**Rough Working Draft**

**Immigration, Segregation and Poverty in the U.S.**

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**Introduction**

(This section needs to be re-worked and expanded to include literature on immigrant segregation and poverty and other items– including previous literature on immigrants and racial/ethnic segregation, theorizing on the potential role of immigrant segregation influencing immigrant poverty –and the potential pathways by which these affects might occur, and as well some potential expectations regarding answers to the questions posed in the paper. The current intro is provided to give some sense of the direction of the paper.)

Segregation is seemingly a permanent feature of urban America. And the physical isolation of blacks and other minority groups is been a major concern because of the social and economic costs associated with segregation. Many racially segregated neighborhoods are disadvantaged and suffer disproportionately from high concentrations of poverty, joblessness, hopelessness and political indifference, lower levels of education attainment, physical isolation from important job centers, among many other problems including unavailability of good schools (Wilson, 1987; Massey and Denton, 1993; Cutler and Glaeser, 1997; Massey and Fischer, 2000; Raphael and Stoll, 2002).

Over the past two decade, however, segregation levels especially between blacks and nonblacks, particularly blacks and whites, have declined. For example, in 1980, the black-white index of dissimilarity was 73.8 and dropped nearly 9 percentage points to 65.0 in 2000 (Iceland, et. al., 2002; Logan, 2003).

There is good reason to believe that immigration might influence these observed segregation levels. During this period immigration in the U.S. increased so that between 1990 and 2000 the foreign-born population increased by 57 percent (compared with an increase of 13 percent for the total U.S. population) with most (about 52 percent) migrating from Latin America, especially Mexico. Many migrant households inhabit communities that were formerly highly segregated African-American neighborhoods, with high poverty rates, and the many attendant social ills, although many immigrants, in particular Hispanic immigrants, locate in

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distant suburbs close to higher income households yet often segregated in small enclaves (Singer, 2004).

Results from segregation indices among different racial/ethnic groups offer some additional evidence that immigrants might influence racial/ethnic segregation levels, especially those for blacks. In 2000, for example, black segregation from other racial and ethnic minority groups was lower than that between blacks and whites. The black-white segregation index was 65, while the black-Latino index was 51. Moreover, over the 1990s, racial segregation between blacks and other groups declined more dramatic between blacks and Hispanics than between blacks and whites: the index of dissimilarity between blacks and whites declined by 3.8 percentage points from 1990 to 2000, while the equivalent decline between blacks and Hispanics was 6.1 percentage points (Stoll, 2004). In combination with increased immigration, these features will likely lead to lower segregation levels, particularly among blacks.

Yet, there is very limited scholarship on the question of whether immigration influences racial and ethnic segregation in the U.S. Instead, the empirical research on segregation has focused on other areas of inquiry, including how to measure segregation, whether it is increasing or decreasing over time, how it differs among and between different racial and ethnic groups, how it differs by income level of residents, and what its determinants are (Iceland, et. al., 2002; Ihlanfeldt and Scafidi, 2002; Glaeser and Vigdor, 2001; Massey and Denton, 1993). Scholarship on the determinants of segregation have focused on suburban housing discrimination (including that found in mortgage determination, and real estate agents and landlord behavior), racial preferences for integrated neighborhood, or income segregation (Massey and Denton, 1993; Goering and Wienk, 1996; Massey and Fischer, 1999; Ondrich, et. al.,1999; Ondrich, et. al., 2001; Ihlanfeldt and Scafidi, 2002; Charles, 2005).

This paper is intended to fill this void and plans to focus on immigration, segregation and poverty. It explores the extent of residential segregation of immigrants, whether and the extent to which immigration influences racial and ethnic segregation in the U.S., and whether and to what extent immigrant segregation influences poverty. Thus, the central questions pursued include:

- What is the level of immigrant segregation in the U.S., and how does it differ by the area of origin?
- To what extent does historic segregation in the U.S. influence immigrant segregation?
- To what extent does immigration influence racial and ethnic segregation in the U.S.?
- Does immigrant segregation influence immigrant poverty in the U.S.?

**Data and Methods**

To answer these questions, I use data from 2005-09 U.S. Census American Community Survey (ACS), which provide five year averages of counts of the population and other relevant population characteristics at the metropolitan area and census tract levels. The 2005-09 ACS provides the most recent data available at geographic levels small enough to estimate reliable measures of segregation. The 1-year ACS data is collected annually during the interceding Census years but do not collect data at lower levels of geography (typically below 50,000) to generate reliable estimates.

The primary measure of residential segregation used in this study is the index of dissimilarity, and this measure is calculated for a number of pair-wise combination of groups for the 150 largest metropolitan areas in the U.S.[1] Metropolitan areas are restricted to these areas (representing areas with populations greater than about 250,000) in order to generate enough

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[1] The metropolitan areas used in the analysis are Metropolitan Statistical Areas (MSAs) and Primary Metropolitan Statistical Areas (PMSAs) as defined by the Office of Management and Budget (OMB) in 1999 for Census 2000. Consolidated Metropolitan Statistical Areas (CMSAs), which are usually much larger than MSAs or PMSAs, were not included among these metropolitan areas.

population counts for specific groups, such as Asian immigrants, to reliably calculate measures of segregation. Each of the sub-groups examined below have at least 100 persons in the metropolitan area. The index of dissimilarity, a measure of evenness, is the most commonly used measure of segregation, but not the only one in the segregation literature. Others include the isolation, exposure and entropy indexes, for example, and these measure different aspects of the scope or kind of segregation.

These alternative measures of segregation are well noted in the literature and their differences and consequences have been examined elsewhere (Massey and Denton, 1988). I alternately calculated segregation indices using the isolation index, a measure of exposure that indicates the probability that a group member would come into contact with a member of another group, but the qualitative findings were very similar to those using the dissimilarity index and thus their results are not reported. I chose to focus on results using the dissimilarity index because it is a commonly used and well understood measure of segregation, and more importantly because its reliability as a measure is less sensitive to the relative size of groups being examined. This is important since some sub-immigrant groups analyzed in his paper have smaller population counts in many metropolitan areas.[2]

The equation used to calculate the index of dissimilarity is quite straightforward. For example, define *immigrant$_i$* as the immigrant population residing in census tract *i* (where *i*=(1,...,n) and indexes the tracts in a given metropolitan area), *white$_i$* as the white (non-Hispanic, native born) population residing in census tract *i*, *immigrant* as the total immigrant population in

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[2] The dissimilarity index provides information on how geographically evenly distributed members of a certain group are relative to members of another group, and thus the population size of that group does not affect the calculation of the index. In contrast, the isolation index, is much more sensitive to the size of groups being examined because, all else equal, the larger the group being examined, the higher will be the isolation index. This is because a larger group will more likely share neighborhoods with other members of hat same group, and thus would be more isolated according to the index calculation.

the metropolitan area, and *white* as the total number of whites in the metropolitan area. The dissimilarity score between immigrants and whites is given by

(1)
$$D = \frac{1}{2} \sum_i \left| \frac{immigrant_i}{immigrant} - \frac{white_i}{white} \right|.$$

As written, the dissimilarity index ranges between 0 (perfect balance) and 1 (perfect imbalance). Hence, the index value between immigrants and whites for metropolitan areas in the sample describes the extent to which the areas (measured as census tracts) where immigrants tend to reside in are different from the areas in which whites are located. The results from this equation are multiplied by 100 to allow one to interpret the index values as the percent (rather than the proportion) of either of the populations that would have to move to yield perfect balance.

The potential problems of using a dissimilarity index to measure segregation are well documented. For example, the dissimilarity index does not actually measure the physical distance between the average member of a given populations. The index measures the imbalance across geographic sub-units of the metropolitan area (for example, census tracts) between members of populations. To take an extreme example, suppose that all immigrant residents resided in one zip code of a city while all whites were located in a different census tract. Whether these two tracts are one mile apart from one another or 20 miles apart will not influence the dissimilarity measure. In both instances, the dissimilarity index will be equal to 100. Yet, the geographic distance could influence the likelihood that there is social contact of individuals across tracts. Nonetheless, as a summary measure, the dissimilarity measure does allow comparisons across geographic areas.

Despite this, there are a number of strengths of the dissimilarity index as well. First, it allows segregation to be measured in a uniform way across metropolitan areas. Secondly, the actual numerical value of the index of dissimilarity has a convenient interpretation. Specifically, the index can be interpreted as the percent of either the immigrant or white population that would have to relocate to different areas to completely eliminate any geographic imbalance. For example, as Figure 1 indicates, the 2005-09 index value describing the imbalance between the residential distributions of immigrants and whites is 43.9 for the metropolitan areas in the sample.[3] This indicates that in 2005-09, about 44 percent of immigrants would have had to relocate within metropolitan areas to be spatially distributed in perfect proportion with the geographic residential distribution of whites (native born, non-Hispanic).

**Results**

*Immigrant Segregation Levels*

Figure 1 also demonstrates that there is tremendous variation in immigrant segregation depending on immigrants' area of origin. Immigrants from Europe demonstrate the lowest levels of segregation from whites followed by those from Asia, Latin American, Africa and the Caribbean.[4] These results are largely consistent with previous research in this area using Census data from 2000 (Iceland and Lake, 2004). However, segregation levels of those from Asia and Latin America also vary by the areas of origin within these large sending regions. For example,

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[3] In these and subsequent segregation scores, the index of dissimilarity results are weighted by the respective populations in each metro area. For example, the immigrant/white dissimilarity score is weighted by the number of immigrants in the metro area. Weighting in this way permits us to interpret the scores as the average degree of segregation by the typical member of the respective group. Also, weighting in this way tends to place more weight on metropolitan areas with larger populations since members of respective groups tend to be larger in larger metropolitan areas.

[4] Latin American immigrants do not include immigrants from Spanish speaking islands in the Caribbean; only those from Mexico, Central and South America. Caribbean immigrants do include those from Puerto Rico (despite their American citizenship) and do include immigrants from Spanish, French and Dutch speaking island. Excluding Puerto Ricans from the Caribbean category did not alter the basic findings reported here for immigrants from the Caribbean.

within Latin America, there is some variation in the levels of segregation from whites by immigrants from Mexico, other parts of Central America, and the rest of Latin America, with the latter demonstrating higher segregation scores.   Also, the index of dissimilarity of immigrants from Eastern Asia (including China, Japan, and Korea) is 54.2 and that for those from Southeast Asia (including Vietnam, Philippines, Cambodia, etc.) is 54.6, much higher than that for those from Asia as a whole.[5]

A key question is whether these levels of immigrant segregation are considered high or low. One way to think about this is to compare these segregation levels to domestic groups with persistently high segregation scores such as African Americans. Figure 1 also provides their segregation score, 63.8 in 2005-09.  Thus, relative to black segregation in the U.S., the segregation levels of those from the Caribbean, Africa, Mexico, and other parts of Latin American are comparable.  Another way to consider these segregation levels is to consider the literature on racial segregation in housing.  It has developed a typology of segregation levels based on the following categories: low, moderate and high segregation levels according to the following cutoffs: 0-40, 40 to 60 and over 60.   The literature describe indexes of dissimilarity of over 60 as being high or hyper levels of segregation, with that between 40 to 60 as moderate, and below 40 as low (Massey and Denton, 1993).  According to these conventions, immigrant segregation from Europe is considered low, while that from Asia is considered moderate. Segregation levels of those from the Caribbean, Africa, Mexico, and other parts of Latin American are considered in the hyper segregation range.

Do immigrant segregation levels vary by region in the U.S.? This is an important question since in the post war period, segregation levels of minority groups of concern such as

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[5] Obviously, the lower index of dissimilarity score for Asians as a whole relative to that of Southeastern and Eastern Asians is driven by lower segregation scores of those from Central Asia (including India, Afghanistan, etc.,) whose separate scores are not reported.

African Americans have been higher in the Midwest and Northeast than in the West or South (get cite). Figure 2 provides data on segregation levels by region for broad sub-categorizations of immigrants. Interestingly, for all immigrants, and for those from Europe or Asia, there is no statistically significant variation in segregation levels by region for these groups.

This is not the case for immigrants from Latin American, Africa or the Caribbean. For these groups, segregation levels are lower in the South and West than in the Midwest or Northeast, following regional patterns of segregation experienced by African Americans. In particular, segregation levels of immigrants from Latin American (and Mexico) are highest in the Northeast and lowest in the South. Immigrants from African and the Caribbean experience higher levels of segregation in the Midwest, but the lowest levels of segregation differ for each group: slightly lower for Africans in the West, and lower for those from the Caribbean in the South.

The reasons for these regional variations in segregation levels for those from Latin American, Africa and the Caribbean are likely many, but could include a few noteworthy factors. Segregation levels are on average higher for more recent immigrant than those with a longer vintage (Iceland and Lake, 2004). Consequently, the higher levels of segregation in the Northeast for those immigrants from Latin American and in particular Mexico could reflect their relatively new presence in these areas. On the other hand, the lower levels of segregation in the South (and West) could reflect trends consistent with notions of a "new South" characterized by more openness as displayed lower levels of segregation over the past decades despite the residue of Jim Crow.

*Immigrant Segregation and Pre-existing Segregation*

The latter factor suggests that the level or historical experience of segregation in cities or metropolitan areas could influence overall immigrant segregation patterns. That is, cities that have a pre-existing "segregation infrastructure" may tend to systematically segregate immigrants more. One way to examine this possibility is to explore the relationship between current segregation levels of immigrants and African American segregation from an earlier period. African American segregation reflects deeply rooted, historical segregation patterns in the U.S. that could influences segregation patterns of other groups, especially immigrants. To do this, I calculate indices of segregation between blacks and whites in 1990 for the same metropolitan areas in the sample.[6]

To examine this question, Figure 2 present a scatter plot of the segregation index for immigrants in 2005-09 plotted on the y-axis, against 1990 segregation levels between blacks and whites plotted on the x-axis. Accordingly, I first calculate the 2005-09 immigrant segregation index and the 1990 black segregation index for each metropolitan area in the sample. I then plot these metropolitan-area specific measures against one another. A linear regression line is fitted to the data and is shown in the right side of the figure. The data in the figure demonstrates that segregation levels of immigrants from whites are statistically significantly higher in metropolitan areas with higher levels of black/white segregation in 1990. The regression equation indicates that a 10 percentage point increase in segregation levels in 1990 between blacks and whites is associated with a 1.5 point increase in the segregation levels of immigrants from whites in 2005-09.

The figure also highlights a few metropolitan areas that are representative of this relationship. New York, NY is characterized as having a high level of black-white segregation

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[6] I also calculated segregation indices between blacks and whites for 2000, and found similar results to that reported here. I chose to report the results using the 1990 data because a better case can be made that segregation levels during that period should be more independent of immigrants' vocational decisions in the current period.

in 1990 and a high level of segregation between immigrants and whites in 2005-09. On the other hand, Boise, ID is on the opposite side of this spectrum; it had a relatively low level of black/white segregation in 1990 and a low level of immigrant/white segregation in the most recent period. A number of metropolitan areas deviate from this pattern, however. Cases in points include Ft. Myers, FL and Brownsville, TX. Ft. Myers had a high level of black/white segregation in 1990 but a relatively low level of immigrant segregation in 2005-09. Brownsville is the complete opposite, but for reasons that are not entirely clear.

Figure 3 provides coefficients from a series of bi-variate regressions of the respective immigrant groups as a function of black/white segregation in 1990 to examine whether this pattern holds for all sub-immigrant groups. The figure also provides the coefficient predicting black/white segregation in 2005-09 for comparison purposes. The results are largely consistent with those for immigrants as a whole, showing a fairly strong, positive, and in most cases, statistically significant relationship between immigrant segregation in the current period and black/white segregation from an earlier period. In particular, this relationship is strongest for immigrants from Latin American, including Mexico, and from Southeast Asia. Though not shown here, it is important to note that the magnitude and strength of these coefficients survive even after controls for the physical and socio-economic characteristics of metropolitan areas (described in more detail below) are included in the regressions. This indicates that these results are not driven by systematic differences in observed metropolitan characteristics.

None of these coefficients however compare in size to the magnitude of the coefficient predicting current levels of black segregation across metropolitan areas as a function of past black segregation. Still, the latter relationship is far from near one suggesting that segregation levels have declined in metropolitan areas at varying paces over the past 15 or so years. What is

also noteworthy is that African and Caribbean segregation levels are largely uncorrelated with black segregation from an earlier period (even though their mean segregation levels are relatively high), indicating that they tend to live in metropolitan areas without pre-existing "segregation infrastructures."

*Racial/Ethnic Segregation and Immigration*

Having discovered some evidence that historic black/white segregation levels influence the degree of immigrant segregation in the U.S., a key question of the paper is whether immigrants influence segregation levels of particularly those groups such as African Americans who experience relatively high levels of segregation. The first approach to addressing this question is to simply examine dissimilarity index scores between blacks and nonblacks with and out immigrants included in the tabulations. Differences in these scores (and the direction of the difference) will provide important information regarding whether, to what extent and in what direction immigrants might influence segregation of key groups in the US.

Figure 4 provides the dissimilarity index calculations between blacks and nonblacks (which includes immigrants in the calculation for nonblacks), between blacks and nonblack natives, as well as for blacks and nonblack immigrants in 2005-09.[7] The dissimilarity index score between blacks and nonblacks is 58.7. However, when such scores are calculated between blacks and the nonblack native born, the dissimilarity index increases by about 1 and a half points to 60.3. The dissimilarity index score between blacks and nonblack immigrants is 57.2 about 3 points lower than that between blacks and nonblack natives. However, the difference between the dissimilarity scores of black/nonblack native and black/nonblack immigrants is statistically significant only at the 12 percent level (though not shown). These results provide

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[7] The results of these dissimilarity indexes are insensitive to whether black immigrants are included in the calculations; nor are they sensitive to whether black immigrants are included in the black population.

limited evidence that immigrants influence segregation levels of black positively; that is, there is limited evidence that immigrants increase segregation levels of blacks. More likely, the initial evidence points to immigrants having no or very little influence in lowering segregation levels of blacks.

I probe this relationship in more depth by analyzing scatter plots of segregation of blacks and the percentage of the metropolitan area population that are immigrants. Figure 5 presents this scatter plot, where segregation of blacks is plotted on the y-axis, and the percentage of the metropolitan area population that are immigrants is plotted on the x-axis. As before, a linear regression line is fitted to the data to specify the relationship quantitatively and is shown in the right side of the figure.

Figure 5 indicates that segregation levels of blacks are statistically significantly (at the 10 percent level) lower in metropolitan areas with higher proportions of immigrants. The regression equation indicates that a 10 percentage point increase in the percentage of the metropolitan area population that are immigrants is associated with a near 2 point decrease in the segregation levels of blacks. The figure also highlights two metropolitan areas that represent this relationship at the extremes. San Jose, CA is characterized as having a high percentage of immigrants and a relatively low black segregation. On the other hand, Flint, MI is at the opposite extreme.

In separate analysis not shown here, I test for potential nonlinearities in this relationship by splitting the percentage of the metro population that are immigrants into quintiles and regressing blacks' segregation levels against these quintiles of immigrant representation across metro areas. I find no evidence of nonlinear influences of immigrant representation on black segregation levels as the point estimates of quintiles (with first quintile as the reference category) are statistically significant with very similar point estimates of about .200. Squaring the

proportion immigrant term and including it into the equation also generated no evidence of non-linearities in the relationship between immigrant representation and black segregation levels.

Immigration could also influence the segregation of other ethnic and racial groups in the U.S. Figures 6 and 7 are provided to explore whether immigration is related to the segregation of Latinos and Asians irrespective of their immigrant status. Both scatter plots are similar in method to that shown in Figure 5, and plot the segregation of Latinos (Asians) on the y-axis, and plot the percentage of the metropolitan area population that are immigrants on the x-axis. Each also displays a linear regression line fitted to the data.

The results of these exercises differ and suggest that immigration has differential influences on the segregation of ethnic groups. Figure 6 indicates that segregation levels of Latinos are statistically significantly (at the 10 percent level) higher in metropolitan areas with higher proportions of immigrants. The regression equation indicates that a 10 percentage point increase in the percentage of the metropolitan area population that are immigrants is associated with a 1.5 point increase in the segregation levels of Latinos. On the other hand, Figure 7 demonstrates that the segregation levels of Asians are negatively related to higher levels of immigrant representation in metropolitan areas. This relationship is larger in magnitude and more statistically significant than that for the other groups analyzed in this section. As before, metropolitan areas that represent extreme ends of these relationships are highlighted in both figures, and are provided simply for instructional purposes.

To be sure, inferences based on these bi-variate relationships could be misleading, particularly if they are confounded by other metropolitan area characteristics. For example, larger metropolitan areas are more likely to have higher levels of ethnic segregation and higher

percentages of immigrant representation, and thus the relationship between segregation and immigrant representation could be spurious through metropolitan area size.

To address these and other related issues, I control for an extensive set of observable metropolitan area characteristics to estimate the relationship between segregation and immigrant representation. I do so by conducting a series of regressions that estimate the influence of immigration on segregation given the following equation:

$$seg_i = imm_i \beta_{11} + \beta'_{12} X_i + \varepsilon_{1i} \qquad (2)$$

where $i$ indexes metropolitan areas, $seg_i$ is the dissimilarity index for the relevant pair-wise group, $imm_i$ is the percentage of the metropolitan area that is foreign born (and area of origin of the foreign born), and $X_i$ is a variety of metropolitan area characteristics variables, and $\varepsilon_{1i}$ is a mean-zero, randomly distributed disturbance term.

Metropolitan area characteristics that may co-vary with segregation and mediate the relationship between immigration and segregation could include "physical" characteristics such as region, population size, and the age of the oldest, main central city of the metropolitan area. In addition, they also include socio-economic and political characteristics of these areas such as the fraction of the population that is over 65 or is college educated, percent of metro area that is black (or Latino), and the percent of employment that is in manufacturing, service or retail trade, the metro areas' poverty rate, and the strength of the local labor market (as measured by the white male employment-to-population ratio), as well as the number of municipalities in metropolitan areas.

Table A.1 in the appendix shows the means of the independent variables used in the analysis, both with and without weights for the metropolitan area's population size.  Most of these variables are collected from the 2005-09 ACS.  However, data on the age of the main

central city and the number of municipalities in the metropolitan area are from the U.S. Census of Governments Organization file.[8]  In the analysis, I use the logs of the metropolitan area population size, the central city's age, and the number of municipalities.

The empirical strategy to answer this question is straightforward.  First, I examine bi-variate relationships between racial/ethnic segregation (as before).  I then include into the equations variables measuring the physical characteristics of metropolitan areas, and after that I include the set of variables describing socio-economic and political characteristics of metropolitan areas.  Examination of the change in the coefficients of immigrant representation in the metro area after inclusion of these sets of variables will provide information on whether and to what extent these coefficients survive or if the bi-variate relationships are driven by systematic differences in these metropolitan factors.

Table 2 provides a series of coefficients from regressions predicting segregation for various groups as a function of immigrant representation in metropolitan areas (for all immigrants and by their area of origin.) Each coefficient is based on a separate regression for each of these groups.  For the broad pair-wise segregation indices, the regression models first only include a measure of immigrant representation, subsequently includes physical characteristics of metropolitan areas, and then that further includes socio-economic and political characteristics of metropolitan areas.[9]

The results for black/nonblack index of dissimilarity for in Panel A indicate that immigrant segregation has very little influence on black segregation. Without controls for metropolitan area characteristics, there is some statistically significant and negative coefficients for immigrant representation on black segregation.  These include those for immigrants as a

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[9] As before, I test for potential non-linear influences of immigrant representation on racial/ethnic segregation throughout the analysis in this section, and find no evidence that they exist.

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whole, and from Asia and Latin American, especially Mexico. However, these statistically significant relationships do not survive after the inclusion of metropolitan physical characteristics (accounted for mostly by region and metropolitan area size), indicating the initial relationship between immigrant representation and black segregation is spurious to these characteristics of metropolitan areas. When controls for the physical and socio-economic characteristics of metropolitan areas are all included, there is no evidence that the relative presence of immigrants in metropolitan areas has any influence on black segregation levels.

Turning attention to Latino segregation, we focus on Panel B. Here, the conclusions are slightly more nuanced regarding the influence of immigration representation on Latino segregation. There is some evidence that immigrants both decrease and increase Latino segregation depending on the source of that immigration. There is some evidence that overall immigrant representation in the metropolitan area is associated with increases in Latino segregation; however, this relationship does not survive when all observable metropolitan areas are taken into account. The same is true for the initial positive influence of immigration from Europe and the Caribbean.

Still, even after all metropolitan observable factors are included in to the model specification, the statistically significant and positive influence of immigrant representation from Latin American (and Mexico in particular) on Latino segregation remains. The point estimate indicates that a 10 percentage point increase in the percentage of the metropolitan area population that are Latin American immigrants is associated with about a 4 point increase in the index of dissimilarity. This is also true for the role of immigrant representation from Asia on Latino segregation, but the direction of influence is the opposite. Evidence points to immigrant representation from Asia reducing Latino segregation in metropolitan areas.

Similarly, the results in Panel C suggest that immigration lowers Asian segregation. The statistically significant and negative coefficient on immigrant representation in metropolitan areas remains so even after all observable metro factors are included in the model specification. Much of the influence of immigrants in lowering Asian segregation is through immigrant representation of those from Europe.

Of course, a relatively large share of Latinos and Asians are foreign born, so an important question is whether the findings regarding the influence of immigrant representation on segregation are also true for the native born of these groups. The data provided in the lower two panels of the Table, Panels D and E, are provided to help address this question. The results indicate that the findings are in general very similar to that found for the respective groups that included the foreign born in the dissimilarity tabulations. That is, the influences of immigrant representation (from various areas of origins) are similar for native and foreign born Latinos and Asians.

*Immigrant Segregation and Poverty*

One potential consequence of high levels of immigrant segregation could be in influencing poverty among immigrant groups. The direction of this influence is theoretically ambiguous however. On the one hand, such segregation could negatively influence poverty in the ways predicted by the role of isolation or concentration. For example, in the case of African American segregation, Wilson (1996) and others theorized about the consequence of high levels of segregation on black poverty as a result of isolation from the middle class and limited presence or effectiveness of pro-social institutions. This could also result from the break down of social capital that serves as the glue for overall community health, or in the emergence of

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"concentration" effects wherein the high levels of negative social outcomes such as crime, joblessness, etc., become community norms that are expected ().

On the other hand, immigrant segregation could have limited influence or in fact lower poverty. This could occur if immigrant segregation overlaps or is synonymous with "ethnic enclave" communities. Such communities may help formulate social capital among immigrant groups and could serve as a mechanism for social incorporation, particularly for those who have difficulty speaking English well. (need to expand and add literature, citations here).

Below, I test for the potential influence of immigrant segregation on poverty, and as before I control for an extensive set of observable metropolitan area characteristics. I do so by conducting a series of regressions of the kind:

$$pov_i = immseg_i \beta_{21} + eld_i \beta_{22} + \beta'_{23} X_i + \varepsilon_{2i} \qquad (3)$$

where $i$ indexes metropolitan areas, $pov_i$ is the poverty rate for relevant immigrant group, $eld_i$ is whether the relevant immigrant group has difficulty speaking English, $seg_i$ is the dissimilarity index for the relevant immigrant group, and $X_i$ is vector of metropolitan area characteristics variables described earlier, and $\varepsilon_{2i}$ is a mean-zero, randomly distributed disturbance term.

The measure of poverty is based on the federal definition of the poverty rate for individuals, and the data is gathered from combining the 2005 to 2009 IPUMS Census. The poverty rate is measured at the individual level for all relevant groups at the metropolitan area. One concern is that the results of this analysis could be sensitive to the poverty level used. In response, I experimented with alternative poverty rates calculated at 150 and 200 percent of the poverty line and found very similar qualitatively results though not shown. Similarly, I calculated poverty rates for adults, i.e., those between 18 to 65 years of age, as well as those for different age based demographic groups, and at the household level. Again, I found similar

qualitatively results to those shown here, indicating that the results of the influence of immigrant segregation on poverty does not appear sensitive to the poverty level used, or to the demographic categories used.

The empirical strategy is similar to that described earlier. First, I examine bi-variate relationships between immigrant poverty and segregation. I then include into the equations variables measuring the physical characteristics of metropolitan areas, and after that I include the extent to which the relevant immigrant group in the metro area reports difficulty speaking English. This variable is included to assess whether English language difficulty is a mechanism by which immigrant segregation could influence poverty. It is well known that English language difficulty is a major factor limiting access to employment and higher wages and therefore directly influences poverty. After this, the set of variables describing socio-economic and political characteristics of metropolitan areas are included with and with out the English language difficulty variable. The coefficients on immigrant segregation will be carefully examined to see whether and to what extent they survive with the inclusion of these control variables.

Table 3 reports the coefficients for immigrant segregation on immigrant poverty for immigrants as a whole and by their broad areas of origin. The results from the bi-variate regressions provide some evidence that immigrant segregation both negatively and positively influences poverty depending on the source of that immigration. For immigrants as a whole, immigrant segregation is positively and statistically significantly associated with poverty. This pattern is also found for South East Asian segregation and South East Asian poverty, and for those from Africa, all at very similar magnitudes of influence. The point estimate indicates that

10 point increase in the dissimilarity scores for these groups is associated with about a 2 point increase in their respective poverty rates.

Whether the magnitude of this influence is large or small is difficult to determine. Partly in response to this, I also include similar regressions of African American segregation on African American poverty for comparison. The coefficient for this group is very similar in magnitude to that shown from the relevant immigrant groups. I also conducted these regressions for other native born groups and found no relationship between segregation and poverty. This indicates the unique influence of segregation on poverty for blacks that is well documented in the literature (). The fact that most of the significant coefficients on immigrant segregation are similar in magnitude to that for African Americans is suggestive of large influences of segregation on poverty for these groups.

Except for those from other parts of Latin America, the statistically significant coefficients on segregation survive after inclusion of the physical metro area control variables into the equation. However, once the measure for English language difficulty is included in the model specification, all of these coefficients become insignificant, except for that for those from Africa. This result is suggestive of the role of immigrant enclave economies in influencing segregation patterns for immigrant groups. Many of these groups may choose to live in such co-ethnic communities because of limited English language ability or to smooth the transition to a new country. Once this speaking ability is accounted for, almost all of these significant influences of segregation on poverty disappear.

The one exception is in the case of immigrants from Africa. The significant influence of segregation on poverty for this group survives the inclusion of English language ability. This suggests that the process and factors that might drive their segregation are different than that for

other immigrants, and that race may play a role in similar ways experienced by African Americans. Note that the significant and positive influence of segregation on African American poverty also remains even after all control variables are entered into the equation, with a point estimate of near 2 that remains fairly stable across the model specifications.

Of course, a key problem in estimating the effect of segregation on poverty concerns the direction of causation. Segregation could affect poverty in ways implied or understood from pervious literature on segregation and the "underclass". Alternatively, the residential choices of the poor or immigrant groups could be influenced by other factors such as the geographic distribution of low-income housing or preferences to live near each other, thereby implying that poverty could cause segregation. This problem of simultaneity is likely to upwardly bias OLS estimates of the causal effect of segregation on poverty. These potential problems are likely only applicable to the regressions focusing on immigrants from Africa and African Americans given the results, but further statistical examinations do not provide contradictory evidence to that shown here.[10]

**Conclusion**

**(short, basic conclusion for now to get the job done; will re-write and expand with implications)**

This paper has sought to explore the relationship among immigration, segregation and poverty. It did so by tabulating segregation scores for immigrants using the most recent Census data, and to compare these scores by the area of origin of the foreign-born, as well as to those

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[10] Following Cutler and Glaeser (1997), I estimated two-stage least squares (2SLS) regressions of segregation on poverty for African Americans and immigrants from Africa using the number of rivers in the metropolitan area (as well as other physical geography characteristics of metro areas such as near mountains, national parks, oceans, etc.) as instruments for segregation. However, the results of these exercises still confirmed the results in Table 3 for these groups.

native born groups, such as African Americans whose segregation scores have been extremely high historically.  The paper also explores some potential reason for immigrant segregation, and in turn whether the relative presence of immigrants across metro areas influences racial/ethnic segregation.  Finally, the paper also examines whether immigrant segregation plays a part in raising immigrant poverty.

The findings indicate that while immigrant segregation levels are moderately high for immigrants as whole, they vary by the area of origins, with those from Europe displaying the lowest segregation scores and those from Latin America, Caribbean and Africa the highest.  Immigrants from Asia have segregation scores in between these poles.  The evidence also suggest that among other potential factors, that immigrant segregation is influenced by historic segregation levels across metro areas suggesting that metro areas with a historic segregation infrastructure structures immigrant segregation as well.

On the other hand, there is limited evidence that immigrant representation, in turn, influences segregation of most groups, including African Americans.  But they do influence the segregation levels of Latinos and Asian though in different ways.  Finally, there is very limited evidence that immigrant segregation influences poverty, and that this relationship may be exclusive to immigrants from Africa, who may impacted by race in similar ways as African Americans – though interestingly they tend to live in metro areas not characterized as having historic segregation infrastructures.  Moreover, the limited evidence that immigrant segregation influences poverty is completely accounted for by English language difficulty suggesting that English language problems are both driving some immigrant groups to segregate as well as to experience labor market and other challenges that limit income and economic mobility.

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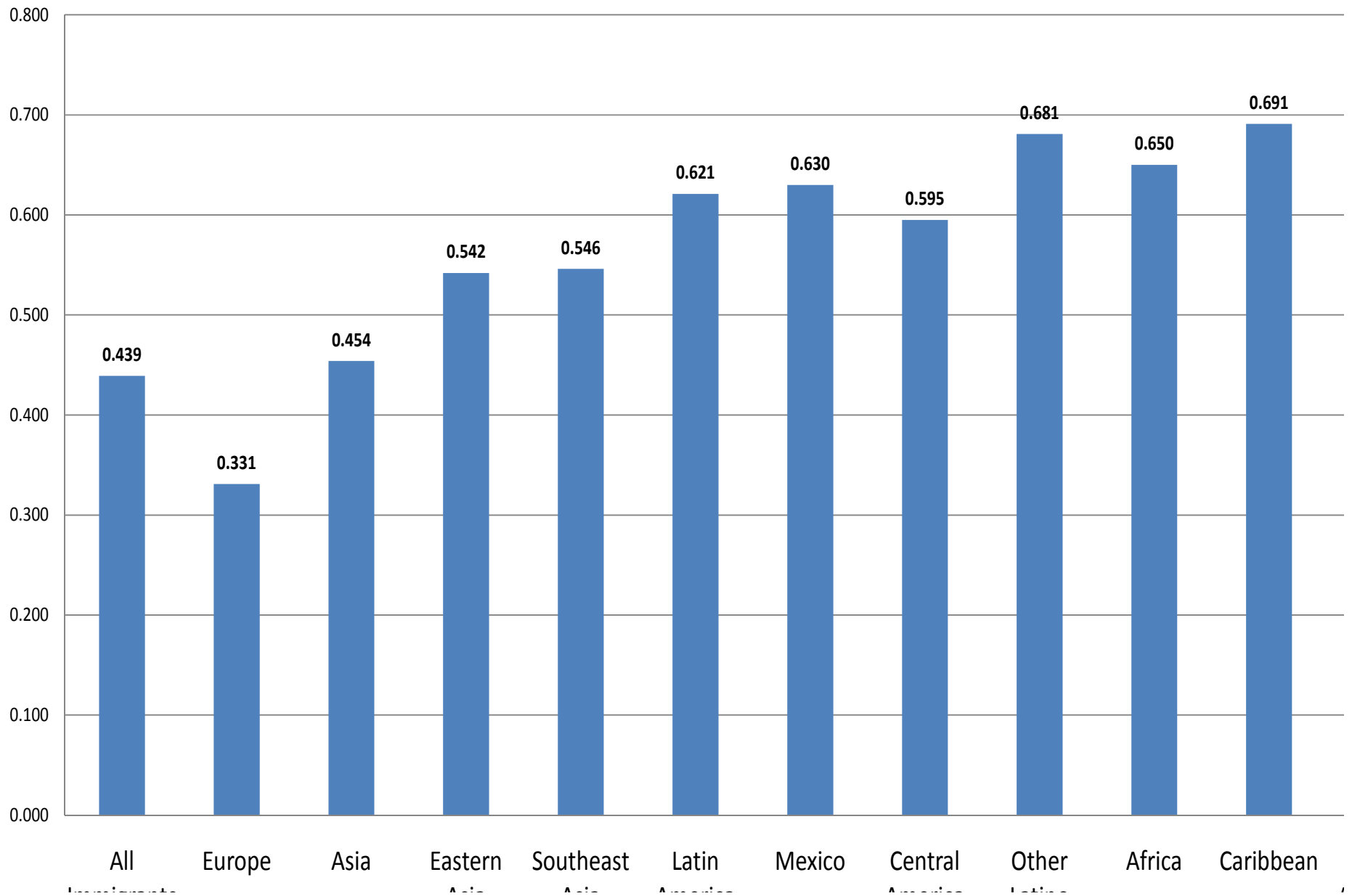
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## Figure 1: Index of Dissimilarity between Immigrants (and by their Country of Origin) and Whites: 2005-09

| Category | Value |
|---|---|
| All Immigrants | 0.439 |
| Europe | 0.331 |
| Asia | 0.454 |
| Eastern Asia | 0.542 |
| Southeast Asia | 0.546 |
| Latin America | 0.621 |
| Mexico | 0.630 |
| Central America | 0.595 |
| Other Latino | 0.681 |
| Africa | 0.650 |
| Caribbean | 0.691 |

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Table 1: Index of Dissimilarity between Immigrants (and their Origins)  and Whites by Region: 2005-09

|  | Northeast | Midwest | South | West |
|---|---|---|---|---|
| All Immigrants | 0.463 | 0.415 | 0.428 | 0.438 |
| Europe | 0.335 | 0.382 | 0.321 | 0.291 |
| Asia | 0.486 | 0.482 | 0.441 | 0.436 |
| Latin America | 0.676 | 0.624 | 0.538* | 0.598* |
| Mexico | 0.787 | 0.677* | 0.593* | 0.628* |
| Africa | 0.679 | 0.693 | 0.623* | 0.619* |
| Caribbean | 0.769 | 0.783 | 0.609* | 0.657* |

Notes: * indicates statistically significantly different at the 5 percent level than the Northeast.

Figure 2: Scatterplot of Index of Dissimilarity between All Immigrants and Whites in 2005-09 and Index of Dissimilarity between Blacks and Whites in 1990
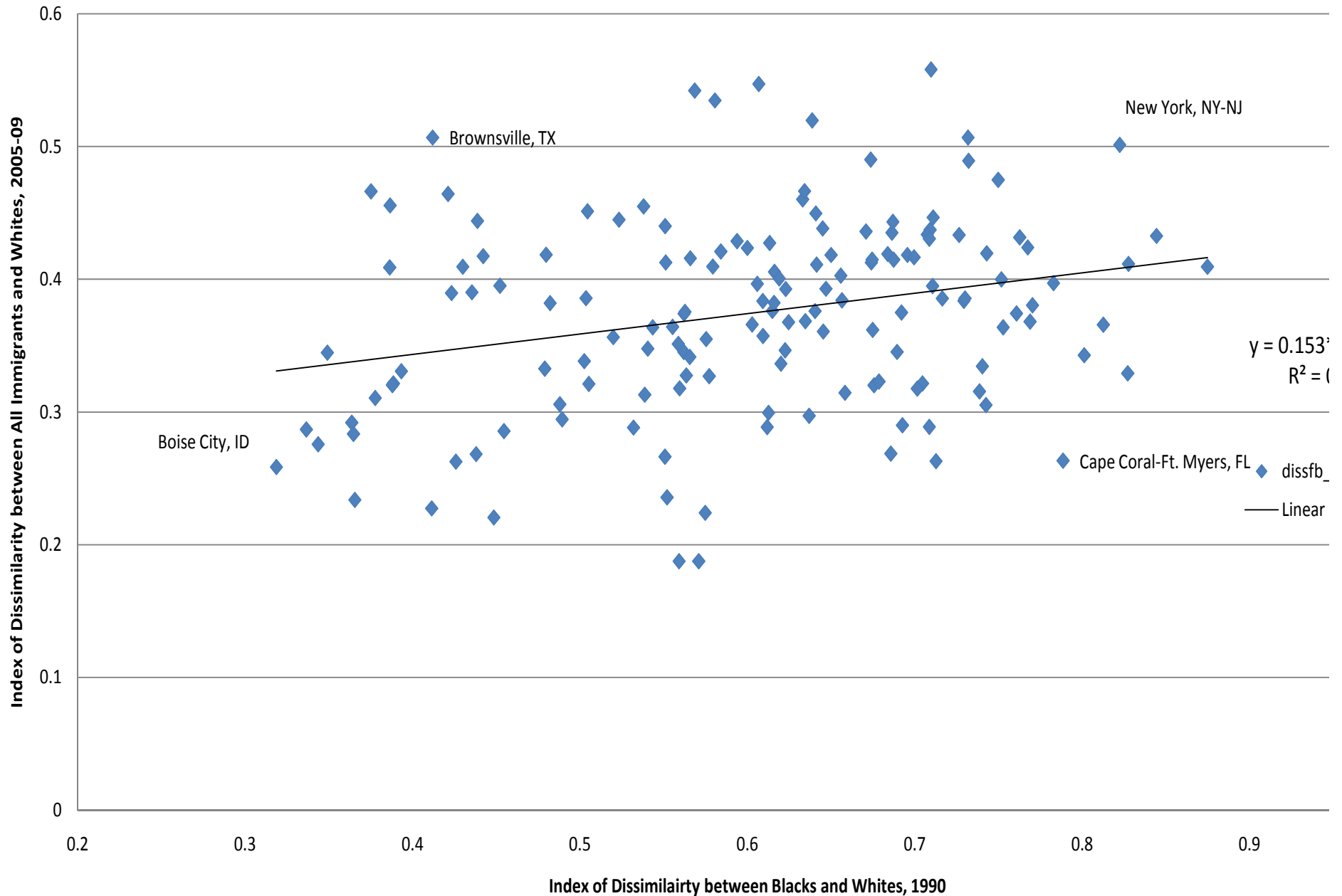
Figure 3: Bi-Variate Coefficients between Immigrant Segregation in 2005-09 and Black Segregation in 1990
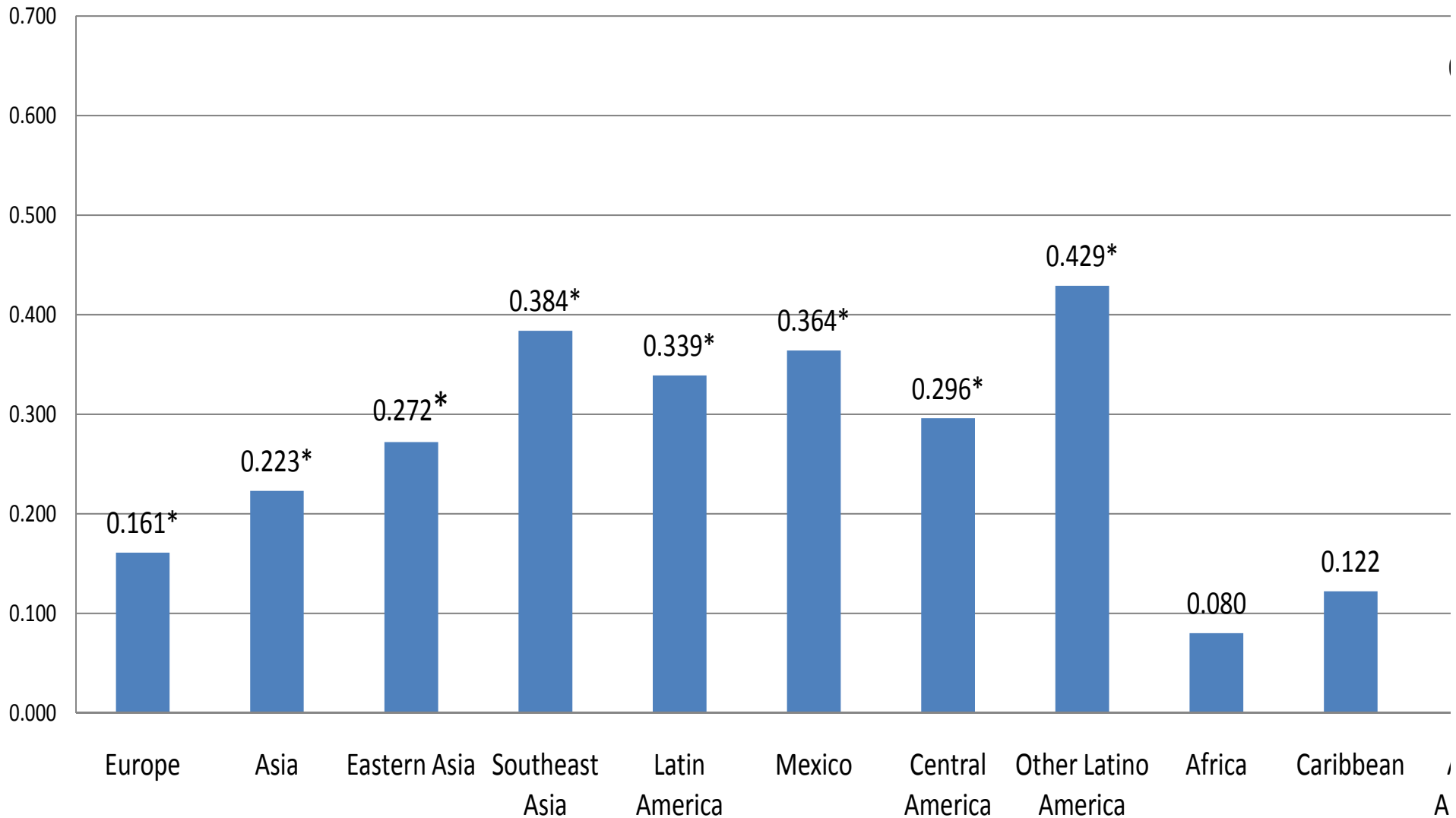
# Figure 4: Index of Dissimilarity for Blacks with and without Immigrants, 2005-09
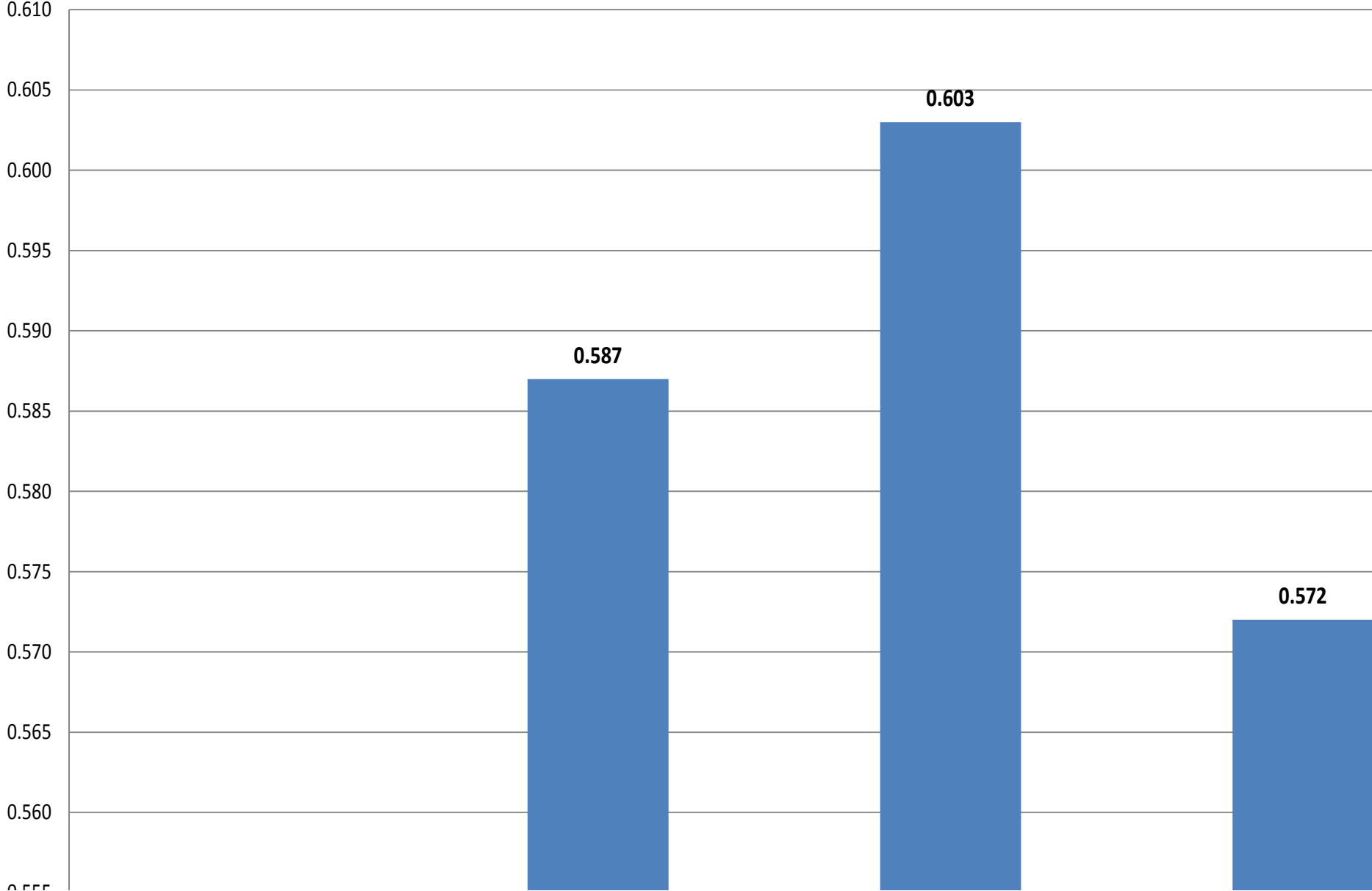
Figure 5: Scatterplot of Index of Dissimilarity between Blacks and Nonblacks and Percentage of Metro Area Population that are Immigrants, 2005-09
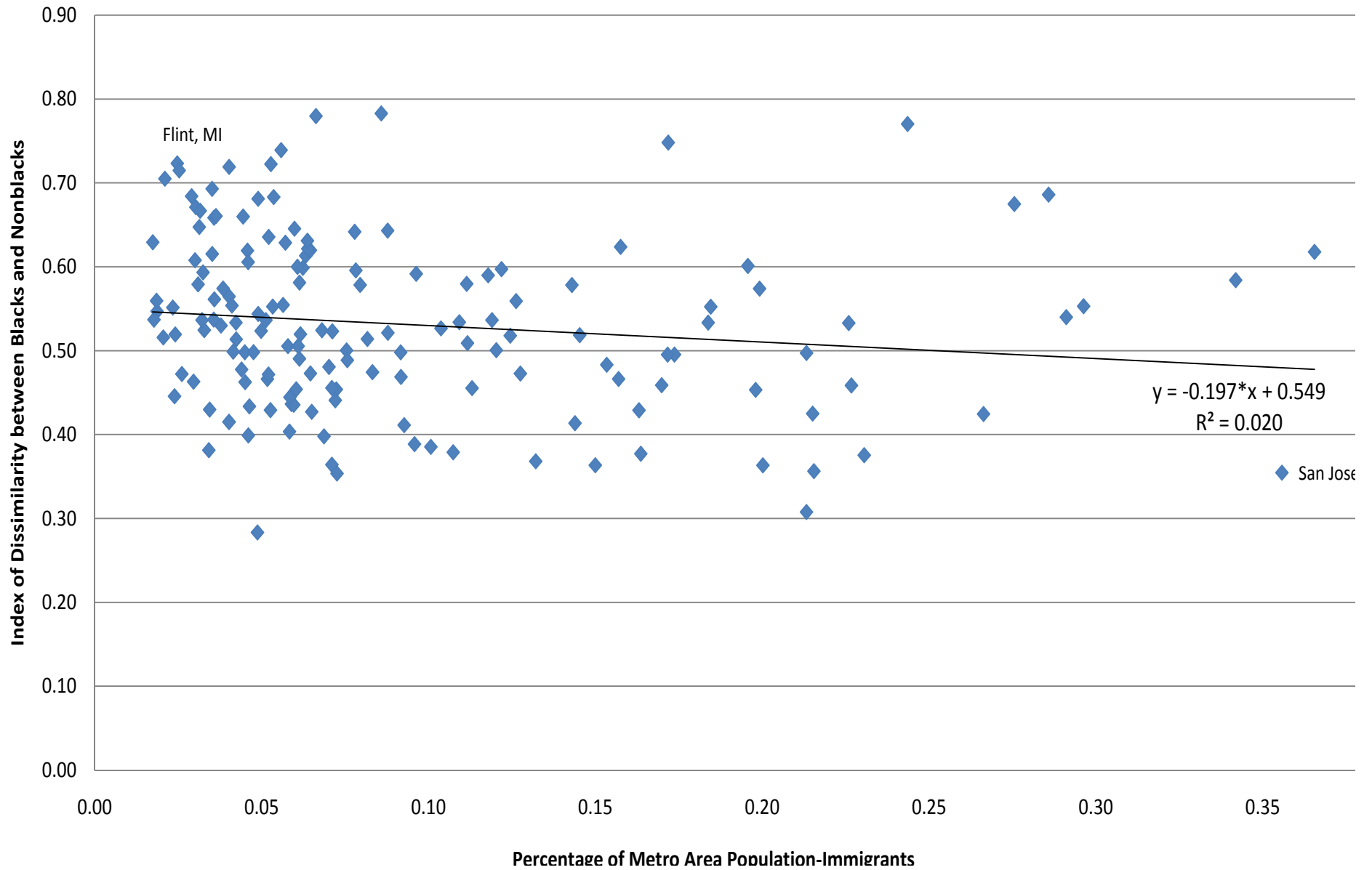
**Figure 6: Scatterplot of Index of Dissimilarity between Latino and NonLatinos and Percentage of Metro Area Population that are Immigrants, 2005-09**
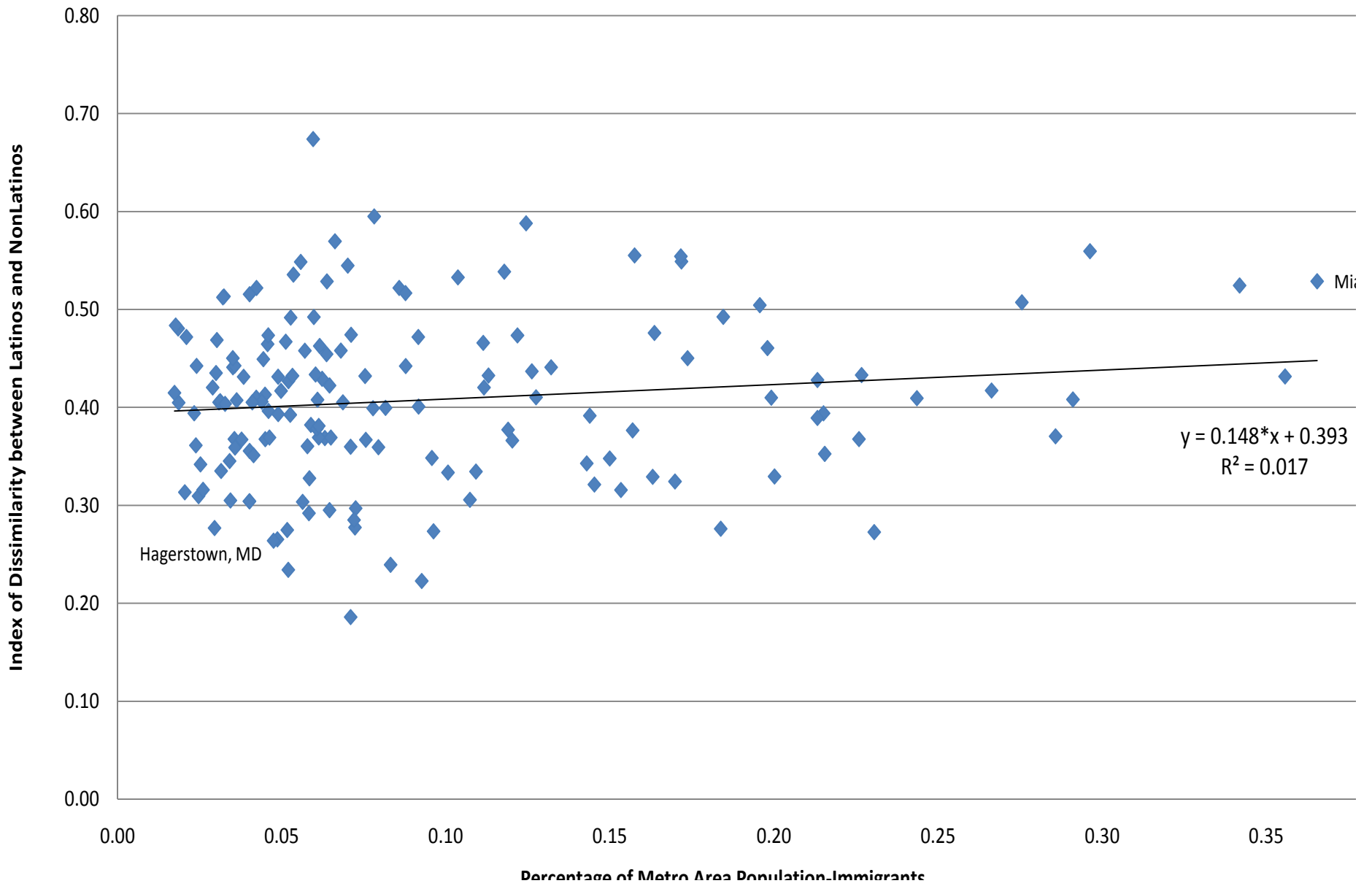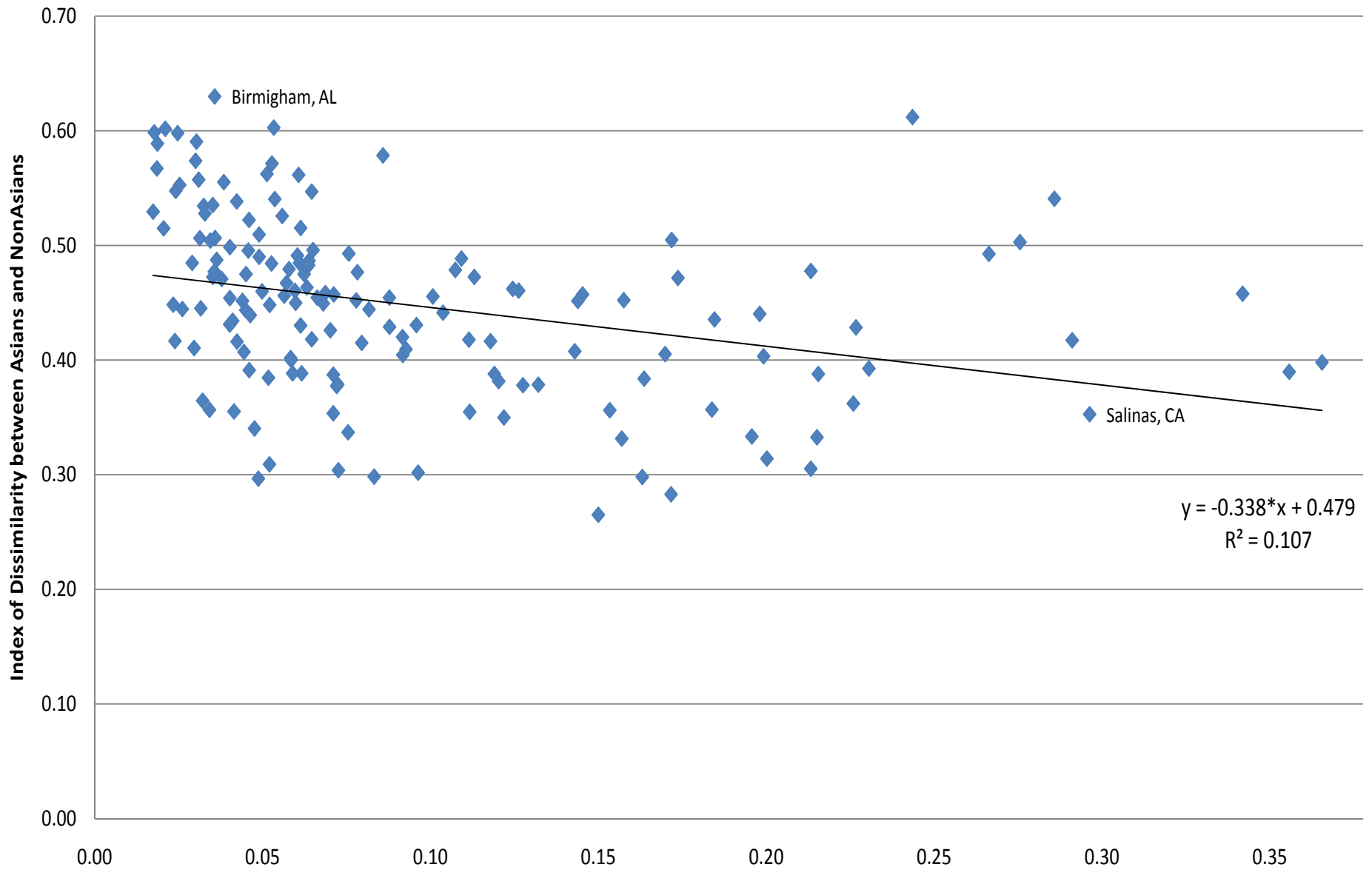
$y = 0.148*x + 0.393$

$R^2 = 0.017$

Figure 7: Scatterplot of Index of Dissimilarity between Asians and NonAsians and Percentage of Metro Area Population that are Immigrants, 2005-09

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Table 2: Regression Coefficients of Segregation as a function of the Percentage of Metro Population that are Immigrants, 2005-09

**% of Metro Population-Immigrants from:**

|  | All Immigrants | Europe | Asia | Latin America | Mexico | Africa | Caribbean |
|---|---|---|---|---|---|---|---|
| **Index of Dissimilarity:** | | | | | | | |
| A. Black/Nonblack | | | | | | | |
| No Controls | -0.197* | 1.429* | -0.654** | -0.298** | -0.370** | 0.051 | 0.457 |
| Metro P Controls | -0.097 | 0.635 | -0.594* | 0.055 | 0.126 | -0.602 | -0.242 |
| Metro P + SE Controls | 0.077 | 0.684 | -0.144 | 0.300 | 0.373 | -0.385 | -0.007 |
| | | | | | | | |
| B. Latino/NonLatino | | | | | | | |
| No Controls | 0.148* | 2.756*** | -0.091 | 0.159 | 0.058 | 0.421 | 0.774* |
| Metro P Controls | 0.163* | 0.692 | -0.480* | 0.426*** | 0.443*** | -0.523 | -0.009 |
| Metro P + SE Controls | -0.011 | 0.587 | -0.426* | 0.396* | 0.411** | 0.503 | 0.083 |
| | | | | | | | |
| C. Asian/NonAsian | | | | | | | |
| No Controls | -0.338*** | -2.075*** | -0.798*** | -0.319*** | -0.272** | -0.512 | -0.583 |
| Metro P Controls | -0.160* | -2.370*** | -0.258 | 0.021 | 0.189 | -0.812 | -0.212 |
| Metro P + SE Controls | -0.154* | -2.621*** | 0.277 | -0.214 | 0.064 | -0.621 | -0.137 |
| | | | | | | | |
| D. Latino Native/NonLatino | | | | | | | |
| No Controls | 0.013 | 2.842*** | -0.316 | -0.042 | -0.142 | 0.612 | 0.744* |
| Metro P Controls | 0.073 | -0.242 | -0.469* | 0.286** | 0.325*** | -0.121 | -0.067 |
| Metro P + SE Controls | -0.180 | 0.178 | -0.433* | 0.013 | 0.175 | -0.108 | -0.157 |
| | | | | | | | |
| E. Asian Native/ NonAsian | | | | | | | |
| No Controls | -0.634*** | -3.122*** | -0.751*** | -0.604*** | -0.585*** | -0.581 | -0.387 |
| Metro P Controls | -0.295*** | -3.674*** | -0.734*** | -0.461 | -0.176 | -0.628 | -0.342 |
| Metro P + SE Controls | -0.315*** | -2.857*** | -0.123 | -0.315 | -0.189 | -0.715 | -0.443 |

Notes: ***, **, * indicates statistically significant at the 1, 5, and 10 percent level, respectively.
    P=metro physical controls (size, region, age of oldest central city.)
    SE=metro socio-economic controls (percent black, percent Latino, percent impoverished, percent over 65, percent college degree,
       percent Immigrant, percent manufacturing, retail trade or service, white male employment to population ratio, number of
        governments.)

Table 3: Regression Coefficients of Immigrant Poverty as a Function of Immigrant Segregation, 2005-09

| Metro Poverty Rate for: | All Immigrants | Europe | Asia | Eastern Asia | South East Asia | Latin America | Mexico | Other Latin American | Africa | Caribbean | African American |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Segregation:** | | | | | | | | | | | |
| No controls | 0.224*** | 0.040 | 0.105 | -0.041 | 0.198** | 0.040 | 0.135 | -0.148** | 0.274* | 0.074 | 0.202*** |
| P | 0.282*** | 0.032 | 0.088 | 0.066 | 0.155* | 0.129 | 0.021 | -0.095 | 0.372** | 0.155 | 0.234*** |
| P + ELD | -0.028 | 0.009 | 0.062 | 0.031 | 0.093 | 0.002 | 0.078 | 0.115 | 0.344* | 0.179 | 0.231*** |
| P+SE | 0.093 | -0.025 | -0.115 | -0.024 | 0.032 | 0.090 | 0.071 | 0.010 | 0.461* | 0.006 | 0.191** |
| P+SE+ELD | -0.043 | -0.062 | -0.129 | -0.067 | 0.007 | -0.014 | -0.037 | -0.175* | 0.422* | 0.044 | 0.185** |

Notes: ***, **, * indicates statistically significant at the 1, 5, and 10 percent level, respectively.

P=metro physical controls (size, region, age of oldest central city.)

SE=metro socio-economic controls (percent black, percent Latino, percent impoverished, percent over 65, percent college degree, percent Immigrant, percent manufacturing, retail trade or service, white male employment to population ratio, number of governments.)

ELD=English Language Difficulty

Immigrant poverty is a function of immigrant segregation from whites for each respective immigrant group. African American poverty is function of African American segregation from whites.