49 |
| 56 | Tampa-St. Petersburg-Clearwater, FL | 5.45 |
| 57 | Reno-Sparks, NV | 5.45 |
| 58 | Manchester-Nashua, NH | 5.28 |
| 59 | San Antonio, TX | 5.27 |
| 60 | Hartford-West Hartford-East Hartford, CT | 5.16 |
| 61 | Little Rock-North Little Rock-Conway, AR | 5.08 |
| 62 | Providence-New Bedford-Fall River, RI-MA | 5.08 |
| 63 | Milwaukee-Waukesha-West Allis, WI | 5.06 |
| 64 | Columbia, SC | 4.99 |
| 65 | Ogden-Clearfield, UT | 4.91 |
| 66 | Springfield, MA | 4.89 |
| 67 | Rochester, NY | 4.89 |
| 68 | Poughkeepsie-Newburgh-Middletown, NY | 4.86 |
| 69 | Virginia Beach-Norfolk-Newport News, VA-NC | 4.80 |
| | Sample Average | 4.71 |
| 70 | Charlotte-Gastonia-Concord, NC-SC | 4.66 |
| 71 | McAllen-Edinburg-Mission, TX | 4.64 |
| 72 | Denver-Aurora, CO | 4.64 |
| 73 | Omaha-Council Bluffs, NE-IA | 4.62 |
| 74 | Modesto, CA | 4.42 |
| 75 | Jackson, MS | 4.41 |
| 76 | Albany-Schenectady-Troy, NY | 4.40 |
| 77 | Scranton-Wilkes-Barre, PA | 4.35 |
| 78 | Seattle-Tacoma-Bellevue, WA | 4.32 |
| 79 | Lancaster, PA | 4.21 |
| 80 | Buffalo-Niagara Falls, NY | 4.21 |
| 81 | Colorado Springs, CO | 4.15 |
| 82 | Madison, WI | 4.14 |
| 83 | Greensboro-High Point, NC | 4.13 |
| 84 | Chattanooga, TN-GA | 4.10 |
| 85 | New Haven-Milford, CT | 4.06 |
| 86 | Winston-Salem, NC | 3.94 |
| 87 | Portland-Vancouver-Beaverton, OR-WA | 3.90 |
| 88 | Cleveland-Elyria-Mentor, OH | 3.86 |
| 89 | Spokane, WA | 3.82 |
| 90 | Kansas City, MO-KS | 3.81 |
| 91 | Evansville, IN-KY | 3.79 |
| 92 | Richmond, VA | 3.68 |
| 93 | Knoxville, TN | 3.64 |
| 94 | Fayetteville-Springdale-Rogers, AR-MO | 3.61 |
| 95 | Syracuse, NY | 3.57 |
| 96 | York-Hanover, PA | 3.22 |
| 97 | Lexington-Fayette, KY | 3.20 |
| 98 | South Bend-Mishawaka, IN-MI | 3.20 |
| 99 | Portland-South Portland-Biddeford, ME | 3.19 |
| 100 | Greenville-Mauldin-Easley, SC | 3.09 |
| 101 | Louisville-Jefferson County, KY-IN | 2.96 |
| 102 | Anchorage, AK | 2.94 |
| 103 | Indianapolis-Carmel, IN | 2.89 |
| 104 | Charleston, WV | 2.89 |
| 105 | Akron, OH | 2.77 |
| 106 | Minneapolis-St. Paul-Bloomington, MN-WI | 2.75 |
| 107 | Memphis, TN-MS-AR | 2.66 |
| 108 | Hickory-Lenoir-Morganton, NC | 2.54 |
| 109 | Salem, OR | 2.51 |
| 110 | Augusta-Richmond County, GA-SC | 2.51 |
| 111 | Cincinnati-Middletown, OH-KY-IN | 2.44 |
| 112 | Springfield, MO | 2.35 |
| 113 | Harrisburg-Carlisle, PA | 2.26 |
| 114 | Raleigh-Cary, NC | 2.21 |
| 115 | Allentown-Bethlehem-Easton, PA-NJ | 1.97 |
| 116 | Reading, PA | 1.91 |
| 117 | Grand Rapids-Wyoming, MI | 1.69 |
| 118 | Fresno, CA | 1.69 |
| 119 | St. Louis, MO-IL | 1.66 |
| 120 | Bakersfield, CA | 1.56 |
| 121 | Columbus, OH | 1.45 |
| 122 | Youngstown-Warren-Boardman, OH-PA | 1.44 |
| 123 | Fort Wayne, IN | 1.40 |
| 124 | Brownsville-Harlingen, TX | 1.34 |
| 125 | Lansing-East Lansing, MI | 0.59 |
| 126 | Dayton, OH | 0.56 |
| 127 | Visalia-Porterville, CA | 0.42 |
| 128 | Stockton, CA | 0.39 |
| 129 | Canton-Massillon, OH | 0.37 |
| 130 | Kalamazoo-Portage, MI | -0.08 |
| 131 | Provo-Orem, UT | -0.21 |
| 132 | Toledo, OH | -0.99 |
| 133 | Rockford, IL | -1.11 |
| 134 | Wichita, KS | -1.44 |
| 135 | Ann Arbor, MI | -2.92 |
| 136 | Flint, MI | -6.59 |

Source: Bureau of Economic Analysis

## Table B-3. Rank of Metropolitan Areas by Percentage Change in Employment, 1996 – 2006

| Rank | Metropolitan Area | Percent Change |
|---|---|---|
| 1 | Las Vegas-Paradise, NV | 67.31 |
| 2 | Naples-Marco Island, FL | 66.23 |
| 3 | Cape Coral-Fort Myers, FL | 55.29 |
| 4 | McAllen-Edinburg-Pharr, TX | 53.61 |
| 5 | Sarasota-Bradenton-Venice, FL | 44.16 |
| 6 | Port St. Lucie-Fort Pierce, FL | 43.61 |
| 7 | Orlando, FL | 41.62 |
| 8 | Boise City-Nampa, ID | 41.30 |
| 9 | Fayetteville-Springdale-Rogers, AR-MO | 40.46 |
| 10 | Wilmington, NC | 34.97 |
| 11 | Provo-Orem, UT | 34.04 |
| 12 | Austin-Round Rock, TX | 32.50 |
| 13 | Sacramento--Arden-Arcade--Roseville, CA | 31.47 |
| 14 | Raleigh-Cary, NC | 30.28 |
| 15 | Charleston-North Charleston, SC | 29.04 |
| 16 | Reno-Sparks, NV | 28.97 |
| 17 | Brownsville-Harlingen, TX | 28.75 |
| 18 | Vallejo-Fairfield, CA | 27.80 |
| 19 | Lakeland, FL | 27.68 |
| 20 | Tampa-St. Petersburg-Clearwater, FL | 27.63 |
| 21 | Deltona-Daytona Beach-Ormond Beach, FL | 27.17 |
| 22 | San Diego-Carlsbad-San Marcos, CA | 25.72 |
| 23 | Anchorage, AK | 25.66 |
| 24 | Charlotte-Gastonia-Concord, NC-SC | 24.94 |
| 25 | Trenton-Ewing, NJ | 24.94 |
| 26 | Bakersfield, CA | 24.53 |
| 27 | Oxnard-Thousand Oaks-Ventura, CA | 24.20 |
| 28 | Tucson, AZ | 24.17 |
| 29 | Palm Bay-Melbourne-Titusville, FL | 23.96 |
| 30 | Stockton, CA | 23.81 |
| 31 | Salt Lake City, UT | 22.98 |
| 32 | Jacksonville, FL | 21.53 |
| 33 | Savannah, GA | 21.48 |
| 34 | Ogden-Clearfield, UT | 20.99 |
| 35 | San Antonio, TX | 20.61 |
| 36 | Colorado Springs, CO | 20.33 |
| 37 | Seattle-Tacoma-Bellevue, WA | 19.34 |
| 38 | Springfield, MO | 19.17 |
| 39 | Nashville-Davidson--Murfreesboro, TN | 19.15 |
| 40 | Modesto, CA | 19.03 |
| 41 | Huntsville, AL | 18.96 |
| 42 | Visalia-Porterville, CA | 18.95 |
| 43 | Santa Rosa-Petaluma, CA | 18.60 |
| 44 | Albuquerque, NM | 18.32 |
| 45 | Madison, WI | 18.26 |
| 46 | Denver-Aurora, CO | 17.39 |
| 47 | Tallahassee, FL | 16.88 |
| 48 | Spokane, WA | 16.46 |
| 49 | Poughkeepsie-Newburgh-Middletown, NY | 16.46 |
| 50 | Allentown-Bethlehem-Easton, PA-NJ | 16.20 |
| 51 | Indianapolis, IN | 16.19 |
| 52 | Portland-South Portland-Biddeford, ME | 16.15 |
| 53 | Knoxville, TN | 16.08 |
| 54 | Richmond, VA | 16.00 |
| 55 | Salinas, CA | 15.99 |
| 56 | Pensacola-Ferry Pass-Brent, FL | 15.96 |
| 57 | Salem, OR | 15.85 |
| 58 | Santa Barbara-Santa Maria-Goleta, CA | 15.63 |
| 59 | Jackson, MS | 15.27 |
| 60 | Portland-Vancouver-Beaverton, OR-WA | 14.41 |
| 61 | Killeen-Temple-Fort Hood, TX | 14.36 |
| | Sample Average | 14.32 |
| 62 | Oklahoma City, OK | 14.22 |
| 63 | Tulsa, OK | 14.22 |
| 64 | Eugene-Springfield, OR | 13.82 |
| 65 | Asheville, NC | 13.73 |
| 66 | Des Moines, IA | 13.71 |
| 67 | Lancaster, PA | 13.68 |
| 68 | Baton Rouge, LA | 13.65 |
| 69 | Baltimore-Towson, MD | 13.42 |
| 70 | Columbus, OH | 13.07 |
| 71 | Minneapolis-St. Paul-Bloomington, MN-WI | 13.02 |
| 72 | Manchester-Nashua, NH | 12.92 |
| 73 | Durham, NC | 12.79 |
| 74 | Fresno, CA | 12.68 |
| 75 | Little Rock-North Little Rock, AR | 12.43 |
| 76 | Virginia Beach-Norfolk-Newport News, VA-NC | 12.32 |
| 77 | Omaha-Council Bluffs, NE-IA | 12.25 |
| 78 | Greenville, SC | 12.04 |
| 79 | El Paso, TX | 12.01 |
| 80 | Fayetteville, NC | 11.97 |
| 81 | Columbia, SC | 11.28 |
| 82 | York-Hanover, PA | 11.11 |
| 83 | Montgomery, AL | 10.80 |
| 84 | Corpus Christi, TX | 10.50 |
| 85 | Memphis, TN-MS-AR | 10.34 |
| 86 | Providence-New Bedford-Fall River, RI-MA | 10.22 |
| 87 | Cincinnati-Middletown, OH-KY-IN | 10.02 |
| 88 | Albany-Schenectady-Troy, NY | 10.00 |
| 89 | Lexington-Fayette, KY | 9.81 |
| 90 | Winston-Salem, NC | 9.62 |
| 91 | Chattanooga, TN-GA | 9.47 |
| 92 | Honolulu, HI | 9.40 |
| 93 | Springfield, MA | 8.95 |
| 94 | Shreveport-Bossier City, LA | 8.84 |
| 95 | Ann Arbor, MI | 8.83 |
| 96 | Greensboro-High Point, NC | 8.81 |
| 97 | Wichita, KS | 8.68 |
| 98 | Birmingham-Hoover, AL | 8.61 |
| 99 | Worcester, MA | 8.56 |
| 100 | Charleston, WV | 8.46 |
| 101 | Harrisburg-Carlisle, PA | 8.34 |
| 102 | Augusta-Richmond County, GA-SC | 7.96 |
| 103 | Grand Rapids-Wyoming, MI | 7.71 |
| 104 | Kansas City, MO-KS | 7.43 |
| 105 | Mobile, AL | 7.41 |
| 106 | Reading, PA | 7.37 |
| 107 | Louisville, KY-IN | 7.24 |
| 108 | Akron, OH | 7.19 |
| 109 | Evansville, IN-KY | 6.77 |
| 110 | New Haven-Milford, CT | 6.55 |
| 111 | St. Louis, MO-IL | 6.41 |
| 112 | Beaumont-Port Arthur, TX | 5.96 |
| 113 | Hartford-West Hartford-East Hartford, CT | 5.75 |
| 114 | Davenport-Moline-Rock Island, IA-IL | 5.70 |
| 115 | Scranton--Wilkes-Barre, PA | 5.35 |
| 116 | Pittsburgh, PA | 5.11 |
| 117 | Bridgeport-Stamford-Norwalk, CT | 5.03 |
| 118 | Fort Wayne, IN | 4.30 |
| 119 | Milwaukee-Waukesha-West Allis, WI | 4.03 |
| 120 | Syracuse, NY | 3.44 |
| 121 | Kalamazoo-Portage, MI | 2.38 |
| 122 | South Bend-Mishawaka, IN-MI | 1.70 |
| 123 | Rochester, NY | 1.57 |
| 124 | Toledo, OH | 1.16 |
| 125 | Buffalo-Niagara Falls, NY | 1.10 |
| 126 | San Jose-Sunnyvale-Santa Clara, CA | 0.16 |
| 127 | Rockford, IL | 0.08 |
| 128 | Cleveland-Elyria-Mentor, OH | -0.24 |
| 129 | Lansing-East Lansing, MI | -1.15 |
| 130 | Youngstown-Warren-Boardman, OH-PA | -2.83 |
| 131 | Canton-Massillon, OH | -3.21 |
| 132 | Dayton, OH | -3.60 |
| 133 | Hickory-Lenoir-Morganton, NC | -7.70 |
| 134 | Flint, MI | -13.31 |
| 135 | Peoria, IL | -14.08 |
| 136 | New Orleans-Metairie-Kenner, LA | -19.37 |

Source: Moody's Economy.com

## Table B-4. Rank of Metropolitan Areas by Percentage Change in Employment, 2003 – 2006

| Rank | Metropolitan Area | Percent Change |
|---|---|---|
| 1 | Cape Coral-Fort Myers, FL | 21.63 |
| 2 | Las Vegas-Paradise, NV | 20.65 |
| 3 | Port St. Lucie-Fort Pierce, FL | 17.61 |
| 4 | Naples-Marco Island, FL | 15.87 |
| 5 | Provo-Orem, UT | 15.59 |
| 6 | Orlando, FL | 15.50 |
| 7 | Wilmington, NC | 14.92 |
| 8 | Sarasota-Bradenton-Venice, FL | 14.68 |
| 9 | Boise City-Nampa, ID | 14.51 |
| 10 | Lakeland, FL | 14.32 |
| 11 | McAllen-Edinburg-Pharr, TX | 14.15 |
| 12 | Savannah, GA | 12.56 |
| 13 | Fayetteville-Springdale-Rogers, AR-MO | 12.50 |
| 14 | Reno-Sparks, NV | 11.71 |
| 15 | Raleigh-Cary, NC | 11.43 |
| 16 | Salt Lake City, UT | 10.51 |
| 17 | Deltona-Daytona Beach-Ormond Beach, FL | 10.42 |
| 18 | Tampa-St. Petersburg-Clearwater, FL | 10.18 |
| 19 | Bakersfield, CA | 10.08 |
| 20 | Austin-Round Rock, TX | 10.06 |
| 21 | Palm Bay-Melbourne-Titusville, FL | 9.89 |
| 22 | Tucson, AZ | 9.77 |
| 23 | Jacksonville, FL | 9.43 |
| 24 | Portland-Vancouver-Beaverton, OR-WA | 8.46 |
| 25 | Ogden-Clearfield, UT | 8.16 |
| 26 | Eugene-Springfield, OR | 7.74 |
| 27 | Albuquerque, NM | 7.63 |
| 28 | Charleston-North Charleston, SC | 7.43 |
| 29 | Nashville-Davidson--Murfreesboro, TN | 7.37 |
| 30 | Salem, OR | 7.35 |
| 31 | Springfield, MO | 7.32 |
| 32 | Colorado Springs, CO | 7.30 |
| 33 | Huntsville, AL | 7.24 |
| 34 | Killeen-Temple-Fort Hood, TX | 7.19 |
| 35 | Seattle-Tacoma-Bellevue, WA | 7.15 |
| 36 | Charlotte-Gastonia-Concord, NC-SC | 7.13 |
| 37 | Fayetteville, NC | 7.10 |
| 38 | Des Moines, IA | 6.96 |
| 39 | Honolulu, HI | 6.93 |
| 40 | Baton Rouge, LA | 6.93 |
| 41 | Trenton-Ewing, NJ | 6.90 |
| 42 | Tulsa, OK | 6.87 |
| 43 | San Antonio, TX | 6.78 |
| 44 | Durham, NC | 6.75 |
| 45 | Visalia-Porterville, CA | 6.55 |
| 46 | Spokane, WA | 6.45 |
| 47 | Tallahassee, FL | 6.41 |
| 48 | Sacramento--Arden-Arcade--Roseville, CA | 6.41 |
| 49 | York-Hanover, PA | 6.41 |
| 50 | Pensacola-Ferry Pass-Brent, FL | 6.35 |
| 51 | Richmond, VA | 6.12 |
| 52 | Anchorage, AK | 6.09 |
| 53 | Columbia, SC | 5.74 |
| 54 | Little Rock-North Little Rock, AR | 5.73 |
| 55 | Oklahoma City, OK | 5.73 |
| 56 | Shreveport-Bossier City, LA | 5.44 |
| 57 | Madison, WI | 5.39 |
| 58 | Reading, PA | 5.38 |
| 59 | Montgomery, AL | 5.33 |
| 60 | Peoria, IL | 5.13 |
| 61 | Brownsville-Harlingen, TX | 5.01 |
| | Sample Average | 4.86 |
| 62 | Knoxville, TN | 4.83 |
| 63 | Greenville, SC | 4.80 |
| 64 | Denver-Aurora, CO | 4.72 |
| 65 | Asheville, NC | 4.63 |
| 66 | Allentown-Bethlehem-Easton, PA-NJ | 4.62 |
| 67 | Mobile, AL | 4.59 |
| 68 | Jackson, MS | 4.56 |
| 69 | Fresno, CA | 4.33 |
| 70 | Birmingham-Hoover, AL | 4.23 |
| 71 | Winston-Salem, NC | 4.18 |
| 72 | Baltimore-Towson, MD | 4.15 |
| 73 | Corpus Christi, TX | 4.14 |
| 74 | Wichita, KS | 4.11 |
| 75 | Vallejo-Fairfield, CA | 4.09 |
| 76 | Chattanooga, TN-GA | 4.04 |
| 77 | Indianapolis, IN | 4.01 |
| 78 | Minneapolis-St. Paul-Bloomington, MN-WI | 3.96 |
| 79 | Akron, OH | 3.93 |
| 80 | San Diego-Carlsbad-San Marcos, CA | 3.81 |
| 81 | El Paso, TX | 3.77 |
| 82 | Davenport-Moline-Rock Island, IA-IL | 3.70 |
| 83 | Oxnard-Thousand Oaks-Ventura, CA | 3.67 |
| 84 | Kansas City, MO-KS | 3.56 |
| 85 | Greensboro-High Point, NC | 3.53 |
| 86 | Louisville, KY-IN | 3.39 |
| 87 | Stockton, CA | 3.36 |
| 88 | Lexington-Fayette, KY | 3.36 |
| 89 | Hartford-West Hartford-East Hartford, CT | 3.20 |
| 90 | Memphis, TN-MS-AR | 3.18 |
| 91 | Lancaster, PA | 3.05 |
| 92 | Omaha-Council Bluffs, NE-IA | 3.01 |
| 93 | Poughkeepsie-Newburgh-Middletown, NY | 2.95 |
| 94 | Manchester-Nashua, NH | 2.83 |
| 95 | Virginia Beach-Norfolk-Newport News, VA-NC | 2.82 |
| 96 | Harrisburg-Carlisle, PA | 2.73 |
| 97 | Fort Wayne, IN | 2.67 |
| 98 | Beaumont-Port Arthur, TX | 2.64 |
| 99 | San Jose-Sunnyvale-Santa Clara, CA | 2.54 |
| 100 | Rockford, IL | 2.46 |
| 101 | New Haven-Milford, CT | 2.40 |
| 102 | Santa Rosa-Petaluma, CA | 2.33 |
| 103 | Santa Barbara-Santa Maria-Goleta, CA | 2.28 |
| 104 | Modesto, CA | 2.26 |
| 105 | Columbus, OH | 2.25 |
| 106 | Scranton--Wilkes-Barre, PA | 2.15 |
| 107 | Cincinnati-Middletown, OH-KY-IN | 2.06 |
| 108 | Milwaukee-Waukesha-West Allis, WI | 2.02 |
| 109 | St. Louis, MO-IL | 1.97 |
| 110 | Augusta-Richmond County, GA-SC | 1.92 |
| 111 | Portland-South Portland-Biddeford, ME | 1.81 |
| 112 | Albany-Schenectady-Troy, NY | 1.80 |
| 113 | Providence-New Bedford-Fall River, RI-MA | 1.54 |
| 114 | Charleston, WV | 1.49 |
| 115 | Grand Rapids-Wyoming, MI | 1.48 |
| 116 | South Bend-Mishawaka, IN-MI | 1.43 |
| 117 | Worcester, MA | 1.26 |
| 118 | Springfield, MA | 0.96 |
| 119 | Bridgeport-Stamford-Norwalk, CT | 0.92 |
| 120 | Syracuse, NY | 0.90 |
| 121 | Toledo, OH | 0.72 |
| 122 | Rochester, NY | 0.60 |
| 123 | Evansville, IN-KY | 0.16 |
| 124 | Pittsburgh, PA | 0.11 |
| 125 | Cleveland-Elyria-Mentor, OH | 0.07 |
| 126 | Buffalo-Niagara Falls, NY | 0.06 |
| 127 | Ann Arbor, MI | -0.26 |
| 128 | Hickory-Lenoir-Morganton, NC | -0.40 |
| 129 | Kalamazoo-Portage, MI | -0.53 |
| 130 | Youngstown-Warren-Boardman, OH-PA | -0.57 |
| 131 | Dayton, OH | -1.85 |
| 132 | Flint, MI | -1.93 |
| 133 | Salinas, CA | -2.38 |
| 134 | Lansing-East Lansing, MI | -2.55 |
| 135 | Canton-Massillon, OH | -2.73 |
| 136 | New Orleans-Metairie-Kenner, LA | -21.39 |

Source: Moody's Economy.com

## Table B-5. Rank of Metropolitan Areas by Percentage Change in Gross Metropolitan Product, 1996 – 2006

| Rank | Metropolitan Area | Percent Change |
|---|---|---|
| 1 | Naples-Marco Island, FL | 112.12 |
| 2 | Cape Coral-Fort Myers, FL | 100.74 |
| 3 | Las Vegas-Paradise, NV | 80.99 |
| 4 | Fayetteville-Springdale-Rogers, AR-MO | 76.95 |
| 5 | Austin-Round Rock, TX | 76.64 |
| 6 | Port St. Lucie-Fort Pierce, FL | 76.12 |
| 7 | McAllen-Edinburg-Pharr, TX | 71.67 |
| 8 | Orlando, FL | 66.25 |
| 9 | Sarasota-Bradenton-Venice, FL | 66.22 |
| 10 | Raleigh-Cary, NC | 66.17 |
| 11 | Sacramento--Arden-Arcade--Roseville, CA | 63.75 |
| 12 | Wilmington, NC | 60.93 |
| 13 | Vallejo-Fairfield, CA | 60.45 |
| 14 | Charlotte-Gastonia-Concord, NC-SC | 59.04 |
| 15 | Oxnard-Thousand Oaks-Ventura, CA | 59.02 |
| 16 | San Diego-Carlsbad-San Marcos, CA | 58.03 |
| 17 | Boise City-Nampa, ID | 57.23 |
| 18 | Charleston-North Charleston, SC | 54.78 |
| 19 | Modesto, CA | 50.73 |
| 20 | Durham, NC | 49.92 |
| 21 | Provo-Orem, UT | 48.15 |
| 22 | Tampa-St. Petersburg-Clearwater, FL | 47.68 |
| 23 | San Antonio, TX | 47.63 |
| 24 | Denver-Aurora, CO | 46.88 |
| 25 | Stockton, CA | 46.28 |
| 26 | Bakersfield, CA | 45.93 |
| 27 | Deltona-Daytona Beach-Ormond Beach, FL | 44.57 |
| 28 | Palm Bay-Melbourne-Titusville, FL | 44.54 |
| 29 | Visalia-Porterville, CA | 44.33 |
| 30 | Santa Rosa-Petaluma, CA | 43.49 |
| 31 | Reno-Sparks, NV | 43.41 |
| 32 | Madison, WI | 42.86 |
| 33 | Jacksonville, FL | 42.68 |
| 34 | Seattle-Tacoma-Bellevue, WA | 42.62 |
| 35 | Shreveport-Bossier City, LA | 42.18 |
| 36 | Oklahoma City, OK | 41.64 |
| 37 | Brownsville-Harlingen, TX | 41.57 |
| 38 | Colorado Springs, CO | 40.71 |
| 39 | Tulsa, OK | 40.13 |
| 40 | Tucson, AZ | 40.06 |
| 41 | Trenton-Ewing, NJ | 39.45 |
| 42 | Baton Rouge, LA | 39.20 |
| 43 | Des Moines, IA | 38.59 |
| 44 | Salt Lake City, UT | 38.22 |
| 45 | Richmond, VA | 38.22 |
| 46 | Corpus Christi, TX | 37.93 |
| 47 | Salinas, CA | 37.83 |
| 48 | Lakeland, FL | 37.57 |
| 49 | Huntsville, AL | 37.30 |
| 50 | Nashville-Davidson--Murfreesboro, TN | 37.14 |
| 51 | Indianapolis, IN | 35.80 |
| 52 | Ogden-Clearfield, UT | 35.31 |
| 53 | Santa Barbara-Santa Maria-Goleta, CA | 35.22 |
| 54 | Knoxville, TN | 35.09 |
| 55 | Virginia Beach-Norfolk-Newport News, VA-NC | 34.56 |
| 56 | Poughkeepsie-Newburgh-Middletown, NY | 34.18 |
| 57 | Baltimore-Towson, MD | 33.78 |
| 58 | Killeen-Temple-Fort Hood, TX | 33.67 |
| 59 | Fresno, CA | 33.62 |
| | Sample Average | 33.15 |
| 60 | Minneapolis-St. Paul-Bloomington, MN-WI | 32.98 |
| 61 | Beaumont-Port Arthur, TX | 32.92 |
| 62 | Portland-Vancouver-Beaverton, OR-WA | 32.90 |
| 63 | Anchorage, AK | 32.64 |
| 64 | San Jose-Sunnyvale-Santa Clara, CA | 32.01 |
| 65 | Columbus, OH | 31.92 |
| 66 | Providence-New Bedford-Fall River, RI-MA | 31.84 |
| 67 | Bridgeport-Stamford-Norwalk, CT | 31.62 |
| 68 | Columbia, SC | 30.47 |
| 69 | Springfield, MO | 30.17 |
| 70 | Portland-South Portland-Biddeford, ME | 30.07 |
| 71 | Asheville, NC | 29.60 |
| 72 | Eugene-Springfield, OR | 29.56 |
| 73 | Albany-Schenectady-Troy, NY | 29.53 |
| 74 | Tallahassee, FL | 29.39 |
| 75 | Manchester-Nashua, NH | 29.29 |
| 76 | Birmingham-Hoover, AL | 28.86 |
| 77 | Fayetteville, NC | 28.85 |
| 78 | Memphis, TN-MS-AR | 28.45 |
| 79 | Kansas City, MO-KS | 28.17 |
| 80 | Spokane, WA | 28.12 |
| 81 | Savannah, GA | 27.80 |
| 82 | Winston-Salem, NC | 27.62 |
| 83 | Montgomery, AL | 27.40 |
| 84 | Salem, OR | 27.33 |
| 85 | Peoria, IL | 26.72 |
| 86 | York-Hanover, PA | 26.47 |
| 87 | Pensacola-Ferry Pass-Brent, FL | 26.09 |
| 88 | Jackson, MS | 25.76 |
| 89 | Chattanooga, TN-GA | 25.39 |
| 90 | Omaha-Council Bluffs, NE-IA | 25.18 |
| 91 | Cincinnati-Middletown, OH-KY-IN | 25.16 |
| 92 | Hartford-West Hartford-East Hartford, CT | 24.32 |
| 93 | Evansville, IN-KY | 24.22 |
| 94 | Little Rock-North Little Rock, AR | 23.33 |
| 95 | Allentown-Bethlehem-Easton, PA-NJ | 23.21 |
| 96 | Greensboro-High Point, NC | 22.51 |
| 97 | Ann Arbor, MI | 21.66 |
| 98 | Lancaster, PA | 21.61 |
| 99 | El Paso, TX | 21.25 |
| 100 | New Haven-Milford, CT | 20.14 |
| 101 | Worcester, MA | 19.59 |
| 102 | Greenville, SC | 19.27 |
| 103 | Harrisburg-Carlisle, PA | 19.14 |
| 104 | Honolulu, HI | 18.94 |
| 105 | Akron, OH | 18.25 |
| 106 | Lexington-Fayette, KY | 18.07 |
| 107 | Pittsburgh, PA | 17.83 |
| 108 | South Bend-Mishawaka, IN-MI | 17.63 |
| 109 | St. Louis, MO-IL | 17.16 |
| 110 | Springfield, MA | 16.93 |
| 111 | Wichita, KS | 16.91 |
| 112 | Mobile, AL | 16.69 |
| 113 | Augusta-Richmond County, GA-SC | 16.35 |
| 114 | Davenport-Moline-Rock Island, IA-IL | 16.22 |
| 115 | Louisville, KY-IN | 15.54 |
| 116 | New Orleans-Metairie-Kenner, LA | 15.23 |
| 117 | Milwaukee-Waukesha-West Allis, WI | 14.93 |
| 118 | Charleston, WV | 14.18 |
| 119 | Scranton--Wilkes-Barre, PA | 14.07 |
| 120 | Albuquerque, NM | 13.65 |
| 121 | Syracuse, NY | 12.95 |
| 122 | Buffalo-Niagara Falls, NY | 12.00 |
| 123 | Cleveland-Elyria-Mentor, OH | 11.93 |
| 124 | Grand Rapids-Wyoming, MI | 11.46 |
| 125 | Rochester, NY | 10.46 |
| 126 | Reading, PA | 10.42 |
| 127 | Fort Wayne, IN | 9.11 |
| 128 | Toledo, OH | 8.63 |
| 129 | Rockford, IL | 6.47 |
| 130 | Canton-Massillon, OH | 6.44 |
| 131 | Hickory-Lenoir-Morganton, NC | 6.03 |
| 132 | Lansing-East Lansing, MI | 6.02 |
| 133 | Dayton, OH | 3.58 |
| 134 | Kalamazoo-Portage, MI | 2.54 |
| 135 | Youngstown-Warren-Boardman, OH-PA | -3.55 |
| 136 | Flint, MI | -20.13 |

Source: Moody's Economy.com

## Table B-6. Rank of Metropolitan Areas by Percentage Change in Gross Metropolitan Product, 2003 – 2006

| Rank | Metropolitan Area | Percent Change |
|---|---|---|
| 1 | Port St. Lucie-Fort Pierce, FL | 34.41 |
| 2 | Cape Coral-Fort Myers, FL | 32.39 |
| 3 | Sarasota-Bradenton-Venice, FL | 27.27 |
| 4 | Las Vegas-Paradise, NV | 26.27 |
| 5 | Shreveport-Bossier City, LA | 25.09 |
| 6 | Naples-Marco Island, FL | 24.40 |
| 7 | Wilmington, NC | 23.66 |
| 8 | Boise City-Nampa, ID | 23.19 |
| 9 | Bakersfield, CA | 22.67 |
| 10 | Austin-Round Rock, TX | 21.09 |
| 11 | Tulsa, OK | 19.97 |
| 12 | Provo-Orem, UT | 19.19 |
| 13 | Beaumont-Port Arthur, TX | 19.11 |
| 14 | Orlando, FL | 19.01 |
| 15 | McAllen-Edinburg-Pharr, TX | 18.70 |
| 16 | Baton Rouge, LA | 18.49 |
| 17 | Fayetteville-Springdale-Rogers, AR-MO | 18.43 |
| 18 | Lakeland, FL | 17.53 |
| 19 | Palm Bay-Melbourne-Titusville, FL | 17.21 |
| 20 | Deltona-Daytona Beach-Ormond Beach, FL | 16.78 |
| 21 | Visalia-Porterville, CA | 16.70 |
| 22 | Salt Lake City, UT | 16.49 |
| 23 | Oklahoma City, OK | 16.47 |
| 24 | Oxnard-Thousand Oaks-Ventura, CA | 16.33 |
| 25 | Charlotte-Gastonia-Concord, NC-SC | 16.24 |
| 26 | Anchorage, AK | 16.20 |
| 27 | Corpus Christi, TX | 15.60 |
| 28 | Savannah, GA | 15.31 |
| 29 | Peoria, IL | 14.78 |
| 30 | Raleigh-Cary, NC | 14.71 |
| 31 | Tampa-St. Petersburg-Clearwater, FL | 14.69 |
| 32 | Huntsville, AL | 14.20 |
| 33 | Portland-Vancouver-Beaverton, OR-WA | 14.11 |
| 34 | Eugene-Springfield, OR | 14.05 |
| 35 | Honolulu, HI | 14.02 |
| 36 | San Antonio, TX | 13.93 |
| 37 | Des Moines, IA | 13.22 |
| 38 | Sacramento--Arden-Arcade--Roseville, CA | 13.20 |
| 39 | Jacksonville, FL | 12.75 |
| 40 | San Jose-Sunnyvale-Santa Clara, CA | 12.74 |
| 41 | Pensacola-Ferry Pass-Brent, FL | 12.59 |
| 42 | Reno-Sparks, NV | 12.47 |
| 43 | Ogden-Clearfield, UT | 12.42 |
| 44 | Fayetteville, NC | 12.36 |
| 45 | Killeen-Temple-Fort Hood, TX | 12.23 |
| 46 | Tucson, AZ | 11.99 |
| 47 | Hartford-West Hartford-East Hartford, CT | 11.96 |
| 48 | Santa Barbara-Santa Maria-Goleta, CA | 11.95 |
| 49 | Spokane, WA | 11.93 |
| 50 | Brownsville-Harlingen, TX | 11.91 |
| 51 | Albuquerque, NM | 11.87 |
| 52 | Charleston-North Charleston, SC | 11.82 |
| 53 | Mobile, AL | 11.63 |
| 54 | Seattle-Tacoma-Bellevue, WA | 11.42 |
| 55 | Richmond, VA | 11.40 |
| 56 | Nashville-Davidson--Murfreesboro, TN | 11.36 |
| 57 | Colorado Springs, CO | 11.12 |
| 58 | Birmingham-Hoover, AL | 10.99 |
| 59 | York-Hanover, PA | 10.92 |
| 60 | Durham, NC | 10.88 |
| 61 | Salem, OR | 10.86 |
| 62 | Springfield, MO | 10.80 |
| 63 | San Diego-Carlsbad-San Marcos, CA | 10.77 |
| 64 | Modesto, CA | 10.74 |
| 65 | Denver-Aurora, CO | 10.28 |
| 66 | Bridgeport-Stamford-Norwalk, CT | 10.21 |
| | Sample Average | 10.18 |
| 67 | Trenton-Ewing, NJ | 10.17 |
| 68 | Knoxville, TN | 10.13 |
| 69 | Asheville, NC | 10.08 |
| 70 | Fresno, CA | 9.94 |
| 71 | Omaha-Council Bluffs, NE-IA | 9.49 |
| 72 | Little Rock-North Little Rock, AR | 9.49 |
| 73 | Vallejo-Fairfield, CA | 9.42 |
| 74 | Columbia, SC | 9.40 |
| 75 | Wichita, KS | 9.09 |
| 76 | Stockton, CA | 9.09 |
| 77 | Poughkeepsie-Newburgh-Middletown, NY | 9.03 |
| 78 | El Paso, TX | 8.85 |
| 79 | Chattanooga, TN-GA | 8.76 |
| 80 | Portland-South Portland-Biddeford, ME | 8.58 |
| 81 | Baltimore-Towson, MD | 8.55 |
| 82 | Davenport-Moline-Rock Island, IA-IL | 8.50 |
| 83 | Virginia Beach-Norfolk-Newport News, VA-NC | 8.42 |
| 84 | Indianapolis, IN | 8.36 |
| 85 | Salinas, CA | 8.29 |
| 86 | Santa Rosa-Petaluma, CA | 8.19 |
| 87 | Montgomery, AL | 8.06 |
| 88 | Minneapolis-St. Paul-Bloomington, MN-WI | 7.46 |
| 89 | Tallahassee, FL | 7.44 |
| 90 | Akron, OH | 7.35 |
| 91 | Lexington-Fayette, KY | 7.34 |
| 92 | Jackson, MS | 7.23 |
| 93 | Manchester-Nashua, NH | 7.10 |
| 94 | Winston-Salem, NC | 6.93 |
| 95 | Kansas City, MO-KS | 6.78 |
| 96 | Charleston, WV | 6.72 |
| 97 | Madison, WI | 6.67 |
| 98 | Columbus, OH | 6.57 |
| 99 | Greensboro-High Point, NC | 6.34 |
| 100 | New Haven-Milford, CT | 6.19 |
| 101 | Syracuse, NY | 5.97 |
| 102 | Rochester, NY | 5.87 |
| 103 | Memphis, TN-MS-AR | 5.77 |
| 104 | Louisville, KY-IN | 5.57 |
| 105 | Milwaukee-Waukesha-West Allis, WI | 5.56 |
| 106 | Harrisburg-Carlisle, PA | 5.39 |
| 107 | Cincinnati-Middletown, OH-KY-IN | 5.31 |
| 108 | Lancaster, PA | 5.28 |
| 109 | Providence-New Bedford-Fall River, RI-MA | 5.26 |
| 110 | Cleveland-Elyria-Mentor, OH | 5.23 |
| 111 | Albany-Schenectady-Troy, NY | 5.11 |
| 112 | Reading, PA | 4.91 |
| 113 | Rockford, IL | 4.68 |
| 114 | St. Louis, MO-IL | 4.56 |
| 115 | South Bend-Mishawaka, IN-MI | 4.54 |
| 116 | Augusta-Richmond County, GA-SC | 4.50 |
| 117 | Buffalo-Niagara Falls, NY | 4.49 |
| 118 | Pittsburgh, PA | 4.30 |
| 119 | Scranton--Wilkes-Barre, PA | 3.83 |
| 120 | Greenville, SC | 3.67 |
| 121 | Hickory-Lenoir-Morganton, NC | 3.64 |
| 122 | Canton-Massillon, OH | 3.57 |
| 123 | Allentown-Bethlehem-Easton, PA-NJ | 3.35 |
| 124 | Evansville, IN-KY | 3.32 |
| 125 | Springfield, MA | 2.77 |
| 126 | New Orleans-Metairie-Kenner, LA | 2.58 |
| 127 | Fort Wayne, IN | 1.84 |
| 128 | Worcester, MA | 1.84 |
| 129 | Toledo, OH | 1.71 |
| 130 | Dayton, OH | 1.31 |
| 131 | Youngstown-Warren-Boardman, OH-PA | 0.54 |
| 132 | Grand Rapids-Wyoming, MI | -0.09 |
| 133 | Ann Arbor, MI | -2.23 |
| 134 | Lansing-East Lansing, MI | -2.81 |
| 135 | Kalamazoo-Portage, MI | -4.96 |
| 136 | Flint, MI | -8.40 |

Source: Moody's Economy.com

## Table B-7. Rank of Metropolitan Areas by Percentage Change in Productivity, 1996 – 2006

| Rank | Metropolitan Area | Percent Change |
|---|---|---|
| 1 | Peoria, IL | 47.49 |
| 2 | New Orleans-Metairie-Kenner, LA | 42.91 |
| 3 | Austin-Round Rock, TX | 33.31 |
| 4 | Durham, NC | 32.93 |
| 5 | San Jose-Sunnyvale-Santa Clara, CA | 31.80 |
| 6 | Shreveport-Bossier City, LA | 30.63 |
| 7 | Cape Coral-Fort Myers, FL | 29.26 |
| 8 | Oxnard-Thousand Oaks-Ventura, CA | 28.03 |
| 9 | Naples-Marco Island, FL | 27.61 |
| 10 | Raleigh-Cary, NC | 27.54 |
| 11 | Charlotte-Gastonia-Concord, NC-SC | 27.29 |
| 12 | Modesto, CA | 26.62 |
| 13 | Fayetteville-Springdale-Rogers, AR-MO | 25.98 |
| 14 | San Diego-Carlsbad-San Marcos, CA | 25.70 |
| 15 | Vallejo-Fairfield, CA | 25.54 |
| 16 | Beaumont-Port Arthur, TX | 25.44 |
| 17 | Bridgeport-Stamford-Norwalk, CT | 25.31 |
| 18 | Denver-Aurora, CO | 25.12 |
| 19 | Corpus Christi, TX | 24.82 |
| 20 | Sacramento--Arden-Arcade--Roseville, CA | 24.55 |
| 21 | Oklahoma City, OK | 24.00 |
| 22 | Tulsa, OK | 22.69 |
| 23 | Port St. Lucie-Fort Pierce, FL | 22.63 |
| 24 | Baton Rouge, LA | 22.48 |
| 25 | San Antonio, TX | 22.40 |
| 26 | Des Moines, IA | 21.88 |
| 27 | Visalia-Porterville, CA | 21.34 |
| 28 | Santa Rosa-Petaluma, CA | 20.99 |
| 29 | Madison, WI | 20.80 |
| 30 | Charleston-North Charleston, SC | 19.94 |
| 31 | Virginia Beach-Norfolk-Newport News, VA-NC | 19.81 |
| 32 | Providence-New Bedford-Fall River, RI-MA | 19.62 |
| 33 | Seattle-Tacoma-Bellevue, WA | 19.52 |
| 34 | Kansas City, MO-KS | 19.31 |
| 35 | Wilmington, NC | 19.23 |
| 36 | Richmond, VA | 19.15 |
| 37 | Salinas, CA | 18.83 |
| 38 | Birmingham-Hoover, AL | 18.64 |
| 39 | Fresno, CA | 18.58 |
| 40 | Stockton, CA | 18.15 |
| 41 | Baltimore-Towson, MD | 17.96 |
| 42 | Albany-Schenectady-Troy, NY | 17.76 |
| 43 | Minneapolis-St. Paul-Bloomington, MN-WI | 17.66 |
| 44 | Hartford-West Hartford-East Hartford, CT | 17.55 |
| 45 | Jacksonville, FL | 17.40 |
| 46 | Orlando, FL | 17.39 |
| 47 | Columbia, SC | 17.24 |
| 48 | Bakersfield, CA | 17.19 |
| 49 | Santa Barbara-Santa Maria-Goleta, CA | 16.94 |
| 50 | Colorado Springs, CO | 16.93 |
| 51 | Killeen-Temple-Fort Hood, TX | 16.89 |
| 52 | Indianapolis, IN | 16.88 |
| 53 | Columbus, OH | 16.67 |
| 54 | Palm Bay-Melbourne-Titusville, FL | 16.60 |
| | Sample Average | 16.48 |
| 55 | Winston-Salem, NC | 16.42 |
| 56 | Memphis, TN-MS-AR | 16.41 |
| 57 | Knoxville, TN | 16.38 |
| 58 | Evansville, IN-KY | 16.35 |
| 59 | Portland-Vancouver-Beaverton, OR-WA | 16.16 |
| 60 | Tampa-St. Petersburg-Clearwater, FL | 15.71 |
| 61 | South Bend-Mishawaka, IN-MI | 15.66 |
| 62 | Huntsville, AL | 15.42 |
| 63 | Sarasota-Bradenton-Venice, FL | 15.30 |
| 64 | Poughkeepsie-Newburgh-Middletown, NY | 15.22 |
| 65 | Nashville-Davidson--Murfreesboro, TN | 15.10 |
| 66 | Fayetteville, NC | 15.07 |
| 67 | Montgomery, AL | 14.99 |
| 68 | Hickory-Lenoir-Morganton, NC | 14.87 |
| 69 | Chattanooga, TN-GA | 14.54 |
| 70 | Manchester-Nashua, NH | 14.50 |
| 71 | Asheville, NC | 13.95 |
| 72 | Eugene-Springfield, OR | 13.84 |
| 73 | York-Hanover, PA | 13.82 |
| 74 | Cincinnati-Middletown, OH-KY-IN | 13.76 |
| 75 | Deltona-Daytona Beach-Ormond Beach, FL | 13.69 |
| 76 | Tucson, AZ | 12.79 |
| 77 | New Haven-Milford, CT | 12.75 |
| 78 | Greensboro-High Point, NC | 12.59 |
| 79 | Salt Lake City, UT | 12.39 |
| 80 | Cleveland-Elyria-Mentor, OH | 12.20 |
| 81 | Pittsburgh, PA | 12.10 |
| 82 | Portland-South Portland-Biddeford, ME | 11.98 |
| 83 | Ogden-Clearfield, UT | 11.83 |
| 84 | Ann Arbor, MI | 11.79 |
| 85 | McAllen-Edinburg-Pharr, TX | 11.75 |
| 86 | Trenton-Ewing, NJ | 11.62 |
| 87 | Omaha-Council Bluffs, NE-IA | 11.51 |
| 88 | Boise City-Nampa, ID | 11.27 |
| 89 | Reno-Sparks, NV | 11.19 |
| 90 | Buffalo-Niagara Falls, NY | 10.78 |
| 91 | Tallahassee, FL | 10.70 |
| 92 | Provo-Orem, UT | 10.53 |
| 93 | Milwaukee-Waukesha-West Allis, WI | 10.49 |
| 94 | Akron, OH | 10.32 |
| 95 | Worcester, MA | 10.16 |
| 96 | St. Louis, MO-IL | 10.10 |
| 97 | Spokane, WA | 10.01 |
| 98 | Harrisburg-Carlisle, PA | 9.97 |
| 99 | Canton-Massillon, OH | 9.97 |
| 100 | Davenport-Moline-Rock Island, IA-IL | 9.96 |
| 101 | Brownsville-Harlingen, TX | 9.96 |
| 102 | Salem, OR | 9.91 |
| 103 | Little Rock-North Little Rock, AR | 9.70 |
| 104 | Springfield, MO | 9.23 |
| 105 | Syracuse, NY | 9.20 |
| 106 | Jackson, MS | 9.10 |
| 107 | Rochester, NY | 8.75 |
| 108 | Pensacola-Ferry Pass-Brent, FL | 8.73 |
| 109 | Honolulu, HI | 8.72 |
| 110 | Mobile, AL | 8.64 |
| 111 | Scranton--Wilkes-Barre, PA | 8.27 |
| 112 | El Paso, TX | 8.25 |
| 113 | Las Vegas-Paradise, NV | 8.18 |
| 114 | Augusta-Richmond County, GA-SC | 7.77 |
| 115 | Lakeland, FL | 7.75 |
| 116 | Louisville, KY-IN | 7.74 |
| 117 | Wichita, KS | 7.58 |
| 118 | Lexington-Fayette, KY | 7.52 |
| 119 | Dayton, OH | 7.45 |
| 120 | Toledo, OH | 7.38 |
| 121 | Springfield, MA | 7.33 |
| 122 | Lansing-East Lansing, MI | 7.26 |
| 123 | Lancaster, PA | 6.98 |
| 124 | Greenville, SC | 6.46 |
| 125 | Rockford, IL | 6.38 |
| 126 | Allentown-Bethlehem-Easton, PA-NJ | 6.03 |
| 127 | Anchorage, AK | 5.55 |
| 128 | Charleston, WV | 5.28 |
| 129 | Savannah, GA | 5.20 |
| 130 | Fort Wayne, IN | 4.61 |
| 131 | Grand Rapids-Wyoming, MI | 3.48 |
| 132 | Reading, PA | 2.84 |
| 133 | Kalamazoo-Portage, MI | 0.16 |
| 134 | Youngstown-Warren-Boardman, OH-PA | -0.75 |
| 135 | Albuquerque, NM | -3.95 |
| 136 | Flint, MI | -7.86 |

Source: Moody's Economy.com

## Table B-8. Rank of Metropolitan Areas by Percentage Change in Productivity, 2003 – 2006

| Rank | Metropolitan Area | Percent Change |
|---|---|---|
| 1 | New Orleans-Metairie-Kenner, LA | 30.49 |
| 2 | Shreveport-Bossier City, LA | 18.63 |
| 3 | Beaumont-Port Arthur, TX | 16.05 |
| 4 | Port St. Lucie-Fort Pierce, FL | 14.29 |
| 5 | Tulsa, OK | 12.25 |
| 6 | Oxnard-Thousand Oaks-Ventura, CA | 12.21 |
| 7 | Bakersfield, CA | 11.44 |
| 8 | Corpus Christi, TX | 11.00 |
| 9 | Sarasota-Bradenton-Venice, FL | 10.98 |
| 10 | Salinas, CA | 10.93 |
| 11 | Baton Rouge, LA | 10.81 |
| 12 | Oklahoma City, OK | 10.15 |
| 13 | Austin-Round Rock, TX | 10.02 |
| 14 | San Jose-Sunnyvale-Santa Clara, CA | 9.94 |
| 15 | Anchorage, AK | 9.53 |
| 16 | Visalia-Porterville, CA | 9.53 |
| 17 | Santa Barbara-Santa Maria-Goleta, CA | 9.46 |
| 18 | Bridgeport-Stamford-Norwalk, CT | 9.21 |
| 19 | Peoria, IL | 9.19 |
| 20 | Cape Coral-Fort Myers, FL | 8.85 |
| 21 | Charlotte-Gastonia-Concord, NC-SC | 8.51 |
| 22 | Hartford-West Hartford-East Hartford, CT | 8.48 |
| 23 | Modesto, CA | 8.29 |
| 24 | Wilmington, NC | 7.61 |
| 25 | Boise City-Nampa, ID | 7.58 |
| 26 | Naples-Marco Island, FL | 7.37 |
| 27 | Mobile, AL | 6.73 |
| 28 | San Diego-Carlsbad-San Marcos, CA | 6.70 |
| 29 | San Antonio, TX | 6.69 |
| 30 | Palm Bay-Melbourne-Titusville, FL | 6.66 |
| 31 | Portland-South Portland-Biddeford, ME | 6.65 |
| 32 | Honolulu, HI | 6.63 |
| 33 | Brownsville-Harlingen, TX | 6.57 |
| 34 | Huntsville, AL | 6.49 |
| 35 | Birmingham-Hoover, AL | 6.48 |
| 36 | Canton-Massillon, OH | 6.48 |
| 37 | Sacramento--Arden-Arcade--Roseville, CA | 6.38 |
| 38 | Omaha-Council Bluffs, NE-IA | 6.29 |
| 39 | Poughkeepsie-Newburgh-Middletown, NY | 5.91 |
| 40 | Pensacola-Ferry Pass-Brent, FL | 5.86 |
| 41 | Eugene-Springfield, OR | 5.86 |
| 42 | Des Moines, IA | 5.86 |
| 43 | Deltona-Daytona Beach-Ormond Beach, FL | 5.76 |
| 44 | Santa Rosa-Petaluma, CA | 5.73 |
| 45 | Stockton, CA | 5.54 |
| 46 | Virginia Beach-Norfolk-Newport News, VA-NC | 5.45 |
| 47 | Salt Lake City, UT | 5.41 |
| 48 | Fresno, CA | 5.37 |
| 49 | Denver-Aurora, CO | 5.31 |
| 50 | Fayetteville-Springdale-Rogers, AR-MO | 5.28 |
| 51 | Rochester, NY | 5.24 |
| 52 | Asheville, NC | 5.21 |
| 53 | Portland-Vancouver-Beaverton, OR-WA | 5.21 |
| 54 | Spokane, WA | 5.16 |
| 55 | Cleveland-Elyria-Mentor, OH | 5.15 |
| 56 | Charleston, WV | 5.15 |
| 57 | Vallejo-Fairfield, CA | 5.12 |
| | Sample Average | 5.07 |
| 58 | Knoxville, TN | 5.06 |
| 59 | Syracuse, NY | 5.02 |
| 60 | Richmond, VA | 4.98 |
| 61 | Fayetteville, NC | 4.92 |
| 62 | El Paso, TX | 4.89 |
| 63 | Wichita, KS | 4.78 |
| 64 | Killeen-Temple-Fort Hood, TX | 4.70 |
| 65 | Las Vegas-Paradise, NV | 4.65 |
| 66 | Davenport-Moline-Rock Island, IA-IL | 4.63 |
| 67 | Chattanooga, TN-GA | 4.54 |
| 68 | Buffalo-Niagara Falls, NY | 4.43 |
| 69 | York-Hanover, PA | 4.24 |
| 70 | Columbus, OH | 4.22 |
| 71 | Baltimore-Towson, MD | 4.22 |
| 72 | Indianapolis, IN | 4.18 |
| 73 | Pittsburgh, PA | 4.18 |
| 74 | Manchester-Nashua, NH | 4.15 |
| 75 | Tampa-St. Petersburg-Clearwater, FL | 4.09 |
| 76 | Charleston-North Charleston, SC | 4.09 |
| 77 | Hickory-Lenoir-Morganton, NC | 4.06 |
| 78 | Seattle-Tacoma-Bellevue, WA | 3.99 |
| 79 | McAllen-Edinburg-Pharr, TX | 3.98 |
| 80 | Ogden-Clearfield, UT | 3.95 |
| 81 | Albuquerque, NM | 3.94 |
| 82 | Durham, NC | 3.86 |
| 83 | Lexington-Fayette, KY | 3.86 |
| 84 | Nashville-Davidson--Murfreesboro, TN | 3.71 |
| 85 | New Haven-Milford, CT | 3.71 |
| 86 | Providence-New Bedford-Fall River, RI-MA | 3.66 |
| 87 | Colorado Springs, CO | 3.56 |
| 88 | Little Rock-North Little Rock, AR | 3.55 |
| 89 | Milwaukee-Waukesha-West Allis, WI | 3.48 |
| 90 | Columbia, SC | 3.47 |
| 91 | Minneapolis-St. Paul-Bloomington, MN-WI | 3.37 |
| 92 | Akron, OH | 3.29 |
| 93 | Salem, OR | 3.27 |
| 94 | Albany-Schenectady-Troy, NY | 3.25 |
| 95 | Springfield, MO | 3.25 |
| 96 | Dayton, OH | 3.22 |
| 97 | Cincinnati-Middletown, OH-KY-IN | 3.18 |
| 98 | Evansville, IN-KY | 3.15 |
| 99 | Provo-Orem, UT | 3.11 |
| 100 | Kansas City, MO-KS | 3.11 |
| 101 | South Bend-Mishawaka, IN-MI | 3.07 |
| 102 | Trenton-Ewing, NJ | 3.06 |
| 103 | Jacksonville, FL | 3.03 |
| 104 | Orlando, FL | 3.03 |
| 105 | Raleigh-Cary, NC | 2.94 |
| 106 | Lakeland, FL | 2.81 |
| 107 | Greensboro-High Point, NC | 2.72 |
| 108 | Winston-Salem, NC | 2.64 |
| 109 | Harrisburg-Carlisle, PA | 2.59 |
| 110 | Montgomery, AL | 2.59 |
| 111 | Jackson, MS | 2.55 |
| 112 | St. Louis, MO-IL | 2.54 |
| 113 | Augusta-Richmond County, GA-SC | 2.53 |
| 114 | Memphis, TN-MS-AR | 2.51 |
| 115 | Savannah, GA | 2.44 |
| 116 | Rockford, IL | 2.17 |
| 117 | Lancaster, PA | 2.16 |
| 118 | Louisville, KY-IN | 2.11 |
| 119 | Tucson, AZ | 2.02 |
| 120 | Springfield, MA | 1.80 |
| 121 | Scranton--Wilkes-Barre, PA | 1.65 |
| 122 | Madison, WI | 1.21 |
| 123 | Youngstown-Warren-Boardman, OH-PA | 1.12 |
| 124 | Toledo, OH | 0.98 |
| 125 | Tallahassee, FL | 0.96 |
| 126 | Reno-Sparks, NV | 0.68 |
| 127 | Worcester, MA | 0.58 |
| 128 | Lansing-East Lansing, MI | -0.27 |
| 129 | Reading, PA | -0.45 |
| 130 | Fort Wayne, IN | -0.81 |
| 131 | Greenville, SC | -1.07 |
| 132 | Allentown-Bethlehem-Easton, PA-NJ | -1.22 |
| 133 | Grand Rapids-Wyoming, MI | -1.55 |
| 134 | Ann Arbor, MI | -1.98 |
| 135 | Kalamazoo-Portage, MI | -4.46 |
| 136 | Flint, MI | -6.59 |

Source: Moody's Economy.com

## APPENDIX C: INDICATORS SCORES AND RANKS BY MSA



Note: In the Tables C-1 to C-9, the apparent ties in the factor scores are due to rounding of the numbers to two decimal places.

## Table C-1. Rank of Metropolitan Areas According to Skilled Workforce and R&D Factor Score, 2005 and 2006

| Metro Area | 2005 Score | 2005 Rank | 2006 Score | 2006 Rank |
|---|---|---|---|---|
| Ann Arbor, MI | 17.21 | 1 | 22.09 | 1 |
| Durham, NC | 15.06 | 2 | 14.27 | 2 |
| San Jose-Sunnyvale-Santa Clara, CA | 13.84 | 3 | 11.84 | 3 |
| Madison, WI | 10.28 | 4 | 10.75 | 4 |
| Trenton-Ewing, NJ | 6.87 | 8 | 9.86 | 5 |
| San Diego-Carlsbad-San Marcos, CA | 6.43 | 9 | 6.92 | 6 |
| Raleigh-Cary, NC | 7.08 | 7 | 6.76 | 7 |
| Austin-Round Rock, TX | 7.37 | 6 | 6.22 | 8 |
| Seattle-Tacoma-Bellevue, WA | 5.58 | 11 | 5.68 | 9 |
| Bridgeport-Stamford-Norwalk, CT | 5.89 | 10 | 5.67 | 10 |
| Baltimore-Towson, MD | 4.50 | 15 | 5.00 | 11 |
| New Haven-Milford, CT | 5.32 | 13 | 4.83 | 12 |
| Eugene-Springfield, OR | 1.97 | 30 | 4.77 | 13 |
| Lexington-Fayette, KY | 3.91 | 20 | 4.70 | 14 |
| Minneapolis-St. Paul-Bloomington, MN-WI | 4.42 | 16 | 4.59 | 15 |
| Albany-Schenectady-Troy, NY | 4.05 | 18 | 4.48 | 16 |
| Worcester, MA | 4.09 | 17 | 4.47 | 17 |
| Huntsville, AL | 8.10 | 5 | 4.32 | 18 |
| Tallahassee, FL | 5.34 | 12 | 4.29 | 19 |
| Lansing-East Lansing, MI | 2.68 | 29 | 3.62 | 20 |
| Denver-Aurora, CO | 3.86 | 21 | 3.54 | 21 |
| Manchester-Nashua, NH | 3.46 | 22 | 3.51 | 22 |
| Colorado Springs, CO | 3.19 | 23 | 3.15 | 23 |
| Portland-Vancouver-Beaverton, OR-WA | 3.04 | 24 | 2.98 | 24 |
| Columbus, OH | 2.86 | 26 | 2.92 | 25 |
| Hartford-West Hartford-East Hartford, CT | 2.96 | 25 | 2.84 | 26 |
| Tucson, AZ | 3.97 | 19 | 2.64 | 27 |
| Rochester, NY | 2.71 | 28 | 2.29 | 28 |
| Santa Barbara-Santa Maria-Goleta, CA | 4.94 | 14 | 2.18 | 29 |
| Portland-South Portland-Biddeford, ME | 1.80 | 31 | 1.90 | 30 |
| Albuquerque, NM | 2.78 | 27 | 1.78 | 31 |
| Omaha-Council Bluffs, NE-IA | 1.34 | 38 | 1.74 | 32 |
| Kalamazoo-Portage, MI | 1.66 | 32 | 1.62 | 33 |
| Anchorage, AK | 1.07 | 39 | 1.57 | 34 |
| Richmond, VA | 1.02 | 40 | 1.46 | 35 |
| Sacramento-Arden-Arcade-Roseville, CA | 1.50 | 35 | 1.41 | 36 |
| Columbia, SC | 0.65 | 46 | 1.34 | 37 |
| Honolulu, HI | 0.01 | 56 | 1.34 | 38 |
| Kansas City, MO-KS | 1.59 | 34 | 1.17 | 39 |
| Des Moines-West Des Moines, IA | 1.37 | 37 | 1.15 | 40 |
| Springfield, MA | 0.61 | 48 | 1.13 | 41 |
| Oxnard-Thousand Oaks-Ventura, CA | 0.94 | 41 | 1.08 | 42 |
| Indianapolis-Carmel, IN | 0.59 | 49 | 0.97 | 43 |
| Providence-New Bedford-Fall River, RI-MA | 0.64 | 47 | 0.96 | 44 |
| Knoxville, TN | -0.12 | 63 | 0.91 | 45 |
| Charleston-North Charleston, SC | 0.81 | 43 | 0.88 | 46 |
| Santa Rosa-Petaluma, CA | 1.66 | 33 | 0.87 | 47 |
| Charlotte-Gastonia-Concord, NC-SC | 0.50 | 51 | 0.87 | 48 |
| Pittsburgh, PA | 0.08 | 55 | 0.80 | 49 |
| St. Louis, MO-IL | 0.43 | 53 | 0.65 | 50 |
| Nashville-Davidson-Murfreesboro-Franklin, TN | 0.82 | 42 | 0.64 | 51 |
| Syracuse, NY | -0.06 | 60 | 0.58 | 52 |
| Poughkeepsie-Newburgh-Middletown, NY | 0.33 | 54 | 0.57 | 53 |
| Salt Lake City, UT | 0.72 | 45 | 0.50 | 54 |
| Wilmington, NC | -0.20 | 67 | 0.42 | 55 |
| Provo-Orem, UT | 0.52 | 50 | 0.28 | 56 |
| Milwaukee-Waukesha-West Allis, WI | 0.81 | 44 | 0.21 | 57 |
| Virginia Beach-Norfolk-Newport News, VA-NC | -0.21 | 68 | 0.10 | 58 |
| Cincinnati-Middletown, OH-KY-IN | -0.04 | 59 | 0.07 | 59 |
| Buffalo-Niagara Falls, NY | -0.75 | 77 | 0.05 | 60 |
| Birmingham-Hoover, AL | -0.31 | 71 | 0.05 | 61 |
| Spokane, WA | -0.38 | 72 | 0.03 | 62 |
| Little Rock-North Little Rock-Conway, AR | -0.10 | 62 | -0.07 | 63 |
| Harrisburg-Carlisle, PA | 0.01 | 57 | -0.16 | 64 |
| Cleveland-Elyria-Mentor, OH | -0.13 | 64 | -0.25 | 65 |
| Boise City-Nampa, ID | -0.91 | 78 | -0.33 | 66 |
| Orlando-Kissimmee, FL | -0.52 | 74 | -0.37 | 67 |
| Akron, OH | -0.02 | 58 | -0.39 | 68 |
| Dayton, OH | 1.39 | 36 | -0.60 | 69 |
| Winston-Salem, NC | -0.63 | 75 | -0.61 | 70 |
| Oklahoma City, OK | -0.45 | 73 | -0.62 | 71 |
| Baton Rouge, LA | -1.68 | 88 | -0.64 | 72 |
| Jackson, MS | 0.47 | 52 | -0.71 | 73 |
| San Antonio, TX | -0.65 | 76 | -0.74 | 74 |
| Reno-Sparks, NV | -0.22 | 69 | -0.76 | 75 |
| New Orleans-Metairie-Kenner, LA | -0.28 | 70 | -0.98 | 76 |
| Peoria, IL | -2.28 | 102 | -1.04 | 77 |
| Greenville-Mauldin-Easley, SC | -0.13 | 65 | -1.07 | 78 |
| Palm Bay-Melbourne-Titusville, FL | -0.17 | 66 | -1.20 | 79 |
| Jacksonville, FL | -1.02 | 81 | -1.21 | 80 |
| Louisville-Jefferson County, KY-IN | -1.46 | 84 | -1.29 | 81 |
| Wichita, KS | -1.79 | 91 | -1.39 | 82 |
| Asheville, NC | -1.50 | 85 | -1.42 | 83 |
| Allentown-Bethlehem-Easton, PA-NJ | -1.01 | 80 | -1.53 | 84 |
| Fayetteville-Springdale-Rogers, AR-MO | -0.06 | 61 | -1.68 | 85 |
| Tampa-St. Petersburg-Clearwater, FL | -1.71 | 90 | -1.69 | 86 |
| Ogden-Clearfield, UT | -1.65 | 86 | -1.72 | 87 |
| Savannah, GA | -1.26 | 82 | -1.73 | 88 |
| South Bend-Mishawaka, IN-MI | -2.12 | 98 | -1.76 | 89 |
| Greensboro-High Point, NC | -1.67 | 87 | -1.78 | 90 |
| Tulsa, OK | -1.27 | 83 | -1.81 | 91 |
| Fort Wayne, IN | -1.68 | 89 | -1.87 | 92 |
| Grand Rapids-Wyoming, MI | -2.05 | 95 | -1.90 | 93 |
| Montgomery, AL | -1.01 | 79 | -1.91 | 94 |
| Augusta-Richmond County, GA-SC | -2.09 | 97 | -1.97 | 95 |
| Salinas, CA | -3.37 | 110 | -1.98 | 96 |
| Toledo, OH | -2.00 | 93 | -2.16 | 97 |
| York-Hanover, PA | -3.63 | 114 | -2.28 | 98 |
| Vallejo-Fairfield, CA | -2.27 | 101 | -2.29 | 99 |
| Pensacola-Ferry Pass-Brent, FL | -2.45 | 103 | -2.30 | 100 |
| Springfield, MO | -2.17 | 99 | -2.32 | 101 |
| Memphis, TN-MS-AR | -2.01 | 94 | -2.42 | 102 |
| Fayetteville, NC | -4.23 | 120 | -2.65 | 103 |
| Lancaster, PA | -2.58 | 104 | -2.89 | 104 |
| Sarasota-Bradenton-Venice, FL | -3.17 | 108 | -2.93 | 105 |
| Evansville, IN-KY | -2.95 | 105 | -2.96 | 106 |
| Chattanooga, TN-GA | -1.88 | 92 | -3.01 | 107 |
| Charleston, WV | -2.26 | 100 | -3.02 | 108 |
| Salem, OR | -3.09 | 107 | -3.13 | 109 |
| Davenport-Moline-Rock Island, IA-IL | -2.07 | 96 | -3.14 | 110 |
| Reading, PA | -3.01 | 106 | -3.14 | 111 |
| Shreveport-Bossier City, LA | -3.73 | 115 | -3.24 | 112 |
| Cape Coral-Fort Myers, FL | -4.37 | 122 | -3.48 | 113 |
| Killeen-Temple-Fort Hood, TX | -3.42 | 111 | -3.56 | 114 |
| Scranton-Wilkes-Barre, PA | -3.55 | 113 | -3.64 | 115 |
| Naples-Marco Island, FL | -3.24 | 109 | -3.67 | 116 |
| Las Vegas-Paradise, NV | -4.45 | 123 | -3.86 | 117 |
| Mobile, AL | -3.45 | 112 | -3.86 | 118 |
| Port St. Lucie, FL | -4.28 | 121 | -3.98 | 119 |
| Rockford, IL | -4.18 | 119 | -4.13 | 120 |
| Deltona-Daytona Beach-Ormond Beach, FL | -4.07 | 118 | -4.20 | 121 |
| Flint, MI | -4.46 | 124 | -4.20 | 122 |
| Canton-Massillon, OH | -4.01 | 117 | -4.38 | 123 |
| Corpus Christi, TX | -3.98 | 116 | -4.69 | 124 |
| Hickory-Lenoir-Morganton, NC | -4.54 | 125 | -4.85 | 125 |
| Fresno, CA | -4.66 | 126 | -4.86 | 126 |
| Youngstown-Warren-Boardman, OH-PA | -5.20 | 129 | -4.91 | 127 |
| Stockton, CA | -4.88 | 127 | -5.07 | 128 |
| El Paso, TX | -5.34 | 130 | -5.09 | 129 |
| Beaumont-Port Arthur, TX | -5.15 | 128 | -5.17 | 130 |
| Modesto, CA | -5.88 | 132 | -5.56 | 131 |
| Lakeland, FL | -5.79 | 131 | -5.90 | 132 |
| Bakersfield, CA | -6.04 | 133 | -6.09 | 133 |
| Brownsville-Harlingen, TX | -7.53 | 135 | -7.14 | 134 |
| McAllen-Edinburg-Mission, TX | -6.64 | 134 | -7.34 | 135 |
| Visalia-Porterville, CA | -7.55 | 136 | -7.57 | 136 |

## Table C-2. Rank of Metropolitan Areas According to Technology Commercialization Factor Score, 2005 and 2006

| Metro Area | 2005 Score | 2005 Rank | 2006 Score | 2006 Rank |
|---|---|---|---|---|
| San Jose-Sunnyvale-Santa Clara, CA | 13.09 | 1 | 14.81 | 1 |
| San Diego-Carlsbad-San Marcos, CA | 2.80 | 4 | 2.78 | 2 |
| Austin-Round Rock, TX | 1.57 | 13 | 2.42 | 3 |
| Bridgeport-Stamford-Norwalk, CT | 4.38 | 2 | 2.40 | 4 |
| Santa Rosa-Petaluma, CA | 2.70 | 5 | 2.31 | 5 |
| Boise City-Nampa, ID | 2.48 | 6 | 2.04 | 6 |
| Oxnard-Thousand Oaks-Ventura, CA | 1.89 | 7 | 1.87 | 7 |
| Seattle-Tacoma-Bellevue, WA | 1.09 | 18 | 1.71 | 8 |
| Santa Barbara-Santa Maria-Goleta, CA | 1.85 | 8 | 1.63 | 9 |
| Visalia-Porterville, CA | -0.50 | 73 | 1.56 | 10 |
| Durham, NC | 2.94 | 3 | 1.47 | 11 |
| Worcester, MA | 1.30 | 15 | 1.41 | 12 |
| Nashville-Davidson-Murfreesboro-Franklin, TN | 1.58 | 12 | 1.35 | 13 |
| Poughkeepsie-Newburgh-Middletown, NY | 1.17 | 17 | 1.32 | 14 |
| Trenton-Ewing, NJ | 1.74 | 9 | 1.31 | 15 |
| Naples-Marco Island, FL | 0.87 | 25 | 1.24 | 16 |
| Salinas, CA | 0.93 | 23 | 1.16 | 17 |
| Ann Arbor, MI | 1.39 | 14 | 1.07 | 18 |
| New Haven-Milford, CT | 0.85 | 26 | 1.04 | 19 |
| Raleigh-Cary, NC | 0.73 | 27 | 0.99 | 20 |
| Vallejo-Fairfield, CA | 1.23 | 16 | 0.95 | 21 |
| Honolulu, HI | 1.63 | 11 | 0.84 | 22 |
| Portland-Vancouver-Beaverton, OR-WA | 0.52 | 31 | 0.76 | 23 |
| Denver-Aurora, CO | 0.48 | 33 | 0.72 | 24 |
| Manchester-Nashua, NH | 0.92 | 24 | 0.71 | 25 |
| York-Hanover, PA | -0.64 | 89 | 0.54 | 26 |
| Sarasota-Bradenton-Venice, FL | 0.23 | 36 | 0.53 | 27 |
| Hartford-West Hartford-East Hartford, CT | 0.97 | 21 | 0.51 | 28 |
| Minneapolis-St. Paul-Bloomington, MN-WI | 0.49 | 32 | 0.46 | 29 |
| Sacramento-Arden-Arcade-Roseville, CA | 0.55 | 29 | 0.41 | 30 |
| Stockton, CA | 0.26 | 35 | 0.39 | 31 |
| Reno-Sparks, NV | 1.00 | 20 | 0.33 | 32 |
| Baltimore-Towson, MD | 0.20 | 37 | 0.26 | 33 |
| Palm Bay-Melbourne-Titusville, FL | 0.08 | 41 | 0.25 | 34 |
| Allentown-Bethlehem-Easton, PA-NJ | 0.38 | 34 | 0.24 | 35 |
| Port St. Lucie, FL | 0.04 | 42 | 0.23 | 36 |
| Providence-New Bedford-Fall River, RI-MA | 0.57 | 28 | 0.19 | 37 |
| Tucson, AZ | 0.17 | 38 | 0.16 | 38 |
| Rochester, NY | 1.03 | 19 | 0.12 | 39 |
| Cape Coral-Fort Myers, FL | 0.52 | 30 | 0.11 | 40 |
| Orlando-Kissimmee, FL | -0.20 | 51 | 0.06 | 41 |
| Madison, WI | -0.16 | 50 | 0.05 | 42 |
| Albany-Schenectady-Troy, NY | 0.09 | 40 | 0.04 | 43 |
| Salt Lake City, UT | 0.03 | 43 | 0.01 | 44 |
| Tampa-St. Petersburg-Clearwater, FL | 0.11 | 39 | -0.01 | 45 |
| Deltona-Daytona Beach-Ormond Beach, FL | -0.46 | 69 | -0.05 | 46 |
| Las Vegas-Paradise, NV | -0.01 | 46 | -0.06 | 47 |
| Provo-Orem, UT | 0.00 | 44 | -0.12 | 48 |
| Bakersfield, CA | -0.26 | 54 | -0.14 | 49 |
| Fresno, CA | -0.27 | 55 | -0.16 | 50 |
| Charlotte-Gastonia-Concord, NC-SC | -0.36 | 63 | -0.19 | 51 |
| Portland-South Portland-Biddeford, ME | -0.35 | 61 | -0.22 | 52 |
| Modesto, CA | -0.35 | 59 | -0.23 | 53 |
| Colorado Springs, CO | -0.14 | 49 | -0.25 | 54 |
| Anchorage, AK | -0.42 | 67 | -0.26 | 55 |
| Jacksonville, FL | -0.52 | 75 | -0.27 | 56 |
| Springfield, MA | -0.57 | 80 | -0.29 | 57 |
| Akron, OH | -0.35 | 60 | -0.30 | 58 |
| Pittsburgh, PA | -0.66 | 91 | -0.32 | 59 |
| New Orleans-Metairie-Kenner, LA | -0.70 | 98 | -0.35 | 60 |
| Richmond, VA | -0.53 | 76 | -0.36 | 61 |
| Albuquerque, NM | -0.27 | 56 | -0.36 | 62 |
| Milwaukee-Waukesha-West Allis, WI | -0.34 | 58 | -0.37 | 63 |
| Charleston-North Charleston, SC | -0.46 | 70 | -0.38 | 64 |
| Ogden-Clearfield, UT | -0.37 | 66 | -0.39 | 65 |
| Cincinnati-Middletown, OH-KY-IN | -0.36 | 62 | -0.42 | 66 |
| Eugene-Springfield, OR | -0.68 | 93 | -0.43 | 67 |
| Greenville-Mauldin-Easley, SC | -0.60 | 83 | -0.43 | 68 |
| Kansas City, MO-KS | -0.36 | 64 | -0.44 | 69 |
| Wilmington, NC | -0.23 | 52 | -0.44 | 70 |
| Salem, OR | -0.61 | 85 | -0.45 | 71 |
| Flint, MI | -0.58 | 81 | -0.45 | 72 |
| Lakeland, FL | -0.64 | 90 | -0.45 | 73 |
| Spokane, WA | -0.51 | 74 | -0.46 | 74 |
| Memphis, TN-MS-AR | -0.76 | 104 | -0.48 | 75 |
| Birmingham-Hoover, AL | -0.49 | 71 | -0.48 | 76 |
| Baton Rouge, LA | -0.69 | 96 | -0.48 | 77 |
| Reading, PA | -0.54 | 78 | -0.50 | 78 |
| Winston-Salem, NC | -0.49 | 72 | -0.51 | 79 |
| Huntsville, AL | -0.67 | 92 | -0.51 | 80 |
| Lancaster, PA | -0.12 | 48 | -0.53 | 81 |
| Asheville, NC | -0.53 | 77 | -0.54 | 82 |
| Canton-Massillon, OH | -0.70 | 97 | -0.54 | 83 |
| Chattanooga, TN-GA | -0.62 | 86 | -0.56 | 84 |
| Virginia Beach-Norfolk-Newport News, VA-NC | -0.80 | 108 | -0.57 | 85 |
| Kalamazoo-Portage, MI | -0.56 | 79 | -0.57 | 86 |
| Knoxville, TN | -0.60 | 84 | -0.58 | 87 |
| Jackson, MS | -0.69 | 95 | -0.58 | 88 |
| Corpus Christi, TX | -0.01 | 45 | -0.59 | 89 |
| Pensacola-Ferry Pass-Brent, FL | -0.78 | 106 | -0.60 | 90 |
| Columbia, SC | -0.71 | 100 | -0.60 | 91 |
| Lexington-Fayette, KY | -0.72 | 101 | -0.60 | 92 |
| Greensboro-High Point, NC | -0.60 | 82 | -0.61 | 93 |
| Indianapolis-Carmel, IN | -0.07 | 47 | -0.62 | 94 |
| Tallahassee, FL | -0.77 | 105 | -0.62 | 95 |
| San Antonio, TX | -0.62 | 87 | -0.63 | 96 |
| St. Louis, MO-IL | -0.63 | 88 | -0.64 | 97 |
| Cleveland-Elyria-Mentor, OH | -0.33 | 57 | -0.65 | 98 |
| Des Moines-West Des Moines, IA | -0.73 | 102 | -0.67 | 99 |
| Columbus, OH | -0.70 | 99 | -0.68 | 100 |
| Grand Rapids-Wyoming, MI | -0.69 | 94 | -0.68 | 101 |
| Harrisburg-Carlisle, PA | -0.43 | 68 | -0.70 | 102 |
| Tulsa, OK | -0.36 | 65 | -0.72 | 103 |
| Montgomery, AL | -0.93 | 116 | -0.75 | 104 |
| Hickory-Lenoir-Morganton, NC | -0.79 | 107 | -0.75 | 105 |
| El Paso, TX | -0.86 | 112 | -0.75 | 106 |
| Mobile, AL | -0.91 | 114 | -0.75 | 107 |
| Peoria, IL | 0.93 | 22 | -0.76 | 108 |
| Savannah, GA | -0.84 | 111 | -0.77 | 109 |
| Louisville-Jefferson County, KY-IN | -0.83 | 110 | -0.78 | 110 |
| Syracuse, NY | -0.95 | 119 | -0.78 | 111 |
| Wichita, KS | -1.05 | 130 | -0.79 | 112 |
| Omaha-Council Bluffs, NE-IA | -0.95 | 118 | -0.79 | 113 |
| Rockford, IL | -0.98 | 124 | -0.80 | 114 |
| Shreveport-Bossier City, LA | -0.95 | 120 | -0.80 | 115 |
| Killeen-Temple-Fort Hood, TX | -1.03 | 127 | -0.82 | 116 |
| Oklahoma City, OK | -0.97 | 121 | -0.82 | 117 |
| Beaumont-Port Arthur, TX | -0.97 | 123 | -0.82 | 118 |
| Little Rock-North Little Rock-Conway, AR | -1.03 | 126 | -0.83 | 119 |
| Dayton, OH | -0.74 | 103 | -0.85 | 120 |
| Lansing-East Lansing, MI | -0.92 | 115 | -0.86 | 121 |
| South Bend-Mishawaka, IN-MI | 1.67 | 10 | -0.86 | 122 |
| Buffalo-Niagara Falls, NY | -0.93 | 117 | -0.87 | 123 |
| McAllen-Edinburg-Mission, TX | -1.11 | 133 | -0.87 | 124 |
| Springfield, MO | -0.97 | 122 | -0.88 | 125 |
| Augusta-Richmond County, GA-SC | -1.01 | 125 | -0.89 | 126 |
| Evansville, IN-KY | -1.04 | 128 | -0.91 | 127 |
| Toledo, OH | -0.81 | 109 | -0.93 | 128 |
| Fort Wayne, IN | -0.89 | 113 | -0.94 | 129 |
| Charleston, WV | -1.05 | 129 | -0.95 | 130 |
| Fayetteville-Springdale-Rogers, AR-MO | -1.07 | 131 | -0.98 | 131 |
| Scranton-Wilkes-Barre, PA | -0.25 | 53 | -0.99 | 132 |
| Youngstown-Warren-Boardman, OH-PA | -1.13 | 134 | -1.04 | 133 |
| Davenport-Moline-Rock Island, IA-IL | -1.10 | 132 | -1.06 | 134 |
| Fayetteville, NC | -1.14 | 135 | -1.08 | 135 |
| Brownsville-Harlingen, TX | -1.34 | 136 | -1.17 | 136 |

## Table C-3. Rank of Metropolitan Areas According to Racial Inclusion and Income Equality Factor Score, 2005 and 2006

| Metro Area | 2005 Score | 2005 Rank | 2006 Score | 2006 Rank |
|---|---|---|---|---|
| Provo-Orem, UT | 4.23 | 1 | 4.40 | 1 |
| Ogden-Clearfield, UT | 4.06 | 2 | 4.37 | 2 |
| Manchester-Nashua, NH | 3.39 | 7 | 4.04 | 3 |
| Boise City-Nampa, ID | 3.62 | 4 | 3.78 | 4 |
| Portland-South Portland-Biddeford, ME | 3.91 | 3 | 3.71 | 5 |
| Lancaster, PA | 3.49 | 5 | 3.59 | 6 |
| Salt Lake City, UT | 3.44 | 6 | 3.43 | 7 |
| Eugene-Springfield, OR | 3.11 | 11 | 3.22 | 8 |
| Madison, WI | 3.20 | 8 | 3.19 | 9 |
| Hickory-Lenoir-Morganton, NC | 2.90 | 16 | 3.17 | 10 |
| Santa Rosa-Petaluma, CA | 2.88 | 17 | 3.09 | 11 |
| Allentown-Bethlehem-Easton, PA-NJ | 3.16 | 10 | 3.05 | 12 |
| Des Moines, IA | 2.93 | 15 | 3.04 | 13 |
| Fayetteville-Springdale-Rogers, AR-MO | 3.17 | 9 | 3.04 | 14 |
| Scranton--Wilkes-Barre, PA | 3.00 | 12 | 2.98 | 15 |
| York-Hanover, PA | 2.84 | 19 | 2.97 | 16 |
| Salem, OR | 2.98 | 13 | 2.89 | 17 |
| Spokane, WA | 2.88 | 18 | 2.81 | 18 |
| Honolulu, HI Metro Area | 2.57 | 23 | 2.74 | 19 |
| Springfield, MO | 2.93 | 14 | 2.69 | 20 |
| Reno-Sparks, NV | 2.47 | 24 | 2.67 | 21 |
| Oxnard-Thousand Oaks-Ventura, CA | 2.82 | 20 | 2.62 | 22 |
| Portland-Vancouver-Beaverton, OR-WA | 2.34 | 25 | 2.62 | 23 |
| Colorado Springs, CO | 2.70 | 22 | 2.60 | 24 |
| Asheville, NC | 2.09 | 29 | 2.50 | 25 |
| Reading, PA | 2.81 | 21 | 2.37 | 26 |
| Seattle-Tacoma-Bellevue, WA | 2.14 | 27 | 2.19 | 27 |
| Poughkeepsie-Newburgh-Middletown, NY | 1.83 | 32 | 2.10 | 28 |
| Worcester, MA | 2.05 | 30 | 2.08 | 29 |
| San Jose-Sunnyvale-Santa Clara, CA | 2.20 | 26 | 1.99 | 30 |
| Austin-Round Rock, TX | 1.73 | 34 | 1.91 | 31 |
| Minneapolis-St. Paul-Bloomington, MN-WI | 1.82 | 33 | 1.80 | 32 |
| McAllen-Edinburg-Pharr, TX | 0.83 | 57 | 1.75 | 33 |
| Evansville, IN-KY | 2.00 | 31 | 1.63 | 34 |
| Vallejo-Fairfield, CA | 1.29 | 41 | 1.59 | 35 |
| Omaha-Council Bluffs, NE-IA | 0.90 | 52 | 1.45 | 36 |
| Brownsville-Harlingen, TX | 1.08 | 46 | 1.39 | 37 |
| Anchorage, AK | 1.50 | 35 | 1.39 | 38 |
| Palm Bay-Melbourne-Titusville, FL | 1.17 | 44 | 1.38 | 39 |
| Denver-Aurora, CO | 1.39 | 39 | 1.34 | 40 |
| Canton-Massillon, OH | 1.47 | 37 | 1.30 | 41 |
| Killeen-Temple-Fort Hood, TX | 1.26 | 42 | 1.25 | 42 |
| Cape Coral-Fort Myers, FL | 1.05 | 47 | 1.23 | 43 |
| Fort Wayne, IN | 2.12 | 28 | 1.19 | 44 |
| Santa Barbara-Santa Maria-Goleta, CA | 1.24 | 43 | 1.18 | 45 |
| Harrisburg-Carlisle, PA | 1.39 | 40 | 1.16 | 46 |
| Sarasota-Bradenton-Venice, FL | 0.85 | 55 | 1.09 | 47 |
| Lansing-East Lansing, MI | 0.94 | 49 | 1.07 | 48 |
| Raleigh-Cary, NC | 0.59 | 64 | 1.05 | 49 |
| Wichita, KS | 1.16 | 45 | 1.00 | 50 |
| Albuquerque, NM | -0.04 | 77 | 0.98 | 51 |
| Deltona-Daytona Beach-Ormond Beach, FL | 0.74 | 59 | 0.98 | 52 |
| Providence-New Bedford-Fall River, RI-MA | -3.33 | 122 | 0.98 | 53 |
| Modesto, CA | 0.91 | 51 | 0.98 | 54 |
| Hartford-West Hartford-East Hartford, CT | 0.55 | 65 | 0.95 | 55 |
| Port St. Lucie-Fort Pierce, FL | 0.82 | 58 | 0.93 | 56 |
| Ann Arbor, MI | 1.44 | 38 | 0.90 | 57 |
| Wilmington, NC | 0.30 | 70 | 0.86 | 58 |
| South Bend-Mishawaka, IN-MI | 0.51 | 68 | 0.81 | 59 |
| Albany-Schenectady-Troy, NY | 0.71 | 60 | 0.80 | 60 |
| San Diego-Carlsbad-San Marcos, CA | 0.88 | 53 | 0.80 | 61 |
| Lakeland, FL | 1.48 | 36 | 0.75 | 62 |
| Grand Rapids-Wyoming, MI | 0.59 | 63 | 0.60 | 63 |
| Davenport-Moline-Rock Island, IA-IL | 0.25 | 71 | 0.55 | 64 |
| San Antonio, TX | 0.25 | 72 | 0.46 | 65 |
| Kalamazoo-Portage, MI | 0.61 | 61 | 0.43 | 66 |
| Lexington-Fayette, KY | 0.43 | 69 | 0.43 | 67 |
| Las Vegas-Paradise, NV | 0.92 | 50 | 0.42 | 68 |
| Sacramento--Arden-Arcade--Roseville, CA | 0.51 | 67 | 0.38 | 69 |
| Salinas, CA | 1.04 | 48 | 0.28 | 70 |
| Charleston, WV | 0.21 | 73 | 0.23 | 71 |
| Bridgeport-Stamford-Norwalk, CT | 0.54 | 66 | 0.22 | 72 |
| Tucson, AZ | -0.24 | 80 | 0.18 | 73 |
| New Haven-Milford, CT | -0.58 | 89 | 0.18 | 74 |
| Knoxville, TN | 0.87 | 54 | 0.16 | 75 |
| Pittsburgh, PA | 0.05 | 75 | 0.15 | 76 |
| Syracuse, NY | 0.19 | 74 | 0.07 | 77 |
| Greenville, SC | -0.34 | 82 | 0.00 | 78 |
| Akron, OH | 0.01 | 76 | -0.01 | 79 |
| Louisville, KY-IN | 0.83 | 56 | -0.08 | 80 |
| Rochester, NY | -0.15 | 78 | -0.09 | 81 |
| Naples-Marco Island, FL | -0.33 | 81 | -0.09 | 82 |
| Tampa-St. Petersburg-Clearwater, FL | -0.51 | 86 | -0.31 | 83 |
| Youngstown-Warren-Boardman, OH-PA | -0.34 | 83 | -0.36 | 84 |
| Springfield, MA | -0.58 | 88 | -0.37 | 85 |
| Columbus, OH | -0.41 | 84 | -0.40 | 86 |
| Kansas City, MO-KS | -0.72 | 91 | -0.47 | 87 |
| Rockford, IL | -0.21 | 79 | -0.56 | 88 |
| Stockton, CA | -0.71 | 90 | -0.60 | 89 |
| Corpus Christi, TX | -0.45 | 85 | -0.65 | 90 |
| Indianapolis, IN | -0.58 | 87 | -0.67 | 91 |
| Cincinnati-Middletown, OH-KY-IN | -1.09 | 98 | -0.84 | 92 |
| Winston-Salem, NC | -0.91 | 94 | -0.85 | 93 |
| Orlando, FL | -0.83 | 93 | -0.94 | 94 |
| Oklahoma City, OK | -1.12 | 100 | -1.01 | 95 |
| Greensboro-High Point, NC | -0.79 | 92 | -1.02 | 96 |
| Virginia Beach-Norfolk-Newport News, VA-NC | -1.02 | 95 | -1.02 | 97 |
| Huntsville, AL | -1.11 | 99 | -1.06 | 98 |
| Peoria, IL | -1.19 | 102 | -1.07 | 99 |
| Tulsa, OK | -1.06 | 97 | -1.09 | 100 |
| Dayton, OH | -1.12 | 101 | -1.17 | 101 |
| El Paso, TX | -1.28 | 103 | -1.19 | 102 |
| Fayetteville, NC | -1.69 | 110 | -1.33 | 103 |
| Richmond, VA | -1.70 | 111 | -1.45 | 104 |
| Charlotte-Gastonia-Concord, NC-SC | -1.51 | 107 | -1.49 | 105 |
| Jacksonville, FL | -1.67 | 109 | -1.49 | 106 |
| Nashville-Davidson--Murfreesboro, TN | -1.03 | 96 | -1.49 | 107 |
| Pensacola-Ferry Pass-Brent, FL | -1.71 | 112 | -1.59 | 108 |
| Chattanooga, TN-GA | 0.61 | 62 | -1.66 | 109 |
| Trenton-Ewing, NJ Metro Area | -2.25 | 116 | -1.67 | 110 |
| Toledo, OH | -1.76 | 113 | -1.71 | 111 |
| Buffalo-Niagara Falls, NY | -1.53 | 108 | -1.73 | 112 |
| Visalia-Porterville, CA | -1.33 | 104 | -1.86 | 113 |
| Bakersfield, CA | -1.94 | 114 | -1.92 | 114 |
| Durham, NC | -1.40 | 105 | -2.06 | 115 |
| Milwaukee-Waukesha-West Allis, WI | -1.50 | 106 | -2.19 | 116 |
| St. Louis, MO-IL | -2.10 | 115 | -2.24 | 117 |
| Little Rock-North Little Rock, AR | -2.47 | 118 | -2.49 | 118 |
| Fresno, CA | -2.46 | 117 | -2.80 | 119 |
| Columbia, SC | -3.17 | 120 | -2.92 | 120 |
| Cleveland-Elyria-Mentor, OH | -2.72 | 119 | -2.96 | 121 |
| Augusta-Richmond County, GA-SC | -3.19 | 121 | -3.39 | 122 |
| Charleston-North Charleston, SC | -3.58 | 123 | -3.47 | 123 |
| Baltimore-Towson, MD | -3.87 | 125 | -3.56 | 124 |
| Savannah, GA | -3.86 | 124 | -4.31 | 125 |
| Beaumont-Port Arthur, TX | -4.28 | 127 | -4.39 | 126 |
| Birmingham-Hoover, AL | -4.40 | 128 | -4.39 | 127 |
| Flint, MI | -4.01 | 126 | -4.61 | 128 |
| New Orleans-Metairie-Kenner, LA | -7.34 | 136 | -4.86 | 129 |
| Tallahassee, FL | -4.44 | 129 | -5.36 | 130 |
| Montgomery, AL | -5.23 | 130 | -5.37 | 131 |
| Mobile, AL | -5.68 | 133 | -6.07 | 132 |
| Baton Rouge, LA | -5.59 | 131 | -7.24 | 133 |
| Jackson, MS | -5.66 | 132 | -7.30 | 134 |
| Shreveport-Bossier City, LA | -7.11 | 135 | -7.38 | 135 |
| Memphis, TN-MS-AR | -6.95 | 134 | -7.88 | 136 |

## Table C-4. Rank of Metropolitan Areas According to Urban Assimilation Factor Score, 2005 and 2006

| | 2005 | | 2006 | |
|---|---|---|---|---|
| **Metro Area** | **Score** | **Rank** | **Score** | **Rank** |
| El Paso, TX | 9.53 | 1 | 9.50 | 1 |
| McAllen-Edinburg-Pharr, TX | 9.22 | 2 | 9.01 | 2 |
| San Jose-Sunnyvale-Santa Clara, CA | 8.99 | 3 | 8.79 | 3 |
| Brownsville-Harlingen, TX | 8.70 | 4 | 8.70 | 4 |
| Honolulu, HI Metro Area | 6.67 | 5 | 6.53 | 5 |
| Salinas, CA | 5.37 | 6 | 5.27 | 6 |
| Visalia-Porterville, CA | 4.47 | 8 | 4.55 | 7 |
| San Antonio, TX | 4.63 | 7 | 4.54 | 8 |
| San Diego-Carlsbad-San Marcos, CA | 4.26 | 9 | 4.24 | 9 |
| Fresno, CA | 4.18 | 10 | 4.04 | 10 |
| Stockton, CA | 3.86 | 11 | 3.93 | 11 |
| Oxnard-Thousand Oaks-Ventura, CA | 3.60 | 12 | 3.81 | 12 |
| Vallejo-Fairfield, CA | 3.33 | 13 | 3.32 | 13 |
| Santa Barbara-Santa Maria-Goleta, CA | 3.02 | 14 | 3.23 | 14 |
| Modesto, CA | 2.79 | 15 | 2.77 | 15 |
| Albuquerque, NM | 2.59 | 18 | 2.75 | 16 |
| Corpus Christi, TX | 2.77 | 16 | 2.74 | 17 |
| Bakersfield, CA | 2.63 | 17 | 2.73 | 18 |
| Austin-Round Rock, TX | 2.31 | 20 | 2.39 | 19 |
| Las Vegas-Paradise, NV | 2.47 | 19 | 2.36 | 20 |
| Trenton-Ewing, NJ Metro Area | 2.12 | 22 | 2.35 | 21 |
| Bridgeport-Stamford-Norwalk, CT | 2.13 | 21 | 2.15 | 22 |
| Denver-Aurora, CO | 1.95 | 24 | 2.09 | 23 |
| Seattle-Tacoma-Bellevue, WA | 1.92 | 25 | 1.97 | 24 |
| Tucson, AZ | 1.96 | 23 | 1.91 | 25 |
| Naples-Marco Island, FL | 1.60 | 27 | 1.85 | 26 |
| Orlando, FL | 1.71 | 26 | 1.65 | 27 |
| Santa Rosa-Petaluma, CA | 1.12 | 29 | 1.44 | 28 |
| Sacramento--Arden-Arcade--Roseville, CA | 1.45 | 28 | 1.44 | 29 |
| Killeen-Temple-Fort Hood, TX | 1.10 | 30 | 0.97 | 30 |
| Tampa-St. Petersburg-Clearwater, FL | 0.88 | 32 | 0.96 | 31 |
| Reno-Sparks, NV | 0.89 | 31 | 0.89 | 32 |
| Colorado Springs, CO | 0.57 | 34 | 0.67 | 33 |
| New Haven-Milford, CT | 0.59 | 33 | 0.46 | 34 |
| Raleigh-Cary, NC | 0.33 | 36 | 0.44 | 35 |
| Hartford-West Hartford-East Hartford, CT | 0.28 | 37 | 0.42 | 36 |
| Charlotte-Gastonia-Concord, NC-SC | 0.45 | 35 | 0.24 | 37 |
| Poughkeepsie-Newburgh-Middletown, NY | 0.08 | 39 | 0.23 | 38 |
| Cape Coral-Fort Myers, FL | -0.10 | 45 | 0.18 | 39 |
| Lakeland, FL | 0.04 | 42 | 0.15 | 40 |
| Worcester, MA | 0.17 | 38 | 0.14 | 41 |
| Portland-Vancouver-Beaverton, OR-WA | 0.08 | 40 | 0.10 | 42 |
| Durham, NC | 0.07 | 41 | -0.05 | 43 |
| Fayetteville, NC | 0.01 | 43 | -0.05 | 44 |
| Salem, OR | -0.03 | 44 | -0.14 | 45 |
| Sarasota-Bradenton-Venice, FL | -0.23 | 49 | -0.15 | 46 |
| Port St. Lucie-Fort Pierce, FL | -0.18 | 47 | -0.18 | 47 |
| Anchorage, AK | -0.46 | 52 | -0.29 | 48 |
| Baltimore-Towson, MD | -0.31 | 50 | -0.30 | 49 |
| Providence-New Bedford-Fall River, RI-MA | -0.20 | 48 | -0.36 | 50 |
| New Orleans-Metairie-Kenner, LA | -0.69 | 60 | -0.42 | 51 |
| Manchester-Nashua, NH | -0.15 | 46 | -0.42 | 52 |
| Kansas City, MO-KS | -0.50 | 54 | -0.43 | 53 |
| Jacksonville, FL | -0.53 | 55 | -0.48 | 54 |
| Ann Arbor, MI | -0.32 | 51 | -0.48 | 55 |
| Beaumont-Port Arthur, TX | -0.68 | 59 | -0.49 | 56 |
| Salt Lake City, UT | -0.54 | 56 | -0.52 | 57 |
| Fayetteville-Springdale-Rogers, AR-MO | -0.48 | 53 | -0.58 | 58 |
| Richmond, VA | -0.55 | 57 | -0.62 | 59 |
| Palm Bay-Melbourne-Titusville, FL | -0.57 | 58 | -0.67 | 60 |
| Albany-Schenectady-Troy, NY | -0.89 | 66 | -0.72 | 61 |
| Minneapolis-St. Paul-Bloomington, MN-WI | -0.71 | 61 | -0.74 | 62 |
| Rochester, NY | -0.83 | 63 | -0.75 | 63 |
| Tulsa, OK | -0.82 | 62 | -0.78 | 64 |
| Allentown-Bethlehem-Easton, PA-NJ | -0.92 | 67 | -0.80 | 65 |
| Milwaukee-Waukesha-West Allis, WI | -0.83 | 64 | -0.81 | 66 |
| Provo-Orem, UT | -0.88 | 65 | -0.87 | 67 |
| Memphis, TN-MS-AR | -1.00 | 72 | -0.89 | 68 |

| | 2005 | | 2006 | |
|---|---|---|---|---|
| **Metro Area** | **Score** | **Rank** | **Score** | **Rank** |
| Deltona-Daytona Beach-Ormond Beach, FL | -0.95 | 69 | -0.95 | 69 |
| Rockford, IL | -0.95 | 70 | -0.97 | 70 |
| Nashville-Davidson--Murfreesboro, TN | -1.03 | 73 | -0.97 | 71 |
| Oklahoma City, OK | -0.99 | 71 | -0.98 | 72 |
| Columbia, SC | -1.05 | 76 | -1.00 | 73 |
| Winston-Salem, NC | -1.06 | 77 | -1.00 | 74 |
| Little Rock-North Little Rock, AR | -1.03 | 74 | -1.00 | 75 |
| Springfield, MA | -0.93 | 68 | -1.04 | 76 |
| Virginia Beach-Norfolk-Newport News, VA-NC | -1.08 | 78 | -1.06 | 77 |
| Greensboro-High Point, NC | -1.05 | 75 | -1.12 | 78 |
| Wichita, KS | -1.09 | 79 | -1.12 | 79 |
| Savannah, GA | -1.10 | 81 | -1.13 | 80 |
| Reading, PA | -1.35 | 97 | -1.21 | 81 |
| Birmingham-Hoover, AL | -1.28 | 93 | -1.22 | 82 |
| Greenville, SC | -1.24 | 90 | -1.22 | 83 |
| Grand Rapids-Wyoming, MI | -1.09 | 80 | -1.22 | 84 |
| Boise City-Nampa, ID | -1.14 | 82 | -1.23 | 85 |
| St. Louis, MO-IL | -1.18 | 85 | -1.23 | 86 |
| Columbus, OH | -1.18 | 84 | -1.23 | 87 |
| Buffalo-Niagara Falls, NY | -1.34 | 96 | -1.24 | 88 |
| Cleveland-Elyria-Mentor, OH | -1.20 | 87 | -1.24 | 89 |
| Lansing-East Lansing, MI | -1.18 | 83 | -1.25 | 90 |
| Huntsville, AL | -1.23 | 88 | -1.25 | 91 |
| Baton Rouge, LA | -1.25 | 91 | -1.28 | 92 |
| Augusta-Richmond County, GA-SC | -1.29 | 94 | -1.28 | 93 |
| Ogden-Clearfield, UT | -1.26 | 92 | -1.28 | 94 |
| Indianapolis, IN | -1.31 | 95 | -1.31 | 95 |
| Omaha-Council Bluffs, NE-IA | -1.23 | 89 | -1.32 | 96 |
| Tallahassee, FL | -1.41 | 102 | -1.37 | 97 |
| Des Moines, IA | -1.38 | 99 | -1.38 | 98 |
| Madison, WI | -1.20 | 86 | -1.38 | 99 |
| Knoxville, TN | -1.40 | 101 | -1.39 | 100 |
| Jackson, MS | -1.45 | 104 | -1.42 | 101 |
| Pensacola-Ferry Pass-Brent, FL | -1.42 | 103 | -1.44 | 102 |
| Charleston-North Charleston, SC | -1.39 | 100 | -1.45 | 103 |
| Lexington-Fayette, KY | -1.63 | 112 | -1.46 | 104 |
| Syracuse, NY | -1.65 | 114 | -1.50 | 105 |
| Eugene-Springfield, OR | -1.38 | 98 | -1.51 | 106 |
| Montgomery, AL | -1.56 | 108 | -1.53 | 107 |
| Kalamazoo-Portage, MI | -1.51 | 105 | -1.55 | 108 |
| Harrisburg-Carlisle, PA | -1.56 | 107 | -1.57 | 109 |
| Lancaster, PA | -1.58 | 109 | -1.58 | 110 |
| Davenport-Moline-Rock Island, IA-IL | -1.64 | 113 | -1.61 | 111 |
| Cincinnati-Middletown, OH-KY-IN | -1.56 | 106 | -1.62 | 112 |
| Louisville, KY-IN | -1.66 | 115 | -1.63 | 113 |
| Fort Wayne, IN | -1.59 | 110 | -1.65 | 114 |
| Shreveport-Bossier City, LA | -1.79 | 119 | -1.67 | 115 |
| South Bend-Mishawaka, IN-MI | -1.60 | 111 | -1.68 | 116 |
| Hickory-Lenoir-Morganton, NC | -1.73 | 117 | -1.76 | 117 |
| Pittsburgh, PA | -1.81 | 121 | -1.80 | 118 |
| Spokane, WA | -1.78 | 118 | -1.80 | 119 |
| Toledo, OH | -1.68 | 116 | -1.83 | 120 |
| Asheville, NC | -1.91 | 122 | -1.85 | 121 |
| Mobile, AL | -1.79 | 120 | -1.98 | 122 |
| Charleston, WV | -2.00 | 124 | -1.99 | 123 |
| Wilmington, NC | -2.05 | 126 | -2.05 | 124 |
| Akron, OH | -2.02 | 125 | -2.06 | 125 |
| Flint, MI | -1.93 | 123 | -2.08 | 126 |
| Peoria, IL | -2.11 | 128 | -2.17 | 127 |
| Scranton--Wilkes-Barre, PA | -2.12 | 129 | -2.17 | 128 |
| Portland-South Portland-Biddeford, ME | -2.17 | 132 | -2.18 | 129 |
| Dayton, OH | -2.16 | 131 | -2.22 | 130 |
| York-Hanover, PA | -2.30 | 133 | -2.26 | 131 |
| Evansville, IN-KY | -2.15 | 130 | -2.26 | 132 |
| Chattanooga, TN-GA | -2.09 | 127 | -2.29 | 133 |
| Springfield, MO | -2.47 | 136 | -2.44 | 134 |
| Canton-Massillon, OH | -2.46 | 135 | -2.50 | 135 |
| Youngstown-Warren-Boardman, OH-PA | -2.36 | 134 | -2.51 | 136 |

## Table C-5. Rank of Metropolitan Areas According to Legacy of Place Factor Score, 2005 and 2006

| Metro Area | 2005 Score | 2005 Rank | 2006 Score | 2006 Rank |
|---|---|---|---|---|
| Peoria, IL | 6.88 | 1 | 6.69 | 1 |
| York-Hanover, PA | 6.69 | 2 | 6.15 | 2 |
| Scranton-Wilkes-Barre, PA | 6.29 | 3 | 5.96 | 3 |
| Youngstown-Warren-Boardman, OH-PA | 5.30 | 8 | 5.86 | 4 |
| Albany-Schenectady-Troy, NY | 5.73 | 5 | 5.54 | 5 |
| Rochester, NY | 5.65 | 6 | 5.47 | 6 |
| Davenport-Moline-Rock Island, IA-IL | 5.00 | 11 | 5.32 | 7 |
| Reading, PA | 5.90 | 4 | 5.30 | 8 |
| Buffalo-Niagara Falls, NY | 4.92 | 13 | 5.25 | 9 |
| Pittsburgh, PA | 4.95 | 12 | 5.14 | 10 |
| Lancaster, PA | 5.44 | 7 | 5.12 | 11 |
| Harrisburg-Carlisle, PA | 4.68 | 16 | 4.82 | 12 |
| Syracuse, NY | 5.07 | 10 | 4.81 | 13 |
| Milwaukee-Waukesha-West Allis, WI | 4.45 | 19 | 4.80 | 14 |
| Hartford-West Hartford-East Hartford, CT | 5.28 | 9 | 4.75 | 15 |
| Canton-Massillon, OH | 4.71 | 15 | 4.67 | 16 |
| Cleveland-Elyria-Mentor, OH | 4.64 | 17 | 4.55 | 17 |
| Toledo, OH | 3.93 | 21 | 4.33 | 18 |
| Evansville, IN-KY | 3.75 | 24 | 3.98 | 19 |
| Cincinnati-Middletown, OH-KY-IN | 3.54 | 27 | 3.95 | 20 |
| Worcester, MA | 3.78 | 23 | 3.89 | 21 |
| Allentown-Bethlehem-Easton, PA-NJ | 4.56 | 18 | 3.81 | 22 |
| Springfield, MA | 4.00 | 20 | 3.81 | 23 |
| Omaha-Council Bluffs, NE-IA | 3.91 | 22 | 3.74 | 24 |
| Grand Rapids-Wyoming, MI | 3.44 | 28 | 3.66 | 25 |
| Rockford, IL | 2.97 | 34 | 3.62 | 26 |
| Dayton, OH | 3.60 | 25 | 3.62 | 27 |
| Kalamazoo-Portage, MI | 4.74 | 14 | 3.54 | 28 |
| Portland-South Portland-Biddeford, ME | 3.14 | 32 | 3.43 | 29 |
| Poughkeepsie-Newburgh-Middletown, NY | 3.56 | 26 | 3.37 | 30 |
| St. Louis, MO-IL | 3.37 | 29 | 3.34 | 31 |
| Akron, OH | 3.33 | 30 | 3.29 | 32 |
| Lansing-East Lansing, MI | 2.78 | 36 | 3.27 | 33 |
| Providence-New Bedford-Fall River, RI-MA | 3.15 | 31 | 3.14 | 34 |
| South Bend-Mishawaka, IN-MI | 2.92 | 35 | 2.75 | 35 |
| Madison, WI | 2.30 | 38 | 2.64 | 36 |
| Flint, MI | 2.45 | 37 | 2.62 | 37 |
| Bridgeport-Stamford-Norwalk, CT | 1.63 | 45 | 2.59 | 38 |
| Manchester-Nashua, NH | 1.87 | 42 | 2.41 | 39 |
| New Haven-Milford, CT | 3.13 | 33 | 2.41 | 40 |
| Wichita, KS | 1.77 | 44 | 2.15 | 41 |
| Chattanooga, TN-GA | 1.53 | 46 | 2.06 | 42 |
| Minneapolis-St. Paul-Bloomington, MN-WI | 2.01 | 40 | 2.04 | 43 |
| Fort Wayne, IN | 2.14 | 39 | 1.94 | 44 |
| Birmingham-Hoover, AL | 1.88 | 41 | 1.72 | 45 |
| Kansas City, MO-KS | 1.85 | 43 | 1.66 | 46 |
| Des Moines-West Des Moines, IA | 1.34 | 47 | 1.45 | 47 |
| Indianapolis-Carmel, IN | 1.22 | 49 | 1.34 | 48 |
| Columbus, OH | 1.06 | 51 | 1.14 | 49 |
| Baltimore-Towson, MD | 1.29 | 48 | 1.00 | 50 |
| Louisville-Jefferson County, KY-IN | 1.03 | 52 | 0.79 | 51 |
| Knoxville, TN | 0.08 | 60 | 0.75 | 52 |
| Hickory-Lenoir-Morganton, NC | 1.08 | 50 | 0.71 | 53 |
| Beaumont-Port Arthur, TX | 0.79 | 53 | 0.60 | 54 |
| Richmond, VA | -0.07 | 61 | 0.37 | 55 |
| Jackson, MS | -0.10 | 62 | 0.26 | 56 |
| Montgomery, AL | -0.13 | 63 | 0.16 | 57 |
| Charleston, WV | 0.19 | 59 | 0.15 | 58 |
| Little Rock-North Little Rock-Conway, AR | 0.23 | 58 | 0.13 | 59 |
| Trenton-Ewing, NJ | 0.75 | 54 | -0.01 | 60 |
| Ann Arbor, MI | 0.48 | 55 | -0.04 | 61 |
| Winston-Salem, NC | -0.68 | 72 | -0.13 | 62 |
| Memphis, TN-MS-AR | 0.39 | 56 | -0.20 | 63 |
| Greensboro-High Point, NC | -0.34 | 65 | -0.20 | 64 |
| Springfield, MO | 0.26 | 57 | -0.22 | 65 |
| Savannah, GA | -0.70 | 73 | -0.24 | 66 |
| Lexington-Fayette, KY | -0.40 | 66 | -0.36 | 67 |
| Nashville-Davidson-Murfreesboro-Franklin, TN | -0.92 | 80 | -0.40 | 68 |
| Mobile, AL | -0.55 | 68 | -0.40 | 69 |
| Shreveport-Bossier City, LA | -0.92 | 79 | -0.56 | 70 |
| Spokane, WA | -0.66 | 71 | -0.56 | 71 |
| Huntsville, AL | -0.56 | 69 | -0.60 | 72 |
| Tulsa, OK | -0.81 | 77 | -0.72 | 73 |
| Augusta-Richmond County, GA-SC | -0.52 | 67 | -0.74 | 74 |
| New Orleans-Metairie-Kenner, LA | -0.27 | 64 | -0.75 | 75 |
| Baton Rouge, LA | -0.90 | 78 | -0.78 | 76 |
| Asheville, NC | -0.79 | 76 | -0.79 | 77 |
| Fayetteville-Springdale-Rogers, AR-MO | -0.77 | 75 | -1.08 | 78 |
| Columbia, SC | -0.64 | 70 | -1.12 | 79 |
| Greenville-Mauldin-Easley, SC | -1.34 | 83 | -1.21 | 80 |
| Portland-Vancouver-Beaverton, OR-WA | -1.32 | 82 | -1.27 | 81 |
| Denver-Aurora, CO | -1.56 | 85 | -1.29 | 82 |
| Eugene-Springfield, OR | -1.30 | 81 | -1.34 | 83 |
| Oklahoma City, OK | -1.37 | 84 | -1.38 | 84 |
| Durham, NC | -1.86 | 87 | -1.48 | 85 |
| Visalia-Porterville, CA | -0.72 | 74 | -1.61 | 86 |
| Salt Lake City, UT | -2.14 | 92 | -1.70 | 87 |
| Ogden-Clearfield, UT | -1.79 | 86 | -1.72 | 88 |
| Charleston-North Charleston, SC | -2.00 | 88 | -1.88 | 89 |
| Salinas, CA | -2.20 | 93 | -1.92 | 90 |
| Seattle-Tacoma-Bellevue, WA | -2.02 | 89 | -1.97 | 91 |
| Salem, OR | -2.28 | 95 | -2.15 | 92 |
| Killeen-Temple-Fort Hood, TX | -2.75 | 100 | -2.26 | 93 |
| Santa Barbara-Santa Maria-Goleta, CA | -3.06 | 108 | -2.30 | 94 |
| Fresno, CA | -2.13 | 91 | -2.32 | 95 |
| Virginia Beach-Norfolk-Newport News, VA-NC | -2.54 | 98 | -2.35 | 96 |
| Stockton, CA | -2.05 | 90 | -2.37 | 97 |
| Boise City-Nampa, ID | -2.25 | 94 | -2.38 | 98 |
| Charlotte-Gastonia-Concord, NC-SC | -2.29 | 96 | -2.40 | 99 |
| Wilmington, NC | -2.90 | 104 | -2.42 | 100 |
| Tallahassee, FL | -2.30 | 97 | -2.46 | 101 |
| Honolulu, HI | -2.56 | 99 | -2.49 | 102 |
| Santa Rosa-Petaluma, CA | -2.75 | 102 | -2.71 | 103 |
| Fayetteville, NC | -2.92 | 105 | -2.79 | 104 |
| San Antonio, TX | -3.03 | 106 | -2.88 | 105 |
| Brownsville-Harlingen, TX | -2.75 | 101 | -2.92 | 106 |
| El Paso, TX | -3.19 | 113 | -3.04 | 107 |
| Modesto, CA | -3.10 | 109 | -3.06 | 108 |
| Oxnard-Thousand Oaks-Ventura, CA | -3.18 | 112 | -3.08 | 109 |
| Anchorage, AK | -3.17 | 111 | -3.14 | 110 |
| Sacramento-Arden-Arcade-Roseville, CA | -3.16 | 110 | -3.23 | 111 |
| Vallejo-Fairfield, CA | -3.24 | 114 | -3.28 | 112 |
| Corpus Christi, TX | -3.05 | 107 | -3.30 | 113 |
| McAllen-Edinburg-Mission, TX | -3.73 | 119 | -3.30 | 114 |
| Pensacola-Ferry Pass-Brent, FL | -2.83 | 103 | -3.36 | 115 |
| Bakersfield, CA | -3.46 | 117 | -3.50 | 116 |
| San Jose-Sunnyvale-Santa Clara, CA | -3.63 | 118 | -3.61 | 117 |
| Raleigh-Cary, NC | -3.75 | 120 | -3.66 | 118 |
| Tucson, AZ | -3.84 | 121 | -3.70 | 119 |
| Jacksonville, FL | -3.38 | 115 | -3.71 | 120 |
| Austin-Round Rock, TX | -3.89 | 124 | -3.83 | 121 |
| Tampa-St. Petersburg-Clearwater, FL | -4.11 | 128 | -3.84 | 122 |
| Provo-Orem, UT | -3.97 | 125 | -3.86 | 123 |
| Albuquerque, NM | -4.04 | 127 | -3.96 | 124 |
| Sarasota-Bradenton-Venice, FL | -3.41 | 116 | -3.97 | 125 |
| Colorado Springs, CO | -3.89 | 122 | -4.00 | 126 |
| San Diego-Carlsbad-San Marcos, CA | -3.99 | 126 | -4.06 | 127 |
| Palm Bay-Melbourne-Titusville, FL | -3.89 | 123 | -4.40 | 128 |
| Deltona-Daytona Beach-Ormond Beach, FL | -4.30 | 129 | -4.44 | 129 |
| Reno-Sparks, NV | -4.62 | 131 | -4.83 | 130 |
| Orlando-Kissimmee, FL | -4.70 | 132 | -4.88 | 131 |
| Lakeland, FL | -4.55 | 130 | -4.92 | 132 |
| Port St. Lucie, FL | -5.35 | 134 | -5.32 | 133 |
| Cape Coral-Fort Myers, FL | -5.23 | 133 | -5.53 | 134 |
| Naples-Marco Island, FL | -6.00 | 135 | -5.99 | 135 |
| Las Vegas-Paradise, NV | -7.21 | 136 | -7.14 | 136 |

## Table C-6. Rank of Metropolitan Areas According to Business Dynamics Factor Score, 2005 and 2006

| Metro Area | 2005 Score | 2005 Rank | 2006 Score | 2006 Rank |
|---|---|---|---|---|
| Deltona-Daytona Beach-Ormond Beach, FL | 0.42 | 29 | 1.56 | 1 |
| Port St. Lucie, FL | 0.59 | 15 | 1.49 | 2 |
| Orlando-Kissimmee, FL | 0.96 | 6 | 1.49 | 3 |
| Sarasota-Bradenton-Venice, FL | 0.56 | 17 | 1.43 | 4 |
| Lakeland, FL | 0.88 | 7 | 1.41 | 5 |
| Palm Bay-Melbourne-Titusville, FL | 0.42 | 27 | 1.29 | 6 |
| Fayetteville-Springdale-Rogers, AR-MO | 1.62 | 2 | 1.22 | 7 |
| Jacksonville, FL | 0.35 | 36 | 1.01 | 8 |
| Cape Coral-Fort Myers, FL | 0.46 | 25 | 0.94 | 9 |
| Boise City-Nampa, ID | 0.85 | 9 | 0.90 | 10 |
| Tampa-St. Petersburg-Clearwater, FL | 0.62 | 13 | 0.86 | 11 |
| Las Vegas-Paradise, NV | 1.29 | 3 | 0.82 | 12 |
| Tallahassee, FL | 1.03 | 5 | 0.78 | 13 |
| Virginia Beach-Norfolk-Newport News, VA-NC | 0.59 | 14 | 0.73 | 14 |
| Pensacola-Ferry Pass-Brent, FL | 0.66 | 12 | 0.72 | 15 |
| Ogden-Clearfield, UT | 1.14 | 4 | 0.70 | 16 |
| Harrisburg-Carlisle, PA | -0.32 | 95 | 0.64 | 17 |
| Naples-Marco Island, FL | 0.57 | 16 | 0.60 | 18 |
| Provo-Orem, UT | 0.77 | 10 | 0.58 | 19 |
| Richmond, VA | 0.21 | 47 | 0.54 | 20 |
| McAllen-Edinburg-Mission, TX | 0.88 | 8 | 0.48 | 21 |
| Charleston-North Charleston, SC | 0.42 | 28 | 0.44 | 22 |
| Raleigh-Cary, NC | 0.17 | 50 | 0.43 | 23 |
| Lexington-Fayette, KY | 0.03 | 62 | 0.40 | 24 |
| Jackson, MS | 0.36 | 32 | 0.38 | 25 |
| Poughkeepsie-Newburgh-Middletown, NY | 0.34 | 38 | 0.37 | 26 |
| Wilmington, NC | 0.46 | 24 | 0.34 | 27 |
| Springfield, MO | 0.23 | 44 | 0.32 | 28 |
| Anchorage, AK | 0.51 | 21 | 0.29 | 29 |
| Oklahoma City, OK | 0.18 | 49 | 0.29 | 30 |
| Albany-Schenectady-Troy, NY | 0.17 | 51 | 0.29 | 31 |
| Charlotte-Gastonia-Concord, NC-SC | -0.17 | 84 | 0.28 | 32 |
| Austin-Round Rock, TX | 0.35 | 35 | 0.28 | 33 |
| Salt Lake City, UT | 0.45 | 26 | 0.28 | 34 |
| Asheville, NC | 0.24 | 43 | 0.28 | 35 |
| Baltimore-Towson, MD | 0.33 | 40 | 0.27 | 36 |
| Nashville-Davidson-Murfreesboro-Franklin, TN | -0.11 | 77 | 0.23 | 37 |
| Fayetteville, NC | -0.50 | 108 | 0.23 | 38 |
| Minneapolis-St. Paul-Bloomington, MN-WI | 0.36 | 34 | 0.23 | 39 |
| Kansas City, MO-KS | 0.07 | 56 | 0.20 | 40 |
| Reno-Sparks, NV | -0.06 | 69 | 0.20 | 41 |
| St. Louis, MO-IL | -0.14 | 80 | 0.19 | 42 |
| Trenton-Ewing, NJ | -0.36 | 102 | 0.15 | 43 |
| Colorado Springs, CO | 0.06 | 57 | 0.13 | 44 |
| Des Moines-West Des Moines, IA | 0.52 | 19 | 0.12 | 45 |
| Seattle-Tacoma-Bellevue, WA | -0.03 | 67 | 0.10 | 46 |
| Madison, WI | -0.07 | 70 | 0.10 | 47 |
| Salem, OR | 0.41 | 30 | 0.09 | 48 |
| Greenville-Mauldin-Easley, SC | 0.03 | 63 | 0.06 | 49 |
| Spokane, WA | 0.36 | 33 | 0.06 | 50 |
| Indianapolis-Carmel, IN | -0.11 | 76 | 0.06 | 51 |
| Rochester, NY | -0.12 | 78 | 0.05 | 52 |
| Portland-Vancouver-Beaverton, OR-WA | 0.16 | 53 | 0.05 | 53 |
| Portland-South Portland-Biddeford, ME | 0.34 | 37 | 0.05 | 54 |
| San Diego-Carlsbad-San Marcos, CA | 0.23 | 45 | 0.05 | 55 |
| Winston-Salem, NC | -0.50 | 111 | 0.03 | 56 |
| Worcester, MA | 0.53 | 18 | 0.03 | 57 |
| Huntsville, AL | 0.40 | 31 | 0.02 | 58 |
| Albuquerque, NM | 0.03 | 61 | 0.02 | 59 |
| Savannah, GA | -0.36 | 101 | 0.01 | 60 |
| Little Rock-North Little Rock-Conway, AR | 0.05 | 59 | 0.01 | 61 |
| Oxnard-Thousand Oaks-Ventura, CA | 0.48 | 23 | -0.01 | 62 |
| Peoria, IL | -0.45 | 105 | -0.02 | 63 |
| Honolulu, HI | 0.76 | 11 | -0.03 | 64 |
| Manchester-Nashua, NH | -0.42 | 104 | -0.04 | 65 |
| Memphis, TN-MS-AR | -0.24 | 91 | -0.04 | 66 |
| Reading, PA | -0.33 | 97 | -0.04 | 67 |
| Columbia, SC | 0.14 | 54 | -0.06 | 68 |
| York-Hanover, PA | -0.68 | 122 | -0.06 | 69 |
| San Antonio, TX | 0.01 | 64 | -0.08 | 70 |
| Chattanooga, TN-GA | -0.50 | 107 | -0.08 | 71 |
| El Paso, TX | -0.57 | 113 | -0.08 | 72 |
| Augusta-Richmond County, GA-SC | 0.17 | 52 | -0.09 | 73 |
| Denver-Aurora, CO | -0.09 | 71 | -0.09 | 74 |
| Greensboro-High Point, NC | -0.35 | 100 | -0.09 | 75 |
| Omaha-Council Bluffs, NE-IA | -0.11 | 75 | -0.10 | 76 |
| Birmingham-Hoover, AL | -0.12 | 79 | -0.10 | 77 |
| Columbus, OH | -0.10 | 74 | -0.10 | 78 |
| Lancaster, PA | -0.15 | 81 | -0.11 | 79 |
| Hartford-West Hartford-East Hartford, CT | -0.96 | 135 | -0.12 | 80 |
| New Orleans-Metairie-Kenner, LA | -0.19 | 87 | -0.13 | 81 |
| Tucson, AZ | 0.06 | 58 | -0.13 | 82 |
| Grand Rapids-Wyoming, MI | -0.15 | 82 | -0.14 | 83 |
| Knoxville, TN | -0.09 | 72 | -0.14 | 84 |
| Tulsa, OK | -0.34 | 98 | -0.15 | 85 |
| Montgomery, AL | -0.26 | 92 | -0.15 | 86 |
| Durham, NC | -0.19 | 88 | -0.18 | 87 |
| Vallejo-Fairfield, CA | 0.29 | 42 | -0.21 | 88 |
| Wichita, KS | -0.20 | 89 | -0.21 | 89 |
| Syracuse, NY | 0.01 | 65 | -0.23 | 90 |
| Bakersfield, CA | -0.21 | 90 | -0.23 | 91 |
| Davenport-Moline-Rock Island, IA-IL | -0.78 | 129 | -0.25 | 92 |
| Milwaukee-Waukesha-West Allis, WI | -0.72 | 124 | -0.25 | 93 |
| Evansville, IN-KY | -0.80 | 131 | -0.27 | 94 |
| Sacramento-Arden-Arcade-Roseville, CA | 0.21 | 48 | -0.27 | 95 |
| Louisville-Jefferson County, KY-IN | -0.35 | 99 | -0.27 | 96 |
| Eugene-Springfield, OR | 0.11 | 55 | -0.28 | 97 |
| Scranton-Wilkes-Barre, PA | -0.58 | 115 | -0.32 | 98 |
| Flint, MI | -0.82 | 132 | -0.32 | 99 |
| Pittsburgh, PA | -0.78 | 128 | -0.33 | 100 |
| Shreveport-Bossier City, LA | 0.05 | 60 | -0.34 | 101 |
| Modesto, CA | 0.31 | 41 | -0.35 | 102 |
| New Haven-Milford, CT | -0.99 | 136 | -0.38 | 103 |
| Fort Wayne, IN | -0.19 | 85 | -0.39 | 104 |
| Bridgeport-Stamford-Norwalk, CT | -0.77 | 125 | -0.40 | 105 |
| Killeen-Temple-Fort Hood, TX | 0.50 | 22 | -0.40 | 106 |
| Youngstown-Warren-Boardman, OH-PA | -0.71 | 123 | -0.41 | 107 |
| Allentown-Bethlehem-Easton, PA-NJ | -0.33 | 96 | -0.43 | 108 |
| Providence-New Bedford-Fall River, RI-MA | 0.34 | 39 | -0.45 | 109 |
| Cincinnati-Middletown, OH-KY-IN | -0.47 | 106 | -0.46 | 110 |
| Mobile, AL | -0.79 | 130 | -0.46 | 111 |
| Rockford, IL | -0.65 | 120 | -0.46 | 112 |
| Lansing-East Lansing, MI | -0.60 | 117 | -0.48 | 113 |
| Salinas, CA | -0.64 | 119 | -0.48 | 114 |
| Corpus Christi, TX | -0.01 | 66 | -0.49 | 115 |
| Baton Rouge, LA | -0.05 | 68 | -0.51 | 116 |
| Hickory-Lenoir-Morganton, NC | -0.82 | 133 | -0.52 | 117 |
| Fresno, CA | -0.17 | 83 | -0.52 | 118 |
| San Jose-Sunnyvale-Santa Clara, CA | -0.77 | 126 | -0.56 | 119 |
| Buffalo-Niagara Falls, NY | -0.19 | 86 | -0.56 | 120 |
| Ann Arbor, MI | -0.10 | 73 | -0.57 | 121 |
| Cleveland-Elyria-Mentor, OH | -0.78 | 127 | -0.57 | 122 |
| Santa Rosa-Petaluma, CA | -0.50 | 110 | -0.58 | 123 |
| Santa Barbara-Santa Maria-Goleta, CA | -0.40 | 103 | -0.59 | 124 |
| Charleston, WV | -0.60 | 118 | -0.63 | 125 |
| Toledo, OH | -0.58 | 114 | -0.63 | 126 |
| Brownsville-Harlingen, TX | 0.22 | 46 | -0.77 | 127 |
| Canton-Massillon, OH | -0.51 | 112 | -0.78 | 128 |
| Akron, OH | -0.26 | 93 | -0.79 | 129 |
| Beaumont-Port Arthur, TX | -0.50 | 109 | -0.81 | 130 |
| Stockton, CA | 0.52 | 20 | -0.82 | 131 |
| Dayton, OH | -0.60 | 116 | -0.82 | 132 |
| South Bend-Mishawaka, IN-MI | -0.68 | 121 | -0.85 | 133 |
| Kalamazoo-Portage, MI | -0.86 | 134 | -0.88 | 134 |
| Visalia-Porterville, CA | -0.28 | 94 | -1.05 | 135 |
| Springfield, MA | 2.37 | 1 | -1.63 | 136 |

## Table C-7. Rank of Metropolitan Areas According to Individual Entrepreneurship Factor Score, 2005 and 2006

| Metro Area | 2005 Score | 2005 Rank | 2006 Score | 2006 Rank |
|---|---|---|---|---|
| Naples-Marco Island, FL | 2.16 | 3 | 3.60 | 1 |
| Sarasota-Bradenton-Venice, FL | 2.57 | 2 | 3.41 | 2 |
| Wilmington, NC | 1.25 | 10 | 3.19 | 3 |
| Santa Rosa-Petaluma, CA | 1.75 | 6 | 3.14 | 4 |
| Cape Coral-Fort Myers, FL | 1.29 | 9 | 2.78 | 5 |
| Asheville, NC | 1.13 | 12 | 2.52 | 6 |
| Oxnard-Thousand Oaks-Ventura, CA | 0.57 | 27 | 2.22 | 7 |
| Palm Bay-Melbourne-Titusville, FL | 0.84 | 17 | 2.16 | 8 |
| Bridgeport-Stamford-Norwalk, CT | 1.46 | 8 | 1.93 | 9 |
| Portland-South Portland-Biddeford, ME | 1.47 | 7 | 1.90 | 10 |
| Boise City-Nampa, ID | 1.20 | 11 | 1.82 | 11 |
| Port St. Lucie, FL | 1.96 | 4 | 1.81 | 12 |
| McAllen-Edinburg-Mission, TX | 0.52 | 29 | 1.65 | 13 |
| Salinas, CA | 0.93 | 15 | 1.55 | 14 |
| Deltona-Daytona Beach-Ormond Beach, FL | 1.76 | 5 | 1.36 | 15 |
| Tampa-St. Petersburg-Clearwater, FL | 0.79 | 21 | 1.32 | 16 |
| San Diego-Carlsbad-San Marcos, CA | 0.54 | 28 | 1.26 | 17 |
| Eugene-Springfield, OR | 1.08 | 13 | 1.23 | 18 |
| Santa Barbara-Santa Maria-Goleta, CA | 0.84 | 18 | 1.20 | 19 |
| Portland-Vancouver-Beaverton, OR-WA | 0.64 | 25 | 1.19 | 20 |
| Pensacola-Ferry Pass-Brent, FL | 0.83 | 19 | 1.17 | 21 |
| Poughkeepsie-Newburgh-Middletown, NY | 0.85 | 16 | 1.11 | 22 |
| Colorado Springs, CO | 0.74 | 23 | 1.06 | 23 |
| Denver-Aurora, CO | 0.67 | 24 | 1.04 | 24 |
| Provo-Orem, UT | 0.78 | 22 | 0.86 | 25 |
| Orlando-Kissimmee, FL | 0.44 | 32 | 0.83 | 26 |
| Oklahoma City, OK | 0.44 | 31 | 0.77 | 27 |
| Seattle-Tacoma-Bellevue, WA | 0.38 | 33 | 0.69 | 28 |
| Salem, OR | 0.82 | 20 | 0.63 | 29 |
| Tulsa, OK | 0.38 | 34 | 0.63 | 30 |
| Anchorage, AK | 0.97 | 14 | 0.62 | 31 |
| Corpus Christi, TX | 0.22 | 41 | 0.59 | 32 |
| Springfield, MO | 0.28 | 38 | 0.58 | 33 |
| Sacramento-Arden-Arcade-Roseville, CA | -0.06 | 51 | 0.48 | 34 |
| Ogden-Clearfield, UT | 0.60 | 26 | 0.48 | 35 |
| Brownsville-Harlingen, TX | 7.69 | 1 | 0.36 | 36 |
| Austin-Round Rock, TX | 0.17 | 42 | 0.33 | 37 |
| New Orleans-Metairie-Kenner, LA | -0.22 | 66 | 0.30 | 38 |
| Lakeland, FL | 0.47 | 30 | 0.27 | 39 |
| Spokane, WA | 0.31 | 36 | 0.26 | 40 |
| Savannah, GA | -0.26 | 69 | 0.22 | 41 |
| Fayetteville-Springdale-Rogers, AR-MO | 0.30 | 37 | 0.22 | 42 |
| Tallahassee, FL | 0.11 | 44 | 0.20 | 43 |
| Tucson, AZ | -0.06 | 50 | 0.19 | 44 |
| Chattanooga, TN-GA | -0.30 | 76 | 0.11 | 45 |
| Worcester, MA | -0.11 | 54 | 0.11 | 46 |
| Flint, MI | -0.36 | 83 | 0.05 | 47 |
| Jacksonville, FL | 0.35 | 35 | 0.02 | 48 |
| Raleigh-Cary, NC | -0.15 | 60 | 0.01 | 49 |
| Birmingham-Hoover, AL | -0.55 | 105 | 0.01 | 50 |
| Providence-New Bedford-Fall River, RI-MA | 0.04 | 46 | -0.02 | 51 |
| Charleston-North Charleston, SC | 0.13 | 43 | -0.02 | 52 |
| Salt Lake City, UT | -0.17 | 62 | -0.05 | 53 |
| Greenville-Mauldin-Easley, SC | -0.12 | 57 | -0.07 | 54 |
| Little Rock-North Little Rock-Conway, AR | -0.22 | 64 | -0.08 | 55 |
| Modesto, CA | -0.53 | 102 | -0.10 | 56 |
| Nashville-Davidson-Murfreesboro-Franklin, TN | -0.29 | 73 | -0.11 | 57 |
| Vallejo-Fairfield, CA | -0.11 | 55 | -0.15 | 58 |
| Scranton-Wilkes-Barre, PA | -0.51 | 98 | -0.15 | 59 |
| El Paso, TX | -0.10 | 52 | -0.15 | 60 |
| Honolulu, HI | -0.03 | 48 | -0.15 | 61 |
| Albuquerque, NM | -0.13 | 58 | -0.16 | 62 |
| Visalia-Porterville, CA | 0.05 | 45 | -0.16 | 63 |
| San Jose-Sunnyvale-Santa Clara, CA | -0.15 | 59 | -0.16 | 64 |
| Lancaster, PA | -0.38 | 86 | -0.22 | 65 |
| Manchester-Nashua, NH | -0.40 | 87 | -0.24 | 66 |
| Kalamazoo-Portage, MI | -0.84 | 123 | -0.26 | 67 |
| San Antonio, TX | -0.06 | 49 | -0.27 | 68 |
| Springfield, MA | -0.02 | 47 | -0.27 | 69 |
| Jackson, MS | -0.25 | 68 | -0.28 | 70 |
| Durham, NC | -0.22 | 63 | -0.32 | 71 |
| Youngstown-Warren-Boardman, OH-PA | -0.29 | 74 | -0.32 | 72 |
| Lexington-Fayette, KY | -0.33 | 79 | -0.33 | 73 |
| Minneapolis-St. Paul-Bloomington, MN-WI | -0.42 | 91 | -0.36 | 74 |
| Kansas City, MO-KS | -0.30 | 77 | -0.38 | 75 |
| Augusta-Richmond County, GA-SC | -0.26 | 70 | -0.41 | 76 |
| Trenton-Ewing, NJ | -0.44 | 92 | -0.42 | 77 |
| Winston-Salem, NC | -0.24 | 67 | -0.43 | 78 |
| Allentown-Bethlehem-Easton, PA-NJ | -0.11 | 53 | -0.45 | 79 |
| Hartford-West Hartford-East Hartford, CT | -0.22 | 65 | -0.46 | 80 |
| Bakersfield, CA | -0.37 | 85 | -0.47 | 81 |
| Canton-Massillon, OH | -0.34 | 81 | -0.48 | 82 |
| Huntsville, AL | -0.69 | 116 | -0.48 | 83 |
| Ann Arbor, MI | -0.44 | 93 | -0.48 | 84 |
| Albany-Schenectady-Troy, NY | -0.55 | 104 | -0.52 | 85 |
| Beaumont-Port Arthur, TX | -0.28 | 72 | -0.52 | 86 |
| Charleston, WV | -0.12 | 56 | -0.52 | 87 |
| Reading, PA | -0.95 | 130 | -0.53 | 88 |
| Omaha-Council Bluffs, NE-IA | -0.47 | 96 | -0.54 | 89 |
| Columbia, SC | -0.49 | 97 | -0.54 | 90 |
| Charlotte-Gastonia-Concord, NC-SC | -0.55 | 106 | -0.56 | 91 |
| New Haven-Milford, CT | -0.27 | 71 | -0.58 | 92 |
| Baltimore-Towson, MD | -0.30 | 75 | -0.58 | 93 |
| Killeen-Temple-Fort Hood, TX | 0.22 | 40 | -0.59 | 94 |
| Cleveland-Elyria-Mentor, OH | -0.44 | 94 | -0.60 | 95 |
| Wichita, KS | -0.32 | 78 | -0.61 | 96 |
| Stockton, CA | -0.65 | 114 | -0.61 | 97 |
| Des Moines-West Des Moines, IA | -0.78 | 121 | -0.62 | 98 |
| Reno-Sparks, NV | 0.27 | 39 | -0.62 | 99 |
| Rochester, NY | -0.45 | 95 | -0.63 | 100 |
| Greensboro-High Point, NC | -0.76 | 119 | -0.63 | 101 |
| Pittsburgh, PA | -0.33 | 80 | -0.66 | 102 |
| Fresno, CA | -0.16 | 61 | -0.67 | 103 |
| Baton Rouge, LA | -0.87 | 124 | -0.73 | 104 |
| Lansing-East Lansing, MI | -0.65 | 113 | -0.76 | 105 |
| Grand Rapids-Wyoming, MI | -0.93 | 129 | -0.76 | 106 |
| Louisville-Jefferson County, KY-IN | -0.53 | 100 | -0.78 | 107 |
| Davenport-Moline-Rock Island, IA-IL | -0.59 | 108 | -0.78 | 108 |
| Richmond, VA | -0.42 | 89 | -0.80 | 109 |
| Indianapolis-Carmel, IN | -0.71 | 118 | -0.81 | 110 |
| Shreveport-Bossier City, LA | -0.42 | 90 | -0.81 | 111 |
| Knoxville, TN | -0.61 | 110 | -0.82 | 112 |
| St. Louis, MO-IL | -0.57 | 107 | -0.87 | 113 |
| Akron, OH | -0.53 | 101 | -0.87 | 114 |
| Hickory-Lenoir-Morganton, NC | -0.61 | 109 | -0.88 | 115 |
| Fayetteville, NC | -0.34 | 82 | -0.94 | 116 |
| Evansville, IN-KY | -0.65 | 112 | -0.98 | 117 |
| Madison, WI | -0.77 | 120 | -1.00 | 118 |
| Fort Wayne, IN | -0.93 | 128 | -1.01 | 119 |
| Montgomery, AL | -0.37 | 84 | -1.02 | 120 |
| Virginia Beach-Norfolk-Newport News, VA-NC | -0.70 | 117 | -1.04 | 121 |
| Syracuse, NY | -0.51 | 99 | -1.07 | 122 |
| Las Vegas-Paradise, NV | -0.68 | 115 | -1.11 | 123 |
| South Bend-Mishawaka, IN-MI | -1.00 | 132 | -1.15 | 124 |
| Columbus, OH | -0.92 | 127 | -1.16 | 125 |
| Mobile, AL | -0.41 | 88 | -1.20 | 126 |
| Buffalo-Niagara Falls, NY | -0.80 | 122 | -1.29 | 127 |
| Rockford, IL | -0.62 | 111 | -1.29 | 128 |
| Memphis, TN-MS-AR | -1.39 | 136 | -1.34 | 129 |
| Cincinnati-Middletown, OH-KY-IN | -0.89 | 126 | -1.37 | 130 |
| Peoria, IL | -0.54 | 103 | -1.40 | 131 |
| Harrisburg-Carlisle, PA | -0.88 | 125 | -1.43 | 132 |
| Toledo, OH | -0.95 | 131 | -1.45 | 133 |
| York-Hanover, PA | -1.09 | 133 | -1.46 | 134 |
| Milwaukee-Waukesha-West Allis, WI | -1.18 | 134 | -1.48 | 135 |
| Dayton, OH | -1.29 | 135 | -1.55 | 136 |

## Table C-8. Rank of Metropolitan Areas According to Locational Amenities Factor Score, 2005 and 2006

| Metro Area | 2005 Score | 2005 Rank | 2006 Score | 2006 Rank |
|---|---|---|---|---|
| Cleveland-Elyria-Mentor, OH | 2.28 | 16 | 2.88 | 1 |
| Seattle-Tacoma-Bellevue, WA | 3.65 | 1 | 2.84 | 2 |
| Minneapolis-St. Paul-Bloomington, MN-WI | 3.16 | 5 | 2.79 | 3 |
| Madison, WI | 2.75 | 8 | 2.75 | 4 |
| Baltimore-Towson, MD | 2.23 | 17 | 2.74 | 5 |
| St. Louis, MO-IL | 2.42 | 15 | 2.69 | 6 |
| Pittsburgh, PA | 3.36 | 3 | 2.62 | 7 |
| Denver-Aurora, CO | 3.44 | 2 | 2.61 | 8 |
| Portland-Vancouver-Beaverton, OR-WA | 3.25 | 4 | 2.60 | 9 |
| Milwaukee-Waukesha-West Allis, WI | 2.68 | 10 | 2.54 | 10 |
| New Orleans-Metairie-Kenner, LA | 0.43 | 54 | 2.52 | 11 |
| Rochester, NY | 1.73 | 25 | 2.46 | 12 |
| Knoxville, TN | 0.40 | 57 | 2.34 | 13 |
| Cincinnati-Middletown, OH-KY-IN | 1.52 | 28 | 2.34 | 14 |
| Indianapolis-Carmel, IN | 0.51 | 52 | 2.30 | 15 |
| Buffalo-Niagara Falls, NY | 2.73 | 9 | 2.28 | 16 |
| Salt Lake City, UT | -3.40 | 132 | 2.19 | 17 |
| Orlando-Kissimmee, FL | 0.85 | 41 | 2.16 | 18 |
| Charleston-North Charleston, SC | -0.72 | 91 | 2.13 | 19 |
| Virginia Beach-Norfolk-Newport News, VA-NC | -0.02 | 72 | 2.11 | 20 |
| Omaha-Council Bluffs, NE-IA | 1.79 | 23 | 2.09 | 21 |
| San Diego-Carlsbad-San Marcos, CA | 1.79 | 24 | 2.04 | 22 |
| Louisville-Jefferson County, KY-IN | 0.37 | 58 | 2.00 | 23 |
| Durham, NC | -1.70 | 115 | 1.99 | 24 |
| Richmond, VA | 1.15 | 35 | 1.95 | 25 |
| Nashville-Davidson-Murfreesboro-Franklin, TN | 0.49 | 53 | 1.92 | 26 |
| Kansas City, MO-KS | 2.03 | 18 | 1.88 | 27 |
| Columbus, OH | 0.58 | 48 | 1.81 | 28 |
| Reno-Sparks, NV | 1.22 | 33 | 1.76 | 29 |
| Albany-Schenectady-Troy, NY | 1.95 | 19 | 1.76 | 30 |
| Providence-New Bedford-Fall River, RI-MA | 1.42 | 31 | 1.68 | 31 |
| Memphis, TN-MS-AR | 0.05 | 70 | 1.55 | 32 |
| Charlotte-Gastonia-Concord, NC-SC | 0.26 | 65 | 1.54 | 33 |
| Jacksonville, FL | -2.81 | 127 | 1.50 | 34 |
| Tampa-St. Petersburg-Clearwater, FL | 1.32 | 32 | 1.47 | 35 |
| Little Rock-North Little Rock-Conway, AR | -0.72 | 92 | 1.46 | 36 |
| Hartford-West Hartford-East Hartford, CT | 2.60 | 11 | 1.36 | 37 |
| San Jose-Sunnyvale-Santa Clara, CA | 0.42 | 55 | 1.32 | 38 |
| Savannah, GA | -0.88 | 95 | 1.26 | 39 |
| Portland-South Portland-Biddeford, ME | 0.87 | 40 | 1.24 | 40 |
| Asheville, NC | -0.27 | 80 | 1.22 | 41 |
| San Antonio, TX | 2.86 | 6 | 1.20 | 42 |
| Albuquerque, NM | 0.99 | 37 | 1.13 | 43 |
| Anchorage, AK | 1.65 | 26 | 1.12 | 44 |
| Syracuse, NY | 1.87 | 21 | 1.10 | 45 |
| Spokane, WA | 0.10 | 68 | 1.08 | 46 |
| Tulsa, OK | -0.15 | 75 | 1.05 | 47 |
| Toledo, OH | 0.99 | 38 | 1.03 | 48 |
| Birmingham-Hoover, AL | -1.36 | 106 | 1.03 | 49 |
| Evansville, IN-KY | -0.76 | 93 | 0.99 | 50 |
| Oklahoma City, OK | -1.35 | 104 | 0.95 | 51 |
| Austin-Round Rock, TX | 0.05 | 71 | 0.94 | 52 |
| Sarasota-Bradenton-Venice, FL | -0.79 | 94 | 0.94 | 53 |
| Sacramento-Arden-Arcade-Roseville, CA | -0.44 | 84 | 0.90 | 54 |
| Grand Rapids-Wyoming, MI | 0.54 | 51 | 0.86 | 55 |
| Kalamazoo-Portage, MI | 0.95 | 39 | 0.83 | 56 |
| Ann Arbor, MI | 2.85 | 7 | 0.80 | 57 |
| Raleigh-Cary, NC | 0.33 | 60 | 0.80 | 58 |
| Las Vegas-Paradise, NV | 1.43 | 30 | 0.79 | 59 |
| Tallahassee, FL | -0.52 | 85 | 0.78 | 60 |
| Chattanooga, TN-GA | -1.33 | 103 | 0.74 | 61 |
| Columbia, SC | -0.59 | 88 | 0.74 | 62 |
| Boise City-Nampa, ID | 0.80 | 42 | 0.63 | 63 |
| Dayton, OH | 2.47 | 14 | 0.57 | 64 |
| Honolulu, HI | 2.50 | 13 | 0.53 | 65 |
| Akron, OH | 0.58 | 49 | 0.46 | 66 |
| Lexington-Fayette, KY | 0.28 | 63 | 0.45 | 67 |
| Eugene-Springfield, OR | 1.84 | 22 | 0.40 | 68 |
| New Haven-Milford, CT | 1.50 | 29 | 0.39 | 69 |
| Des Moines-West Des Moines, IA | 1.20 | 34 | 0.35 | 70 |
| Springfield, MO | 0.55 | 50 | 0.32 | 71 |
| South Bend-Mishawaka, IN-MI | 0.13 | 66 | 0.25 | 72 |
| Harrisburg-Carlisle, PA | 0.62 | 46 | 0.21 | 73 |
| Santa Barbara-Santa Maria-Goleta, CA | 1.05 | 36 | 0.20 | 74 |
| Corpus Christi, TX | 0.12 | 67 | 0.16 | 75 |
| Greenville-Mauldin-Easley, SC | -1.26 | 101 | 0.08 | 76 |
| Jackson, MS | -1.50 | 112 | 0.04 | 77 |
| Huntsville, AL | -1.92 | 119 | -0.04 | 78 |
| Poughkeepsie-Newburgh-Middletown, NY | -3.12 | 129 | -0.08 | 79 |
| Colorado Springs, CO | 0.27 | 64 | -0.12 | 80 |
| Allentown-Bethlehem-Easton, PA-NJ | 0.36 | 59 | -0.15 | 81 |
| Cape Coral-Fort Myers, FL | -1.41 | 107 | -0.20 | 82 |
| Fort Wayne, IN | -0.16 | 76 | -0.25 | 83 |
| Peoria, IL | 0.68 | 45 | -0.25 | 84 |
| Greensboro-High Point, NC | -0.25 | 79 | -0.29 | 85 |
| Scranton-Wilkes-Barre, PA | -0.16 | 77 | -0.30 | 86 |
| Wilmington, NC | -0.91 | 96 | -0.36 | 87 |
| Deltona-Daytona Beach-Ormond Beach, FL | -1.45 | 109 | -0.36 | 88 |
| Bridgeport-Stamford-Norwalk, CT | 0.42 | 56 | -0.55 | 89 |
| Pensacola-Ferry Pass-Brent, FL | -1.16 | 97 | -0.58 | 90 |
| Davenport-Moline-Rock Island, IA-IL | -0.40 | 82 | -0.63 | 91 |
| Tucson, AZ | 0.77 | 43 | -0.89 | 92 |
| Springfield, MA | 1.91 | 20 | -0.89 | 93 |
| Fayetteville-Springdale-Rogers, AR-MO | -0.42 | 83 | -0.96 | 94 |
| Shreveport-Bossier City, LA | -1.46 | 110 | -0.96 | 95 |
| Wichita, KS | 0.58 | 47 | -0.98 | 96 |
| Baton Rouge, LA | -1.72 | 116 | -0.99 | 97 |
| Manchester-Nashua, NH | -1.36 | 105 | -0.99 | 98 |
| Salinas, CA | -1.31 | 102 | -1.02 | 99 |
| Mobile, AL | -2.13 | 122 | -1.04 | 100 |
| Augusta-Richmond County, GA-SC | -2.81 | 126 | -1.15 | 101 |
| Lansing-East Lansing, MI | 1.64 | 27 | -1.21 | 102 |
| Winston-Salem, NC | -3.55 | 135 | -1.34 | 103 |
| Palm Bay-Melbourne-Titusville, FL | -3.27 | 130 | -1.45 | 104 |
| Brownsville-Harlingen, TX | -2.62 | 125 | -1.53 | 105 |
| Fresno, CA | -0.32 | 81 | -1.60 | 106 |
| Hickory-Lenoir-Morganton, NC | -1.89 | 118 | -1.77 | 107 |
| Naples-Marco Island, FL | -1.53 | 113 | -1.78 | 108 |
| Rockford, IL | -1.21 | 99 | -1.82 | 109 |
| Charleston, WV | -0.05 | 73 | -1.84 | 110 |
| Worcester, MA | -0.24 | 78 | -1.89 | 111 |
| Canton-Massillon, OH | 0.28 | 62 | -1.92 | 112 |
| Youngstown-Warren-Boardman, OH-PA | -0.14 | 74 | -1.92 | 113 |
| Trenton-Ewing, NJ | 2.52 | 12 | -1.94 | 114 |
| Santa Rosa-Petaluma, CA | 0.32 | 61 | -1.97 | 115 |
| Ogden-Clearfield, UT | -3.55 | 136 | -2.01 | 116 |
| El Paso, TX | -0.61 | 89 | -2.11 | 117 |
| Flint, MI | 0.05 | 69 | -2.55 | 118 |
| Lakeland, FL | -1.87 | 117 | -2.65 | 119 |
| Provo-Orem, UT | 0.76 | 44 | -2.67 | 120 |
| Beaumont-Port Arthur, TX | -1.26 | 100 | -2.86 | 121 |
| Oxnard-Thousand Oaks-Ventura, CA | -1.69 | 114 | -2.88 | 122 |
| Lancaster, PA | -1.49 | 111 | -2.91 | 123 |
| Montgomery, AL | -1.43 | 108 | -2.92 | 124 |
| Reading, PA | -0.56 | 87 | -3.48 | 125 |
| McAllen-Edinburg-Mission, TX | -3.54 | 134 | -3.72 | 126 |
| Bakersfield, CA | -3.02 | 128 | -3.72 | 127 |
| Visalia-Porterville, CA | -2.37 | 123 | -3.78 | 128 |
| York-Hanover, PA | -2.59 | 124 | -3.83 | 129 |
| Fayetteville, NC | -3.35 | 131 | -3.97 | 130 |
| Salem, OR | -0.63 | 90 | -4.00 | 131 |
| Port St. Lucie, FL | -1.20 | 98 | -4.04 | 132 |
| Killeen-Temple-Fort Hood, TX | -1.95 | 120 | -4.12 | 133 |
| Stockton, CA | -1.98 | 121 | -4.31 | 134 |
| Vallejo-Fairfield, CA | -0.52 | 86 | -4.48 | 135 |
| Modesto, CA | -3.41 | 133 | -4.56 | 136 |

## Table C-9. Rank of Metropolitan Areas According to Urban/Metro Structure Factor Score, 2005 and 2006

| Metro Area | 2005 Score | 2005 Rank | 2006 Score | 2006 Rank |
|---|---|---|---|---|
| Poughkeepsie-Newburgh-Middletown, NY | 2.20 | 1 | 2.14 | 1 |
| Naples-Marco Island, FL | 1.82 | 2 | 1.99 | 2 |
| Harrisburg-Carlisle, PA | 1.75 | 3 | 1.76 | 3 |
| York-Hanover, PA | 1.62 | 6 | 1.65 | 4 |
| Lancaster, PA | 1.66 | 4 | 1.61 | 5 |
| Pittsburgh, PA | 1.59 | 8 | 1.58 | 6 |
| Bridgeport-Stamford-Norwalk, CT | 1.53 | 9 | 1.58 | 7 |
| Scranton-Wilkes-Barre, PA | 1.65 | 5 | 1.52 | 8 |
| Worcester, MA | 1.41 | 12 | 1.50 | 9 |
| Providence-New Bedford-Fall River, RI-MA | 1.45 | 11 | 1.49 | 10 |
| Allentown-Bethlehem-Easton, PA-NJ | 1.41 | 13 | 1.45 | 11 |
| Albany-Schenectady-Troy, NY | 1.53 | 10 | 1.43 | 12 |
| Portland-South Portland-Biddeford, ME | 1.60 | 7 | 1.39 | 13 |
| Oxnard-Thousand Oaks-Ventura, CA | 1.26 | 14 | 1.38 | 14 |
| Santa Barbara-Santa Maria-Goleta, CA | 1.10 | 22 | 1.28 | 15 |
| Trenton-Ewing, NJ | 1.04 | 27 | 1.24 | 16 |
| Youngstown-Warren-Boardman, OH-PA | 1.19 | 16 | 1.22 | 17 |
| Hartford-West Hartford-East Hartford, CT | 1.17 | 17 | 1.21 | 18 |
| Hickory-Lenoir-Morganton, NC | 1.15 | 18 | 1.16 | 19 |
| Manchester-Nashua, NH | 1.12 | 20 | 1.16 | 20 |
| Syracuse, NY | 1.08 | 24 | 1.16 | 21 |
| Reading, PA | 1.04 | 26 | 1.09 | 22 |
| Ogden-Clearfield, UT | 0.99 | 28 | 1.07 | 23 |
| Richmond, VA | 0.80 | 36 | 1.07 | 24 |
| Provo-Orem, UT | 0.50 | 51 | 1.02 | 25 |
| Minneapolis-St. Paul-Bloomington, MN-WI | 1.10 | 21 | 0.93 | 26 |
| Pensacola-Ferry Pass-Brent, FL | 1.24 | 15 | 0.92 | 27 |
| Rochester, NY | 0.82 | 35 | 0.92 | 28 |
| Fayetteville-Springdale-Rogers, AR-MO | 1.15 | 19 | 0.91 | 29 |
| New Haven-Milford, CT | 0.94 | 29 | 0.90 | 30 |
| Santa Rosa-Petaluma, CA | 0.56 | 46 | 0.90 | 31 |
| Asheville, NC | 0.83 | 34 | 0.87 | 32 |
| Cleveland-Elyria-Mentor, OH | 1.08 | 23 | 0.85 | 33 |
| Buffalo-Niagara Falls, NY | 0.84 | 33 | 0.83 | 34 |
| Lansing-East Lansing, MI | 0.73 | 38 | 0.82 | 35 |
| Springfield, MA | 0.64 | 41 | 0.79 | 36 |
| Greenville-Mauldin-Easley, SC | 0.87 | 31 | 0.79 | 37 |
| St. Louis, MO-IL | 0.93 | 30 | 0.78 | 38 |
| Palm Bay-Melbourne-Titusville, FL | 1.08 | 25 | 0.78 | 39 |
| Cincinnati-Middletown, OH-KY-IN | 0.84 | 32 | 0.73 | 40 |
| Sarasota-Bradenton-Venice, FL | 0.75 | 37 | 0.72 | 41 |
| Canton-Massillon, OH | 0.63 | 42 | 0.64 | 42 |
| New Orleans-Metairie-Kenner, LA | -0.36 | 86 | 0.63 | 43 |
| Grand Rapids-Wyoming, MI | 0.65 | 39 | 0.60 | 44 |
| Charleston, WV | 0.58 | 44 | 0.59 | 45 |
| Deltona-Daytona Beach-Ormond Beach, FL | 0.62 | 43 | 0.55 | 46 |
| Dayton, OH | 0.55 | 47 | 0.55 | 47 |
| Columbia, SC | 0.36 | 57 | 0.55 | 48 |
| Lakeland, FL | 0.52 | 49 | 0.53 | 49 |
| Tampa-St. Petersburg-Clearwater, FL | 0.46 | 53 | 0.52 | 50 |
| Ann Arbor, MI | 0.57 | 45 | 0.50 | 51 |
| Orlando-Kissimmee, FL | 0.65 | 40 | 0.50 | 52 |
| Baltimore-Towson, MD | 0.47 | 52 | 0.47 | 53 |
| Evansville, IN-KY | 0.54 | 48 | 0.44 | 54 |
| Boise City-Nampa, ID | 0.30 | 62 | 0.42 | 55 |
| Virginia Beach-Norfolk-Newport News, VA-NC | 0.34 | 59 | 0.41 | 56 |
| Denver-Aurora, CO | 0.15 | 69 | 0.36 | 57 |
| Raleigh-Cary, NC | 0.40 | 56 | 0.34 | 58 |
| Portland-Vancouver-Beaverton, OR-WA | -0.21 | 78 | 0.31 | 59 |
| Sacramento-Arden-Arcade-Roseville, CA | 0.15 | 70 | 0.31 | 60 |
| Killeen-Temple-Fort Hood, TX | 0.34 | 58 | 0.31 | 61 |
| Cape Coral-Fort Myers, FL | 0.43 | 55 | 0.30 | 62 |
| Knoxville, TN | 0.19 | 65 | 0.29 | 63 |
| Charleston-North Charleston, SC | 0.34 | 60 | 0.26 | 64 |
| Akron, OH | 0.19 | 66 | 0.24 | 65 |
| Salinas, CA | -0.05 | 73 | 0.23 | 66 |
| Kalamazoo-Portage, MI | 0.46 | 54 | 0.22 | 67 |
| Madison, WI | 0.32 | 61 | 0.21 | 68 |
| Vallejo-Fairfield, CA | 0.16 | 68 | 0.19 | 69 |
| Port St. Lucie, FL | 0.30 | 63 | 0.16 | 70 |
| Birmingham-Hoover, AL | 0.18 | 67 | 0.14 | 71 |
| Kansas City, MO-KS | 0.52 | 50 | 0.14 | 72 |
| McAllen-Edinburg-Mission, TX | -0.31 | 83 | 0.08 | 73 |
| Flint, MI | 0.20 | 64 | 0.02 | 74 |
| Salt Lake City, UT | -0.25 | 81 | -0.04 | 75 |
| Beaumont-Port Arthur, TX | -0.25 | 80 | -0.11 | 76 |
| San Diego-Carlsbad-San Marcos, CA | -0.10 | 76 | -0.11 | 77 |
| Seattle-Tacoma-Bellevue, WA | -0.02 | 72 | -0.15 | 78 |
| San Jose-Sunnyvale-Santa Clara, CA | -0.08 | 74 | -0.20 | 79 |
| Chattanooga, TN-GA | -0.47 | 93 | -0.24 | 80 |
| Jackson, MS | -0.09 | 75 | -0.25 | 81 |
| Nashville-Davidson-Murfreesboro-Franklin, TN | -0.36 | 85 | -0.32 | 82 |
| Milwaukee-Waukesha-West Allis, WI | 0.03 | 71 | -0.33 | 83 |
| Visalia-Porterville, CA | -0.36 | 87 | -0.36 | 84 |
| Des Moines-West Des Moines, IA | -0.23 | 79 | -0.38 | 85 |
| South Bend-Mishawaka, IN-MI | -0.15 | 77 | -0.41 | 86 |
| Salem, OR | -0.84 | 105 | -0.42 | 87 |
| Las Vegas-Paradise, NV | -0.32 | 84 | -0.44 | 88 |
| Wilmington, NC | -0.47 | 92 | -0.45 | 89 |
| Tulsa, OK | -0.70 | 99 | -0.48 | 90 |
| Louisville-Jefferson County, KY-IN | -0.29 | 82 | -0.53 | 91 |
| Tallahassee, FL | -0.46 | 91 | -0.56 | 92 |
| Greensboro-High Point, NC | -0.37 | 88 | -0.57 | 93 |
| Savannah, GA | -0.86 | 106 | -0.57 | 94 |
| Honolulu, HI | -0.87 | 107 | -0.60 | 95 |
| Davenport-Moline-Rock Island, IA-IL | -0.59 | 97 | -0.60 | 96 |
| Baton Rouge, LA | -0.48 | 94 | -0.62 | 97 |
| Augusta-Richmond County, GA-SC | -0.40 | 89 | -0.63 | 98 |
| Springfield, MO | -0.43 | 90 | -0.64 | 99 |
| Bakersfield, CA | -0.55 | 96 | -0.67 | 100 |
| Spokane, WA | -1.71 | 130 | -0.72 | 101 |
| Austin-Round Rock, TX | -0.80 | 103 | -0.76 | 102 |
| Omaha-Council Bluffs, NE-IA | -0.82 | 104 | -0.80 | 103 |
| Indianapolis-Carmel, IN | -0.71 | 100 | -0.88 | 104 |
| Eugene-Springfield, OR | -0.97 | 111 | -0.89 | 105 |
| Durham, NC | -0.93 | 109 | -0.92 | 106 |
| Winston-Salem, NC | -0.73 | 101 | -0.94 | 107 |
| Fort Wayne, IN | -0.66 | 98 | -0.94 | 108 |
| Columbus, OH | -1.05 | 114 | -0.95 | 109 |
| Reno-Sparks, NV | -0.90 | 108 | -0.96 | 110 |
| Little Rock-North Little Rock-Conway, AR | -0.77 | 102 | -0.97 | 111 |
| Huntsville, AL | -0.55 | 95 | -1.00 | 112 |
| Modesto, CA | -1.46 | 120 | -1.03 | 113 |
| Oklahoma City, OK | -1.48 | 121 | -1.09 | 114 |
| Peoria, IL | -1.00 | 113 | -1.11 | 115 |
| Brownsville-Harlingen, TX | -1.33 | 117 | -1.12 | 116 |
| Lexington-Fayette, KY | -0.98 | 112 | -1.14 | 117 |
| Toledo, OH | -0.97 | 110 | -1.23 | 118 |
| Charlotte-Gastonia-Concord, NC-SC | -1.10 | 115 | -1.24 | 119 |
| Fresno, CA | -1.45 | 119 | -1.29 | 120 |
| Stockton, CA | -1.35 | 118 | -1.38 | 121 |
| Colorado Springs, CO | -1.52 | 122 | -1.40 | 122 |
| Mobile, AL | -1.63 | 126 | -1.44 | 123 |
| Montgomery, AL | -1.70 | 129 | -1.53 | 124 |
| Wichita, KS | -1.61 | 125 | -1.56 | 125 |
| Shreveport-Bossier City, LA | -1.59 | 124 | -1.61 | 126 |
| El Paso, TX | -1.68 | 128 | -1.67 | 127 |
| Jacksonville, FL | -1.52 | 123 | -1.70 | 128 |
| Albuquerque, NM | -1.67 | 127 | -1.79 | 129 |
| Fayetteville, NC | -1.14 | 116 | -1.97 | 130 |
| Memphis, TN-MS-AR | -1.85 | 132 | -2.08 | 131 |
| San Antonio, TX | -2.13 | 134 | -2.14 | 132 |
| Rockford, IL | -2.03 | 133 | -2.16 | 133 |
| Anchorage, AK | -1.78 | 131 | -2.21 | 134 |
| Tucson, AZ | -2.53 | 135 | -2.54 | 135 |
| Corpus Christi, TX | -2.67 | 136 | -2.72 | 136 |

# APPENDIX D: INDICATORS AND THEIR UNDERLYING VARIABLES FOR NEO MSAS AND NEO AVERAGE

# Table D-1. NEO Metropolitan Areas Ranked by Each Variable

| Factors and Variables | Akron MSA | | | | | | Canton-Massillon MSA | | | | | | Cleveland-Elyria-Mentor MSA | | | | | | Youngstown-Warren-Boardman | | | | | | NEO Average | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2000 | | 2005 | | 2006 | | 2000 | | 2005 | | 2006 | | 2000 | | 2005 | | 2006 | | 2000 | | 2005 | | 2006 | | 2000 | 2005 | 2006 |
| | Value | Rank | Value | Rank | Value | Rank | Value | Rank | Value | Rank | Value | Rank | Value | Rank | Value | Rank | Value | Rank | Value | Rank | Value | Rank | Value | Rank | Value | Value | Value |
| **Skilled Workforce & R&D** | | **74** | | **58** | | **68** | | **119** | | **117** | | **123** | | **66** | | **64** | | **65** | | **128** | | **129** | | **127** | | | |
| Pct. of population in professional occupation | 32.0 | 81 | 34.1 | 59 | 33.0 | 71 | 28.1 | 122 | 28.7 | 114 | 28.7 | 118 | 33.5 | 58 | 33.9 | 64 | 33.8 | 64 | 26.1 | 133 | 26.5 | 130 | 27.5 | 123 | 31.6 | 32.3 | 32.2 |
| Pct. of population with graduate or professional degree | 8.1 | 73 | 9.7 | 61 | 9.2 | 68 | 5.9 | 121 | 6.1 | 124 | 6.0 | 124 | 8.7 | 61 | 10.0 | 52 | 10.0 | 55 | 5.3 | 127 | 5.6 | 128 | 5.6 | 128 | 7.7 | 8.9 | 8.7 |
| Pct. of population with bachelor's degree | 16.2 | 56 | 18.4 | 48 | 18.2 | 50 | 11.5 | 119 | 12.6 | 122 | 12.1 | 123 | 15.2 | 75 | 16.6 | 80 | 15.7 | 90 | 11.0 | 125 | 11.7 | 129 | 11.9 | 128 | 14.3 | 15.7 | 15.2 |
| Industry R&D per employee | 417.3 | 66 | 353.5 | 74 | 429.3 | 73 | 394.6 | 69 | 476.5 | 64 | 250.7 | 100 | 719.7 | 47 | 759.7 | 50 | 791.2 | 53 | 57.4 | 132 | 50.6 | 132 | 50.5 | 133 | 397.2 | 410.1 | 380.4 |
| SBIR & STTR awards per employee | 5.78 | 44 | 6.54 | 62 | 4.71 | 35 | 0.00 | 103 | 0.00 | 114 | 0.00 | 83 | 9.30 | 33 | 26.63 | 23 | 15.20 | 8 | 0.00 | 136 | 0.00 | 136 | 0.00 | 136 | 6.51 | 16.75 | 5.65 |
| Population dependency | 0.38 | 71 | 0.37 | 54 | 0.37 | 59 | 0.40 | 110 | 0.38 | 96 | 0.39 | 111 | 0.40 | 109 | 0.38 | 99 | 0.39 | 113 | 0.41 | 119 | 0.39 | 111 | 0.39 | 114 | 0.40 | 0.38 | 0.38 |
| University R&D per employee | 109.0 | 49 | 140.8 | 51 | 134.5 | 65 | 0.0 | 98 | 0.0 | 94 | 0.0 | 118 | 193.1 | 34 | 235.8 | 37 | 307.2 | 50 | 2.6 | 84 | 4.5 | 79 | 6.3 | 104 | 76.2 | 95.3 | 112.0 |
| **Technology Commercialization** | | **36** | | **60** | | **58** | | **91** | | **97** | | **83** | | **35** | | **57** | | **98** | | **125** | | **134** | | **133** | | | |
| Venture capital per employee | 270.2 | 60 | 0.0 | 95 | 60.5 | 42 | 0.0 | 114 | 8.3 | 83 | 0.0 | 97 | 840.4 | 29 | 239.9 | 36 | 16.4 | 69 | 39.5 | 96 | 5.0 | 87 | 26.3 | 61 | 550.4 | 141.5 | 24.3 |
| Number of patents per employee | 1.424 | 18 | 1.437 | 20 | 1.460 | 22 | 0.902 | 33 | 1.095 | 27 | 1.327 | 25 | 0.845 | 38 | 0.803 | 42 | 0.716 | 49 | 0.392 | 88 | 0.307 | 96 | 0.310 | 93 | 0.889 | 0.881 | 0.857 |
| Cost of living | 96.2 | 66 | 89.0 | 100 | 86.7 | 118 | 91.6 | 117 | 84.7 | 126 | 84.4 | 127 | 97.9 | 49 | 89.7 | 95 | 88.0 | 110 | 90.0 | 126 | 83.8 | 132 | 82.6 | 132 | 93.9 | 86.8 | 85.4 |
| **Racial Inclusion & Income Equality** | | **69** | | **76** | | **79** | | **40** | | **37** | | **41** | | **119** | | **119** | | **121** | | **81** | | **83** | | **84** | | | |
| Pct. of black population | 10.9 | 86 | 11.5 | 88 | 11.7 | 86 | 6.7 | 58 | 6.4 | 56 | 6.9 | 55 | 19.1 | 107 | 19.4 | 111 | 19.5 | 107 | 10.6 | 84 | 10.5 | 81 | 10.7 | 82 | 15.0 | 15.2 | 15.4 |
| Isolation index for black population | 0.61 | 106 | 0.47 | 112 | 0.45 | 113 | 0.42 | 79 | 0.28 | 82 | 0.31 | 86 | 0.79 | 131 | 0.68 | 136 | 0.67 | 136 | 0.65 | 114 | 0.53 | 123 | 0.51 | 121 | 0.62 | 0.49 | 0.49 |
| Income inequality | 5.8 | 62 | 5.8 | 56 | 5.8 | 57 | 5.1 | 21 | 5.1 | 21 | 5.1 | 18 | 6.3 | 88 | 6.3 | 85 | 6.4 | 91 | 5.5 | 48 | 5.5 | 43 | 5.5 | 43 | 5.7 | 5.7 | 5.7 |
| Students at schools with more than 70% free lunches | 0.121 | 81 | 0.062 | 78 | 0.069 | 75 | 0.084 | 64 | 0.046 | 60 | 0.054 | 61 | 0.259 | 121 | 0.136 | 119 | 0.133 | 115 | 0.153 | 98 | 0.091 | 99 | 0.096 | 97 | 0.199 | 0.105 | 0.106 |
| Violent crime | 191.7 | 4 | 274.7 | 18 | 284.9 | 16 | 403.3 | 45 | 386.9 | 49 | 401.3 | 50 | 436.7 | 54 | 401.9 | 54 | 459.7 | 70 | 348.4 | 33 | 323.4 | 30 | 335.4 | 29 | 345.0 | 346.7 | 370.3 |
| **Urban Assimilation** | | **126** | | **125** | | **125** | | **136** | | **135** | | **135** | | **77** | | **87** | | **89** | | **133** | | **134** | | **136** | | | |
| Pct. of Hispanic population | 0.8 | 134 | 1.0 | 133 | 1.0 | 133 | 0.9 | 131 | 0.9 | 134 | 1.0 | 134 | 3.4 | 85 | 3.8 | 94 | 3.8 | 94 | 1.7 | 117 | 1.9 | 122 | 1.9 | 124 | 2.4 | 2.7 | 2.7 |
| Share of minority business employment (in total emp) | 0.010 | 118 | 0.010 | 118 | 0.010 | 118 | 0.009 | 122 | 0.009 | 122 | 0.009 | 122 | 0.017 | 75 | 0.017 | 75 | 0.017 | 75 | 0.012 | 107 | 0.012 | 107 | 0.012 | 107 | 0.014 | 0.014 | 0.014 |
| Pct. of foreign born population | 3.0 | 113 | 3.2 | 117 | 3.7 | 112 | 1.7 | 131 | 1.9 | 132 | 2.2 | 131 | 5.3 | 71 | 5.6 | 83 | 5.7 | 86 | 2.0 | 129 | 1.7 | 134 | 1.8 | 132 | 4.0 | 4.1 | 4.4 |
| Productivity in information sector | 88.4 | 93 | 130.9 | 94 | 128.9 | 104 | 70.2 | 129 | 110.1 | 124 | 108.5 | 129 | 99.0 | 61 | 147.4 | 60 | 150.9 | 62 | 69.5 | 132 | 106.4 | 129 | 97.4 | 133 | 97.5 | 147.3 | 138.2 |
| Pct. of Asian population | 1.3 | 92 | 1.6 | 89 | 1.8 | 86 | 0.5 | 134 | 0.6 | 133 | 0.8 | 130 | 1.4 | 82 | 1.8 | 76 | 1.8 | 83 | 0.4 | 136 | 0.5 | 136 | 0.5 | 136 | 1.1 | 1.4 | 1.5 |
| **Legacy of Place** | | **30** | | **30** | | **32** | | **17** | | **15** | | **16** | | **16** | | **17** | | **17** | | **6** | | **8** | | **4** | | | |
| Business churning | 0.171 | 112 | 0.169 | 114 | 0.167 | 114 | 0.157 | 133 | 0.157 | 130 | 0.161 | 124 | 0.171 | 114 | 0.171 | 110 | 0.171 | 106 | 0.161 | 128 | 0.158 | 128 | 0.153 | 135 | 0.167976 | 0.167 | 0.167 |
| Climate | 19 | 114 | 19 | 114 | 19 | 114 | 14 | 122 | 14 | 122 | 14 | 122 | 15 | 119 | 15 | 119 | 15 | 119 | 8 | 128 | 8 | 128 | 8 | 128 | 14 | 14 | 14 |
| Pct. of houses built before 1940 | 20.7 | 108 | 21.2 | 110 | 21.5 | 110 | 24.1 | 120 | 24.0 | 117 | 25.6 | 120 | 24.3 | 121 | 25.9 | 120 | 26.2 | 121 | 23.6 | 117 | 22.4 | 111 | 24.5 | 118 | 23.5 | 24.3 | 25.0 |
| Dissimilarity index for black population | 0.70 | 110 | 0.66 | 115 | 0.65 | 113 | 0.61 | 93 | 0.60 | 101 | 0.63 | 107 | 0.80 | 135 | 0.78 | 132 | 0.77 | 133 | 0.77 | 130 | 0.73 | 126 | 0.72 | 130 | 0.721 | 0.695 | 0.693 |
| City poverty ratio | 1.79 | 97 | 1.78 | 98 | 1.69 | 94 | 2.05 | 109 | 2.27 | 115 | 1.97 | 107 | 2.44 | 124 | 2.34 | 119 | 2.14 | 119 | 2.16 | 111 | 2.03 | 107 | 2.15 | 120 | 2.21 | 2.17 | 2.00 |
| No. of government units per 10,000 pop | 1.266 | 63 | 1.266 | 63 | 1.255 | 66 | 1.843 | 94 | 1.843 | 94 | 1.829 | 96 | 0.968 | 44 | 0.968 | 44 | 0.984 | 53 | 2.504 | 113 | 2.504 | 113 | 2.573 | 117 | 1.355 | 1.355 | 1.369 |
| Share of manufacturing employment | 0.19 | 115 | 0.14 | 113 | 0.14 | 111 | 0.24 | 130 | 0.17 | 126 | 0.17 | 127 | 0.17 | 107 | 0.14 | 108 | 0.14 | 110 | 0.20 | 124 | 0.16 | 124 | 0.16 | 123 | 0.18 | 0.15 | 0.14 |
| **Business Dynamics** | | **89** | | **93** | | **129** | | **81** | | **112** | | **128** | | **100** | | **127** | | **122** | | **104** | | **123** | | **107** | | | |
| Birth over death ratio | 1.01 | 89 | 1.10 | 93 | 0.97 | 129 | 1.03 | 81 | 1.05 | 112 | 0.97 | 128 | 0.99 | 100 | 0.99 | 127 | 1.03 | 122 | 0.98 | 104 | 1.00 | 123 | 1.08 | 107 | 0.995 | 1.014 | 1.001 |
| **Individual Entrepreneurship** | | **104** | | **101** | | **114** | | **100** | | **81** | | **82** | | **102** | | **94** | | **95** | | **87** | | **74** | | **72** | | | |
| Self employed (all industries except ag & mining) | 0.083 | 84 | 0.094 | 93 | 0.087 | 106 | 0.082 | 89 | 0.095 | 90 | 0.093 | 81 | 0.082 | 90 | 0.089 | 110 | 0.088 | 105 | 0.080 | 99 | 0.088 | 113 | 0.091 | 91 | 0.082 | 0.090 | 0.089 |
| Share of business establishments with under 20 workers | 0.837 | 106 | 0.840 | 99 | 0.839 | 106 | 0.840 | 94 | 0.846 | 76 | 0.845 | 88 | 0.839 | 98 | 0.846 | 75 | 0.848 | 74 | 0.849 | 70 | 0.853 | 51 | 0.853 | 54 | 0.840 | 0.846 | 0.847 |
| **Locational Amenities** | | **71** | | **49** | | **66** | | **110** | | **62** | | **112** | | **3** | | **16** | | **1** | | **114** | | **74** | | **113** | | | |
| Transportation index | 69.7 | 76 | 38.0 | 71 | 71.0 | 68 | 65.4 | 83 | 54.0 | 47 | 70.0 | 71 | 96.3 | 10 | 73.0 | 25 | 97.0 | 6 | 49.0 | 109 | 24.0 | 98 | 30.0 | 115 | 70.1 | n/c | 67.0 |
| Arts index | 81.6 | 37 | 76.0 | 45 | 69.0 | 72 | 8.8 | 132 | 36.0 | 107 | 46.0 | 111 | 97.2 | 6 | 94.0 | 10 | 87.0 | 35 | 21.8 | 124 | 65.0 | 70 | 63.0 | 90 | 52.3 | n/c | 66.3 |
| Recreation index | 77.3 | 54 | 76.0 | 34 | 97.0 | 9 | 68.0 | 77 | 70.0 | 46 | 12.0 | 131 | 99.7 | 2 | 92.0 | 8 | 96.0 | 11 | 73.7 | 64 | 63.0 | 61 | 53.0 | 92 | 79.7 | n/c | 64.5 |
| Health index | 24.1 | 117 | 33.0 | 78 | 27.0 | 112 | 34.3 | 103 | 53.0 | 47 | 44.0 | 93 | 84.7 | 29 | 23.0 | 102 | 86.0 | 21 | 20.4 | 122 | 48.0 | 57 | 29.0 | 111 | 40.9 | n/c | 46.5 |
| **Urban/ Metro Structure** | | **38** | | **66** | | **65** | | **32** | | **42** | | **42** | | **35** | | **23** | | **33** | | **18** | | **16** | | **17** | | | |
| Share of city population in MSA population | 0.31 | 75 | 0.29 | 71 | 0.28 | 69 | 0.20 | 38 | 0.18 | 38 | 0.19 | 37 | 0.22 | 42 | 0.20 | 42 | 0.19 | 39 | 0.14 | 17 | 0.12 | 14 | 0.12 | 14 | 0.22 | 0.20 | 0.20 |
| Property crime | 2795.4 | 16 | 3772.9 | 61 | 3562.4 | 55 | 3423.7 | 37 | 3764.9 | 60 | 3554.8 | 54 | 3423.2 | 36 | 2759.1 | 21 | 3130.8 | 37 | 3319.2 | 32 | 3185.0 | 34 | 3007.3 | 34 | 3240.4 | 3370.5 | 3313.8 |

* n/c means the data from 2005 are not comparable to data from 2000 and 2006.