Changes in Neighborhood Inequality, 2000-2010

by

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Abstract

Recent work has suggested that higher income inequality may be a desirable attribute of a neighborhood in that it represents diversity, even though high (and rising) inequality appears to be detrimental to the nation as a whole. The research reported here has determined the key characteristics of a census tract that are associated with the level of inequality in 2000 or 2010, and those associated with changes in income inequality between 2000 and 2010. For the change, the strongest influence is a negative effect for the level of income inequality in 2000; that is, higher income inequality in 2000 leads to a decline over the decade, ceteris paribus. Neighborhoods with higher proportions or levels of the following population and housing characteristics tend to have both higher income inequality and a larger increase in income inequality between 2000 and 2010: individuals in poverty, those with a bachelor's degree, older individuals, householders living alone, and median rent, and lower median housing value and household income. Among these, perhaps the most important determinant is the percent in poverty in 2000. Furthermore, as the baseline level of demographic and economic diversity increases, the better the baseline and change characteristics explain the change in the Gini index from 2000 to 2010.

Keyword: Neighborhood, neighborhood succession, neighborhood dynamics, income inequality, Gini index

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1. INTRODUCTION

Where one lives can affect many aspects of well-being including access to education and employment (Temkin and Rohe 1996). And income inequality in that neighborhood can affect outcomes, including crime and health.[1] There is a substantial literature examining neighborhood dynamics (also called neighborhood succession), mostly focusing on the housing market aspects of change over time (see Megbolugbe et al. 1996).[2] Most of the research has focused on "downward" movement – the transition from neighborhoods from primarily high-income to primarily low-income (poor) occupants and "filtering" the change in the housing stock from high quality and newer housing to lower quality and older housing (Brueckner 1977; Weicher and Thibodeau 1988; Bond and Coulson 1989; Weicher et al. 2010). But some neighborhoods improve their housing quality over time, typically due to new construction, or considerable renovation (e.g., via "gentrification").

This paper focuses on a particular non-housing aspect of neighborhood change – change in income inequality over a 10-year period, and how such change relates to both the initial conditions present in the neighborhood, and to changes in the socio-demographic and housing characteristics of the neighborhood over that period.[3] If

[1] Freedman and McGavock (2015: 807) cite, among others, Hipp (2007) on the effects of inequality on crime, and Nkansah-Amankra et al. (2010) on effects on health.

[2] Grigsby et al. (1987) cite a literature on neighborhood succession dating back to the 1920s.

[3] The two periods surveyed (2000, with questions about 1999 income, and 2008-2012, with questions about the previous 12 months of income) covered roughly similar periods of economic activity. According to the National Bureau of Economic Research's business cycle dating, there were recessions in March 2000 to November 2001, and December 2007 to June 2009.

indeed the neighborhood context of inequality matters, then how that inequality changes over time should matter as well. Understanding that change and its context would give us a better foundation for examining other changes over time at the neighborhood level, perhaps eventually shedding more light on issues of residential segregation and neighborhood resilience. How much income inequality is good for a nation, a metropolitan area, or a neighborhood is an open question more data analysis might help to address. As Chetty and Hendren (2015), among others, have argued, "neighborhoods matter".[4] The Gini index of household income inequality is but one measure of a neighborhood's character. Galster and Booza (2007) show the value of examining income distributions in more detail, identifying "bipolar" communities (those with a strong representation of both high- and low-income households) as worthy of attention.

After a literature review, the subsequent section describes the data in more detail. In the "Findings" section, I first investigate the demographic characteristics associated with higher or lower levels of income inequality, using both regression and factor analyses. Then, I examine the correlates of change, examining both base period (2000) census tract (neighborhood) characteristics and the change in those characteristics over the 2000-2010 period. These aspects will be examined for metropolitan areas as a whole, and for categories of such areas, and also for the 21 largest metropolitan areas. Finally, differences across individual metropolitan areas are examined. The final section presents some modest conclusions and suggestions for future research.

2. LITERATURE REVIEW

[4] See http://howhousingmatters.org/articles/neighborhoods-matter/.

One key issue is how to define a neighborhood. Megbolugbe et al. (1996: 1787) offers some alternatives. Theoretical arguments can ensue about which definition is best, but most researchers adopt a definition that allows them to analyze existing data. In effect, in the United States researchers often define a neighborhood as equivalent to the smallest geographic unit for which a significant number of estimates are published on a regular basis by the U.S. Census Bureau -- a census tract.[5] Census tracts are intended to be relatively homogenous along whatever characteristics are felt to be important (though they must be contiguous geographically), and typically have about 4,000 residents and 1,500 housing units.

Income can provide command over material resources but is not divided equally among households; an index of income inequality is one measure of that disparity. As the Organization of Economic Cooperation and Development (2014: 110) noted, some people consider high levels of income inequality to be morally undesirable, and others regard income inequality as harmful ("causing conflict, limiting co-operation or creating psychological and physical health stresses"). But Weinberg (2011: 1) argued that unalloyed condemnation of high income inequality is not appropriate when the unit of analysis is the neighborhood, reflecting instead a great deal of individual choice of whom to live amongst. He argued that diversity in incomes among neighbors can

[5] Census tracts are collections of block groups, which in turn are collections of census blocks. Each decennial census publishes limited data at the block and block group levels (primarily population counts by race and ethnicity); the American Community Survey publishes some estimates at the block group level but more at the census tract level. Census tracts are defined either by local government officials, sometimes with the help of local residents, or by the Census Bureau in the absence of local assistance. Census tract boundaries are adjusted each decade to correspond with growth or decline. Most often, of course, census tracts defined in growth areas are subdivided in later years to preserve over-time comparability.

enhance the social environment. In effect, the market determines income inequality outcomes by neighborhood (Hardman and Ioannides 2004), affected by residential segregation (Iceland and Weinberg 2002; Reardon et al. 2015).

Most research in this area has focused on income level or poverty rates, often on low-income (poor) neighborhoods, and typically on just a single metropolitan area (Ellen and O'Regan 2008). However, recent work by Weinberg (2011), using the first-ever release of estimates at the census-tract level from the American Community Survey, investigated income inequality at the neighborhood level. His analysis covered 61,358 census tracts with 50 or more household interviews in the 2005-2009 period. His paper showed that low income inequality was most likely the result of income sorting – higher-income households choose to live apart from lower-income ones: "The most income-mixed areas (the ones with the highest income inequality) tend to be found in cities, with older housing on average, while the most income-segregated areas (the ones with the lowest income inequality) tend to be found in suburbs, with younger housing on average" [Weinberg 2011: 20].

However, errors might arise when doing longitudinal analysis with published data because tract boundaries change. Published data also fail to allow researchers to distinguish the demographic differences among parts of tracts when reconstructing consistent geographic boundaries.[6] The research in this paper will correct these longitudinal data problems faced by Ellen and O'Regan (2008), Wei (2012), and Wei and Knox (2014) in defining neighborhoods because it is based on a confidential dataset constructed by the Census Bureau that allocates all 2000 Census long-form sample members to the correct 2010 census tract, based on the internal Census Bureau

[6] See http://www.s4.brown.edu/us2010/Researcher/Bridging.htm.

geocoding, rather than using areal interpolation.[7] Also, the database uses 2008-2012 ACS data files to represent average 2010 characteristics.

The focus of the proposed research will however be on just one neighborhood characteristic of well-being – change in household income inequality, as measured by the Gini index of inequality, for neighborhoods defined as census tract by the 2010 Census. The Gini index ranges from 0.0, when all households have equal shares of income, to 1.0, when one household has all the income and the rest none.[8]

3. DATA

In order to simplify the 2010 Census and provide more frequent estimates for small areas and groups, the Census Bureau began the American Community Survey (ACS) to replace the Census long form, last fielded in 2000 to a 1-in-6 sample of households. After a decade of testing, the ACS was begun in 2005 and questionnaires were sent to a sample of about 2.9 million housing units each year, increased to 3.3 million in 2011. From 2005 to 2010, interviews were completed in the U.S. and Puerto Rico at about 1.9 million housing units each year, increasing to 2.1 million housing units in 2011. Five years of data (approximately an 11 percent sample) are cumulated to provide detailed information for small geographic areas (e.g., census tracts or small

[7] These data are available at Federal Statistical Research Data Centers to qualified researchers (see http://www.census.gov/ces/rdcresearch/).

[8] For more information on measurement of income in the American Community Survey and on the Gini index of inequality, see Bishaw and Semega (2008). Weinberg (2011) also used two additional measures of income inequality – the ratio of the household income at the 90th (95th) percentile to that of the household at the 10th (20th) percentile – and found that his results did not differ qualitatively from those found for the Gini index.

towns) and for small population groups (e.g., those under 18 with a disability in a particular metropolitan or micropolitan area). Small jurisdictions are sampled at higher rates than larger ones. The 5 years of ACS data that are used in this study cover 2008 through 2012; for convenience they are referred to below as 2010 data (because the 5 years are centered on that date).

I used judgment to select the census tract characteristics to be included as potential explanatory variables.[9] Appendix Table A.1 shows the means and 25th, 50th,and 75th percentiles for the Gini index and for all independent variables at the tract level, for 2000, 2008-2012, and the change from 2000 to 2008-2012. More than half of tracts had an increase in their Gini index over the decade, but this increase was concentrated at the bottom of the distribution (the Gini index at the 75th percentile was the same at the beginning and end of the period).

Multi-collinearity is to be expected, as several variables are closely related to one another. For example, the total tract population and the total number of housing units in a tract are correlated at 0.83, and the percent non-Hispanic White and the percent Black or African American are correlated at -0.68. Thus, the importance of particular variables must be inferred from the patterns of results, rather than from specific regressions. On the other hand, there are only three independent variables that are correlated with the change in the Gini index of income inequality from 2000 to 2010 at above the 0.20 level – the percent with less than a high school education, the percent in

[9] There is only one characteristic which is not comparable between the two surveys. The 2000 Census long form asked about moving in the past 5 years, while the ACS asks about moving in the past year. For that reason, the mobility variable is omitted from the change regressions.

poverty, and household median income – and only one change variable has a correlation above 0.20 – change in the percent in poverty.

To be included in the analysis sample, tracts must have sufficient sample size in both the census in 2000 and the ACS in 2008-2012, and be in a metropolitan area. To make the estimates more reliable, I have arbitrarily restricted my analysis to those tracts with at least 200 occupied housing units in both 2000 and 2010, leaving 58,264 tracts with sufficient observations in both 2000 and 2010.[10] This corresponds to an average of 32 Census long-form interviews per tract in 2000, and 22 ACS interviews in 2008-2012.

In addition, tracts were characterized by (1) the Census region (Northeast, Midwest, South, and West), (2) the size of metropolitan area they were in, and (3) the level of metropolitan area median income. The four metropolitan area population classes and the number of census tracts in each are: Small (under 350,000 people) – 7,889 tracts, Medium (350,000 to 599,999 people) – 6,052 tracts, Large (600,000 to 1,499,000 people) – 11,710 tracts, and Very Large (1.5 million people or more) – 32,613 tracts. The four metropolitan income classes are determined by quartiles of median household income in 2000 (each roughly 14,600 tracts): Low -- $24,863 to $39,288, Middle -- $39,289 to $44,223, High -- $44,224 to $49,175, and Very High -- $49,176 to $74,335.

Based on the work of Duncan and Aber (1997), I hypothesize that one additional categorization would be useful: diversity (heterogeneity), with higher levels of socioeconomic diversity likely to be associated with higher levels of income inequality as well. Since no generally recognized approach is available, I created one by categorizing

[10] Because the ACS imposes additional sample size restrictions on published tabulations, analyses of 2010 estimates alone and of the change from 2000 to 2010 use fewer tracts (57,318).

tracts according to six characteristics likely to be related to diversity: percentage who were not non-Hispanic White, percentage of households not headed by a married couple, percentage of households which rent, percentage of individuals 25 or older with less than a high school diploma, percentage crowded (more than 1 person per room), and percentage of those 16 or older who were unemployed. Each tract was given a score of 0 to 3 for each of these characteristics, depending on which quartile of its distribution it fell. These scores were then summed; in 2000, 2.53% of tracts had a diversity index of 0 and 4.39% has a diversity index of 18 (the maximum); in 2010 the figures were 1.64% and 2.58%, respectively. For the purpose of presenting results categorized by diversity, the 2000 index was rescaled into rough quintiles: scores 0-3 (18% of tracts), 4-7 (25%), 8-10 (17%), 11-14 (20%), and 15-18 (20%).

4. FINDINGS

Figure 1 shows the relationship at the metropolitan area level between the level of the Gini index of household income inequality in 2000 and the index in 2010 – the correlation is 0.775, with a downward trend line versus the 45-degree line (that is, demonstrating regression to the mean).[11,12] Figure 2 shows that, at the metropolitan area level, the higher the Gini index in 2000, the smaller the increase in Gini between 2000 and 2010 (the mean change in the Gini index for tracts between 2000 and 2010 is +0.006 with a standard deviation of 0.058).

4.1. Point-in-Time Regressions

[11] The correlation at the tract level is 0.640.

[12] The three metropolitan areas with the lowest 2000 Gini (that is, most equal) and five of the lowest ten are in Wisconsin.

Table 1 presents the basic regression results, with cross-section regressions of the Gini index on tract characteristics for 2000 and 2010, including a quadratic term for the percent in poverty.[13] The goodness-of-fit (R^2) of both cross-section equations is quite good (0.606 and 0.519). All the included characteristics have a significant effect on the Gini coefficient in at least one year, and 30 of the 33 characteristics do in both years. The effects of the various characteristics are quite similar across the two years, with only 4 of the 33 characteristics affecting the Gini index in significantly opposite directions in the two regressions, though most of these effects are quite small; these opposite signs are possibly due to multicollinearity.

To determine the characteristics with the most effect on the cross-section Gini index, I calculated the effect of a 10% (not percentage point) increase in each independent variable, with the other characteristics held at their sample means. There are only four variables with marginal effects of 0.004 Gini points or more in both years: percent below poverty (0.007 points in 2000 and 0.006 points in 2010), percent with a bachelor's degree (0.004 and 0.005), percent of married couple households (0.010 and 0.005), and percent of householders living alone (0.007 and 0.004).[14] Other characteristics with effects of 0.004 or above in one year were percent non-Hispanic White alone (0.008) and percent single-parent householders (0.004), for 2000, and median housing value (0.004) and median household income (-0.004), for 2010.

[13] I also tested quadratic terms for income, rent, and home value; these added no additional explanatory power.

[14] Since the quadratic term for percent in poverty is negative, the positive effect of the poverty rate on the Gini decreases as poverty increases, though not steeply.

I then attempted to learn if different classifications of tracts led to a difference in the quantitatively important descriptors of the Gini index.[15] Table 2 presents the characterization of significant coefficients for the national-level regression, the 3 sub-categories examined (region, population size, and median income), and for the 21 largest metropolitan areas independently.[16] The results are consistent, suggesting it is only eight key demographic characteristics that one should focus on as quantitatively important in affecting the level of neighborhood income inequality: percent non-Hispanic White alone, percent with a bachelor's degree, percent married couple families, percent single-parent households, percent living alone, percent in poverty, median home value, and median household income. However, explaining the Gini coefficient in 2000 or in 2010 using only these eight independent variables explains significantly less than does the full complement of 33 variables, for both years.

Another way of examining the key variables is by use of factor analysis. Factor analysis is designed to summarize the contributions of many independent variables in a smaller number of factors, each one a weighted combination of all the variables. There are six factors with eigenvalues greater than 1.0 that together explain 74% of the

[15] Note however that as one divides the sample into smaller groups, the possibility arises that the smaller sample sizes will affect the determination of significance without affecting the magnitude of the estimated effect. This should not be too serious a concern, though, as the smallest selection (the Denver MA in 2010) has 567 tracts.

[16] The regression coefficients are available from the author. The 21 MAs surround the following major cities: Atlanta, Baltimore, Boston, Chicago, Dallas, Denver, Detroit, Houston, Los Angeles, Miami, Minneapolis, New York, Philadelphia, Phoenix, Riverside, St. Louis, San Diego, San Francisco, Seattle, Tampa, and Washington. R^2 for the 42 regressions ranges from 0.502 and 0.492 for Tampa in 2000 and 2010, respectively, to 0.759 for Baltimore in 2000 and 0.740 for Denver in 2010.

variance in the Gini index at the tract level in 2000. All of the explanatory variables that affect the Gini most strongly, as indicated by their appearance in Table 2, appear in the first six factors, except for percent Black, percent Asian, and percent moving between 1995 and 2000 (see Table 3).

4.2. Change Regressions

The transition matrix from the quintile of the tract Gini in 2000 to 2010 is shown in Table 4. This matrix is notably unstable – only 39.5% of tracts stay in the same quintile, with the most stability at the ends of the distribution (panel A shows that 53.3% of tracts in the lowest quintile in 2000 stay there and 55.1% of tracts in the highest quintile stay there). But the traditional way of looking at transitions by looking at quintiles does not take account of the fact that the indexes are heavily concentrated around the mean. Another and perhaps more informative way of looking at the transitions demonstrates the opposite: stability. Panel B shows that 84.4% of tracts within one standard deviation of the mean in 2000 stay within one standard deviation of the mean in 2010. There appears to be more stability at the high end, where 28.1% of tracts with Gini more than two standard deviations above the mean stay in that category 10 years later, versus only 6.5% staying in the lowest category (more than two standard deviations below the mean).

Table 5 presents the regression of the change in the Gini between 2000 and 2010 on baseline 2000 characteristics, including the Gini index in 2000, and on changes in characteristics between 2000 and 2010.[17] In addition to the 2000 Gini index, with a large negative coefficient and strong marginal effect, there were five baseline

[17] The combined equation had significantly better fit (R^2=0.474) than the equation with only baseline characteristics (0.356) or only change characteristics (0.137).

characteristics that were associated with a 0.002 point or more marginal effect on the change in the Gini index associated with a 10% change in the characteristic – percent non-Hispanic White alone (+0.003), percent with a bachelor's degree (+0.003), percent married couples (+0.004), percent living alone (+0.003), and percent in poverty (+0.003) – but there were no change characteristics with that large an effect (see Figure 3). Other characteristics with a modest marginal effect were median home value (+), rent (-), and income (-), and percent owner-occupied (+), and the change in median value (+) and rent (-).

Another way of looking at the change in the Gini index between 2000 and 2010 is to classify tracts by their relationship to the average change between those two years (an increase of 0.0057). The change was classified into five categories: (1) more than two standard deviations (0.058) below the mean change (3.1% of the tracts), (2) more than one but less than or equal to two standard deviations below the mean (10.5%), (3) within 1 standard deviation of the mean (73.0%), (4) more than one but less than or equal to two standard deviations above the mean (11.4%), and (5) more than two standard deviations above the mean (2.0%). All the tracts in categories 1 and 2 (below the mean) in 2000, and some of the tracts in category 3 (near the mean), had a decline in Gini between 2000 and 2010. When the independent variables from 2000 are examined when the tracts are classified by these five categories of change in the Gini, only three stand out as being different among the categories (that is, being at least one standard deviation below the overall mean for that independent variable), and then only to identify the lowest category of two standard deviations below the mean: percent with less than a high school education (34.1% in the lowest group versus a mean of 19.5%), percent unemployed (11.7% versus 6.2%), and percent in poverty (26.0% versus 12.4%).

Also note that the level of the Gini index in 2000 was 0.543 in the tracts with the largest negative change in Gini, higher than the mean Gini index across all tracts of 0.407.

I also conducted a discriminant analysis to see if there were key independent variables that could classify the tracts into the five categories of change in the Gini index, based on 2000 tract characteristics. When examining standardized canonical weights, the main influence in the first function was the level of the Gini index in 2000 (related to the finding of regression to the mean over the decade). Very few other variables had high weights; for the second through fourth discriminant functions the key variables were race and ethnicity (percent black, percent non-Hispanic White, and percent Hispanic). While it was easy to classify tracts in the middle of the distribution (97% of those in category 3 were classified into category 3), the final discriminant functions were not very successful in classifying tracts into their true classifications, with the best success for category 1 (though even there, only 48% of 1,782 tracts in category 1 were classified into category 1).

Figure 4 presents yet another way I attempted to uncover the key determinants of change in the Gini index between 2000 and 2010. This figure summarizes the results of regressions when the sample was categorized by five levels of the pre-determined diversity index described above, four metropolitan income categories, four metropolitan population categories, and independently for the 21 largest metropolitan areas (MAs), with the independent variables ordered by the number of significant coefficients in the MA regressions.[18] The regularity of influences suggests that the following are the key

[18] All the regressions are available from the author. Appendix Table A.2 summarizes the significance and direction of those effects.

influences on the change in the Gini index, listed in order of most consistent effects to less:

- Gini index in 2000 (a strong negative influence), negative and significant for all categories and MAs;
- Percent below the poverty level in 1999 (positive) and percent below the poverty level squared (negative), and change in poverty (positive);
- Median housing value of owner-occupied units (positive) and change in value (positive);
- Percent of those 25 years or older with a Bachelor's degree (positive) and change in this proportion (positive);
- Median household income (negative) and change in income (negative);
- Percent 65 and older (positive) and change in this proportion (positive);
- Median gross rent (negative) and change in rent (negative);
- Percent of householders living alone (positive) and change in this proportion (positive);
- Density (units per square mile) (negative);
- Percent owner-occupied units (positive);
- Change in density (housing units per square mile); and
- Change in the percent of households that are married couples (positive).

With the addition of but a few new characteristics (percent 65 and older, density), these are much the same characteristics that had influence on the level of the Gini index.

The goodness of fit does not vary by population category or income category (all R^2 are in the 0.46 to 0.50 range); there are no variables for which the direction in one

category differs from the direction in the other three for either population or income. *In contrast, the goodness of fit varies strongly with the 2000 level of diversity*, as measured by my constructed index. As diversity increases, so does the R^2. From a low of 0.40 for the lowest level of diversity (scores of 0 to 3), the rise in the goodness of fit is monotonic: to 0.42, 0.44, 0.47, and finally 0.58 for the highest level of diversity (scores of 15 to 18). Thus, as the level of demographic and economic diversity increases, the better the baseline and change characteristics explain the change in the Gini index from 2000 to 2010.[19]

Appendix Table A.3 presents the pattern of significance and the sign of the coefficients in the 21 metropolitan area (MA) regressions. There is no particular relationship between the number of tracts and the goodness of fit – the best fit was obtained in Denver (0.658), the MA in this selected group with the smallest number of tracts (567), while the worst fit was in Boston (0.460), with 975 tracts (in the middle of the distribution). Local factors do appear to matter. The goodness of fit for 20 of the 21 MAs exceeded the fit at the national level, that is, the fit for all MAs pooled (0.474). There are however three variables for which a significant coefficient in the regression for one MA differs in direction from those in at least one-third (7) of the other MAs: percent under 18 years old (8 with a significant positive coefficient, Miami with a significant negative coefficient), percent 65 years and older (14 positive, Phoenix negative), and percent below poverty squared (Houston positive, 11 negative). All the regressions had

[19] There is only one variable for which the coefficient for the highest diversity category differs in sign from the other four: the change in the percent 65 years and older.

at least 16 significant coefficients (excluding the constant), while the two largest MAs (New York and Los Angeles) had 38 and 33 significant coefficients, respectively.[20]

5. CONCLUSIONS AND FUTURE RESEARCH

Of the 33 tract characteristics examined, only a handful had a substantial effect on the level of the Gini index and on the change in the Gini index from 2000 to 2010. By far the biggest determinant of the change in the index was the baseline level of the index in 2000: the higher the Gini index, the smaller the change. The key characteristics affecting the change in household income inequality at the neighborhood level between 2000 and 2010 were:

- Percent below the poverty level in 1999 (positive for the baseline characteristic and for the change between 2000 and 2010);
- Median housing value of owner-occupied units (positive for both);
- Percent of those 25 years or more with a bachelor's degree (positive for both);
- Median household income (negative for both);
- Percent 65 years and older (positive for both);
- Median gross rent (includes utilities) (negative for both); and
- Percent of householders living alone (positive for both).

Among these, the most important is the percent in poverty in 1999, though the effect decreases as the percent poor increases. Note also that as the level of demographic and economic diversity increases, the better the baseline and change characteristics explain the change in the Gini index from 2000 to 2010.

[20] Of the top ten largest MAs in population, all but two (Detroit and Miami) had 25 or more significant coefficients; all of the others had 16 to 24 significant coefficients.

One possible extension is to create some metropolitan area case studies, where one used additional variables that could affect inequality but are not measured by ACS data. Variables that could affect the attractiveness of a neighborhood to households might include tract-level crime rates, school achievement measures, environmental hazards (pollution) or advantages (parks), or access indicators (such as to retail establishments, restaurants, health care facilities, or jobs). Another possible extension is to relate the findings to residential segregation.

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Table 1. Regression of Gini Index of Household Income Inequality on Census Tract Characteristics, 2000 and 2010

	2000			2010		
Variable	**Coefficient**	**Sign.**	**Marginal Effect**	**Coefficient**	**Sign.**	**Marginal Effect**
Household population (00)	-0.000394	***	-0.00153	-0.000053	***	-0.00019
Housing Units (00)	0.001331	***	0.00214	0.000375	***	0.00068
Percent Black or African American alone	0.001170	***	0.00163	0.000338	***	0.00051
Percent White alone not Hispanic	0.001216	***	0.00810	0.000268	***	0.00191
Percent Asian alone	0.000601	***	0.00024	-0.000118	***	-0.00006
Percent American Indian or Alaska Native alone	0.000896	***	0.00006	0.000416	***	0.00003
Percent Native Hawaiian or Pacific Islander alone	0.001970	***	0.00003	0.000264		0.00000
Percent Hispanic or Latino (of any race)	0.001011	***	0.00133	0.000095	***	0.00016
Percent under 18 years old	-0.000895	***	-0.00229	-0.000320	***	-0.00075
Percent 65 years or older	0.001093	***	0.00135	0.000983	***	0.00130
Percent of those 25 years or more without a high school diploma	0.000957	***	0.00187	0.000597	***	0.00088
Percent of those 25 years or more with a bachelor's degree	0.001750	***	0.00449	0.001705	***	0.00502
Percent of households that are married couples	0.001912	***	0.00982	0.001153	***	0.00547
Percent of householders that are single parents	0.002527	***	0.00439	0.000983	***	0.00186
Percent of householders living alone	0.002272	***	0.00569	0.001421	***	0.00390
Percent owner-occupied units	-0.000240	***	-0.00156	0.000205	***	0.00130
Percent of units built in the previous 10 years	0.000049	***	0.00008	-0.000070	***	-0.00009
Percent mobile homes	0.000170	***	0.00009	0.000174	***	0.00008
Percent single-family detached units	-0.000005		-0.00003	-0.000140	***	-0.00084
Percent single-family attached units	-0.000148	***	-0.00010	-0.000197	***	-0.00013
Percent of structures with 20 units or more	0.000122	***	0.00011	0.000224	***	0.00020
Percent of occupied units with 1.01 or more persons per room	-0.000153	***	-0.00010	-0.000571	***	-0.00022
Percent of those 5 years or older who do not speak English "very well"	-0.000239	***	-0.00021	-0.000148	***	-0.00014
Percent of households moving 1995 to 2000	-0.000606	***	-0.00302	NA		
Percent of households moving in the past year	NA			-0.000188	***	-0.00029
Percent of those 16 years or older in the civilian labor force who are unemployed	0.000237	***	0.00015	0.000238	***	0.00024
Percent below the poverty level in 1999	0.005550	***	0.00686	0.003776	***	0.00589
Percent foreign born	0.000122	***	0.00015	-0.000232	***	-0.00033
Units per square mile (00)	-0.000042	***	-0.00011	-0.000053	***	-0.00014
Median gross rent (includes utilities) ($00)	-0.002724	***	-0.00188	-0.002873	***	-0.00292
Median housing value of owner-occupied units ($0000)	0.001731	***	0.00260	0.001636	***	0.00403
Median household income ($000)	-0.000319	***	-0.00152	-0.000751	***	-0.00446
Median travel time of workers 16 years or older not working at home (minutes)	-0.000038		-0.00010	-0.000168	***	-0.00043
Percent below the poverty level in 1999 squared	-0.0000003	***	0.00000	-0.0000002	***	0.00000
Constant	0.030756	**		0.197372	***	
Observations	58,264			57,318		
R^2	0.606			0.519		

SOURCES: 2000: 2000 decennial census retabulated to 2010 census tract boundaries; 2010: 2008-2012 American Community Survey (5-year estimates).
NOTES: Includes only the metropolitan area census tracts with at least 200 occupied housing units in both years. NA = not applicable. Sign. = Significance; confidence levels: */**/*** = 0.10/0.05/0.01. Marginal effect is the effect on the dependent variable of increasing the independent variable by 10% while holding all other independent variables at their sample mean.

Table 2. Number and Size of Marginal Effects on the Gini Index Exceeding 0.004, for National and Categorical Cross-Section Regressions, 2000 and 2010

Characteristic	2000					2010				
	National	Of 4 regions	Of 4 population categories	Of 4 income categories	Of 21 metropolitan areas	National	Of 4 regions	Of 4 population categories	Of 4 income categories	Of 21 metropolitan areas
Percent Black or African American alone	NO	1+	0	0	4	NO	0	0	0	0
Percent White alone not Hispanic	YES,+	3+	3+	0	16+,3-	NO	0	0	0	5+,1-
Percent Asian alone	NO	1+	0	0	0	NO	0	0	0	0
Percent Hispanic or Latino (of any race)	NO	1+	0	0	8+	NO	0	0	0	0
Percent under 18 years old	NO	0	0	0	2-	NO	0	0	0	0
Percent of those 25 years or more without a high school diploma	NO	0	0	0	2+	NO	0	0	0	0
Percent of those 25 years or more with a bachelor's degree	YES,+	3+	4+	4+	13+	YES,+	3+	4+	4+	13+
Percent of households that are married couples	YES,+	4+	4+	4+	16+,1-	YES,+	4+	4+	4+	9+
Percent of householders that are single parents	YES,+	2+	3+	3+	9+	NO	0	0	0	1+
Percent of householders living alone	YES,+	4+	4+	4+	15+,1-	YES,+	2+	2+	3+	7+
Percent owner-occupied units	NO	0	0	0	4-	NO	0	0	0	3+
Percent single-family detached units	NO	0	0	0	2-	NO	0	0	0	2-
Percent of households moving 1995 to 2000	NO	0	0	0	5-	NA				
Percent below the poverty level in 1999	YES,+	4+	4+	4+	20+	YES,+	4+	4+	4+	21+
Median gross rent	NO	0	0	0	0	NO	0	0	0	4-
Median housing value of owner-occupied units	NO	0	3+	1+	14+	YES,+	4+	4+	3+	19+
Median household income	NO	1-	0	0	7-	YES,-	3-	4-	3-	17-

SOURCES: See Table 1.

NOTES: Shown in the table are the number of times that the effect of a 10 percent increase in the indicated independent variable, evaluated at the means of all other independent variables, leads to a change in the Gini coefficient of 0.004 or more (signs of effects are indicated). Excludes all variables where no marginal effects of sufficient size were found. NA = Not applicable.

Table 3. Census Tract Characteristics with the Largest Influence on the Rotated Factor Loadings for the Gini Index of Household Inequality in 2000

Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6
% White alone not Hispanic [-]	% under 18 [+]	% with a bachelor's degree [+]	% White alone not Hispanic [-]	% unemployed [+]	Household population [+]
% Hispanic [+]	% married couples [+]	Median gross rent [+]	% single parents [+]	% below the poverty level [+]	Housing units [+]
% without a high school diploma [+]	% living alone [-]	Median housing value [+]		% below the poverty level squared [+]	
% crowded [+]	% owner-occupied [+]	Median household income [+]			
% who do not speak English "very well" [+]	% single-family detached [+]				
% foreign born [+]	% of structures with 20 units or more [-]				

SOURCES: See Table 1.

NOTES: Only six factors have eigenvalues of greater than 1.0 in the factor analysis of the influences on the Gini index in 2000. The direction of influence is noted in brackets ([]).

Table 4. Changes in Tract Gini Index from 2000 to 2010 (Percent of Row Transitions)

Panel A	**Quintile in 2010**				
Quintile in 2000 (range)	**1** (<0.359)	**2** (0.359-0.390)	**3** (0.391-0.420)	**4** (0.421-0.461)	**5** (>0.461)
1 (<0.349)	53.3%	25.9%	12.7%	6.1%	2.0%
2 (0.349-0.382)	24.6%	30.8%	24.6%	14.5%	5.4%
3 (0.383-0.416)	12.5%	23.1%	27.3%	25.2%	11.8%
4 (0.417-0.461)	6.4%	14.2%	22.6%	31.0%	25.8%
5 (>0.461)	2.5%	6.3%	12.1%	24.0%	55.1%

Panel B	**Distribution in 2010[b] (% of tracts)**				
Distribution in 2000[a] (% of tracts)	**<2 sd below mean** (0.3%)	**1-2 sd below mean** (9.0%)	**within 1 sd of mean** (75.9%)	**1-2 sd above mean** (11.5%)	**<2 sd above mean** (3.3%)
<2 sd below mean (2.7%)	6.5%	56.1%	36.8%	8.0%	
1-2 sd below mean (17.0%)	0.5%	25.2%	73.1%		
within 1 sd of mean (65.0%)	0.1%	4.8%	84.4%	9.4%	1.3%
1-2 sd above mean (10.8%)	1.0%		54.3%	34.2%	10.7%
>2 sd above mean (4.5%)			37.9%	33.7%	28.1%

SOURCES: See Table 1.

NOTES: sd = standard deviation. The Gini index at the tract level is correlated at 0.640 between the level in 2000 and that in 2010.

a. Gini index in 2000: mean = 0.413 and standard deviation = 0.064.

b. Gini index in 2010: mean = 0.407 and standard deviation = 0.071.

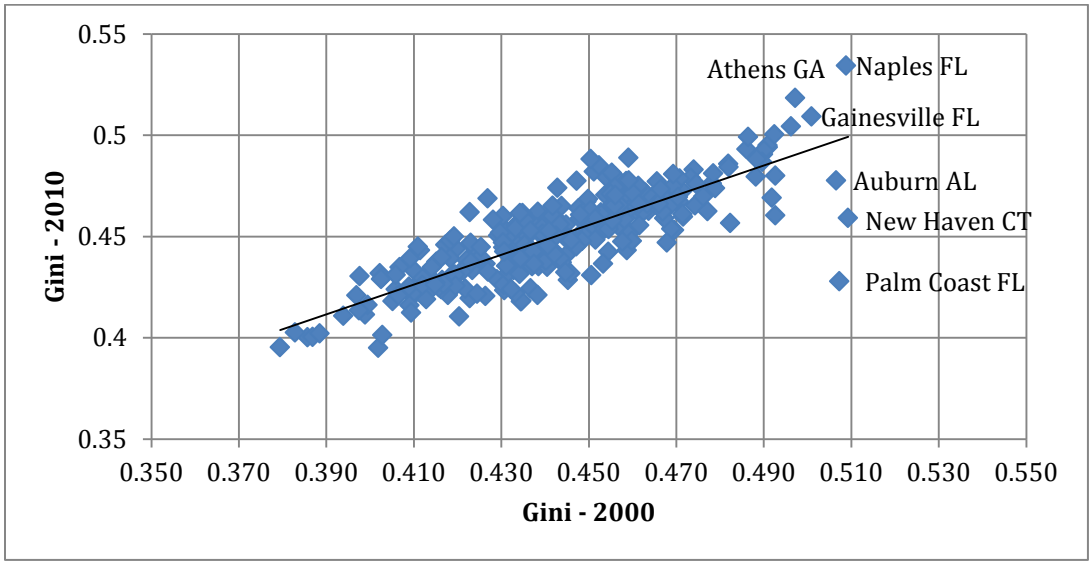
Table 5. Regression of 2000 to 2010 Change in Census Tract Gini Index of Household Income Inequality on Baseline (2000) and Tract Change Characteristics

Independent Variable	**Coefficient**	**Signifi-cance**	**Marginal Effect**
Gini index of household income inequality in 2000	-0.699771	***	-0.0285
Household population (00)	-0.000006		0.0000
Housing Units (00)	0.000316	***	0.0005
Percent Black or African American alone	0.000437	***	0.0006
Percent White alone not Hispanic	0.000482	***	0.0032
Percent Asian alone	0.000286	**	0.0001
Percent American Indian or Alaska Native alone	0.000662	***	0.0000
Percent Native Hawaiian or Pacific Islander alone	0.000740	**	0.0000
Percent Hispanic or Latino (of any race)	0.000401	***	0.0005
Percent under 18 years old	0.000024		0.0001
Percent 65 years or older	0.000468	***	0.0006
Percent of those 25 years or more without a high school diploma	0.000220	***	0.0004
Percent of those 25 years or more with a bachelor's degree	0.001240	***	0.0032
Percent of households that are married couples	0.000774	***	0.0040
Percent of householders that are single parents	0.000625	***	0.0011
Percent of householders living alone	0.001098	***	0.0027
Percent owner-occupied units	0.000244	***	0.0016
Percent of units built in the previous 10 years	-0.000009		0.0000
Percent mobile homes	0.000095	***	0.0001
Percent single-family detached units	-0.000148	***	-0.0009
Percent single-family attached units	-0.000151	***	-0.0001
Percent of structures with 20 units or more	0.000139	***	0.0001
Percent of occupied units with 1.01 or more persons per room	-0.000575	***	-0.0004
Percent of those 5 years or older who do not speak English "very well"	-0.000125	*	-0.0001
Percent of households moving 1995 to 2000	-0.000012		-0.0001
Percent of those 16 years or older in the civilian labor force who are unemployed	0.000097		0.0001
Percent below the poverty level in 1999	0.002732	***	0.0034
Percent foreign born	-0.000145	***	-0.0002
Units per square mile (00)	-0.000045	***	-0.0001
Median gross rent (includes utilities) ($00)	-0.002598	***	-0.0018
Median housing value of owner-occupied units ($0000)	0.001259	***	0.0019
Median household income ($000)	-0.000307	***	-0.0015
Median travel time of workers 16 years or older not working at home (minutes)	-0.000009		0.0000
Percent below the poverty level in 1999 squared	0.000000	***	-0.0005
Change from 2000 to 2010 in:			
Household population (00)	-0.000030	***	0.0000
Housing Units (00)	0.000300	***	0.0001
Percent Black or African American alone	0.000128	***	0.0000
Percent White alone not Hispanic	0.000190	***	0.0001
Percent Asian alone	0.000004		0.0000

Percent American Indian or Alaska Native alone	0.000364	**	0.0000
Percent Native Hawaiian or Pacific Islander alone	0.000551	**	0.0000
Percent Hispanic or Latino (of any race)	0.000030		0.0000
Percent under 18 years old	-0.000365	***	0.0001
Percent 65 years or older	0.000543	***	0.0000
Percent of those 25 years or more without a high school diploma	0.000016		0.0000
Percent of those 25 years or more with a bachelor's degree	0.001132	***	0.0004
Percent of households that are married couples	0.000712	***	-0.0003
Percent of householders that are single parents	0.000523	***	0.0001
Percent of householders living alone	0.001021	***	0.0002
Percent owner-occupied units	0.000187	***	0.0000
Percent of units built in the previous 10 years	0.000150	***	-0.0001
Percent mobile homes	0.000055		0.0000
Percent single-family detached units	-0.000028		0.0000
Percent single-family attached units	-0.000170	***	0.0000
Percent of structures with 20 units or more	0.000189	***	0.0000
Percent of occupied units with 1.01 or more persons per room	-0.000410	***	0.0001
Percent of those 5 years or older who do not speak English "very well"	-0.000135	**	0.0000
Percent of those 16 years or older in the civilian labor force who are unemployed	-0.000001		0.0000
Percent below the poverty level in 1999	0.001972	***	0.0006
Percent foreign born	0.000018		0.0000
Units per square mile (00)	0.000083	***	0.0000
Median gross rent (includes utilities) ($00)	-0.001538	***	-0.0005
Median housing value of owner-occupied units ($0000)	0.001111	***	0.0011
Median household income ($000)	-0.001163	***	-0.0013
Median travel time of workers 16 years or older not working at home (minutes)	-0.000092	*	0.0000
Constant	0.099181	***	NA
Observations	57,318		
R^2	0.474		

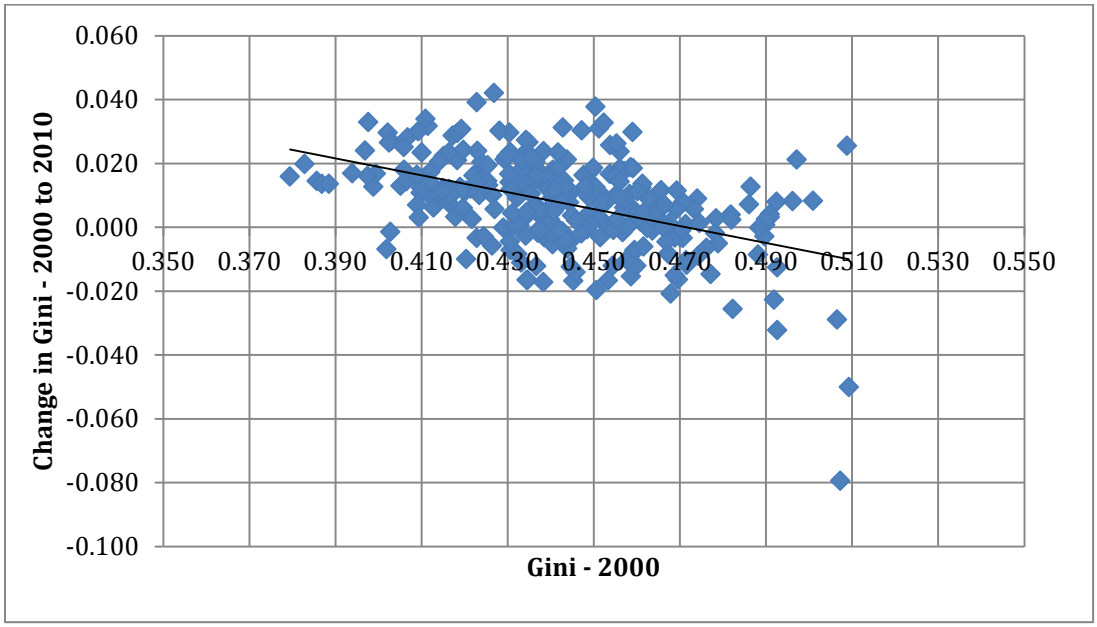
SOURCES and NOTES: See Table 1.

Figure 1. Relationship of Metropolitan Area Household Income Gini Indexes: 2000 and 2010



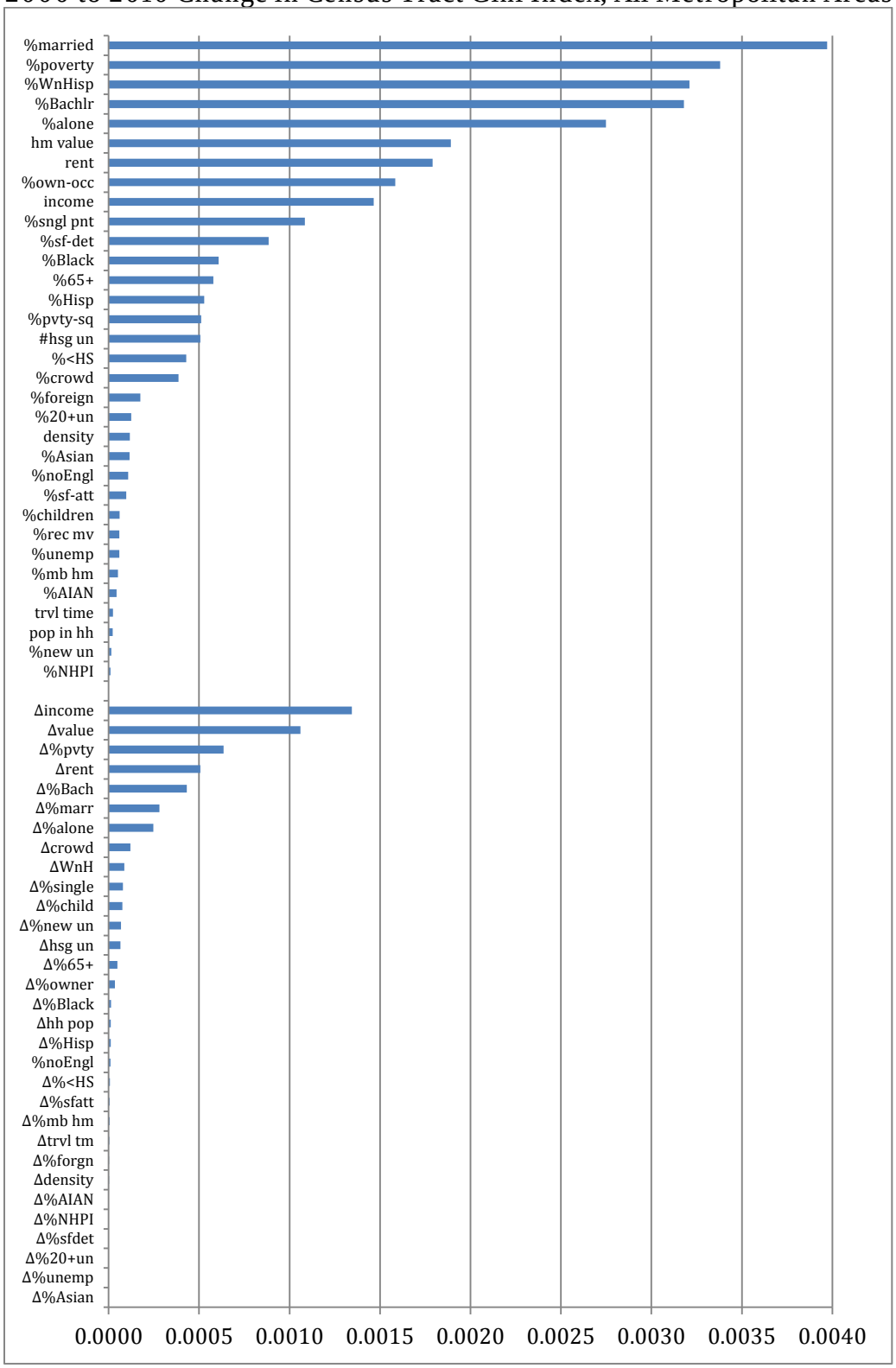
SOURCE: Author's calculations from 2000 Census and 2010 American Community Survey published tables.
NOTES: Excludes metropolitan areas which were not defined in 2000 or whose boundaries were significantly redefined in 2010.

Figure 2. Relationship of 2000 to 2010 Change in Metropolitan Area Household Income Gini Index to Gini Index Value in 2000



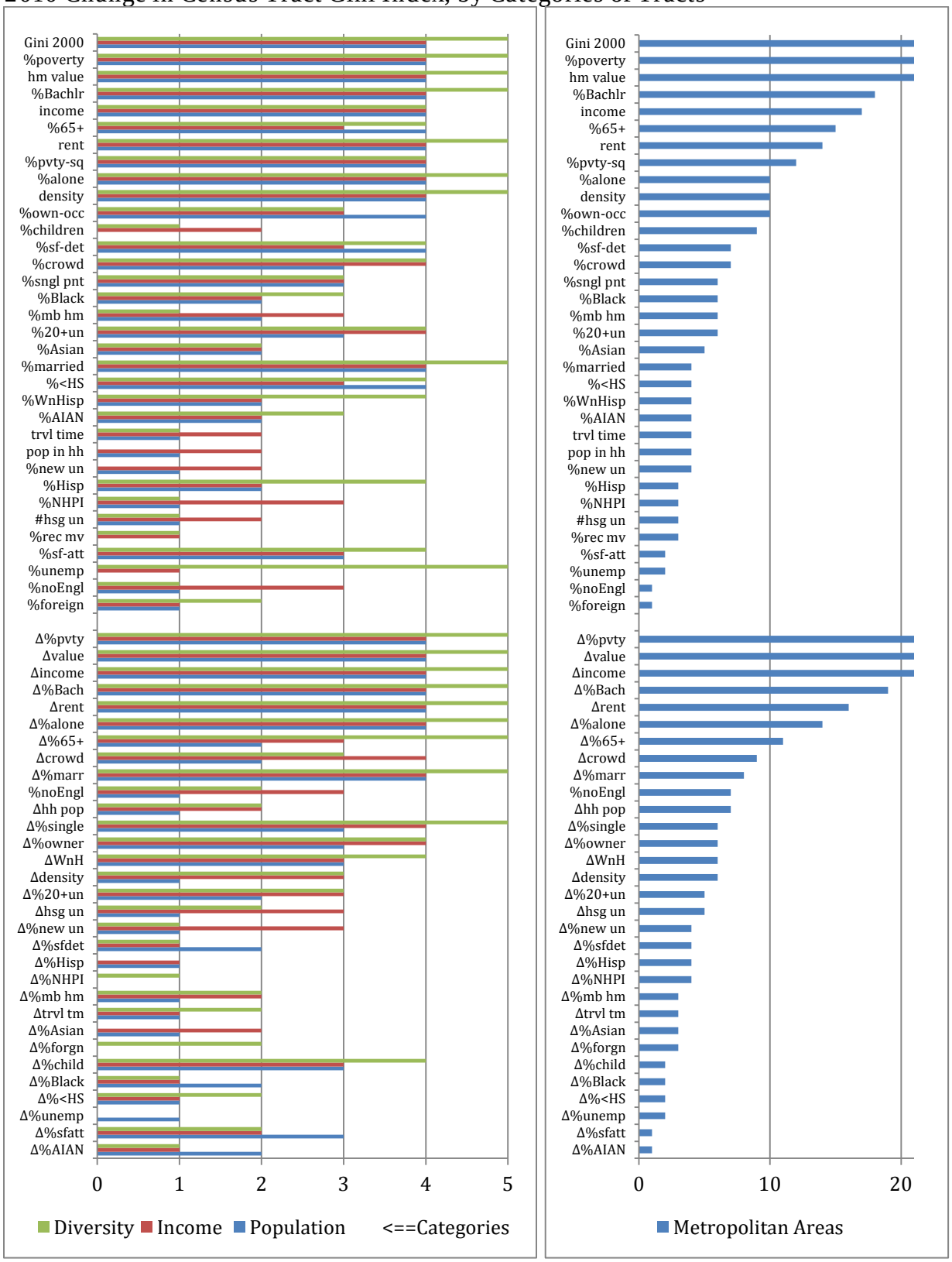
SOURCE: Author's calculations from 2000 Census and 2010 American Community Survey published tables.
NOTES: Excludes metropolitan areas which were not defined in 2000 or whose boundaries were significantly redefined in 2010.

Figure 3. Marginal Effects of Tract Baseline (2000) and Change Characteristics on the 2000 to 2010 Change in Census Tract Gini Index, All Metropolitan Areas pooled



SOURCES and NOTES: See Table 1. Marginal effect of Gini index in 2000 (0.0285) excluded from the figure. Variable names are explained in full in Table 5; Δ = Change.

Figure 4. Significance of Tract Baseline (2000) and Change Characteristics on 2000 to 2010 Change in Census Tract Gini Index, by Categories of Tracts



SOURCES and NOTES: See Table 1. Variable names are explained in full in Table 5; Δ = Change.

APPENDIX TABLE A.1. Description of Tract-level Variables Used in the Analysis

Variable	Percentile	2000	2008-2012	Change
Gini index of household income	25	0.359	0.368	-0.027
	50	0.399	0.406	0.008
	75	0.449	0.450	0.041
	mean	0.407	0.413	0.006
Household population (00)	25	27.47	24.35	-6.01
	50	37.63	36.32	-1.07
	75	49.02	49.91	3.50
	mean	38.88	34.87	-4.01
Housing Units (00)	25	11.34	12.62	0.05
	50	15.37	17.10	0.81
	75	20.13	22.66	2.69
	mean	16.06	18.25	2.18
Percent Black or African American alone	25	1.00	1.10	-0.90
	50	3.50	4.70	0.20
	75	13.50	16.40	2.70
	mean	13.94	14.96	1.02
Percent White alone not Hispanic	25	47.30	58.90	-3.40
	50	78.70	79.90	0.70
	75	91.60	91.30	7.10
	mean	66.61	71.18	4.57
Percent Asian alone	25	0.50	0.30	-0.50
	50	1.50	1.90	0.20
	75	4.00	5.80	1.90
	mean	4.03	5.19	1.16
Percent American Indian or Alaska Native alone	25	0.20	0.00	-0.40
	50	0.30	0.00	-0.10
	75	0.70	0.60	0.10
	mean	0.68	0.63	-0.05
Percent Native Hawaiian or Pacific Islander alone	25	0.00	0.00	-0.10
	50	0.00	0.00	0.00
	75	0.10	0.00	0.00
	mean	0.14	0.16	0.02
Percent Hispanic or Latino (of any race)	25	1.60	2.60	0.00
	50	4.30	7.50	2.10
	75	14.30	21.60	6.30
	mean	13.19	16.99	3.81
Percent under 18 years old	25	21.90	19.50	-4.60
	50	25.90	23.60	-2.10
	75	29.80	27.70	0.40
	mean	25.54	23.44	-2.10
Percent 65 years or older	25	7.50	8.50	-1.20
	50	11.10	12.30	0.90
	75	15.40	16.30	3.10

	mean	12.35	13.25	0.89
Percent of those 25 years or more without a high school diploma	25	8.70	5.90	-8.10
	50	15.90	11.20	-4.00
	75	26.80	20.10	-0.90
	mean	19.53	14.72	-4.81
Percent of those 25 years or more with a bachelor's degree	25	11.70	14.50	-0.20
	50	20.90	25.00	3.30
	75	35.90	41.10	7.30
	mean	25.65	29.47	3.81
Percent of households that are married couples	25	39.40	35.10	-8.00
	50	52.90	48.40	-3.90
	75	64.00	60.20	0.20
	mean	51.34	47.40	-3.94
Percent of householders that are single parents	25	10.70	11.10	-1.80
	50	14.80	16.40	1.30
	75	21.30	24.50	4.70
	mean	17.36	18.87	1.52
Percent of householders living alone	25	17.00	18.80	-1.20
	50	23.40	26.00	2.20
	75	31.20	34.50	5.90
	mean	25.03	27.45	2.42
Percent owner-occupied units	25	49.20	47.30	-5.60
	50	70.60	67.90	-1.40
	75	84.80	82.60	2.30
	mean	64.98	63.15	-1.83
Percent of units built in the previous 10 years	25	2.90	2.90	-6.40
	50	9.80	8.70	-1.60
	75	24.70	18.60	0.70
	mean	17.22	12.66	-4.56
Percent mobile homes	25	0.00	0.00	-0.80
	50	0.30	0.00	0.00
	75	4.60	3.50	0.00
	mean	5.48	4.51	-0.97
Percent single-family detached units	25	40.40	41.20	-2.90
	50	65.50	66.00	0.40
	75	82.40	82.70	3.90
	mean	59.62	60.03	0.41
Percent single-family attached units	25	0.90	0.90	-1.30
	50	2.70	3.10	0.00
	75	7.10	7.90	1.80
	mean	6.45	6.76	0.32
Percent of structures with 20 units or more	25	0.00	0.00	-1.30
	50	2.20	2.60	0.00
	75	10.60	10.40	1.10
	mean	9.03	8.98	-0.05

Percent of occupied units with 1.01 or more persons per room	25	1.30	0.40	-4.00
	50	3.10	1.70	-1.30
	75	7.70	4.50	0.00
	mean	6.72	3.80	-2.92
Percent of those 5 years or older who do not speak English "very well"	25	1.60	1.50	-1.20
	50	3.60	4.40	0.20
	75	10.10	12.40	2.50
	mean	8.74	9.45	0.71
Percent of households moving 1995 to 2000/in the past 12 months	25	39.10	8.80	NA
	50	48.00	13.40	NA
	75	58.50	19.90	NA
	mean	49.84	15.51	NA
Percent of those 16 years or older in the civilian labor force who are unemployed	25	2.90	5.90	1.00
	50	4.60	8.60	3.60
	75	7.60	12.70	6.60
	mean	6.16	10.02	3.86
Percent below the poverty level in 1999/the past 12 months	25	4.40	6.00	-0.70
	50	8.50	11.70	2.40
	75	16.70	21.60	6.60
	mean	12.37	15.59	3.22
Percent foreign born	25	2.60	3.50	-0.70
	50	6.50	8.90	1.20
	75	16.20	20.20	4.30
	mean	12.12	14.05	1.93
Units per square mile (00)	25	3.09	3.83	-0.57
	50	11.92	12.45	0.09
	75	25.17	25.07	1.20
	mean	25.86	26.27	0.41
Median gross rent (includes utilities) ($00)[a]	25	5.05	7.43	1.84
	50	6.28	9.32	2.87
	75	8.01	12.07	4.34
	mean	6.89	10.18	3.30
Median housing value of owner-occupied units ($0000)[a]	25	8.40	12.15	2.91
	50	12.23	18.85	6.33
	75	17.76	31.48	13.43
	mean	15.02	24.63	9.54
Median household income in 1999/the past 12 months ($000)[a]	25	32.73	38.97	3.44
	50	43.55	53.65	9.60
	75	58.17	73.39	17.36
	mean	47.75	59.32	11.57
Median travel time of workers 16 years or older not working at home (minutes)	25	21.40	21.00	-2.60
	50	25.40	25.00	-0.40
	75	30.20	29.60	1.80
	mean	26.28	25.79	-0.49

SOURCE: Census 2000 and 2008-2012 American Community Survey.

NOTES: Observations (number of tracts) = 58,264 except for the following variables for 2010: value (57,787), rent (57,806), travel time (58,251). NA = not applicable (definition differs between 2000 Census and ACS).
a. The 2008-2012 figures are in 2012 dollars.

APPENDIX TABLE A.2. Significance and Direction of Effects of Tract Baseline (2000) and Change Characteristics on 2000 to 2010 Change in Census Tract Gini Index, by Categories of Tracts

Independent Variable	National	Of 4 regions	Of 4 population categories	Of 4 income categories	Of 5 diversity categories	Of 21 metro-politan areas
Gini index of household income inequality in 2000	YES,-	4-	4-	4-	5-	21-
Household population (00)	NO	0	1+	1+,1-	0	2+,2-
Housing Units (00)	YES,+	2+	1+	2+	1+	1+,2-
Percent Black or African American alone	YES,+	2+	2+	2+	3+	3+,3-
Percent White alone not Hispanic	YES,+	2+	2+	2+	4+	3+,1-
Percent Asian alone	YES,+	1+	2+	2+	2+	3+,2-
Percent American Indian or Alaska Native alone	YES,+	1+	2+	2+	3+	4+
Percent Native Hawaiian or Pacific Islander alone	YES,+	0	1+	2+,1-	1+	1+,2-
Percent Hispanic or Latino (of any race)	YES,+	1+	2+	2+	4+	3+,3-
Percent under 18 years old	NO	3+,1-	0	2+	1-	8+,1-
Percent 65 years or older	YES,+	4+	4+	3+	4+	14+,1-
Percent of those 25 years or more without a high school diploma	YES,+	1+	4+	3+	4+	4+
Percent of those 25 years or more with a bachelor's degree	YES,+	4+	4+	4+	5+	18+
Percent of households that are married couples	YES,+	3+	4+	4+	5+	3+,1-
Percent of householders that are single parents	YES,+	3+	3+	3+	3+	5+,1-
Percent of householders living alone	YES,+	4+	4+	4+	5+	10+
Percent owner-occupied units	YES,+	4+	4+	3+	3+	10+
Percent of units built in the previous 10 years	NO	1+,1-	1-	2-	0	2+,2-
Percent mobile homes	YES,+	3+	2+	3+	1-	5+,1-
Percent single-family detached units	YES,-	2+,1-	4-	3-	4-	3+,4-
Percent single-family attached units	YES,-	1+,1-	3-	3-	4-	1+,1-
Percent of structures with 20 units or more	YES,+	3+	3+	4+	4+	5+,1-
Percent of occupied units with 1.01 or more persons per room	YES,-	3-	3-	4-	4-	1+,6-
Percent of those 5 years or older who do not speak English "very well"	YES,-	1+,1-	1-	1+,2-	1-	1+
Percent of households moving 1995 to 2000	NO	1-	0	1-	1-	3-
Percent of those 16 years or	NO	2+	0	1+	2+	1+,1-

older in the civilian labor force who are unemployed						
Percent below the poverty level in 1999	YES,+	4+	4+	4+	5+	21+
Percent foreign born	YES,-	1-	1-	1-	2-	1-
Units per square mile (00)	YES,-	4-	4-	4-	5-	10-
Median gross rent (includes utilities) ($00)	YES,-	4-	4-	4-	5-	14-
Median housing value of owner-occupied units ($0000)	YES,+	4+	4+	4+	5+	21+
Median household income ($000)	YES,-	4-	4-	4-	4-	17-
Median travel time of workers 16 years or older not working at home (minutes)	NO	2-	1+,1-	1+,1-	1-	1+,3-
Percent below the poverty level in 1999 squared	YES,-	4-	4-	4-	4-	1+,11-
Change from 2000 to 2010 in:						
Household population (00)	YES,-	2-	1-	2-	2-	2+,5-
Housing Units (00)	YES,+	3+	1+	3+	2+	5+
Percent Black or African American alone	YES,+	1+	2+,1-	1+	1+	1+,1-
Percent White alone not Hispanic	YES,+	3+	3+	3+	4+	3+,3-
Percent Asian alone	NO	0	1+,1-	1+,1-	0	1+,2-
Percent American Indian or Alaska Native alone	YES,+	0	2+	1+	1+	1+
Percent Native Hawaiian or Pacific Islander alone	YES,+	0	0	0	1+	2+,2-
Percent Hispanic or Latino (of any race)	NO	0	1+	1-	0	4-
Percent under 18 years old	YES,-	2-	3-	3-	1+,3-	1+,1-
Percent 65 years or older	YES,+	4+	2+	3+	4+,1-	11+
Percent of those 25 years or more without a high school diploma	NO	0	1+	1+	2+	1+,1-
Percent of those 25 years or more with a bachelor's degree	YES,+	4+	4+	4+	5+	19+
Percent of households that are married couples	YES,+	4+	4+	4+	5+	8+
Percent of householders that are single parents	YES,+	4+	3+	4+	5+	6+
Percent of householders living alone	YES,+	4+	4+	4+	5+	14+
Percent owner-occupied units	YES,+	3+	3+	4+	3+,1-	5+,1-
Percent of units built in the previous 10 years	YES,+	3+	1+	3+	1+	3+,1-
Percent mobile homes	NO	2+	1+,1-	2+	1+,1-	3+
Percent single-family detached units	NO	1+,1-	2-	1-	1-	1+,3-
Percent single-family attached units	YES,-	1-	3-	2-	2-	1-

Percent of structures with 20 units or more	YES,+	3+	2+	3+	3+	4+,1-
Percent of occupied units with 1.01 or more persons per room	YES,-	3-	2-	4-	3-	9-
Percent of those 5 years or older who do not speak English "very well"	YES,-	1+,3-	1-	1+,2-	2-	3+,4-
Percent of those 16 years or older in the civilian labor force who are unemployed	NO	1+	1-	0	0	1+,1-
Percent below the poverty level in 1999	YES,+	4+	4+	4+	5+	21+
Percent foreign born	NO	1+,1-	0	0	1+,1-	2+,1-
Units per square mile (00)	YES,+	3+	1+	3+	2+,1-	5+,1-
Median gross rent (includes utilities) ($00)	YES,-	4-	4-	4-	5-	16-
Median housing value of owner-occupied units ($0000)	YES,+	4+	4+	4+	5+	21+
Median household income ($000)	YES,-	4-	4-	4-	5-	21-
Median travel time of workers 16 years or older not working at home (minutes)	YES,-	1-	1-	1+	2-	1+,2-

SOURCES and NOTES: See Table 1.

APPENDIX TABLE A.3. Significance and Direction of Effects of Tract Baseline (2000) and Change Characteristics on 2000 to 2010 Change in Census Tract Gini Index, for the 21 Largest Metropolitan Areas

METROPOLITAN AREA	Atlanta	Baltimore	Boston	Chicago	Dallas	Denver	Detroit	Houston	Los Angeles	Miami	Minne-apolis
Gini index of household income inequality in 2000	-	-	-	-	-	-	-	-	-	-	-
Household population (00)			-					+	+		
Housing Units (00)									-		
Percent Black or African American alone			+		+					-	
Percent White alone not Hispanic			+		+						
Percent Asian alone			+		+						
Percent American Indian or Alaska Native alone	+	+		+							
Percent Native Hawaiian or Pacific Islander alone					+						
Percent Hispanic or Latino (of any race)			+		+					-	
Percent under 18 years old			+	+				+	+	-	+
Percent 65 years or older	+	+	+	+	+		+	+	+		
Percent of those 25 years or more without a high school diploma					+	+					+
Percent of those 25 years or more with a bachelor's degree	+	+	+	+	+	+	+	+	+	+	+
Percent of households that are married couples									-		
Percent of householders that are single parents							+		-		
Percent of householders living alone	+			+			+				+
Percent owner-occupied units			+		+	+	+	+		+	
Percent of units built in the previous 10 years	+			+	-						
Percent mobile homes		+	+		-				+		
Percent single-family detached units				+	-	-	-	-	+		
Percent single-family attached units							-				
Percent of structures with 20 units or more							+	-	+		
Percent of occupied units with 1.01 or more persons per room					-				-		+
Percent of those 5 years or older who do not speak English "very well"											
Percent of households moving 1995 to 2000											
Percent of those 16 years or older in the civilian labor force who are unemployed									+		
Percent below the poverty level in 1999	+	+	+	+	+	+	+	+	+	+	+
Percent foreign born											
Units per square mile (00)					-	-	-	-	-		
Median gross rent (includes utilities) ($00)		-	-		-	-		-	-		

Median housing value of owner-occupied units ($0000)	+	+	+	+	+	+	+	+	+	+	+
Median household income ($000)	-	-	-	-	-	-	-	-	-	-	
Median travel time of workers 16 years or older not working at home (minutes)				-		-		+			
Percent below the poverty level in 1999 squared		-	-	-		-	-	+	-		-
Change from 2000 to 2010 in:											
Household population (00)	-			-				-		+	
Housing Units (00)			+	+				+			
Percent Black or African American alone									+	-	
Percent White alone not Hispanic				-					+		-
Percent Asian alone					+						
Percent American Indian or Alaska Native alone	+										
Percent Native Hawaiian or Pacific Islander alone	+					-					
Percent Hispanic or Latino (of any race)			-					-		-	
Percent under 18 years old							+				
Percent 65 years or older		+		+		+		+	+		
Percent of those 25 years or more without a high school diploma											
Percent of those 25 years or more with a bachelor's degree	+	+	+	+	+	+	+	+	+	+	+
Percent of households that are married couples			+		+	+		+			
Percent of householders that are single parents					+		+				
Percent of householders living alone			+	+	+	+	+	+	+	+	+
Percent owner-occupied units				+	+	-			+		+
Percent of units built in the previous 10 years				+					+		
Percent mobile homes						+					
Percent single-family detached units				+	-			-			-
Percent single-family attached units											-
Percent of structures with 20 units or more							+	-			
Percent of occupied units with 1.01 or more persons per room		-	-		-				-		
Percent of those 5 years or older who do not speak English "very well"		+		-					+	-	-
Percent of those 16 years or older in the civilian labor force who are unemployed					+						
Percent below the poverty level in 1999	+	+	+	+	+	+	+	+	+	+	+
Percent foreign born		-									+
Units per square mile (00)				+			-		+		

Median gross rent (includes utilities) ($00)	-		-	-	-	-		-	-		-
Median housing value of owner-occupied units ($0000)	+	+	+	+	+	+	+	+	+	+	+
Median household income ($000)	-	-	-	-	-	-	-	-	-	-	-
Median travel time of workers 16 years or older not working at home (minutes)			+	-							
Constant				+				+	+	+	
Observations	927	655	975	2,148	1,220	567	1,252	1,029	2,815	1,156	750
R^2	0.586	0.649	0.460	0.569	0.550	0.658	0.598	0.619	0.611	0.566	0.486

METROPOLITAN AREA	New York	Phila-delphia	Phoenix	River-side	St. Louis	San Diego	San Francisco	Seattle	Tampa	Washing-ton
Gini index of household income inequality in 2000	-	-	-	-	-	-	-	-	-	-
Household population (00)					-					
Housing Units (00)				-	+					
Percent Black or African American alone	-								+	-
Percent White alone not Hispanic	-								+	
Percent Asian alone	-								+	-
Percent American Indian or Alaska Native alone		+								
Percent Native Hawaiian or Pacific Islander alone	-						-			
Percent Hispanic or Latino (of any race)	-								+	-
Percent under 18 years old	+	+			+					
Percent 65 years or older	+	+	-		+		+	+		+
Percent of those 25 years or more without a high school diploma					+					
Percent of those 25 years or more with a bachelor's degree	+	+	+	+	+			+	+	
Percent of households that are married couples	+		+							+
Percent of householders that are single parents	+		+					+		+
Percent of householders living alone	+	+	+					+	+	+
Percent owner-occupied units	+			+		+			+	
Percent of units built in the previous 10 years					-					
Percent mobile homes							+			+
Percent single-family detached units										+
Percent single-family attached units										+
Percent of structures with 20 units or more	+						+	+		
Percent of occupied units with 1.01 or more persons per room	-	-	-		-					

Percent of those 5 years or older who do not speak English "very well"							+				
Percent of households moving 1995 to 2000		-	-				-				
Percent of those 16 years or older in the civilian labor force who are unemployed							-				
Percent below the poverty level in 1999	+	+	+	+	+	+	+	+	+	+	
Percent foreign born							-				
Units per square mile (00)		-	-	-		-				-	
Median gross rent (includes utilities) ($00)	-	-	-	-		-	-	-		-	
Median housing value of owner-occupied units ($0000)	+	+	+	+	+	+	+	+	+	+	
Median household income ($000)		-	-	-	-	-			-	-	
Median travel time of workers 16 years or older not working at home (minutes)	-										
Percent below the poverty level in 1999 squared	-	-					-			-	
Change from 2000 to 2010 in:											
Household population (00)		-	+							-	
Housing Units (00)	+						+				
Percent Black or African American alone											
Percent White alone not Hispanic	+					+			-		
Percent Asian alone		-		-					-		
Percent American Indian or Alaska Native alone											
Percent Native Hawaiian or Pacific Islander alone				+						-	
Percent Hispanic or Latino (of any race)										-	
Percent under 18 years old									-		
Percent 65 years or older	+	+		+			+	+		+	
Percent of those 25 years or more without a high school diploma					+	-					
Percent of those 25 years or more with a bachelor's degree	+	+	+	+	+			+	+	+	
Percent of households that are married couples	+		+		+				+		
Percent of householders that are single parents	+		+	+					+		
Percent of householders living alone	+	+	+	+					+		
Percent owner-occupied units						+					
Percent of units built in the previous 10 years	+		-								
Percent mobile homes				+			+				
Percent single-family detached units											
Percent single-family attached units											
Percent of structures with 20 units or more	+	+						+			

Percent of occupied units with 1.01 or more persons per room	-	-	-		-	-				
Percent of those 5 years or older who do not speak English "very well"	-						+			
Percent of those 16 years or older in the civilian labor force who are unemployed				-						
Percent below the poverty level in 1999	+	+	+	+	+	+	+	+	+	+
Percent foreign born	+						-			
Units per square mile (00)	+					+				+
Median gross rent (includes utilities) ($00)	-	-	-	-		-	-	-		-
Median housing value of owner-occupied units ($0000)	+	+	+	+	+	+	+	+	+	+
Median household income ($000)	-	-	-	-	-	-	-	-	-	-
Median travel time of workers 16 years or older not working at home (minutes)	-									
Constant	+						+		-	+
Observations	4,273	1,418	843	796	610	616	941	708	701	1,281
R^2	0.540	0.529	0.554	0.611	0.542	0.606	0.540	0.565	0.550	0.554

SOURCE and NOTES: See Table 1. Metropolitan areas listed by name of major city rather than the official title.