Is the Melting Pot Still Hot? Explaining the Resurgence of Immigrant Segregation.

IS THE MELTING POT STILL HOT?
EXPLAINING THE RESURGENCE OF IMMIGRANT SEGREGATION

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Abstract

This paper uses decennial Census data to examine trends in immigrant segregation in the United States between 1910 and 2000. Immigrant segregation declined in the first half of the century, but has been rising steadily over the past three decades. Analysis of restricted access 1990 Census microdata suggests that this rise would be even more striking if the native-born children of immigrants could be consistently excluded from the analysis. We analyze panel and cross-sectional variation in immigrant segregation, as well as housing price patterns across metropolitan areas, to test four hypotheses of immigrant segregation. Immigration itself has surged in recent decades, but the tendency for newly arrived immigrants to be younger and of lower socioeconomic status explains very little of the recent rise in immigrant segregation. We also find no evidence of increased nativism in the housing market. Evidence instead points to changes in urban form, particularly the tendency for ethnic enclaves to form as suburbanizing households leave older neighborhoods, as a central explanation for the new immigrant segregation.

I. Introduction

Since 1960, the average foreign born resident of the United States has experienced steadily increasing levels of segregation from the population at large. As Figure 1 shows, mean levels of the two classic measures of segregation – dissimilarity and isolation indices – have risen steadily in recent decades. These general trends toward increasing segregation mask a remarkable degree of variation in the experiences of different ethnic groups and trends in different parts of the country. While segregation has increased for many individual ethnic groups, it has declined for some, and has remained relatively constant for some of the nation's fastest growing immigrant groups, including Mexicans. Few, if any, immigrant groups, however, have experienced the wholesale decline in segregation witnessed by African Americans during the same time period (Cutler, Glaeser, and Vigdor 1999).

Why has immigrant segregation increased even as racial segregation has declined? Are there systematic factors that can explain the disparate experiences of different ethnic groups? In this paper, we use variation in segregation over time, across cities, and across ethnic groups to evaluate four theories of immigrant segregation. The first theory argues that changes in measured immigrant segregation over time are driven largely by the non-heritability of immigrant status and fluctuations in flows of new migrants into the host country. The second theory asserts that immigrants cluster together when they have cultural characteristics in common with each other (such as language) that differ from the characteristics of the population as a whole. Immigrant groups with stronger ties to American culture, or those that have undergone greater assimilation, should experience less segregation according to this theory.

Two other theories focus on factors that are external to immigrants themselves. The third

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theory posits that nativism, or other forms of discrimination against immigrants, drives immigrant segregation. Natives might either be willing to pay to avoid immigrants (decentralized discrimination) or may be able to effectively restrict immigrant location choices (centralized discrimination). The fourth theory focuses on the changing nature of the American city, in particular the rise of car-based living on the urban periphery. Economic segregation has increased in recent decades (Jargowsky 1997), possibly because of class differences in transportation modes. Disparities in economic class between immigrants and natives, and their changing implications regarding the importance of accessibility to transportation and employment, may explain some portion of the rise in immigrant segregation.

In Section II of this paper, we introduce our data on immigrant segregation in the United States over the twentieth century. Using data from the Census enumerations of 1910, 1920, 1940, 1950, 1970, 1980, 1990, and 2000, we compute segregation indices for dozens of immigrant groups across hundreds of cities and metropolitan statistical areas (MSAs). The data reveal that immigrant segregation began the twentieth century at relatively high levels, then declined as Federal restrictions and other forces stemmed the tide of immigration after 1920. Over the latter half of the century, as immigrants born in Latin America and Asia began to enter the country in large numbers, segregation rose once again. Preliminary data from the 2000 Census suggest that immigrant segregation is now higher than at any point in the preceding century, and continues its upward trend.

In Section III, we use restricted-access Census microdata to compute alternative segregation indices designed to circumvent measurement issues related to the non-heritability of immigrants status. The alternative indices suggest that self-integration bias has the greatest impact on segregation indices of the most isolated groups. Thus, the time series evidence presented in

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Figure 1 would most likely be even more dramatic if we were able to apply this correction using all years of our data.

In Section IV of the paper, we discuss our three remaining theories and describe our methods of distinguishing the relative importance of each. In Section V, we use city and immigrant group characteristics to explain panel and cross-sectional variation in segregation levels. We find significant evidence in favor of the cultural difference hypothesis. Immigrants with more experience in the US and those from countries where the predominant language is more linguistically similar to English tend to be less segregated. Controlling for these factors explains only a relatively small portion of the overall increase in immigrant segregation, however. Cross-sectionally, we find evidence supporting the urban form hypothesis: immigrant groups from less-developed countries are more likely to isolate themselves in low-density, automobile-dependent metro areas, presumably to take advantage of shared transportation resources. This pattern does not hold for immigrants from more developed countries, for whom car ownership is undoubtedly more feasible.

In Section V, we follow Cutler, Glaeser and Vigdor (1999) and look at housing prices to test the various theories of immigrant segregation. We find that immigrants paid a premium for housing in segregated markets as recently as 1970, but that this premium had disappeared by 1990. The most likely explanation for this pattern is that immigrants now tend to occupy neighborhoods that have fallen out of favor with natives, for reasons other than their ethnic composition. Indeed, in 2000 over 40% of all foreign-born individuals lived in a metropolitan area where immigrant location patterns bore a closer resemblance to the native residential distribution in 1970 than in any subsequent Census enumeration.

Section VI concludes.

II. Measuring segregation

There are numerous ways of measuring residential segregation within a population. In this paper, as in our previous work (Cutler, Glaeser and Vigdor 1999; Glaeser and Vigdor 2003) we focus on two measures in particular. The indexes of dissimilarity and isolation have many antecedents in the sociological literature (Bell 1954; Duncan and Duncan 1955; Taeuber and Taeuber 1965), and unlike many other segregation indices they require no information on the geographical location and land area of neighborhood units (Massey and Denton 1988). These unrestrictive data requirements are advantageous, since we have little information on the geographic arrangement of neighborhoods within a city in the earlier years of our panel.

The dissimilarity index is one of the most commonly used measures of segregation. It is calculated by dividing a city or metropolitan area into neighborhoods, indexed i, and using the formula in equation (1):

$$(1) \quad \textbf{Dissimilarity Index} = \frac{1}{2}\sum_i \left| \frac{group_i}{group_{total}} - \frac{non\text{-}group_i}{non\text{-}group_{total}} \right|$$

where $group_i$ denotes the number of relevant immigrant group members living in neighborhood i, $group_{total}$ the number living in the entire city or metropolitan area, and $non\text{-}group_i$ and $non\text{-}group_{total}$ are similarly defined for residents not belonging to the group in question.[1] The dissimilarity index

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[1] Segregation indices require us to operationalize the concept of "neighborhood." Our definition of neighborhood is driven largely by data availability. Prior to 1940, the Census Bureau reports population statistics, including a count of the foreign born population by country of origin, at the city ward level. Wards are political subdivisions of cities which range widely in shape and size across cities. For this reason, some caution is warranted when interpreting segregation indices based on ward data (Cutler, Glaeser and Vigdor, 1999). Beginning in 1940, we use census tracts as our neighborhood construct. Tracts are designed to be of relatively constant size, each containing roughly 4,000 residents, with boundaries usually determined by large roads, railroad tracks, or natural features.

In almost all cases, tracts are smaller geographical units than wards. For this reason, segregation measured at the ward level tends to be lower than segregation measured at the tract level [FN]. In previous work, using data on black-white segregation in 1940, when both ward and tract data were available for many cities, we determined that the discrepancy between ward- and tract-level segregation was approximately 15 percentage points for both the dissimilarity and isolation indices. While it is unclear whether similar adjustment factors would apply in the case of

takes on a value of zero when each neighborhood contains a constant proportion of group members, and a value of one when group members never share neighborhoods with non-group members. Intermediate values can be interpreted as the share of group members that would have to switch neighborhoods in order to achieve an even distribution across the city or metropolitan area.

The isolation index measures the degree of exposure that immigrants have to other members of their group, correcting for the fact that groups forming a larger share of the population have naturally higher exposure rates. We calculate the index with the following formula:

$$(2)\ \text{Isolation Index} = \frac{\sum_i \dfrac{group_i}{group_{total}} \times \dfrac{group_i}{population_i} - \dfrac{group_{total}}{population_{total}}}{\min\left(1, \dfrac{group_{total}}{population_{smallest}}\right) - \dfrac{group_{total}}{population_{total}}}$$

where $group_i$ and $group_{total}$ are defined as above, $population_i$ and $population_{total}$ represent the overall population in tract i and the entire city or metropolitan area, and $population_{smallest}$ is the population of the neighborhood with the fewest residents in the city or metropolitan area. The numerator of this formula is the difference between the neighborhood group share experienced by the "average" group member and the share that would be expected if the group were spread evenly across all neighborhoods. The denominator scales the numerator to have a theoretical range between zero and one. An index value of zero implies that the immigrant group is spread evenly across neighborhoods. A value of one occurs when group members are concentrated in neighborhoods where all residents belong to the group.[2]

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immigrant segregation, the reader is encouraged to keep this factor in mind while reviewing the results below.

[2]Before proceeding with interpretation of these trends, it is important to note three limitations with our time series. First, as noted above, our definition of a neighborhood changes between 1920 and 1940. This complicates any comparison of segregation levels before 1940 with those experienced afterwards. Second, the definition of a city changes over time as well. Beginning in 1970, our data pertain to metropolitan statistical areas (MSAs) rather than

Trends in Immigrant Segregation

Our most basic summary information on immigrant segregation in the twentieth century is summarized in Table 1 and Figure 1. Both the table and figure show weighted average segregation levels, with weights equal to the size of an immigrant community.[3] Indices of dissimilarity and isolation followed generally similar paths, falling in the early part of the century, then rising steadily in the latter portion. Isolation began at a more elevated level and fell between 1920 and 1950 even as dissimilarity began its rise.[4] Table 1 indicates that this pattern mirrors trends in the overall size of the immigrant population, which also reached a relative minimum in 1950. Depending on the index used, immigrant segregation levels are either reached the highest point in recorded history (dissimilarity) or rose to levels not seen in 70 years (isolation).[5]

Table 1 presents summary statistics for a selection of major immigrant groups in 1910 and 1990. In 1910, the largest immigrant groups represented European countries such as the four listed in the table. Immigrant groups from Northern and Western Europe, represented by Germany and Ireland in this table, experienced less segregation than the average immigrant in 1910, perhaps

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cities. This change may be responsible for some portion of differences in segregation levels between 1950 and 1970. Finally, our segregation data for 1980 are incomplete. To compute segregation indices in 1980 and later years it is necessary to consult Census Summary File 4A. We attempted, unsuccessfully, to acquire a complete version of this file from the Census Bureau. Failing in this attempt, we collected data from a number of different sources for a total of 32 states and the District of Columbia. While the states included in our collection cover the vast majority of the immigrant and native population, we are unable to compute indices for immigrant communities in Connecticut, Colorado, and several other smaller states.

[3] We define an immigrant community as a group of at least 1,000 individuals born in the same country residing in the same city. The values shown can thus be interpreted as the segregation experienced by the "average" immigrant in each year.

[4] The decline between 1920 and 1940 is especially noteworthy since the transition from wards to tracts should lead to a natural increase in our index.

[5] The transition from ward to tract data, and from city to MSA aggregation, imply that caution should be used in the interpretation of differences between early (1910-20) and later (1970-1990) parts of the century. Trends within these time periods are not subject to similar caveats.

because of their more lengthy tenure in the country. Immigrants from Southern and Eastern Europe, such as Italians and Russians, were generally more recent arrivals and experienced greater segregation. Both Russian and Italian immigrants experienced average dissimilarity levels on the order of 0.5 and isolation levels around 0.1.

Eighty years later, segregation levels experienced by a new cohort of recent immigrants were remarkably similar to those observed in 1910. By the end of the century, the largest immigrant groups in the United States hailed from Latin American and Asian countries. Table 1 shows summary information for three of these groups: Mexicans, Filipinos, and Cubans. All three immigrant groups experienced dissimilarity levels remarkably similar to those of the "newer" immigrant groups in 1910. Mexican and Cuban isolation levels also closely mirror those of Russians and Italians in 1910.

These overall trends in segregation mask considerable variation across immigrant groups. Figures 2 through 7 display long-term trends in dissimilarity and isolation levels for three sets of immigrant groups. Not only do the individual groups vary in their long term experiences, but individual groups' trends vary depending on the segregation index examined. Figures 2 and 4, which track the dissimilarity of "old" and "new" European immigrant groups, mirror the overall trend towards increasing dissimilarity in the later 20th century. Isolation, on the other hand, has been decreasing for most of these groups, as seen in figures 3 and 5. As seen in Table 1, the older immigrant groups of Northern and Western Europe have historically had lower segregation levels than those of Southern and Eastern Europe; this gap appears to be closing in recent data.

Omissions in Census reporting make it difficult to construct historical time series on the segregation of Asian and Latin American immigrant groups. Figures 6 and 7 summarize the

available dissimilarity and isolation indices for these groups. The newest immigrant groups generally experience high levels of segregation. For the groups shown here, however, dissimilarity has been either constant or decreasing in recent years. Isolation, by contrast, has remained steady or risen for each group in each decade since 1970.

Analyzing the graphs as a group, several notable patterns appear. The considerable rise in overall average dissimilarity between 1950 and 1990 is not replicated in the time pattern for any individual group. While dissimilarity increased for many groups between 1950 and 1970, the general picture between 1970 and 1990 is one of stasis or decline for most immigrant groups, particularly the "newest" groups plotted in the last figures. Similarly, the overall rise in isolation between 1970 and 1990 is not perfectly replicated by any individual group. Overall levels of immigrant segregation are rising largely because the composition of the immigrant population is shifting towards the more-segregated groups.

Another intriguing pattern is the tendency for dissimilarity and isolation indices to move in opposite directions over time. In the last half of the century, most European immigrant groups experienced increases in dissimilarity and decreases in isolation simultaneously. That is to say, these groups witnessed an increase in distance between their neighborhoods and those occupied by non-group members, but within their own neighborhoods their degree of concentration declined. For the newest immigrant groups, those experiencing the most rapid population growth, the pattern is reversed. For these groups, dissimilarity levels are declining or stable, while isolation levels have been increasing. The newest immigrants are appearing in an ever-increasing number of neighborhoods, but those neighborhoods are becoming increasingly concentrated. These observations are consistent with groups experiencing rapid growth, but it should be noted that even

for some of these groups rapid growth has brought very little change in segregation levels in the past twenty years.

III. Do Immigrants Integrate Themselves by Having Children?

One important distinction between the segregation of racial and immigrant groups is that race is a heritable trait while immigrant status is not. Thus even without residential mobility, immigrant groups will tend to appear more integrated over time as they bear native children. It is possible, for example, that the relatively low amounts of immigrant segregation in the mid-20th century can be attributed to a relatively high native-born-child to immigrant ratio. While we lack the data necessary to evaluate the extent of "childbearing bias" for most of the sample, our access to restricted use Census microdata for 1990 enable us to perform a cross-sectional analysis.

Restricted-access microdata, which enable us to observe living arrangements and tract-level geographic identification for a one-in-six sample of US households, permit the computation of alternative dissimilarity and isolation indices for each immigrant community in our sample. The alternative indices vary from the original version in their definition of the "other" group – all non-group members in the same metropolitan area. The first set of alternative indices measures the segregation of immigrant group members from native-born individuals. These indices, denoted D_N and I_N for dissimilarity and isolation, will be higher than the original versions to the extent that immigrant groups locate near one another in cities. The second set of alternative indices measures the segregation of immigrant group members from a subset of natives: those living in households where no immigrants live. These indices will be denoted D_{NOH} and I_{NOH} for dissimilarity and isolation, with the *NOH* standing for "Native-only households." Natives disqualified from this more

restrictive definition will consist largely of immigrants' own native-born children and other native-born housemates.

Table 2 presents summary statistics and correlations for the original dissimilarity and isolation indices computed with 1990 public-use summary data, as well as a substitute version computed with the restricted-access microdata and the two alternative indices described above. In theory, the original indices based on public-use data and restricted-access microdata should be identical, since the latter is the sole source of the former. As Table 2 shows, however, the two indices differ slightly in means and are imperfectly correlated, albeit at the 98% level or better. Divergences between the two indices can be attributed to Census imputation and weighting procedures, which influence the public-use summary data but have not been applied to the restricted-access microdata.

The two alternative indices are also highly yet imperfectly correlated with the indices that follow the original definition. The impact of changing definitions on measured dissimilarity is generally quite small; comparing indices based on restricted-access data reveal that D_{NOH} is correlated at 0.993 with the original version of the index. Figure 8 shows this relationship graphically. Among the roughly 2,000 points shown in this scatterplot, only a few dozen can be identified at any significant distance from the 45-degree line. It should be noted, however, that the mass of data points shown on the graph is clustered slightly above the 45-degree line, suggesting that immigrant childbearing has a consistent but small depressing effect on dissimilarity measures. The weighted mean difference between the original dissimilarity index and D_{NOH}, using weights equal to the number of immigrants in the group, is 0.027. A bivariate regression reveals that the slope

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coefficient in this relationship is not distinguishable from 1, but the intercept term is significantly greater than zero.[6]

Correlation coefficients between isolation indices computed with different formulae are somewhat lower. The correlation between the restricted-access data-based index using the original formula and I_{NOH} is 0.945. Figure 6 shows this relationship graphically. Virtually every data point in this plot lies above the 45-degree line, and the divergence from this line increases from left to right. The implication of this graph is that immigrant childbearing produces a noticeable decline in isolation levels, particularly among those groups experiencing high levels of isolation. A regression line plotted to fit the data in Figure 6 would feature an intercept term indistinguishable from zero and a slope coefficient of roughly 1.6. This suggests that immigrants' tendency to share households with their own children and other natives leads to a significant understatement of isolation levels among the most segregated groups.[7] The weighted mean difference between the original isolation index and I_{NOH} is 0.052. The average isolation of immigrants from households containing only natives is almost twice as high as immigrant isolation from all other individuals.

Unfortunately, the data required to perform this exercise are not available for earlier years. We can, however, use our 1990 results to make predictions about what alternative index values would have been in earlier years. Specifically, we compute the gap between alternative and original measures of segregation,

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[6] Some part of this relationship can be attributed to the fact that the original definition of the dissimilarity index masks situations where immigrants share neighborhoods with immigrants of different national origin groups. Regressions of the immigrants-vs-natives index on the original version, and of the immigrants-vs-natives-in-native-only-households index on the immigrants-vs-natives index reveals that no more than 20% of the divergence shown in Figure 5 can be attributed to immigrant group colocation.

[7] Further regression decomposition reveals that about 1/3 of this 60% understatement can be attributed to the tendency for immigrant groups to co-locate. The majority of the effect can be attributed to immigrant childbearing.

D_{NOH}-D and I_{NOH}-I, and regress those values on country of origin fixed effects, city fixed effects, and immigrant group/year/city specific characteristics derived from Census and IPUMS data samples for 1990.[8] We then make out-of-sample predictions based on immigrant data from earlier years. The results of this exercise appear in Figure 7. The childbearing bias in immigrant segregation indices appears to be most severe in periods of time when measured segregation levels are high: the early and late parts of the twentieth century. Thus, concerns that the dip in immigrant segregation can be attributed to childbearing bias are unfounded – in fact, our rough attempt to eliminate childbearing bias suggest that the long-term dynamics in immigrant segregation are even more extreme than they appear.

IV. The Causes of Segregation

In this section, we discuss three potential explanations for the rise in immigrant segregation. We will divide our explanations into three broad categories: (1) cultural distance, (2) discrimination and (3) urban form. The first category emphasizes changes within the immigrant community. The second two categories emphasize external changes.

Culture and Assimilation

Perhaps the most common theory of immigrant ghettos is that these concentrations occur because immigrants want to live near people with similar tastes and who speak the same language. Because sharing preferences and communication tools is desirable, immigrants will systematically

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[8] These characteristics include immigrant group size, mean immigrant age, and mean immigrant occupation score. Observations in this regression are weighted by the sample size used to compute the immigrant group/year/city specific characteristics. The regressions reveal that larger immigrant groups tend to have higher gaps between original and alternative indices, and that higher SES groups (as measured by the occupation score) have higher gaps between original and alternative dissimilarity indices.

outbid natives for housing in neighborhoods with high same-group concentrations. Immigrants from countries that are more culturally different from the U.S. should display the greatest tendency to follow this pattern. This theory also predicts that as some assimilation occurs even for those immigrants who live in segregated communities, we should expect to see that immigrants who have lived in the U.S. longer will live in less segregated communities.

We will focus on whether segregation across groups is related to the degree of cultural distance from the United States and to the length of time that group members have spent in the country. We use two measures of the cultural distance between a country of origin and the United States. First we consider linguistic difference. Using a well-established categorization of language families (Comrie, Matthews, and Polinsky 1996), we sort immigrant groups into those from English speaking countries, those from countries speaking other Germanic languages, those from countries speaking Indo-European languages outside the Germanic branch, and those from countries speaking non-Indo-European languages. Second, we consider difference in the degree of development as measured by origin country GDP. This theory suggests that all rich countries have something in common. We can also test the importance of socioeconomic status at a more micro level by controlling for a measure of the skill content of immigrants' occupations by country of origin, destination city, and year.

If segregation is driven by a desire for immigrants to live in close proximity to other members of their ethnic group, the density of the group in the population should be an important determinant of segregation levels. Groups forming a high proportion of the population do not need to cluster in certain neighborhoods to take advantage of proximity to other members. Thus, controlling for city size larger immigrant groups should experience less isolation. Controlling for

group share, on the other hand, immigrants in larger cities may exhibit a greater tendency to cluster, since physical distances between members will be greater in larger cities.

A final strategy for testing the culture and assimilation hypothesis will focus on the link between immigrant segregation and the prices that immigrants pay for housing across metropolitan areas. If immigrants place a positive value on living in an enclave community, we should observe that immigrants pay premiums to live in a segregated community. Relatively unassimilated immigrants should place the highest value on exposure to members of their own group; we therefore expect newly arrived immigrants to pay the highest premium for housing.

Discrimination

A second theory of rising segregation of immigrants is that these immigrants have become targets of increasingly more virulent nativism. This change may be attributable in part to racial distinctions between natives and the most rapidly growing immigrant groups. There are several natural ways to test this theory. A simple test would examine whether immigrant groups belonging to different racial categories experience significantly higher segregation controlling for other characteristics. It is reasonable to expect that nativism increases in the density of the immigrant population, in which case group share would be a positive predictor of segregation. This empirical test stands in direct contrast to the culture and assimilation hypothesis. Finally, following the methodology of Kain and Quigley (1975) and Cutler, Glaeser and Vigdor (1999), we can examine the link between segregation and the prices that immigrants pay for housing. If discrimination against immigrants takes on a centralized form, whereby natives impose restrictions on immigrant location choices, we expect immigrants to pay a premium for housing. Unlike the preceding

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hypothesis, we would expect such a discrimination-related premium to apply to immigrants equally regardless of their degree of assimilation or expectations regarding length of stay in the host country. If discrimination against immigrants is decentralized, we would expect natives to pay a premium for housing in communities with higher degrees of immigrant segregation. As detailed below, native premia for housing in segregated areas is also consistent with the hypothesis that immigrants occupy neighborhoods that have fallen out of favor with natives. To distinguish these explanations, we will test whether immigrant discounts for housing are particularly acute for immigrants who belong to particular racial groups.

Urban Form

A final hypothesis is that the immigrant segregation is getting worse because of changes in urban form and in particular the rise of low-density suburban residence and employment. Changes in urban form could explain the discrepancies in dissimilarity and isolation trends made evident in Figures 2 through 7 above. Established immigrant groups in growing metropolitan areas may become simultaneously more distant from the typical native (more dissimilar) and less over-represented in the neighborhoods where they live (less isolated). Newly arrived immigrants may participate in the process of sprawl, limiting their dissimilarity, while forming distinct clusters in particular neighborhoods, increasing their isolation. Immigrants may also disproportionately inhabit neighborhoods that fall out of favor among natives as they opt for more spacious housing at the urban perimeter where land values are lower. Immigrants lacking the access to capital necessary for car ownership may be particularly predisposed to form residential clusters in automobile-dependent cities, to take advantage of carpools or similar shared transportation alternatives.

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There are four ways of testing this hypothesis. First, if low-density, automobile-oriented development explains the rise of segregation over time, it is reasonable to expect these factors to associate with segregation in the cross-section. Second, we can determine whether the relationship between origin country GDP and segregation depends on transportation patterns in a metropolitan area. Immigrants from more developed countries are more likely to have previously acquired driving skills and more likely to have the financial means of affording a car and should thus be better able to co-locate with natives in auto-dependent cities. The final test is predicated on the notion that this explanation has also been offered as a rationale for the more general economic separation of poor households in cities and rich ones in suburbs (Glaeser, Kahn and Rappaport, 2001). If driven by the same forces, immigrant segregation should correlate highly with the degree of segregation between poor and wealthier natives. We check this possibility by forming an index of whites earning less than $15,000 per year from all other households in each metropolitan area and interacting this measure with origin country GDP. Finally, as indicated above, we will look for evidence that ethnic enclaves form in low-value neighborhoods shunned by the native population.

IV. Direct Evidence on the Determinants of Segregation

To understand the factors underlying the rise of immigrant segregation in the latter part of the 20th century, we formed a panel dataset of segregation indices, where the unit of observation is the country of origin/city of residence/year. As Tables 3a and 3b indicate, the resulting dataset has 4,044 observations spanning the years 1910 to 1990.

In each table, the specification reported in column (1) includes only year effects as explanatory variables, to redisplay the basic time trends first made evident in Figure 1.[9] Table 3a, which focuses on the dissimilarity index, shows discrete jumps in dissimilarity levels between 1920 and 1940, and again between 1950 and 1970, followed by steady increases thereafter. Average dissimilarity levels were roughly 20 percentage points higher in 1990 than they were in 1910. Some portion of the earlier increases in measured segregation may result from methodological changes put in place between 1920 and 1940 (the switch from ward to tract as a neighborhood unit) and 1950 and 1970 (the switch from city to MSA as a unit of aggregation). Our previous research (Cutler, Glaeser and Vigdor 1999) suggests that the first switch, in particular, should lead to an increase in measures of segregation. Table 3b, however, shows that increased segregation indices are not an inevitable result of these methodological changes. As was evident in Figure 1, Isolation levels declined for several decades after 1910, only to rise significantly after 1970. According to this regression specification, isolation levels in 1990 were virtually indistinguishable from those in 1910.

Columns (2) through (5) in both tables introduce an increasing number of covariates to the analysis, with the intention of explaining the time patterns of segregation shown in the first column. Column (2) begins the process by introducing city/metropolitan area fixed effects into the analysis. With these effects in place, the year effects measure within-city changes in segregation levels over time. This alteration actually steepens the slope of the dissimilarity time path: in cities where dissimilarity levels were observed in both 1910 and 1990, the 1990 are nearly 28 percentage points higher. The gradual shift of immigrants to less segregated parts of the country has partially masked

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[9] These regressions are weighted by the number of observations used to compute certain immigrant community/year specific characteristics using IPUMS data. This weighting procedure is roughly equivalent to weighting observations by immigrant community size. Thus, the year effects can be interpreted as year-to-year differences in the level of segregation experienced by the typical immigrant.

the overall increase in dissimilarity. Isolation, on the other hand, appears to have declined more rapidly within cities between 1910 and 1970; the 1970 to 1990 trend is roughly equivalent within cities and overall.

The regressions reported in column (3) add a basic set of explanatory variables: the logarithm of city/MSA population, the immigrant group's share of the total population, a measure of the group's average socioeconomic status (SES), and the mean age of immigrant group members in a given city in a given year.[10] Both dissimilarity and isolation index values tend to be lower for immigrant groups residing in larger cities, other things equal. Older immigrant groups also tend to be less segregated by either index measure. There is a significant negative link between SES and isolation levels, but no comparable link appears with dissimilarity. Finally, the impact of group share on segregation, holding other factors constant, differs significantly depending on the segregation index used. Groups forming higher shares of the metropolitan population tend to be both more isolated and less dissimilar than other groups. This pattern might reflect the tendency for larger groups to spread out into more neighborhoods while still maintaining high concentrations in a few core areas.[11]

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[10] The socioeconomic measure is the Occupation Score, which is a measure of average earnings of workers in a given occupation as of 1950. Other measures such as educational attainment and earnings are not available in Census data from 1910 and 1920.

[11] A simple example uses two groups arrayed over two neighborhoods. Suppose the initial distribution is as follows:

	Neighborhood 1	Neighborhood 2
Group 1	12	0
Group 2	176	212

which yields a dissimilarity level of 0.532 and an isolation level of 0.064. If growth of Group 1 occurs, bringing the overall distribution to

	Neighborhood 1	Neighborhood 2
Group 1	24	2

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Recalling the initial purpose of this exercise, it is quite noteworthy that in both specifications the addition of these four controls, which dramatically improve the models' fit according to R^2 measures, do nothing to eliminate the pattern of significant year effects that increase over time. If anything, the trend towards higher dissimilarity and isolation is now more striking. Isolation, in particular, now appears to increase steadily over time until relenting somewhat in the 1980s.

Does the changing composition of the immigrant population explain any portion of the observed increase? In column (4), we introduce a set of four indicators for immigrant groups' country of origin and a set of three indicators for the primary language spoken in the origin country. The omitted origin category is European/Canadian, and the omitted language category is English. The results indicate that immigrant groups speaking non-Germanic languages are consistently more segregated from the rest of the population. Immigrants originating in African, Caribbean or Asian countries tend to have higher dissimilarity levels; Caribbean immigrants are also more isolated than others. The existence of positive effects for African and Caribbean immigrants suggests that racism, either centralized or decentralized, may play some role in recent increases in immigrant segregation.

Controlling for these categorical variables leads to some reduction in the estimated increase in immigrant segregation over time. The reduction in significant positive year effects between columns (3) and (4) amounts to 40% in the case of dissimilarity and 25% for isolation. Thus, some amount of the increases in immigrant segregation observed over the twentieth century can be attributed to increasing linguistic and racial differences between immigrant groups and the general population.

Group 2   176   212

dissimilarity decreases to 0.468 while isolation declines to 0.052.

Column (5) controls more thoroughly for differences between immigrant groups, by controlling for a set of group fixed effects. These regression models fit the data particularly well, with R^2 measures of 0.79 in Table 3a and 0.85 in Table 3b. Estimated year effects continue to display an increasing, statistically significant pattern. Intriguingly, point estimates of year effects tend to be higher in the more flexible specification than they were in column (4). Thus, by any estimate, there continues to be a significant trend towards increasing immigrant segregation even after controlling for all possible permanent differences between groups originating in different countries, all permanent differences in the characteristics of destination cities, and basic characteristics that vary across groups, cities, and time.

To further investigate the determinants of segregation, we now turn to a cross-sectional analysis of immigrant segregation levels in 1990. In this analysis, we make use of a number of variables not available for earlier Census years, including information on origin country GDP and public transit use. Regression models explaining variation in dissimilarity indices appear in Table 4a ; Table 4b examines the isolation index.

The regressions in column (1) of Tables 4a and 4b include a set of immigrant community characteristics similar to those employed in the earlier longitudinal analyses, plus one variable – the logarithm of origin country GDP per capita in 2000 – that varies by country of origin rather than immigrant community. These specifications also control for the regional and linguistic variables found in Tables 3a and 3b, and metropolitan area fixed effects. Although not always statistically significant, cross-sectional results confirm those in the panel analysis: groups comprised of older, higher SES individuals tend to be less segregated, and immigrant communities that form a larger share of the metropolitan population tend to be both more isolated and less dissimilar than others.

Higher GDP per capita predicts less segregation, though the effect is only significant in the case of the isolation index.

The regressions in columns (2) and (3) drop metropolitan area fixed effects in order to introduce a set of controls for metro area characteristics. Column (2) employs country of origin fixed effects, while column (3) controls for country of origin GDP per capita. The metro area characteristics include measures of population and population growth, weighted density, the share of commuters using public transportation, and measures of the degree of segregation between poor white households, defined as those with household incomes below $15,000 in 1989 dollars, and the remainder of the population.[12]

Among these characteristics, only the logarithm of metro area population in 1990 shows any relationship with the dissimilarity of immigrant groups residing within. Moreover, the relationship shown in Table 4a opposes that shown in the longitudinal analysis in Table 3a, which incorporated city or metro area fixed effects. Thus, larger cities tend to feature more segregated immigrant groups, but growth over time is associated with lower segregation. There is some evidence in Table 4a to support this conclusion: faster population growth in a metropolitan area is associated with lower dissimilarity, significantly so in the specification that omits country of origin fixed effects.

Columns (2) and (3) reveal another discrepancy between models that include or exclude country of origin fixed effects: the coefficient on the group's mean occupation score reverses sign. Thus, ethnic groups of higher socioeconomic status tend to be less segregated in American cities, but across cities the settlements attracting immigrants in the highest-paying occupations tend to be

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[12] The weighted density measure is computed by calculating the population density of each census tract in the metropolitan area, and taking the mean weighted by population of each tract.

the most segregated ones. This may reflect a tendency for immigrant professionals to locate in cities where an ethnic enclave presents a natural market for their services. This pattern is not replicated, however, in Table 4b, which shows that isolation is consistently lower among groups with higher SES.

Immigrant isolation shows little relationship with metro area population or growth in the cross-section, but relates significantly to a number of other characteristics. Immigrants tend to be more isolated in dense urban areas with a high degree of public transit use. Extrapolating from these cross-sectional results to time series patterns of segregation, low-density suburbanization and increased reliance on the automobile do not appear responsible for broad increases in immigrant segregation in recent decades. At least cross-sectionally, these patterns are associated with lower, rather than higher, degrees of immigrant segregation. We investigate this pattern further below.

Interestingly, immigrant isolation tends to be highest in cities where poor white households experience high dissimilarity yet low isolation. A similar, though insignificant, pattern appeared in Table 4a. Metropolitan areas meeting this description are often cities where whites form a relatively small share of the poor population, such as Honolulu, Anchorage, and Washington DC.

In both tables, columns (4) and (5) introduce a series of interaction terms between a country of origin characteristic, per capita GDP, and three metro area characteristics, population growth, density and share of commuters using public transit. The resulting coefficients are consistently positive across specifications, though statistically significant most clearly when explaining variation in the isolation index. Immigrants from more developed countries tend to experience the greatest segregation in dense, public transit-oriented cities, while immigrants from less developed countries exhibit the opposite pattern: isolation for these groups is highest in low-density, car-dependent metro

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areas. Point estimates suggest that the cutoff value between these two types of immigrant groups occurs at GDP per capita levels between $6,000 and $7,000 per year, or roughly the level of Argentina.

There is at least some evidence, then, that low-density, auto-centered development has contributed to increasing immigrant segregation. Groups originating in less-developed countries may tend to form enclaves in these types of metro areas to take advantage of shared transportation resources, or because native suburbanization opens up residential opportunities in certain neighborhoods that have fallen out of favor. Testing this hypothesis is one motivation for our examination of immigrant segregation and housing prices below.

V. Evidence on Housing Prices

Our theories of immigrant segregation make varying predictions regarding the relationship between immigrant segregation and housing prices. A desire for exposure to one's own culture, or for access to networks that ease the process of assimilation, should lead immigrants to pay a premium for housing in segregated neighborhoods. Immigrants might also pay a premium if natives take collective action to restrict their housing market choice; in earlier work (Cutler, Glaeser and Vigdor 1999) we find evidence of such action directed against blacks in the earlier 20th century. More decentralized nativism may lead to a situation where housing trades at discounted prices in immigrant enclaves, and commands a premium in established native neighborhoods. Such a pattern might also be observed if immigrants tend to congregate in neighborhoods that have fallen into disregard among natives for reasons other than ethnic composition.

Altogether, there are two theories predicting a positive relationship between immigrant segregation and the prices immigrants pay for housing, and two theories predicting a negative relationship. To distinguish between the hypotheses predicting a positive effect, we follow our earlier work (Cutler, Glaeser and Vigdor 1999) and examine the differences in housing premia paid by new and established immigrants, under the assumption that demand for enclave residence is strongest among new migrants, while xenophobia does not discriminate between recent arrivals and others. To distinguish between the hypotheses predicting a negative effect, we test whether the relationship between segregation and housing prices differs for immigrant groups that differ racially from the native majority. Finally, we estimate specifications using data from two IPUMS samples, to enable inference regarding the possible contribution these factors make to the increase in immigrant segregation over time.

The results in Table 5a utilize the logarithm of rent as a dependent variable. The unit of observation is a renter-occupied housing unit in any metropolitan area in either 1970 or 1990. Each regression controls for a set of metropolitan area fixed effects, country of origin fixed effects, and housing structural characteristics, implying that the impact of segregation on rents is identified by comparing the segregation levels of ethnic groups, relative to their national average, within cities.[13] Segregation indices are set to zero for households headed by native born renters.

In 1970, we find consistent evidence that immigrants paid a premium for housing in segregated areas. A one percentage point increase in dissimilarity is associated with a 0.7% increase in rent paid by immigrants, controlling for housing quality measures and metro area fixed effects.

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[13] Note that the inclusion of country of origin fixed effects precludes the need to independently control for whether a householder is an immigrant.

A percentage point increase in isolation predicts a 1.8 percentage point increase in rents. In the isolation regressions, immigrant group share of the population appears as a significant negative predictor of rent. This result probably relates to the strong positive relationship between group share and isolation, shown in Table 4b above. Thus, increases in isolation associated with higher group share do not predict higher housing rents, while increases orthogonal to variation in group share do.

As detailed above, this evidence is consistent either with a decentralized market outcome where immigrants are willing to pay a premium to reside in enclave neighborhoods, or with a market featuring artificial barriers to immigrant mobility. To distinguish between these explanations, the second and fourth regressions add controls for whether an immigrant householder arrived in the United States within the past five years, and interacts that indicator with segregation. Recent immigrants tend to pay higher rent overall, but the recent immigrant premium is consistently estimated to be highest when groups experience the least amount of segregation. The evidence is thus more consistent with barriers to residential mobility among immigrants, although demand for enclave residence that increases with time spent in the US could also explain this result.

Identical specifications estimated using 1990 IPUMS data produce radically different results. The estimated impact of dissimilarity on rents is precisely estimated and close to zero, and the impact of isolation on rents is negative and statistically insignificant. Recent immigrants continue to pay a premium for housing, but this premium is unrelated to the degree of segregation their ethnic group experiences in their city. In a period of rapidly rising immigrant segregation, the premium immigrants paid for rental housing in segregated cities disappeared.

Table 5b shifts attention to owner-occupiers, analyzing variation in self-reported estimates of housing value. In general, the results here replicate the analysis of rent values. Estimates suggest

that immigrant owner-occupiers' housing values increased with their group's segregation in 1970. The estimated effects are smaller in magnitude than in the corresponding rent regressions, and fail to attain statistical significance in the case of the isolation index. There is no indication that the value of homes owned by recent immigrants bears any special relationship to segregation.

In 1990, there is actually statistically significant evidence of a positive relationship between dissimilarity and housing values, but the coefficient is one-tenth the magnitude of the equivalent 1970 model. Point estimates for isolation are also positive, but roughly one-half the magnitude of 1970 estimates. Further evidence suggests that recently arrived immigrants actually pay a significant discount for owner occupied housing when their group experiences greater segregation. This is consistent either with a pattern of nativism directed predominantly at newly arrived immigrants, or with a tendency for immigrants to purchase housing in low-demand neighborhoods.

Table 6 tests the nativism hypothesis, under the presumption that anti-immigrant sentiment is particularly strong when directed at immigrants with racial backgrounds differing from the majority. The four regressions in this table judge whether immigrants originating in African, Caribbean, or Latin American countries are subject to a greater discount for housing in segregated areas. Such a pattern would be consistent with our earlier finding (Cutler, Glaeser and Vigdor 1999) of a discount in housing prices paid by blacks in segregated cities. Table 6 reveals that there is no such pattern among the immigrant groups in question. The only statistically significant interaction terms, occurring in just one of four specifications, suggest the reverse – that immigrants belonging to these minority groups pay a rent premium in metro areas where their group is isolated from the majority.

This evidence against the decentralized nativism hypothesis points to immigrant occupation of less-desirable neighborhoods as a reason for both the discounts observed in some 1990 specifications and the overall disappearance of the immigrant segregation premium between 1970 and 1990. Our final empirical exercise tests this supposition, making use of the Urban Institute's Underclass Database, which

provides longitudinal information on individual neighborhoods, proxied by Census tracts, between the 1970 and 2000 Census enumerations. We used this database to compute a dissimilarity index measuring the separation of natives and immigrants in the 2000 Census, and three additional hypothetical dissimilarity indices comparing immigrants' 2000 distribution across tracts to the distribution of natives across tracts in 1970, 1980 and 1990. The hypothetical dissimilarity indices measure the fraction of the immigrant population that would have to switch neighborhoods to identically match the distribution of natives in one of these earlier Census years.

If immigrants disproportionately inhabit neighborhoods that have fallen out of favor among natives, then the dissimilarity between immigrants and the native distribution in earlier Census enumerations should fall below the actual 2000 immigrant-native dissimilarity index. If, on the other hand, immigrants move to newly created neighborhoods at rates similar to those of natives, then suburbanization trends over the past three decades should render current dissimilarity substantially lower than the hypothetical indices.

Figure 10 presents the results of this analysis, classifying metropolitan areas according to whether the distribution of immigrants in 2000 most closely matches the distribution of natives in 1970, 1980, 1990 or 2000. As the figure illustrates, there is some degree of heterogeneity across metro areas, but the most common tendency is for immigrants to occupy neighborhoods more closely

associated with past native residence than current native residence. This tendency is most pronounced in the nation's two largest immigrant destinations, New York and Los Angeles, where the current distribution of the immigrant population most closely resembles the 1970 native population. Among the nation's top ten destinations for immigrants, displayed in Figure 10, only in San Diego, Washington, and Miami does the current distribution of immigrants across neighborhoods most closely resemble the current distribution of natives. In most areas, immigrant enclaves have appeared in the wake of natives' drive towards the suburban fringe.

VI. Conclusions

This paper has documented the time series path of segregation for immigrant groups in the United States between 1910 and 2000. These patterns closely track immigration flows to the United States, first declining and then rising after the century's midpoint. Recent increases in immigrant segregation are remarkable for several reasons, not least of which is the fact that they run counter to current trends in racial segregation in American metropolitan areas. Surprisingly, these increases over time do not appear related to increases in the immigrant share of the population, to changes in the average skill level or age of immigrants, or to the evolution of new regions of the country as centers of immigration. Controlling for these factors only increases the slope of the time path of immigrant segregation.

The rise in immigrant segregation appears related to several factors. Newer immigrant groups, particularly those from African or Caribbean nations, are more likely to be racially dissimilar from the American majority. Greater linguistic differences between immigrants' native tongues and English has created a greater demand for enclave communities that offer opportunities to reduce communication costs within groups. The decentralization and declining density of American cities

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has led to two distinct patterns in immigrant location choices. Migrants from Europe and other developed countries gravitate towards denser neighborhoods, which separates them from native suburbanites but still puts them in contact with a wide range of members of other ethnic and racial groups. Migrants from less-developed countries isolate themselves in small, scattered enclaves, presumably to take advantage of shared resources while maintaining proximity to centers of service industry and other low-wage employment.

Finally, while we have no direct evidence on the time pattern of nativist or xenophobic sentiment, we note that cross-sectional variation in immigrant segregation in 1990 appears to be driven by the same forces that determine black-white segregation: differential willingness to pay to live in neighborhoods with particular ethnic character.

Will immigrant segregation continue its ascent in the twenty-first century? As American cities continue to decentralize, and the locus of immigration shifts further away from Europe and towards nations with starker linguistic and racial differences from the American majority, it is reasonable to expect that immigrant segregation will rise rather than decline. Further analysis of the consequences of immigrant isolation, in terms of socioeconomic advancement and cultural assimilation, seems quite prudent in light of these trends.

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Table 1: Summary of Dissimilarity and Isolation, 1910-2000

Year/Country of origin	Number of Immigrants	Number of Communities	Dissimilarity		Isolation	
			Mean	Std. Dev.	Mean	Std. Dev.
1910	9.3 M	592	0.352	0.141	0.083	0.073
Germany	1.2 M	154	0.236	0.064	0.025	0.019
Russia	1.1 M	90	0.501	0.065	0.124	0.041
Ireland	0.8 M	69	0.240	0.061	0.020	0.009
Italy	0.7 M	110	0.483	0.126	0.116	0.066
1920	10.9 M	810	0.342	0.124	0.061	0.051
1940	9.0 M	553	0.376	0.112	0.049	0.034
1950	7.6 M	566	0.379	0.104	0.039	0.028
1970	11.6 M	1241	0.463	0.121	0.040	0.052
1980	10.8 M	1309	0.513	0.132	0.051	0.067
1990	16.0 M	2118	0.561	0.145	0.060	0.064
Mexico	3.9 M	114	0.497	0.109	0.126	0.053
Philippines	0.8 M	63	0.526	0.070	0.048	0.037
Cuba	0.7 M	34	0.533	0.063	0.161	0.101
2000 Mexico	7.4 M	188	0.499	0.102	0.135	0.051

Note: Unit of observation for summary statistics is the immigrant community, defined by country of origin and city/MSA. Summary statistics are weighted by the number of immigrants residing in the community. Immigrant communities with less than 1,000 members are excluded from the analysis.

Table 2: Correlations among alternative computations of segregation indices

Panel 1: Dissimilarity	Unweighted Mean	Correlation with Original version	Correlation with rest. microdata orig. version	Correlation with other group = native version
Original version	0.626	—	—	—
Original version, computed with restricted microdata	0.601	0.987	—	—
Other group is natives	0.606	0.984	0.998	—
Other group is natives in native-only households	0.612	0.978	0.993	0.998
Panel 2: Isolation				
Original version	0.016	—	—	—
Original version, computed with restricted microdata	0.014	0.980	—	—
Other group is natives	0.018	0.952	0.977	—
Other group is natives in native-only households	0.024	0.917	0.945	0.986

Table 3 a: Panel evidence on dissimilarity levels

Independent Variable	(1)	(2)	(3)	(4)	(5)
1920 Year Effect	-0.006 (0.016)	$1.19*10^{-4}$ (0.014)	0.007 (0.014)	-0.026 (0.018)	-0.022** (0.009)
1940 Year Effect	0.070** (0.016)	0.070** (0.015)	0.116** (0.014)	0.040 (0.028)	0.059** (0.010)
1950 Year Effect	0.079** (0.017)	0.083** (0.015)	0.146** (0.015)	0.052* (0.032)	0.080** (0.011)
1970 Year Effect	0.149** (0.017)	0.184** (0.015)	0.239** (0.018)	0.142** (0.038)	0.194** (0.013)
1980 Year Effect	0.184** (0.016)	0.266** (0.018)	0.280** (0.023)	0.158** (0.039)	0.236** (0.017)
1990 Year Effect	0.208** (0.014)	0.278** (0.013)	0.301** (0.016)	0.185** (0.036)	0.218** (0.012)
Ln(City/MSA Population)	—	—	-0.019 (0.009)	-0.005 (0.016)	-0.014** (0.006)
Group share	—	—	-0.641** (0.050)	-0.899** (0.193)	-0.400** (0.048)
Mean occupation score in group/city/year	—	—	$3.60*10^{-4}$ ($6.51*10^{-4}$)	$-6.78*10^{-4}$ (0.002)	0.003** ($6.21*10^{-4}$)
Mean age in group/city/year	—	—	-0.005** ($2.15*10^{-4}$)	-0.002** (0.001)	-0.003** ($2.58-10^{-4}$)
African origin country	—	—	—	0.217** (0.047)	—
Caribbean origin country	—	—	—	0.115** (0.043)	—
Asian origin country	—	—	—	0.036 (0.030)	—
Latin American origin country	—	—	—	-0.005 (0.028)	—
Germanic language other than English	—	—	—	0.027 (0.050)	—
Indo-European language other than Germanic	—	—	—	0.157** (0.031)	—
Non-Indo-European language	—	—	—	0.144** (0.037)	—
City/MSA fixed effects	No	Yes	Yes	Yes	Yes
Group fixed effects	No	No	No	No	Yes
N	4,044	4,044	4,044	4,044	4,044
R^2	0.209	0.419	0.496	0.646	0.786

Note: Standard errors in parentheses. Regression specifications are weighted according to the sample size used to compute mean group/city/year characteristics used in columns 3-5. Standard errors in column (4) have been corrected for within-ethnic-group clustering.

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Table 3 b: Panel evidence on isolation levels

Independent Variable	(1)	(2)	(3)	(4)	(5)
1920 Year Effect	-0.018** (0.007)	-0.017** (0.006)	0.010** (0.004)	0.004 (0.011)	0.004 (0.003)
1940 Year Effect	-0.021** (0.007)	-0.021** (0.006)	0.035** (0.004)	0.024** (0.010)	0.027** (0.003)
1950 Year Effect	-0.027** (0.007)	-0.028** (0.007)	0.042** (0.004)	0.028** (0.011)	0.032** (0.004)
1970 Year Effect	-0.029** (0.007)	-0.038** (0.007)	0.065** (0.005)	0.050** (0.012)	0.050** (0.004)
1980 Year Effect	-0.005 (0.007)	-0.010 (0.008)	0.082** (0.006)	0.063** (0.013)	0.057** (0.005)
1990 Year Effect	0.002 (0.006)	-0.014** (0.006)	0.069** (0.004)	0.052** (0.012)	0.054** (0.004)
Ln(City Population)	—	—	-0.020** (0.002)	-0.017** (0.005)	-0.016** (0.002)
Group share	—	—	1.074** (0.013)	1.014** (0.034)	0.874** (0.016)
Mean occupation score	—	—	-0.002** (1.74×10^{-4})	-0.002** (0.001)	-0.002** (2.05×10^{-4})
Mean age	—	—	-0.001** (5.73×10^{-5})	-0.001** (5.07×10^{-4})	-0.002** ($8.48 - 10^{-5}$)
African origin country	—	—	—	-0.008 (0.009)	—
Caribbean origin country	—	—	—	0.021* (0.011)	—
Asian origin country	—	—	—	-0.004 (0.003)	—
Latin American origin country	—	—	—	-0.004 (0.012)	—
Germanic language other than English	—	—	—	0.003 (0.003)	—
Indo-European language other than Germanic	—	—	—	0.026** (0.003)	—
Non-Indo-European language	—	—	—	0.026** (0.006)	—
City/MSA fixed effects	No	Yes	Yes	Yes	Yes
Group fixed effects	No	No	No	No	Yes
N	4,044	4,044	4,044	4,044	4,044
R^2	0.031	0.280	0.769	0.794	0.851

Note: Standard errors in parentheses. Regression specifications are weighted according to the sample size used to compute mean group/city/year characteristics used in columns 3-5. Standard errors in column (4) have been corrected for within-ethnic-group clustering.

Table 4a: Cross-sectional evidence on dissimilarity levels, 1990

Independent Variable	(1)	(2)	(3)	(4)	(5)
Ln(City Population)	—	0.030[**] (0.010)	0.038[**] (0.009)	0.037[**] (0.009)	—
Group share	-1.458[**] (0.221)	-1.387[**] (0.148)	-1.423[**] (0.179)	-1.443[**] (0.160)	-1.164[**] (0.093)
Mean occupation score	-0.003 (0.003)	0.003[**] (0.002)	-0.004[**] (0.001)	-0.004[**] (0.002)	0.004[**] (0.001)
Mean age	-0.002 (0.001)	-0.003[**] (0.001)	-0.002[**] (0.001)	-0.002[**] (0.001)	-0.004[**] $(4.94*10^{-4})$
ln(Origin country GDP per capita)	-0.004 (0.007)	—	-0.003 (0.004)	-0.373[**] (0.067)	—
Population growth rate 1980-1990	—	-0.084 (0.054)	-0.104[**] (0.052)	-0.212 (0.149)	—
ln(Person-weighted population density, 1990)	—	-0.024 (0.023)	-0.024 (0.023)	-0.288[**] (0.055)	—
Share of commuters using public transit	—	-0.139 (0.104)	-0.149 (0.092)	-1.295[**] (0.275)	—
Dissimilarity index of poor whites	—	0.155 (0.154)	0.284 (0.172)	0.243 (0.160)	—
Isolation index of poor whites	—	-0.100 (0.384)	-0.206 (0.437)	-0.184 (0.428)	—
ln(GDP per capita)* ln(population growth)	—	—	—	0.013 (0.013)	0.004 (0.009)
ln(GDP per capita)* ln(density)	—	—	—	0.033[**] (0.006)	0.019[**] (0.004)
ln(GDP per capita)* public transit share	—	—	—	0.146[**] (0.030)	0.079[**] (0.021)
Region/language controls	Yes	No	Yes	Yes	No
Group fixed effects	No	Yes	No	No	Yes
City/MSA fixed effects	Yes	No	No	No	Yes
N	1,456	1,455	1,455	1,455	1,455
R^2	0.586	0.762	0.555	0.569	0.848

Note: Standard errors in parentheses. Regression specifications are weighted according to the sample size used to compute mean group/city/year characteristics used in columns 3-5. Standard errors are adjusted for clustering within ethnic groups (column 1) or cities (columns 2, 3 and 4).
[**] denotes a coefficient significant at the 5% level.

Table 4b: Cross-sectional evidence on isolation levels, 1990

Independent Variable	(1)	(2)	(3)	(4)	(5)
Ln(City Population)	—	$6.73*10^{-4}$ (0.003)	$1.36*10^{-4}$ (0.004)	$1.33*10^{-4}$ (0.004)	—
Group share	1.061^{**} (0.101)	0.228^{*} (0.127)	0.608^{**} (0.168)	0.605^{**} (0.166)	0.697^{**} (0.030)
Mean occupation score	-0.003^{**} (0.001)	-0.004^{**} (0.001)	-0.004^{**} (0.001)	-0.004^{**} (0.001)	-0.003^{**} ($3.39*10^{-4}$)
Mean age	$-3.65*10^{-4}$ ($4.71*10^{-4}$)	-0.002^{**} ($2.60*10^{-4}$)	$-8.72*10^{-4**}$ ($2.91*10^{-4}$)	-0.001^{**} ($2.94*10^{-4}$)	-0.001^{**} ($1.59*10^{-4}$)
ln(Origin country GDP per capita)	-0.004^{*} (0.002)	—	-0.003^{*} (0.002)	-0.044^{*} (0.023)	—
Population growth rate 1980-1990	—	-0.014 (0.013)	-0.019 (0.021)	-0.060 (0.047)	—
ln(Person-weighted population density, 1990)	—	0.031^{**} (0.008)	0.023^{*} (0.012)	0.004 (0.018)	—
Share of commuters using public transit	—	0.125^{**} (0.036)	0.101^{*} (0.056)	-0.136 (0.104)	—
Dissimilarity index of poor whites	—	0.202^{**} (0.083)	0.263^{*} (0.158)	0.262^{*} (0.156)	—
Isolation index of poor whites	—	-0.390^{**} (0.113)	-0.491^{**} (0.198)	-0.487^{**} (0.196)	—
ln(GDP per capita)* ln(population growth)	—	—	—	0.005 (0.004)	0.001 (0.003)
ln(GDP per capita)* ln(density)	—	—	—	0.003 (0.002)	0.001 (0.001)
ln(GDP per capita)* public transit share	—	—	—	0.030^{**} (0.012)	0.007 (0.007)
Region/language controls	Yes	No	Yes	Yes	No
Group fixed effects	No	Yes	No	No	Yes
City/MSA fixed effects	Yes	No	No	No	Yes
N	1,456	1,455	1,455	1,455	4,044
R^2	0.836	0.813	0.663	0.668	0.896

Note: Standard errors in parentheses. Regression specifications are weighted according to the sample size used to compute mean group/city/year characteristics used in columns 3-5.

Table 5a: Segregation and House Rents

	Dependent Variable: ln(Annual Rental Payments)							
	1970				1990			
Independent Variable	Dissimilarity		Isolation		Dissimilarity		Isolation	
Segregation	0.732**	0.741**	1.808**	1.815**	-0.001	-0.008	-0.303	-0.287
	(0.124)	(0.129)	(0.464)	(0.477)	(0.018)	(0.020)	(0.198)	(0.202)
Recent Immigrant		0.220**		0.134**		0.104**		0.116**
		(0.056)		(0.018)		(0.013)		(0.011)
Segregation*Recent Immigrant		-0.200*		-0.472**		0.037		0.088
		(0.105)		(0.129)		(0.030)		(0.230)
Group Share	0.433	0.366	-3.218**	-2.910**	-0.331	-0.306	-0.056	-0.058
	(0.320)	(0.323)	(0.767)	(0.747)	(0.236)	(0.232)	(0.290)	(0.284)
N	147,271	147,271	147,271	147,271	211,288	211,288	211,288	211,288
R^2	0.378	0.378	0.377	0.378	0.299	0.299	0.299	0.299

Note: Standard errors, corrected for clustering of observations at the MSA by ethnic group level, in parentheses. All specifications control for housing structural characteristics, metropolitan area fixed effects, and country of origin fixed effects.
** denotes a coefficient significant at the 5% level, * the 10% level.

Table 5b: Segregation and Owner-Occupied House Values

	Dependent Variable: ln(Owner's report of housing value)							
	1970				1990			
Independent Variable	Dissimilarity		Isolation		Dissimilarity		Isolation	
Segregation	0.372**	0.371**	0.772	0.789	0.030*	0.035*	0.365	0.415
	(0.078)	(0.079)	(0.520)	(0.518)	(0.015)	(0.015)	(0.222)	(0.223)
Recent Immigrant	—	-0.010	—	0.017	—	0.005	—	0.004
		(0.085)		(0.027)		(0.025)		(0.019)
Segregation*Recent Immigrant	—	0.029	—	-0.287	—	-0.117*	—	-1.635**
		(0.184)		(0.253)		(0.058)		(0.441)
Group Share	0.852*	0.851*	-0.810	-0.791	-0.332	-0.336	-0.583*	-0.600*
	(0.347)	(0.349)	(0.999)	(0.992)	(0.253)	(0.252)	(0.282)	(0.279)
N	188,945	188,945	188,945	188,945	415,967	415,967	415,967	415,967
R^2	0.441	0.441	0.440	0.440	0.611	0.611	0.611	0.611

Note: Standard errors, corrected for clustering of observations at the MSA by ethnic group level, in parentheses. All specifications control for housing structural characteristics, metropolitan area fixed effects, and country of origin fixed effects.
** denotes a coefficient significant at the 5% level, * the 10% level.

Table 6: Immigrant race, segregation, and housing prices

Independent variable	ln(Annual Rental Payments)		ln(Owner's report of housing value)	
	Dissimilarity	Isolation	Dissimilarity	Isolation
Segregation	0.006	-1.097	0.036*	-0.007
	(0.021)	(0.360)	(0.016)	(0.271)
Segregation*Caribbean immigrant	-0.094	0.996*	-0.033	0.466
	(0.050)	(0.411)	(0.054)	(0.340)
Segregation*Latin American immigrant	0.007	1.160*	-0.016	0.600
	(0.046)	(0.451)	(0.053)	(0.489)
Segregation*African immigrant	0.017	-0.883	-0.029	-0.902
	(0.046)	(0.934)	(0.031)	(1.706)
Group share	-0.305	-0.262	-0.320	-0.647*
	(0.234)	(0.302)	(0.262)	(0.328)
N	211,288	211,288	415,967	415,967
R^2	0.299	0.299	0.611	0.611

Note: Standard errors, corrected for clustering of observations at the MSA by ethnic group level, in parentheses. All specifications control for housing structural characteristics, metropolitan area fixed effects, and country of origin fixed effects.
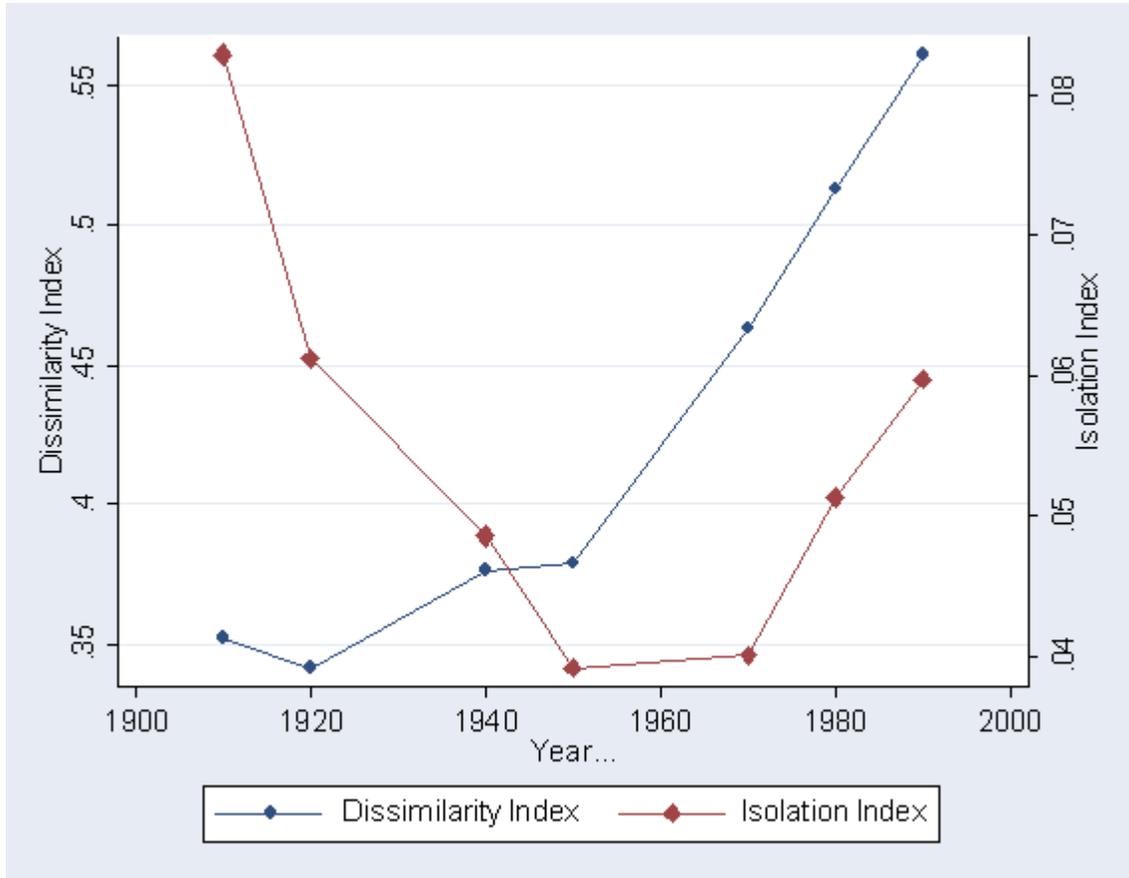** denotes a coefficient significant at the 5% level, * the 10% level.

Figure 1: Dissimilarity and Isolation, 1910-1990. Observations are weighted averages of statistics for immigrant communities, with weights equal to the number of immigrants in the community.
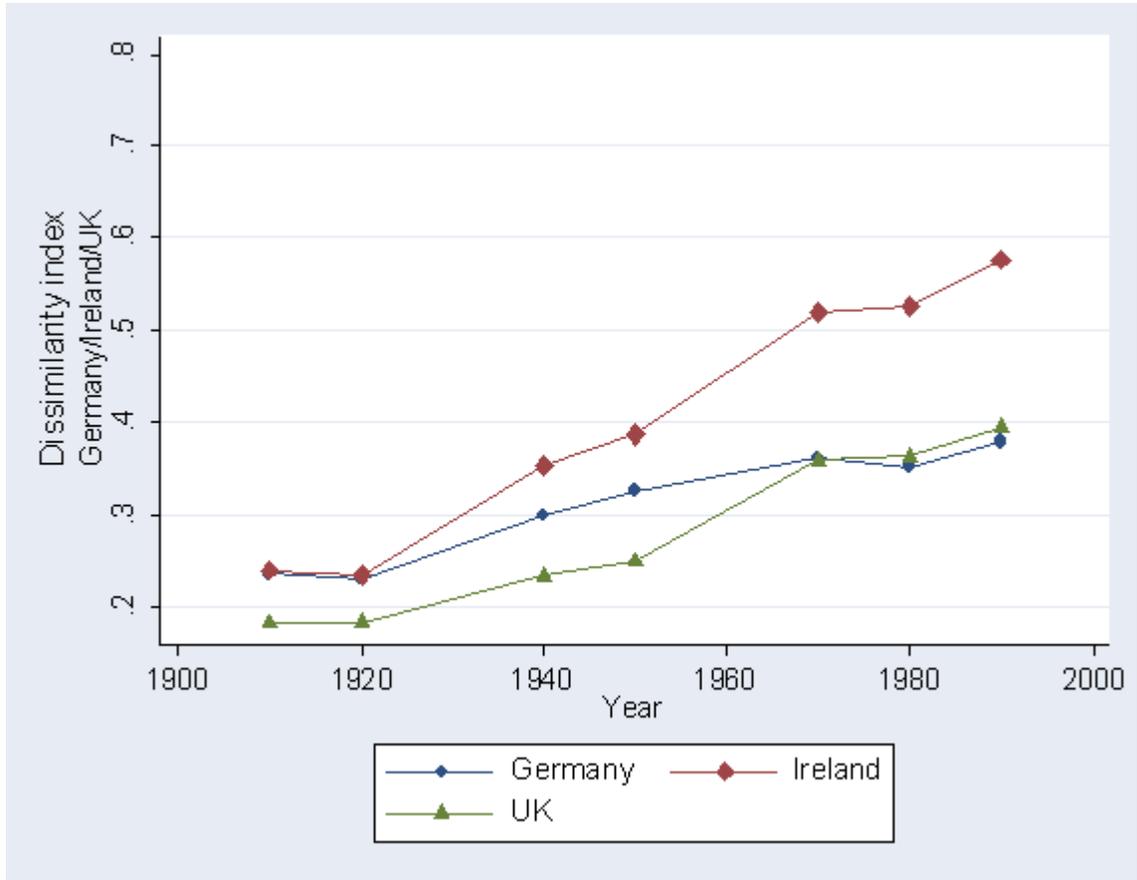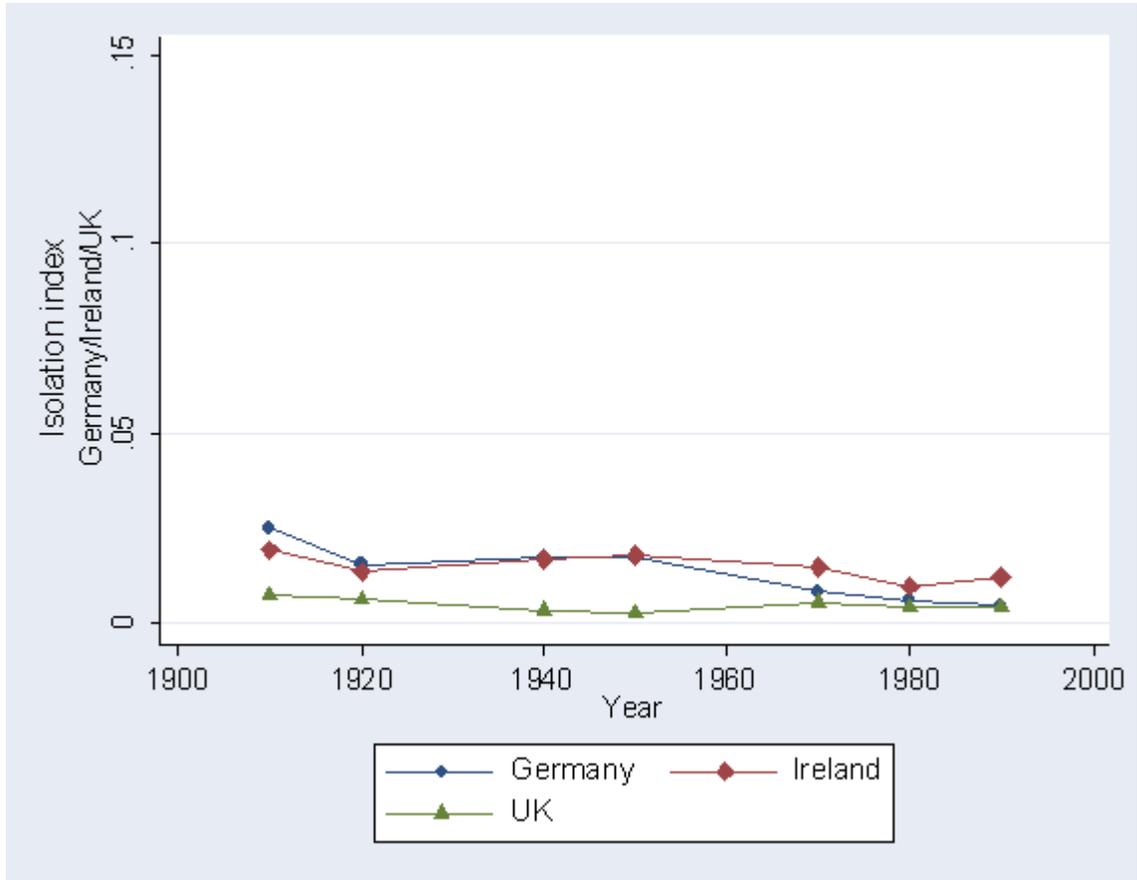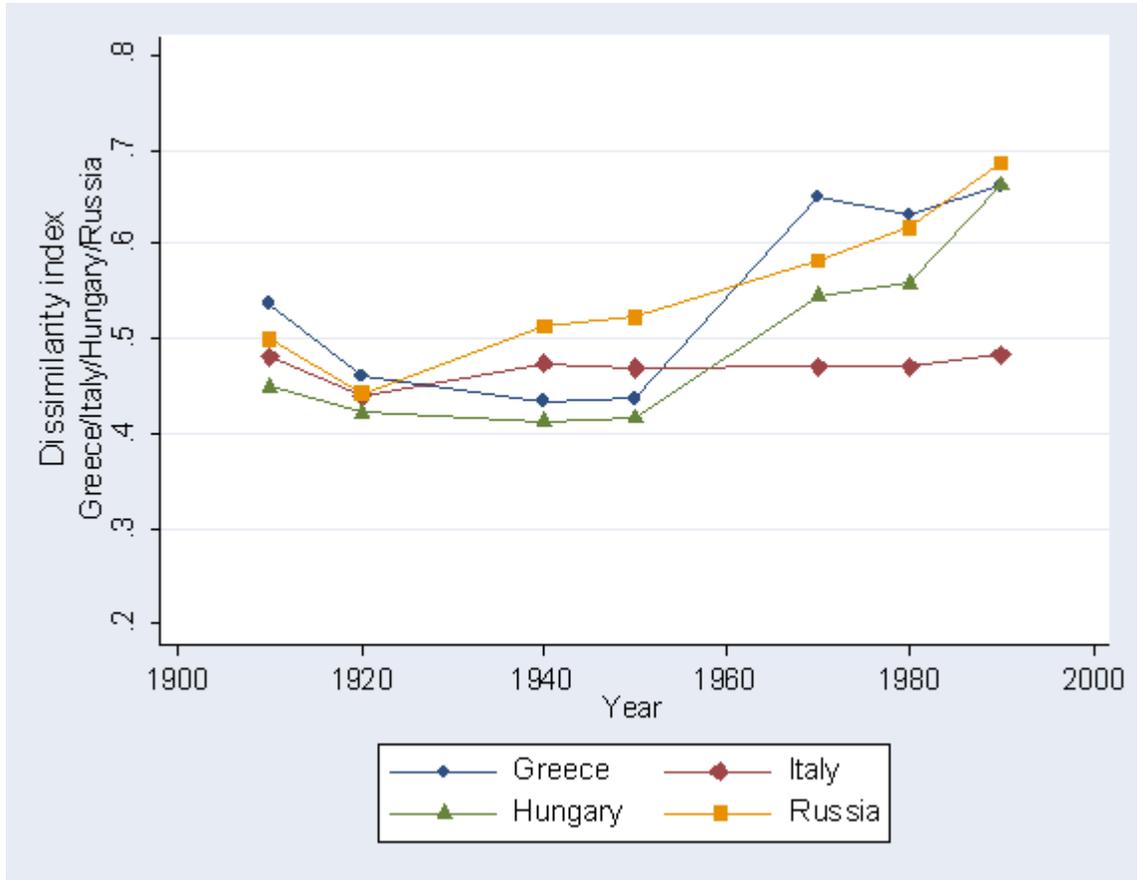
Figure 2: Dissimilarity for older immigrant groups, 1910-1990. Observations are weighted averages of statistics for immigrant communities, with weights equal to the number of immigrants in the community.

Figure 3: Isolation for older immigrant groups, 1910-1990. Observations are weighted averages of statistics for immigrant communities, with weights equal to the number of immigrants in the community.
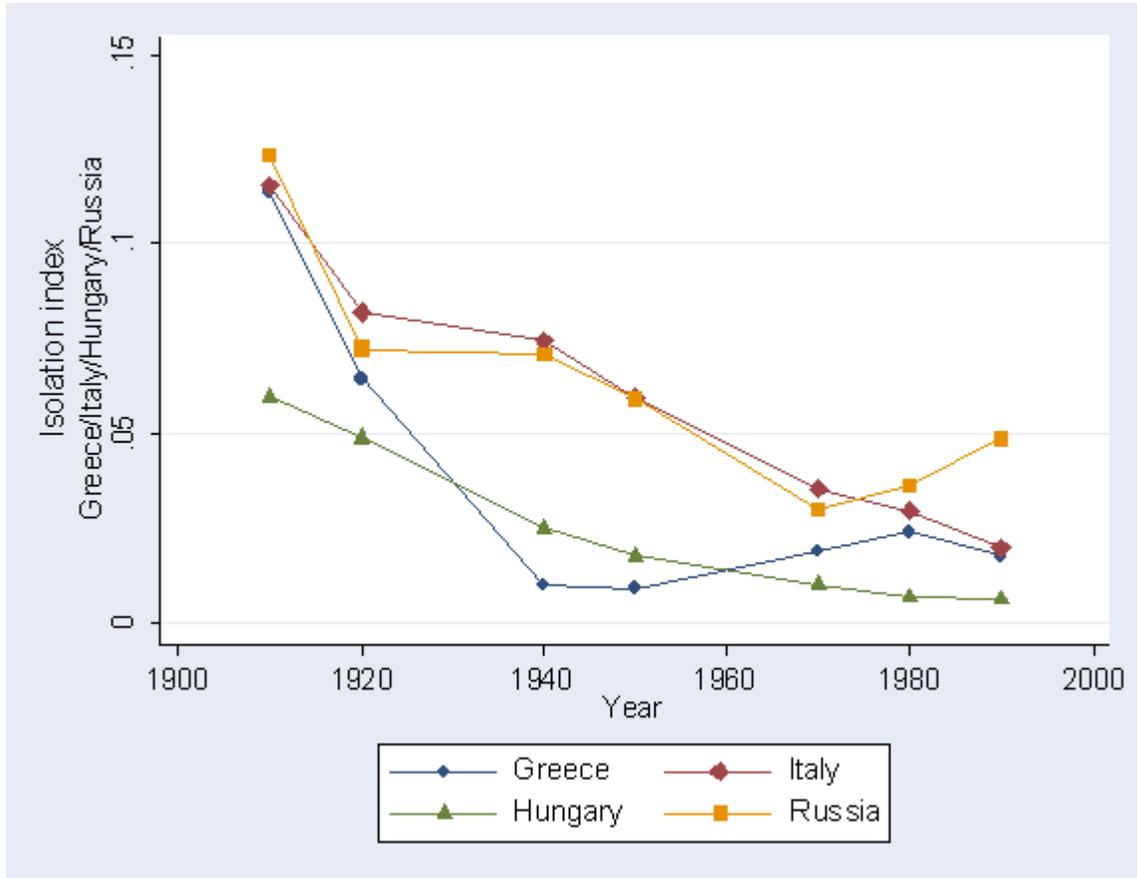
Figure 4: Dissimilarity for new immigrant groups, 1910-1990. Observations are weighted averages of statistics for immigrant communities, with weights equal to the number of immigrants in the community.

Figure 5: Isolation for new immigrant groups, 1910-1990. Observations are weighted averages of statistics for immigrant communities, with weights equal to the number of immigrants in the community.
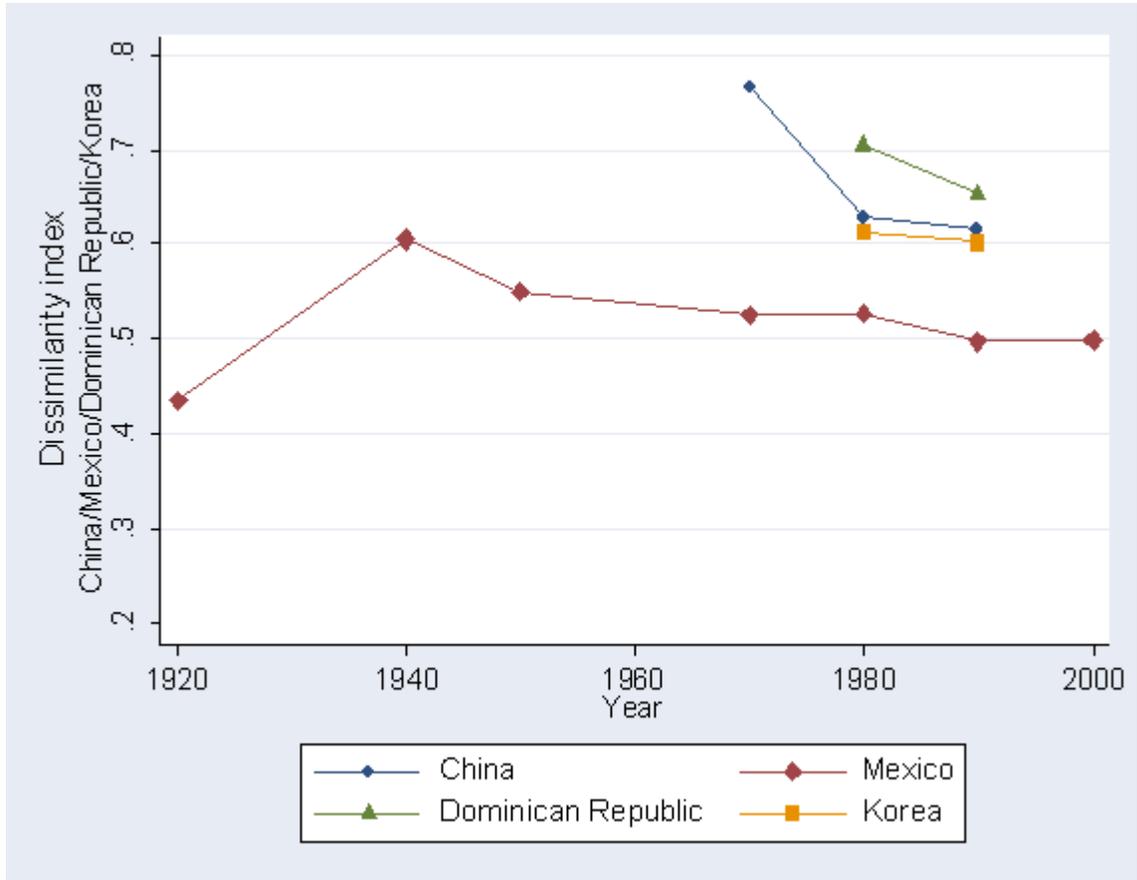
Figure 6: Dissimilarity for newest immigrant groups, 1920-2000. Observations are weighted averages of statistics for immigrant communities, with weights equal to the number of immigrants in the community.
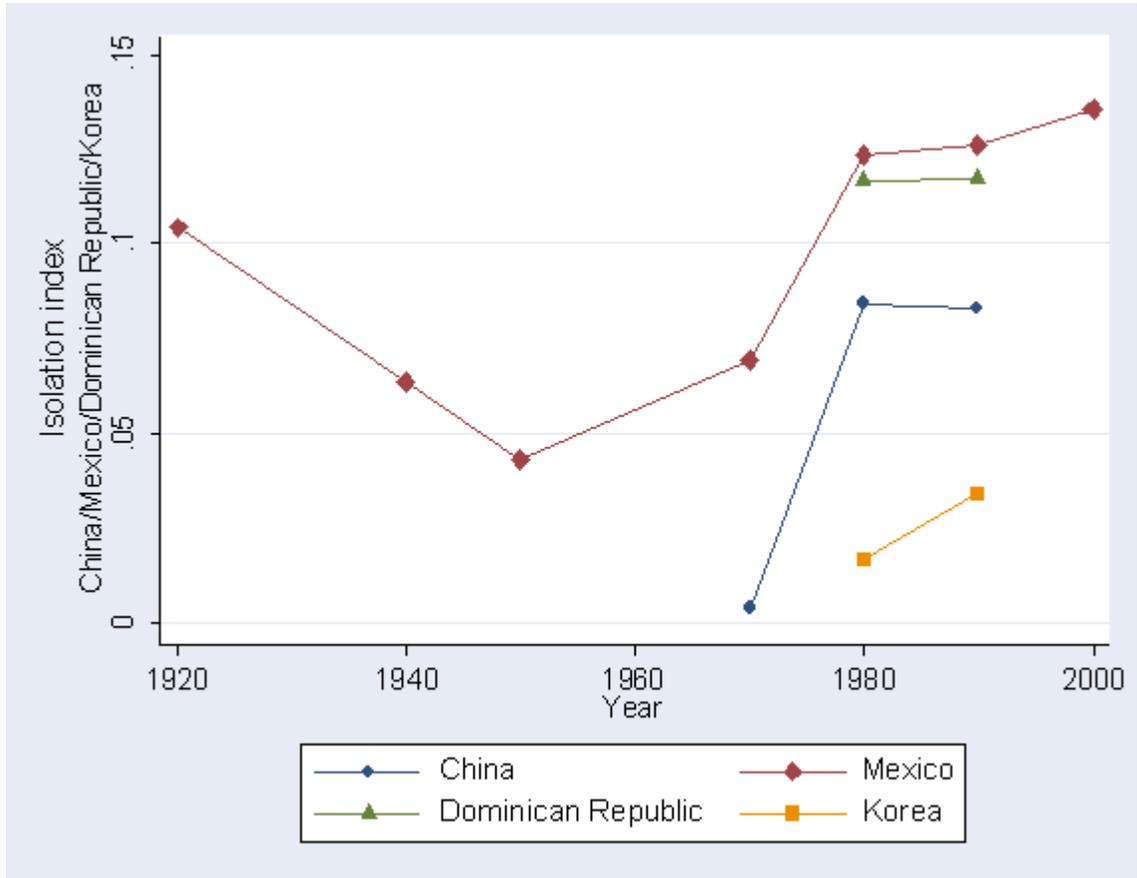
Figure 7: Isolation for newest immigrant groups, 1920-2000. Observations are weighted averages of statistics for immigrant communities, with weights equal to the number of immigrants in the community.
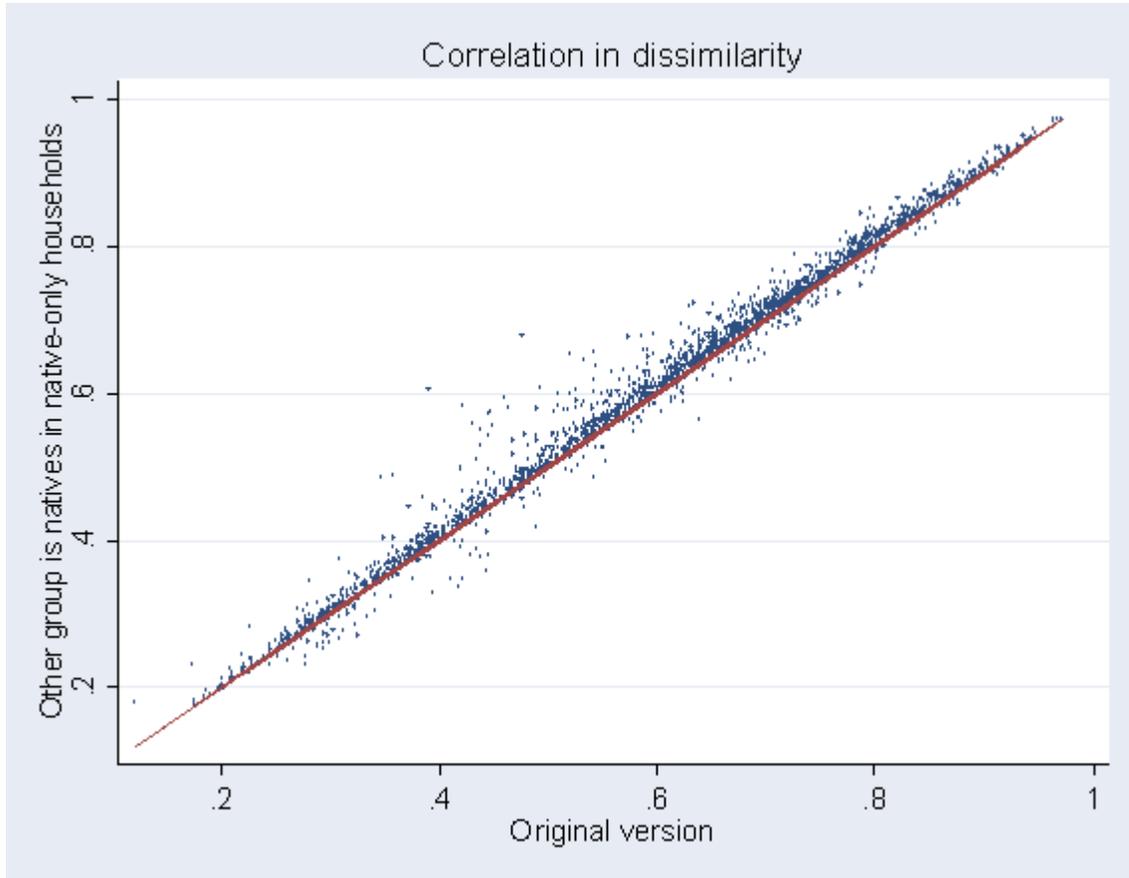
Figure 8: Correlation between original version of dissimilarity index and alternative that compares the distribution of immigrant group members to the distribution of natives living in native-only households. The plotted line is the 45-degree line.
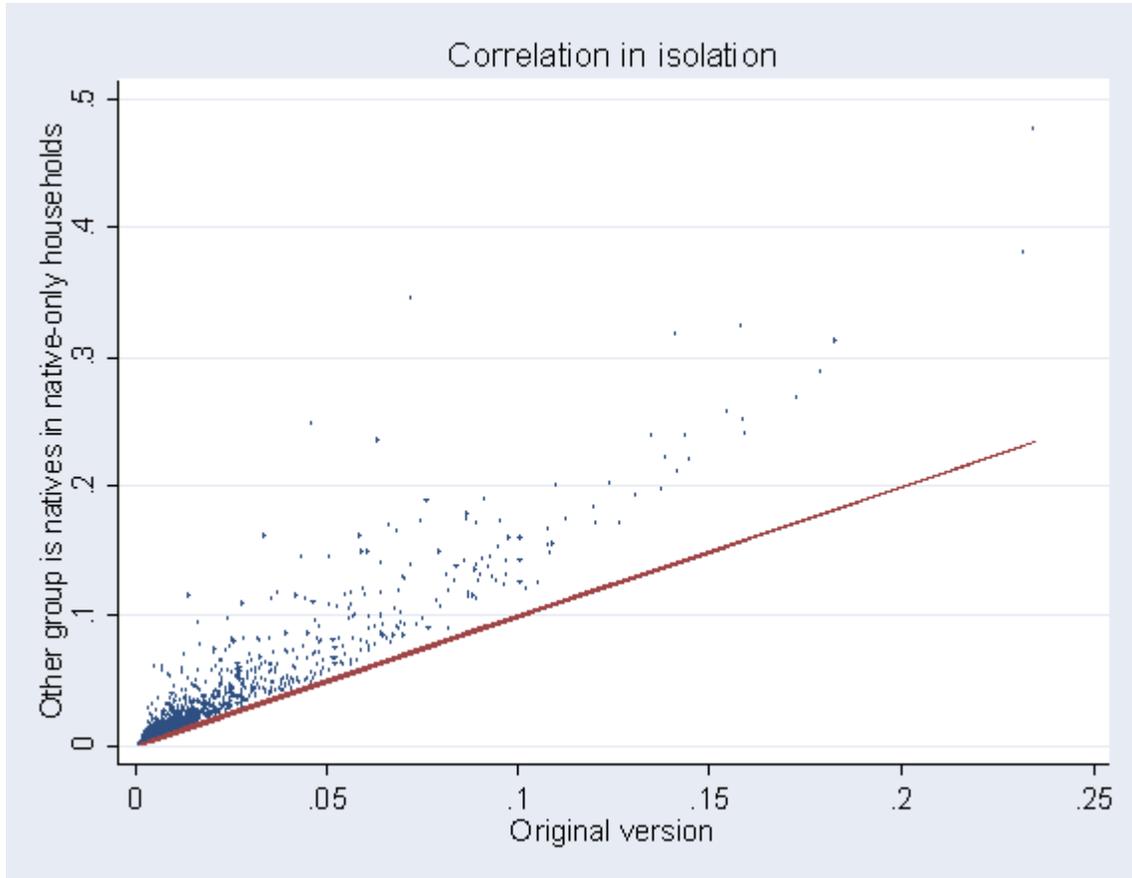
Figure 9: Correlation between original version of isolation index and alternative that compares the distribution of immigrant group members to the distribution of natives living in native-only households. The plotted line is the 45-degree line.

Figure 10: Matching current immigrant locations to past native locations