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Relationship between Growth and Prosperity in 100 Largest U.S. Metropolitan Areas

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December 2010

Abstract

This study examines the relationship between growth and economic prosperity in the 100 largest U.S. metropolitan areas to determine whether certain benefits commonly attributed to growth are supported by statistical data. The annual population growth rate of each metro area from 2000 to 2009 is used to compare economic well-being in terms of per capita income, unemployment rate, and poverty rate. The study finds that faster growth rates are associated with lower incomes, greater income declines, and higher poverty rates. Unemployment rates tend to be higher in faster growing areas, though the correlation is not statistically significant at the 95% confidence level. The 25 slowest-growing metro areas outperformed the 25 fastest growing in every category and averaged $8,455 more in per capita personal income in 2009. The findings raise questions about the efficacy of conventional urban planning and economic development strategies that pursue growth of metro areas to advance the economic welfare of the general public.

This is a study of how income, unemployment, and poverty are influenced by growth rates in the 100 largest U.S. Metropolitan Statistical Areas (MSAs). The purpose of this research is to obtain a better understanding about the statistical relationship between growth rates and basic measures of the economic well-being of the residents of these metro areas.

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Most cities and metro areas in the U.S. are actively pursuing growth through a combination of public policies, investments, tax incentives, and subsidies. Growth has many economic, social, and environmental impacts, but this pursuit of growth is typically based on a stated desire to provide jobs and economic prosperity for people living in the area. "We have to grow to provide jobs," or even "We have to grow or die," are common axioms from local officials. These statements favoring growth are usually made without evidence as to their validity. They seem to be based on the assumption that additional jobs that may result from expansion of an urban area will benefit existing residents by giving them more employment opportunities and better wages.

Public policies and plans regarding urban growth typically involve tradeoffs between costs and benefits. Local residents may view a policy to encourage land development or growth as negatively impacting their quality of life through increased traffic congestion, environmental quality impacts, loss of farm and forest lands, and loss of amenity values (such as tranquility, sense of community, or open space). They may also be concerned about higher taxes to fund the cost of the new public infrastructure (roads, schools, sewer and water systems, etc.) required to serve growth. However, the prospect that new growth will bring jobs and economic prosperity that may benefit local residents is often viewed as compelling enough to outweigh these costs. This study seeks to gain insight into whether these employment and economic benefits are supported by empirical data.

The policy of pursuing growth is enormously expensive, costing local taxpayers more than a hundred billion dollars every year for the new infrastructure alone.[1] Given the magnitude of public sector costs required to support growth, there is relatively little known about the impacts of this growth.

In addition to examining how past growth affects recent employment and economic conditions, this study looks at how these 100 metro areas fared during the Great Recession. The Great Recession officially lasted 18 months. It started December 2007 and ended in June of 2009.[2] While the effects of this recession continue, the official period of the recession is included within the data reported here. It is possible to compare the impacts of the recession with the pace of growth in each

[1] State and local governments spent $289 billion on construction in 2009, according to the U.S. Census. Most of this expenditure went towards building new schools, roads, sewage systems, and water treatment systems. It is assumed that more than half of this capital investment was to accommodate new growth.

[2] According to a September 20, 2010 announcement by the Business Cycle Dating Committee of the National Bureau of Economic Research, http://www.nber.org/cycles/sept2010.html.

metro area.

The study concludes with a comparison of the 25 slowest-growing metro areas with the 25 fastest-growing to see which group fared the best in terms of the prosperity indicators used in this study.

Methodology

This study builds on findings from two prior studies. The first (Molotch, 1976) focused on Standard Metropolitan Statistical Areas (SMSAs) in the U.S. and examined the period from 1950 to 1970. This study compared the 25 fastest-growing SMSAs with the 25 slowest-growing, and found no significant difference in unemployment rates between the two groups. The question arises as to whether these findings would still hold today.

The second study (Gottlieb, 2002) compared population growth rates with changes in per capita income for the 100 largest MSAs from 1990-1998. The correlation between rate of income growth and population growth was found to have no statistically-significant relationship. Would these findings be similar in the current decade?

For this study, growth rates are based on the average annual rate of population growth over the 9-year period of study from 2000 to 2009.[3] This measure provides an indication of the pace of growth in each metro area. Urban growth is directly linked with population growth, as more people require more housing units and commercial buildings for employment and shopping. All population data are from the U.S. Census.[4]

The 100 largest MSAs were based on 2009 population estimates from the U.S. Census for MSAs in the 50 states and District of Columbia. The MSAs are defined by the Office of Management and Budget and the most recent listing available from the U.S. Census was used for this study (December 2009). The study sample of 100

[3] Average annual rate of growth is based on the rate (expressed as a percent) that would yield the observed population change for the period.

[4] Source: U.S. Census Bureau, Population Division, *Table 1. Annual Estimates of the Population of Metropolitan and Micropolitan Statistical Areas: April 1, 2000 to July 1, 2009* (CBSA-EST2009-01), release date: March 2010; and for the 1990 and 2000 Census from *Table 1a. Population in Metropolitan and Micropolitan Statistical Areas in Alphabetical Order and Numerical and Percent Change for the United States and Puerto Rico: 1990 and 2000*, Internet release date: December 30, 2003.

MSAs has a total 2009 population of 201,501,813, which represents 78% of the population in all 366 MSAs. This constitutes a substantial study sample representing 66% of the total U.S. population. The 100 MSAs range in size from a population of 510,000 to 19 million.

Income and Growth

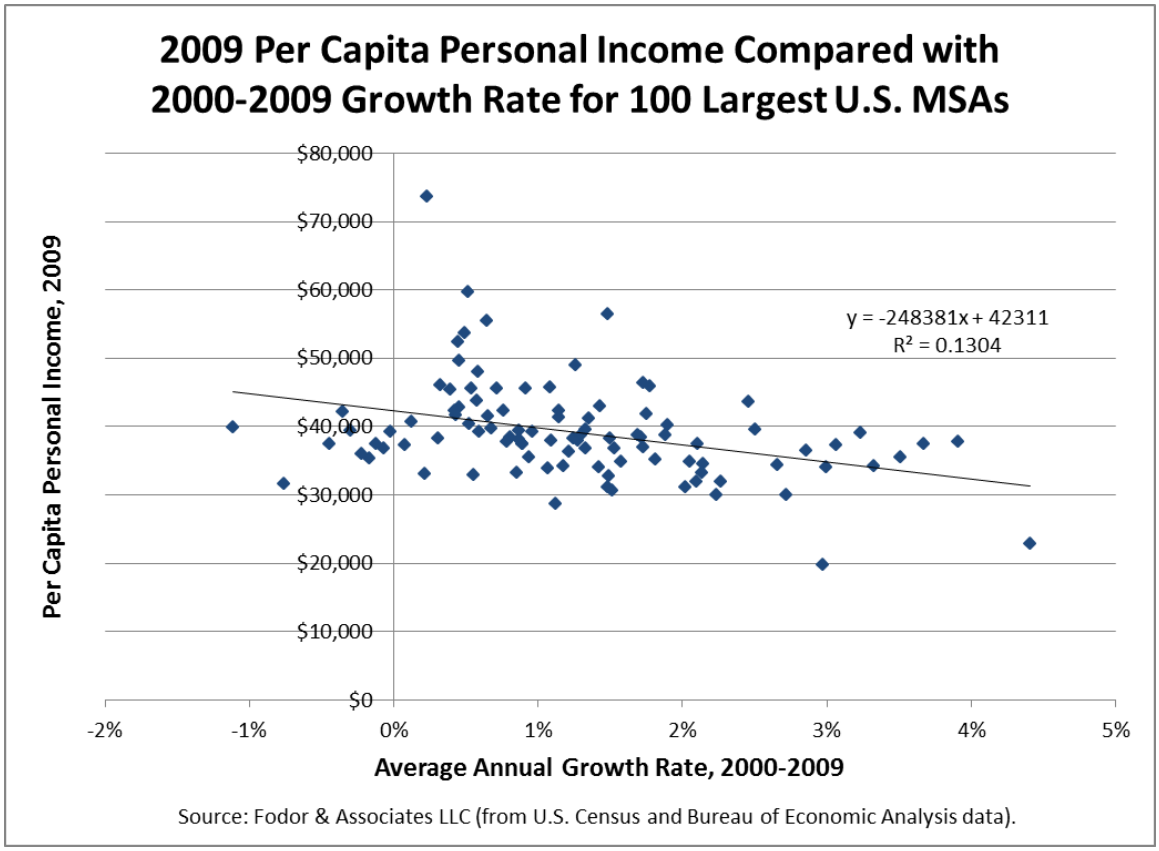
Data for 2009 per capita personal income were compared with the average annual growth rate from 2000 to 2009 for each MSA. Per capita income was selected as the basis for comparing income changes over time because other measures, such as median household and family income, can change over time due to changing household and family composition. The income data from the U.S. Bureau of Economic Analysis includes all personal income sources. It is calculated by taking the total personal income for the metro area and dividing it by the total population.

As shown by the graphical data and trendline in Figure 1, there is a strong tendency for income to be lower in faster growing metro areas. This is a strong correlation with a >99% level of confidence.[5] The data show that faster growth corresponds with lower incomes. The slope of the trendline shows a decline of almost $2,500 in per capita income for each 1% increase in growth rate. This finding contradicts the conventional wisdom that more growth will benefit local residents by enabling them to find higher-paying jobs.

Finding #1: Incomes tend to be higher in metro areas with lower growth rates.

[5] This is based on the probability of a non-directional hypothesis using a two-tailed t-test. See *Methodology Notes* section for more information.

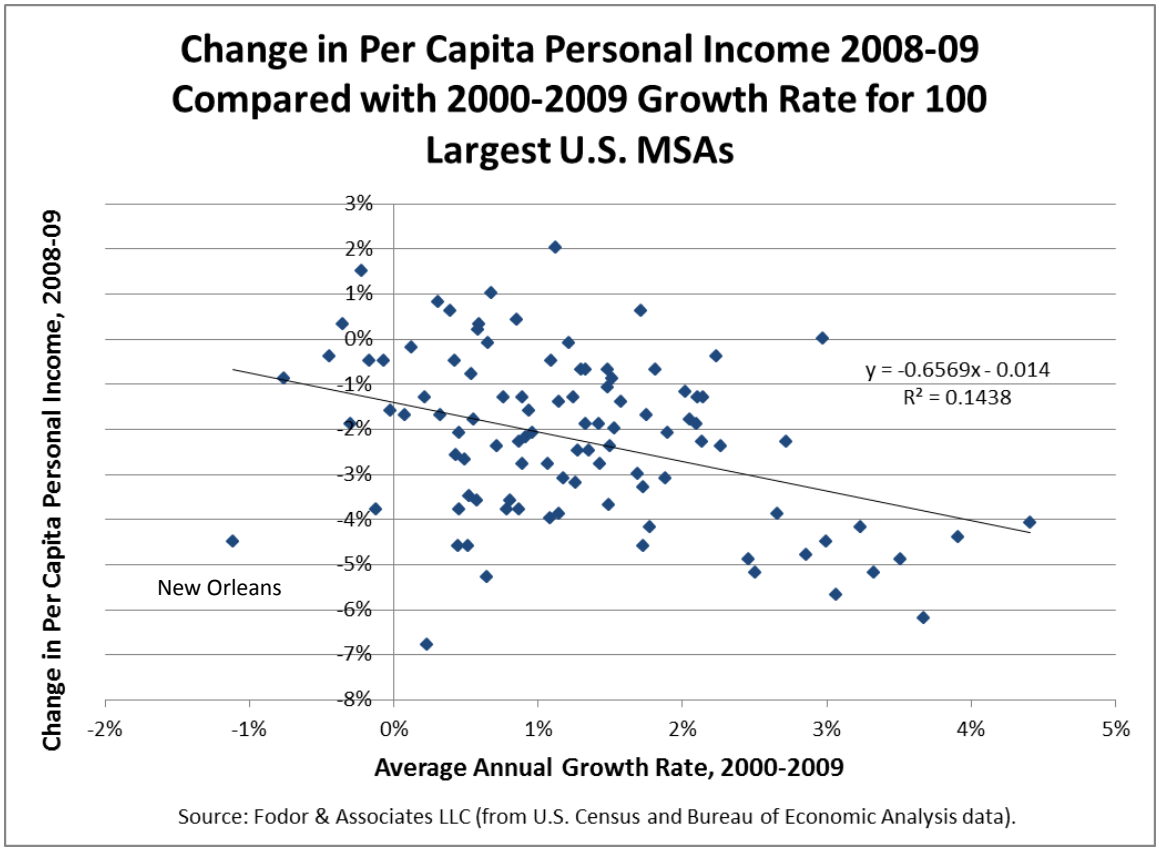
Figure 1



To see how personal income changed for each metro area in 2009, the percentage change from the previous period (2008) was compared with growth rates. Most MSAs had a drop in per capita personal income in 2009 due to the recession. Figure 2 shows that faster-growing metro areas had a bigger drop in income than did slower-growing areas. This correlation is statistically significant at the 99% level.

Finding #2: Faster-growing metro areas tended to have a bigger drop in income last year (2009).

Figure 2

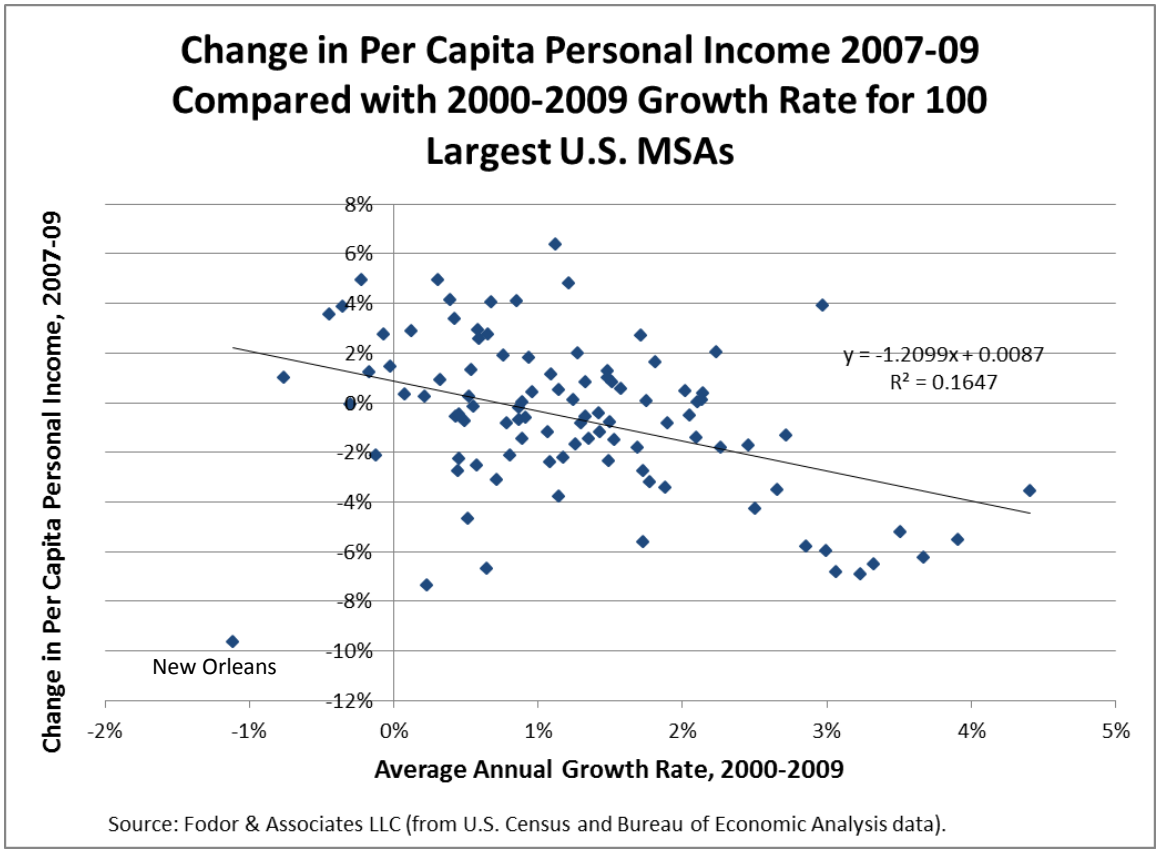


The overall drop in personal income is a result of the Great Recession caused by the bursting of the residential real estate bubble and the sub-prime mortgages and financial derivatives that fueled it. To capture the full impact of the Great Recession, the change in income from 2007 to 2009 was examined. As shown in Figure 3, a very strong correlation exists between faster growth and declining income during the recession (>99% significance level). Metro areas that grew the fastest from 2000 to 2009 had the greatest declines in personal income. Many of the fastest-growing MSAs had income declines of 6% over this 2-year period. (The biggest decline in income was for the New Orleans MSA, which was a statistical outlier severely impacted by Hurricane Katrina.)

The data show that the fastest-growing metro areas were the hardest hit by the recession. Many of the slower-growing areas fared much better. Many areas with stable or declining populations saw increases in personal income.

Finding #3: Metro areas that grew faster from 2000 to 2009 tended to have greater declines in personal income during the Great Recession (2007-09).

Figure 3



As shown in Figure 4, the percentage change in per capita personal income over the entire 2000 to 2009 period showed a similar statistically-significant correlation with growth rates (>99% significance). While all MSAs showed gains in income over the 2000-2009 period, metro areas with higher growth rates had significantly lower gains than slower-growing areas. The linear correlation indicates that a metro area with a stable, non-growing population would tend to see a 43% higher income gain than an area growing at 3% per year.

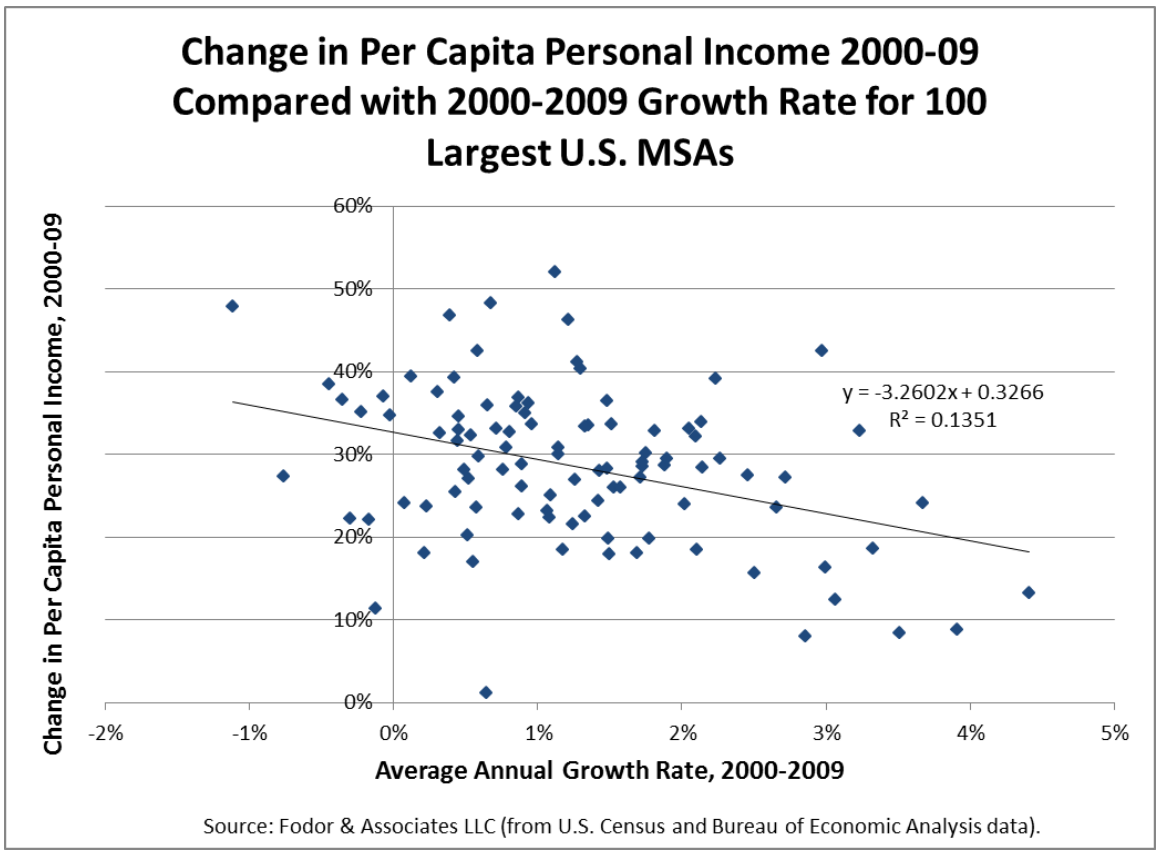
Finding #4: Metro areas with slower growth had bigger income gains over the 2000-2009 period.

The slope of the linear correlation of 2000-09 personal income change with growth rate is not as steep on an annual basis as it is for the income change for either the 2008-09 or 2007-09 periods, indicating that faster-growing metro areas were more severely impacted by the recession.

Finding #5: Per capita personal income in faster-growing metro areas was more

severely impacted by the recession.

Figure 4



A remarkable finding from the statistical analysis of the relationship between personal income and growth rates is that the correlations for income were even stronger with population growth occurring over the longer 1990 to 2009 time period, and stronger still for the prior 1990 to 2000 period. This applied to 2009 income levels and all the income changes described above for the following periods: 2008-09, 2007-09, and 2000-09. All of these correlations were significant at the 99.9% confidence level. This finding indicates that the per capita income levels of a metro area may be strongly influenced by the rate of growth occurring in a prior decade. In this case, growth rates in the 1990 to 2000 period showed the strongest correlation to changes in income as recently as last year. Faster-growing metro areas during the 1990 to 2000 period had lower income growth over the following nine years, and had bigger declines in income during the 2007-09 recession.

Finding #6: Higher growth rates occurring 10 or more years in the past have a stronger correlation to lower incomes in 2009 than do more-recent periods,

indicating that there may be long-term adverse consequences to local residents from faster growth.

Unemployment and Growth

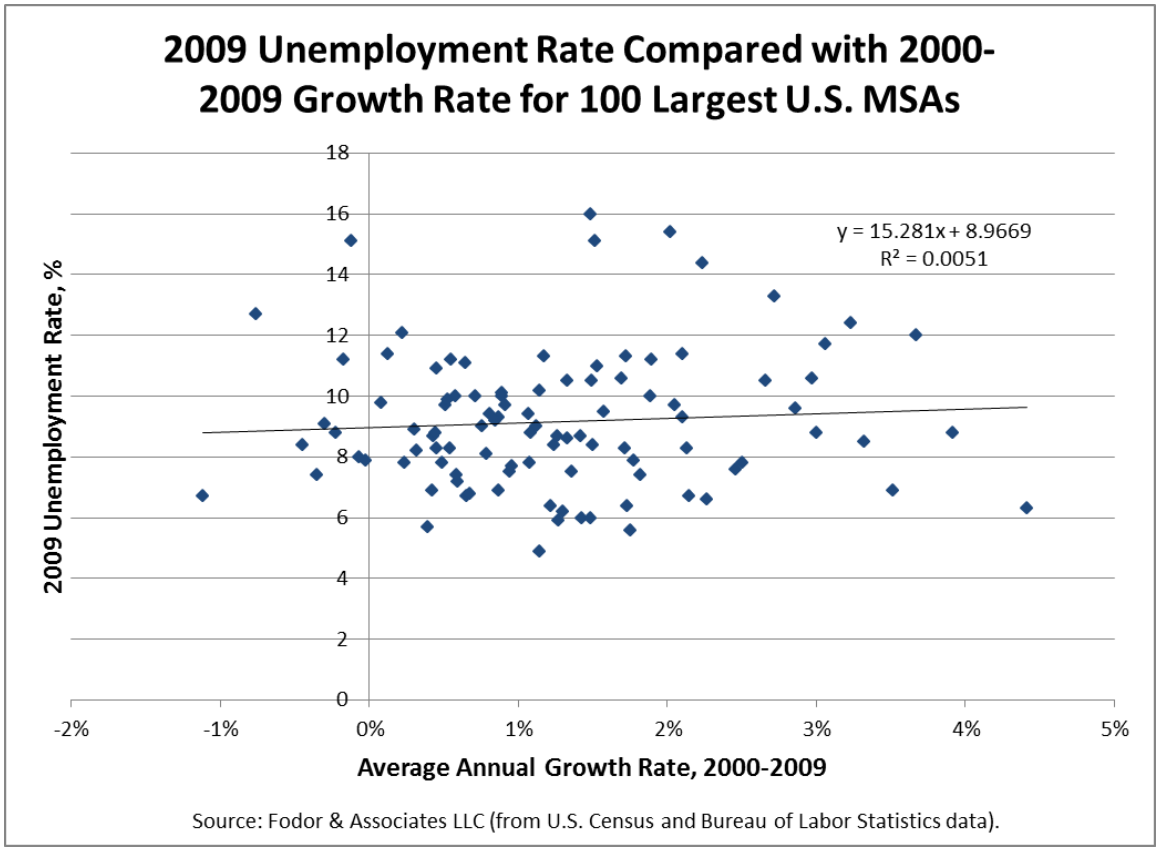
The unemployment rate from the U.S. Bureau of Labor Statistics provides an index for the local employment conditions that reflects both the supply and demand for jobs. Both the 2009 unemployment rate and the change in unemployment rate over the 2000-09 period were compared with growth rates. If growth produced employment benefits for local residents, one would expect to see unemployment rates tend to be lower for metro areas with faster growth.

Figure 5 shows that the 2009 unemployment rate does not correlate closely with growth rate. There is no statistically-significant relationship between growth rate and unemployment. The trendline shows there is a slight tendency for metro areas with higher growth rates to have higher unemployment rates.

Finding #7: Metro areas with faster growth rates do not tend to have lower unemployment rates.

This finding is inconsistent with the belief that more growth will create more jobs, which will help local unemployed persons find work. There is no clear employment benefit shown from faster growth. There may be new jobs created as a result of growth, but apparently there are more newcomers and job seekers moving in than there are new jobs being created. The result is that local unemployment rates remain more or less the same, but the number of unemployed people increases with growth.

Figure 5



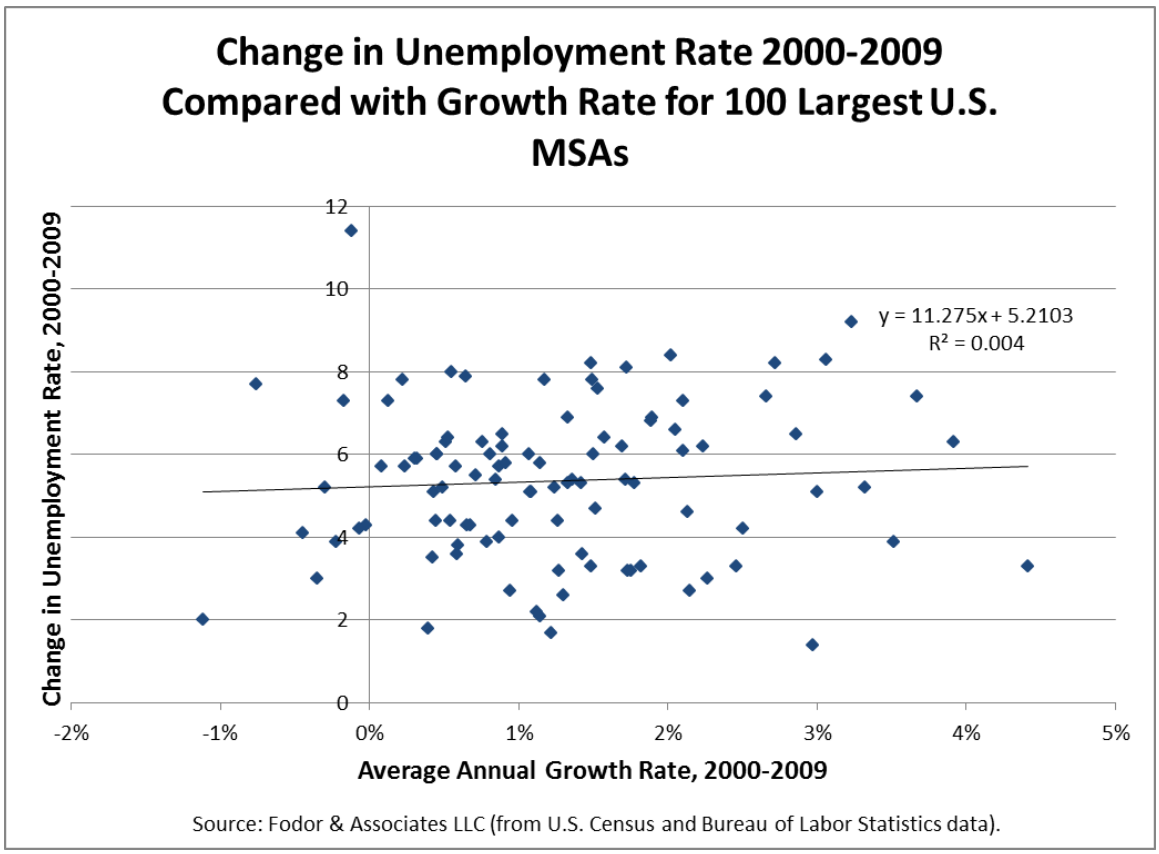
The change in the unemployment rate over the period gives more information about how employment conditions have changed in each metro area. The change in unemployment rate will reflect improving or worsening employment conditions that would not show up in ending period unemployment rates. The change in unemployment rate is calculated as ending period unemployment rate, minus starting period unemployment rate. A positive change in the unemployment rate indicates that unemployment has increased (undesirable).

The unemployment rate increased over the 2000-2009 period for all 100 MSAs, reflecting the effects of the recession. As shown in Figure 6, there is a weak tendency for the change in unemployment to be worse (higher) in faster-growing metro areas. These results were also not at the statistically-significant level. The conclusion from these data is that faster growth is not generating improved employment conditions. Similar to the finding for ending-period unemployment, the "conventional wisdom" that more growth will produce improved employment conditions is not supported.

Finding #8: Metro areas with faster growth rates do not tend to see their

employment conditions improve more than slower growing areas.

Figure 6



Poverty and Growth

The last statistic examined in this study is the poverty rate, which is the percent of the population living at or below the official poverty level.[6] Poverty rates for 2009 from the *American Community Survey* were compared with growth rates for the 2000-2009 period. As shown in Figure 7, higher growth rates correspond to higher poverty rates. The correlation is fairly strong (>90% level), but is not quite significant at the 95% confidence level.

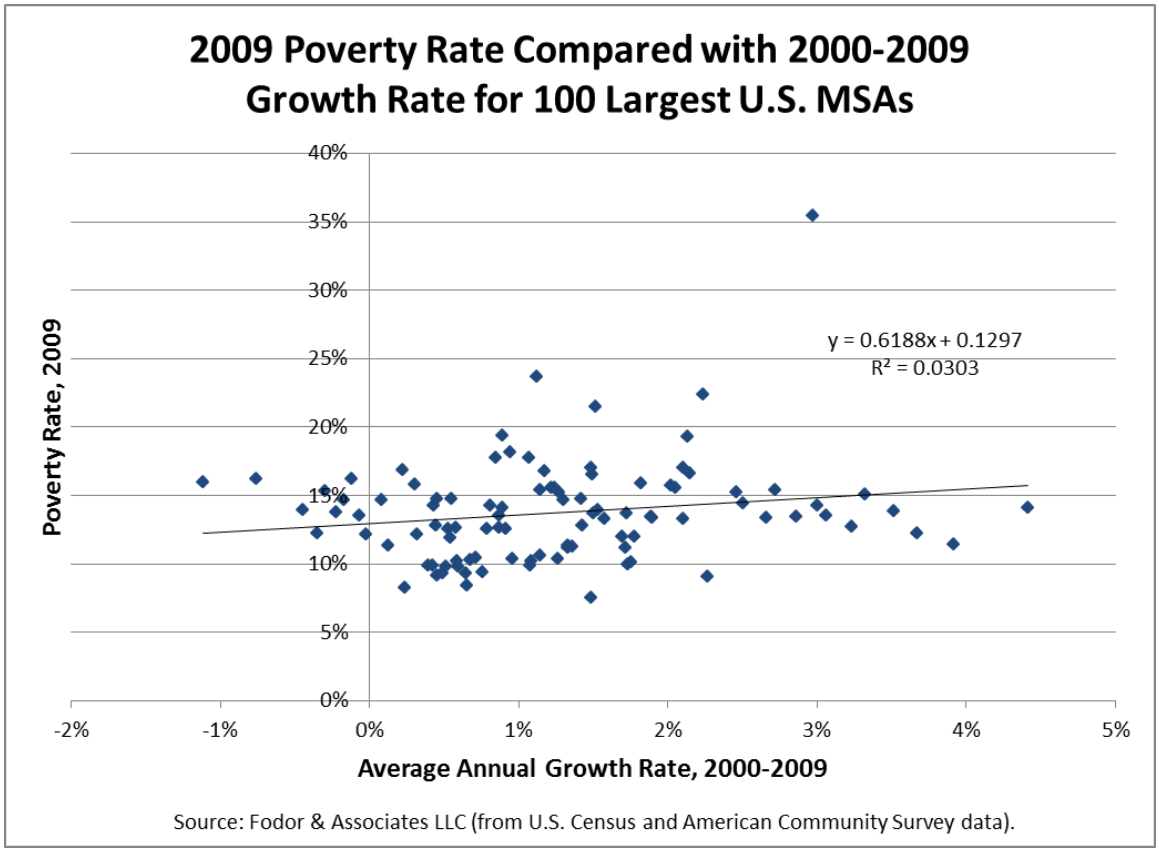
Finding #9: Faster growth rates tend to correspond with higher poverty levels, but not at the statistically-significant 95% confidence level.

[6] As defined by the Office of Management and Budget, the weighted average poverty threshold for a family of four in 2009 was $21,954.

An interesting result of the statistical analysis is that the 2009 poverty rate correlates more strongly with population growth rates over the longer 1990 to 2009 period, and correlates at the 95% confidence level with growth rates over the prior 1990 to 2000 period. The implication of this finding is that current poverty rates may be influenced by past growth — even growth occurring more than a decade ago. If this is the case, policies to encourage more growth could produce longer-term adverse consequences for the area 10 or more years into the future.

Finding #10: Metro areas with higher growth rates during the previous decade (1990-2000) tend to have higher poverty rates in 2009.

Figure 7



Fastest-Growing versus Slowest-Growing MSAs

To gain more insight into how growth rates affect local economic conditions, the 25 slowest-growing MSAs of the 100 largest were compared with the 25 fastest-growing MSAs. The 25 slowest-growing MSAs represented an essentially stable population,

averaging less than 0.1% per year annual growth. The 25 fastest-growing MSAs averaged 2.7%/year annual growth. The average growth rate for all 100 MSAs in the study was 1.3%/year.

As shown in Table 1, the slowest-growing MSAs outperformed the fastest-growing in every category. The 25 slowest-growing MSAs averaged almost 1% lower unemployment rates, 2.4% lower poverty rates, and a remarkable $8,455 more in per capita personal income in 2009. They also had larger income gains from 2000 to 2009 and saw significantly lower declines in income from the recession (2007-09).

Table 1

Comparison of 25 Fastest- and 25 Slowest-Growing MSAs of 100 Largest for the 2000-2009 Period

Averages for Each Group	All 100 MSAs	25 Slowest Growing	25 Fastest Growing	Difference (slowest-fastest)
Ave. Ann. Pop. Growth Rate 2000-2009	1.3%	0.1%	2.7%	-2.6%
2009 Unemp Rate, %	9.2	9.2	9.8	-0.6
2000-2009 Change in Uemp Rate	5.4	5.4	5.7	-0.2
2009 Poverty Rate, %	13.7%	13.0%	15.5%	-2.4%
2009 Per Capita Personal Income	$39,190	$42,908	$34,454	$8,455
Per Capita Personal Income Change 2007-09	-0.7%	0.2%	-2.5%	2.7%
Per Capita Personal Income Change 2000-09	28.6%	31.0%	24.4%	6.6%

Source: Fodor & Associates LLC from U.S. Census data and other sources.

Finding #11: The slowest-growing metro areas outperformed the fastest-growing areas in every category used in this study to reflect the prosperity of local residents. Residents of the slowest-growing metro areas averaged $8,455 more per capita in personal income than those of the fastest-growing areas.

This finding suggests a need to re-evaluate our thinking about growth. The slowest-growing group of metro areas had a nearly stable population, yet significantly outperformed the fastest-growing group.

A listing of the 25 slowest- and fastest-growing MSAs is provided in Table 2. The MSAs are ordered alphabetically by state. The slowest-growing MSAs are located in 13 different states, dominated by Connecticut, New York, and Ohio. The fastest-growing MSAs are located in 12 different states, dominated by California, Florida,

and Texas. The average 2009 population size of the slowest-growing MSAs is 1,984,145 and the fastest-growing is 2,736,578.

Table 2

Listing of Slowest- and Fastest-Growing MSAs of 100 Largest (listed alphabetically by state)	
25 Slowest-Growing	**25 Fastest-Growing**
Los Angeles-Long Beach-Santa Ana, CA	Phoenix-Mesa-Scottsdale, AZ
San Francisco-Oakland-Fremont, CA	Tucson, AZ
Bridgeport-Stamford-Norwalk, CT	Bakersfield, CA
Hartford-West Hartford-East Hartford, CT	Riverside-San Bernardino-Ontario, CA
New Haven-Milford, CT	Sacramento--Arden-Arcade--Roseville, CA
Honolulu, HI	Stockton, CA
New Orleans-Metairie-Kenner, LA	Cape Coral-Fort Myers, FL
Boston-Cambridge-Quincy, MA-NH	Jacksonville, FL
Springfield, MA	Lakeland-Winter Haven, FL
Detroit-Warren-Livonia, MI	Orlando-Kissimmee, FL
St. Louis, MO-IL	Atlanta-Sandy Springs-Marietta, GA
Albany-Schenectady-Troy, NY	Boise City-Nampa, ID
Buffalo-Niagara Falls, NY	Charlotte-Gastonia-Concord, NC-SC
New York-Northern New Jersey-Long Island, NY-NJ-PA	Raleigh-Cary, NC
Rochester, NY	Albuquerque, NM
Syracuse, NY	Las Vegas-Paradise, NV
Akron, OH	Charleston-North Charleston-Summerville, SC
Cleveland-Elyria-Mentor, OH	Nashville-Davidson--Murfreesboro--Franklin, TN
Dayton, OH	Austin-Round Rock, TX
Toledo, OH	Dallas-Fort Worth-Arlington, TX
Youngstown-Warren-Boardman, OH-PA	Houston-Sugar Land-Baytown, TX
Pittsburgh, PA	McAllen-Edinburg-Mission, TX
Scranton--Wilkes-Barre, PA	San Antonio, TX
Providence-New Bedford-Fall River, RI-MA	Ogden-Clearfield, UT
Milwaukee-Waukesha-West Allis, WI	Provo-Orem, UT

Conclusions

Most cities in the U.S. have operated on the assumption that growth is inherently beneficial and that more and faster growth will benefit local residents economically. This examination of the 100 largest metro areas, representing 66% of the total U.S. population, shows those that have fared the best have the lowest growth rates. Even metro areas with stable or declining populations tended to fare better than fast-growing areas.

This study compared income levels, unemployment rates, and poverty rates with growth rates for each metro area. In every category, faster-growing metro areas fared worse than slower growing areas. Residents of the 25 slowest-growing metro areas averaged $8,455 more personal income per capita than in the 25 fastest-growing areas. They also had lower unemployment and poverty rates. The nine-year study period captures the effects of the Great Recession, and changes from 2007 to 2009 show that faster-growing metro areas were more severely impacted.

Growth clearly provides benefits to some elements of the local population (see Molotch, 1976; Logan, 1988; and Fodor, 2001). Foremost among these are the real estate, financial, and land development businesses. Growth generates demand for more housing and commercial space that these businesses build, sell, and finance. Higher demand increases real estate prices, commissions, and loan fees, and makes the development business more profitable. These business interests represent a wealthy and politically influential constituency in most cities that advocates in favor of increasing local growth. They are organized and represented through their local trade associations: the homebuilders' associations, the realtors' associations, the mortgage bankers' associations, and the local chambers of commerce.

While certain businesses prosper from growth, the balance of the community seems to suffer. The statistics showing that fast-growing areas tend to have lower and declining incomes, indicate that any gains by the businesses that directly benefit from growth are more than offset by losses to the balance of the local population. In other words, a small segment of the local population may benefit from faster growth, but the larger population tends to see their prosperity decline.

This study found that public policies and economic development strategies that seek quantitative growth of a metro area may have short- and long-term adverse consequences for local residents. A path of high growth today may lead to negative consequences lasting well into the next decade.

Assuming we are interested in promoting the economic welfare of urban residents, we should re-evaluate our policy emphasis on growth. The impacts of urban growth on communities are poorly understood. Given the findings of this study, the magnitude of public investments in growth, and the potential economic consequences for urban residents across the country, more research is clearly warranted on this important topic.

As communities seek the best course for emerging from the recession, new strategies are needed. Continued pursuit of more growth appears unlikely to be the solution. The growth model could be replaced by the stable, sustainable community model. Under a stable community model, the financial resources formerly required to support growth could be directed to other beneficial investments. Alternative economic development strategies may include localizing economies, restoring local production and manufacturing, and investing in public amenities. These strategies could focus on preparing local economies for the future by recognizing global imperatives such as responding to peak oil, addressing climate change, and the need to protect and enhance environmental resources.

Summary of Findings

Finding #1: Incomes tend to be higher in metro areas with lower growth rates.

Finding #2: Faster-growing metro areas tended to have a bigger drop in income last year (2009).

Finding #3: Metro areas that grew faster from 2000 to 2009 tended to have greater declines in personal income during the Great Recession (2007-09).

Finding #4: Metro areas with slower growth had bigger income gains over the 2000-2009 period.

Finding #5: Per capita personal income in faster-growing metro areas was more severely impacted by the recession.

Finding #6: Higher growth rates occurring 10 or more years in the past have a stronger correlation to lower incomes than do more-recent periods, indicating that there may be long-term adverse consequences to local residents from faster growth.

Finding #7: Metro areas with faster growth rates do not tend to have lower unemployment rates.

Finding #8: Metro areas with faster growth rates do not tend to see their employment conditions improve more than slower-growing areas.

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Methodology Notes

MSA Description

The general concept of a metropolitan statistical area is that of a core area containing a substantial population nucleus, together with adjacent communities having a high degree of economic and social integration with that core. Each metropolitan statistical area must have at least one urbanized area of 50,000 or more inhabitants. MSAs have fixed geographic boundaries based on counties, or their equivalent. For more information, see:
http://www.census.gov/population/www/metroareas/aboutmetro.html

Per Capita Personal Income Data Series

Per capita personal income data are obtained from the Bureau of Economic Analysis (BEA).[7] According to BEA, "per capita personal income is calculated as the personal income of the residents of a given area divided by the resident population of that area."[8] These population data are from the Census Bureau's annual mid-year population estimates. According to BEA, "Personal income is the income received by persons from all sources—that is, from participation in production (such as compensation of employees, income from self-employment, and rental income) and from current transfer receipts from both government (such as Social Security and

[7] Source: 2000-2008 income data from BEA Regional Economic Accounts, Local Area Personal Income, Table CA1-3, and 2009 preliminary data released August 9, 2010, BEA Personal Income for Metropolitan Areas, Table 1, Personal Income and Per Capita Personal Income by Metropolitan Area, 2007-2009 (see: http://www.bea.gov/newsreleases/regional/mpi/mpi_newsrelease.htm).
[8] See page I-6 of Local Area Methodology, http://www.bea.gov/regional/pdf/lapi2007/lapi2007.pdf.

Medicare benefits) and business (such as pension benefits)."[9]

Unemployment Data Series

All unemployment data are from the Bureau of Labor Statistics (BLS). For unemployment data the BLS uses a different local area definition for some areas than the Census. Due to the lack of official county designations in some New England states, the BLS classifies 21 metro areas as *New England City and Town Areas*, or *NECTAs*. Fifteen of these NECTAs are reported as MSAs by the Census. Unemployment data for the seven NECTAs included among the largest 100 MSAs in this study represent a slightly different geographic area than the population data for the equivalent MSAs. However, because these data are for the same metro areas and this study focuses on rates of change of the each area's population (rather than absolute values), this geographic difference is unlikely to have a significant effect on the results.

Poverty Data Series

Poverty data were obtain from the *2009 American Community Survey 1-Year Estimates* for all MSAs.[10]

Statistical Significance

The statistical analysis used in this study is based on the question of whether or not there is a linear relationship between two variables. For example, the question of whether the unemployment rate is related to growth rate is initially examined by graphical representation of the data and fitting of a trendline. The correlation coefficient provides an indication of how well the data match the trendline. The probability that the trendline represents a true correlation is based on the t-test for significance. A two-tailed, non-directional t-test is applied to all correlations. A 95% level of confidence in an outcome is the standard research benchmark, and is used here ($p_{ho} \leq 0.05$). Some of the correlations in this study have a confidence level of 99% or higher, resulting in particularly strong correlations. Any level of confidence below 95% officially lacks statistical significance. A correlation may exist between two variables below the 95% confidence level, but statistically, it is not significant. A finding that the correlation coefficient is very low (close to zero) between two

[9] See page 8 of *Customer Guide*, http://www.bea.gov/agency/pdf/BEA_Customer_Guide.pdf.
[10] *American Community Survey, 2009, Table B17001 Poverty Status in Past 12 Months by Sex by Age*.

variables is an indication that the two variables are independent of each other.

Graphical Representation

Each graph presented in this report includes all data points and a trendline showing the best-fitting linear relationship for the data. The line equation is provided along with the R^2-value, which is the square of the correlation coefficient and indicates how well the line fits the data.

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