Which Places Are Growing?
Seven Notable Trends from Newly Released Census Data
By Edward L. Glaeser (Harvard University)

Each new Census provides us with a picture of our changing United States. We have been a nation in flux for almost four centuries, as populations have moved over space—first populating the less dense areas of the country, and then in the 20th century, moving to sun, sprawl and the highly productive metropolitan areas of the coast. The 2010 Census confirms many of the trends that have been occurring for decades, but there are also some breaks with the past. In some cases, public policies are playing a major role in shaping America and not all of those policies are benign. In those cases, the Census provides a wake-up call about the governing of America.

This report is a brief overview of major trends in the county level population data that were released on March 24, 2011. A more complete analysis of the data will take more time and this brief should be seen as a first pass at categorizing population changes. Many of the trends discussed here are discussed at greater length in my book Triumph of the City.

This policy brief summarizes seven major facts about U.S. county-level population growth:

1. **Population growth was much higher in counties with higher incomes as of 2000.** Americans unsurprisingly moved to areas that deliver higher wages.

2. **January temperature continues to be a strong predictor of population growth.** This fact reflects both a natural affinity for warmth, and also the tendency of many Sunbelt areas to have fewer barriers to building.

3. **Population growth was faster near ports.** While 19th century Americans populated the American hinterland, 21st century Americans are moving to the country’s periphery.

4. **People are moving to dense areas, but not the densest areas.** Despite the decline in transportation costs, people are still disproportionately moving to places that had higher density levels as of 2000, responding to the enormous productivity advantages associated with proximity.

5. **The education level of a county as of 2000 strongly predicts population growth over the last decade.** Again, this trend reflects the tendency of skilled areas to generate far higher incomes.

6. **Manufacturing employment predicts lower population growth.** While manufacturing has predicted urban decline for decades, the connection between manufacturing and lower levels of
growth across all U.S. counties is a more recent phenomenon.

7. Limits to housing supply that come from either nature or regulation will also limit population growth. The most expensive areas have not grown all that much and the areas that have grown most demonstrably are not that expensive.

**Trend # 1: Money Matters**

There should be little surprise that Americans are following the money and moving to areas that pay more. Figure 1 shows the dramatic correlation between county median incomes, as of 2000, and population growth between 2000 and 2010. In the poorest 40 percent of counties, population growth is typically negative or very small. In the richest 20 percent of counties, population growth averages almost fifteen percent.

This relationship is not new. Glaeser and Shapiro (2003) illustrate a similar connection across metropolitan areas during the 1990s. Glaeser, Ponzetto and Tobio (2011) find that median income in 1950 strongly predicts county population growth between 1950 and 2000. It might have been expected that a wealthier nation would put less priority on material concerns, but that does not seem to be true when it comes to migration. What could be more natural then people leaving poorer areas and moving to more prosperous areas?

Many of the facts that follow reflect this general trend of people following prosperity. The correlation between population growth and many area attributes, such as density and skills, largely reflects the connection between these attributes and higher incomes. In a sense, the bigger puzzle appears in those areas, including greater Boston and coastal California, where incomes are enormously high, but population growth is reasonably modest.

This strong correlation does pose a challenge to policies that are aimed at disproportionately increasing incomes in poorer areas, such as the Appalachian Regional Commission. Americans seem to be quite good at moving from poor to rich places, and this process enhances national productivity by ensuring that people are working in the areas where their labor produces the highest returns. If public policy attempts to equalize regional incomes, it is leaning against this trend, and perhaps inadvertently keeping people in less productive areas.

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**Figure 1: Average Population Growth by Median Income in 2000 (Quintiles)**

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Trend # 2: The Sunbelt Continues to Grow

Figure 2 shows county-level population growth by January temperature. The warmest 40 percent of counties have average population growth over eight percent. The coldest 40 percent of counties have average population growth under 3 percent.

This trend is certainly not new. For decades, January temperature has been a powerful predictor of area growth (Glaeser and Tobio, 2008). One part of this growth surely reflects transportation cost improvements that freed firms from having to cluster around the waterways of the Great Lakes System and the railroads that followed them. Another part of this expansion reflects technological changes, like the air conditioner, that made hot summers more pleasant.

But the connection between January temperature and growth reflects more than just the weather. Sixty years ago, income and productivity in the South lagged significantly below that in Northern states. There has been a remarkable convergence of incomes since then, as manufacturing firms moved to lower wage areas that gradually became higher wage. Right-to-Work laws in Southern states seem to have significantly attracted new industry (Holmes, 1998). Indeed, one can quite plausibly argue that the South had far worse institutions for economic growth before the Civil Rights Era, but that today, fewer regulations and lower taxes makes the Sunbelt more pro-growth.

Perhaps the most important regulations that impact growth are those that impact the construction of new homes. Across metropolitan areas, the growth of population is tightly tied to the growth of housing supply and to the rules that impact new construction (Glaeser, Gyourko and Saks, 2005). Relatively few limits on new construction make it easier to provide abundant new housing in places like Atlanta, Dallas, and Houston and that has been one reason for those metropolitan areas’ million-plus person growth since 2000 (Glaeser and Tobio, 2007). One key piece of evidence suggesting the importance of elastic housing supply for the growth of these areas is that prices in these areas remain low, despite enormous population growth. The standard tools of basic economics teach us that the combination of low prices and enormous quantities typically means abundant supply.
Trend # 3: America is Moving to its Coasts

During the 19th century, Americans by the millions moved away from the Eastern Seaboard and populated the nation’s hinterland (Glaeser, Ponzetto and Tobio, 2011). In recent decades, the population has again been pulled towards the old ports and seacoasts (Rappaport and Sachs, 2007). Figure 3 shows the strong connection between proximity to either a coastal or inland port and population growth between 2000 and 2010. Counties closest to ports grew by almost 8 percent while those farthest from ports grew by less than 3 percent.

This growth does not reflect people working on the docks and it does not reflect the importance of water-borne trade. It reflects the fact that America’s great metropolitan areas formed on waterways and the pull of metropolitan productivity remains quite strong. Within Massachusetts, we see that Boston’s growth outpaced the state, but Berkshire and Franklin Counties, which are in the western part of the state, lost population. Similarly, northeastern Virginia is adding population at a rapid clip, while the state’s rural hinterlands are depopulating. In Texas, Houston, Austin and Dallas continue to explode but many more inland counties lost population.

The 19th century push inwards reflected the enormous value of matching people with rich farmland and other natural resources. American productivity was greatly enhanced when farmers could work the rich soil of Iowa. But the share of labor in agriculture has been declining steadily, and most natural resources are relatively easy to ship. We work in an economy where new ideas generate prosperity and most employment is in services. The physical proximity on the coast enables both the spread of ideas and the face-to-face contact that is crucial for many services.
**Trend # 4: People are Moving to Dense Areas—Although not the Densest Areas**

The move to coasts ultimately reflects the enormous valuable of physical proximity in the modern world. Despite new technologies that have made it possible to browse the Internet from across the plant and telecommute in from any sylvan spot, people are still choosing to move to dense areas. Figure 4 shows that on average, the least dense quintile of America counties lost about two percent of their population between 2000 and 2010. The densest quintile gained an average of over 12 percent of their population.

This growth reflects, in large, part of the productivity advantages from being around other people in large metropolitan areas. If the rest of America achieved the per capita productivity levels seen in the New York area, out nation’s Gross Domestic Product would increase by 43 percent. On average, as county density increases by 10 percent, county incomes increase by nearly 7 percent. The connection between density and productivity is a major reason why the least dense areas are de-populating and the densest areas are growing.

The connection between prosperity and density is something of a puzzle, given that improvements in transportation and communication technology should have reduced the advantages of being close together. One hypothesis is that a more globalized and technologically sophisticated world has increased the returns to skill and innovation (Goldin and Katz, 2008). Economists since Alfred Marshall have long argued that cities enhance skill accumulation by exposing workers to a wider range of peers and experiences. Glaeser and Maré (2001) document the swifter rate of wage growth in urban areas, for example. The spread of ideas in dense metropolitan areas also seems to enable innovative chains where one smart person borrows ideas from another. The death of distance may have pummeled the dressmakers of New York City, but it only enriched the fashion designers who still work in that city.

But while the connection between population growth and density generally is positive, the

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**Figure 4: Average Population Growth by Population Density in 2000 (Quintiles)**

![Average Population Growth by Population Density in 2000 (Quintiles)](image-url)
relationship turns negative at the highest density levels. Figure 5 shows the connection between population growth and density among the densest fifth of counties—dividing that set of counties into tenths.

As Figure 5 illustrates, growth is pretty flat between the second and seventh deciles of this group. This corresponds to the 86th – 94th percentiles of the overall density distribution, which includes counties such as Palm Beach County, Florida and Clark County, Washington (outside of Portland, OR), and then begins to decline. This figure reminds us that America is a profoundly metropolitan nation, but population growth tends to be somewhat lower in the very densest areas, such as Queens County, New York and Baltimore County, Maryland. There are four reasons why growth is somewhat lower among the densest counties. First, building up is somewhat more expensive than building out. Construction costs in these areas are often somewhat more expensive because of the cost of higher rise construction.

Second, America is still in the century-long process of rebuilding itself around the automobile. Humankind has always built its urban spaces around dominant transportation technologies. The oldest parts of America’s oldest cities have narrow and winding streets more appropriate for pedestrians than cars. 19th century cities were built around the streetcar and the elevated rail line and 20th century cities have been built around the car. The car enables people to live at low densities and requires plenty of land, which is why it tends to favor somewhat lower density living.

Third, growth rates persist and car cities are likely to have grown up more recently. The same factors that pushed the post-war growth of Phoenix and Houston continue to this day.

Fourth, government policies—national, state, and local—tend to favor lower density living. The federal government has long subsidized highways, which tended to enable people to flee urban areas (Baum-Snow, 2007). The strong connection between structure type (apartment vs. home) and ownership type (owner-occupied vs. rented) means that implicitly subsidizing homeownership via federal policies such as the home mortgage interest tax deduction pushes people away from apartments that tend overwhelmingly to be rented. Finally, the lure of suburban schools and zoning policies that are more restrictive in areas that have more people also push development out to moderately lower density areas.

Figure 5: Average Population Growth by Population Density in 2000 (Top Quintile Only, Divided into Deciles)
Still, it is important to note that the average growth rate of the very densest counties is still much higher than the growth rate in the nation’s least dense counties and the medium density counties continue to offer many of the advantages of urban connection. America’s economy is disproportionately contained in its large metropolitan areas—the three largest areas (New York, Los Angeles and Chicago) contain 18 percent of the nation’s GDP and only 13 percent of the country’s population—and that seems likely to continue.

**Trend # 5: Skills Continue to Predict Growth**

Education has been a strong predictor of area growth for many decades (Glaeser, Scheinkman and Shleifer, 1995, Simon and Nardinelli, 1996), and the last ten years are no exception. The most educated fifth of counties, measured by the share of the adult population with college degrees in 2000, experienced an average growth rate of more than 13 percent. (See Figure 6) The least educated 60 percent of counties grew on average by less than 3 percent.

The connection between skills and population growth could, in principle, reflect many different factors. It could be that there are fewer social problems in more educated areas or that people are moving to be around educated people because educated parent lead to better schools. But the primary reason why education has been linked to population growth in the past is that incomes are rising much more steeply in educated areas (Glaeser and Saiz, 2004, Shapiro, 2006). For example, Glaeser, Ponzetto and Tobio (2011) report that income growth increases by roughly 10 percentage points between 1980 and 2000 as the share of the county’s adult population with a college degree in 1980 increases by ten percent.

The increasing connection between area level education and higher incomes is not merely a reflection of the well known rise in returns to skill (Goldin and Katz, 2008). Holding an individual’s education constant, that person’s wages rise on average by about 8 percent as the share of adults with college degrees in that person’s metropolitan area increases by 10 percent (Moretti, 2004). These effects are typically called human capital externalities—the benefits of having skilled neighbors.

There are many possible reasons that these externalities might exist. Smart neighbors are more likely to be successful entrepreneurs who provide good jobs. Smart neighbors may teach us things that make us more productive. But whatever the reason, having educated people

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**Figure 6: Average Population Growth by Share with BA in 2000 (Quintiles)**

![Average Population Growth by Share with BA in 2000 (Quintiles)](chart)
near you in an area is typically associated with having higher earnings and this has been getting stronger over time (Glaeser and Saiz, 2004).

Given the tendency of migration to follow higher incomes, it is therefore unsurprising that skilled areas have been growing more quickly. The connection between skills and area growth seems strongest in initially denser areas (Glaeser, Ponzetto and Tobio, 2011) and in areas that experienced negative shocks (Glaeser and Saiz, 2004). While almost all of the older, colder cities of the country seemed profoundly troubled during the 1970s, the better educated places such as Boston, Minneapolis and Seattle have managed to come back, while less educated areas have continued to decline. Education was a powerful protector against unemployment during the recent recession (Glaeser, Ponzetto and Tobio, 2011).

**Trend #6: Population is still leaving Manufacturing Regions**

Population continues to move away from manufacturing areas within the U.S. Figure 7 shows that the population of the counties that had the greatest share of their employment in manufacturing grew by nearly 4 percent. In contrast, the population of the fifth of counties with the fewest manufacturing jobs grew by over 8 percent.

For many decades, concentration in manufacturing has been associated with urban decline. Manufacturing has been suburbanizing and leaving dense urban areas since at least the early part of the 20th century, when Henry Ford moved his massive automobile plant to River Rouge. Manufacturing tends to be relatively space intensive and that is one reason why it has tended to move away from urban cores (Glaeser and Kahn, 2001) and locate in medium density counties (Glaeser and Kohlhase, 2005). The flight of industrial firms from cities naturally hit those cities with the most manufacturing the hardest since they had the most to lose, and that is one reason why manufacturing has predicted urban decline since the 1950s.

But manufacturing was not associated with population decline throughout a wider sample of counties during much of the past. Glaeser, Ponzetto and Tobio (2011) report a positive association between manufacturing in 1980.
and county population growth between 1980 and 2000, holding many other factors constant. One reason for this fact is that while manufacturing cities were declining, many less dense areas were attracting new industrial jobs and succeeding as places of manufacturing. While there are still counties that attract manufacturing today, during the last decade, there was a negative association between manufacturing share and population growth holds across the entire country.

While there is no immediate policy implication of this fact, it does suggest that manufacturing is not serving as a magnet for population growth either across cities or across counties. Attracting individual manufacturing plants may certainly make sense for individual counties (Greenstone, Hornbeck, and Moretti, 2010), but it is hard to imagine that America’s future lies in heavy industry.

**Trend #7: Housing Supply Matters**

The preceding six trends have generally described factors the influence the demand to live in a place, such as economic prosperity and sunshine. But population change is not just about demand for an area. The population growth of an area is intimately connected to the growth of the area’s housing supply, as people typically need homes to inhabit. If it was equivalently easy or hard to build a home anywhere in the U.S., then housing supply would not matter, but it is much harder to build in some places than others because of both natural barriers and regulation (Glaeser, Gyourko and Saks, 2005).

Differences in housing supply help us to make sense of Figure 8, which shows the relationship between housing prices in 2000 and population growth between 2000 and 2010 across U.S. counties. Overall the relationship is quite positive. Housing prices are a good indicator of the demand to live in an area, and when prices are sufficiently low, private building essentially ceases. On the lower left corner of the graph, we see counties that have low prices and accompanying low growth rates.

But the graph also shows another more surprising pattern. The counties that are expensive have not grown all that much, such as Santa Clara County California, and the
places that have grown a great deal are not that expensive, such as Pinal County, Arizona. The high prices in Manhattan and around San Francisco tell us that there is no lack of desire to live in these areas, but they are not growing all that quickly. The natural explanation for this phenomenon is that building in these areas is difficult. Similarly, the low prices in Pinal County, Arizona or Flagler County, Florida indicate the relative ease of building in these areas rather than any lack of demand.

Housing supply certainly matters and is helping shape America. In some areas, housing supply is naturally limited by geography. Manhattan, the most expensive point on the graph, has profound geographic constraints that make construction more costly. But in many areas, regulations limit construction far more than geography. Those regulations ensure that fewer people get to live in the most productive and pleasant parts of the country, such as coastal California.

**Conclusion**

The preceding trends do not dictate any particular public policies or suggest any particular course of action. They should be relevant, however, for policy-makers at both the local and the national level. We believe that there are a few lessons that come out of the data.

First, people are quite mobile and move to wealthier places. This fact should lead us to respect the power of migration to make both individuals and the nation more productive. We should therefore be cautious about policies that act to restrict mobility, such as subsidizing homeownership (Oswald, 2005) and worry about whether attempts to bolster depressed areas are actually stopping people from migrating to areas where they might lead more productive, happier lives.

Second, the country is moving to relatively dense places and towards ports. This reminds us that our metropolitan areas are places of extraordinary productivity and economic innovation. We should surely worry about policies that artificially limit the growth of these areas, including local land use policies that limit construction, the state policies that enable those local policies), and federal policies that disproportionately subsidize transportation in low density areas.

Third, education is a strong predictor of area growth and manufacturing predicts decline. These facts suggest that the future of the American economy depends on our nation’s skills, not on the ability to produce ordinary goods marginally more efficiently. These facts seem to suggest the importance of wise investments in education and warn against excessive subsidization of declining industries.

Fourth, housing supply matters. The share of our nation is increasingly being molded by local land use policies formed for the most parochial of reasons. Localities rarely have the right incentives to internalize the cost of their zoning decisions on people who do not live there yet. There is a good case for higher levels of government ensuring that these local policies look after the wider interests of the nation.

**Data Note**

*All data is from the 2000 and 2010 Census, except for data on manufacturing, January temperature and distance to ports. Share of employment in manufacturing comes from the 2000 County Business Patterns. January temperature data comes from ICPSR (Inter-university Consortium for Political and Social Research) study number 2896, “Historical, Demographic, Economic, and Social Data: The United States, 1790-2002,” by Michael R. Haines, which compiles data from various Census sources over many years. The spherical distance (in miles) from the center of each county to the nearest coastal or inland port was calculated in GIS (Geographic Information Systems) using The US Army Corps of Engineers (USACE) Ports database.*
References


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